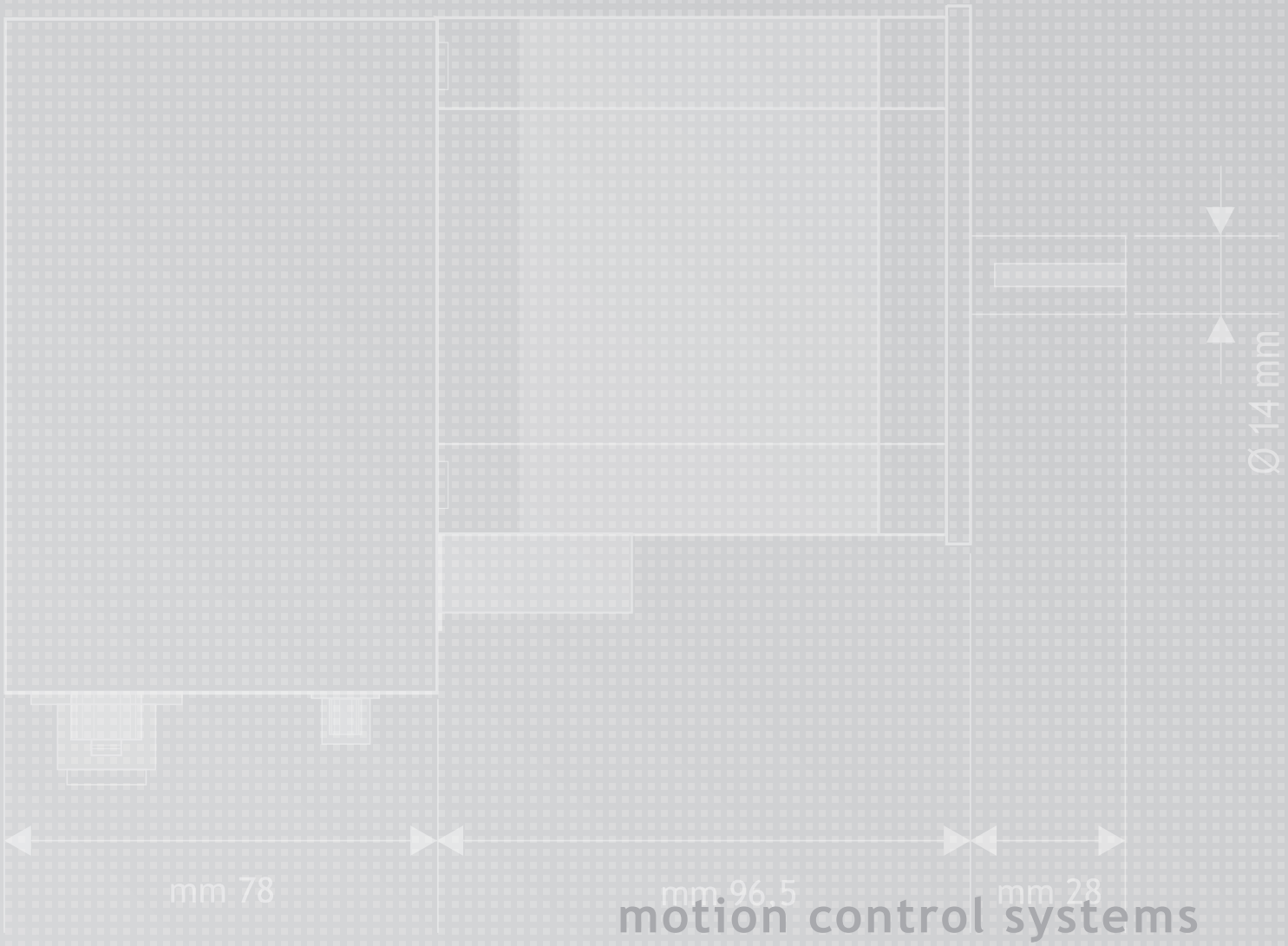


motion control systems

GENERAL CATALOGUE

Look Ahead!

MOTION CONTROL SYSTEMS

GENERAL CATALOGUE

INDEX

700+ OVERALL PART-NUMBERS AVAILABLE

Introducing R.T.A. Group

Founded in 1976 in Pavia (Italy), today R.T.A. is a leading player in the industrial automation industry, with a wide and constantly expanding product and solution portfolio.

WHO WE ARE

THE PERFECT PARTNER FOR MOTION CONTROL AND COOLING SOLUTIONS FOR ANY KIND OF AUTOMATIC MACHINERY.

HOW WE RANK

WE ARE N.1 INDEPENDENT GROUP IN EUROPE IN THE STEPPING MOTOR DRIVES SEGMENT (SOURCE: IHS MARKIT).

WHAT WE HAVE ACHIEVED

OVER 1 MLN DRIVES SOLD WORLDWIDE SINCE 1976.

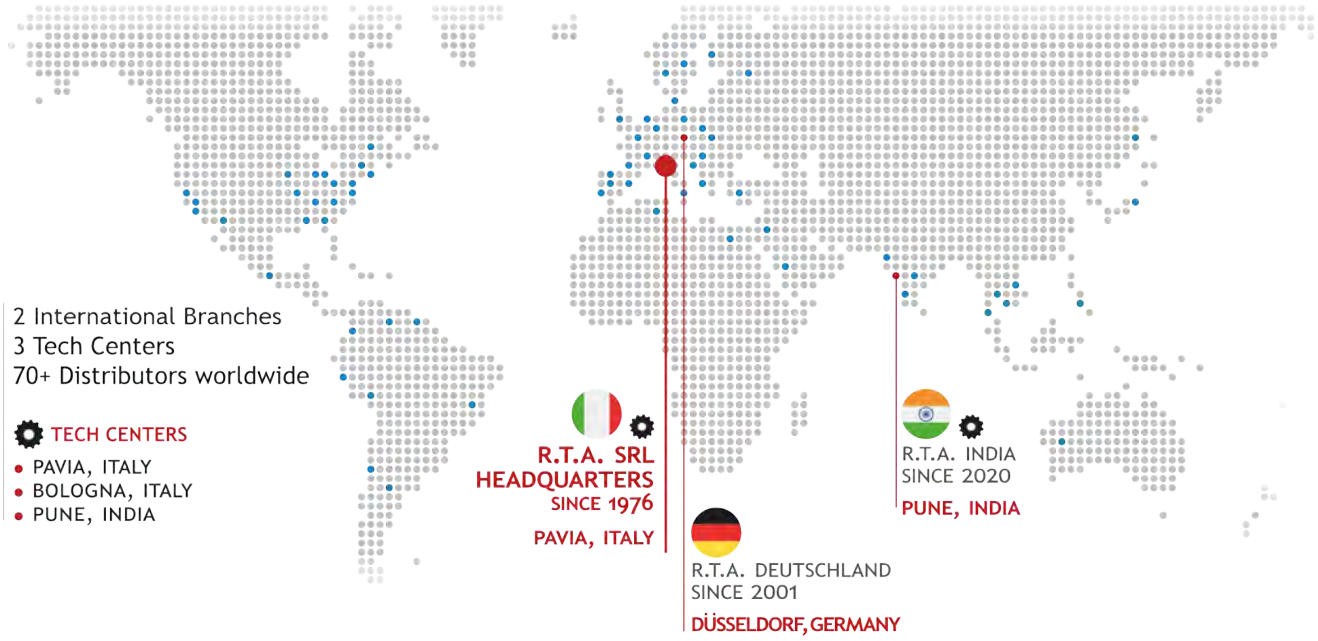
Our DNA

- Almost 50 years experienced
- Robust industrial footprint
- High quality and reliability production
- Online and on-site technical support
- Continuous technological Innovation
- Internationalization

Look Ahead!

OUR PAYOFF MEANS WE CHASE CHANGE AND WE BELIEVE IN TECHNOLOGY, INNOVATION AND PEOPLE.

R.T.A. in the world



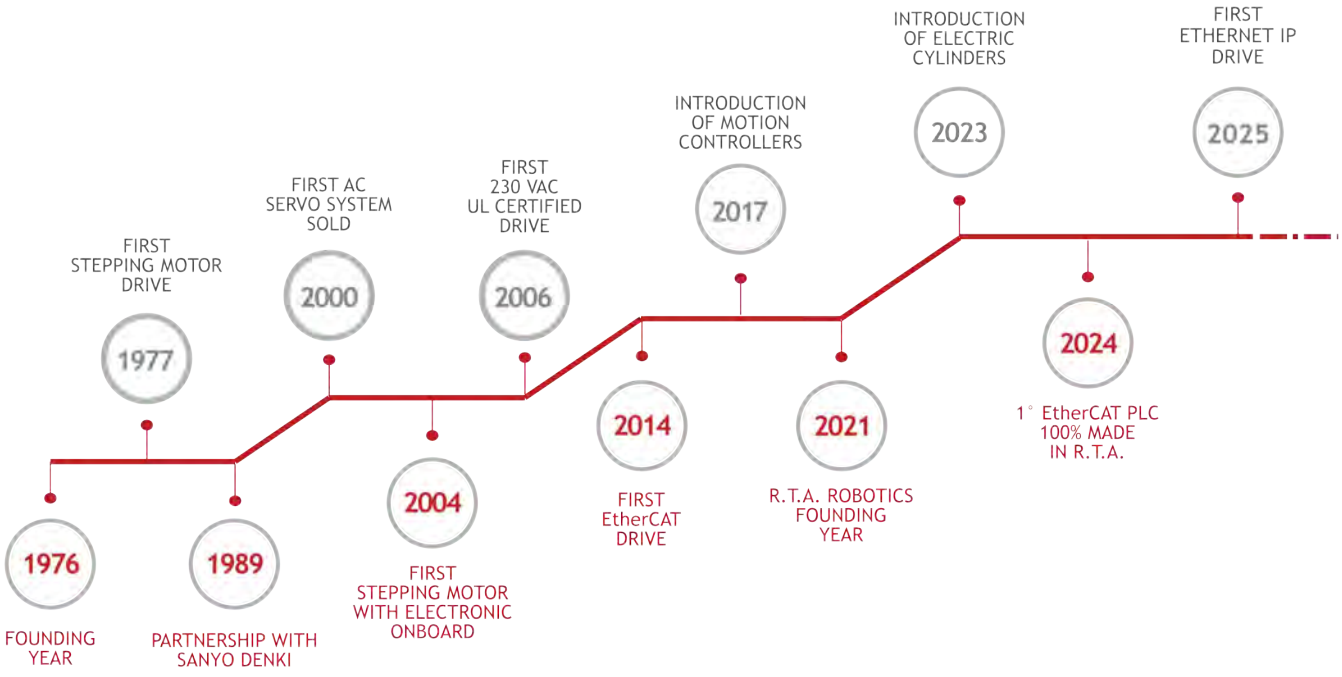
R.T.A. ITALY - HEADQUARTERS
FOUNDING YEAR: **1976**
TOTAL HEADCOUNT: **74**

R.T.A. DEUTSCHLAND
FOUNDING YEAR: **2001**
TOTAL HEADCOUNT: **9**

R.T.A. INDIA
FOUNDING YEAR: **2020**
TOTAL HEADCOUNT: **2**

R.T.A. corporate milestones

RESEARCH, INNOVATION AND GROWTH

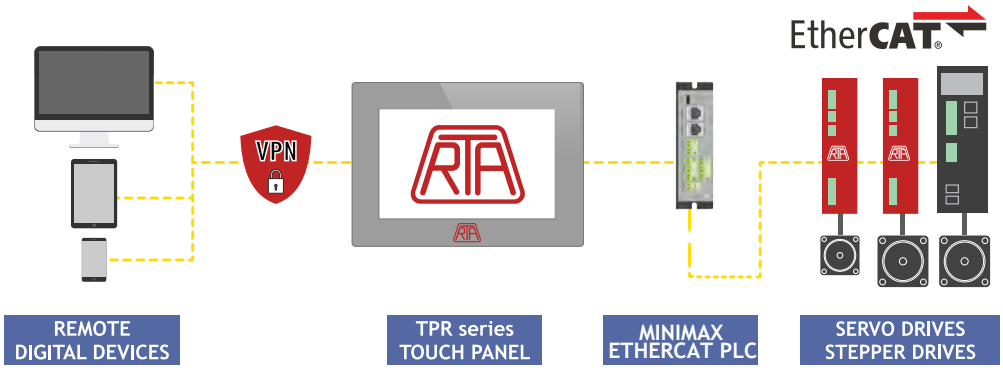


A double-sided company: Production & Integration

A-side: THE INDUSTRIAL BACKBONE

- In-house design of stepping motor drives since 1976.
- Strong industrial footprint: 100% MADE IN ITALY, with constant attention to quality and reliability.
- Robust and easy-to-use products, even in harsh environments.

B-side: THE INTEGRATED APPROACH



- A fully integrated mechatronic package for virtually any industrial application.
- A team of highly experienced software engineers exclusively dedicated to software development projects.

Certified reliability

2 YEARS
OF WORLDWIDE RECOGNIZED WARRANTY

COMPUTERIZED TESTING LINE
EVERY DRIVE IS TESTED TWICE BY TWO DIFFERENT OPERATORS

ISO 9001-2015
CERTIFIED QUALITY SYSTEM SINCE 1999

CUSTOMER SUPPORT
EXCELLENT PRE- AND POST-SALE SERVICE

One distinguishing feature of R.T.A.

20 years after installation we still grant the availability of our products.

R.T.A. goes digital and social

CORPORATE WEBSITE

The general catalogue digital edition is also available at **www.rta.it**, R.T.A. corporate website always updated with the latest news.

www.rta.it

SCAN THE CODE

E-STORE

250+ products including Stepping Motor Drives, Stepping Motors, Gearboxes, Cooling Fans and nearly 100 spare parts and discontinued products.

www.rta-store.com

SCAN THE CODE

DOWNLOAD AREA

Hardware and software manuals, ESI files and 3D drawings can be easily downloaded at **download.rta.it**

download.rta.it

SCAN THE CODE

YOUTUBE CHANNEL

Corporate and promotional videos, technical demos and the recording of R.T.A. tech talk, providing highly-technological explanations and solutions

SCAN THE CODE

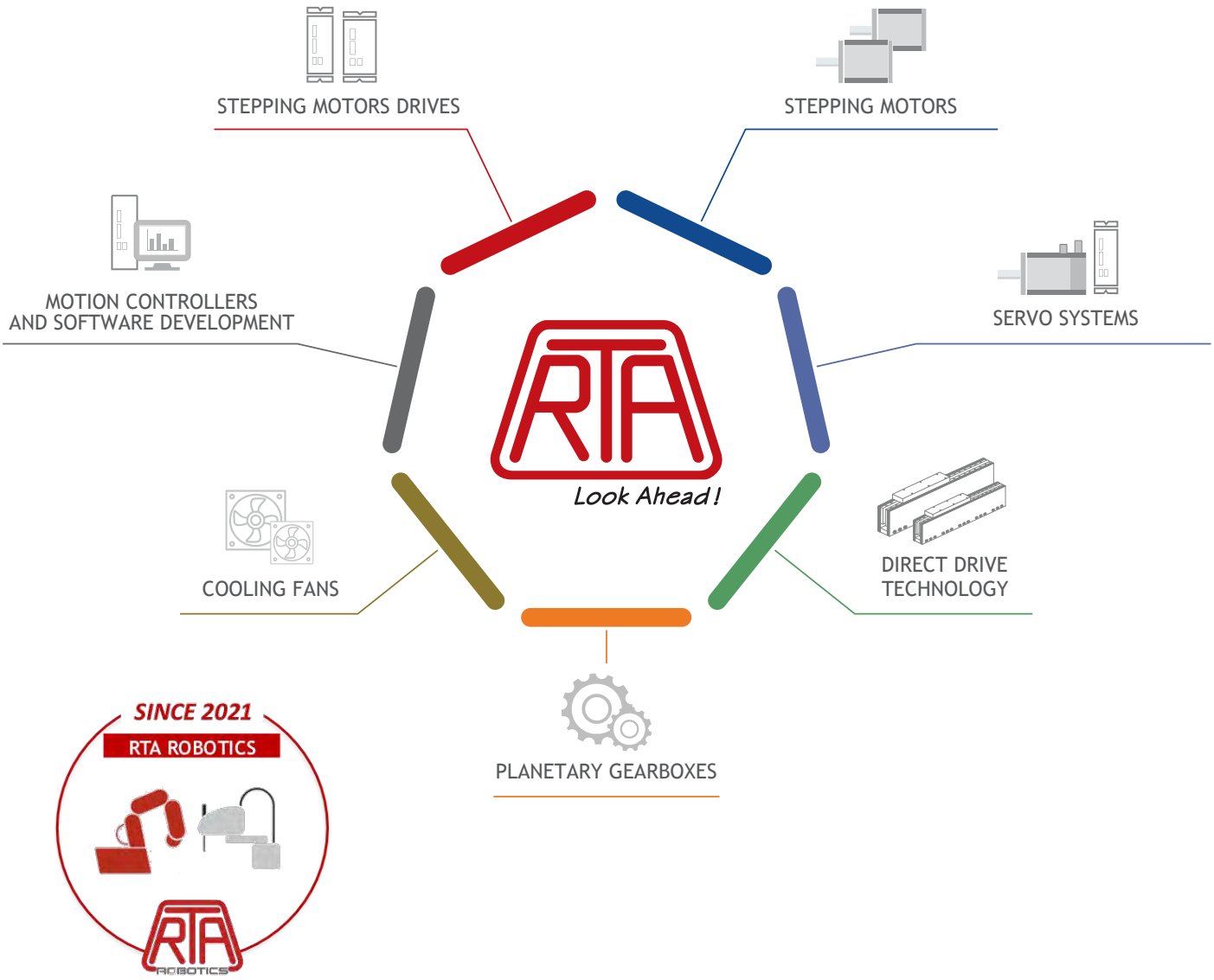
LINKEDIN PAGE

Follow R.T.A. on LinkedIn for the latest news and updates.

SCAN THE CODE

One partner for multiple integrated solutions

7 PRODUCT LINES

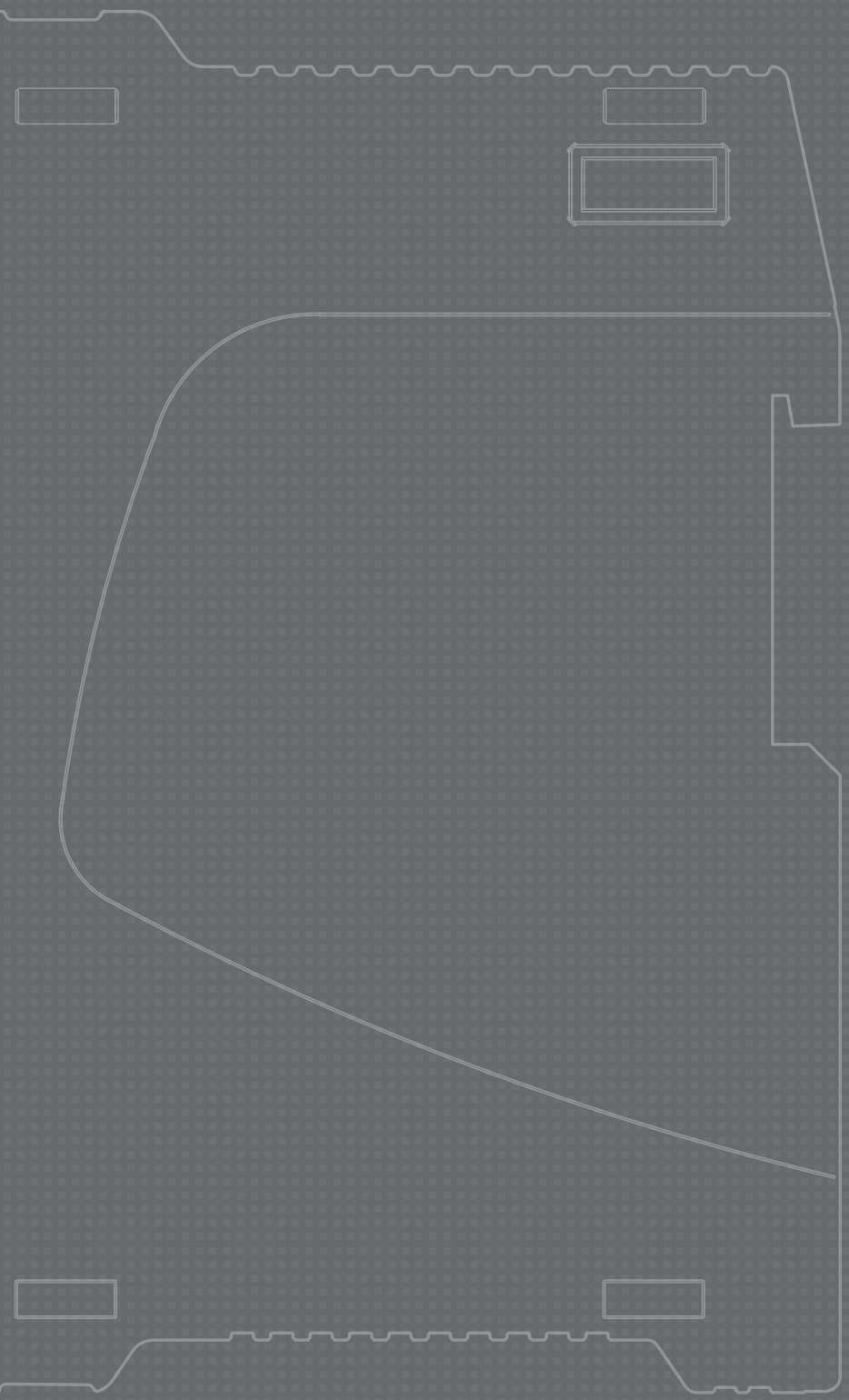


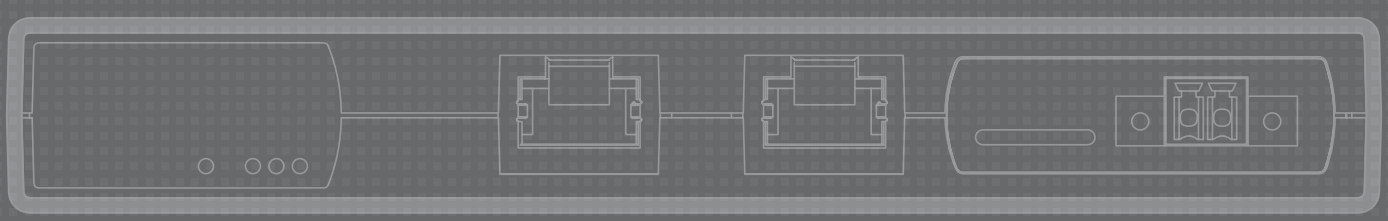
DEEP CONSOLIDATED **CROSS-SECTIONAL** KNOW-HOW.

STATE OF THE ART **CUSTOMER SUPPORT** IN EVERY PHASE OF THE PROJECT.

HIGH END SERVICE COMBINED WITH **QUICK DELIVERY** FROM STOCK OF ALLA PRODUCT LINES.

MOTION CONTROLLERS





MOTION CONTROLLERS

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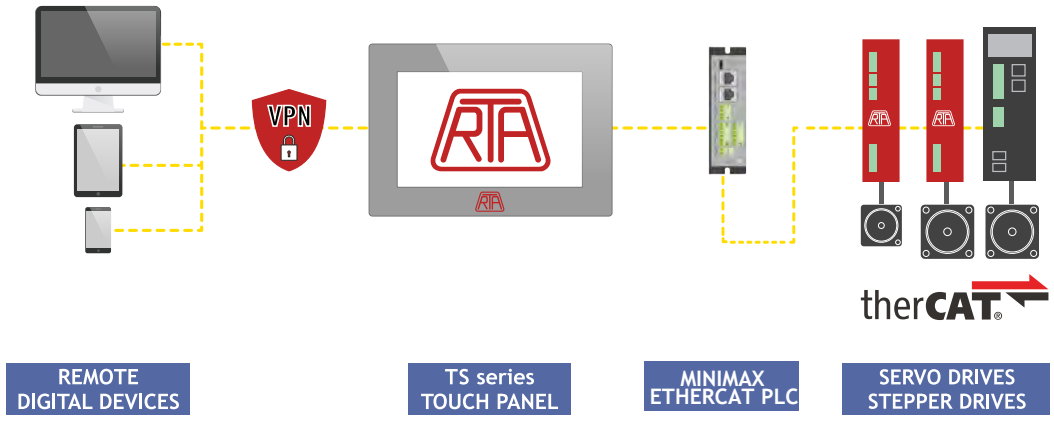
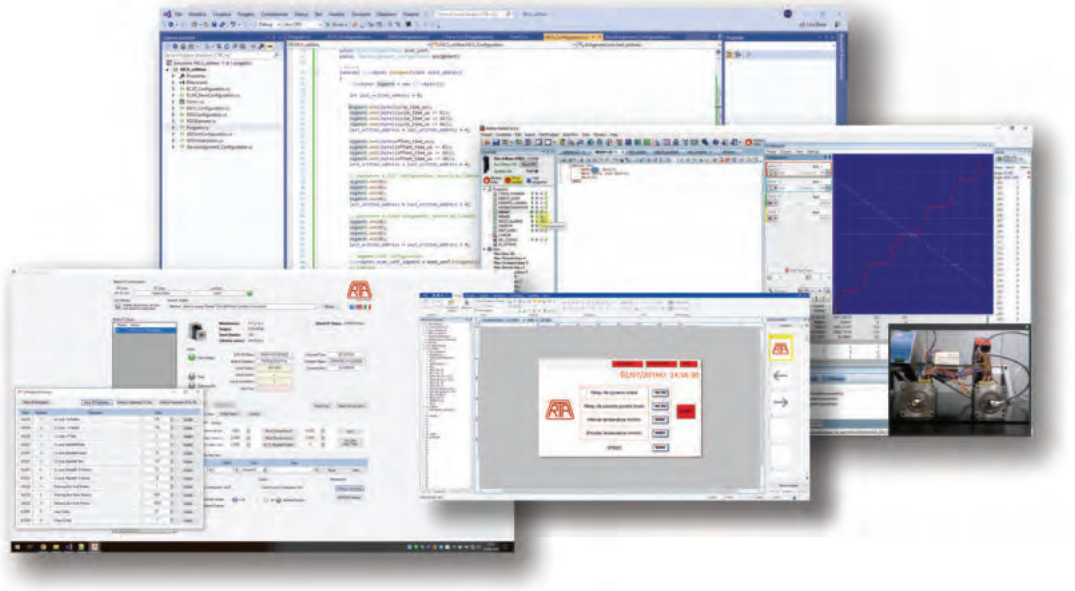
The architecture

R.T.A. architecture is a flexible solution for a wide range of motion control applications in most industrial fields. It's an articulated system allowing the programming, functioning and monitoring of up to 128 axes of stepper, servo and linear motors (64 real and 64 virtual), based on the most common protocols. Products and technologies are fully compatible and scalable and they can be easily remotely monitored through VPN.



Software development

- At R.T.A. we have a team of software engineers fully dedicated to software development projects.
- We can offer A-to-Z or partial software design, working closely with the customer's technicians in every phase of the project.
- FREE Windows-based programming interface for setup, diagnostic and configuration activities and a comprehensive motion library.
- Online and on-site fast and qualified technical assistance.



Products and solutions

MINIMAX ETHERCAT PLC SERIES

Drive of up to 40 advanced axes via EtherCAT real-time field bus.
Smart Structured Text programming language with built-in function libraries through RTA Studio: unique software environment for configuration and debugging.
Easy integration with other automation systems by Modbus TCP/IP, UDP and Modbus RTU. Availability of IOT ET D.8.8 EtherCAT module.
RTA Wiki platform available for further technical insights.

EtherCAT TRIO MOTION CONTROLLERS

Drive of up to 128 axes via EtherCAT real-time field bus
TrioBASIC and IEC61131-3 programming languages.
Precise calculation thanks to powerful dual- and quad-core processors.
Multitasking programming language and free Windows-based development environment.
Built-In Ethernet port, allowing programming, connection with HMI, and data transferring with the rest of the world, using the most common protocols.

PULSE TRAIN & ANALOG MOTION CONTROLLERS

PULSE TRAIN
ANALOG INPUT
ANALOG OUTPUT

Linear, circular, helicoidal and spherical interpolation.
3, 5 or 8 multi-function channels.
TrioBASIC and IEC61131-3 programming languages.
Multitasking programming language and free Windows-based development environment.
Built-In Ethernet port, allowing programming, connection with HMI, and transferring data with the rest of the world, using the most common protocols.

HMI - TS SERIES

Three standard models in three sizes.
Free Windows based developing program.
Free remote control (VPN) enabling the operator to easily connect and monitor the "on the field" HMI through a safely protected VPN connection.

Easy integration with all R.T.A. products

ANALOG & DIGITAL I/Os

A selection of digital and analogue I/O terminals and motion modules designed for precise positioning
of stepper and servo motors, that perfectly fit in a complex system, that can be placed remotely from the master if needed.

Available modules: Power Connect, Thermocouple, RTD, Load Cell,
16 IN/out PnP, 2 Servo Axes, 8 Analog I/O

CAN I/O

CANopen®

Digital and analogue I/O expansion modules provide a simple and scalable I/O system based on CANopen protocol.

FLEXSLICE ARCHITECTURE MAIN FEATURES:

- Scalable and expandable system
- Easy parameter configuration
- Up to 6 drives in a row
- Up to 128 axes controlled (64 real and 64 virtual)
- DIN-rail mounted

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MOTION CONTROLLERS

MOTION CONTROLLERS

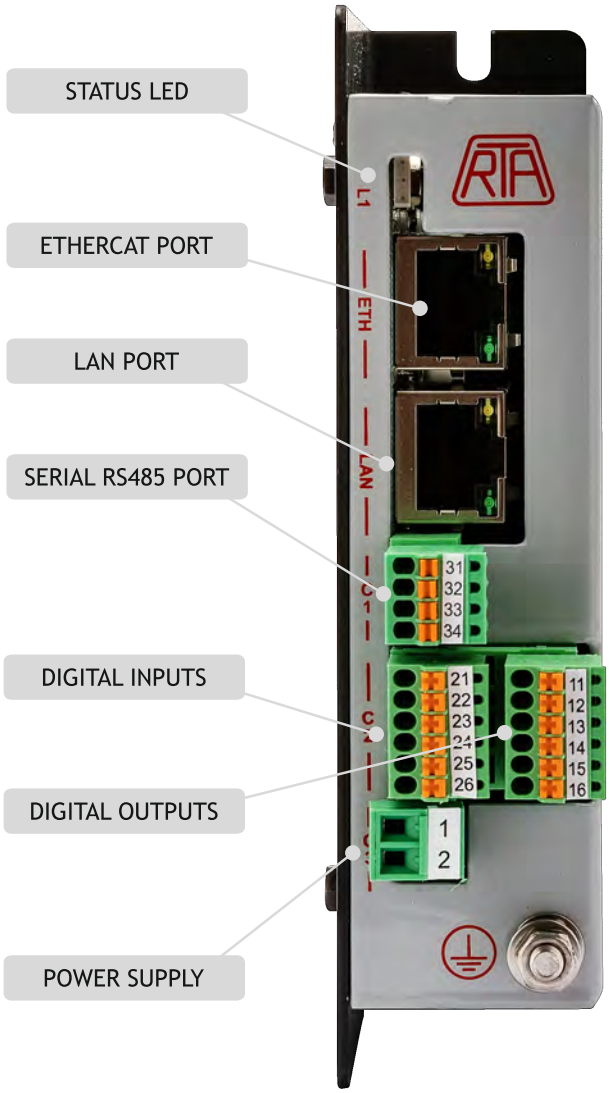
ETHERCAT MOTION CONTROLLERS & FLEXSLICE ARCHITECTURE

MiniMax Series EtherCAT PLC

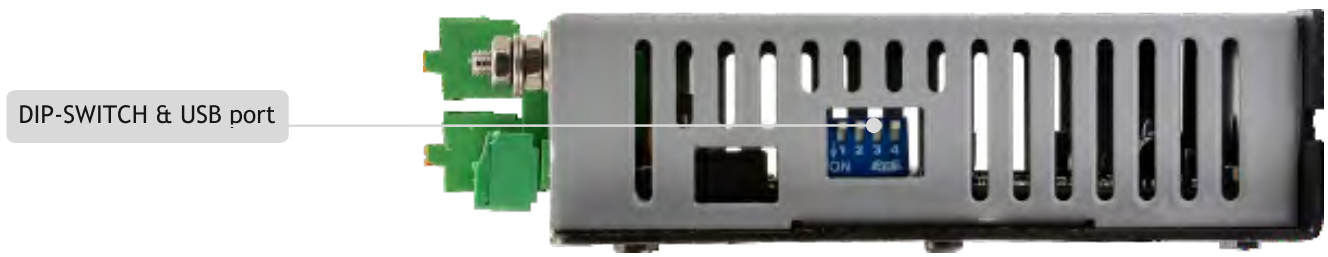
INTRODUCTION

MiniMax is an EtherCAT PLC designed for easy configuration and programming of stepper and servo drives. It allows to develop EtherCAT automation solutions ranging from basic to medium complexity. With an additional LAN port featuring a Modbus TCP/IP server protocol, it can be easily integrated with HMIs, third party PLCs, Industrial Pcs and other network devices.

HIGHLIGHTS

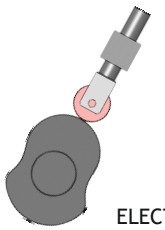


- RTA Studio: unique software environment for configuration and debugging
- Smart Structured Text programming language with built-in function libraries
- Full RTA and SANYO DENKI EtherCAT drives compatibility
- Easy integration with other automation systems by Modbus TCP/IP, UDP and Modbus RTU
- Up to 20 realtime parallel processes
- Compact Size: 32x130x106 mm
- Advanced Axes Motion Interpolation
- 5 Digital Inputs + 5 Digital Outputs
- **RTA Wiki** platform available for further technical insights



MiniMax versions comparison

MiniMax A1	MiniMax R2
8 basic axes*	20 basic axes
2 advanced axes▲	20 advanced axes



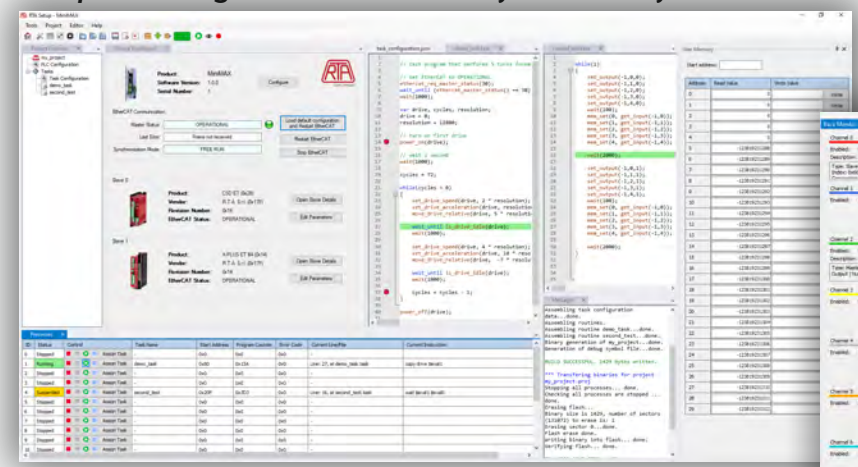
ELECTRICAL CAMS MANAGEMENT

* Basic axes: point to point movements and homing (CSP mode of operation)

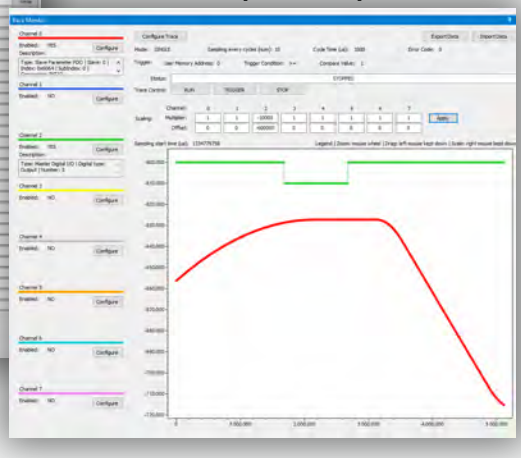
▲ Advanced axes: advanced axes interpolation, mechanical cam, gears and links

MiniMax Development Environment

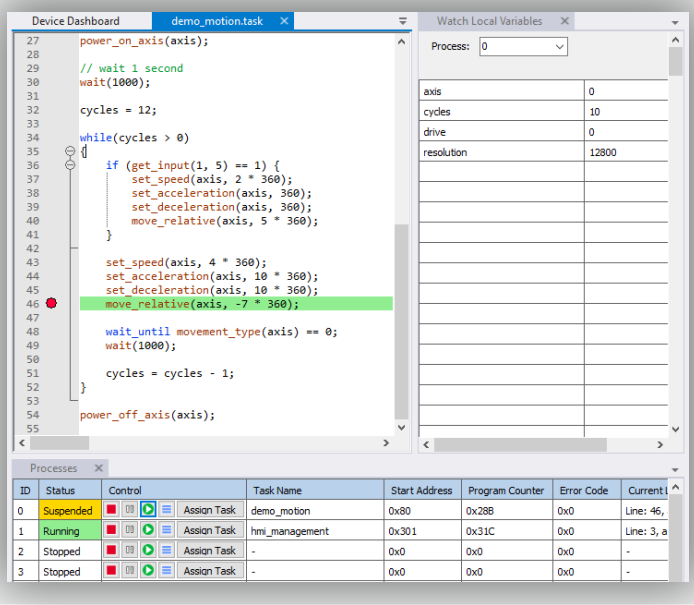
Complete integrated environment for Microsoft Windows



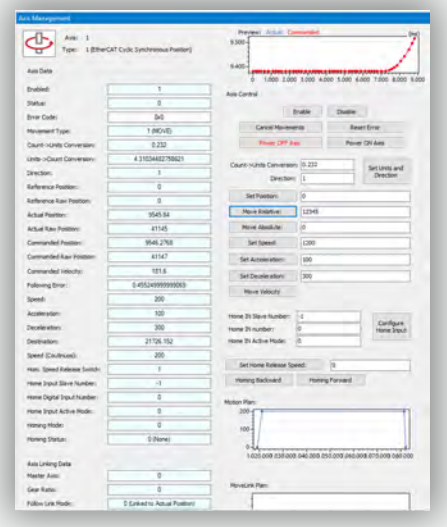
Trace monitoring of automation process parameters



Easy programming language and debugging tools

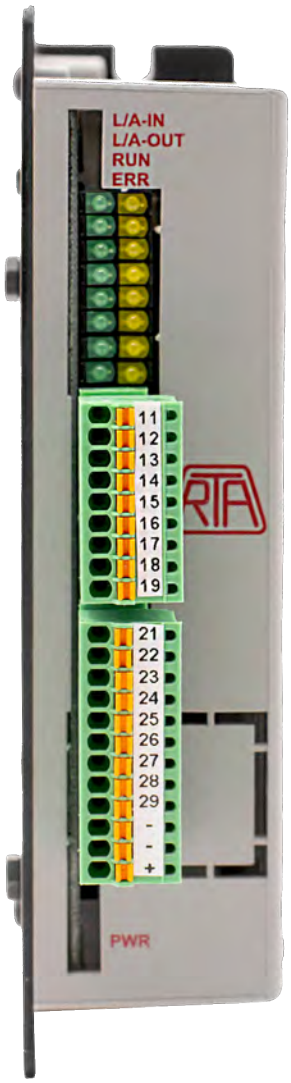


Quick Axis settings and testing setup



Download the MiniMax Series full Datasheet

IOT ET D8.8 Module



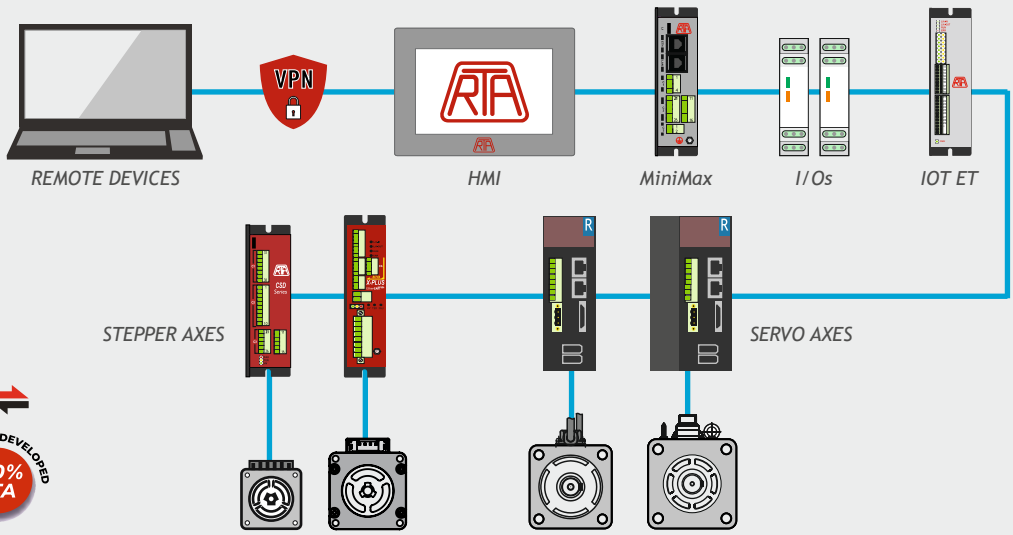
The IOT module manages digital inputs/outputs, with integrated LED indication to display its status.

HIGHLIGHTS

- It receives digital logic commands, detect digital inputs status and controls digital outputs.
- EtherCAT interface
- RTA's EtherCAT PLC *MiniMax* expansion or stand-alone unit
- 8 digital input
- 8 digital bi-directional output
- Power supply: 24 VDC
- Protections Over-Voltage and Shortcircuit for outputs

R.T.A. *MiniMax* SYSTEM EXAMPLE

UP TO 20 STEPPER & SERVO AXES



EtherCAT PLC

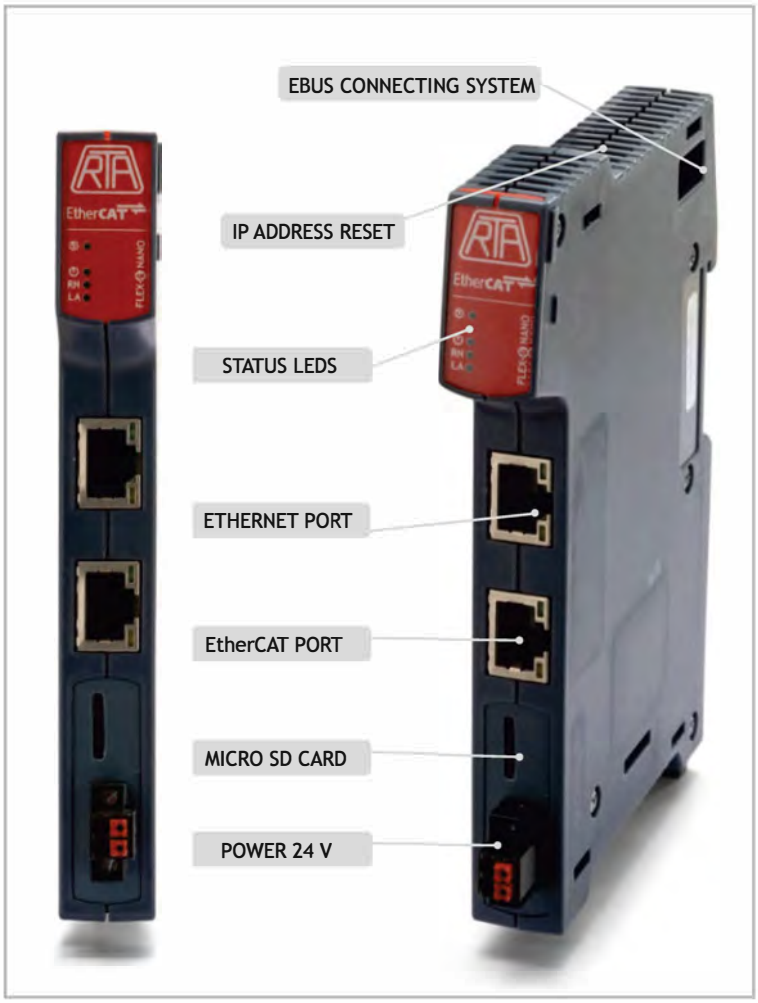
DESIGNED & DEVELOPED 100% RTA

FLEX-6 NANO Integrated EtherCAT® Controller

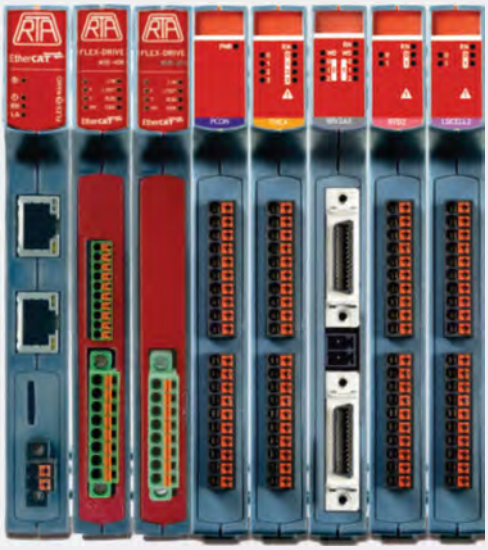
INTRODUCTION

Flex-6 Nano is a powerful, flexible and compact DIN-rail mounted motion coordinator, controlling up to 64 stepper and servo axis.

Flex-6 Nano can be used as a stand-alone controller or it can easily «plug» straight into the EtherCAT Flexslice Architecture, including servo and stepper drives and I/O modules.



THE FLEXSLICE ARCHITECTURE



NO NEED FOR EtherCAT COUPLER

EtherCAT®

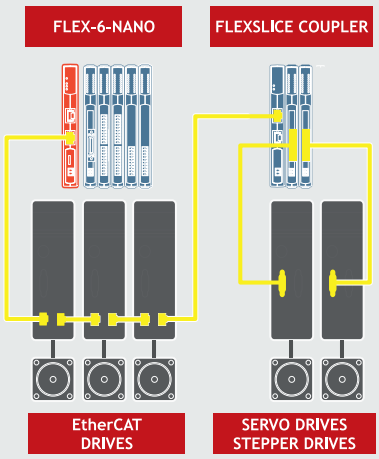
POWERFUL
COMPACT
VERSATILE

HIGHLIGHTS

- Dual core 1GHZ Arm Processor
- 2 - 64 stepper and servo axis
- Built in EBus Coupler
- Cycle Time as low as 125us
- Ethercat Protocol to Individual modules using the Ebus System.
- Easy parameter configuration
- Remote placement of the modules from the master if needed.
- DIN-rail mounted

SPECIFICATIONS

- Multitasking Operating System
- Comprehensive Motion Library
- TrioBasic Motion Language
- IEC61131-3 Programming
- HMI Support
- Robotic Functions
- Multi-protocol Communications Support

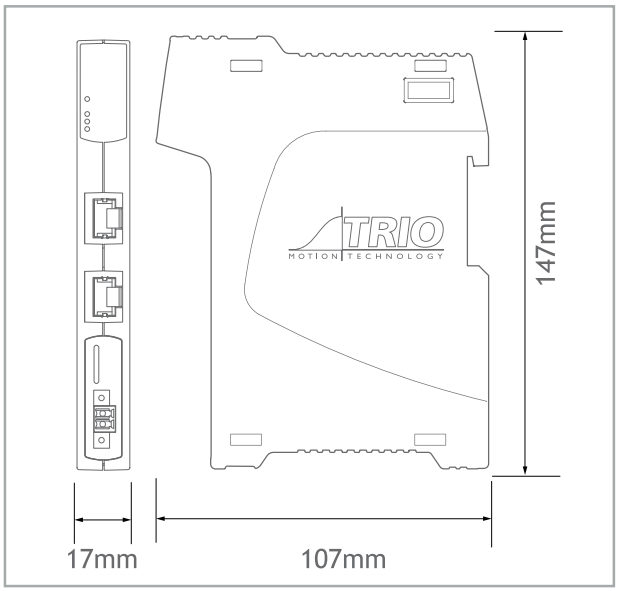


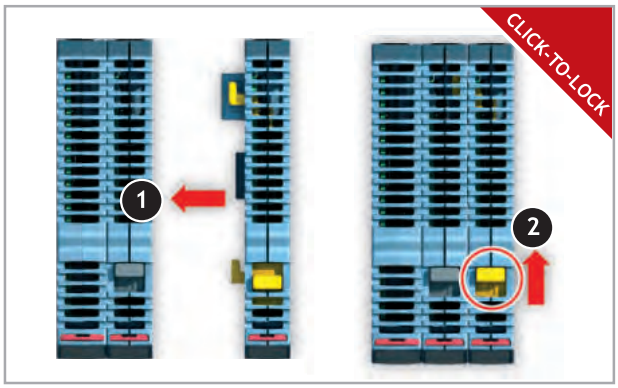
EtherCAT®

TECHNICAL FEATURES

- Dual core 1 GHZ Arm Processor.
- 1 Gbit DDR3 Memory.
- 1 Gbit Fast Serial Flash Memory to store data.
- Built-in Long Time Retention RTC.
- Built-in Ethercat coupler for direct access to Flexslice modules.
- Completely field programmable with *Motion Perfect*.
- Bus cycle time synchronised with *Motion Coordinator* Servo Period.
- EtherCAT protocol remains intact down to individual modules using the EBUS system.
- I/O functions tightly synchronised to motion using EtherCAT distributed clock.
- Practical Push-In connector options.
- RoHS and UL approved.

MECHANICAL DIMENSIONS





Flexslice Architecture

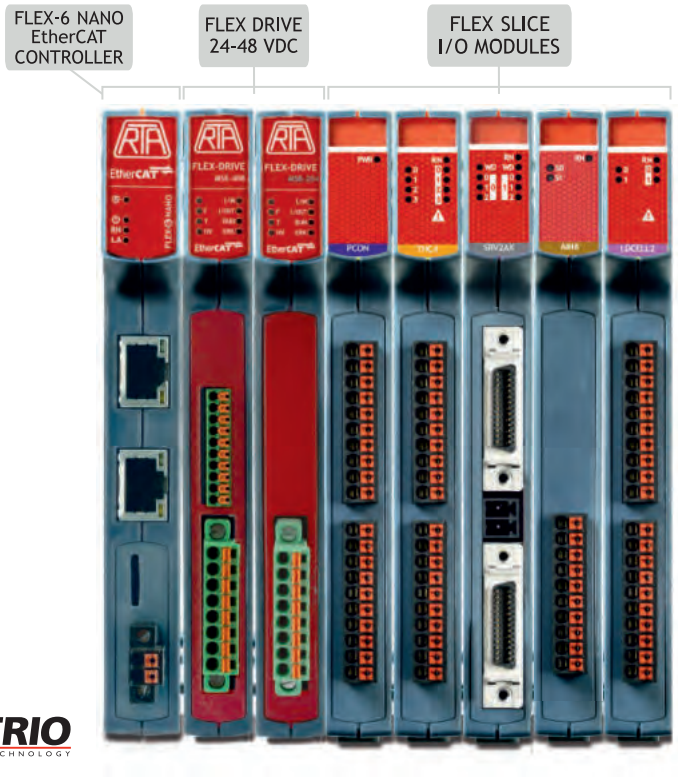
INTRODUCTION

Flexslice architecture is a flexible solution for a wide range of motion control applications in most industrial fields. It is an articulated system allowing the complete process of programming, functioning and monitoring of up to 128 axes of stepper, servo and linear motors, based on the most common protocols.

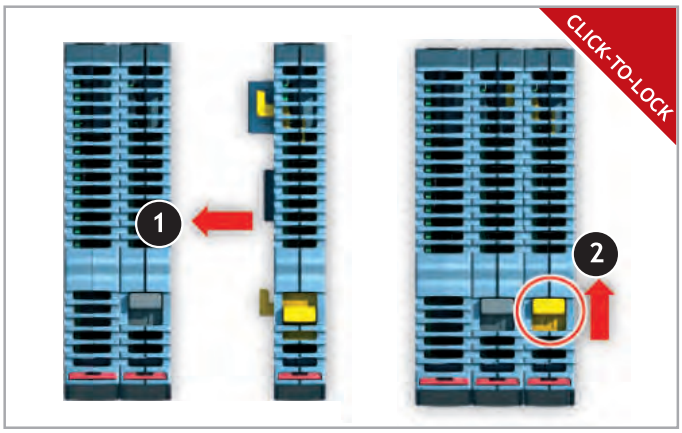
It is an intelligent system originally designed by TRIO Motion Technologies,where R.T.A. EtherCAT drives fit perfectly, developing a powerful and ultra-compact solution.

HIGHLIGHTS

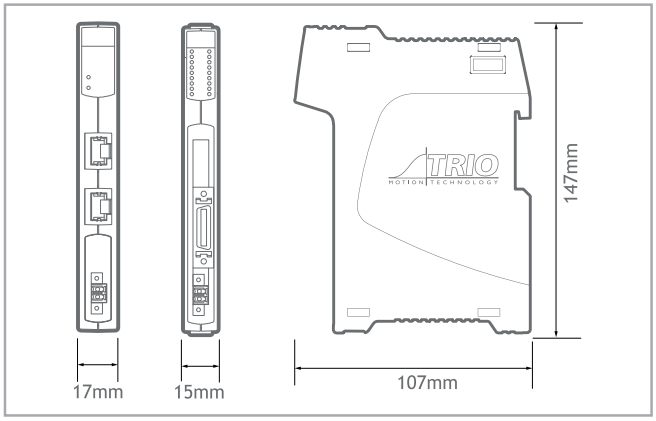
- Scalable and expandable system
- Easy parameter configuration
- Perfect matching with R.T.A. Flex-Drive EtherCAT stepping motor drive.
- Power supply:
  - for controller and Coupler: 24 VDC
  - for Flex-Drive: 24-48 VDC
  - for all Modules: via internal EBus
- Up to 128 axes controlled
- EtherCAT cycle times down to 125 µs
- Wide selection of digital and analog I/O modules designed for precise positioning of stepper and servo motors.
- Secure remote monitoring through VPN
- DIN-rail mounted



FAST & EASY ASSEMBLY



MECHANICAL DIMENSIONS



LOGIC MODULES

Flex-6 Nano EtherCAT Motion Coordinator

- EBus output current: 2500 mA
- **Power supply requirement: 24 VDC**
- EtherCAT Connection: RJ45
- Protocol: EtherCAT Master
- Cycle Time as Low as 125us
- Modes of Operation: CSP, CSV and CST
- Communication: Modbus/TCP

P366: EtherCAT Coupler

- EBus output current: 2500 mA
- **Power supply requirement: 24 VDC**
- EtherCAT Connection: RJ45
- Protocol: EtherCAT Slave
- Data rate 100 Mbit/s
- Network Cable: CAT 6

POWER MODULES

RTA Flex-Drive EtherCAT MSE 408 Model

- EBus module current consumption: 350 mA max + Encoder (85 mA max)
- **Power supply requirement: 24-48 VDC**
- I_{NP} (Peak value): 4 A
- Sensor Feedback: ENCODER or OPEN LOOP

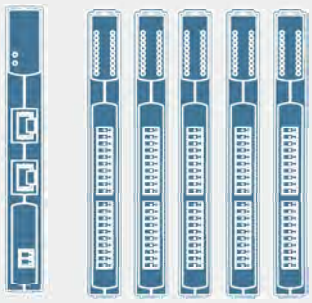
RTA Flex-Drive EtherCAT MSB 204 Model

- EBus module current consumption: 350 mA max
- **Power supply requirement: 24-48 VDC**
- I_{NP} (Peak value): 2.5 A
- Sensor Feedback: OPEN LOOP

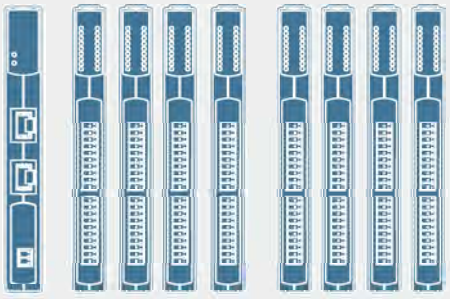
The configuration of a Flex-Drive Architecture can be defined considering that the total sum of the EBus current consumption of every included module should be lower than the Ebus output current of Flex-6-Nano Motion Coordinator or P366 EtherCAT coupler (2500 mA).

SOME EXAMPLES OF FLEXSLICE ARCHITECTURES

1 FLEX-6 NANO or 1 COUPLER
+ UP TO 5 FLEX-DRIVE MSE 408



1 FLEX-6 NANO or 1 COUPLER
+ UP TO 4 FLEX-DRIVE MSE 408
+ 4 DIGITAL I/Os or 2 ANALOG I/Os



Please refer to R.T.A. Technical support in case of doubts about specific layouts.

FLEX-DRIVE Series Drives

EtherCAT®

INTRODUCTION

- FLEX-DRIVE allows connection with any stepper motor up to Nema 24 (60 mm) with or without encoder feedback, supporting PP, CSP, CSV and Homing mode of operation.
- MSE 408 model is equipped with one configurable fast capture input, suitable for Touch Probe, proximity or free use.
- Easy setup: no need of programming software, all settings are made through EtherCAT network.
- Separated power supply for logic circuit and motor power.

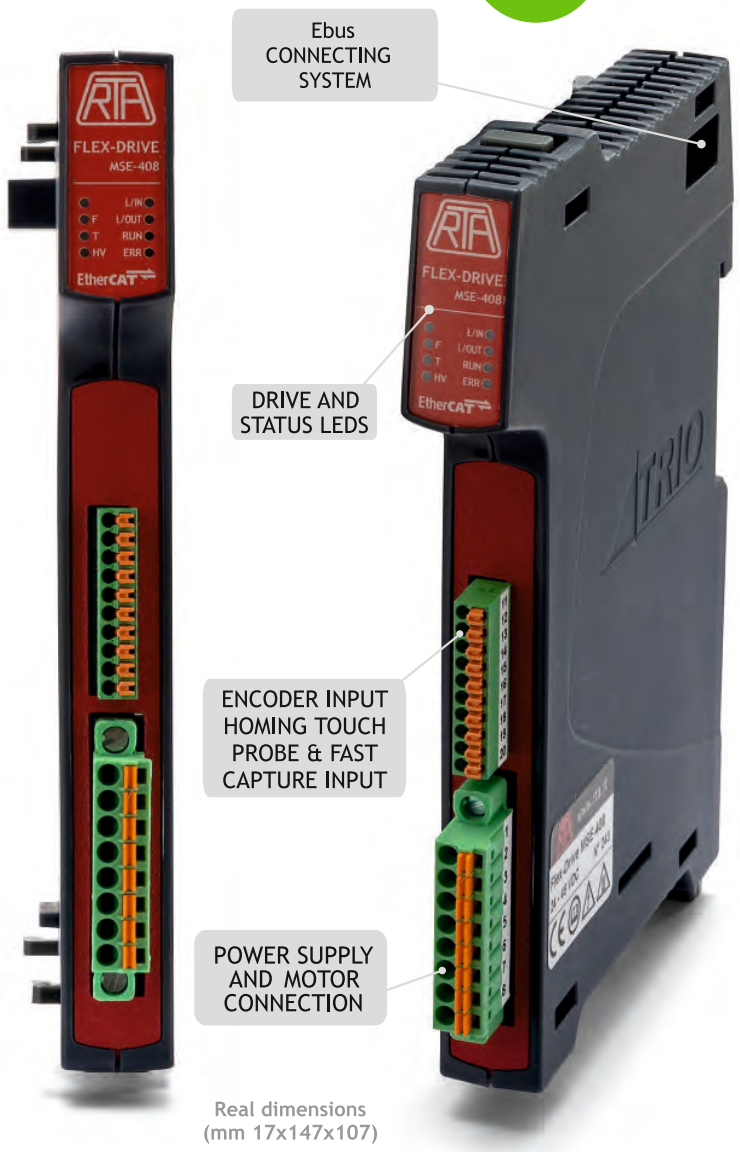
AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

MAIN EtherCAT FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost (120%).
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.

4th FIRMWARE GENERATION



Real dimensions (mm 17x147x107)

Please refer to download.rta.it for technical specifications

AUTO FEED FUNCTION

AUTO SYNC FUNCTION

FLEX-DRIVE

SCAN THE QR CODES TO WATCH TWO VIDEOS ON FLEX-DRIVE AND AUTO-SYNC FUNCTION

AUTO-SYNC

Flexslice Modules

P362: Power Connect

The P362 Flexslice Power Connect provides a solution for simple and convenient wiring of 3 wire sensor power and return wires.
The pins of the 2 x single-row push-in connectors are joined together to form 2 isolated banks of commoned connections.
With 0V connected to the lower connector and 24V to the upper connector, the LED gives an indication that power is on.

- EBus Module current consumption: 0mA
- Power supply requirement: 24V (+/-20%) DC
- Max connector current: 4A

P367: Thermocouple

The P367 Flexslice Thermocouple module has 4 thermocouple inputs, each digitised to a resolution of 16 bit. The 4 thermocouple inputs are brought out to a single row push-in connector. A second single row push-in connector has 4 relay outputs for control of a heater or other switched load.

- EBus Module current consumption: 160mA max
- Power supply: via the EBUS
- Number of Inputs: 4
- Thermocouple types: J, K, T, E
- Resolution: 16 bit
- Number of Outputs: 4
- Output type: Normally open (NO)
- Load type: Resistive, inductive and capacitive
- Max. Output Voltage: 24V
- Max Output Current: 100mA

P368: RTD Module

The P368 Flexslice RTD module has 4 resistance temperature detector (RTD) inputs, each digitised to a resolution of 16 bit. The 4 RTD inputs are brought out to a single row push-in connector.
A second single row push-in connector has 4 relay outputs for control of a heater or other switched load.

- EBus Module current consumption: 160mA max
- Power supply: via the EBUS
- Number of Inputs: 4
- RTD types Resolution: 16 bit
- Number of Outputs: 4
- Output type: Normally open (NO)
- Load type Resistive, inductive and capacitive
- Max. Output Voltage: 24V
- Max Output Current: 100mA

P369: Load Cell Module

The P369 Flexslice Load Cell module has 2 load cell inputs, each digitised to a resolution of 16 bit. The 2 load cell inputs are brought out to a single row push-in connector. A second single row push-in connector has 4 relay outputs for control of a switched load.

- EBus Module current consumption: 160mA max
- Power supply: via the EBUS
- Number of Inputs: 2
- Load Cell types: 4 wire
- Resolution: 16 bit
- Number of Outputs: 4
- Output type: Normally open (NO)
- Load type Resistive, inductive and capacitive
- Max. Output Voltage: 24V
- Max Output Current: 100mA

P371: 16-OUT PnP

The P371 digital output Flexslice connects the binary control signals from the *Motion Coordinator* to the machine's output devices at 24V DC.
All 16 outputs are current sourcing (PNP) type and have electrical isolation.
Outputs and power connection are via 2 x single-row push-in connectors.
The Flexslice module indicates the output signal states via LEDs.

- EBus Module current consumption: 110mA max
- Power supply: via the EBUS
- Power supply requirement: 24V (+/-20%) DC
- Number of Digital Outputs: 16 (2 banks of 8)
- Load type: Resistive, inductive and capacitive
- "ON" time: 110us (10% to 90%)
- "OFF" time 210us (90% to 10%)
- Max. Output current: 0.5A per channel
- Max. Output current: 4A per bank of 8
- Short-Circuit Protection: 1.4A typ per output
- Over voltage Protection: Yes
- Reverse Voltage Protection: Yes

P372: 16-IN PnP

The P372 digital input Flexslice connects 24V DC signals from devices on the machine to the binary control registers in the *Motion Coordinator*. All 16 inputs are current sinking (PNP) type and have electrical isolation. Inputs and power connection are via 2 x single-row push-in connectors.
The Flexslice module indicates the input signal states via LEDs.

- EBus Module current consumption: 110mA max
- Power supply: via the EBUS
- Power supply requirement: 24V (+/-20%) DC
- Number of Digital Inputs: 16 (2 banks of 8)
- Load type: Resistive, inductive and capacitive
- "ON" Voltage Threshold: 11.2V typ
- "OFF" Voltage Threshold: 10.2V typ
- Input current: 3.5mA typ
- Input filter Cut-off (RC network): 18KHz

P374: Analog 2 Servo Axes

The P374 Flexslice Analogue 2 Servo Axes module allows up to 2 servo motors, connected to a control system. It supports incrementale encoder inputs. If conigured for stepper/pulse output an axis can be pulse+direction or quadrature simulated encoder output. Each MDR connector supports all the signals for full closed loop control of a servo axis.

- EBus Module current consumption: 180mA max
- Power Supply: via the EBUS
- Power Supply 24V (+/-20%) DC @ 100mA
- Max Axes: 2 (software configurable)
- Max Enc Rate: 8M Edges/s encoder count
- Max Step Rate: 8MHz pulse count
- Step/Pulse Width: Wave
- Enc/Step Input/Output: RS422
- DAC Voltage Output: 2 x 12bit +/-10V
- Registration inputs: 4 x 24V Isolated PNP
- WDOG Output: 2 x Normally open (NO)
- WDOG Max. Output Voltage: 24V
- WDOG Max Output Current: 100mA
- Field Programmable: Yes

P378: 8 Analog outputs

The P378 Flexslice 8 Analogue Output module has eight programmable voltage range output terminals, each digitised to a resolution of 12 bit. The 8 single ended outputs have a common 0V potential and are brought out to a single push-in connector.

- EBus Module current consumption: 200mA max
- Power Supply: via the EBUS
- Signal voltage: -10...+10V; 0...+10V
- Signal current: +/-5mA max
- Resolution: 12 bit
- Output impedance: 16 ohm
- Number of Analogue Ouputs: 8

P379: 8 Analog inputs

The P379 Flexslice 8 Analogue Input module has eight programmable voltage range input terminals, each digitised to a resolution of 12 bit.
The 8 single ended inputs have a common 0V potential and are brought out to a single row push-in connector.

- EBus Module current consumption: 160mA max
- Power Supply: via the EBUS
- Signal voltage: -10...+10V; 0...+10V
- Signal current: 0...20 mA
- Resolution: 12 bit
- Overvoltage protection: ±25V
- Number of Inputs: 8

Please refer to R.T.A. Technical Support for architectures layouts and Flexslice modules features.

MC6N-ECAT EtherCAT® Master

INTRODUCTION

The MC6N is a high performance Motion Coordinator which perfectly dialogues with the R.T.A. motion control solution (servos and steppers).

HIGHLIGHTS

- High performance motion coordinator for remote servo and stepper drives via EtherCAT bus.
- EtherCAT drives can be connected and driven in cyclic synchronous position, speed or torque modes.
- 1 GHz dual core processor controlling up to 64 axes (twice as the previous model MC4N).
- Same simple programming as the traditional analog and step/dir axes, with the possibility to set up drives and process alarms over the EtherCAT bus.
- Ideal for high axes count machines or robotic applications.

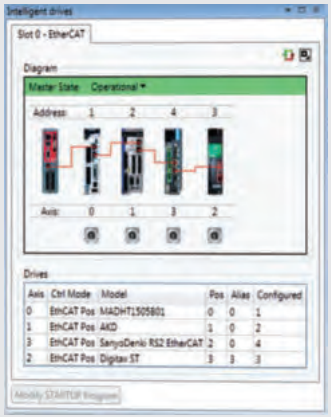
1st GENERATION Vs 2nd GENERATION

MC4N	MC6N
532 Mhz ARM11	1GHz dual core ARM Cortex-A7 processor
up to 32 axis	up to 64 axis
Execution time: 35 lines/ms	Execution time: 102 lines m/s
350 mA power consumption	180 mA power consumption
Maximum retentive variables: 4096	Maximum retentive variables: 16384

EASY PROGRAMMING SYSTEM

The built-in Ethernet port allows programming and connection of common PLC and HMI protocols.

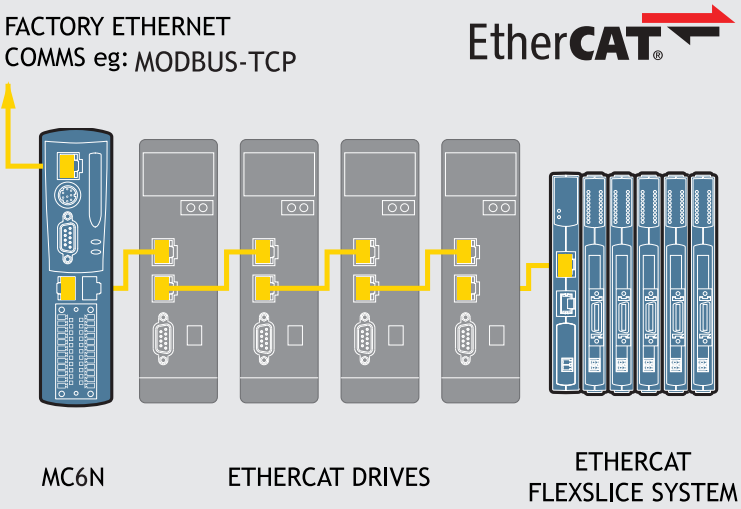
Standard IEC 61131-3 languages available, allowing a fully functional PLC programming system.



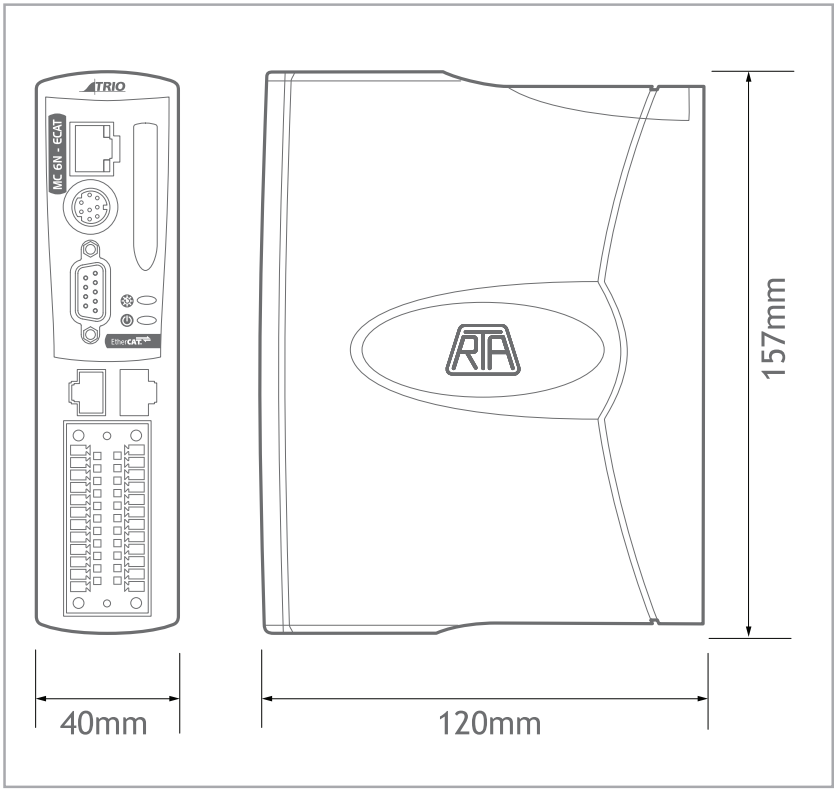
EtherCAT®

SPECIFICATIONS

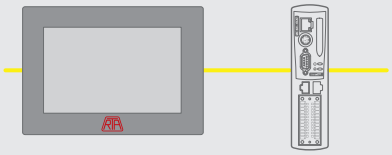
- Up to 64 EtherCAT digital drive virtual axis
- Multitasking operating system
- Up to 1024 EtherCAT I/O
- Ethercat cycle times down to 125 µsec.
- Linear, circular, helical and spherical interpolation
- EnDAT and SSI absolute encoder supported
- Ethernet-IP / Modbus TCP / Trio Activex /HMI Uniplay / UDP / Ethernet interface built-in
- Metal backplate for maximum noiselessness
- Robotic transformations
- High speed registration inputs
- SD memory card slot
- CANopen I/O expansions
- RoHS and UL approved



MECHANICAL DIMENSIONS



TS SERIES TOUCH SCREEN COMPATIBILITY



Easy interaction with R.T.A.'s TS series touch screens.

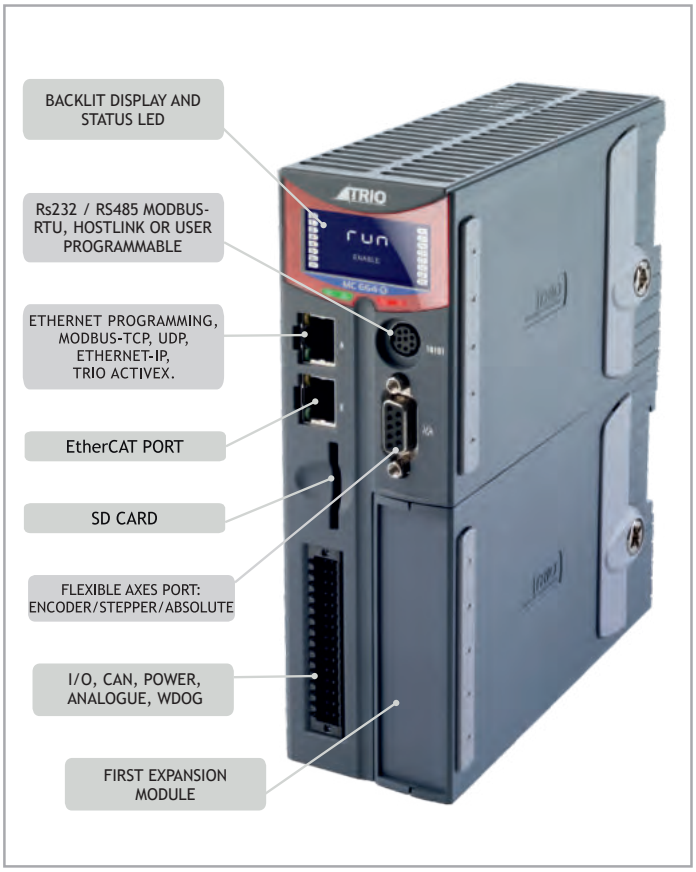
MAXIMUM VERSATILITY

Built-in support for digital drives and I/Os of most brands on the market.

MC664X Quad Core 128 Axis EtherCAT® Coordinator

INTRODUCTION

The MC664X is a very performing flexible EtherCAT Motion Coordinator which perfectly fits the R.T.A. EtherCAT motion control solution (servos and steppers).

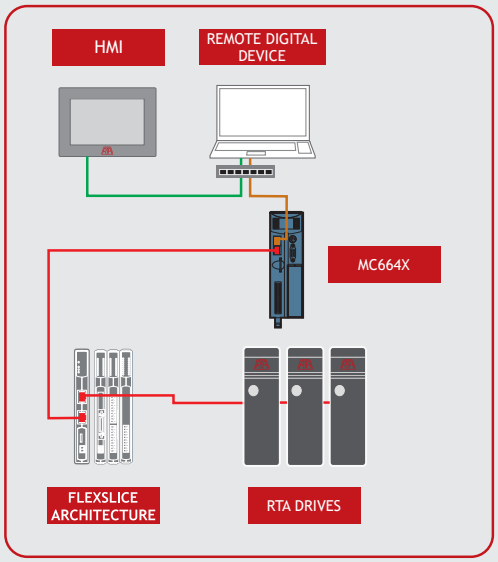


HIGHLIGHTS

- High performance Motion Coordinator for driving servo and stepper drives via EtherCAT bus.
- Able to manage up to 128 axes (64 stepper/servo and 64 virtual), 1024 digital inputs and outputs and 32 analogue inputs and analog outputs.
- Precise 64 bit Motion Calculations with Quad Core Cortex A9 1GHz Processor for multiple simultaneus robotic transformations.
- Ideal for ultra-precise axes count machines or robotic applications.
- Expansions modules available for managing step & dir analogue signals and encoder feedback.

SPECIFICATIONS

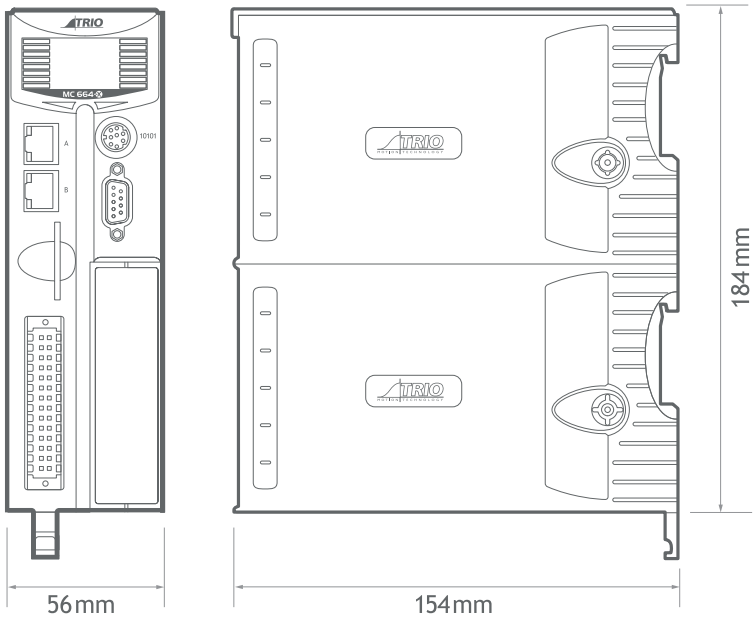
- Multitasking Operating System
- Comprehensive Motion Library
- TrioBasic Motion Language
- IEC61131-3 Programming
- TS SERIES HMI Support
- Robotic Functions (licensed separately)
- Multi-protocol Communications Support



TECHNICAL FEATURES

- Up to 128 Axes - Stepper / Servo Axes
- Precise 64 bit Motion calculations with Quad Core Cortex A9 1GHz Processor
- Dedicated communications Core
- Built-in EtherCAT port
- Built-in Ethernet interface / Ethernet-IP / Modbus TCP
- Anybus-CC module for flexible factory comms including Profinet/Profibus, Sercos II, SLM and RTEX
- Multi-tasking TRIO BASIC programming
- SD memory card slot
- CANopen I/O expansion
- Backlit LCD display

MECHANICAL DIMENSIONS



MOTION CONTROLLERS

PULSE TRAIN & ANALOG INPUT MOTION CONTROLLERS

A-Series PLC SYSTEM CPU - Modules - HMI

INTRODUCTION

A-series integrated PLC system, including CPU, modules and touch screens, is a versatile and programmable logic controller, expandable with external modules.

It is typically suitable for simple stepper position applications, thanks to easy and flexible parameters setting.

It perfectly integrates with R.T.A. selected products and technologies, forming an easy-to-use control system.

TOUCH SCREENS

- Easy integration with the PLC System
- Compact size
- Quick installation

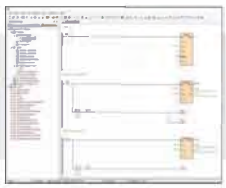
R.T.A. PLC SYSTEM

POSITIONING CONTROL *made easy*

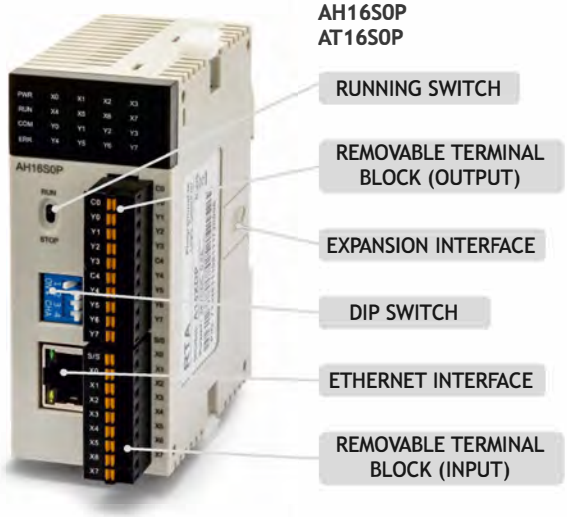
STEP-DIR — MODBUS TCP

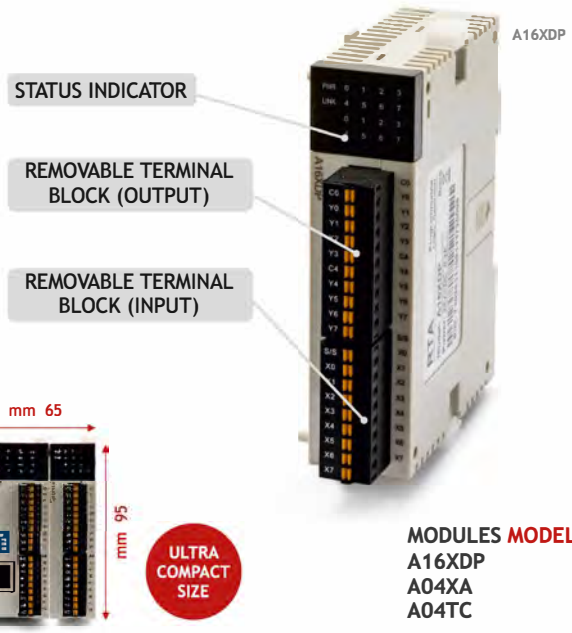
LADDER LOGIC

Programming System



CPU **MODELS**
AH16S0P
AT16S0P





MODULES **MODELS**
A16XDP
A04XA
A04TC

MAIN FEATURES

CPU MAIN FEATURES		
	AH16S0P	AT16S0P
PULSE/TRAIN AXES	4	2
MOVEMENT	Single and multi-axes	Single axes movement
ETHERNET	yes	yes
EXPANDABLE	15 modules	15 modules
INPUT/OUTPUT	8 Digital Input / 8 Digital Output	

MODULES MAIN FEATURES			
	A16XDP	A04XA	A04TC
DIGITAL INPUT	8	0	0
DIGITAL OUTPUT	8	0	0
ANALOG INPUT		2	0
ANALOG OUTPUT		2	0
THERMOCOUPLE			4

TECHNICAL SPECIFICATIONS

PLC SPECIFICATIONS	AH16S0P	T16S0P
POWER SUPPLY	24 VDC ±15%	
POWER PROTECTION	DC input power polarity reverse, over voltage protection	
STEP/DIR OUTPUT	4 (200KHz, 24V PNP)	2 (200KHz, 24V PNP)
AB ENCODER INPUT	4 (200KHz, 24V PNP)	2 (200KHz, 24V PNP)

DIGITAL INPUT SPECIFICATIONS	
INPUT SIGNAL	24 VDC PNP
INPUT IMPEDANCE	4.3KΩ
MAX INPUT CURRENT	10 mA
INSULATION TYPE	Optoelectronic isolation for each channel

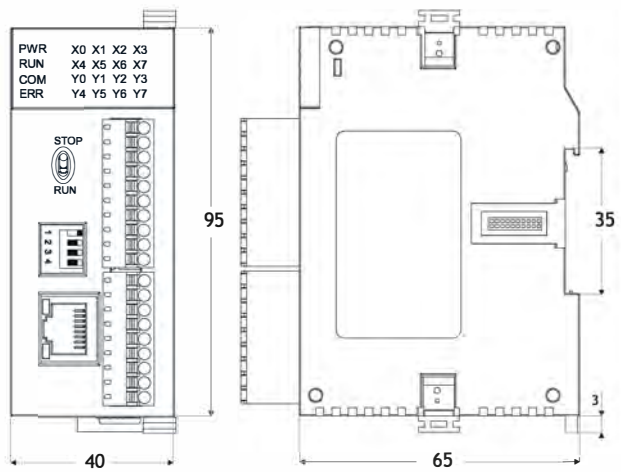
DIGITAL OUTPUT SPECIFICATIONS	
MAX LOAD	0,5A/1 point, 2A/4 points COM, 24VDC PNP
REACTION TIME	Off->On 10 ms, On->Off 5 ms
INSULATION TYPE	Optoelectronic isolation for each channel

ANALOG INPUT / OUTPUT SPECIFICATIONS					
	VOLTAGE INPUT/OUTPUT			CURRENT INPUT/OUTPUT	
INPUT/OUTPUT RANGE	0V - +10V	0V - +5V	1V - +5V	0 - 20 mA	4 - 20 mA
RESOLUTION	2.5 mV	1.25 mV	1.25 mV	5μA	
DIGITAL INPUT/OUTPUT RANGE	12 bits, Code range: 0~ 32000				

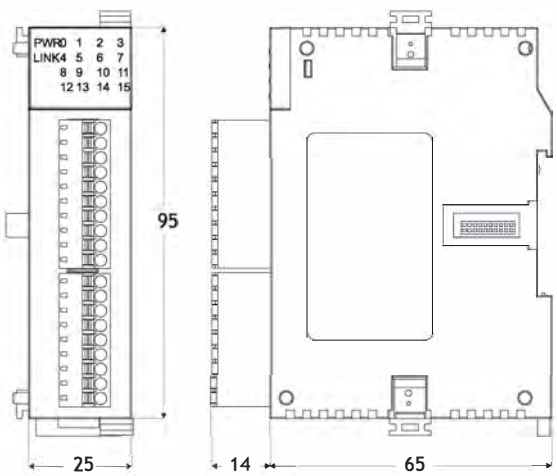
THERMOCOUPLE MODULE SPECIFICATIONS	
INPUT RANGE	IS, K, E, B, N, R, Wre/25, Wre5/26, [0, 20]mV, [0, 50]mV, [0, 100]mV
RESOLUTION	0.1°C
MAX INPUT RANGE	±30mA
RESPONSE TIME	560ms/4 Channel
DIGITAL OUTPUT RANGE	12 bits, Code range: 0 ~ 32000

MECHANICAL DIMENSIONS (mm)

CPU
AH16S0P
AT16S0P



MODULES
A16XDP
A04XA
A04TC



MC 403 / MC 405 *Flexible Motion Coordinators*

INTRODUCTION

MC 403 and MC 405 are high specification and flexible Motion Coordinators which perfectly fits the traditional R.T.A. motion control solution.

Both models offer maximum flexibility for advanced application in industrial automation, where high performance in interpolated motion is required.

MAIN FEATURES

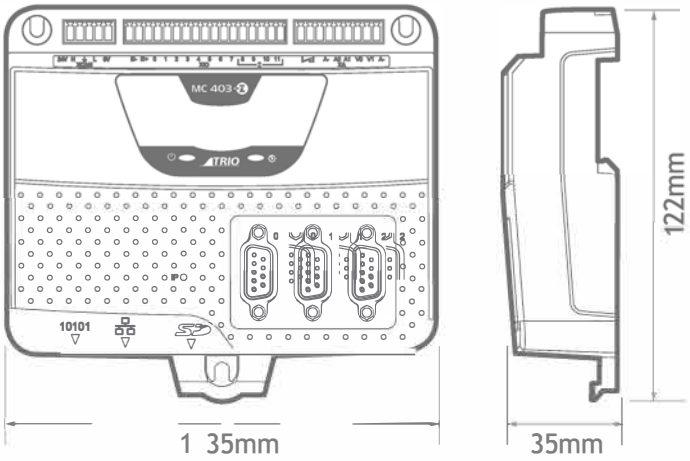
- Linear, circolar, helical and spherical interpolation.
- Virtual axes flexible cam shapes, and linked motion.
- Precise 64 bit Motion Calculator ARM11 processor with VFP.
- Multi-tasking TRIO BASIC programming.
- Text file handing.
- Robotic transformations.
- Micro SD Memory Card slot.
- CANopen I/O expansions available.
- RoHS and UL approved.

TECNICHAL FEATURES

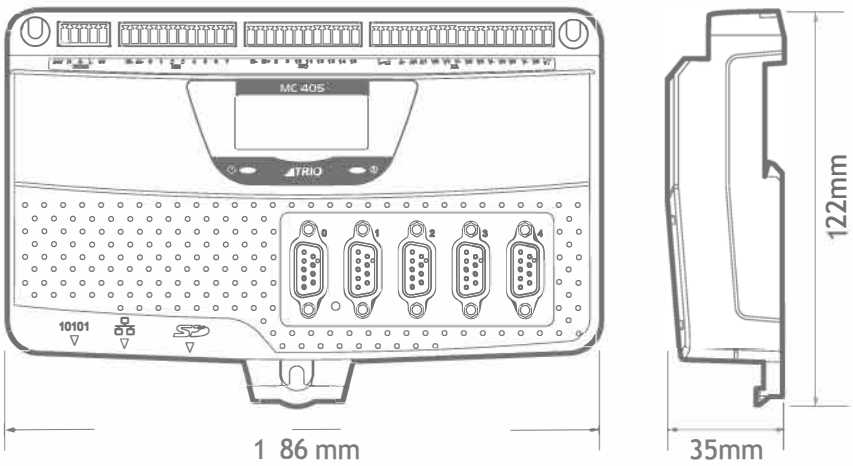
SPECIFICATIONS	MC 403	MC 405
PULSE TRAIN/AXIS	3	5
SERVO AXIS	2	4
DRIVE COMMUNICATION LOOP	125 - 2000 µs	
BUILT-IN INTERFACES	Ethernet Interface / Ethernet-IP / Modbus TCP	
SUPPORTED ENCODER	EnDat Line Driver ABZ SSI Absolute	
PROGRAMMING LANGUAGE	TRIO BASIC and IEC 61131-3	

MECHANICAL DIMENSIONS

MC 403



MC 405



MOTION CONTROLLERS

CAN I/O MODULES

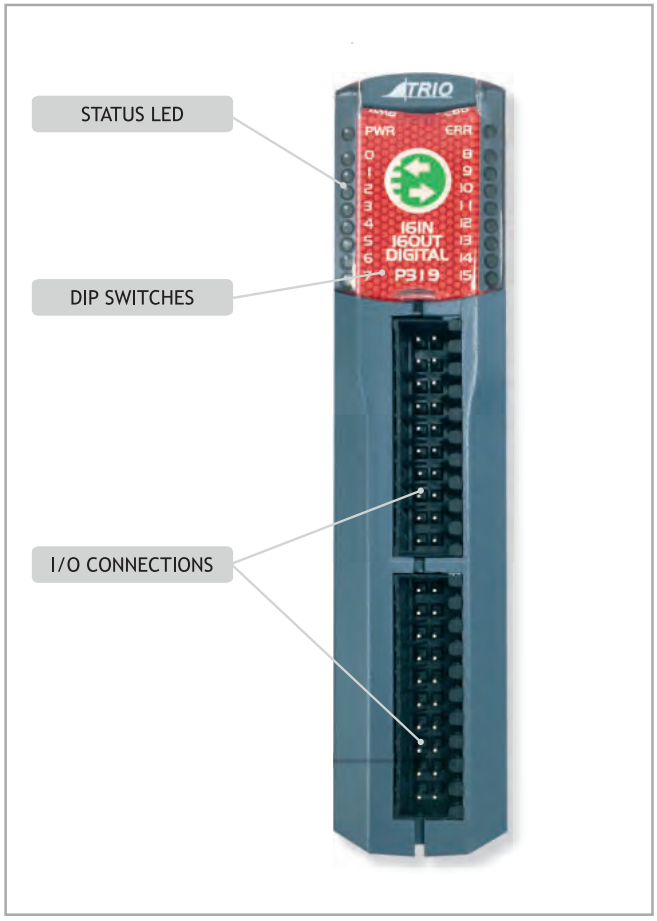
CAN 16-IN / OUT digital

INTRODUCTION

The Trio CAN16 Input/Output module offers a compact DIN rail mounted I/O expansion capability for motion coordinators.

It can provide up to 256 distribuited bi-directional I/O channels at 24 VDC level.

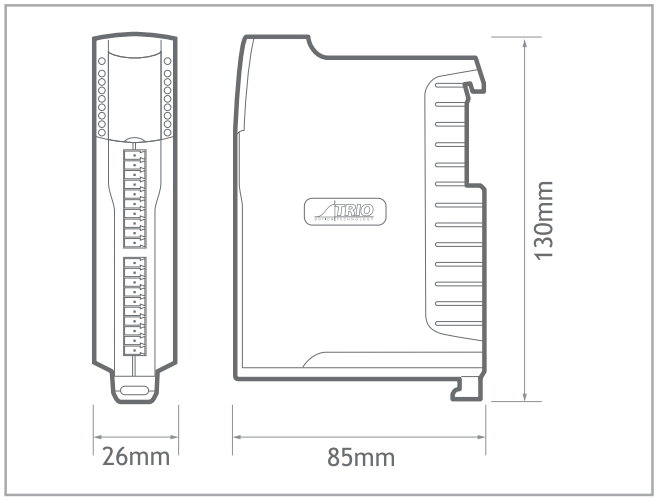
This module can be mixed on the same bus, with other types in the CAN I/O range, reducing considerably the machine wiring.



MAIN FEATURES

Inputs	16 x 24V input channels with 2500V isolation
Outputs	16 x 24V sourcing (PNP) output channels
Configuration	2 x 8 bi-directional input/output channels
Protection	Outputs are overcurrent and over temperature rated
Indicators	Individual status LEDS
Address settings	Via DIP switches
Power supply	24 V / 1,5 W
Mounting	DIN rail mount
Size	26 mm wide x 85 mm deep x 130 mm high
Weight	168 g
CAN	500 kHz, up to 256 expansion output channels
EMC	EN61000-6-2 (2005) Industrial Noise Immunity EN61000-6-4 (2007) Industrial Noise Emissions
CAN protocol	TrioCAN I/O / CANopen Ds401
Compliancies	UL and RoHS

MECHANICAL DIMENSIONS



MOTION CONTROLLERS

HMI - TS SERIES

HMI Touch Screen - TS series

NEW Tech Specs

MAIN FEATURES

- Four models in two sizes
- Free developer tools
- Optional remote control (VPN)
- Easy integration with R.T.A. products
- R.T.A. support team

NEW MODEL

NEW MODEL

NEW MODEL

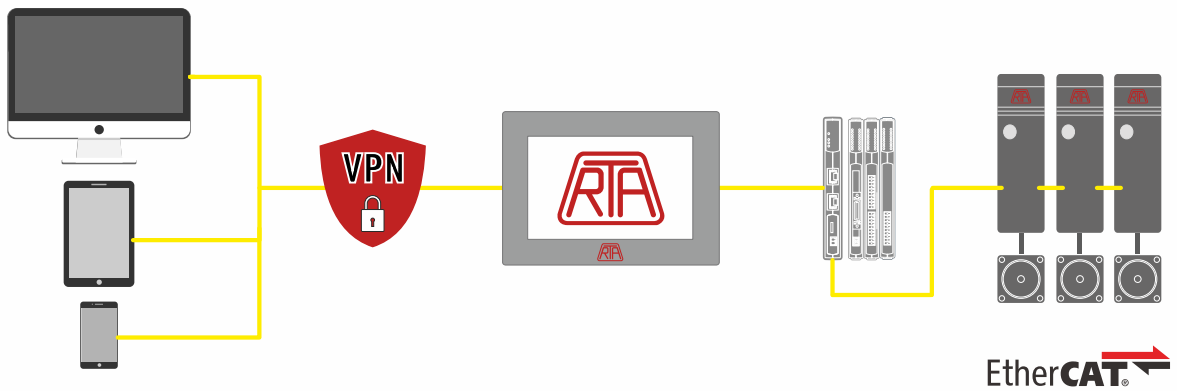
	MODEL	TS-07-IP-B-08072	TS-07-CMT-A-02078X	TS-07-CMT-A-03072XH2	TS-10-CMT-A-03092X
SOFTWARE FEATURES	*BASE FUNCTIONS	■	■	■	■
	**ADVANCED FUNCTIONS		■	■	■
	PLC TAG EMBEDDED IN PROJECT	■	■	■	■
	OPC SERVER			■	■
	EXTERNAL DATABASE			■	■
	SUPPORT				
REMOTE CONTROL	EASY ACCESS 2.0 (CRZACEA020)	/	Optional	Optional	Optional
I/O PORT	ETHERNET	10/100 Base-T x 1	10/100 Base-T x 2	10/100 Base-T x 2	10/100 Base-T x 1 10/100/1000 Base-T x 1

*Base functions: Picutres/ Sharpe Library embedded in project, Enhanced Security Mode, VNC Server, Circular Trend Display, Combo Button, Operation Log, OPC UA Client, Picture Viewer, Recipe Database / Reciper View

**Advanced functions: e-Mail, Media Player, MQTT (Publisher / Subscriber), USB Camera, IP Camera, VNC Viewer,

HOW THE REMOTE CONTROL WORKS

EasyAccess 2.0 enables the operator to easily connect and monitor the remote HMI from anywhere in the world, through a protected remote VPN connection.

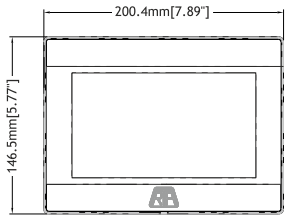


ADVANCED SPECIFICATIONS

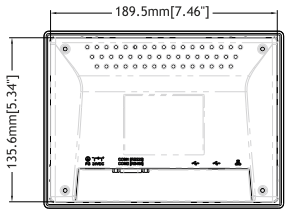
MODEL		TS-07-IP-B-08072	TS-07-CMT-A-02078X	TS-07-CMT-A-03072XH2	TS-10-CMT-A-03092X
DISPLAY	DISPLAY	7" TFT	7" TFT	7" TFT	9.7" TFT
	RESOLUTION	800x480	800x480	1024x600	1024x768
	BACKLIGHT LIFE TIME	>30,000 hrs.	>30,000 hrs.	>25,000 hrs.	>30,000 hrs.
MEMORY	FLASH	256 Mb	4 Gb	4 Gb	4 Gb
	RAM	128 Mb	1 Gb	1 Gb	1 Gb
PROCESSOR		Dual-core RISC	Quadcore RISC	Quadcore RISC	Quadcore RISC
I/O PORT	USB HOST	USB 2.0 x 1	USB 2.0 x 1	USB 2.0 x 1	USB 2.0 x 1
	COM PORT	COM1 RS-232, COM2 RS-485 2W/4W	COM2 RS-485 2W/4W, COM3 RS-485 2W	COM2 RS-485 2W/4W, COM3 RS-485 2W CAN Bus	COM2 RS-485 2W/4W, COM3 RS-485 2W CAN Bus
		/	COM1 RS-232 4W, COM3 RS-232 2W	COM1 RS-232 4W, COM3 RS-232 2W	COM1 RS-232 4W, COM3 RS-232 2W
RTC		Built-in	Built-in	Built-in	Built-in
CERTIFICATE		CE	CE/UL	CE/UL	CE/UL
DIMENSIONS	DIMENSIONS WxHxD	200.4 x 146.5 x 34 mm	200.3 x 146.3 x 35 mm	200.3 x 146.3 x 35 mm	260.6 x 203.1 x 44.5 mm
	PANEL CUTOUT	192 x 138 mm	192 x 138 mm	192 x 138 mm	250 x 192 mm
ENVIROMENT	PROTECTION STRUCTURE	NEMA4 / IP65 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel	UL Type 4X (indoor use only)/ NEMA4/ IP66 Compliant Front Panel
POWER	INPUT POWER	24 ± 20% VDC	24 ± 20% VDC	24 ± 20% VDC	24 ± 20% VDC
	POWER CONSUMPTION	450 mA at 24VDC	820 mA at 24VDC	850 mA at 24VDC	1 A at 24 VDC
	POWER ISOLATION	Built-in	Built-in	Built-in	Built-in

MECHANICAL DIMENSIONS (mm)

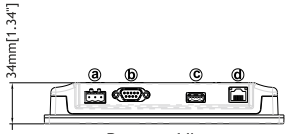
Model TS-07-IP-B-08072



Front View

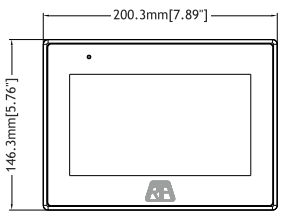


Rear View

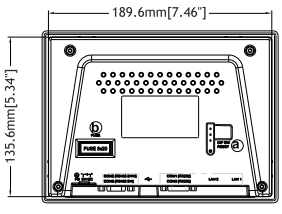


Bottom View

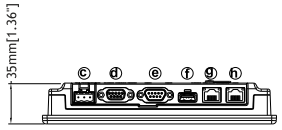
Model TS-07-CMT-A-03072XH2
TS-07-CMT-A-02078X



Front View

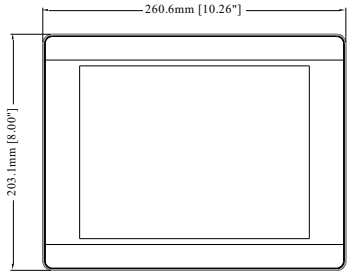


Rear View

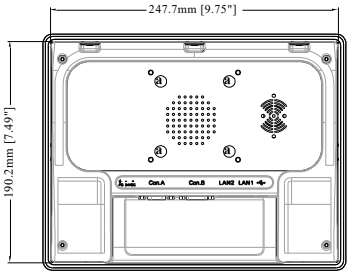


Bottom View

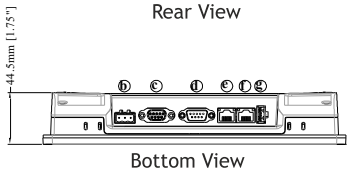
Model TS-10-CMT-A-03092X



Front View



Rear View



Bottom View

HMI

Touch Screen C7H - C10S

MAIN FEATURES

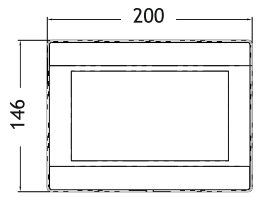
- 2 serial ports, 2 USB ports, SD card
- Compact size for easy installation
- R.T.A. support team

TECHNICAL SPECIFICATIONS

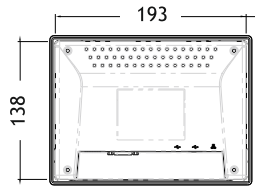
MODEL		C7H	C10S
DISPLAY	DISPLAY	7"	10.1"
	RESOLUTION	1024x600 pixels	1024x600 pixels
MEMORY	FLASH	4 Gb	
	RAM	512 Mb	
DIMENSIONS	DIMENSION	200x146x37 mm	270x212x35 mm
	WEIGHT	0.8 Kg	1.3 Kg
POWER	POWER CONSUMPTION	24±20% VDC	
	INPUT POWER	7 W	10 W

MECHANICAL DIMENSIONS (mm)

Model C7H



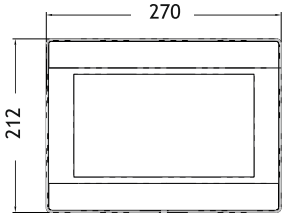
Front View



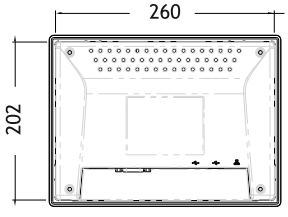
Rear View

Bottom View

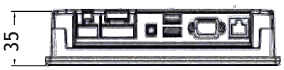
Model C10S



Front View



Rear View



Bottom View

SAFETY PLC

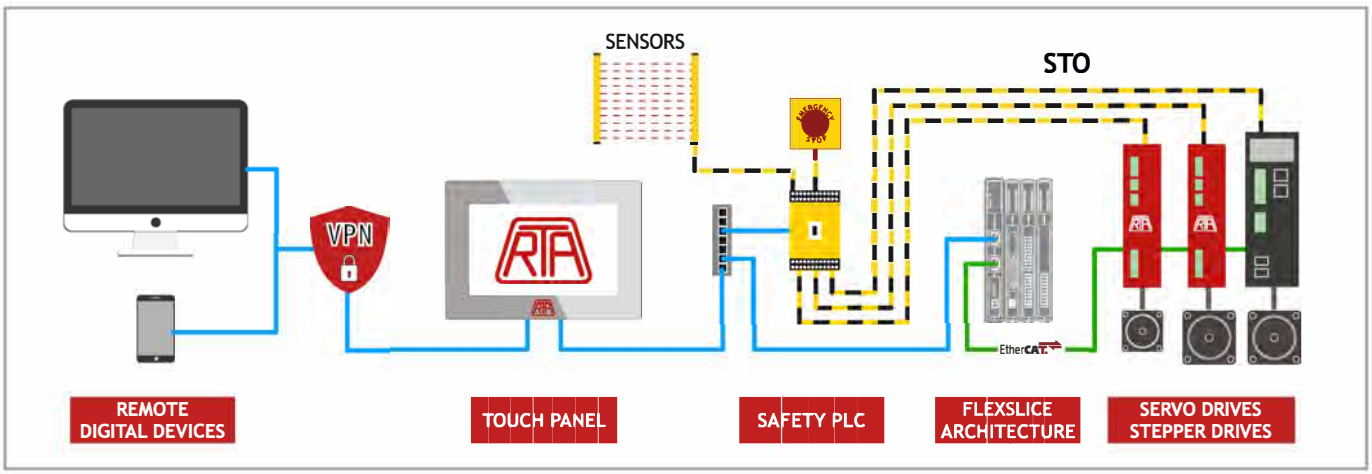
INTRODUCTION

The samosPRO Compact module is suitable for monitoring safety sensors, emergency STOP buttons, safety door switches and door locks, safety light curtains and laser scanners.

HIGHLIGHTS

- 16 safe input, 4 safe output
- 4 configurable I/Os
- Mini-USB and Ethernet ports
- Modbus TCP/IP comunication
- Easy integration in the R.T.A. system

R.T.A. SAFETY PLC SYSTEM



MAIN FEATURES

GENERAL FEATURES	
TYPE OF PROTECTION (ACCORDING TO DIN 60529)	IP20
NORMATIVE	EN 62508, EN 62061, EN ISO 13849-1, EN 50156, EN 81-1
CERTIFICATIONS	TUV, UL

SAFETY PARAMETERS	
CATEGORY (ISO 13849-1)	4
PL (ISO 13849-1)	Level e
SIL_{CL} (IEC 62061)	3
HFT	1
T_M	20 a

TECHNICAL SPECIFICATIONS

POWER CIRCUIT	
OPERATING VOLTAGE RANGE	24 VDC -30%/+25%
NOMINAL POWER	3,5 W (Logic absortion)

INPUT CIRCUIT	
DIGITAL INPUTS	16 + 4 Configurable
INPUT VOLTAGE RANGE	15 VDC up to 30 VDC
NOMINAL CURRENT	2 mA

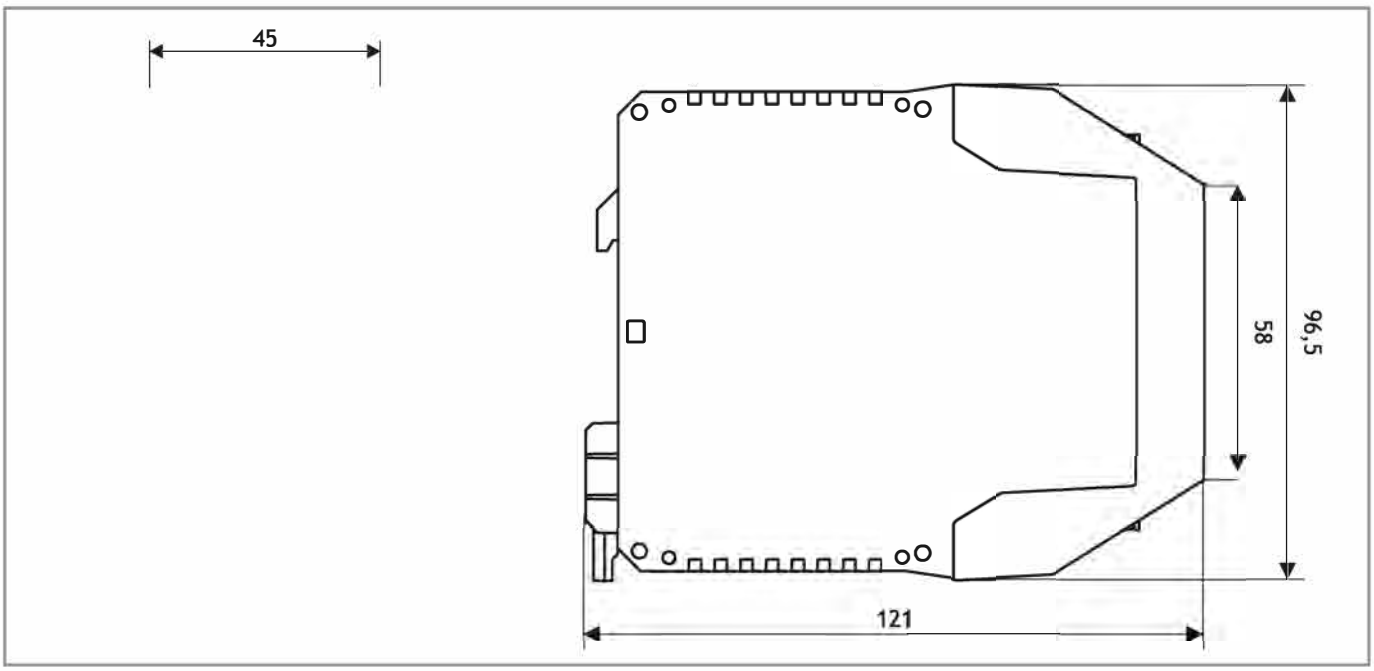
OUTPUT CIRCUIT	
DIGITAL OUTPUTS	4 + 4 Configurable
OUTPUT VOLTAGE RANGE	24 VDC
OUTPUT CURRENT I_n PER OUTPUT	4 A (I_{sum} 16 A)

INTERFACE CIRCUIT	
ETHERNET INDUSTRIAL PROTOCOLS	Modbus TCP/IP
PROGRAM MEMORY	Esternal (Mandatory pairing with SD WIELAND R1.190.1000.00)

SAFETY FUNCTIONS

- ✓ Contactless operating selection function
- ✓ Control function of external contactors
- ✓ Contemporaneity button function
- ✓ Operation mode selection function
- ✓ Block restart funtion
- ✓ Bimanual function
- ✓ Safety function
- ✓ Access control function
- ✓ ON/OFF Delay timer

MECHANICAL DIMENSIONS (mm)



Ethernet switch MIEN2205

INTRODUCTION

MIEN2205 is a standard (unmanaged) Ethernet switch with 5x10/100Base-T(X) ports.
With its very compact size, it is easy to install and its rigid IP30 housing makes it suitable for diverse environments.

MODEL MIEN2205

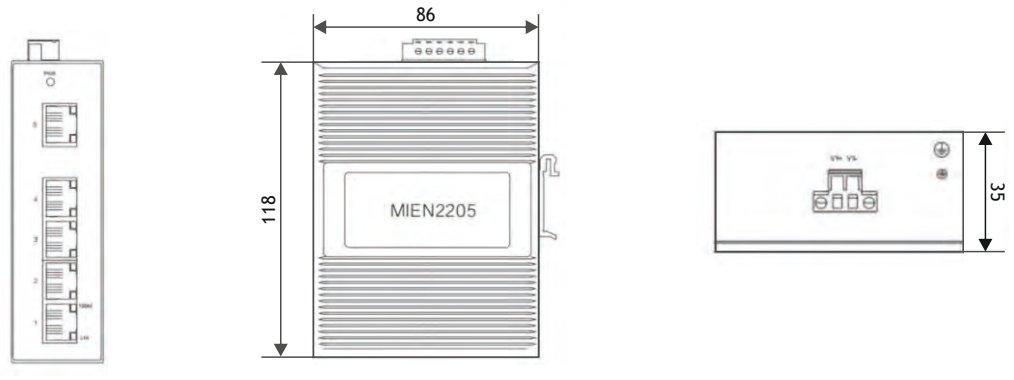
MAIN FEATURES

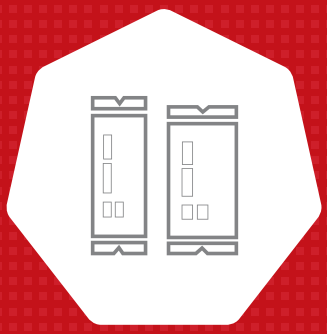
- Compact size for easy installation
- 5 ports 10/100base-T(X)
- Auto-negotiation and auto-MDI/MDI-X
- Store-and-Forward transmission
- Flow control
- DIN-rail and wall mounting

TECHNICAL SPECIFICATIONS

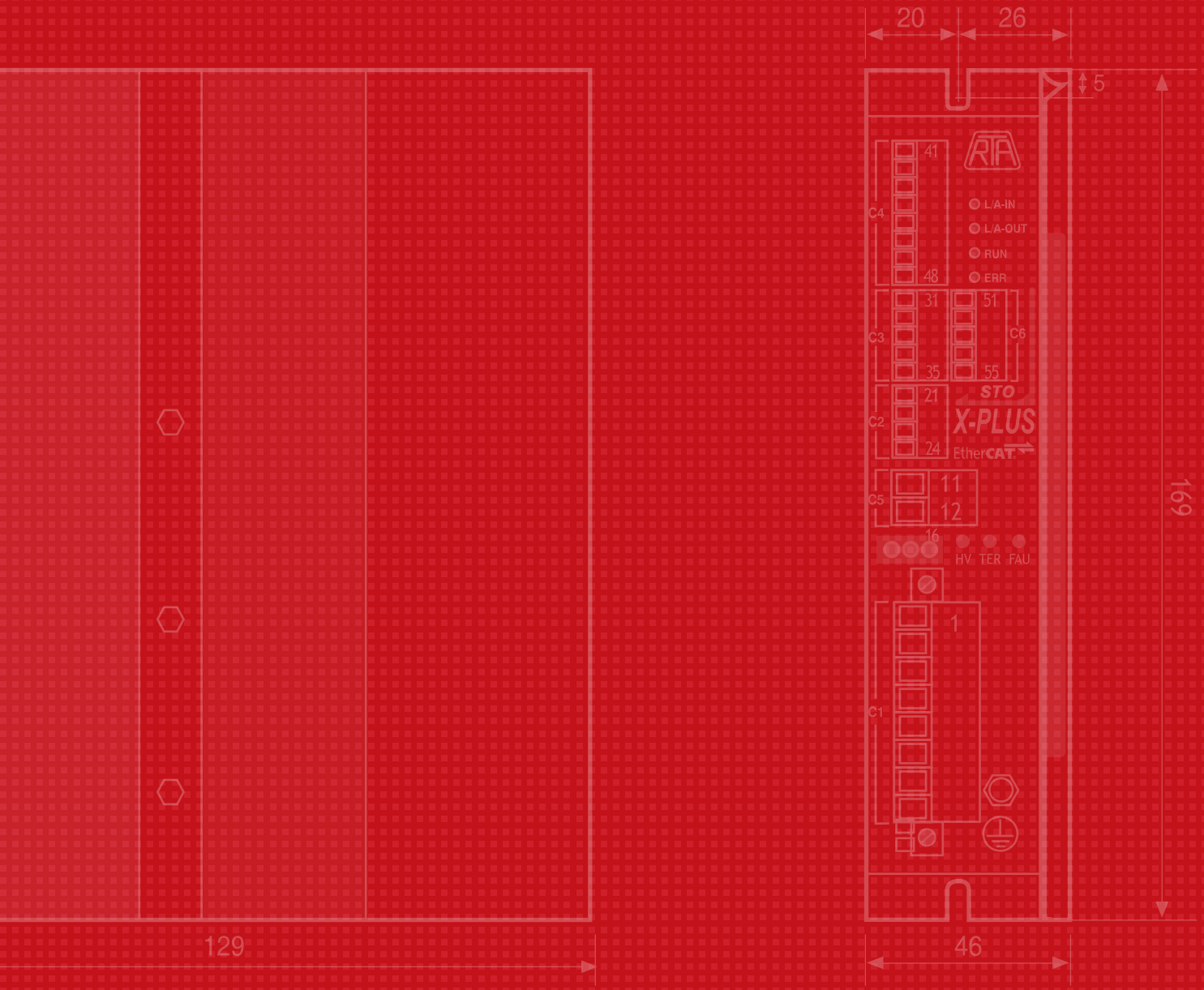
PHISICAL PORTS	
10/100BASE-T(X) PORTS IN RJ45 AUTO MDI/MDIX	5
POWER	
INPUT POWER	Dual 12-48VDC and 24VAC on 4-pin terminal block
POWER CONSUMPTION	<3Watts, 12-48VDC: 0.10A-0.04A, 24VAC: 0.10A
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Present
OPERATING TEMPERATURE	From -40°C to 85°C

MECHANICAL DIMENSIONS (mm)





STEPPING MOTOR DRIVES


20
26
5
169
129
46
125
L/A-IN
L/A-OUT
RUN
ERR
STO
X-PLUS
EtherCAT
HV
TER
FAU
C1
C2
C3
C4
C5
C6
41
48
31
35
51
55
21
24
11
12
16
1

STEPPING MOTOR DRIVES

INDEX

7 Drives families, nearly 100 different models

Key advantages of R.T.A. stepper drives

- Wide range of operating protocols: Step/Dir, Analog, RS485, EtherCAT, ModBus TCP and RTU, EtherNet/IP, CAN Open.
- Tuneless Closed-Loop and Auto-Syncronization functions for EtherCAT ModBus and EtherNet drives.
- 110-230Vac Direct Voltage Bus technology for top speed/torque performances up to 3,000 rpm.
- Widest power range on market: 200+ models from 24 Vdc to 230 Vac – from 0.1A to 10A.
- Modular, stand-alone and combo units.
- Simplicity by Design: immediate installation setup and easy maintenance.
- Defect-free guaranteed at delivery: double individual test for all models prior to shipment.
- 100% Made in Italy: Design, Production, Assembling, Testing.

R.T.A. Customer is never left alone

- Pre-sales sizing/selection service.
- Multilanguage post-sales hardware & software technical staff.
- Products availability and support guaranteed for 20 years after installation and wide range of legacy models for spare/maintenance.
- Sales Network in 40+ countries worldwide.
- 24 months International Warranty.

Main features

- Current range: from 0,1 A to 12 A.
- Operating Voltage range: from 24 VDC to 230 VAC.
- 230 VAC versions, with power supply directly from the main (110 VAC or 230 VAC).
- UL / CSA certified versions available.

STO SIL3 SAFE TORQUE OFF (STO) AUTO SYNC FUNCTION

R.T.A. 7 Drives families:

1 EtherCAT

2 MODBUS TCP/IP

3 EtherNet/IP

4 CANopen

5 STEP & DIRECTION ADVANCED

6 PROGRAMMABLE

7 ANALOG INPUT

DRIVE TYPE GLOSSARY

ET	EtherCAT	MT	MODBUS TCP/IP	HT	EtherNet/IP
CO	CANopen	AD	STEP & DIRECTION ADVANCED		
PM	PROGRAMMABLE	AI	ANALOG INPUT		

1 EtherCAT

Bus voltage range: 24 VDC-230 VAC
Rated current: up to 6 A (120% current voverboost)

- Extremely wide product portfolio of EtherCAT drives ranging from 25W to 1000W power.
- Proven compatibility with most EtherCAT master controllers.
- Easy setup all through EtherCAT parameters.
- 1 Firmware for all Drives.
- Double power supply.
- Open loop, closed loop and full closed loop.
- Programmable I/O.
- Profiles: Homing, PP, CSP, CSV.
- UL / CSA certified versions.
- STO (Sil 3 - PL=e) Function available.

EtherCAT® AUTO SYNC FUNCTION AUTO FEED FUNCTION SIL3 SAFE TORQUE OFF (STO) STO

AUTO-SYNC FUNCTION TO AVOID LOSS OF SYNCHRONISM / LOSS OF STEP

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EtherCAT

2 MODBUS TCP/IP

Operating bus voltage range: 24 VDC-230 VAC
Rated current: up to 6 A (120% current overboost)

- Full digital microstepping drive
- Modes of operation: PP, PV, Homing
- Configurable IP address via USB port
- UL / CSA certified version available

Modbus TCP/IP · AUTO SYNC FUNCTION · AUTO FEED FUNCTION · SIL3 SAFE TORQUE OFF (STO) STO

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MODBUS TCP

		DRIVE TYPE	VOLTAGE RANGE (V)	CURRENT RANGE (A) *OVERBOOST*	DIMENSIONS (mm)	CERTIFICATIONS	SUGGESTED MOTORS	PAGE
Stand Alone								
CSD MT 94		MT	24 - 48 VDC	4.0 *4,8*	Box: 130 x 106 x 32 mm Plug-in connectors	CE	Nema 11, Nema 17, Nema 23, Nema 24	80
CSD MT S4		MT	24 - 48 VDC	4.0 *4,8*	Box: 130 x 106 x 32 mm Plug-in connectors	CE,UL,CSA + STO SIL3	Nema 11, Nema 17, Nema 23, Nema 24	80
CSD MT S8	NEW!	MT	24 - 85 VDC	6.0 *8,4*	Box: 130 x 106 x 32 mm Plug-in connectors	CE,UL,CSA + STO SIL3	Nema 11, Nema 17, Nema 23, Nema 24, Nema 34	80
X-PLUS MT S4		MT	110 - 230 VAC Supply directly from the main	2.4-4.0 *4,8*	Open frame drive: 152 x 129 x 46 mm Plug-in connectors	CE,UL,CSA + STO SIL3	Nema 23 or bigger (with rating for high voltage)	82
X-PLUS MT B4		MT	110 - 230 VAC Supply directly from the main	2.4-4.0 *4,8*	Open frame drive: 152 x 129 x 46 mm Plug-in connectors	CE,UL,CSA	Nema 23 or bigger (with rating for high voltage)	82

3 EtherNet/IP

Operating bus voltage range: 24 - 85 VDC
Rated current: up to 6 A (140% current overboost)

- Full digital microstepping drive
- Modes of operation: PP, PV, Homing
- UL / CSA certified

EtherNet/IP · AUTO SYNC FUNCTION · AUTO FEED FUNCTION · SIL3 SAFE TORQUE OFF (STO) STO

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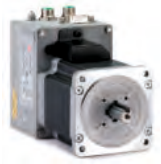
MODBUS TCP

		DRIVE TYPE	VOLTAGE RANGE (V)	CURRENT RANGE (A) *OVERBOOST*	DIMENSIONS (mm)	CERTIFICATIONS	SUGGESTED MOTORS	PAGE
Stand Alone								
CSD HT S4		HT	24 - 48 VDC	4.0 *4,8*	Box: 130 x 106 x 32 mm Plug-in connectors	CE,UL,CSA + STO SIL3	Nema 11, Nema 17, Nema 23, Nema 24	86
CSD HT S8	NEW!	HT	24 - 85 VDC	6.0 *8,4*	Box: 130 x 106 x 32 mm Plug-in connectors	CE,UL,CSA + STO SIL3	Nema 11, Nema 17, Nema 23, Nema 24, Nema 34	86

4 CANopen



Operating bus voltage range: 24 - 85 VDC

- Microstepping function up to 3200 step / revolution
- Incremental or absolute encoder function
- UL / CSA certified version available

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CANopen

"Not preferred models" are models which have been replaced with the latest versions. They are still available in R.T.A.'s stock, however they are not recommended for new applications.

5 STEP & DIRECTION ADVANCED

Bus voltage range: 24 VDC - 230 VAC
Phase current range: 0,6 A - 8 A

- Full digital microstepping drive

AUTO SYNC FUNCTION · AUTO FEED FUNCT · SIL3 SAFE TORQUE OFF (STO) STO

- Adaptive microstepping up to 12.000 step/revolution (1/64)
- Direct input from the main AC power supply versions available
- Excellent smoothness of movements
- Low noises and vibrations
- UL/CSA certified versions available

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STEP&DIRECTION ADVANCED

STEP&DIRECTION ADVANCED

	DRIVE TYPE	VOLTAGE RANGE (V)	CURRENT RANGE (A) *OVERBOOST*	DIMENSIONS (mm)	CERTIFICATIONS	SUGGESTED MOTORS	PAGE
A-CSD 02	AD	24 - 48 VDC	0.7 - 2.4	Open frame drive: 92 x 85 x 22 mm AMP connectors	CE	Nema 11, Nema 17, Nema 23, 60 mm	98
A-CSD 02.V	AD	24 - 48 VDC	0.7 - 2.4	Open frame drive: 92 x 85 x 22 mm Screw-type connectors	CE	Nema 11, Nema 17, Nema 23, 60 mm	98
A-CSD 04	AD	24 - 48 VDC	2.6 - 4.4	Open frame drive: 92 x 85 x 23 mm AMP connectors	CE	Nema 11, Nema 17, Nema 23, 60 mm	98
A-CSD 04.V	AD	24 - 48 VDC	2.6 - 4.4	Open frame drive: 92 x 85 x 23 mm Screw-type connectors	CE	Nema 11, Nema 17, Nema 23, 60 mm	98
A-CSD 92	AD	24 - 48 VDC	0.7 - 2.4	Open frame drive: 90 x 99 x 21 mm Plug-In connectors	CE	Nema 11, Nema 17, Nema 23, 60 mm	98
A-CSD 94	AD	24 - 48 VDC	2.6 - 4.4	Open frame drive: 92 x 85 x 22 mm Plug-In connectors	CE	Nema 11, Nema 17, Nema 23, 60 mm	98
HGD 02	AD	24 - 75 VDC	0.75 - 2.0	Open frame drive: 70 x 70 x 25 mm PIN connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	100
HGD 05	AD	24 - 75 VDC	2,25 -6,0	Open frame drive: 110 x 108 X 34 mm PIN connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	100
A-NDC 04	AD	24 - 85 VDC	0.6 - 2.0	Open frame drive: 101 x 94 x 25 mm AMP connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	102
A-NDC 04.V	AD	24 - 85 VDC	0.6 - 2.0	Open frame drive: 101 x 94 x 25 mm Screw-type connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	102
A-NDC 06	AD	24 - 85 VDC	1.9 - 6.0	Open frame drive: 101 x 94 x 25 mm AMP connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	102
A-NDC 06.V	AD	24 - 85 VDC	1.9 - 6.0	Open frame drive: 101 x 94 x 25 mm Screw-type connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	102
A-NDC 94	AD	24 - 85 VDC	0.6 - 2.0	Open frame drive: 110 x 108 x 34 mm Plug-In connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	102
A-NDC 96	AD	24 - 85 VDC	1.9 - 6.0	Open frame drive: 110 x 108 x 34 mm Plug-In connectors	CE	Nema 17, Nema 23, 60 mm, Nema 34	102
NEW! CSD MS8 / CSD MS8.P	AD	24 - 85 VDC	1.9 - 6.0	Box: 130 x 106 x 32 mm Plug-in connectors	CE,UL,CSA + STO SIL3	Nema 11, Nema 17, Nema 23, Nema 24, Nema 34	104
X-PLUS L2	AD	110 - 230 VAC Supply directly from the main	1.4 - 2.5	Open frame drive: 152 x 129 x 30 mm Plug-In connectors	CE	Nema 23 or bigger (with rating for high voltage)	106
X-PLUS B4.1	AD	110 - 230 VAC Supply directly from the main	2.4 - 4.0	Open frame drive: 152 x 129 x 46 mm Plug-In connectors	CE	Nema 23 or bigger (with rating for high voltage)	106
X-PLUS S4.1	AD	110 - 230 VAC Supply directly from the main	2.4 - 4.0	Open frame drive: 152 x 129 x 46 mm Plug-In connectors	CE,UL,CSA + STO SIL3	Nema 23 or bigger (with rating for high voltage)	110
X-PLUS C4.1	AD	110 - 230 VAC Supply directly from the main	2.4 - 4.0	Open frame drive: 152 x 129 x 46 mm Plug-In connectors	CE,UL,CSA	Nema 23 or bigger (with rating for high voltage)	112
X-PLUS RS4	AD	110 - 230 VAC Supply directly from the main	1.2 - 4.8	Box: 169 x 129 x 46 mm Plug-In connectors	CE,UL,CSA + STO SIL3	Nema 23 or bigger (with rating for high voltage)	114
NEW! X-PLUS MS4 / X-PLUS MS4.P	AD	110 - 230 VAC Supply directly from the main	1.2 - 4.8	Box: 169 x 129 x 46 mm Plug-In connectors	CE,UL,CSA + STO SIL3	Nema 23 or bigger (with rating for high voltage)	116
NEW! X-PLUS AS4 / X-PLU AS4.P	AD	110 - 230 VAC Supply directly from the main	1.2 - 4.8	Box: 169 x 129 x 46 mm Plug-In connectors	CE,UL,CSA + STO SIL3	Nema 23 or bigger (with rating for high voltage)	118

Not preferred models PAGE 120

"Not preferred models" are models which have been replaced with the latest versions. They are still available in R.T.A.'s stock, however they are not recommended for new applications.

6 PROGRAMMABLE

Operating Bus voltage range: 28 VAC - 230 VAC
Phase current range: 0,1 A - 8 A

- Microstepping function up to 4000 step/revolution.
- Communication through RS485 serial line.
- Motor loss of synchronism alarm function available.
- Direct input from the main AC power supply versions available.

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PROGRAMMABLE

"Not preferred models" are models which have been replaced with the latest versions. They are still available in R.T.A.'s stock, however they are not recommended for new applications.

7 ANALOG INPUT

Bus voltage range: 24 VDC - 100 VAC
Phase current range: 0,6 A - 6 A

- Microstepping function up to 4000 step/revolution
- Excellent smoothness of movements
- Low noises and vibrations

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ANALOG INPUT

ACCESSORIES - SWITCHING POWER SUPPLY

	NOMINAL POWER (W)	INPUT (V)	OUTPUT (V)	DIMENSIONS (mm)	CERTIFICATIONS	PAGE
R-UHP 200-XX	200	90-294	12 VDC 24 VDC 48 VDC	194 x 55 x 26	CE	138
R-UHP 350-XX	350	90-294	12 VDC 24 VDC 48 VDC	220 x 62 x 31	CE	140
R-UHP 500-XX	500	90-294	12 VDC 24 VDC 48 VDC	232 x 81 x 31	CE	142
R-UHP 1000-XX	1000	90-294	12 VDC 24 VDC 48 VDC	240 x 115 x 41	CE	144
R-NDR 480-XX	480	90-294	12 VDC 24 VDC 48 VDC	125 x 64 x 114	CE	146
R-NDR 480-XX	480	90-294	12 VDC 24 VDC 48 VDC	125 x 86 x 129	CE	148

STEPPING MOTOR DRIVES

EtherCAT

CSD ET Series Drives

EtherCAT®

INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, now available with a 4th generation firmware release and extended current and voltage range.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Also available with other interfaces:

EtherNet/IP Modbus TCP/IP

AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

EXTENDED VOLTAGE & CURRENT RANGE

4th FIRMWARE GENERATION

MAIN FEATURES

- Modes of operation: Profile Position, Profile Velocity, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost:
  - 120% for CSD ET 94/S4 models
  - 140% for CSD ETS8 models.

CURRENT OVERBOOST +140%

- Control of different motors sizes:
  - Up to Nema 24 for CSD E 94/S4 models
  - Up to Nema 34 for CSD E S8 models. NEW!
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- 5 + 5 I/Os (ET 94) and 2 + 3 I/Os (ET S4/S8).

c UL us

AUTO FEED FUNCT

AUTO SYNC FUNCTION

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

Please refer to download.rta.it for technical specifications

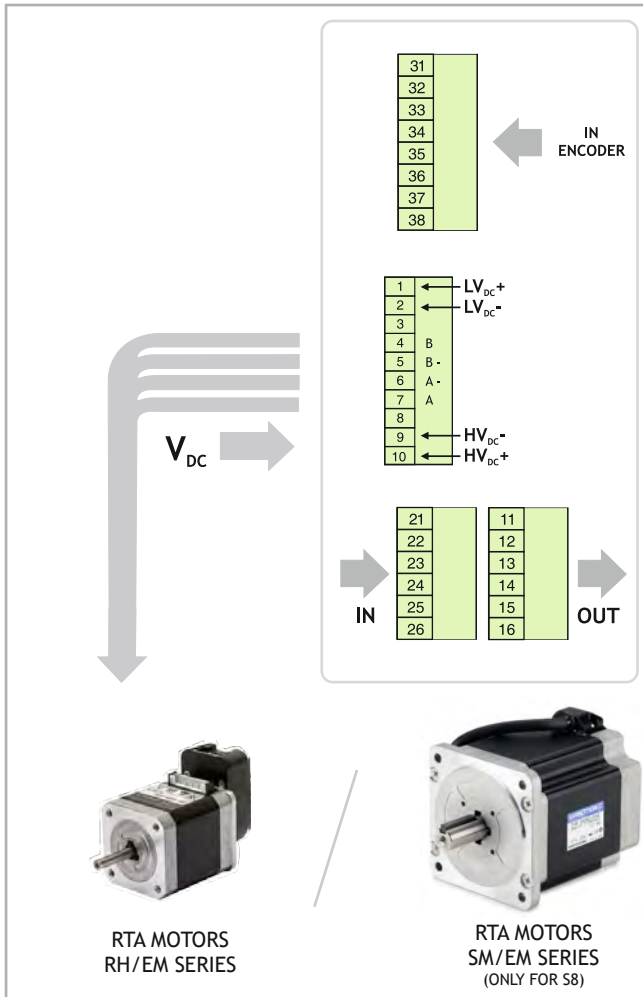
Series	Model	V_{DC} range (Volt)	I nom. (Amp)	I boost (Amp)	Digital In/Out	STO	Dimensions (mm)
CSD ET	S8 STO	24 to 85	6.0	8.4	2/3	Yes	130x106x32
CSD ET	S4 STO	24 to 48	4.0	4.8	2/3	Yes	130x106x32
CSD ET	94	24 to 48	4.0	4.8	5/5	No	130x106x32

TECHNICAL FEATURES

- Range of operating voltage:
  - 24-48 VDC for CSD ET 94/S4 models
  - 24-85 VDC for CSD ET S8 models.
- Protections:
  -Protection against under-voltage and over-voltage
  -Protection against a short-circuit at motor outputs
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- Warranty: 24 months.

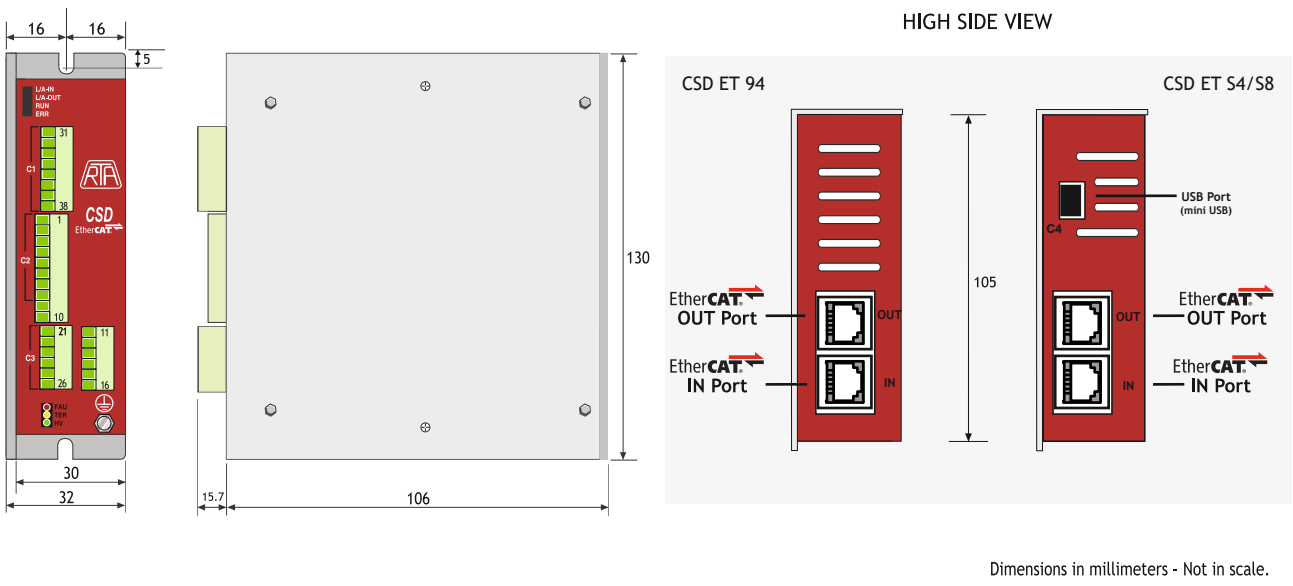
- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD

POWER AND LOGIC CONNECTIONS



EtherCAT®

MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

PLUS ET Series Drives

EtherCAT®

3rd FIRMWARE GENERATION

INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, now available with a 3rd generation firmware release (2021).
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third parts motors.
- Compact system, developed to offer a wide variety of integrated functions and optimized for the most demanding motion control applications.

MAIN EtherCAT FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost (120%).
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.
- 4 + 3 I/Os.

Please refer to download.rta.it for technical specifications

Series	Model	V_{AC} range	V_{DC} range	I nom.	Digital In/Out	Dimensions
		(Volt)	(Volt)	(Amp)		(mm)
PLUS ET	A3	/	39 to 85	6.0	4/3	152x129x46
PLUS ET	B3	28 to 62	/	6.0	4/3	152x129x46

TECHNICAL FEATURES

- Range of operating voltage: 39-85 VDC **(PLUS ET A3)** and 28-62 VAC **(PLUS ET B3)**.
- Protections:
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- External fans not needed.
- Warranty: 24 months.

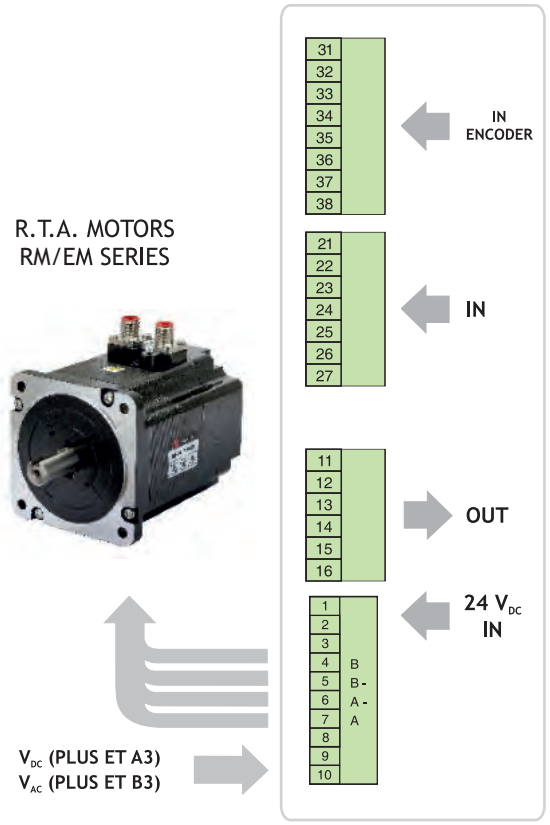
EtherCAT®

WARRANTY 2 YEARS GARANZIA

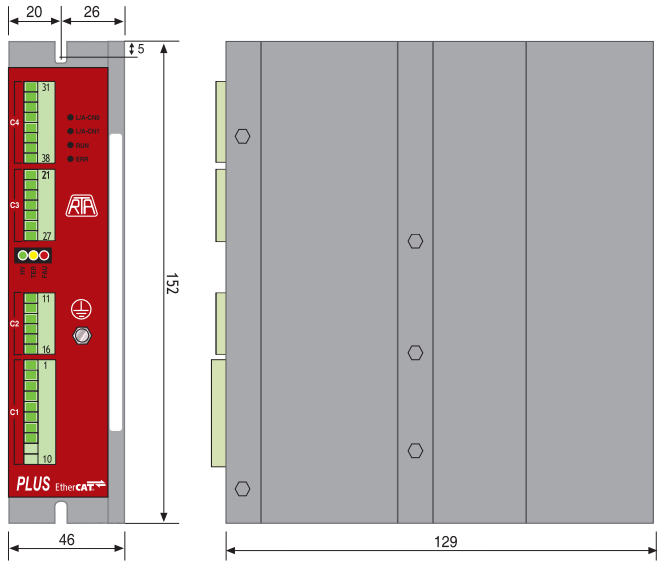
SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

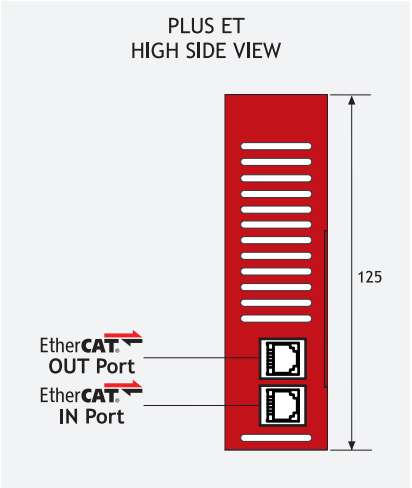
AUTO SYNC FUNCTION

POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS





Dimensions in millimeters - Not in scale.

X-PLUS ET S4 Series Drives

EtherCAT®

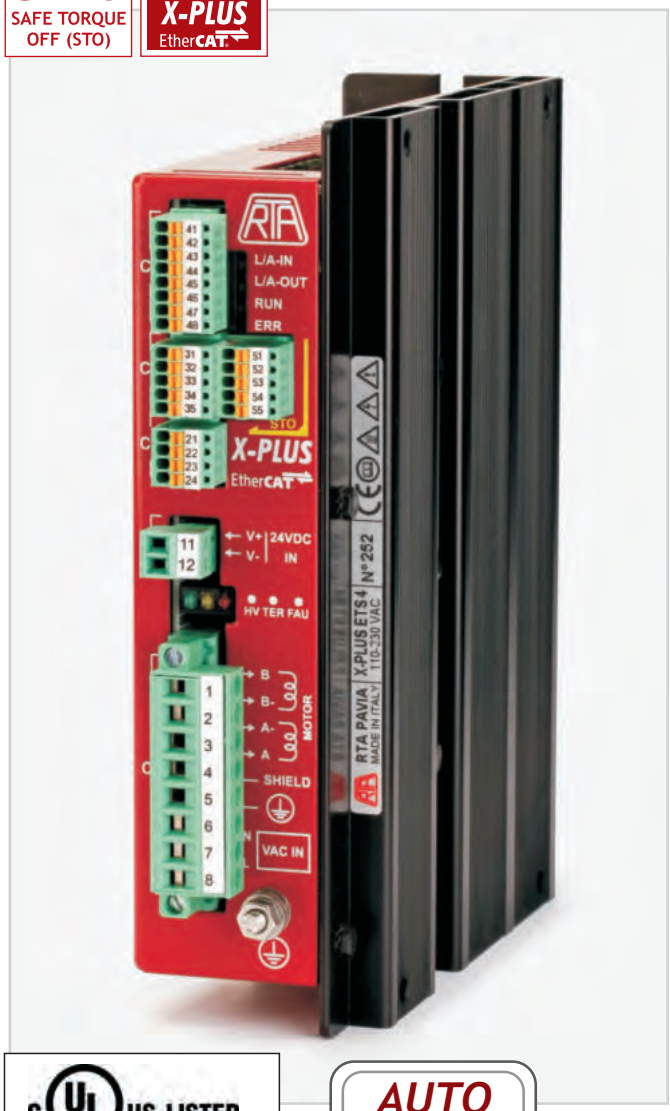
3rd FIRMWARE GENERATION

SIL3 SAFE TORQUE OFF (STO)

STO X-PLUS EtherCAT

INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, direct input from the main AC power supply (from 110 VAC to 230 VAC) and STO function.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third parts motors.
- High performance in terms of power and able to further increase the appication potential.
- Compact system, developed to offer a wide variety of integrated functions and optimized for the most demanding motion control applications.



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FILE NUMBER: E306454

AUTO SYNC FUNCTION

MAIN EtherCAT FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost (120%).
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- 4 + 3 I/Os and 2 STO.
- Auto-sync function available featuring a closed loop positioning.

Please refer to download.rta.it for technical specifications

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

Series	Model	V_{AC} range	I nom.	Digital In/Out	STO In	Dimensions
		(Volt)	(Amp)			(mm)
X-PLUS ET	S4	110 to 230 +/- 15%	4.0	4/3	2	169x129x46

TECHNICAL FEATURES

- Possibility to switch o ffmotor current by menas of STO function.
- Range of operating voltage 110-230 VAC.
- Protections:
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- External fans not needed.
- UL / CSA certified.
- Warranty: 24 months.

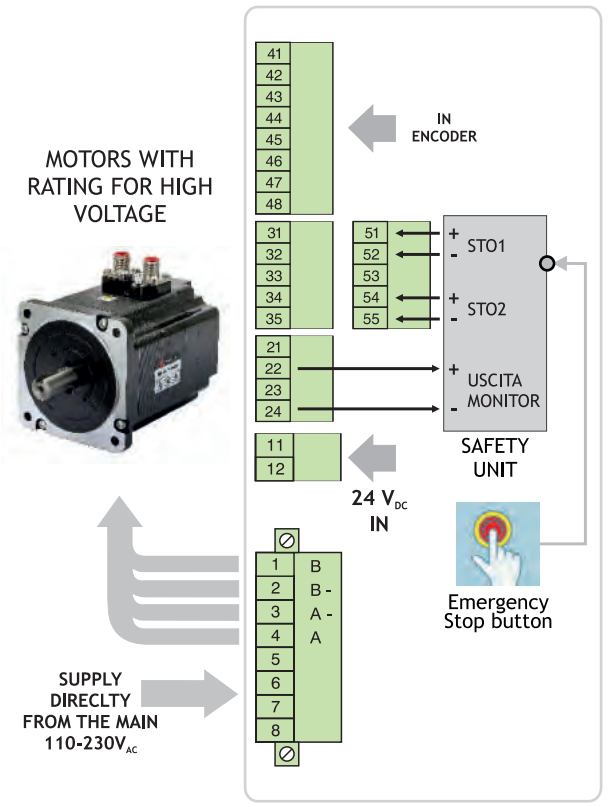
EtherCAT®

WARRANTY 2 YEARS GARANZIA

SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

AUTO SYNC FUNCTION

POWER AND LOGIC CONNECTIONS

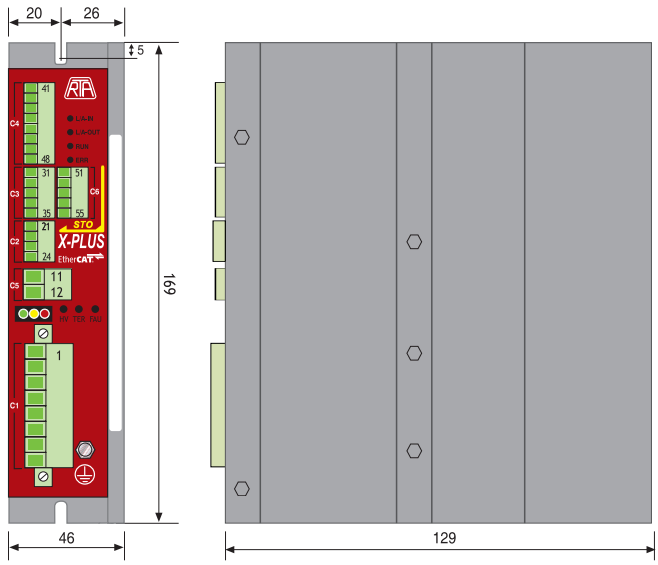


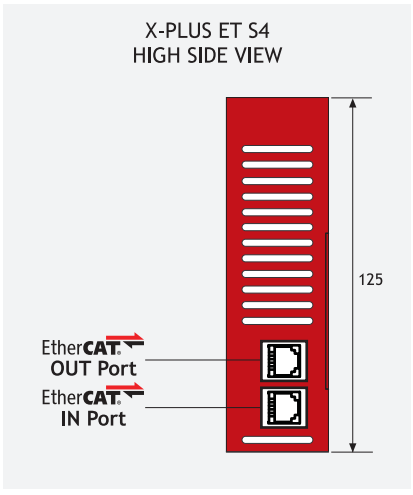
STO FUNCTION FEATURES

- Safe Torque Off (STO) function [SIL3]
- Error Detection Monitor

SIL 3 SAFE TORQUE OFF (STO)

MECHANICAL DIMENSIONS





Dimensioni in millimetri - Disegno non in scala.

X-PLUS ET B4 Series Drives

3rd FIRMWARE GENERATION

EtherCAT®

INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, direct input from the main AC power supply (from 110 VAC to 230 VAC).
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third parts motors.
- High performance in terms of power and able to further increase the appication potential.
- Compact system, developed to offer a wide variety of integrated functions and optimized for the most demanding motion control applications.

MAIN EtherCAT® FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost (120%).
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.
- 4 + 3 I/Os.

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FILE NUMBER: E306454

AUTO SYNC FUNCTION

Please refer to download.rta.it for technical specifications

Series	Model	V_{AC} range	I nom.	Digital In/Out	Dimensions
		(Volt)	(Amp)		(mm)
X-PLUS ET	B4	110 to 230 +/- 15%	4.0	4/3	169x129x46

TECHNICAL FEATURES

- Range of operating voltage 110-230 VAC.
- Protections:
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- External fans not needed.
- UL / CSA certified.
- Warranty: 24 months.

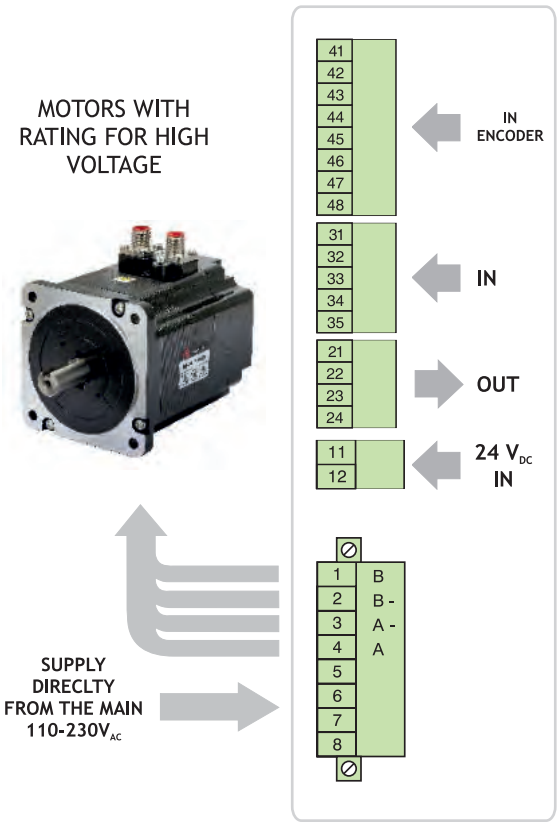
EtherCAT®

WARRANTY 2 YEARS GARANZIA

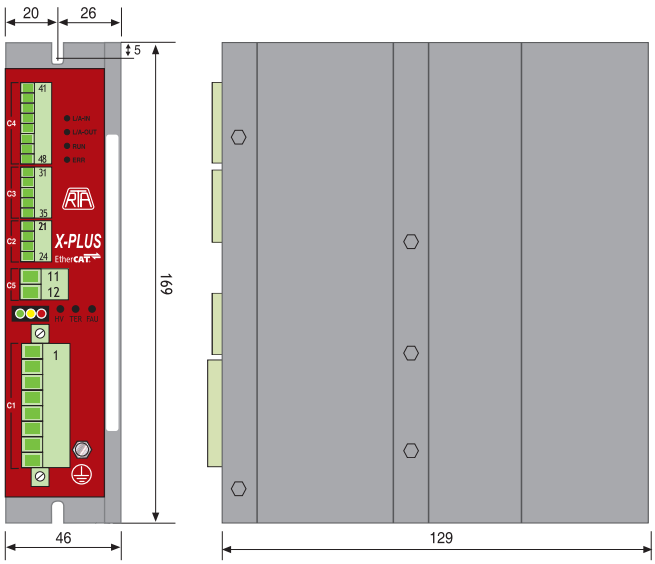
SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

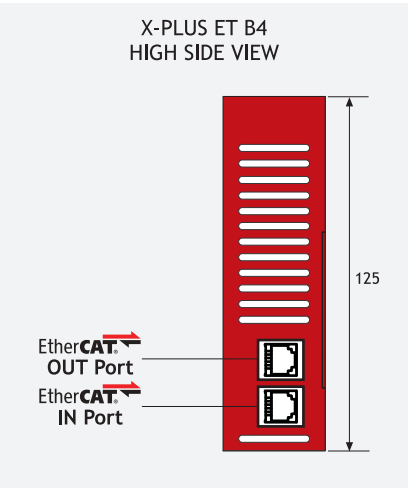
AUTO SYNC FUNCTION

POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS





Dimensions in millimeters - Not in scale.

FLEX-DRIVE Series Drives

EtherCAT®

INTRODUCTION

- FLEX-DRIVE allows connection with any stepper motor up to Nema 24 (60 mm) with or without encoder feedback, supporting PP, CSP, CSV and Homing mode of operation.
- MSE 408 model is equipped with one configurable fast capture input, suitable for Touch Probe, proximity or free use.
- Easy setup: no need of programming software, all settings are made through EtherCAT network.
- Separated power supply for logic circuit and motor power.

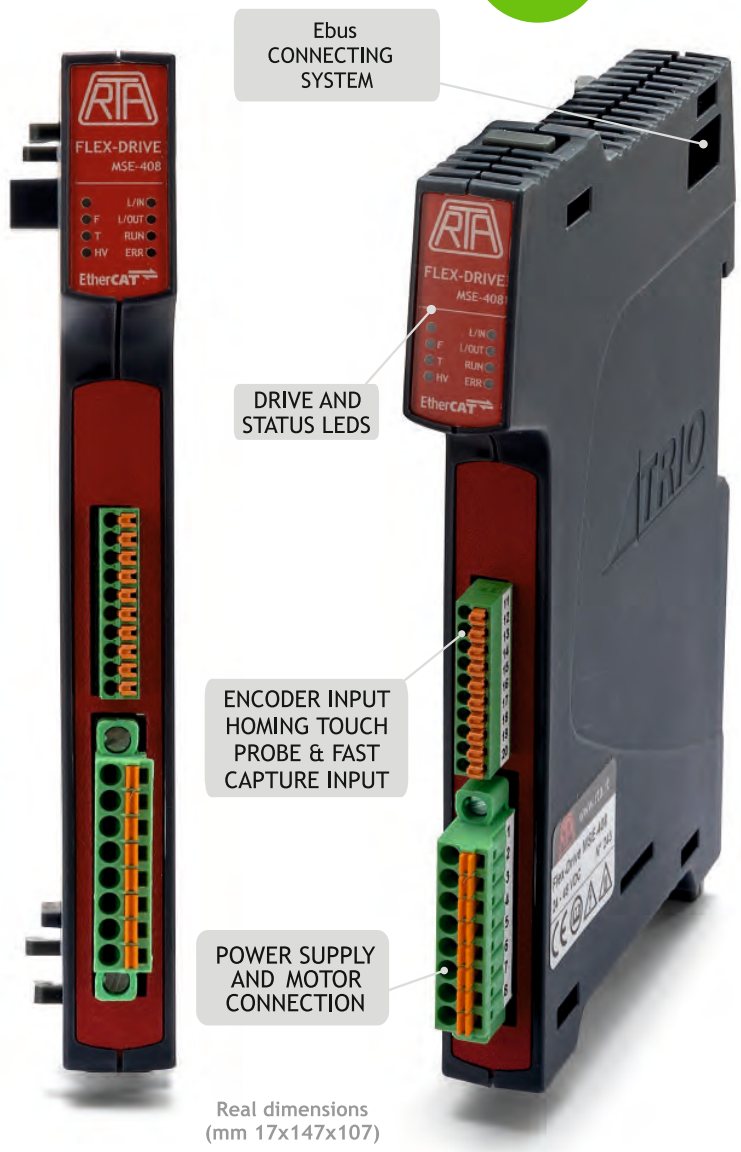
AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

MAIN EtherCAT FEATURES

- Modes of operation: PP, PV, Homing, CSP and CSV.
- Wide range of motor phase current setting and motor current overboost (120%).
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- Auto-sync function available featuring a closed loop positioning.

4th FIRMWARE GENERATION



Real dimensions (mm 17x147x107)

Please refer to download.rta.it for technical specifications

AUTO FEED FUNCTION

AUTO SYNC FUNCTION

FLEX-DRIVE

SCAN THE QR CODES TO WATCH TWO VIDEOS ON FLEX-DRIVE AND AUTO-SYNC FUNCTION

AUTO-SYNC

MODELS AND FEATURES

MSE 408 Model

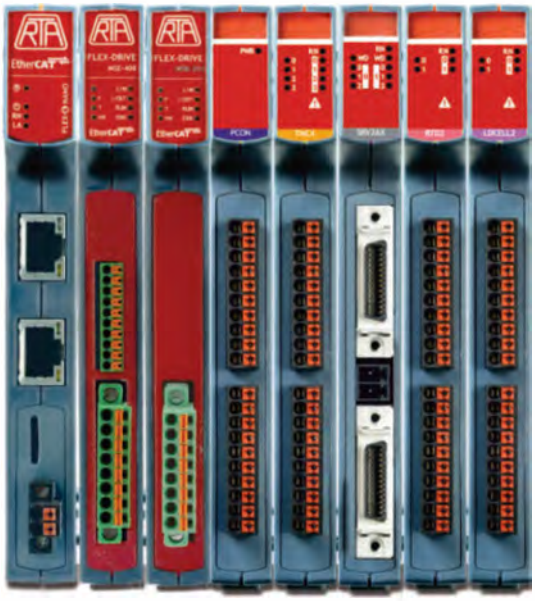
- Voltage: 24-48 VDC
- I_{NP} (Peak value): 4 A
- Sensor Feedback: ENCODER or OPEN LOOP

MSB 204 Model

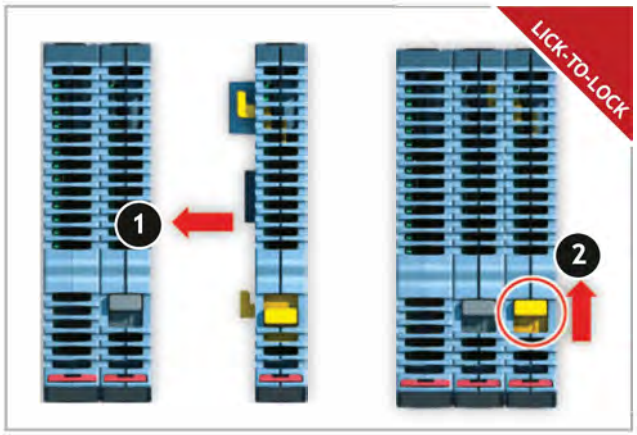
- Voltage: 24-48 VDC
- I_{NP} (Peak value): 2.5 A
- Sensor Feedback: OPEN LOOP

PERFECTLY FITTING THE FLEXSLICE ARCHITECTURE

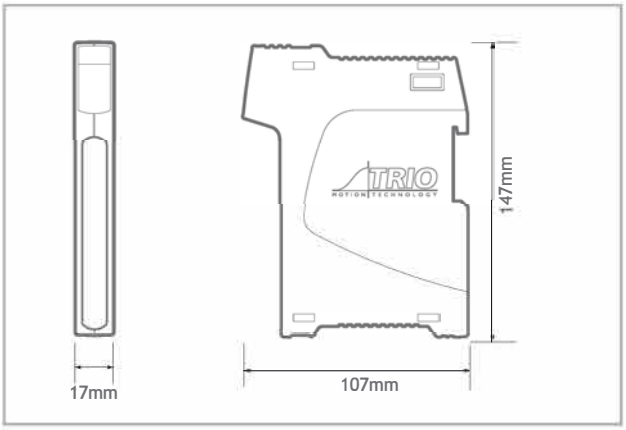
- The Flex-Drive series is designed to fit into FLEXSLICE SYSTEM, the modular EtherCAT architecture by TRIO MOTION TECHNOLOGY
- The direct connection with FLEX-6-NANO or Flex Ethercat COUPLER creates a powerful multiaxis modular system, composed by Motion Controller, stepping motor drives, digital and analogue I/Os, all sharing same internal EBUS and logic power supply.



FAST & EASY ASSEMBLY



MECHANICAL DIMENSIONS



HI-MOD and R-MOD series
Combo Units

INTRODUCTION

First developed in 2004, the Combo Unit solution consists in two series of stepping motors in five sizes, with integrated drives based on EtherCAT or CANopen interface, with incremental or battery-less multi-turn absolute encoder.

It is a compact system housed in a metallic box mounted on motor body, minimizing dimensions and optimizing wiring and mounting easiness.

R.T.A. Combo Units are the ideal integrated solution for advanced applications requiring compact dimensions and ensuring perfect integration in complex architectures.

HI-MOD series

EtherCAT® CANopen

R-MOD series

EtherCAT®

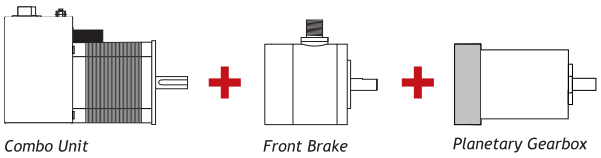
COMBO UNITS EVOLUTION

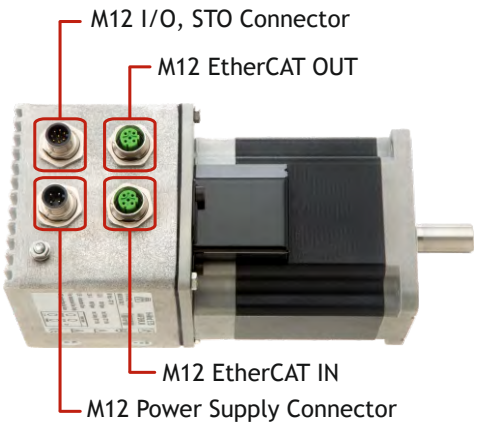
- 2004: *First Release*
- 2006: *CANopen version*
- 2012: *UL Certification*
- 2014: *EtherCAT version*
- 2016: *STO Function*
- 2021: *Auto-Sync Function*

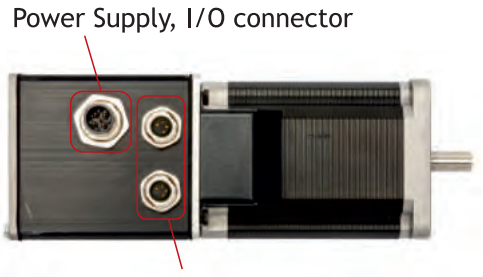
HIGHLIGHTS

- Holding Torque up to 920 Ncm
- Auto-sync function available featuring a closed loop positioning.
- Battery-less multi-turn ABSOLUTE ENCODER versions
- STO Function - SIL3 with Error Detection Monitor
- Different HOMING operation modes
- UL/CSA Certified

Front Brake and/or Gearbox versions available







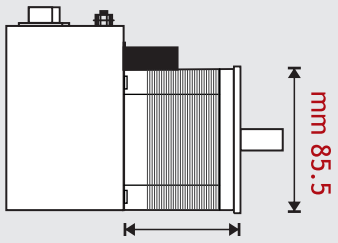
AUTO SYNC FUNCTION

BATTERY-LESS ABSOLUTE ENCODER

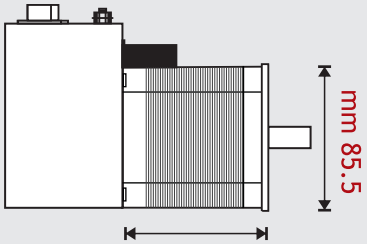
STO SIL3 SAFE TORQUE OFF (STO)

SPACE SAVING SOLUTION

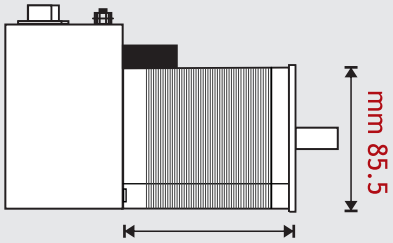
HI-MOD series



Holding Torque: 360 Ncm

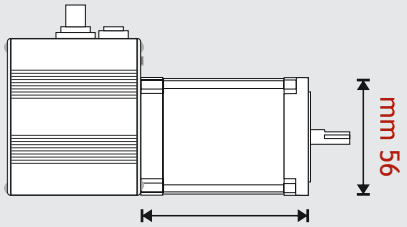


Holding Torque: 700 Ncm



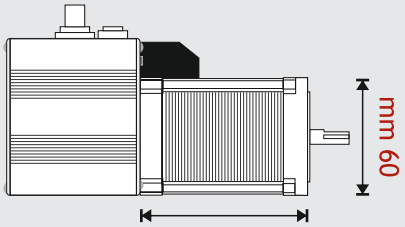
Holding Torque: 920 Ncm

R-MOD series



mm 78 (2H) **Holding Torque:** 165 Ncm

mm 54.5 (1H) **Holding Torque:** 110 Ncm



mm 85.8 (2H) **Holding Torque:** 300 Ncm

mm 53.8 (1H) **Holding Torque:** 170 Ncm

R-MOD ET Combo Unit

NEW! Flange size Nema 23

EtherCAT®

INTRODUCTION

R-MOD ET is a series of combo-units in two sizes with integrated microstep bipolar chopper EtherCAT drives, based on battery-less multi-turn absolute encoder.

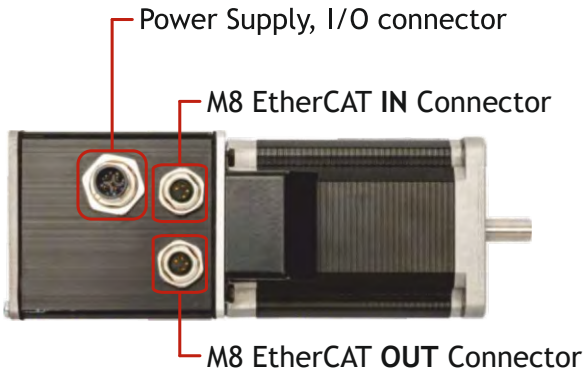
HIGHLIGHTS

FULL CLOSED LOOP

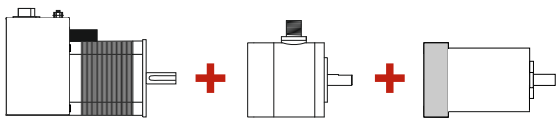
- New generation Full Closed Loop Absolute Encoder version available
- Holding Torque up to 300 Ncm
- Communication by means of EtherCAT interface
- Different Operation Modes
- Different flange sizes (NEMA 23 / NEMA 24)
- Different HOMING operation modes
- PROXIMITY hardware input
- AUTO-SYNC function
- Battery-less Multi-turn ABSOLUTE ENCODER versions

SIDE VIEW

TOP VIEW



Front Brake and/or Gearbox versions available



AUTO SYNC FUNCTION

BATTERY-LESS ABSOLUTE ENCODER

CE

SPACE SAVING SOLUTION

Please refer to download.rta.it for technical specifications

Starter kit and cable set available.

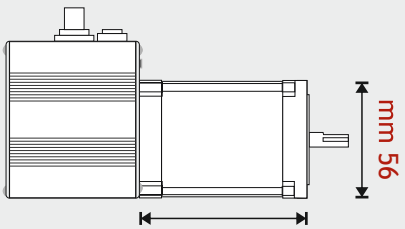
SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

AUTO SYNC FUNCTION

Models	Lenght (mm)	Flange size (mm)	Holding Torque (Ncm)	Encoder Type	Certifications
R-MOD ET A2H1MK *Full Closed Loop*	123.2	56	110	Battery-less Multi-turn Absolute	CE
R-MOD ET A2H2MK *Full Closed Loop*	145.2	56	165	Battery-less Multi-turn Absolute	CE
R-MOD ET A3H1MK *Full Closed Loop*	123.2	60	170	Battery-less Multi-turn Absolute	CE
R-MOD ET A3H2MK *Full Closed Loop*	155.2	60	300	Battery-less Multi-turn Absolute	CE

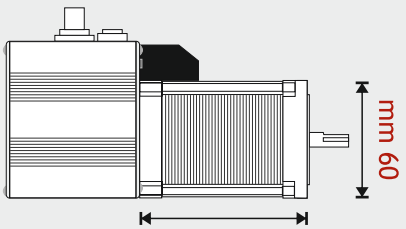
Incremental encoder version also available.

SIZES AND PERFORMANCES



mm 78 (2H) **Holding Torque:** 165 Ncm

mm 54.5 (1H) **Holding Torque:** 110 Ncm

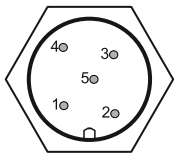


mm 85.8 (2H) **Holding Torque:** 300 Ncm

mm 53.8 (1H) **Holding Torque:** 170 Ncm

CONNECTION SCHEME

CN1



1: Input (PX / Touch probe)
2: Power supply
3: Input (PX / Touch probe)
4: GND
5: Logic power supply

CN2

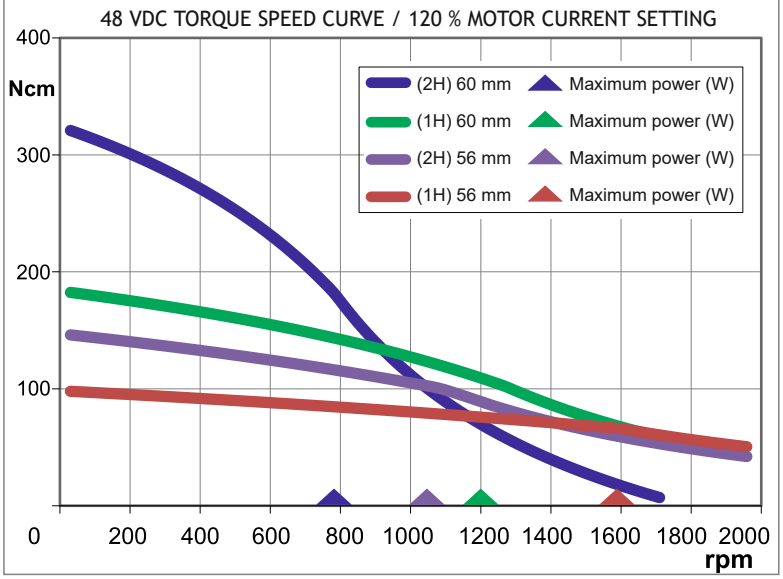
EtherCAT OUT (Female)

CN3

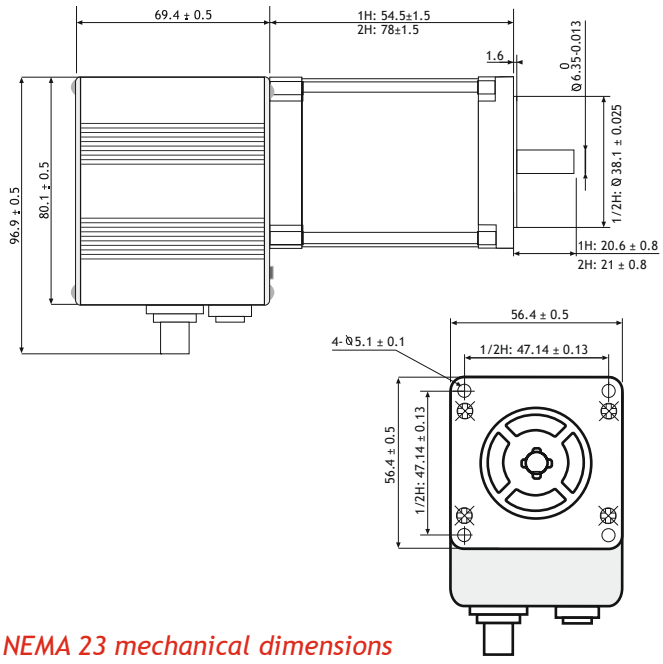
EtherCAT IN (Female)

1: Trasmit Data +
2: Receive Data +
3: Trasmit Data -
4: Receive data -

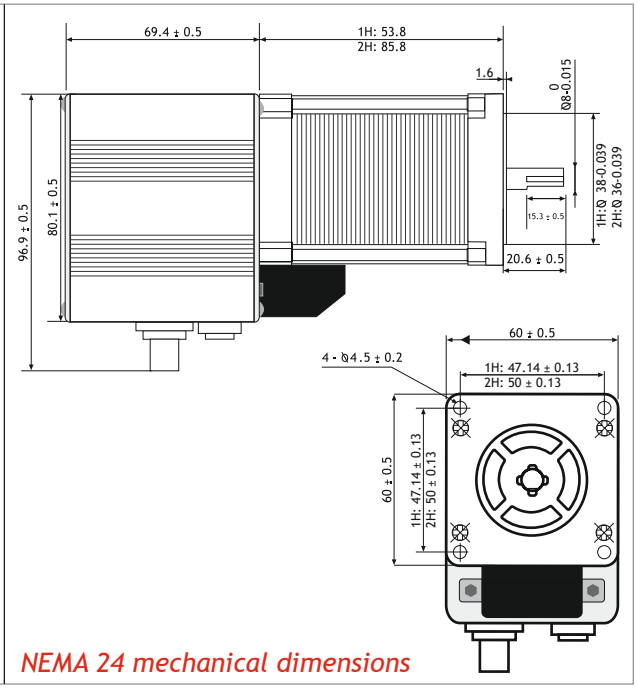
TORQUE/SPEED CURVE



MECHANICAL DIMENSIONS (mm)



NEMA 23 mechanical dimensions



NEMA 24 mechanical dimensions

HI MOD ET/ETS Combo Unit

EtherCAT®

INTRODUCTION

HI-MOD ETS is a series of stepping motors in three sizes with integrated ministep bipolar chopper EtherCAT drives and STO Function, based on battery-less multi-turn absolute encoder.

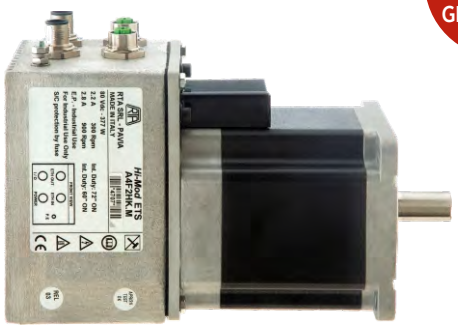
HIGHLIGHTS

FULL CLOSED LOOP

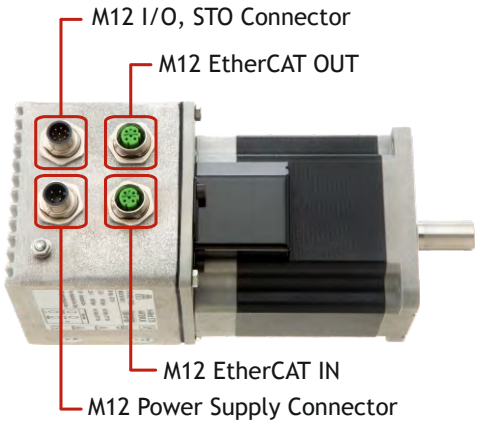
- New generation Full Closed Loop Absolute Encoder versions available
- Holding Torque up to 920 Ncm
- Communication by means of EtherCAT interface
- Different Operation Modes
- Available Inputs / Outputs
- Touch probe hardware input
- AUTO-SYNC function
- Battery-less Multi-turn ABSOLUTE ENCODER versions
- STO Function - SIL3 with Error Detection Monitor

3rd FIRMWARE GENERATION

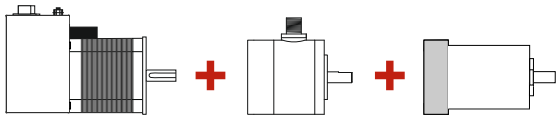
SIDE VIEW



TOP VIEW



Front Brake and/or Gearbox versions available



AUTO SYNC FUNCTION

SPACE SAVING SOLUTION

BATTERY-LESS ABSOLUTE ENCODER

CE

STO SIL3 SAFE TORQUE OFF (STO)

M12 CONNECTOR

SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

AUTO SYNC FUNCTION

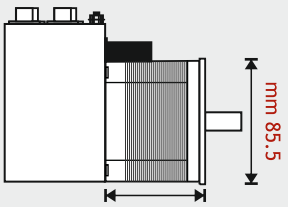
Please refer to download.rta.it for technical specifications

Models	Motor Lenght (mm)	Holding Torque (Ncm)	Encoder Type	Digital In/Out	STO	Rated Voltage (VDC)
HI-MOD ETS A4K2HK.M *Full Closed Loop*	96.5	700	Battery-less Multi-turn Absolute	2/2	✓	48-80
HI-MOD ET A5K2HK.M *Full Closed Loop*	96·5	700	Battery-less Multi-turn Absolute	2/2	X	48-80
HI-MOD ETS A4K2RK.M *Full Closed Loop*	96.5	700	Battery-less Multi-turn Absolute	2/2	✓	80-140
HI-MOD ET A5K2RK.M *Full Closed Loop*	96.5	700	Battery-less Multi-turn Absolute	2/2	X	80-140

140 VDC

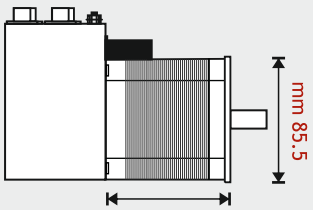
Other models upon request

SIZES AND PERFORMANCES



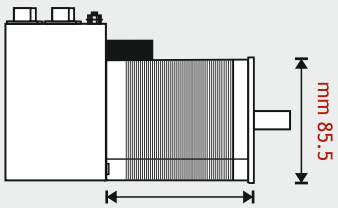
mm 66 (1H)

Holding Torque: 360 Ncm



mm 96.5 (2H)

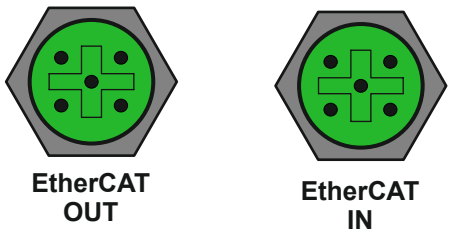
Holding Torque: 700 Ncm

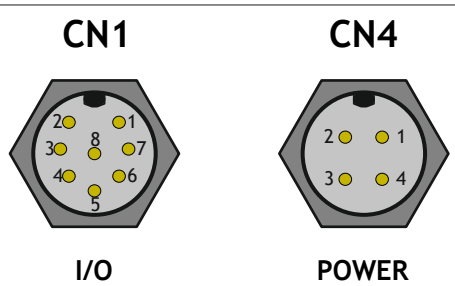


mm 127 (3H)

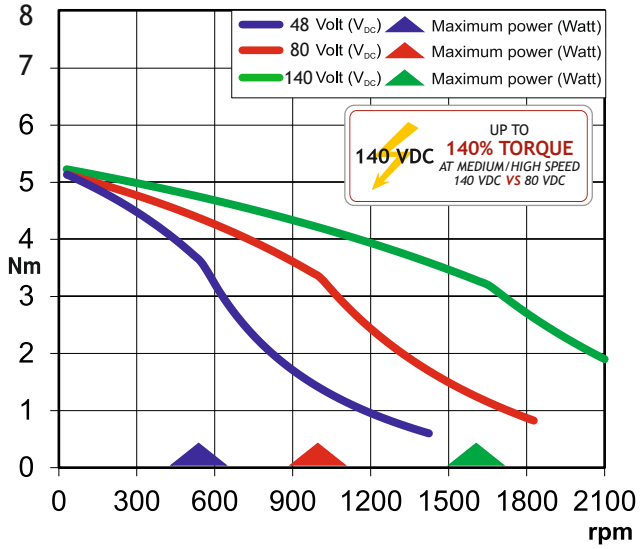
Holding Torque: 920 Ncm

CONNECTION SCHEME

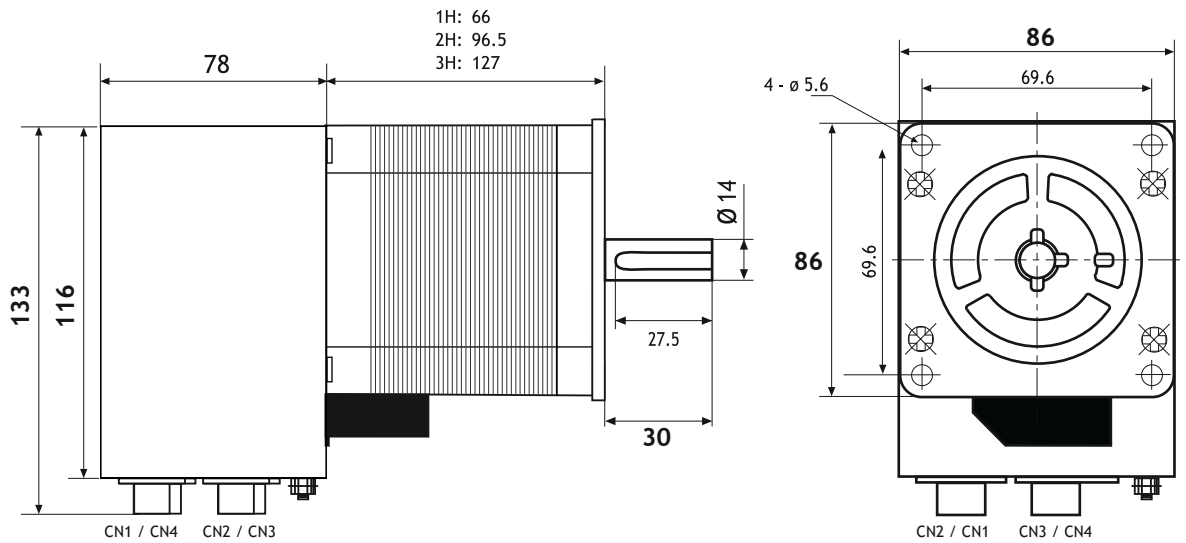




TORQUE/SPEED CURVE



MECHANICAL DIMENSIONS (mm)



Starter kit and cable set available.

STEPPING MOTOR DRIVES

MODBUS TCP/IP

CSD MT Series Drives

Modbus TCP/IP

INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, now available with a 4th generation firmware release and extended current and voltage range.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Also available with other interfaces:

EtherNet/IP EtherCAT

EXTENDED VOLTAGE & CURRENT RANGE

4th FIRMWARE GENERATION

AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

MAIN FEATURES

- Modes of operation: Profile Position, Profile Velocity and Homing.
- Wide range of motor phase current setting and motor current overboost:
  - 120% for CSD E 94/S4 models
  - 140% for CSD E S8 models.

CURRENT OVERBOOST +140%

- Control of different motors sizes:
  - Up to Nema 24 for CSD E 94/S4 models
  - Up to Nema 34 for CSD E S8 models. NEW!
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- 5 + 5 I/Os (MT 94) and 2 + 3 I/Os (MT S4/S8).

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AUTO FEED FUNCT

AUTO SYNC FUNCTION

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

Please refer to download.rta.it for technical specifications

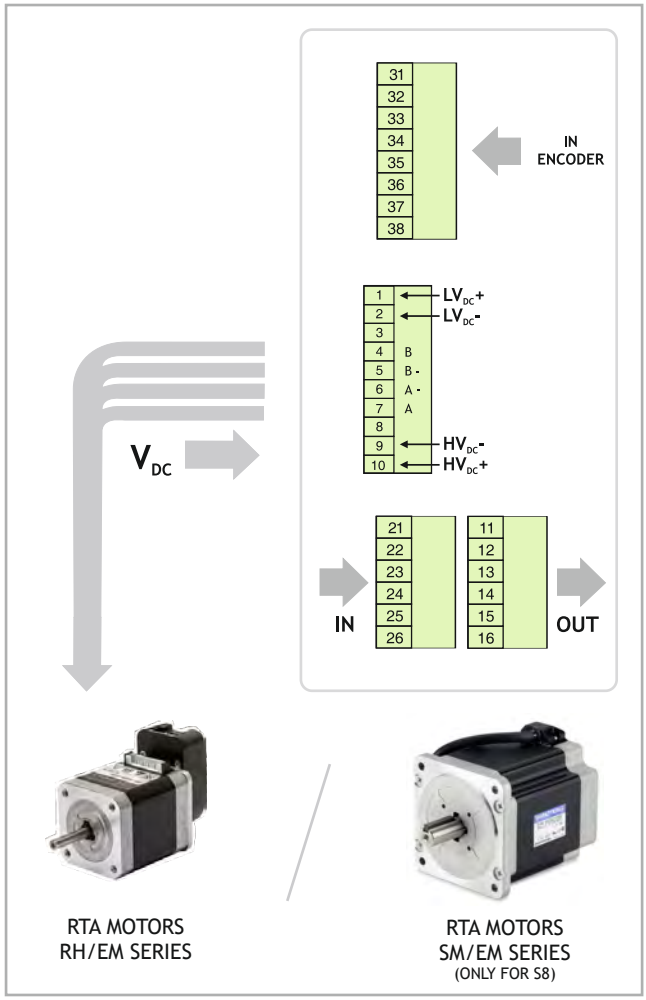
Series	Model	V_{DC} range	I nom.	I boost	Digital In/Out	STO	Dimensions
		(Volt)	(Amp)	(Amp)			(mm)
CSD MT	S8 STO	24 to 85	6.0	8.4	2/3	Yes	130x106x32
CSD MT	S4 STO	24 to 48	4.0	4.8	2/3	Yes	130x106x32
CSD MT	94	24 to 48	4.0	4.8	5/5	No	130x106x32

TECHNICAL FEATURES

- Range of operating voltage:
  - 24-48 VDC for CSD MT 94/S4 models
  - 24-85 VDC for CSD MT S8 models.
- Protections:
  -Protection against under-voltage and over-voltage
  -Protection against a short-circuit at motor outputs
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- Warranty: 24 months.

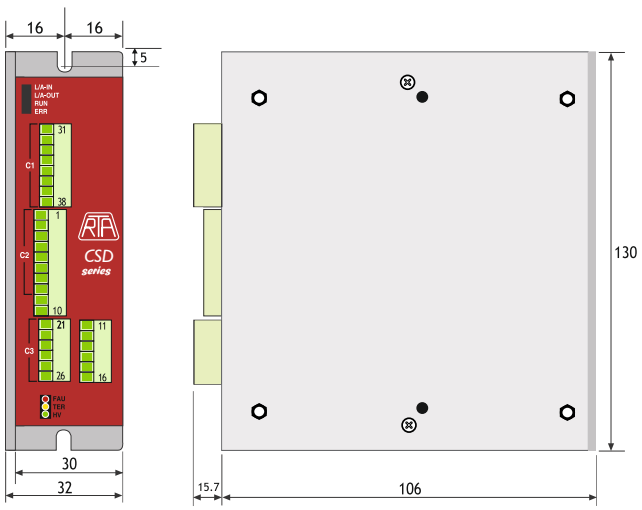
- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD

POWER AND LOGIC CONNECTIONS

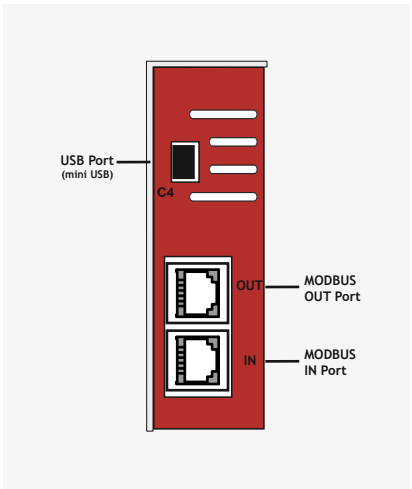


Modbus TCP/IP

MECHANICAL DIMENSIONS



CSD MT
HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

X-PLUS MT Series Drives

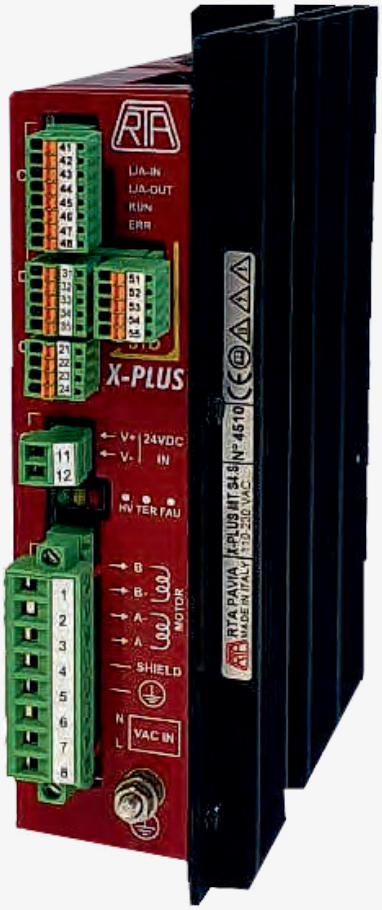
INTRODUCTION

- New series of stepping motor drives with Modbus interface, direct input from the main AC power supply and STO function.
- Direct connection from the main AC power supply (110 Vac to 230 Vac).
- Auto-sync function available featuring a closed loop positioning.
- Optimized for coupling with SANYO DENKI stepping motors, fitted with or without encoder.
- High performances in terms of power and ability to further increase the pontetial of the applications.
- UL/CSA certified.

HIGHLIGHTS

- Communication by means of Modbus TCP/IP interface.
- Modes of operation: PROFILE POSITION, PROFILE VELOCITY and HOMING
- Full digital microstepping drive.
- Wide range of SANYO DENKI stepping motors to be coupled with: holding torque up to 9,2 Nm and flange size up to 86 mm.
- Extremely compact size.
- A highly sophisticated operation system, preserving anyhow the traditional ease of use of R.T.A. drives.
- Configurable IP address via USB port
- Easy setup by RTA Modbus configurator software

Modbus TCP/IP



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FILE NUMBER: E306454

STO X-PLUS

AUTO SYNC FUNCTION

Please refer to download.rta.it for technical specifications

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

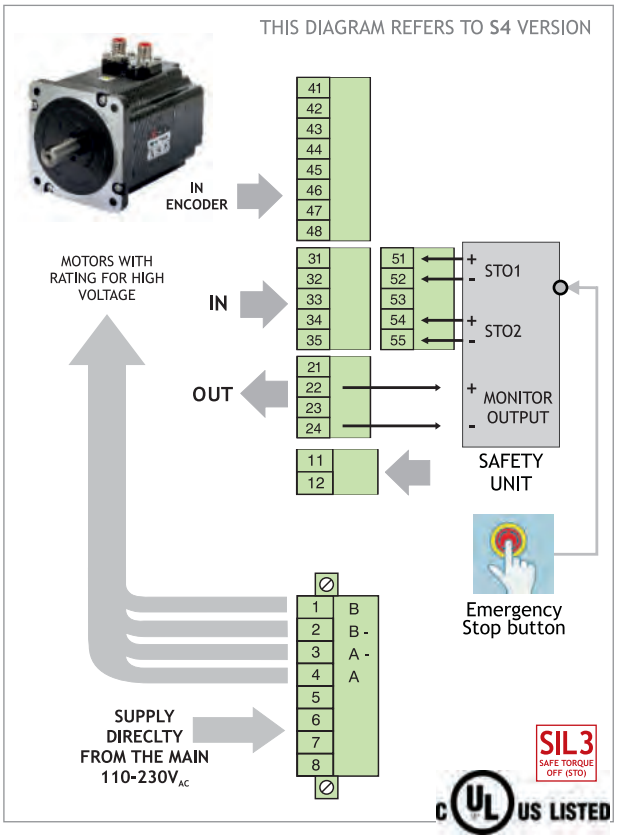
Series	Model	V_{AC} range	I nom.	Digital In/Out	STO In	Dimensions
		(Volt)	(Amp)			(mm)
X-PLUS MT	S4 STO	110 to 230 +/- 15%	4.0	4/3	2	169x129x46
X-PLUS MT	B4	110 to 230 +/- 15%	4.0	4/3	/	169x129x46

TECHNICAL FEATURES

- Communication by means of Modbus TCP/IP interface.
- Possibility to switch off motor current by means of STO function.
- Range of operating voltages: 110-230 $V_{AC.}$
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in boxed version with plug-in connectors. Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- External fans not needed.
- UL/CSA certified.
- Warranty: 24 months.
- Wide range of motor phase current setting.
- Motor current overboost (120%).
- Intelligent management of the current profile.
- Communication by means of Modbus (CoE) interface.
- Different variety of HOMING operation modes.
- Encoder feedback.

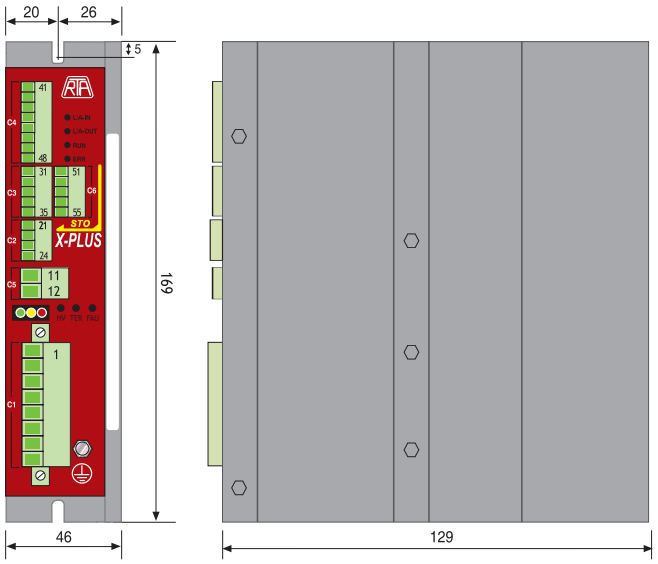
POWER AND LOGIC CONNECTIONS

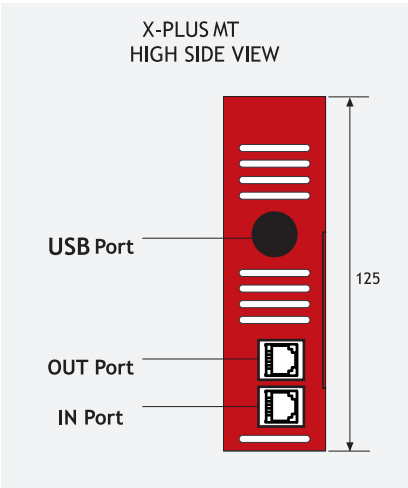


SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

AUTO SYNC FUNCTION

MECHANICAL DIMENSIONS





Dimension in miliimeters - Not in scale.

STEPPING MOTOR DRIVES

ETHERNET/IP

CSD HT Series Drives

EtherNet/IP™

INTRODUCTION

- New series of stepping motor drives with EtherCAT interface, now available with a 4th generation firmware release and extended current and voltage range.
- Drives optimized for coupling with SANYO DENKI stepping motors, fitted with encoder, but also able to manage third party motors.
- Also available with other interfaces:

EtherCAT Modbus TCP/IP

EXTENDED VOLTAGE & CURRENT RANGE

4th FIRMWARE GENERATION

AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

MAIN FEATURES

- Modes of operation: Profile Position, Profile Velocity and Homing.
- Wide range of motor phase current setting and motor current overboost:
  - 120% for CSD E 94/S4 models
  - 140% for CSD E S8 models.

CURRENT OVERBOOST +140%

- Control of different motors sizes:
  - Up to Nema 24 for CSD E 94/S4 models
  - Up to Nema 34 for CSD E S8 models. NEW!
- Different variety of HOMING operation modes.
- Encoder feedback and support of different resolution.
- Touch Probe function available.
- Limit switches management.
- 2 + 3 I/Os.

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AUTO FEED FUNCT

AUTO SYNC FUNCTION

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

Please refer to download.rta.it for technical specifications

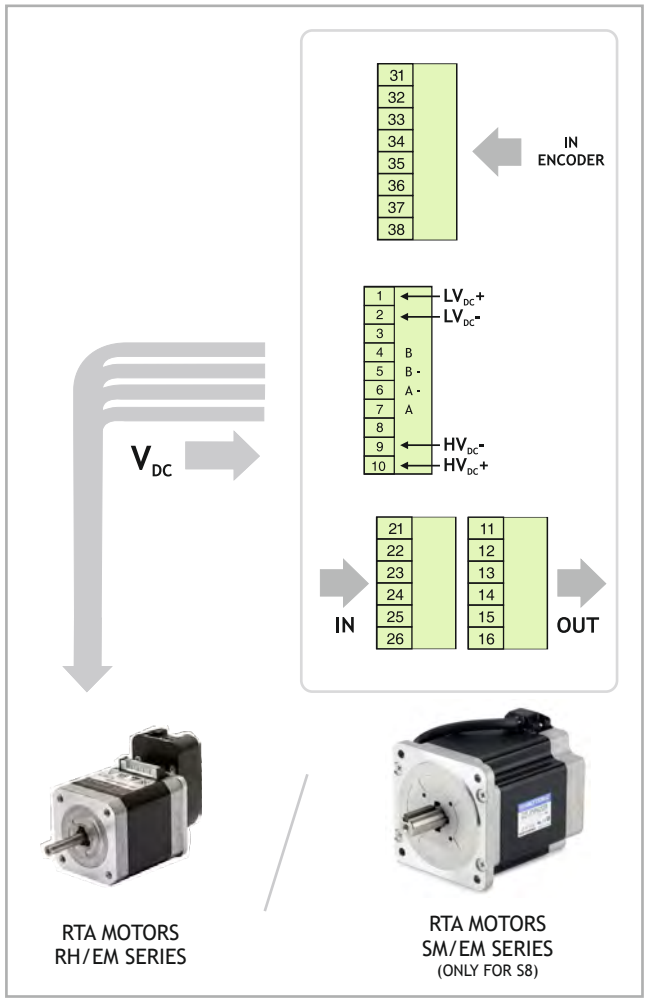
Series	Model	V_{DC} range	I nom.	I boost	Digital In/Out	Dimensions
		(Volt)	(Amp)	(Amp)		(mm)
CSD HT	S8 STO	24 to 85	6.0	8.4	2/3	130x106x32
CSD HT	S4 STO	24 to 48	4.0	4.8	2/3	130x106x32

TECHNICAL FEATURES

- Range of operating voltage:
  - 24-48 VDC for CSD HT S4 models
  - 24-85 VDC for CSD HT S8 models.
- Protections:
  -Protection against under-voltage and over-voltage
  -Protection against a short-circuit at motor outputs
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in plastic boxed version with plug-in connectors.
- Maximum compactness.
- Optoinsulated auxiliary and programmable inputs and outputs.
- Warranty: 24 months.

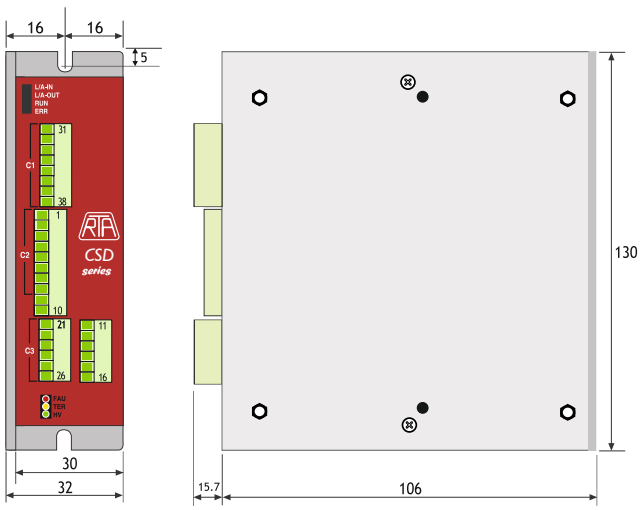
- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD

POWER AND LOGIC CONNECTIONS

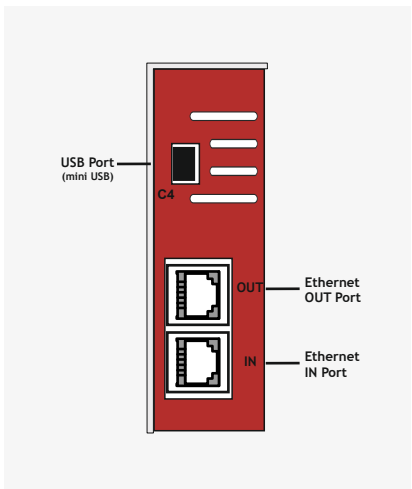


EtherNet/IP

MECHANICAL DIMENSIONS



CSD HT
HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

STEPPING MOTOR DRIVES

CANopen

HI MOD A/E Combo Unit

CANopen®

INTRODUCTION

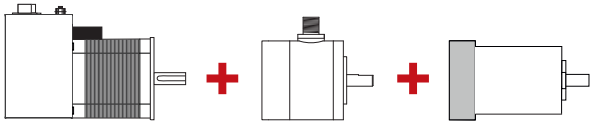
- Series of stepper motors with integrated ministep bipolar chopper drives equipped with programmable motion controller. Setting by means of CANopen interface.
  - **Hi-Mod E** with Incremental Encoder
  - **Hi-Mod A** with Absolute Encoder
- Compact system housed in a metallic box mounted on motor body, minimizing dimensions and optimizing wiring and mounting easiness.
- Target: advanced applications requiring the detection of motor loss of synchronism or stall by means of encoder and programmable motion controller setting by means of CANopen interface.
- UL/CSA certified versions available.

SIDE VIEW

HIGHLIGHTS

- Communication by means of CANopen interface .
- Command to execute runs with position control to set: distance, direction, speed and acceleration.
- Command to execute zero research (HOMING).
- Incremental Encoder (HI-MOD E) or high resolution Battery-less Multi-Turn Absolute Encoder (HI-MOD A).
- The system does not need back-up battery to keep the information when shut down (HI-MOD A).

Front Brake and/or Gearbox versions available



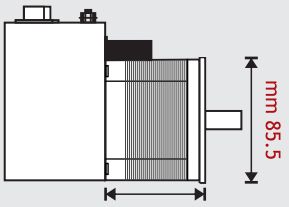
Combo Unit *Front Brake* *Planetary Gearbox*

BATTERY-LESS ABSOLUTE ENCODER

SPACE SAVING SOLUTION

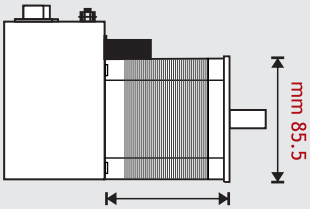
Models	Motor Lenght (mm)	Holding Torque (Ncm)	Encoder Type	Digital In/Out	UL Marking
HI-MOD A3F1H2	66.0	360	Battery-less Multi-turn Absolute	1/0	NO
HI-MOD A3F2H2	96.5	700	Battery-less Multi-turn Absolute	1/0	NO
HI-MOD A3F1H5	66.0	360	Battery-less Multi-turn Absolute	1/0	YES
HI-MOD A3F2H5	96.5	700	Battery-less Multi-turn Absolute	1/0	YES
HI-MOD E3F1H2	66.0	360	Incremental	1/0	NO
HI-MOD E3F2H2	96.5	700	Incremental	1/0	NO
HI-MOD E3F3H2	127.0	920	Incremental	1/0	NO
HI-MOD E3F1H5	66.0	360	Incremental	1/0	YES
HI-MOD E3F2H5	96.5	700	Incremental	1/0	YES
HI-MOD E3F3H5	127.0	920	Incremental	1/0	YES

SIZES AND PERFORMANCES



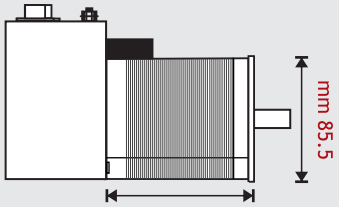
mm 66 (1H)

Holding Torque: 360 Ncm



mm 96.5 (2H)

Holding Torque: 700 Ncm

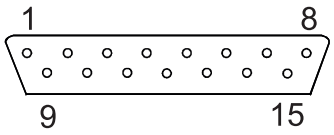


mm 127 (3H)

Holding Torque: 920 Ncm

CONNECTION SCHEME

CN1



4-12: PX
7-8: Power Suppl
6-13-14-15: GND
5: + 24 Volt VDC

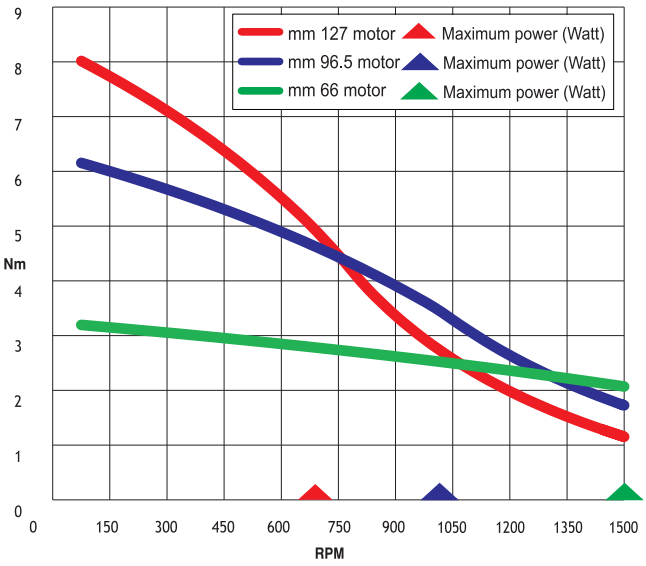
CN2 CN3

Male

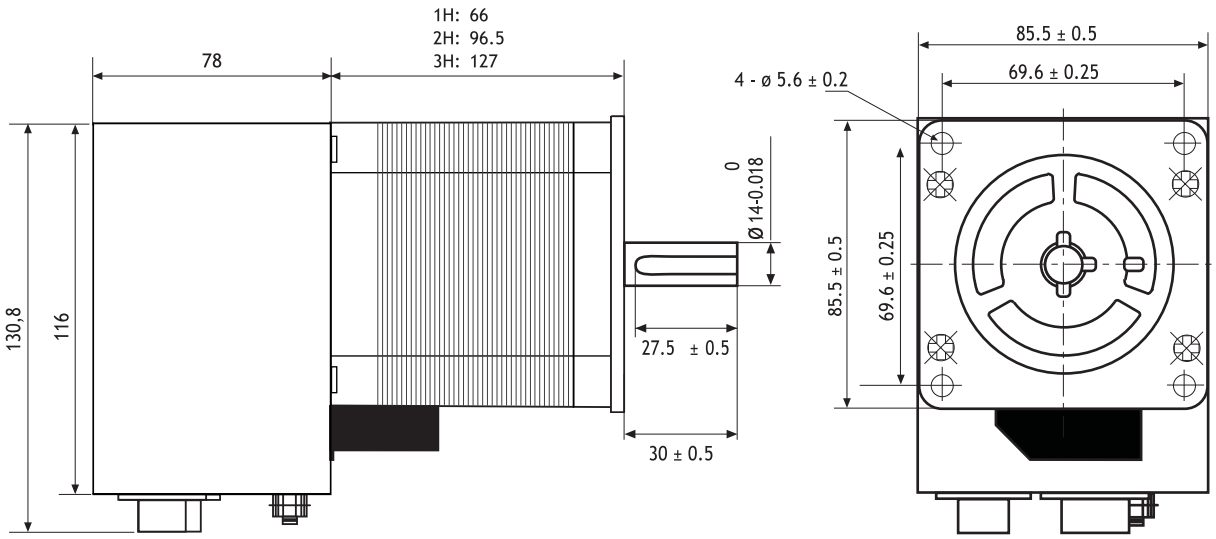
Female

2: Positive control logic supply
3: Negative logic supply and negative CAN_H / CAN_L
4: CAN_H bus line
5: CAN_L bus line

TORQUE/SPEED CURVE



MECHANICAL DIMENSIONS (mm)



Starter kit and cable set available.

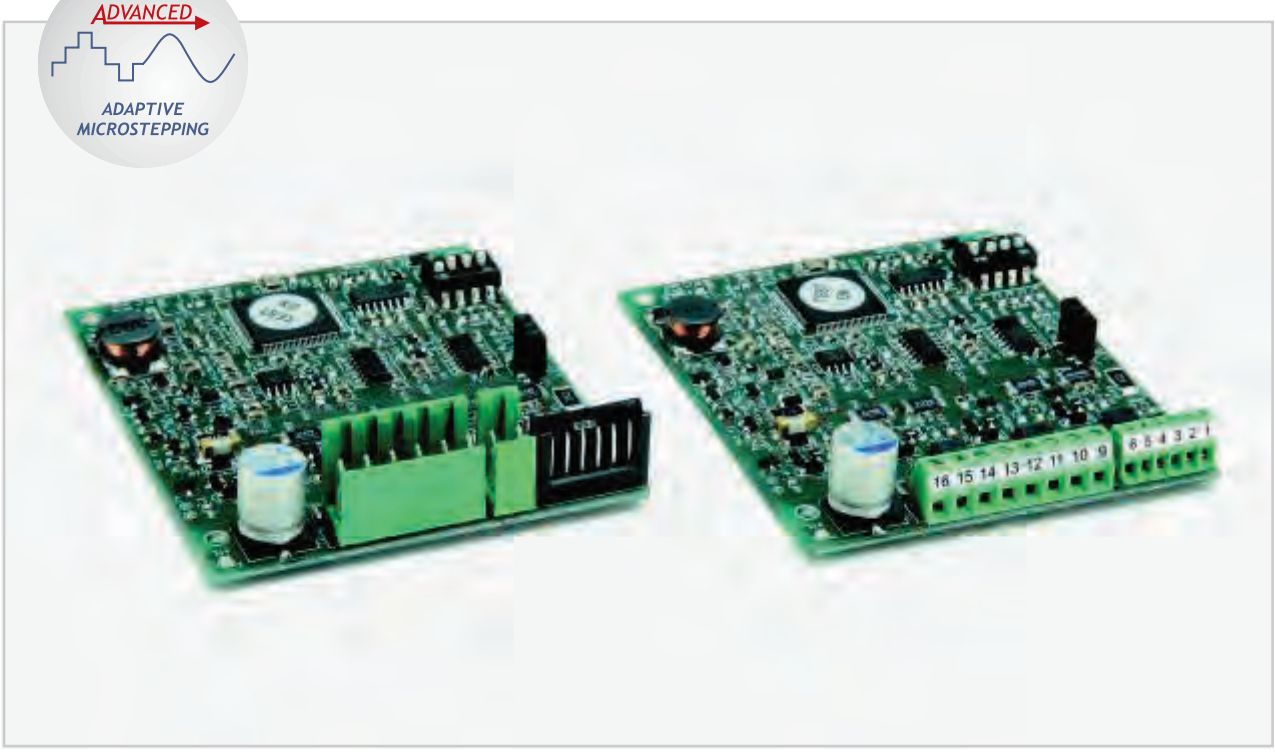
CANopen - NOT PREFERRED MODELS						
	DRIVE TYPE	VOLTAGE RANGE (V)	PHASE CURRENT RANGE (A)	SUGGESTED MOTORS (Flange size)	CERTIFICATIONS	SUGGESTED MOTORS
HI-MOD B3F1H0.C	CO	32 - 75 VDC	/ /	/ /	CE	/ /
HI-MOD B3F2H0.C	CO	32 - 75 VDC	/ /	/ /	CE	/ /
HI-MOD B3F3H0.C	CO	32 - 75 VDC	/ /	/ /	CE	/ /

"Not preferred models" are models which have been replaced with the latest versions. They are still available in R.T.A.'s stock, however they are not recommended for new applications.

STEPPING MOTOR DRIVES

STEP/DIRECTION ADVANCED

BSD Series Drives



INTRODUCTION

- New series of microstep stepping motor drives specifically developed for small and mid-size stepping motors.
- Ultra-compact and optimized design to reduce space and cost, combined with *Adaptive Microstepping* technology ensuring noise and vibration suppression.
- Target: simple and effective motion control solutions requiring low power, high precision, smoothness of movement and low acoustic noise.
- Ideal solution to replace integrated circuits and self-made, low power drives. The perfect choice for small routers, medical, 3D printers and all types of compact machines.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to 3.200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
BSD	02 - 02.V*	24 to 48	0.7	2.2	78x68x21

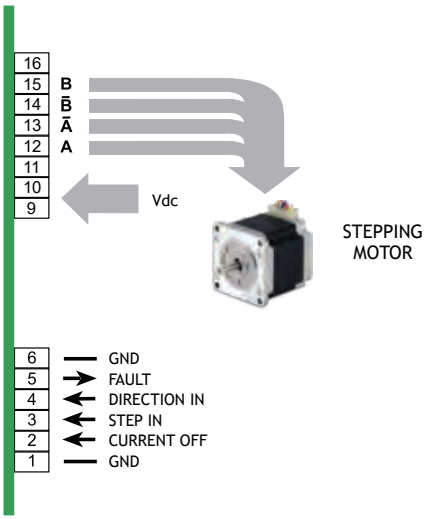
* BSD 02.V version is equipped with screw-type connectors.

TECHNICAL FEATURES

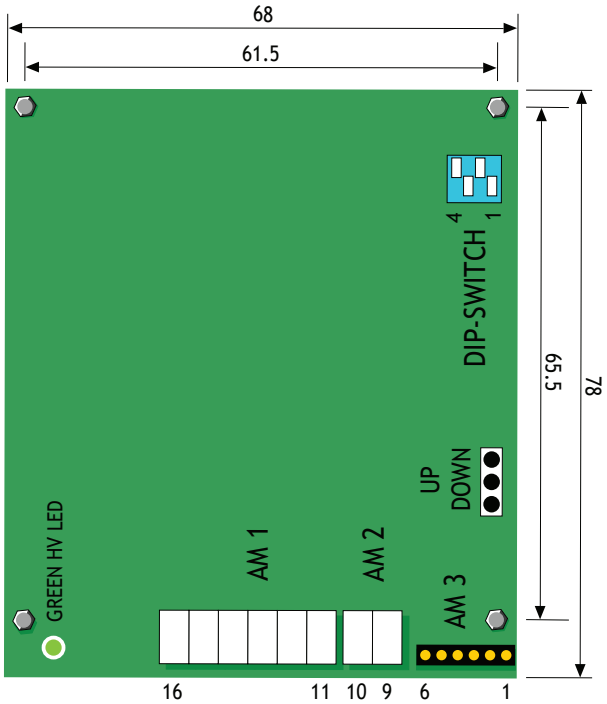
- Range of operating voltage: 24-48 $V_{DC.}$
- Range of current: 0.7-2.2 Amp. Setting up to four possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600 and 3.200 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:

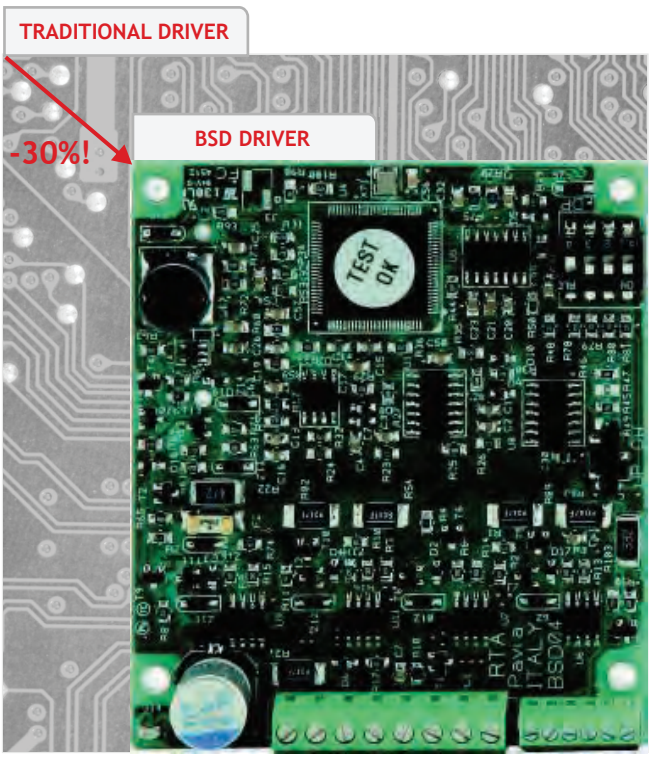
  -Protection against under-voltage.
  -Protection against a short-circuit at motor outputs.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available version: open frame, crimp-type/screw-type connectors.
  Maximum compactness.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS





REAL DIMENSIONS

Dimensions in millimeters - In scale.

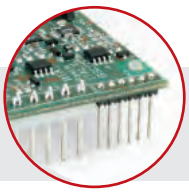
BSD 02.S Series Drives

INTRODUCTION

- New series of microstep stepping motor drives specifically developed for small and mid-size stepping motors.
- Ultra-compact and optimized design to reduce space and cost, combined with *Adaptive Microstepping* technology ensuring noise and vibration suppression.
- Target: simple and effective motion control solutions requiring low power, high precision, smoothness of movement and low acoustic noise.
- Ideal solution to replace integrated circuits and self-made, low power drives. The perfect choice for small routers, medical, 3D printers and all types of compact machines.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to 3.200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- Highly compact, easy to use and cost effective solution. This system is designed to be soldered to a PCB.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.



NEW VERSION EQUIPPED WITH SOLDER PINS (STRIPLINE)

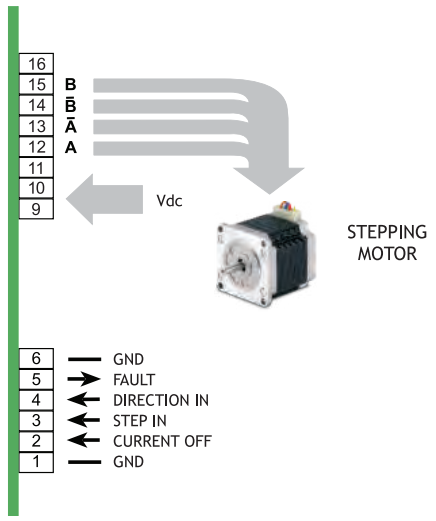
Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
BSD	02.S	24 to 48	0.7	2.2	78x68x27

TECHNICAL FEATURES

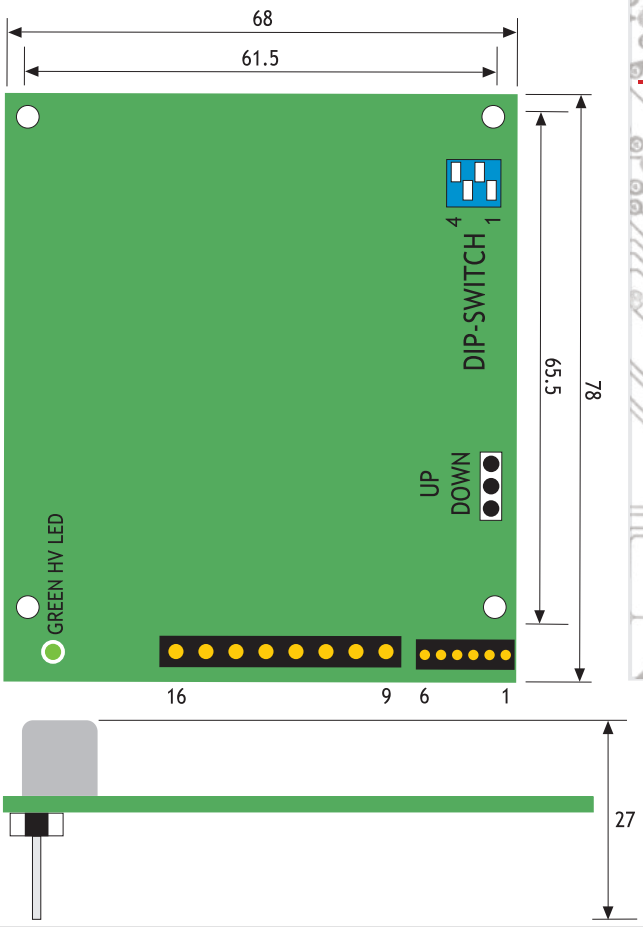
- Range of operating voltage: 24-48 $V_{DC.}$
- Range of current: 0.7-2.2 Amp. Setting up to four possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600 and 3.200 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:

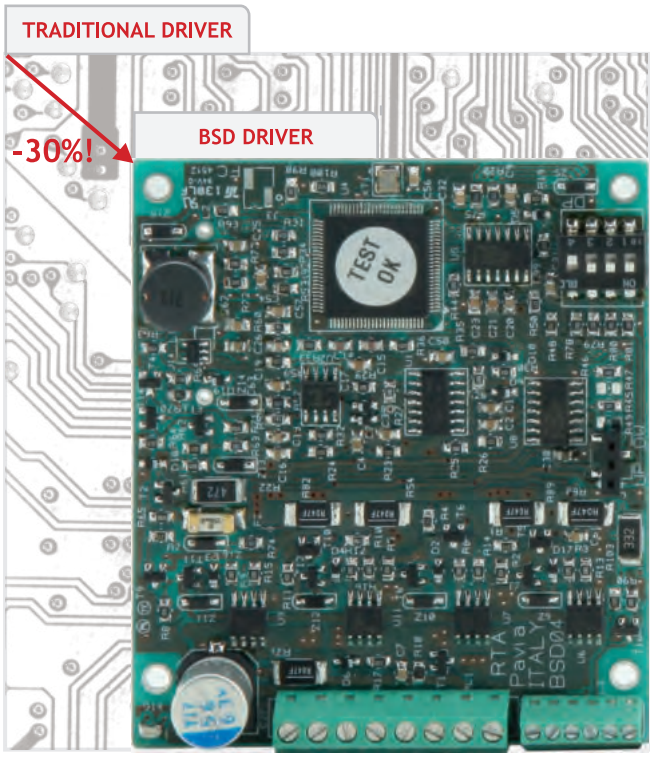
  -Protection against under-voltage.
  -Protection against a short-circuit at motor outputs.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available version: open frame, crimp-type/screw-type/ solder pin connectors.
  Maximum compactness.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS

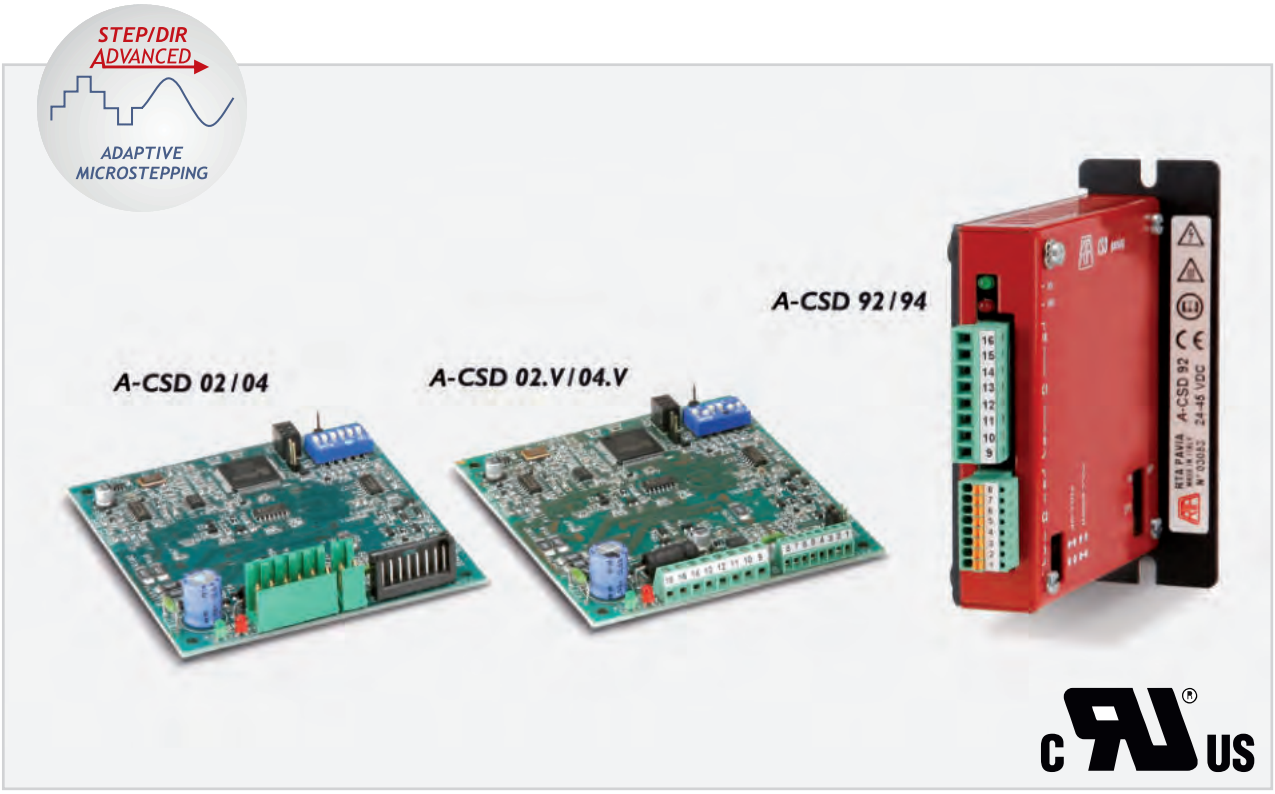




REAL DIMENSIONS

Dimensions in millimeters - In scale.

A-CSD Series Drives



INTRODUCTION

- New series of bipolar microstep stepping motor drives, specifically developed for applications sensitive to acoustic noise and vibration.
- Significant evolution of the CSD series, preserving backward mechanical, electrical and applicative compatibility.
- Target: advanced applications requiring high precision, smoothness of movement and low acoustic noise.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to a 3.200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
A-CSD	02 - 02.V*	24 to 48	0.7	2.4	92x85x22
A-CSD	04 - 04.V*	24 to 48	2.6	4.4	92x85x23
A-CSD	92	24 to 48	0.7	2.4	99x90x21
A-CSD	94	24 to 48	2.6	4.4	99x90x21

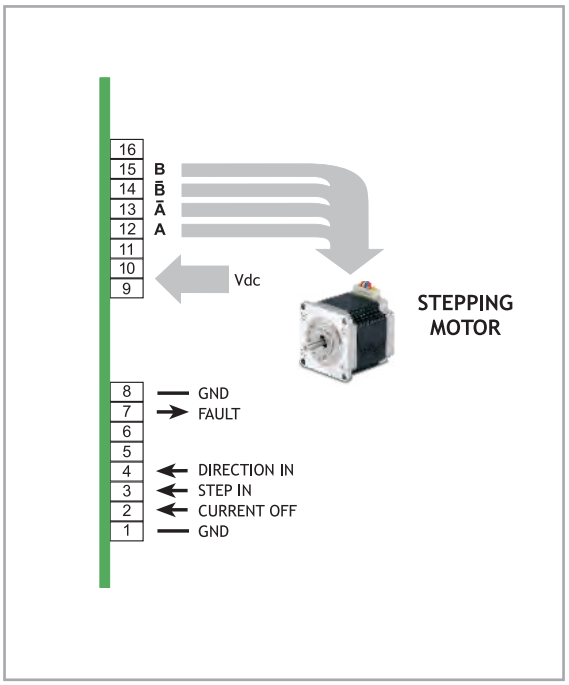
* A-CSD 02.V and A-CSD 04.V versions are equipped with screw-type connectors.

TECHNICAL FEATURES

- Range of operating voltage: 24-48 $V_{DC.}$
- Range of current: 0.7-4.4 Amp. Setting up to eight possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600 and 3.200 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:

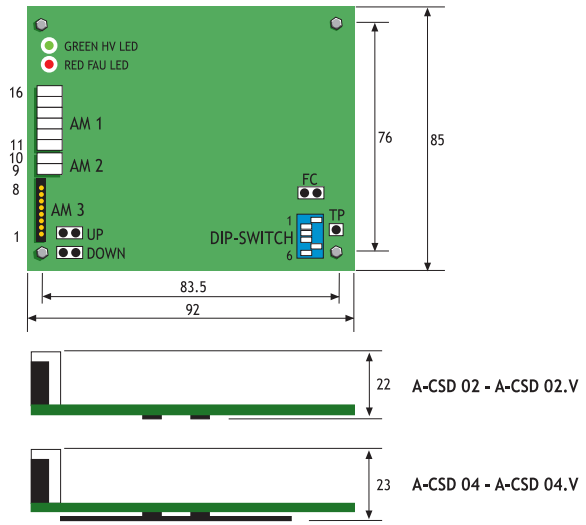
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available versions: boxed/open frame, crimp-type/screw-type connectors. Maximum compactness.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS

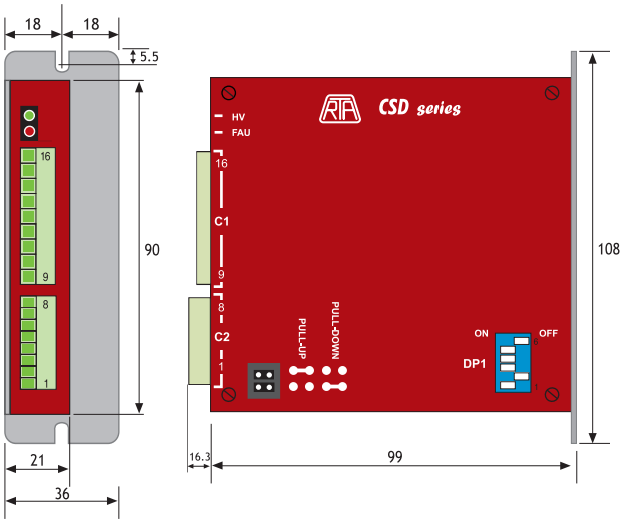


MECHANICAL DIMENSIONS

A-CSD 02 / A-CSD 04



A-CSD 92 / A-CSD 94



Dimensions in millimeters - Not in scale.

HGD Series Drives

INTRODUCTION

- Series of ministep bipolar chopper drives, suitable for driving medium power two-phase stepping motors, with four, six or eight terminals.
- Highly compact (70×70×25 mm), easy to use and cost effective solution. This system is designed to be soldered to a PCB.
- Target: medium and medium-low power applications requiring increase in performance compared to self-built or integrated circuits combined with an improvement of reliability and durability.

HIGHLIGHTS

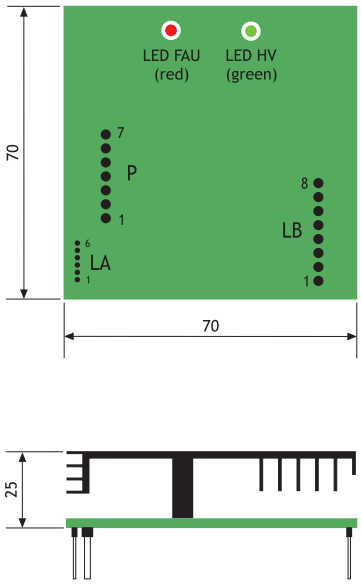
- Microstepping function up to 3.200 step/rev.
- Separated solder type connectors for logic signals and power connections.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- Standard input and output signals ease interfacing with the most commonly used control systems and ensure high noise immunity.

Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
HGD	02	24 to 75	0.75	2.0	70x70x25
HGD	05	24 to 75	2.25	6.0	70x70x25

TECHNICAL FEATURES

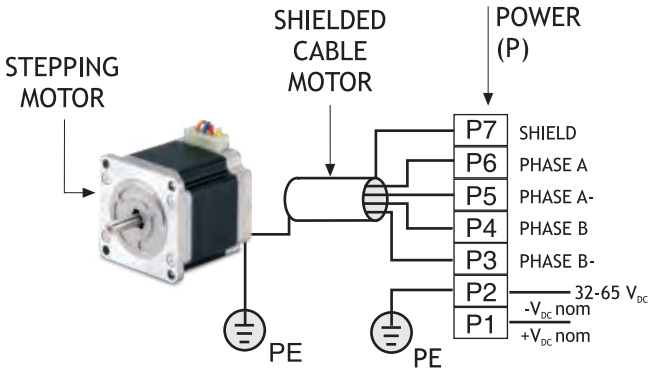
- Range of operating voltages: 24-75 $V_{DC.}$
  Operation with a single external supply voltage.
- Range of current: 0.75-6.0 Amp. Setting up to six possible values by means of hardware connections.
- Microstepping: 400, 800, 1.600 and 3.200 steps /revolution. Setting by means of hardware connections.
- Automatic current reduction at motor standstill.
- Protections:
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Possibility to reduce motor current with an external logic signal.
- High efficiency CHOPPER with MOSFET final stage output.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- Warranty: 24 months.

MECHANICAL DIMENSIONS

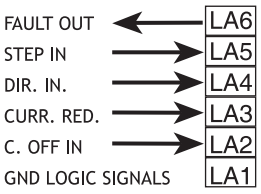


Dimensions in millimeters - Not in scale.

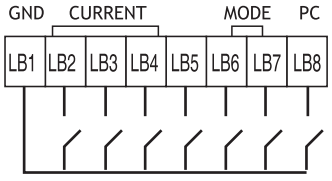
POWER AND LOGIC CONNECTIONS



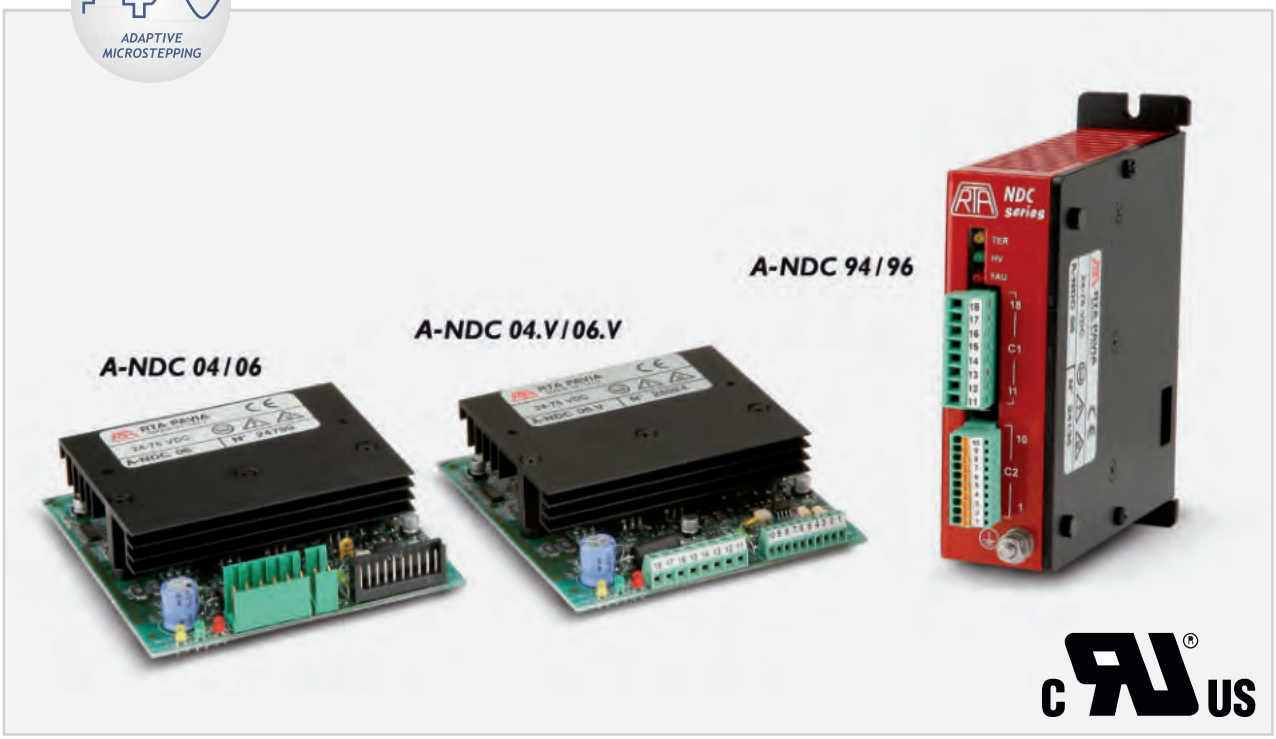
LOGIC (LA)



LOGIC (LB)



A-NDC Series Drives



INTRODUCTION

- New series of bipolar microstep stepping motor drives, specifically developed for applications sensitive to acoustic noise and vibration.
- Significant evolution of the NDC series, preserving backward mechanical, electrical and applicative compatibility.
- Target: advanced applications requiring high precision, smoothness of movement and low acoustic noise.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to a 12.800 step/rev (1/64).
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
A-NDC	04 - 04.V*	24 to 85	0.6	2.0	101x94x25
A-NDC	06 - 06.V*	24 to 85	1.9	6.0	101x94x25
A-NDC	94	24 to 85	0.6	2.0	110x108x34
A-NDC	96	24 to 85	1.9	6.0	110x108x34

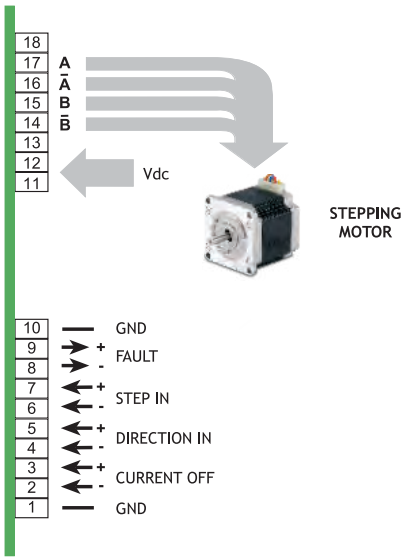
* A-NDC 04.V and A-NDC 06.V versions are equipped with screw-type connectors.

TECHNICAL FEATURES

- Range of operating voltage: 24-85 $V_{DC.}$
- Range of current: 0.6-6 Amp. Setting up to eight possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600, 3.200, 6.400 and 12.800 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:

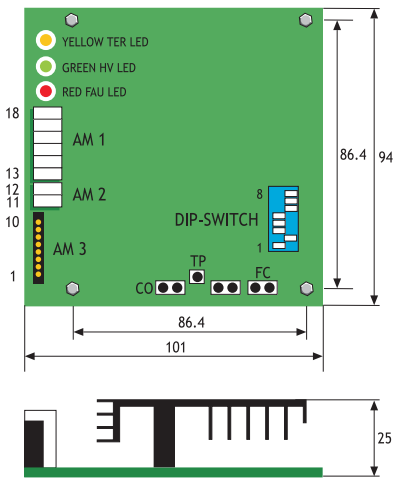
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available versions: boxed/open frame, crimp-type/screw-type connectors. Maximum compactness.
- Optoinsulated inputs to ensure best EM noise immunity.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS

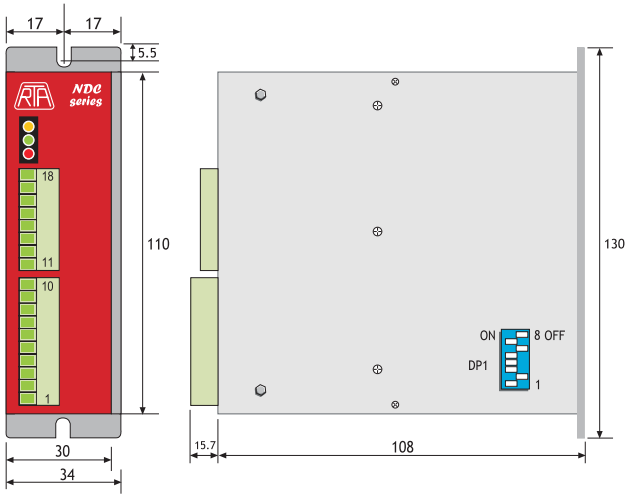


MECHANICAL DIMENSIONS

A-NDC 04 / A-NDC 06



A-NDC 94 / A-NDC 96



Dimensions in millimeters - Not in scale.

CSD MS8 & CSD MS8.P
Series Drives

Step-Dir EVOLUTION + Modbus RTU

INTRODUCTION

- CSD MS8 is a new model of RTA flagship stepping motor drive with STEP&DIR and Modbus RTU RS-485 interface for application in which low/medium power is required.
- Embedded Auto-Sync and Auto-Feed functions with encoder, featuring a closed loop positioning and motor performance optimization.

AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

MODBUS RTU MAIN FUNCTIONS

- Homing, Position and Velocity mode
- Registers for diagnostics

Modbus RTU

CSD MS8.P *programmable version*

- For simple, single-axis applications
- Possibility to load and execute a single-task program

</>.P

HIGHLIGHTS

- 3 Current Control modes available: Open Loop, Auto-Sync and Auto-Feed.
- Configuration settings, diagnostics and setup via RTA STUDIO for Windows®.
- INPUT and OUTPUT configurable.
- Extended interfaces: STEP&DIR and Modbus RTU.
- Zero index, Proximity Switch and Hard Stop searching function.
- Replied encoder signal output.

c UL us

AUTO FEED FUNCT

AUTO SYNC FUNCTION

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

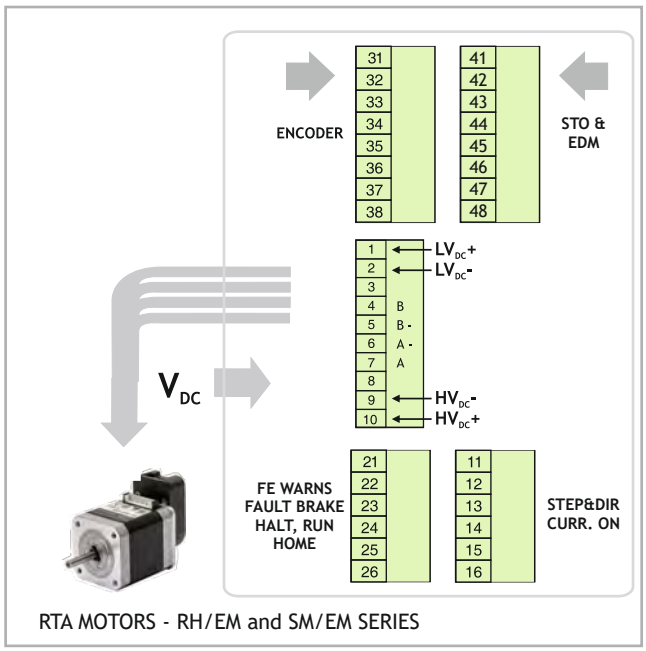
Please refer to download.rta.it for technical specifications

Series	Model	V_{AC} range	I nom.	I boost	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
CSD	MS8 / MS8.P	24 to 85	6.0	8.4	130x108x34

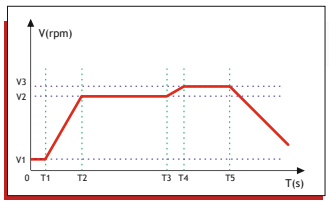
TECHNICAL FEATURES

- Range of operating nominal voltage: 24 - 85 Vdc.
- Up to 8.4 Amps motor current setting.
- RS-485 baud rate up to 256000.
- Microstepping: up to 12.800 steps/revolutions.
- Various encoder resolution available.
- Available current reduction at motor standstill.
- Easy wiring with plug-in connectors.
  Maximum compactness.
- Optoinsulated digital I/O to ensure best EM noise immunity.
- Protections:
  -Protection against under-voltage and over-voltage
  -Protection against a short-circuit at motor outputs
  -Overtemperature protection.
  -Open motor/encoder phase.
- Available in plastic boxed version with plug-in connectors.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- A kit for mounting on a DIN rail is available as optional. Code: KNDCGD
- Warranty: 24 months.

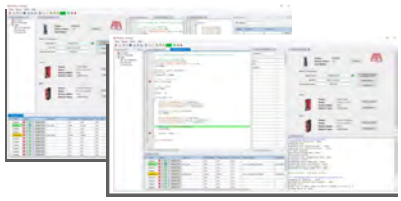
POWER AND LOGIC CONNECTIONS



RTA MOTORS - RH/EM and SM/EM SERIES



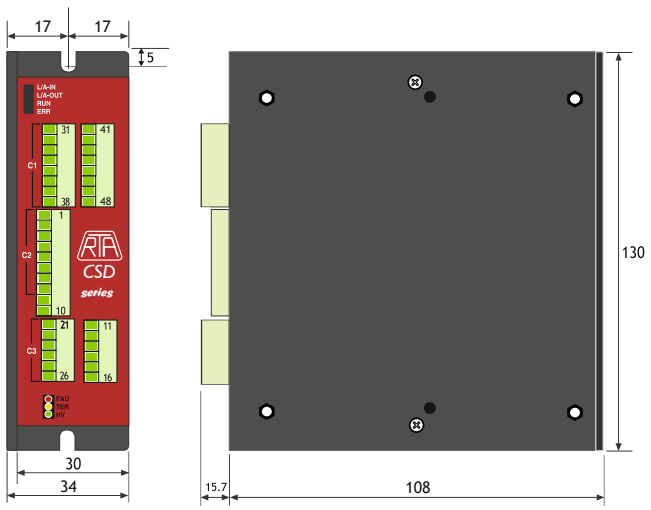
.P drives Motion Profile example

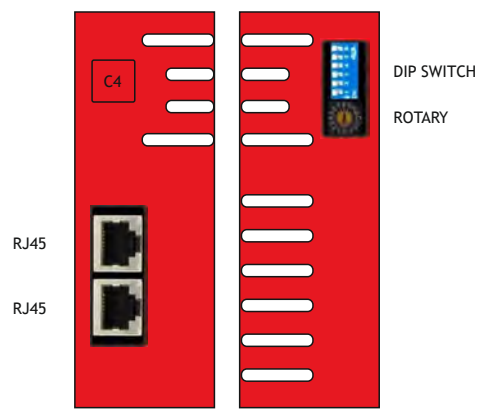


Programmable through RTA Studio IDE

MECHANICAL DIMENSIONS

CSD MS8
HIGH SIDE VIEW





Dimensions in millimeters - Not in scale.

X-PLUS L Series Drives

INTRODUCTION

- New series of compact bipolar microstep stepping motor drive with power input directly from the main AC supply (110 VAC to 230 VAC), specifically developed for Nema 23 and Nema 34 single stack motor coupling.
- The drive is equipped with an internal rectifier able to transfer more than 300 VDC (230 VAC) to the motor, in order to ensure the maximum power for the applications as well as a significant cost saving on transformer and rectifier, together with related cabling.
- Ten years after the development of X-PLUS B4 (230 VAC, 4 Amp) X-PLUS L2 features a more compact and economically competitive solution especially developed for small size motors.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to 4000 step/rev.
- Intelligent management of the current profile that achivies good results in terms of smoothness of movement, low noise and vibration control.
- A higly sophisticated control system, preserving anyhow the traditional ease of use R.T.A. drives.
- Mandatory coupling with stepper motors rated for high voltage (class F insulation), from NEMA 23 single stack up to, at max, NEMA 34 single stack.

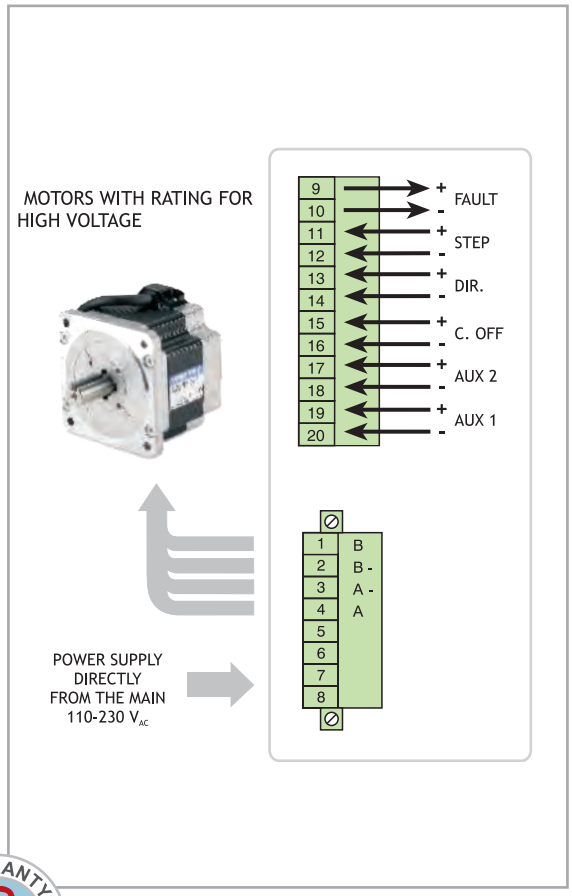
ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(A)	(A)	(mm)
X-PLUS	L2	110 to 230 +/- 15%	1.4	2.5	152x129x30

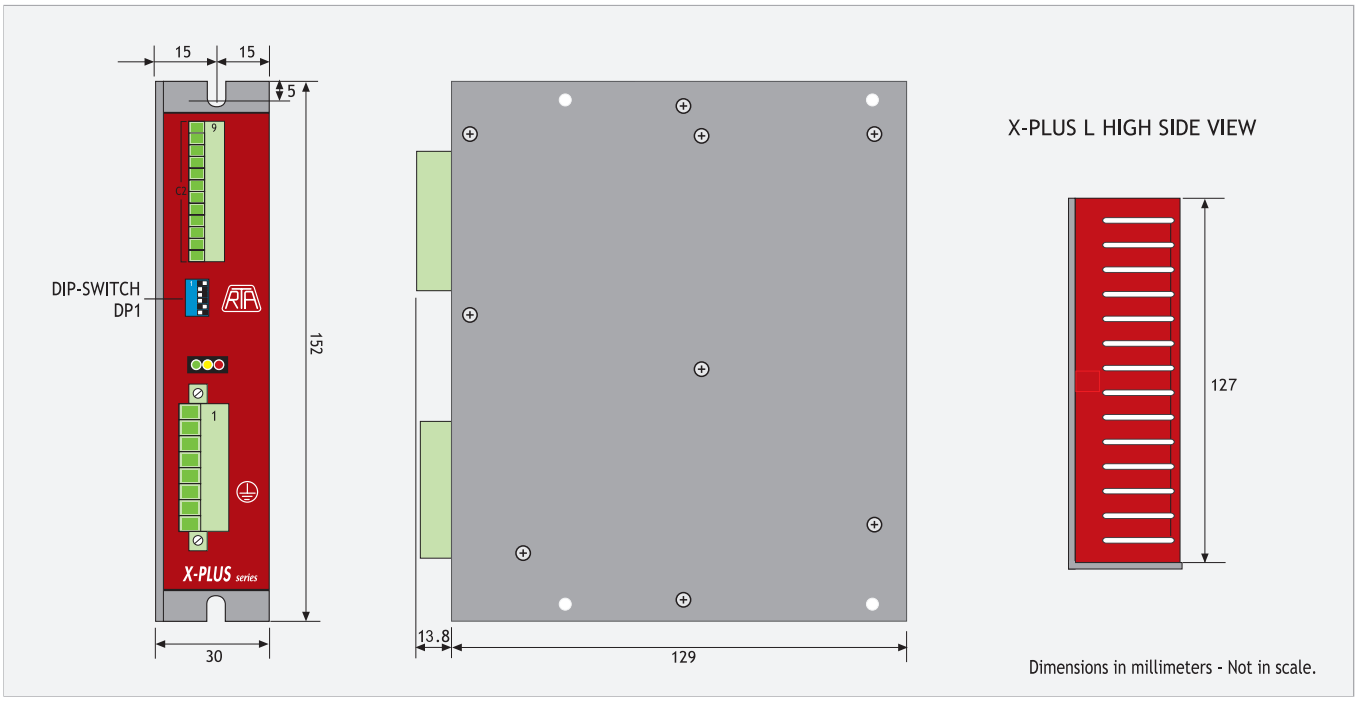
TECHNICAL FEATURES

- Range of operating voltages: 110-230 VAC.
- Range of current: 1.4 - 2.5 A. Setting up four possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip switch.
- Protections:
  -Protection against under-voltage and over voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
- Optoinsulated inputs to ensure best EM noise immunity.
- Possibility to switch off motor current with an external logic signal.
- High efficiency CHOPPER.
- Electronic resonance damping circuit to ensure acoustic noise and mechanic vibrations reductions at low and medium speed.
- Alarm memory.
- External fans not needed.
- Coupling with stepping motors rated for high voltage.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS



X-PLUS B4.1 Series Drives

INTRODUCTION

- New series bipolar microstep stepping motor drive with power input directly from the main AC supply (110 V_{AC} to 230 V_{AC}), specifically developed for applications requiring high performance with reduced acoustic noise and low vibrations .
- Target: advanced applications requiring high precision, low noise and smoothness of movement.
- The perfect choice for combining high power and low acoustic noise.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to 3,200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

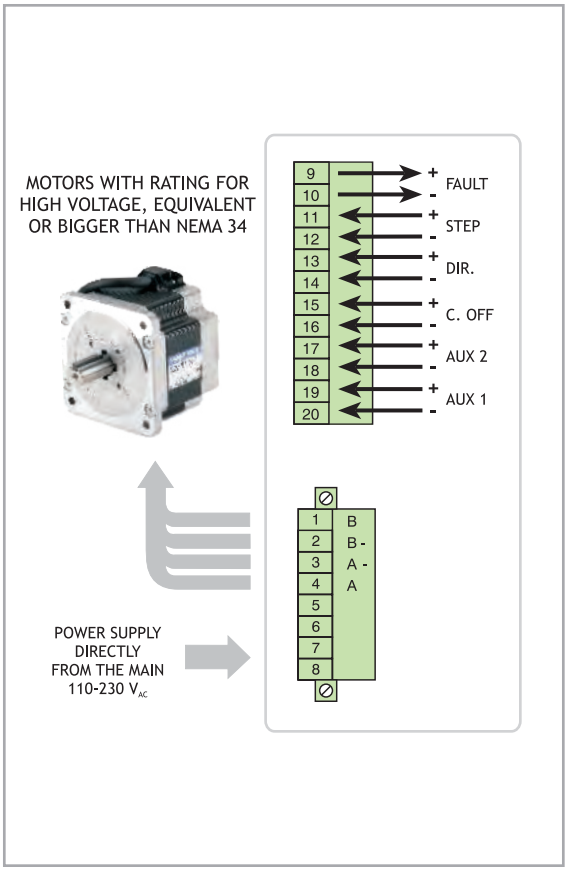
Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-PLUS	B4.1	110 to 230 +/- 15%	2.4	4.0	152x129x46

TECHNICAL FEATURES

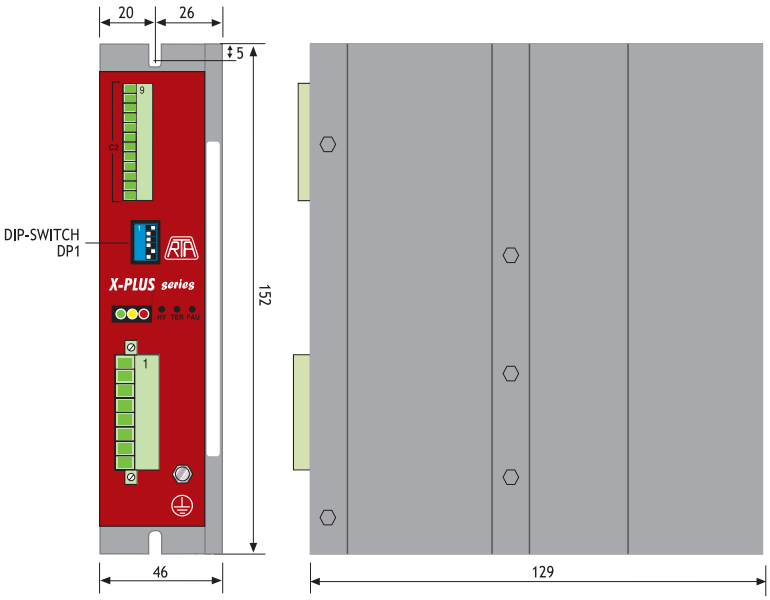
- Range of operating voltage: 110-230 $V_{AC.}$
- Range of current: 2.4-4 Amp. Setting up to four possible values by means of dip-switches.
- Microstepping: 400, 800, 1,600 and 3,200 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in boxed version with plug-in connectors. Maximum compactness.
- Optoinsulated inputs to ensure best EM noise immunity.
- External fans not needed.
- Coupling with stepping motors rated for high voltage and equivalent or bigger than NEMA 34 is mandatory.
- Warranty: 24 months.

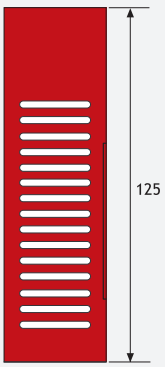
POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS



X-PLUS B4.1 HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

X-PLUS S4.1 Series Drives

INTRODUCTION

- New series bipolar microstep stepping motor drive with power input directly from the main AC supply (110 V_{AC} to 230 V_{AC}), with STO function, specifically developed for applications requiring high performance with reduced acoustic noise and low vibrations.
- Target: advanced applications requiring high precision, low noise and smoothness of movement.
- The perfect choice for combining high power and low acoustic noise.
- UL/CSA certified.

c UL us LISTED
FILE NUMBER: E306454

HIGHLIGHTS

- STO [SIL3] function.
- Error Detection Monitor.
- Full digital microstepping drive.
- Adaptive microstepping up to 3,200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3
- Error Detection Monitor

SIL3
SAFE TORQUE OFF (STO)

Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-PLUS	S4.1	110 to 230 +/- 15%	2.4	4.0	152x129x46

TECHNICAL FEATURES

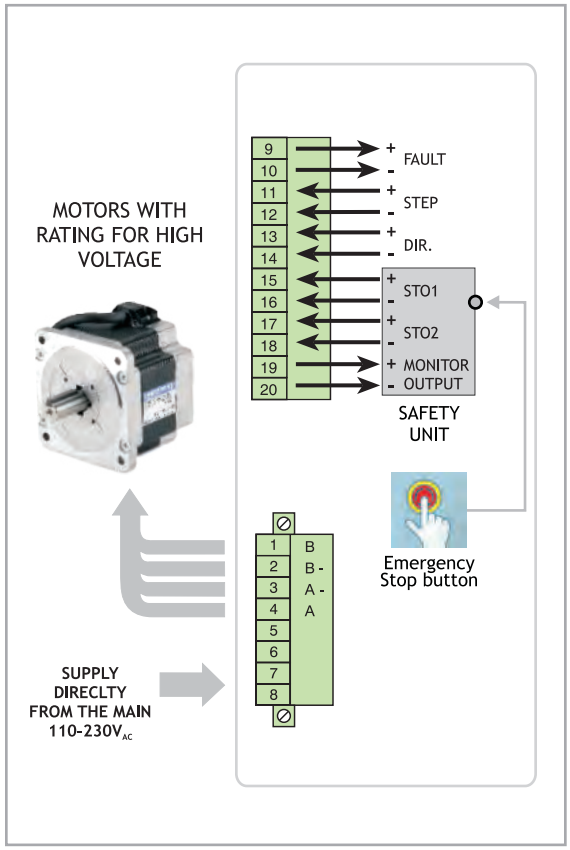
- Possibility to switch off motor current by means of STO function.
- Range of operating voltages: 110-230 V_{AC}.
- Range of current: 2.4-4.0 Amp. Setting up to four possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600, 3.200 steps /revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in boxed version with plug-in connectors. Maximum compactness.
- Optoinsulated inputs to ensure best EM noise immunity.
- External fans not needed.
- Coupling with stepping motors rated for high voltage and equivalent or bigger than NEMA 34 is mandatory.
- UL/CSA certified.
- Warranty: 24 months.

c UL us LISTED

WARRANTY 2 YEARS GARANZIA

POWER AND LOGIC CONNECTIONS



STO FUNCTION FEATURES

- Safe Torque Off (STO) function [SIL3]
- Error Detection Monitor

SIL3 SAFE TORQUE OFF (STO)

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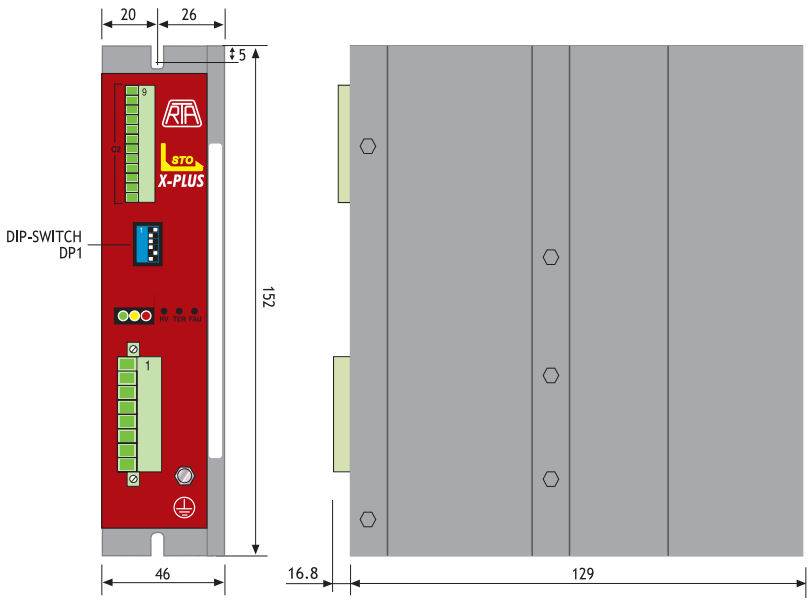
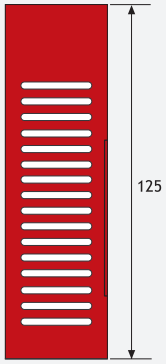


X-PLUS S4.1 HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

X-PLUS C4.1 Series Drives

INTRODUCTION

- New series bipolar microstep stepping motor drive with power input directly from the main AC supply (110 V_{AC} to 230 V_{AC}), specifically developed for applications requiring high performance with reduced acoustic noise and low vibrations.
- Target: advanced applications requiring high precision, low noise and smoothness of movement.
- The perfect choice for combining high power and low acoustic noise.
- UL/CSA certified.

HIGHLIGHTS

- Full digital microstepping drive.
- Adaptive microstepping up to 3,200 step/rev.
- Intelligent management of the current profile that achieves good results in terms of smoothness of movement, low noise and vibration control.
- A highly sophisticated control system, preserving anyhow the traditional ease of use of R.T.A. drives.

c UL us LISTED
FILE NUMBER: E306454

ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

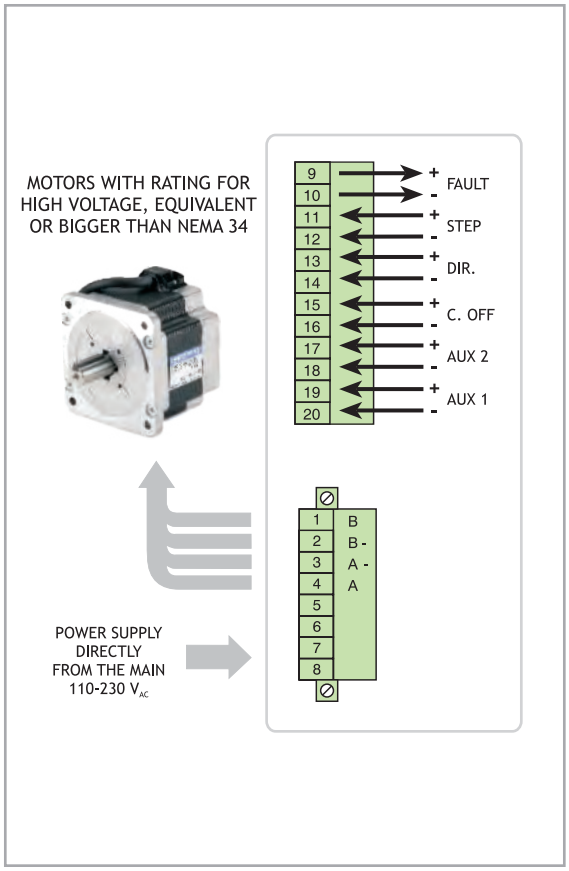
Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-PLUS	C4.1	110 to 230 +/- 15%	2.4	4.0	152x129x46

TECHNICAL FEATURES

- Range of operating voltage: 110-230 $V_{AC.}$
- Range of current: 2.4-4 Amp. Setting up to four possible values by means of dip-switches.
- Microstepping: 400, 800, 1,600 and 3,200 steps/revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Management of the current profile setting by means of a dip-switch.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Available in boxed version with plug-in connectors. Maximum compactness.
- Optoinsulated inputs to ensure best EM noise immunity.
- External fans not needed.
- Coupling with stepping motors rated for high voltage and equivalent or bigger than NEMA 34 is mandatory.
- UL/CSA certified.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS



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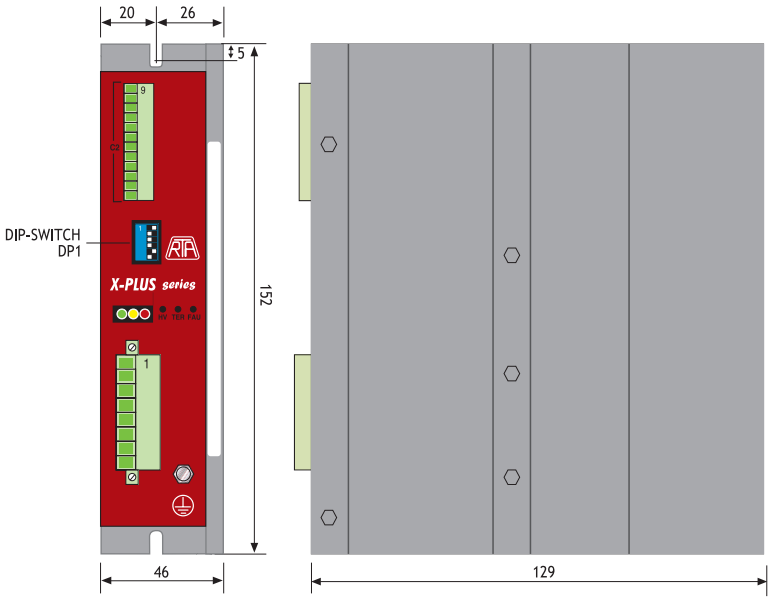
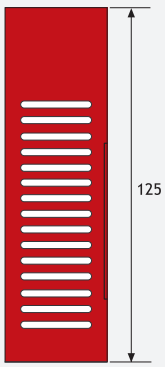
MECHANICAL DIMENSIONS



X-PLUS C4.1 HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

X-PLUS RS4 Series Drives

Step-Dir EVOLUTION + ANALOG IN ±10 V

INTRODUCTION

- X-Plus RS4 is a new model of RTA flagship high-power stepping motor drive with Step & Direction and Analog Input interface.
- The embedded Auto-Sync function with encoder enhances the drive features and optimizes the motor performances.
- Also available with Modbus RTU interface.

HIGHLIGHTS

- Embedded Auto-Sync function with encoder, featuring a closed loop positioning.
- Easy parameter setting via DIP switches.
- Modes of operation: STEP&DIR or Analog Input velocity setpoint (± 10 V) for application where SPEED CONTROL is needed.
- Integrated system for back EMF energy dissipation with optional external resistor.
- LED diagnostic function.
- Zero index searching function.
- Encoder signal output functionality included.

AUTO SYNC FUNCTION

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3-PIe
- Error Detection Monitor (EDM) output

SIL3 SAFE TORQUE OFF (STO)

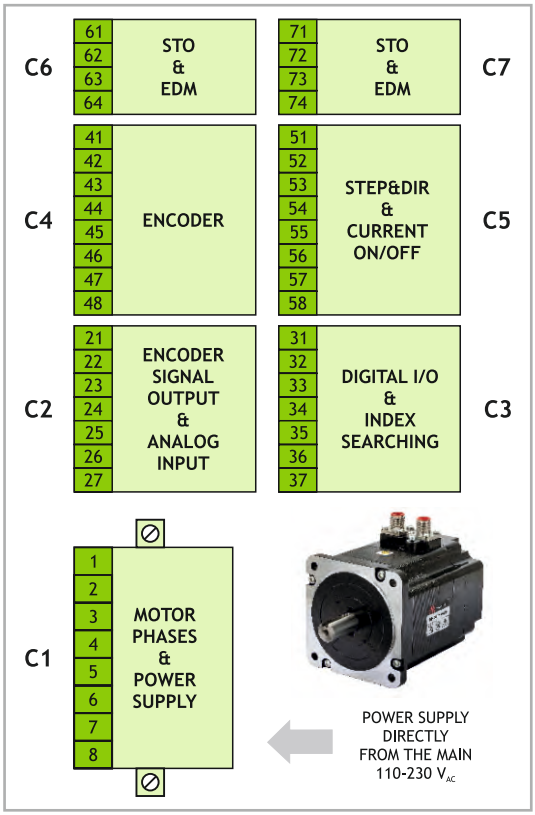
ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-PLUS	RS4	110 to 230 +/- 15%	1.2	4.8	169x129x46

TECHNICAL FEATURES

- Range of operating nominal voltage: 110-230 V_{AC}.
- Range of current motor settings: 1.2-4.8 A.
  Setting up to four possible values by means of dip-switches.
- Microstepping: 1600, 3200, 6400 and 12800 steps/revolutions
  Setting by means of dip-switches.
- Various encoder resolution available.
- Automatic current reduction at motor standstill.
- Protections:
  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
  -Open motor/encoder phase.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Easy wiring with plug-in connectors .
  Maximum compactness.
- Optoinsulated digital I/O to ensure best EM noise immunity.
- Coupling with stepping motors rated for high insulation is mandatory.
- Warranty: 24 months.

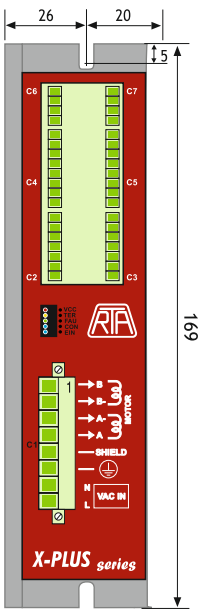
POWER AND LOGIC CONNECTIONS

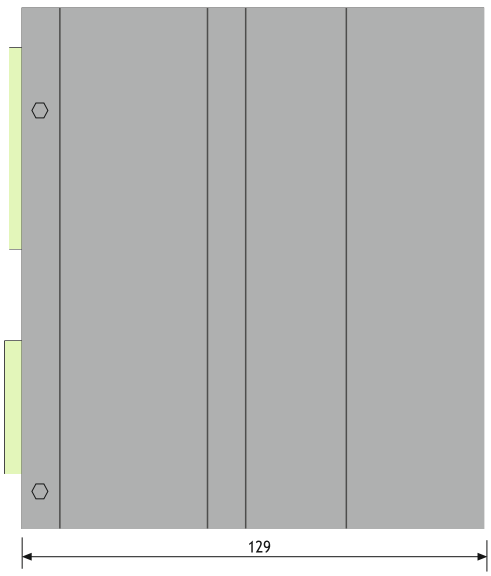


SCAN THE QR CODE TO WATCH A VIDEO ON THE AUTO-SYNC FUNCTION

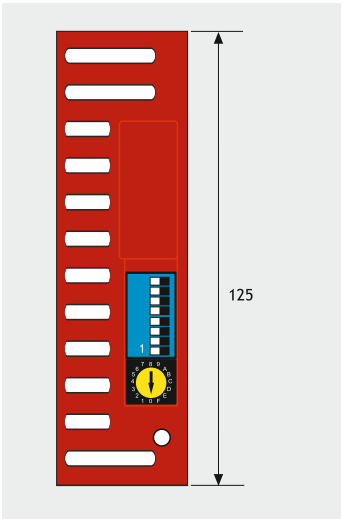
AUTO SYNC FUNCTION

MECHANICAL DIMENSIONS





X-PLUS RS4 HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

X-Plus MS4 & X-Plus MS4.P
Series Drives

INTRODUCTION

- X-Plus MS4 is a new model of RTA flagship high-power stepping motor drive with STEP&DIR, Analog Input and Modbus RTU RS-485 interface.
- Embedded Auto-Sync and Auto-Feed functions with encoder, featuring a closed loop positioning and motor performance optimization.

Step-Dir EVOLUTION + ANALOG IN ±10 V + Modbus RTU

AUTO FEED FUNCT

AUTO SYNC FUNCTION

AUTO-FEED

AUTO-FEED is a closed loop function with:

- Very simple tuning
- Lower power consumption and heating

MODBUS RTU MAIN FUNCTIONS

- Homing, Position and Velocity mode
- Registers for diagnostics

Modbus RTU

X-Plus MS4.P *programmable version*

- For simple, single-axis applications
- Possibility to load and execute a single-task program

</>.P

HIGHLIGHTS

- 3 Current Control modes available: Open Loop, Auto-Sync and Auto-Feed.
- Configuration settings, diagnostics and setup via RTA STUDIO for Windows®.
- Extended interfaces: STEP&DIR, Analog Input velocity setpoint (± 10 Volt) and Modbus RTU.
- Integrated system for back EMF energy dissipation with optional external resistor.
- Zero index, Proximity Switch and Hard Stop searching function.
- Replied encoder signal output.

STO FUNCTION FEATURES

- Safe Torque Off (STO) function - SIL3-PIe
- Error Detection Monitor (EDM) output

SIL3 SAFE TORQUE OFF (STO)

ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

Series	Model	V_{AC} range	I nom.	I boost	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-PLUS	MS4 / MS4.P	110 to 230 +/- 15%	4.8	6.0	169x129x46

TECHNICAL FEATURES

- Range of operating nominal voltage: 110-230 V_{AC}.
- Up to 6.0 Amps motor current setting.
- RS-485 baud rate up to 256000.
- Microstepping: 400, 800, 1600, 3200, 6400 and 12800 steps/revolutions.
- Various encoder resolution available.
- INPUT and OUTPUT configurable.
- Protections:

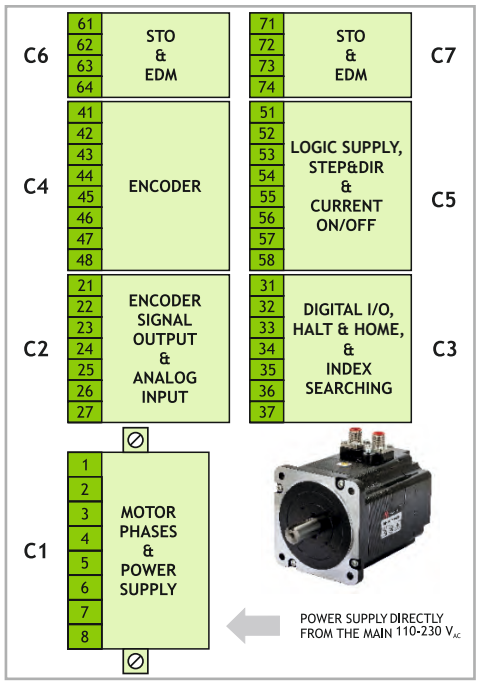
  -Protection against under-voltage and over-voltage
  -Protection against a short-circuit at motor outputs
  -Overtemperature protection with thermal sensor
  -Open motor/encoder phase.
- Automatic current reduction at motor standstill.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Easy wiring with plug-in connectors. Maximum compactness.
- Optoinsulated digital I/O to ensure best EM noise immunity.
- Coupling with stepping motors rated for high insulation is mandatory.
- Warranty: 24 months.

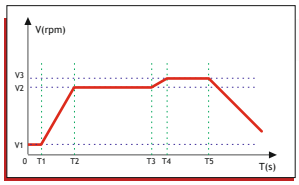
AUTO FEED FUNCTION

AUTO SYNC FUNCTION

WARRANTY 2 YEARS GARANZIA

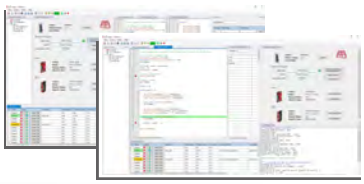
POWER AND LOGIC CONNECTIONS



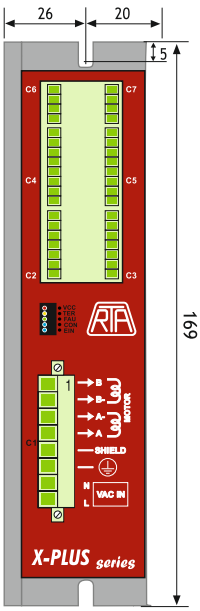


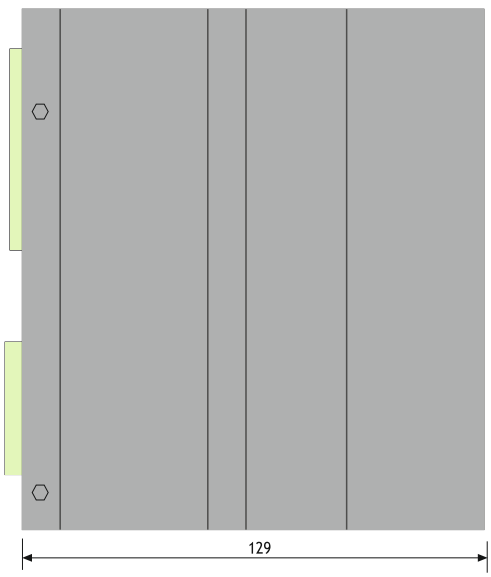
.P drives Motion Profile example

Programmable through RTA Studio IDE

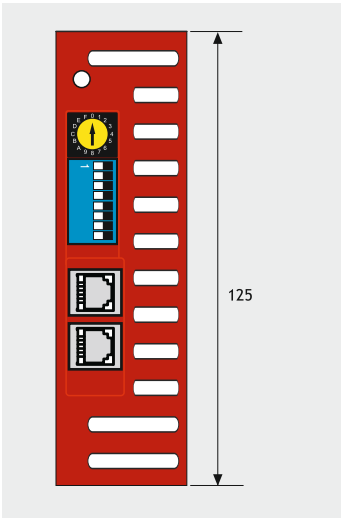


MECHANICAL DIMENSIONS





X-PLUS MS4 HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

X-Plus AS4 & X-Plus AS4.P
Series Drives

INTRODUCTION

- X-Plus AS4 is a new model of RTA flagship high-power stepping motor drive with STEP&DIR, Analog Input (± 10 Volt) and Modbus RTU RS-485 interface.
- Embedded Auto-Sync and Auto-Feed functions with absolute encoder, featuring a closed loop positioning and motor performance optimization.

HIGHLIGHTS

- 3 Current Control modes available: Open Loop, Auto-Sync and Auto-Feed.
- Configuration settings, diagnostics and setup via RTA STUDIO for Windows®.
- Integrated system for back EMF energy dissipation with optional external resistor.

ABSOLUTE ENCODER MANAGEMENT

- High-precision positioning enabled by battery-less absolute encoders for advanced motion control

BATTERY-LESS ABSOLUTE ENCODER

AUTO-FEED

AUTO-FEED is a closed loop function with:
- Very simple tuning
- Lower power consumption and heating

MODBUS RTU MAIN FUNCTIONS

- Homing, Position and Velocity mode
- Registers for diagnostics

X-Plus AS4.P *programmable version*

- For simple, single-axis applications
- Possibility to load and execute a single-task program

Modbus RTU · Step-Dir EVOLUTION · ANALOG IN ±10 V

SIL3 SAFE TORQUE OFF (STO) · AUTO FEED FUNCT · AUTO SYNC FUNCTION

Motor coupling

- RM 3T1M-00HT
- RM 3T2M-00HT
- RM 3T3M-00HT

BATTERY-LESS ABSOLUTE ENCODER

ONE OF THE MOST COMPACT DRIVES WITH POWER INPUT DIRECTLY FROM THE MAIN AC SUPPLY (110 - 230 VAC)

Series	Model	V_{AC} range	I nom.	I boost	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-PLUS	AS4 / AS4.P	110 to 230 +/- 15%	4.8	6.0	169x129x46

TECHNICAL FEATURES

- Range of operating nominal voltage: 110-230 V_{AC}.
- Up to 6.0 Amps motor current setting.
- RS-485 baud rate up to 256000.
- Microstepping: 2048, 4096, 16384 and 65536 steps/revolutions.
- INPUT and OUTPUT configurable.
- Protections:

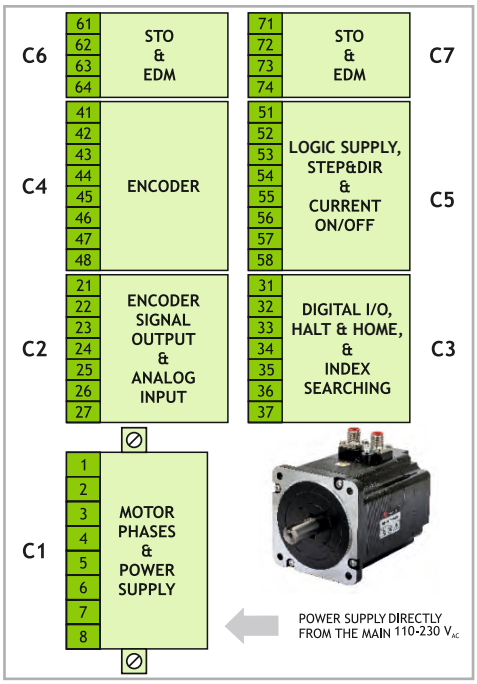
  -Protection against under-voltage and over-voltage
  -Protection against a short-circuit at motor outputs
  -Overtemperature protection with thermal sensor
  -Open motor/encoder phase.
- Automatic current reduction at motor standstill.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction.
- Easy wiring with plug-in connectors. Maximum compactness.
- Optoinsulated digital I/O to ensure best EM noise immunity.
- Coupling with stepping motors rated for high insulation is mandatory.
  RTA codes: RM 3TxM-00HT x=1, 2, 3
- Warranty: 24 months.

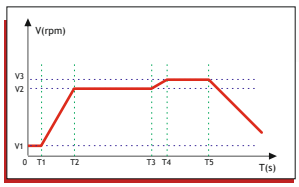
AUTO FEED FUNCTION

AUTO SYNC FUNCTION

WARRANTY 2 YEARS GARANZIA

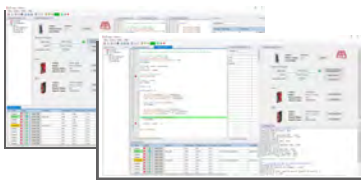
POWER AND LOGIC CONNECTIONS



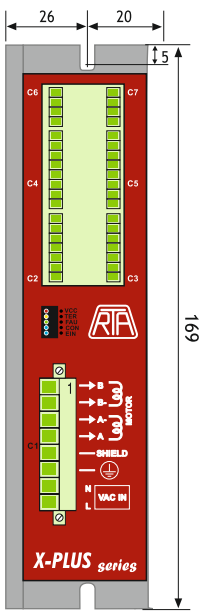


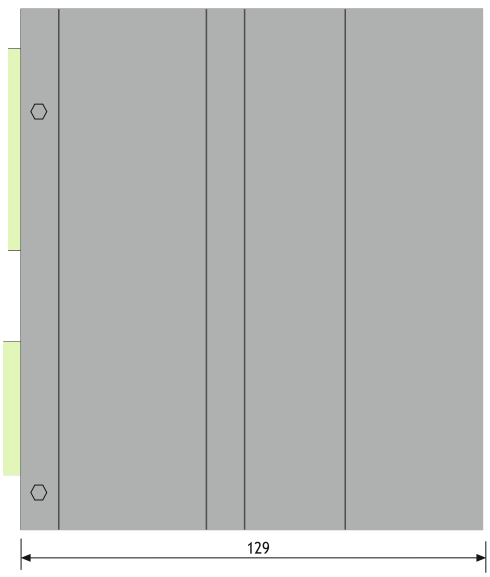
.P drives Motion Profile example

Programmable through RTA Studio IDE

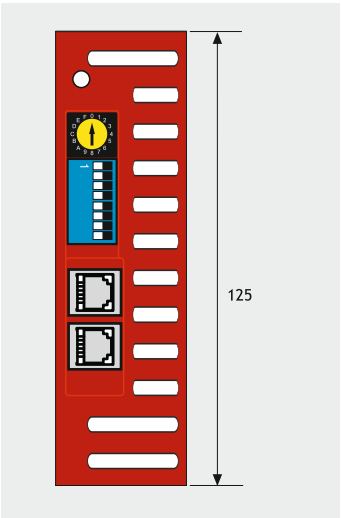


MECHANICAL DIMENSIONS





X-PLUS AS4 HIGH SIDE VIEW



Dimensions in millimeters - Not in scale.

STEP & DIRECTION - NOT PREFERRED MODELS

	DRIVE TYPE	VOLTAGE RANGE (V)	PHASE CURRENT RANGE (A)	SUGGESTED MOTORS (Flange size)
CSD 02	STEP / DIR	24 - 48 VDC	0.7 - 2.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD 02.V	STEP / DIR	24 - 48 VDC	0.7 - 2.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD 04	STEP / DIR	24 - 48 VDC	2.6 - 4.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD 04.V	STEP / DIR	24 - 48 VDC	2.6 - 4.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD12	STEP / DIR	24 - 48 VDC	0.7 - 2.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD12.V	STEP / DIR	24 - 48 VDC	0.7 - 2.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD14	STEP / DIR	24 - 48 VDC	2.6 - 4.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD14.V	STEP / DIR	24 - 48 VDC	2.6 - 4.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD 92	STEP / DIR	24 - 48 VDC	0.7 - 2.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
CSD 94	STEP / DIR	24 - 48 VDC	2.6 - 4.4	NEMA 11, NEMA 17, NEMA 23, 60 mm
NDC 04	STEP / DIR	24 - 75 VDC	0.6 - 2.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
NDC 04.V	STEP / DIR	24 - 75 VDC	0.6 - 2.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
NDC 06	STEP / DIR	24 - 75 VDC	1.9- 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
NDC 06.V	STEP / DIR	24 - 75 VDC	1.9- 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
NDC 94	STEP / DIR	24 - 75 VDC	0.6 - 2.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
NDC 96	STEP / DIR	24 - 75 VDC	1.9- 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
SAC 25	STEP / DIR	24 - 50 VAC	1.7 - 3.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
SAC 26	STEP / DIR	25 - 50 VAC	3.4 - 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS A3	STEP / DIR	39 - 85 VDC	2.4 - 8.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS A4	STEP / DIR	77 - 140 VDC	1.9 - 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS B3	STEP / DIR	28 - 62 VAC	2.4 - 8.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS B4	STEP / DIR	55 - 100 VAC	1.9 - 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS B7	STEP / DIR	28 - 62 VAC	3.0 - 10.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS E3	STEP / DIR	28 - 62 VAC	2.4 - 8.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
PLUS E4	STEP / DIR	55 - 100 VAC	1.9 - 6.0	NEMA 17, NEMA 23, 60 mm, NEMA 34
X-PLUS B4	STEP / DIR	110- 230 VAC (direct from the main)	2.4 - 4.0	NEMA 34 (High Voltage)
X-PLUS S4	STEP / DIR	110- 230 VAC (direct from the main)	2.4 - 4.0	NEMA 34 (High Voltage)
X-PLUS C4	STEP / DIR	110- 230 VAC (direct from the main)	2.4 - 4.0	NEMA 34 (High Voltage)
X-MIND B2	STEP / DIR	110- 230 VAC (direct from the main)	1.13 - 2.0	NEMA 34 (High Voltage)
X-MIND B4	STEP / DIR	110- 230 VAC (direct from the main)	2.3 - 4.0	NEMA 34 - NEMA 42 (High Voltage)
X-MIND B6	STEP / DIR	110- 230 VAC (direct from the main)	3.4 - 6.0	NEMA 34 - NEMA 42 (High Voltage)
HI-MOD B	STEP / DIR	32 - 75 VDC	Value set by R.T.A.	NEMA 34
GAC03	EUROCARD	42- 62 VAC	4.0 - 10.0	NEMA 23, 60 mm, NEMA 34

	DRIVE TYPE	VOLTAGE RANGE (V)	PHASE CURRENT RANGE (A)	SUGGESTED MOTORS (Flange size)
GAC04	EUROCARD	69 - 100 VAC	5.0 - 12.0	NEMA 23, 60 mm, NEMA 34
GMH 05	EUROCARD	55 - 85 VDC	1.6 - 3.0	NEMA 23, 60 mm, NEMA 34
GMH 06	EUROCARD	55 - 85 VDC	3.5 - 6.0	NEMA 23, 60 mm, NEMA 34
GMH 07	EUROCARD	55 - 85 VDC	7.0 - 12.0	NEMA 23, 60 mm, NEMA 34
GMH 09	EUROCARD	100 - 180 VDC	7.0 - 12.0	NEMA 23, 60 mm, NEMA 34
GMD 02	EUROCARD	55 - 85 VDC	1.6 - 6.0	NEMA 23, 60 mm, NEMA 34
GMD 03	EUROCARD	55 - 85 VDC	4.0 - 10.0	NEMA 23, 60 mm, NEMA 34
GMD 04	EUROCARD	95 - 140 VDC	5.0 - 12.0	NEMA 23, 60 mm, NEMA 34
GMD 06	EUROCARD	160 - 190 VDC	5.0 - 12.0	NEMA 23, 60 mm, NEMA 34
MIND A3	STEP / DIR	55 - 85 VDC	5.7 - 10.0	60 mm, NEMA 34
MIND A4	STEP / DIR	95 - 140 VDC	4.55 - 8.0	60 mm, NEMA 34
MIND A5	STEP / DIR	120 - 180 VDC	6.7 - 12.0	NEMA 34
MIND B2	STEP / DIR	55 - 85 VDC	2.3 - 4.0	NEMA 23, 60 mm, NEMA 34
MIND B3	STEP / DIR	55 - 85 VDC	5.7 - 10.0	NEMA 23, 60 mm, NEMA 34
MIND B4	STEP / DIR	95 - 140 VDC	4.5 - 8.0	NEMA 23, 60 mm, NEMA 34
MIND B5	STEP / DIR	120 - 180 VDC	6.7 - 12.0	NEMA 34
FFM01	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.
FFM02	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.
FFM04	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.
FFM05	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.
OFM30	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.
OFM60	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.
RMM36	OPTIONAL CARD	/ /	/ /	GAC, GMH, GMD Series.

"Not preferred models" are models which have been replaced with the latest versions. They are still available in R.T.A.'s stock, however they are not recommended for new applications.

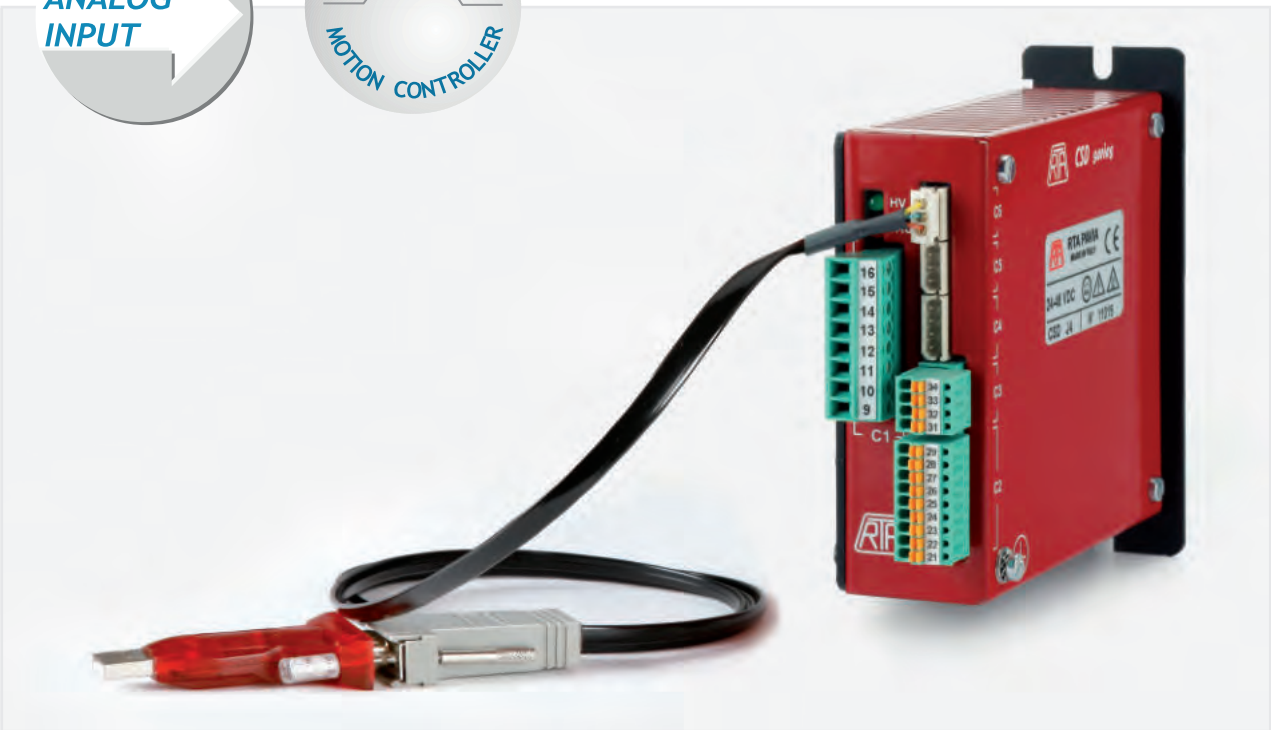
STEPPING MOTOR DRIVES

PROGRAMMABLE

CSD J Series Drives

ANALOG INPUT

PROGRAMMABLE MOTION CONTROLLER



INTRODUCTION

- Series of ministep bipolar chopper drives with an on-board programmable motion controller that can be used:
  - for the interfacing, through RS485 serial line, with a central control system
  - as an independent unit.
- Presence of a dedicated analog input for the setting of motor target speed.
- Target: low-power applications needing a programmable motion controller with small size motors.

HIGHLIGHTS

- Microstepping function up to 4.000 step/rev.
- Setting of the motor target speed sampled at the beginning of the motion sequence (before motor starts running).
- Programmable motion controller allowing the connection up to 48 drives on a single serial line.
- External fans not needed: ideal both for mounting inside a metallic electrical cabinet and for stand-alone applications.

Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
CSD	J2	24 to 48	1.2	2.1	90x99x30
CSD	J4	24 to 48	2.6	4.4	90x99x30

TECHNICAL FEATURES

- Range of operating voltage: 24-48 $V_{DC.}$
- Range of current: 1.2-4.4 A. Setting up to four possbile values by means of a serial line.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps/revolution. Setting by means of a serial line.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection with thermal sensor.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- Optoinsulated inputs compatible with Pull-Up or Pull-Down command signals.
- Version: boxed, equipped with crimp-type connectors. Maximum compactness.
- Warranty: 24 months.

ANALOG INPUT TO CONTROL MOTOR SPEED

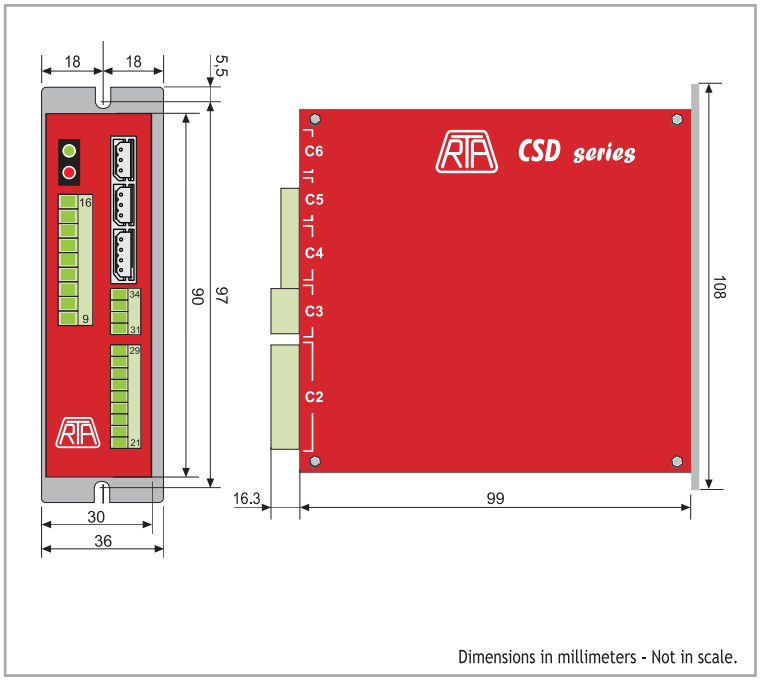
- Target speed setting by means of analog input sampled at the beginning of the motion sequence (before motor starts running).
- Input setting: 0-5 V_{DC} or 0-10 V_{DC}
- Frequency range:

  - 3000 Hz- 48000 Hz (with ramp)
  - 0 Hz-4100 Hz or 0 Hz-510 Hz (without ramp)
- Possibility of matching with potentiometers of 2.2 KOhm.

PROGRAMMABLE MOTION CONTROLLER

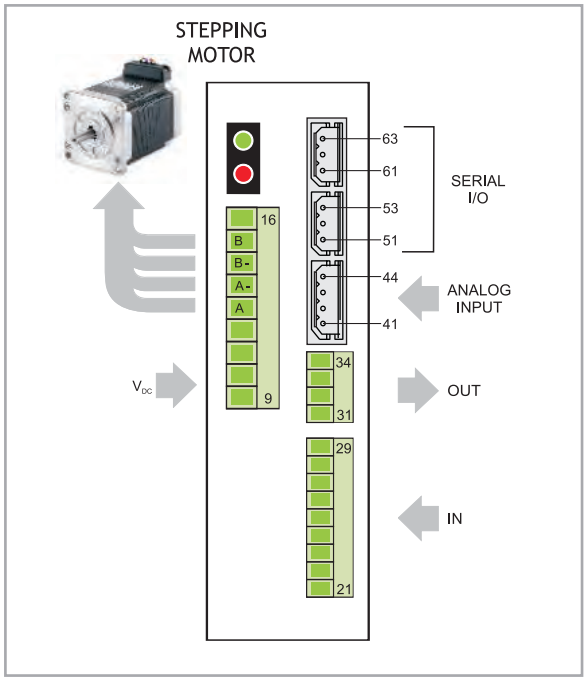
- Communication through RS485 serial line; up to 48 drives can be connected on a single serial line. One instruction can be broadcasted to all drives.
- Various types of available instructions, as for example: indexed run with ramp, free run with ramp, indexed run without ramp, run with a programmable braking distance, zero research. Space can be programmed in relative or absolute mode (linear or circular).
- Number of steps for indexed ramp up to ± 8.338.607 in relative or absolute mode, speed from 1 to 24.000 Hz in standard resolution and from 1 to 48.000 Hz in high resolution, ramp times from 16 to 1440 msec.
- Availability of instructions to develop motion programs as, for example: conditional jump, time delay, program block and recovery, I/O management, FOR NEXT loop.
- Possibility to control the execution of 8 previously stored motion programs through hardware inputs. Accordingly, the drive can be used in stand-alone applications, without serial connection.
- 8 inputs and 3 outputs, all optically insulated. Among them 1 input and 1 output are freely programmable.
- Memory of 128 instructions kept also at drive switched-off and three run time instructions.
- A utility working in Windows® is available in order to ease motion programs development by the user.

MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

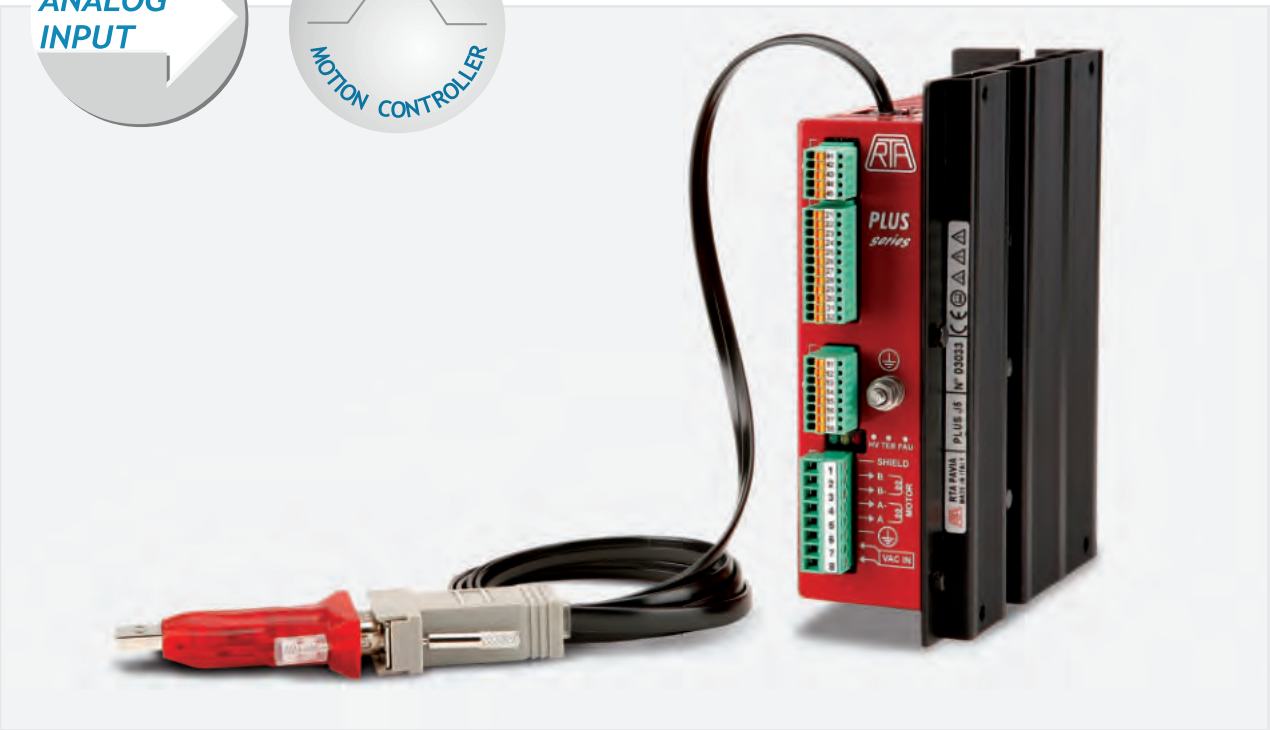
POWER AND LOGIC CONNECTIONS



PLUS J Series Drives

ANALOG INPUT

PROGRAMMABLE MOTION CONTROLLER



INTRODUCTION

- Series of ministep bipolar chopper drives with an on-board programmable motion controller that can be used:
  - for the interfacing, through RS485 serial line, with a central control system
  - as an independent unit.
- Presence of a dedicated analog input for the setting of motor target speed.
- Target: medium power applications needing AC power supply and a programmable motion controller.

HIGHLIGHTS

- Microstepping function up to 4.000 step/rev.
- Setting of the motor target speed sampled at the beginning of the motion sequence (before motor starts running).
- Programmable motion controller allowing connection up to 48 drives on a single serial line.
- External fans not needed: ideal both for mounting inside a metallic electrical cabinet and for stand-alone applications.

Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
PLUS	J5	28 to 62	4.4	8.0	152x129x46

TECHNICAL FEATURES

- Range of operating voltage: 28-62 $V_{AC.}$
- Range of current: 4.4-8.0 Amp. Setting up to four possible values by means of a serial line.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps/revolution. Setting by means of a serial line.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- Optoinsulated inputs compatible with Pull-Up or Pull-Down command signals.
- External fans not needed.
- Version: boxed, equipped with crimp-type connectors. Maximum compactness.

ANALOG INPUT TO CONTROL MOTOR SPEED

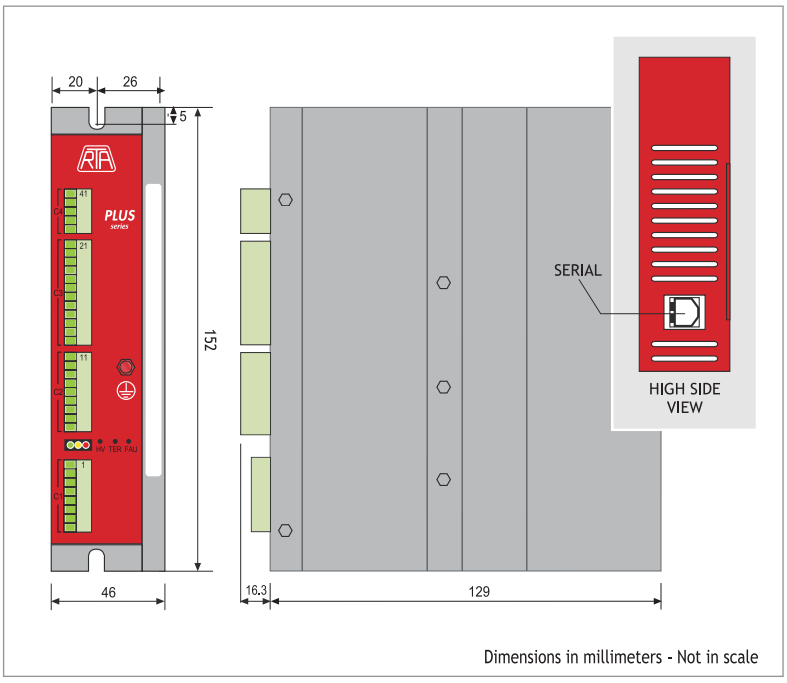
- Target speed setting by means of analog input sampled at the beginning of the motion sequence (before motor starts running).
- Input setting: 0-5 V_{DC} or 0-10 V_{DC}
- Frequency range:

  - 3000 Hz- 48000 Hz (with ramp)
  - 0 Hz-4100 Hz or 0 Hz-510 Hz (without ramp)
- Possibility of matching with potentiometers of 2.2 KOhm.

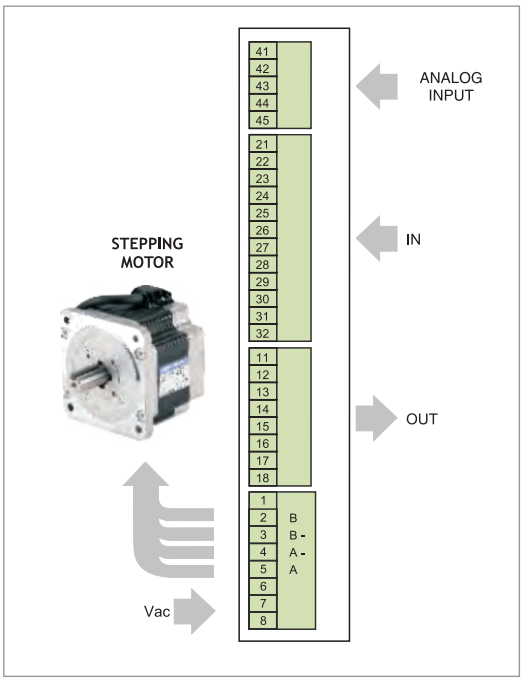
PROGRAMMABLE MOTION CONTROLLER

- Communication through RS485 serial line; up to 48 drives can be connected on a single serial line. One instruction can be broadcasted to all drives.
- Various types of available instructions, as for example: indexed run with ramp, free run with ramp, indexed run without ramp, run with a programmable braking distance, zero research. Space can be programmed in relative or absolute mode (linear or circular).
- Number of steps for indexed ramp up to ± 8.338.607 in relative or absolute mode, speed from 1 to 24.000 Hz in standard resolution and from 1 to 48.000 Hz in high resolution, ramp times from 16 to 1440 msec.
- Availability of instructions to develop motion programs as, for example: conditional jump, time delay, program block and recovery, I/O management, FOR NEXT loop.
- Possibility to control the execution of 16 previously stored motion programs through hardware inputs. Accordingly, the drive can be used in stand-alone applications, without serial connection.
- 11 inputs and 6 outputs, all optically insulated. Among them 3 inputs and 4 outputs are freely programmable.
- Memory of 128 instructions kept also at drive switched-off and three run time instructions.
- A utility working in Windows® is available in order to ease motion programs development by the user.
- Alarm memory by use of yellow blinking led.

MECHANICAL DIMENSIONS

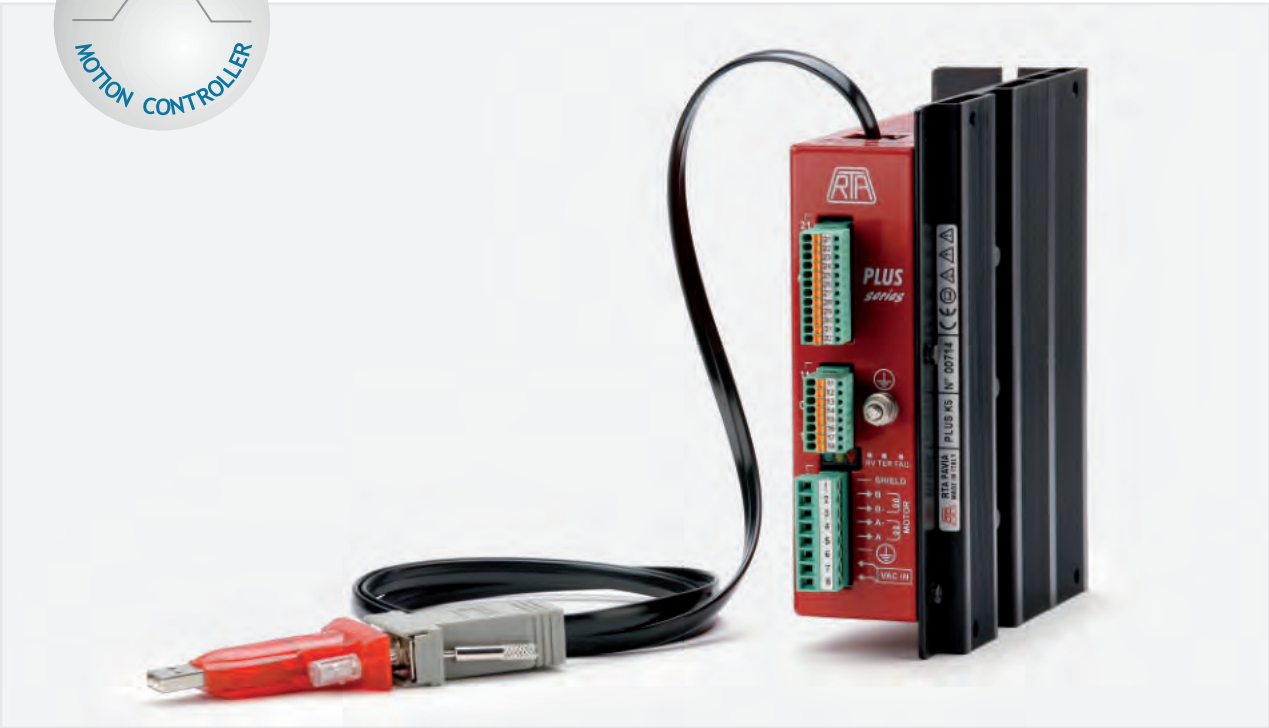


POWER AND LOGIC CONNECTIONS



PLUS K Series Drives

PROGRAMMABLE MOTION CONTROLLER



INTRODUCTION

- Series of ministep bipolar chopper drives with an on-board programmable motion controller that can be used:
  - for the interfacing, through RS485 serial line, with a central control system
  - as an independent unit.
- Compact system equipped with dedicated instructions optimized for advanced motion control applications.
- Target: medium power applications needing AC power supply and a programmable motion controller.

HIGHLIGHTS

- Microstepping function up to 4.000 step/rev.
- Communication through RS485 serial line.
- Programmable motion controller allowing connection up to 48 drives on a single serial line.
- External fans not needed: ideal both for mounting inside a metallic electrical cabinet and for stand-alone applications.

Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
PLUS	K4	55 to 100	3.4	6.0	152x129x46
PLUS	K5	28 to 62	4.4	8.0	152x129x46

TECHNICAL FEATURES

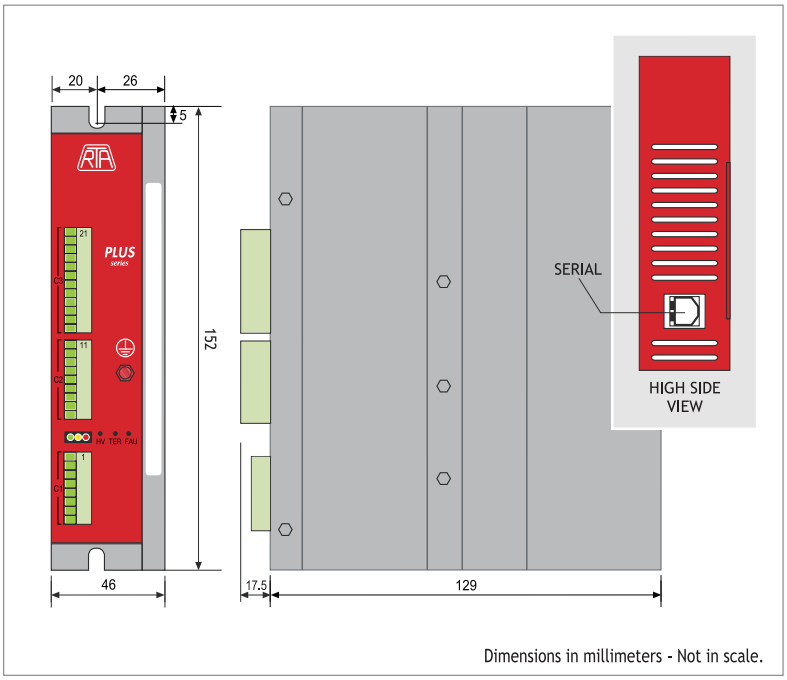
- Range of operating voltage: 28-100 $V_{AC.}$
- Range of current: 3.4-8.0 Amp. Setting up to four possible values by means of a serial line.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps/revolution. Setting by means of a serial line.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- Optoinsulated inputs.
- External fans not needed.
- Version: boxed, equipped with crimp-type connectors. Maximum compactness.
- Warranty: 24 months.

PROGRAMMABLE MOTION CONTROLLER

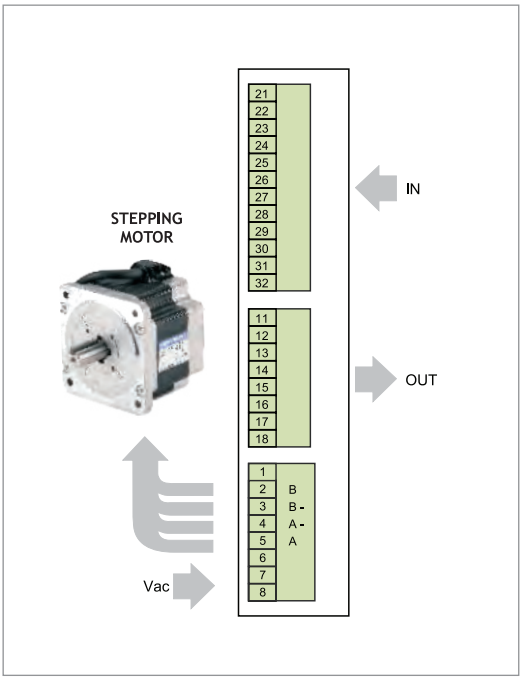
- Communication through RS485 serial line; up to 48 drives can be connected on a single serial line. One instruction can be broadcasted to all drives.
- Various types of available instructions, as for example: indexed run with ramp, free run with ramp, indexed run without ramp, run with a programmable braking distance, zero research. Space can be programmed in relative or absolute mode (linear or circular).
- Number of steps for indexed ramp up to ± 8.338.607 in relative or absolute mode, speed from 1 to 24.000 Hz in standard and increased resolution, ramp times from 16 to 1440 msec.
- Availability of instructions to develop motion programs as, for example: conditional jump, time delay, program block and recovery, I/O management, FOR NEXT loop.
- Possibility to control the execution of 16 previously stored motion programs through hardware inputs. Accordingly, the drive can be used in stand-alone applications, without serial connection.
- 11 inputs and 6 outputs, all optically insulated. Among them 3 inputs and 4 outputs are freely programmable.
- Memory of 128 instructions kept also at drive switched-off and three run time instructions.
- A utility working in Windows® is available in order to ease motion programs development by the user.
- Alarm memory by use of yellow blinking led.

MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

POWER AND LOGIC CONNECTIONS



X-MIND K Series Drives

PROGRAMMABLE MOTION CONTROLLER

INTRODUCTION

- Series of ministep bipolar chopper drives with direct input from the main AC power supply (110-230 VAC) and an on-board programmable motion controller that can be used:
  - for the interfacing, through RS485 serial line, with a central control system
  - as an independent unit.
- Compact system equipped with dedicated instructions optimized for advanced motion control applications.
- Target: advanced applications requiring direct input from the main power supply and a programmable motion controller.

HIGHLIGHTS

- Microstepping function up to 4.000 step/rev.
- Communication through RS485 serial line.
- Programmable motion controller allowing connection up to 48 drives on a single serial line.
- External fans not needed: ideal both for mounting inside a metallic electrical cabinet and for stand-alone applications.

Series	Model	V_{AC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Amp)	(Amp)	(mm)
X-MIND	K4	110 to 230 +/-15%	2.3	4.0	180x173x53
X-MIND	K6	110 to 230 +/-15%	3.4	6.0	180x173x53

TECHNICAL FEATURES

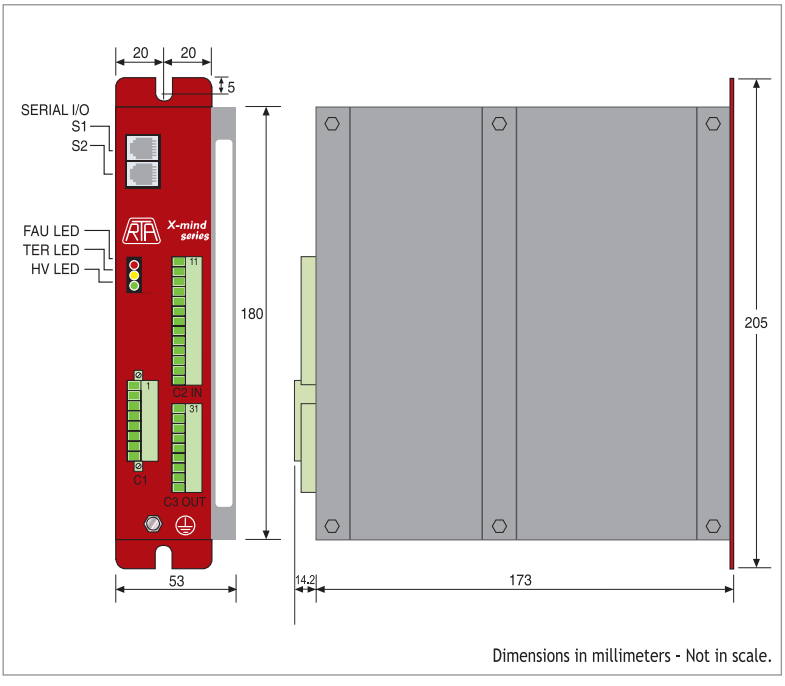
- Range of operating voltage: 110-230 $V_{AC.}$
- Range of current: 2.3-6.0 Amp. Setting up to four possible values by means of a serial line.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps/revolution. Setting by means of a serial line.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtemperature protection.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- External fans not needed.
- Coupling with stepping motors rated for high voltage and equivalent or bigger than NEMA 34 is mandatory.
- Version: boxed, equipped with crimp-type connectors. Maximum compactness.
- Warranty: 24 months.

PROGRAMMABLE MOTION CONTROLLER

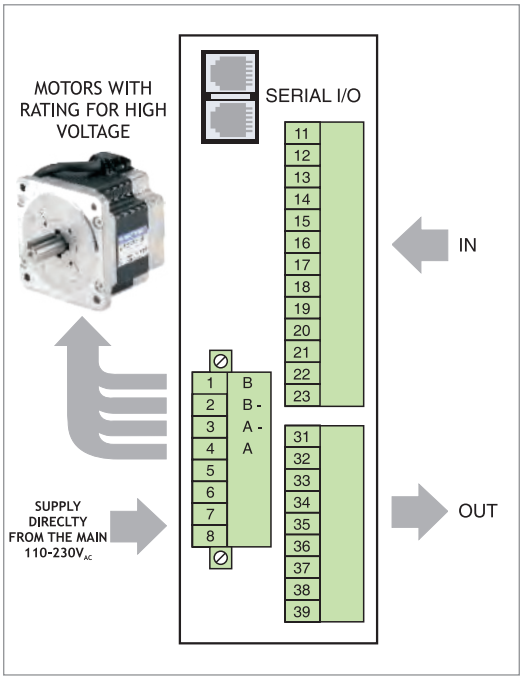
- Communication through RS485 serial line; up to 48 drives can be connected on a single serial line. One instruction can be broadcasted to all drives.
- Various types of available instructions, as for example: indexed run with ramp, free run with ramp, indexed run without ramp, run with a programmable braking distance, zero research. Space can be programmed in relative or absolute mode (linear or circular).
- Number of steps for indexed ramp up to ± 8.338.607 in relative or absolute mode, speed from 1 to 24.000 Hz in standard and increased resolution, ramp times from 16 to 1440 msec.
- Availability of instructions to develop motion programs as, for example: conditional jump, time delay, program block and recovery, I/O management, FOR NEXT loop.
- Possibility to control the execution of 16 previously stored motion programs through hardware inputs. Accordingly, the drive can be used in stand-alone applications, without serial connection.
- 11 inputs and 6 outputs, all optically insulated. Among them 3 inputs and 4 outputs are freely programmable.
- Memory of 128 instructions kept also at drive switched-off and three run time instructions.
- A utility working in Windows® is available in order to ease motion programs development by the user.

MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

POWER AND LOGIC CONNECTIONS



PROGRAMMABLE - NOT PREFERRED MODELS				
	DRIVE TYPE	VOLTAGE RANGE (V)	PHASE CURRENT RANGE (A)	SUGGESTED MOTORS (Flange size)
MIND T2	PROGRAMMABLE	55 - 85 VDC	2.3 - 4.0	NEMA 23, 60 mm, NEMA 34
MIND T3	PROGRAMMABLE	55 - 85 VDC	5.7 - 10.0	NEMA 23, 60 mm, NEMA 34
MIND T4	PROGRAMMABLE	95 - 140 VDC	4.5 - 8.0	NEMA 34
MIND T5	PROGRAMMABLE	120 - 180 VDC	6.7 - 12.0	NEMA 34

"Not preferred models" are models which have been replaced with the latest versions. They are still available in R.T.A.'s stock, however they are not recommended for new applications.

STEPPING MOTOR DRIVES

ANALOG INPUT

ADW Series Drives

ANALOG INPUT

ADW 96

ADW 06

ADW 06.V

INTRODUCTION

- ADW is the new R.T.A. electronic drive designed for all applications where accurate SPEED CONTROL is needed.
- The motor velocity can be regulated in 3 ways:
  - Analog voltage input
  - External potentiometer
  - Internal speed settings
- The extended ADW power range (24-75 V_{DC}, 0.65 - 6.0 A) and its versatility (four Modes of Operation) allow to access to a wide variety of application fields.

HIGHLIGHTS

- Any speed-regulated applications with variable or pre-set velocity setting.
- Conveyors:
  - Single belt transport
  - Multi belt transport with high precision position/speed synchronization.
- Jog or adjustment movements.

MODES OF OPERATION

1 RUN MODE
2 START/STOP MODE
3 CW/CCW (JOG)
4 LIMIT SWITCH MODE

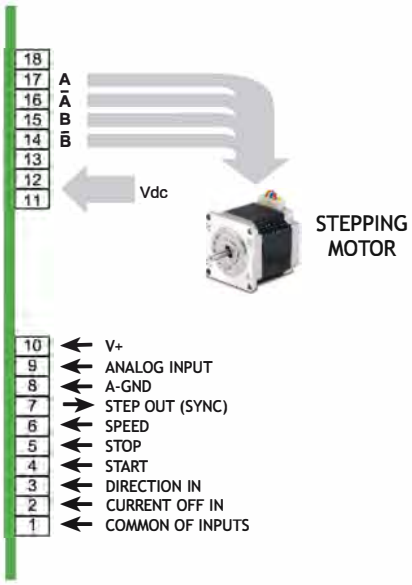
Series	Model	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(V)	(A)	(A)	(mm)
ADW	04 - 04.V*	24 to 75	0.65	2.0	122x94x25
ADW	06 - 06.V*	24 to 75	1.9	6.0	122x94x25
ADW	94	24 to 75	0.65	2.0	129x110x34
ADW	96	24 to 75	1.9	6.0	129x110x34

* ADW 04.V and ADW 06.V versions are equipped with screw-type connectors.

TECHNICAL FEATURES

- Range of operating voltage: 24-75 $V_{DC.}$
- Range of current: 0.65-6 A. Easy setting of values by means of dip-switches.
- Wide speed range: 0.8 rpm to 2,000 rpm. Continuous operation zone up to approx 400 rpm, depending on motor choice.
- 64 internally selectable preset speed.
- 0-5Vdc or 0-10Vdc selectable analog command range.
- Low & High-speed motion profile.
- Adjustable internal acceleration/deceleration ramp.
- Voltage source for potentiometer available at connector.
- "Auto-stop" function.
- All opto-insulated digital inputs.
- *Sync-out* for multi-Axis synchronization.
- Over-voltage, short-circuit and thermal protection.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS



BENEFITS VS. CONVENTIONAL *INVERTERS + AC MOTORS + WORM GEARBOX* SETUP.

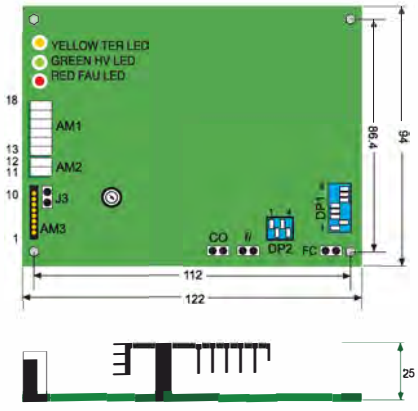
- Broader and more accurate speed range [0.8 rpm to 2,000 rpm]
- Zero-deviation motor speed control at any speed. [motor speed is not affected by variable factors like load, inertia or friction].
- The motors automatically act as brake at zero speed.
- Easy multi-axis synchronization in Position and Speed.
- No need of worm gearbox due to the high-torque at low rotation speed range [0-400 rpm].
- Smaller dimension: overall size < 1/3 compared with traditional AC Asynchronous sets.
- Lower weight.

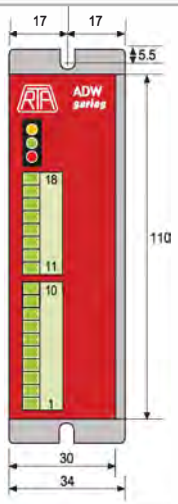
TYPICAL APPLICATION: DIMENSIONAL COMPARISON

Motor volume reduction up to 70%!

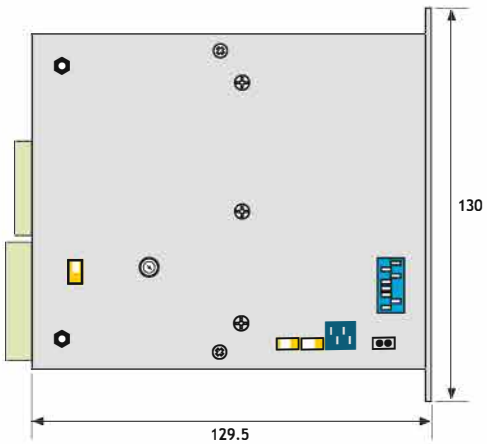
MECHANICAL DIMENSIONS

ADW 04-06





ADW 94-96



Dimensions in millimeters - Not in scale.

STEPPING MOTOR DRIVES

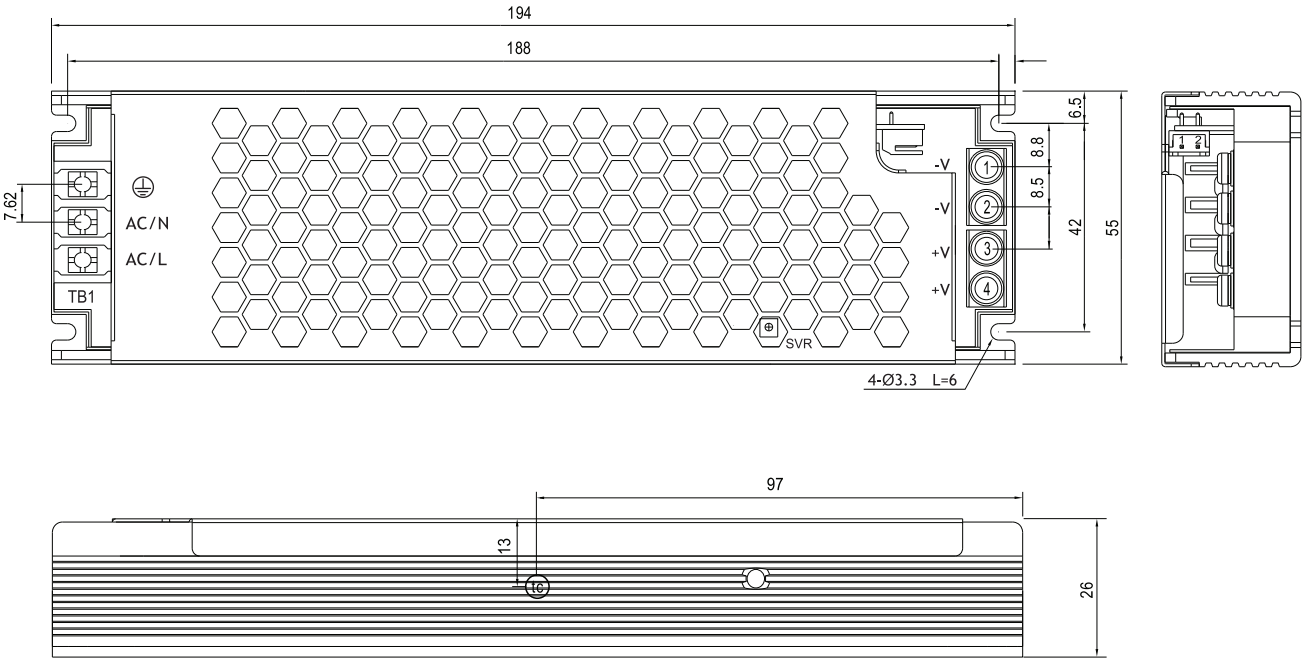
ACCESSORIES - SWITCHING POWER SUPPLIES

R-UHP 200-XX SWITCHING POWER SUPPLY

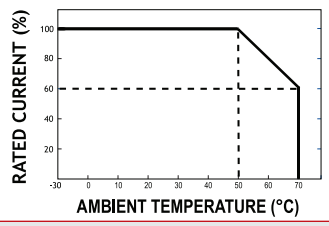
Main Features

- 16.7A output - 12 VDC
  8,4A output - 24 VDC
  4,2A output - 48 VDC
- AC input voltage range: 90~264 VAC
- -30~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- V_{DC_OK} signal active
- Led indicator for power on
- Warranty: 24 months

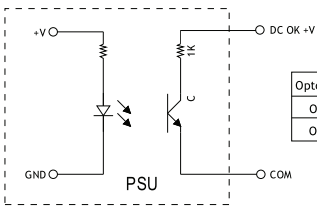
Dimensions (Units:mm)



MORE INFO



DERATING CURVE



Optocoupler C-E Pin Conduction	PSU turns on	DC ok
Optocoupler C-E Pin Open	PSU turns off	DC fail
Optocoupler Rating(max.)	15Vdc/10mA resistive load	

V_{DC_OK} FUNCTION MANUAL

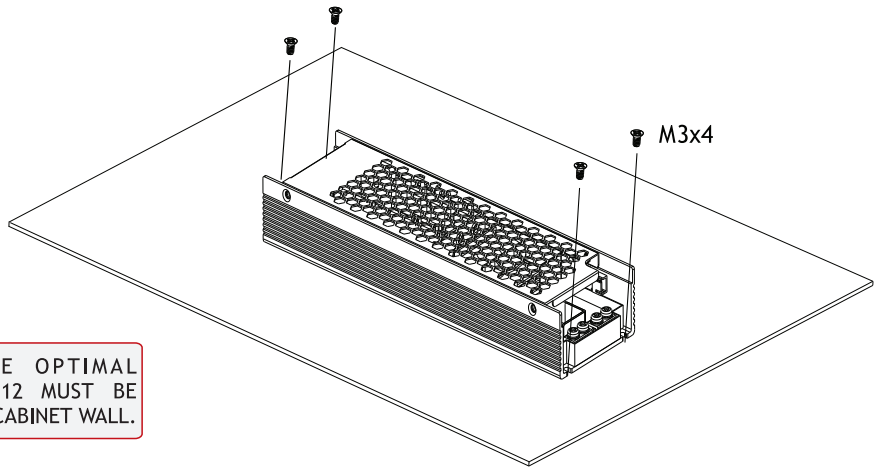
Specifications

MODEL		R-UHP 200-12	R-UHP 200-24	R-UHP 200-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	16.7A	8.4A	4.2A
	RATED POWER (convection)	200.4W	201.6W	201.6W
	VOLTAGE ADJ. RANGE	11.4 ~ 12.6V	22.8 ~ 25.2 V	45.6-50.4V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.3%	±0.3%	±0.3%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	47 ~ 63Hz	47 ~ 63Hz
	EFFICIENCY	93%	94%	94%
	AC CURRENT (Typ.)	2.2A/115VAC 1.1A/230VAC	2.2A/115VAC 1.1A/230VAC	2.2A/115VAC 1.1A/230VAC
PROTECTION	OVERLOAD	110~140% rated output power	110~140% rated output power	110~140% rated output power
		Protection type : Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	13.2 ~ 15.6 V	26.4 ~ 31.2 V	52.8 ~ 62.4V
		Protection type :Shut down O/P voltage,re-power on to recover		
	OVER TEMPERATURE	Protection type :Shut down O/P voltage, recovers automatically after temperature goes down		
FUNCTION	VDC_OK SIGNAL(Optional)	Contact rating(max.):15Vdc/10mA resistive load		
ENVIRONMENT	WORKING TEMP.	-30 ~ +70 (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes		
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL60950-1,TUV EN60950-1,EN60335-1,CCC GB4943, EAC TP TC 004 approved, Design refer to EN61558-1,-2-16		
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C/70%RH		
	EMC EMISSION	Compliance to EN55032,GB9254,Class B, EN55014,EN61000-3-2,-3,EAC TP TC 020		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61000-6-2 (EN50082-2), heavy industry level ,criterial A, EAC TP TC020		
OTHERS	MTBF	257K hrs min. MIL-HD KB217F (25 C)		

NOTE

1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature.
2. Tolerance: includes set up tolerance, line regulation and load regulation.
3. Please check the derating curve for more details.
4. The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m (6500ft).
5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives.

Mounting

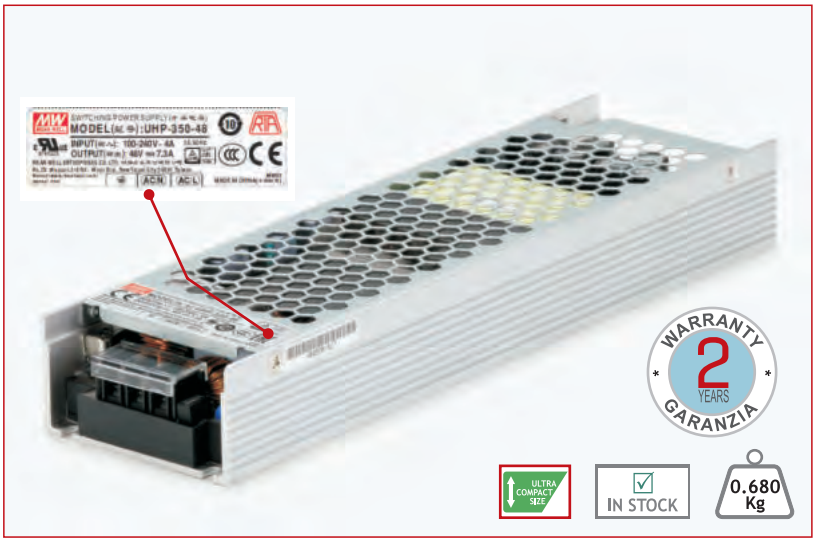


IN ORDER TO ASSURE OPTIMAL DISSIPATION, R-UHP 200-12 MUST BE INSTALLED ON ELECTRICAL CABINET WALL.

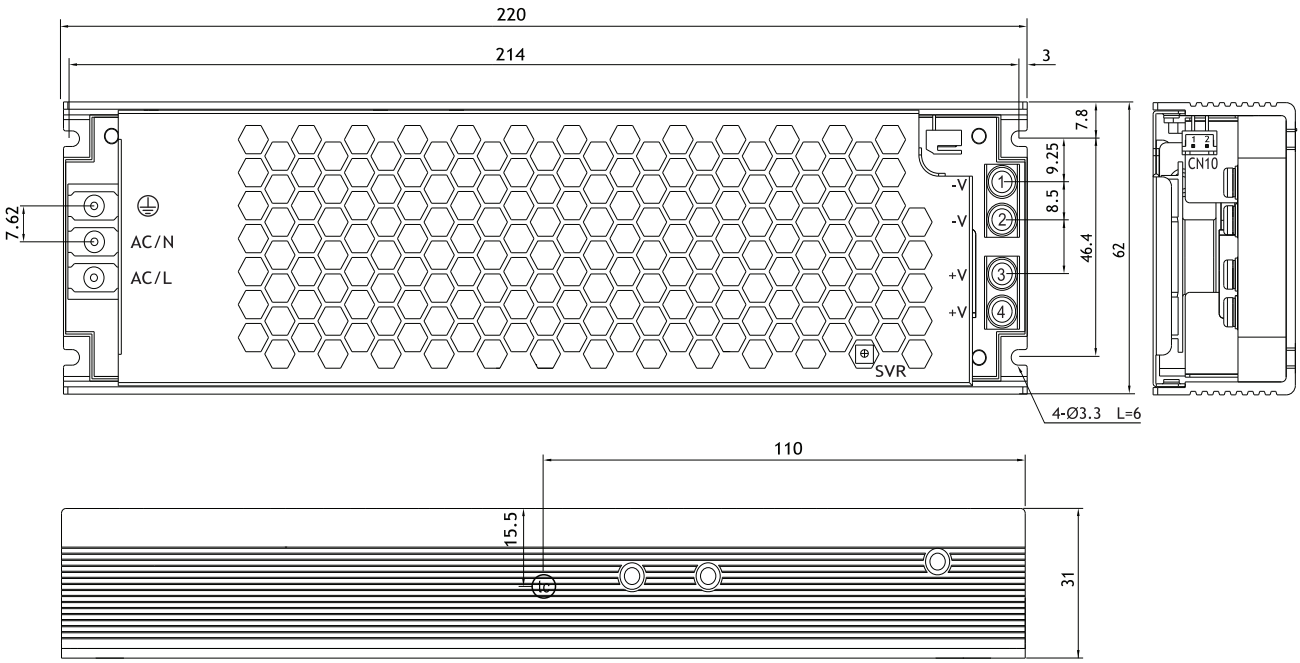
R-UHP 350-XX SWITCHING POWER SUPPLY

Main Features

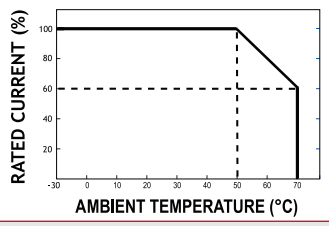
- 29.2 A output - 12 VDC
  14.6 A output - 24 VDC
  7.3 A output - 48 VDC
- AC input voltage range: 90~264 VAC
- -30~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- V_{DC_OK} signal active
- Led indicator for power on
- Warranty: 24 months



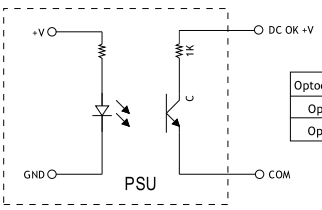
Dimensions (Units:mm)



MORE INFO



DERATING CURVE



Optocoupler C-E Pin Conduction	PSU turns on	DC ok
Optocoupler C-E Pin Open	PSU turns off	DC fail
Optocoupler Rating(max.)	15Vdc/10mA resistive load	

V_{DC_OK} FUNCTION MANUAL

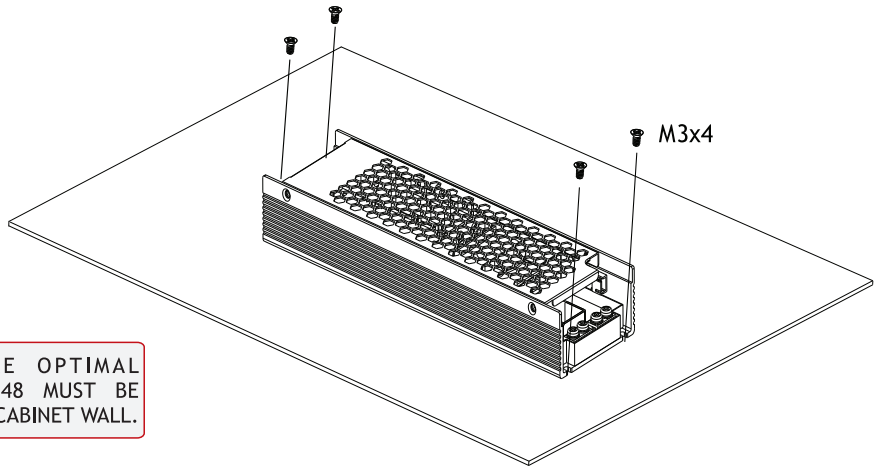
Specifications

MODEL		R-UHP 350-12	R-UHP 350-24	R-UHP 350-48
OUTPUT	DC VOLTAGE	12 V	24V	48V
	RATED CURRENT	29.2 A	14.6 A	7.3A
	RATED POWER (convection)	350.4W	350.4W	350.4W
	VOLTAGE TOLERANCE	±1.0%	±1.0%	±1.0%
	VOLTAGE ADJ. RANGE	11.4~12.6V	22.8~25.2V	45.6~ 50.4V
	LINE REGULATION	±0.3%	±0.3%	±0.3%
	LOAD REGULATION Note.2	±0.5%	±0.5%	±0.5%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	47 ~ 63Hz	47 ~ 63Hz
	EFFICIENCY	91%	94%	94%
	AC CURRENT (Typ.)	4A/115VAC 2A/230VAC	4A/115VAC 2A/230VAC	4A/115VAC 2A/230VAC
PROTECTION	OVERLOAD	110~140% rated output power	110~140% rated output power	110~140% rated output power
		Protection type : Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	13.2 ~ 15.6V	26.4 ~ 31.2V	52.8 ~ 62.4V
		Protection type :Shut down O/P voltage,re-power on to recover		
	OVER TEMPERATURE	Protection type :Shut down O/P voltage, recovers automatically after temperature goes down		
FUNCTION	VDC_OK SIGNAL(Optional	Contact rating(max.):15Vdc/10mA resistive load		
ENVIRONMENT	WORKING TEMP.	-30 ~ +70 (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes		
	SAFETY STANDARDS	UL60950-1,TUV EN60950-1,EN60335-1,CCC GB4943, EAC TP TC 004 approved, Design refer to EN61558-1,-2-16		
SAFETY & EMC (Note.5)	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.25KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C/70%RH		
	EMC EMISSION	Compliance to EN55032,GB9254,Class B, EN55014,EN61000-3-2,-3,EAC TP TC 020		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61000-6-2 (EN50082-2), heavy industry level ,criterial A, EAC TP TC020		
OTHERS	MTBF	285 K hrs min. MIL-HDBK-217F (25°C)		

NOTE

1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature.
2. Tolerance: includes set up tolerance, line regulationand load regulation.
3. Please check the derating curve for more details.
4. The ambient temperature derating of 3.5°C /1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m (6500ft).
5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives.

Mounting

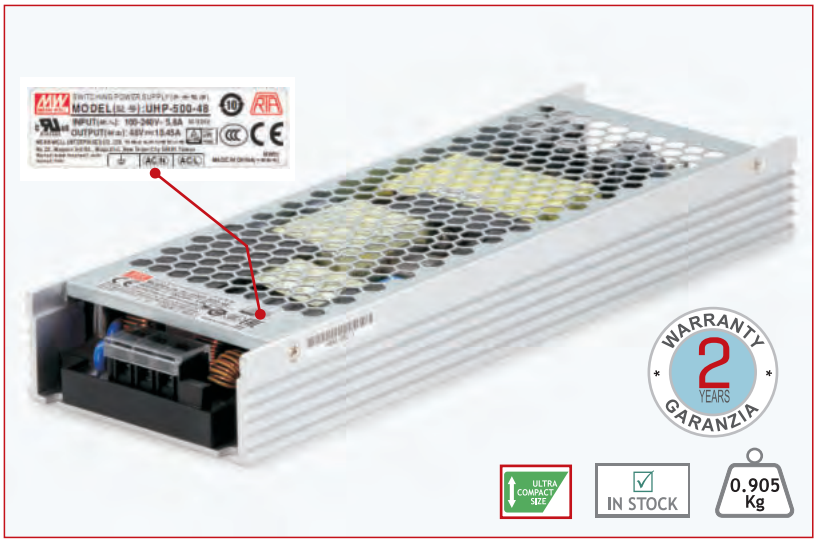


IN ORDER TO ASSURE OPTIMAL DISSIPATION, R-UHP 350-48 MUST BE INSTALLED ON ELECTRICAL CABINET WALL.

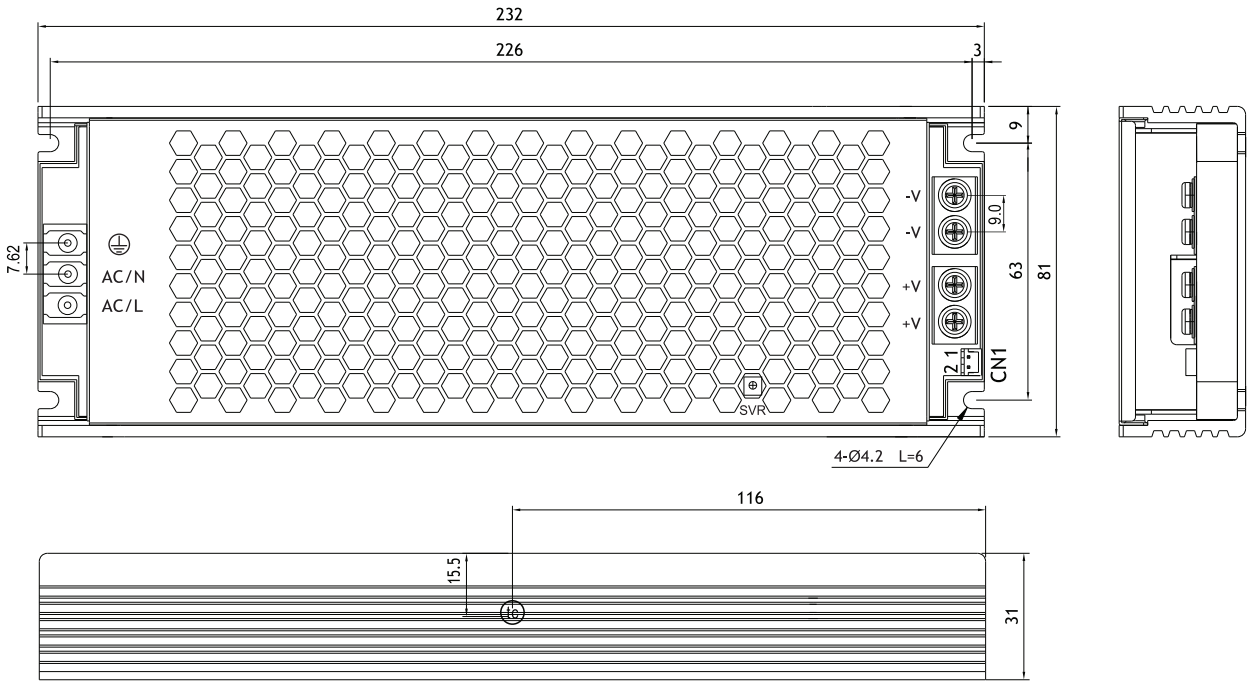
R-UHP 500-XX SWITCHING POWER SUPPLY

Main Features

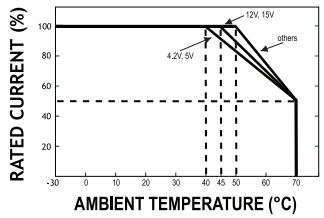
- 41.7 A output - 12 VDC
  20.9 A output - 24 VDC
  10.45 A output - 48 VDC
- AC input voltage range: 90~264 VAC
- -30~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- V_{DC_OK} signal active
- Led indicator for power on
- Warranty: 24 months



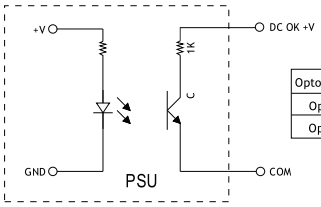
Dimensions (Units:mm)



MORE INFO



DERATING CURVE



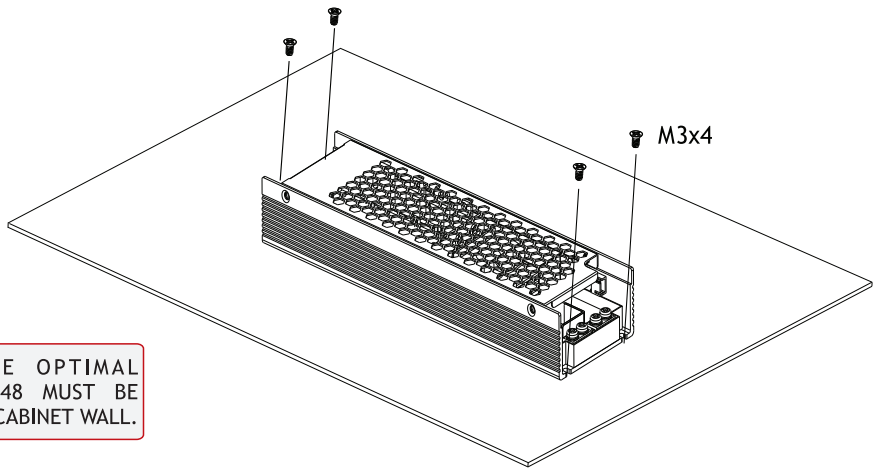
Optocoupler C-E Pin Conduction	PSU turns on	DC ok
Optocoupler C-E Pin Open	PSU turns off	DC fail
Optocoupler Rating(max.)	15Vdc/10mA resistive load	

V_{DC_OK} FUNCTION MANUAL

Specifications

MODEL		R-UHP 500-12	R-UHP 500-24	R-UHP 500-48
OUTPUT	DC VOLTAGE	12V	24V	48V
	RATED CURRENT	41.7A	20.9A	10.45A
	RATED POWER (convection)	500.4W	501.6W	501.6W
	VOLTAGE ADJ. RANGE	11.4 ~ 12.6	22.8 ~ 25.2V	45.6-50.4V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.3%	±0.3%	±0.3%
	LOAD REGULATION	±0.5%	±0.5%	±0.5%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	47 ~ 63Hz	47 ~ 63Hz
	EFFICIENCY	94%	94.5%	95%
	AC CURRENT (Typ.)	4.85A/115VAC 2.6A/230VAC	4.85A/115VAC 2.6A/230VAC	4.85A/115VAC 2.6A/230VAC
PROTECTION	OVERLOAD	110~140% rated output power	110~140% rated output power	110~140% rated output power
		Protection type : Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	13.2 ~ 15.6	26.4 ~ 31.2V	52.8 ~ 62.4V
		Protection type :Shut down O/P voltage,re-power on to recover		
	OVER TEMPERATURE	Protection type :Shut down O/P voltage, recovers automatically after temperature goes down		
FUNCTION	VDC_OK SIGNAL(Optional)	Contact rating(max.):30Vdc/1A resistive load		
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C (Refer to "Derating Curve")		
	WORKING HUMIDITY	20 ~ 90% RH non-condensing		
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes		
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL60950-1,TUV EN60950-1,EN60335-1,CCC GB4943, EAC TP TC 004 approved, Design refer to EN61558-1,-2-16		
	WITHSTAND VOLTAGE	I/P-O/P:3 75KVAC I/P-FG:2KVAC O/P-FG:1 25KVAC		
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C/70%RH		
	EMC EMISSION	Compliance to EN55032,GB9254,Class B, EN55014,EN61000-3-2,-3,EAC TP TC 020		
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61000-6-2 (EN50082-2), heavy industry level ,criterial A, EAC TP TC020		
OTHERS	MTBF	168K hrs min. MIL-HDBK-217F (25°C)		
NOTE	1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature. 2. Tolerance: includes set up tolerance, line regulation and load regulation. 3. Please check the derating curve for more details. 4.The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m (6500ft). 5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives.			

Mounting



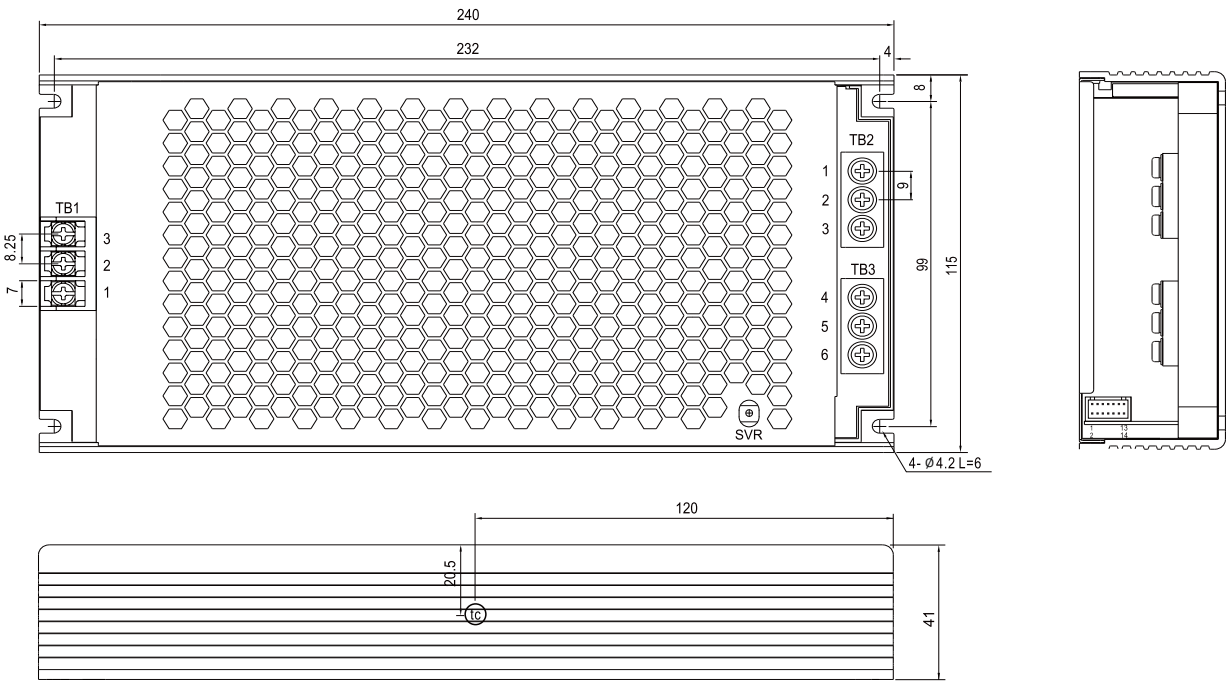
IN ORDER TO ASSURE OPTIMAL DISSIPATION, R-UHP 500-48 MUST BE INSTALLED ON ELECTRICAL CABINET WALL.

R-UHP 1000-48 SWITCHING POWER SUPPLY

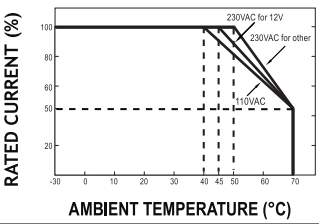
Main Features

- 21 A output - 48 VDC
- AC input voltage range:90~264 VAC
- -30~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- V_{DC_OK} signal active
- Led indicator for power on
- Warranty: 24 months

Dimensions (Units:mm)



MORE INFO

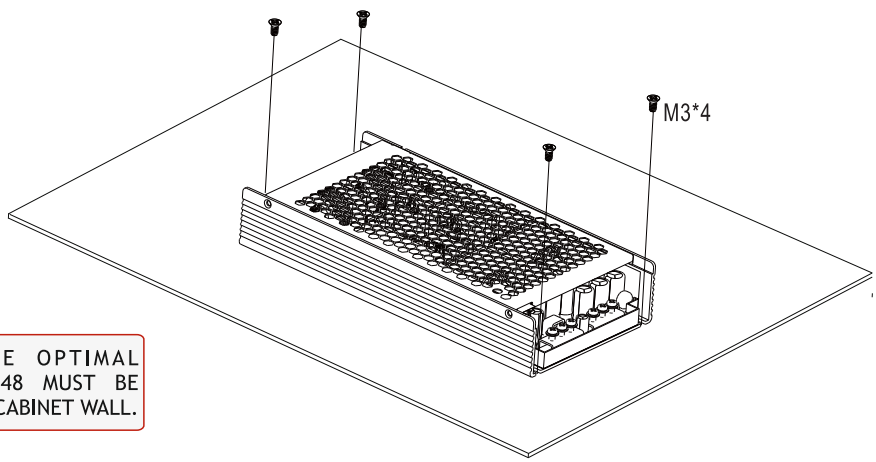


DERATING CURVE

Specifications

MODEL		R-UHP 1000- 48
OUTPUT	DC VOLTAGE	48V
	RATED CURRENT	21A
	RATED POWER	1008W
	VOLTAGE ADJ. RANGE	48 ~ 57.6V
	VOLTAGE TOLERANCE Note.	±1.0%
	LINE REGULATION	±0.5%
	LOAD REGULATION	±0.5%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz
	EFFICIENCY	96%
	AC CURRENT (Typ.)	10.1A/115VAC 5.3A/230VAC
PROTECTION	OVERLOAD	105 ~ 120% rated output power
		Protection type: Constant current limiting with delay shutdown after 3 seconds, re-power to cover
	OVER VOLTAGE	59 ~ 66 V
		Protection type: Shut down O/P voltage, re-power on to recover
	OVER TEMPERATURE	Protection type: Shut down O/P voltage, recovers automatically after temperature goes down
FUNCTION	DC_OK SIGNAL(Optional)	The TTL signal out, PSU turn on=4.5 ~ 5.5V; PSU turn off= -01 ~ 0.5V
ENVIRONMENT	WORKING TEMP.	-30 ~ +70°C (Refer to «Derating Curve»)
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL62368-1, TUV BS EN/EN62368-1, EAC TP TC 004 approved; design refer to BS EN/EN61558-1, BS EN/EN60335-1
	WITHSTAND VOLTAGE	I/P-O/P:3 75KVAC I/P-FG:2KVAC O/P-FG:1 25KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC/25°C/70%RH
	EMC EMISSION	Compliance to EN55032,GB9254,Class B, EN55014,EN61000-3-2,-3,EAC TP TC 020
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61000-6-2 (EN50082-2), heavy industry level ,criterial A, EAC TP TC020
OTHERS	MTBF	218.86K hrs min. Telcordia SR-332 (Bellcore); 69.81K hrs min. MIL-HDBK-217F(25°C)
NOTE	1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature. 2. Tolerance: includes set up tolerance, line regulation and load regulation. 3. Please check the derating curve for more details. 4.The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m (6500ft). 5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives.	

Mounting



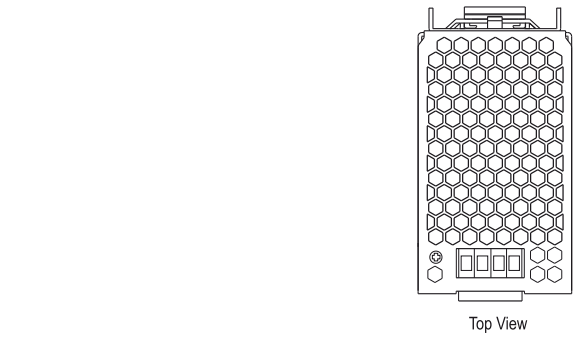
IN ORDER TO ASSURE OPTIMAL DISSIPATION, R-UHP 1000-48 MUST BE INSTALLED ON ELECTRICAL CABINET WALL.

R-NDR-240-XX SWITCHING POWER SUPPLY

Main Features

- 10 A output - 24 VDC
- 5 A output - 48 VDC
- AC input voltage range: 90~264 VAC
- -20~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- DC output voltage adjustable
- DIN rail TS-35 / 7.5 or 15 mounting
- Warranty: 24 months

Dimensions (Units:mm)



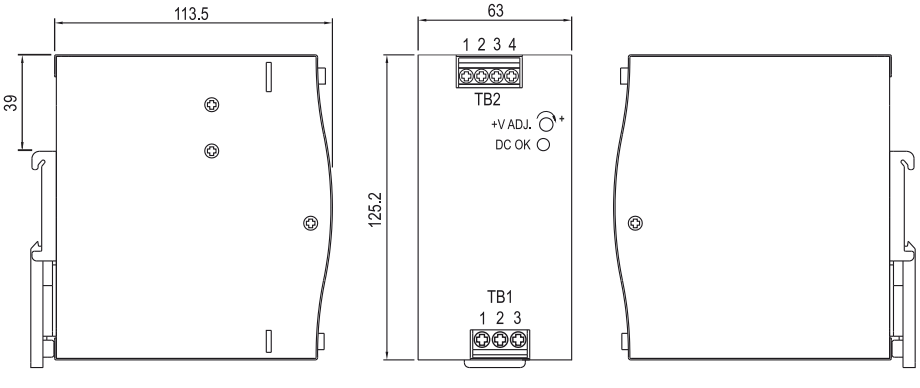
Top View

Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N or DC -
3	AC/L or DC +

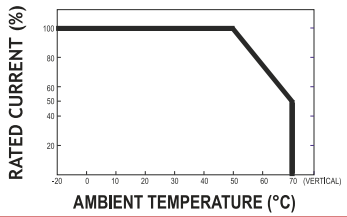
Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT -V
3,4	DC OUTPUT+V

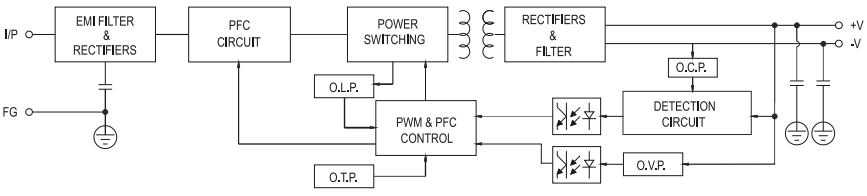


Side View | Front View | Side View

MORE INFO



DERATING CURVE



BLOCK DIAGRAM

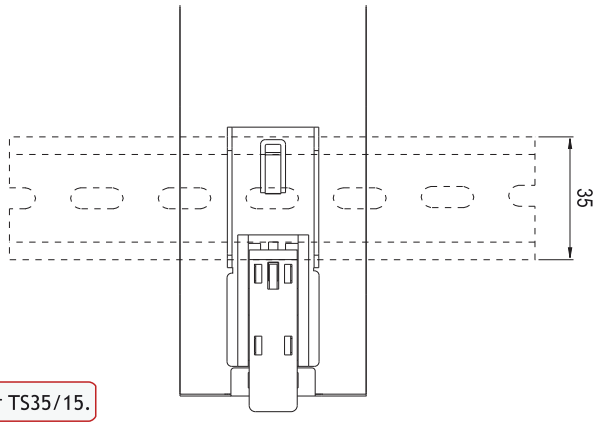
Specifications

MODEL		R-NDR-240-24	R-NDR-240-48
OUTPUT	DC VOLTAGE	24 V	48V
	RATED CURRENT	10A	5A
	RATED POWER (convection)	240W	240W
	VOLTAGE ADJ. RANGE	24~28V	48~55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	47 ~ 63Hz
	EFFICIENCY	88.5%	88,5%
	AC CURRENT (Typ.)	2.5A/115VAC 1.3A/230VAC	2.5A/115VAC 1.3A/230VAC
PROTECTION	OVERLOAD	105~130% rated output power	105~130% rated output power
		Protection type : Constant current limiting, recovers automatically after fault condition is removed	
	OVER VOLTAGE	29~33V	56~65V
		Protection type :Shut down O/P voltage,re-power on to recover	
	OVER TEMPERATURE	Protection type :Shut down O/P voltage, recovers automatically after temperature goes down	
ENVIRONMENT	WORKING TEMP.	-20 ~ +70 (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	VIBRATION	10 ~ 500Hz 2G 10min./1c cle 60min. each alon X Y Z axes	
SAFETY & EMC (Note.5)	SAFETY STANDARDS	Ul508, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C/ 70% RH	
	EMC EMISSION	Compliance to EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A	
OTHERS	MTBF	230.2K hrs min. MIL-HDBK-217F (25°C)	

NOTE

1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature.
2. Tolerance: includes set up tolerance, line regulation and load regulation.
3. Please check the derating curve for more details.
4. The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m (6500ft).
5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives.

Mounting



This series fits DIN rail TS35/7.5 or TS35/15.

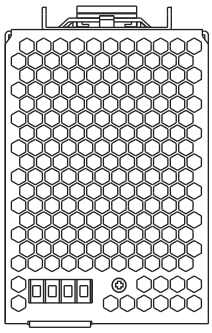
Back View

R-NDR-480-XX SWITCHING POWER SUPPLY

Main Features

- 20 A output - 24 VDC
- 10 A output - 48 VDC
- AC input voltage range: 90~264 VAC
- -20~+70 °C ambient temperature
- Protections: Short Circuit, Overload, Over Voltage, Over Temperature
- DC output voltage adjustable
- DIN rail TS-35 / 7.5 or 15 mounting
- Warranty: 24 months

Dimensions (Units:mm)

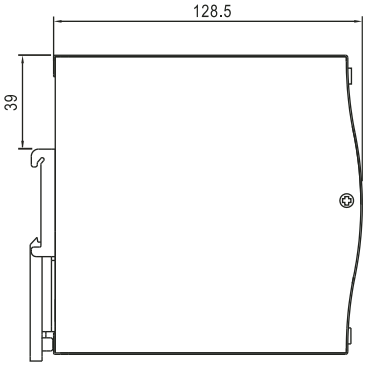

Top View

Terminal Pin No. Assignment (TB1)

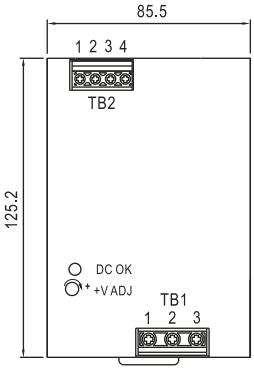
Pin No.	Assignment
1	FG ⏚
2	AC/N or DC -
3	AC/L or DC +

Terminal Pin No. Assignment (TB2)

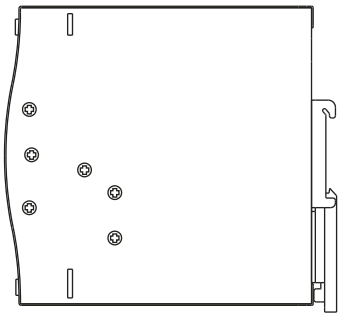
Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT-V



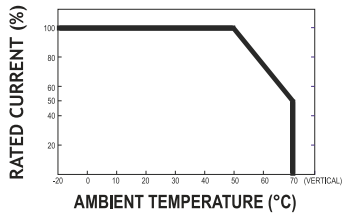
Side View



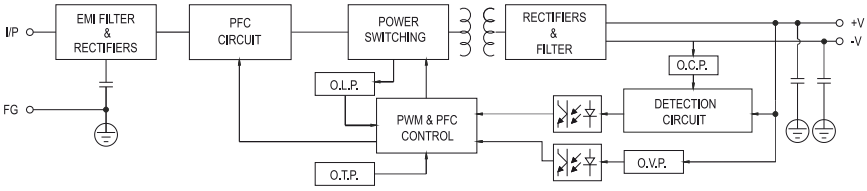
Front View


Side View

MORE INFO



DERATING CURVE



BLOCK DIAGRAM

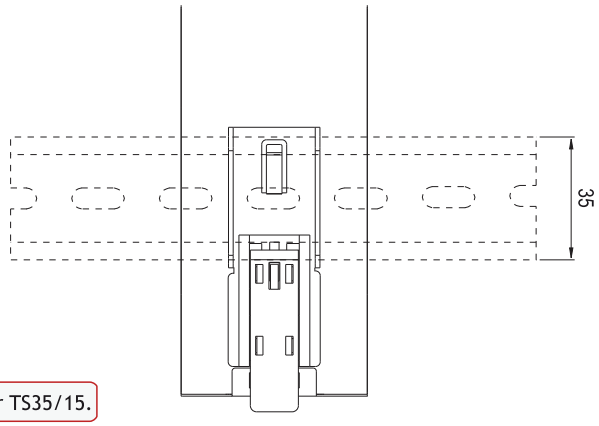
Specifications

MODEL		R-NDR-480-24	R-NDR-480-48
OUTPUT	DC VOLTAGE	24 V	48 V
	RATED CURRENT	20A	10A
	RATED POWER (convection)	480W	480W
	VOLTAGE ADJ. RANGE	24~28V	48~55V
	VOLTAGE TOLERANCE Note.3	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%
INPUT	VOLTAGE RANGE Note.3	90 ~ 264VAC 127 ~ 370VDC	90 ~ 264VAC 127 ~ 370VDC
	FREQUENCY RANGE	47 ~ 63Hz	47 ~ 63Hz
	EFFICIENCY	92.5%	92.5%
	AC CURRENT (Typ.)	4.8A/115 VAC 2.4A/230VAC	4.8A/115 VAC 2.4A/230VAC
PROTECTION	OVERLOAD	105~130% rated output power	105~130% rated output power
		Protection type : Constant current limiting, until will shut down after 3 seconds, re-power to recover	
	OVER VOLTAGE	29~33V	56~65V
		Protection type :Shut down O/P voltage,re-power on to recover	
	OVER TEMPERATURE	Protection type :Shut down O/P voltage, recovers automatically after temperature goes down	
ENVIRONMENT	WORKING TEMP.	-20 ~ +70 (Refer to "Derating Curve")	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	VIBRATION	10 ~ 500Hz 2G 10min./1c cle 60min. each alon X Y Z axes	
SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC	
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C/ 70% RH	
	EMC EMISSION	Compliance to EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2,-3	
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A	
OTHERS	MTBF	146.8K hrs min. MIL-HDBK-217F (25°C)	

NOTE

1. All parameters NOT specially mentioned are measured at 230 VAC input, rated load and 25°C ambient temperature.
2. Tolerance: includes set up tolerance, line regulation and load regulation.
3. Please check the derating curve for more details.
4. The ambient temperature derating of 5°C /1000m is needed for operating altitude greater than 2000m (6500ft).
5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that is still meets EMC directives.

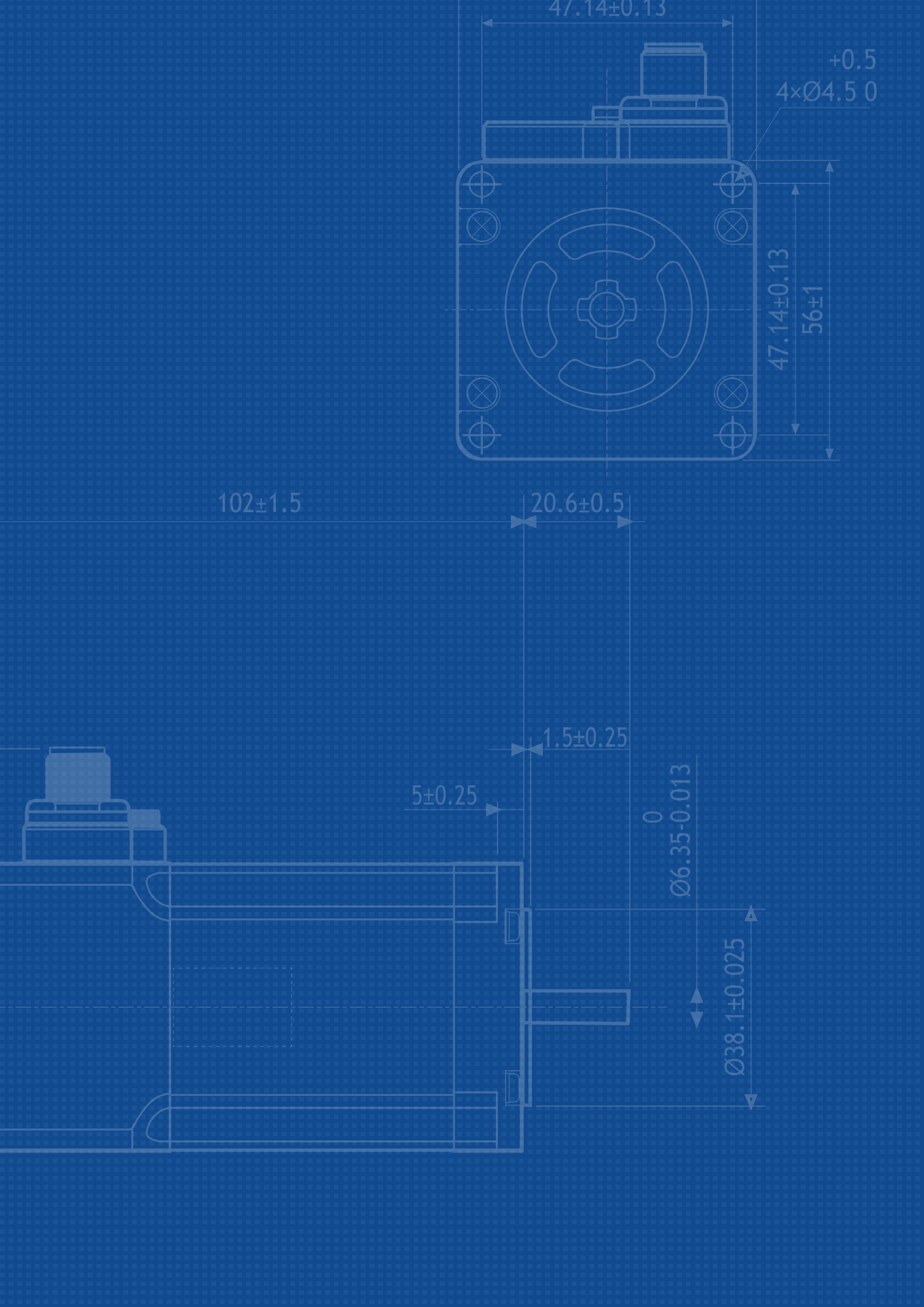
Mounting



This series fits DIN rail TS35/7.5 or TS35/15.

Back View

STEPPING MOTORS


47.14±0.13
4×Ø4.5 +0.5 0
47.14±0.13
56±1
102±1.5
20.6±0.5
1.5±0.25
5±0.25
Ø6.35 0 -0.013
Ø38.1±0.025

STEPPING MOTORS

INDEX

Key advantages of R.T.A. stepping motors

SANYO DENKI
SANMOTION
STEPPING SYSTEMS

Exclusive Partnership with **SANYO DENKI CO.** since 1989, one of the leading manufacturer of motion solution in the world.

- More than 30 years of experience, collaboration and evolution.
- High quality and reliability made in Japan, through automatized and robotized assembly line.

2 Families, Industrial stepping motors and Traditional stepping motors 5 Series with more than 100 models

IP 54 | FULL IP65 | PROTECTION IP65 DEGREE | M12 CONNECTOR | MOTORS WITH ENCODER | c UL us

1 INDUSTRIAL STEPPING MOTORS

- 25 models
- Flange size: 42 mm, 56 mm, 60 mm, 86 mm
- Holding torque: from 29 Ncm to 900 Ncm
- M12 and JST built-in connectors
- Protection degree: IP 54, IP 65, FULL IP 65
- Encoder versions available

2 INDUSTRIAL STEPPING MOTORS WITH ENCODER

- 24 models
- Embedded encoder in a terminal box
- Encoder resolutions: 400 cpr, 4000 cpr, INDEX
- Standard signal: differential (single-ended version available)

Table of contents

INDUSTRIAL STEPPING MOTORS

NOTE: Codes between brackets refer to double-shaft models.

INDUSTRIAL STEPPING MOTORS WITH ENCODER

3 TRADITIONAL STEPPING MOTORS

- 66 models
- Flange size: 14 mm, 28 mm, 42 mm, 56 mm 60 mm, 86 mm, 106,4 mm
- Holding torque: from 0,65 Ncm to 2.460 Ncm
- Encoder and brake versions available

MOTORS WITH ENCODER

BRAKE

4 TRADITIONAL STEPPING MOTORS WITH ENCODER

- 32 models
- Encoder assembled and tested by RTA
- Encoder resolutions: 400 cpr, 4000 cpr, INDEX
- Standard signal: differential (single ended version available)

5 TRADITIONAL STEPPING MOTORS WITH BRAKE

- 12 models
- Brakes static torque: from 24 Ncm to 350 Ncm

VERSION WITH BRAKE AND ENCODER AVAILABLE

6 ACCESSORIES - FRONT BRAKES

- 2 sizes: Nema 24 and Nema 34
- 24 VDC Power Supply
- M12 Connectors
- Holding Torque: 1.5 Nm (Nema 24) and 3.5 Nm (Nema 34)
- Cables: Standard or 90° (1 m or 3 m length)

Table of contents

TRADITIONAL STEPPING MOTORS

TRADITIONAL STEPPING MOTORS

	HOLDING TORQUE (Ncm)	FLANGE SIZE (mm)	LENGTH (mm)	BIPOLAR CURRENT* (A)	PAGE
50 mm FLANGE					
103-H6701-0140 (-0113)	38	50	39.8	0.7*	215
103-H6703-0440	68	50	51.3	1.4*	216
56 mm FLANGE					
103-H7121-0440	49	56	41.8	1.5*	217
103-H7123-5040 (-5010)	85	56	53.8	2.0	218
103-H7123-0140	110	56	53.8	0.7*	219
103-H7123-0440	110	56	53.8	1.5	220
103-H7123-0740 (-0710)	110	56	53.8	2.2*	221
103-H7123-1749 (-1711)	110	56	53.8	4.0	222
103-H7126-0140	165	56	75.8	0.75*	223
103-H7126-0740 (-0710)	165	56	75.8	2.2*	224
103-H7126-1740 (-1710)	165	56	75.8	4.0	225
103-H7126-6640 (-6610)	165	56	75.8	5.60	226
103-H7128-5740 (-5710)	200	56	94.8	2	227
60 mm FLANGE					
103-H7822-0740	137	60	54.9	4.0	228
103-H7822-1731	170	60	53.8	2.2*	229
103-H7823-0740	300	60	85.8	2.2*	230
103-H7823-1740 (-1714)	300	60	85.8	4.0	231
103-H7826-1642 (-1612)	380	60	103.8	6.0	232
85.5 mm FLANGE					
SM 2861-5055 (-5025)	360	86	66.0	2.0	233
SM 2861-5255 (-5225)	360	86	66.0	6.0	234
SM 2862-5055	700	86	96.5	2.0	235
SM 2862-5155 (-5125)	700	86	96.5	4.0	236
SM 2862-5255 (-5225)	700	86	96.5	6.0	237
SM 2863-5155 (-5126)	920	86	127.0	4.0	238
SM 2863-5255 (-5225)	920	86	127.0	6.0	239

TRADITIONAL STEPPING MOTORS

	HOLDING TORQUE (Ncm)	FLANGE SIZE (mm)	LENGTH (mm)	BIPOLAR CURRENT (A)	PAGE
106.4 mm FLANGE					
103-H89222-6341 (-6311)	1620	106.4	163.0	6.0	240
103-H89222-6541	1620	106.4	163.0	10.0	241
103-H89223-6341 (-6311)	2460	106.4	221.0	6.0	242
103-H89223-6641 (-6611)	2460	106.4	221.0	12.00	243

Not preferred models PAGE 244

TRADITIONAL STEPPING MOTORS WITH ENCODER

	SANYO DENKI MOTOR CODE	HOLDING TORQUE (Ncm)	FLANGE SIZE (mm)	LENGTH (mm)	BIPOLAR CURRENT* (A)	PAGE
EM 0H1M-04D0	SH 2281-5231	7	28.0	32.0	0.7*	246
EM 0H2M-04D0	SH 2285-5231	14.5	28.0	51.5	0.7*	246
EM 1H2H-04D0	103-H5210-4512	51	42	48	2.0	247
EM 1H2H-04E0	103-H5210-4512	51	42	48	2.0	247
EM 1H2H-0HE0	103-H5210-4512	51	42	48	2.0	247
EM 1H3H-04D0	103-H212-4610	65	42	59.5	2.0	248
EM 1H3H-04E0	103-H212-4610	65	42	59.5	2.0	248
EM 1H3H-0HE0	103-H212-4610	65	42	59.5	2.0	248
EM 2H1M-04D0	103-H7123-1711	110	56	53.8	4.0	249
EM 2H1M-04E0	103-H7123-1711	110	56	53.8	4.0	249
EM 2H1M-0HE0	103-H7123-1711	110	56	53.8	4.0	249
EM 2H2M-04D0	103-H7126-1710	165	56	75.8	4.0	250
EM 2H2M-04E0	103-H7126-1710	165	56	75.8	4.0	250
EM 2H2M-0HE0	103-H7126-1710	165	56	75.8	4.0	250
EM 6H1M-04D0	103-H7822-1731	137	60	75.8	4.0	251
EM 6H1M-04E0	103-H7822-1731	137	60	75.8	4.0	251
EM 6H1M-0HE0	103-H7822-1731	137	60	75.8	4.0	251
EM 6H2M-04D0	103-H7823-1714	300	60	85.8	4.0	252
EM 6H2M-04E0	103-H7823-1714	300	60	85.8	4.0	252
EM 6H2M-0HE0	103-H7823-1714	300	60	85.8	4.0	252
EM 6H3H-04D0	103-H7826-1612	380	60	103.8	6	253
EM 6H3H-04E0	103-H7826-1612	380	60	103.8	6	253

TRADITIONAL STEPPING MOTORS WITH ENCODER

	SANYO DENKI MOTOR CODE	HOLDING TORQUE (Ncm)	FLANGE SIZE (mm)	LENGTH (mm)	BIPOLAR CURRENT* (A)	PAGE
EM 6H3H-0HE0	103-H7826-1612	380	60	103.8	6	253
EM 3F1L-04D0	SM 2861-5025	360	85.5	66.0	2.0	254
EM 3F1H-04D0	SM 2861-5225	360	85.5	66.0	6.0	255
EM 3F1H-04E0	SM 2861-5225	360	85.5	66.0	6.0	255
EM 3F1H-0HE0	SM 2861-5225	360	85.5	66.0	6.0	255
EM 3F2M-04D0	SM 2862-5125	700	85.5	96.5	4.0	256
EM 3F2H-04D0	SM 2862-5225	700	85.5	96.5	6.0	257
EM 3F2H-04E0	SM 2862-5225	700	85.5	96.5	6.0	257
EM 3F2H-0HE0	SM 2862-5225	700	85.5	96.5	6.0	257
EM 3F3H-04D0	SM 2863-5225	920	85.5	127.0	6.0	258
EM 3F3H-04E0	SM 2863-5225	920	85.5	127.0	6.0	258
EM 3F3H-0HE0	SM 2863-5225	920	85.5	127.0	6.0	258
EM 3F3M-14D0	SM 2863-5126	920	85.5	127.0	4.0	259

TRADITIONAL STEPPING MOTORS WITH BRAKE

	SANYO DENKI MOTOR CODE	HOLDING TORQUE (Ncm)	FLANGE SIZE (mm)	LENGTH (mm)	CURRENT (A)	PAGE
103-H5210-4512.B	103-H5210-4512	51	42	82	2.0	262
103-H7123-5010.B	103-H7123-5010	85	56	89.8	2.0	263
103-H7123-0710.B	103-H7123-0710	110	56	89.8	3.0	264
103-H7123-1711.B	103-H7123-1711	110	56	89.8	4.0	265
103-H7126-0710.B	103-H7126-0710	165	56	89.8	3.0	266
103-H7126-1710.B	103-H7126-1710	165	56	89.8	4.0	267
103-H7823-1714.B	103-H7823-1714	300	60	121.8	4.0	268
103-H7826-1612.B	103-H7826-1612	380	60	103.8	6.0	269
SM 2861-5025.B	SM 2861-5025	360	86	102	2.0	270
SM 2861-5225.B	SM 2861-5225	360	86	102	6.0	271
SM 2862-5125.B	SM 2862-5125	700	86	132.5	4.0	272
SM 2862-5225.B	SM 2862-5225	700	86	132.5	6.0	273

ACCESSORIES - FRONT BRAKES

	HOLDING TORQUE (Ncm)	FLANGE (mm)	CURRENT (mA)	VOLTAGE (V)	POWER (W)	PAGE
FB-M12-17-02-00000	0.2	42	170	24 VDC	4.1	282
FB-M12-23-08-00000	0.8	57	340	24 VDC	8.1	283
FB-M12-24-15-00000	1.5	60	460	24 VDC	11.0	284
FB-M12-34-35-00000	3.5	86	460	24 VDC	11.0	285

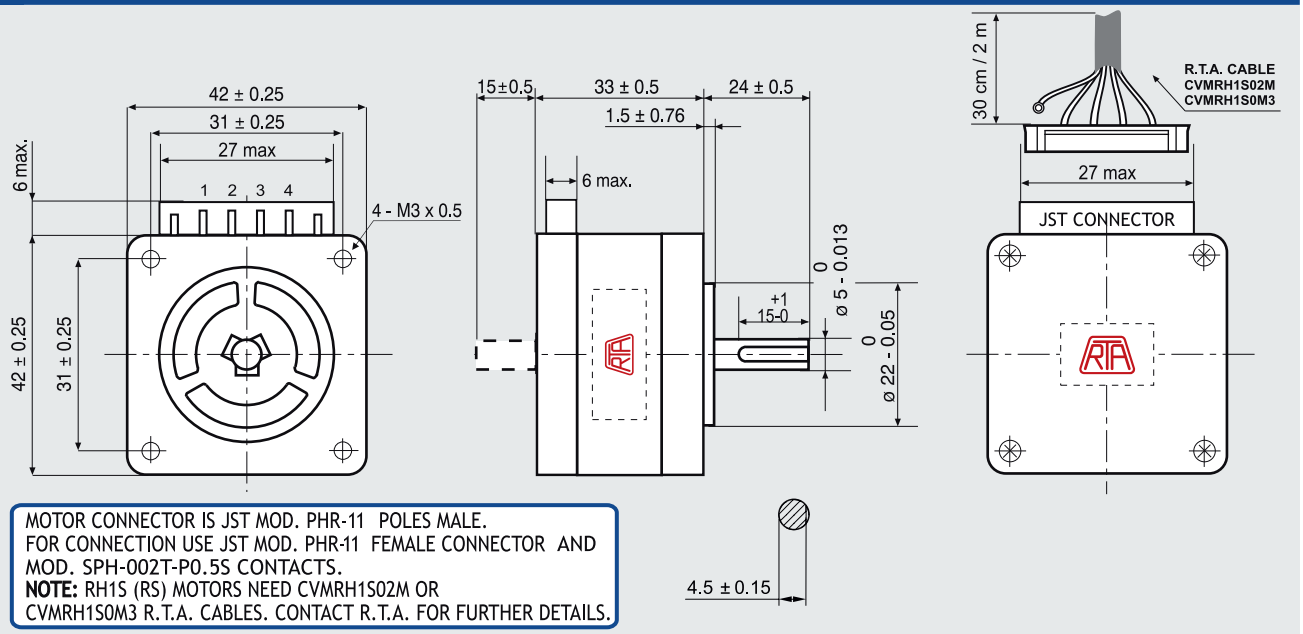
* Bipolar series connection

STEPPING MOTORS

INDUSTRIAL STEPPING MOTORS

RH 1S0M

Dimensions (Unit:mm)

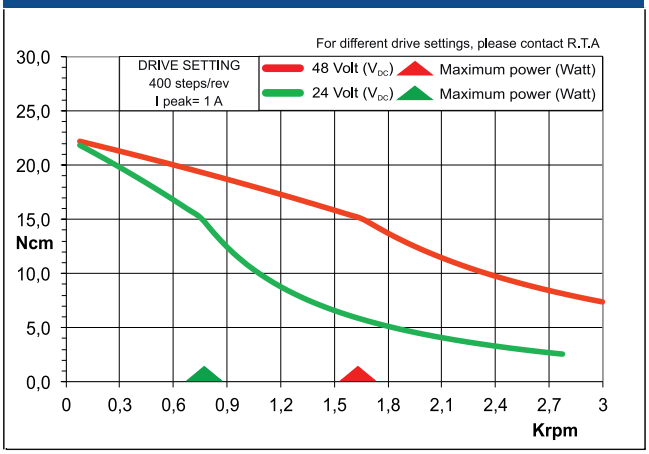


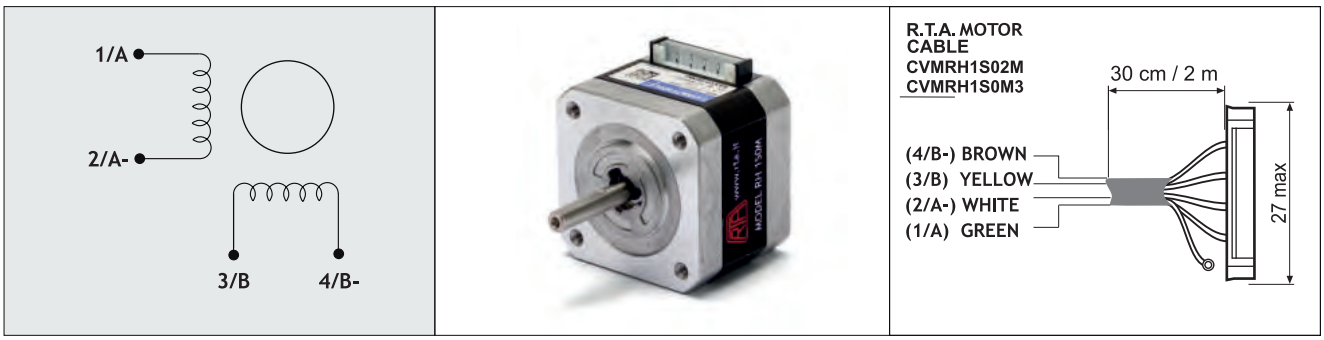
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

FEATURES

MODEL		RH 1S0M (RH 1S0M-RS)
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	3.6
INDUCTANCE	(mH)	7
BIPOLAR HOLDING TORQUE	(Ncm)	29
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	31
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	93500
BACK E.M.F.	(V/Krpm)	29
MASS	(Kg)	0.23
PROTECTION DEGREE		IP40
LEADS CODE		V

Codes between brackets refer to double shaft models.

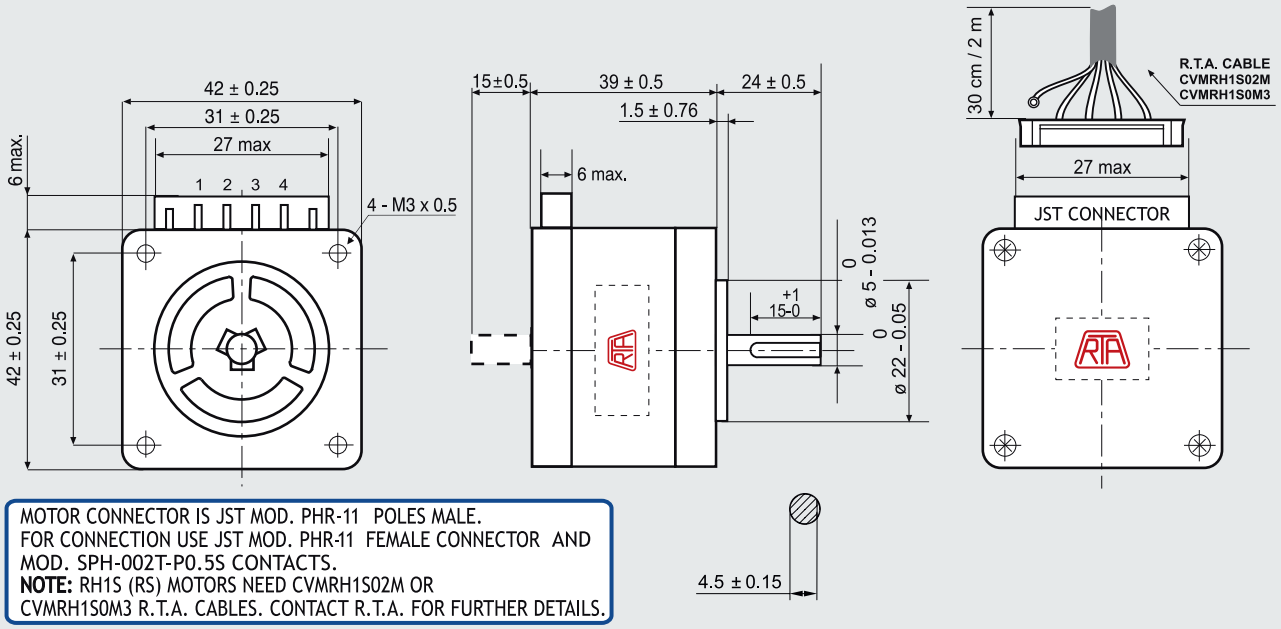




Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S1M

Dimensions (Unit:mm)



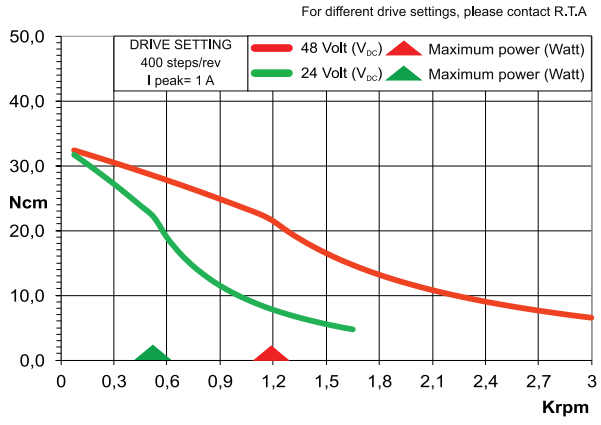
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

FEATURES

MODEL		RH 1S1M (RH 1S1M-RS)
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	4.6
INDUCTANCE	(mH)	9.6
BIPOLAR HOLDING TORQUE	(Ncm)	43
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	46
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	93500
BACK E.M.F.	(V/Krpm)	43
MASS	(Kg)	0.3
PROTECTION DEGREE		IP40
LEADS CODE		V

Codes between brackets refer to double shaft models.

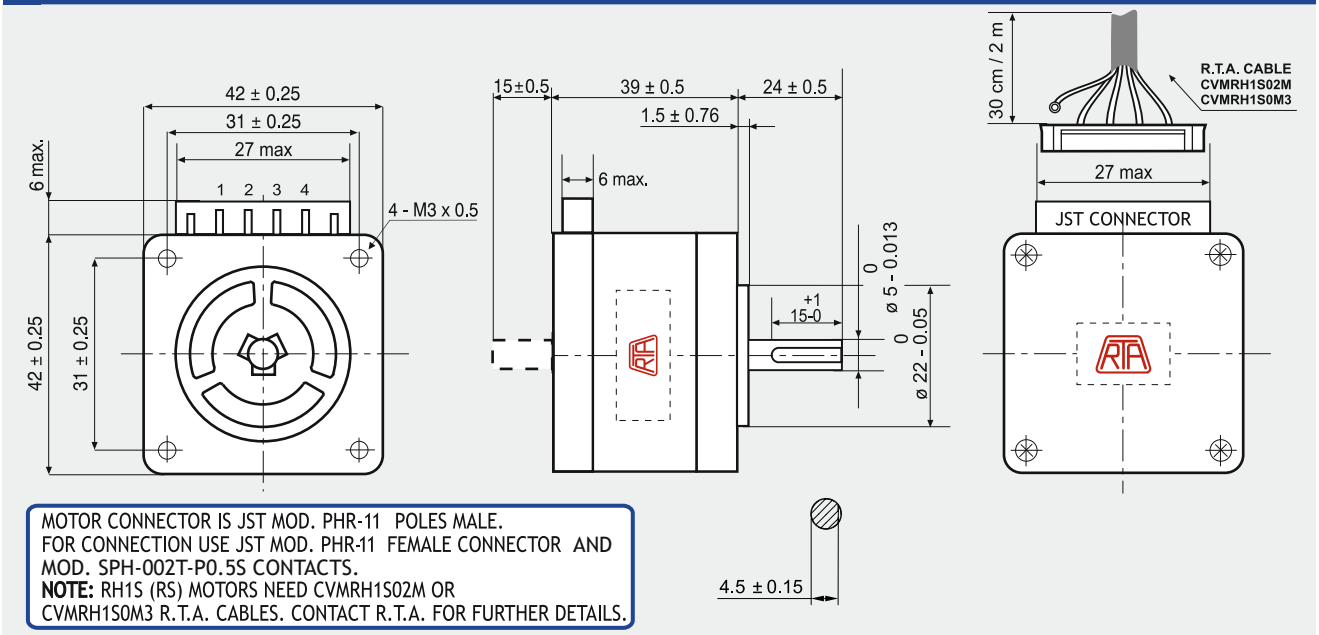
TORQUE/SPEED CURVE



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S1H

Dimensions (Unit:mm)



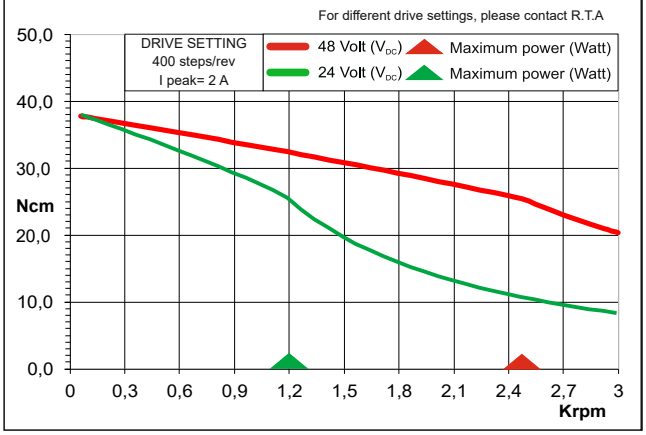
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

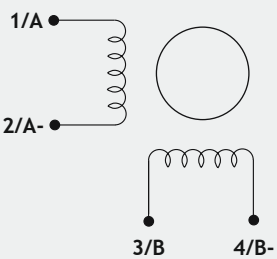
FEATURES

MODEL		RH 1S1H (RH 1S1H-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.1
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	43
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	46
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	93000
BACK E.M.F.	(V/Krpm)	21.5
MASS	(Kg)	0.3
PROTECTION DEGREE		IP40
LEADS CODE		V

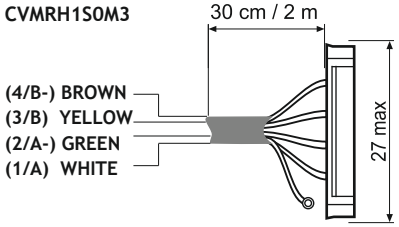
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





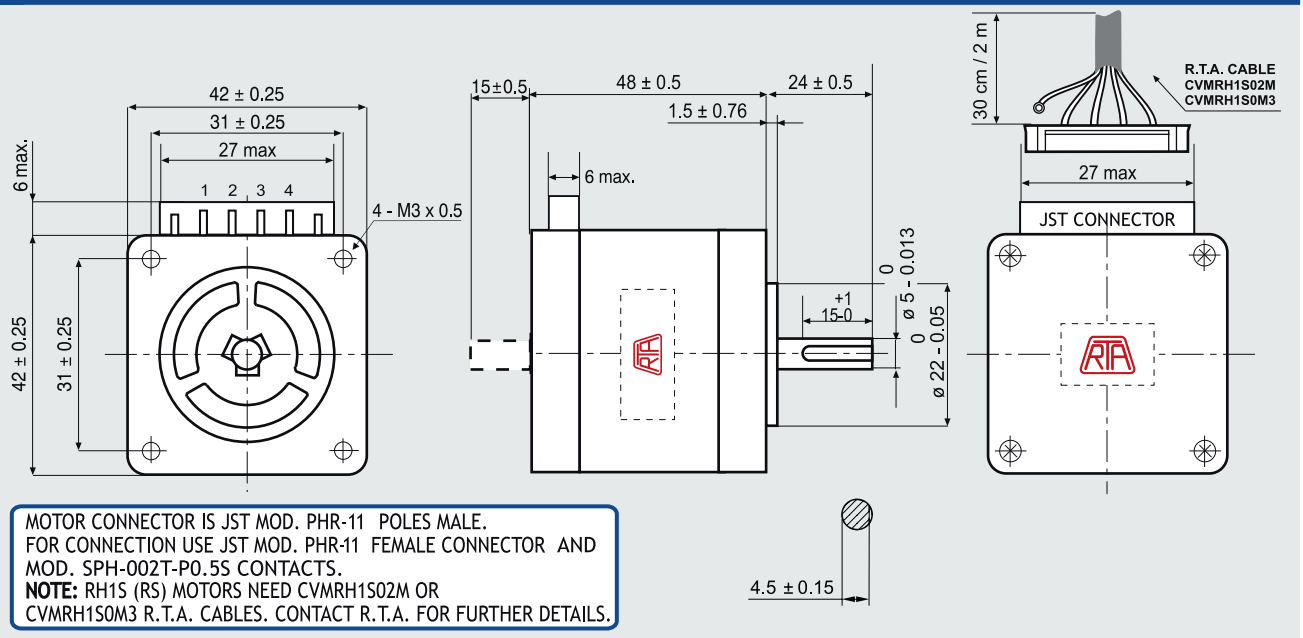
R.T.A. MOTOR
CABLE CVMRH1S02M
CVMRH1S0M3



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S2M

Dimensions (Unit:mm)



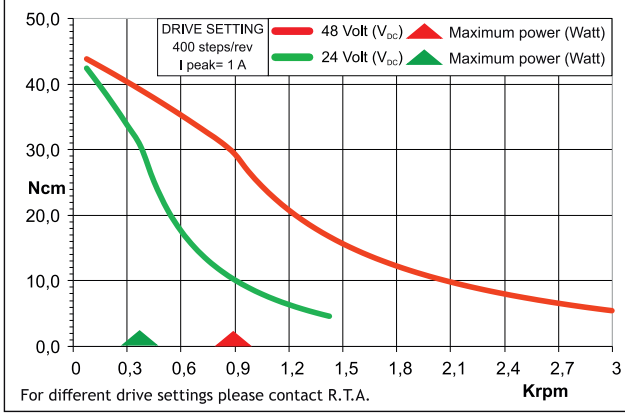
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

FEATURES

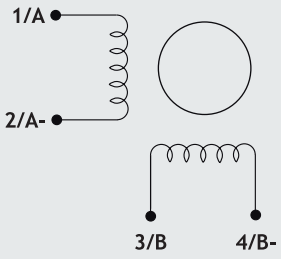
MODEL		RH 1S2M (RH 1S2M-RS)
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	5.3
INDUCTANCE	(mH)	12.5
BIPOLAR HOLDING TORQUE	(Ncm)	56
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	63
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	88900
BACK E.M.F.	(V/Krpm)	56
MASS	(Kg)	0.38
PROTECTION DEGREE		IP40
LEADS CODE		V

Codes between brackets refer to double shaft models.

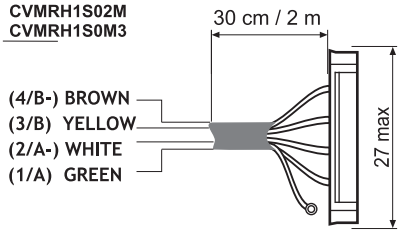
TORQUE/SPEED CURVE



For different drive settings please contact R.T.A.



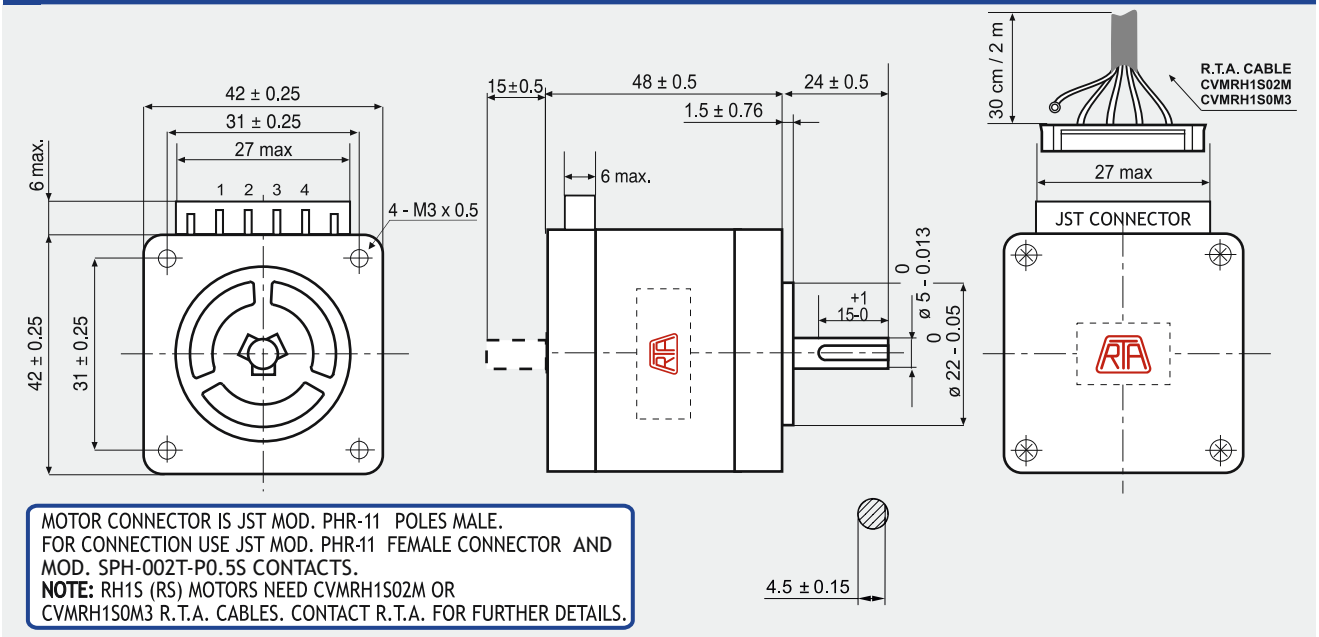
R.T.A. MOTOR CABLE
CVMRH1S02M
CVMRH1S0M3



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S2H

Dimensions (Unit:mm)



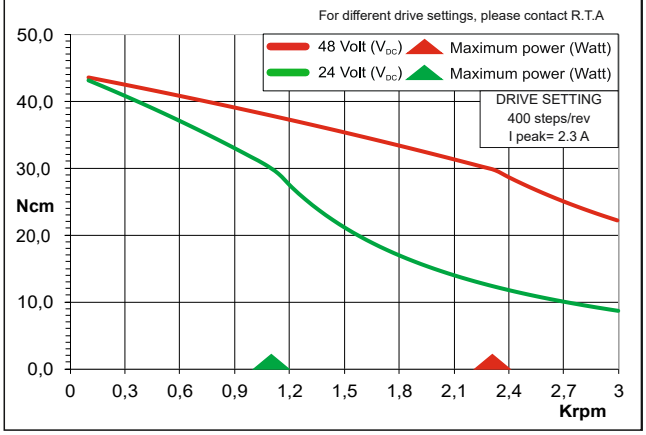
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

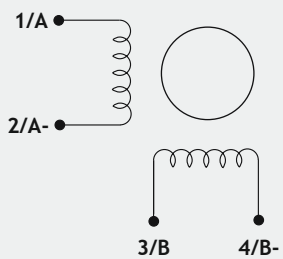
FEATURES

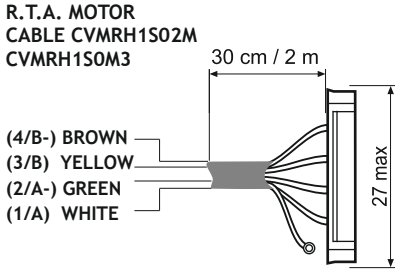
MODEL		RH 1S2H (RH 1S2H-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.3
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.93
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	56
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	63
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	89000
BACK E.M.F.	(V/Krpm)	24.3
MASS	(Kg)	0.38
PROTECTION DEGREE		IP40
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



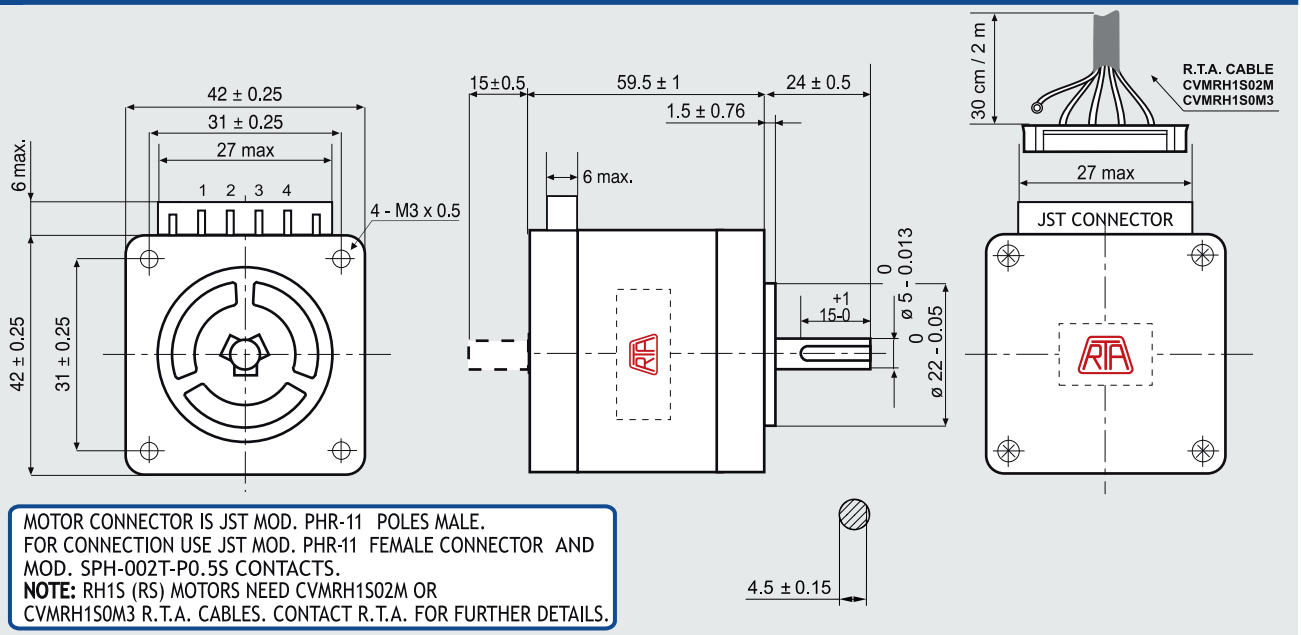




Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S3M

Dimensions (Unit:mm)



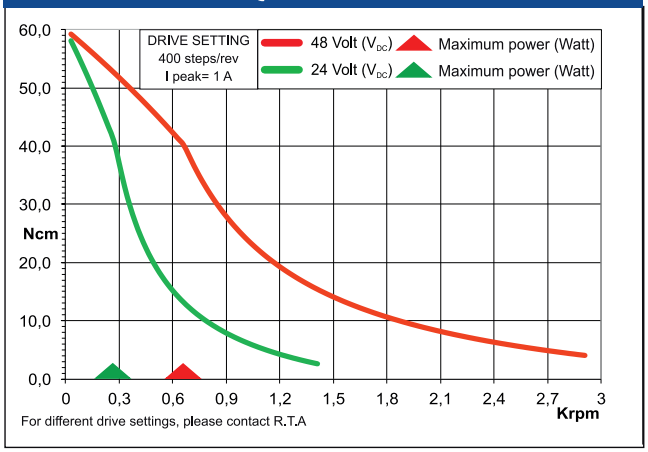
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

FEATURES

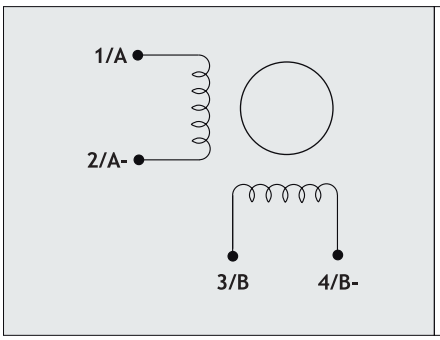
MODEL		RH 1S3M (RH 1S3M-RS)
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	6.5
INDUCTANCE	(mH)	16
BIPOLAR HOLDING TORQUE	(Ncm)	80
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	94
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	85100
BACK E.M.F.	(V/Krpm)	80
MASS	(Kg)	0.51
PROTECTION DEGREE		IP40
LEADS CODE		V

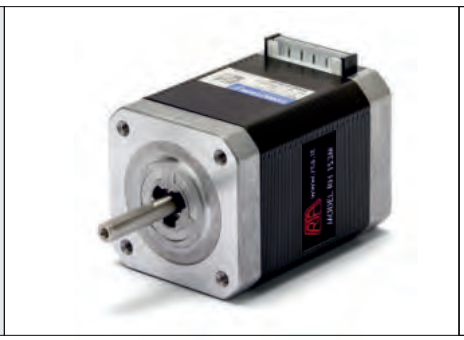
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE

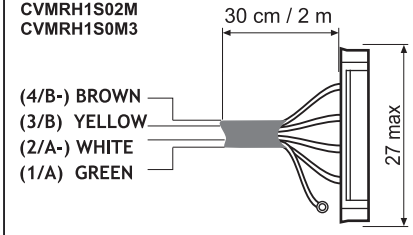


For different drive settings, please contact R.T.A





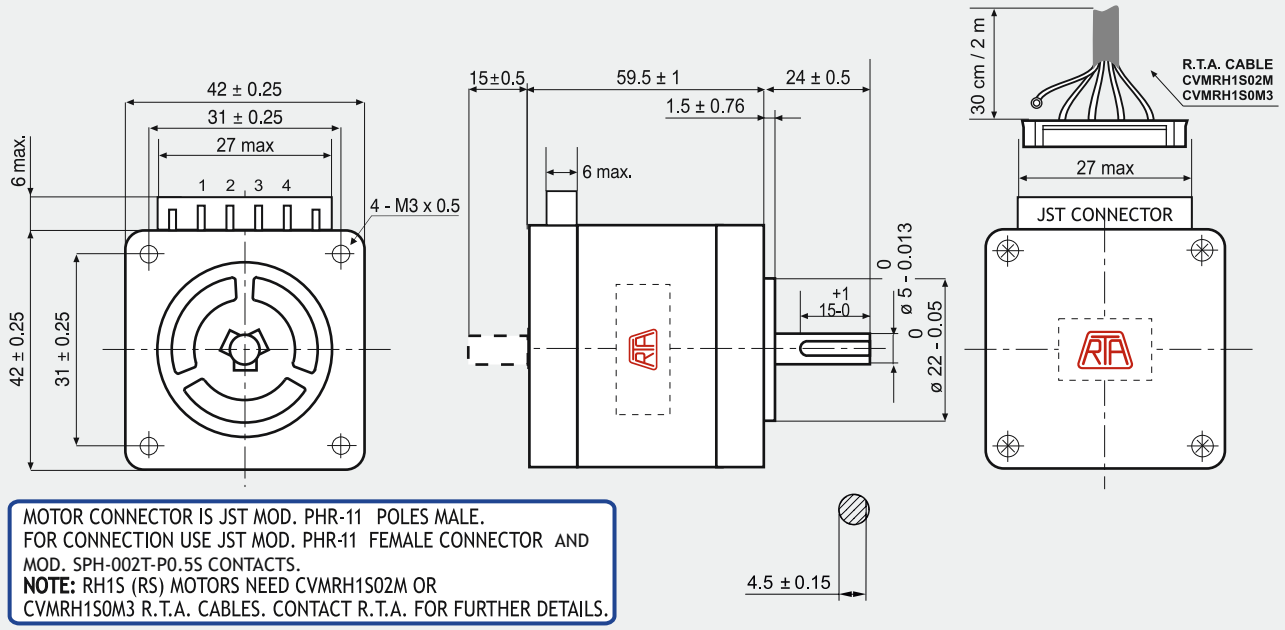
R.T.A. MOTOR CABLE
CVMRH1S02M
CVMRH1S0M3



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S3H

Dimensions (Unit:mm)



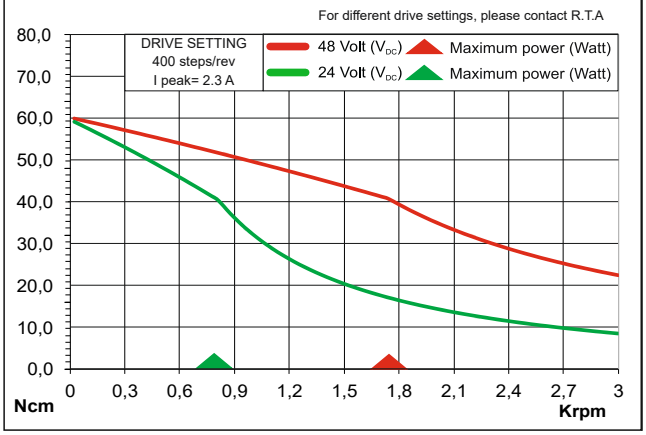
MOTOR CONNECTOR IS JST MOD. PHR-11 POLES MALE.
FOR CONNECTION USE JST MOD. PHR-11 FEMALE CONNECTOR AND MOD. SPH-002T-P0.5S CONTACTS.
NOTE: RH1S (RS) MOTORS NEED CVMRH1S02M OR CVMRH1S0M3 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

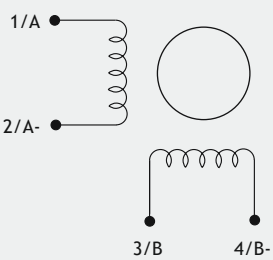
FEATURES

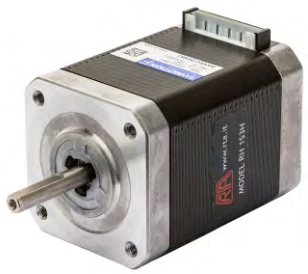
MODEL		RH 1S3H (RH 1S3H-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.3
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.2
INDUCTANCE	(mH)	3.0
BIPOLAR HOLDING TORQUE	(Ncm)	80
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	94
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	85100
BACK E.M.F.	(V/Krpm)	34.7
MASS	(Kg)	0.51
PROTECTION DEGREE		IP40
LEADS CODE		V

Codes between brackets refer to double shaft models.

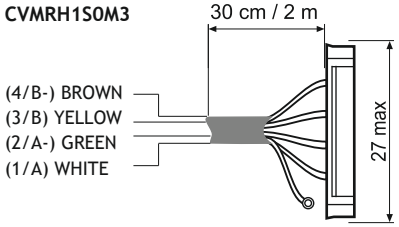
TORQUE/SPEED CURVE







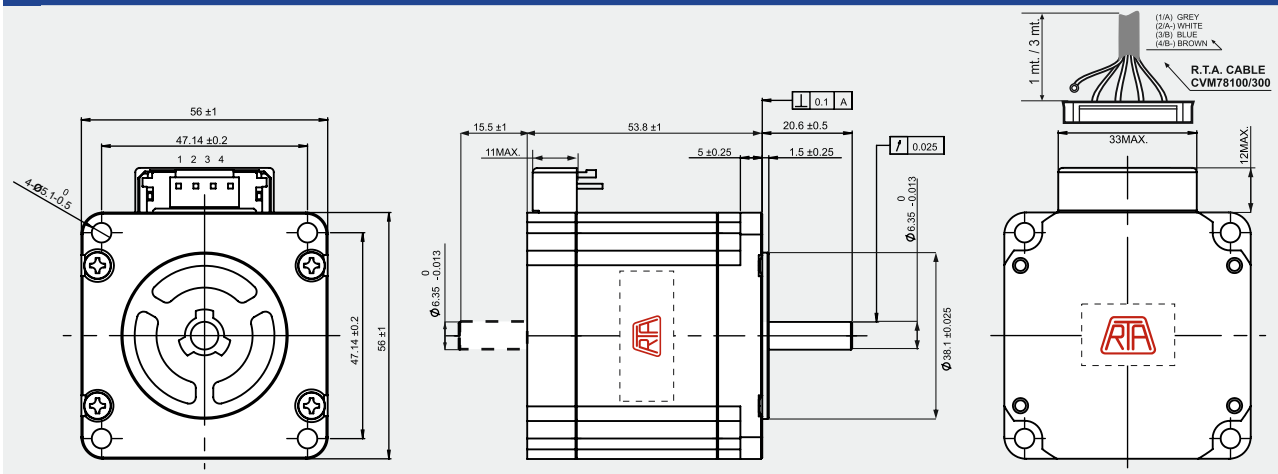
R.T.A. MOTOR CABLE CVMRH1S02M CVMRH1S0M3



Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 2S1M

Dimensions (Unit:mm)



MOTOR CONNECTOR IS JST mod. B4P-VH 4 POLES MALE.
FOR CONNECTION USE JST mod. VHR-4N FEMALE CONNECTOR AND mod. SVH-21 T-P1.1 CONTACTS.
NOTE: RH2S (RS) MOTORS NEED CVM78100 AND CVM78300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

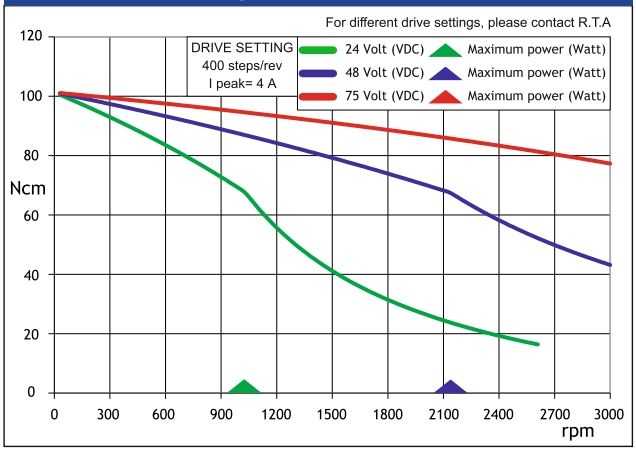
+ 30%
HOLDING TORQUE
THAN THE PREVIOUS «H» SERIES

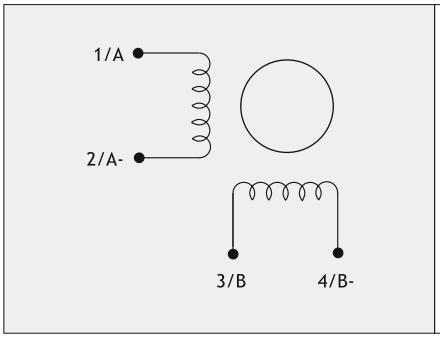
FEATURES

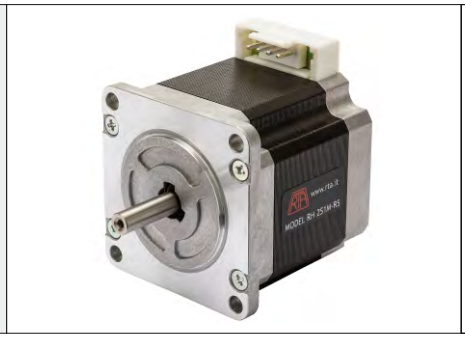
MODEL		RH 2S1M (RH 2S1M-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.37
INDUCTANCE	(mH)	1.5
BIPOLAR HOLDING TORQUE	(Ncm)	140
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	280
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	35
MASS	(Kg)	0.69
INTERNATIONAL STANDARDS		UL, CSA
PROTECTION DEGREE		IP40
LEADS CODE		V

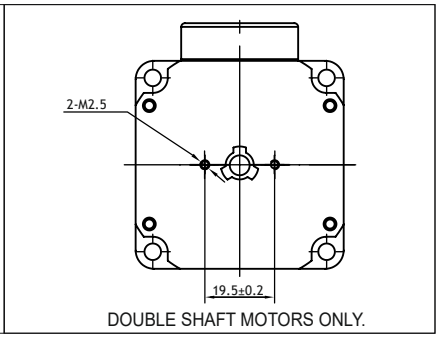
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE







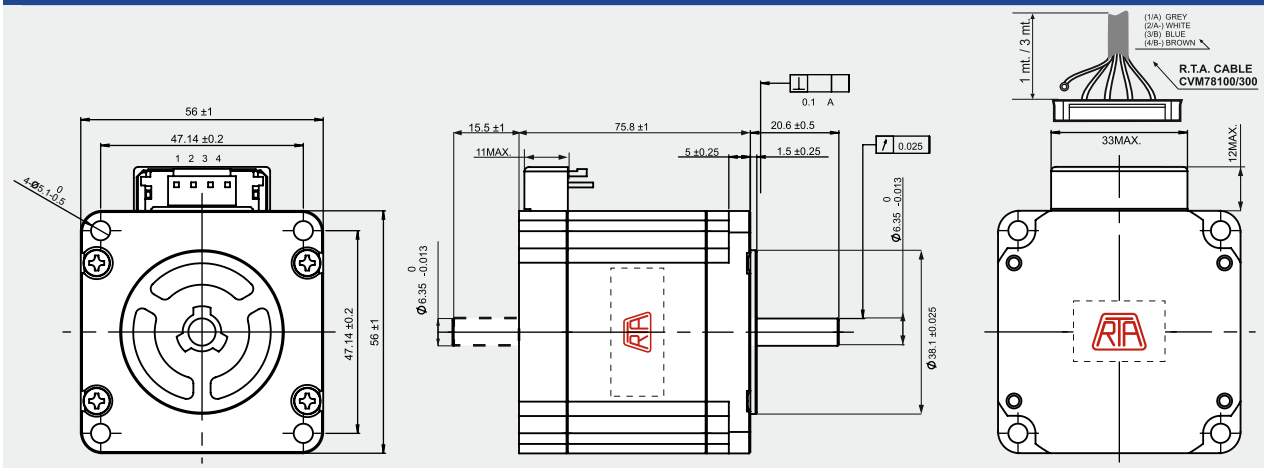


DOUBLE SHAFT MOTORS ONLY.

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

RH 2S2M

Dimensions (Unit:mm)



MOTOR CONNECTOR IS JST mod. B4P-VH 4 POLES MALE.
FOR CONNECTION USE JST mod. VHR-4N FEMALE CONNECTOR AND mod. SVH-21 T-P1.1 CONTACTS.
NOTE: RH2S (RS) MOTORS NEED CVM78100 AND CVM78300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

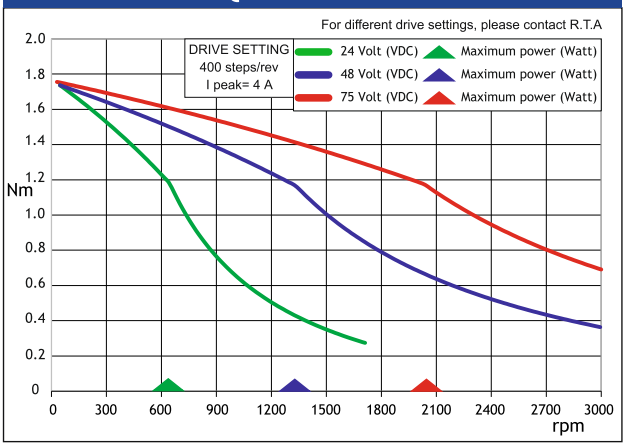
+ 40%
HOLDING TORQUE
THAN THE PREVIOUS «H» SERIES

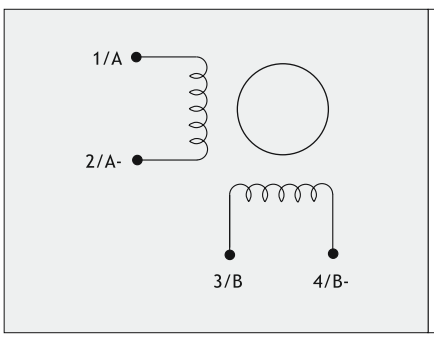
FEATURES

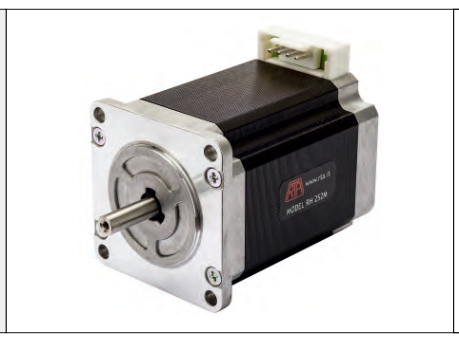
MODEL		RH 2S2M (RH 2S2M-RS)
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.52
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	235
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47000
BACK E.M.F.	(V/Krpm)	58.7
MASS	(Kg)	1.1
INTERNATIONAL STANDARDS		UL, CSA
PROTECTION DEGREE		IP40
LEADS CODE		V

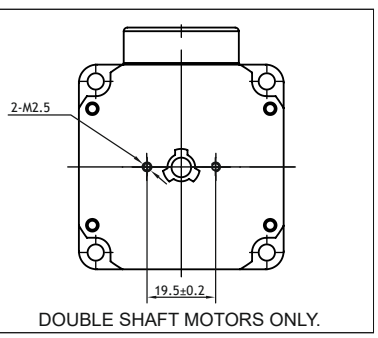
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE







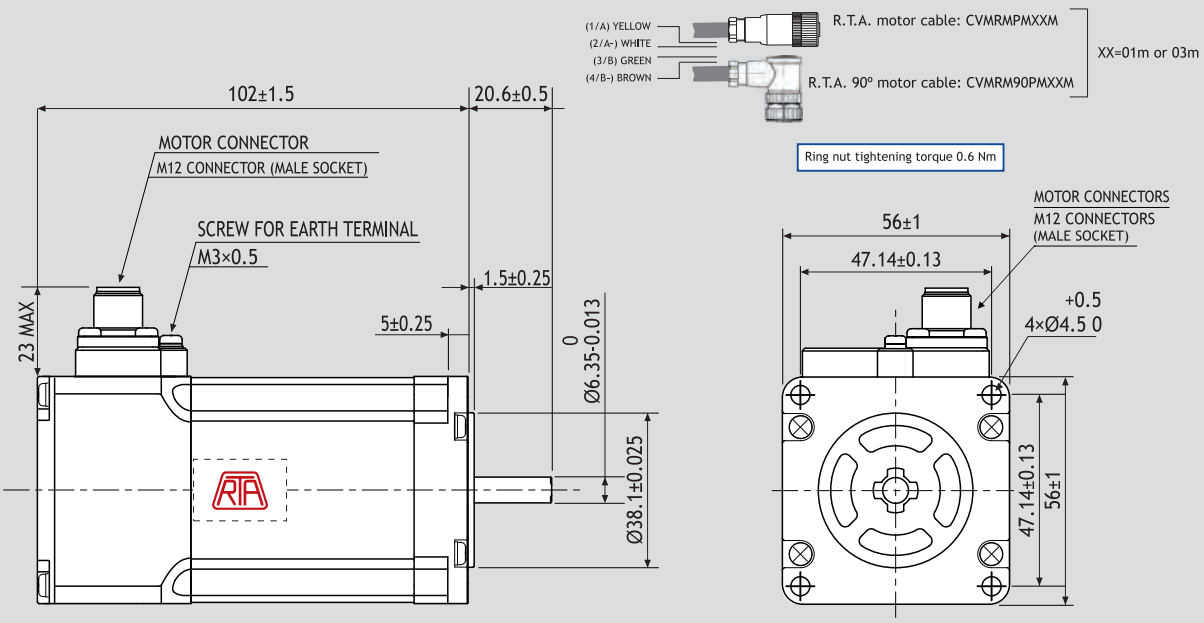


DOUBLE SHAFT MOTORS ONLY.

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

RM 2R2M

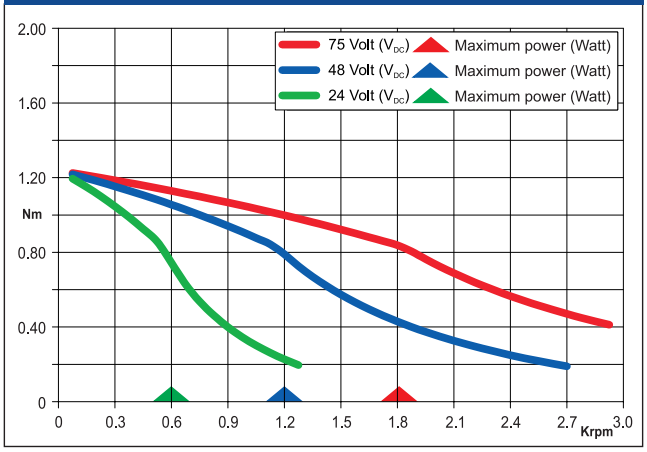
Dimensions (Unit:mm)

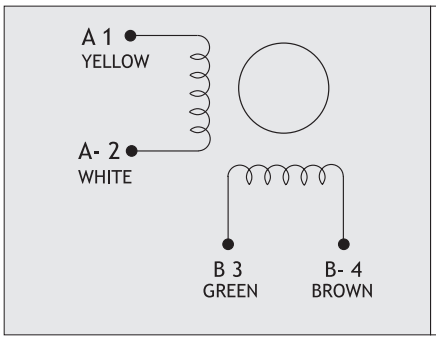


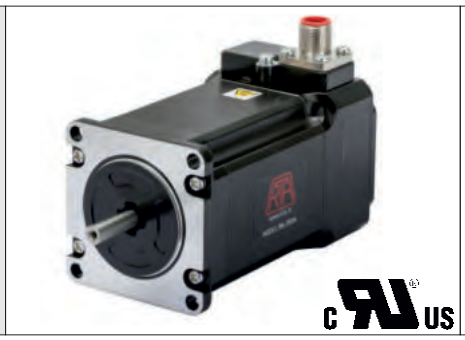
FEATURES

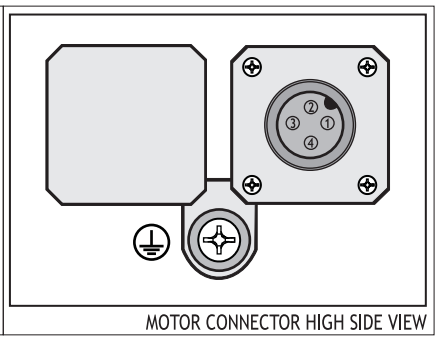
MODEL		RM 2R2M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4
RESISTANCE	(Ohm)	0.48
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	165
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
PROTECTION DEGREE		IP 54
LEADS CODE		V

TORQUE/SPEED CURVE





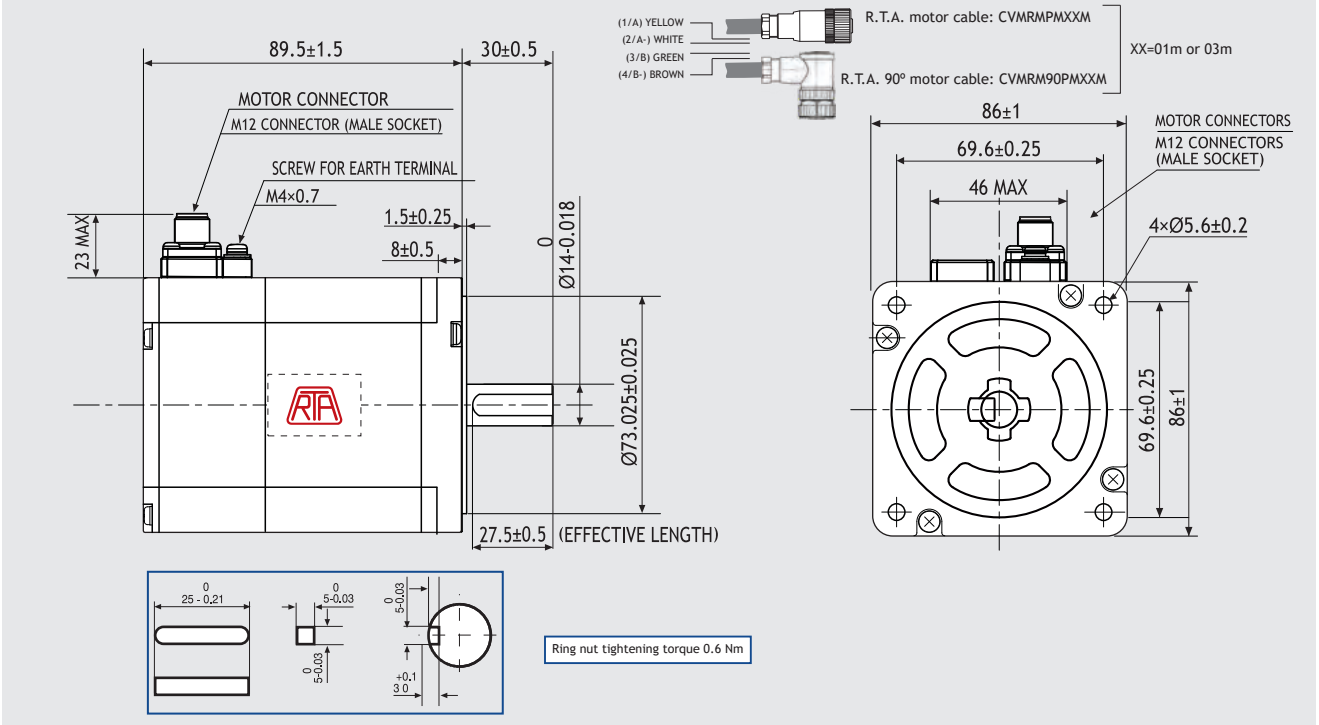




Suggested R.T.A. drive series: CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

RM 3R1M

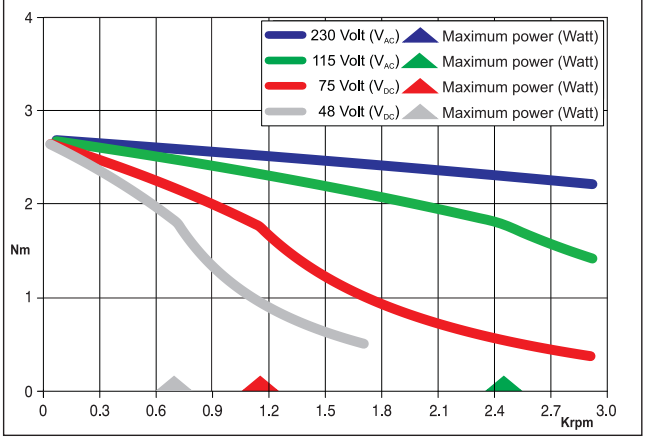
Dimensions (Unit:mm)

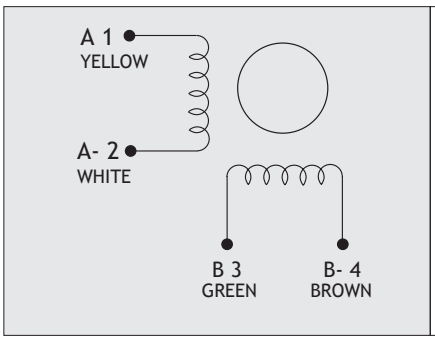


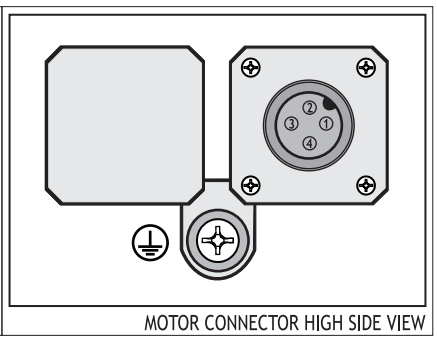
FEATURES

MODEL		RM 3R1M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4
RESISTANCE	(Ohm)	0.56
INDUCTANCE	(mH)	3.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1480
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	90
MASS	(Kg)	1.95
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE



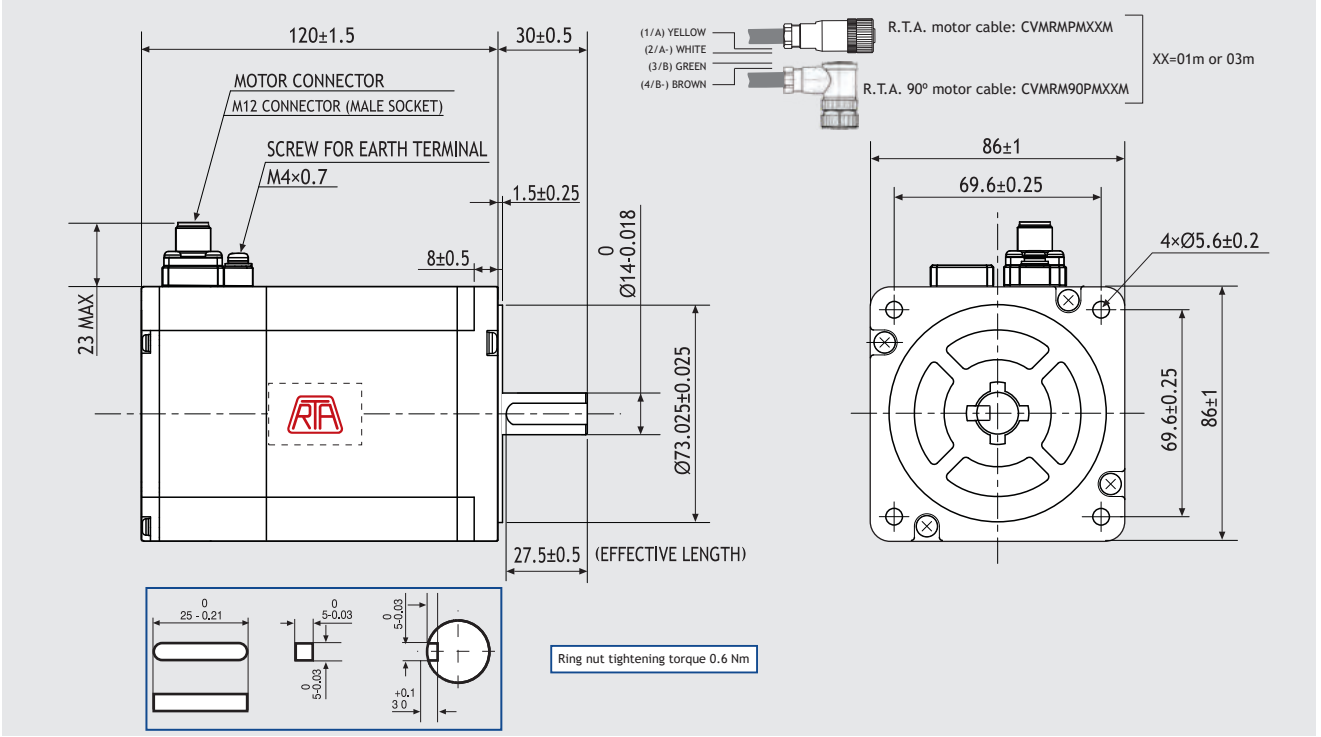




Suggested R.T.A. driver: 230 Vac X-PLUS series/230 Vac X-MIND series.

RM 3R2M

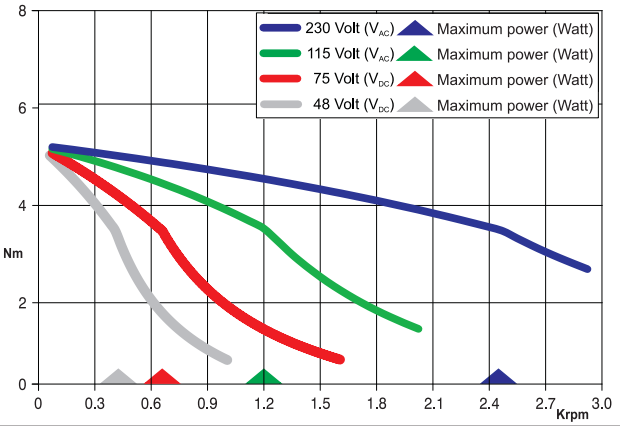
Dimensions (Unit:mm)

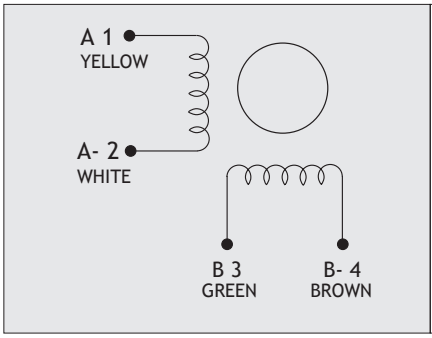


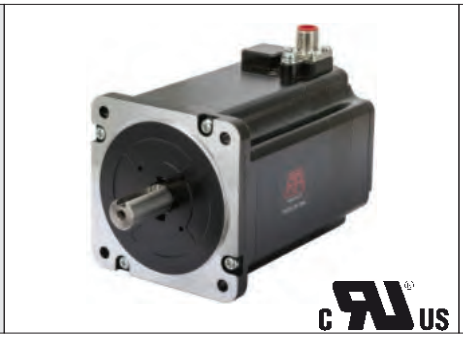
FEATURES

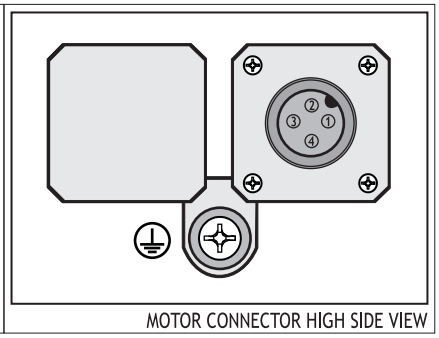
MODEL		RM 3R2M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23330
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	3.1
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE





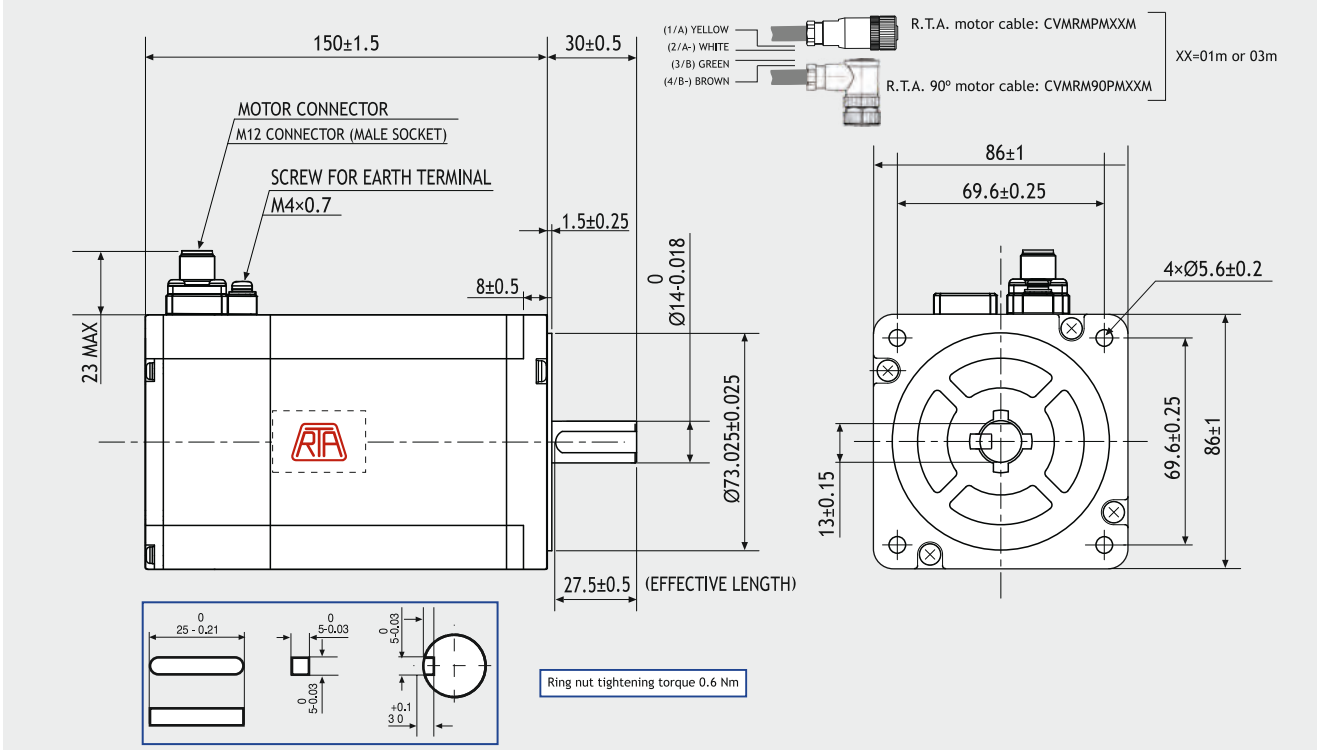




Suggested R.T.A. driver: 230 Vac X-PLUS series/230 Vac X-MIND series.

RM 3R3M

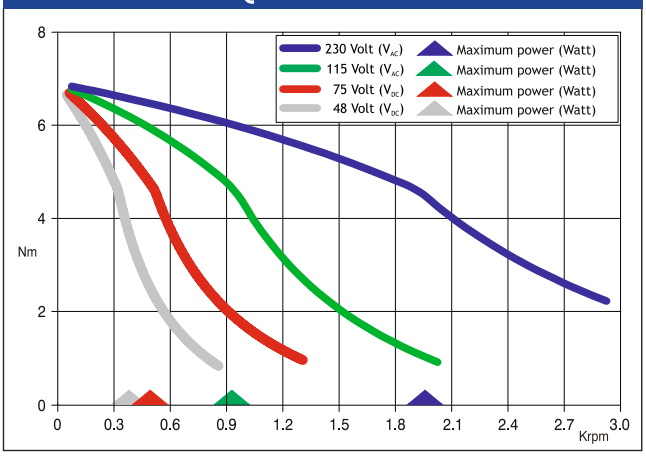
Dimensions (Unit:mm)

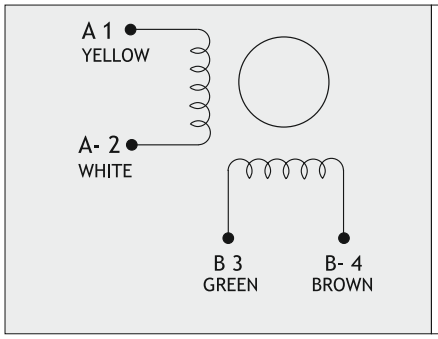


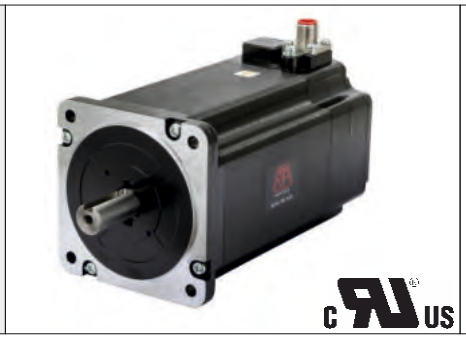
FEATURES

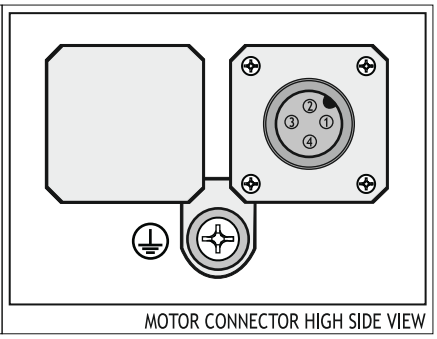
MODEL		RM 3R3M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4
RESISTANCE	(Ohm)	1
INDUCTANCE	(mH)	7.9
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	4500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	241
MASS	(Kg)	4.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE







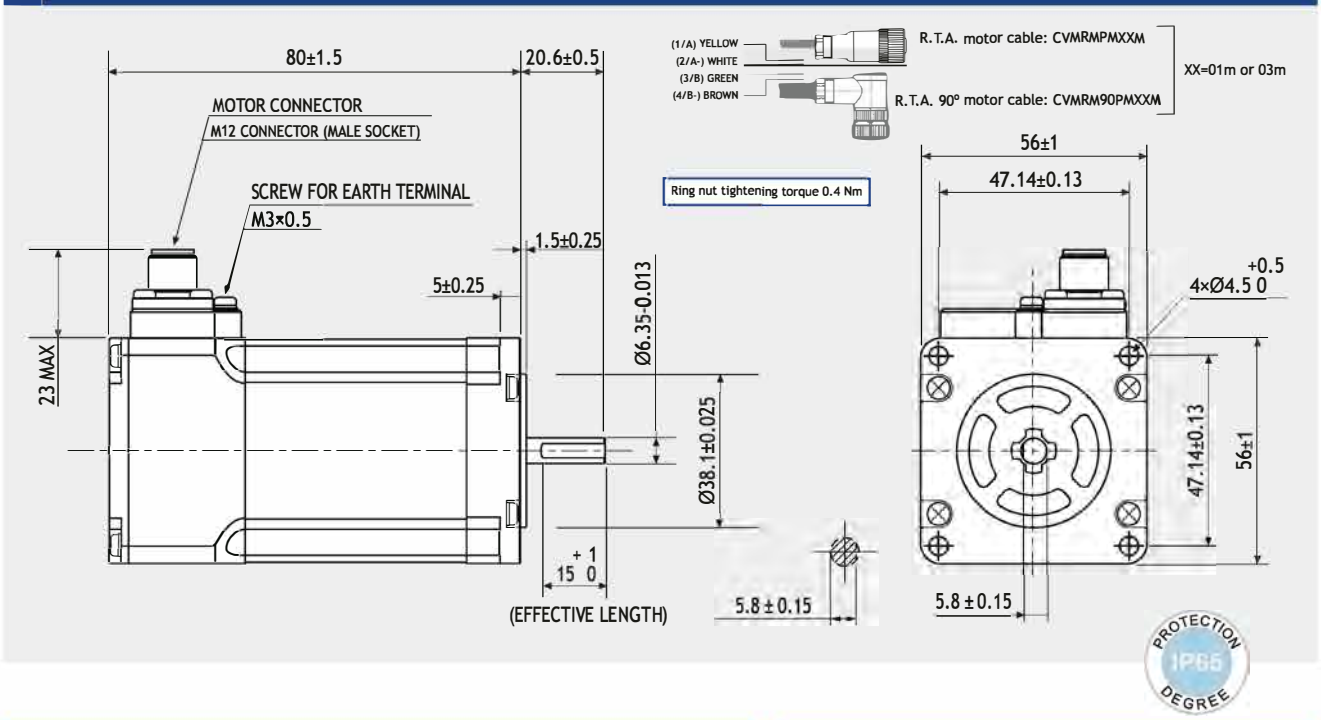


Suggested R.T.A. drive series: 230 Vac X-PLUS

SP 2563-5000

SANYO DENKI
SANMOTION

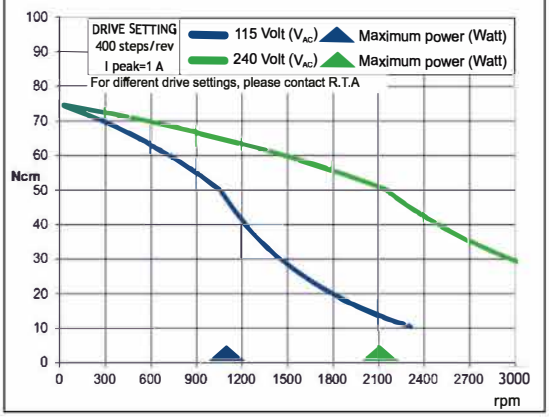
Dimensions (Unit:mm)



FEATURES

MODEL		SP 2563-5000
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	1
RESISTANCE	(Ohm)	5.8
INDUCTANCE	(mH)	29
BIPOLAR HOLDING TORQUE	(Ncm)	100
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47600
BACK E.M.F.	(V/Krpm)	100
MASS	(Kg)	0.9
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP65 - F

TORQUE CURVE

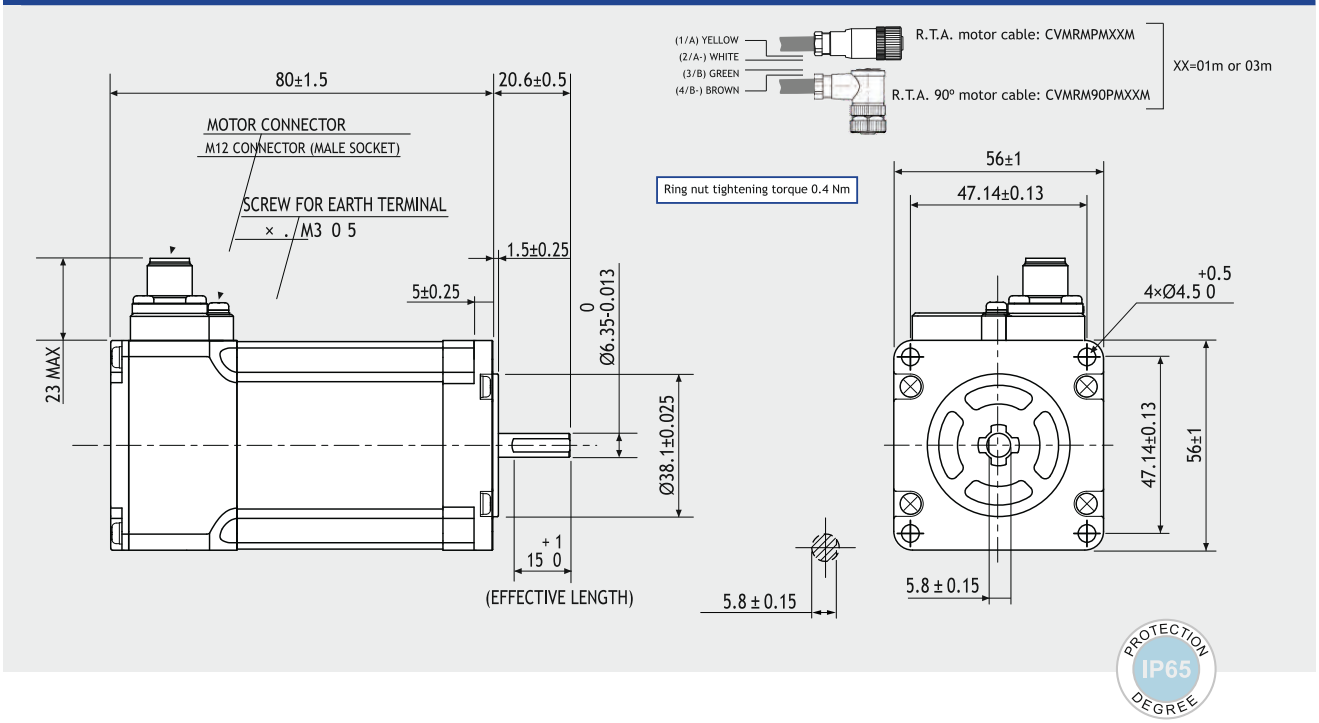


Suggested R.T.A. drive model: X-PLUS L2

SP 2563-5200

SANYO DENKI
SANMOTION

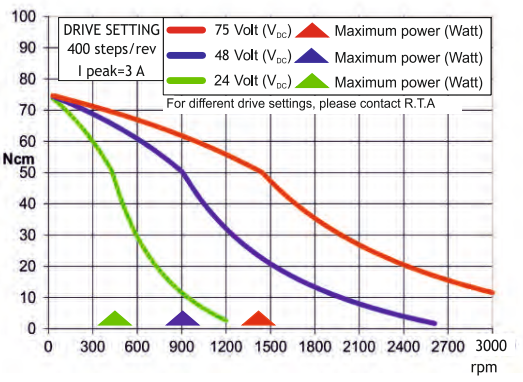
Dimensions (Unit:mm)

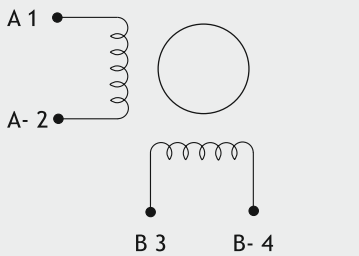


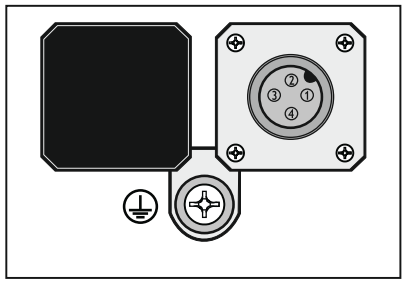
FEATURES

MODEL		SP 2563-5200
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	3
RESISTANCE	(Ohm)	0.75
INDUCTANCE	(mH)	3.4
BIPOLAR HOLDING TORQUE	(Ncm)	100
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47600
BACK E.M.F.	(V/Krpm)	33
MASS	(Kg)	0.9
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP65 - F

TORQUE CURVE





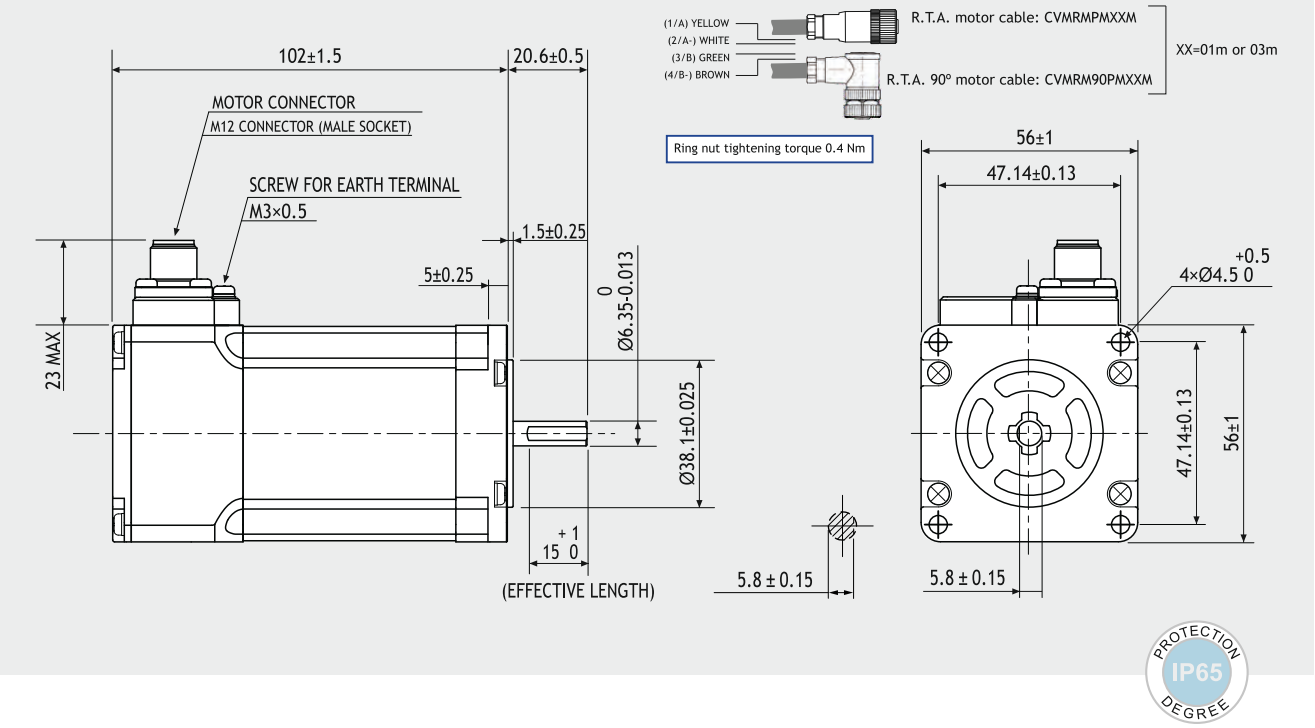


Suggested R.T.A. drive series: CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

SP 2566-5200

SANYO DENKI
SANMOTION

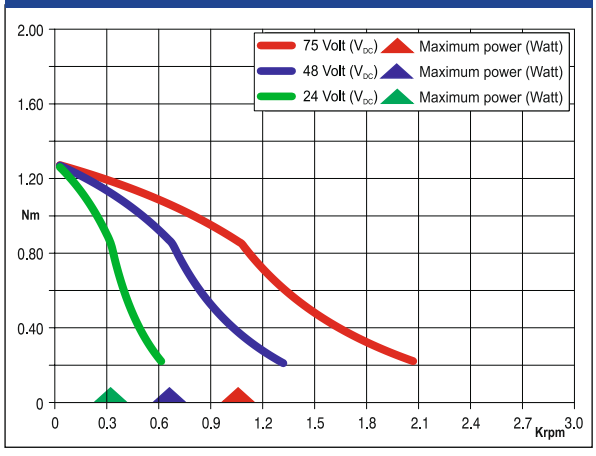
Dimensions (Unit:mm)

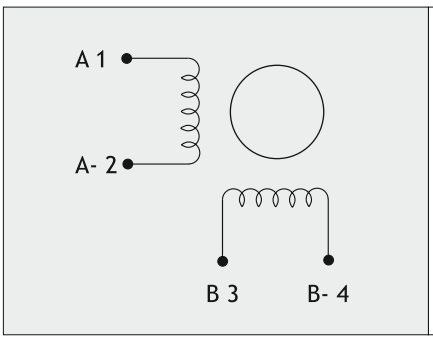


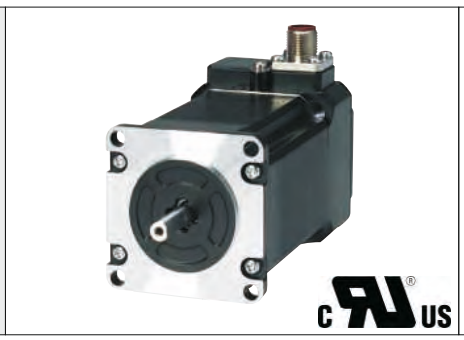
FEATURES

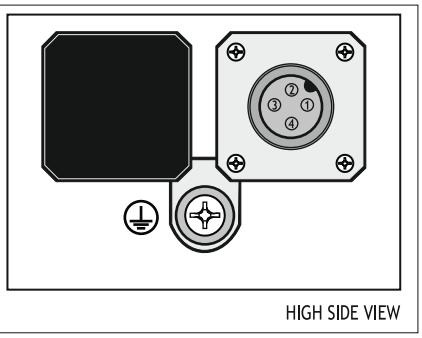
MODEL		SP 2566-5200
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	3
RESISTANCE	(Ohm)	0.94
INDUCTANCE	(mH)	4.4
BIPOLAR HOLDING TORQUE	(Ncm)	170
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47200
BACK E.M.F.	(V/Krpm)	55
MASS	(Kg)	1.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP65 - F

TORQUE/SPEED CURVE







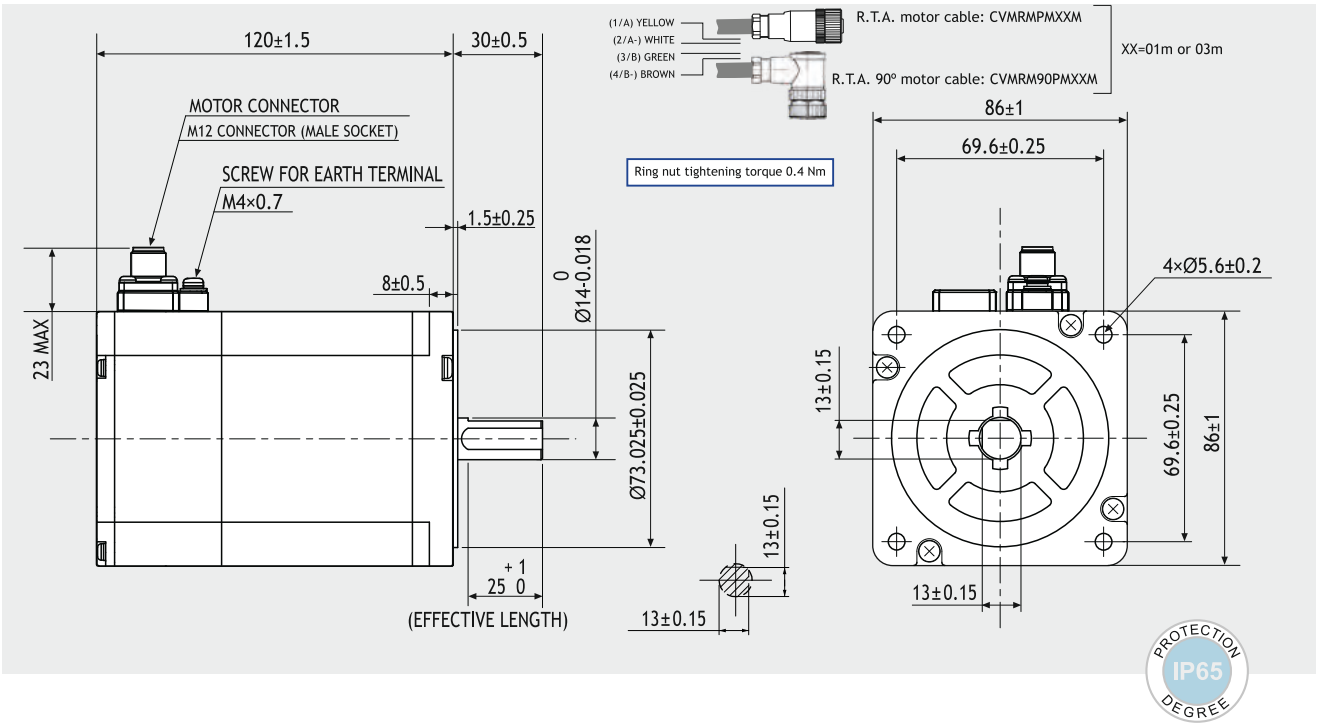


Suggested R.T.A. drive series: CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

SP 2862-5100

SANYO DENKI
SANMOTION

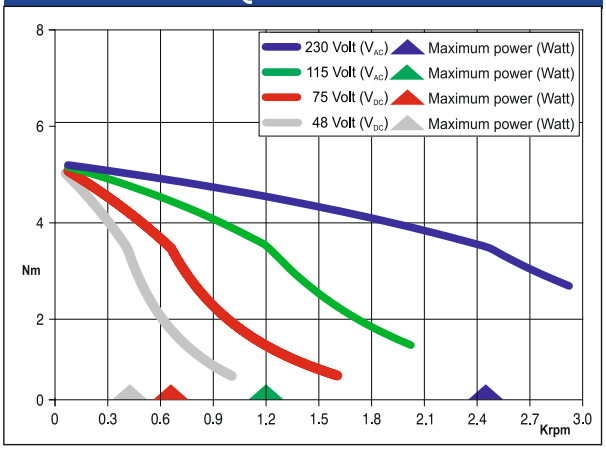
Dimensions (Unit:mm)

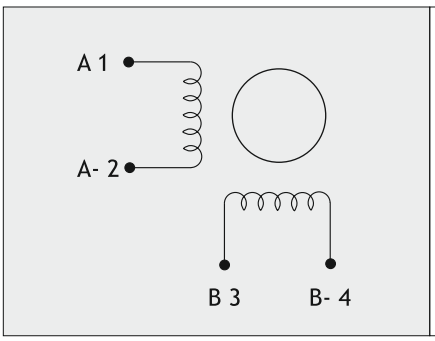


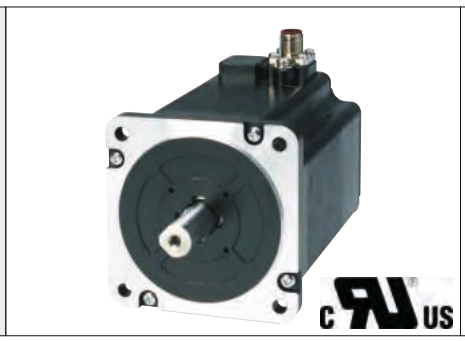
FEATURES

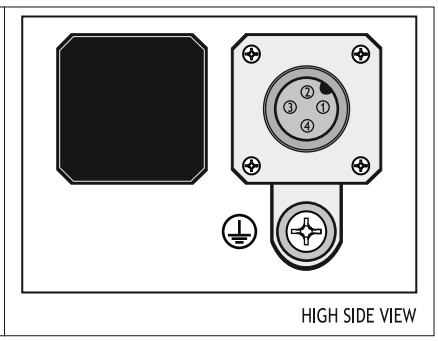
MODEL		SP 2862-5100
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	3.1
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP65 - F

TORQUE/SPEED CURVE







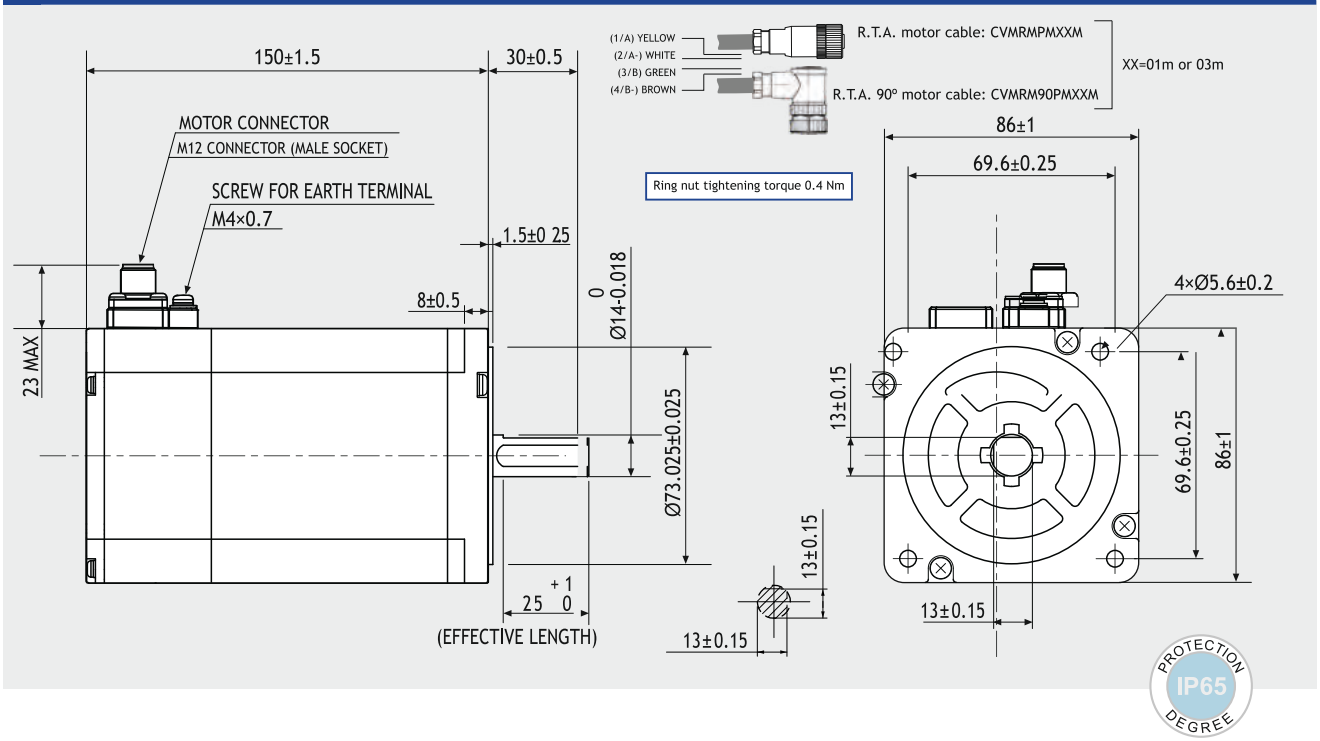


Suggested R.T.A. drive series: 230 Vac X-PLUS

SP 2863-5100

SANYO DENKI
SANMOTION

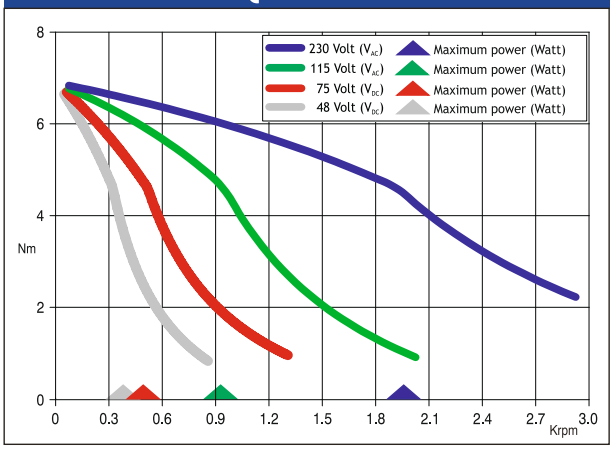
Dimensions (Unit:mm)

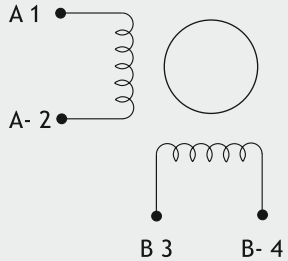


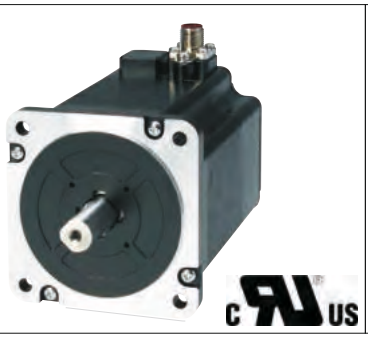
FEATURES

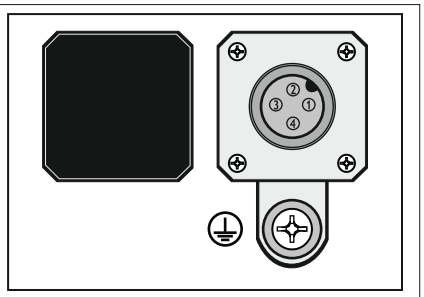
MODEL		SP 2863-5100
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4
RESISTANCE	(Ohm)	1
INDUCTANCE	(mH)	7.9
BIPOLAR HOLDING TORQUE	(Ncm)	900
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	4500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	20000
BACK E.M.F.	(V/Krpm)	225
MASS	(Kg)	4.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP65 - F

TORQUE/SPEED CURVE







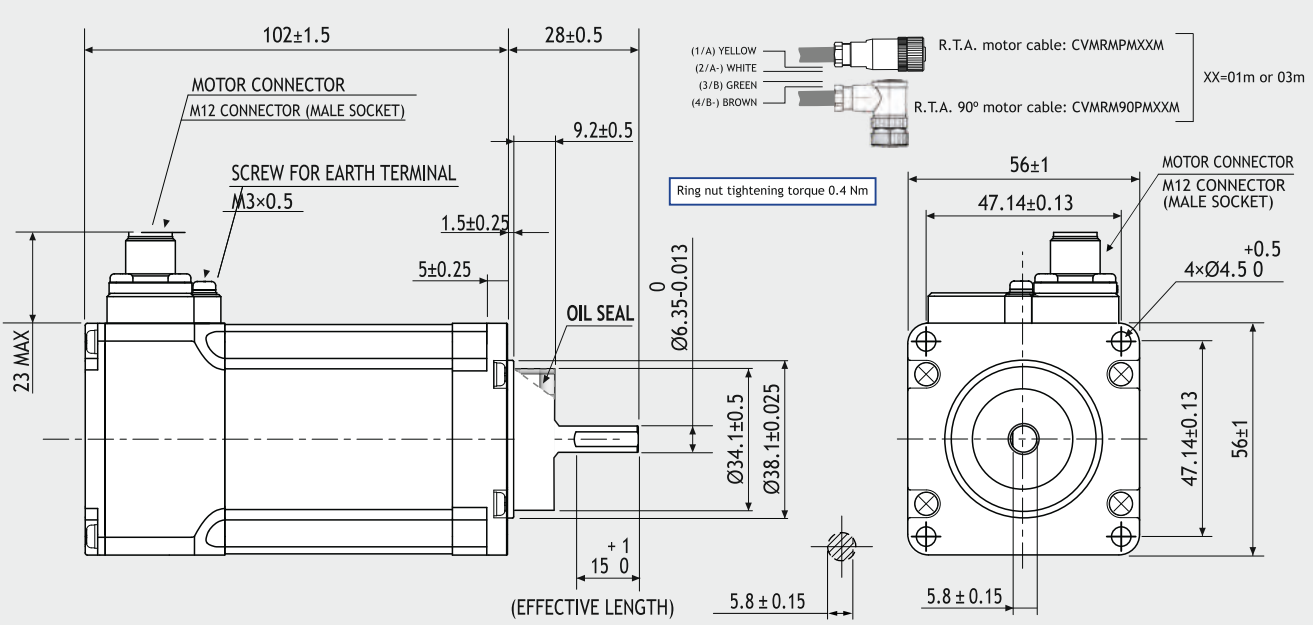


Suggested R.T.A. drive series: 230 Vac X-PLUS

SP2566-50SX00

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

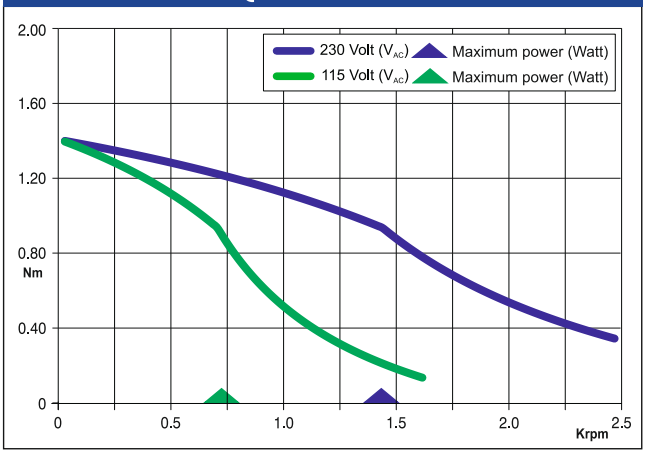


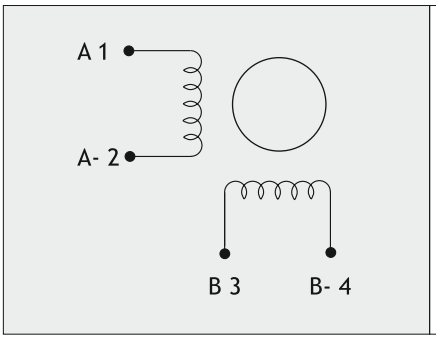
FULL IP65

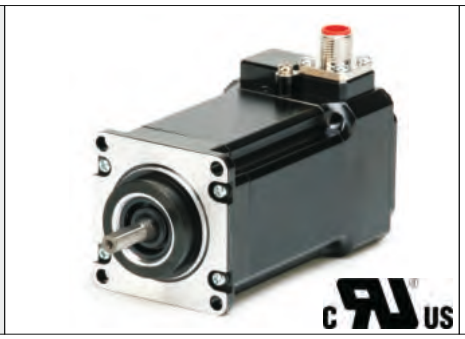
FEATURES

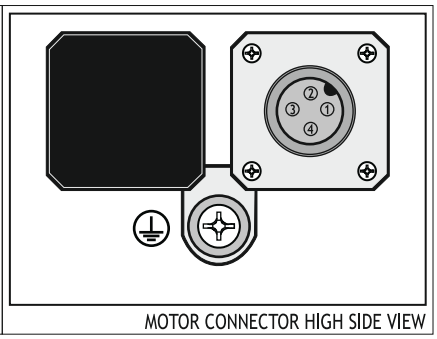
MODEL		SP2566-50SX00
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	7.7
INDUCTANCE	(mH)	35.4
BIPOLAR HOLDING TORQUE	(Ncm)	170
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47200
BACK E.M.F.	(V/Krpm)	160
MASS	(Kg)	1.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		FULL IP65 - F
LEADS CODE		V

TORQUE/SPEED CURVE







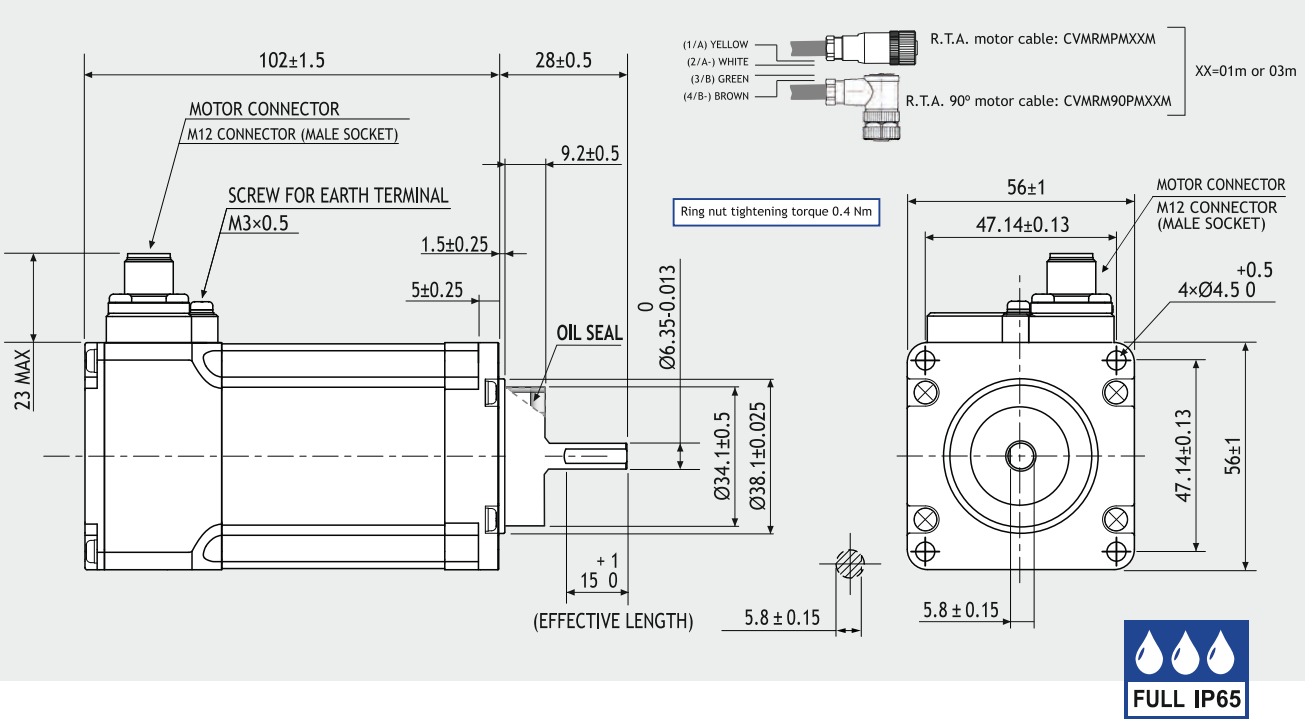


Suggested R.T.A. drive series: X-PLUS L2

SP2566-52SX00

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

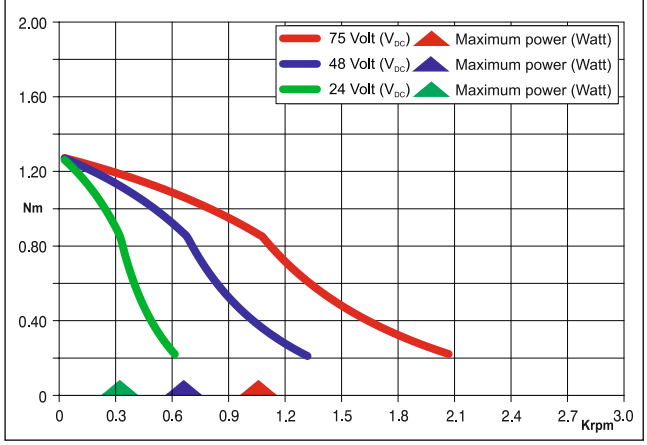


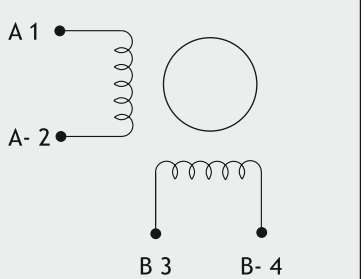
FULL IP65

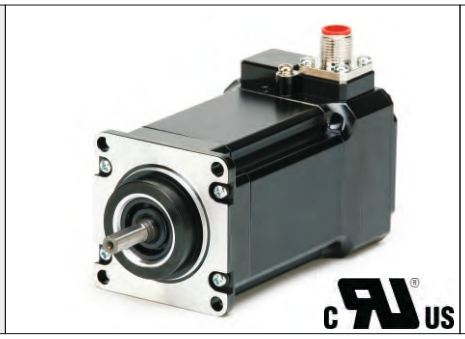
FEATURES

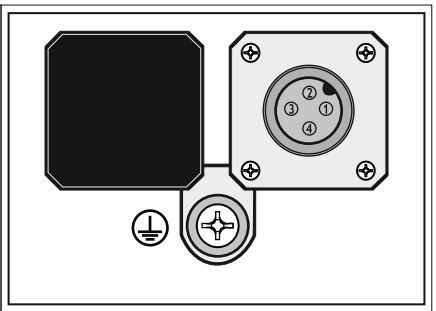
MODEL		SP2566-52SX00
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	3.0
RESISTANCE	(Ohm)	0.94
INDUCTANCE	(mH)	4.4
BIPOLAR HOLDING TORQUE	(Ncm)	170
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47200
BACK E.M.F.	(V/Krpm)	55
MASS	(Kg)	1.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		FULL IP65 - F
LEADS CODE		V

TORQUE/SPEED CURVE







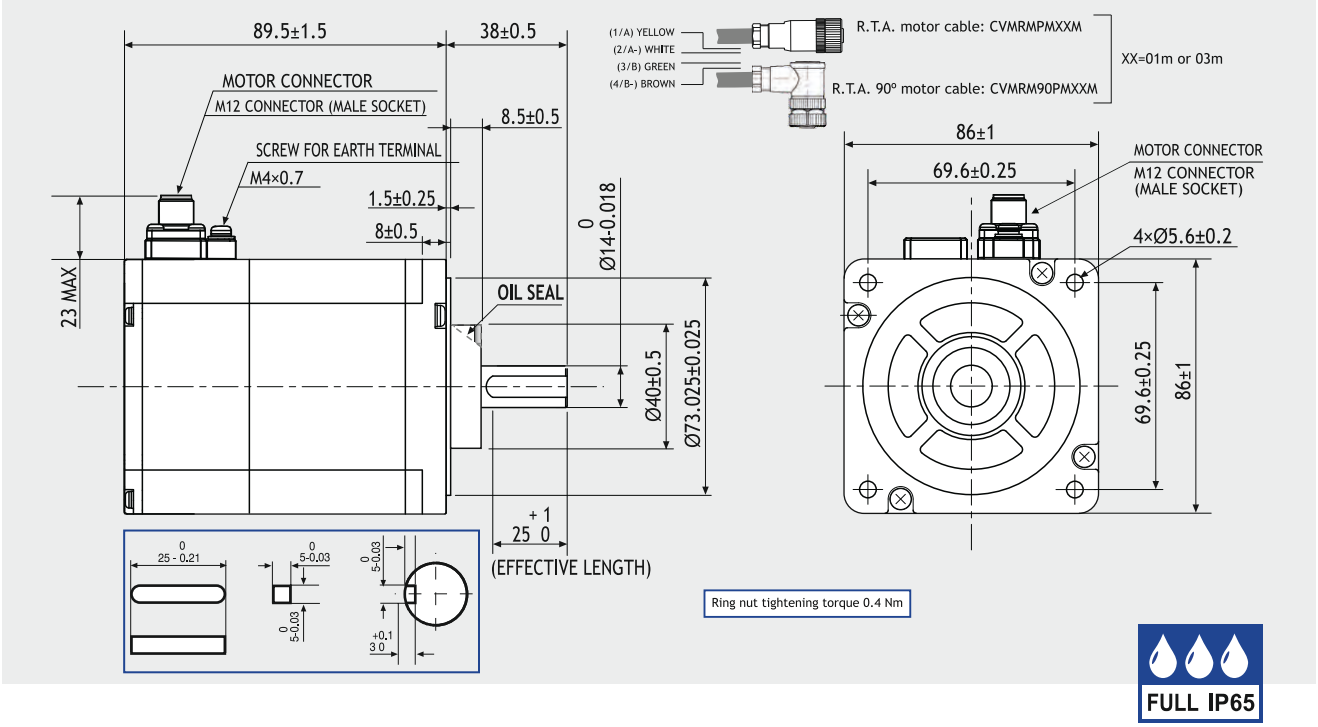


Suggested R.T.A. drive series: CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

SP2861-51SX01

SANYO DENKI
SANMOTION

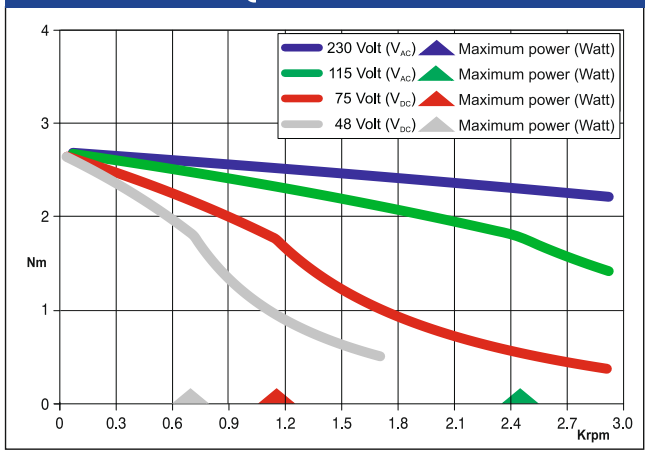
Dimensions (Unit:mm)

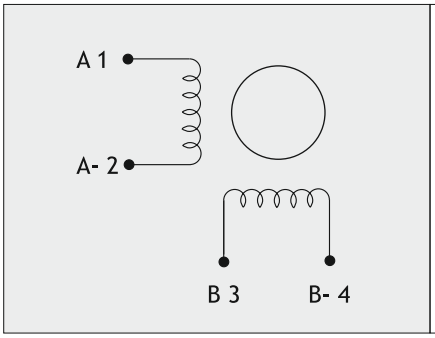


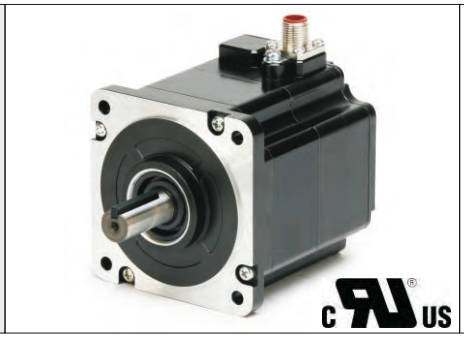
FEATURES

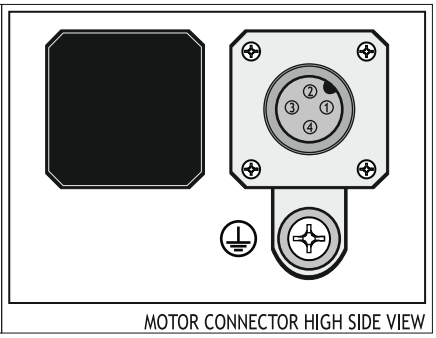
	MODEL	SP2861-51SX01
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	0.56
INDUCTANCE	(mH)	3.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1480
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	90
MASS	(Kg)	1.9
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		FULL IP65 - F
LEADS CODE		V

TORQUE/SPEED CURVE









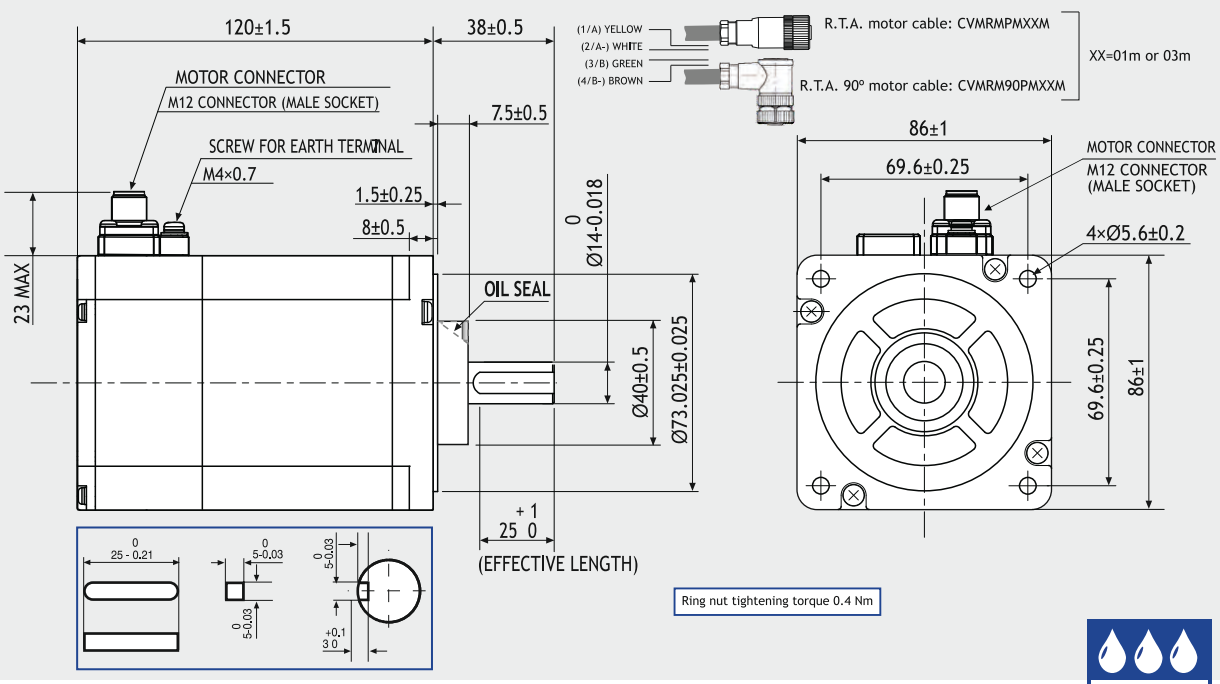
MOTOR CONNECTOR HIGH SIDE VIEW

Suggested R.T.A. drive series: 230 Vac X-PLUS

SP2862-51SX01

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

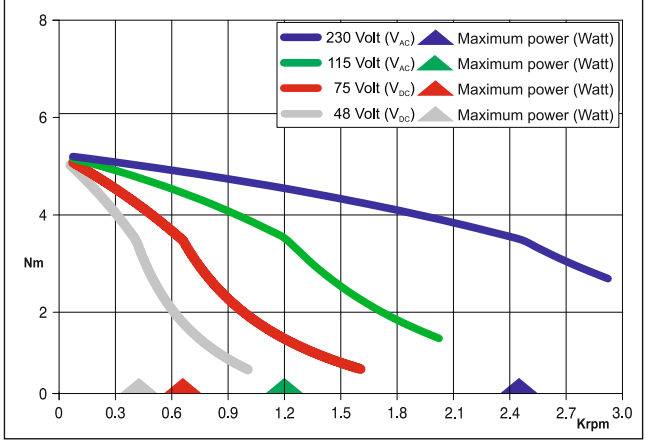


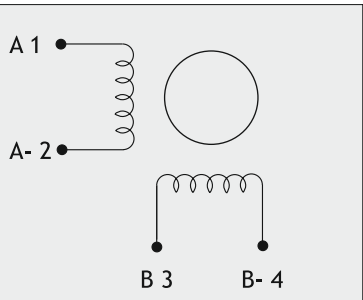
FULL IP65

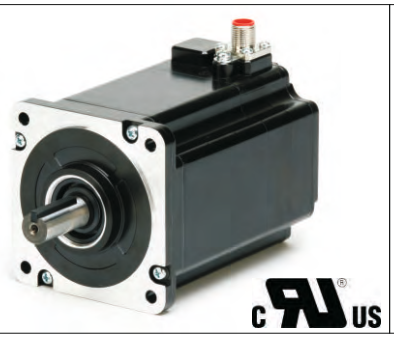
FEATURES

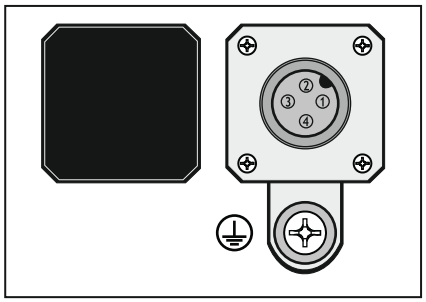
MODEL		SP2862-51SX01
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	3.1
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		FULL IP65 - F
LEADS CODE		V

TORQUE/SPEED CURVE









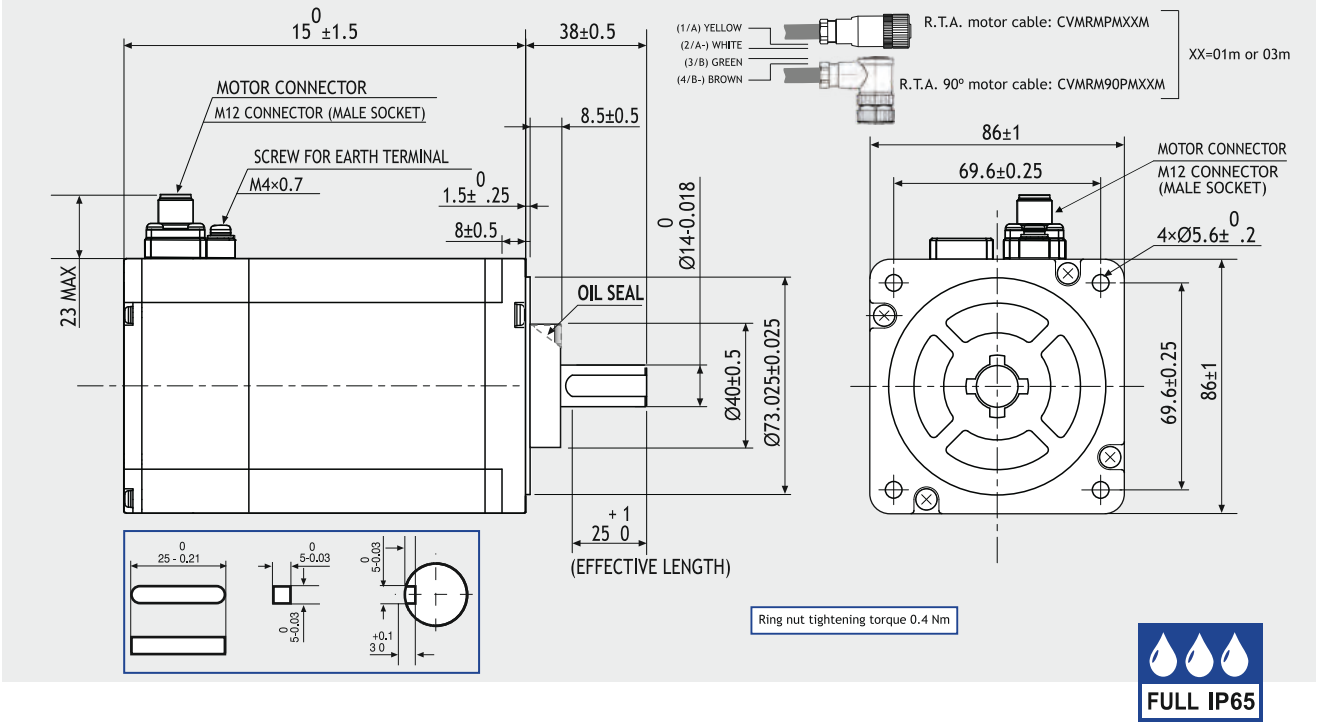
MOTOR CONNECTOR HIGH SIDE VIEW

Suggested R.T.A. drive series: 230 Vac X-PLUS

SP2863-51SX01

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

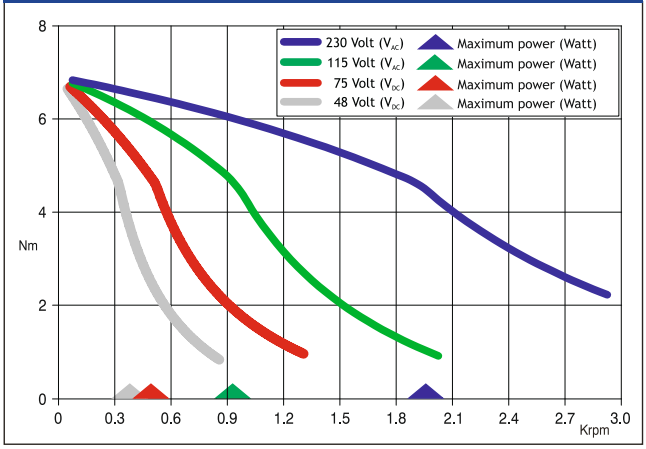


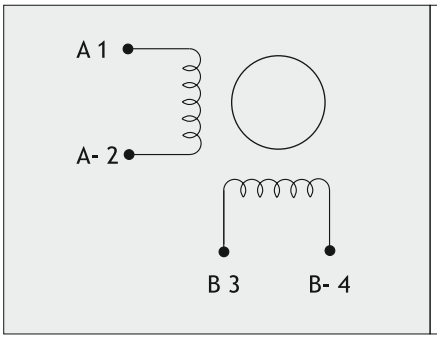
FULL IP65

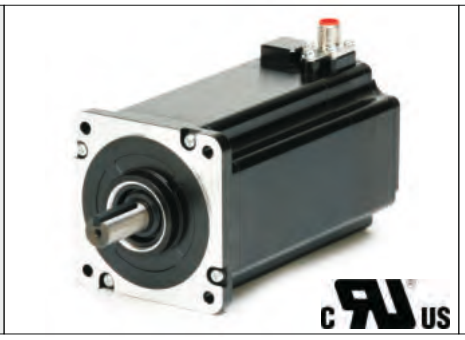
FEATURES

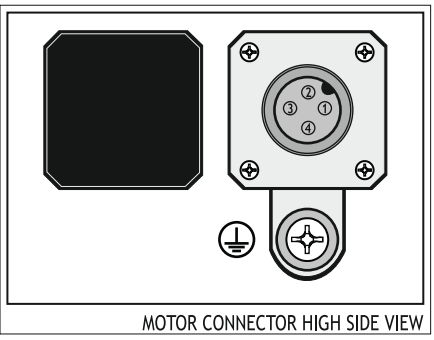
MODEL		SP2863-51SX01
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	1.0
INDUCTANCE	(mH)	7.9
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	4500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	241
MASS	(Kg)	4.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		FULL IP65 - F
LEADS CODE		V

TORQUE/SPEED CURVE









MOTOR CONNECTOR HIGH SIDE VIEW

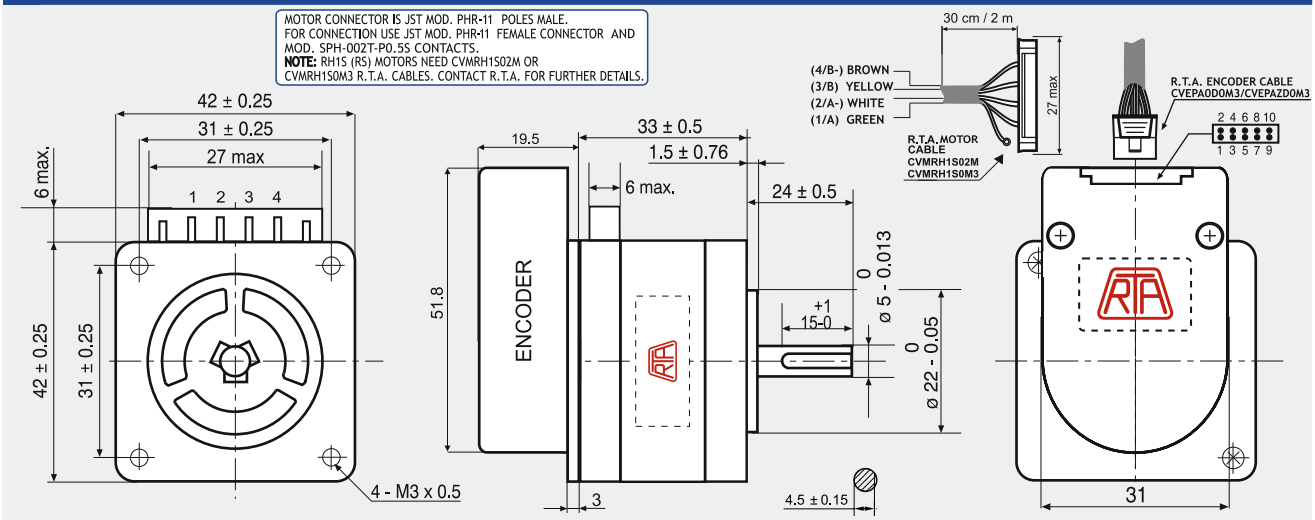
Suggested R.T.A. drive series: 230 Vac X-PLUS

STEPPING MOTORS

INDUSTRIAL STEPPING MOTORS WITH ENCODER

RH 1S0M-0XX0

Dimensions (Unit:mm)

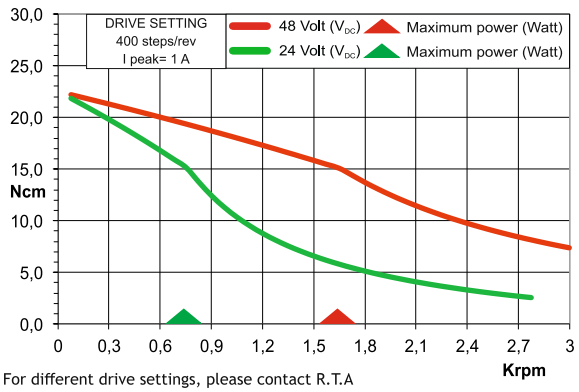


ENCODER OPTIONS:		RH 1S0M-04D0	RH 1S0M-04E0	RH 1S0M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

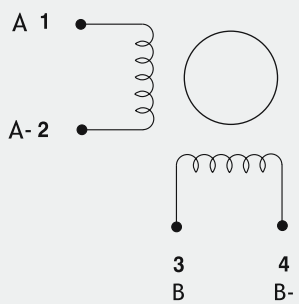
FEATURES

MODEL		RH 1S0M
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(A)	1.0
UNIPOLAR CURRENT	(A)	
RESISTANCE	(Ohm)	3.6
INDUCTANCE	(mH)	7
BIPOLAR HOLDING TORQUE	(Ncm)	29
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	31
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	93500
BACK E.M.F.	(V/Krpm)	29
MASS	(Kg)	0.23
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings, please contact R.T.A



RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

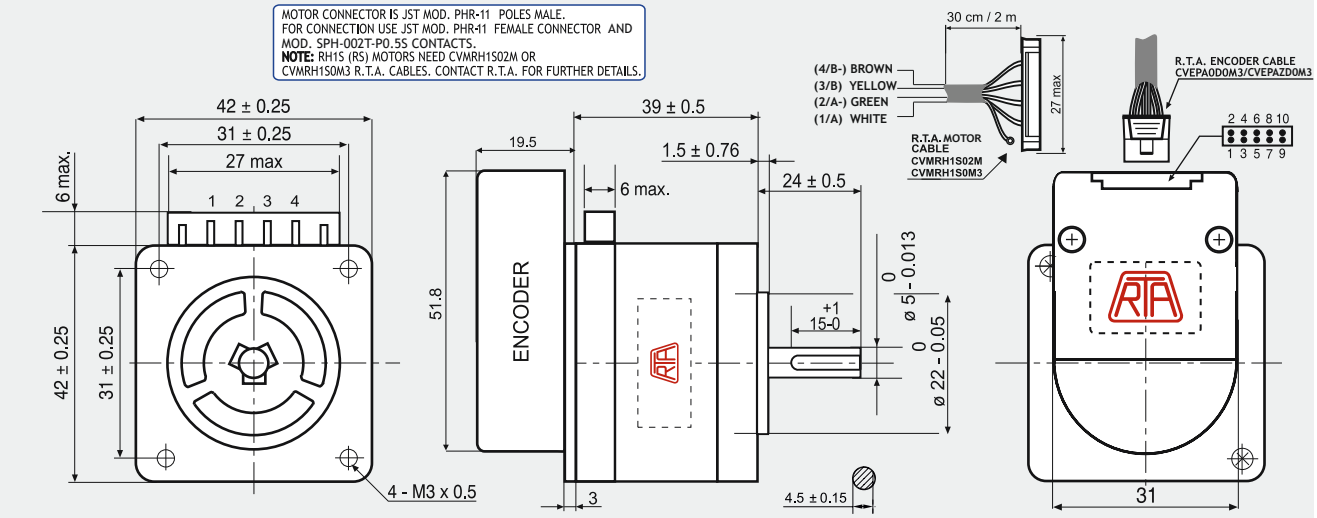
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S1H-0XX0

Dimensions (Unit:mm)

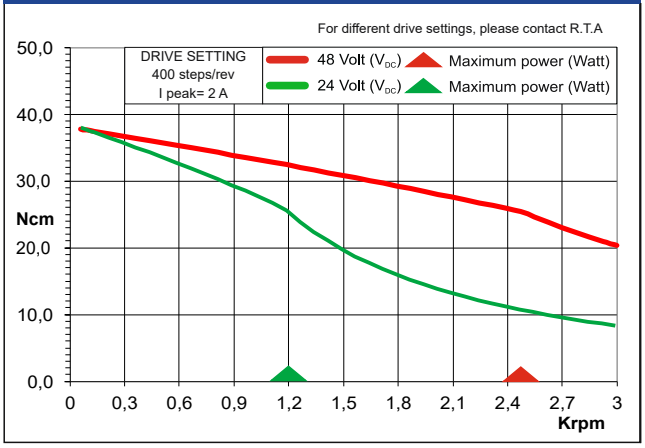


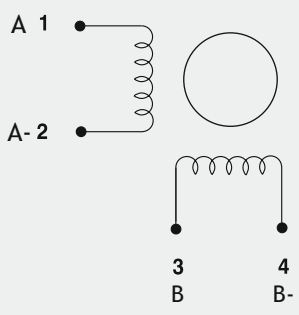
ENCODER OPTIONS:		RH 1S1H-04D0	RH 1S1H-04E0	RH 1S1H-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ±10%	5 V_{DC} ±10%	5 V_{DC} ±10%

FEATURES

MODEL		RH 1S1H
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.1
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	43
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	46
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	93000
BACK E.M.F.	(V/Krpm)	21.5
MASS	(Kg)	0.3
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE





RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

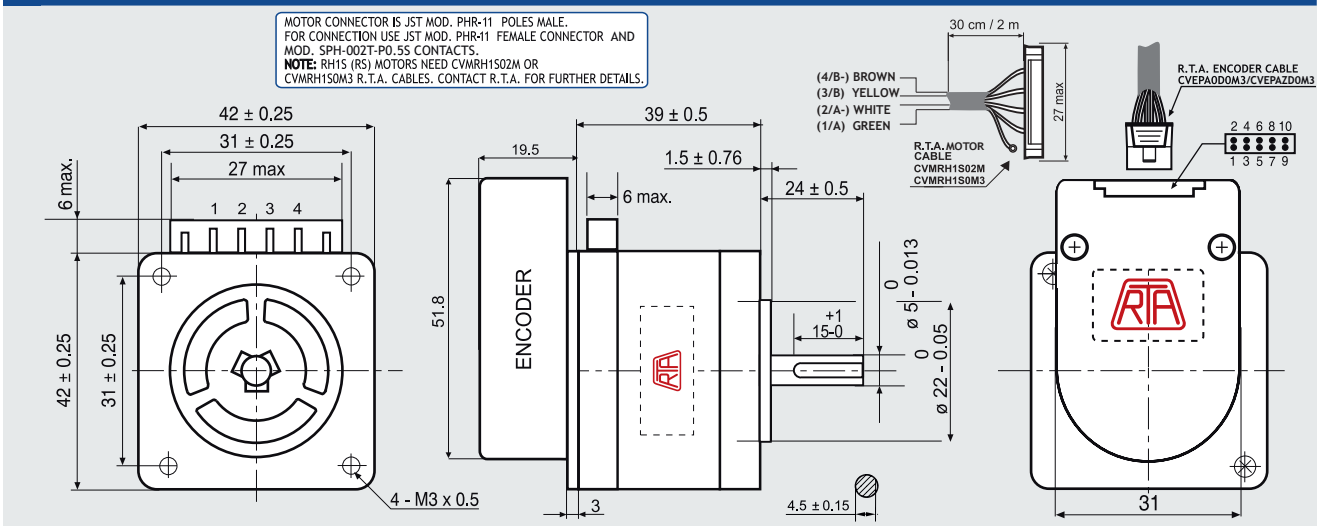
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. LEADS COLOR
CHANNEL A+	6	6 5 8 7 2 3 10 9	GREEN
CHANNEL A-	5		PURPLE
CHANNEL B+	8		BLUE
CHANNEL B-	7		BROWN
+ DC (5V)	2		RED
GROUND	3		BLACK
INDEX+	/		ORANGE
INDEX-	/		WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S1M-0XX0

Dimensions (Unit:mm)

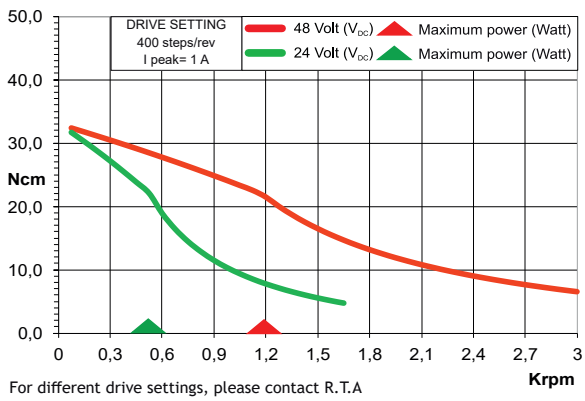


ENCODER OPTIONS:		RH 1S1M-04D0	RH 1S1M-04E0	RH 1S1M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ±10%	5 V_{DC} ±10%	5 V_{DC} ±10%

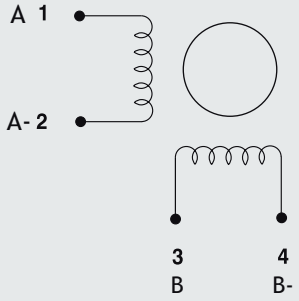
FEATURES

MODEL		RH 1S1M
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(A)	1.0
UNIPOLAR CURRENT	(A)	
RESISTANCE	(Ohm)	4.6
INDUCTANCE	(mH)	9.6
BIPOLAR HOLDING TORQUE	(Ncm)	43
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	46
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	93500
BACK E.M.F.	(V/Krpm)	43
MASS	(Kg)	0.3
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings, please contact R.T.A



RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

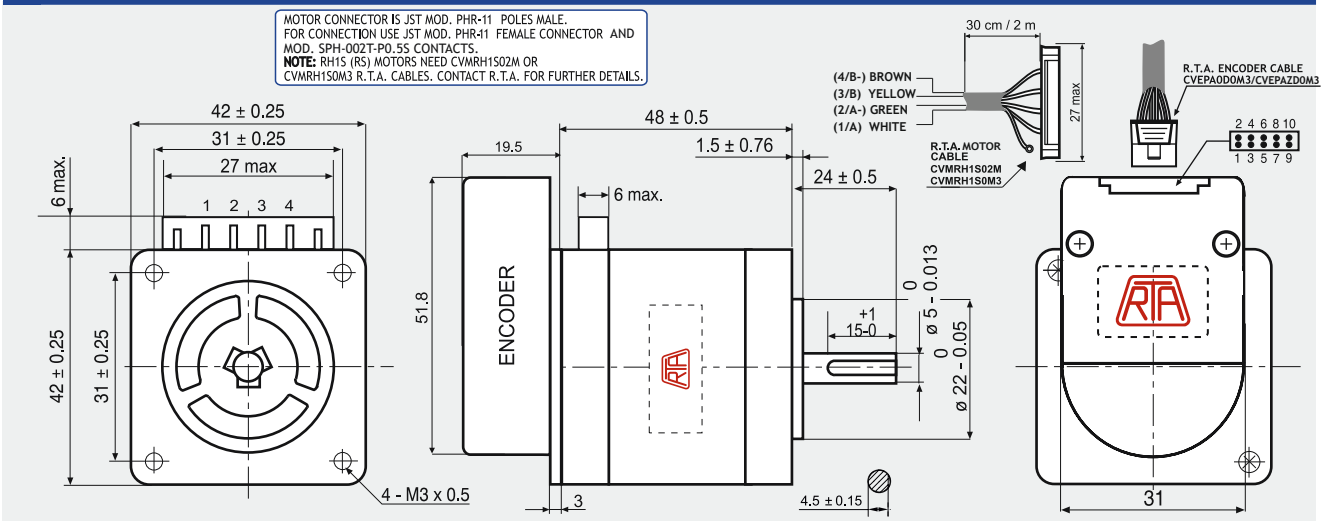
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S2H-0XX0

Dimensions (Unit:mm)

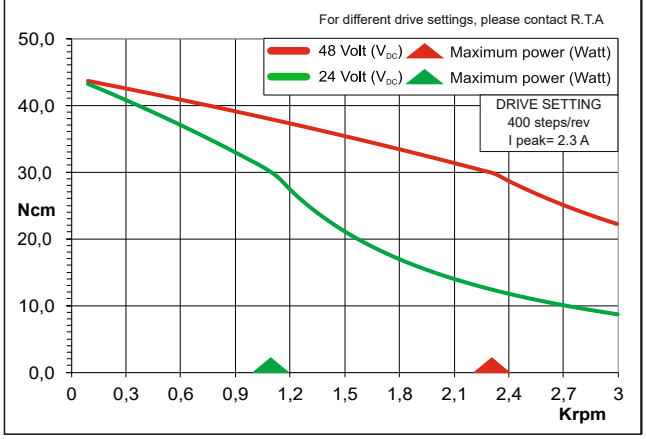


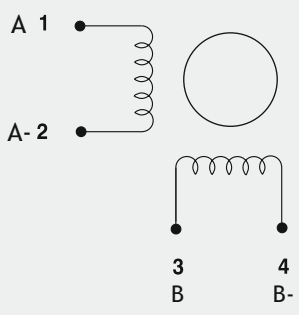
ENCODER OPTIONS:		RH 1S2H-04D0	RH 1S2H-04E0	RH 1S2H-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ±10%	5 V_{DC} ±10%	5 V_{DC} ±10%

FEATURES

MODEL		RH 1S2H
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	2.3
UNIPOLAR CURRENT	(A)	
RESISTANCE	(Ohm)	0.93
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	56
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	63
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	89000
BACK E.M.F.	(V/Krpm)	24.3
MASS	(Kg)	0.38
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE





RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

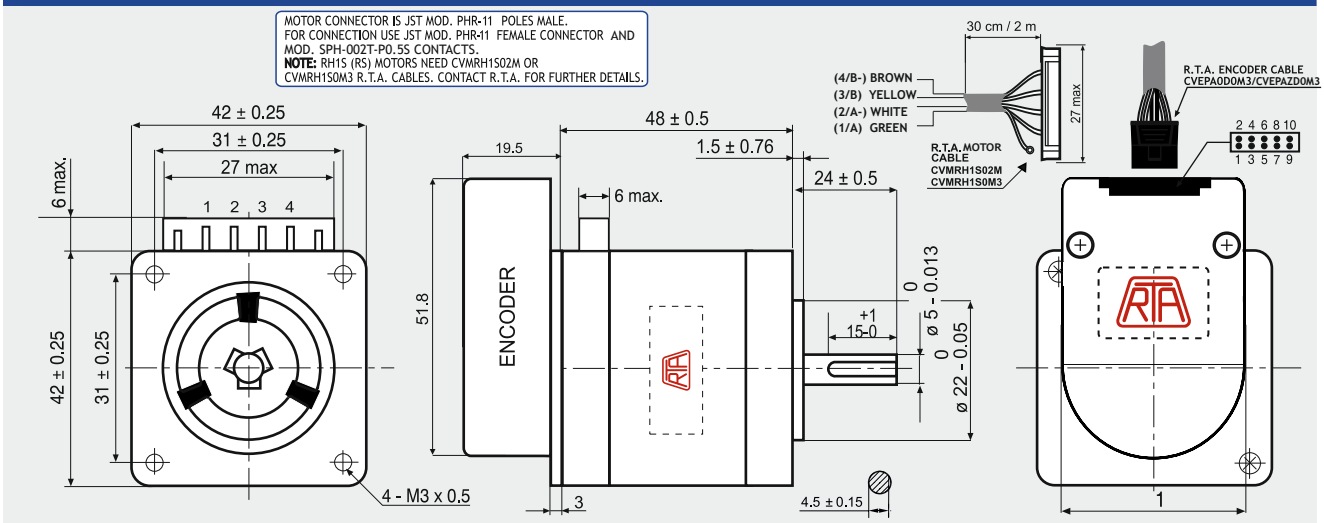
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE COLOR
CHANNEL A+	6	6 5 8 7 2 3 10 9	GREEN
CHANNEL A-	5		PURPLE
CHANNEL B+	8		BLUE
CHANNEL B-	7		BROWN
+ DC (5V)	2		RED
GROUND	3		BLACK
INDEX+	/		ORANGE
INDEX-	/		WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S2M-0XX0

Dimensions (Unit:mm)

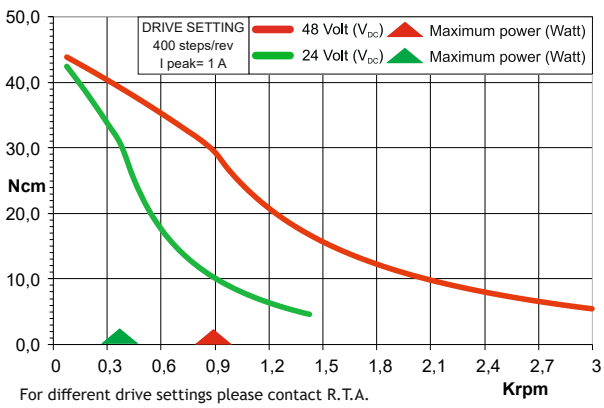


ENCODER OPTIONS:		RH 1S2M-04D0	RH 1S2M-04E0	RH 1S2M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ±10%	5 V_{DC} ±10%	5 V_{DC} ±10%

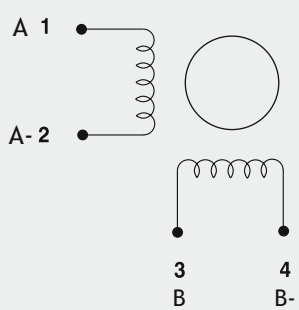
FEATURES

MODEL		RH 1S2M
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(A)	1.0
UNIPOLAR CURRENT	(A)	
RESISTANCE	(Ohm)	5.3
INDUCTANCE	(mH)	12.5
BIPOLAR HOLDING TORQUE	(Ncm)	56
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	63
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	88900
BACK E.M.F.	(V/Krpm)	56
MASS	(Kg)	0.38
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings please contact R.T.A.



RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

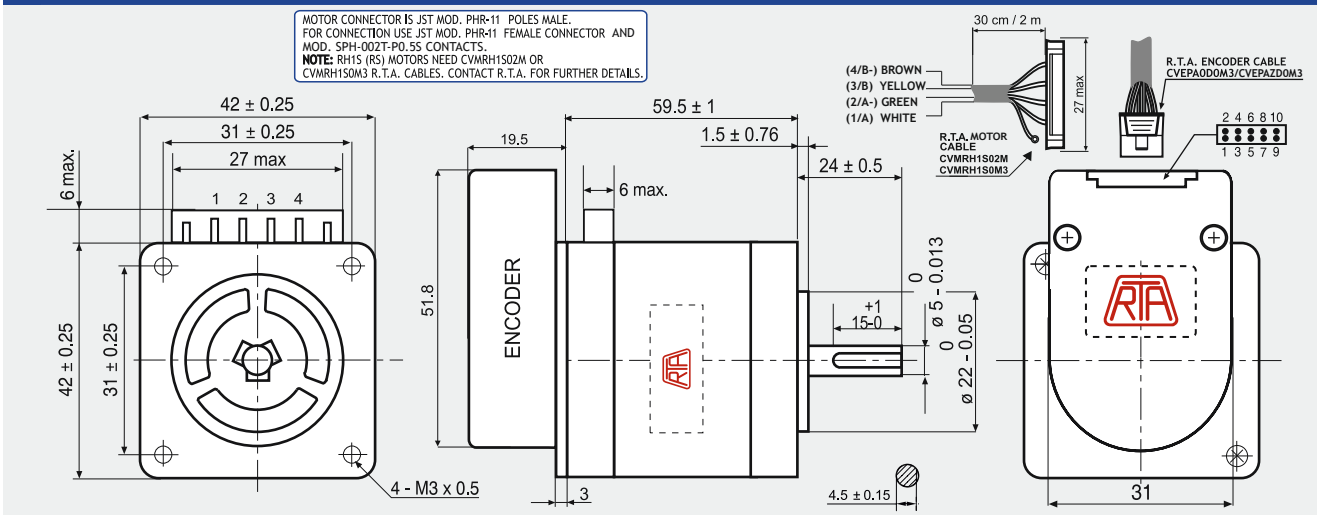
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S3H-0XX0

Dimensions (Unit:mm)

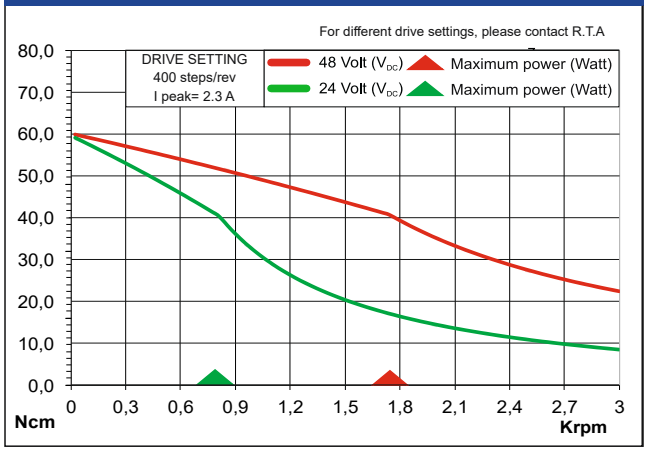


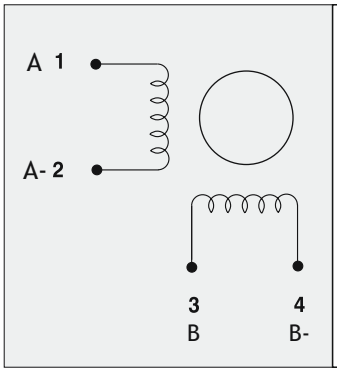
ENCODER OPTIONS:		RH 1S3H-04D0	RH 1S3H-04E0	RH 1S3H-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ±10%	5 V_{DC} ±10%	5 V_{DC} ±10%

FEATURES

MODEL		RH 1S3H
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	2.3
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.2
INDUCTANCE	(mH)	3.0
BIPOLAR HOLDING TORQUE	(Ncm)	80
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	94
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	85100
BACK E.M.F.	(V/Krpm)	34.7
MASS	(Kg)	0.51
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE





RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

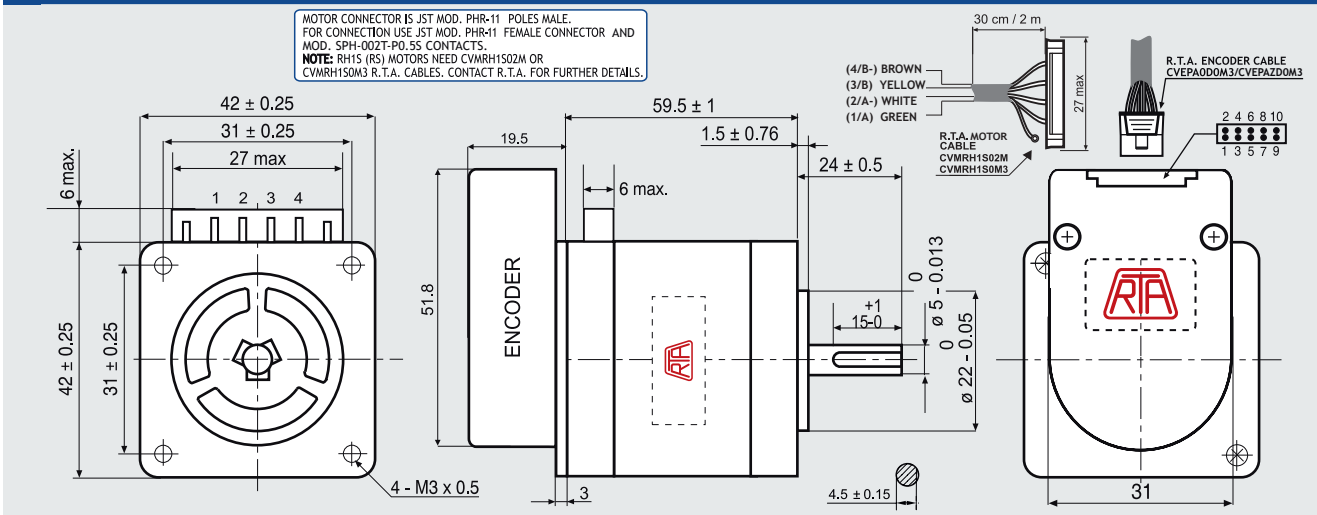
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 1S3M-0XX0

Dimensions (Unit:mm)

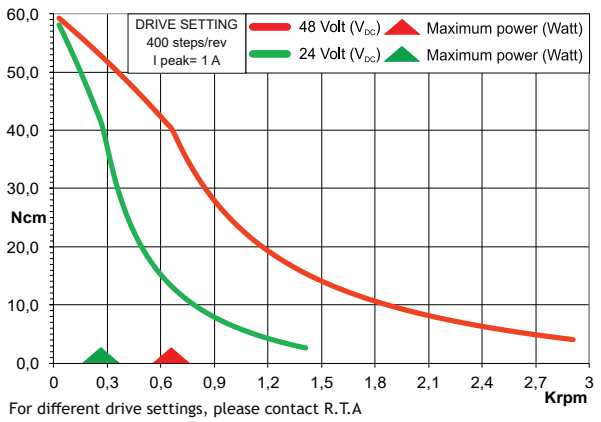


ENCODER OPTIONS:		RH 1S3M-04D0	RH 1S3M-04E0	RH 1S3M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ±10%	5 V_{DC} ±10%	5 V_{DC} ±10%

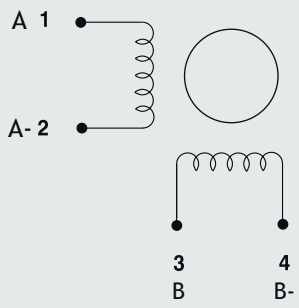
FEATURES

MODEL		RH 1S3M
BASIC STEP ANGLE		1.8°
BIPOLAR CURRENT	(A)	1.0
UNIPOLAR CURRENT	(A)	
RESISTANCE	(Ohm)	6.5
INDUCTANCE	(mH)	16
BIPOLAR HOLDING TORQUE	(Ncm)	80
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	94
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	85100
BACK E.M.F.	(V/Krpm)	80
MASS	(Kg)	0.51
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings, please contact R.T.A



RTA MOTOR CABLE COLORS

DESCRIPTION	
CHANNEL A	GREEN
CHANNEL A-	WHITE
CHANNEL B	YELLOW
CHANNEL B-	BROWN

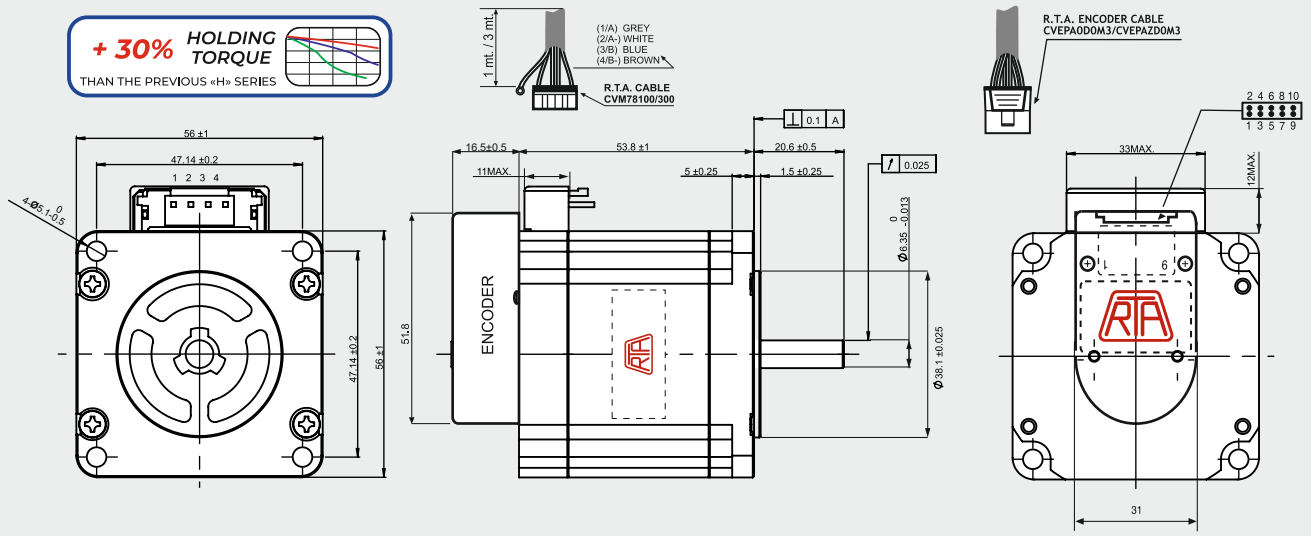
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE
R.T.A. CABLE (30 cm)	CVEPA0D0M3	CVEPAZD0M3	

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

RH 2S1M-0XX0

Dimensions (Unit:mm)

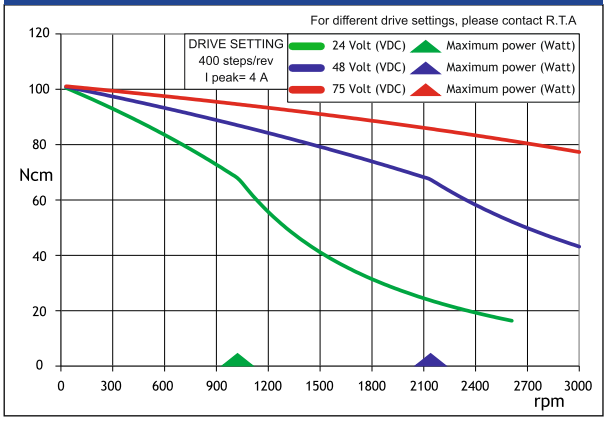


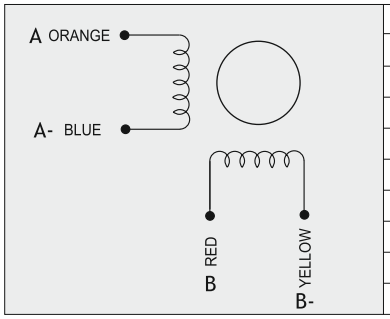
ENCODER OPTIONS:		RH 2S1M-04D0	RH 2S1M-04E0	RH 2S1M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS

FEATURES		
MODEL		**RH 2S1M-0XX0**
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.37
INDUCTANCE	(mH)	1.5
BIPOLAR HOLDING TORQUE	(Ncm)	140
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	280
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	35
MASS	(Kg)	0 69
INTERNATIONAL STANDARDS		UL, CSA
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE SPEED/CURVE



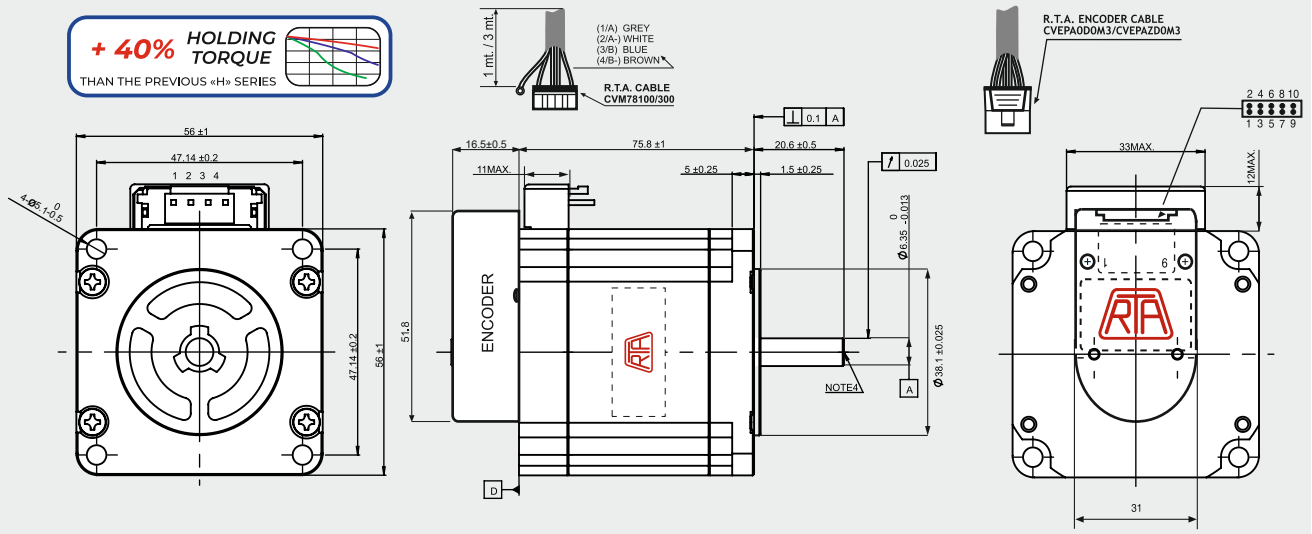


ENCODER PIN-OUT				
DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

RH 2S2M-0XX0

Dimensions (Unit:mm)

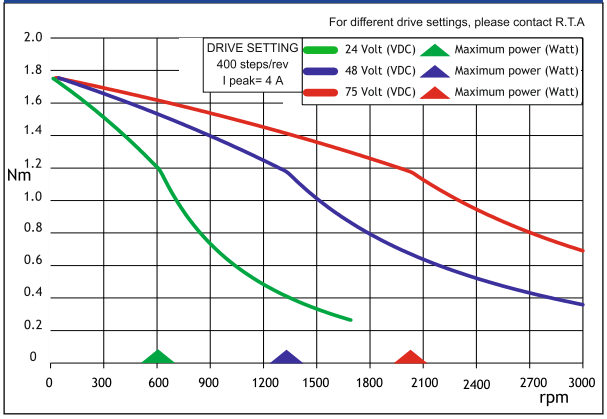


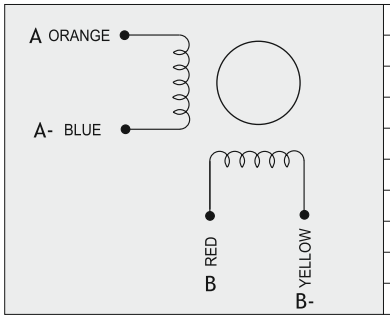
ENCODER OPTIONS:		RH 2S2M-04D0	RH 2S2M-04E0	RH 2S2M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS

FEATURES		
MODEL		**RH 2S2M-0XX0**
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.52
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	235
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	47000
BACK E.M.F.	(V/Krpm)	58.7
MASS	(Kg)	1.1
INTERNATIONAL STANDARDS		UL, CSA
PROTECTION DEGREE		IP40
LEADS CODE		V

TORQUE SPEED/CURVE





ENCODER PIN-OUT				
DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE

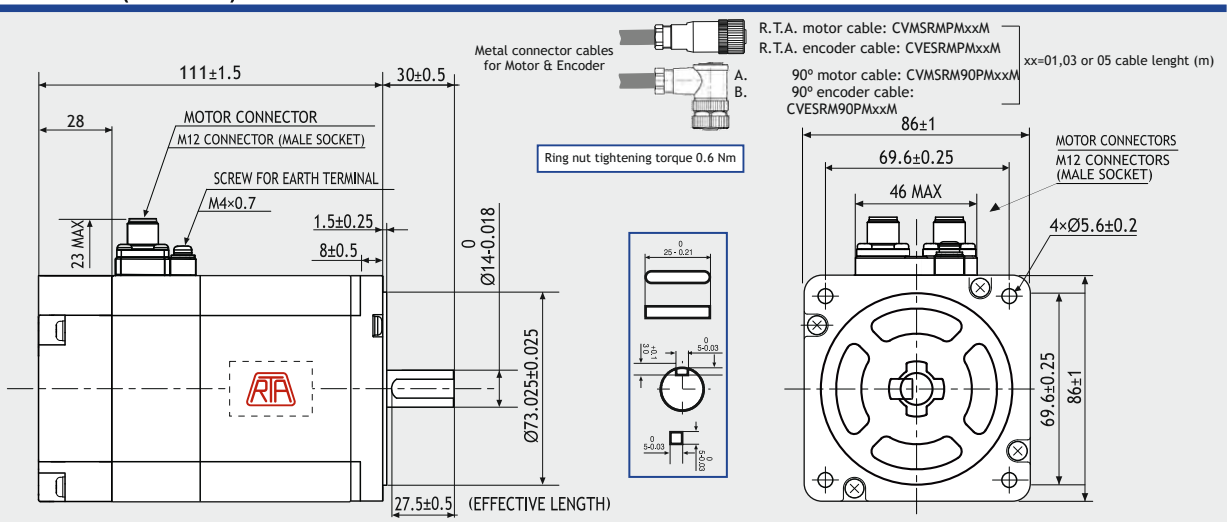
Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE, NDC

RM 3T1M-00HT

NEW!

BATTERY-LESS
ABSOLUTE ENCODER

Dimensions (Unit:mm)



ENCODER FEATURES:

ENCODER MOTOR		RM 3T3M-00HT
RESOLUTION		DRIVE RELATED
MULTI-TURN RESOLUTION		2 16
CURRENT CONSUMPTION	(mA)	60
HIGH LEVEL OUTPUT	(Volt)	5(TIP) - 4.75 (MIN)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX)
OUTPUT SIGNAL		BiSS-C/SSI
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%

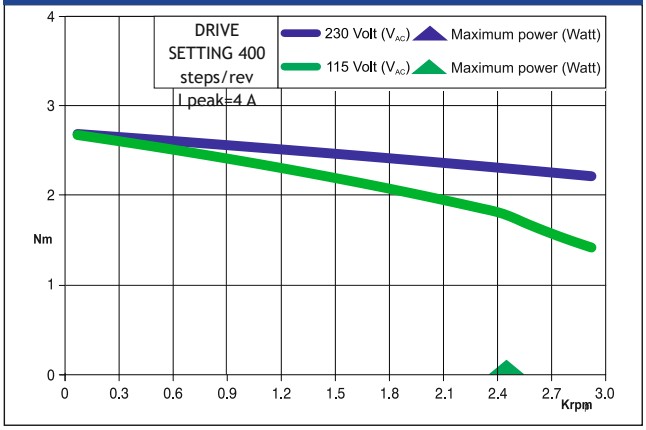
ENCODER CONNECTOR PIN-OUT

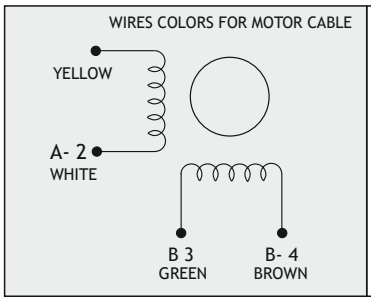
DESCRIPTION	X-PLUS AS4 C4 CON. PINS	M12 MOTOR PINS	RTA CABLE LEADS COLOR
CLOCK +	47	1	BLUE
CLOCK -	46	2	BROWN
DATA +	45	3	GREEN
DATA -	44	4	PURPLE
GND	48	5	BLACK
RESET	42	6	WHITE
NC	43	7	ORANGE
+5 VDC	41	8	RED

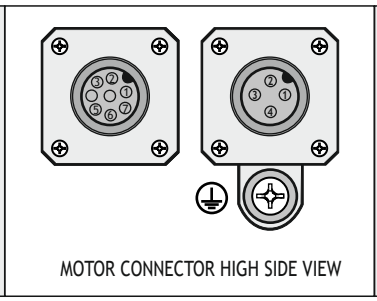
MOTOR FEATURES:

MODEL		RM 3T1M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	4
RESISTANCE	(Ohm)	0.56
INDUCTANCE	(mH)	3.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	(Kgm 2 x 10 -7)	1480
THEORETICAL ACCELERATION	(rad x sec.-2)	2430
BACK E.M.F.	(V/Krpm)	0 90
MASS	(Kg)	1.95
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

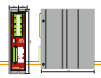
TORQUE/SPEED CURVE







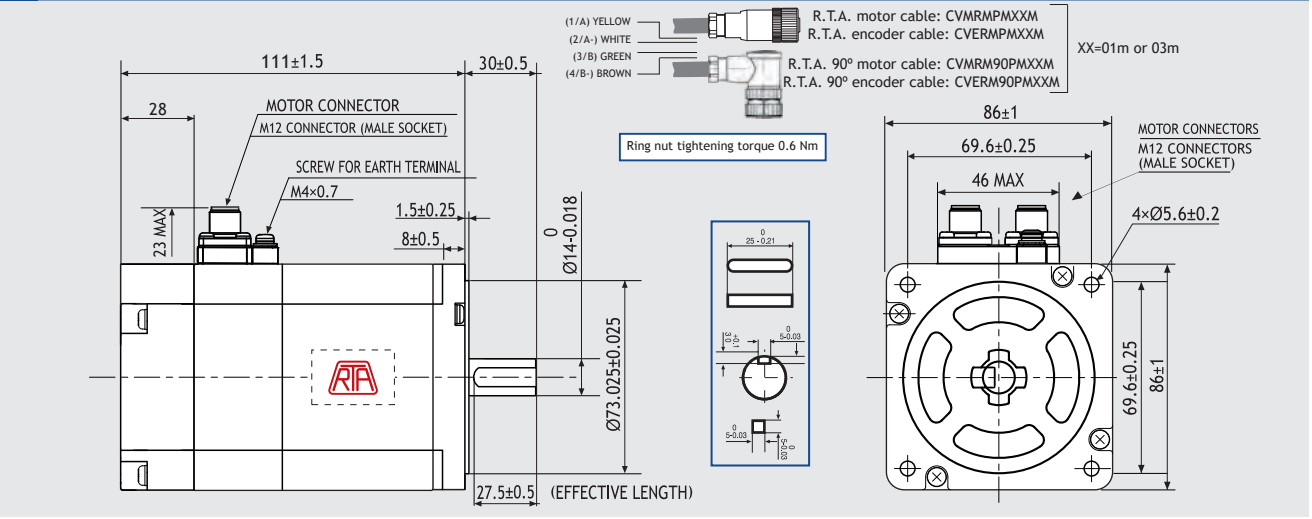
Only for R.T.A. 230 Vac X-PLUS AS4 drive



R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO.,Ltd (JAPAN)

RM 3T1M-0XX0

Dimensions (Unit:mm)

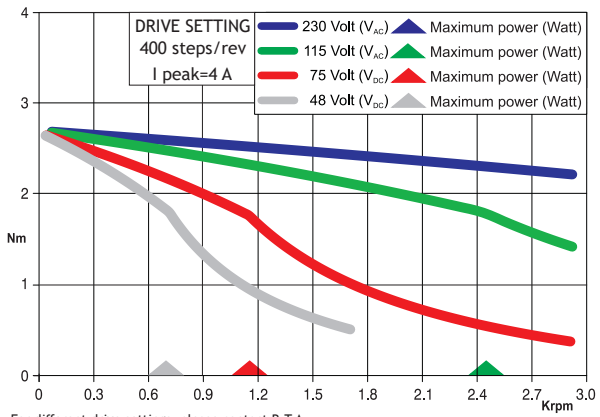


ENCODER OPTIONS:		RM 3T1M-04D0	RM 3T1M-04E0	RM 3T1M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

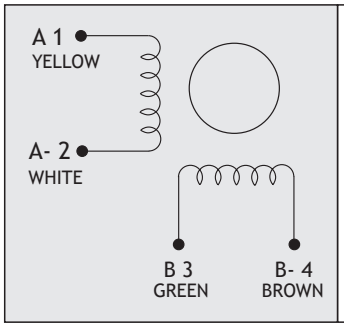
FEATURES

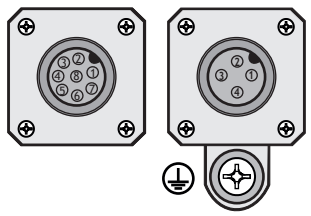
MODEL		RM 3T1M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	4
RESISTANCE	(Ohm)	0.56
INDUCTANCE	(mH)	3.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1480
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	90
MASS	(Kg)	1.95
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings, please contact R.T.A.





MOTOR CONNECTOR HIGH SIDE VIEW

ENCODER CONNECTOR PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL B+	3	3	GREEN
CHANNEL B-	4	4	PURPLE
CHANNEL A+	1	1	BLUE
CHANNEL A-	2	2	BROWN
+ DC (5V)	8	8	RED
GROUND	5	5	BLACK
INDEX+	/	7	ORANGE
INDEX-	/	6	WHITE

R.T.A. CABLE CVMRMPMxxM

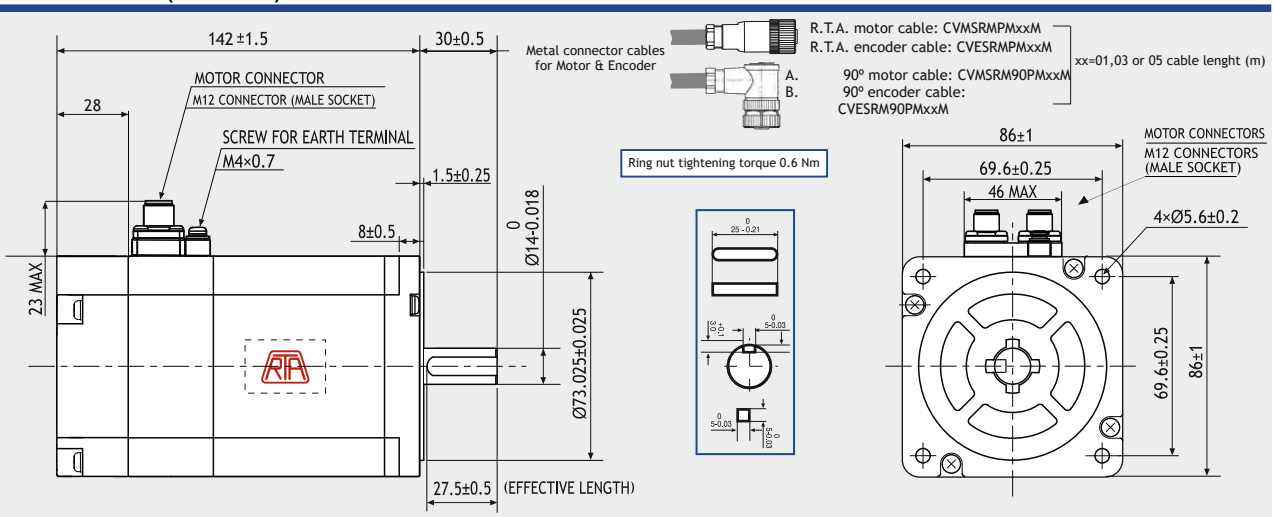
Suggested R.T.A. drive series: 230 Vac X-PLUS

RM 3T2M-00HT

NEW!

BATTERY-LESS
ABSOLUTE ENCODER

Dimensions (Unit:mm)



ENCODER FEATURES:

ENCODER MOTOR		RM 3T2M-00HT
RESOLUTION		DRIVE RELATED
MULTI-TURN RESOLUTION		2 16
CURRENT CONSUMPTION	(mA)	60
HIGH LEVEL OUTPUT	(Volt)	**5(TIP) - 4.75 (MIN)**
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX)
OUTPUT SIGNAL		BiSS-C/SSI
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%

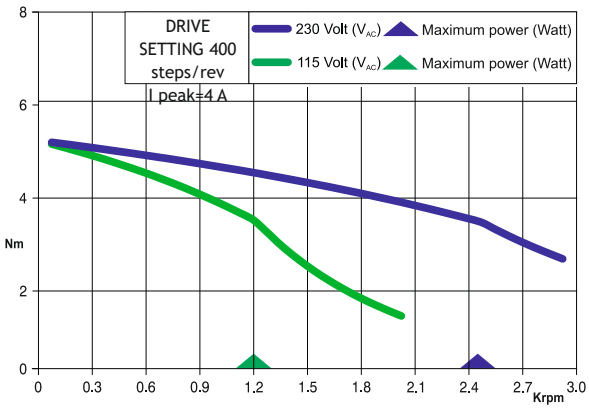
ENCODER CONNECTOR PIN-OUT

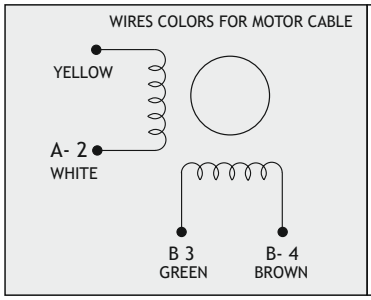
DESCRIPTION	X-PLUS AS4 C4 CON. PINS	M12 MOTOR PINS	RTA CABLE LEADS COLOR
CLOCK +	47	1	BLUE
CLOCK -	46	2	BROWN
DATA +	45	3	GREEN
DATA -	44	4	PURPLE
GND	48	5	BLACK
RESET	42	6	WHITE
NC	43	7	ORANGE
+5 VDC	41	8	RED

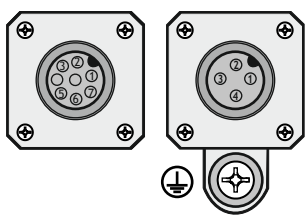
MOTOR FEATURES:

MODEL		RM 3T2M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	4
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm 2 x 10 -7)	3000
THEORETICAL ACCELERATION	(rad x sec.-2)	23330
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	3.1
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE





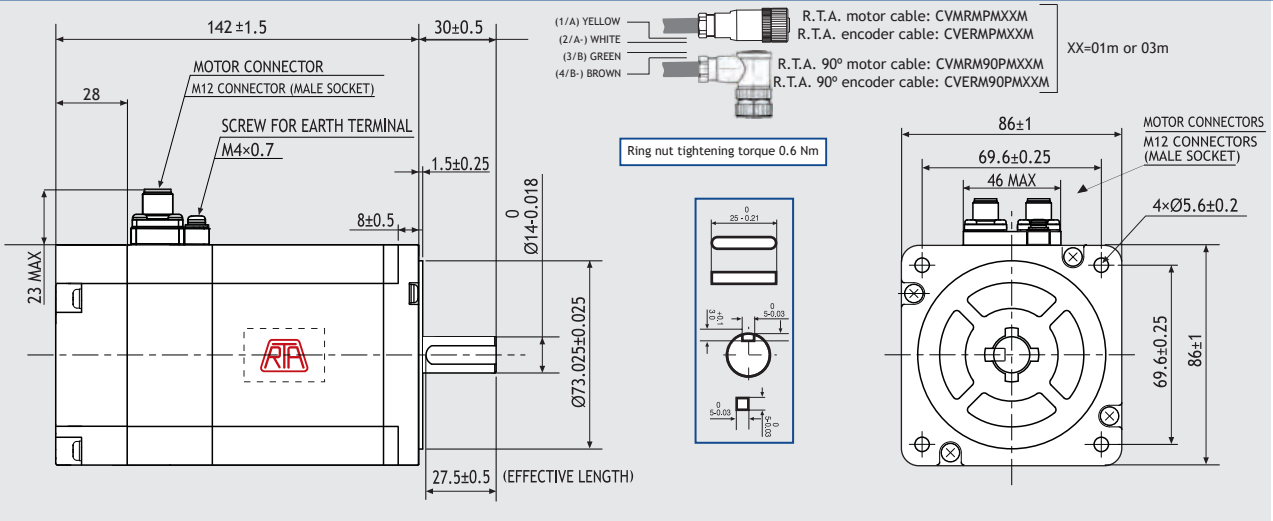


MOTOR CONNECTOR HIGH SIDE VIEW

Only for R.T.A. 230 Vac X-PLUS AS4 drive

RM 3T2M-0XX0

Dimensions (Unit:mm)

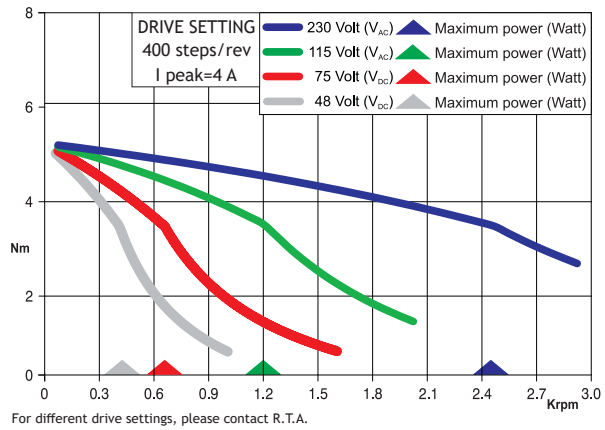


ENCODER OPTIONS:		RM 3T2M-04D0	RM 3T2M-04E0	RM 3T2M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

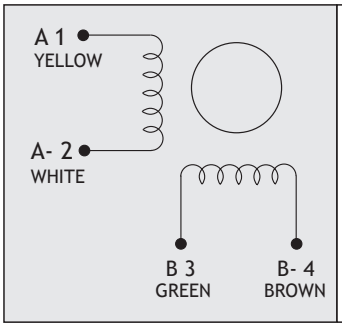
FEATURES

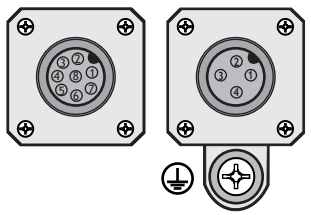
MODEL		RM 3T2M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	4
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23330
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	3.1
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings, please contact R.T.A.





MOTOR CONNECTOR HIGH SIDE VIEW

ENCODER CONNECTOR PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL B+	3	3	GREEN
CHANNEL B-	4	4	PURPLE
CHANNEL A+	1	1	BLUE
CHANNEL A-	2	2	BROWN
+ DC (5V)	8	8	RED
GROUND	5	5	BLACK
INDEX+	/	7	ORANGE
INDEX-	/	6	WHITE

R.T.A. CABLE CVMRMPMXXM

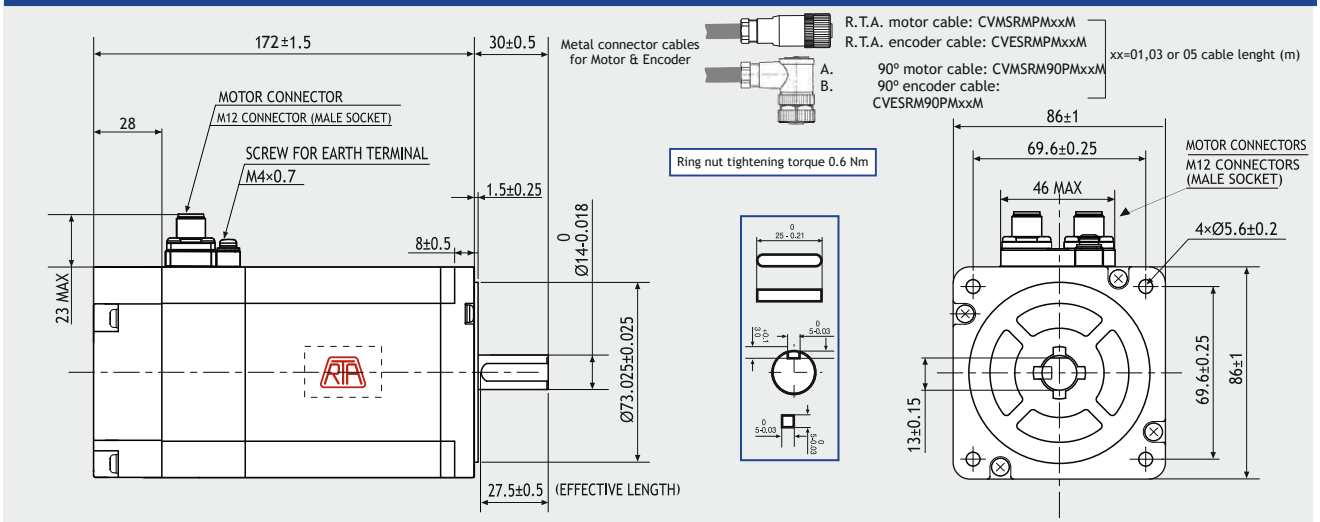
Suggested R.T.A. drive series: 230 Vac X-PLUS

RM 3T3M-00HT

NEW!

BATTERY-LESS
ABSOLUTE ENCODER

Dimensions (Unit:mm)



ENCODER FEATURES:

ENCODER MOTOR		RM 3T3M-00HT
RESOLUTION		DRIVE RELATED
MULTI-TURN RESOLUTION		2 16
CURRENT CONSUMPTION	(mA)	60
HIGH LEVEL OUTPUT	(Volt)	5(TIP) - 4.75 (MIN)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX)
OUTPUT SIGNAL		BiSS-C/SSI
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%

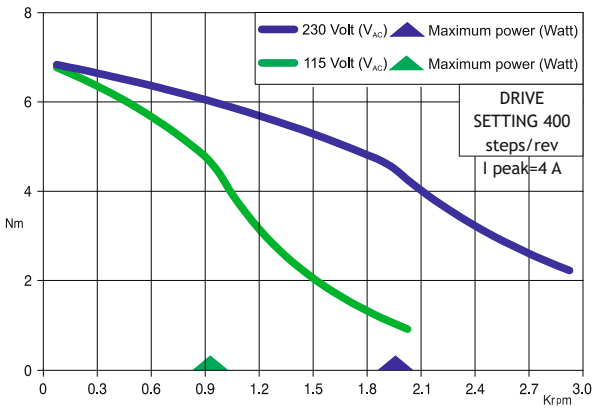
ENCODER CONNECTOR PIN-OUT

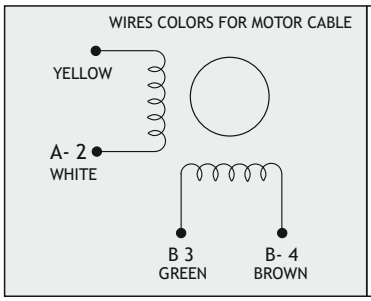
DESCRIPTION	X-PLUS AS4 C4 CON. PINS	M12 MOTOR PINS	RTA CABLE LEADS COLOR
CLOCK +	47	1	BLUE
CLOCK -	46	2	BROWN
DATA +	45	3	GREEN
DATA -	44	4	PURPLE
GND	48	5	BLACK
RESET	42	6	WHITE
NC	43	7	ORANGE
+5 VDC	41	8	RED

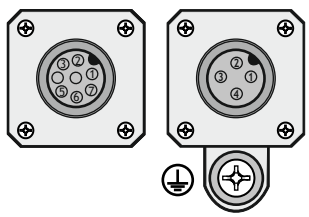
MOTOR FEATURES:

MODEL		RM 3T3M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	4
RESISTANCE	(Ohm)	1 7.9
INDUCTANCE	(mH)	920
BIPOLAR HOLDING TORQUE	(Ncm)	4500
ROTOR INERTIA	(Kgm 2 x 10 -7)	2050
THEORETICAL ACCELERATION	(rad x sec.-2)	0 241
BACK E.M.F.	(V/Krpm)	4.2
MASS	(Kg)	
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

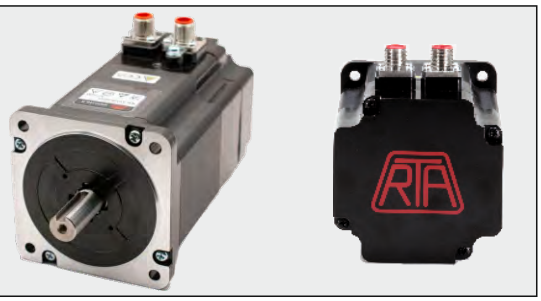
TORQUE/SPEED CURVE



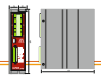




MOTOR CONNECTOR HIGH SIDE VIEW



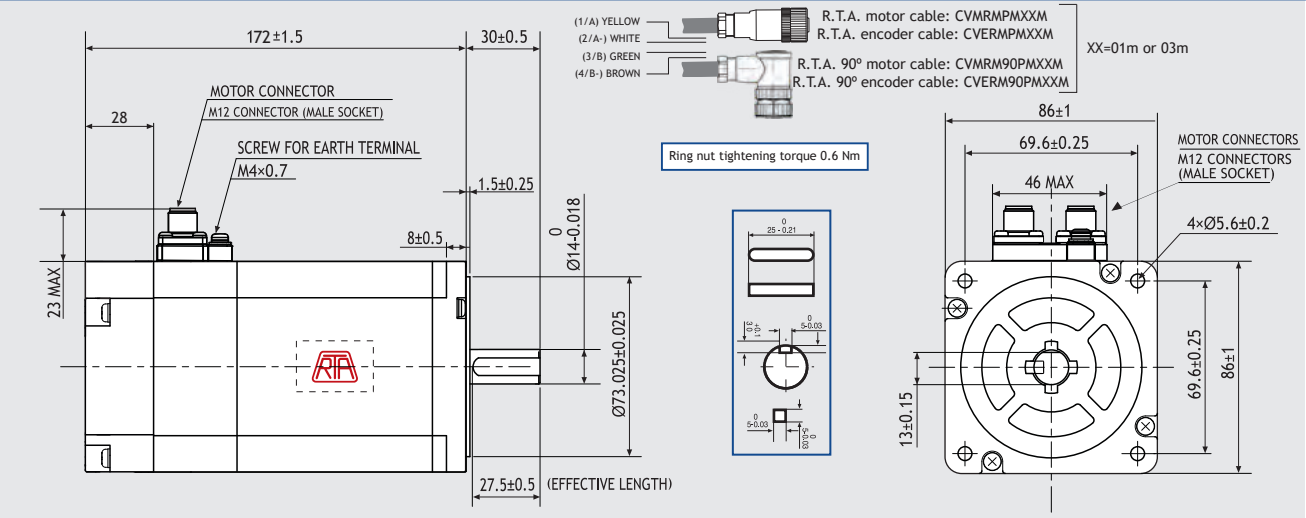
Only for R.T.A. 230 Vac X-PLUS AS4 drive



R.T.A. s.r.l. PAVIA ITALY SANYO DENKI CO.,Ltd JAPAN

RM 3T3M-0XX0

Dimensions (Unit:mm)

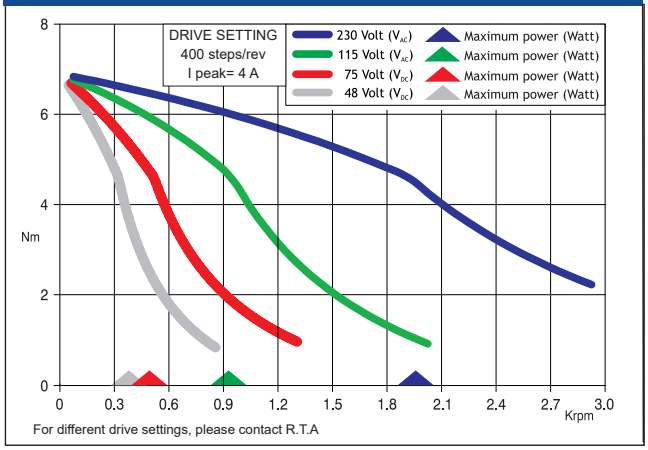


ENCODER OPTIONS:		RM 3T3M-04D0	RM 3T3M-04E0	RM 3T3M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

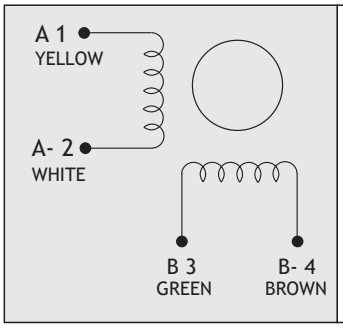
FEATURES

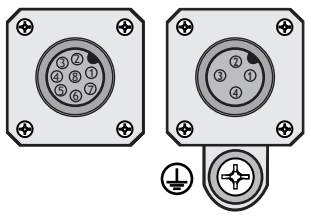
MODEL		RM 3T3M
BASIC STEP ANGLE		1.8 ± 0.09°
BIPOLAR CURRENT	(A)	4
RESISTANCE	(Ohm)	1
INDUCTANCE	(mH)	7.9
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	4500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	241
MASS	(Kg)	4.2
INTERNATIONAL STANDARDS		UL, CSA, CE, RoHS
INSULATION VOLTAGE	(V)	250 V_{AC} (350 V_{DC})
PROTECTION DEGREE - INSULATION CLASS		IP 54 - CLASS F
LEADS CODE		V

TORQUE/SPEED CURVE



For different drive settings, please contact R.T.A





MOTOR CONNECTOR HIGH SIDE VIEW

ENCODER CONNECTOR PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL B+	3	3	GREEN
CHANNEL B-	4	4	PURPLE
CHANNEL A+	1	1	BLUE
CHANNEL A-	2	2	BROWN
+ DC (5V)	8	8	RED
GROUND	5	5	BLACK
INDEX+	/	7	ORANGE
INDEX-	/	6	WHITE

R.T.A. CABLE CVMRMPMXXM

Suggested R.T.A. drive series: 230 Vac X-PLUS

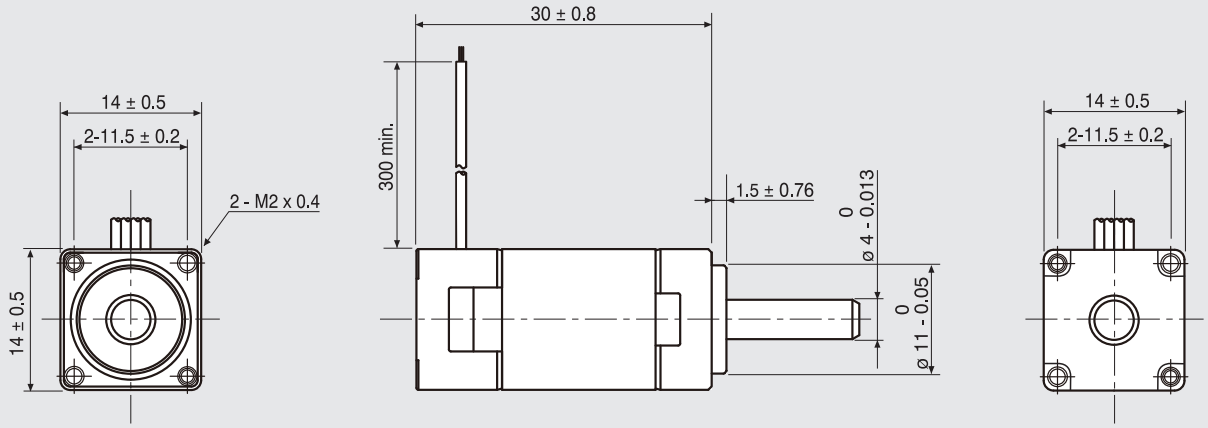
STEPPING MOTORS

TRADITIONAL STEPPING MOTORS

SH2141-5541

SANYO DENKI
SANMOTION

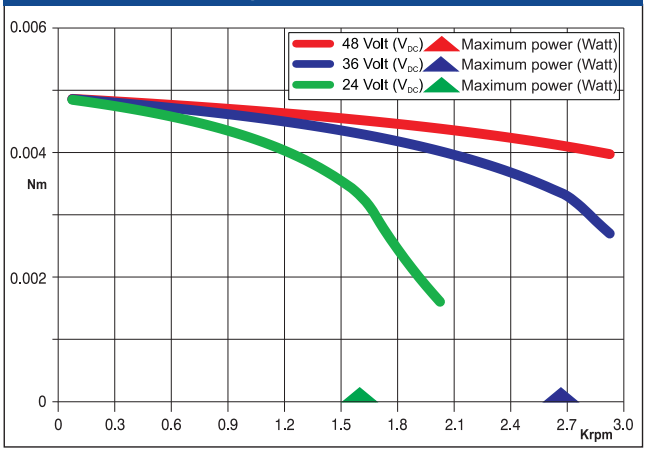
Dimensions (Unit:mm)

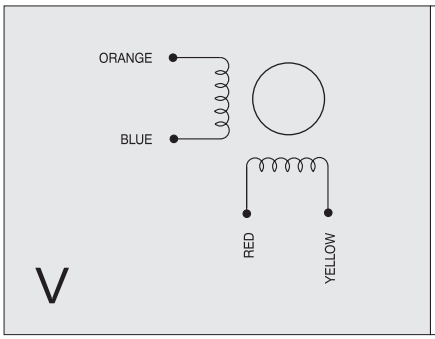


FEATURES

MODEL		SH2141-5541
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.3
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	21
INDUCTANCE	(mH)	4.2
BIPOLAR HOLDING TORQUE	(Ncm)	0.65
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	0.58
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	112000
BACK E.M.F.	(V/Krpm)	10
MASS	(Kg)	0.028
LEADS CODE		V

TORQUE/SPEED CURVE



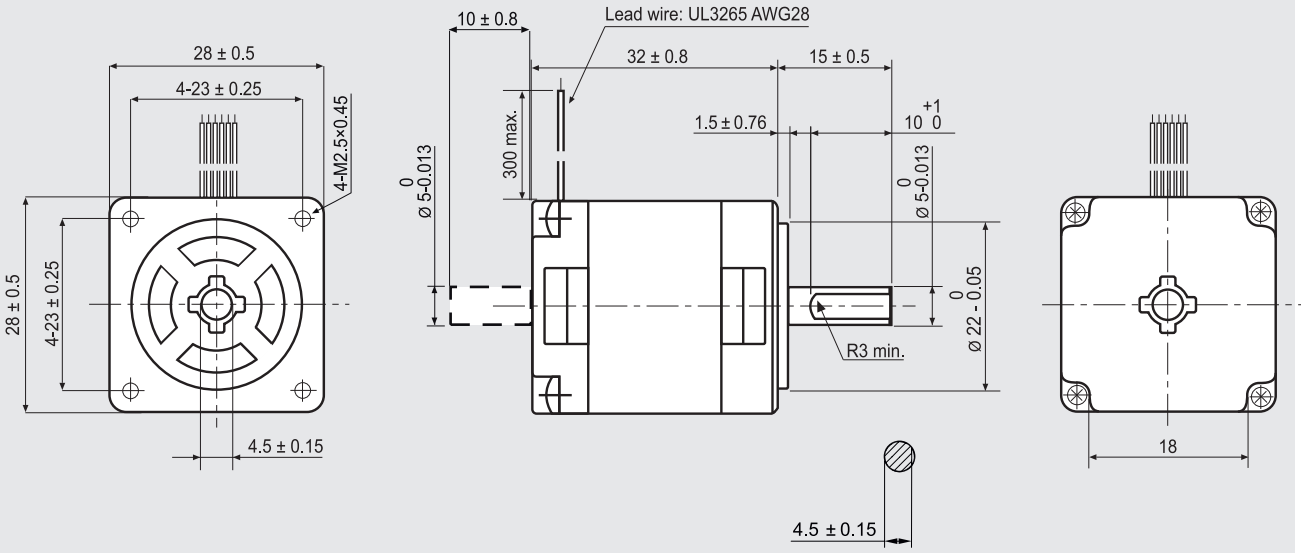


Suggested R.T.A. drive series: CSD, FLEX-DRIVE

SH2281-5271

SANYO DENKI
SANMOTION

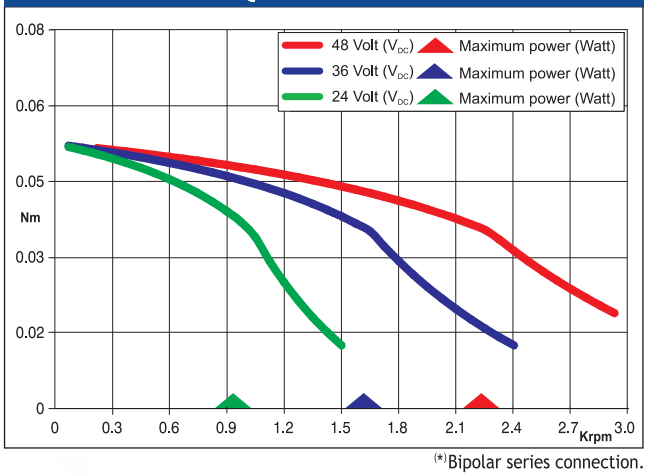
Dimensions (Unit:mm)



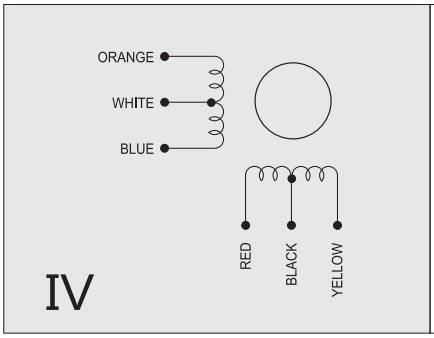
FEATURES

MODEL		SH2281-5271 (SH2281-5231)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.7 (*)
UNIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	2.85
INDUCTANCE	(mH)	1.0
BIPOLAR HOLDING TORQUE	(Ncm)	7
UNIPOLAR HOLDING TORQUE	(Ncm)	5.5
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	10
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	70000
BACK E.M.F.	(V/Krpm)	15
MASS	(Kg)	0.11
LEADS CODE		IV

TORQUE/SPEED CURVE



(*) Bipolar series connection.

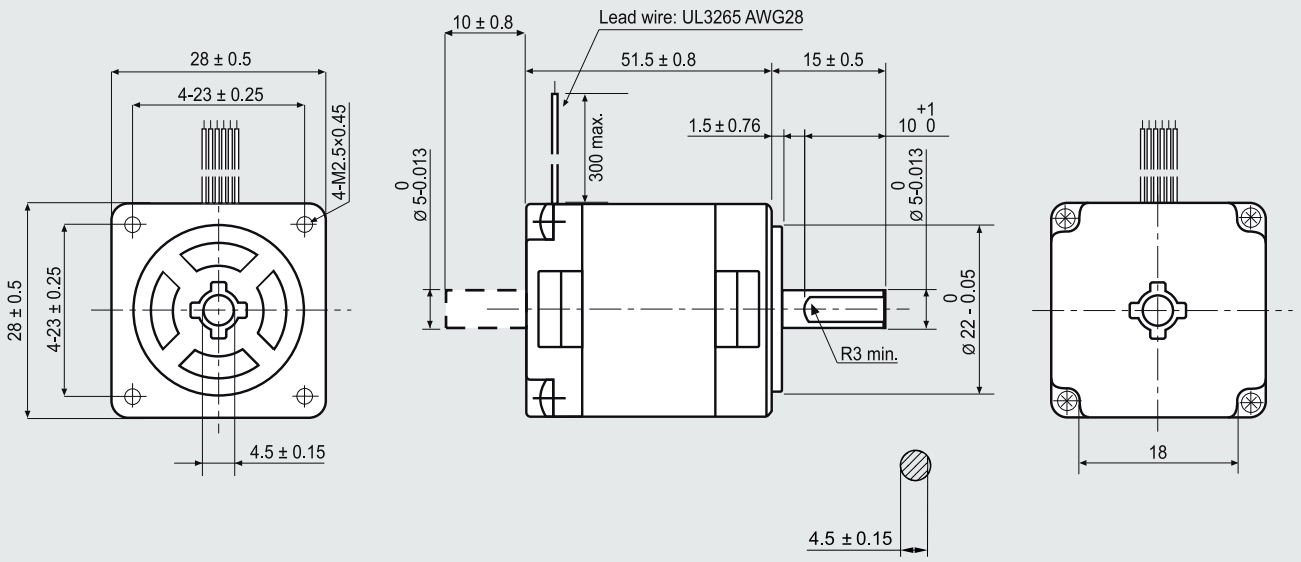


Suggested R.T.A. drive series: BSD, CSD, ADW, HGD, FLEX-DRIVE

SH2285-5271

SANYO DENKI
SANMOTION

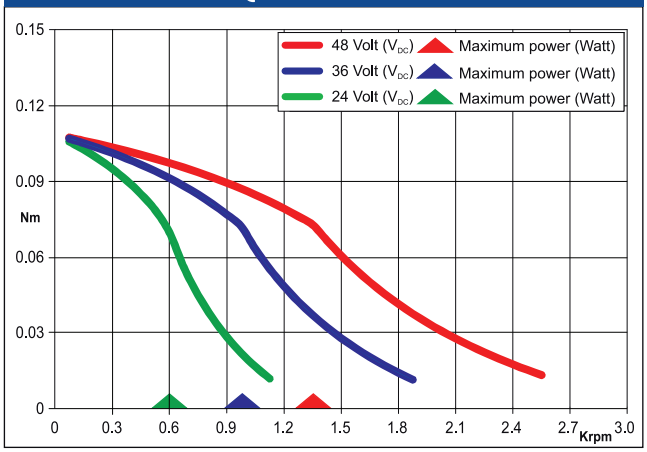
Dimensions (Unit:mm)



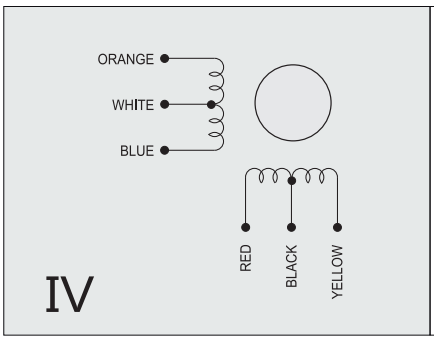
FEATURES

MODEL		SH2285-5271 (SH2285-5231)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.7 (*)
UNIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	4.1
INDUCTANCE	(mH)	1.9
BIPOLAR HOLDING TORQUE	(Ncm)	14.5
UNIPOLAR HOLDING TORQUE	(Ncm)	11.5
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	22
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	66000
BACK E.M.F.	(V/Krpm)	15
MASS	(Kg)	0.2
LEADS CODE		IV

TORQUE/SPEED CURVE



(*) Bipolar series connection.



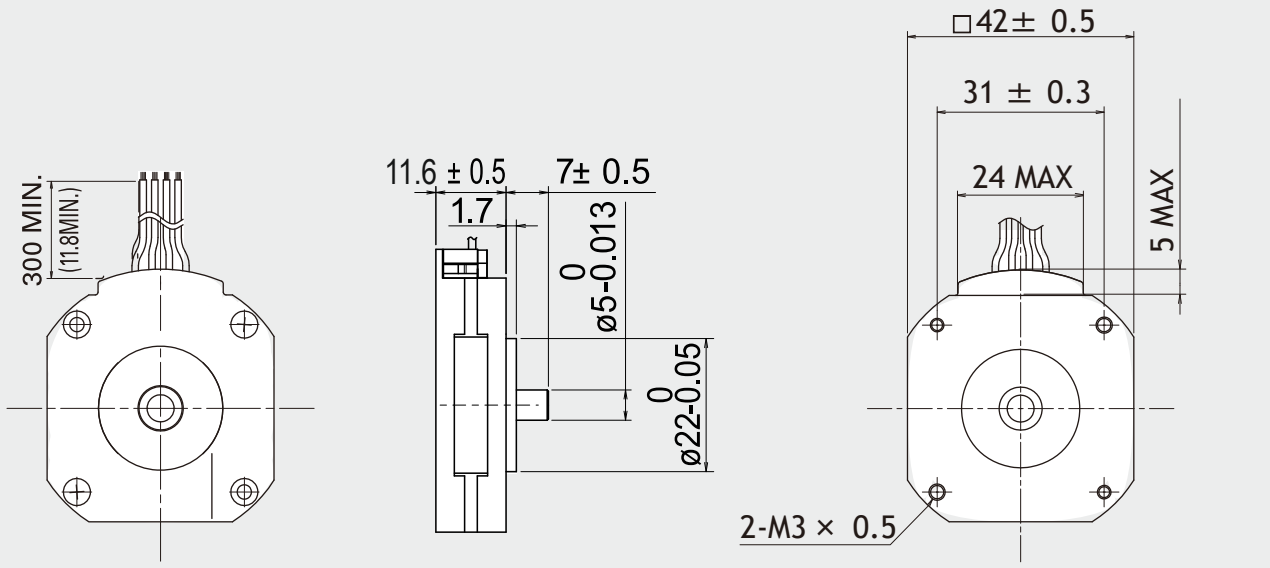
Suggested R.T.A. drive series: BSD, CSD, ADW, HGD, FLEX-DRIVE

SS2421-5041

PANCAKE TYPE motor

SANYO DENKI
SANMOTION

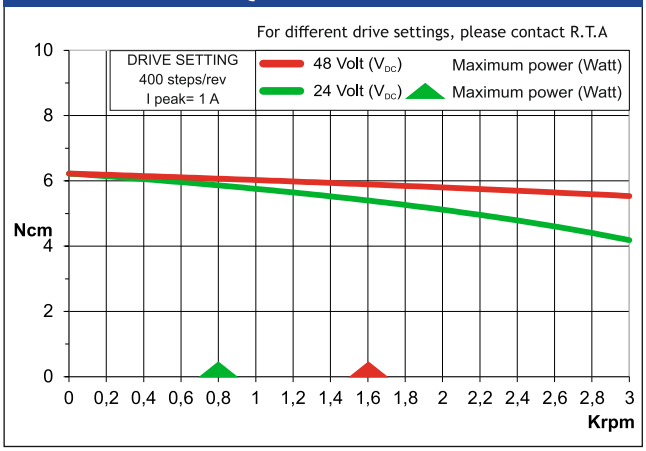
Dimensions (Unit:mm)



FEATURES

MODEL		SS2421-5041
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	3.5
INDUCTANCE	(mH)	1.2
BIPOLAR HOLDING TORQUE	(Ncm)	8.3
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	0.015
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	55000
BACK E.M.F.	(V/Krpm)	8.0
MASS	(Kg)	0.07

TORQUE/SPEED CURVE



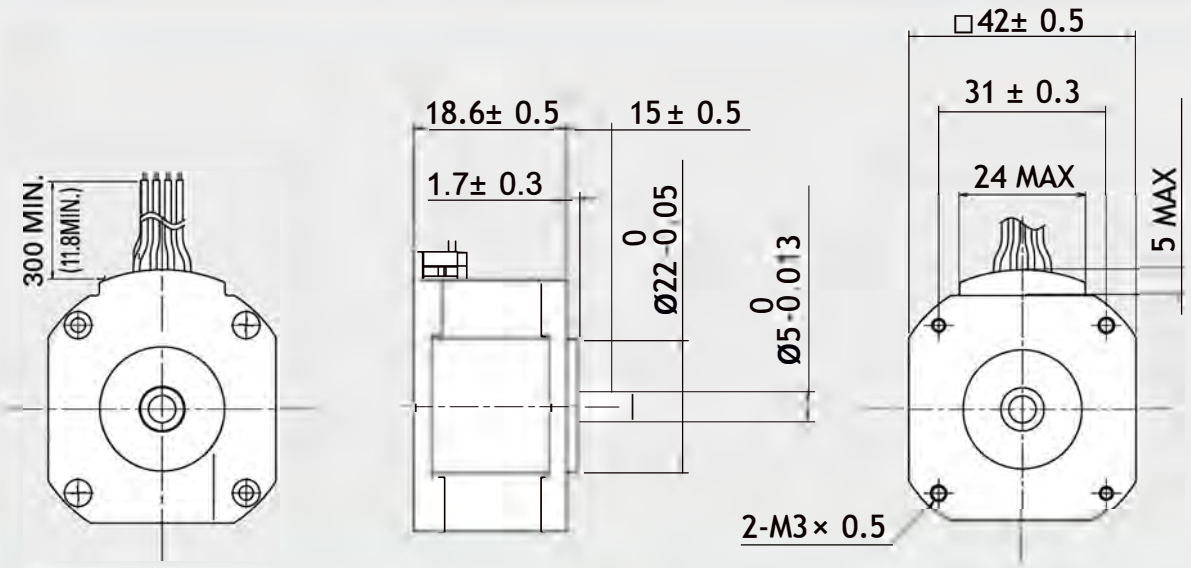
Suggested driver: contact R.T.A.

SS2422-5041

PANCAKE TYPE

SANYO DENKI
SANMOTION

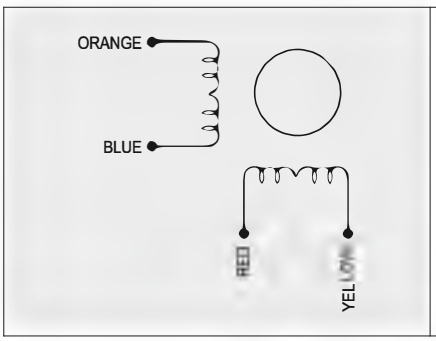
Dimensions (Unit:mm)

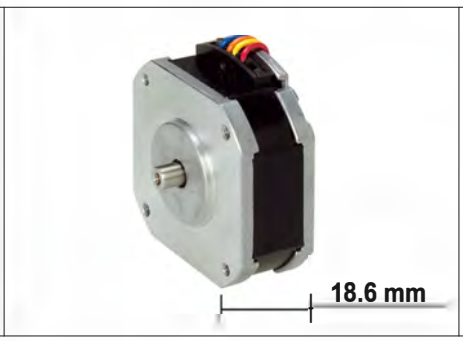


FEATURES

MODEL		SS2422-5041 (SS2422-5011)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	5.4
INDUCTANCE	(mH)	2.9
BIPOLAR HOLDING TORQUE	(Ncm)	18.6
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	0.028
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	63000
BACK E.M.F.	(V/Krpm)	18
MASS	(Kg)	0.14

TORQUE/SPEED CURVE



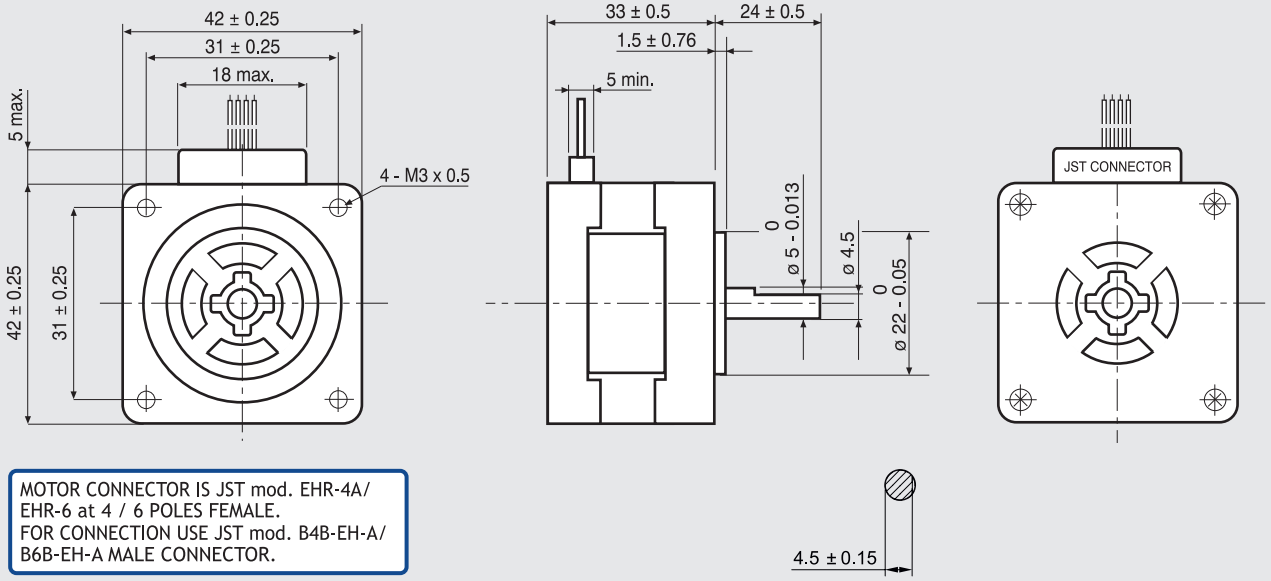


Suggested driver: contact R.T.A.

103-H5205-5040

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

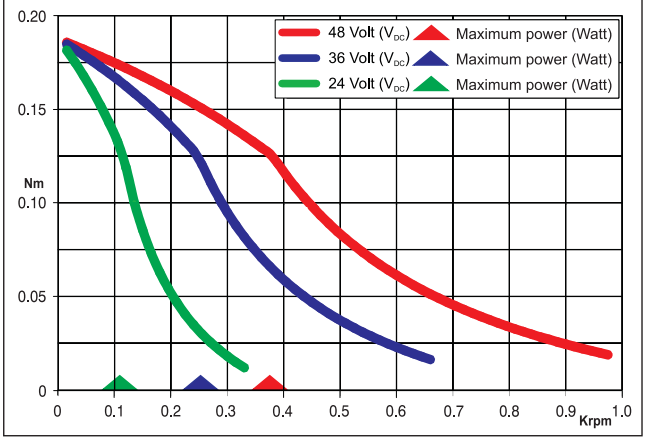


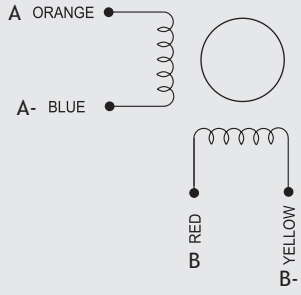
MOTOR CONNECTOR IS JST mod. EHR-4A/ EHR-6 at 4 / 6 POLES FEMALE.
FOR CONNECTION USE JST mod. B4B-EH-A/ B6B-EH-A MALE CONNECTOR.

FEATURES

MODEL		103-H5205-5040
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.25
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	54
INDUCTANCE	(mH)	78
BIPOLAR HOLDING TORQUE	(Ncm)	23.0
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	36
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	64000
BACK E.M.F.	(V/Krpm)	100
MASS	(Kg)	0.23
LEADS CODE		V

TORQUE/SPEED CURVE



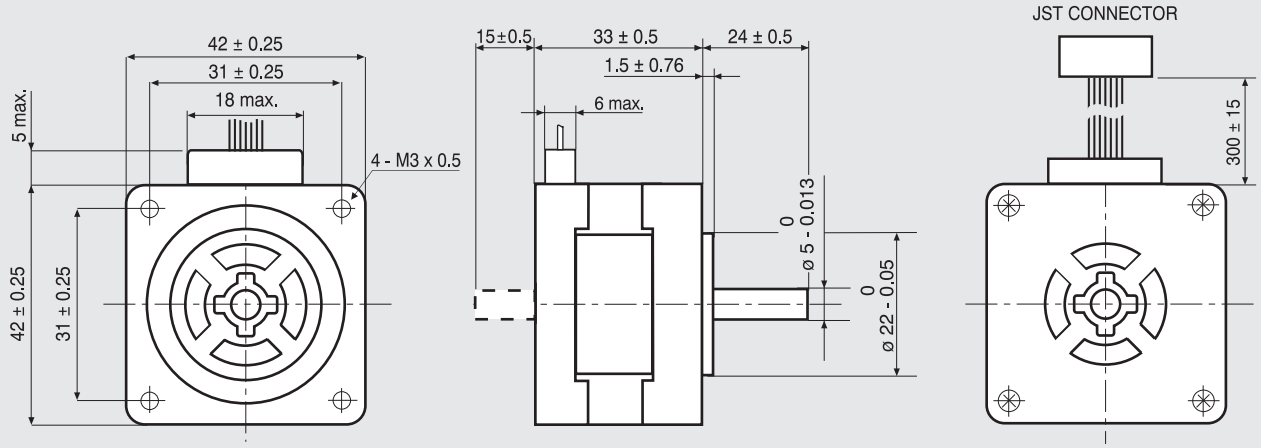


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H5205-0351

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



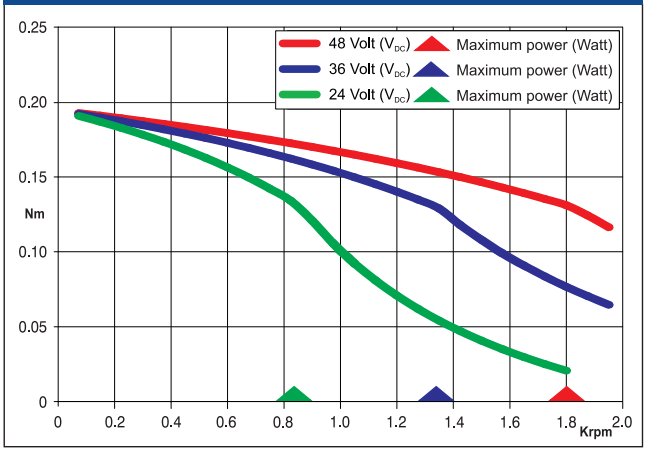
MOTOR CONNECTOR IS JST mod. EHR-6A
6 POLES FEMALE.
FOR CONNECTION USE JST
mod. B6B-EH-A MALE CONNECTOR.

FEATURES

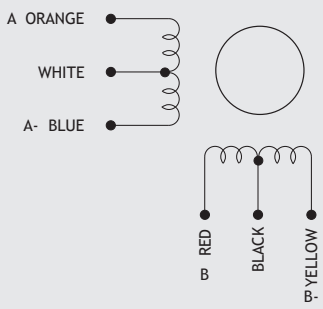
MODEL		103-H5205-0351 (103-H5205-0312)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.7*
UNIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	3.6
INDUCTANCE	(mH)	3.3
BIPOLAR HOLDING TORQUE	(Ncm)	25
UNIPOLAR HOLDING TORQUE	(Ncm)	19
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	36
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	69800
BACK E.M.F.	(V/Krpm)	37
MASS	(Kg)	0.23
LEADS CODE		IV

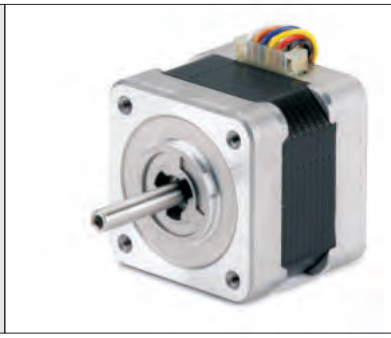
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



(*) Bipolar series connection.



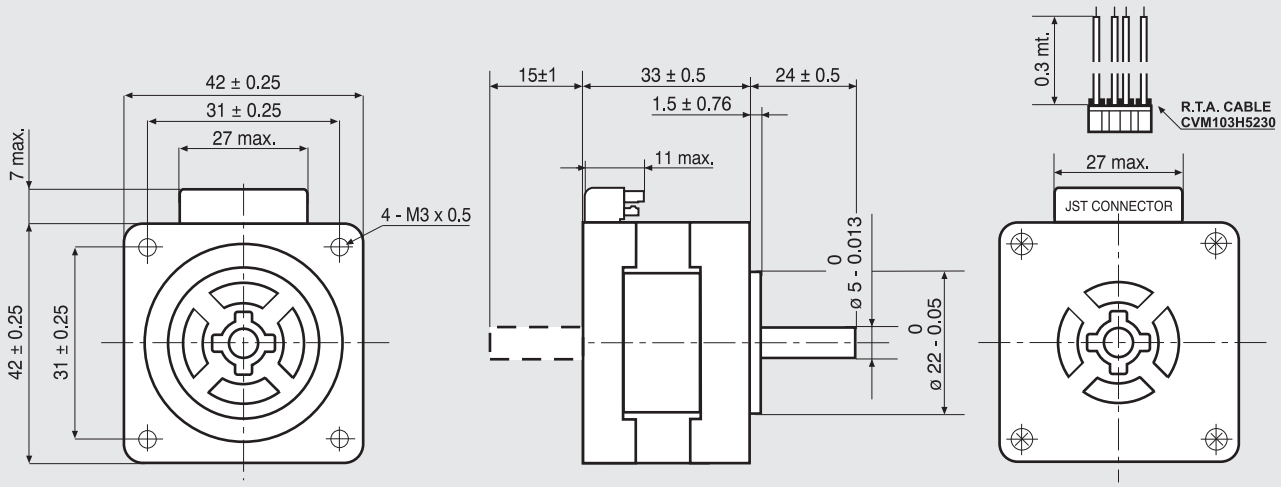


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H5205-4240

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



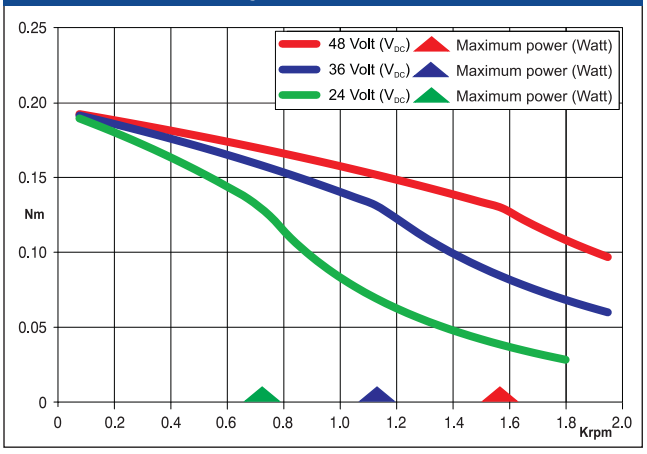
MOTOR CONNECTOR IS JST mod. B6B-EH K 6 POLES MALE.
FOR CONNECTION USE JST mod. EHR-6 FEMALE CONNECTOR AND mod. SEH-001 T-P0.6 CONTACTS.
NOTE: 103-H5205-4240 MOTORS NEED CVM103H5230 R.T.A. CABLES.
CONTACT R.T.A. FOR FURTHER DETAILS.

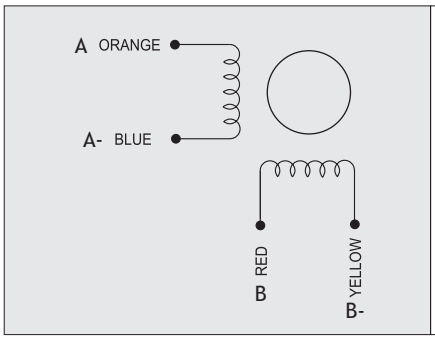
FEATURES

MODEL		103-H5205-4240 (103-H5205-4210)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	3.4
INDUCTANCE	(mH)	6.5
BIPOLAR HOLDING TORQUE	(Ncm)	26.5
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	36
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	69800
BACK E.M.F.	(V/Krpm)	27
MASS	(Kg)	0.23
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



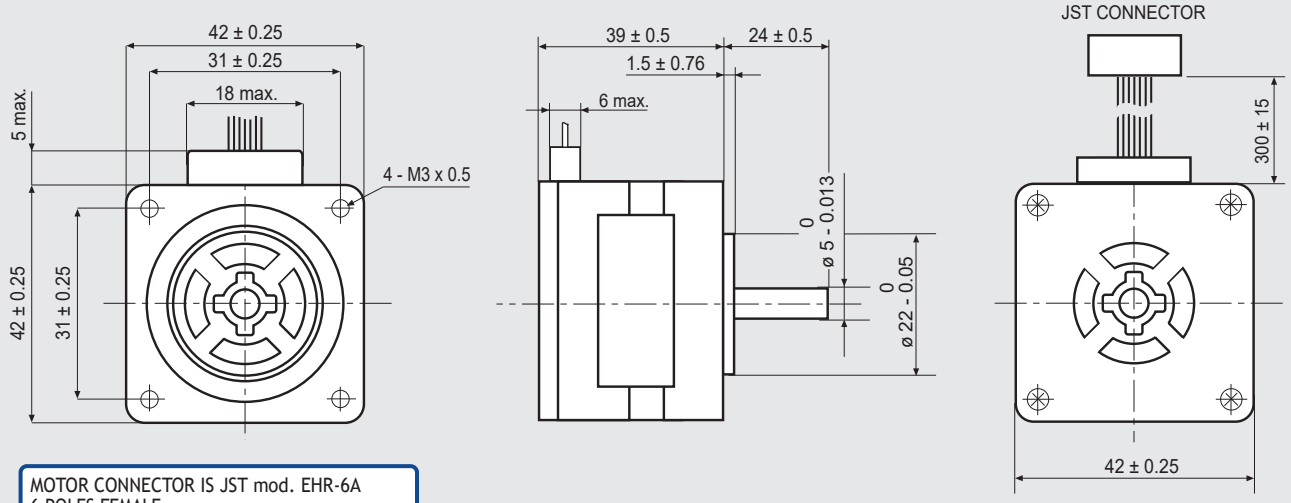


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H5208-0483

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

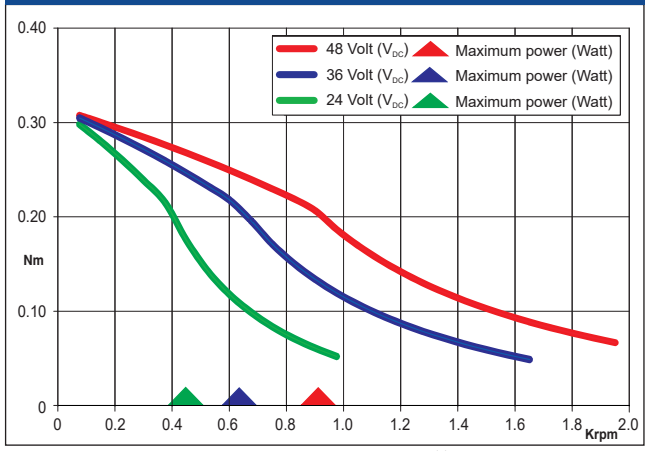


MOTOR CONNECTOR IS JST mod. EHR-6A
6 POLES FEMALE.
FOR CONNECTION USE JST
mod. B6B-EH-A MALE CONNECTOR.

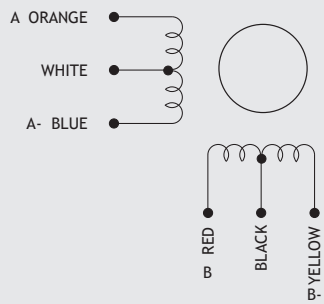
FEATURES

MODEL		103-H5208-0483
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.9(*)
UNIPOLAR CURRENT	(Amp)	1.2
RESISTANCE	(Ohm)	2.9
INDUCTANCE	(mH)	3.4
BIPOLAR HOLDING TORQUE	(Ncm)	42
UNIPOLAR HOLDING TORQUE	(Ncm)	30
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	56
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	71000
BACK E.M.F.	(V/Krpm)	19
MASS	(Kg)	0.27
LEADS CODE		IV

TORQUE/SPEED CURVE



(*)Bipolar series connection.

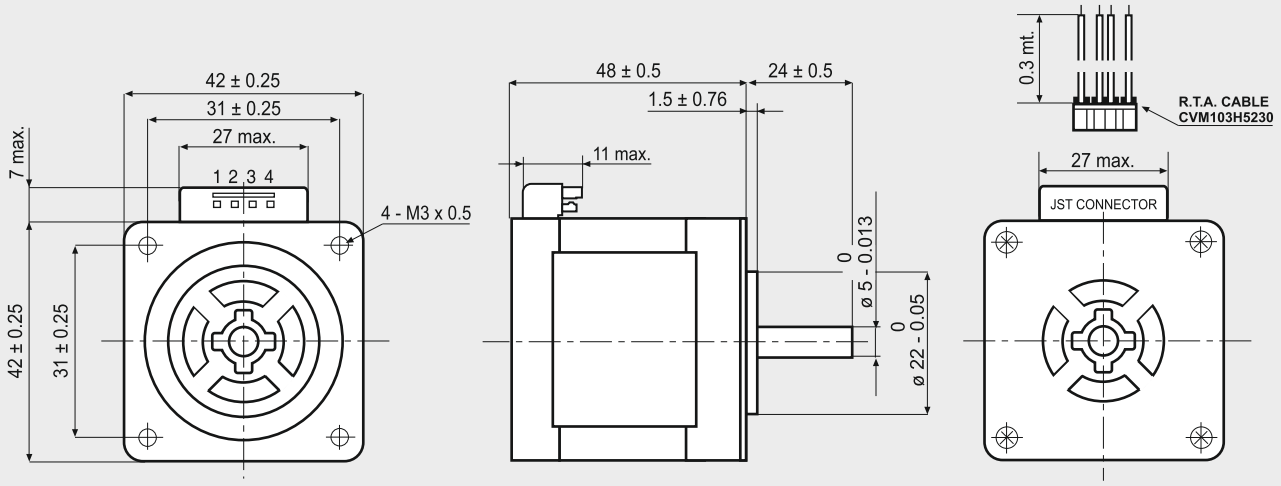


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H5210-4240

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

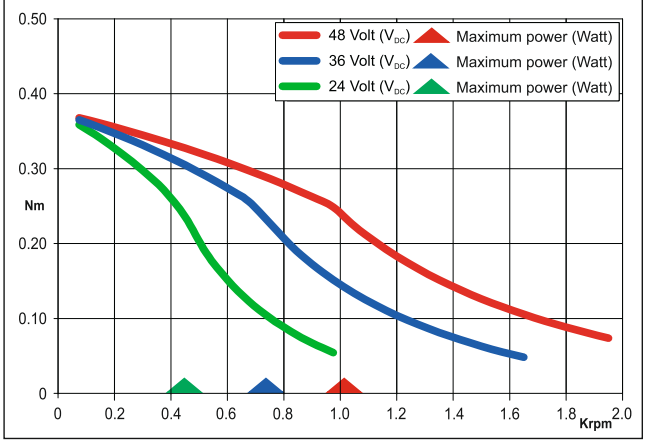


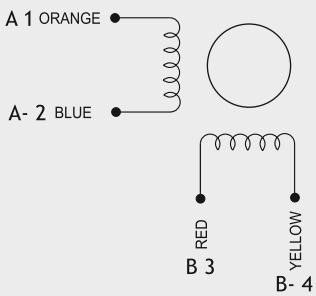
MOTOR CONNECTOR IS JST mod. B6B-EH K 6 POLES MALE.
FOR CONNECTION USE JST mod. EHR-6 FEMALE CONNECTOR AND mod. SEH-001 T-P0.6 CONTACTS.
NOTE: 103-H5210-4240 MOTORS NEED CVM103H5230 R.T.A. CABLES.
CONTACT R.T.A. FOR FURTHER DETAILS.

FEATURES

MODEL		103-H5210-4240
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	4.8
INDUCTANCE	(mH)	9.5
BIPOLAR HOLDING TORQUE	(Ncm)	51
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	74
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	69000
BACK E.M.F.	(V/Krpm)	14
MASS	(Kg)	0.35
LEADS CODE		V

TORQUE/SPEED CURVE



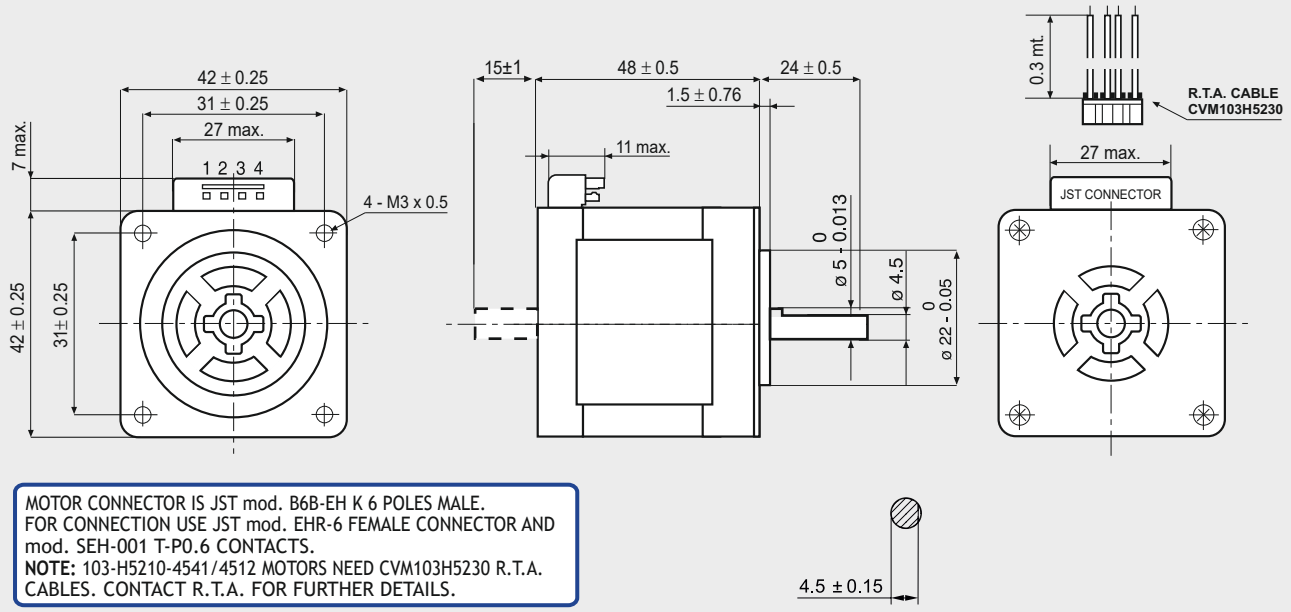


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H5210-4541

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



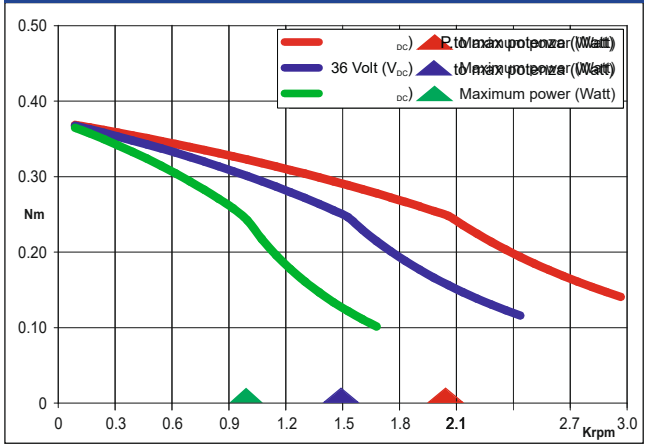
MOTOR CONNECTOR IS JST mod. B6B-EH K 6 POLES MALE.
FOR CONNECTION USE JST mod. EHR-6 FEMALE CONNECTOR AND mod. SEH-001 T-P0.6 CONTACTS.
NOTE: 103-H5210-4541/4512 MOTORS NEED CVM103H5230 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

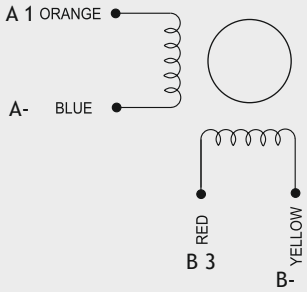
FEATURES

MODEL		103-H5210-4541 (103-H5210-4512)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.25
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	51
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	74
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	69000
BACK E.M.F.	(V/Krpm)	25
MASS	(Kg)	0.35
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





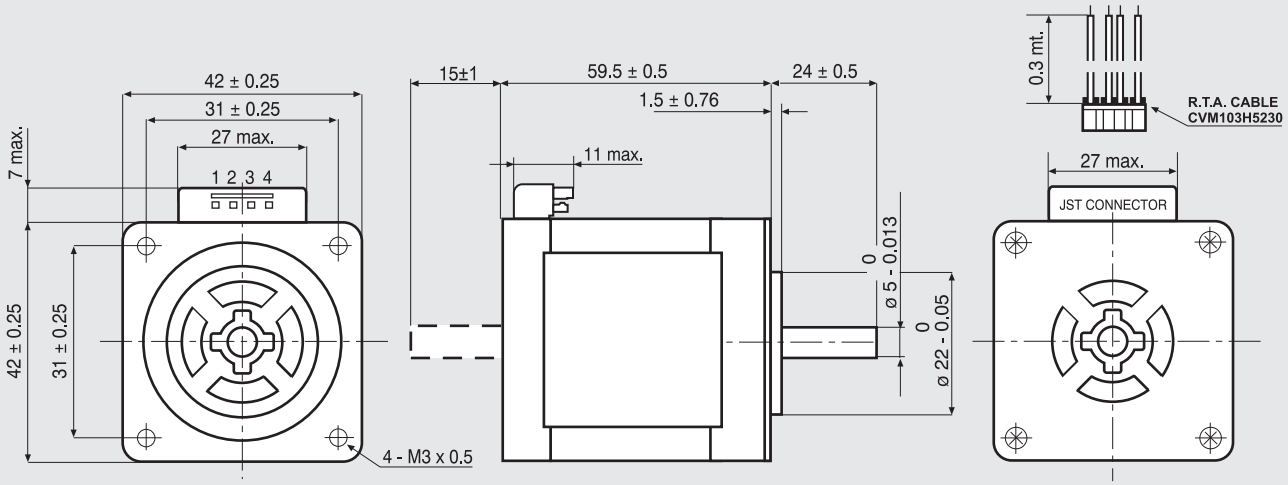
R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO.,Ltd (JAPAN)

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H5212-4640

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



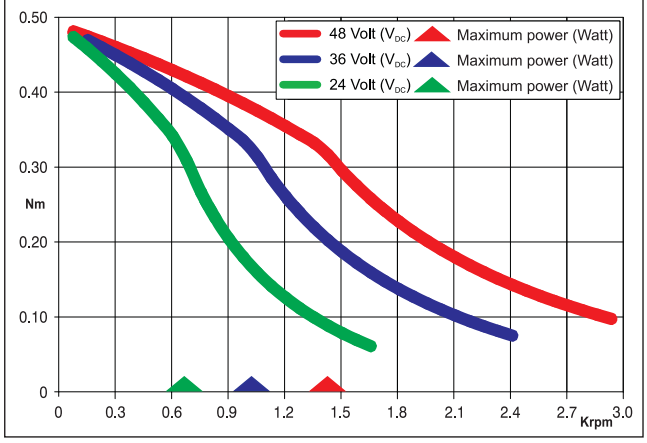
MOTOR CONNECTOR IS JST mod. B6B-EH K 6 POLES MALE.
FOR CONNECTION USE JST mod. EHR-6 FEMALE CONNECTOR AND mod. SEH-001 T-P0.6 CONTACTS.
NOTE: 103-H5212-4640 MOTORS NEED CVM103H5230 R.T.A. CABLES.
CONTACT R.T.A. FOR FURTHER DETAILS.

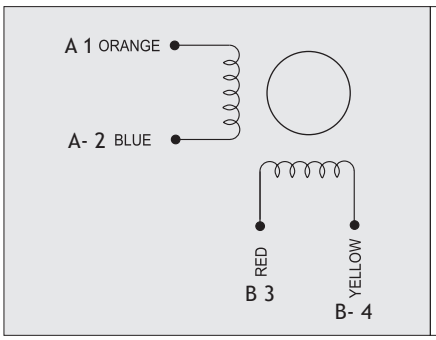
FEATURES

MODEL		103-H5212-4640 (103-H5212-4610)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	1.5
INDUCTANCE	(mH)	3.0
BIPOLAR HOLDING TORQUE	(Ncm)	65
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	110
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	59000
BACK E.M.F.	(V/Krpm)	32
MASS	(Kg)	0.35
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



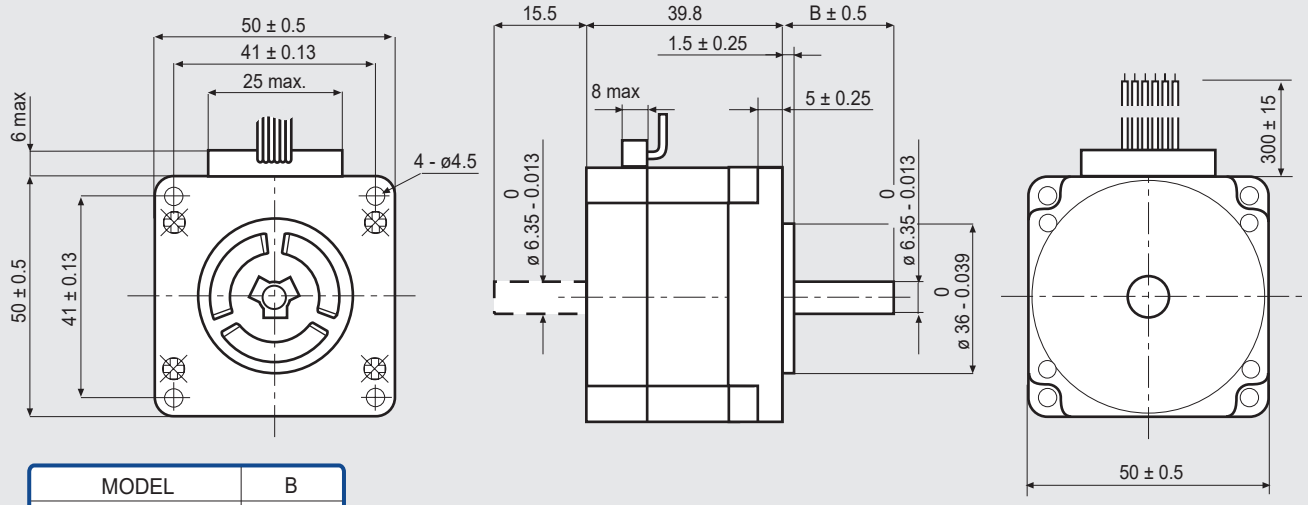


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H6701-0140

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



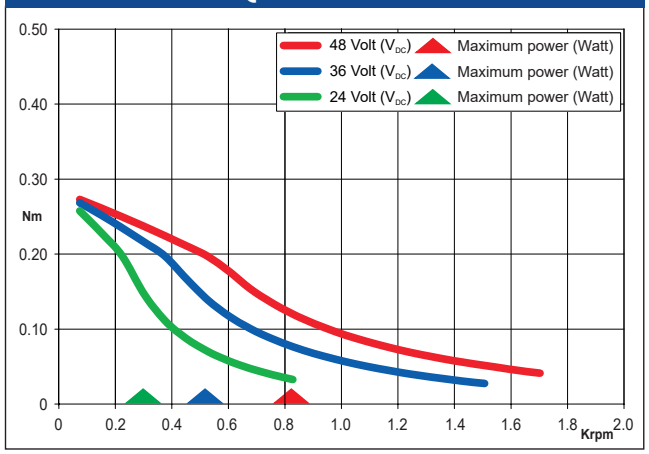
MODEL	B
103 - H6701 - 0140	20.6
103 - H6701 - 0113	28

FEATURES

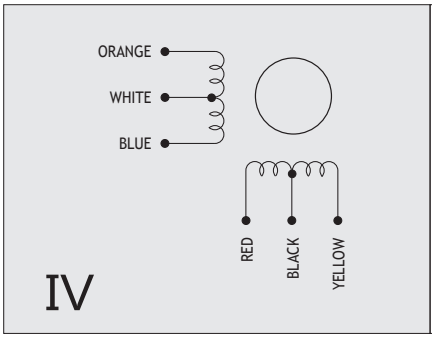
MODEL		103-H6701-0140 (103-H6701-0113)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.7(*)
UNIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	4.3
INDUCTANCE	(mH)	6.8
BIPOLAR HOLDING TORQUE	(Ncm)	38
UNIPOLAR HOLDING TORQUE	(Ncm)	28
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	57
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	66000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	0.35
LEADS CODE		IV

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



(*)Bipolar series connection.

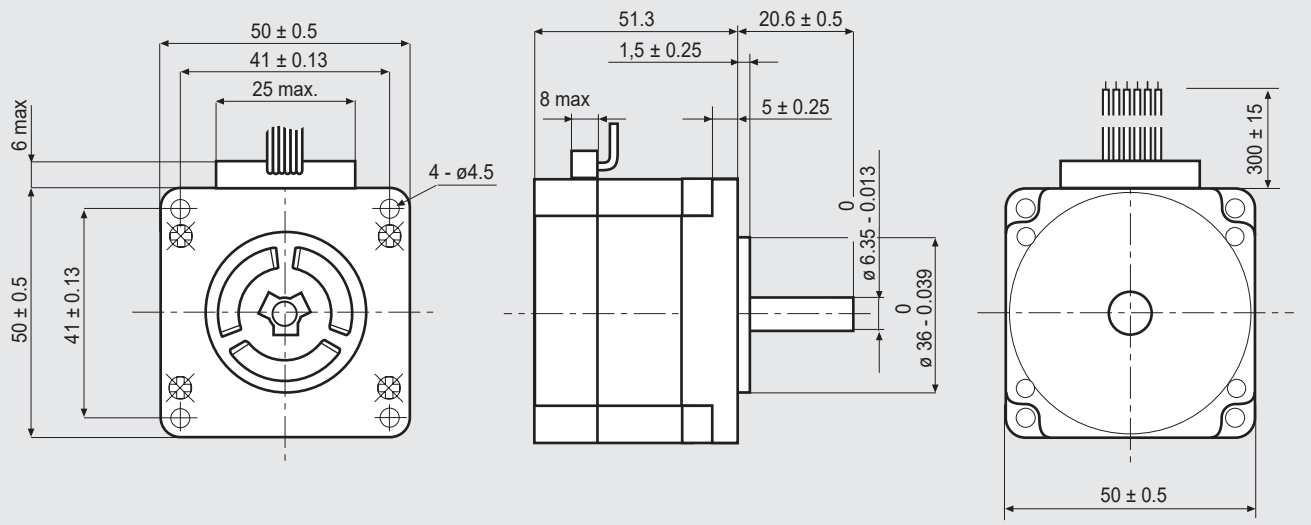


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H6703-0440

SANYO DENKI
SANMOTION

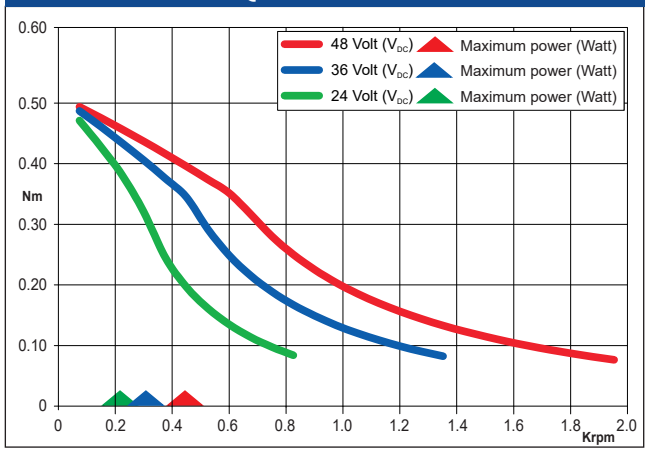
Dimensions (Unit:mm)



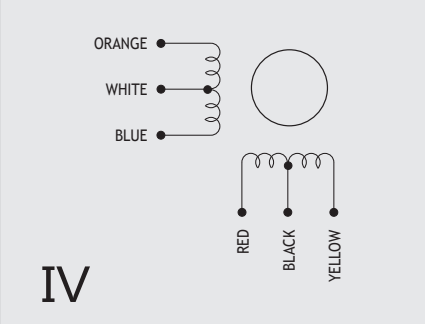
FEATURES

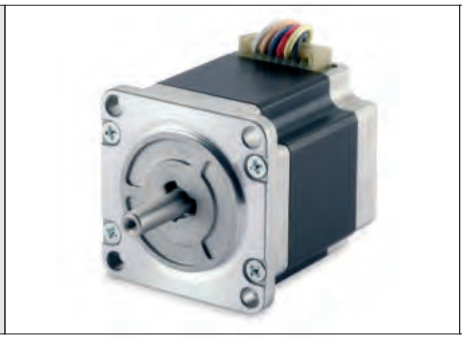
MODEL		103-H6703-0440
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.4(*)
UNIPOLAR CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	1.6
INDUCTANCE	(mH)	3.2
BIPOLAR HOLDING TORQUE	(Ncm)	68
UNIPOLAR HOLDING TORQUE	(Ncm)	49
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	118
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	58000
BACK E.M.F.	(V/Krpm)	17.5
MASS	(Kg)	0.5
LEADS CODE		IV

TORQUE/SPEED CURVE



(*)Bipolar series connection.



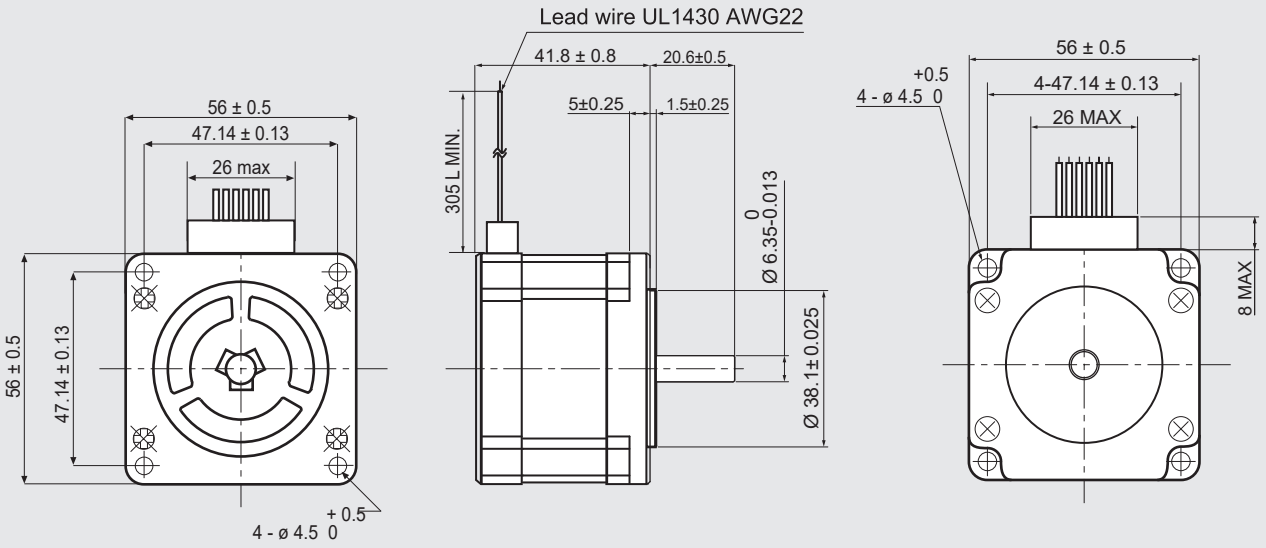


Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H7121-0440

SANYO DENKI
SANMOTION

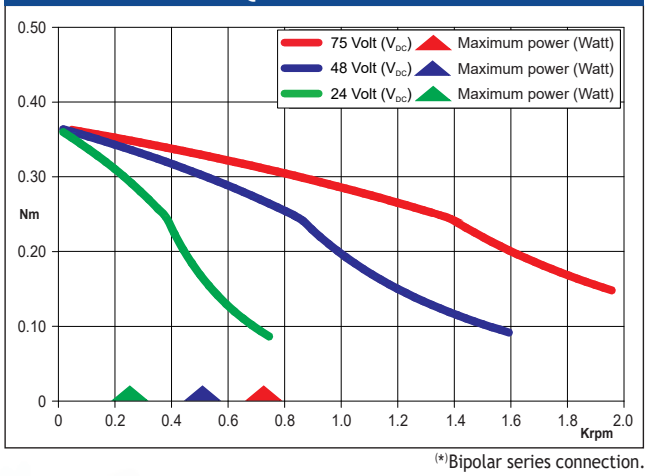
Dimensions (Unit:mm)



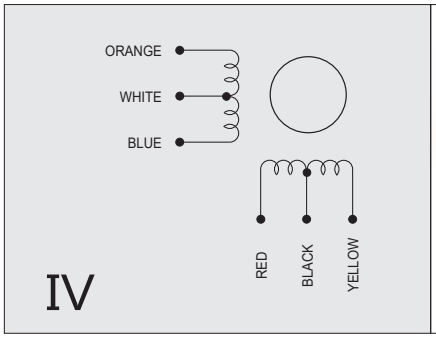
FEATURES

MODEL		103-H7121-0440
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.5(*)
UNIPOLAR CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	1.25
INDUCTANCE	(mH)	1.9
BIPOLAR HOLDING TORQUE	(Ncm)	49
UNIPOLAR HOLDING TORQUE	(Ncm)	39
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	100
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	0.47
LEADS CODE		IV

TORQUE/SPEED CURVE



(*)Bipolar series connection.

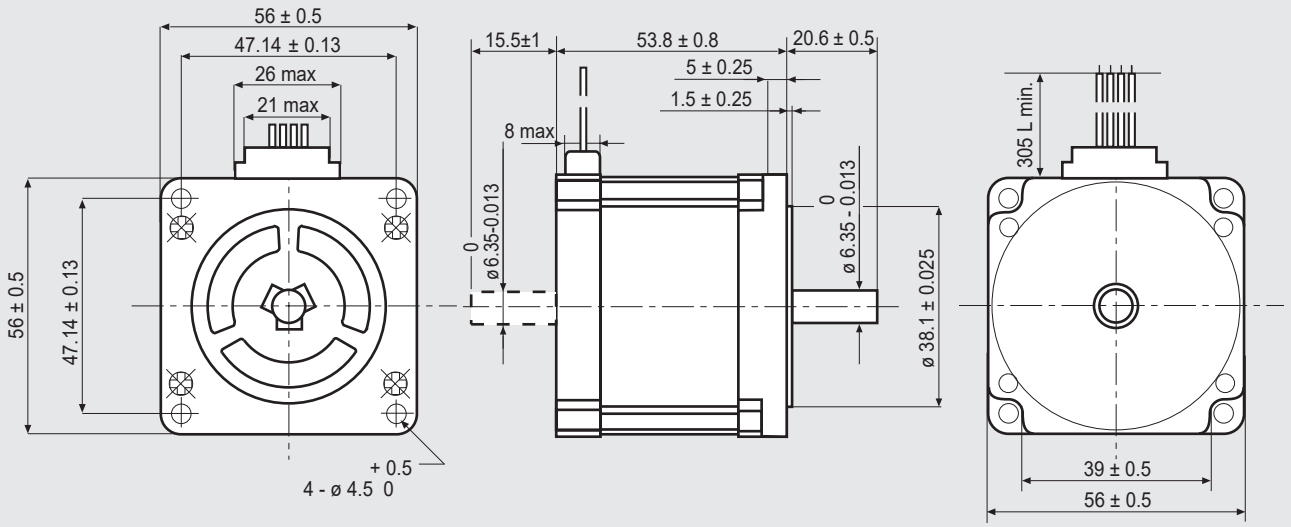


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-5040

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

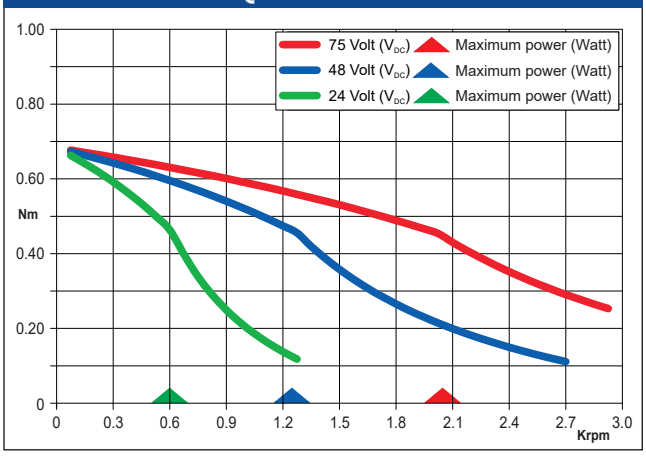


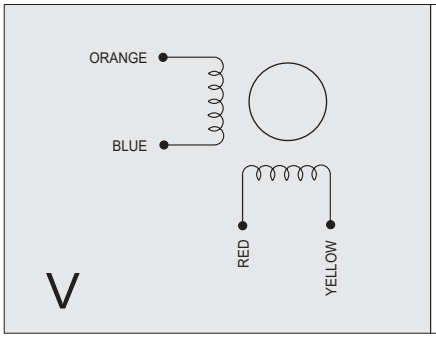
FEATURES

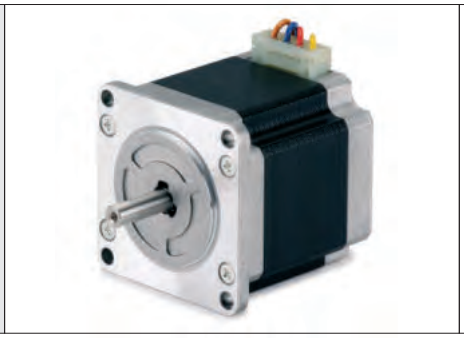
MODEL		103-H7123-5040 (103-H7123-5010)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.8
INDUCTANCE	(mH)	3.8
BIPOLAR HOLDING TORQUE	(Ncm)	85
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	38500
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	0.65
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





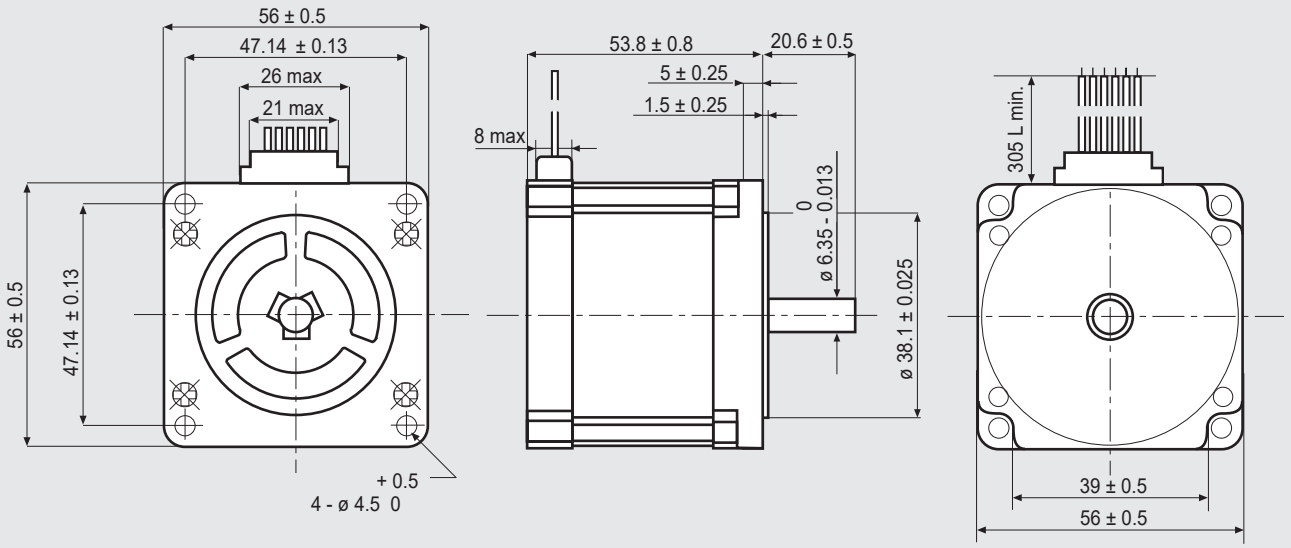


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-0140

SANYO DENKI
SANMOTION

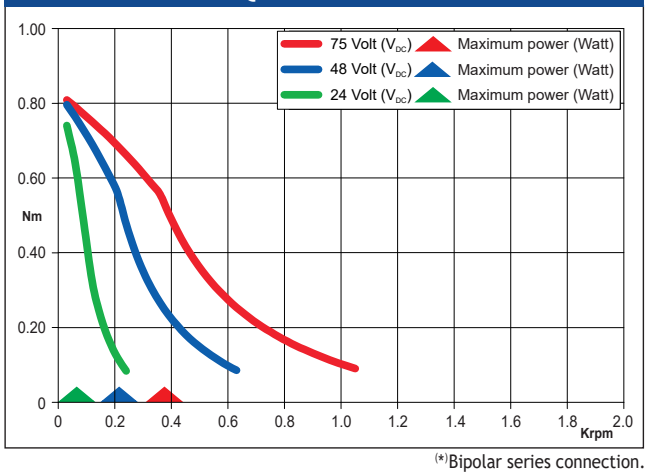
Dimensions (Unit:mm)



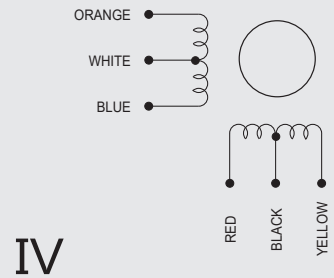
FEATURES

MODEL		103-H7123-0140
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.7 (*)
UNIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	6.7
INDUCTANCE	(mH)	15
BIPOLAR HOLDING TORQUE	(Ncm)	110
UNIPOLAR HOLDING TORQUE	(Ncm)	85
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	60
MASS	(Kg)	0.65
LEADS CODE		IV

TORQUE/SPEED CURVE



(*)Bipolar series connection.

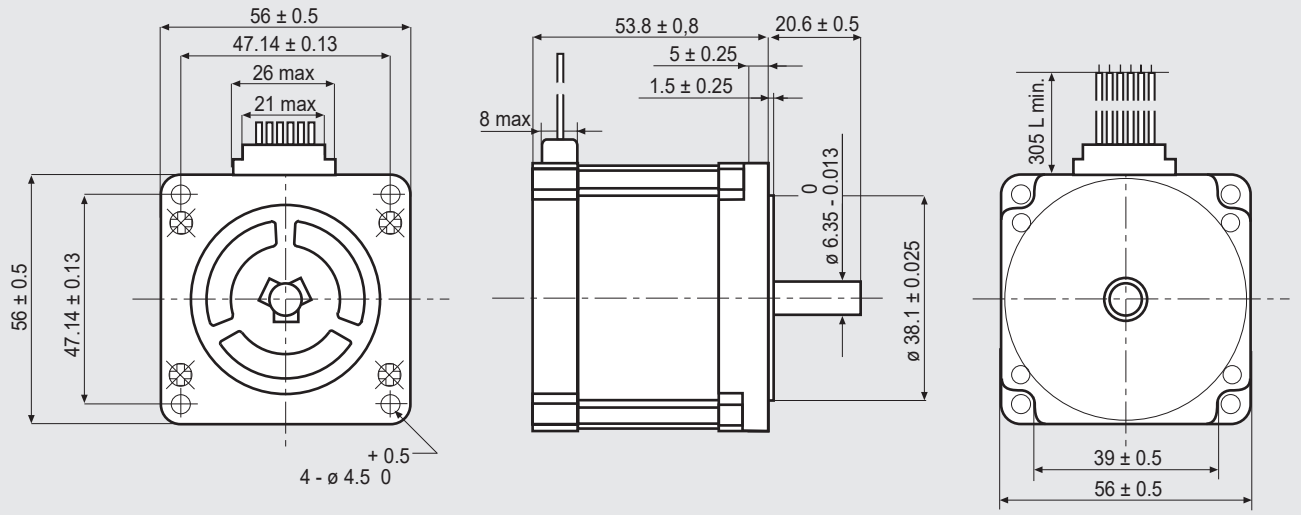


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-0440

SANYO DENKI
SANMOTION

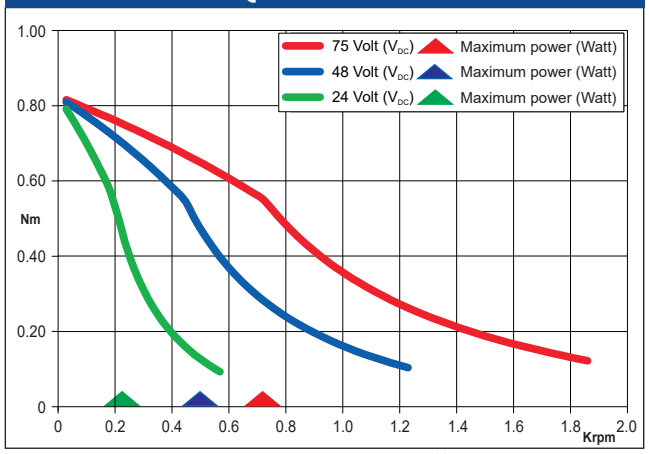
Dimensions (Unit:mm)



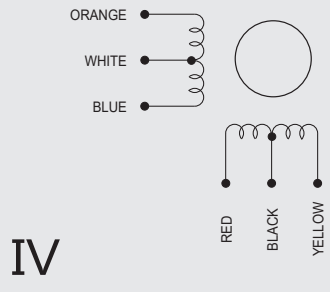
FEATURES

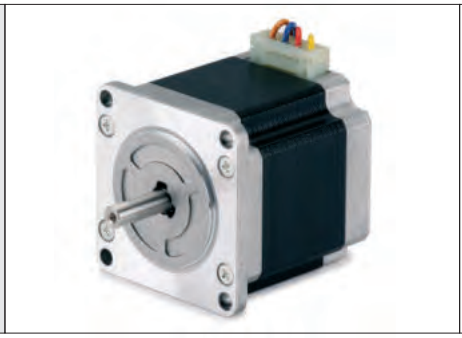
MODEL		103-H7123-0440
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	1.5(*)
UNIPOLAR CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	1.6
INDUCTANCE	(mH)	3.8
BIPOLAR HOLDING TORQUE	(Ncm)	110
UNIPOLAR HOLDING TORQUE	(Ncm)	85
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	0.65
LEADS CODE		IV

TORQUE/SPEED CURVE



(*) Bipolar series connection.



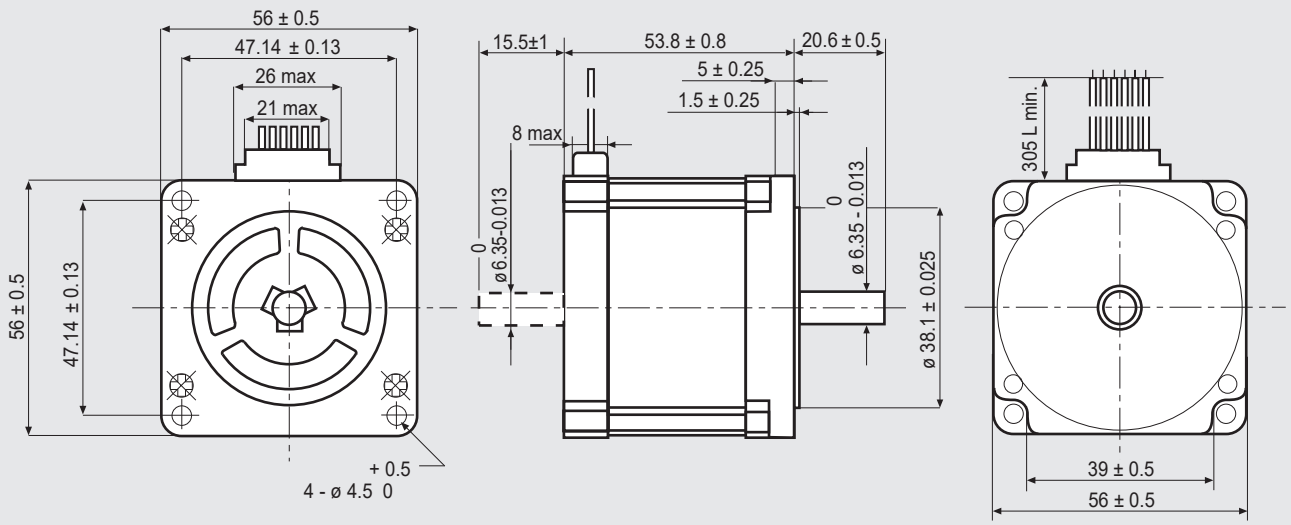


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-0740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

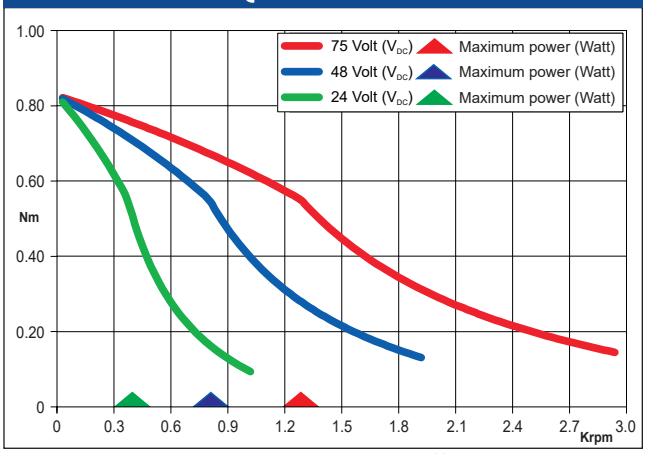


FEATURES

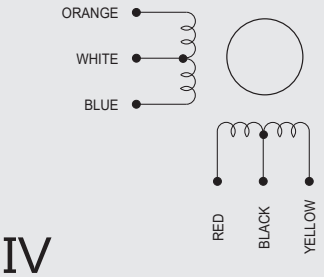
MODEL		103-H7123-0740 (103-H7123-0710)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.2(*)
UNIPOLAR CURRENT	(Amp)	3.0
RESISTANCE	(Ohm)	0.77
INDUCTANCE	(mH)	1.6
BIPOLAR HOLDING TORQUE	(Ncm)	110
UNIPOLAR HOLDING TORQUE	(Ncm)	85
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	0.65
LEADS CODE		IV

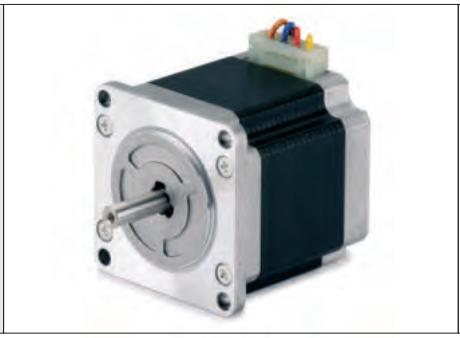
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



(*) Bipolar series connection.



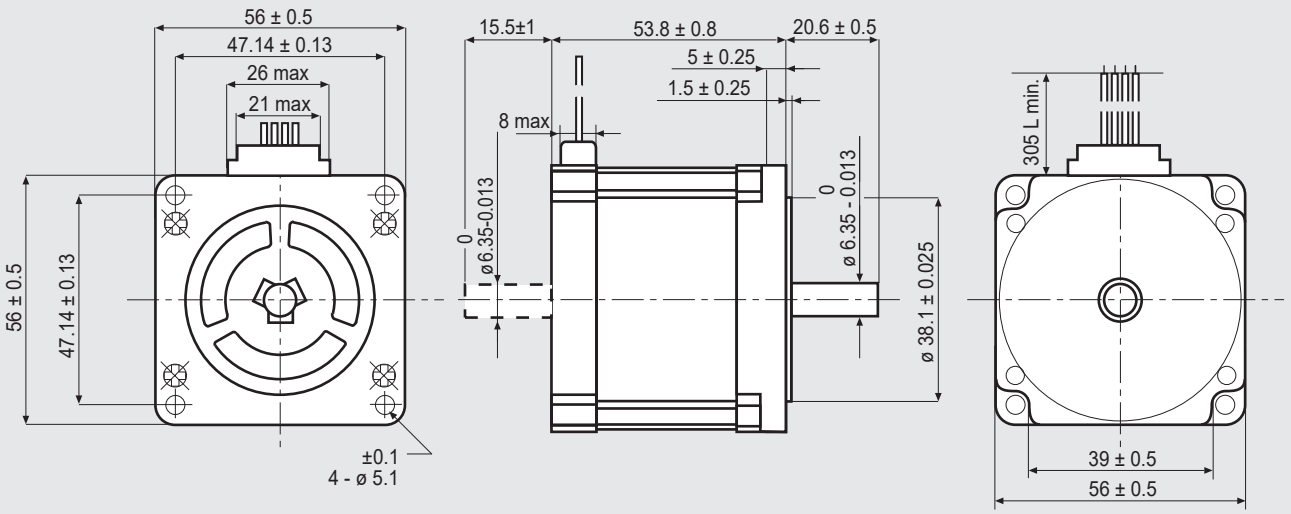


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-1749

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

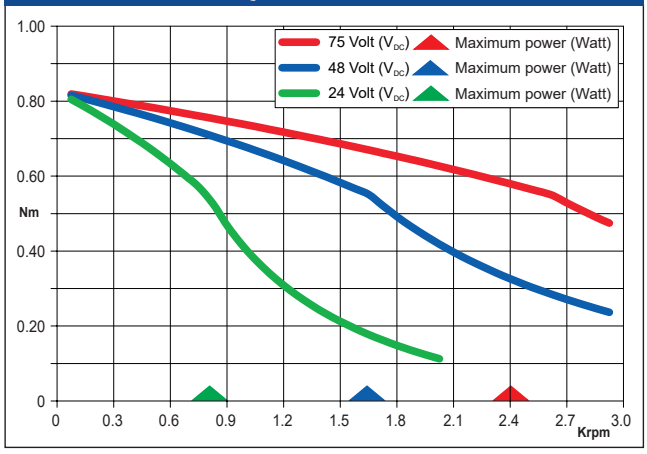


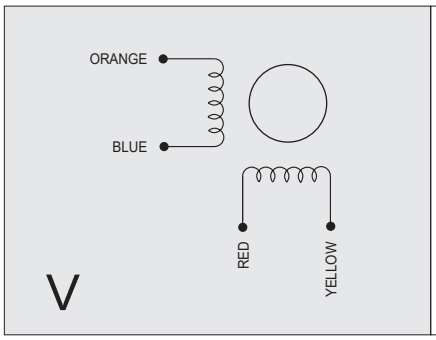
FEATURES

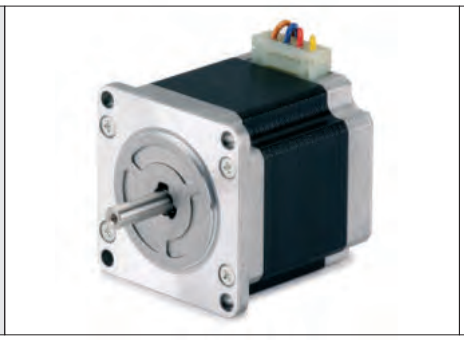
MODEL		103-H7123-1749 (103-H7123-1711)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.41
INDUCTANCE	(mH)	1.6
BIPOLAR HOLDING TORQUE	(Ncm)	110
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	210
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	0.65
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





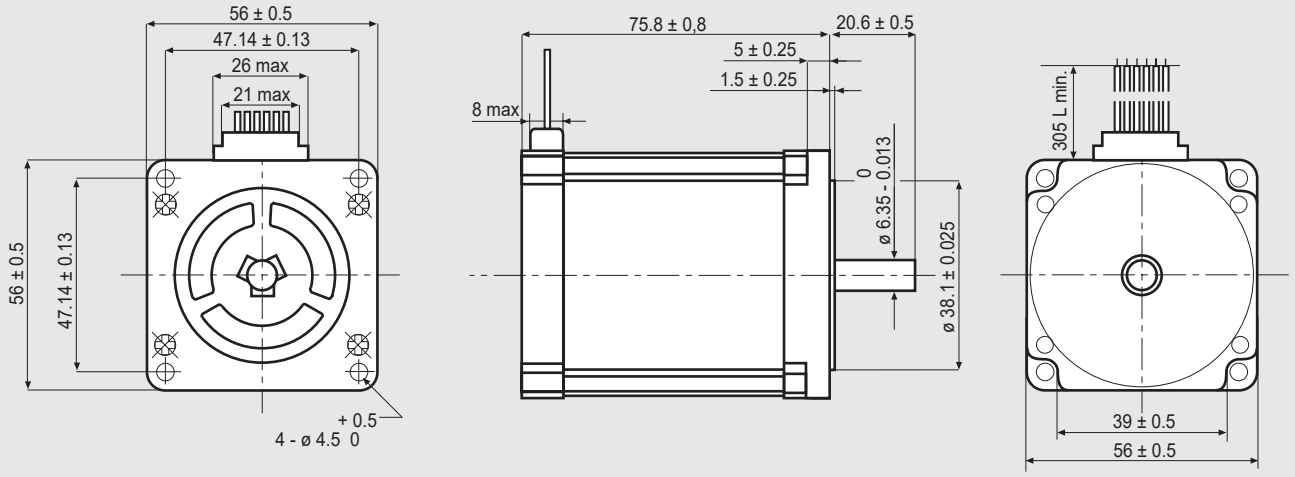


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7126-0140

SANYO DENKI
SANMOTION

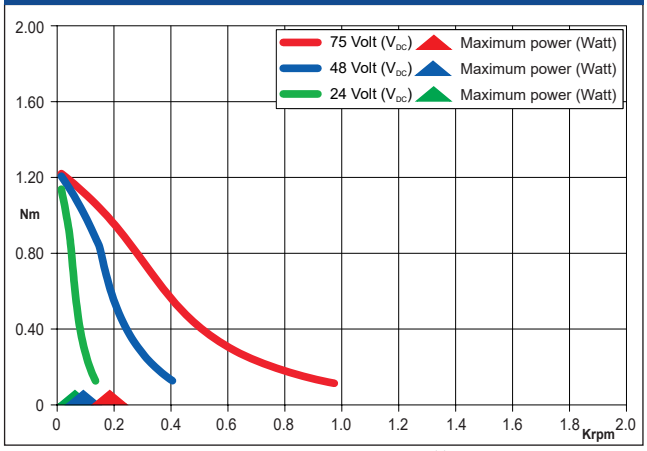
Dimensions (Unit:mm)



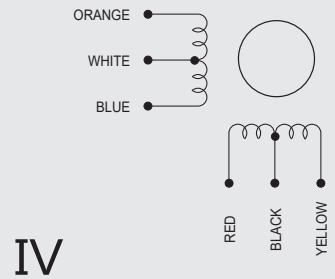
FEATURES

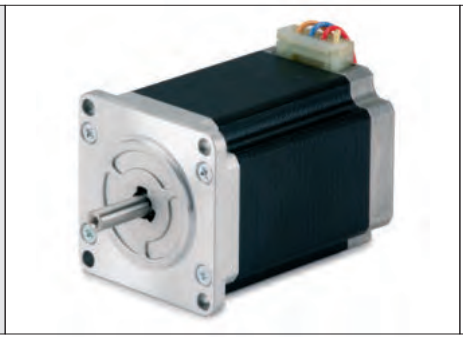
MODEL		103-H7126-0140
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	0.75(*)
UNIPOLAR CURRENT	(Amp)	1.0
RESISTANCE	(Ohm)	8.6
INDUCTANCE	(mH)	19
BIPOLAR HOLDING TORQUE	(Ncm)	165
UNIPOLAR HOLDING TORQUE	(Ncm)	130
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	92
MASS	(Kg)	1
LEADS CODE		IV

TORQUE/SPEED CURVE



(*) Bipolar series connection.



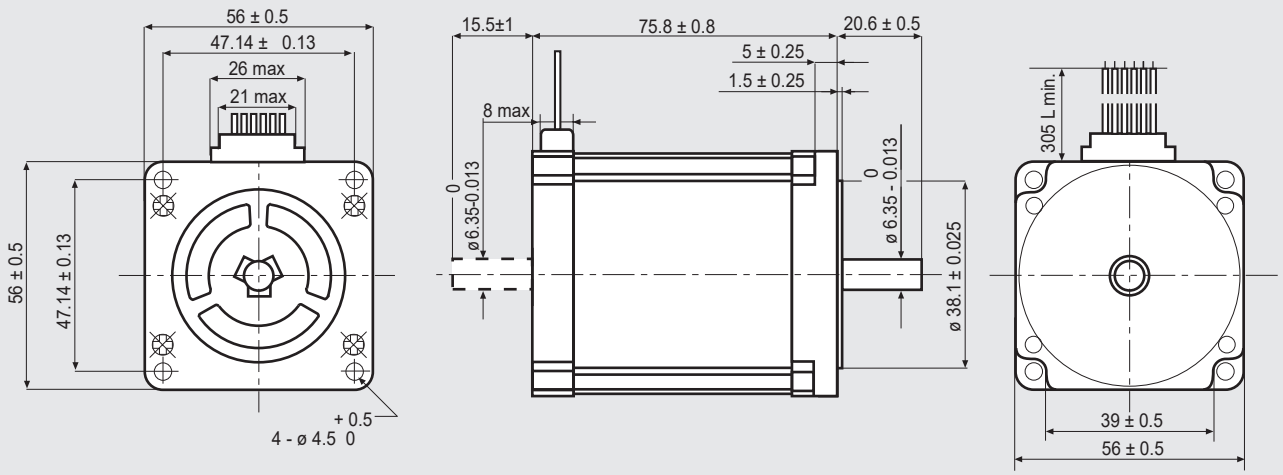


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7126-0740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

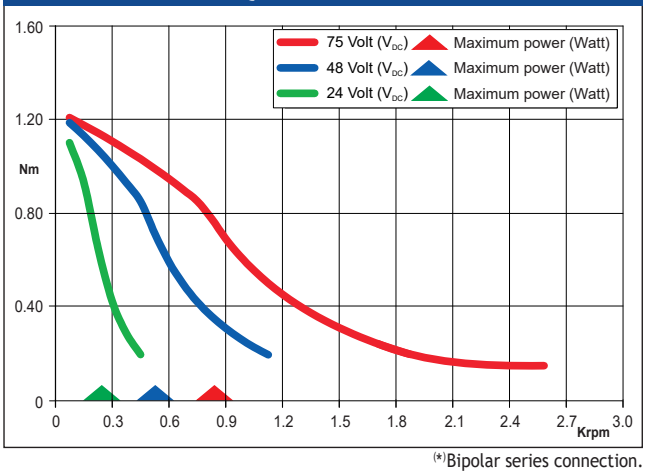


FEATURES

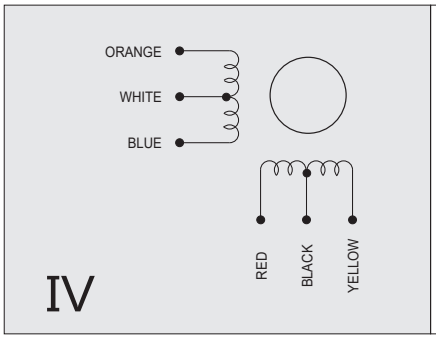
MODEL		103-H7126-0740 (103-H7126-0710)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.2(*)
UNIPOLAR CURRENT	(Amp)	3
RESISTANCE	(Ohm)	0.9
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	165
UNIPOLAR HOLDING TORQUE	(Ncm)	130
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1
LEADS CODE		IV

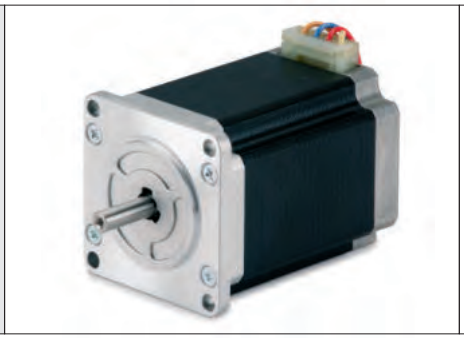
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



(*)Bipolar series connection.



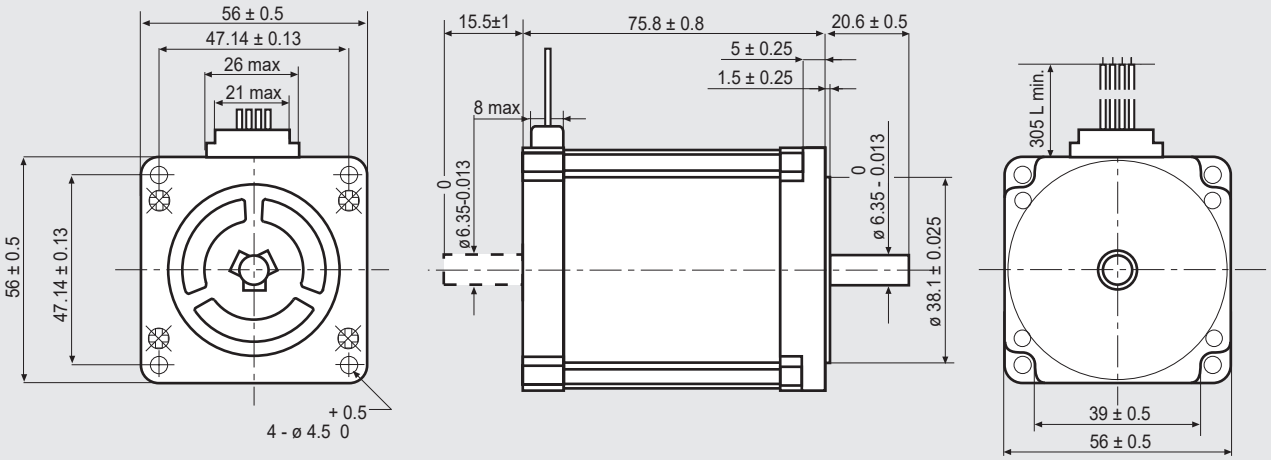


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7126-1740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

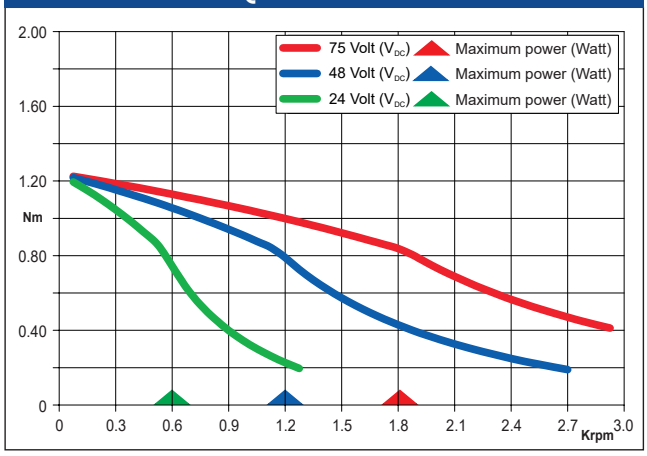


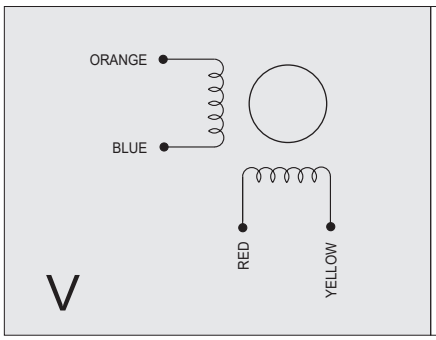
FEATURES

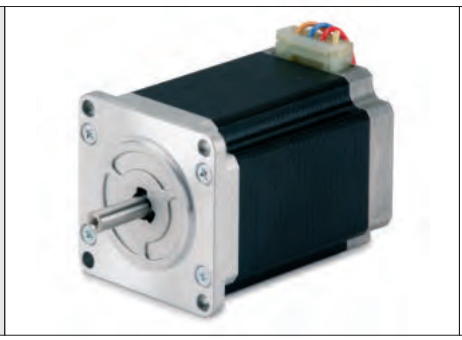
MODEL		103-H7126-1740 (103-H7126-1710)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.48
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	165
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





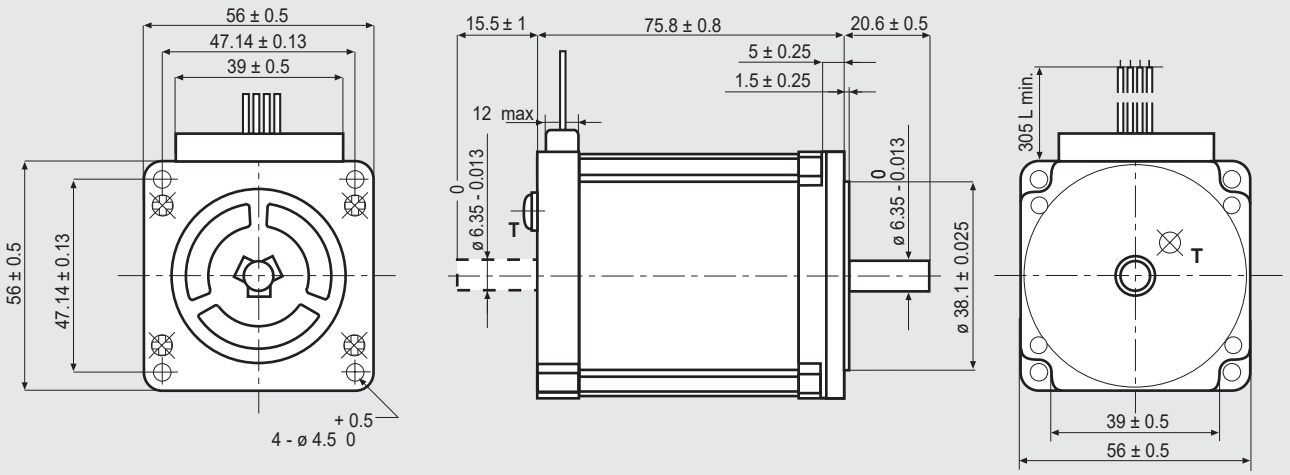


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7126-6640

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



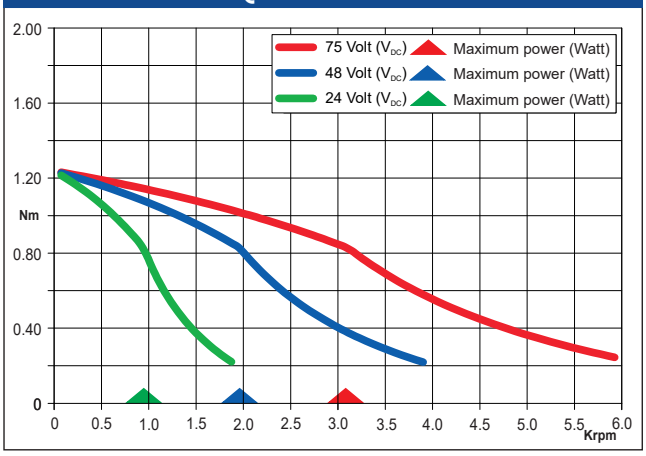
T IS THE EARTH TERMINAL

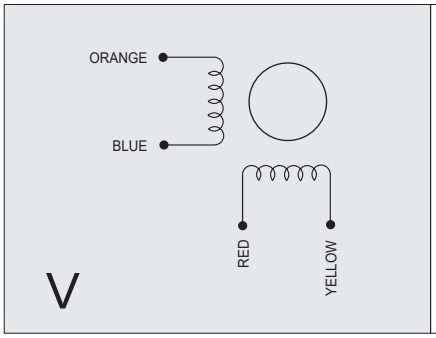
FEATURES

MODEL		103-H7126-6640 (103-H7126-6610)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	5.6
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.3
INDUCTANCE	(mH)	0.85
BIPOLAR HOLDING TORQUE	(Ncm)	165
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	360
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	23
MASS	(Kg)	1
PROTECTION DEGREE		IP43
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



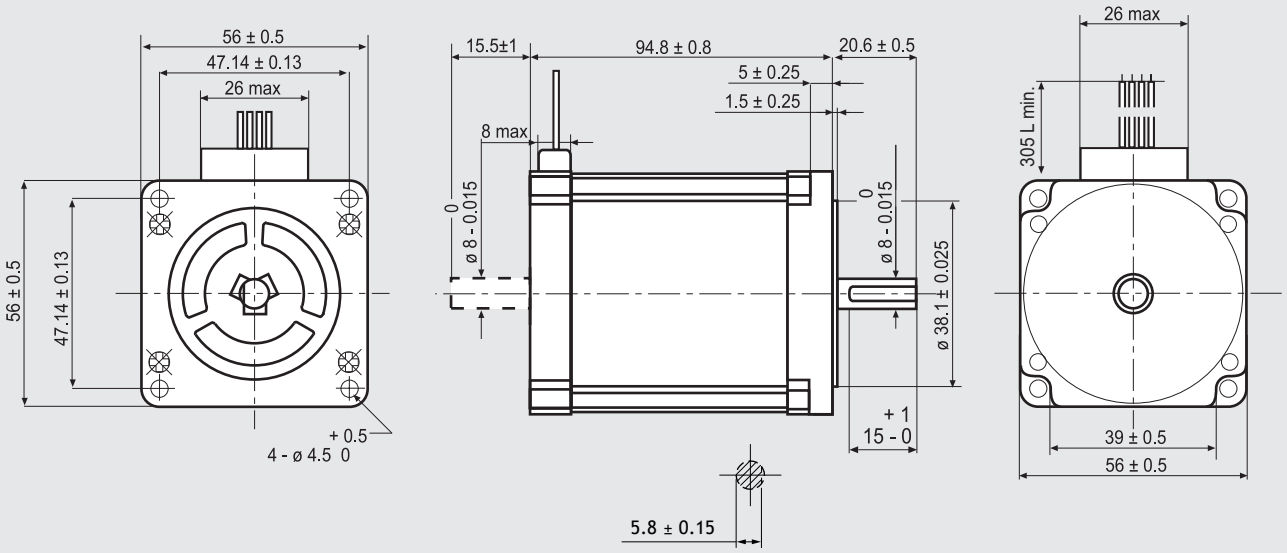


Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

103-H7128-5740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

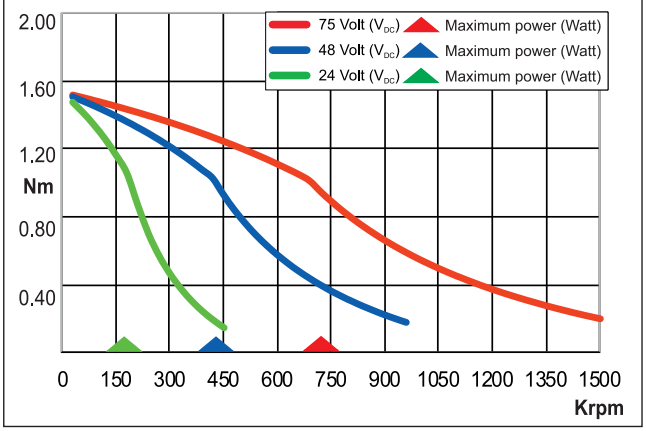


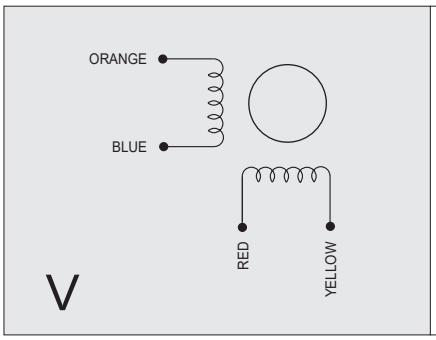
FEATURES

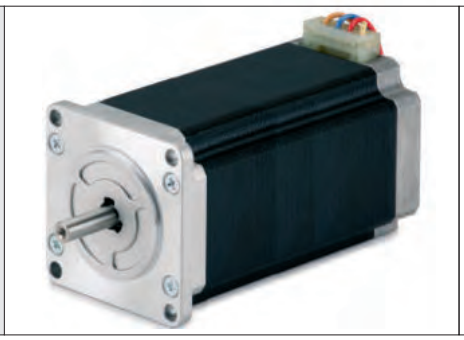
MODEL		103-H7128-5740 (103-H7128-5710)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	2.3
INDUCTANCE	(mH)	10.4
BIPOLAR HOLDING TORQUE	(Ncm)	200
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	490
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	40816
BACK E.M.F.	(V/Krpm)	53.3
MASS	(Kg)	1.3
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





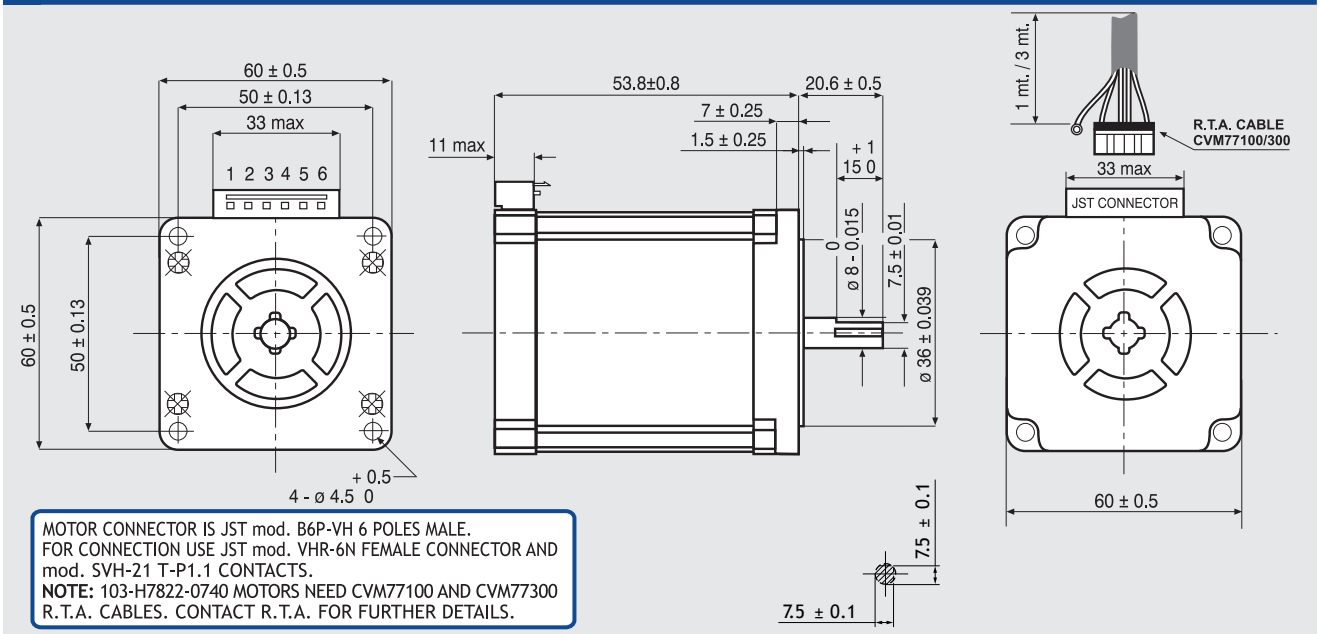


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7822-0740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

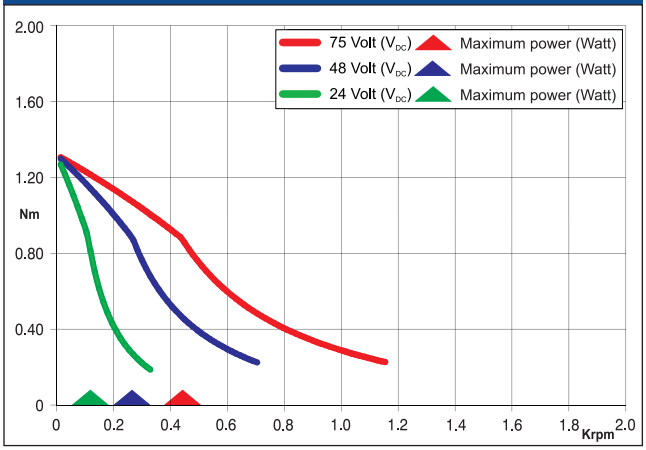


MOTOR CONNECTOR IS JST mod. B6P-VH 6 POLES MALE.
FOR CONNECTION USE JST mod. VHR-6N FEMALE CONNECTOR AND mod. SVH-21 T-P1.1 CONTACTS.
NOTE: 103-H7822-0740 MOTORS NEED CVM77100 AND CVM77300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

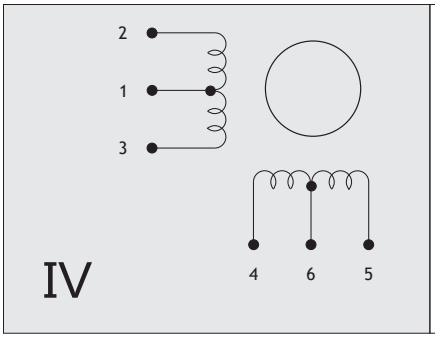
FEATURES

MODEL		103-H7822-0740
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.2 (*)
UNIPOLAR CURRENT	(Amp)	3.0
RESISTANCE	(Ohm)	0.8
INDUCTANCE	(mH)	1.38
BIPOLAR HOLDING TORQUE	(Ncm)	170
UNIPOLAR HOLDING TORQUE	(Ncm)	125
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	400
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	42500
BACK E.M.F.	(V/Krpm)	77
MASS	(Kg)	0.8
LEADS CODE		IV

TORQUE/SPEED CURVE



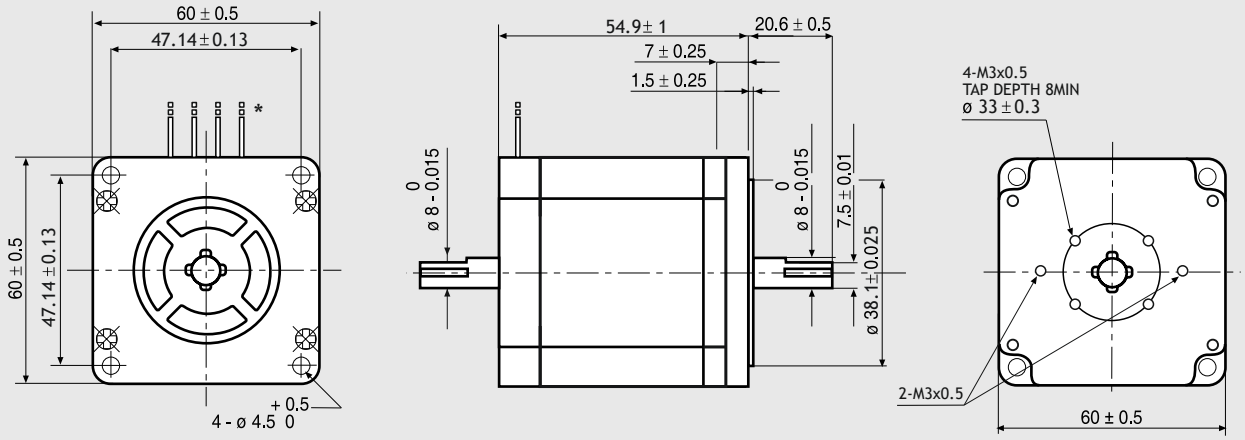
(*) Bipolar series connection.



Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, FLEX-DRIVE

103-H7822-1731

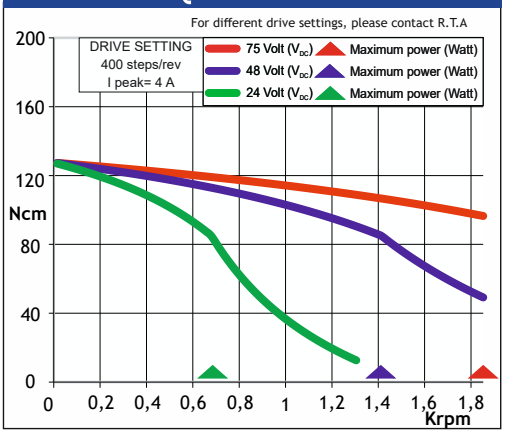
Dimensions (Unit:mm)

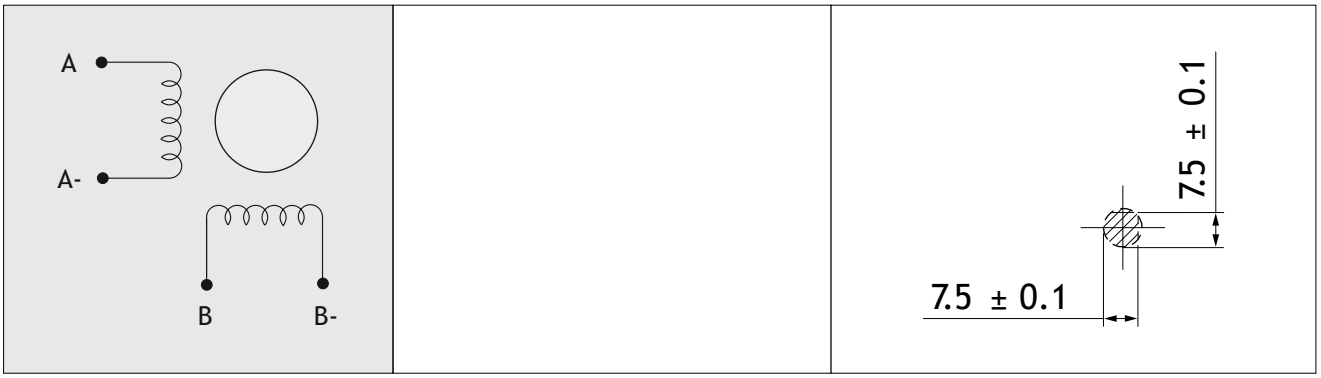


SANYO DENKY FEATURES

MODEL		103-H7822-1731
SANYO DENKI MOTOR CODE		103-H7822-1731
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	4.0
UNIPOLAR PARALLEL CURRENT	(A)	
RESISTANCE	(Ohm)	0.43
INDUCTANCE	(mH)	1.38
BIPOLAR HOLDING TORQUE	(Ncm)	137
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	400
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	34200
BACK E.M.F.	(V/Krpm)	43
MASS	(Kg)	1.1

TORQUE/SPEED CURVE



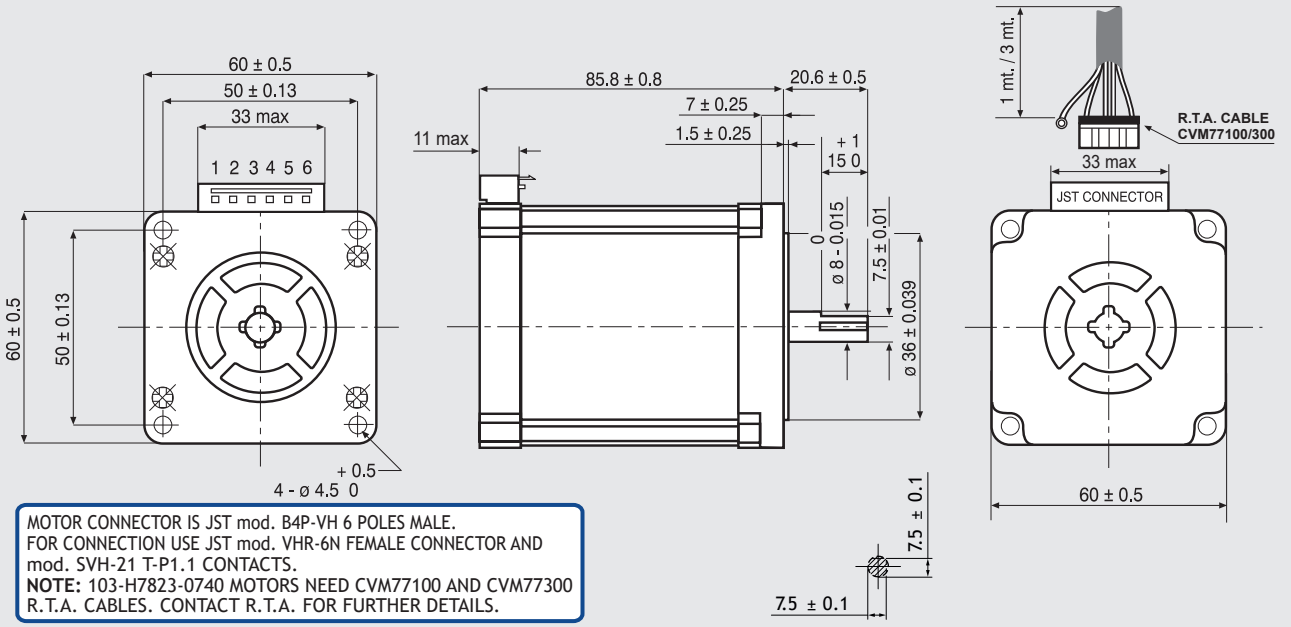


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, FLEX-DRIVE

103-H7823-0740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

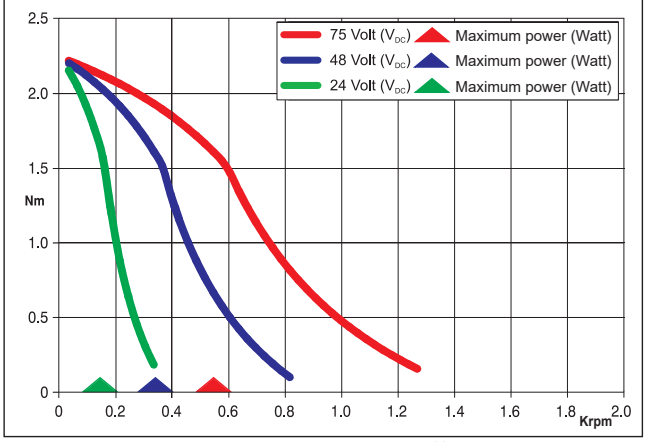


MOTOR CONNECTOR IS JST mod. B4P-VH 6 POLES MALE.
FOR CONNECTION USE JST mod. VHR-6N FEMALE CONNECTOR AND mod. SVH-21 T-P1.1 CONTACTS.
NOTE: 103-H7823-0740 MOTORS NEED CVM77100 AND CVM77300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

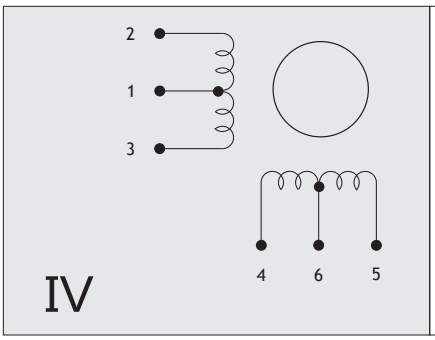
FEATURES

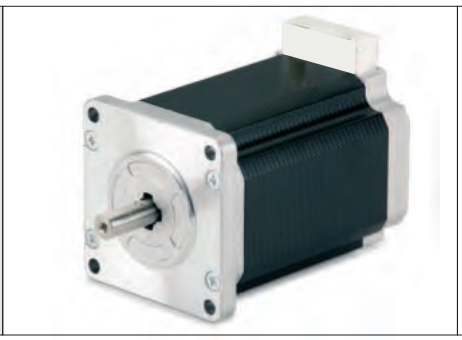
MODEL		103-H7823-0740
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.2(*)
UNIPOLAR CURRENT	(Amp)	3.0
RESISTANCE	(Ohm)	1.25
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	300
UNIPOLAR HOLDING TORQUE	(Ncm)	240
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	840
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	35700
BACK E.M.F.	(V/Krpm)	55
MASS	(Kg)	1.4
LEADS CODE		IV

TORQUE/SPEED CURVE



(*) Bipolar series connection.



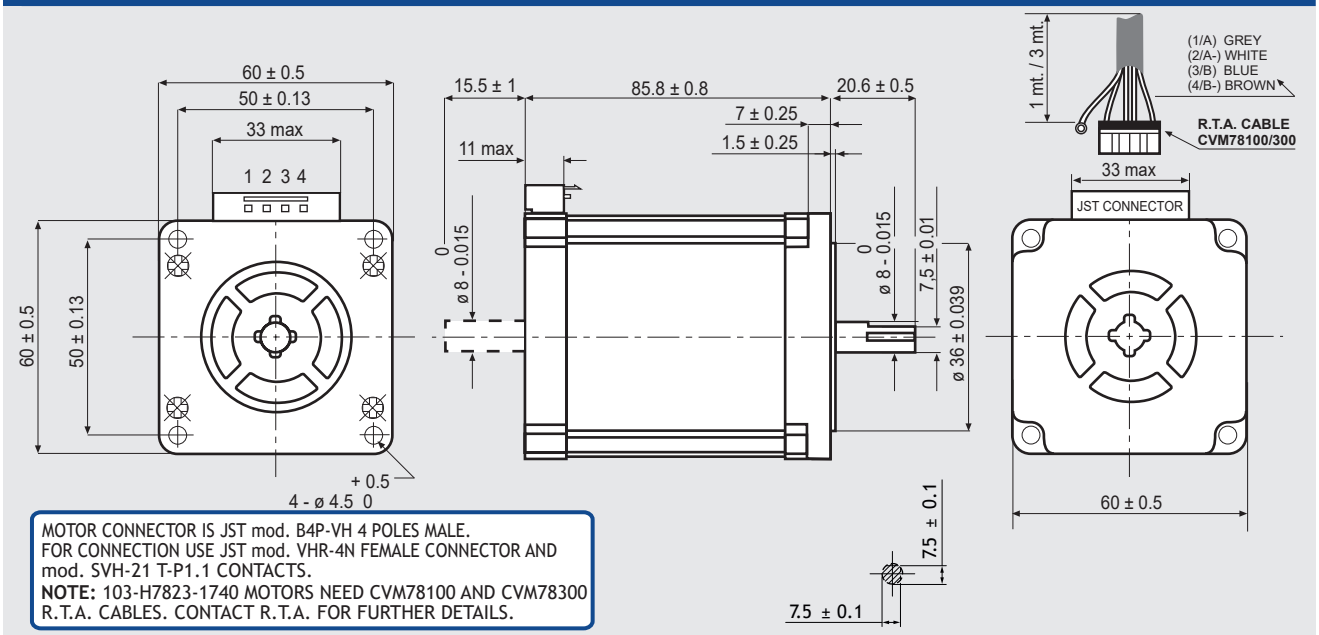


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

103-H7823-1740

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



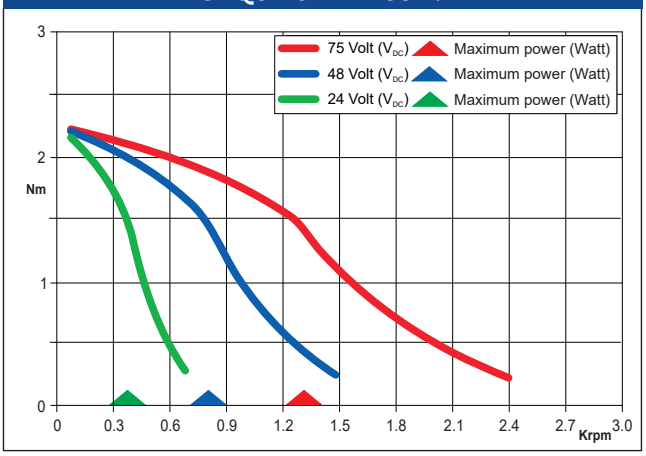
MOTOR CONNECTOR IS JST mod. B4P-VH 4 POLES MALE.
FOR CONNECTION USE JST mod. VHR-4N FEMALE CONNECTOR AND mod. SVH-21 T-P1.1 CONTACTS.
NOTE: 103-H7823-1740 MOTORS NEED CVM78100 AND CVM78300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

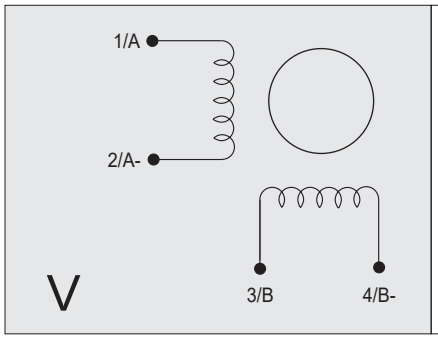
FEATURES

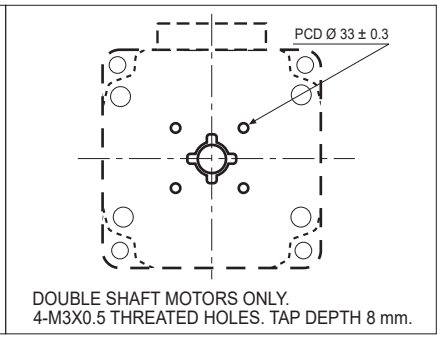
MODEL		103-H7823-1740 (103-H7823-1714)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.65
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	300
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	840
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	35700
BACK E.M.F.	(V/Krpm)	75
MASS	(Kg)	1.4
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE







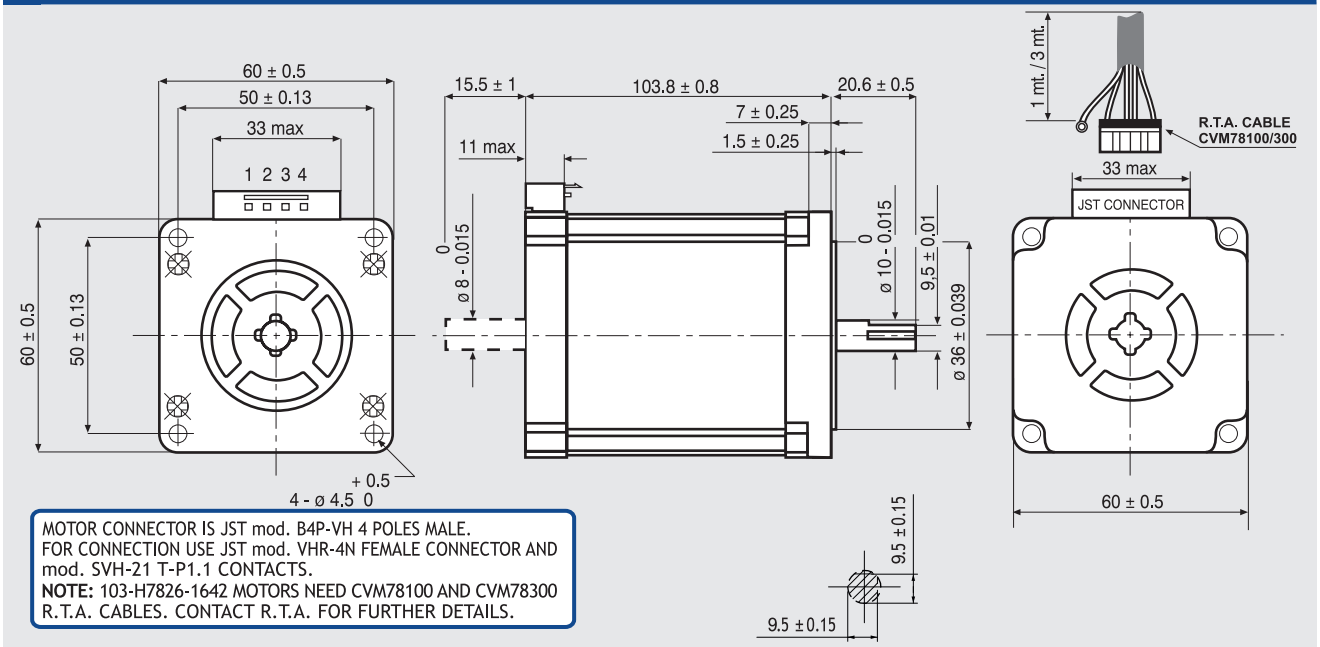
DOUBLE SHAFT MOTORS ONLY.
4-M3X0.5 THREATED HOLES. TAP DEPTH 8 mm.

Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

103-H7826-1642

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



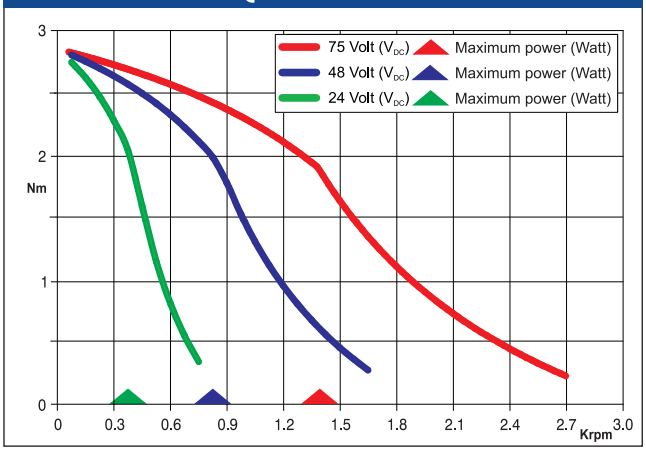
MOTOR CONNECTOR IS JST mod. B4P-VH 4 POLES MALE.
FOR CONNECTION USE JST mod. VHR-4N FEMALE CONNECTOR AND mod. SVH-21 T-P1.1 CONTACTS.
NOTE: 103-H7826-1642 MOTORS NEED CVM78100 AND CVM78300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

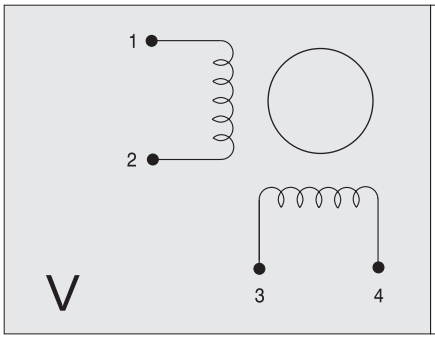
FEATURES

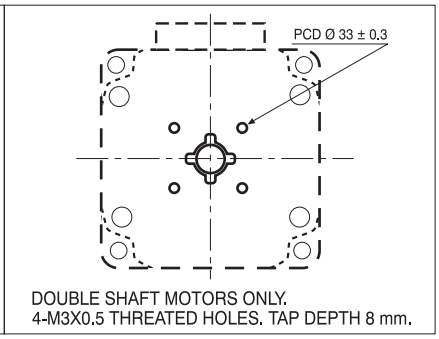
MODEL		103-H7826-1642 (103-H7826-1612)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.43
INDUCTANCE	(mH)	1.45
BIPOLAR HOLDING TORQUE	(Ncm)	380
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1080
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	35200
BACK E.M.F.	(V/Krpm)	70
MASS	(Kg)	1.65
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE







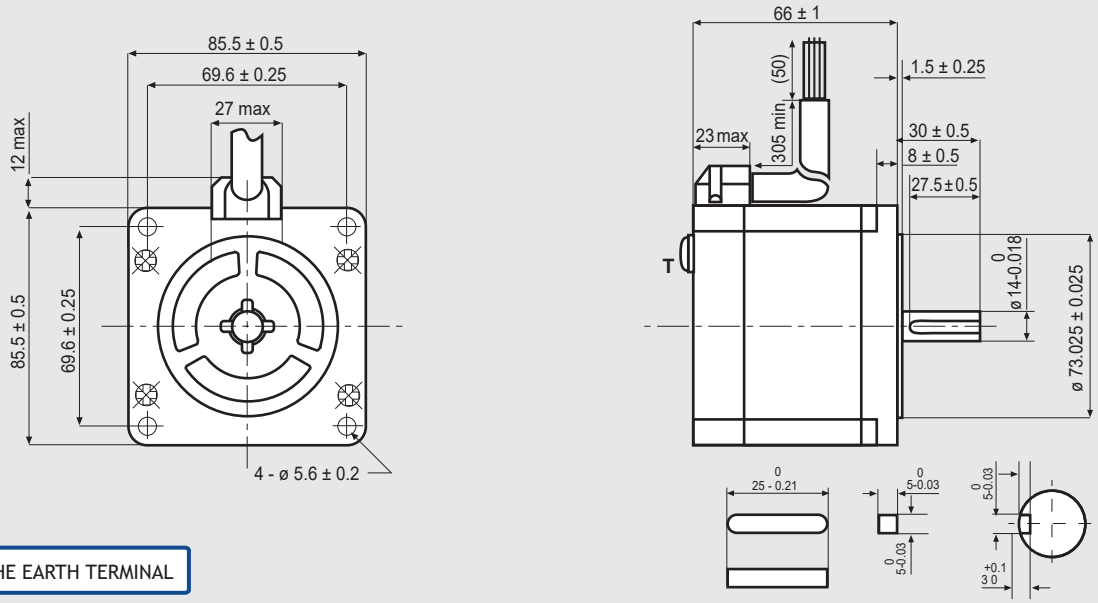
DOUBLE SHAFT MOTORS ONLY.
4-M3X0.5 THREATED HOLES. TAP DEPTH 8 mm.

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

SM 2861-5055

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



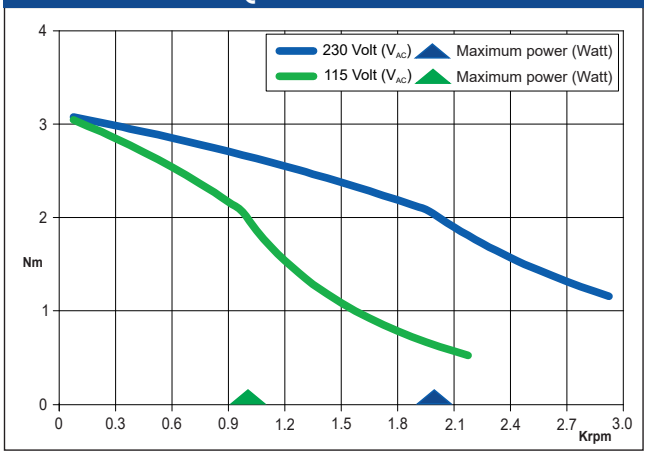
T IS THE EARTH TERMINAL

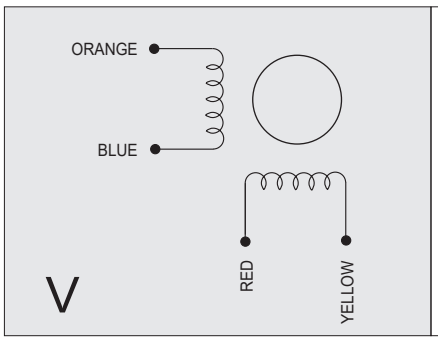
FEATURES

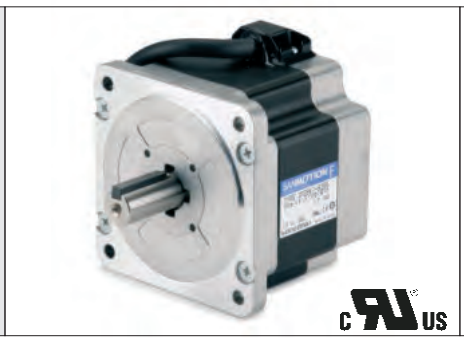
MODEL		SM 2861-5055 (SM 2861-5025)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	2.2
INDUCTANCE	(mH)	15
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1480
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	180
MASS	(Kg)	1.7
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





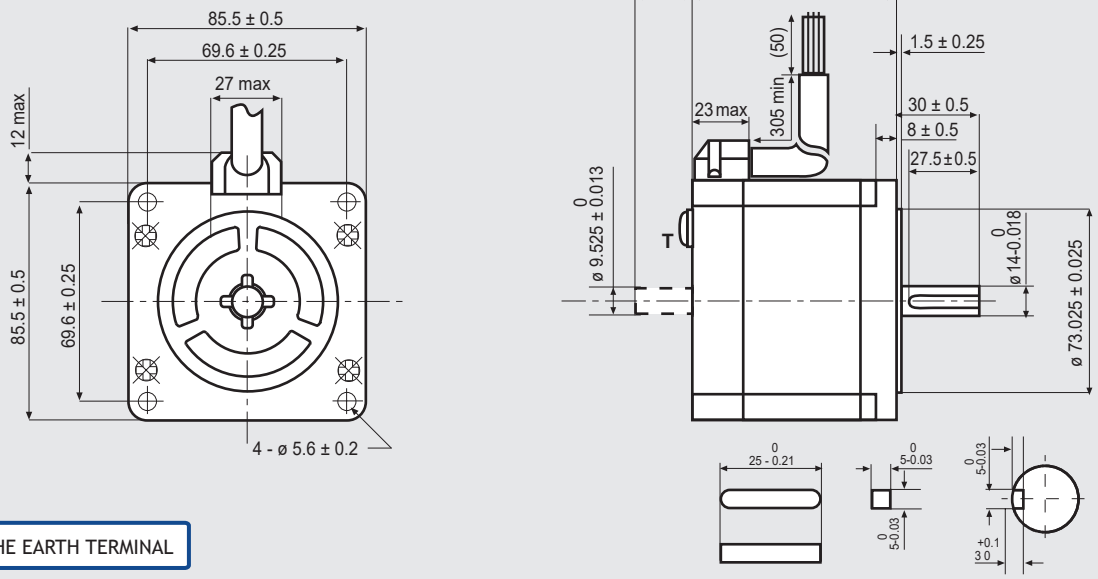


Suggested R.T.A. drive model: X-PLUS L2

SM 2861-5255

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



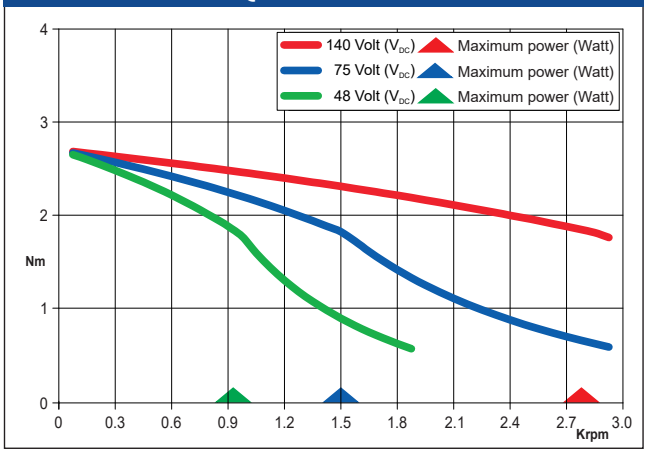
T IS THE EARTH TERMINAL

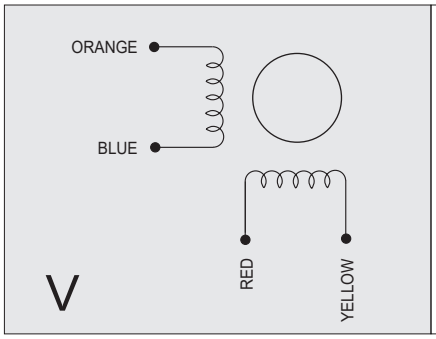
FEATURES

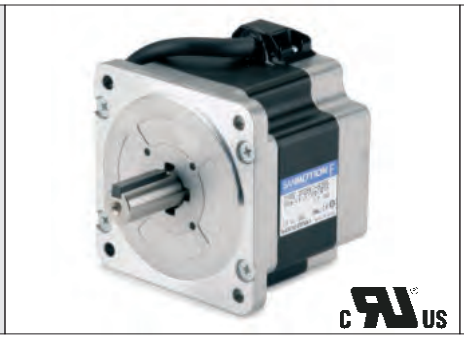
MODEL		SM 2861-5255 (SM 2861-5225)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.29
INDUCTANCE	(mH)	1.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1480
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	60
MASS	(Kg)	1.7
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

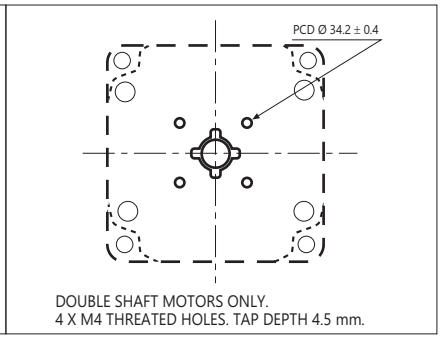
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE









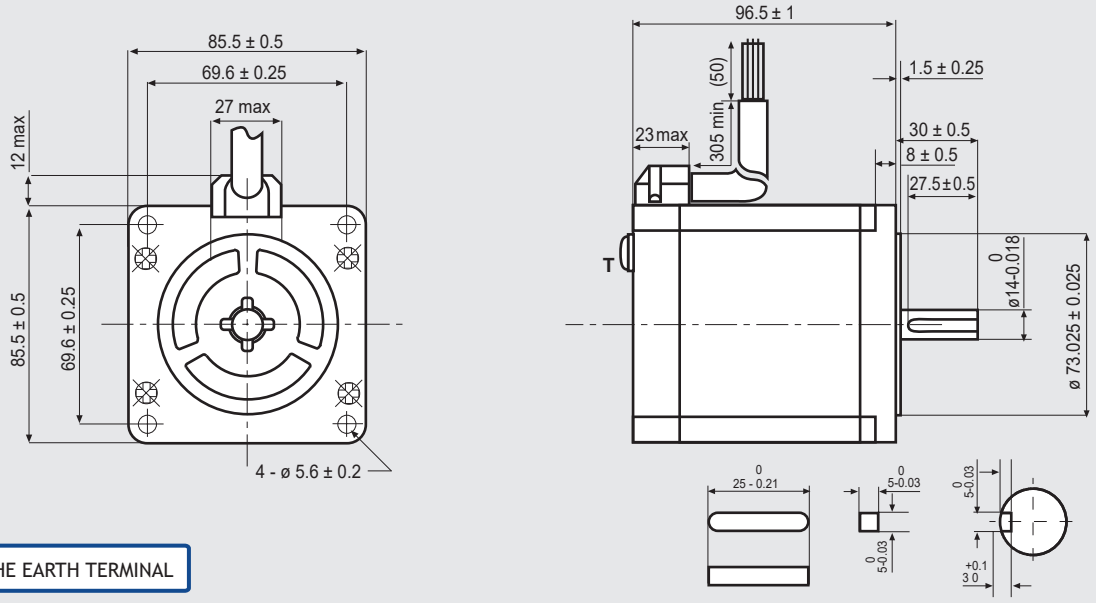
DOUBLE SHAFT MOTORS ONLY.
4 X M4 THREATED HOLES. TAP DEPTH 4.5 mm.

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

SM 2862-5055

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

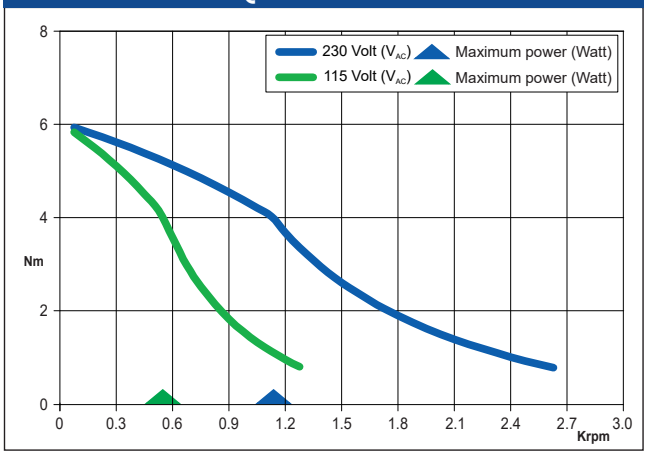


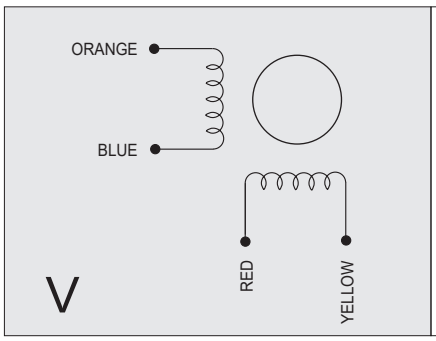
T IS THE EARTH TERMINAL

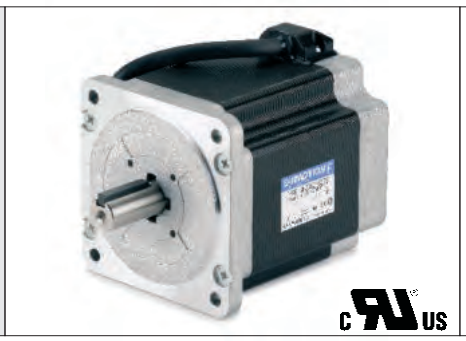
FEATURES

MODEL		SM 2862-5055
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	3.2
INDUCTANCE	(mH)	25
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	350
MASS	(Kg)	2.9
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

TORQUE/SPEED CURVE





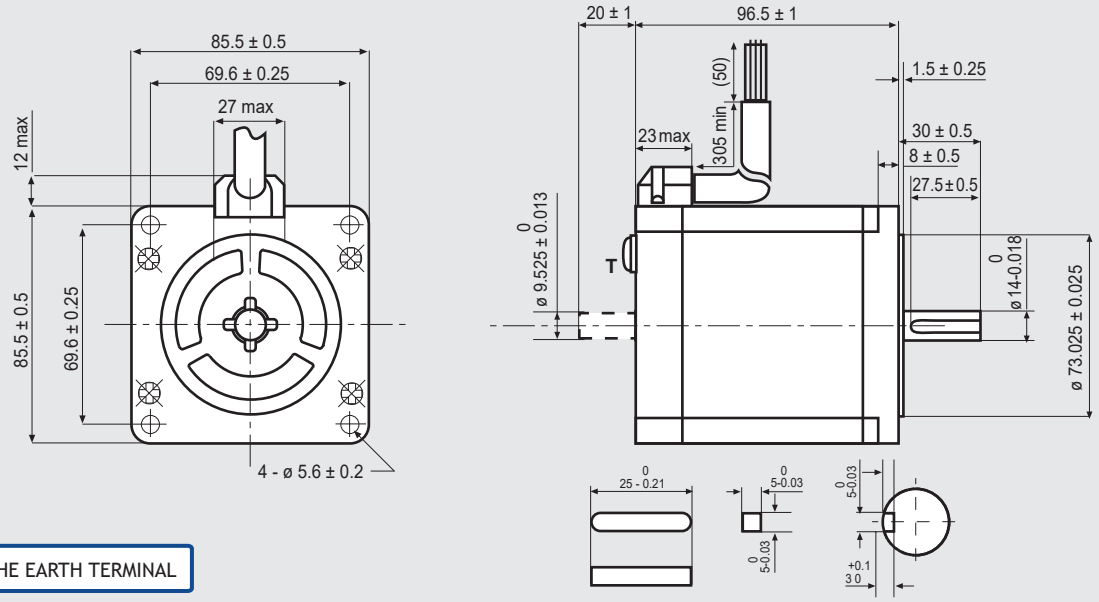


Suggested R.T.A. drive series: 230 Vac X-PLUS

SM 2862-5155

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



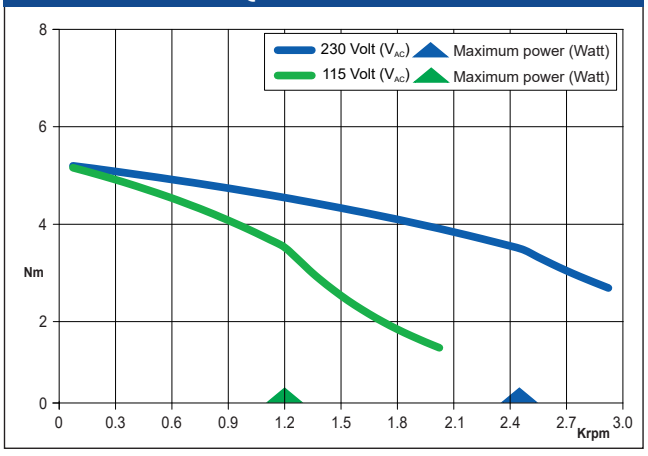
T IS THE EARTH TERMINAL

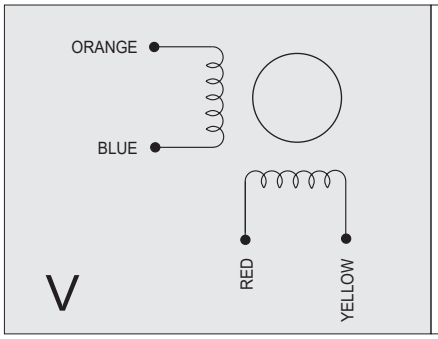
FEATURES

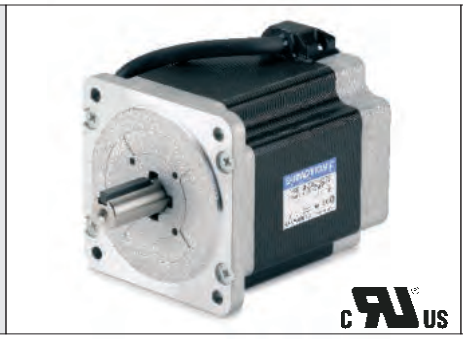
MODEL		SM 2862-5155 (SM 2862-5125)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	2.9
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

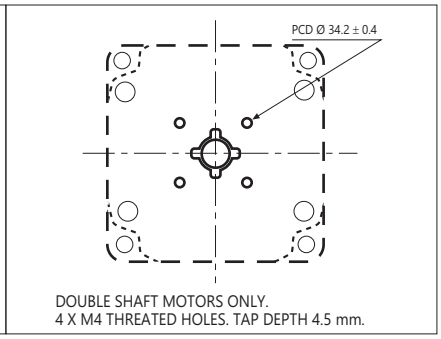
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE









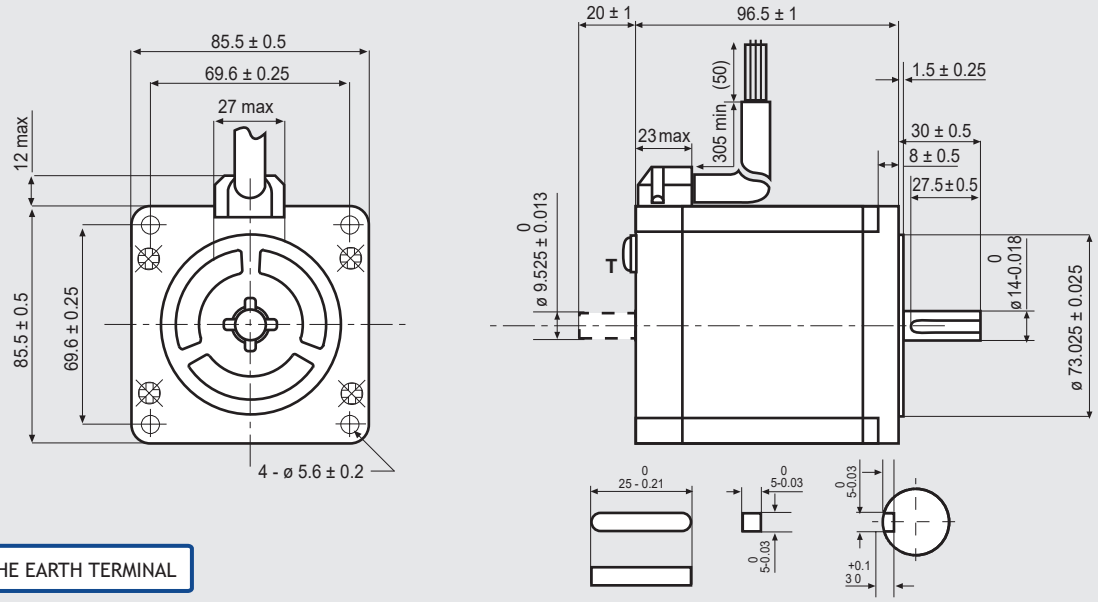
DOUBLE SHAFT MOTORS ONLY.
4 X M4 THREATED HOLES. TAP DEPTH 4.5 mm.

Suggested R.T.A. drive series: 230 Vac X-PLUS

SM 2862-5255

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



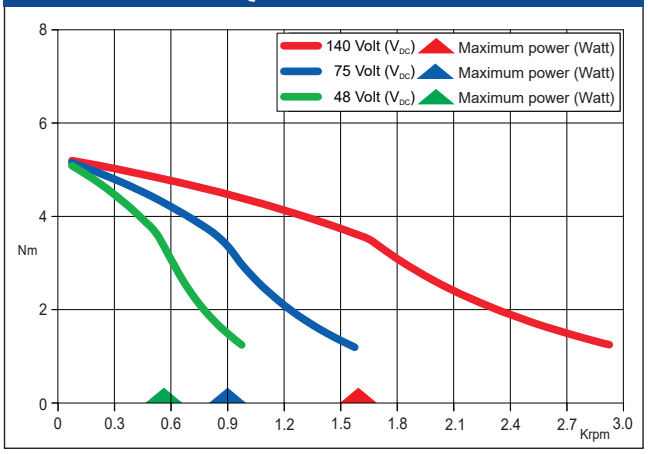
T IS THE EARTH TERMINAL

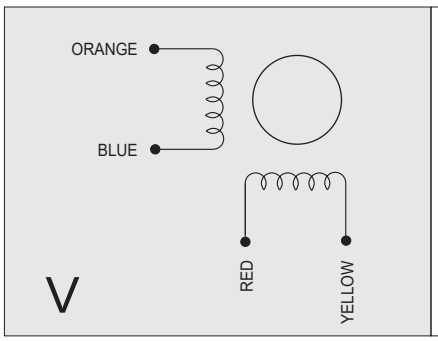
FEATURES

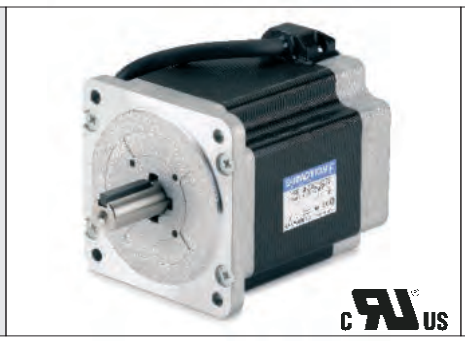
MODEL		SM 2862-5255 (SM 2862-5225)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.36
INDUCTANCE	(mH)	2.8
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	3000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	120
MASS	(Kg)	2.9
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

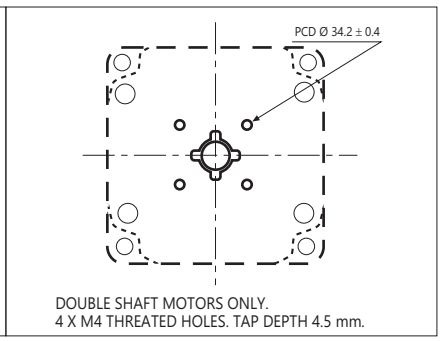
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE









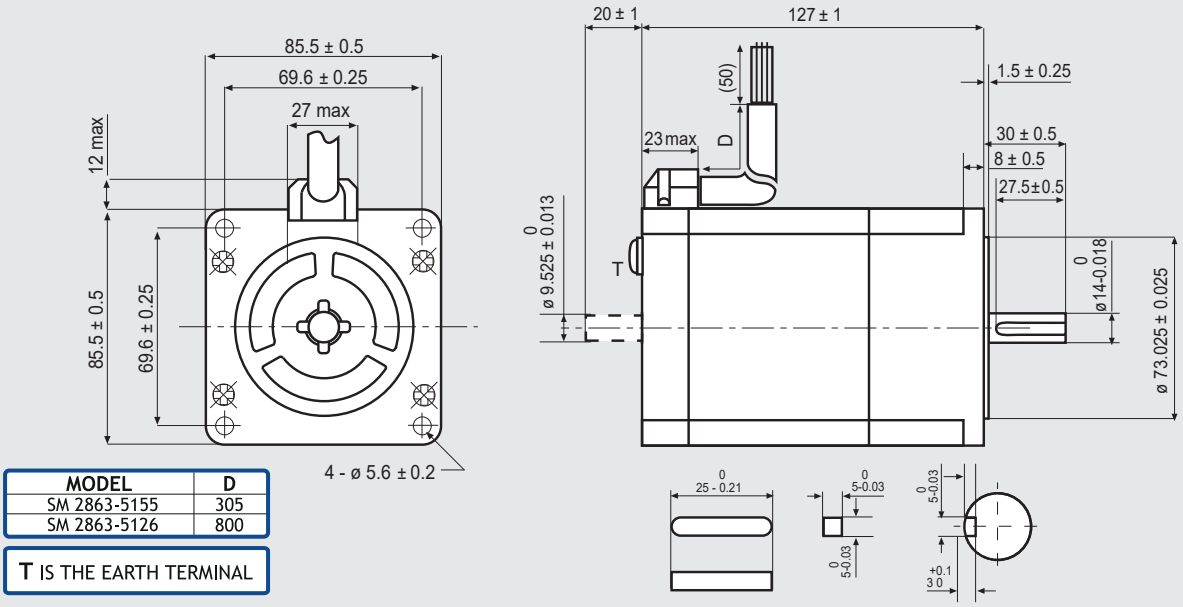
DOUBLE SHAFT MOTORS ONLY.
4 X M4 THREATED HOLES. TAP DEPTH 4.5 mm.

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

SM 2863-5155

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



MODEL	D
SM 2863-5155	305
SM 2863-5126	800

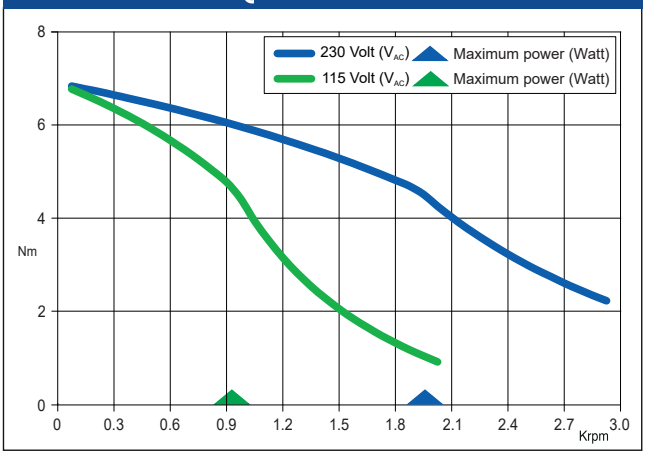
T IS THE EARTH TERMINAL

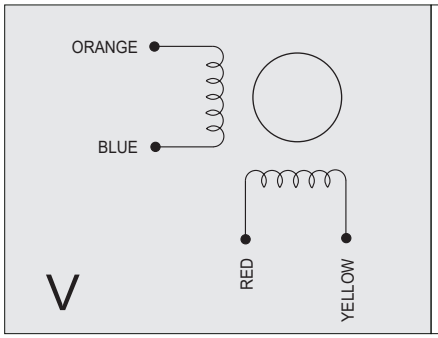
FEATURES

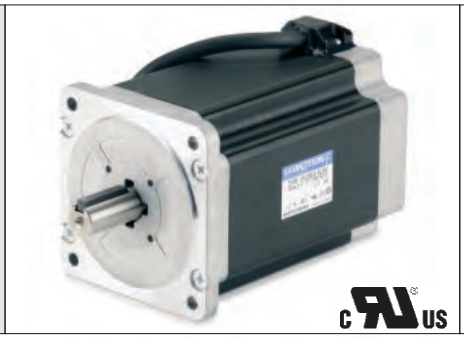
MODEL		SM 2863-5155 (SM 2863-5126)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	1.0
INDUCTANCE	(mH)	7.9
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	4500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	241
MASS	(Kg)	4
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

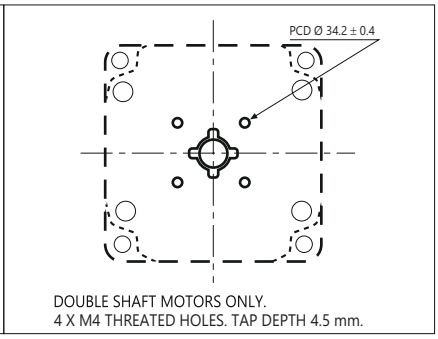
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE









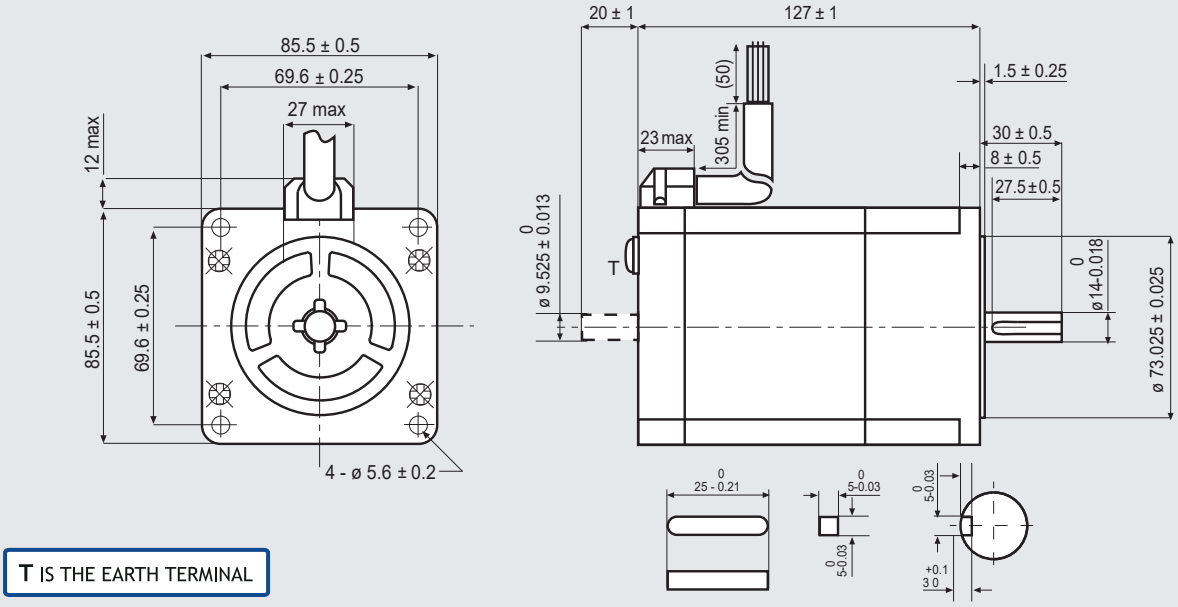
DOUBLE SHAFT MOTORS ONLY.
4 X M4 THREATED HOLES. TAP DEPTH 4.5 mm.

Suggested R.T.A. drive series: 230 Vac X-PLUS

SM 2863-5255

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



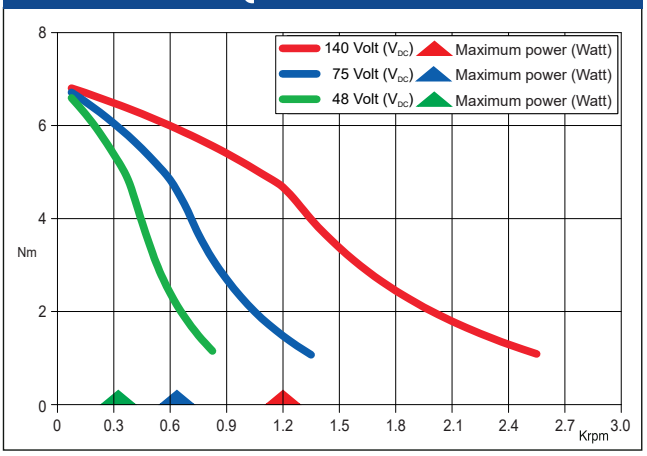
T IS THE EARTH TERMINAL

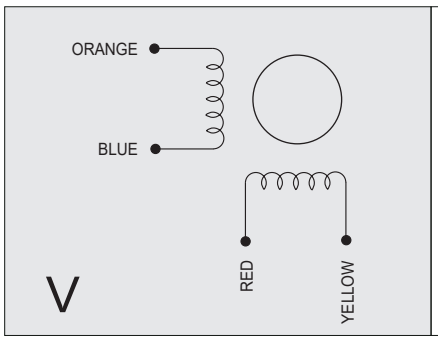
FEATURES

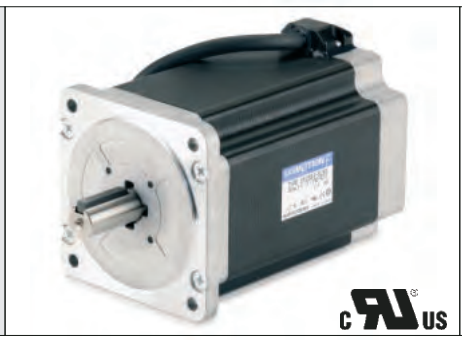
MODEL		SM 2863-5255 (SM 2863-5225)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.46
INDUCTANCE	(mH)	3.8
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	4500
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	161
MASS	(Kg)	4
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE		IP43-F
LEADS CODE		V

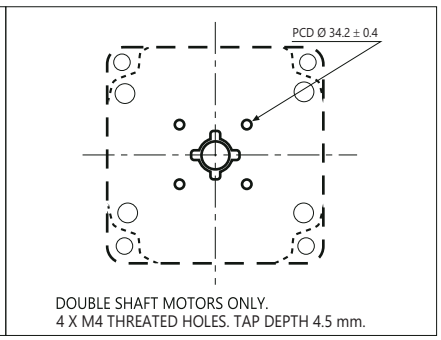
Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE









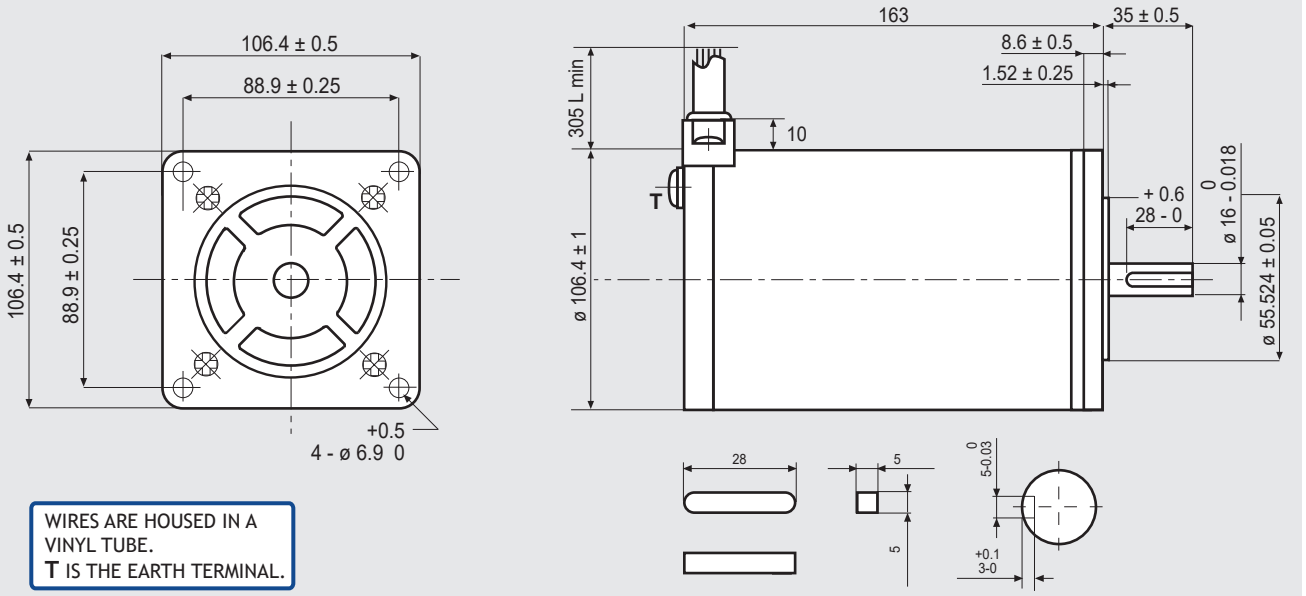
DOUBLE SHAFT MOTORS ONLY.
4 X M4 THREATED HOLES. TAP DEPTH 4.5 mm.

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

103-H89222-6341

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



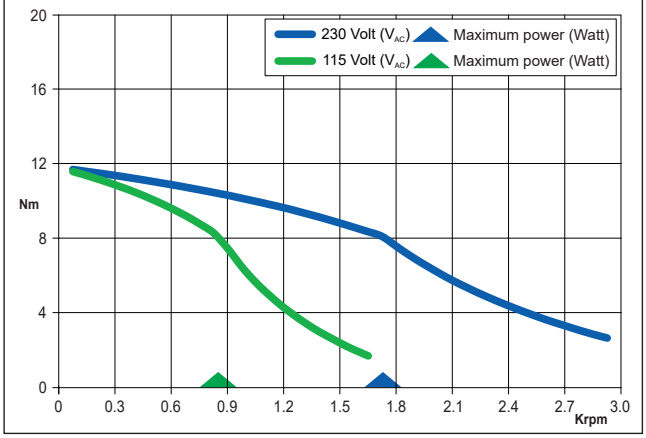
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL.

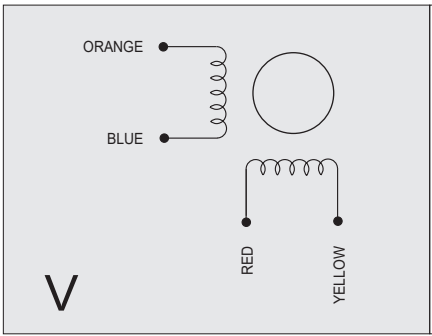
FEATURES

MODEL		103-H89222-6341 (103-H89222-6311)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.45
INDUCTANCE	(mH)	5.4
BIPOLAR HOLDING TORQUE	(Ncm)	1620
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	14650
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	11100
BACK E.M.F.	(V/Krpm)	270
MASS	(Kg)	7
PROTECTION DEGREE		IP43
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



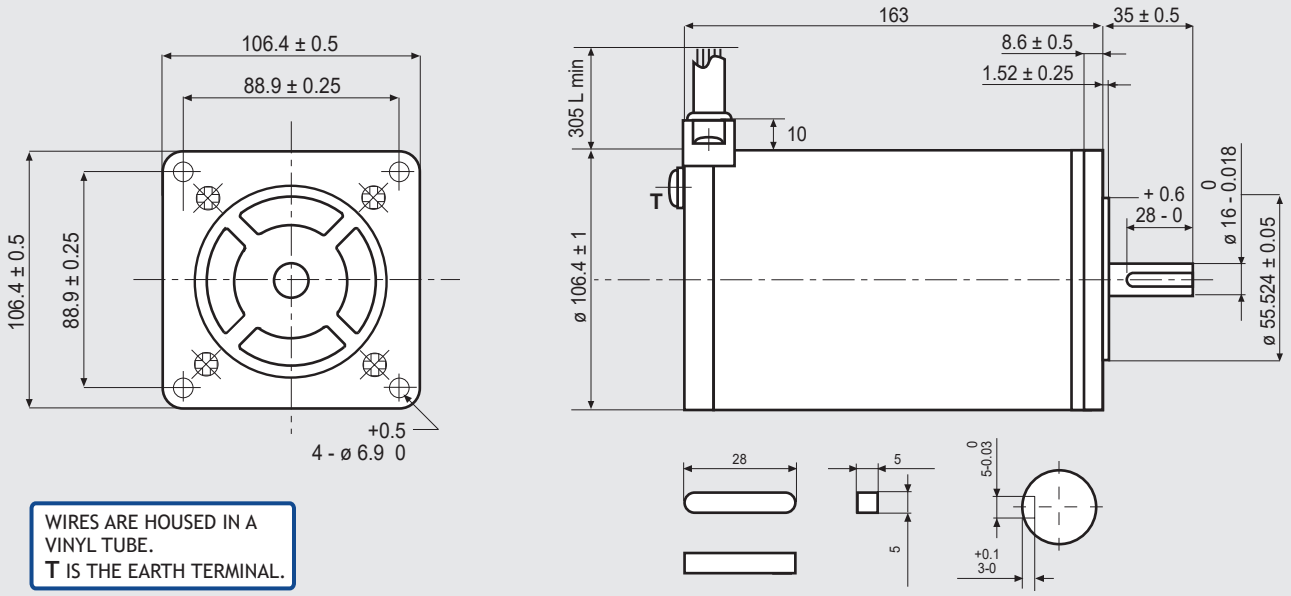


Suggested R.T.A. drive model: X-MIND B6

103-H89222-6541

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

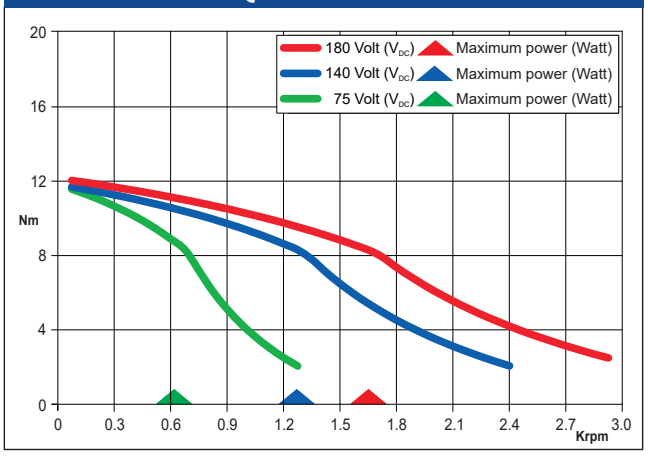


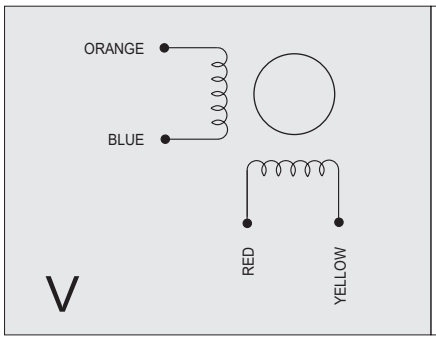
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL.

FEATURES

MODEL		103-H89222-6541
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	10
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.16
INDUCTANCE	(mH)	1.9
BIPOLAR HOLDING TORQUE	(Ncm)	1620
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	14650
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	11100
BACK E.M.F.	(V/Krpm)	162
MASS	(Kg)	7
PROTECTION DEGREE		IP43
LEADS CODE		V

TORQUE/SPEED CURVE



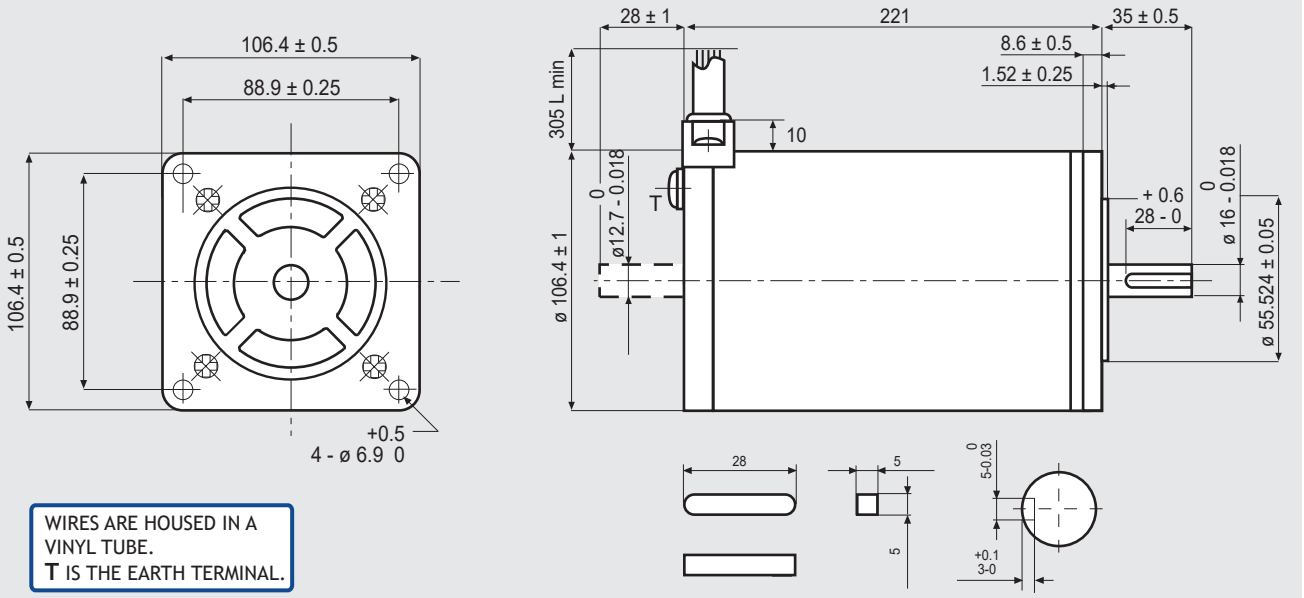


Suggested R.T.A. drive series: PLUS

103-H89223-6341

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



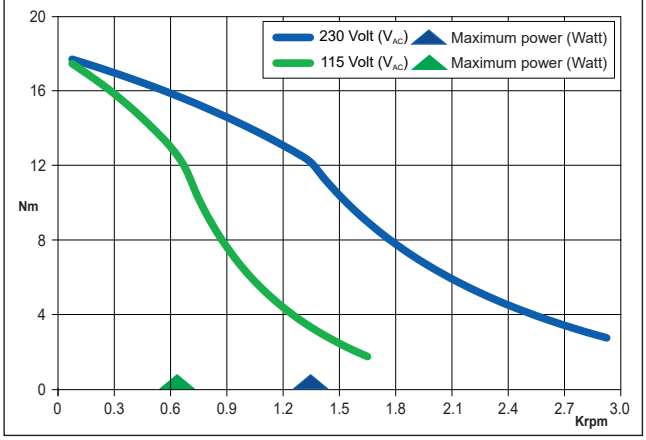
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL.

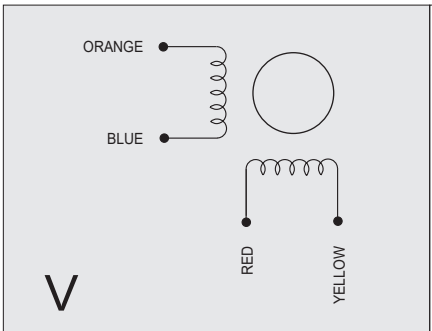
FEATURES

MODEL		103-H89223-6341 (103-H89223-6311)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.63
INDUCTANCE	(mH)	8.0
BIPOLAR HOLDING TORQUE	(Ncm)	2460
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	22000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	11100
BACK E.M.F.	(V/Krpm)	410
MASS	(Kg)	10
PROTECTION DEGREE		IP43
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE



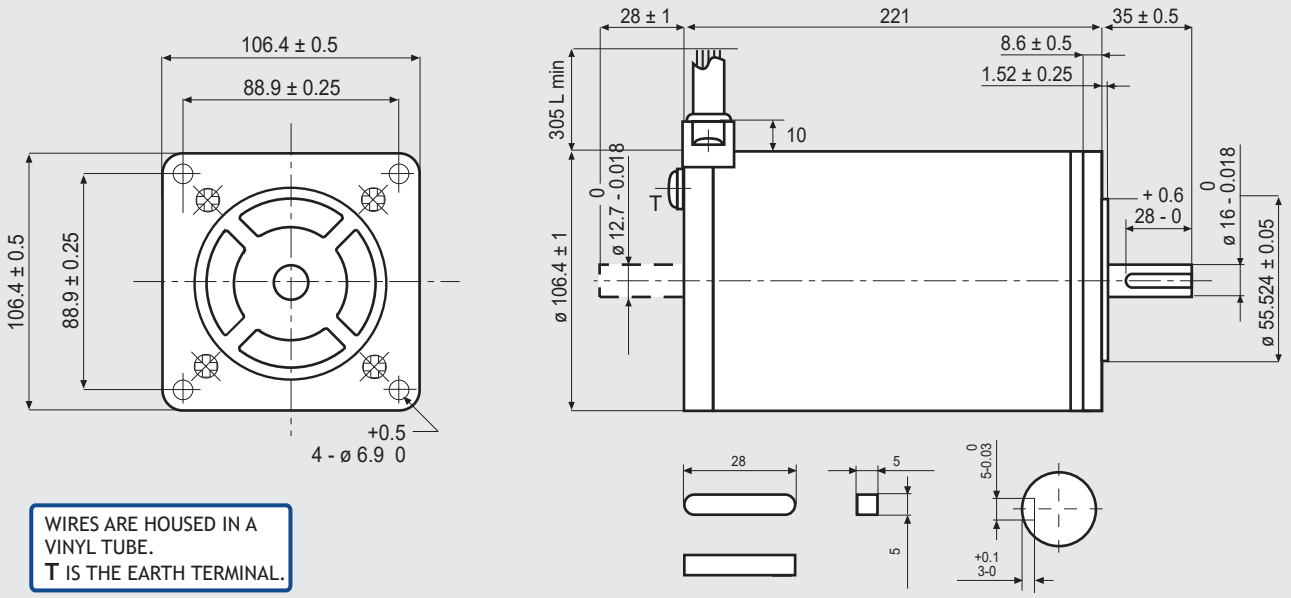


Suggested R.T.A. drive model: X-MIND B6

103-H89223-6641

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



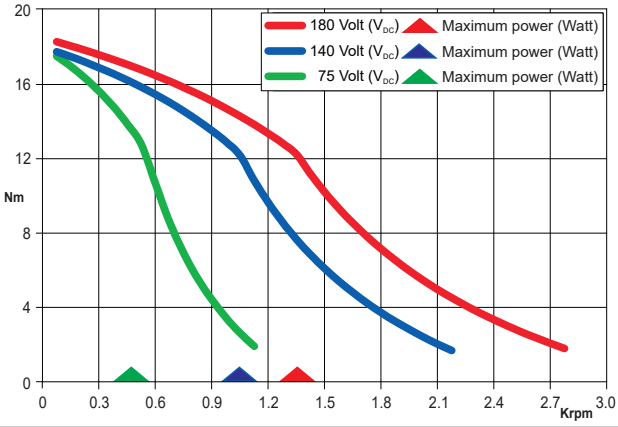
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL.

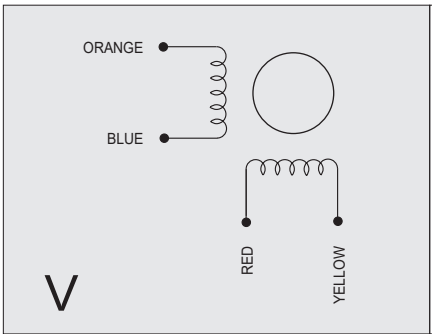
FEATURES

MODEL		103-H89223-6641 (103-H89223-6611)
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	12.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.16
INDUCTANCE	(mH)	2.0
BIPOLAR HOLDING TORQUE	(Ncm)	2460
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	22000
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	11100
BACK E.M.F.	(V/Krpm)	205
MASS	(Kg)	10
PROTECTION DEGREE		IP43
LEADS CODE		V

Codes between brackets refer to double shaft models.

TORQUE/SPEED CURVE





Suggested R.T.A. series: PLUS

NOT PREFERRED MODELS

	HOLDING TORQUE (Ncm)	FLANGE SIZE (mm)	LENGTH (mm)	BIPOLAR CURRENT* (A)
103-H8221-6241	300	85.8	62.0	6.0
103-H8221-6211	300	85.8	62.0	6.0
103-H8222-6340	560	85.8	92.2	6.0
103-H8222-6310	560	85.8	92.2	6.0
103-H8223-6540	790	85.8	125.9	9.0
103-H8223-6510	790	85.8	125.9	9.0

"Not preferred models" are models which have been replaced with the latest versions.
They are still available in R.T.A.'s stock, however they are not recommended for new applications.

STEPPING MOTORS

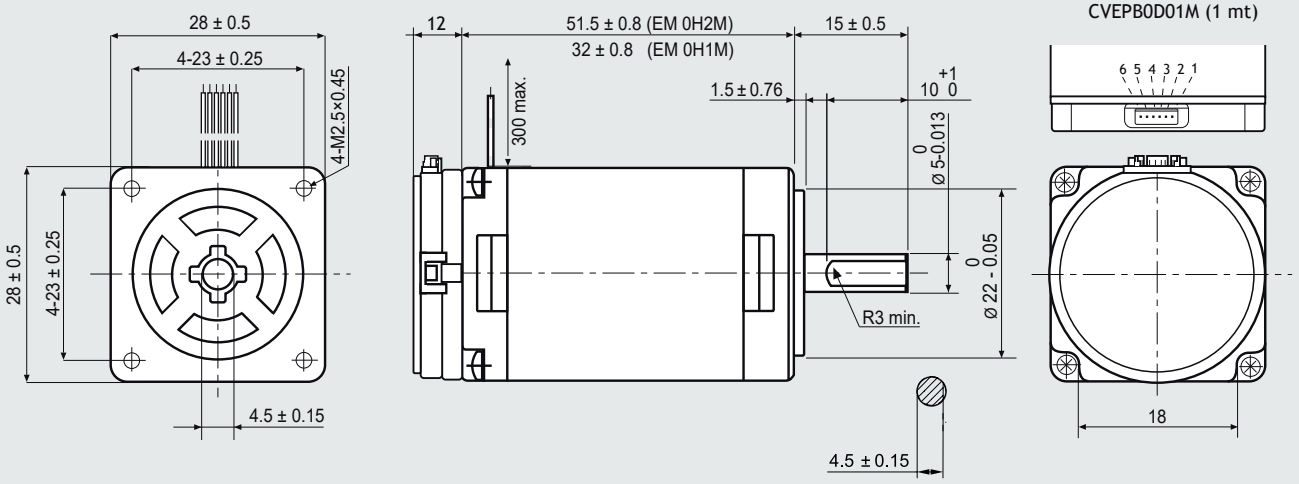
TRADITIONAL STEPPING MOTORS WITH ENCODER

EM 0HxM-04D0

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

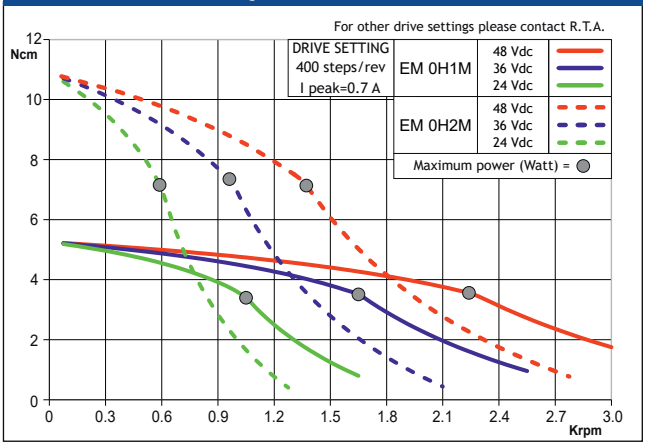
R.T.A. ENCODER CABLES: CVEPB0D0M4 (40 cm)
CVEPB0D01M (1 mt)



FEATURES

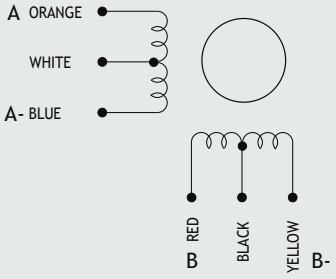
MODEL		EM 0H1M-04D0	EM 0H2M-04D0
SANYO DENK MOTOR CODE		SH 2281-5231	SH 2285-5231
BASIC STEP ANGLE		1.8° ± 0.09°	1.8° ± 0.09°
BIPOLAR CURRENT	(A)	0.7*	0.7*
UNIPOLAR CURRENT	(A)	1.0	1.0
RESISTANCE	(Ohm)	2.85	4.1
INDUCTANCE	(mH)	1.0	1.9
BIPOLAR HOLDING TORQUE	(Ncm)	7	14.5
UNIPOLAR HOLDING TORQUE	(Ncm)	5.5	11.5
ROTOR INERTIA	(Kgm ^{2} x 10^{-7})	10	22
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	70000	66000
BACK E.M.F.	(V/Krpm)	15	15
MASS	(Kg)	0.11	0.2

TORQUE/SPEED CURVE



ENCODER FEATURES

POWER SUPPLY VOLTAGE	(V)	5 V_{DC} ± 5%
CURRENT CONSUMPTION	(mA)	40
HIGH LEVEL OUTPUT	(V)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20 mA)
LOW LEVEL OUTPUT	(V)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20 mA)
OUTPUT SIGNAL		Differential
RESOLUTION		400 cycles per revolution
MAXIMUM FREQUENCY	(KHz)	60
INDEX VERSION		No



ENCODER PIN-OUT

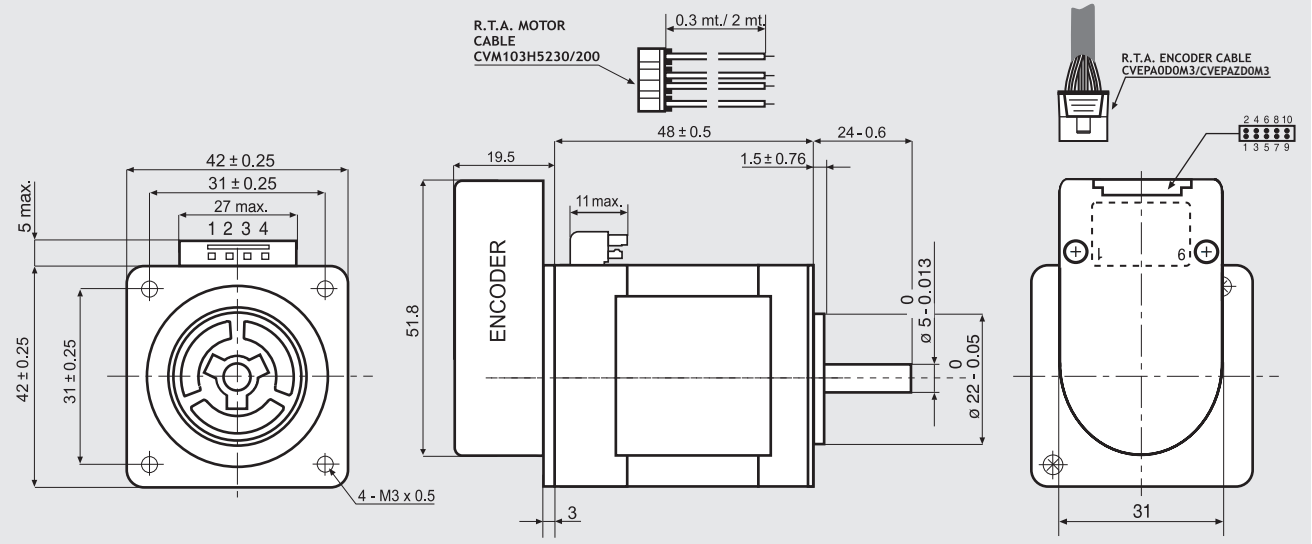
DESCRIPTION	PINS	R.T.A. CABLE LEADS COLOR
GND	1	BLACK
CHANNEL A+	2	BLUE
CHANNEL A-	3	BROWN
+DC (5 V)	4	RED
CHANNEL B+	5	GREEN
CHANNEL B-	6	PURPLE

R.T.A. ENCODER CABLES:
CVEPB0D0M4 (40 cm) / CVEPB0D01M (1 mt)

Suggested R.T.A. drive series: BSD, CSD, ADW, HGD, FLEX-DRIVE

EM 1H2H-0XX0

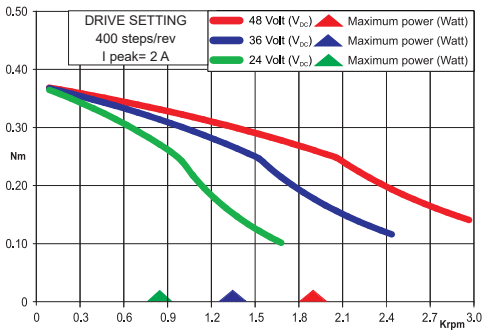
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		EM 1H2H-0XX0
SANYO DENKI MOTOR CODE		103-H5210-4512
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	2.0
RESISTANCE	(Ohm)	1.25
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	51
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	74
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	69000
BACK E.M.F.	(V/Krpm)	14
MASS	(Kg)	0.35
LEADS CODE		V

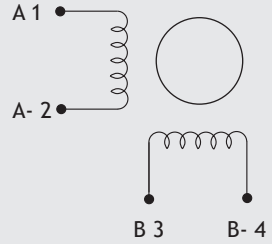
TORQUE/SPEED CURVE



103-H5210-4512 MOTOR NEEDS CVM103H5230 OR CVM103H52200 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

ENCODER OPTIONS:		EM 1H2H-04D0	EM 1H2H-04E0	EM 1H2H-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



RTA MOTOR CABLE COLORS

DESCRIPTION	CVM103H52200 COLORS	CVM103H5230 COLORS
CHANNEL A	ORANGE	WHITE
CHANNEL A-	BLUE	GREEN
CHANNEL B	YELLOW	YELLOW
CHANNEL B-	RED	BROWN

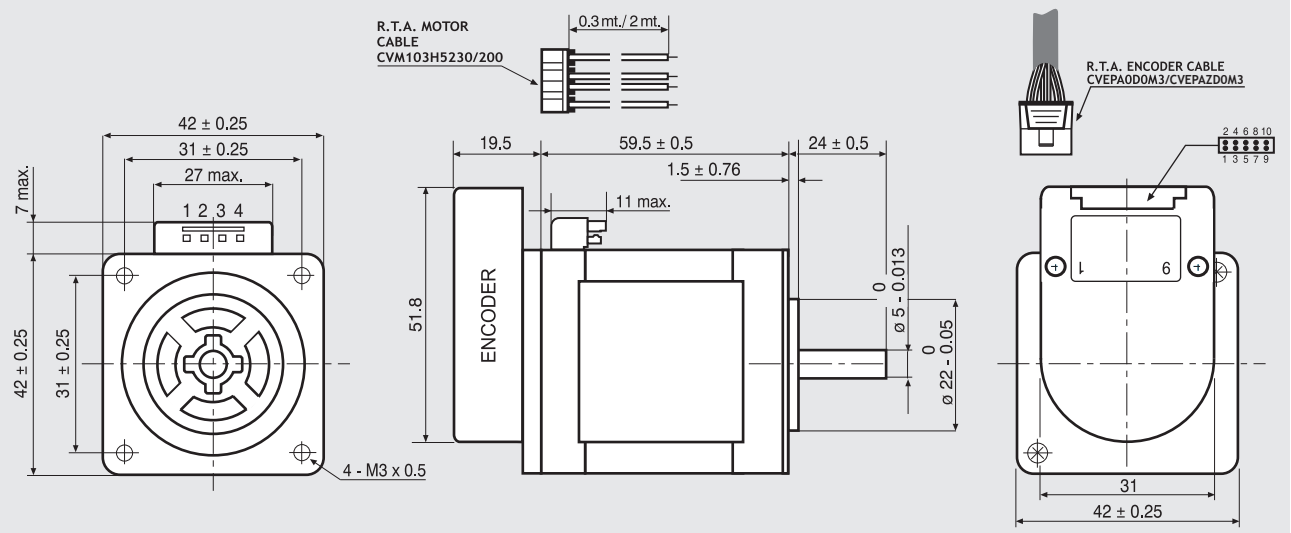
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

EM 1H3H-0XX0

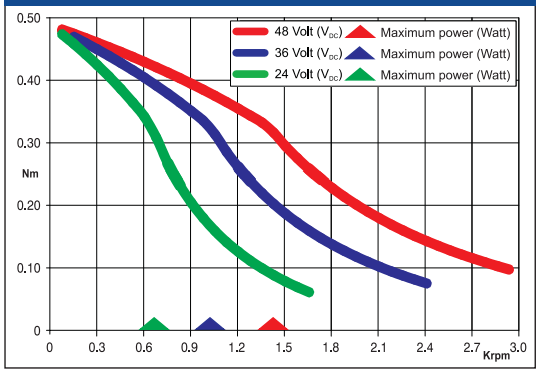
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		EM 1H3H-0XX0
SANYO DENKI MOTOR CODE		103-H5212-4610
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	2.0
RESISTANCE	(Ohm)	1.5
INDUCTANCE	(mH)	3.0
BIPOLAR HOLDING TORQUE	(Ncm)	65
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	110
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	59000
BACK E.M.F.	(V/Krpm)	32
MASS	(Kg)	0.50
LEADS CODE		V

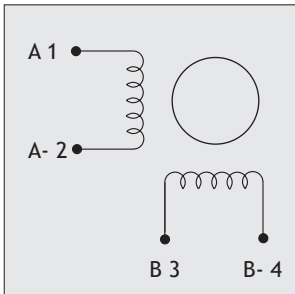
TORQUE/ SPEED CURVE



103-H5212-4610 MOTOR NEEDS CVM103H5230 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS.

ENCODER OPTIONS:		EM 1H3H-04D0	EM 1H3H-04E0	EM 1H3H-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



RTA MOTOR CABLE COLORS

DESCRIPTION	CVM103H52200 COLORS	CVM103H5230 COLORS
CHANNEL A	ORANGE	WHITE
CHANNEL A-	BLUE	GREEN
CHANNEL B	YELLOW	YELLOW
CHANNEL B-	RED	BROWN

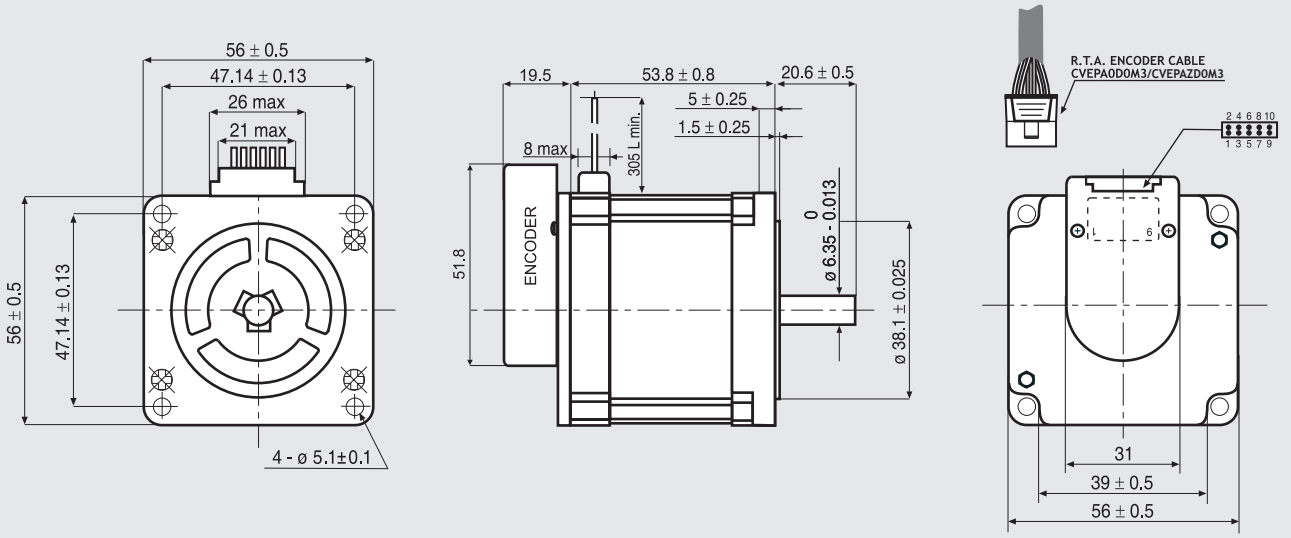
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0/0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	GREEN
CHANNEL A-	5	5	PURPLE
CHANNEL B+	8	8	BLUE
CHANNEL B-	7	7	BROWN
+ DC (5V)	2	2	RED
GROUND	3	3	BLACK
INDEX+	/	10	ORANGE
INDEX-	/	9	WHITE

Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

EM 2H1M-0XX0

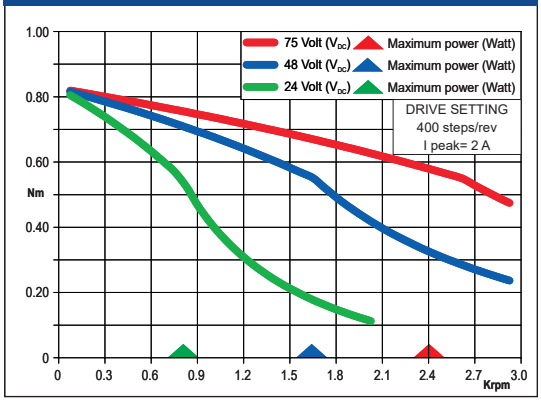
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

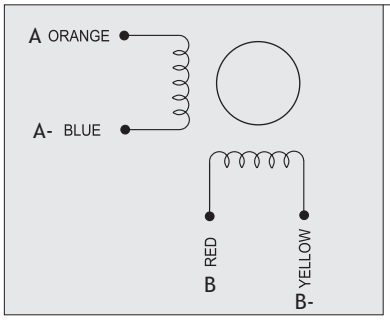
MODEL		EM 2H1M-0XX0
SANYO DENKI MOTOR CODE		103-H7123-1711
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	4.0
RESISTANCE	(Ohm)	0.41
INDUCTANCE	(mH)	1.6
BIPOLAR HOLDING TORQUE	(Ncm)	110
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	210
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	0.65
LEADS CODE		V

TORQUE/SPEED CURVE



ENCODER OPTIONS:		EM 2H1M-04D0	EM 2H1M-04E0	EM 2H1M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



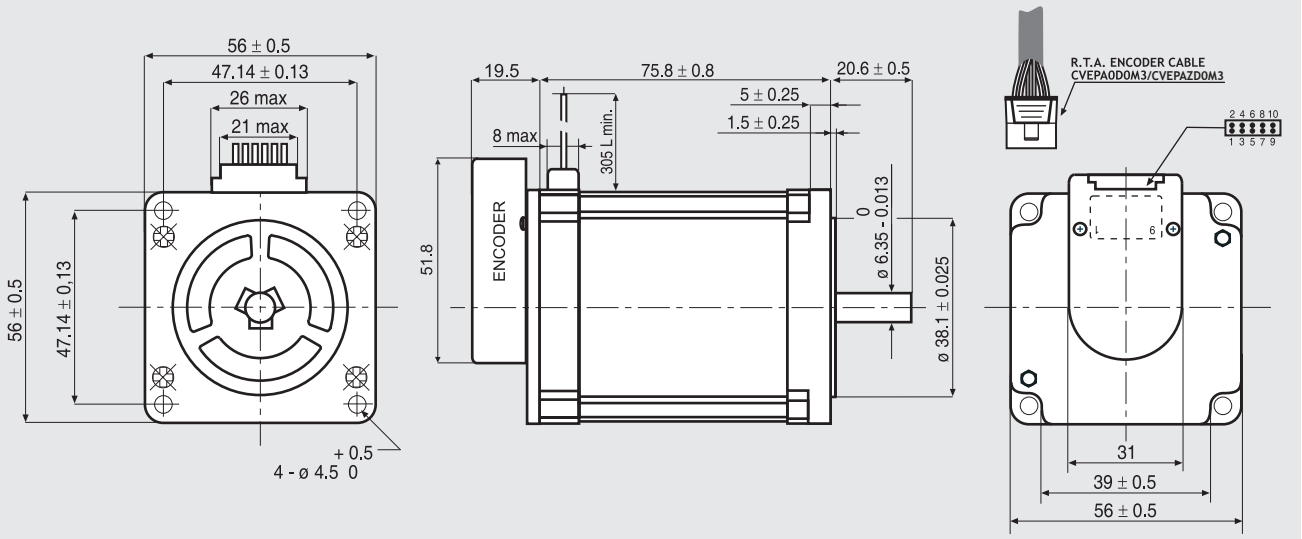
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE

Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

EM 2H2M-0XX0

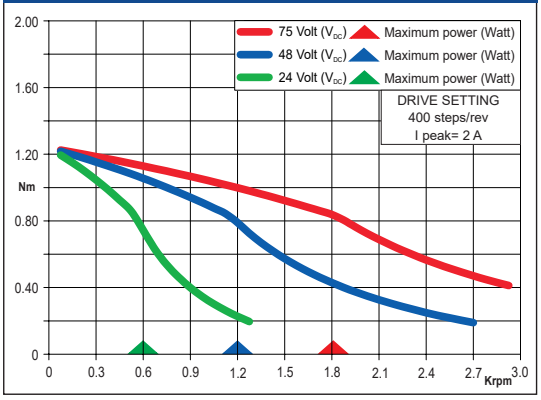
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

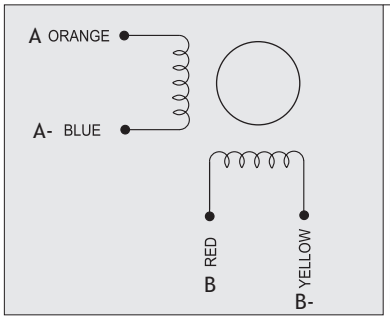
MODEL		EM 2H2M-OXXO
SANYO DENKI MOTOR CODE		103-H7126-1710
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	4.0
RESISTANCE	(Ohm)	0.48
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	165
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	360
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1.0
LEADS CODE		V

TORQUE/SPEED CURVE



ENCODER OPTIONS:		EM 2H2M-04D0	EM 2H2M-04E0	EM 2H2M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



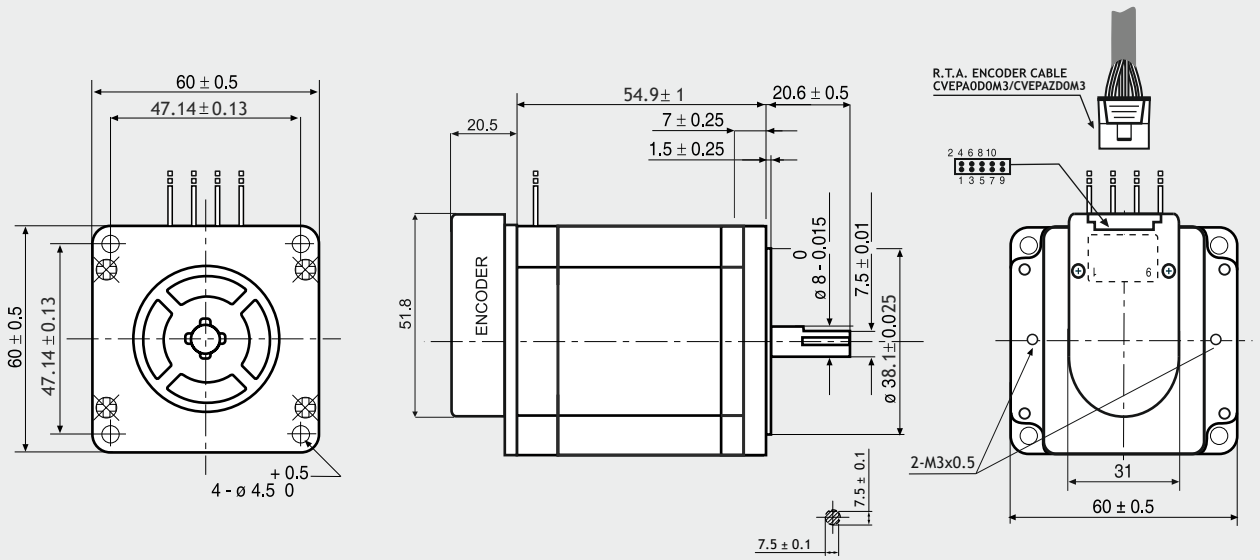
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE

Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

EM 6H1M-0XX0

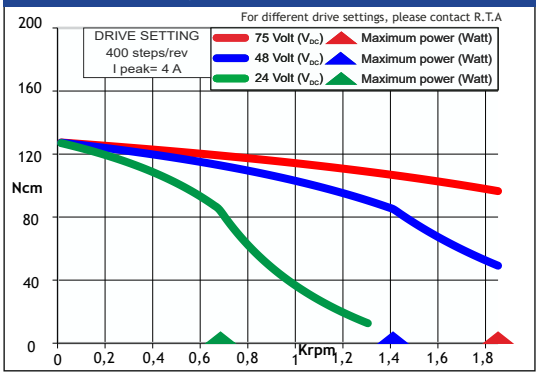
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

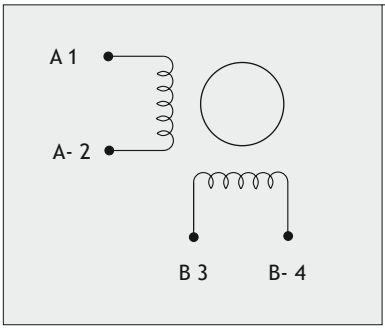
MODEL		EM 6H1M-0XX0
SANYO DENKI MOTOR CODE		103-H7822-1731
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	4.0
RESISTANCE	(Ohm)	0.43
INDUCTANCE	(mH)	1.38
BIPOLAR HOLDING TORQUE	(Ncm)	137
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	400
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	34200
BACK E.M.F.	(V/Krpm)	43
MASS	(Kg)	1.3
LEADS CODE		V

TORQUE/SPEED CURVE



ENCODER OPTIONS:		EM 6H1M-04D0	EM 6H1M-04E0	EM 6H1M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



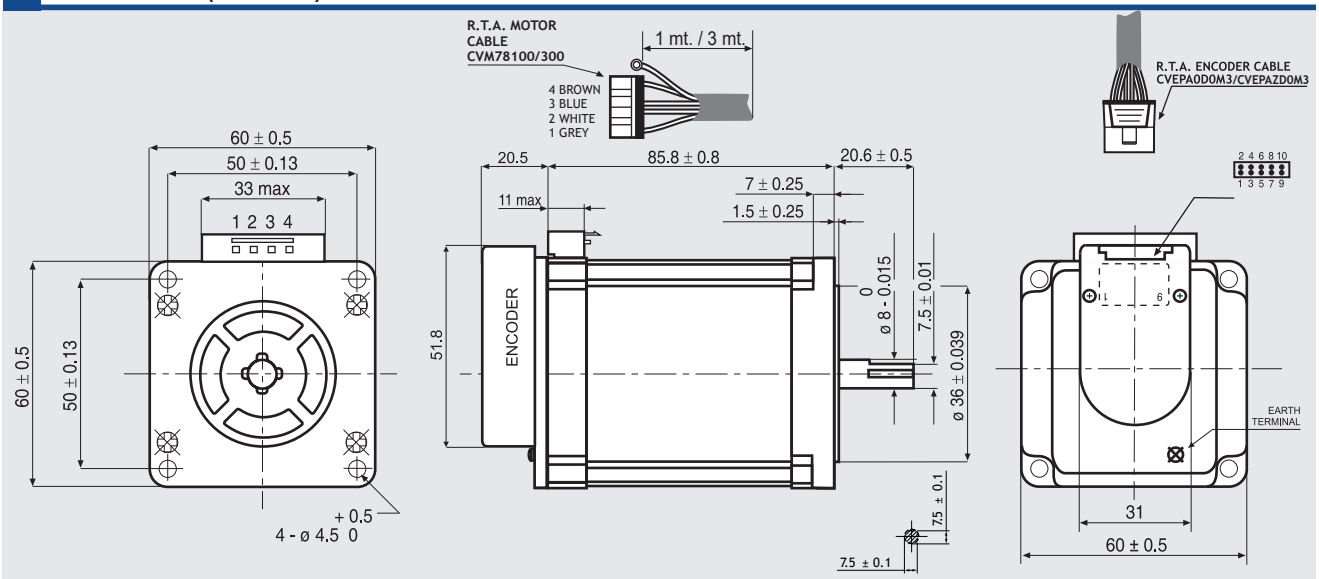
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE
R.T.A. CABLE	CVEPA0D0M3	CVEPAZD03M	CVEPAZD03M	

Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, FLEX-DRIVE

EM 6H2M-0XX0

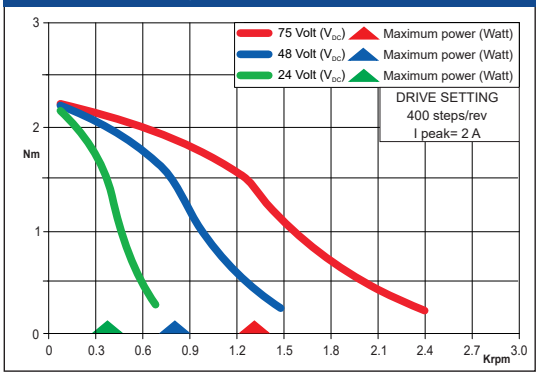
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		EM 6H2M-0XX0
SANYO DENKI MOTOR CODE		103-H7823-1714
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	4.0
RESISTANCE	(Ohm)	0.65
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	300
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	840
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	35700
BACK E.M.F.	(V/Krpm)	75
MASS	(Kg)	1.4
LEADS CODE		V

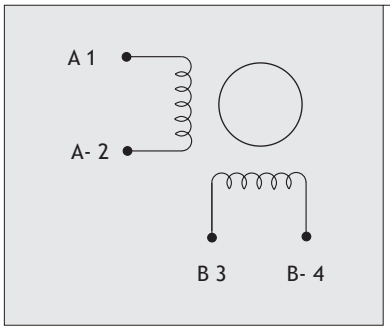
TORQUE/SPEED CURVE



103-H7823-1714 MOTOR NEEDS CVM78/100 OR CVM78/300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

ENCODER OPTIONS:		EM 6H2M-04D0	EM 6H2M-04E0	EM 6H2M-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



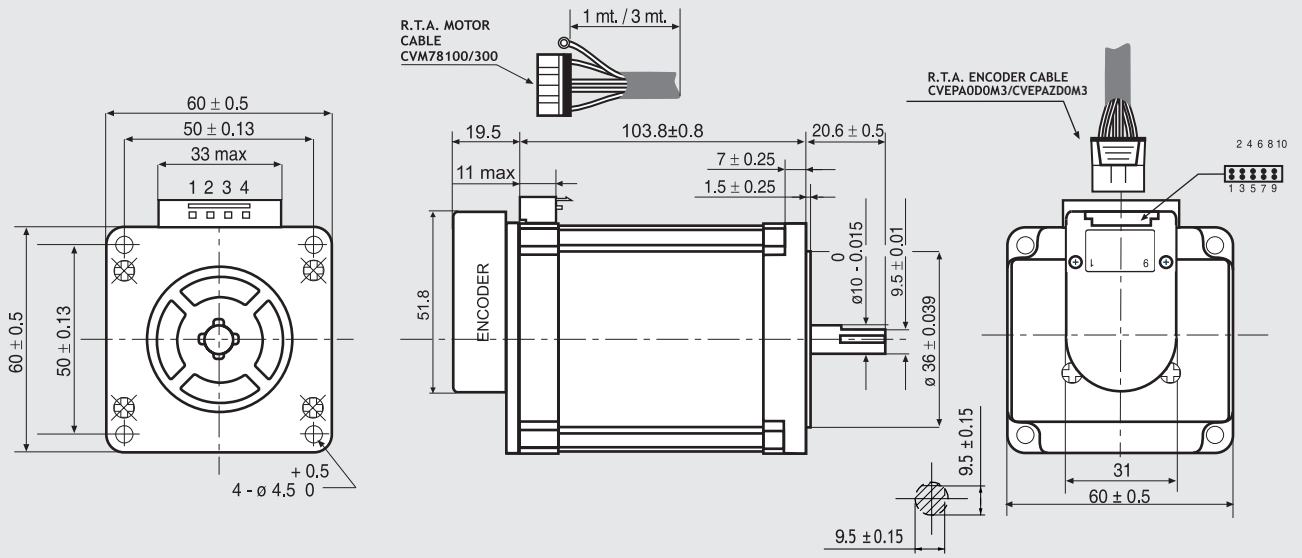
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE
R.T.A. CABLE	CVEPA0D0M3	CVEPAZD03M	CVEPAZD03M	

Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

EM 6H3H-0XX0

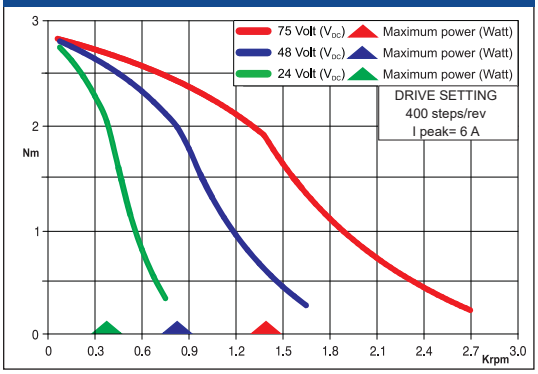
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		EM 6H3H-0XX0
SANYO DENKI MOTOR CODE		103-H7826-1612
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	6.0
RESISTANCE	(Ohm)	0.43
INDUCTANCE	(mH)	1.45
BIPOLAR HOLDING TORQUE	(Ncm)	380
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	1080
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	35200
BACK E.M.F.	(V/Krpm)	70
MASS	(Kg)	1.70
LEADS CODE		V

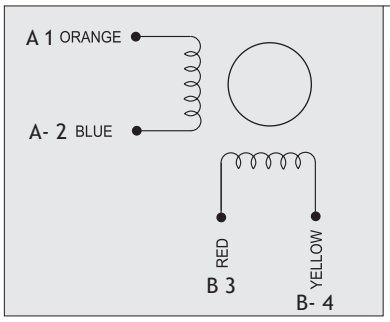
TORQUE/SPEED CURVE



103-H7826-1612 MOTOR NEEDS CVM78/100 OR CVM78/300 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

ENCODER OPTIONS:		EM 6H3H-04D0	EM 6H3H-04E0	EM 6H3H-0HE0
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%

ENCODER NEEDS CVEPA0D0M3 OR CVEPAZD0M3 R.T.A. CABLE. CONTACT R.T.A. FOR FURTHER DETAILS



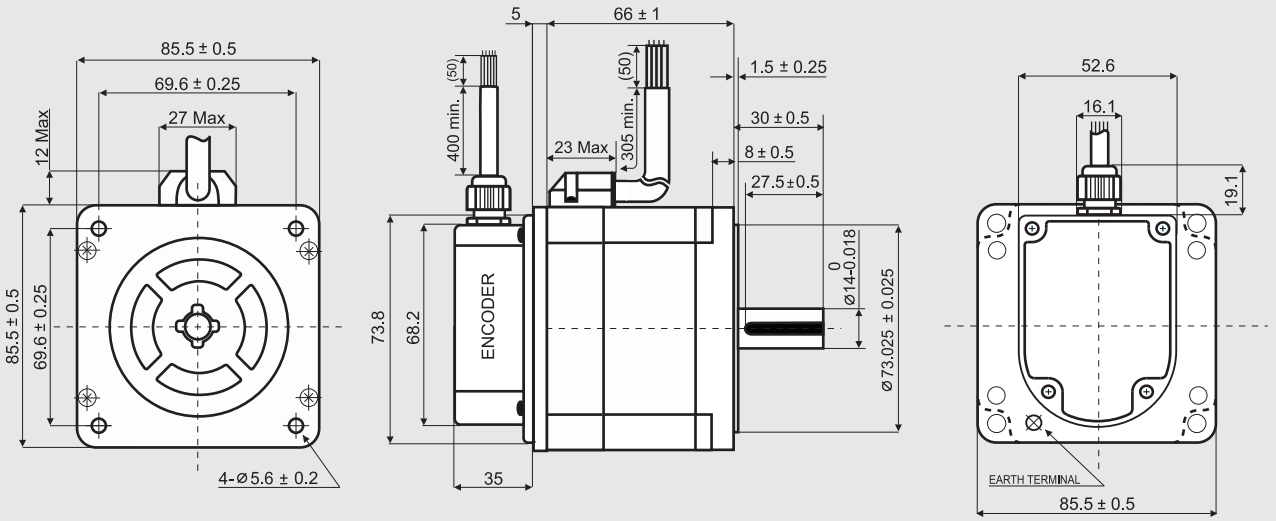
ENCODER PIN-OUT

DESCRIPTION	04D0 PINS	04E0 PINS	0HE0 PINS	R.T.A. CABLE LEADS COLOR
CHANNEL A+	6	6	6	GREEN
CHANNEL A-	5	5	5	PURPLE
CHANNEL B+	8	8	8	BLUE
CHANNEL B-	7	7	7	BROWN
+ DC (5V)	2	2	2	RED
GROUND	3	3	3	BLACK
INDEX+	/	10	10	ORANGE
INDEX-	/	9	9	WHITE
R.T.A. CABLE	CVEPA0D0M3	CVEPAZD03M	CVEPAZD03M	

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

EM 3F1L-04D0

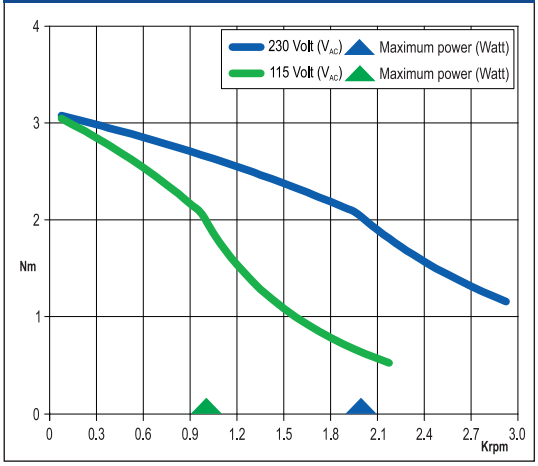
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

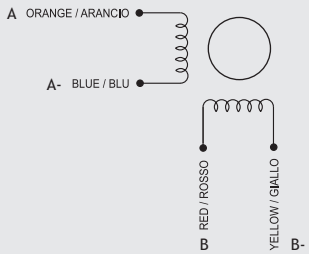
MODEL		EM 3F1L-04D0
SANYO DENKI MOTOR CODE		SM 2861-5025
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	2.2
INDUCTANCE	(mH)	15
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	1480
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	180
MASS	(Kg)	1.7
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

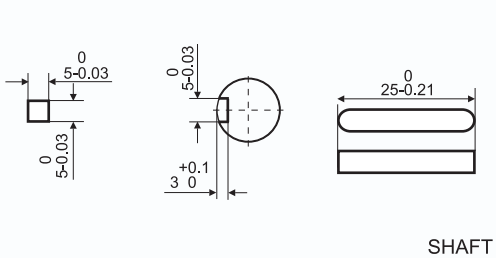
TORQUE/SPEED CURVE



ENCODER FEATURES

POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 5%
CURRENT CONSUMPTION	(mAmp)	40
HIGH LEVEL OUTPUT	(Volt)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20 mA)
LOW LEVEL OUTPUT	(Volt)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20 mA)
OUTPUT SIGNAL		Differential (SINGLE ENDED version available)
RESOLUTION		400 cycles per revolution (500 & 1000 CPR version available)
MAXIMUM FREQUENCY	(KHz)	60
INDEX VERSION		Available upon request



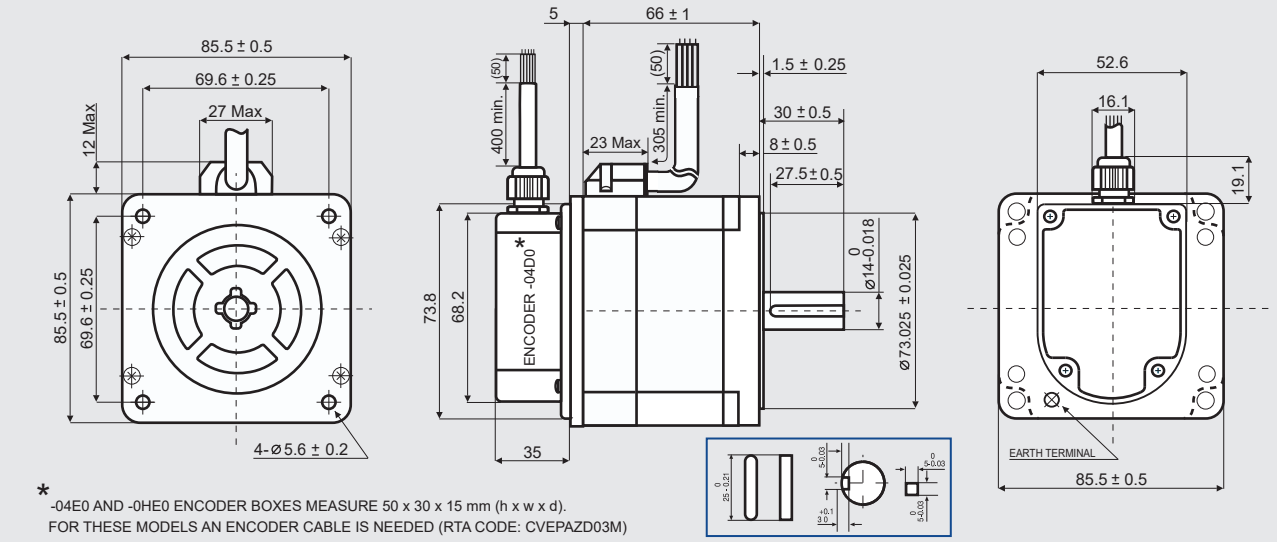


LEADS COLOR	ENCODER
BROWN	CHANNEL A-
BLUE	CHANNEL A+
PURPLE	CHANNEL B-
GREEN	CHANNEL B+
BLACK	GND (0 V)
RED	+ DC (5 V)
SHIELD	

Suggested R.T.A. drive model: X-PLUS L2

EM 3F1H-0XX0

Dimensions (Unit:mm)

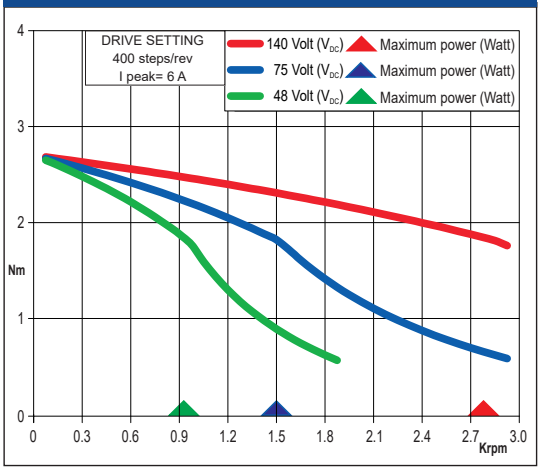


* -04E0 AND -0HE0 ENCODER BOXES MEASURE 50 x 30 x 15 mm (h x w x d).
FOR THESE MODELS AN ENCODER CABLE IS NEEDED (RTA CODE: CVEPAZD03M)

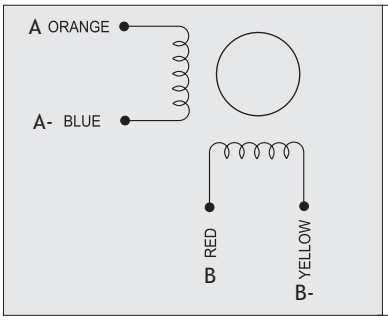
SANYO DENKI MOTOR FEATURES

MODEL		EM 3F1H-0XX0
SANYO DENKI MOTOR CODE		SM 2861-5225
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.29
INDUCTANCE	(mH)	1.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	1480
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	60
MASS	(Kg)	1.7
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

TORQUE/SPEED CURVE



ENCODER OPTIONS:		EM 3F1H-04D0	EM 3F1H-04E0 *	EM 3F1H-0HE0 *
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%



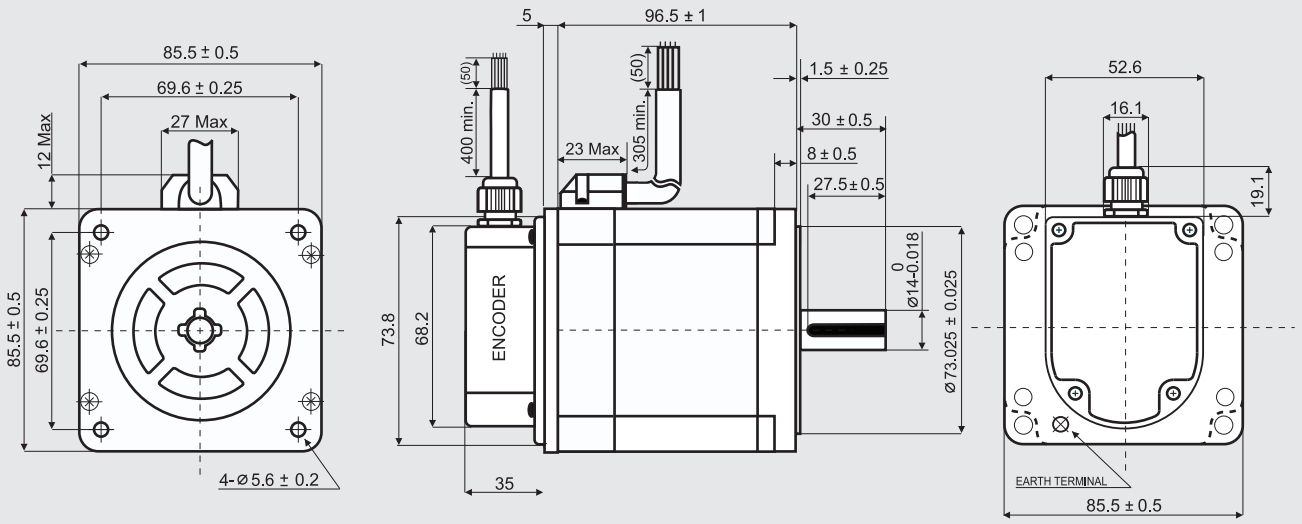
ENCODER CABLE / ENCODER PIN OUT

DESCRIPTION	04D0	04E0 PINS	0HE0 PINS
CHANNEL A+	BLUE	6 GREEN	6 GREEN
CHANNEL A-	BROWN	5 PURPLE	5 PURPLE
CHANNEL B+	GREEN	8 BLUE	8 BLUE
CHANNEL B-	PURPLE	7 BROWN	7 BROWN
+ DC (5V)	RED	2 RED	2 RED
GROUND	BLACK	3 BLACK	3 BLACK
INDEX+	/	10 ORANGE	10 ORANGE
INDEX-	/	9 WHITE	9 WHITE
	R.T.A. CABLE	CVEPAZD03M	CVEPAZD03M

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

EM 3F2M-04D0

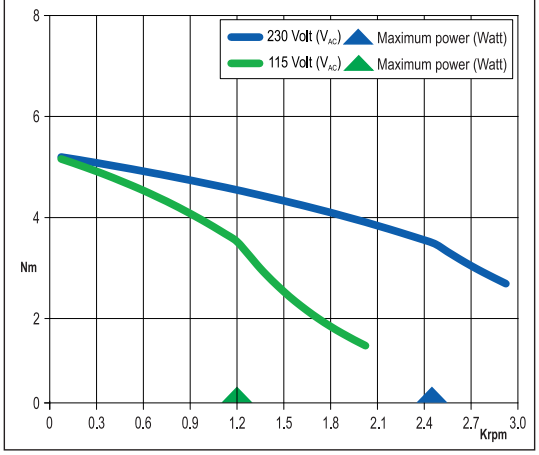
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

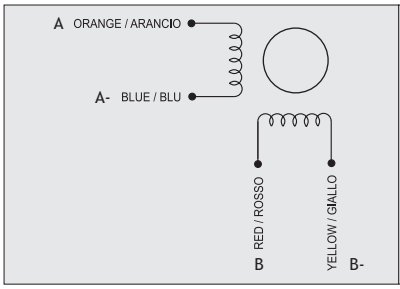
MODEL		EM 3F2M-04D0
SANYO DENKI MOTOR CODE		SM 2862-5125
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	3000
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	2.9
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

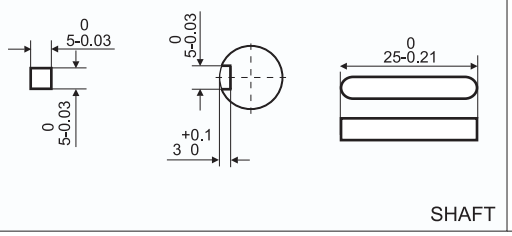
TORQUE/SPEED CURVE



ENCODER FEATURES

POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 5%
CURRENT CONSUMPTION	(mAmp)	40
HIGH LEVEL OUTPUT	(Volt)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20 mA)
LOW LEVEL OUTPUT	(Volt)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20 mA)
OUTPUT SIGNAL		Differential (SINGLE ENDED version available)
RESOLUTION		400 cycles per revolution (500 & 1000 CPR version available)
MAXIMUM FREQUENCY	(KHz)	60
INDEX VERSION		Available upon request



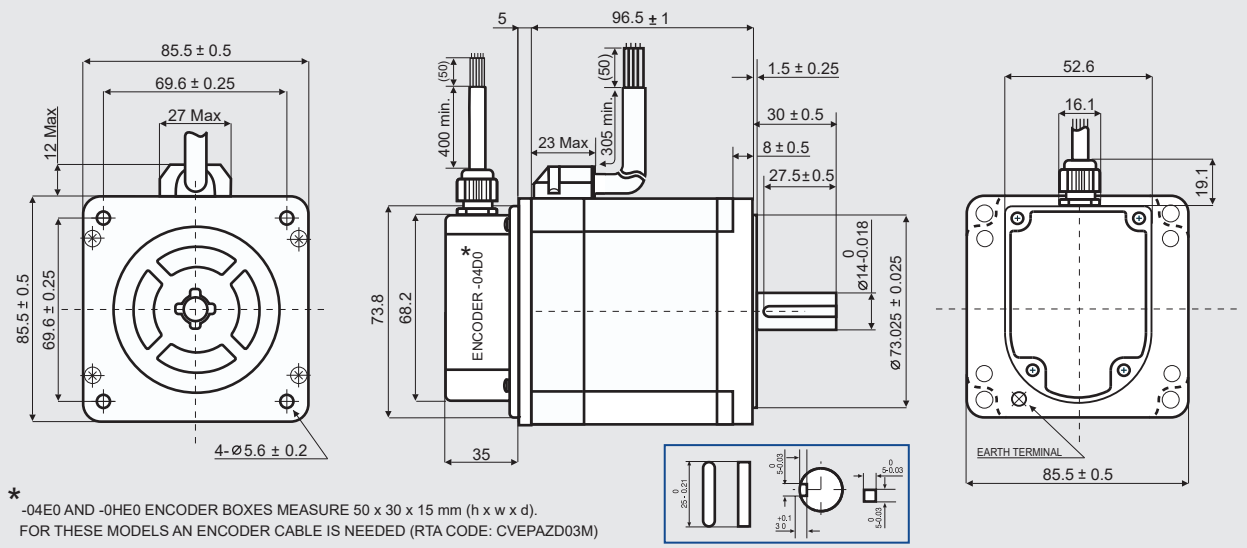


LEADS COLOR	ENCODER
BROWN	CHANNEL A-
BLUE	CHANNEL A+
PURPLE	CHANNEL B-
GREEN	CHANNEL B+
BLACK	GND (0 V)
RED	+ DC (5 V)
SHIELD	

Suggested R.T.A. drive model: 230 Vac X-PLUS

EM 3F2H-0XX0

Dimensions (Unit:mm)

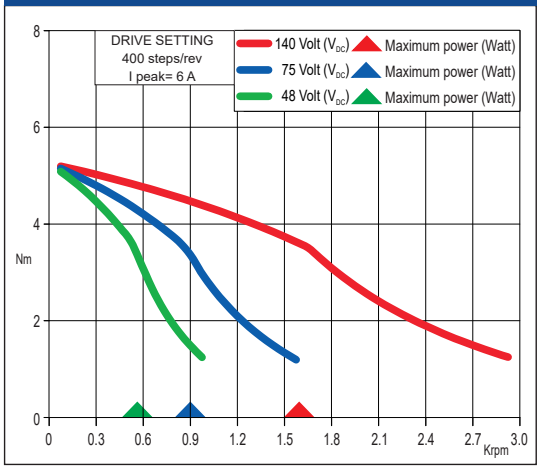


* -04E0 AND -0HE0 ENCODER BOXES MEASURE 50 x 30 x 15 mm (h x w x d).
FOR THESE MODELS AN ENCODER CABLE IS NEEDED (RTA CODE: CVEPAZD03M)

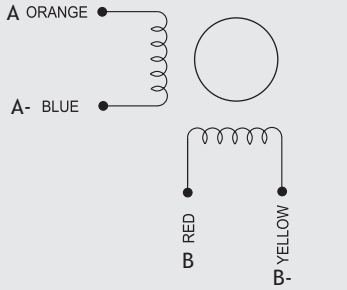
SANYO DENKI MOTOR FEATURES

MODEL		EM 3F2H-0XX0
SANYO DENKI MOTOR CODE		SM 2862-5225
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(A)	6.0
RESISTANCE	(Ohm)	0.36
INDUCTANCE	(mH)	2.8
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	3000
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	120
MASS	(Kg)	2.9
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

TORQUE/SPEED CURVE



ENCODER OPTIONS:		EM 3F2H-04D0	EM 3F2H-04E0 *	EM 3F2H-0HE0 *
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%



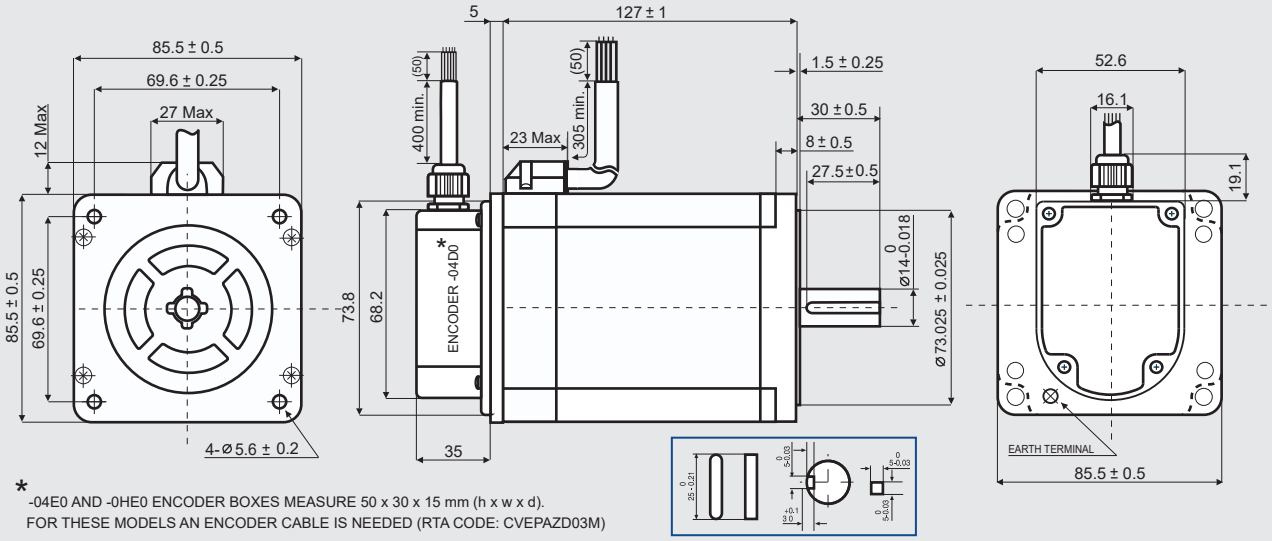
ENCODER CABLE / ENCODER PIN OUT

DESCRIPTION	04D0	04E0 PINS	0HE0 PINS
CHANNEL A+	BLUE	6 GREEN	6 GREEN
CHANNEL A-	BROWN	5 PURPLE	5 PURPLE
CHANNEL B+	GREEN	8 BLUE	8 BLUE
CHANNEL B-	PURPLE	7 BROWN	7 BROWN
+ DC (5V)	RED	2 RED	2 RED
GROUND	BLACK	3 BLACK	3 BLACK
INDEX+	/	10 ORANGE	10 ORANGE
INDEX-	/	9 WHITE	9 WHITE
	R.T.A. CABLE	CVEPAZD03M	CVEPAZD03M

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

EM 3F3H-0XX0

Dimensions (Unit:mm)

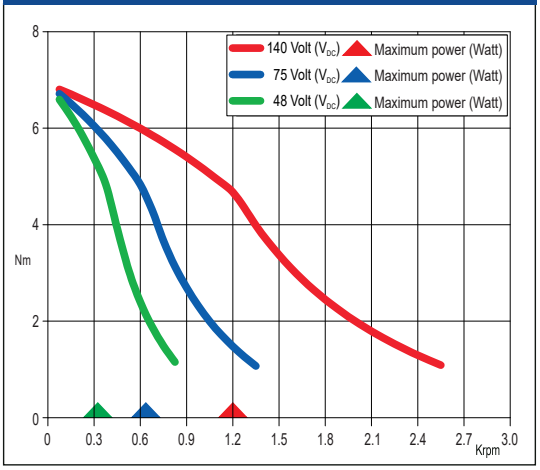


* -04E0 AND -0HE0 ENCODER BOXES MEASURE 50 x 30 x 15 mm (h x w x d).
FOR THESE MODELS AN ENCODER CABLE IS NEEDED (RTA CODE: CVEPAZD03M)

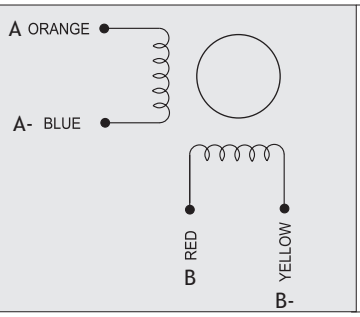
SANYO DENKI MOTOR FEATURES

MODEL		EM 3F3H-0XX0
SANYO DENKI MOTOR CODE		SM 2863-5225
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.46
INDUCTANCE	(mH)	3.8
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	4500
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	161
MASS	(Kg)	4.0
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

TORQUE/SPEED CURVE



ENCODER OPTIONS:		EM 3F3H-04D0	EM 3F3H-04E0 *	EM 3F3H-0HE0 *
RESOLUTION		400 cpr	400 cpr	4000 cpr
INDEX		No	Yes	Yes
CURRENT CONSUMPTION	(mA)	50	50	85
HIGH LEVEL OUTPUT	(Volt)	5 (TIP) - 4.75 (MIN) (I_{MAX}=25mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20mA)
LOW LEVEL OUTPUT	(Volt)	0.25 (TIP) - 0.6 (MAX) (I_{MAX}=25mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20mA)
OUTPUT SIGNAL		Differential	Differential	Differential
MAXIMUM FREQUENCY	(KHz)	100	100	720
POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 10%	5 V_{DC} ± 10%	5 V_{DC} ± 10%



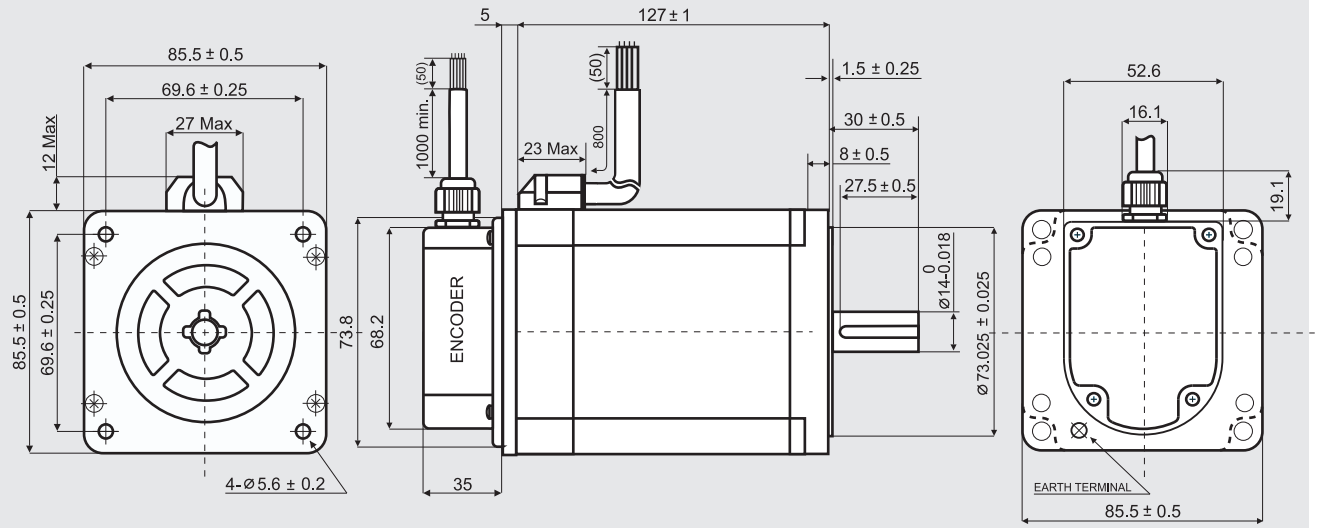
ENCODER CABLE / ENCODER PIN OUT

DESCRIPTION	04D0	04E0 PINS		0HE0 PINS	
CHANNEL A+	BLUE	6	GREEN	6	GREEN
CHANNEL A-	BROWN	5	PURPLE	5	PURPLE
CHANNEL B+	GREEN	8	BLUE	8	BLUE
CHANNEL B-	PURPLE	7	BROWN	7	BROWN
+ DC (5V)	RED	2	RED	2	RED
GROUND	BLACK	3	BLACK	3	BLACK
INDEX+	/	10	ORANGE	10	ORANGE
INDEX-	/	9	WHITE	9	WHITE
	R.T.A. CABLE		CVEPAZD03M		CVEPAZD03M

Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

EM 3F3M-14D0

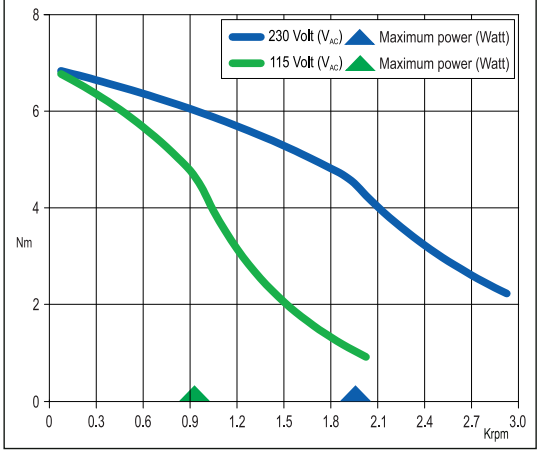
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

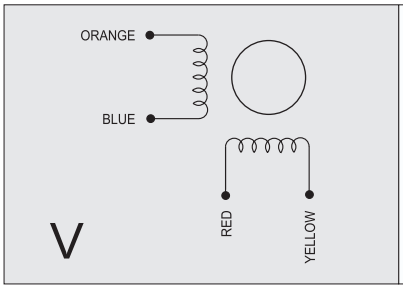
MODEL		EM 3F3M-14D0
SANYO DENKI MOTOR CODE		SM 2863-5126
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	1.0
INDUCTANCE	(mH)	7.9
BIPOLAR HOLDING TORQUE	(Ncm)	920
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	4500
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	20500
BACK E.M.F.	(V/Krpm)	241
MASS	(Kg)	4.0
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

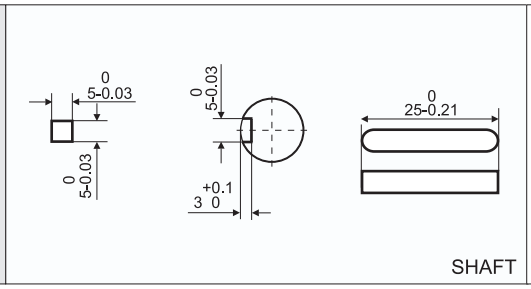
TORQUE/SPEED CURVE



ENCODER FEATURES

POWER SUPPLY VOLTAGE	(Volt)	5 V_{DC} ± 5%
CURRENT CONSUMPTION	(mAmp)	40
HIGH LEVEL OUTPUT	(Volt)	3.4 (TIP) - 2.4 (MIN) (I_{MAX}=20 mA)
LOW LEVEL OUTPUT	(Volt)	0.2 (TIP) - 0.4 (MAX) (I_{MAX}=20 mA)
OUTPUT SIGNAL		Differential (SINGLE ENDED version available)
RESOLUTION		400 cycles per revolution (500 & 1000 CPR version available)
MAXIMUM FREQUENCY	(KHz)	60
INDEX VERSION		Available upon request





LEADS COLOR	ENCODER
BROWN	CHANNEL A-
BLUE	CHANNEL A+
PURPLE	CHANNEL B-
GREEN	CHANNEL B+
BLACK	GND (0 V)
RED	+ DC (5 V)
SHIELD	

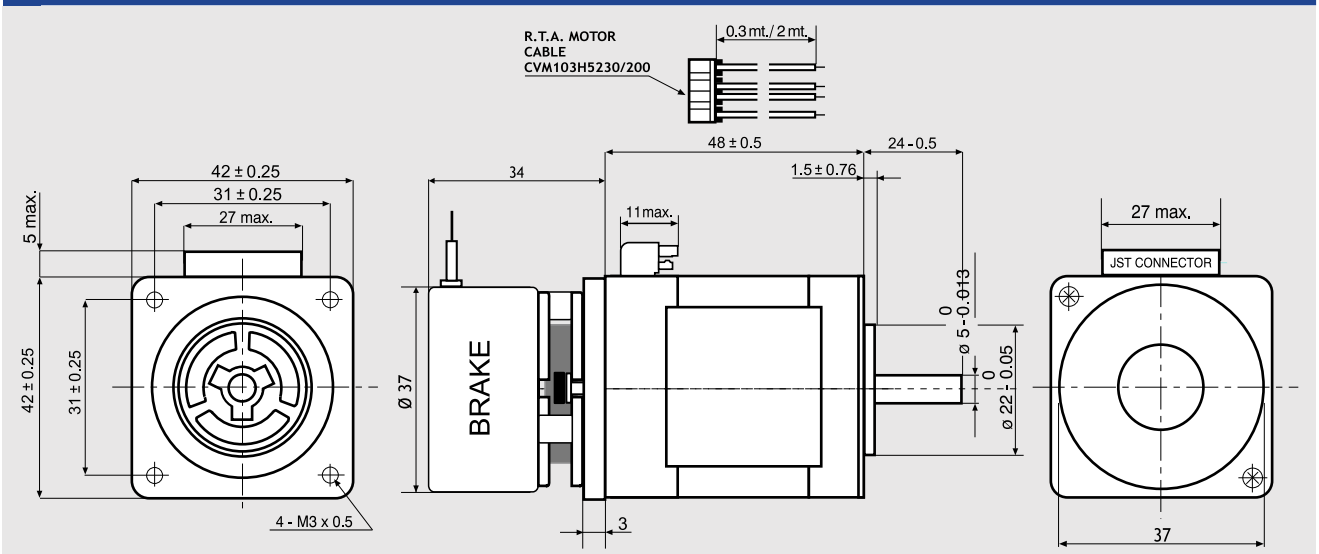
Suggested R.T.A. drive model: 230 Vac X-PLUS

STEPPING MOTORS

TRADITIONAL STEPPING MOTORS WITH BRAKE

103-H5210-4512.B

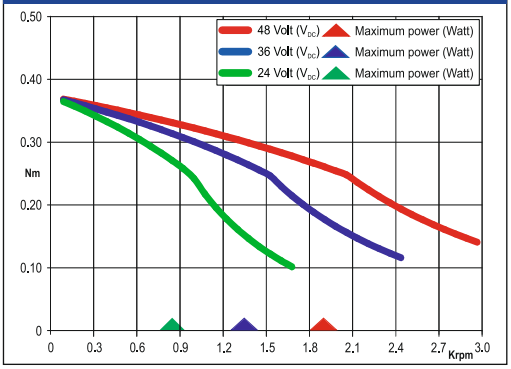
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		103-H5210-4512.B
SANYO DENKI MOTOR CODE		103-H5210-4512
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	1.25
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	51
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	74
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	69000
BACK E.M.F.	(V/Krpm)	25
MASS	(Kg)	0.55
LEADS CODE		V

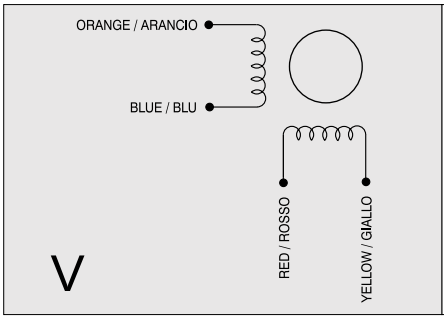
TORQUE/SPEED CURVE

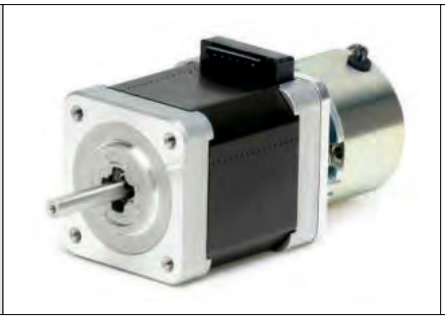


103-H5210-4512 MOTOR NEEDS CVM103H5230 OR CVM103H52200 R.T.A. CABLES. CONTACT R.T.A. FOR FURTHER DETAILS.

BRAKE FEATURES

STATIC TORQUE	(Nm)	0.24
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	5
RELEASE TIME	(ms)	50

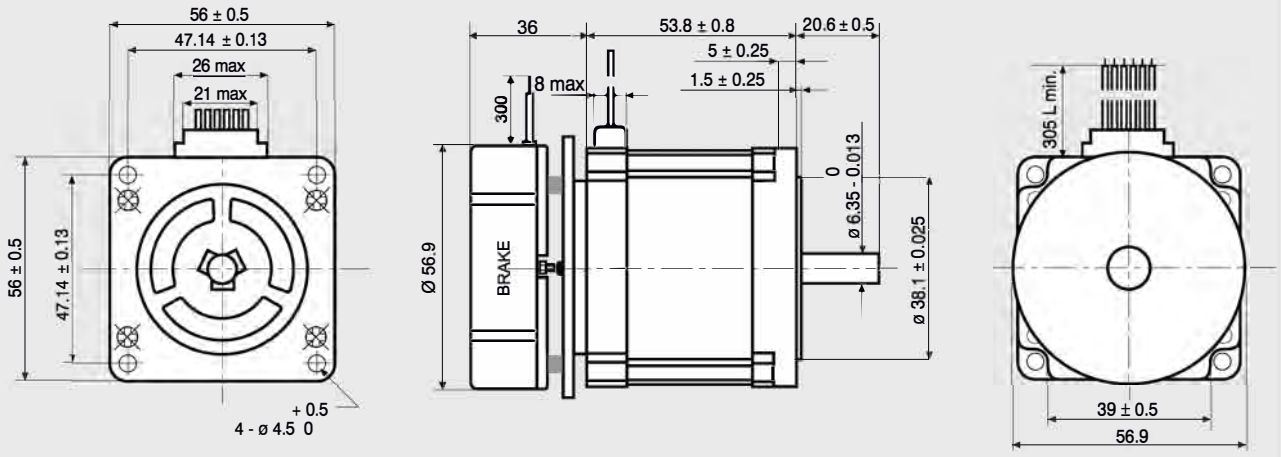




Suggested R.T.A. drive series: BSD, CSD, FLEX-DRIVE

103-H7123-5010.B

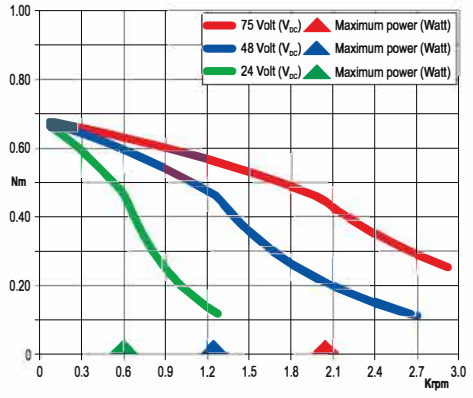
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

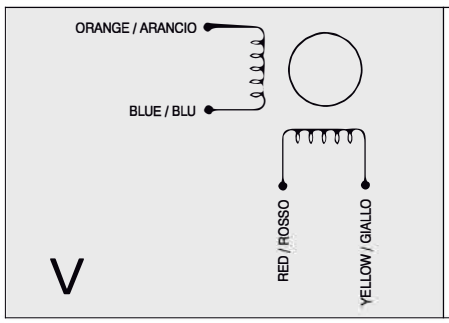
MODEL		103-H7123-5010.B
SANYO DENKI MOTOR CODE		103-H7123-5010
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	2.0
UNIPOLAR PARALLEL CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.8
INDUCTANCE	(mH)	3.8
BIPOLAR HOLDING TORQUE	(Ncm)	85
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	210
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	38500
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1.15
LEADS CODE		V

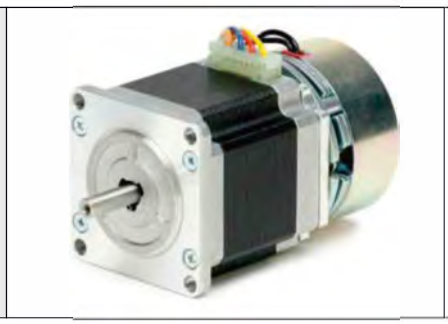
TORQUE/SPEED CURVE



BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

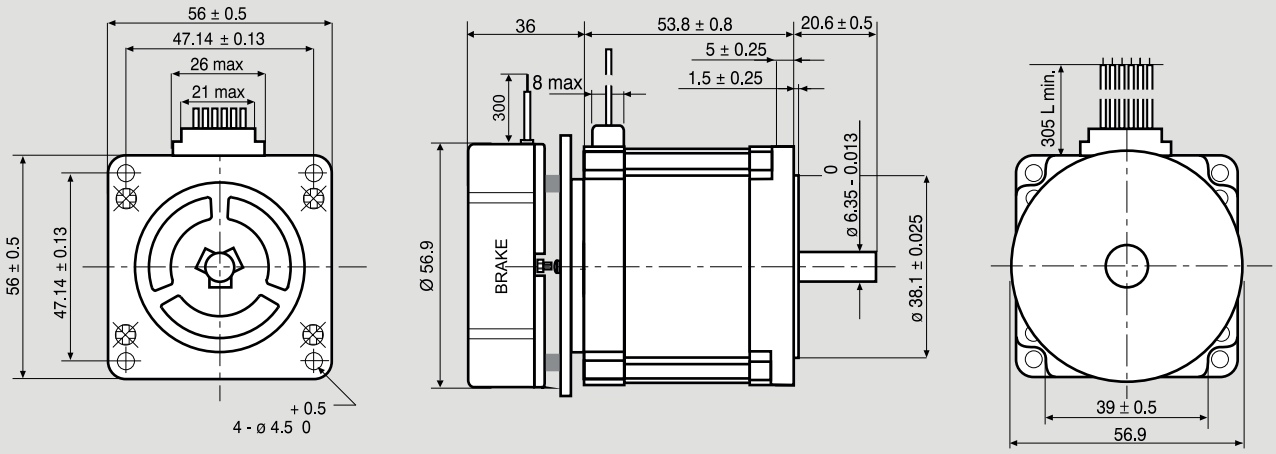




Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-0710.B

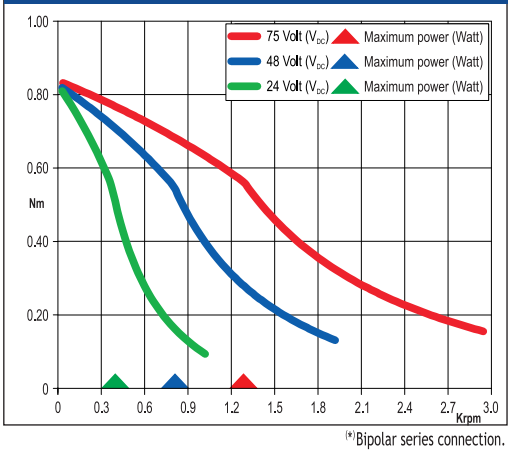
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		103-H7123-0710.B
SANYO DENKI MOTOR CODE		103-H7123-0710
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	2.2*
UNIPOLAR PARALLEL CURRENT	(Amp)	3.0
RESISTANCE	(Ohm)	0.77
INDUCTANCE	(mH)	1.6
BIPOLAR HOLDING TORQUE	(Ncm)	110
UNIPOLAR HOLDING TORQUE	(Ncm)	85
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	210
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	1.15
LEADS CODE		IV

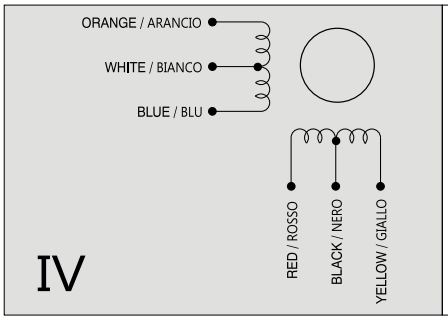
TORQUE/SPEED CURVE

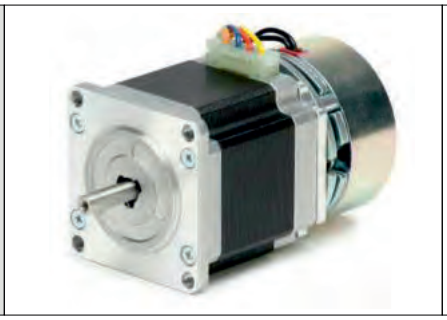


(*)Bipolar series connection.

BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

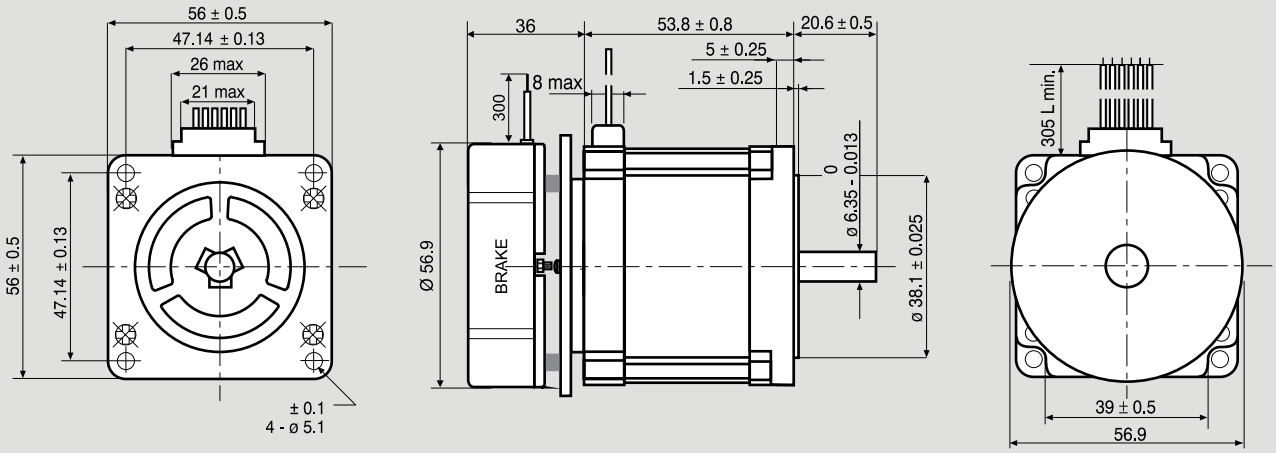




Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7123-1711.B

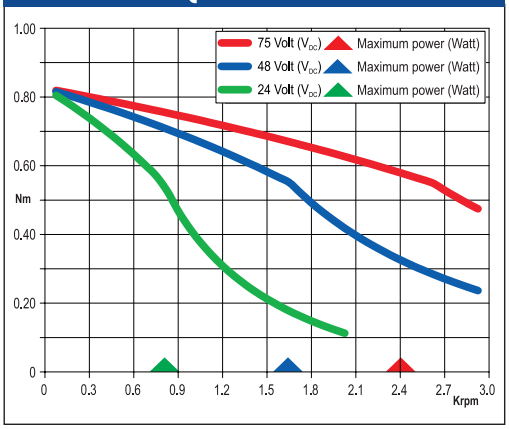
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

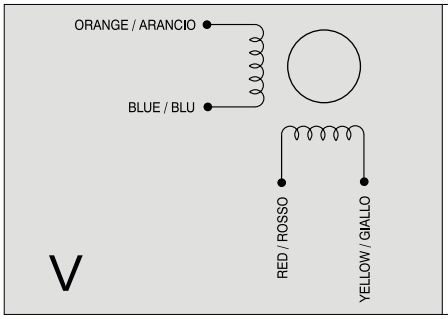
MODEL		103-H7123-1711.B
SANYO DENKI MOTOR CODE		103-H7123-1711
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	4.0
UNIPOLAR PARALLEL CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.41
INDUCTANCE	(mH)	1.6
BIPOLAR HOLDING TORQUE	(Ncm)	110
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	210
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	50000
BACK E.M.F.	(V/Krpm)	20
MASS	(Kg)	1.15
LEADS CODE		V

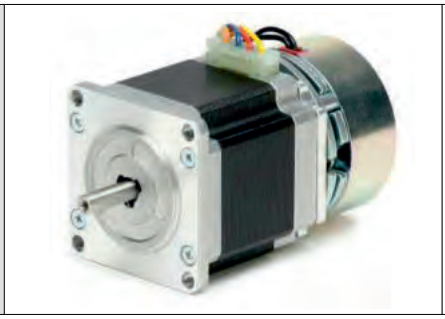
TORQUE/SPEED CURVE



BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

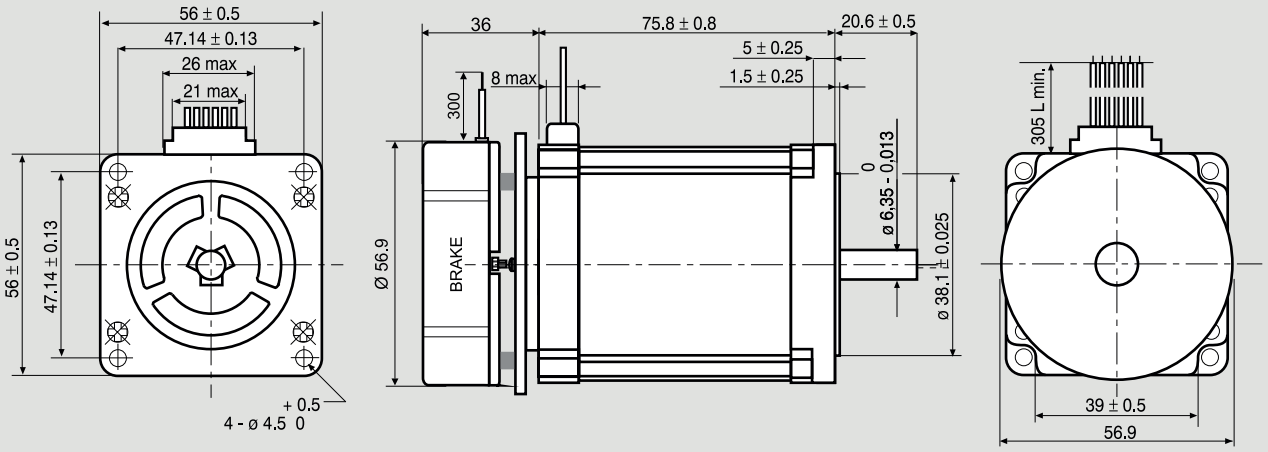




Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7126-0710.B

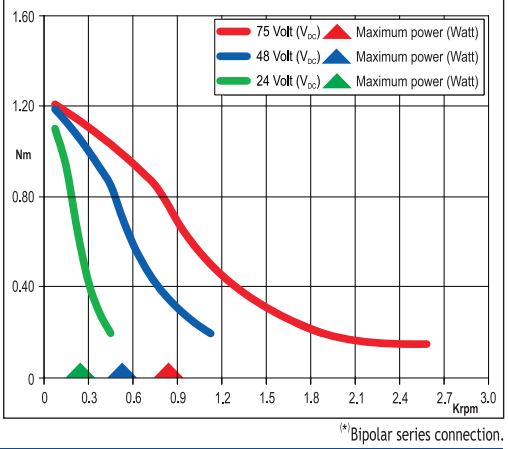
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

MODEL		103-H7126-0710.B
SANYO DENKI MOTOR CODE		103-H7126-0710
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	2.2*
UNIPOLAR PARALLEL CURRENT	(Amp)	3.0
RESISTANCE	(Ohm)	0.9
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	165
UNIPOLAR HOLDING TORQUE	(Ncm)	130
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	360
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1.5
LEADS CODE		IV

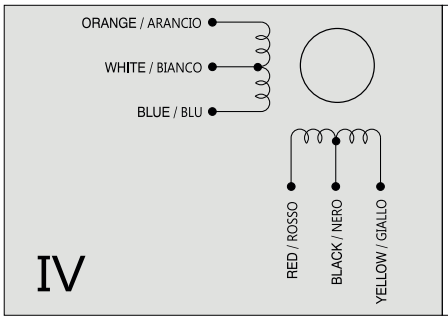
TORQUE/SPEED CURVE

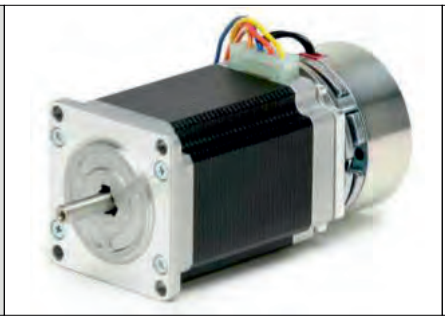


(*)Bipolar series connection.

BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

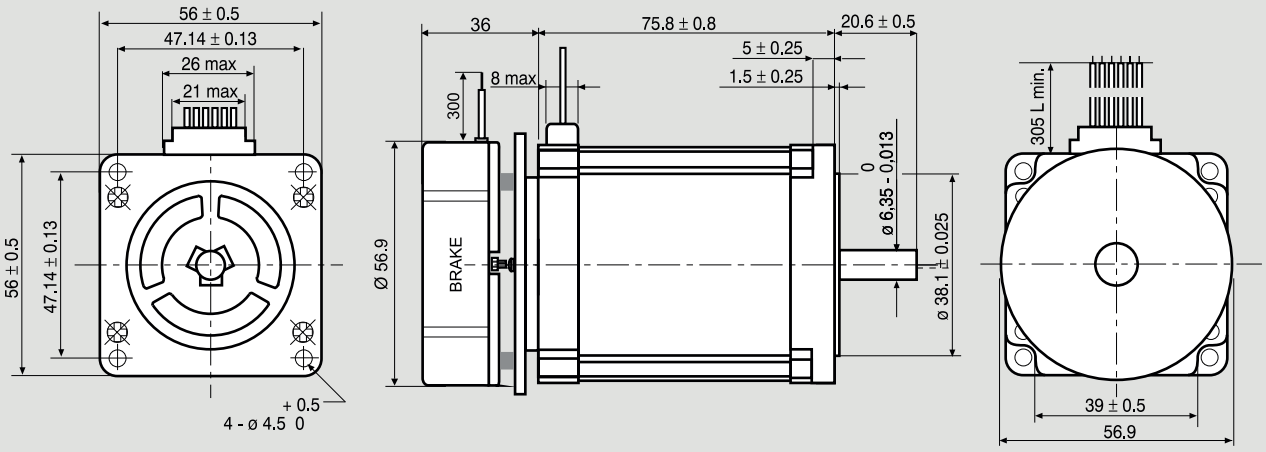




Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7126-1710.B

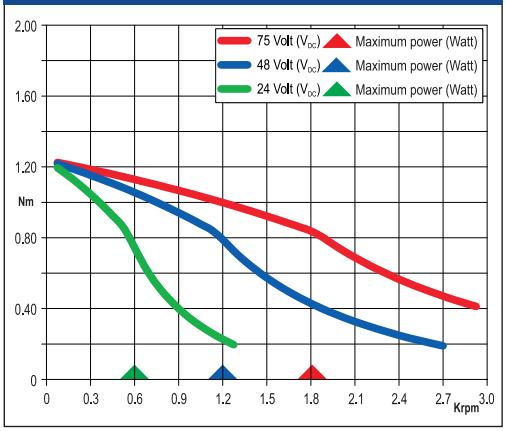
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

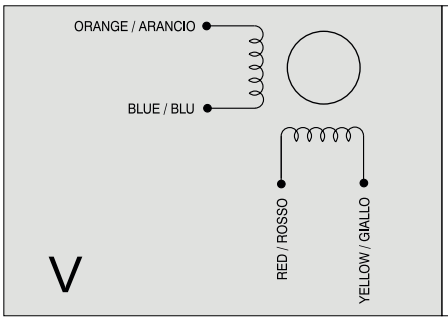
MODEL		103-H7126-1710.B
SANYO DENKI MOTOR CODE		103-H7126-1710
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	4.0
UNIPOLAR PARALLEL CURREN T	(Amp)	
RESISTANCE	(Ohm)	0.48
INDUCTANCE	(mH)	2.2
BIPOLAR HOLDING TORQUE	(Ncm)	165
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	360
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	45800
BACK E.M.F.	(V/Krpm)	31
MASS	(Kg)	1.5
LEADS CODE		V

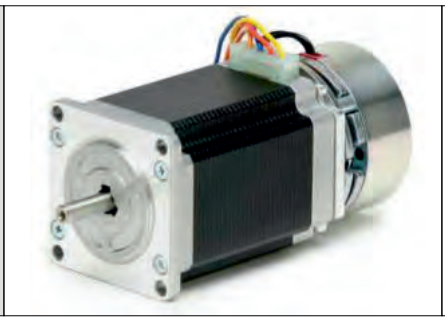
TORQUE/SPEED CURVE



BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

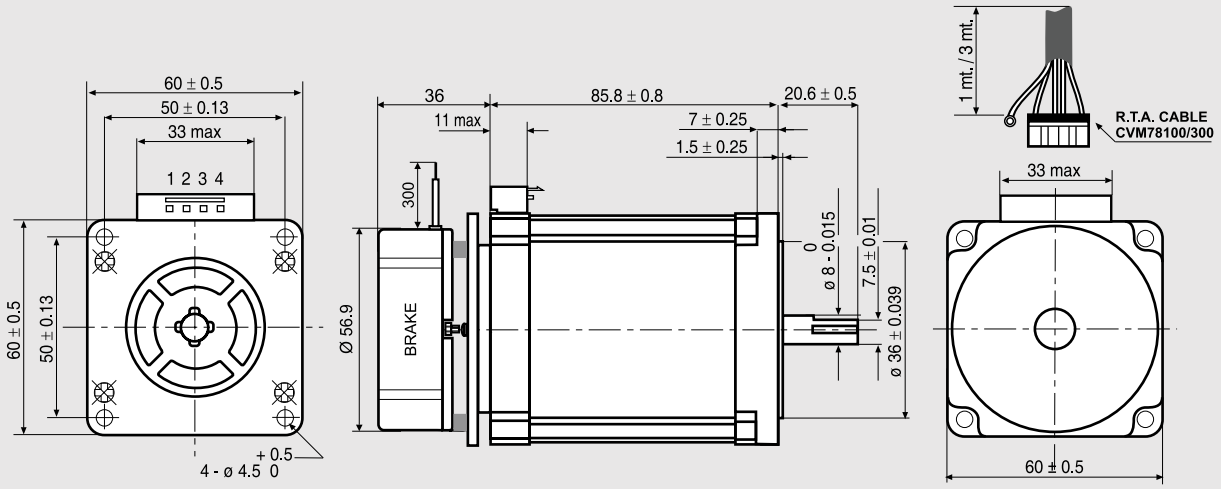




Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, FLEX-DRIVE

103-H7823-1714.B

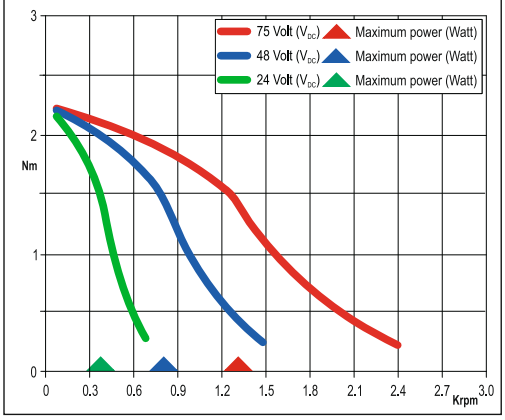
Dimensions (Unit:mm)



SANYO DENKY FEATURES

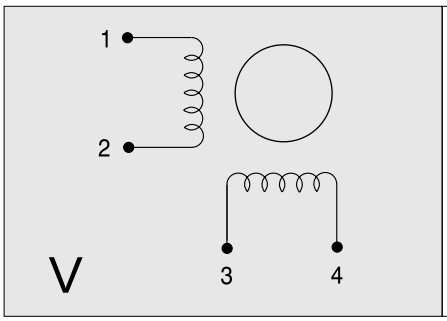
MODEL		103-H7823-1714.B
SANYO DENKI MOTOR CODE		103-H7823-1714
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	4.0
UNIPOLAR PARALLEL CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.65
INDUCTANCE	(mH)	2.4
BIPOLAR HOLDING TORQUE	(Ncm)	300
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	840
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	35700
BACK E.M.F.	(V/Krpm)	75
MASS	(Kg)	1.9
LEADS CODE		V

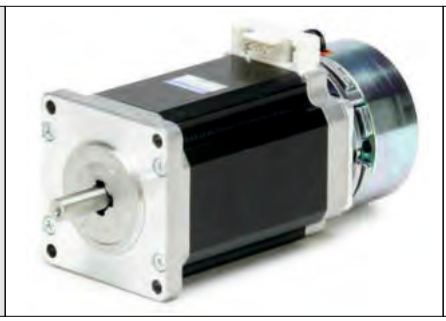
TORQUE/SPEED CURVE

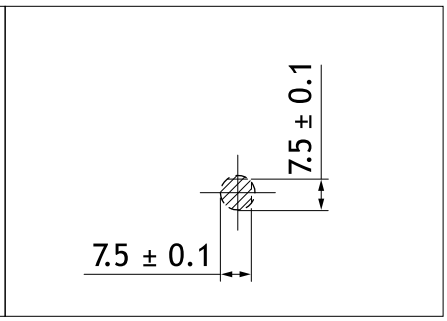


BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300





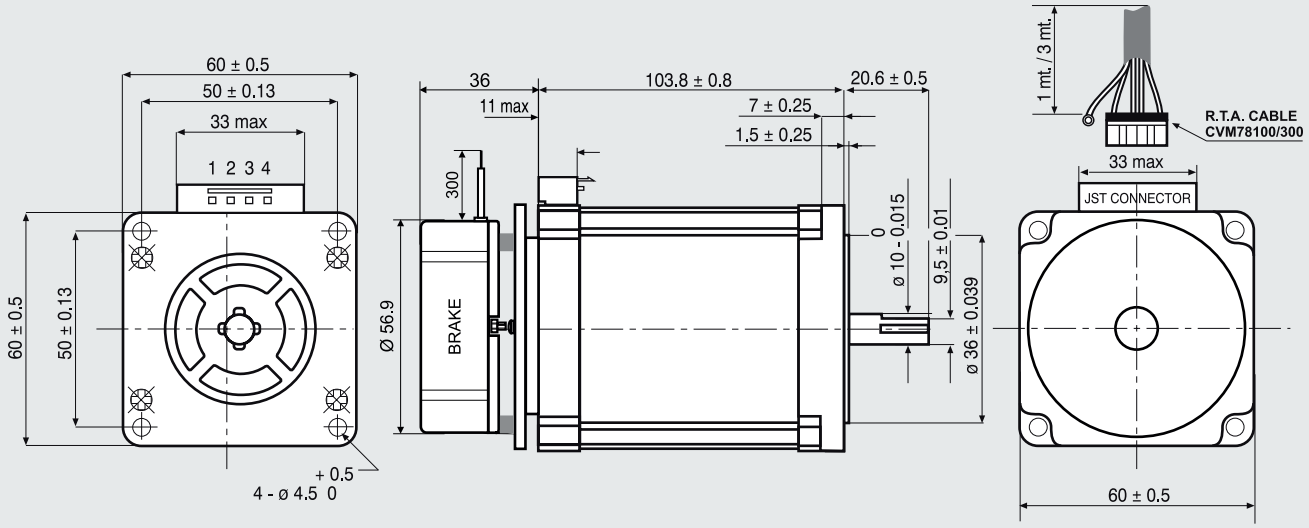


Suggested R.T.A. drive series: BSD, CSD, NDC, ADW, HGD, PLUS, FLEX-DRIVE

103-H7826-1612.B

SANYO DENKI
SANMOTION

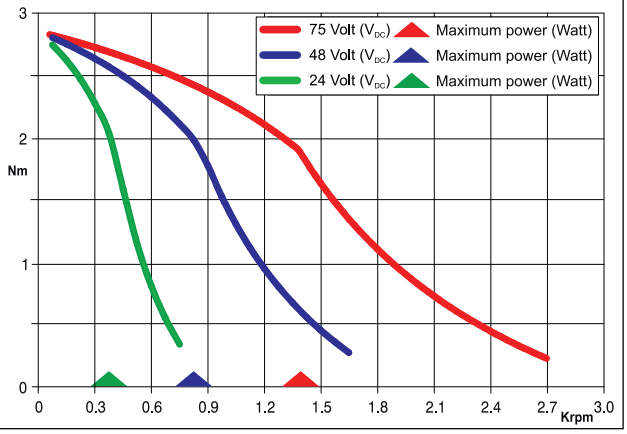
Dimensions (Unit:mm)



FEATURES

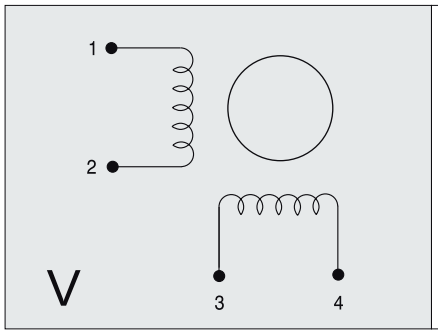
MODEL		103-H7826-1612.B
SANYO DENKI MOTOR CODE		103-H7826-1612
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR CURRENT	(Amp)	6.0
UNIPOLAR CURRENT	(Amp)	
RESISTANCE	(Ohm)	0.43
INDUCTANCE	(mH)	1.45
BIPOLAR HOLDING TORQUE	(Ncm)	380
UNIPOLAR HOLDING TORQUE	(Ncm)	
ROTOR INERTIA	(Kgm ^{2} x 10 $^{-7}$)	1080
THEORETICAL ACCELERATION	(rad x sec.$^{-2}$)	35200
BACK E.M.F.	(V/Krpm)	70
MASS	(Kg)	1.65
LEADS CODE		V

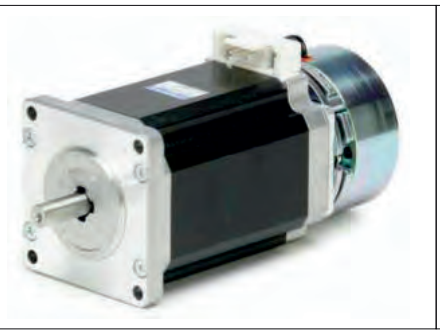
TORQUE/SPEED CURVE

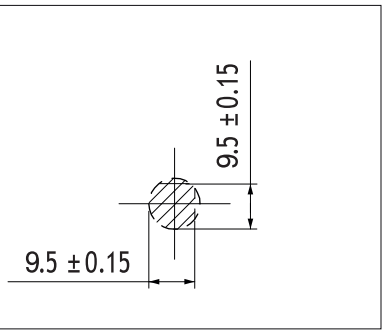


BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	100



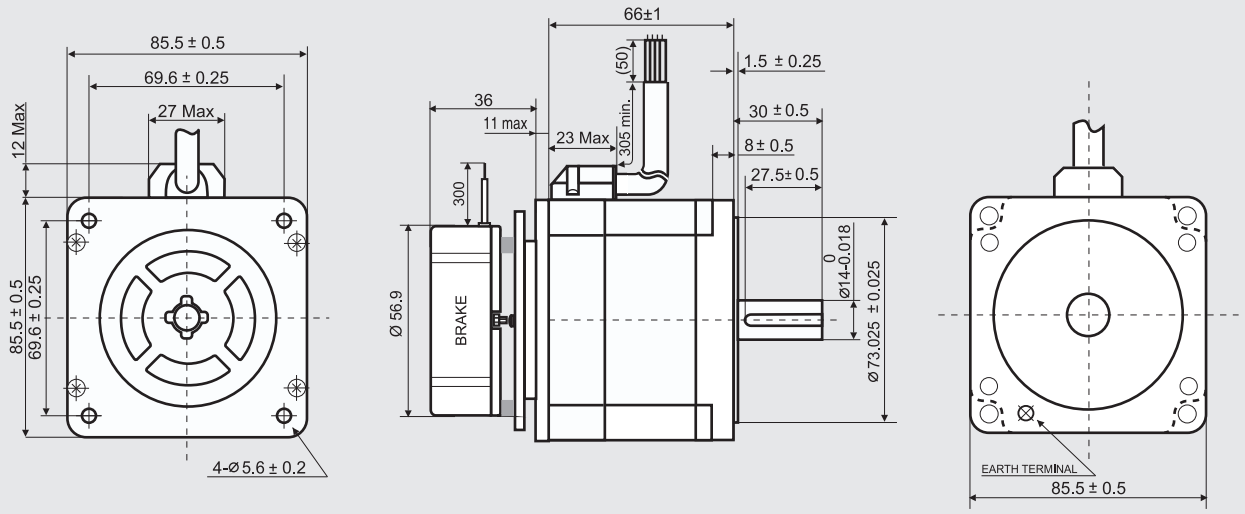




Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

SM 2861-5025.B

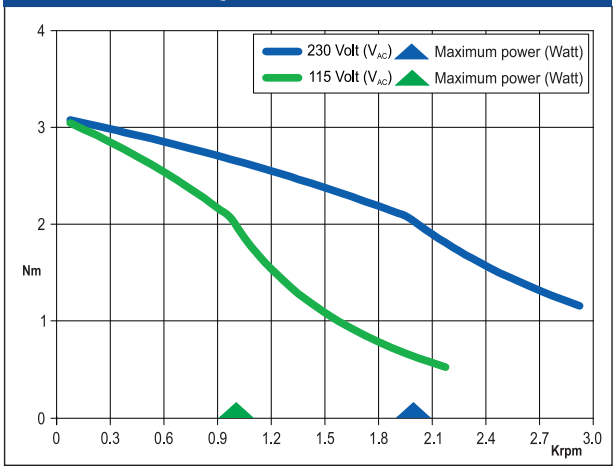
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

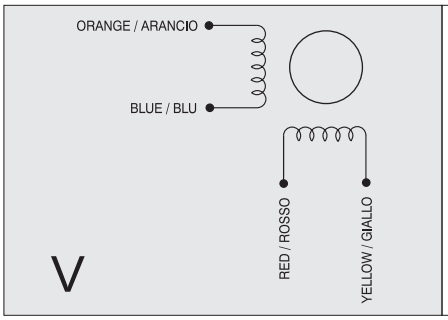
MODEL		SM 2861-5025.B
SANYO DENKI MOTOR CODE		SM 2861-5025
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	2.0
RESISTANCE	(Ohm)	2.2
INDUCTANCE	(mH)	15
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	1480
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	180
MASS	(Kg)	2.2
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

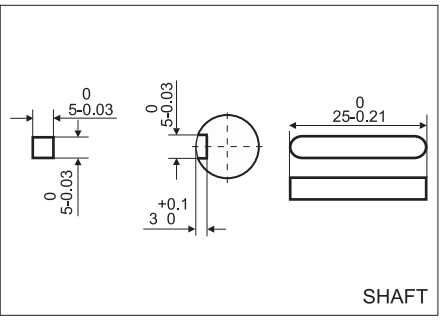
TORQUE/SPEED CURVE



BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

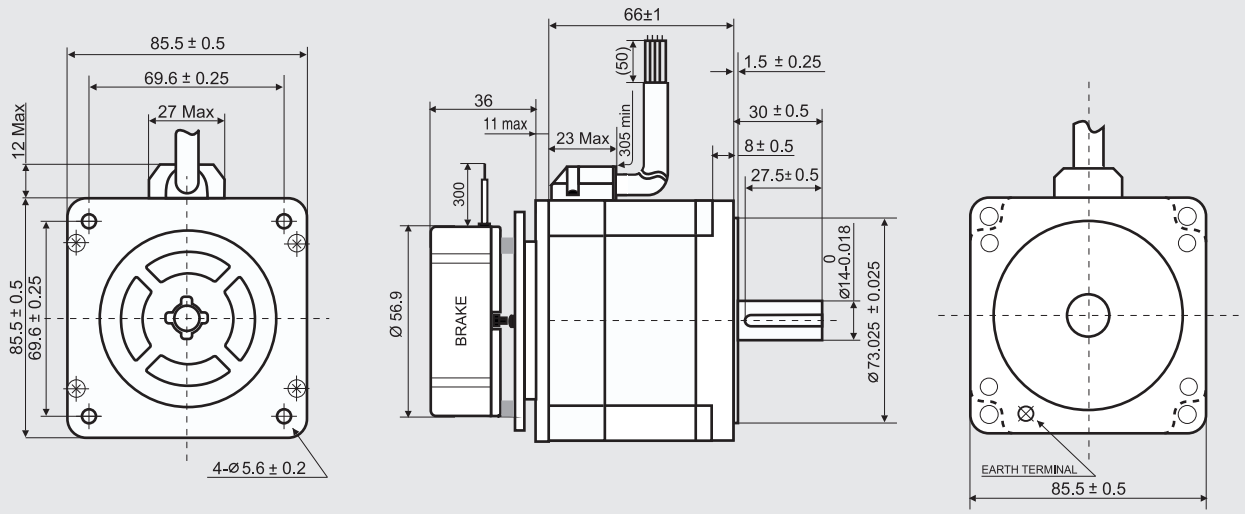




Suggested R.T.A. drive model: X-PLUS L2

SM 2861-5225.B

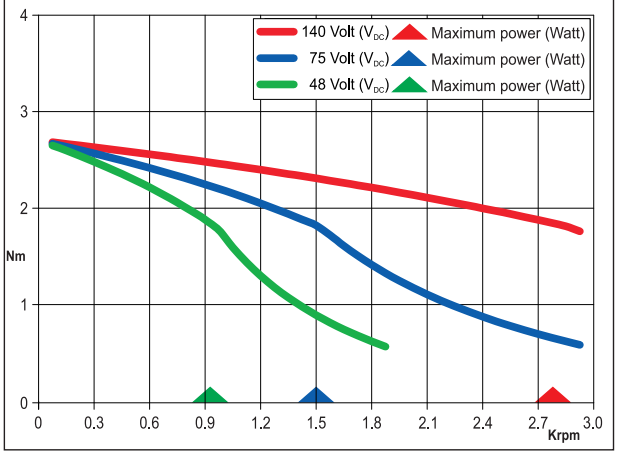
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

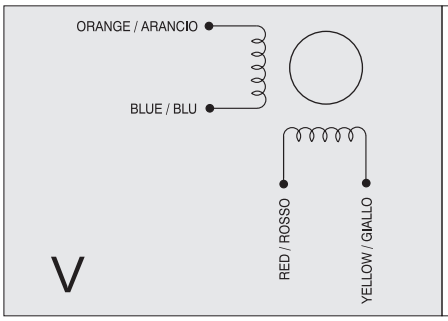
MODEL		SM 2861-5225.B
SANYO DENKI MOTOR CODE		SM 2861-5225
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.29
INDUCTANCE	(mH)	1.7
BIPOLAR HOLDING TORQUE	(Ncm)	360
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	1480
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	24300
BACK E.M.F.	(V/Krpm)	60
MASS	(Kg)	2.2
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

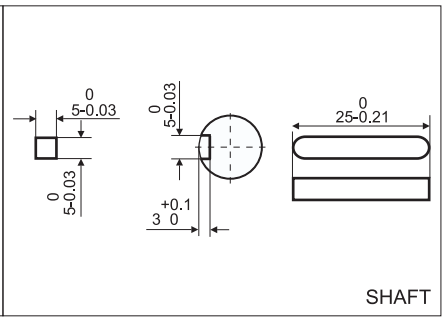
TORQUE/SPEED CURVE



BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

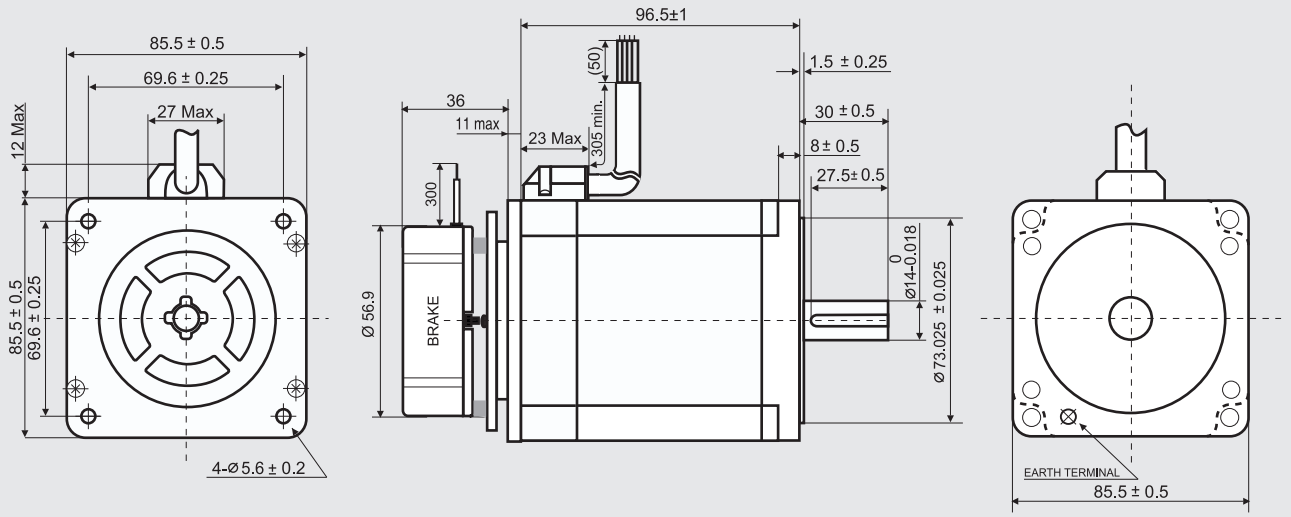




Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

SM 2862-5125.B

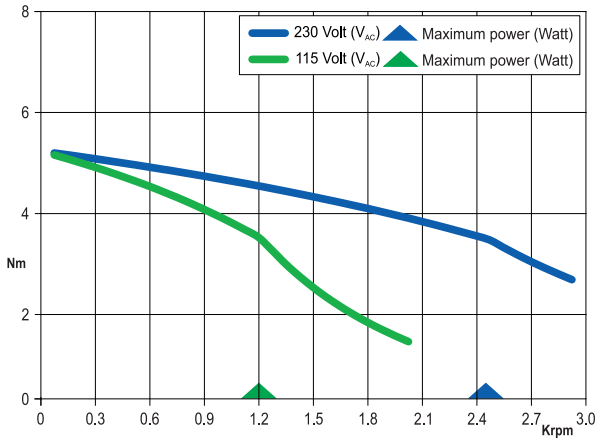
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

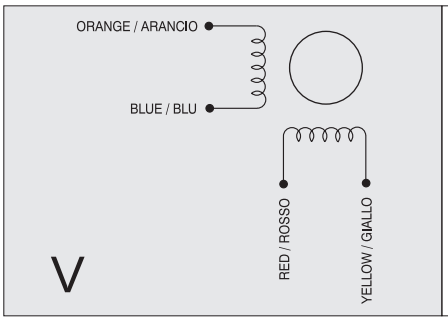
MODEL		SM 2862-5125.B
SANYO DENKI MOTOR CODE		SM 2862-5125
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	4.0
RESISTANCE	(Ohm)	0.83
INDUCTANCE	(mH)	6.4
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	3000
THEORETICAL ACCELERATION	($rad \times sec.^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	175
MASS	(Kg)	3.4
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

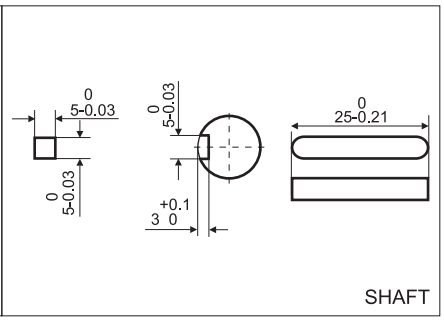
TORQUE/SPEED CURVE



BRAKE FEATURES

STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300

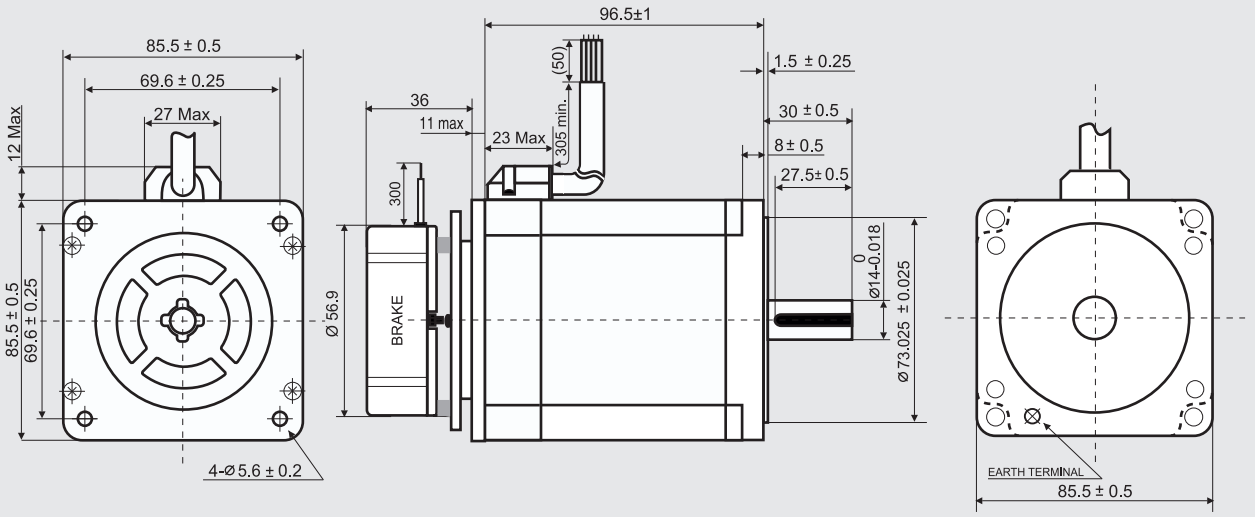




Suggested R.T.A. drive series: 230 Vac X-PLUS

SM 2862-5225.B

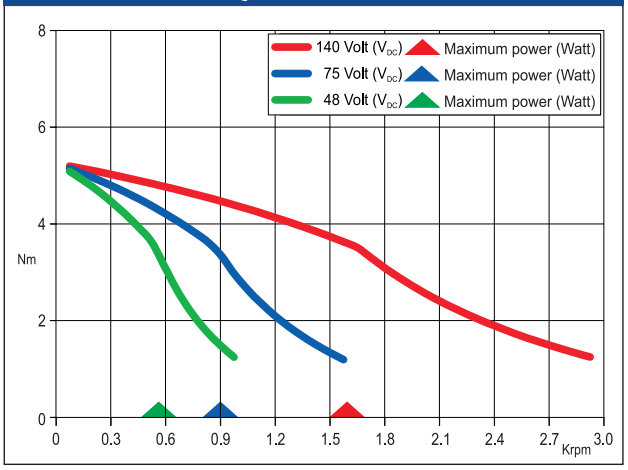
Dimensions (Unit:mm)



SANYO DENKI MOTOR FEATURES

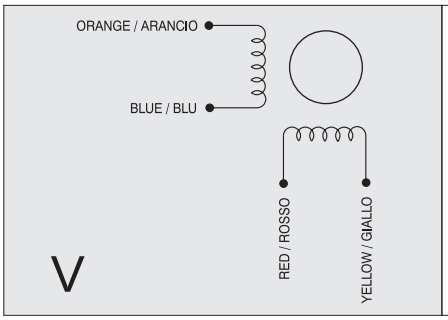
MODEL		SM 2862-5225.B
SANYO DENKI MOTOR CODE		SM 2862-5225
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	6.0
RESISTANCE	(Ohm)	0.36
INDUCTANCE	(mH)	2.8
BIPOLAR HOLDING TORQUE	(Ncm)	700
ROTOR INERTIA	($Kgm^2 \times 10^{-7}$)	3000
THEORETICAL ACCELERATION	(rad × $sec.^{-2}$)	23300
BACK E.M.F.	(V/Krpm)	120
MASS	(Kg)	3.4
INTERNATIONAL STANDARDS		UL, CSA
INSULATION VOLTAGE	(V)	250 VAC (350 VDC)
PROTECTION DEGREE - INSULATION CLASS		IP43 - F
LEADS CODE		V

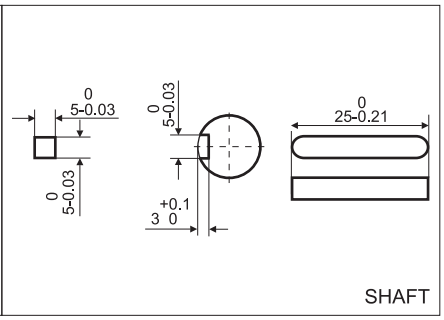
TORQUE/SPEED CURVE



BRAKE FEATURES

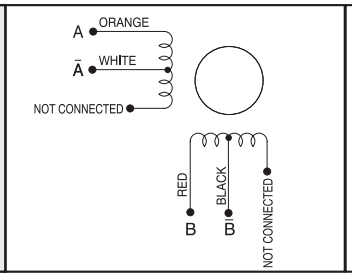
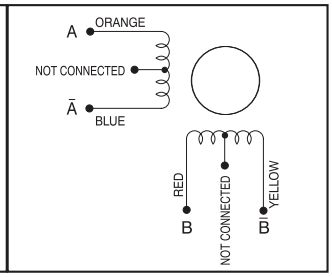
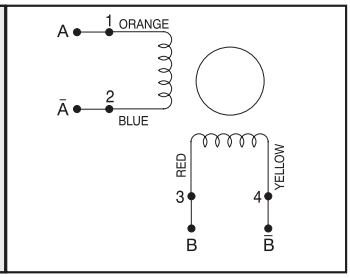
STATIC TORQUE	(Nm)	3.3
DUTY CYCLE		50% max.
VOLTAGE	(Volt)	24 VDC
POWER	(W)	11
RELEASE TIME	(ms)	300





Suggested R.T.A. drive series: NDC, ADW, HGD, PLUS

CONNECTION SCHEMATICS OF DRIVES AND MOTORS

LEADS CODE	SERIES BIPOLAR CONNECTION	PARALLEL BIPOLAR CONNECTION
IV		
V		

INDUSTRIAL STEPPING MOTORS - CABLE OPTIONS		
RH SERIES	MOTOR CABLE	ENCODER CABLE
RH 1S0M	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S0M-RS	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S1M	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S1M-RS	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S2M	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S2M-RS	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S3M	CVMRH1S02M/CVMRH1S0M3	N/A
RH 1S3M-RS	CVMRH1S02M/CVMRH1S0M3	N/A
RM SERIES	MOTOR CABLE	ENCODER CABLE
RM 2R2M	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
RM 3R1M	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
RM 3R2M	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
RM 3R3M	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP SERIES (IP 65)	MOTOR CABLE	ENCODER CABLE
SP 2563-5000	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP 2563-5200	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP 2566-5200	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP 2862-5100	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP 2863-5100	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A

INDUSTRIAL STEPPING MOTORS - CABLE OPTIONS

SP SERIES (FULL IP 65)	MOTOR CABLE	ENCODER CABLE
SP 2566-50SX00	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP 2566-52SX00	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP2861-51SX01	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP2862-51SX01	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A
SP2863-51SX01	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	N/A

INDUSTRIAL STEPPING MOTORS WITH ENCODER - CABLE OPTIONS

	MOTOR CABLE	ENCODER CABLE
RH 1S0M-04D0	CVMRH1S02M/CVMRH1S0M3	CVEPA0D0M3/CVEPA0D02M
RH 1S0M-04E0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S0M-0HE0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S1M-04D0	CVMRH1S02M/CVMRH1S0M3	CVEPA0D0M3/CVEPA0D02M
RH 1S1M-04E0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S1M-0HE0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S2M-04D0	CVMRH1S02M/CVMRH1S0M3	CVEPA0D0M3/CVEPA0D02M
RH 1S2M-04E0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S2M-0HE0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S3M-04D0	CVMRH1S02M/CVMRH1S0M3	CVEPA0D0M3/CVEPA0D02M
RH 1S3M-04E0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RH 1S3M-0HE0	CVMRH1S02M/CVMRH1S0M3	CVEOZD0M3/CVEPAZD02M
RM 3T1M-04D0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
RM 3T1M-04E0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
RM 3T1M-0HE0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
RM 3T2M-04D0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
RM 3T2M-04E0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
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RM 3T3M-04D0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
RM 3T3M-04E0	CVMRMPM01M/CVMRMPM03M CVMRM90PM01M/CVMRM90PM03M	CVERMPM01M/CVERMPM03M CVERM90PM01M/CVERM90PM03M
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TRADITIONAL STEPPING MOTORS - CABLE OPTIONS

14 mm FLANGE	MOTOR CABLE	ENCODER CABLE
SH2141-5541	30 cm LEAD WIRE	N/A
28 mm FLANGE	**MOTOR CABLE**	**ENCODER CABLE**
SH2281-5271	30 cm LEAD WIRE	N/A
SH2281-5231	30 cm LEAD WIRE	N/A
SH2285-5271	30 cm LEAD WIRE	N/A
SH2285-5231	30 cm LEAD WIRE	N/A
42 mm FLANGE	**MOTOR CABLE**	**ENCODER CABLE**
103-H5205-5040	30 cm LEAD WIRE	N/A
103-H5205-0351	30 cm LEAD WIRE	N/A
103-H5205-0312	30 cm LEAD WIRE	N/A
103-H5205-4240	CVM103H5230	N/A
103-H5205-4210	CVM103H5230	N/A
103-H5208-0483	30 cm LEAD WIRE	N/A
103-H5210-4240	CVM103H5230	N/A
103-H5210-4210	CVM103H5230	N/A
103-H5210-4541	CVM103H5230	N/A
103-H5210-4512	30 cm LEAD WIRE	N/A
103-H5212-4640	CVM103H5230	N/A
103-H5212-4610	CVM103H5230	N/A
50 mm FLANGE	**MOTOR CABLE**	**ENCODER CABLE**
103-H6701-0140	30 cm LEAD WIRE	N/A
103-H6703-0440	30 cm LEAD WIRE	N/A
56 mm FLANGE	**MOTOR CABLE**	**ENCODER CABLE**
103-H7121-0440	30 cm LEAD WIRE	N/A
103-H7123-5040	30 cm LEAD WIRE	N/A
103-H7123-5010	30 cm LEAD WIRE	N/A
103-H7123-0140	30 cm LEAD WIRE	N/A
103-H7123-0440	30 cm LEAD WIRE	N/A
103-H7123-0740	30 cm LEAD WIRE	N/A
103-H7123-0710	30 cm LEAD WIRE	N/A
103-H7123-1749	30 cm LEAD WIRE	N/A
103-H7123-1711	30 cm LEAD WIRE	N/A
103-H7126-0140	30 cm LEAD WIRE	N/A
103-H7126-0740	30 cm LEAD WIRE	N/A
103-H7126-0710	30 cm LEAD WIRE	N/A
103-H7126-1740	30 cm LEAD WIRE	N/A
103-H7126-1710	30 cm LEAD WIRE	N/A
103-H7126-6640	30 cm LEAD WIRE	N/A
103-H7126-6610	30 cm LEAD WIRE	N/A
103-H7128-5740	30 cm LEAD WIRE	N/A
103-H7128-5710	30 cm LEAD WIRE	N/A
60 mm FLANGE	**MOTOR CABLE**	**ENCODER CABLE**
103-H7822-0740	CVM77100 + CVM77300	N/A
103-H7823-0740	CVM77100 + CVM77300	N/A
103-H7823-1740	CVM78100 + CVM78300	N/A
103-H7823-1714	CVM78100 + CVM78300	N/A
103-H7826-1642	CVM78100 + CVM78300	N/A
103-H7826-1612	CVM78100 + CVM78300	N/A

TRADITIONAL STEPPING MOTORS - CABLE OPTIONS		
85.5 mm FLANGE	MOTOR CABLE	ENCODER CABLE
SM 2861-5055	30 cm LEAD WIRE	N/A
SM 2861-5025	30 cm LEAD WIRE	N/A
SM 2861-5255	30 cm LEAD WIRE	N/A
SM 2861-5225	30 cm LEAD WIRE	N/A
SM 2862-5055	30 cm LEAD WIRE	N/A
SM 2862-5155	30 cm LEAD WIRE	N/A
SM 2862-5125	30 cm LEAD WIRE	N/A
SM 2862-5255	30 cm LEAD WIRE	N/A
SM 2862-5225	30 cm LEAD WIRE	N/A
SM 2863-5155	30 cm LEAD WIRE	N/A
SM 2863-5126	30 cm LEAD WIRE	N/A
SM 2863-5255	30 cm LEAD WIRE	N/A
SM 2863-5225	30 cm LEAD WIRE	N/A
106.4 mm FLANGE	MOTOR CABLE	ENCODER CABLE
103-H89222-6341	30 cm LEAD WIRE	N/A
103-H89222-6311	30 cm LEAD WIRE	N/A
103-H89222-6541	30 cm LEAD WIRE	N/A
103-H89223-6341	30 cm LEAD WIRE	N/A
103-H89223-6311	30 cm LEAD WIRE	N/A
103-H89223-6641	30 cm LEAD WIRE	N/A
103-H89223-6611	30 cm LEAD WIRE	N/A
NOT PREFERRED:		
103-H8221-6241	30 cm LEAD WIRE	N/A
103-H8221-6211	30 cm LEAD WIRE	N/A
103-H8222-6340	30 cm LEAD WIRE	N/A
103-H8222-6310	30 cm LEAD WIRE	N/A
103-H8223-6540	30 cm LEAD WIRE	N/A
103-H8223-6510	30 cm LEAD WIRE	N/A

TRADITIONAL STEPPING MOTORS WITH ENCODER - CABLE OPTIONS

	MOTOR CABLE	ENCODER CABLE
EM 0H1M-04D0	30 cm LEAD WIRE	CVEPB0D0M4/CVEPB0D01M
EM 0H2M-04D0	30 cm LEAD WIRE	CVEPB0D0M4/CVEPB0D01M
EM 1H2H-04D0	CVM103H5230/CVM103H5200	CVEPA0D03M/CVEPAZD0M3
EM 1H2H-04E0	CVM103H5230/CVM103H5200	CVEPA0D03M/CVEPAZD0M3
EM 1H2H-0HE0	CVM103H5230/CVM103H5200	CVEPA0D03M/CVEPAZD0M3
EM 1H3H-04D0	CVM103H5230/CVM103H5200	CVEPA0D03M/CVEPAZD0M3
EM 1H3H-04E0	CVM103H5230/CVM103H5200	CVEPA0D03M/CVEPAZD0M3
EM 1H3H-0HE0	CVM103H5230/CVM103H5200	CVEPA0D03M/CVEPAZD0M3
EM 2H1M-04D0	30 cm LEAD WIRE	CVEPA0D03M/CVEPAZD0M3
EM 2H1M-04E0	30 cm LEAD WIRE	CVEPA0D03M/CVEPAZD0M3
EM 2H1M-0HE0	30 cm LEAD WIRE	CVEPA0D03M/CVEPAZD0M3
EM 2H2M-04D0	30 cm LEAD WIRE	CVEPA0D03M/CVEPAZD0M3
EM 2H2M-04E0	30 cm LEAD WIRE	CVEPA0D03M/CVEPAZD0M3
EM 2H2M-0HE0	30 cm LEAD WIRE	CVEPA0D03M/CVEPAZD0M3
EM 6H2M-04D0	CVM78100/CVM78300	CVEPA0D03M/CVEPAZD0M3
EM 6H2M-04E0	CVM78100/CVM78300	CVEPA0D03M/CVEPAZD0M3
EM 6H2M-0HE0	CVM78100/CVM78300	CVEPA0D03M/CVEPAZD0M3
EM 6H3H-04D0	CVM78100/CVM78300	CVEPA0D03M/CVEPAZD0M3
EM 6H3H-04E0	CVM78100/CVM78300	CVEPA0D03M/CVEPAZD0M3
EM 6H3H-0HE0	CVM78100/CVM78300	CVEPA0D03M/CVEPAZD0M3
EM 3F1L-04D0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F1H-04D0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F1H-04E0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F1H-0HE0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F2M-04D0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F2H-04D0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F2H-04E0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F2H-0HE0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F3H-04D0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F3H-04E0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F3H-0HE0	30 cm LEAD WIRE	40 cm LEAD WIRE
EM 3F3M-14D0	100 cm LEAD WIRE	80 cm LEAD WIRE

TRADITIONAL STEPPING MOTORS WITH BRAKE - CABLE OPTIONS

	MOTOR CABLE	ENCODER CABLE
103-H5210-4512.B	CVM103H5230/CVM103H5200	/
103-H7123-5010.B	30 cm LEAD WIRE	/
103-H7123-0710.B	30 cm LEAD WIRE	/
103-H7123-1711.B	30 cm LEAD WIRE	/
103-H7126-0710.B	30 cm LEAD WIRE	/
103-H7126-1710.B	30 cm LEAD WIRE	/
103-H7823-1714.B	CVM78100/CVM78300	/
103-H7826-1612.B	CVM78100/CVM78300	/
SM 2861-5025.B	30 cm LEAD WIRE	/
SM 2861-5225.B	30 cm LEAD WIRE	/
SM 2862-5125.B	30 cm LEAD WIRE	/
SM 2862-5225.B	30 cm LEAD WIRE	/

STEPPING MOTORS

ACCESSORIES FRONT BRAKES

FB-M12-17-02-00000

FRONT BRAKES

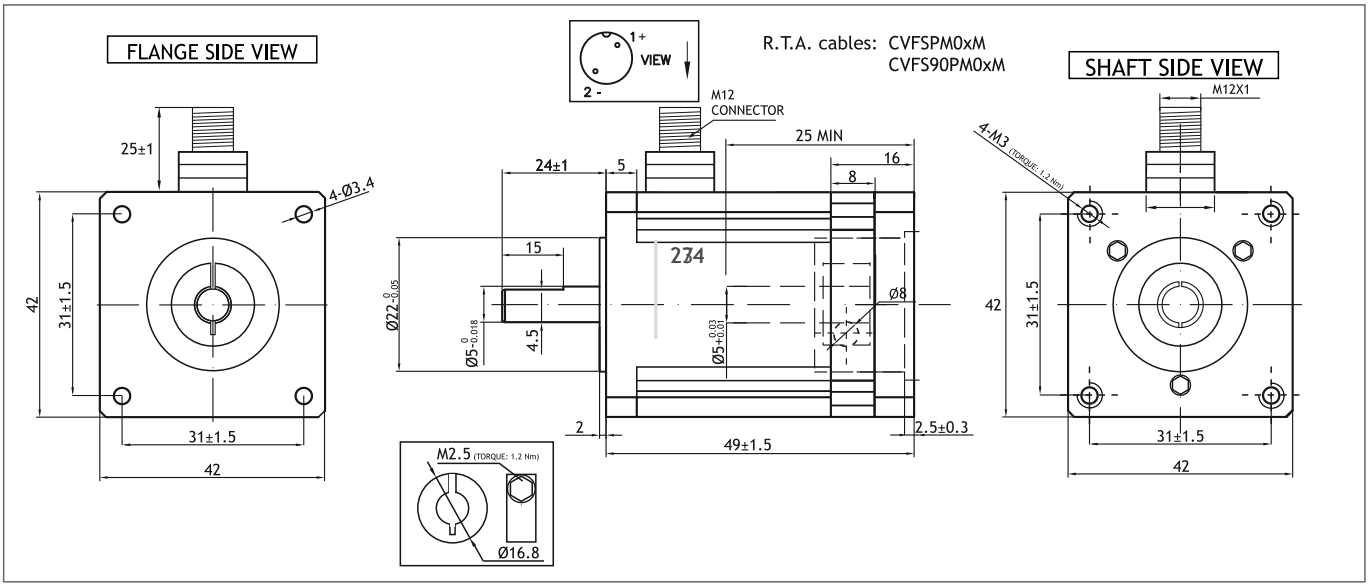
M12 CONNECTOR

24 VDC

NEMA 17

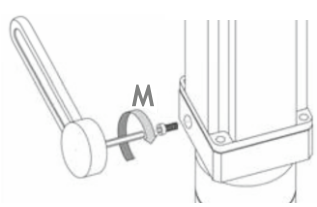
SCAN THE QR CODE TO WATCH A VIDEO ON FB SERIES FRONT BRAKES

Dimensions (Units:mm)



MODEL	Static torque (Nm)	Current (mA)	Voltage (V)	Power (W)	Mass (Kg)
FB-M12-17-02-00000	0.2	170	24 VDC	4.1	0.27

Suggested motors and cables



NEMA 17 motors

R.T.A. cables

CVFSPM0xM x=1m/3m

CVFS90PM0xM x=1m/3m

MOUNTING OPERATION MODE: ■ Tightening torque M= 1.2 Nm ■ Locking bolt M5 ■ R.T.A. Quality Control

CAUTION **Use for safety related functions is forbidden (EN 60204-1). Moreover, when the application arrangement is in such way that a brake fault or failure could generate a risk for property or human life, external independent safety protection system must be provided in the machine.**

FB-M12-23-08-00000

FRONT BRAKES

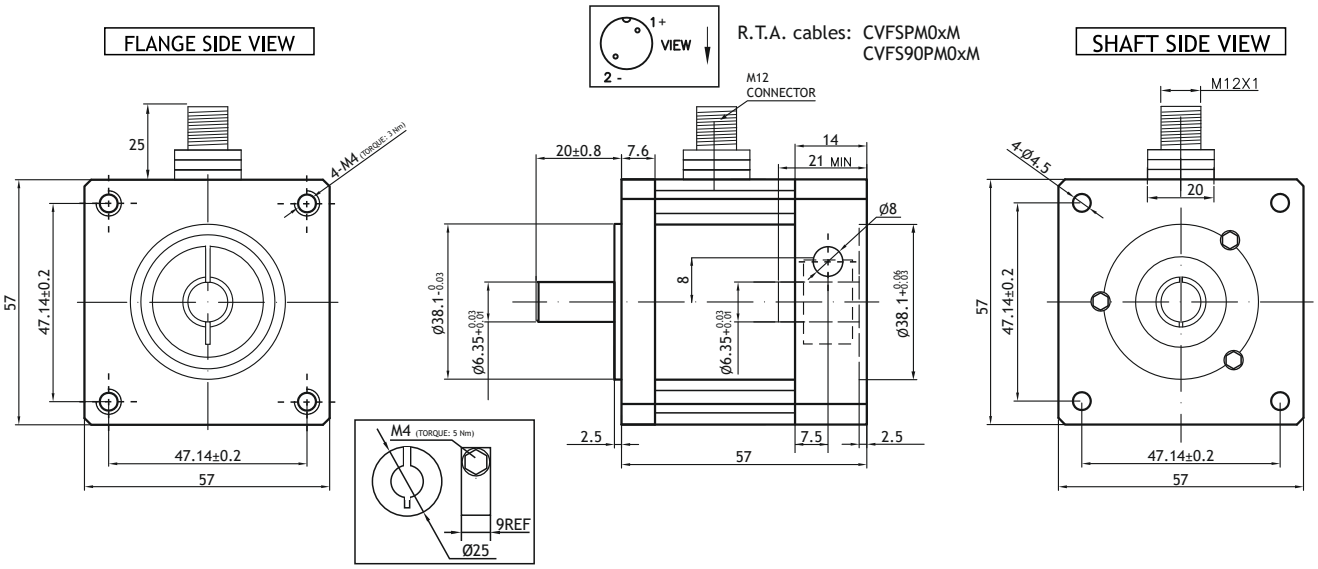
M12 CONNECTOR

24 VDC

NEMA 23

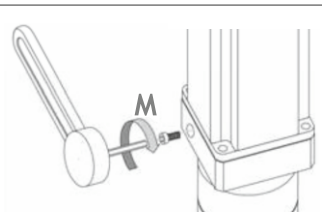
SCAN THE QR CODE TO WATCH A VIDEO ON FB SERIES FRONT BRAKES

Dimensions (Units:mm)



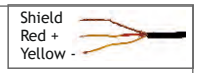
MODEL	Static torque (Nm)	Current (mA)	Voltage (V)	Power (W)	Mass (Kg)
FB-M12-23-08-00000	0.8	340	24 VDC	8.1	0.63

Suggested motors and cables



NEMA 23 motors

R.T.A. cables



CVFSPM0xM x=1m/3m

CVFS90PM0xM x=1m/3m

MOUNTING OPERATION MODE: ■ Tightening torque M= 5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

CAUTION

Use for safety related functions is forbidden (EN 60204-1). Moreover, when the application arrangement is in such way that a brake fault or failure could generate a risk for property or human life, external independent safety protection system must be provided in the machine.

FB-M12-24-15-00000

FRONT BRAKES

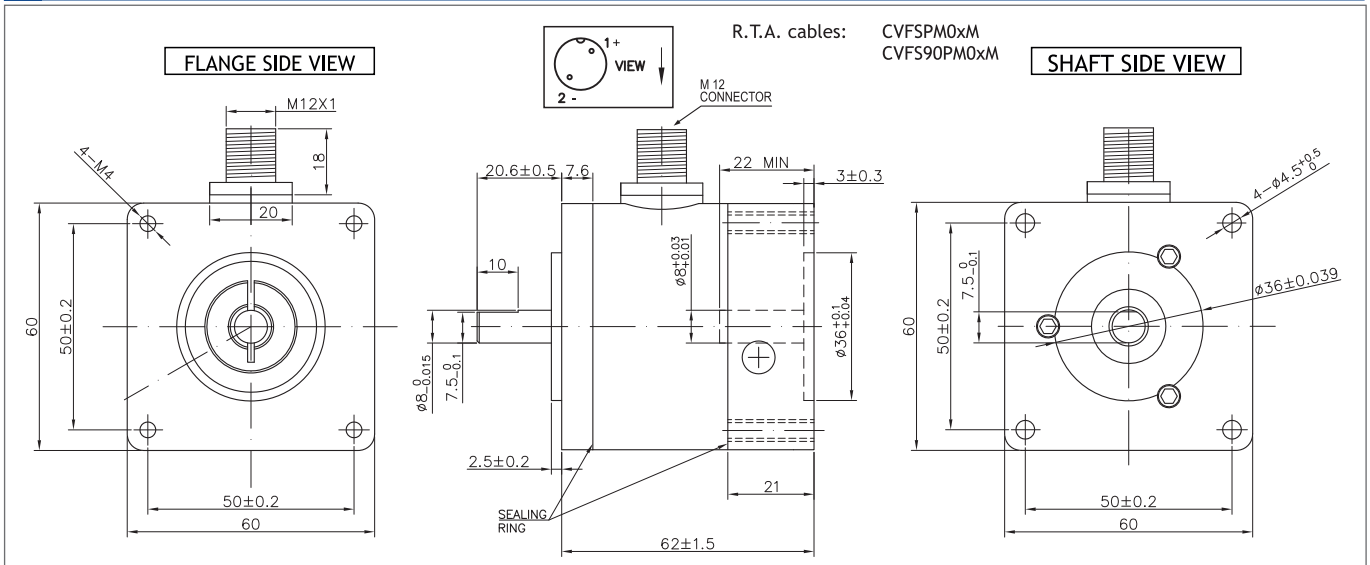
M12 CONNECTOR

24 VDC

NEMA 24

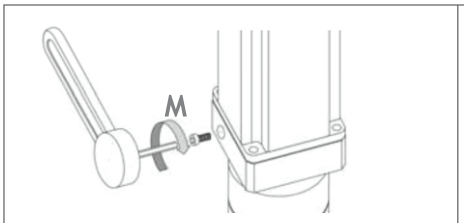
SCAN THE QR CODE TO WATCH A VIDEO ON FB SERIES FRONT BRAKES

Dimensions (Units:mm)



MODEL	Static torque (Nm)	Current (mA)	Voltage (V)	Power (W)	Release time (ms)	Mass (Kg)
FB-M12-24-15-00000	1.5	460	24 VDC	11.0	100	0.57

Suggested motors and cables



NEMA 24 motors

R.T.A. cables

Shield
Red +
Yellow -

CVFSPM0xM x=1m/3m

CVFS90PM0xM x=1m/3m

MOUNTING OPERATION MODE: ■ Tightening torque M=3.4 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

FB-M12-34-35-00000

FRONT BRAKES

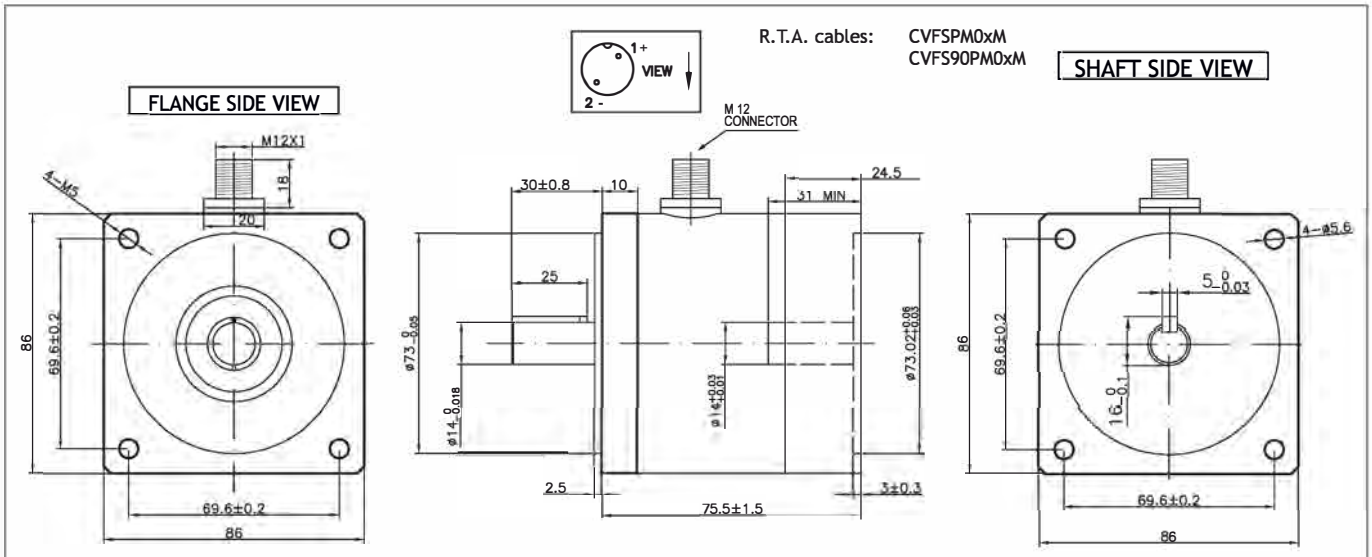
M12 CONNECTOR

24 VDC

NEMA 34

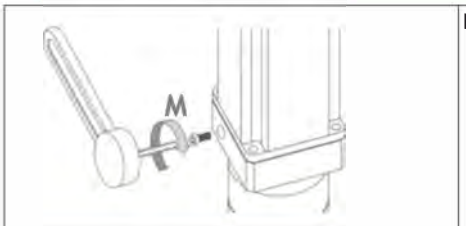
SCAN THE QR CODE TO WATCH A VIDEO ON FB SERIES FRONT BRAKES

Dimensions (Units:mm)



MODEL	Static torque (Nm)	Current (mA)	Voltage (V)	Power (W)	Mass (Kg)
FB-M12-34-35-00000	3.5	460	24 VDC	11.0	1.61

Suggested motors and cables



NEMA 34 motors

R.T.A. cables

CVFSPM0xM x=1m/3m

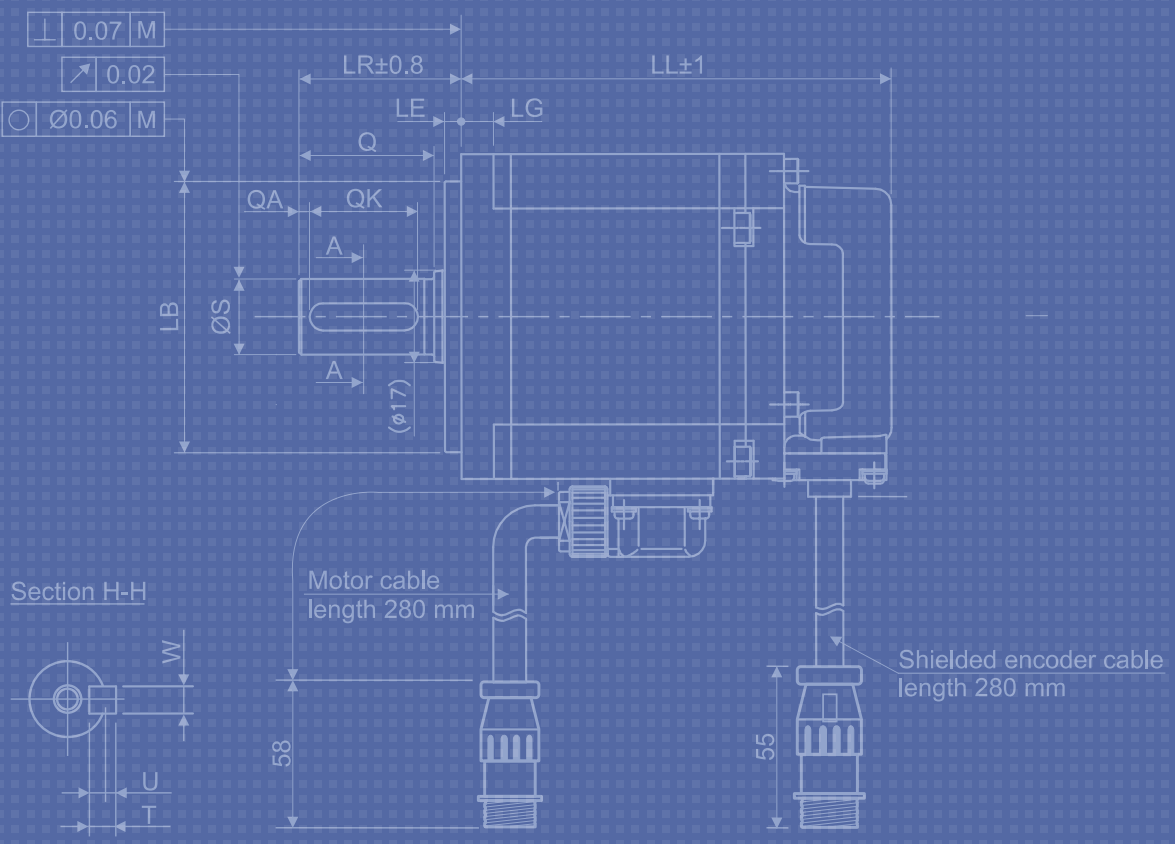
CVFS90PM0xM x=1m/3m

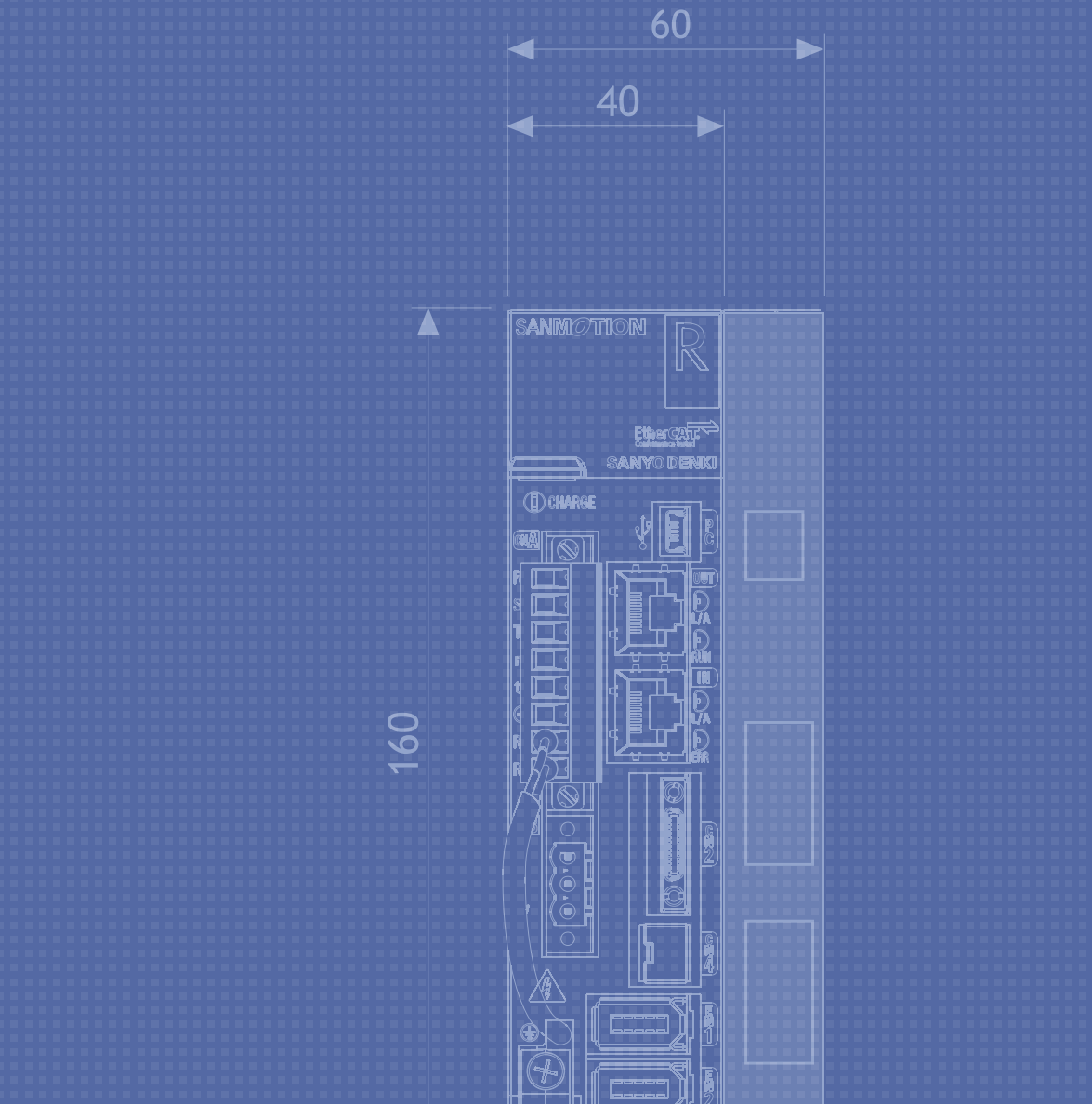
MOUNTING OPERATION MODE: ■ Tightening torque M= 8 Nm ■ Locking bolt M5 ■ R.T.A. Quality Control

ACCESSORIES - FRONT BRAKES - CABLE OPTIONS

	BRAKE CABLE
FB-M12-34-35-00000	CVFSPM01M/CVFSPM03M CVFS90PM01M/CVFS90PM03M
FB-M12-24-15-0000	CVFSPM01M/CVFSPM03M CVFS90PM01M/CVFS90PM03M

SERVO SYSTEMS


0.07 M
0.02
Ø0.06 M
LR±0.8
LL±1
LE
LG
Q
QA
QK
A
A
LB
ØS
(ø17)
Section H-H
W
U
T
Motor cable
length 280 mm
58
55
Shielded encoder cable
length 280 mm


60
40
160
SANMOTION
R
SANYO DENKI
CHARGE

SERVO SYSTEMS

INDEX

Servoamplifiers: 3 series, 17 models

3rd GENERATION SERVOAMPLIFIERS

1 48 VDC SERVOAMPLIFIERS

EtherCAT - single axis

- 48 VDC main power supply
- 24 VDC control power supply
- Amplifier Capacity: 40 A
- Speed Frequency response 800 Hz
- Built-in Dynamic Brake
- Built-in Regenerative Resistor
- Safe Torque Off (STO) - SIL 2 PL=d
- Two encoder inputs
- 6 Inputs / 2 Outputs
- Seven segments display monitor
- Protection functions

EtherCAT - multi axes

- 48 VDC main power supply
- 24 VDC control power supply
- Amplifier Capacity: 40 A
- Speed Frequency response 800 Hz
- Optional External Regenerative Resistor
- Safe Torque Off (STO) - SIL 3 PL=e
- 8 Inputs / 8 Outputs
- Led display monitor
- Protection functions

Pulse Train

- 48 VDC main power supply
- 5 VDC control power supply
- Amplifier Capacity: 40 A
- Speed Frequency response 1,2 KHz
- Built-in Dynamic Brake
- 8 Inputs / 8 Outputs
- Led display monitor
- Protection functions

EtherCAT® | 48 VDC | PULSE TRAIN | ADVANCED MODEL | SIL 3 SAFE TORQUE OFF (STO) | c UL us

2 230 VAC SERVOAMPLIFIERS

EtherCAT

- 230 VAC power supply
- Amplifier capacity: 30 A, 50 A, 100 A
- Speed Frequency response 2,2 KHz
- Built-in Dynamic Brake
- Built-in Regenerative Resistor
- Safe Torque Off (STO) - SIL 3 PL=e
- Advanced Safety Functions available: STO, SS1, SS2, SLS, SOS, SBC, SSM
- Two encoder inputs
- 7 Inputs / 2 Outputs

Pulse Train - Analog Input

- 230 VAC power supply
- Amplifier capacity: 20 A, 30 A, 50 A, 100 A
- Speed Frequency response 2,2 KHz
- Built-in Dynamic Brake
- Optional External Regenerative Resistor
- Safe Torque Off (STO) - SIL 3 PL=e
- 8 Inputs / 8 Outputs

EtherCAT® | 230 VAC | PULSE TRAIN ANALOG INPUT | BATTERY-LESS | SIL 3 SAFE TORQUE OFF (STO) | c UL us

3 400 VAC SERVOAMPLIFIERS

EtherCAT

- 400 VAC power supply
- Amplifier capacity: 50 A, 100 A
- Speed Frequency response 2,2 KHz
- Safe Torque Off (STO) - SIL 3
- Two encoder inputs

Pulse Train - Analog Input

- 400 VAC power supply
- Amplifier capacity: 50 A, 100 A, 150 A
- Speed Frequency response 2,2 KHz
- Safe Torque Off (STO) - SIL 3

EtherCAT® 400 VAC PULSE TRAIN ANALOG INPUT SIL 3 SAFE TORQUE OFF (STO) c UL us

Main features

- Simultaneous access to all parameters through the "Group/Page" Interface.
- Intuitive graphic interface for I/O settings.
- Advanced jogging for mechanics testing.
- Real-time autotuning function.
- Efficient warnings control system for real-time diagnosis.
- Embedded oscilloscope for results checking.
- STO function available.

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SERVOAMPLIFIERS

2 Families: VDC servomotors and VAC servomotors, 4 series with +40 models

1 48 VDC SERVOMOTORS - INCREMENTAL ENCODER

- Nominal Power: 50W, 100W, 200W
- Nominal Torque: From 0,159 Nm to 0,637 Nm
- Maximum torque: From 0,54 Nm to 1,5 Nm
- Encoder resolution: 131072 imp/rev (17 bit)

48 VDC | IP 67 | ULTRA COMPACT SIZE | c UL us

2 230 VAC SERVOMOTORS - BATTERY LESS MULTI-TURN ABSOLUTE ENCODER

- Nominal Power: 100W, 200W, 400W, 750W, 1000W, 3000W
- Nominal Torque: From 0,286 Nm to 7,2 Nm
- Maximum torque: From 1,18 Nm to 20,5 Nm
- Single-turn Encoder resolution: 131072 imp/rev (17 bit)
- Multi-turn Encoder resolution: 65537 turns

230 VAC | BATTERY-LESS ABSOLUTE ENCODER | IP 67 | ULTRA COMPACT SIZE | c UL us

3 230 VAC SERVOMOTORS - INCREMENTAL ENCODER

- Nominal Power: 100W, 200W, 400W, 750W, 1000W, 1500W, 1800W, 2000W, 3000W
- Nominal Torque: From 0,318 Nm to 9,7 Nm
- Maximum torque: From 1,18 Nm to 21,4 Nm
- Encoder resolution: 131072 imp/rev (17 bit)

230 VAC | IP 67 | ULTRA COMPACT SIZE | c UL us

4 400 VAC SERVOMOTORS - BATTERY LESS MULTI-TURN ABSOLUTE ENCODER

- Nominal Power: 3500W, 4500W, 15000W
- Nominal Torque: From 1700 Ncm to 9500 Ncm
- Maximum torque: From 4900 Ncm to 14000 Ncm
- Single-turn Encoder resolution: 131072 imp/rev (17 bit)
- Multi-turn Encoder resolution: 65536 turns (16 bit)

400 VAC | BATTERY-LESS ABSOLUTE ENCODER | IP 67 | ULTRA COMPACT SIZE | c UL us

5 400 VAC SERVOMOTORS - INCREMENTAL ENCODER

- Nominal Power: 3500W, 4500W, 15000W
- Nominal Torque: From 1700 Ncm to 9500 Ncm
- Maximum torque: From 4900 Ncm to 21500 Ncm
- Encoder resolution: 131072 imp/rev (17 bit)

400 VAC | IP 67 | ULTRA COMPACT SIZE | c UL us

Table of contents

SERVOMOTORS

SERVOMOTORS

	NOMINAL POWER (W)	NOMINAL SPEED (rpm)	MAX SPEED (rpm)	NOMINAL TORQUE (Nm)	STALL TORQUE (Nm)	MAX TORQUE (Nm)	INERTIA (Kg x m^2)	FLANGE SIZE (mm)	PAGE
400 VAC Servomotors Battery Less Multi-turn Absolute Encoder									
R2CA18350LXR00M	3500	2000	3000	17.0	22.0	49.0	$40x10^{-4}$	180	357
R2CA18450HXR00M	4500	2000	3500	21.5	30.0	75.0	$50x10^{-4}$	180	358
R2CA18750HCR00M	7500	1500	3000	48.0	54.9	140	$98x10^{-4}$	180	359
400 VAC Servomotors Incremental Encoder									
R2CA18350LXH00M	3500	2000	3000	17.0	22.0	49.0	$40x10^{-4}$	180	361
R2CA18450HXH00M	4500	2000	3500	21.5	30.0	75.0	$50x10^{-4}$	180	362
R2CA2215KVXH00M	15.000	1500	2000	95.0	95.0	215	$288x10^{-4}$	220	363

SERVO SYSTEMS

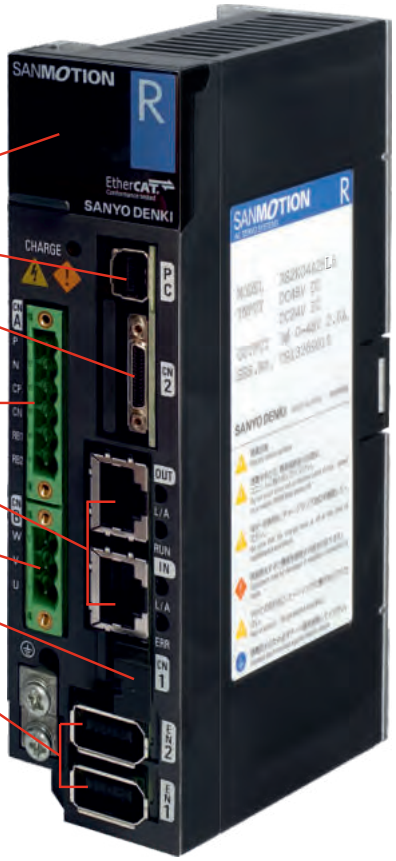
48 VDC SERVOAMPLIFIERS

For cable options please see the table at the end of the section.

SANMOTION R AC SERVO SYSTEMS | ADVANCED MODEL | SIL2 SAFE TORQUE OFF (STO) | 48 VDC | ULTRA COMPACT SIZE | EtherCAT®

48 VDC SERVOAMPLIFIERS

R Advanced series - 48VDC EtherCAT servo drive with STO



FIVE DIGIT DISPLAY: it allows to monitor amplifier and EtherCAT Network.

Rs232 PC INTERFACE: set up and monitor by SanMotion Motor Setup

I/O CONNECTOR: 6 inputs and 2 outputs user configurable.

INPUT POWER SUPPLY CONNECTORS: two separated power supplies. One for the control board (24VDC), and one for the power stage (48VDC). Built in protection against overload and input overvoltage.

EtherCAT **INTERFACE CONNECTORS:** RJ45

MOTOR POWER CONNECTORS

SAFE TORQUE OFF - SIL2 CONNECTOR

ENCODER CONNECTORS - Second encoder for external linear scale to avoid backlash.

MAIN FEATURES

- Amplifier capacity: 40A
- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode.
- Speed frequency response of 800 Hz
- EtherCAT cycle time: up to 125 microsec
- External Regenerative Resistor (optional)
- Built-In Dynamic Brake
- Safe Torque Off(STO) Function: SIL2, IEC62061 : SILCL2, ISO 13894-1 Cat3 : PL=d
- RS2K04A2HL5 amplifier covers motors from 20W to 200W

Dimensions:
mm 40x160x85
Model: RS2K04A2HL5

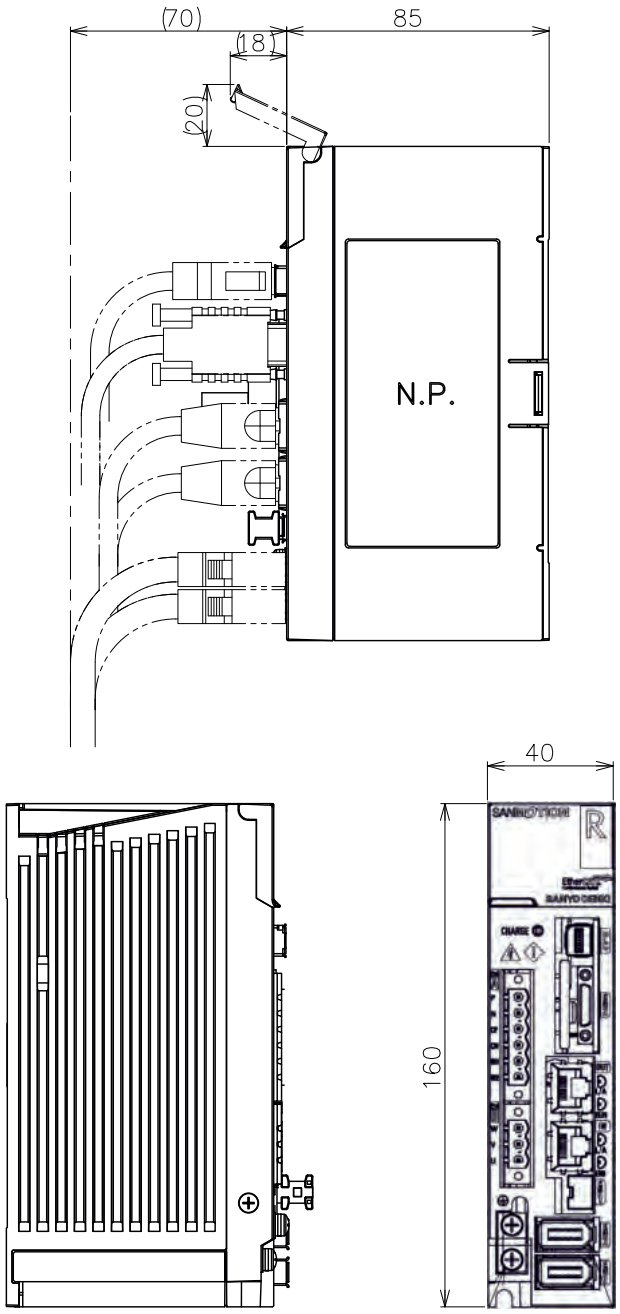
c UL us

TECHNICAL DATA	EtherCAT control
MODEL	RS2K04A2HL5
MAX CURRENT	40 A
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE	48 VDC (±10%)
LOGIC SUPPLY VOLTAGE	24 VDC (±10%)
DIMENSIONS (mm)	40x160x85
MASS (kg)	0,50 Kg

SANMOTION R AC SERVO SYSTEMS ADVANCED MODEL SIL2 SAFE TORQUE OFF (STO) 48 VDC ULTRA COMPACT SIZE EtherCAT®

48 VDC SERVOAMPLIFIERS

R Advanced series - 48VDC EtherCAT servo drive with STO



SANMOTION R AC SERVO SYSTEMS ADVANCED MODEL SIL3 SAFE TORQUE OFF (STO) 48 VDC 4 AXIS SYSTEM EtherCAT®

48 VDC SERVOAMPLIFIERS

1 DRIVE 4 MOTORS

R Advanced series - 48VDC 4 AXIS EtherCAT servo drive with STO

INPUT POWER SUPPLY CONNECTORS: two separated power supply. One for the control board (24VDC), and one for the power stage (48VDC). Built in protection against overload and input overvoltage.

LED DISPLAY STATUS MONITOR: it allows to monitor the status of the amplifier.

EXTERNAL REGENERATIVE RESISTOR (Optional)

I/O CONNECTORS: 8 Inputs + 8 Outputs user configurable.

ENCODER CONNECTORS

Rs232 PC INTERFACE: set up and monitor by SanMotion Motor Setup

! **SAFE TORQUE OFF - SIL3 CONNECTOR** SIL3 SAFE TORQUE OFF (STO)

EtherCAT **INTERFACE CONNECTORS:** RJ45

MOTOR POWER CONNECTORS

Dimensions:
mm 50x200x130
Model: RF2K24A0HL5

c UL us

MAIN FEATURES

- Amplifier capacity: 40A
- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode.
- Speed frequency response of 800 Hz
- EtherCAT cycle time: up to 125 microsec
- External Regenerative Resistor (optional)
- Safe Torque Off(STO) Function: SIL3/IEC61508. PL=e/ISO 13894-1
- RF2K24A0HL5 amplifier covers motors up to 300W (4 axes)

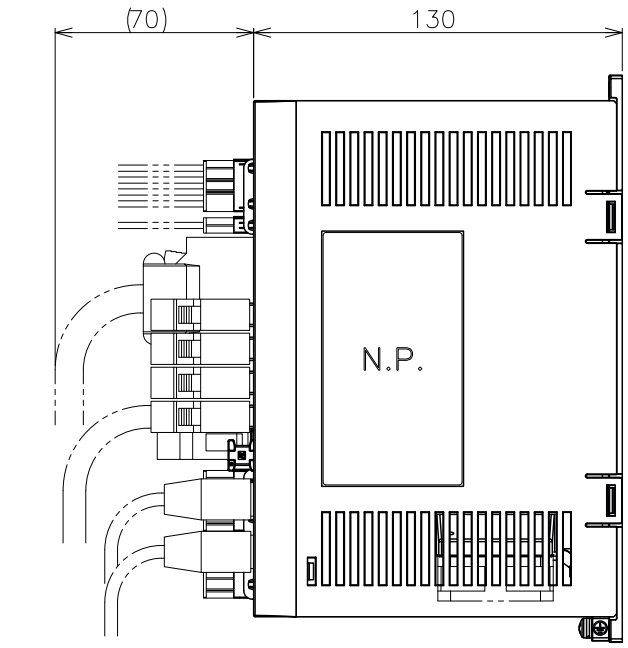
TECHNICAL DATA	EtherCAT control
MODEL	RF2K24A0HL5
MAX CURRENT	40 A
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE	48 VDC (±10%)
LOGIC SUPPLY VOLTAGE	24 VDC (±10%)
DIMENSIONS (mm)	50x200x130
MASS (kg)	0,8 Kg

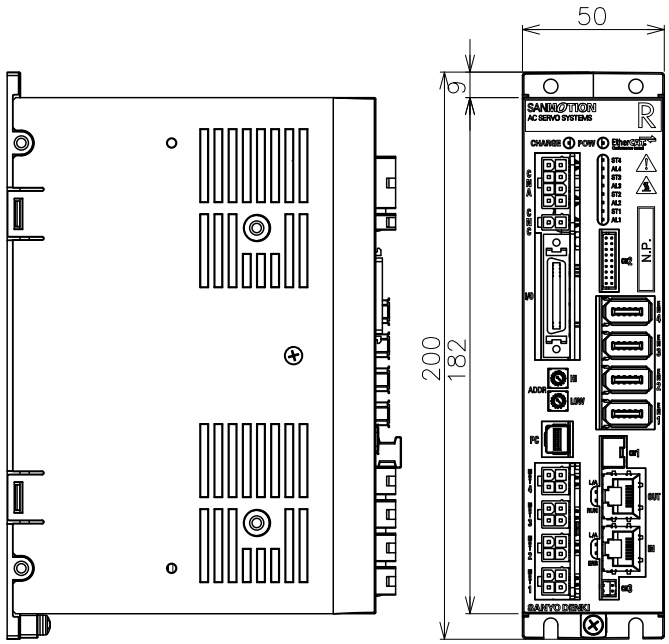
SANMOTION AC SERVO SYSTEMS R ADVANCED MODEL SIL3 SAFE TORQUE OFF (STO) 48 VDC 4 AXIS SYSTEM EtherCAT®

48 VDC SERVOAMPLIFIERS

1 DRIVE 4 MOTORS

R Advanced series - 48VDC 4 AXIS EtherCAT servo drive with STO





SANMOTION R AC SERVO SYSTEMS ADVANCED MODEL 48 VDC ULTRA COMPACT SIZE PULSE TRAIN

48 VDC SERVOAMPLIFIERS

R Advanced series - 48 VDC Pulse-Train interface servodrive

INPUT POWER SUPPLY CONNECTORS: two separated power supplies. One for the control board (5VDC), and one for the power stage (48VDC). Built in protection against overload and input overvoltage.

LED DISPLAY STATUS MONITOR: it allows to monitor the status of the amplifier.

I/O CONNECTOR: pulse train input (clock + direction; forward + backward pulse; 90 phase shift) - - encoder output.

I/O CONNECTOR: 8 inputs + 8 outputs user configurable.

ENCODER CONNECTOR

MOTOR POWER CONNECTORS

Rs232 PC INTERFACE: set up and monitor by SanMotion Motor Setup

Dimensions:
mm 30x116x70
Model: RF2G21A0AA0

MAIN FEATURES

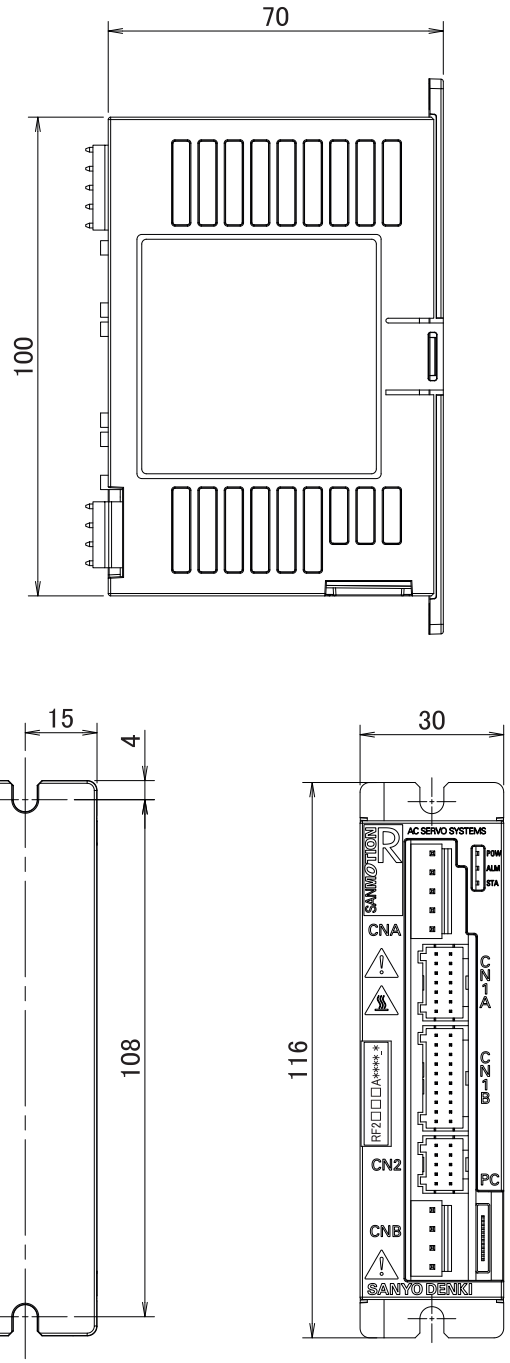
- Amplifier capacity: 40A
- Speed frequency response of 1,2 KHz
- Built-In Dynamic Brake
- RF2G21A0A00 amplifier covers motors from 20W to 200W

TECHNICAL DATA	POSITION
MODEL	RF2G21A0AA0
MAX CURRENT	40 A
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE	48 VDC (±10%)
LOGIC SUPPLY VOLTAGE	5 VDC (± 5%)
DIMENSIONS (mm)	30x116x70
MASS (kg)	0,25 Kg

SANMOTION R AC SERVO SYSTEMS ADVANCED MODEL 48 VDC ULTRA COMPACT SIZE PULSE TRAIN

48 VDC SERVOAMPLIFIERS

R Advanced series - 48 VDC Pulse-Train interface servodrive



SERVO SYSTEMS

230 VAC SERVOAMPLIFIERS

For cable options please see the table at the end of the section.

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | EtherCAT® | 3rd GENERATION!

230 VAC SERVOAMPLIFIERS

RS3 SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE & STO

FIVE DIGIT DISPLAY: It allows to monitor amplifier and EtherCAT Network.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer USB interface.

POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power. Built-in protection circuits against overload and input overvoltage.
Internal regenerative resistor. External regenerative resistor (optional)

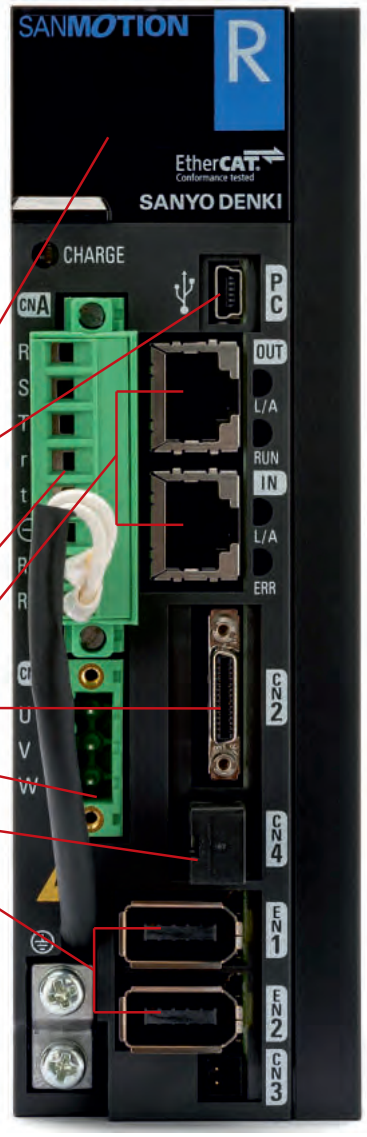
EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e.

I/O CONNECTOR: 7 inputs and 2 outputs.

MOTOR POWER CONNECTOR

! SAFE TORQUE OFF - SIL3 CONNECTOR

! **SECOND ENCODER CONNECTOR FOR EXTERNAL LINEAR SCALE TO AVOID BACKLASH**



Dimensions:
(50x160x130)
Model RS3A03A2HA4W00P

c UL us

MAIN FEATURES OF THE 3rd GENERATION

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode.
- Touch Probe Function.
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]
- Safe Torque Off (STO) function - SIL3/IEC61508. Performance Level - PL = e/ISO13849-1
- RS3A03A2HA4W00P covers 100W, 200W, 400W, 750W, 1000W, 1500W motors

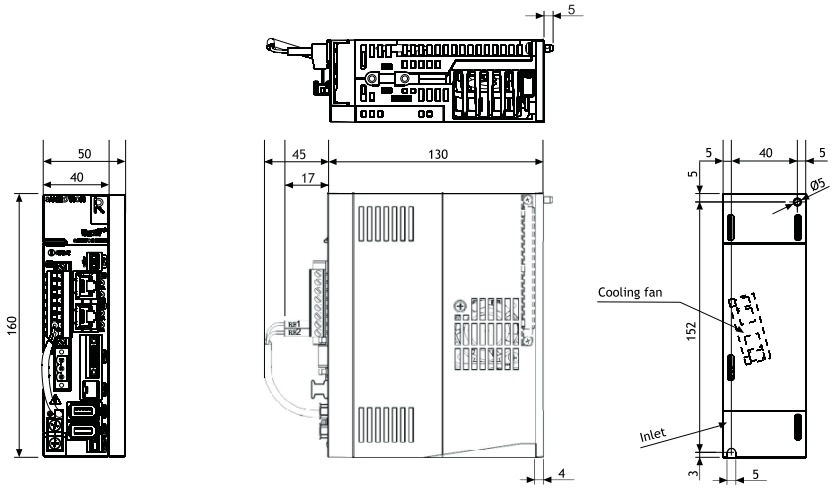
TECHNICAL DATA	EtherCAT Control		
MODEL	RS3A03A2HA4W00P	RS3A05A2HA4W00P	RS3A10A2HA4W00P
MAX CURRENT	30 Amp	50 Amp	100 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current		
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200 VAC or 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
LOGIC SUPPLY VOLTAGE	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
DIMENSIONS (mm)	50x160x130	85x160x130	100x235x220
MASS (kg)	0.9	1.65	4.2

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | EtherCAT®

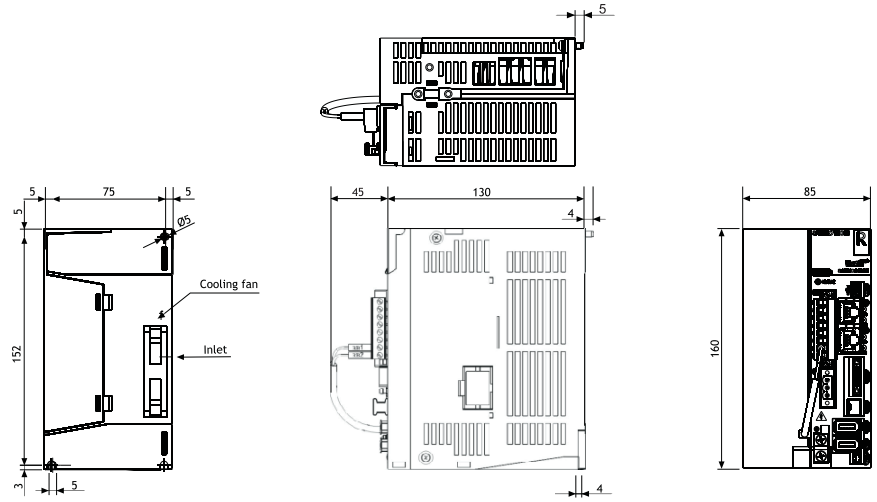
"RS3A" SERIES AC SERVOAMPLIFIERS:

EtherCAT VERSION OUTLINE DRAWINGS

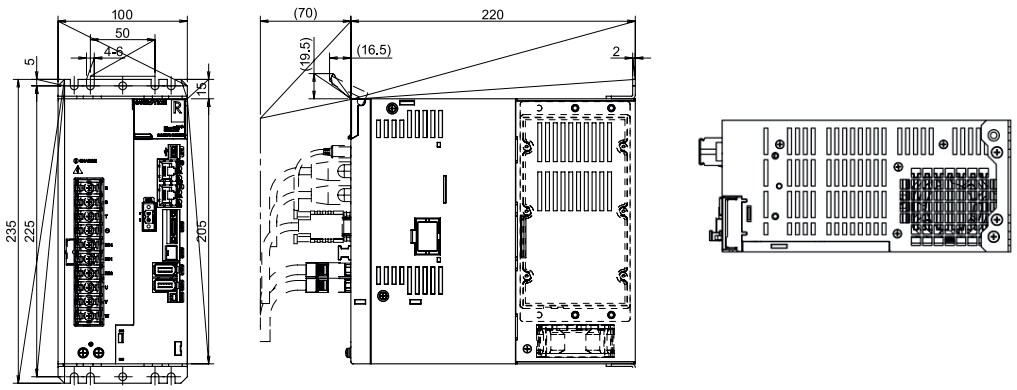
RS3A03A2HA4W00P



RS3A05A2HA4W00P



RS3A10A2HA4W00P



Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | EtherCAT

3rd GENERATION!

230 VAC SERVOAMPLIFIERS

ADVANCED SAFETY MODULE

RS3 SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE & STO

FIVE DIGIT DISPLAY: It allows to monitor amplifier and EtherCAT Network.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer USB interface.

POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power. Built-in protection circuits against overload and input overvoltage.
Internal regenerative resistor. External regenerative resistor (optional)

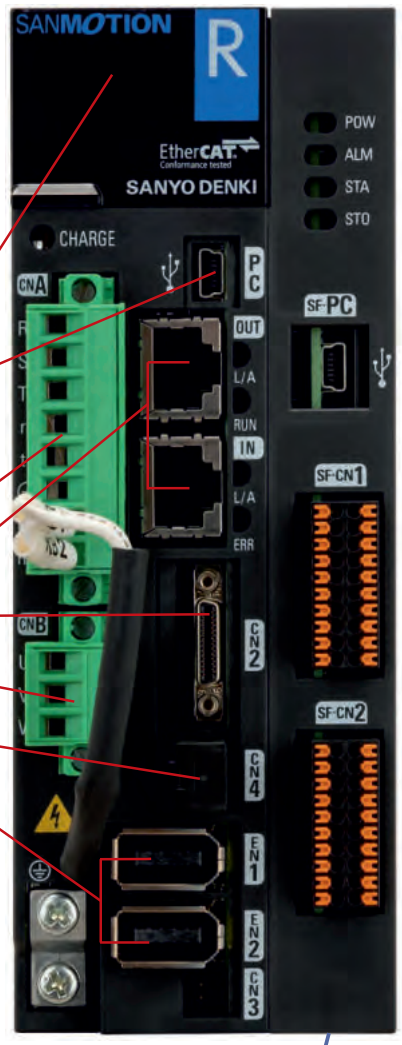
EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e.

I/O CONNECTOR: 7 inputs and 2 outputs.

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE

SAFE TORQUE OFF SIL3 CONNECTOR SIL3

SECOND ENCODER CONNECTOR FOR EXTERNAL LINEAR SCALE TO AVOID BACKLASH



Dimensions:
(60x160x130)
Model RS3A03A2HAE

ADVANCED SAFETY MODULE

MAIN FEATURES OF THE 3rd GENERATION

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode.
- Touch Probe Function.
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]
- Safe Torque Off (STO) function - SIL3/IEC61508. Performance Level - PL = e/ISO13849-1
- One single size covers 100W, 200W, 400W, 750W, 1000W, 1500W motors

c UL us

TECHNICAL DATA	EtherCAT Control
MODEL	RS3A03A2HAE
MAX CURRENT	30 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200 VAC or 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC SUPPLY VOLTAGE	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
DIMENSIONS (mm)	60x160x130
MASS (kg)	1.1

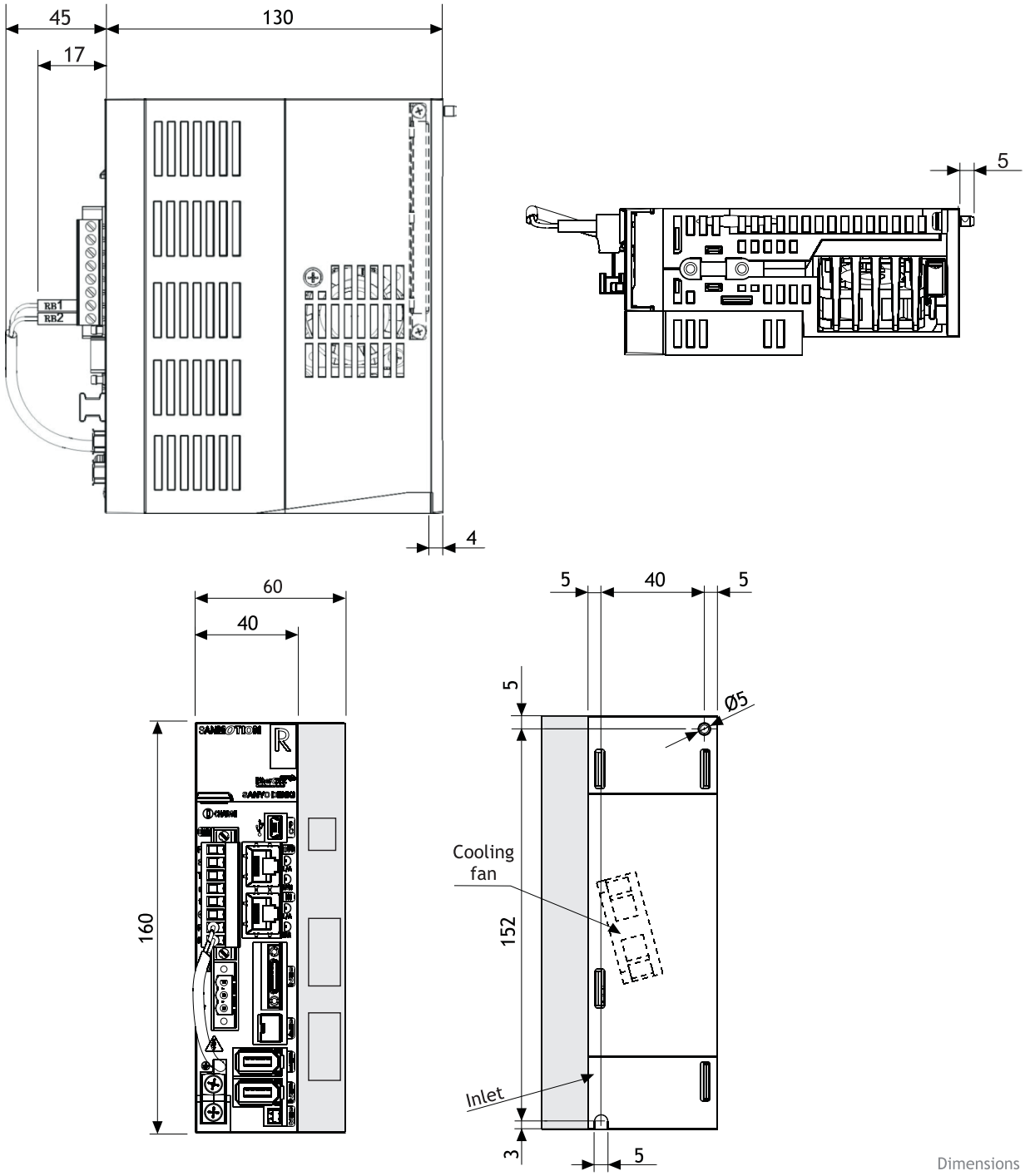
SAFETY FUNCTION SPECIFICATIONS	
	DESCRIPTION
STO	SAFE TORQUE OFF
SS1	SAFE STOP 1
SS2	SAFE STOP 2
SOS	SAFE OPERATING STOP
SLS	SAFELY-LIMITED SPEED
SBC	SAFE BRAKE CONTROL
SSM	SAFE SPEED MONITOR

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | ADVANCED SAFETY MODULE | EtherCAT

"RS3A" SERIES AC SERVOAMPLIFIERS:

EtherCAT VERSION OUTLINE DRAWINGS

RS3A03A2HAE



Dimensions mm.

SANMOTION G
AC SERVO SYSTEMS

EtherCAT®

SIL3
SAFE TORQUE OFF (STO)

c UL us

7th gen

230 VAC G SERVOAMPLIFIERS

EtherCAT INTERFACE

FIVE DIGIT DISPLAY: It allows to monitor in real time the amplifier status

Fast Plug-in connector

PC CONNECTOR: The amplifier can be set and monitored by SanMotion motor setup and a Personal Computer USB 3.0 interface

POWER CONNECTION: 230 VAC, single-phase / three-phase;
Built-in protection circuits against overload and input overvoltage

EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e

Regenerative internal resistor or external regenerative resistor (optional);
Regenerative resistor and logic power supply connector

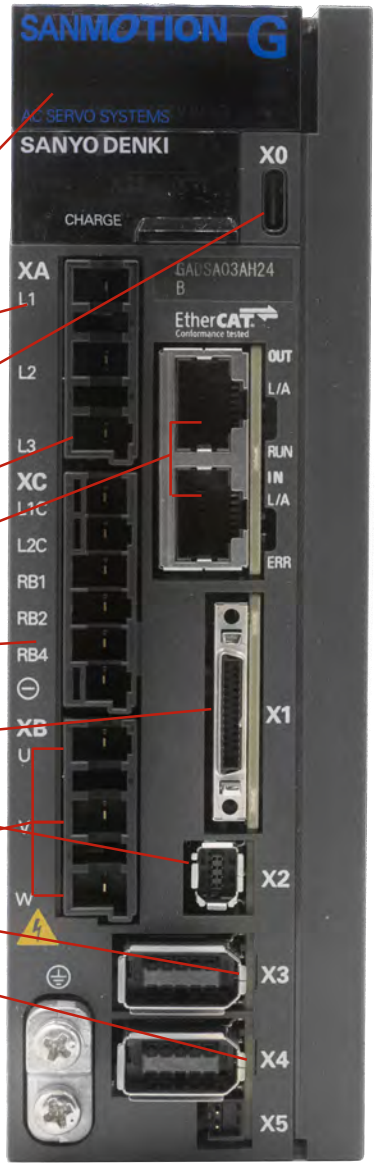
I/O CONNECTOR: 7 inputs and 2 outputs
Encoder output repetition connector NEW!

SAFE TORQUE OFF - SIL3 Pl=e CONNECTOR SIL3

MOTOR POWER CONNECTOR (U-V-W phases)

ENCODER CONNECTOR (X3)

SECOND ENCODER CONNECTOR (X4) for external linear scale to avoid backlash



Model GADSA03AH24
Dimensions: (50x160x130)

MAIN FEATURES

- Safe Torque O ff(STO) function - SIL3 [Performance Level - PL = E]
- Mode of Operations: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode
- One single amplifier size covers from 100 W to 1.5 kW motors
- XML file available
- Speed frequency response of 3.5 kHz

TECHNICAL DATA

MODEL	GADSA03AH24
CURRENT CAPACITY	30 Amp
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200VAC or 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC POWER SUPPLY	Single-phase from 200VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
MAX COMPATIBLE MOTOR OUTPUT	1.5 kW
DIMENSIONS (mm)	50x160x130
Mass (kg)	0.90 kg

SANMOTION G AC SERVO SYSTEMS

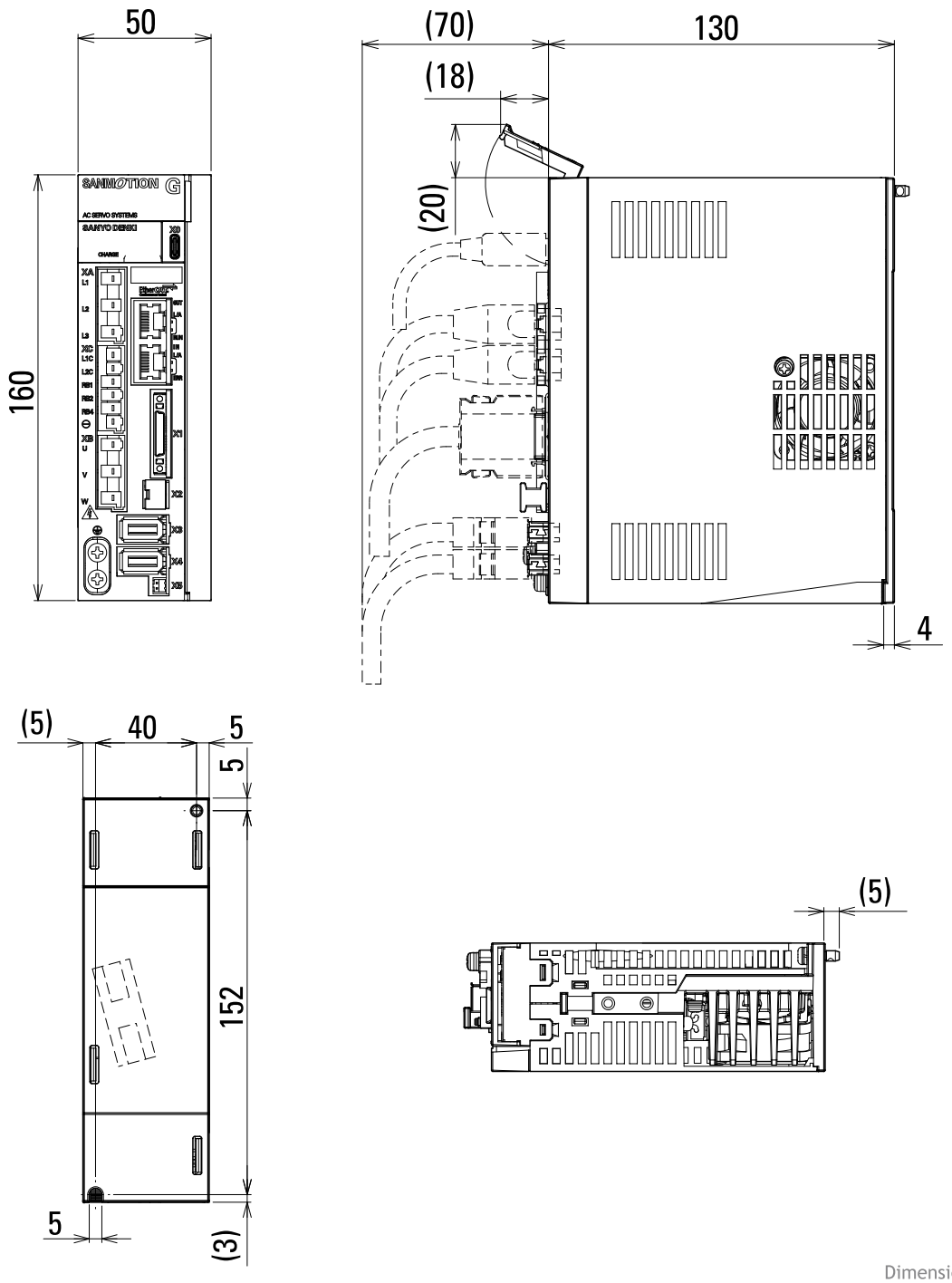
EtherCAT®

SIL3 SAFE TORQUE OFF (STO)

c UL us

230 VAC G SERVOAMPLIFIERS

G SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE



Dimensions mm.

SANMOTION G AC SERVO SYSTEMS

EtherCAT®

SIL3 SAFE TORQUE OFF (STO)

c UL us

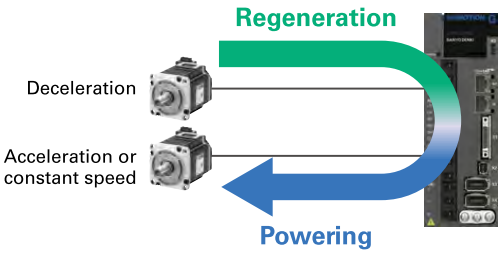
7th gen

2-Axis Integrated AC Servo Amplifier

G SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE

Why one 2-Axis servo amplifier is better than two 1-Axis servo amplifiers

- **Compact & lighter** than 2 servodrives
- **Reduced wiring**
- **Energy savings**
  The regenerative energy generated during the deceleration of one axis can be effectively reused to power the other axis
- Two axes can be **operated in Sync** and with simple commands
  A clever solution
- Two different motor powers can be controlled
  Tailor-made for customer needs



Main features

- Safe Torque Off (STO) function - SIL3 [Performance Level - PL = E]
- Mode of Operations: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode
- Axis 1/2 compatible with absolute encoder
- XML file available
- Speed frequency response of 3.5 kHz

TECHNICAL DATA		
MODEL	GADWA22AH14	GADWA33AH14
CURRENT CAPACITY	20 Amp x 2 axes	30 Amp x 2 axes
MAX COMPATIBLE MOTOR OUTPUT	800 W	1.5 kW
LOGIC POWER SUPPLY	Single-phase from 200VAC to 240 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200VAC or 240 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	

SANMOTION G
AC SERVO SYSTEMS

EtherCAT®

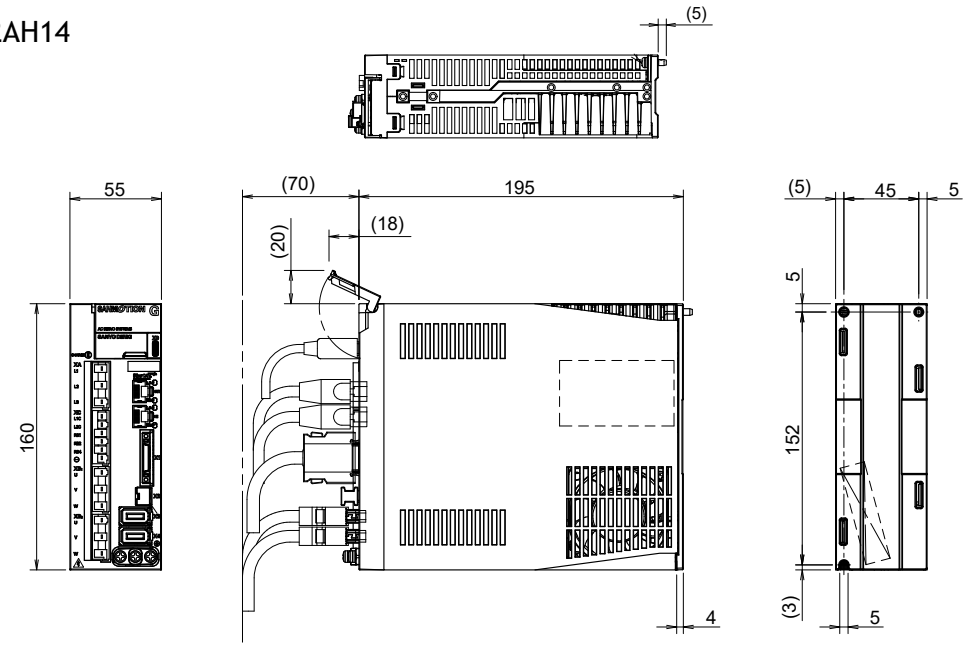
SIL3
SAFE TORQUE OFF (STO)

c UL us

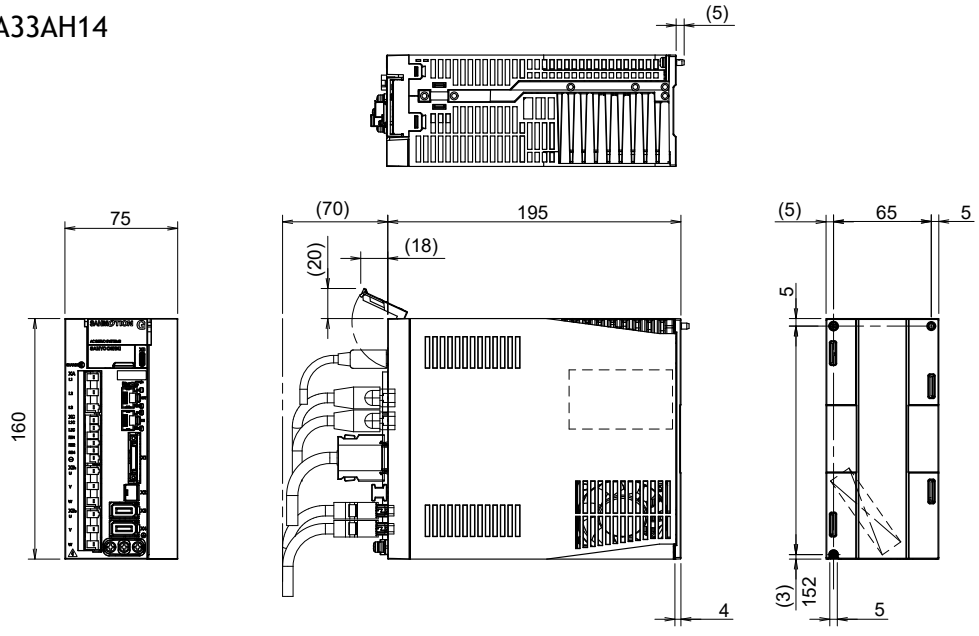
2-Axis Integrated AC Servo Amplifier

G SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE

GADWA22AH14



GADWA33AH14



Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE | 3rd GENERATION!

230 VAC SERVOAMPLIFIERS

RS3 SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE

FIVE DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behavior of the system.

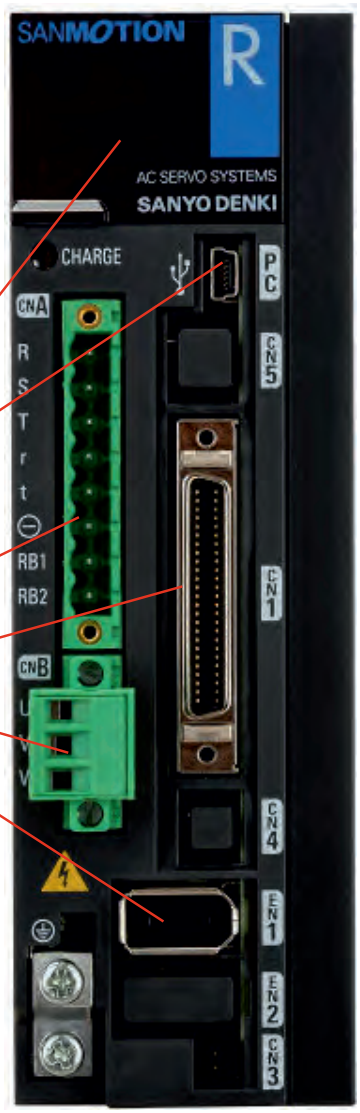
PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer USB interface.

POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.
External regenerative resistor (optional).

I/O CONNECTOR: Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs.

MOTOR POWER CONNECTOR

ENCODER CONNECTOR



MAIN FEATURES OF THE 3rd GENERATION

- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 models!]
- One single size covers 100W, 200W, 400W, 750W, 1000W, 1500W motors
- CN1 connector wiring fully compatible with previous RS1 models
- Sanmotion Motor Setup allows multitasking system settings

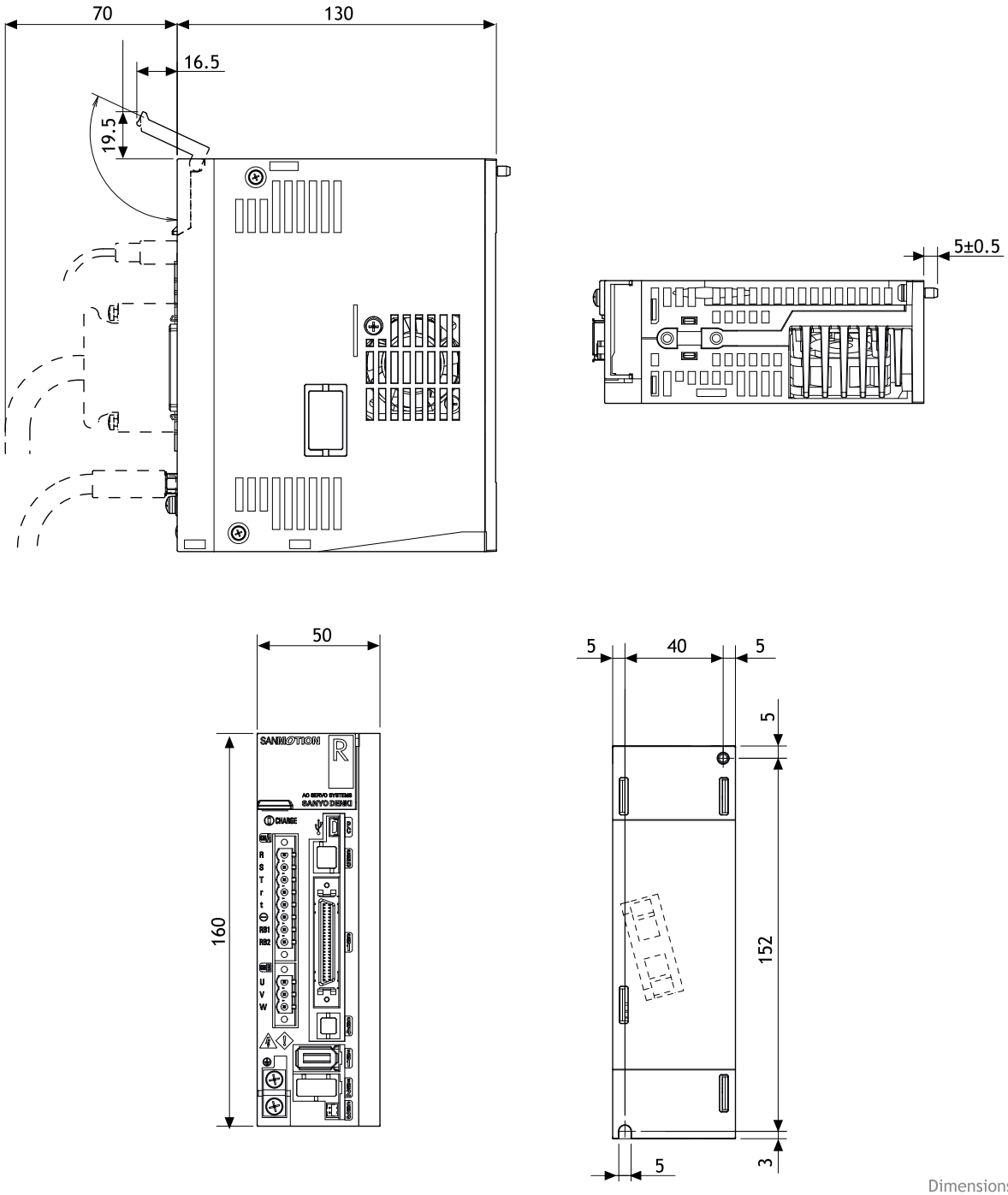
Dimensions:
(50x160x130)
RS3A03A0AL0W00P

TECHNICAL DATA	Position, Velocity, Torque Control Mode Switching available
MODEL	RS3A03A0AL0W00P
MAX CURRENT	30 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC SUPPLY VOLTAGE	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
DIMENSIONS (mm)	50x160x130
MASS (kg)	0.8

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE

"RS3A" SERIES AC SERVOAMPLIFIERS:
PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS

RS3A03A0AL0W00P



Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE | 3rd GENERATION!

230 VAC SERVOAMPLIFIERS

RS3 SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE

FIVE DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behavior of the system.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer USB interface.

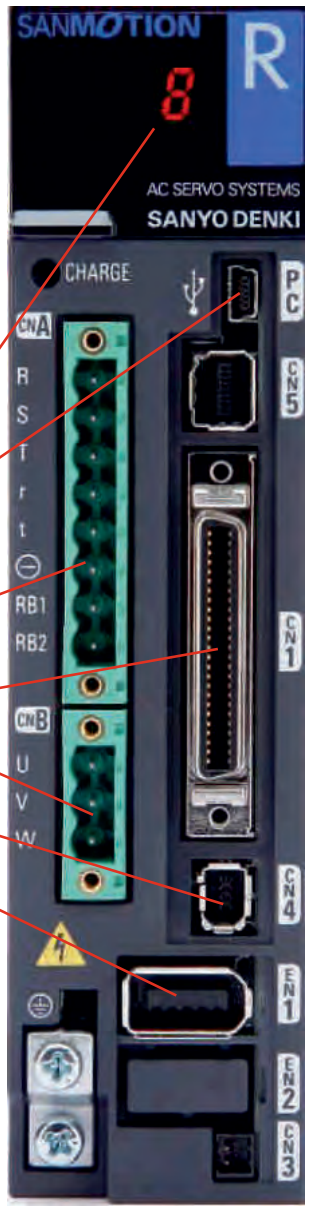
POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.
External regenerative resistor (optional).

I/O CONNECTOR: Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs setting by user.

MOTOR POWER CONNECTOR

! SAFE TORQUE OFF - SIL3 CONNECTOR SIL3 SAFE TORQUE OFF (STO)

ENCODER CONNECTOR



Dimensions:
(40x160x130)
Model RS3A02A0AL2

MAIN FEATURES OF THE 3rd GENERATION

SIL3 SAFE TORQUE OFF (STO)

- Safe Torque Off (STO) function - SIL3/IEC61508 Performance Level - PL = e/ISO13849-1
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]
- Ultra compact size - see photo

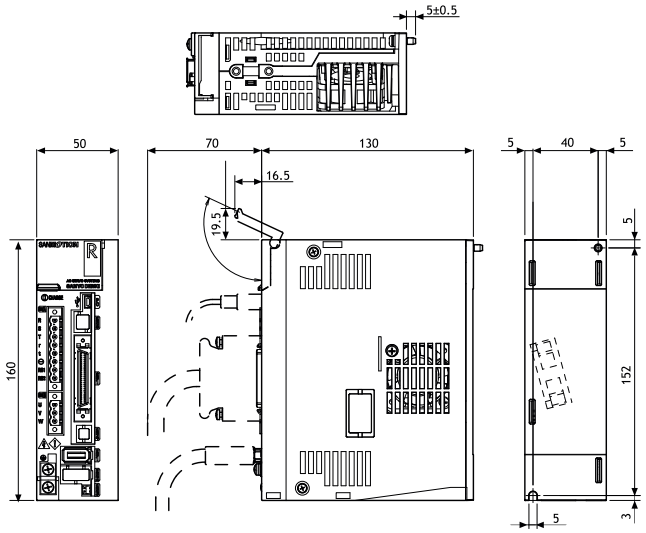
c UL us

TECHNICAL DATA	Position, Velocity, Torque (Control Mode Switching available)		
MODEL	RS3A03A0AL2	RS3A05A0AA2	RS3A10A0AA2
MAX CURRENT	30 Amp	50 Amp	100 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current		
POWER SUPPLY VOLTAGE	Single-phase or three-phase (configurable by the user) 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
LOGIC SUPPLY VOLTAGE	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
DIMENSIONS (mm)	50x160x130	85x160x130	100x235x220
MASS (kg)	0.85	1.55	4.2

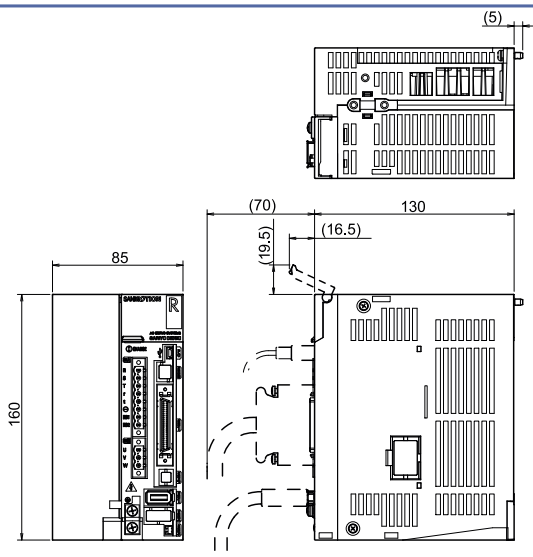
SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE

"RS3A" SERIES AC SERVOAMPLIFIERS:
PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS

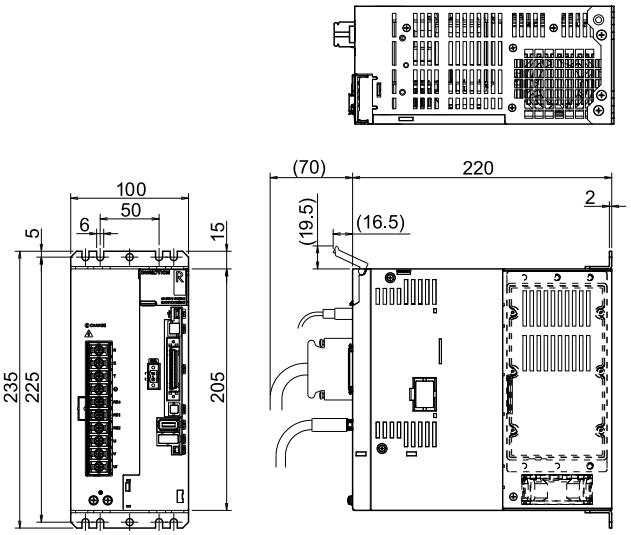
RS3A03A0AL2



RS3A05A0AA2



RS3A10A0AA2



Dimensions mm.

SERVO SYSTEMS

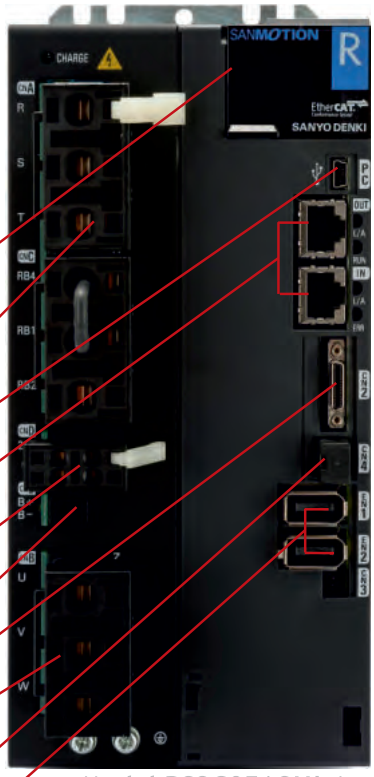
400 VAC SERVOAMPLIFIERS

For cable options please see the table at the end of the section.

SANMOTION AC SERVO SYSTEMS RS3C | 400 VAC | SIL3 SAFE TORQUE OFF (STO) | EtherCAT® | 3rd GENERATION!

400 VAC SERVOAMPLIFIERS

RS3C SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE



Model RS3C05A2HL4
Dimensions:
(100X235X235)

- FIVE DIGIT DISPLAY: It allows to monitor amplifier and EtherCAT Network.
- POWER CONNECTION: 400 VAC, three-phase. Built-in protection circuits against overload and input overvoltage.
- PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer USB interface.
- EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e.
- CONTROL POWER SUPPLY CONNECTOR 24 VDC.
- ! POWER SUPPLY MOTOR BRAKE EMBEDDED.
- I/O CONNECTOR: 7 inputs and 2 outputs configurable by user.
- MOTOR POWER CONNECTOR
- ! SAFE TORQUE OFF - SIL3 CONNECTOR
- ! **SECOND ENCODER CONNECTOR FOR EXTERNAL LINEAR SCALE TO AVOID BACKLASH**

MAIN FEATURES OF THE 3rd GENERATION

SIL3 SAFE TORQUE OFF (STO)

c UL us

- Safe Torque Off (STO) function - SIL3 [Performance Level - PL = e]
- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Cycle Sync Position Mode, Cycle Sync Velocity Mode, Cycle Sync Torque Mode
- Touch Probe Function
- XML file available
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]

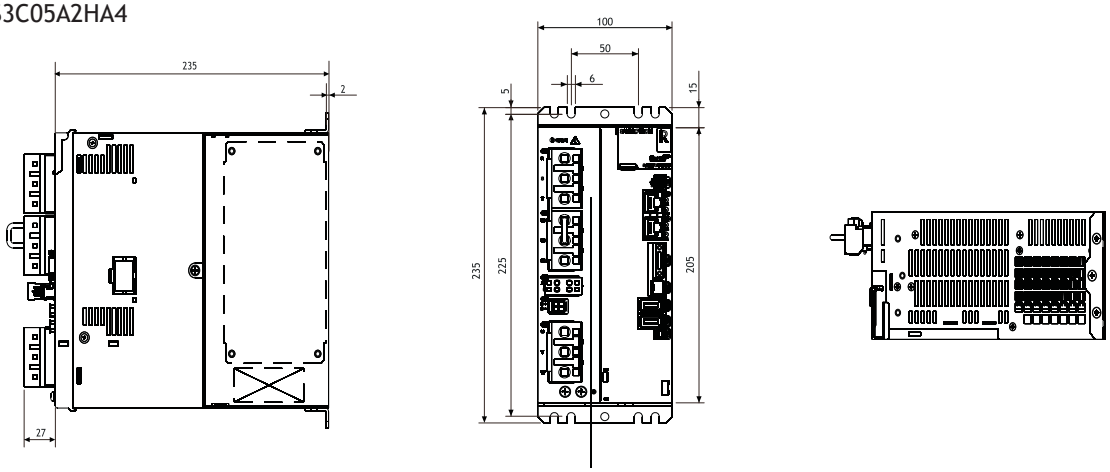
TECHNICAL DATA	EtherCAT Control		
MODEL	RS3C05A2HA4	RS3C10A2HA4	RS3C15A2HL4
MAX CURRENT	50 Amp	100 Amp	150 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current		
POWER SUPPLY VOLTAGE	Three-phase 380 VAC to 480 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
CONTROL POWER SUPPLY	24VDC +/- 10%		
DIMENSIONS (mm)	100x235x235	175x235x235	220x375x217
MASS (kg)	4.7	8.5	11.0

SANMOTION AC SERVO SYSTEMS RS3C | 400 VAC | SIL3 SAFE TORQUE OFF (STO) | EtherCAT®

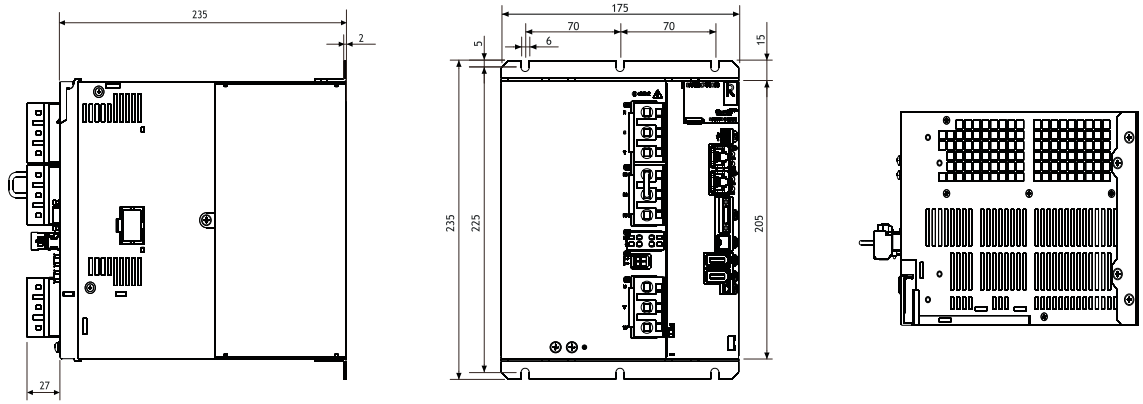
"RS3C" SERIES AC SERVOAMPLIFIERS:

EtherCAT VERSION OUTLINE DRAWINGS

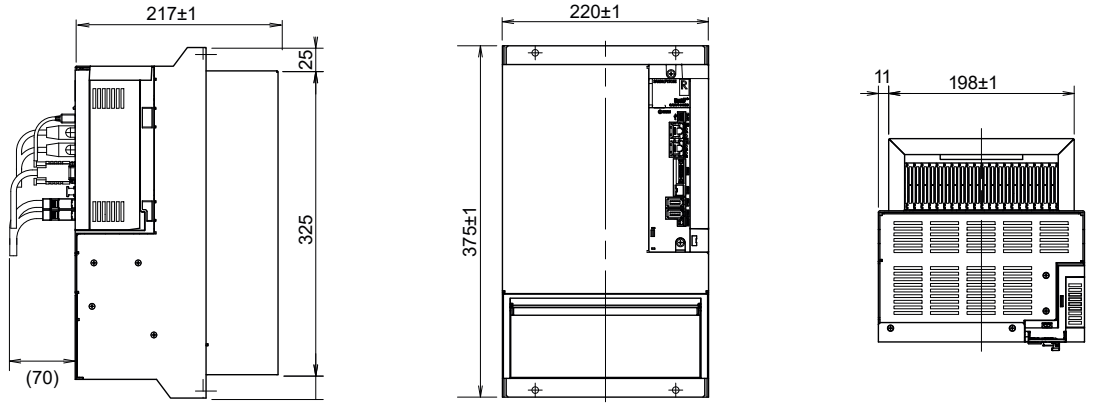
RS3C05A2HA4



RS3C10A2HL4



RS3C15A2HL4

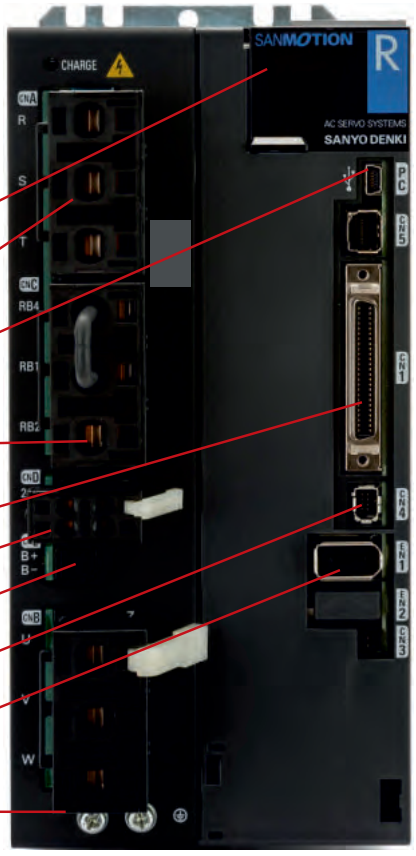


Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS3 | 400 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | 3rd GENERATION!

400 VAC SERVOAMPLIFIERS

RS3C SERIES AC SERVOAMPLIFIERS



SEVEN DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behaviour of the system.

POWER CONNECTION: 400 VAC, three-phase. Built-in protection circuits against overload and input overvoltage.

! PC CONNECTOR: The amplifier can be set and monitored by means of USB interface.

CONNECTION for external regenerative resistor (optional).

I/O CONNECTOR: Control pulse train (clock + direction; forward + backward pulse; 90° phase shift) or analog signal (proportional to speed or torque). 8 inputs and 8 outputs configurable by user.

CONTROL POWER SUPPLY CONNECTOR 24 VDC.

! POWER SUPPLY MOTOR BRAKE EMBEDDED.

SAFE TORQUE OFF - SIL3 CONNECTOR SIL3 SAFE TORQUE OFF (STO)

ENCODER CONNECTOR

MOTOR POWER CONNECTION

MAIN FEATURES OF THE 3rd GENERATION

- Safe Torque Off (STO) function - SIL3/IEC61508
  Performance Level - PL = e/ISO13849-1
- Speed frequency response of 2.2 kHz [3.3 times that of previous RS1 model!]

Model RS3C05A0AA2
Dimensions:
(100X235X235)

SIL3 SAFE TORQUE OFF (STO)

c UL us

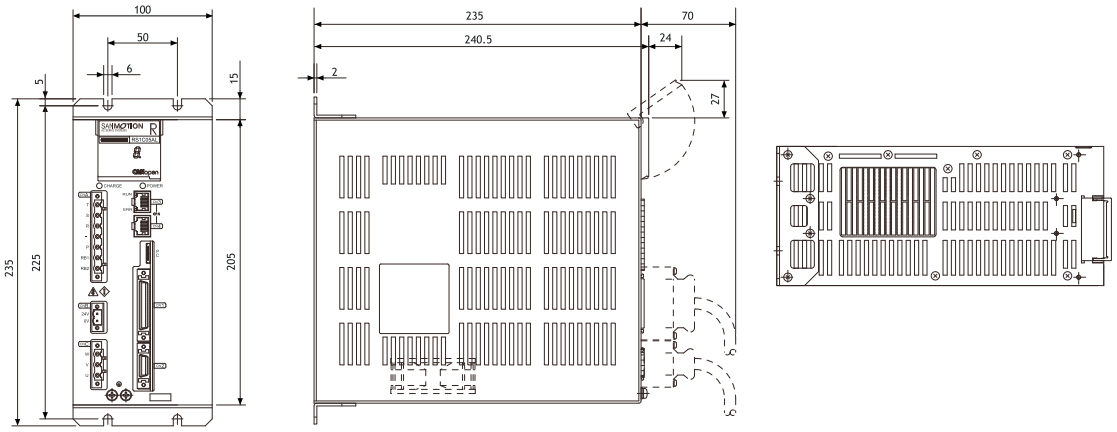
TECHNICAL DATA	Position, Velocity, Torque (Control Mode Switching available)		
MODEL	RS3C05A0AA2	RS3C10A0AA2	RS3C15A0AL2
MAX CURRENT	50 Amp	100 Amp	150 Amp
MOTOR OUTPUT STAGE	IGBT, PWM control, sinusoidal current		
POWER SUPPLY VOLTAGE	Three-phase 380 VAC to 480 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
CONTROL POWER SUPPLY	24VDC +/- 10%		
DIMENSIONS (mm)	100x235x235	175x235x235	220x375x217
MASS (kg)	4.7	8.5	11.0

SANMOTION AC SERVO SYSTEMS RS3 | 400 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT

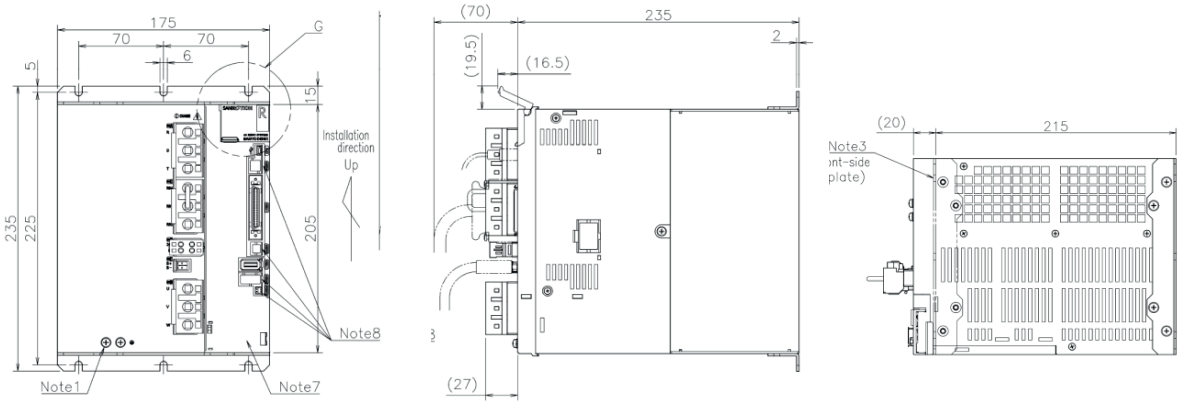
RS3C SERIES AC SERVOAMPLIFIERS

PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS

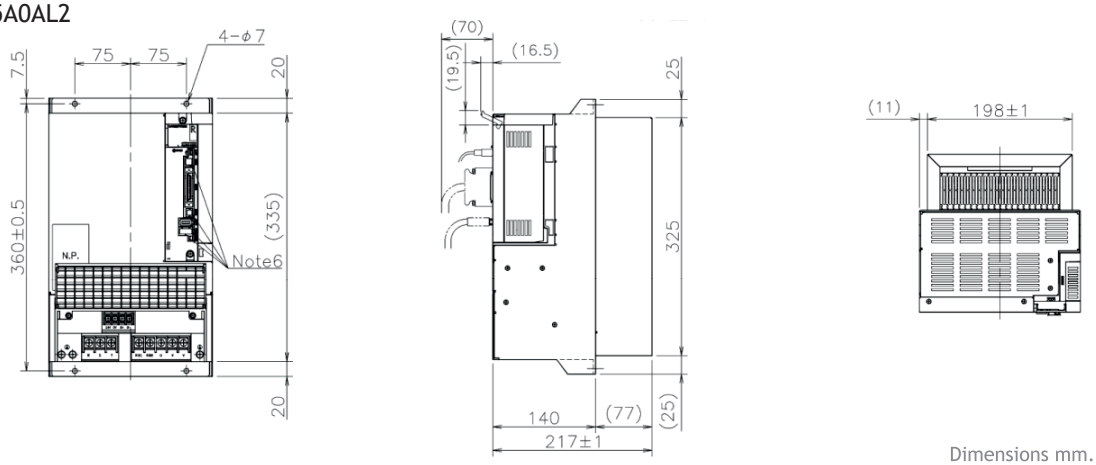
RS3C05A0AA2



RS3C10A0AA2



RS3C15A0AL2



Dimensions mm.

SERVO SYSTEMS

48 VDC SERVOMOTORS - INCREMENTAL ENCODER

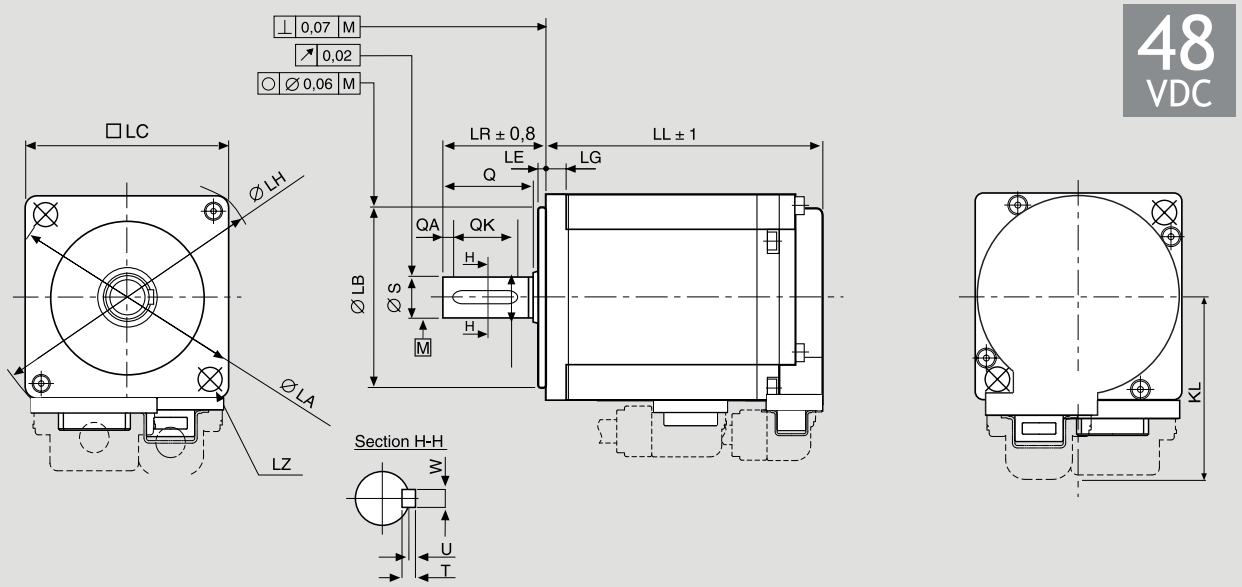
For cable options please see the table at the end of the section.

R2GD04005FXH1CM

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

48 VDC

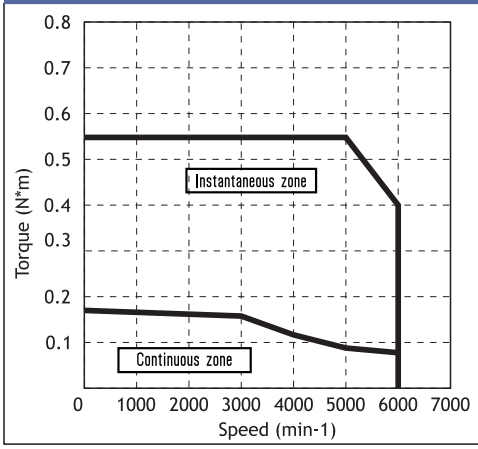


without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
56.5	--	5	35.4	46	0 30-0.021	2.5	56	40	2-Ø4.5	25	0 8-0.009	20	2	12	3	3	1.2	--	--

FEATURES

MODEL		R2GD04005FXH1CM
NOMINAL POWER	(W)	50
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	0.159
STALL TORQUE	(Nm)	0.167
MAXIMUM TORQUE	(Nm)	0.54
INERTIA	($Kg*m^2$)	$0.0376*10^{-4}$
INCREMENTAL ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67 *
WEIGHT	(Kg)	0.27

TORQUE CURVE



* Protection degree IP67 (except for the shaft hole and the edge of the cable).

Indicated performances refer to motor controlled by related 48 VDC step-d r and EtherCAT servo-amplifiers.

Suggested amplifiers: RFG21A0A00, RF2K24A0HL5, RS2K04A2HL5

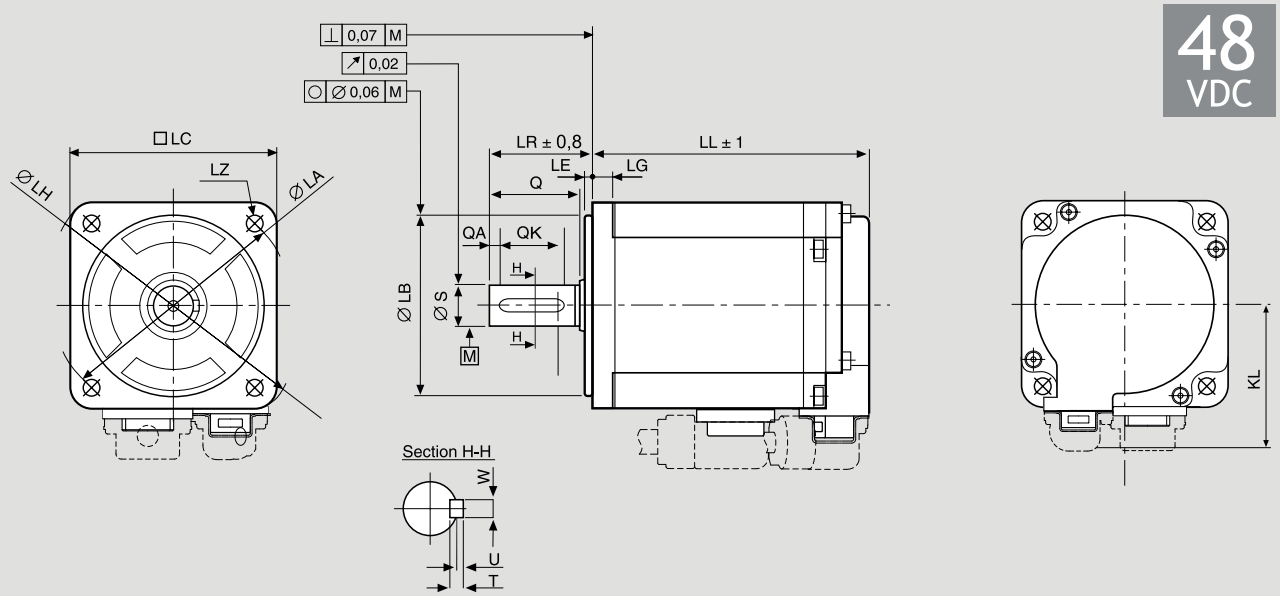
R2GD06010DXH11M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

c UL us

48 VDC



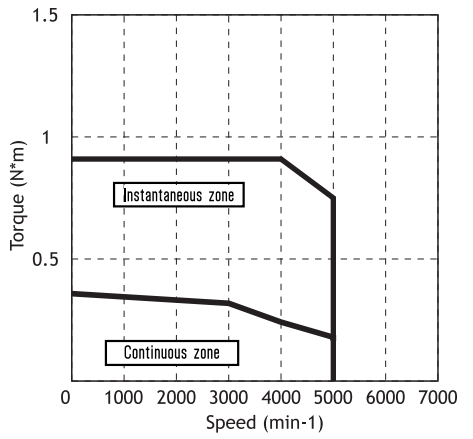
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
58.5	–	6	44.6	70	0 50-0.025	3.0	82	60	4-Ø5.5	25	0 8-0.009	20	2	12	3	3	1,2	–	–

FEATURES

MODEL		R2GD06010DXH11M
NOMINAL POWER	(W)	100
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	5000
NOMINAL TORQUE	(Nm)	0.318
STALL TORQUE	(Nm)	0.353
MAXIMUM TORQUE	(Nm)	0.84
INERTIA	($Kg*m^2$)	$0.117*10^{-4}$
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	0.59

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE



Indicated performances refer to motor controlled by related 48 VDC step-dir and EtherCAT servo-amplifiers.

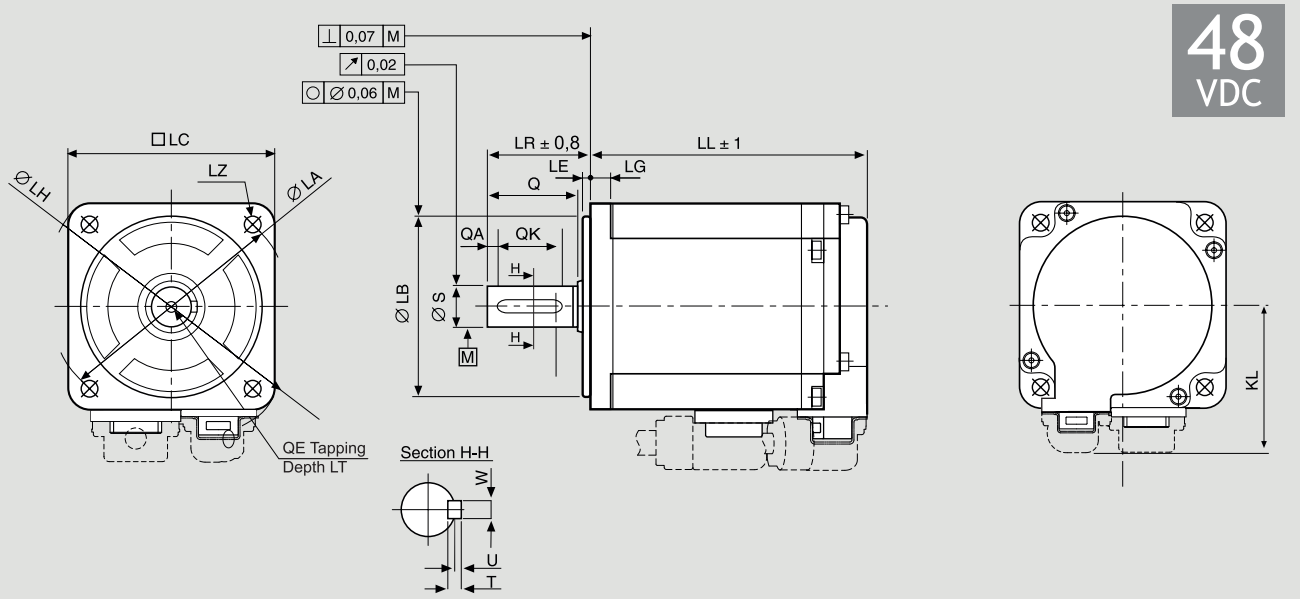
Suggested amplifiers: RF2G21A0A00, RF2K24A0HL5, RS2K04A2HL5

R2GD06020DXH11M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

48 VDC



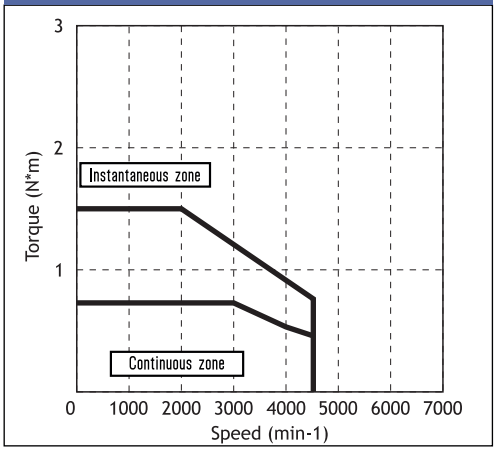
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
69.5	–	6	44.6	70	0 -0.025	3.0	82	60	4-Ø5.5	30	0 -0.011	25	2	20	5	5	2	M5	12

FEATURES

MODEL		R2GD06020DXH11M
NOMINAL POWER	(W)	200
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	4500
NOMINAL TORQUE	(Nm)	0.637
STALL TORQUE	(Nm)	0.637
MAXIMUM TORQUE	(Nm)	1.5
INERTIA	($Kg*m^2$)	$0.219*10^{-4}$
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	0.84

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE



Indicated performances refer to motor controlled by related 48 VDC step-dir and EtherCAT servo-amplifiers.

Suggested amplifiers: RF2G21A0A00, RF2K24A0HL5, RS2K04A2HL5

SERVO SYSTEMS

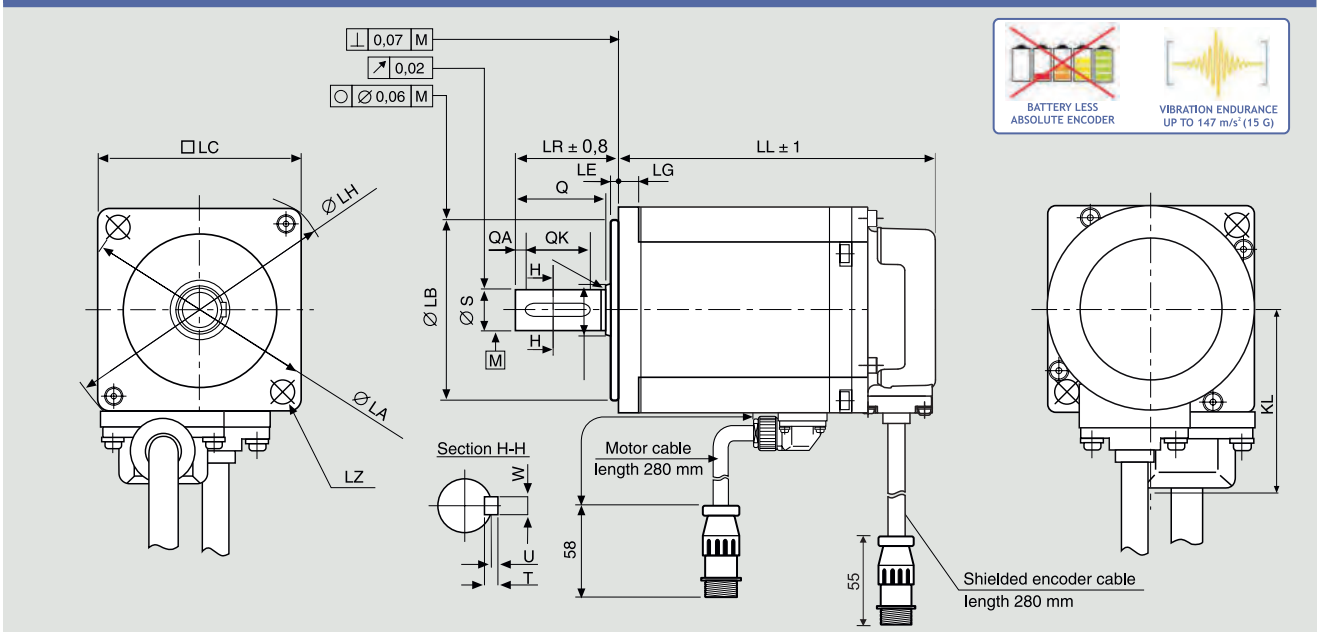
230 VAC SERVOMOTORS
BATTERY LESS MULT-TURN ABSOLUTE ENCODER

For cable options please see the table at the end of the section.

R2AA04010FXR1CM (R2AA04010FCR1CM6)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



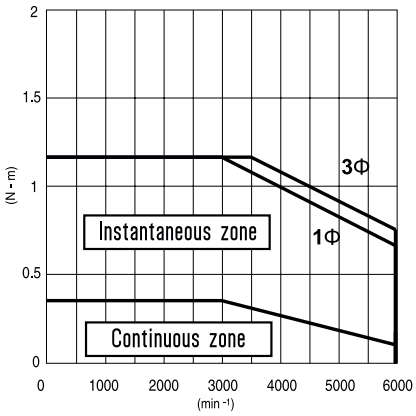
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
83	119	5	34.5	46	0 -0.021	2.5	56	40	2-Ø4.5	25	0 -0.009	20	2	12	3	3	1.2	--	--

FEATURES

MODEL	R2AA04010FXR1CM
NOMINAL POWER [version with brake] (W)	100 [90]
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	0.286
STALL TORQUE (Nm)	0.318
MAXIMUM TORQUE (Nm)	1.18
INERTIA ($Kg*m^2$)	0.0627×10^{-4}
BATTERY LESS ABSOLUTE ENCODER	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE	IP67*
WEIGHT [version with brake] (Kg)	0.53 [0.80]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA04010F [100W] + RS3A03



WITHOUT BRAKE
R2AA04010FXR1CM

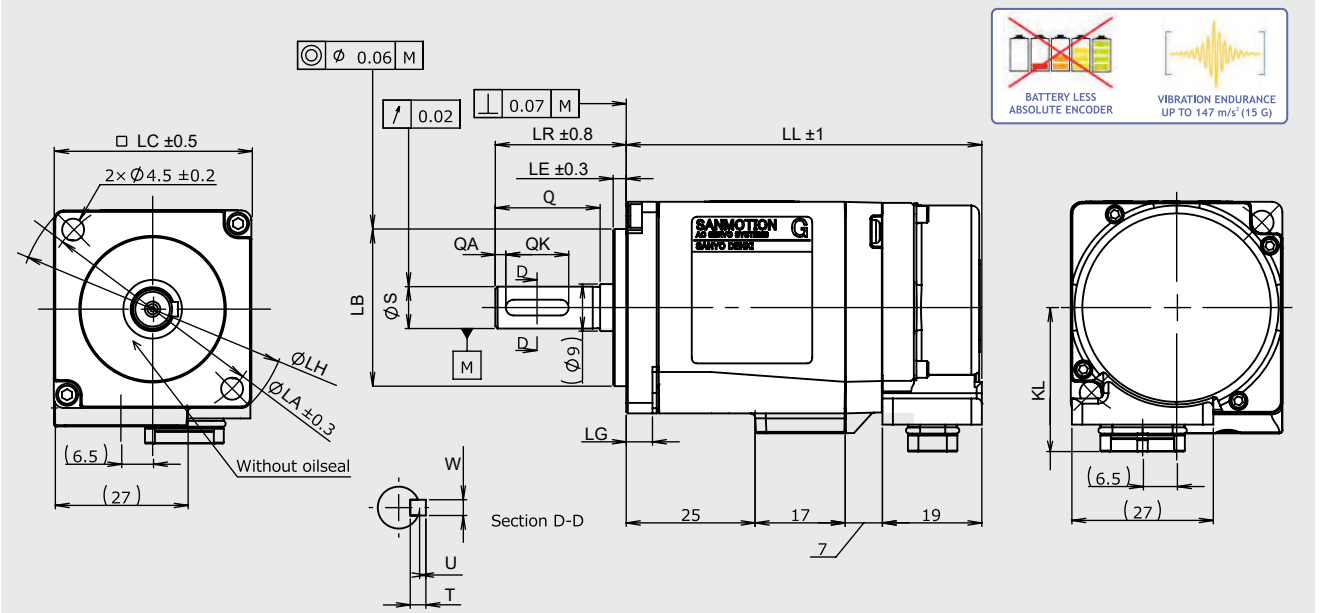
Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

GAM2A4010F0XRK2 [GAM2A4010F0CRK2] SANYO DENKI SANMOTION

Dimensions (Unit:mm)



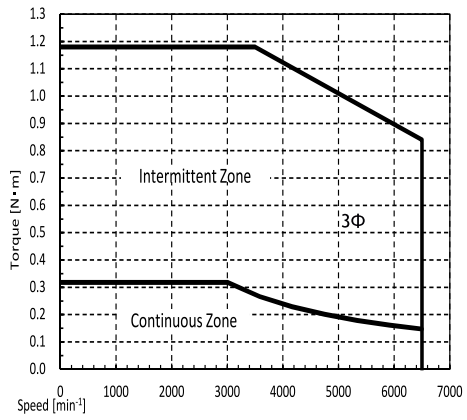
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
68	100.5	5	27.6	46	0 -0.021	2.5	56	40	2-Ø4.5	25	0 -0.009	20	2	12	3	3	1.2	--	--

FEATURES

MODEL	GAM2A4010F0XRK2
NOMINAL POWER [version with brake] (W)	100
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6500
NOMINAL TORQUE (Nm)	0.318
STALL TORQUE (Nm)	0.318
MAXIMUM TORQUE (Nm)	1.18
INERTIA ($Kg*m^2$)	0.0600×10^{-4}
BATTERY LESS ABSOLUTE ENCODER	SINGLE TURN: (23 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE	IP67*
WEIGHT [version with brake] (Kg)	0.39

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
GAM2A4010F0XRK2 + GAD amplifier



WITHOUT BRAKE
GAM2A4010F0XRK2

Indicated performances refer to motor controlled by related new GAD EtherCAT series amplifiers.

3Φ = torque curve with three-phase power supply

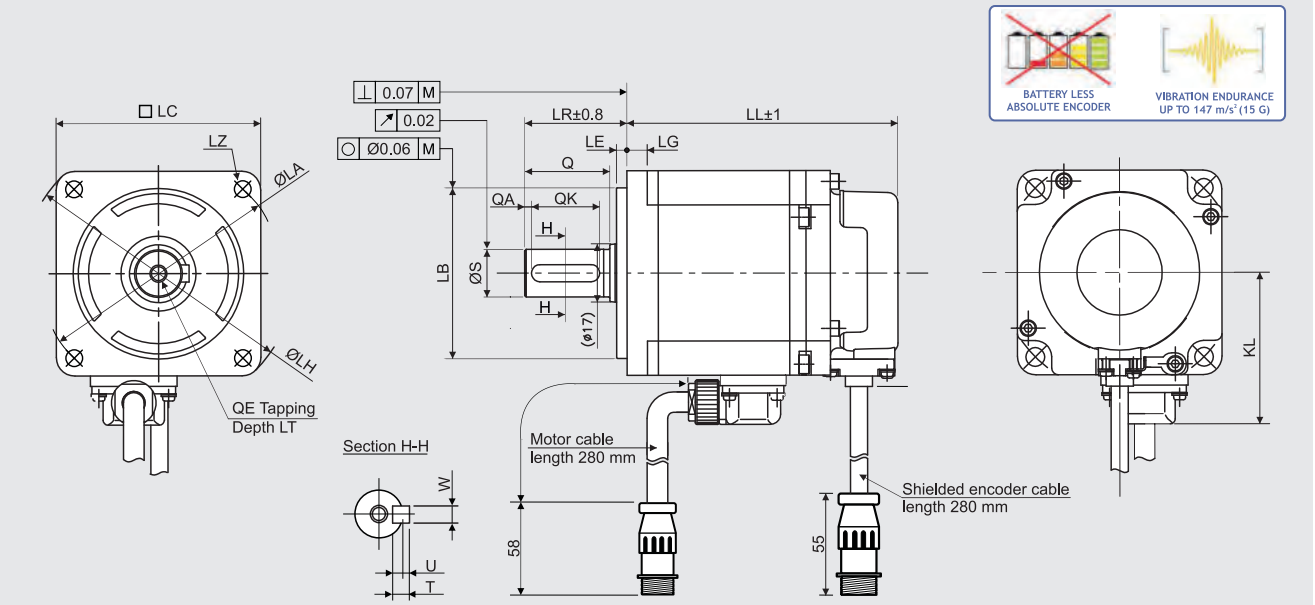
WITH BRAKE
GAM2A4010F0CRK2

Suggested amplifiers: GADSA03AH24

R2AA06020FXR11M (R2AA06020FCR11M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



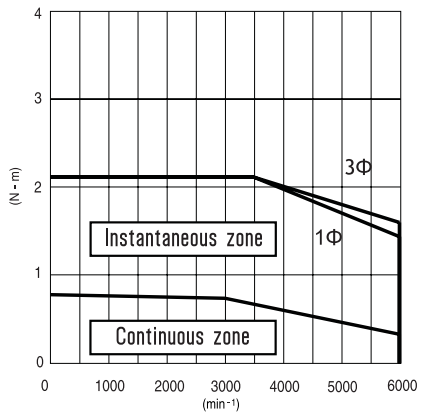
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
79.5	107.5	6	44.4	70	0 50-0.025	3.0	82	60	4-Ø5.5	30	0 14-0.011	25	2	20	5	5	2	M5	12

FEATURES

MODEL		R2AA06020FXR11M
NOMINAL POWER	(W)	200
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	0.637
STALL TORQUE	(Nm)	0.686
MAXIMUM TORQUE	(Nm)	2.20
INERTIA	($Kg*m^2$)	0.219×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	0.99 [1.4]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA06020F [200W] + RS3A03



WITHOUT BRAKE
R2AA06020FXR11M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

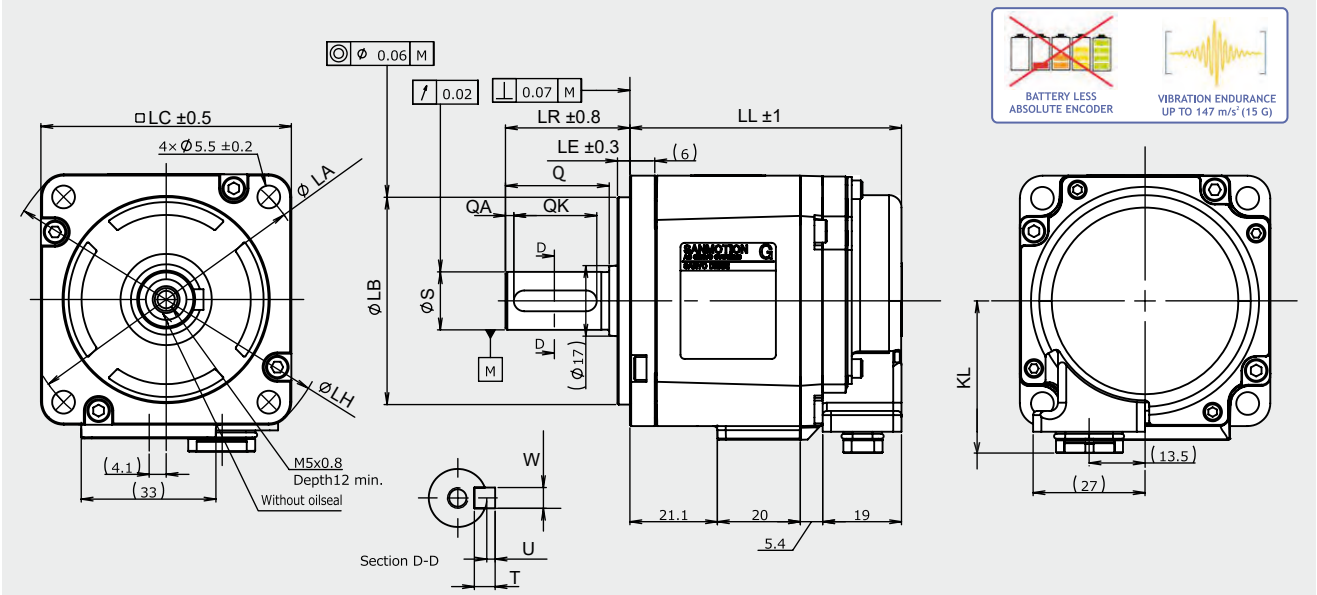
1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
R2AA06020FCR11M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

GAM2A6020F0XRK2 [GAM2A6020F0CRK2] SANYO DENKI SANMOTION

Dimensions (Unit:mm)



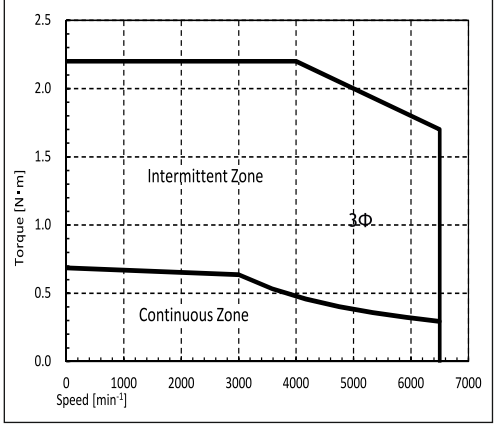
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
65.5	91.5	6	36.8	70	0 50-0.025	3.0	81	60	--	30	0 14-0.011	25	2	20	5	5	2	--	--

FEATURES

MODEL		GAM2A6020F0XRK2
NOMINAL POWER	(W)	200
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6500
NOMINAL TORQUE	(Nm)	0.637
STALL TORQUE	(Nm)	0.686
MAXIMUM TORQUE	(Nm)	2.20
INERTIA	($Kg*m^2$)	0.247×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: (23 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	(Kg)	0.80

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
GAM2A6020F0XRK2 + GAD amplifier



WITHOUT BRAKE
GAM2A6020F0XRK2

Indicated performances refer to motor controlled by related new GAD EtherCAT series amplifiers.

3Φ = torque curve with three-phase power supply

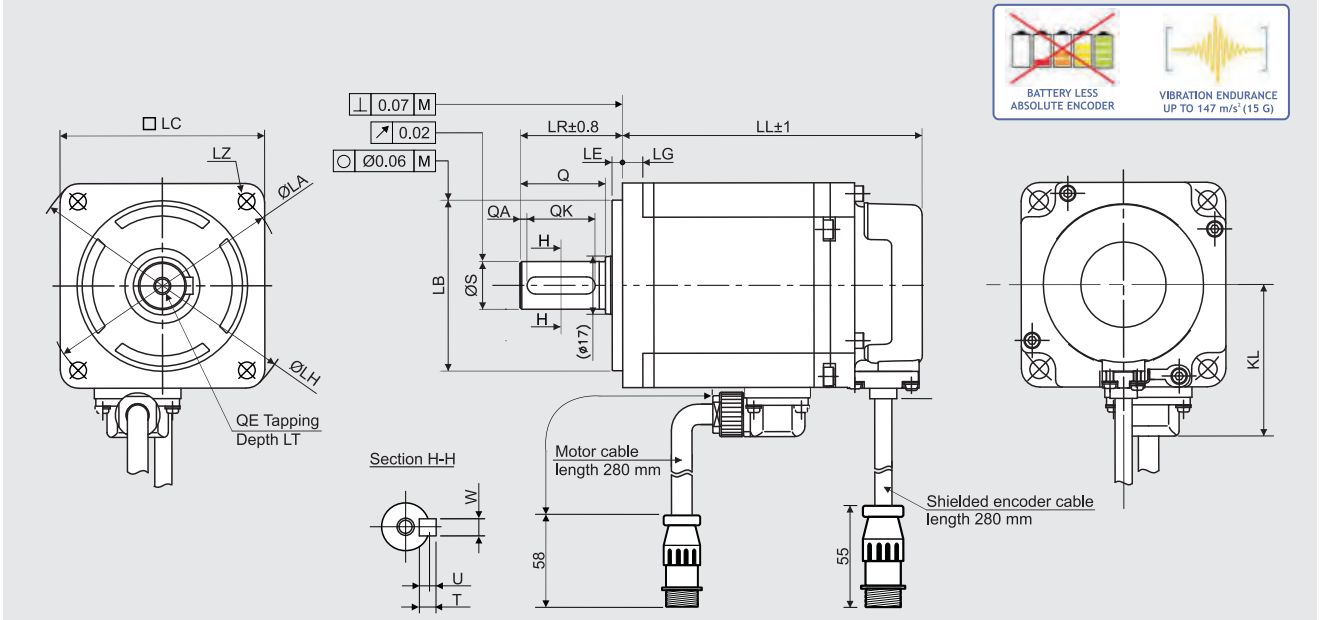
WITH BRAKE
GAM2A6020F0CRK2

Suggested amplifiers: GADSA03AH24

R2AA06040FXR11M (R2AA06040FCR11M6)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



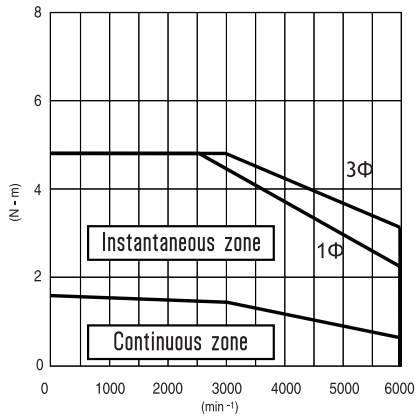
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
105.5	133.5	6	44.4	70	0 50-0.025	3.0	82	60	4-Ø5.5	30	0 14-0.011	25	2	20	5	5	2	M5	12

FEATURES

MODEL		R2AA06040FXR11M
NOMINAL POWER	(W)	400
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	1.270
STALL TORQUE	(Nm)	1.370
MAXIMUM TORQUE	(Nm)	4.80
INERTIA	($Kg*m^2$)	0.412×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	1.50 [1.90]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA06040F [400W] +RS3A03



WITHOUT BRAKE
R2AA06040FXR11M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

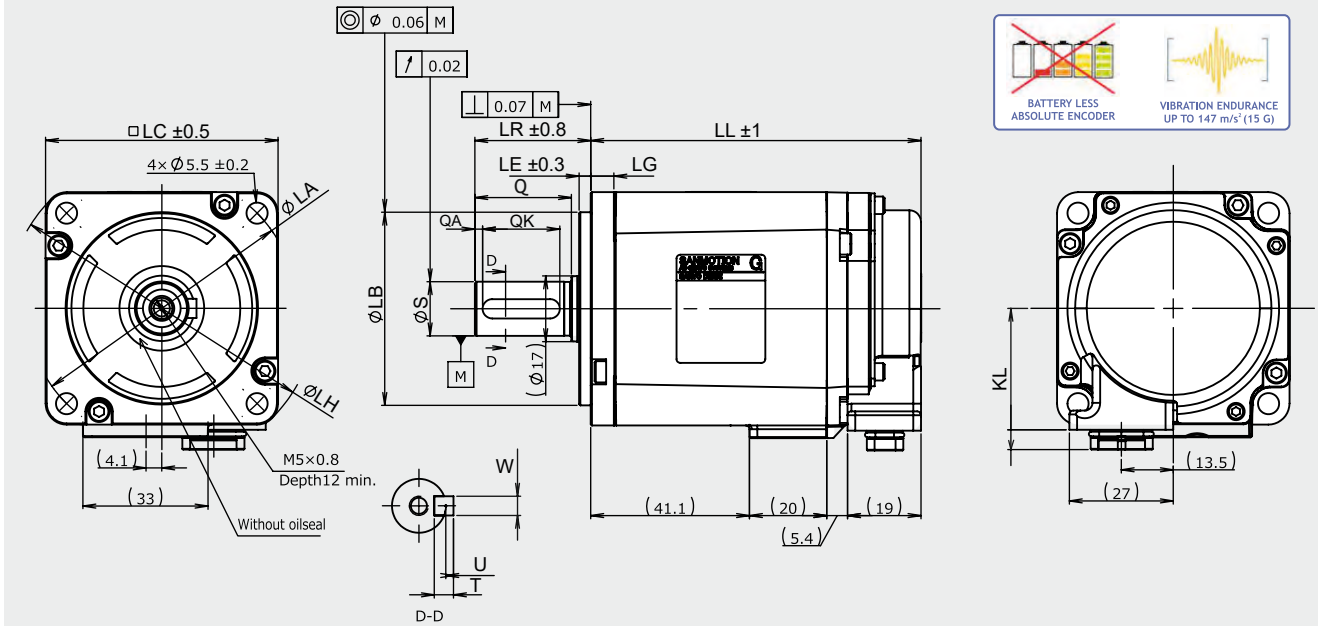
1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
R2AA06040FCR11M6

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

GAM2A6040F0XRK2 [GAM2A6040F0CRK2] SANYO DENKI SANMOTION

Dimensions (Unit:mm)



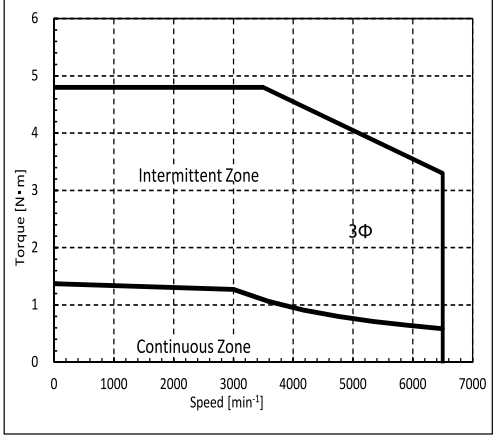
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
85.5	111.5	6	36.8	70	0 50-0.025	3.0	81	60	--	30	0 14-0.011	25	2	20	5	5	2	--	--

FEATURES

MODEL		GAM2A6040F0XRK2 [GAM2A6040F0CRK2]
NOMINAL POWER	(W)	400
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6500
NOMINAL TORQUE	(Nm)	1.270
STALL TORQUE	(Nm)	1.370
MAXIMUM TORQUE	(Nm)	4.80
INERTIA	($Kg*m^2$)	0.460×10^{-4} [0.534×10^{-4}]
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: (23 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT [version with brake]	(Kg)	1.2 [1.6]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
GAM2A6040F0XRK2 + GAD amplifier



WITHOUT BRAKE
GAM2A6040F0XRK2

Indicated performances refer to motor controlled by related new GAD EtherCAT series amplifiers.

3Φ = torque curve with three-phase power supply

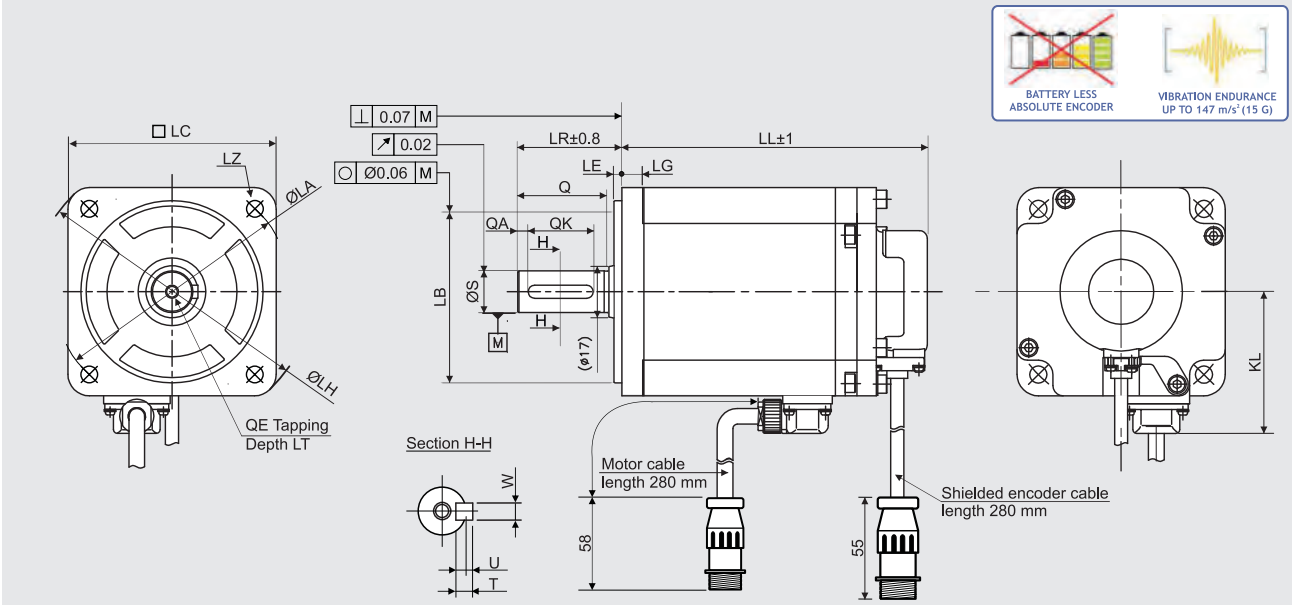
WITH BRAKE
GAM2A6040F0CRK2

Suggested amplifiers: GADSA03AH24

R2AA08075FXR11M (R2AA08075FCR11M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



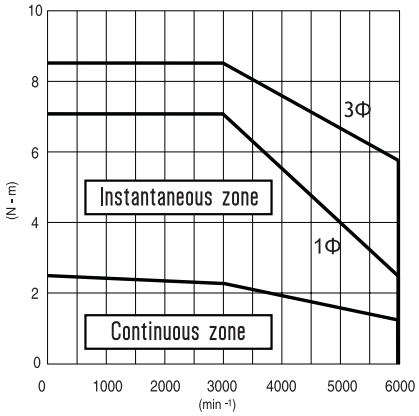
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
117.3	153	8	54.4	90	0 -0.030	3.0	108	80	4-Ø6.6	40	0 -0.011	35	4	25	5	5	2	M5	12

FEATURES

MODEL		R2AA08075FXR11M
NOMINAL POWER	(W)	750
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	2.390
STALL TORQUE	(Nm)	2.550
MAXIMUM TORQUE	(Nm)	8.50
INERTIA	($Kg*m^2$)	1.820×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	2.80 [3.70]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA08075F [750W] + RS3A03



WITHOUT BRAKE
R2AA08075FXR11M

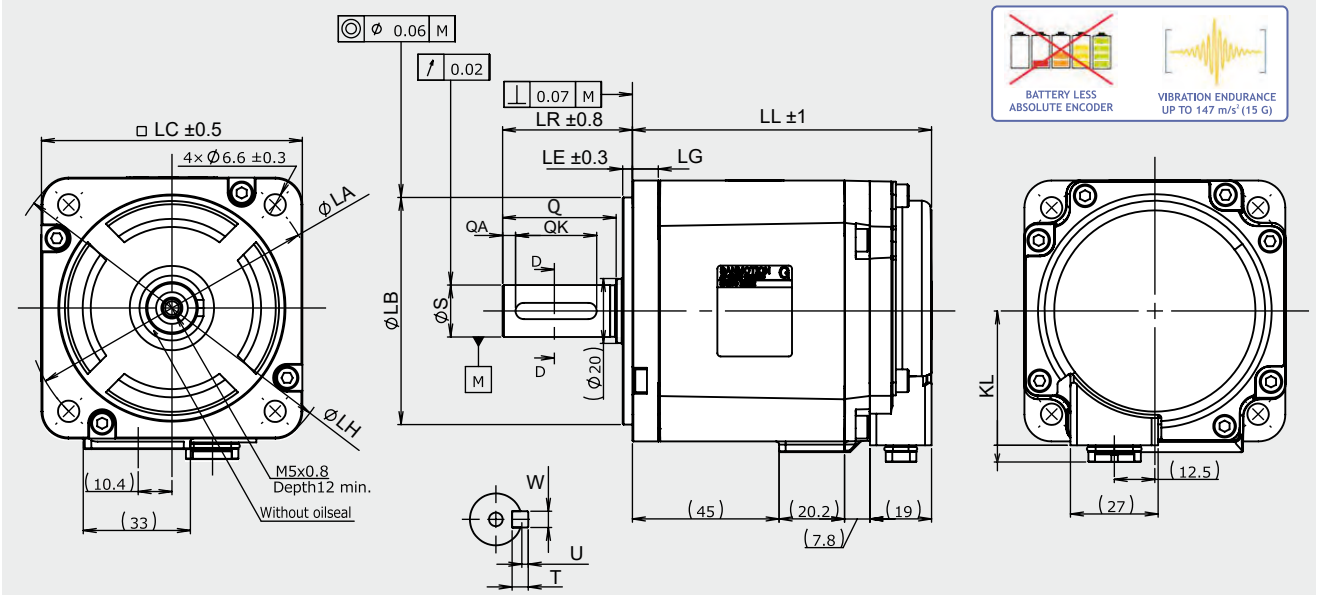
Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
R2AA08075FCR11M

GAM2A8075V0XRK2 [GAM2A8075V0CRK2] SANYO DENKI SANMOTION

Dimensions (Unit:mm)



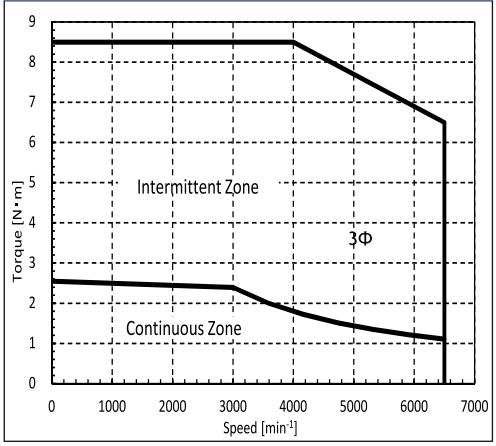
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
92	126	8	46.6	90	0 70-0.030	3.0	107	80	--	40	0 16-0.011	35	4	25	5	5	2	--	--

FEATURES

MODEL		GAM2A8075V0XRK2 [GAM2A8075V0CRK2]
NOMINAL POWER	(W)	750
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6500
NOMINAL TORQUE	(Nm)	2.390
STALL TORQUE	(Nm)	2.550
MAXIMUM TORQUE	(Nm)	8.50
INERTIA	($Kg*m^2$)	1.560×10^{-4} [1.760×10^{-4}]
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: (23 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	2.2 [3]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
GAM2A8075F0XRK2 + GAD amplifier



WITHOUT BRAKE
GAM2A8075F0XRK2

Indicated performances refer to motor controlled by related new GAD EtherCAT series amplifiers.

3Φ = torque curve with three-phase power supply

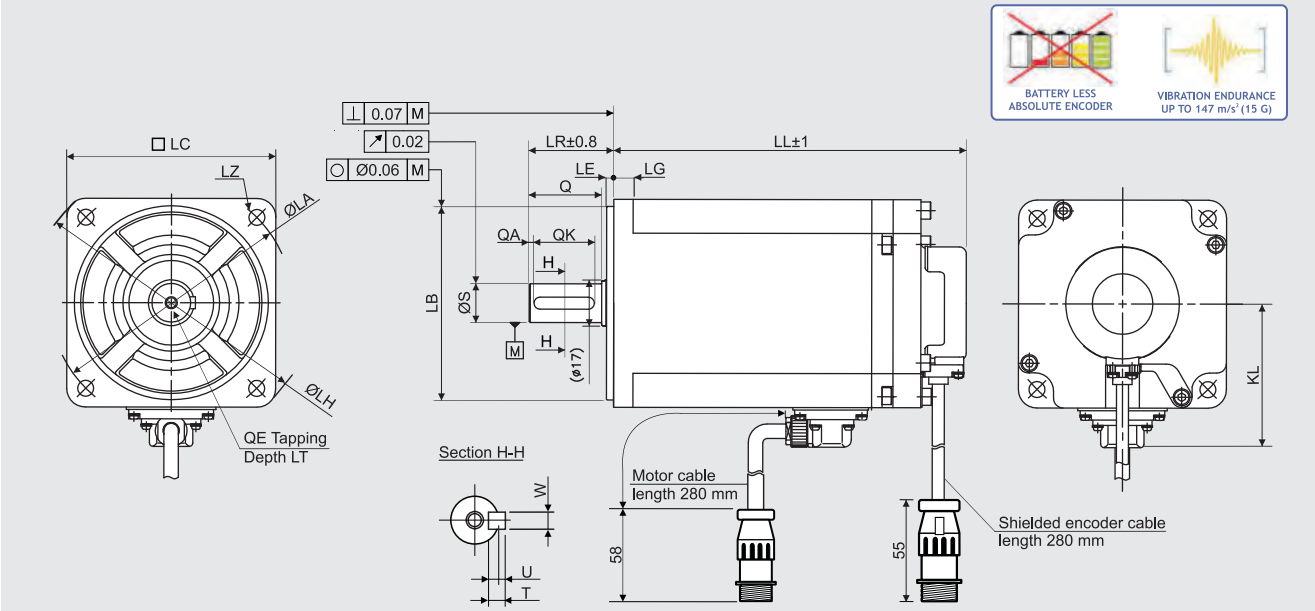
WITH BRAKE
GAM2A8075F0CRK2

Suggested amplifiers: GADSA03AH24

R2AAB8100HXR29M (R2AAB8100HCR29M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

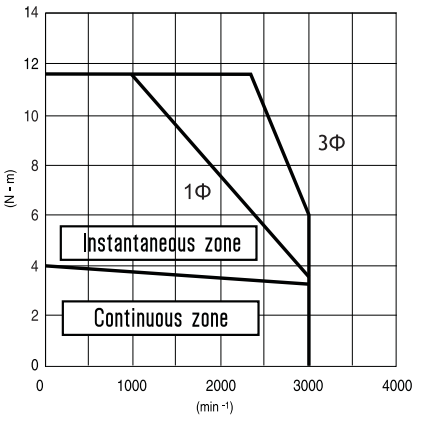


without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
145.8	171.8	8	59.4	100	0 80-0.03	3.0	115.5	86	4-Ø6.6	35	0 16-0.011	30	2	25	5	5	2	M5	12

FEATURES

MODEL		R2AAB8100HXR29M
NOMINAL POWER	(W)	1000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	3.180
STALL TORQUE	(Nm)	3.920
MAXIMUM TORQUE	(Nm)	11.60
INERTIA	($Kg*m^2$)	2.383×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	3.60 [4.50]

TORQUE CURVE
R2AAB8100H [1kW] + RS3A03



* Protection degree IP67 (except for the shaft hole and the edge of the cable).

WITHOUT BRAKE
R2AAB8100HXR29M

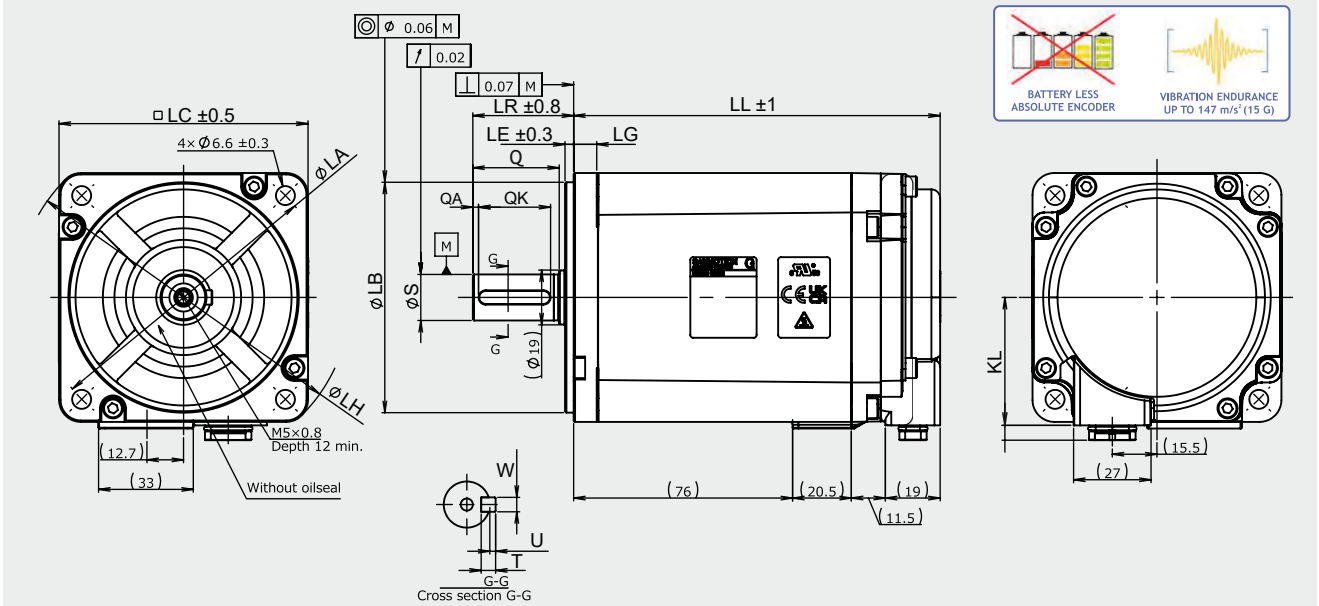
Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
R2AAB8100HCR29M

GAM2A9100H0XRK2 [GAM2A9100H0CRK3] SANYO DENKI SANMOTION

Dimensions (Unit:mm)

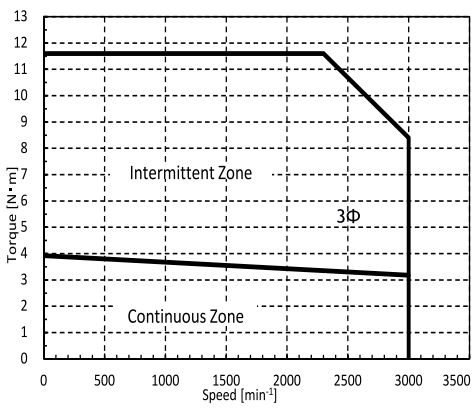


without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
127	153	8	49.6	100	0 80-0.03	3.0	116	86	--	35	0 16-0.011	30	2	25	5	5	2	--	--

FEATURES

MODEL		GAM2A9100H0XRK2
NOMINAL POWER	(W)	1000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	3.180
STALL TORQUE	(Nm)	3.920
MAXIMUM TORQUE	(Nm)	11.60
INERTIA	($Kg*m^2$)	2.450×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: (23 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	3.4

TORQUE CURVE
GAM2A9100H0XRK2 + GAD amplifier



* Protection degree IP67 (except for the shaft hole and the edge of the cable).

WITHOUT BRAKE
GAM2A9100H0XRK2

Indicated performances refer to motor controlled by related new GAD EtherCAT series amplifiers.

3Φ = torque curve with three-phase power supply

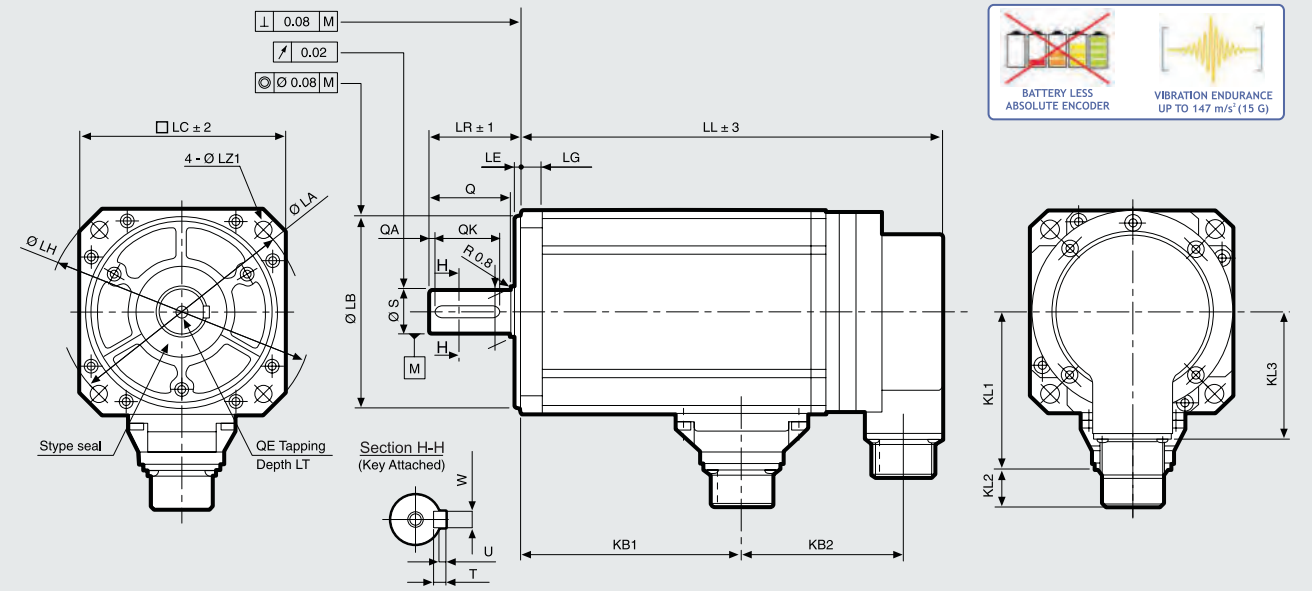
WITH BRAKE
GAM2A9100H0CRK2

Suggested amplifiers: GADSA03AH24

Q2AA10150BXR48M (Q2AA10150BCR48M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

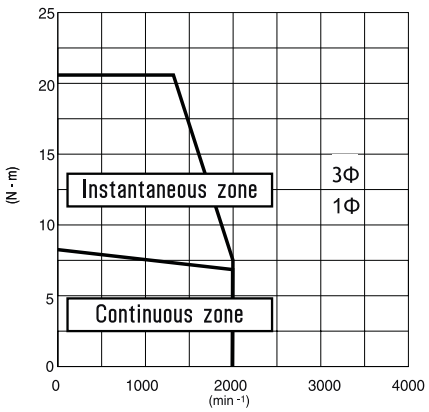


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
237	88	272,5	124	78	19	64	10	115	0 95-0.035	3	130	100	9	--	45	0 22-0.013	40	3	32	0 6-0.030	6	2.5	128	M6	20

FEATURES

MODEL		Q2AA10150BXR48M
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	7.2
STALL TORQUE	(Nm)	7.7
MAXIMUM TORQUE	(Nm)	20.5
INERTIA	($Kg*m^2$)	8.0×10^{-4}
BATTERY LESS ABSOLUTE ENCODER		SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	7.0 [8.5]

TORQUE CURVE
Q2AA10150B [1.5kW] + RS3A03



Q2AA10150BXR48M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

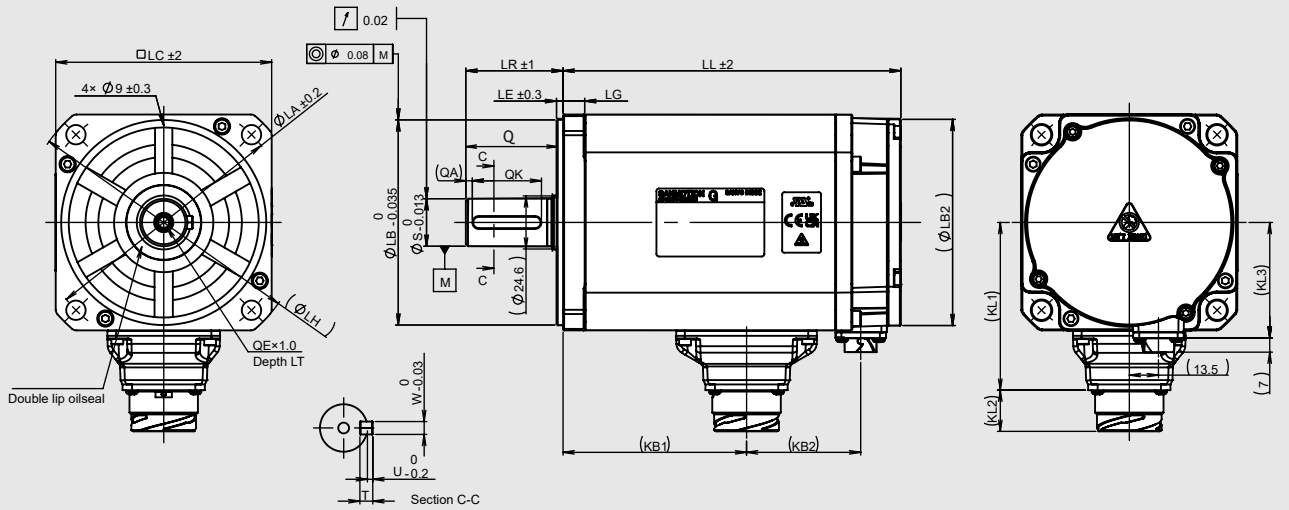
1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Q2AA10150BCR48M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

GAM2AA150B0XNB3 [GAM2AA150B0CNB3]

Dimensions (Unit:mm)

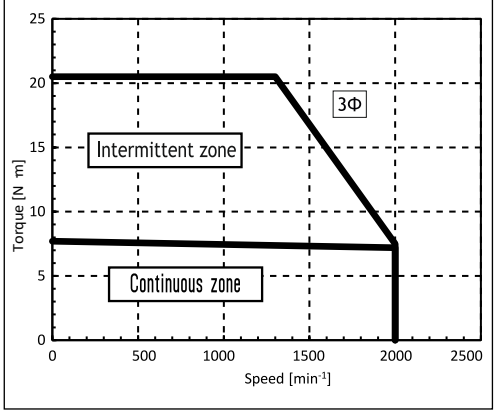


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LB2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
161	45	205.5	90	78	19	54	10	115	0 95.5-0.035	3	130	100	9	95.5	45	0 22-0.013	40	3	32	0 6-0.03	6	2.5	97.5	M6	20

FEATURES

MODEL		GAM2AA150B0XNB3 [GAM2AA150B0CNB3]
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	7.2
STALL TORQUE	(Nm)	7.7
MAXIMUM TORQUE	(Nm)	20.5
INERTIA	($Kg*m^2$)	$6.10x10^{-4}$ [$6.45x10^{-4}$]
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit)
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	5.9 [7.5]

TORQUE CURVE
GAM2AA150B0X[C] + RS3A03



WITHOUT BRAKE
GAM2AA10150B0XNB3

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

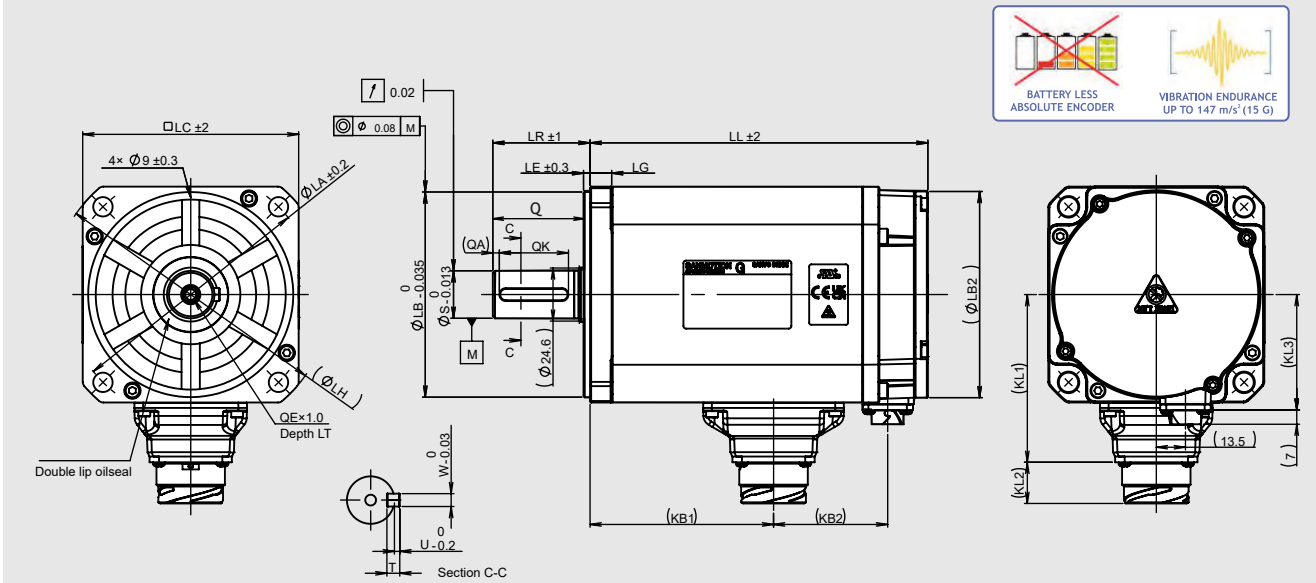
1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
GAM2AA10150B0CNB3

Suggested amplifiers: RS3A03A2HA4W00, RS3A03A0AA2, RS3A03A2HAE

GAM2AA150B0XRB3 [GAM2AA150B0CRB3]

Dimensions (Unit:mm)

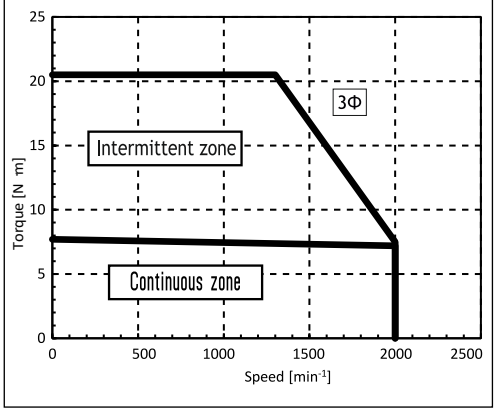


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LB2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
161	45	205.5	90	78	19	54	10	115	0 95.5-0.035	3	130	100	9	95.5	45	0 22-0.013	40	3	32	0 6-0.03	6	2.5	97.5	M6	20

FEATURES

MODEL		GAM2AA150B0XRB3 [GAM2AA150B0CRB3]
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	7.2
STALL TORQUE	(Nm)	7.7
MAXIMUM TORQUE	(Nm)	20.5
INERTIA	($Kg*m^2$)	$6.10x10^{-4}$ [$6.45x10^{-4}$]
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	5.9 [7.5]

TORQUE CURVE
GAM2AA10150B0X[C] + RS3A03



WITHOUT BRAKE
GAM2AA150B0XRB3

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

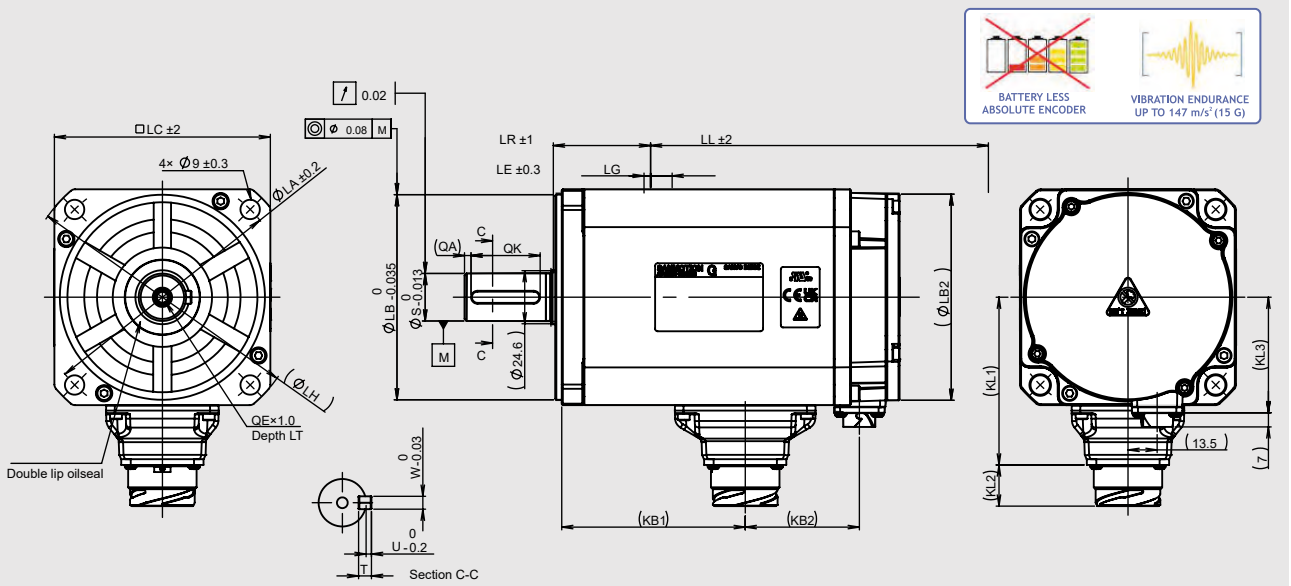
1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

WITH BRAKE
GAM2AA150B0CRB3

Suggested amplifiers: RS3A03A2HA4W00, RS3A03A0AA2, RS3A03A2HAE

GAM1AA150F0XRB3

Dimensions (Unit:mm)

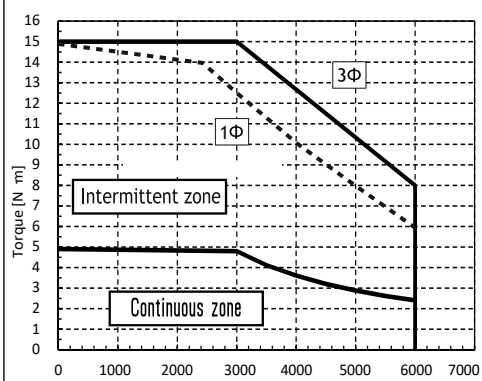


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LB2	LR	S	QA	QK	W	T	U	KB1	QE	LT
161	53	205.5	90	78	19	54	10	115	0 95.5-0.035	3	130	100	9	95.5	45	0 22-0.013	3	32	0 6-0.03	6	2.5	85	M6	20

FEATURES

MODEL		GAM1AA150F0XRB3
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	4.8
STALL TORQUE	(Nm)	4.9
MAXIMUM TORQUE	(Nm)	15.0
INERTIA	($Kg*m^2$)	$1.98x10^{-4}$
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	5.0

TORQUE CURVE
GAM1AA150F0XRB3 + RS3A05



GAM1AA150F0XRB3

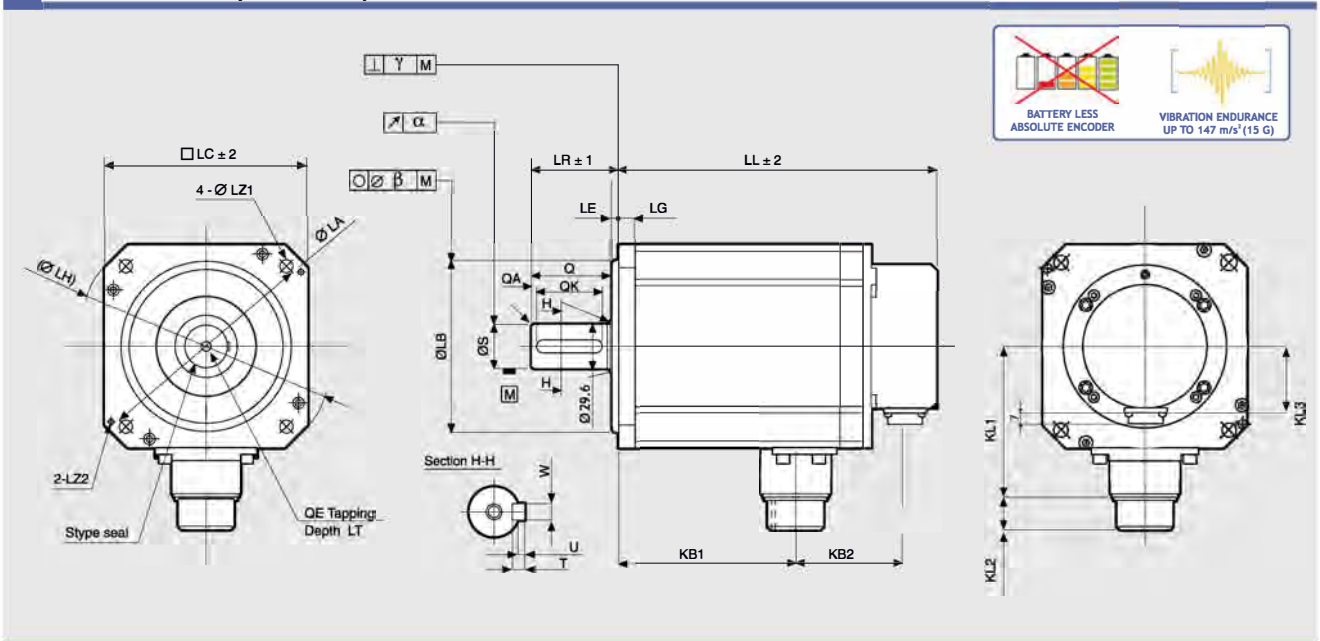
Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

Suggested amplifiers: RS3A05A2HA4W00, RS3A05A0AA2, RS3A05A2HAE

R2AA13200LXR00M (R2AA13200LCR00M)

Dimensions (Unit:mm)

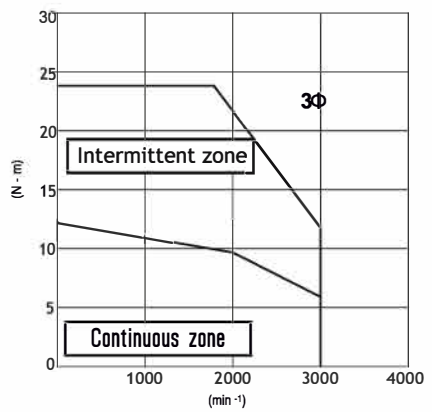


without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
171	57	216	103	98	21	38	12	145	0 110-0	4	165	130	9	M6	55	0 28-0.013	50	3	42	0 8-0.036	7	3	99	M8	25

FEATURES

MODEL		R1AA13200LXR00M
NOMINAL POWER	(W)	2000
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	9.5
STALL TORQUE	(Nm)	12
MAXIMUM TORQUE	(Nm)	24
INERTIA	($Kg*m^2$)	12.2×10^{-4}
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	[version with brake] (Kg)	10 (12)

TORQUE CURVE
R1AA13200F [2kW] + RS3A05



WITHOUT BRAKE
R2AA13200LXR00M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITHOUT BRAKE
R2AA13200LCR00M

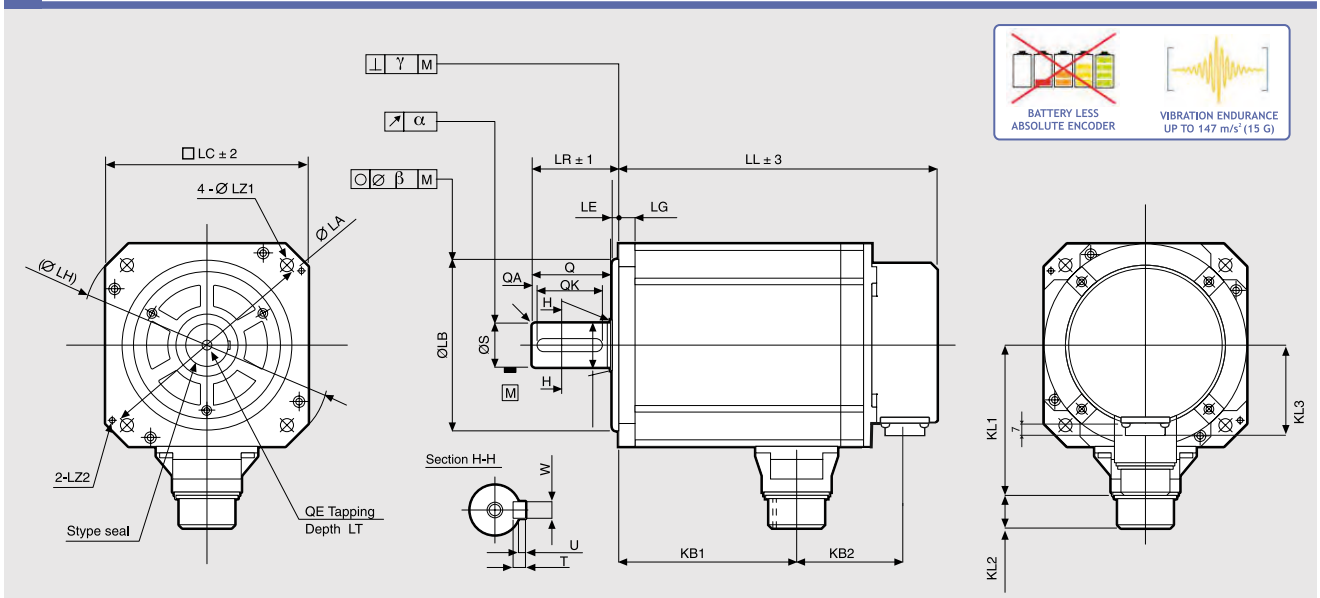
Suggested amplifiers: RS3A05A0AA2, RS3A05A2HA4W00

R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO.,Ltd (JAPAN)

R1AA13300FXR00M (R1AA13300FCR00M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

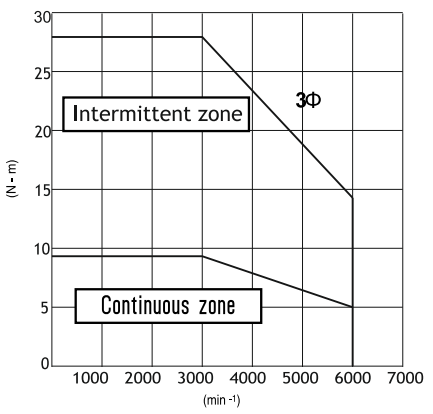


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
184	57	230	103	98	21	45	12	145	0 -0.035	4	165	130	9	M6	55	0 -0.013	50	3	42	0 -0.036	7	3	112	M8	25

FEATURES

MODEL		R1AA13300FXR00M
NOMINAL POWER	(W)	3000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	9.7
STALL TORQUE	(Nm)	9.7
MAXIMUM TORQUE	(Nm)	29
INERTIA	($Kg*m^2$)	7×10^{-4}
ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns
PROTECTION DEGREE		IP65
WEIGHT	[version with brake] (Kg)	9.7 [11.8]

TORQUE CURVE
R1AA13300F [3kW] + RS3A10



WITHOUT BRAKE
R1AA13300FXR00M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITH BRAKE
R1AA13300FCR00M

Suggested amplifiers: RS3A10A0AA2, RS3A10A2HA4W00P

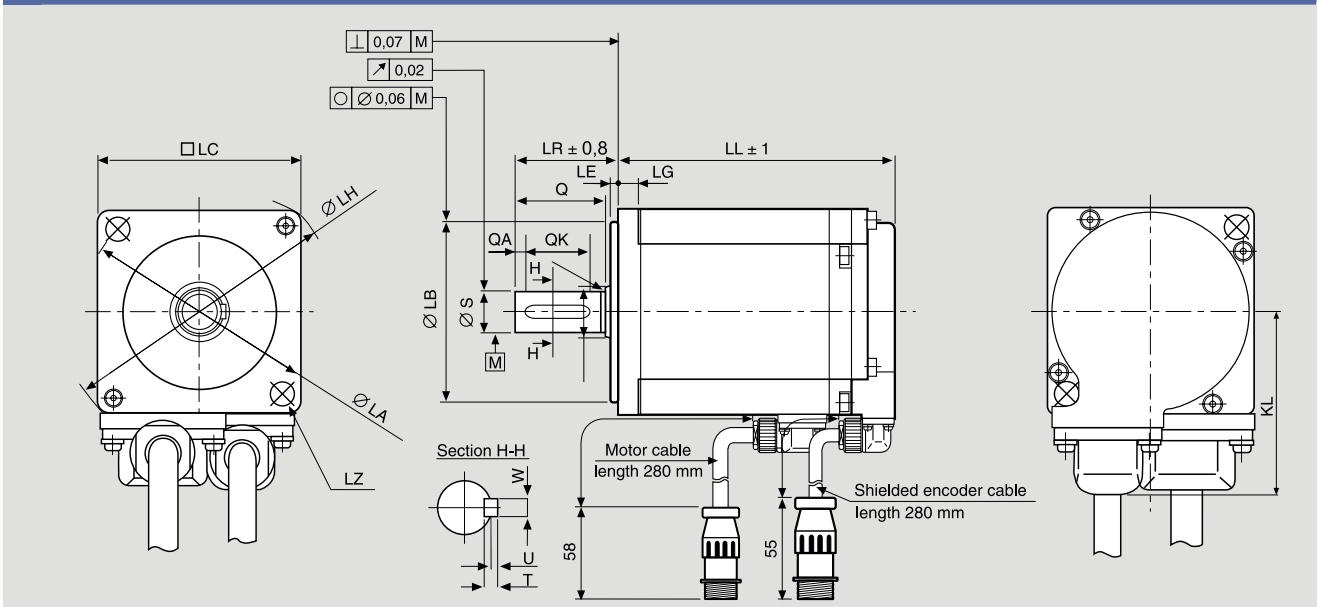
SERVO SYSTEMS

230 VAC SERVOMOTORS - INCREMENTAL ENCODER

For cable options please see the table at the end of the section.

R2AA04010FXH1CM (R2AA04010FCH1CM6) SANYO DENKI SANMOTION

Dimensions (Unit:mm)



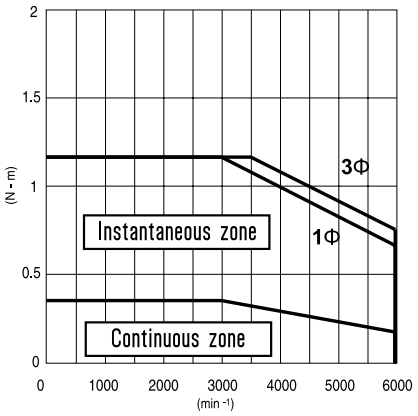
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
72	108	5	35.4	46	0 -0.021	2.5	56	40	2-Ø4.5	25	0 -0.009	20	2	12	3	3	1.2	--	--

FEATURES

MODEL	R2AA04010FXH1CM
NOMINAL POWER [version with brake] (W)	100 [90]
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	0.318
STALL TORQUE (Nm)	0.318
MAXIMUM TORQUE (Nm)	1.18
INERTIA ($Kg*m^2$)	0.0627×10^{-4}
ENCODER (imp./rev)	131072 (17 bit)
PROTECTION DEGREE	IP67*
WEIGHT [version with brake] (Kg)	0.39 [0.62]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA04010F [100W] + RS3A03



WITHOUT BRAKE
R2AA04010FXH1CM

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

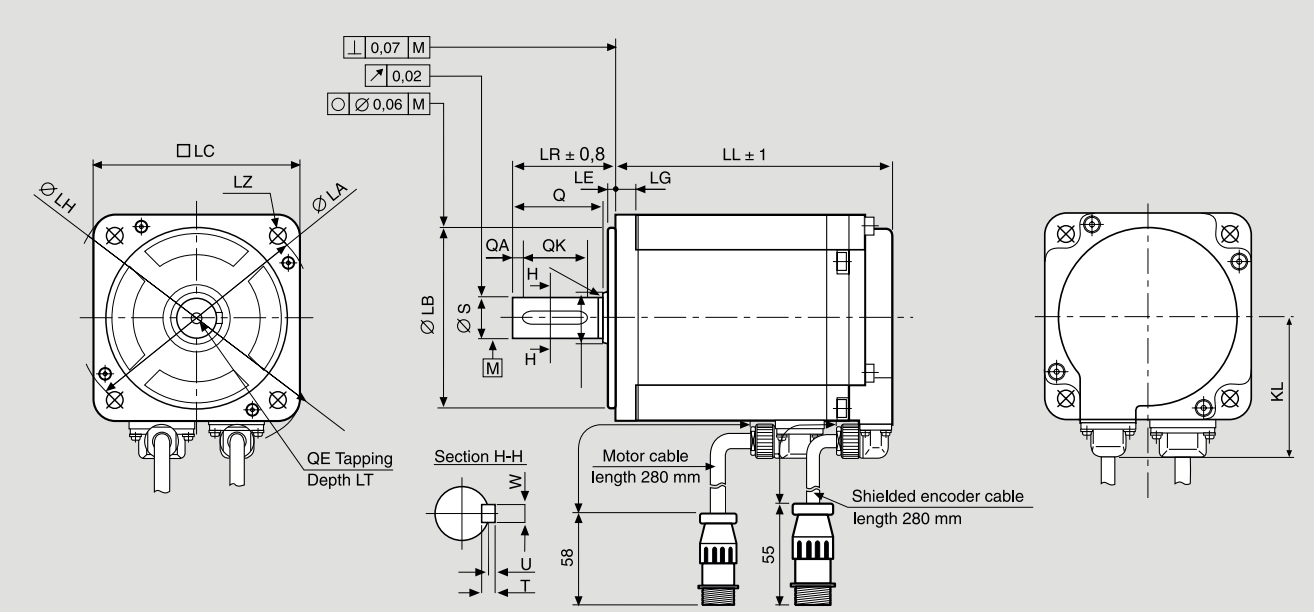
WITH BRAKE
R2AA04010FCH1CM6

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

R2AA06020FXH11M (R2AA06020FCH11M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



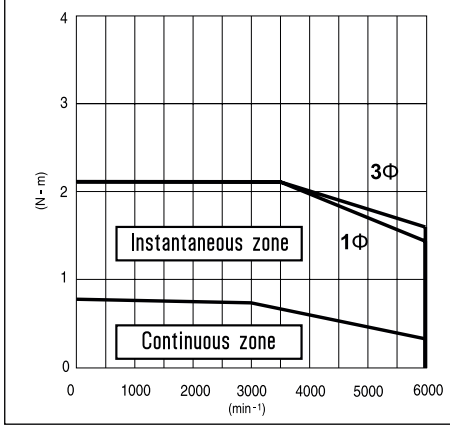
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
69.5	97.5	6	44.6	70	0 50-0.025	3.0	82	60	4-Ø5.5	30	0 14-0.011	25	2	20	5	5	2	M5	12

FEATURES

MODEL	R2AA06020FXH11M
NOMINAL POWER [version with brake] (W)	200
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	0.637
STALL TORQUE (Nm)	0.686
MAXIMUM TORQUE (Nm)	2.20
INERTIA ($Kg*m^2$)	0.219×10^{-4}
ENCODER (imp./rev)	131072 (17 bit)
PROTECTION DEGREE	IP67
WEIGHT [version with brake] (Kg)	0.84 [1.19]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA06020F [200W] + RS3A03



WITHOUT BRAKE
R2AA06020FXH11M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

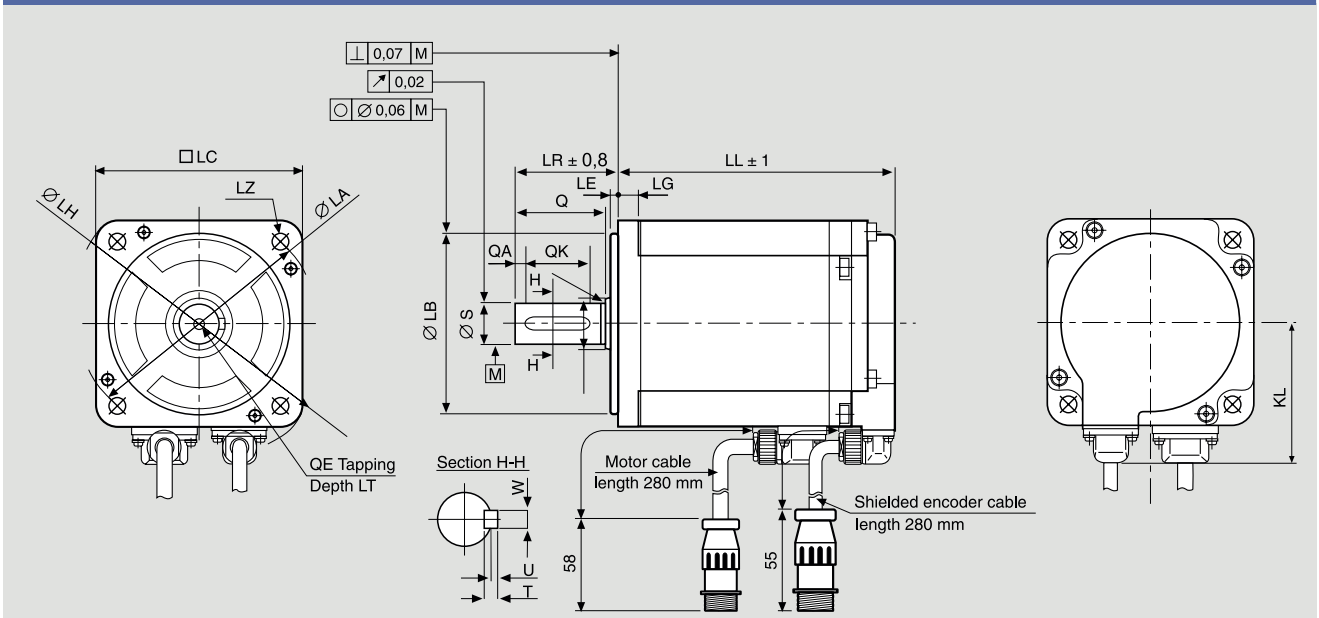
WITH BRAKE
R2AA06020FCH11M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

R2AA06040FXH11M (R2AA06040FCH11M6)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

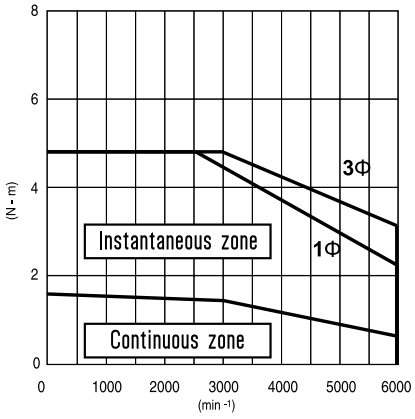


without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
95.5	123.5	6	44.6	70	0 -0.025	3.0	82	60	4-Ø5.5	30	0 -0.011	25	2	20	5	5	2	M5	12

FEATURES

MODEL	R2AA06040FXH11M
NOMINAL POWER [version with brake] (W)	400 [360]
NOMINAL SPEED (rpm)	3000
MAXIMUM SPEED (rpm)	6000
NOMINAL TORQUE (Nm)	1.270
STALL TORQUE (Nm)	1.370
MAXIMUM TORQUE (Nm)	4.80
INERTIA ($Kg*m^2$)	0.412×10^{-4}
ENCODER (imp./rev)	131072 (17 bit)
PROTECTION DEGREE	IP67
WEIGHT [version with brake] (Kg)	1.30 [1.65]

TORQUE CURVE
R2AA06040F [400W] + RS3A03



* Protection degree IP67 (except for the shaft hole and the edge of the cable).

WITHOUT BRAKE
R2AA06040FXH11M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

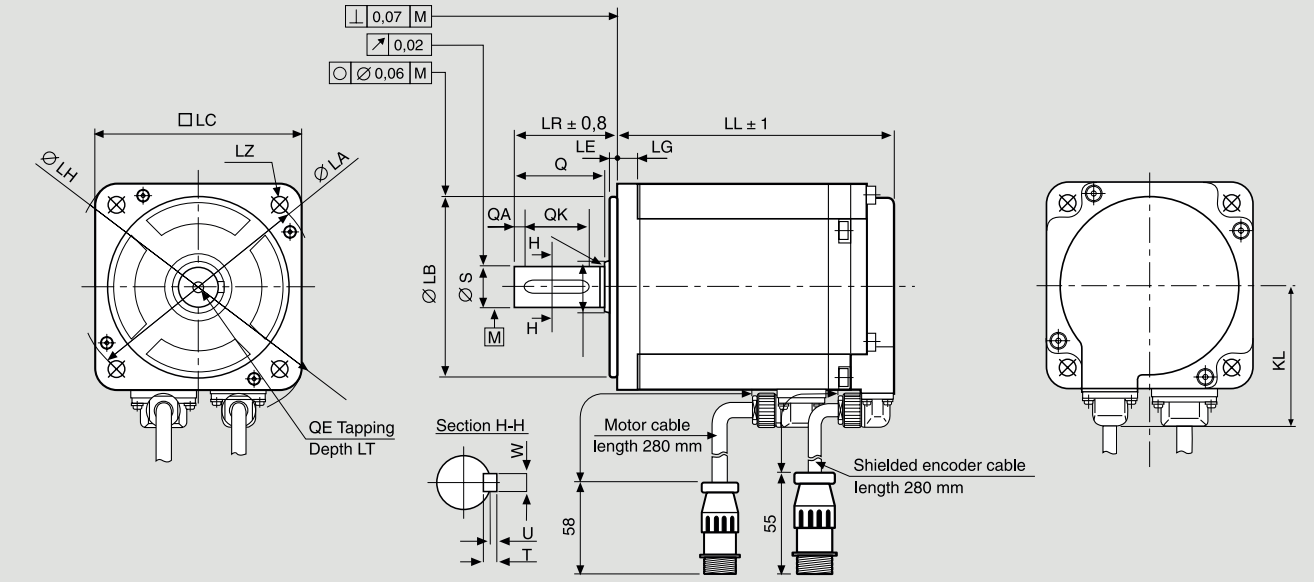
WITH BRAKE
R2AA06040FCH11M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

R2AA08075FXH11M (R2AA08075FCH11M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



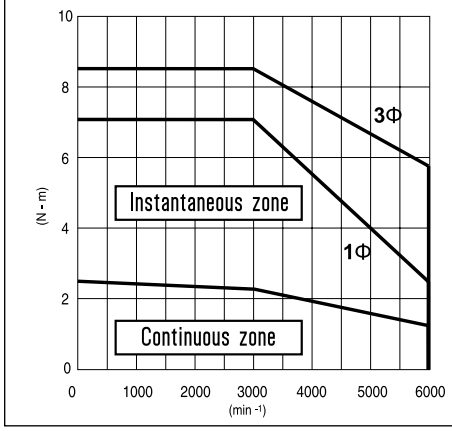
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
107.3	143	8	54.4	90	0 -0.030	3.0	108	80	4-Ø6.6	40	0 -0.011	35	4	25	5	5	2	M5	12

FEATURES

MODEL		R2AA08075FXH11M
NOMINAL POWER	(W)	750
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	2.390
STALL TORQUE	(Nm)	2.550
MAXIMUM TORQUE	(Nm)	8.50
INERTIA	($Kg*m^2$)	1.820×10^{-4}
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67
WEIGHT	[version with brake] (Kg)	2.60 [3.45]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA08075F [750W] + RS3A03



WITHOUT BRAKE
R2AA08075FXH11M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

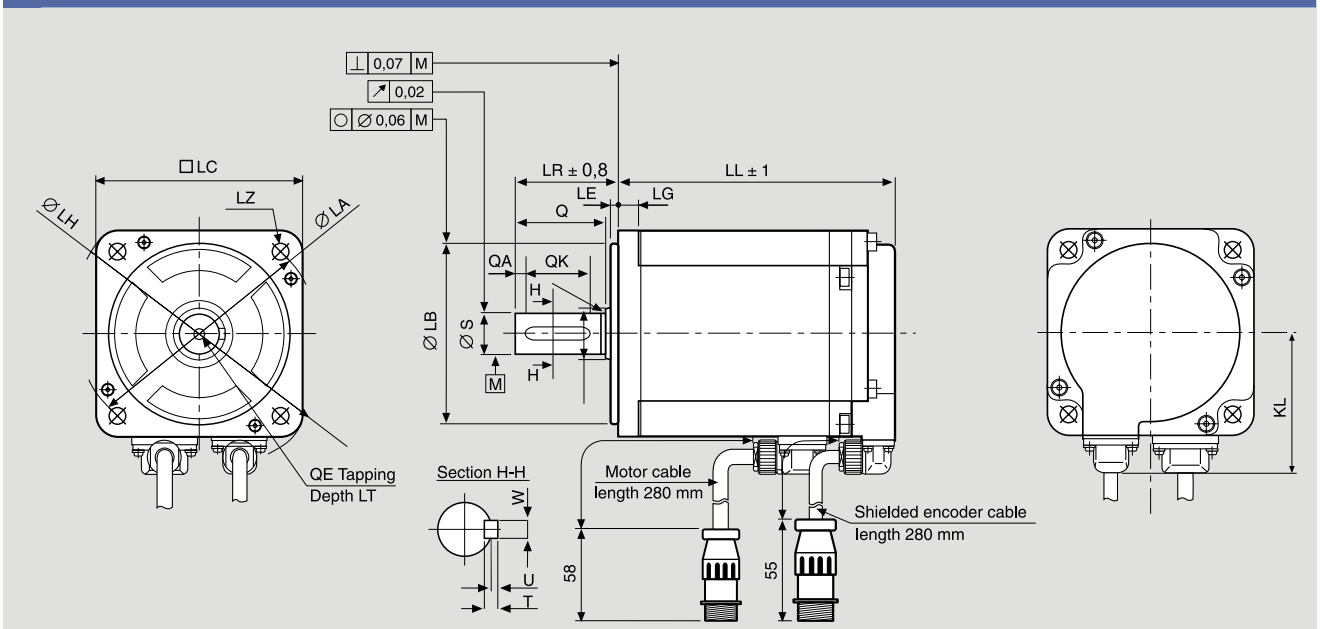
WITH BRAKE
R2AA08075FCH11M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

R2AAB8100HXH29M (R2AAB8100HCH29M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

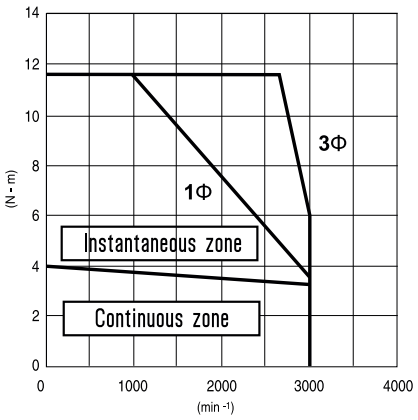


without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
137	163	8	59.4	100	0 80-0.003	3.0	115.5	86	4-Ø6.6	35	0 16-0.011	30	2	25	5	5	2	M5	12

FEATURES

MODEL		R2AAB8100HXH29M
NOMINAL POWER	(W)	1000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	3.180
STALL TORQUE	(Nm)	3.920
MAXIMUM TORQUE	(Nm)	11.60
INERTIA	($Kg*m^2$)	2.383×10^{-4}
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67*
WEIGHT	[version with brake] (Kg)	3.50 [4.30]

TORQUE CURVE
R2AAB8100H [1kW] + RS3A03



* Protection degree IP67 (except for the shaft hole and the edge of the cable).

WITHOUT BRAKE
R2AAB8100HXH29M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

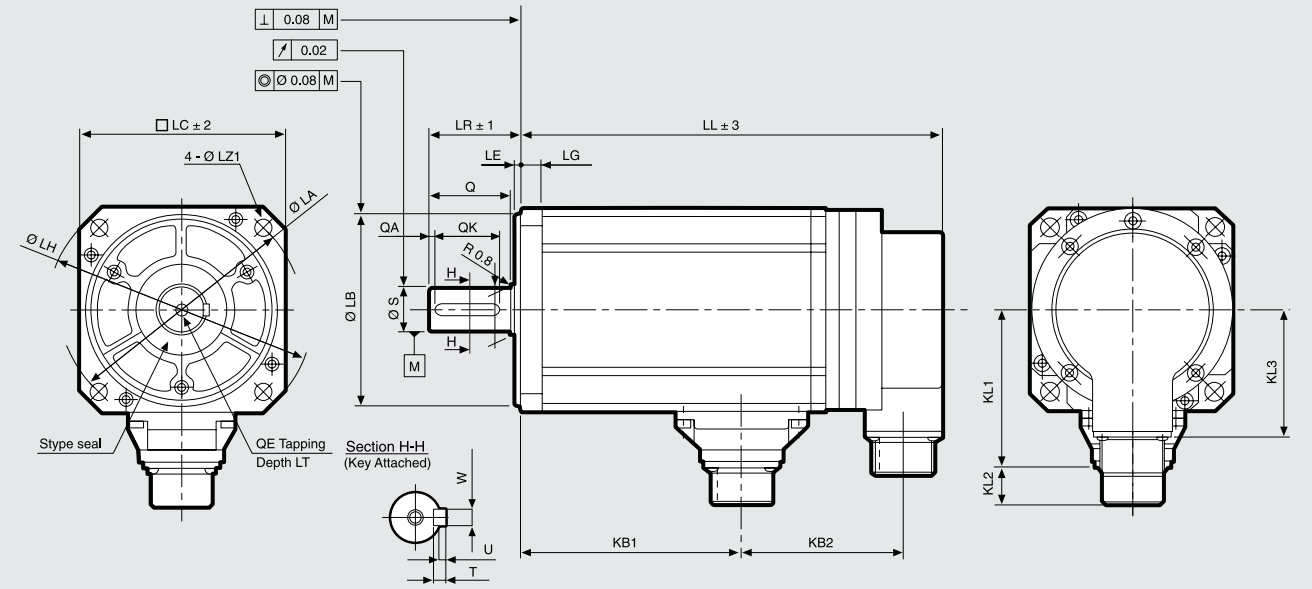
WITH BRAKE
R2AAB8100HCH29M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

Q2AA10150BXH48M (Q2AA10150BCH48M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

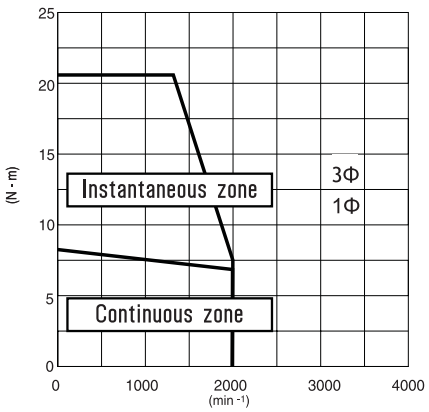


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
237	88	272,5	124	78	19	64	10	115	0 95-0.035	3	130	100	9	--	45	0 22-0.013	40	3	32	0 6-0.030	6	2.5	128	M6	20

FEATURES

MODEL		Q2AA10150BXH48M
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	7.2
STALL TORQUE	(Nm)	7.7
MAXIMUM TORQUE	(Nm)	20.5
INERTIA	($Kg*m^2$)	8.0×10^{-4}
ENCODER	(imp./rev)	131072 (17 bit)
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	7.0 [8.5]

TORQUE CURVE
Q2AA10150B [1.5kW] + RS3A03



Q2AA10150BXH48M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

1Φ torque curve with single phase power supply
3Φ = torque curve with three-phase power supply

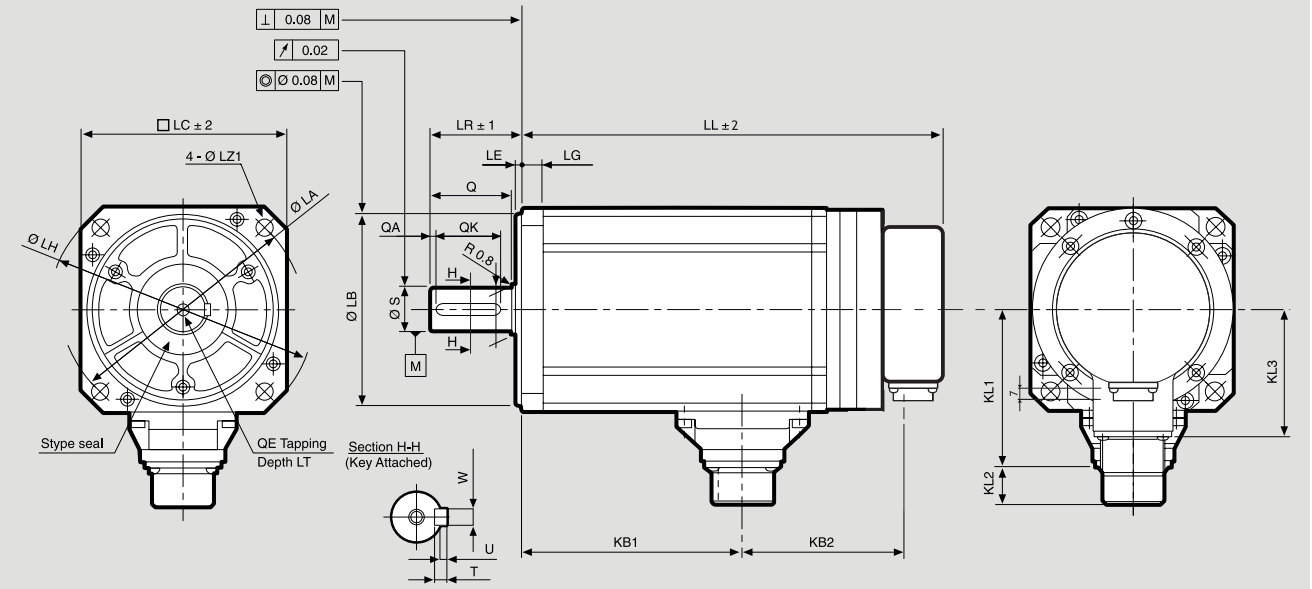
Q2AA10150BCH48M

Suggested amplifiers: RS3A03A0AL0W00P, RS3A03A2HA4W00P, RS3A03A0AL2

R1AA10150FXH00M (R1AA10150FCH00M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



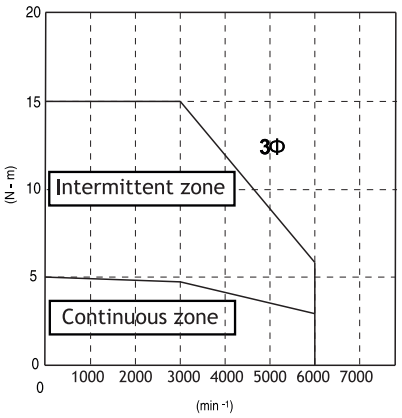
without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
168	68	209	109	78	19	70	10	115	0 95-0.035	3	130	100	9	--	45	0 22-0.013	40	3	32	0 6-0.030	6	2.5	85	M6	20

FEATURES

MODEL		R1AA10150FXH00M
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	4.80
STALL TORQUE	(Nm)	4.90
MAXIMUM TORQUE	(Nm)	15
INERTIA	$(Kg*m)^2$	2×10^{-4}
ENCODER	(imp./rev)	131072 (17 BIT)
PROTECTION DEGREE		IP65
WEIGHT [version with brake]	(Kg)	5 [6.6]

TORQUE CURVE

R1AA10150F [1.5kW] + RS3A05



R1AA10150FXH00M
R1AA10150FCH00M

Indicated performances refer to motor by related new RS3 standard and EtherCat amplifiers.

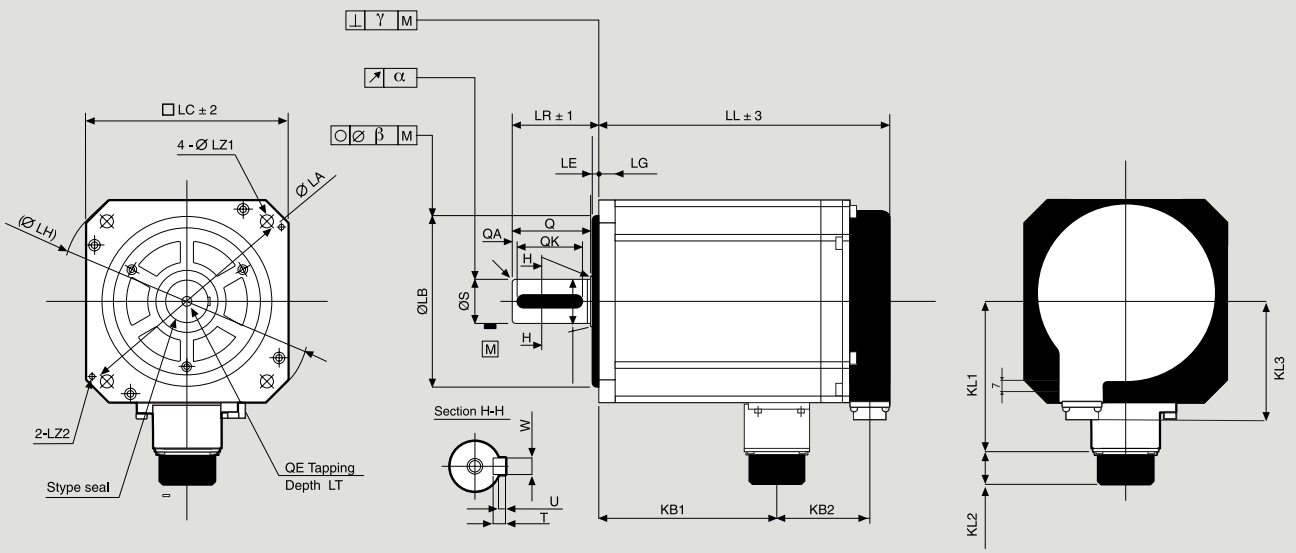
3Φ = torque curve with three-phase power supply

Suggested amplifiers: RS3A05A0AA2, RS3A05A2HA4

R2AA13200LXHW0M (R2AA13200LCHW0M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

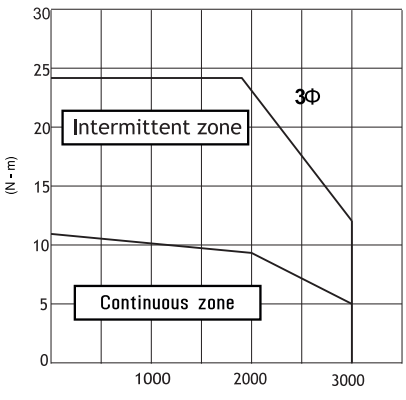


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
160	48	201	90	98	21	69	12	145	0 110-0.035	4	165	130	9	M6	55	0 28-0.013	50	3	42	0 8-0.036	7	3	99	M8	25

FEATURES

MODEL		R2AA13200LXHW0M
NOMINAL POWER	(W)	2000
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	9.5
STALL TORQUE	(Nm)	12
MAXIMUM TORQUE	(Nm)	24
INERTIA	($Kg*m^2$)	12.2×10^{-4}
ENCODER	(imp./rev)	131072 (17BIT)
PROTECTION DEGREE		IP65
WEIGHT [version with brake]	(Kg)	9.0 [11]

TORQUE CURVE
R2AA13200L [2kW] + RS3A05



WITHOUT BRAKE
R2AA13200LXHW0M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

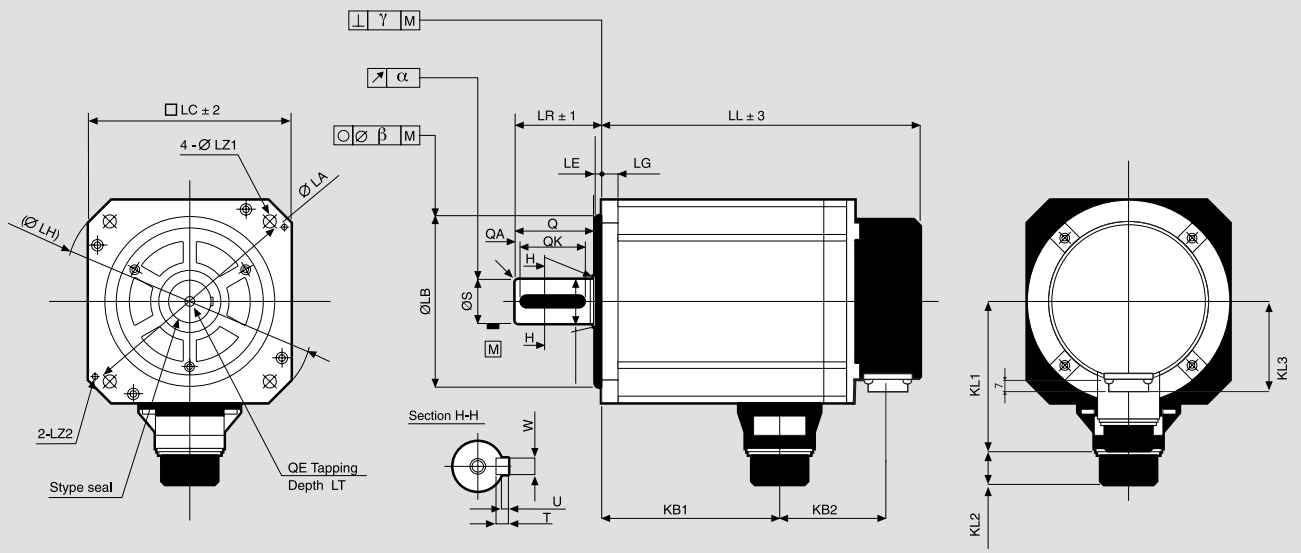
WITH BRAKE
R2AA13200LCHW0M

Suggested amplifiers: RS3A05A0AA2, RS3A05A2HA4W00P

R1AA13300FXH00M (R1AA13300FCH00M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

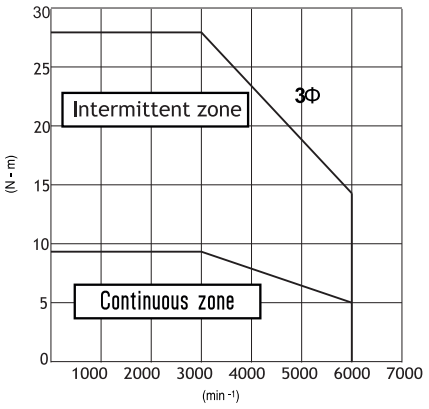


without brake LL	KB2	with brake LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
184	57	230	103	98	21	78	12	145	0 110-0.035	4	165	130	9	M6	55	0 28-0.013	50	3	42	0 8-0.036	7	3	112	M8	25

FEATURES

MODEL		R1AA13300FXH00M
NOMINAL POWER	(W)	3000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	6000
NOMINAL TORQUE	(Nm)	9.7
STALL TORQUE	(Nm)	9.7
MAXIMUM TORQUE	(Nm)	29
INERTIA	($Kg*m^2$)	7×10^{-4}
ENCODER	(imp./rev)	131072 (17BIT)
PROTECTION DEGREE		IP65
WEIGHT [version with brake]	(Kg)	9.7 [11.8]

TORQUE CURVE
R1AA13300F [3kW] + RS3A10



WITHOUT BRAKE
R1AA13300FXH00M

Indicated performances refer to motor controlled by related new RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITH BRAKE
R1AA13300FC00M

Suggested amplifiers: RS3A10A0AA2, RS3A10A2HA4W00P

SERVO SYSTEMS

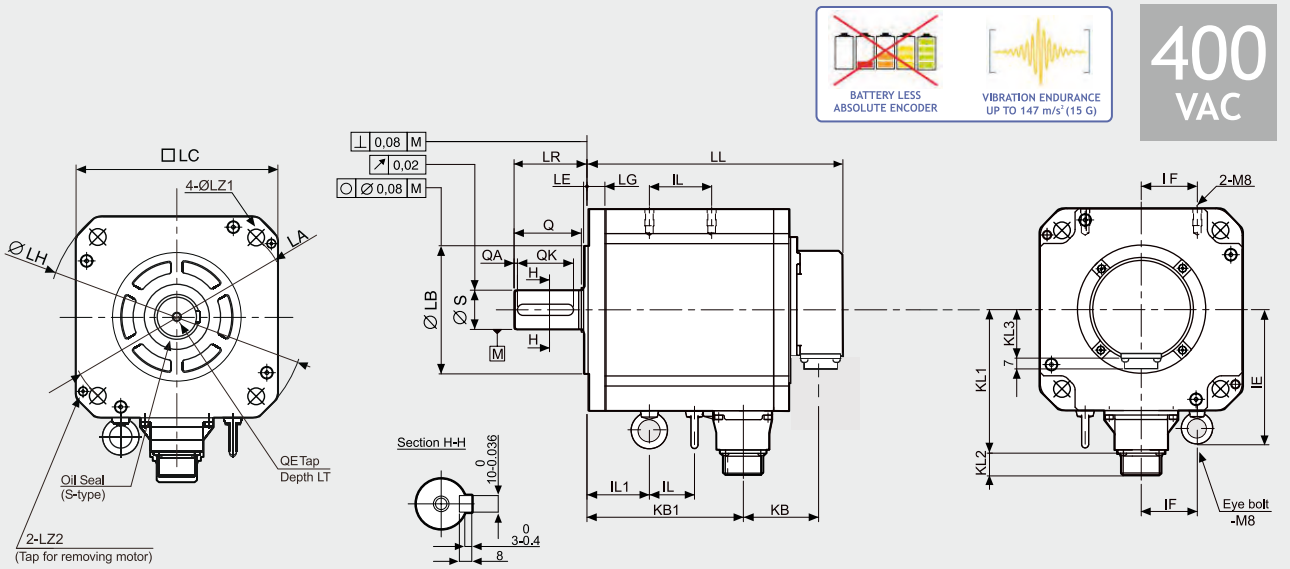
400 VAC SERVOMOTORS
BATTERY LESS MULTI-TURN ABSOLUTE ENCODER

For cable options please see the table at the end of the section.

R2CA18350LXR00M (R2CA18350LCR00M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

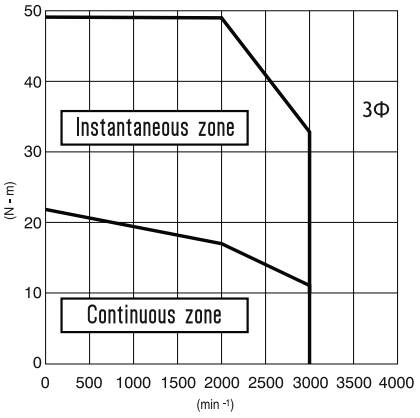


without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
159	52	206	99	123	21	38	16	200	0 Ø114.3-0.035	3	Ø230	□180	Ø13.5	M8	65	0 Ø35-0.016	60	3	50	47	20	50	123	92	M8	25

FEATURES

MODEL		R2CA18350LXR00M (R2CA18350LCR00M)
NOMINAL POWER	(W)	3500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	17.0
STALL TORQUE	(Nm)	22.0
MAXIMUM TORQUE	(Nm)	49.0
INERTIA	($Kg*m^2$)	40×10^{-4}
BATTERY-LESS ABSOLUTE ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	15.5

TORQUE CURVE
R2CA18350LXH [3.5kW] + RS3C05

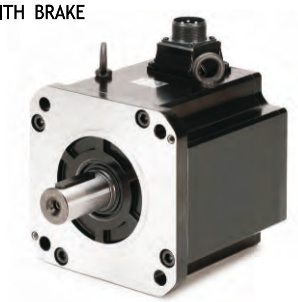


WITHOUT BRAKE

Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITH BRAKE



Suggested amplifiers: RS3C05A0AA2, RS3C05A2HA4

R2CA18450HXR00M (R2CA18450HCR00M)

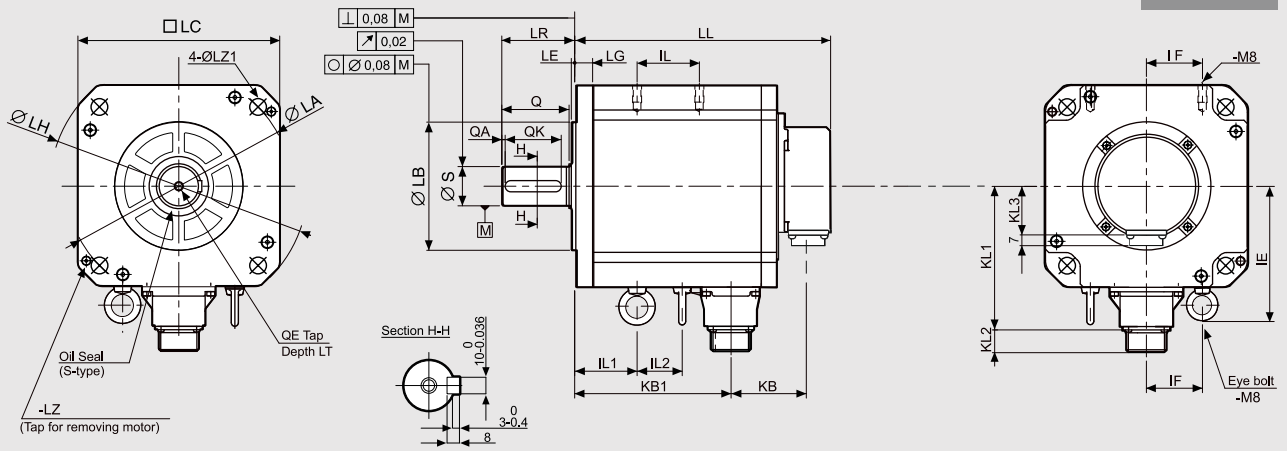
SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

BATTERY LESS ABSOLUTE ENCODER

VIBRATION ENDURANCE UP TO 147 m/s² (15 G)

400 VAC



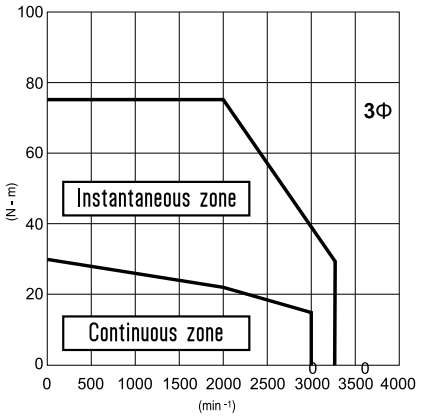
without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
176	52	223	99	123	21	38	16	200	0 Ø114.3-0.035	3	Ø230	□180	Ø13.5	M8	65	0 Ø35-0.016	60	3	50	57	20	50	123	109	M8	25

FEATURES

MODEL		R2CA18450HXR00M (R2CA18450HCR00M)
NOMINAL POWER	(W)	4500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3500
NOMINAL TORQUE	(Nm)	21.5
STALL TORQUE	(Nm)	30
MAXIMUM TORQUE	(Nm)	75.0
INERTIA	($Kg*m^2$)	50×10^{-4}
BATTERY-LESS ABSOLUTE ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	20 [24]

TORQUE CURVE

R2CA18450HX [4.5kW] + RS3C10



WITHOUT BRAKE

Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

WITH BRAKE

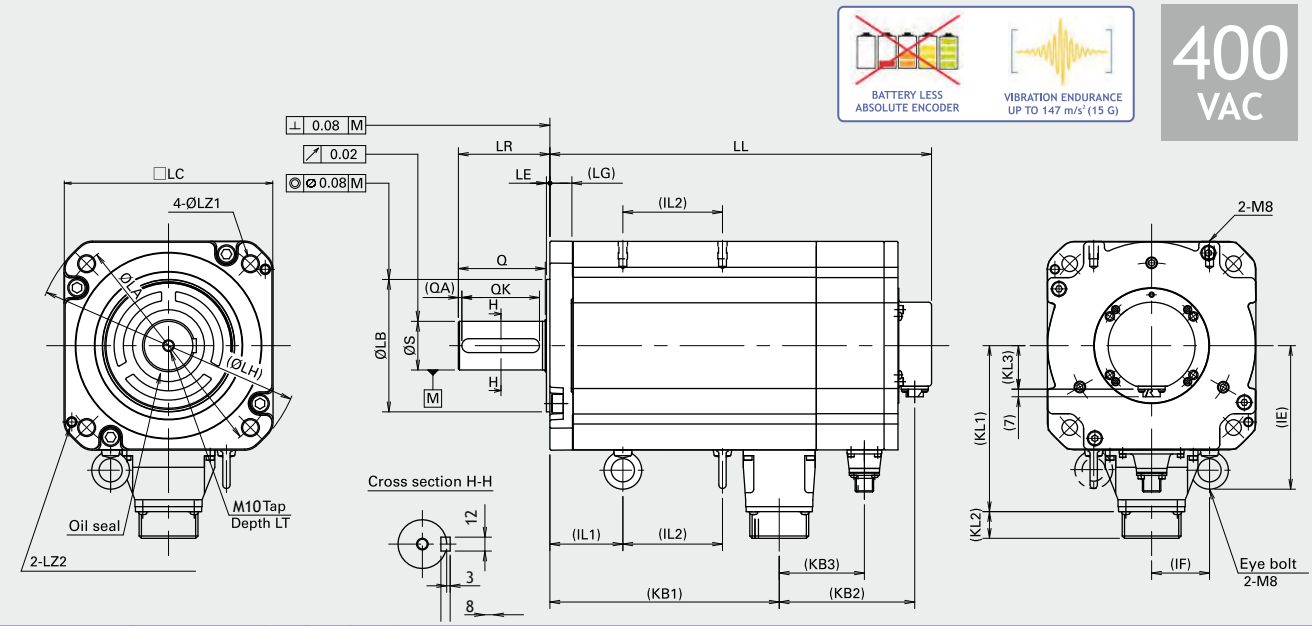
Suggested amplifiers: RS3C10A0AA2, RS3C10A2HA4

R.T.A. s.r.l. PAVIA (ITALY) SANYO DENKI CO.,Ltd (JAPAN)

R2CA18750HCR00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

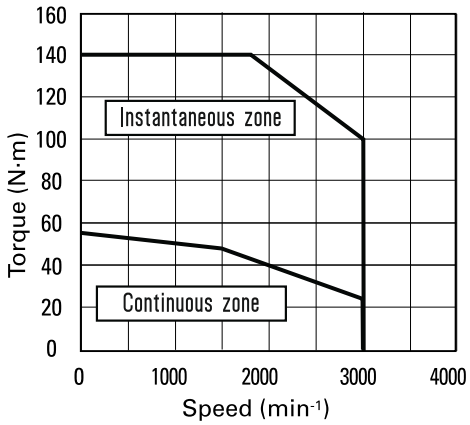


without brake LL	KB2	KB3	with brake LL	KB2	KB3	LG	KL1	KL2	KL3	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	KB1	LT	IE	IF	IL1	IL2
--	--	--	329	117	74	19	144	22	38	200	0 -0.0035 114.3	3	230	180	13.5	M8	79	0 -0.016 42	75	3	67	198	25	123	50	63	86

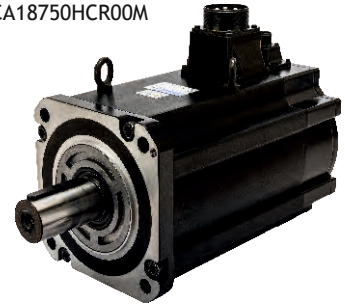
FEATURES

MODEL		R2CA18750HCR00M
NOMINAL POWER	(W)	7500
NOMINAL SPEED	(rpm)	1500
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	48
STALL TORQUE	(Nm)	54.9
MAXIMUM TORQUE	(Nm)	140
INERTIA	($Kg*m^2$)	98×10^{-4}
BATTERY-LESS ABSOLUTE ENCODER	(imp./rev)	SINGLE TURN: 131072 imp/rev (17 bit) MULTI TURN: 65536 turns (16 bit)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	38

TORQUE CURVE
R2CA18750HCR [7.5 KW] + RS3C15



R2CA18750HCR00M



Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

Suggested amplifiers: RS3C15A2HL4

SERVO SYSTEMS

400 VAC SERVOMOTORS - INCREMENTAL ENCODER

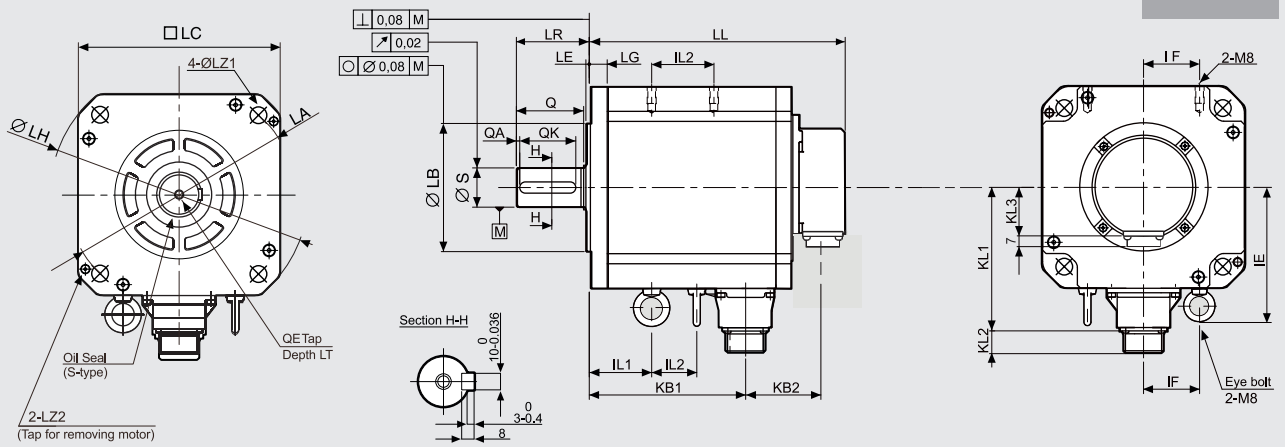
For cable options please see the table at the end of the section.

R2CA18350LXH00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

400 VAC



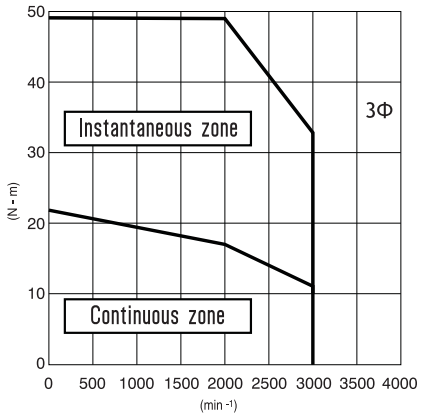
LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
159	52	123	21	38	16	200	0 Ø114.3-0.035	3	Ø230	□180	Ø13.5	M8	65	0 Ø35-0.016	60	3	50	47	20	50	123	92	M8	25

FEATURES

MODEL		R2CA18350LXH00M
NOMINAL POWER	(W)	3500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	17.0
STALL TORQUE	(Nm)	22.0
MAXIMUM TORQUE	(Nm)	49.0
INERTIA	($Kg*m^2$)	40×10^{-4}
ENCODER	(imp./rev)	131072 (17BIT)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	15.5

TORQUE CURVE

R2CA18350LXH [3.5kW] + RS3C05



WITHOUT BRAKE

(Version with brake available on request)

Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

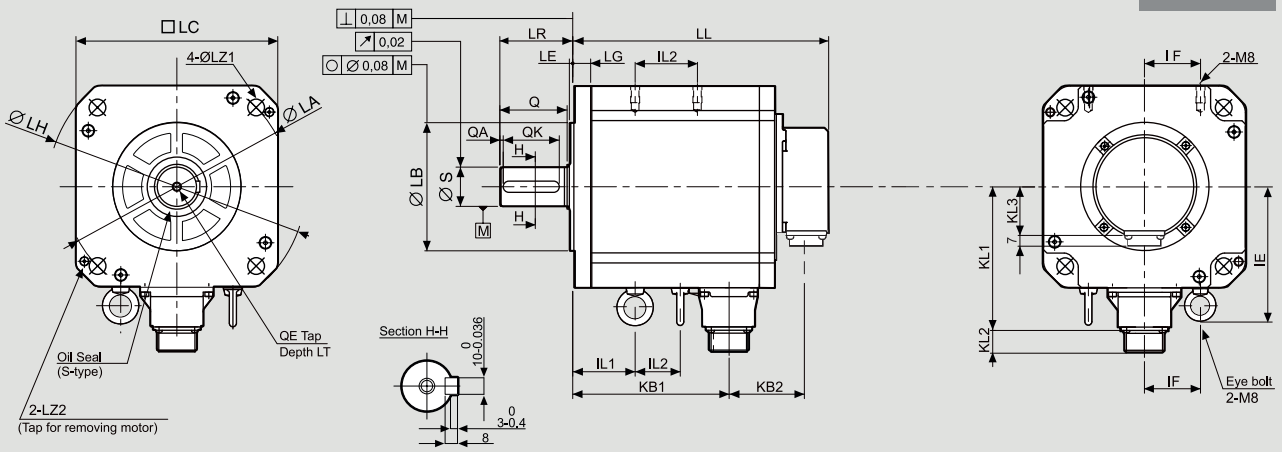
Suggested amplifiers: RS3C05A0AA2, RS3C05A2HA4

R2CA18450HXH00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

400 VAC



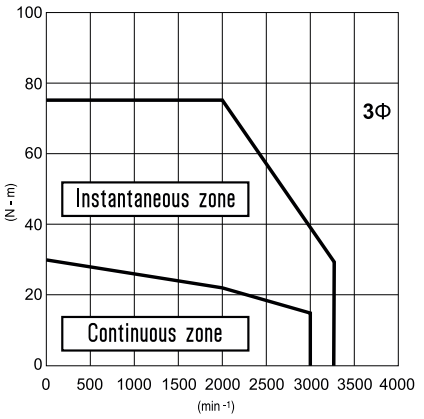
LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
176	52	123	21	38	16	200	0 Ø114.3-0.035	3	Ø230	□180	Ø13.5	M8	65±1	0 Ø35-0.016	60	3	50	57	20	50	123	109	M8	25

FEATURES

MODEL		R2CA18450HXH00M
NOMINAL POWER	(W)	4500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3500
NOMINAL TORQUE	(Nm)	21.5
STALL TORQUE	(Nm)	30
MAXIMUM TORQUE	(Nm)	75.0
INERTIA	($Kg*m^2$)	50×10^{-4}
ENCODER	(imp./rev)	131072 (17 BIT)
PROTECTION DEGREE		IP65
WEIGHT	(Kg)	20

TORQUE CURVE

R2CA18450HX [4.5kW] + RS3C10



WITHOUT BRAKE

(Version with brake available on request)

Indicated performances refer to motor controlled by related RS3 standard and EtherCat amplifiers.

3Φ = torque curve with three-phase power supply

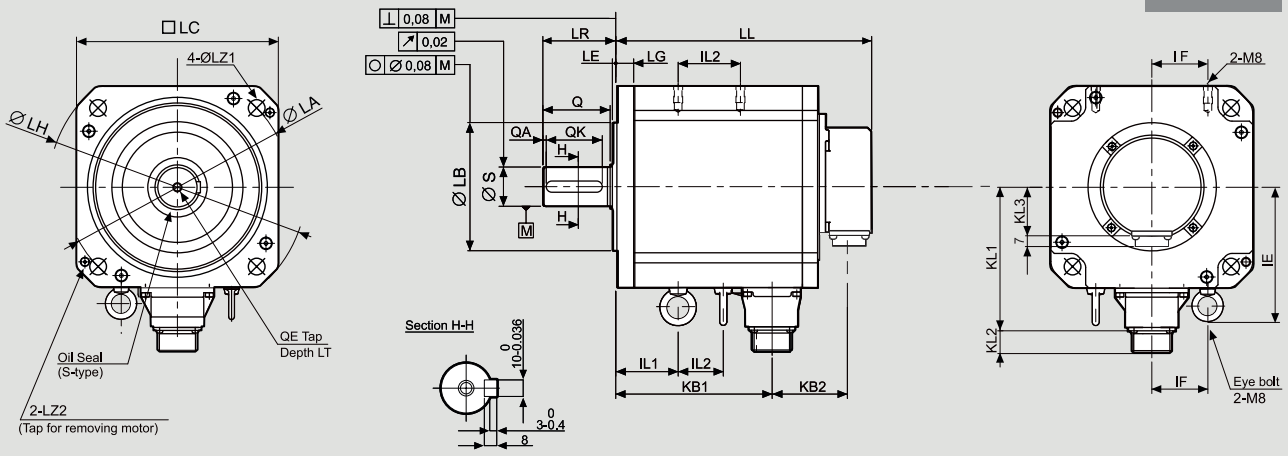
Suggested amplifiers: RS3C10A0AA2, RS3C10A2HA4

R2CA2215KVXH00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

400 VAC



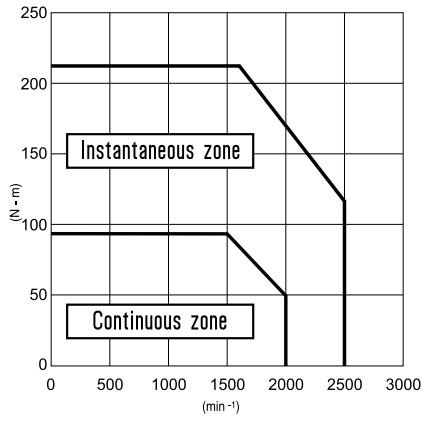
LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
397	78	162	22	38	19	235	0 Ø200-0.046	4	Ø270	□220	Ø13.5	M10	79	0 Ø55-0.019	79	3	67	98	150	60	142	304	M10	25

FEATURES

MODEL		R2CA2215KVXH00M
NOMINAL POWER	(W)	15000
NOMINAL SPEED	(rpm)	1500
MAXIMUM SPEED	(rpm)	2500
NOMINAL TORQUE	(Nm)	95.0
STALL TORQUE	(Nm)	95.0
MAXIMUM TORQUE	(Nm)	215
INERTIA	($Kg*m^2$)	288×10^{-4}
ENCODER	(imp./rev)	131072 (17BIT)
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	74

TORQUE CURVE

R2CA2215KVXH [15.0kW] + RS3C15



WITHOUT BRAKE

(Version with brake available on request)

Indicated performances refer to motor controlled by related RS3 standard amplifiers.

Suggested amplifiers: RS3C15A0AL2

CABLE OPTIONS EtherCAT SERVODRIVES

AC SERVOMOTORS	EtherCAT SERVODRIVES				
48 VDC Incremental encoder multi-axis	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2GD04005FXH1CM	CVAB48ET402M	CVMB48ET4PMXXM	CVEB48ETPMXXM	NO BRAKE	RF2K24A0HL5
R2GD06010DXH11M	CVAB48ET402M	CVMB48ET4PMXXM	CVEB48ETPMXXM	NO BRAKE	
R2GD06020DXH11M	CVAB48ET402M	CVMB48ET4PMXXM	CVEB48ETPMXXM	NO BRAKE	
48 VDC Incremental Encoder single-axis	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2GD04005FXH1CM	N/A	CVMB48ETPMXXM	CVEB48ETPMXXM	NO BRAKE	RS2K04A2HL5
R2GD06010DXH11M	N/A	CVMB48ETPMXXM	CVEB48ETPMXXM	NO BRAKE	
R2GD06020DXH11M	N/A	CVMB48ETPMXXM	CVEB48ETPMXXM	NO BRAKE	
230 VAC Battery Less Absolute Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA04010FXR1CM	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	RS3 A03A2HA4W00P
R2AA06020FXR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA06040FXR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA08075FXR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AAB8100HXR29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
Q2AA10150BXR48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	NO BRAKE	
230 VAC Battery Less Multi-turn Absolute Encoder (brake version)	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA04010FCR1CM6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	RS3 A03A2HA4W00P
R2AA06020FCR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA06040FCR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA08075FCR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AAB8100HCR29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
Q2AA10150BCR48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	CVFPMXXM	
230 VAC Incremental Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA04010FXH1CM	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	RS3 A03A2HA4W00P
R2AA04010FCH1CM6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA06020FXH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA06020FCH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA06040FXH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA06040FCH11M6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA08075FXH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	

CABLE OPTIONS EtherCAT SERVODRIVES

AC SERVOMOTORS	EtherCAT SERVODRIVES				
230 VAC Incremental Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA08075FCH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	RS3 A03A2HA4W00P
R2AAB8100HXH29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AAB8100HCH29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
Q2AA10150BXH48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	NO BRAKE	
Q2AA10150BCH48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	CVFPMXXM	
R1AA10150FXH00M	N/A	CVMBR1AR90XXM CVMBR1ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3 A05A2HA4W00P
R1AA10150FCH00M	N/A	CVMFR1ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
R2AA13180HXH00M	N/A	CVMBR2AR90XXM CVMBR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	
R2AA13180HCH00M	N/A	CVMFR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
R2AA13200LXHW0M	N/A	CVMBR2AR90XXM CVMBR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	
R2AA13200LCHW0M	N/A	CVMFR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
R1AA13300FXH00M	N/A	CVMB3KR1AR90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3 A10A2HA4W00P
R1AA13300FCH00M	N/A	CONNECTOR ONLY	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
400 VAC Incremental Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2CA18350LXH00M	N/A	CONNECTOR ONLY (cable section: 3x2,5mm^2)	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3C05A2HA4
R2CA18450HXH00M	N/A	CONNECTOR ONLY (cable section: 3x4mm^2)	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3C10A2HA4
R2CA2215KVXH00M	N/A	CONNECTOR ONLY (cable section: 3x8mm^2)	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3C15A2HL4

CABLE OPTIONS EtherCAT SERVODRIVES

AC SERVOMOTORS	EtherCAT SERVODRIVES		
48 VDC Incremental encoder multi-axis	STO CABLE	I/O CONNECTOR	DRIVE
R2GD04005FXH1CM	CVSIORAD02M	KCIO48ET	RF2K24A0HL5
R2GD06010DXH11M	CVSIORAD02M	KCIO48ET	
R2GD06020DXH11M	CVSIORAD02M	KCIO48ET	
48 VDC Incremental encoder single-axis	STO CABLE	I/O CONNECTOR	DRIVE
R2GD04005FXH1CM	CVSIORAD02M	CVIOB48ET02M	RS2K04A2HL5
R2GD06010DXH11M	CVSIORAD02M	CVIOB48ET02M	
R2GD06020DXH11M	CVSIORAD02M	CVIOB48ET02M	
230 VAC Battery Less Multi-turn Absolute Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2AA04010FXR1CM	CVSIORAD02M	CVIORS3ET02M	RS3A03A2HA4W00P
R2AA06020FXR11M	CVSIORAD02M	CVIORS3ET02M	
R2AA06040FXR11M	CVSIORAD02M	CVIORS3ET02M	
R2AA08075FXR11M	CVSIORAD02M	CVIORS3ET02M	
R2AAB8100HXR29M	CVSIORAD02M	CVIORS3ET02M	
Q2AA10150BXR48M	CVSIORAD02M	CVIORS3ET02M	
230 VAC Battery Less Multi-turn Absolute Encoder (brake version)	STO CABLE	I/O CONNECTOR	DRIVE
R2AA04010FCR1CM6	CVSIORAD02M	CVIORS3ET02M	RS3A03A2HA4W00P
R2AA06020FCR11M	CVSIORAD02M	CVIORS3ET02M	
R2AA06040FCR11M	CVSIORAD02M	CVIORS3ET02M	
R2AA08075FCR11M	CVSIORAD02M	CVIORS3ET02M	
R2AAB8100HCR29M	CVSIORAD02M	CVIORS3ET02M	
Q2AA10150BCR48M	CVSIORAD02M	CVIORS3ET02M	
230 VAC Incremental Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2AA04010FXH1CM	CVSIORAD02M	CVIORS3ET02M	RS3A03A2HA4W00P
R2AA04010FCH1CM6	CVSIORAD02M	CVIORS3ET02M	
R2AA06020FXH11M	CVSIORAD02M	CVIORS3ET02M	
R2AA06020FCH11M	CVSIORAD02M	CVIORS3ET02M	
R2AA06040FXH11M	CVSIORAD02M	CVIORS3ET02M	
R2AA06040FCH11M6	CVSIORAD02M	CVIORS3ET02M	
R2AA08075FXH11M	CVSIORAD02M	CVIORS3ET02M	
R2AA08075FCH11M	CVSIORAD02M	CVIORS3ET02M	
R2AAB8100HXH29M	CVSIORAD02M	CVIORS3ET02M	
R2AAB8100HCH29M	CVSIORAD02M	CVIORS3ET02M	
Q2AA10150BXH48M	CVSIORAD02M	CVIORS3ET02M	
Q2AA10150BCH48M	CVSIORAD02M	CVIORS3ET02M	
R1AA10150FXH00M	CVSIORAD02M	CVIORS3ET02M	RS3A05A2HA4W00P
R1AA10150FCH00M	CVSIORAD02M	CVIORS3ET02M	
R2AA13180HXH00M	CVSIORAD02M	CVIORS3ET02M	
R2AA13180HCH00M	CVSIORAD02M	CVIORS3ET02M	
R2AA13200LXHW0M	CVSIORAD02M	CVIORS3ET02M	
R2AA13200LCHW0M	CVSIORAD02M	CVIORS3ET02M	

CABLE OPTIONS EtherCAT SERVODRIVES

AC SERVOMOTORS	EtherCAT SERVODRIVES		
230 VAC Incremental Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R1AA13300FXH00M	CVSIORAD02M	CVIORS3ET02M	RS3A10A2HA4W00P
R1AA13300FCH00M	CVSIORAD02M	CVIORS3ET02M	
400 VAC Incremental Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2CA18350LXH00M	CVSIORAD02M	CVIORSRET02M	RS3C05A2HA4
R2CA18450HXH00M	CVSIORAD02M	CVIORS3ET02M	RS3C10A2HA4
R2CA2215KVXH00M	CVSIORAD02M	CVIORS3ET02M	RS3C15A2HL4

CABLE OPTIONS PULSE-TRAIN/ANALOG SERVODRIVES

AC SERVOMOTORS	PULSE-TRAIN/ANALOG SERVODRIVES				
48 VDC Incremental encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2GD04005FXH1CM	CVAB4802M	CVMB48PMXXM	CVEB48PMXXM	NO BRAKE	RF2G21A0A00
R2GD06010DXH11M	CVAB4802M	CVMB48PMXXM	CVEB48PMXXM	NO BRAKE	
R2GD06020DXH11M	CVAB4802M	CVMB48PMXXM	CVEB48PMXXM	NO BRAKE	
230 VAC Battery Less Multi-turn Absolute Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA04010FXR1CM	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	RS3A03A0AL0W00P RS3A03A0AL2
R2AA06020FXR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA06040FXR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA08075FXR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AAB8100HXR29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
Q2AA10150BXR48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	NO BRAKE	
230 VAC Battery Less Multi-turn Absolute Encoder (brake version)	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA04010FCR1CM6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	RS3A03A0AL0W00P RS3A03A0AL2
R2AA06020FCR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA06040FCR11M6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA08075FCR11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AAB8100HCR29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
Q2AA10150BCR48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	CVFPMXXM	
230 VAC Incremental Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2AA04010FXH1CM	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	RS3A03A0AL0W00P RS3A03A0AL2
R2AA04010FCH1CM6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA06020FXH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA06020FCH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA06040FXH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA06040FCH11M6	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AA08075FXH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AA08075FCH11M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	
R2AAB8100HXH29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	NO BRAKE	
R2AAB8100HCH29M	CVABRAXXM	CVMBRARXXM CVMBRARPMXXM	CVEBRARXXM CVEBRARPMXXM	CVFRPMXXM	

CABLE OPTIONS PULSE-TRAIN/ANALOG SERVODRIVES

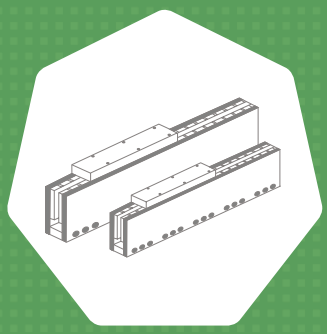
AC SERVOMOTORS	PULSE-TRAIN/ANALOG SERVODRIVES				
230 VAC Incremental Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
Q2AA10150BXH48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	NO BRAKE	RS3A03A0AL0W00P RS3A03A0AL2
Q2AA10150BCH48M	N/A	CVMBAR90QHXXM CVMBAR90QHPMXXM	CVEBAR90QHXXM CVEBAR90QHPMXXM	CVFPMXXM	
R1AA10150FXH00M	N/A	CVMBR1AR90XXM CVMBR1ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3A05A0AA2W00P
R1AA10150FCH00M	N/A	CVMFR1ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
R2AA13180HXH00M	N/A	CVMBR2AR90XXM CVMBR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	
R2AA13180HCH00M	N/A	CVMFR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
R2AA13200LXHW0M	N/A	CVMBR2AR90XXM CVMBR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	
R2AA13200LCHW0M	N/A	CVMFR2ARPM90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
R1AA13300FXH00M	N/A	CVMB3KR1AR90XXM	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3A10A0AA2
R1AA13300FCH00M	N/A	CONNECTOR ONLY	CVEBAR1R2XXM CVEBAR1R2PMXXM	MOTOR CABLE	
400 VAC Incremental Encoder	POWER SUPPLY CABLE	MOTOR CABLE	ENCODER CABLE	HOLDING BRAKE CABLE	DRIVE
R2CA18350LXH00M	N/A	CONNECTOR ONLY (cable section: 3x2,5mm^2)	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3C05A0AA2
R2CA18450HXH00M	N/A	CONNECTOR ONLY (cable section: 3x4mm^2)	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3C10A0AA2
R2CA2215KVXH00M	N/A	CONNECTOR ONLY (cable section: 3x8mm^2)	CVEBAR1R2XXM CVEBAR1R2PMXXM	NO BRAKE	RS3C15A0AL2

CABLE OPTIONS PULSE-TRAIN/ANALOG SERVODRIVES

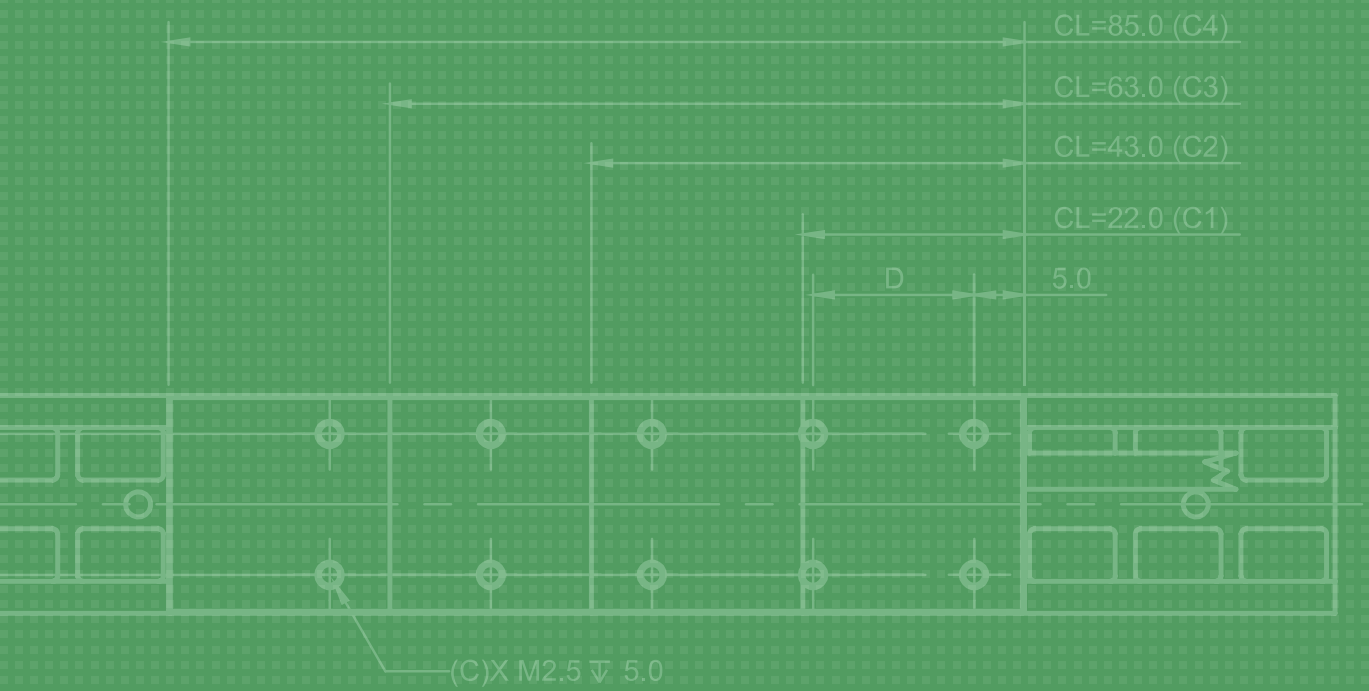
AC SERVOMOTORS	PULSE-TRAIN/ANALOG SERVODRIVES		
48 VDC Incremental encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2GD04005FXH1CM	no SIL	CVSDB4802M-CVIOB4802M	RF2G21A0A00
R2GD06010DXH11M	no SIL	CVSDB4802M-CVIOB4802M	
R2GD06020DXH11M	no SIL	CVSDB4802M-CVIOB4802M	
230 VAC Battery Less Multi-turn Absolute Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2AA04010FXR1CM	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3A03A0AL0W00P RS3A03A0AL2
R2AA06020FXR11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA06040FXR11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA08075FXR11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AAB8100HXR29M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
Q2AA10150BXR48M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
230 VAC Battery Less Multi-turn Absolute Encoder (brake version)	STO CABLE	I/O CONNECTOR	DRIVE
R2AA04010FCR1CM6	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3A03A0AL0W00P RS3A03A0AL2
R2AA06020FCR11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA06040FCR11M6	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA08075FCR11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AAB8100HCR29M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
Q2AA10150BCR48M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
230 VAC Incremental Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2AA04010FXH1CM	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3A03A0AL0W00P RS3A03A0AL2
R2AA04010FCH1CM6	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA06020FXH11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA06020FCH11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA06040FXH11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA06040FCH11M6	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA08075FXH11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA08075FCH11M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AAB8100HXH29M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AAB8100HCH29M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
Q2AA10150BXH48M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
Q2AA10150BCH48M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R1AA10150FXH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3A05A0AA2W00P
R1AA10150FCH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	

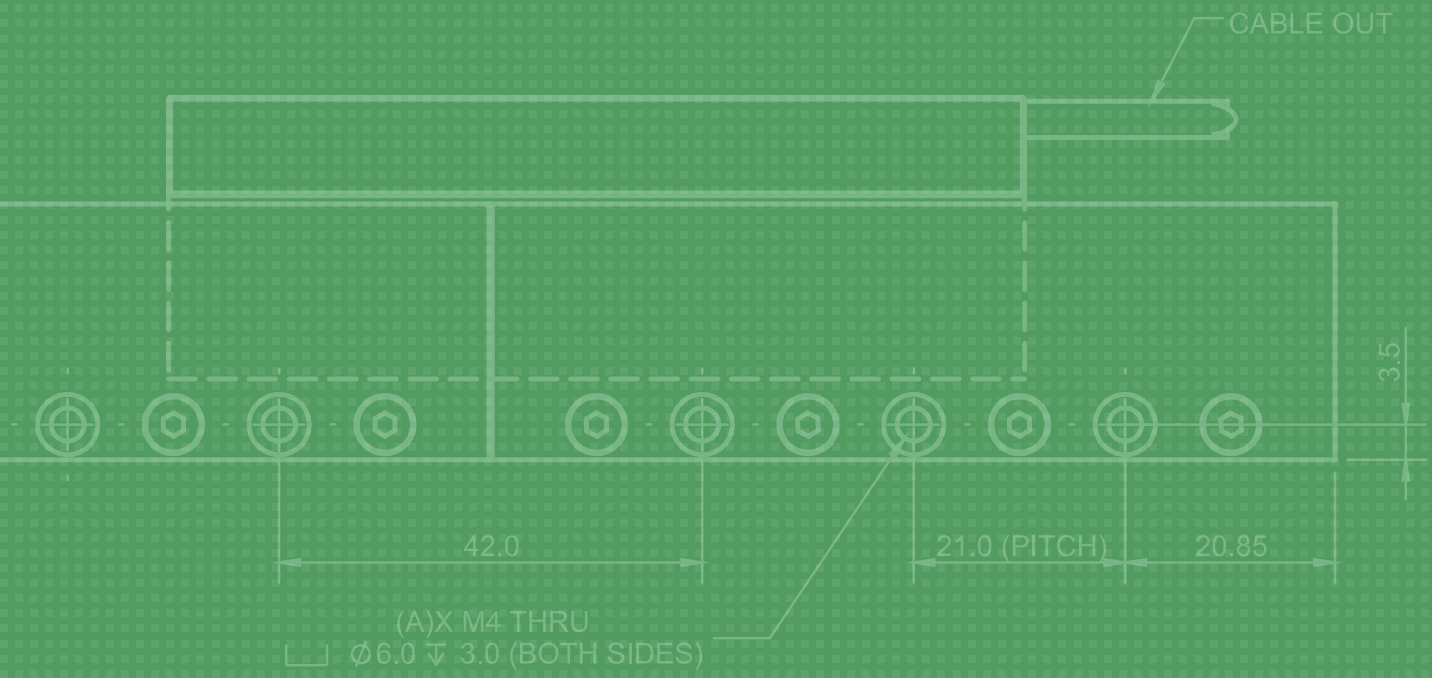
CABLE OPTIONS PULSE-TRAIN/ANALOG SERVODRIVES

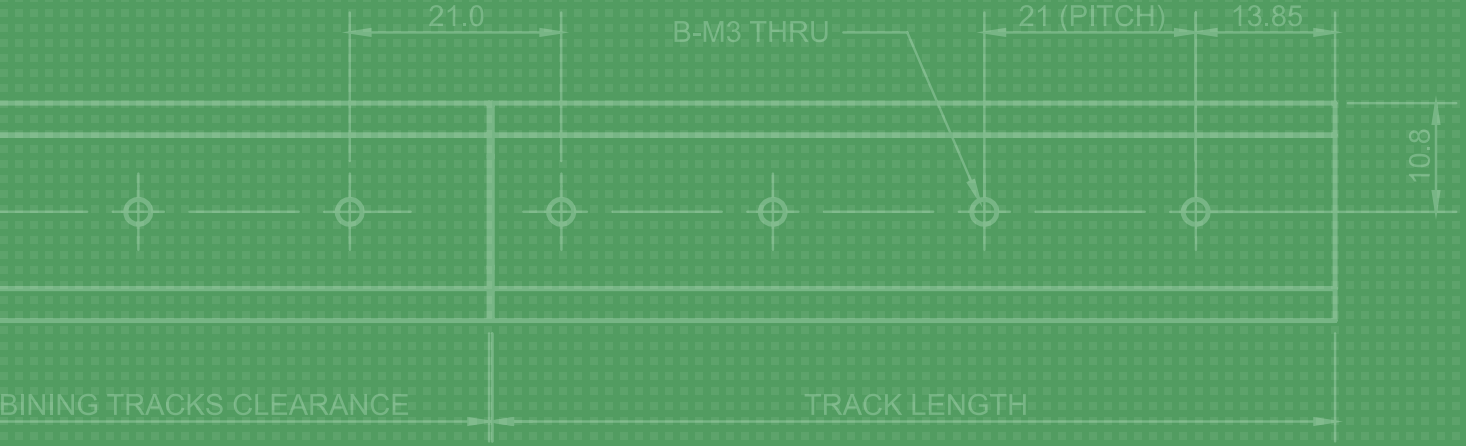
AC SERVOMOTORS	PULSE-TRAIN/ANALOG SERVODRIVES		
230 VAC Incremental Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2AA13180HXH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3A05A0AA2W00P
R2AA13180HCH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA13200LXHW0M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R2AA13200LCHW0M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
R1AA13300FXH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3A10A0AA2
R1AA13300FCH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	
400 VAC Incremental Encoder	STO CABLE	I/O CONNECTOR	DRIVE
R2CA18350LXH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3C05A0AA2
R2CA18450HXH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3C10A0AA2
R2CA2215KVXH00M	CVSIORAD02M-BPS01	CVLBRR02M-KCQ02	RS3C15A0AL2



DIRECT DRIVE TECHNOLOGY


CL=85.0 (C4)
CL=63.0 (C3)
CL=43.0 (C2)
CL=22.0 (C1)
D
5.0
(C)X M2.5 ↧ 5.0


CABLE OUT
3.5
42.0
21.0 (PITCH)
20.85
(A)X M4 THRU
⌴ Ø6.0 ↧ 3.0 (BOTH SIDES)


21.0
B-M3 THRU
21 (PITCH)
13.85
10.8
BINING TRACKS CLEARANCE
TRACK LENGTH

DIRECT DRIVE TECHNOLOGY

INDEX

Direct Drive Technology

Since 2018 R.T.A. has approached the Direct Drive technology, in partnership with PBA Systems, a well-established innovative company from Singapore.
Since then R.T.A. has enlarged its products portfolio with a new line: LINEAR MOTORS and DIRECT DRIVE ROTARY MOTORS.
The direct drive solutions offered by R.T.A. are very diversified, but special customized solutions can also be developed.
All Direct Drive solutions are managed through Sanyo Denki amplifiers.

The Direct Drive Technology key advanteges

- High Speed and acceleration.
- High Accuracy and Repeatability.
- Long Stroke.
- Zero Backlash.
- Longer Lifetime, No Maintenance.
- Maximum Smoothness & Rigidity.
- Multiple Carriages on the Same Track.

HIGH SPEED

COMPACT DESIGN

HIGH FORCE

3 main motors families

1 IRONLESS LINEAR MOTORS

- Low moving mass, suitable for high acceleration application.
- High Precision motion.
- No Backlash.
- Excellent repeatability.
- Cogging free.
- Low velocity rippling even at very low speed.
- Unlimited length for magnet track.
- Easy assembly and installation.

IRONLESS
LINEAR MOTOR

DXB/BT Series

Main Features

	PEAK FORCE (N)	CONTINUOUS FORCE AC (N)	PEAK CURRENT (A)	CONTINUOUS CURRENT AC (A)	COIL LENGTH (mm)
DX10B	63.3	12.7	14.01	2.8	22-85
DX20B	229	60	21	5.46	61-151
DX30B/BT	724	188	47.25	12.29	61-301
DX50B/BT	1339	348	52.50	13.65	61-361
DX65B/BT	5191	1247	93.75	22.50	121-901
DX90B/BT	5366	1234	67.50	15.53	121-721

Application fields

Precision positioning, Semiconductor machines, Laser trimming, Precision Stamping, Biotech handlers, Microscope stages.

2 IRON-CORE LINEAR MOTORS

- High output force.
- Compact design.
- High rigidity structure.
- Low cogging force.
- No Backlash.
- Excellent repeatability.
- Easy installation.

IRONCORE LINEAR MOTOR

PIX/PIXA Series

Main Features

	PEAK FORCE (N)	CONTINUOUS FORCE AC (N)	PEAK CURRENT (A)	CONTINUOUS CURRENT AC (A)	COIL LENGTH (mm)
PIX200-027	1393	279	60.8	8.60	64-320
PIX200-040	2307	461	43.8	8.80	64-320
PIXA030	320	80	11.31	2.83	120-480
PIXA050	597	149	21.27	5.32	120-480
PIXA065	2205	551	36.25	9.06	120-480
PIXA085	3968	992	65.27	16.32	120-480
PIXA110	6409	1602	82.01	20.50	120-480
PIXA135	8196	2049	76.75	19.19	120-480
PIXA160	9827	2457	92.02	23.01	120-480

Application fields

Pick and place, Laser cutting, Extruders, Machine Tools, Large format printing, Digital printing.

3 DIRECT-DRIVE ROTARY MOTORS

- Ultra-compact size.
- Direct mounting without additional mechanical power transmission.
- High precision with quick responsiveness time.
- High resolution.
- Repeatability of rotary positioning.
- High torque & infinite rotations.
- Low mechanical vibrations, longer lifetime, no maintenance.

DIRECTDRIVE
ROTARY MOTOR

PDDR Series Series

Main Features

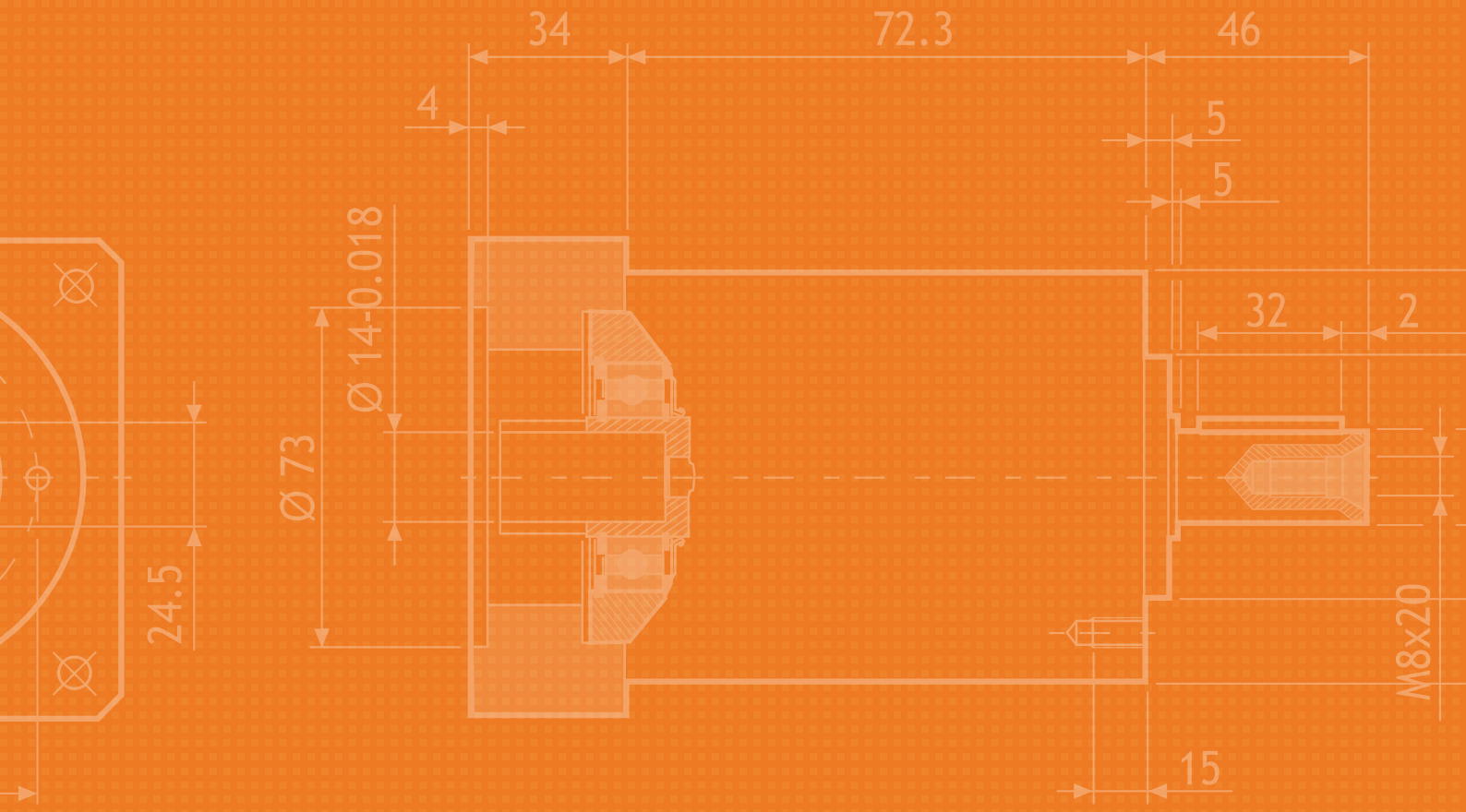
	PEAK TORQUE (Nm)	MAX SPEED (RPS)	REPEATABILITY (arcsec)	ACCURACY (arcsec)
PDDR110-06-I	6.0	10.0	+/-2.5	+/-30
PDDR110-12-I	12.0	8.0	+/-2.5	+/-30
PDDR150-T-I	4.3	10.0	+/-2	+/-30
PDDR150-15-O	15.7	5.0	+/-2	+/-30
PDDR150-30-O	32.2	5.0	+/-2	+/-30
PDDR150-50-O	54.4	5.0	+/-2	+/-30
PDDR150-80-O	86.6	5.0	+/-2	+/-30
PDDR160-40-I	40.0	8.0	+/-4	+/-30
PDDR160-80-I	81.0	9.0	+/-4	+/-30
PDDR240-30-I	30.7	5.0	+/-2	+/-30
PDDR240-80-I	80.6	4.5	+/-2	+/-30
PDDR240-132-I	132.0	2.8	+/-2	+/-30
PDDR300-150-I	150.1	2.9	+/-2	+/-30
PDDR300-300-I	299.7	3.0	+/-2	+/-30
PDDR300-450-I	450.9	2.0	+/-2	+/-30
PDDR490-600-I	540.0	2.8	+/-2	+/-30
PDDR490-900-I	780.0	1.9	+/-2	+/-30
PDDR490-1200-I	1090.0	1.4	+/-2	+/-30

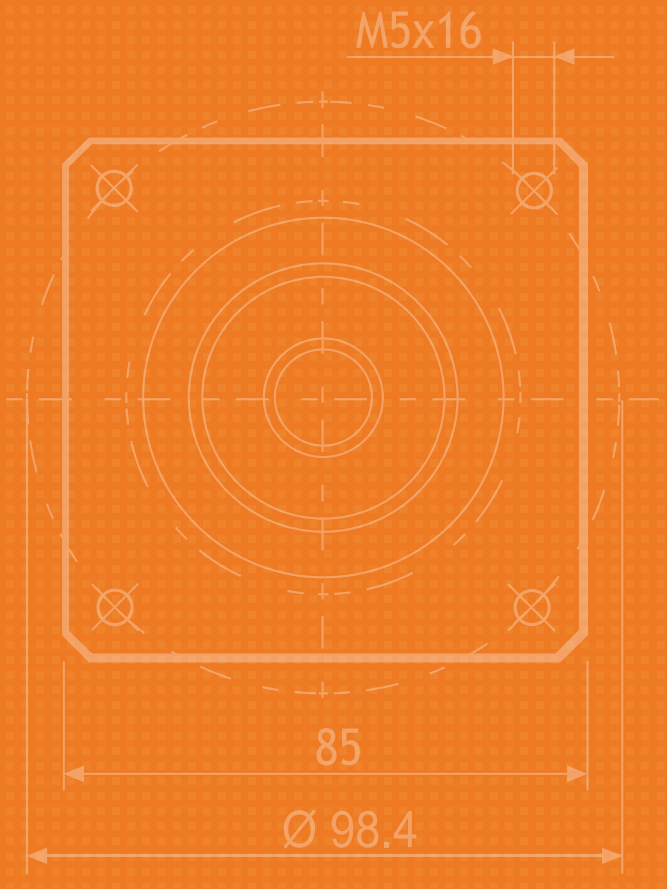
Application fields

Radars, Scanners, Rotary indexing table, Robots, Packaging, Inspection stations, Direction change conveyors, General automation.

For further information about R.T.A. Direct Drive Technology solutions, please contact R.T.A.

PLANETARY GEARBOXES


34
72.3
46
4
5
5
Ø 14-0.018
Ø 73
32
2
24.5
M8x20
15


M5x16
85
Ø 98.4

PLANETARY GEARBOXES

INDEX

Key advantages of R.T.A. planetary gearboxes

SG series is a full range of planetary gearboxes combining high performance with optimal reliability. It features a perfect PLUG AND GO solution with R.T.A. stepper and servo motors.

- Low noise.
- High quality.
- High precision.
- High nominal and accelerants torque.
- Excellent radial and axial load carrying capacity.
- IP64 protection degree.
- Custom ratios available.

IP64 | PLUG & GO ! | IN STOCK | MADE IN ITALY

CUSTOM RATIOS AVAILABLE | LOW BACKLASH VERSIONS

R.T.A. added value: the service

- Wide stock of models always available.
- Dedicated warehouse with quick restore.
- Professional service of assembling and testing.
- Quality test on every product to ensure the best performance and traceability.

R.T.A. Stock philosophy

R.T.A. gearboxes are always available at stock, guaranteering very fast delivery times.

R.T.A. Plug&Go solution in 5 easy steps

R.T.A. offers an exclusive professional assembly service of stepper and servo motors with the wide range of planetary gearboxes.

- Select the gearboxes and motors from our wide range of models always available in stock.
- Our highly qualified staff will make the assembly and testing of the products.
- The assembled motor/gearbox combo is ready to use.
- Processing and shipping times will be extremely fast.
- No more storage charges, assembly and quality control.

Planetary gearboxes encoding models

Motion Control Systems

Type: SG-P11-050-005-12-HH-712X-00000
Serial Number: xxxx i:xx

www.rta.it
www.rta-store.com MADE IN ITALY

ENCODING MODELS

SG	P11	050	005	12	HH	712X	00000

- 00000: Special P/N
- 712X: Motor code
- HH: Motors series code for combination
  - HH=H series stepper motors
  - SM=SM series stepper motors
  - R2=R2 series servo motors
- 12: Backlash (arcmin)=12-15
- 005: Gear ratio “i”=003, 005, 009, 010, 025
- 050: Dimensions body gearboxes (mm)=040, 050, 070, 090, 120
- P11: Gearbox type P=Planetary
- SG: RTA Gearboxes series

2 series, 32 models

1 STEPPER GEARBOXES

- 16 models
- Motor flange coupling from Nema 17 to Nema 34
- i= 03, 05, 09, 10, 25
- Gearbox body from 40 mm to 90 mm
- IP 64 protection degree
- Low Backlash versions

IP64 | CUSTOM RATIOS AVAILABLE | LOW BACKLASH VERSIONS

2 SERVO GEARBOXES

- 16 models
- Motor flange coupling from flange 40mm to 100mm
- i= 03, 05, 10, 25
- Gearbox body from 40 mm to 120 mm
- IP 64 protection degree

IP64 | CUSTOM RATIOS AVAILABLE | LOW BACKLASH VERSIONS

Table of contents

PLANETARY GEARBOXES

PLANETARY GEARBOXES

	GEARBOX BODY (mm)	MAX VELOCITY (min')	BACKLASH (arcmin)	RATED OUTPUT TORQUE	EMERGENCY TORQUE (Nm)	MOTOR COUPLING (Flange size)	PAGE
STEPPER GEARBOXES							
BODY SIZE Ø mm 70 MOTOR FLANGE mm 85 - SHAFT Ø mm 14							
SG-P11-070-010-12-SM-2861-00000	70	6000	12'	18	60	NEMA 34	396
BODY SIZE Ø mm 70 MOTOR FLANGE mm 85 - SHAFT Ø mm 14							
SG-P11-070-003-12-SM-286X-00000	70	4000	12'	18	60	NEMA 34	397
SG-P11-070-005-12-SM-286X-00000	70	5000	12'	25	70	NEMA 34	397
BODY SIZE Ø mm 90 MOTOR FLANGE 85 mm - SHAFT Ø mm 14							
SG-P11-090-010-12-SM-286X-00000	90	6000	12'	37	150	NEMA 34	398
SG-P11-090-025-15-SM-2861-00000	90	4500	15'	43	160	85 mm	399
BODY SIZE Ø mm 120 MOTOR FLANGE 86 mm - SHAFT Ø mm 14							
SG-P11-120-025-15-SM-286X-00000 NEW!	120	4500	15'	110	360	NEMA 34	400
SERVO GEARBOXES							
BODY SIZE Ø mm 40 MOTOR FLANGE mm 40 - SHAFT Ø mm 8							
SG-P12-040-005-15-R2-0100-00000	40	5000	15'	12	30	40 mm	403
SG-P12-040-010-15-R2-0100-00000	40	5000	15'	6	25	40 mm	403
SG-P12-040-025-19-R2-0100-00000	40	5000	19'	12	30	40 mm	403
BODY SIZE Ø mm 70 MOTOR FLANGE mm 60 - SHAFT Ø mm 14							
SG-P11-070-003-12-R2-0X00-00000	70	4000	12'	18	60	60 mm	404
SG-P11-070-005-12-R2-0X00-00000	70	5000	12'	25	70	60 mm	404
SG-P11-070-010-12-R2-0X00-00000	70	6000	12'	18	60	60 mm	404
BODY SIZE Ø mm 90 MOTOR FLANGE mm 60 - SHAFT Ø mm 14							
SG-P11-090-010-12-R2-0400-00000	90	6000	12'	37	150	60 mm	405
BODY SIZE Ø mm 90 MOTOR FLANGE mm 60 - SHAFT Ø mm 14							
SG-P11-090-025-15-R2-0X00-00000	90	4500	12'	43	160	60 mm	406
BODY SIZE Ø mm 90 MOTOR FLANGE mm 80 - SHAFT Ø mm 16							
SG-P11-090-003-12-R2-0750-00000	90	3500	12'	37	160	10 mm	407
SG-P11-090-005-12-R2-0750-00000	90	4500	12'	43	160	80 mm	407
SG-P11-090-010-12-R2-0750-00000	90	6000	12'	37	150	80 mm	407
BODY SIZE Ø mm 90 MOTOR FLANGE mm 100 - SHAFT Ø mm 16							
SG-P11-090-005-12-R2-1000-00000	90	4500	12'	43	160	100 mm	408
BODY SIZE Ø mm 120 MOTOR FLANGE mm 80 - SHAFT Ø mm 16							
SG-P11-120-010-12-R2-0750-00000	120	6000	12'	95	150	80 mm	409
SG-P11-120-025-15-R2-0750-00000	120	4500	12'	110	360	80 mm	409
BODY SIZE Ø mm 120 MOTOR FLANGE mm 100 - SHAFT Ø mm 16							
SG-P11-120-010-12-R2-1000-00000	120	5000	12'	95	300	100 mm	410
SG-P11-120-025-15-R2-1000-00000	120	4500	12'	110	360	100 mm	410

PLANETARY GEARBOXES

STEPPER GEARBOXES

SG-P12-040-0XX-1X-HH-52XX-00000

i=005 *i*=010 *i*=025

PLANETARY GEARBOXES

SG 040

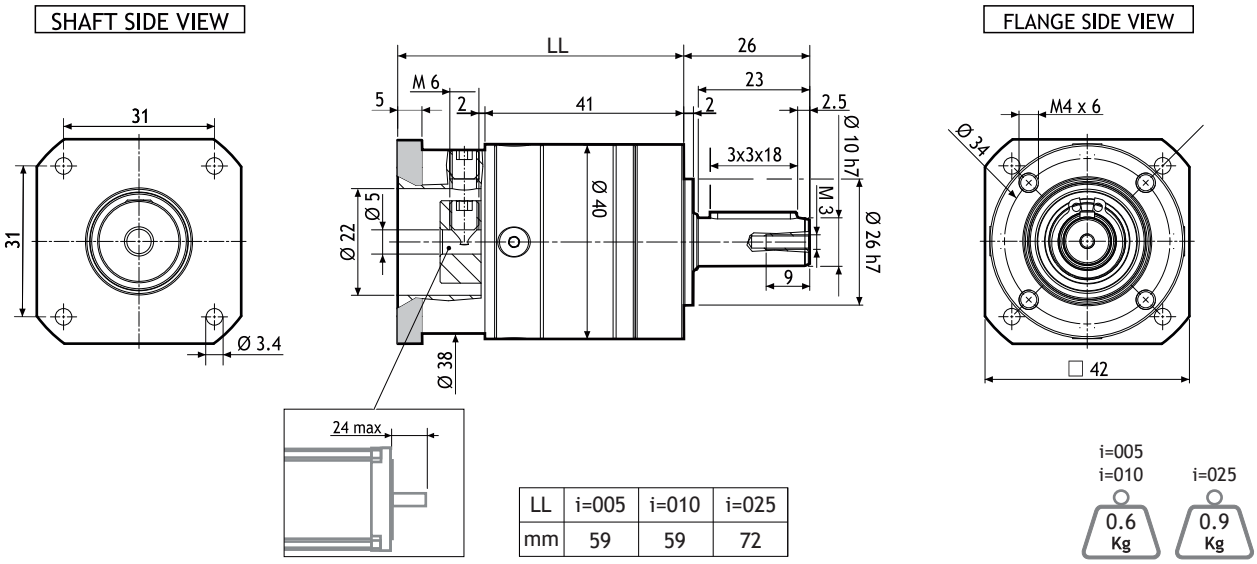
φ<19'

φ<15'

MADE IN ITALY

IP64

Dimensions (Units:mm)



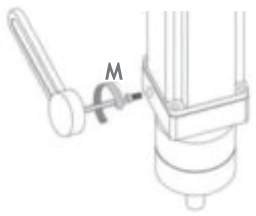
LL	i=005	i=010	i=025
mm	59	59	72

i=005 i=010 0.6 Kg

i=025 0.9 Kg

MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P12-040-005-15-HH-52XX-00000	12	18	30	<15'	3500	5000	0.8	220	200	98	$1.6x10^{-6}$
SG-P12-040-010-15-HH-52XX-00000	6	9	25	<15'	3500	5000	0.8	220	200	98	$1.2x10^{-6}$
SG-P12-040-025-19-HH-52XX-00000	12	18	30	<19'	3500	5000	0.8	220	200	97	$1.5x10^{-6}$

Suggested motors



RH 1S0M

RH 1S1M

RH 1S2M

RH 1S3M

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-050-00X-12-HH-712X-00000

i=003 | *i*=005 | *i*=009

PLANETARY GEARBOXES

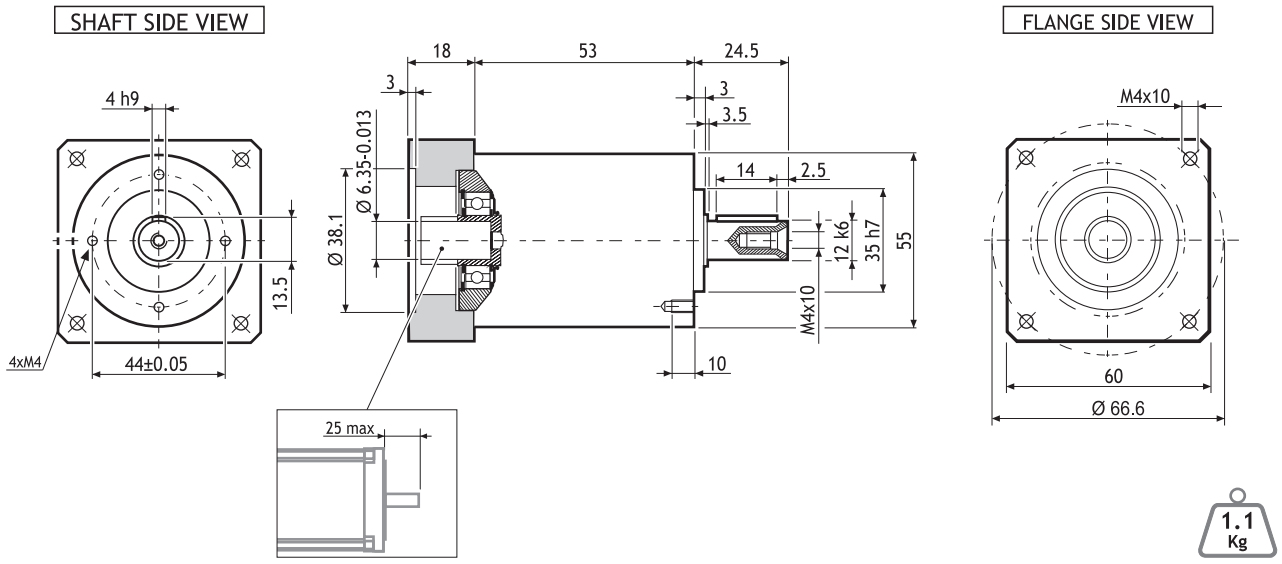
SG 050

φ=12'

MADE IN ITALY

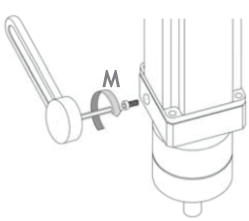
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-050-003-12-HH-712X-00000	10	16	28	12'	3300	4000	0.9	500	600	97	$0.07x10^{-4}$
SG-P11-050-005-12-HH-712X-00000	12	20	30	12'	3500	5000	0.9	500	600	97	$0.05x10^{-4}$
SG-P11-050-009-12-HH-712X-00000	10	16	28	12'	4000	6000	0.9	500	600	97	$0.04x10^{-4}$

Suggested motors



103-H7123 SERIES

103-H7126 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-050-0XX-12-HH-782X-00000

i=003 *i*=005

PLANETARY GEARBOXES

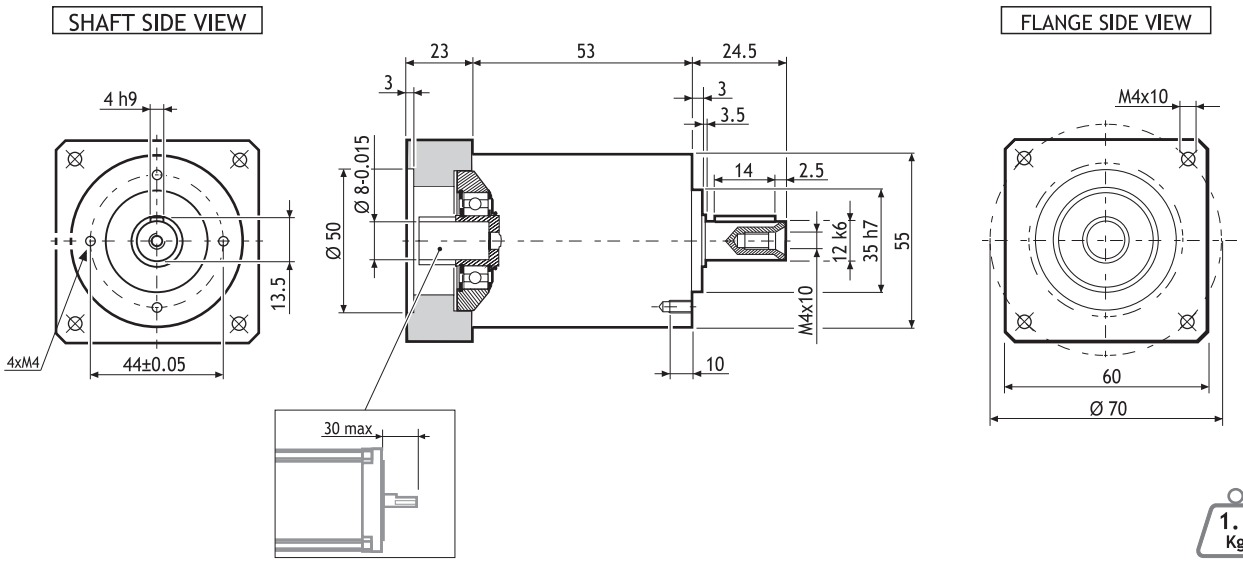
SG 050

φ=12'

MADE IN ITALY

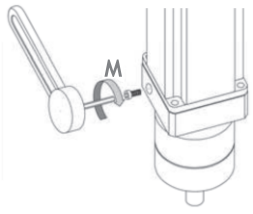
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-050-003-12-HH-782X-00000	10	16	28	12'	3300	4000	0.9	500	600	97	$0.07x10^{-4}$
SG-P11-050-005-12-HH-782X-00000	12	20	30	12'	3500	5000	0.9	500	600	97	$0.05x10^{-4}$

Suggested motors



103-H7823 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-050-003-12-HH-7826-00000

PLANETARY GEARBOXES

SG 050

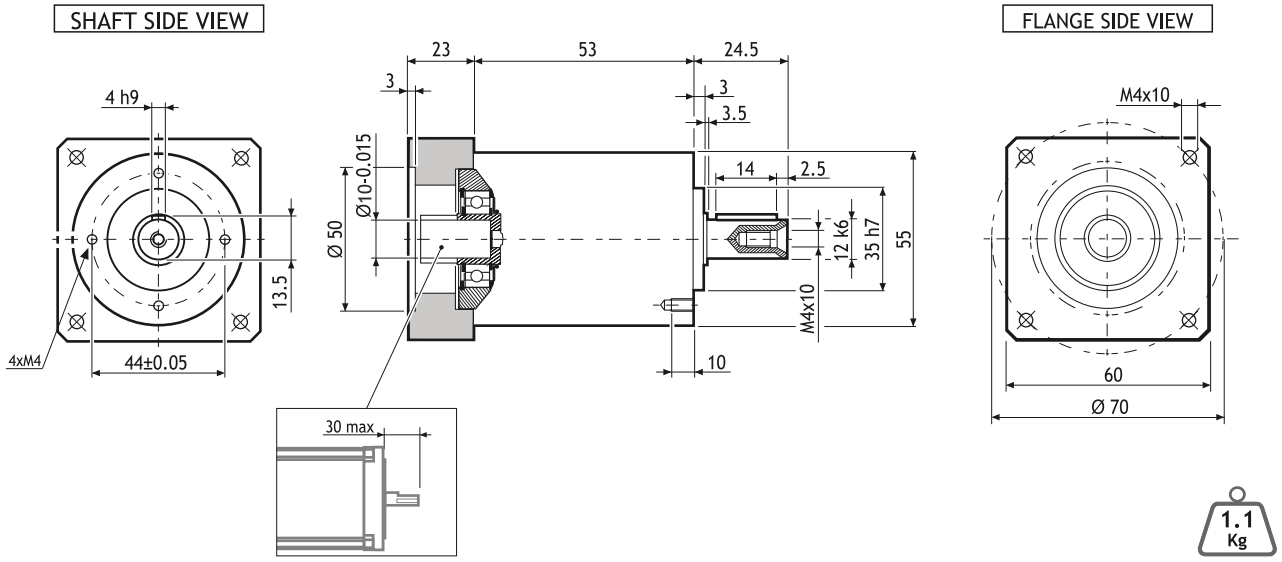
i=003

φ=12'

MADE IN ITALY

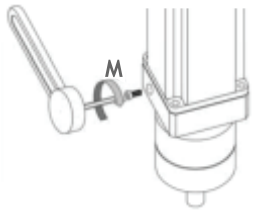
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-050-003-12-HH-7826-00000	10	16	28	12'	3300	4000	0.9	500	600	97	0.07x10^{-4}

Suggested motors



103-H7826 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-050-005-12-SM-2861-00000

PLANETARY GEARBOXES

SG 050

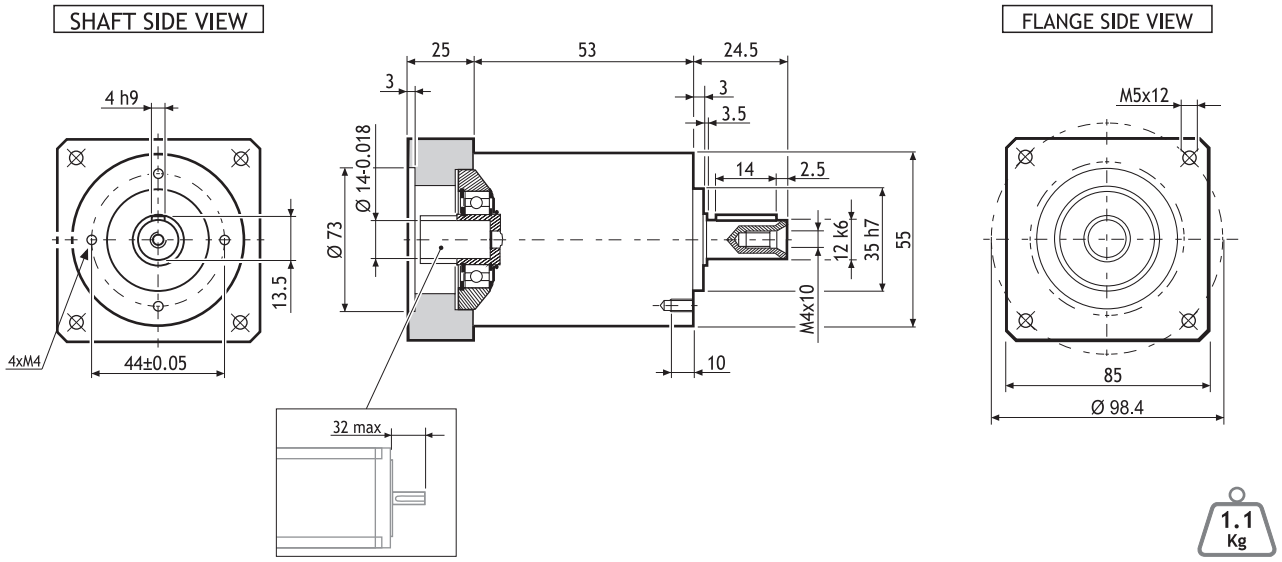
i=005

φ=12'

MADE IN ITALY

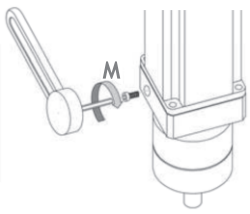
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-050-005-12-SM-2861-00000	12	20	30	12'	3500	5000	0.9	500	600	97	$0.07x10^{-4}$

Suggested motors



RM 3R1M

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-070-010-12-HH-782X-00000

PLANETARY GEARBOXES

SG 070

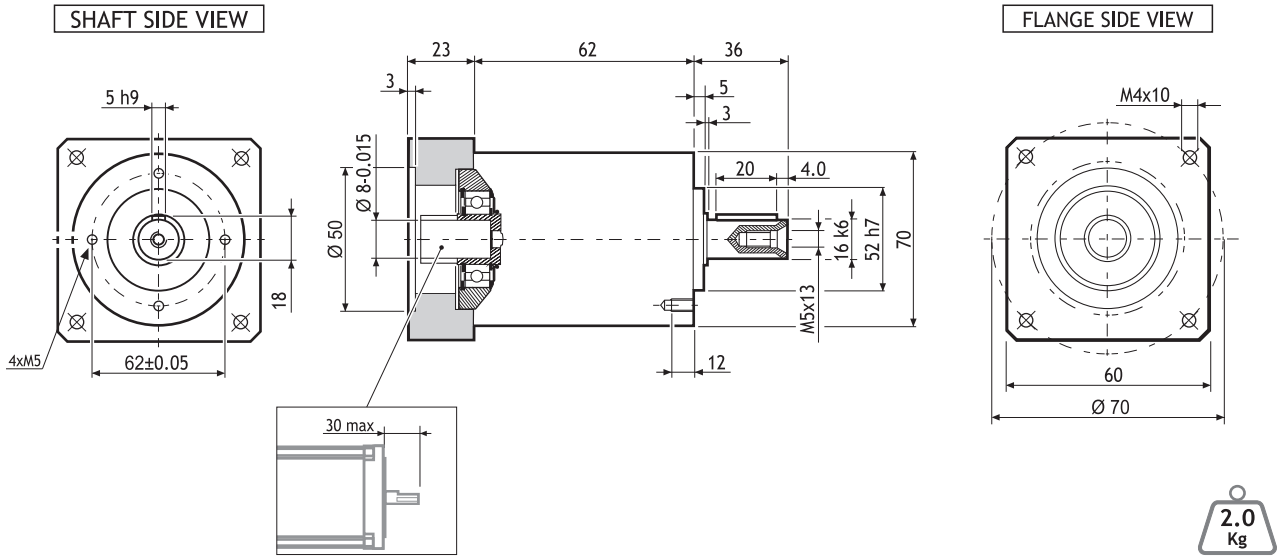
i=010

φ=12'

MADE IN ITALY

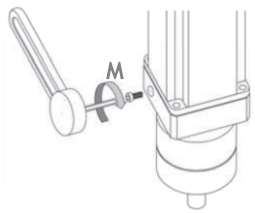
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-070-010-12-HH-782X-00000	18	30	60	12'	4000	6000	3	1300	1400	97	$0.06x10^{-4}$

Suggested motors



103-H7823 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-070-010-12-SM-2861-00000

PLANETARY GEARBOXES

SG 070

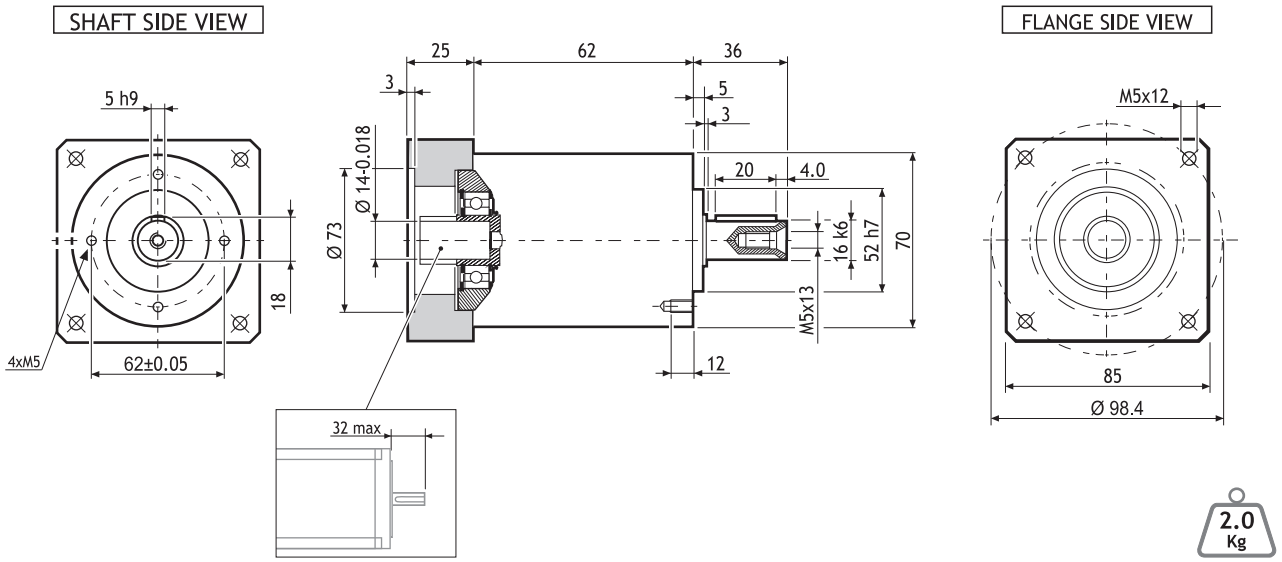
i=010

φ=12'

MADE IN ITALY

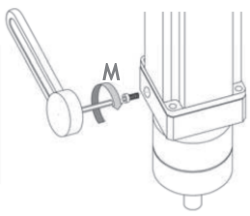
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-070-010-12-SM-2861-00000	18	30	60	12'	4000	6000	3	1300	1400	97	$0.04x10^{-4}$

Suggested motors



RM 3R1M

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-070-0XX-12-SM-286X-00000

i=003 *i*=005

PLANETARY GEARBOXES

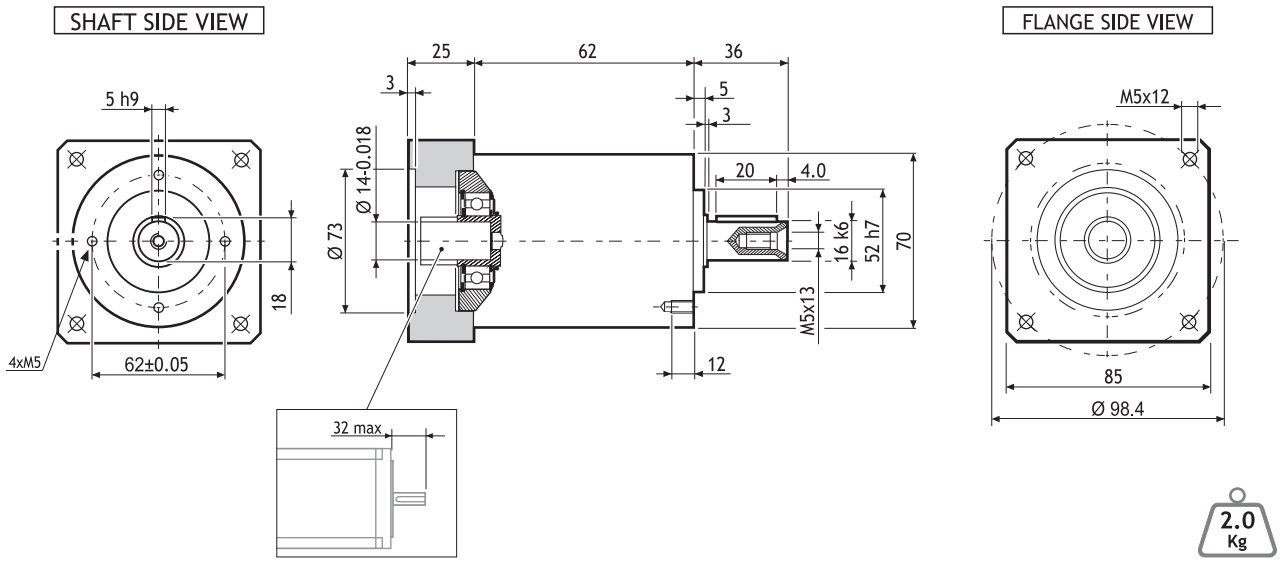
SG 070

φ=12'

MADE IN ITALY

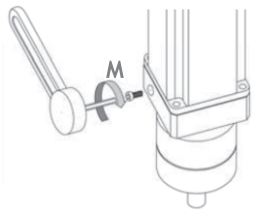
IP64

Dimensions (Units:mm)

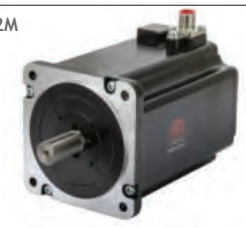


MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-070-003-12-SM-286X-00000	18	30	60	12'	3300	4000	3	1300	1400	97	$0.14x10^{-4}$
SG-P11-070-005-12-SM-286X-00000	25	35	70	12'	3500	5000	3	1300	1400	97	$0.09x10^{-4}$

Suggested motors



RM 3R2M



RM 3R3M

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-090-010-12-SM-286X-00000

PLANETARY GEARBOXES

SG 090

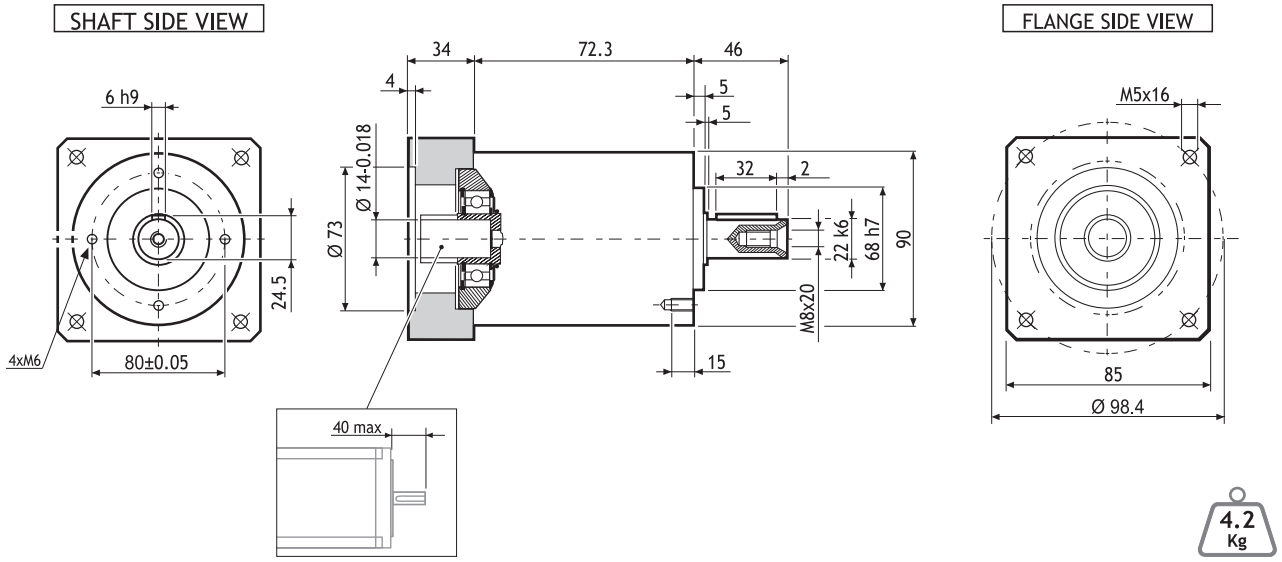
i=010

φ=12'

MADE IN ITALY

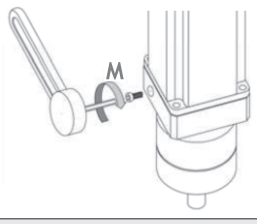
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-090-010-12-SM-286X-00000	37	70	150	12'	4000	6000	9	2200	1900	97	0.35x10^{-4}

Suggested motors



RM 3R2M

RM 3R3M

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-090-025-15-SM-2861-00000

PLANETARY GEARBOXES

SG 090

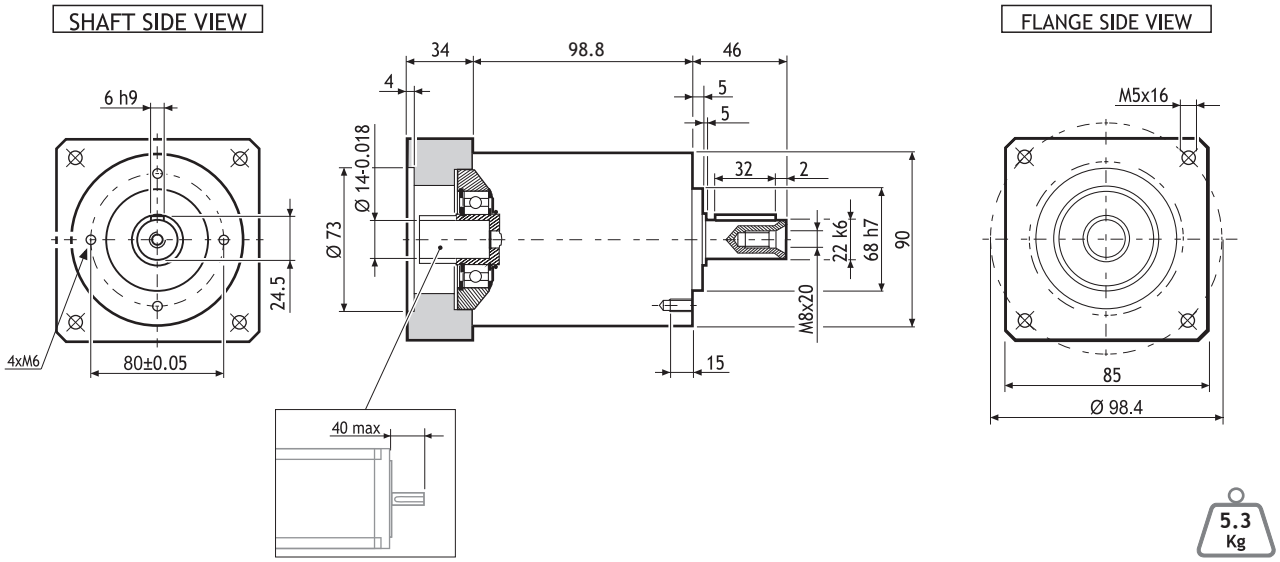
i=025

φ=15'

MADE IN ITALY

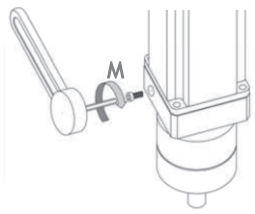
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-090-025-15-SM-2861-00000	43	80	160	15‘	3200	4500	8.5	2200	1900	94	0.40x10-4

Suggested motors



RM 3R1M

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-120-025-15-SM-286X-00000

PLANETARY GEARBOXES

SG 120

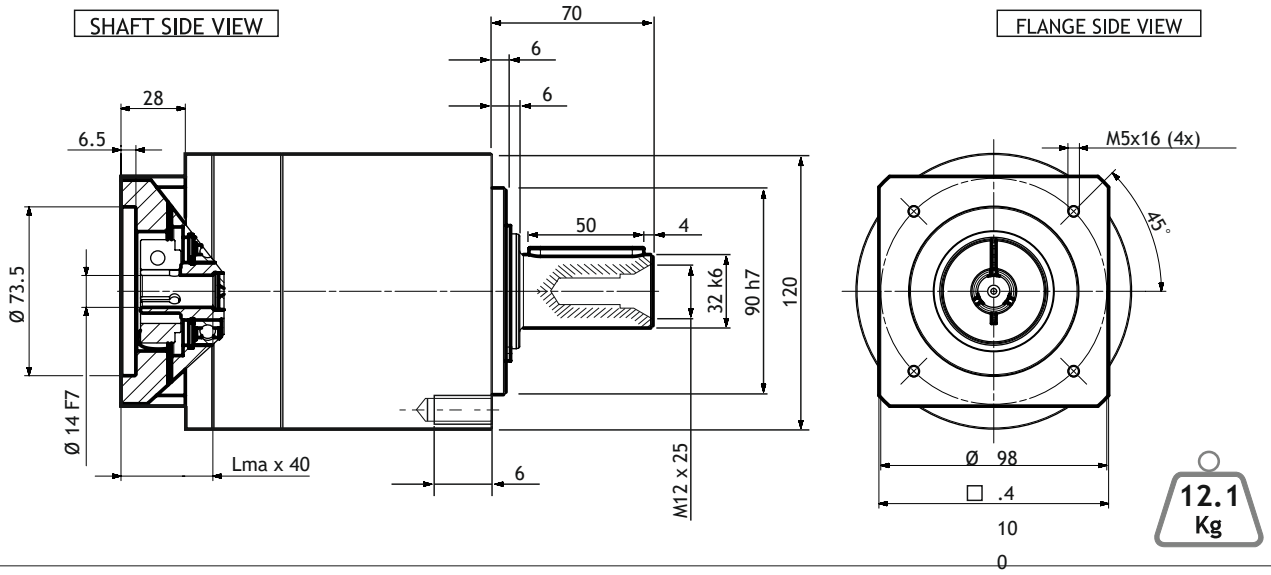
i=025

φ=15'

MADE IN ITALY

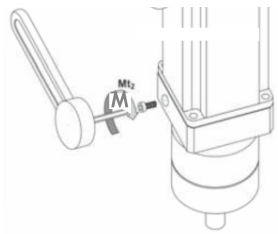
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [$Kgcm^2$]
SG-P11-120-025-15-SM-286X-00000	110	190	360	15‘	3000	4500	22.5	3500	3000	94	0.71

Suggested motors



RM 3RxM

RM 3TxM-0xx0

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

PLANETARY GEARBOXES

SERVO GEARBOXES

SG P12-040-0XX-1X-R2-0100

i=005 | i=010 | i=025

PLANETARY GEARBOXES

SG 040

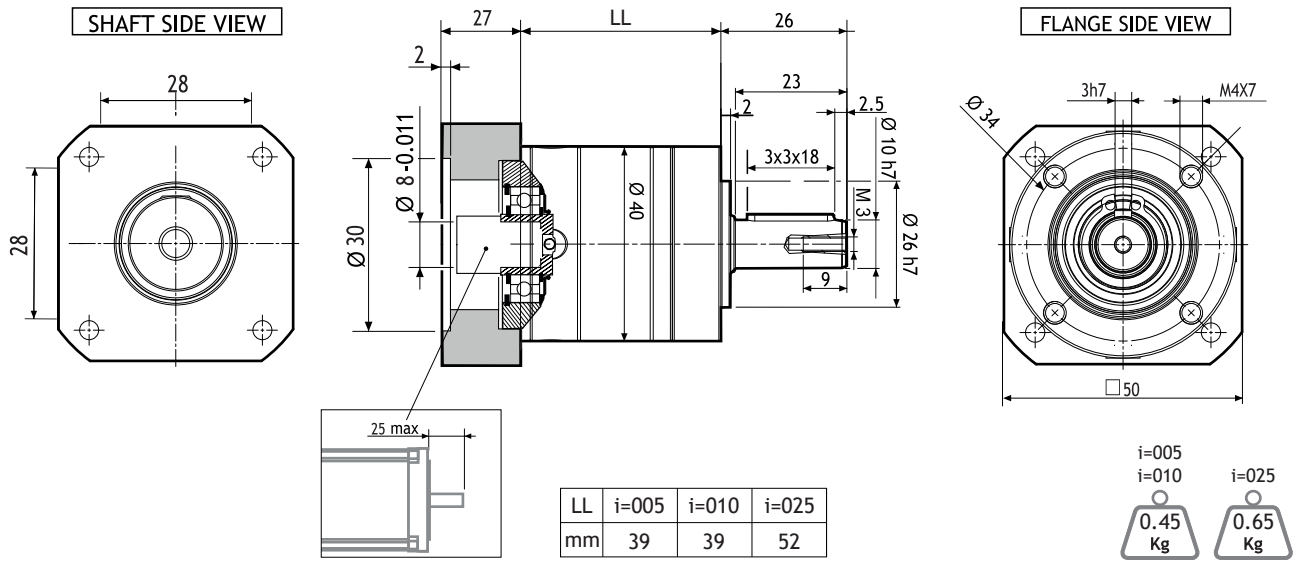
φ<19'

φ<15'

MADE IN ITALY

IP64

Dimensions (Units:mm)



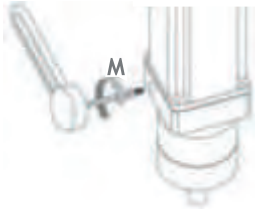
LL	i=005	i=010	i=025
mm	39	39	52

i=005 i=010 0.45 Kg

i=025 0.65 Kg

MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P12-040-005-15-R2-0100	12	18	30	15'	5000	8000	0.8	220	200	98	$1.6x10^{-6}$
SG-P12-040-010-15-R2-0100	6	9	25	15'	5000	8000	0.8	220	200	98	$1.2x10^{-6}$
SG-P12-040-025-19-R2-0100	12	18	30	<19'	5000	8000	0.8	220	200	97	$1.5x10^{-6}$

Suggested motors



R2AA04010FXH1CM

MOUNTING OPERATION MODE: Tightening torque M=5 Nm | Locking bolt M4 | R.T.A. Quality Control

SG-P11-070-0XX-12-R2-0X00-00000

i=003 | *i*=005 | *i*=010

PLANETARY GEARBOXES

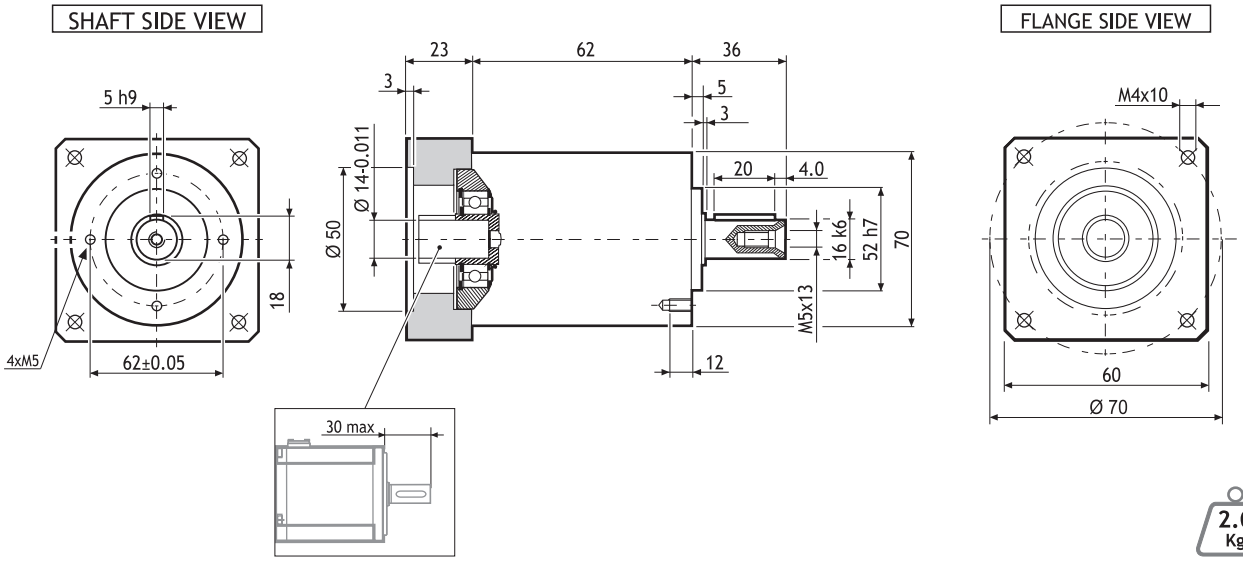
SG 070

φ=12'

MADE IN ITALY

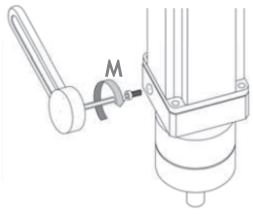
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-070-003-12-R2-0X00-00000	18	30	60	12'	3300	4000	3	1300	1400	97	$0.12x10^{-4}$
SG-P11-070-005-12-R2-0X00-00000	25	35	70	12'	3500	5000	3	1300	1400	97	$0.09x10^{-4}$
SG-P11-070-010-12-R2-0X00-00000	18	30	60	12'	4000	6000	3	1300	1400	97	$0.06x10^{-4}$

Suggested motors



R2AA06020 SERIES

R2AA06040 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=5 Nm ■ Locking bolt M4 ■ R.T.A. Quality Control

SG-P11-090-010-12-R2-0400-00000

PLANETARY GEARBOXES

SG 090

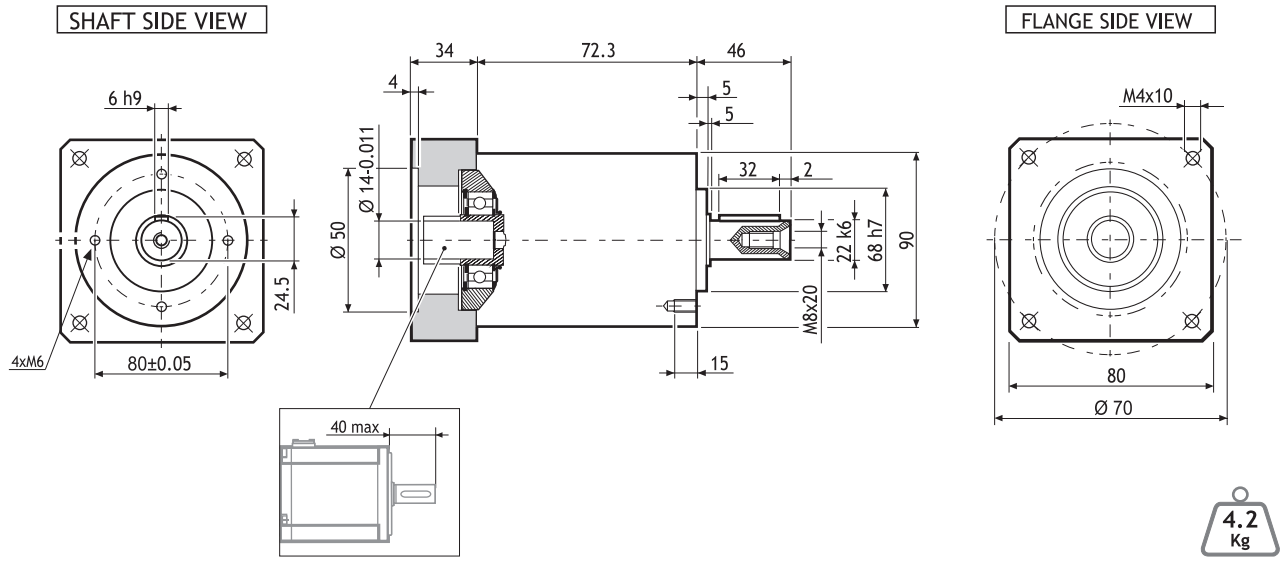
i=010

φ=12'

MADE IN ITALY

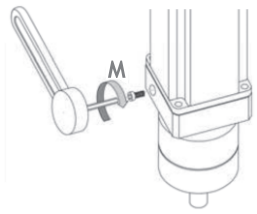
IP64

Dimensions (Units:mm)

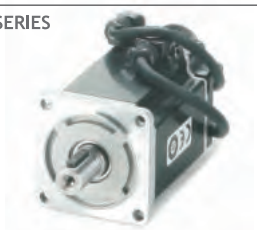


MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-090-010-12-R2-0400-00000	37	70	150	12'	4000	6000	9	2200	1900	97	$0.35x10^{-4}$

Suggested motors



R2AA06040 SERIES



MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-090-025-15-R2-0X00-00000

PLANETARY GEARBOXES

SG 090

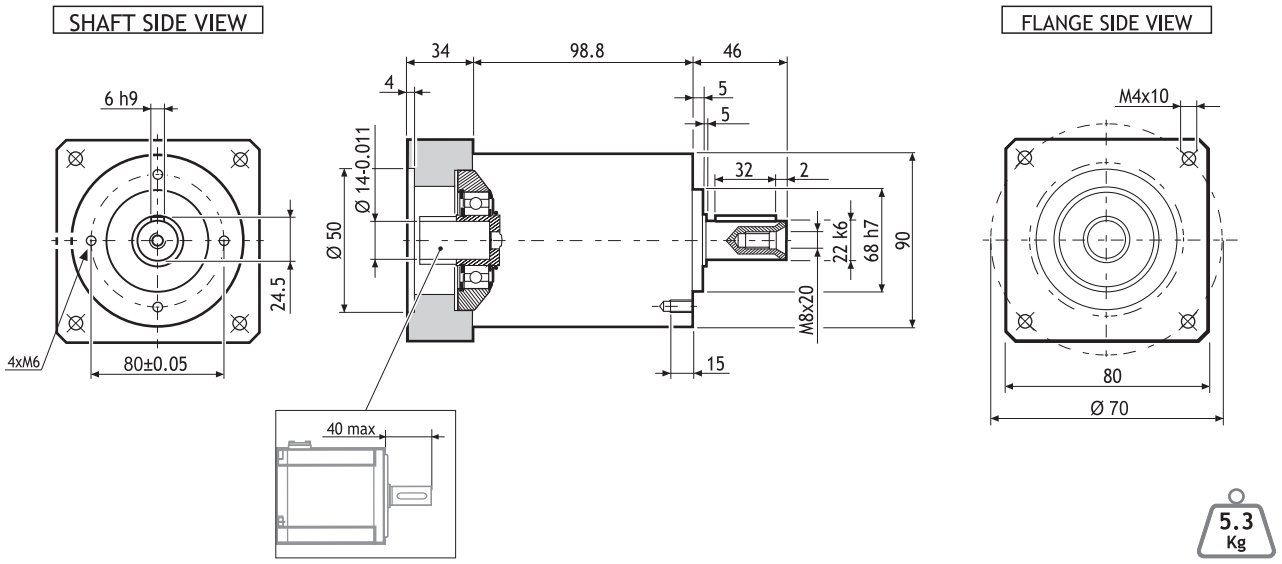
i=025

φ=15'

MADE IN ITALY

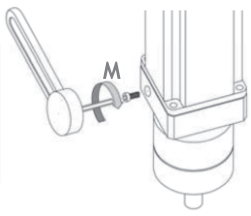
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-090-025-15-R2-0X00-00000	43	80	160	15'	3200	4500	8.5	2200	1900	94	$0.40x10^{-4}$

Suggested motors



R2AA06020 SERIES

R2AA06040 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-090-0XX-12-R2-0750-00000

i=003 | i=005 | i=010

PLANETARY GEARBOXES

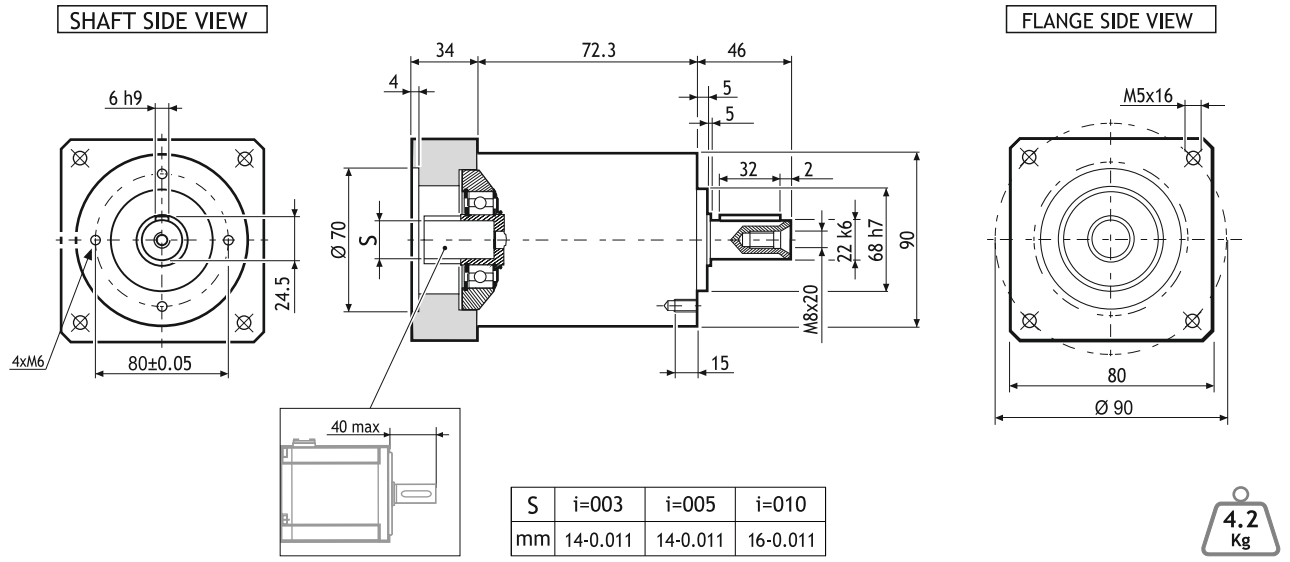
SG 090

φ=12'

MADE IN ITALY

IP64

Dimensions (Units:mm)

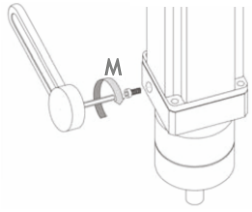


S	i=003	i=005	i=010
mm	14-0.011	14-0.011	16-0.011

4.2 Kg

MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-090-003-12-R2-0750-00000	37	70	150	12'	2900	3500	7	2200	1900	97	0.65x10^{-4}
SG-P11-090-005-12-R2-0750-00000	43	80	160	12'	3200	4500	9	2200	1900	97	0.47x10^{-4}
SG-P11-090-010-12-R2-0750-00000	37	70	150	12'	4000	6000	9	2200	1900	97	0.35x10^{-4}

Suggested motors



R2AA08075 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-090-005-12-R2-1000-00000

PLANETARY GEARBOXES

SG 090

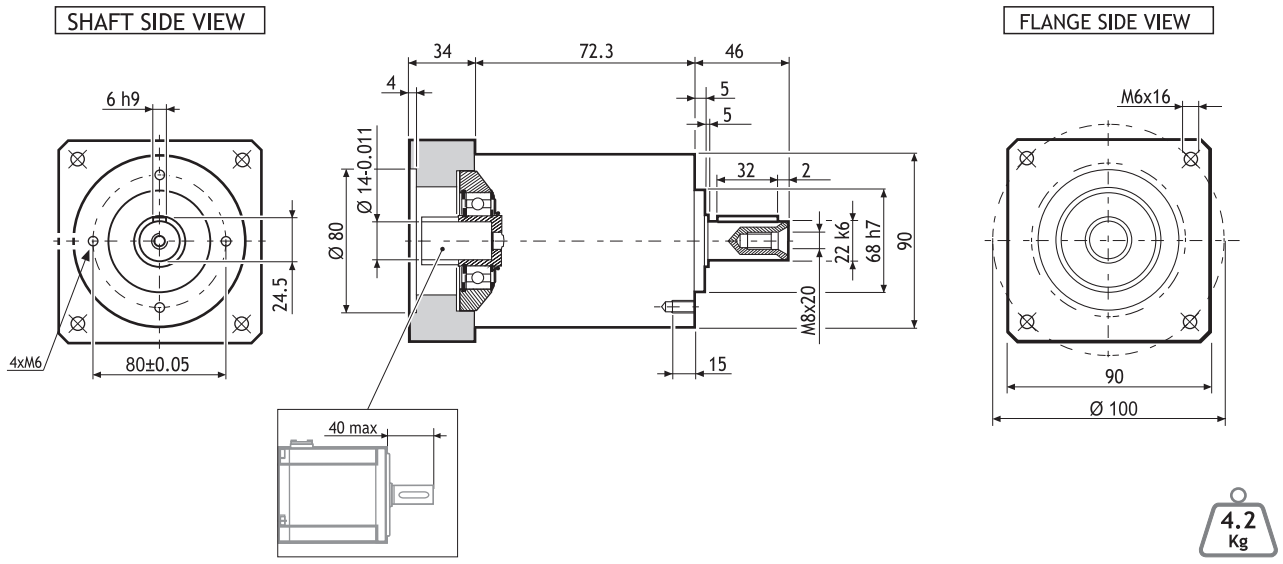
i=005

φ=12'

MADE IN ITALY

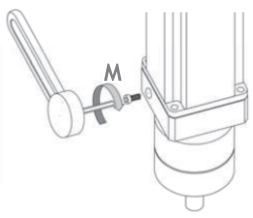
IP64

Dimensions (Units:mm)



MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-090-005-12-R2-1000-00000	43	80	160	12'	3200	4500	9	2200	1900	97	$0.47x10^{-4}$

Suggested motors



R2AAB8100 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-120-0XX-1X-R2-0750-00000

i=010 i=025

PLANETARY GEARBOXES

SG 120

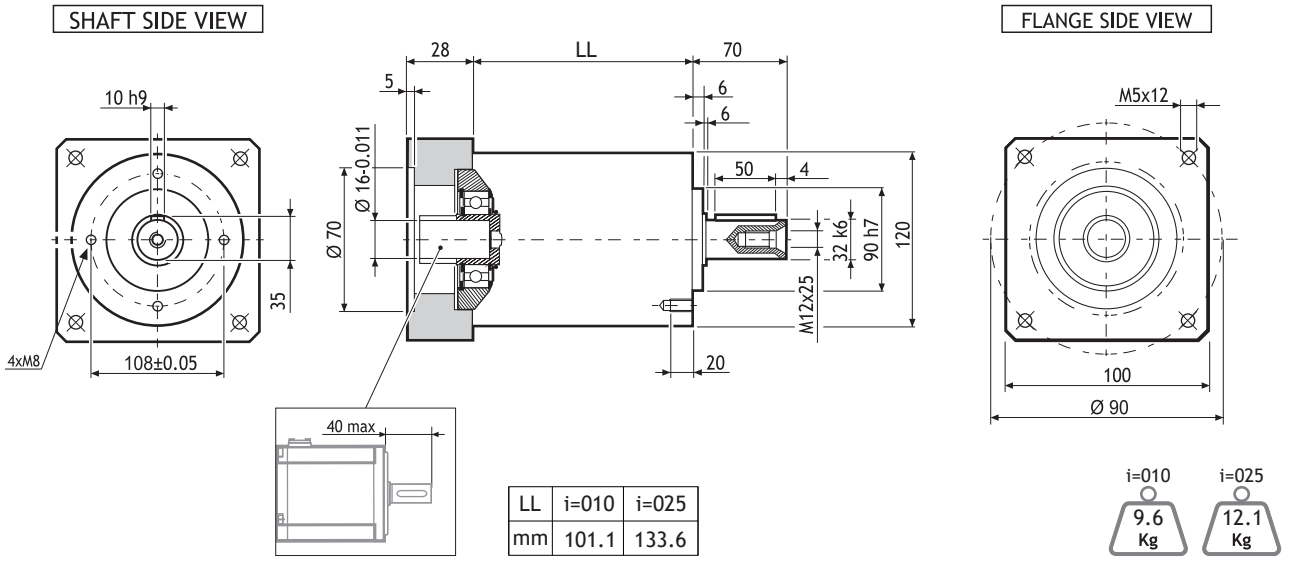
φ=15'

φ=12'

MADE IN ITALY

IP64

Dimensions (Units:mm)



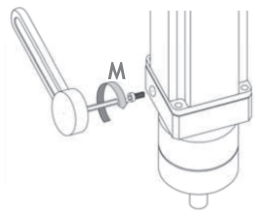
LL	i=010	i=025
mm	101.1	133.6

i=010 9.6 Kg

i=025 12.1 Kg

MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-120-010-12-R2-0750-00000	95	160	300	12'	3500	5000	25	3500	3000	97	$0.49x10^{-4}$
SG-P11-120-025-15-R2-0750-00000	110	190	360	15'	3000	4500	22.5	3500	3000	94	$0.71x10^{-4}$

Suggested motors



R2AA08075 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control

SG-P11-120-0XX-1X-R2-1000-00000

i=010 i=025

PLANETARY GEARBOXES

SG 120

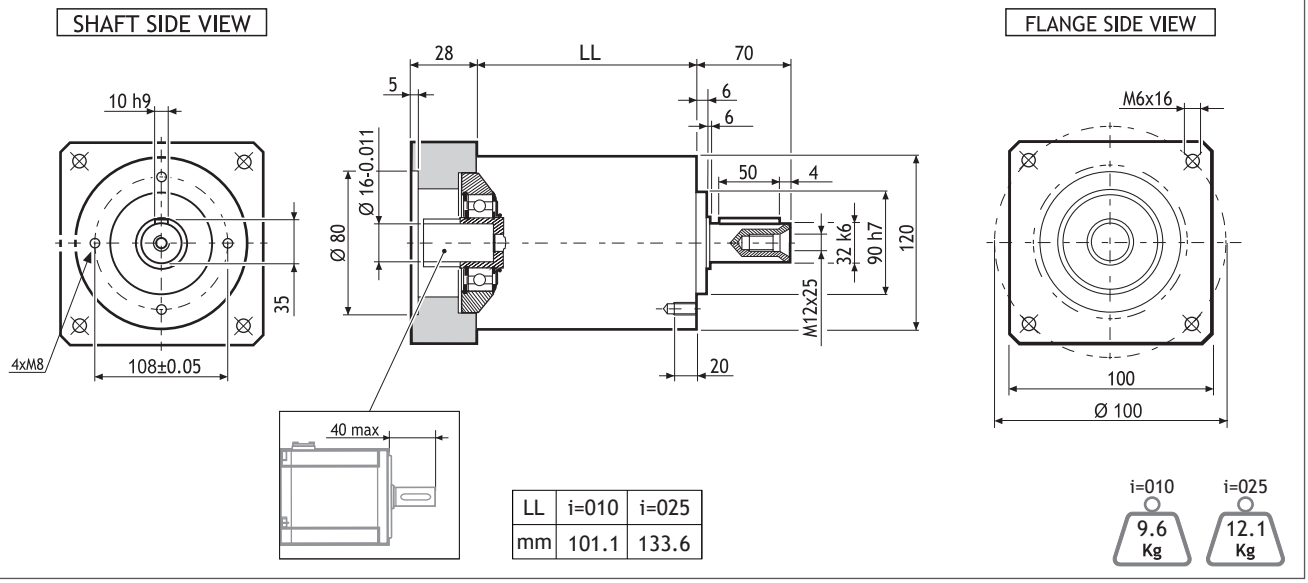
φ=15'

φ=12'

MADE IN ITALY

IP64

Dimensions (Units:mm)

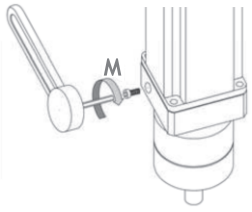


LL	i=010	i=025
mm	101.1	133.6

i=010	i=025
9.6 Kg	12.1 Kg

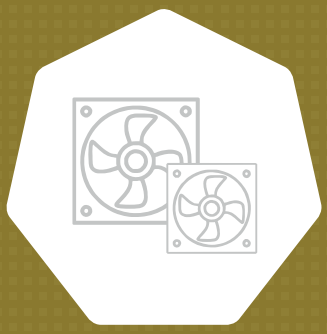
MODEL	Rated output torque [Nm]	Maximum acceleration output torque [Nm]	Emergency step output torque [Nm]	Backlash [arcmin]	Nominal input speed [min^{-1}]	Maximum momentary input speed [min^{-1}]	Torsional stiffness [Nm/arcmin]	Maximum radial force applying on output shaft [N]	Maximum axial force applying on output shaft [N]	Gear efficiency [%]	Gear moment of inertia [Kgm^2]
SG-P11-120-010-12-R2-1000-00000	95	160	300	12'	3500	5000	25	3500	3000	97	$0.49x10^{-4}$
SG-P11-120-025-15-R2-1000-00000	110	190	360	15'	3000	4500	22.5	3500	3000	94	$0.71x10^{-4}$

Suggested motors

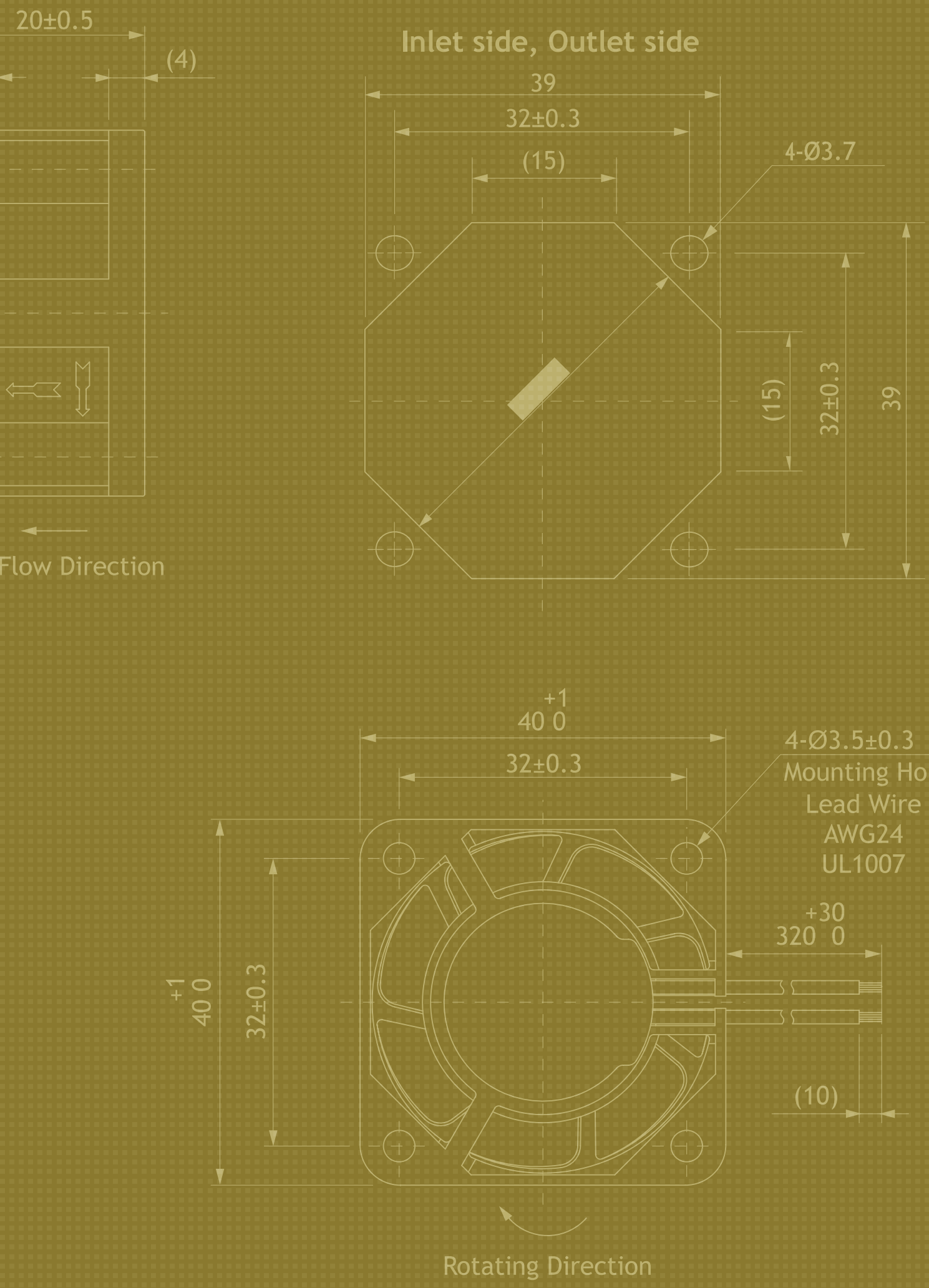


R2AAB8100 SERIES

MOUNTING OPERATION MODE: ■ Tightening torque M=11 Nm ■ Locking bolt M6 ■ R.T.A. Quality Control



COOLING FANS


20±0.5
(4)
Flow Direction
Inlet side, Outlet side
39
32±0.3
(15)
4-Ø3.7
(15)
32±0.3
39
+1
40 0
32±0.3
4-Ø3.5±0.3
Mounting Hole
Lead Wire
AWG24
UL1007
+30
320 0
+1
40 0
32±0.3
(10)
Rotating Direction

COOLING FANS

INDEX

Key advantages

SANYO DENKI
San Ace
COOLING SYSTEMS

Exclusive Partnership with SANYO DENKI CO. since 1989, one of the main players in high quality cooling fans manufacturing in the world, with more than 2,500,000 fans/month.

- Japanese high quality and reliability, through automatized and robotized assembly line.
- Constantly evolving technologies ensuring excellent performances of San Ace products.
- Impressive products portfolio, with 5000+ models available from SANYO DENKI San Ace line-up.

R.T.A. added value: the service

- Dedicated warehouse with quick restore.
- Wide stock of models always available.
- Pre- and post-sale professional consulting and service.
- A team fully dedicated to San Ace products management and sales.

Main features

- Dual ball bearings.
- Voltage: DC AC ACDC
- Standard life expectancy: 60,000 hrs at 60°C.
- Standard operating temperature: -20°C to + 70°C.
- PWM control function, pulse, lock or low speed control sensors available.
- High performance even in harsh environments.
- Low power consumption and low noise.

SANYO DENKI products line-up and solutions

Axial DC Fans Frame size from 36mm to 200mm.

Axial and centrifugal Splash Proof Fans Waterproof capability.

Long Life Fans Up to 180,000 hours of expected life at 60°C.

Counter Rotating Fans High airflow and high static pressure.

Centrifugal Fans and Blowers Air is blown in a centrifugal course. High static pressure.

Reversible Flow Fans The wind directions can be switched. Equivalent cooling performance can be obtained in both directions.

G-Proof Suitable for applications subject to high levels of G-Force or vibrations.

Wide Temperature Range Operating temperature range -40°C +85°C, with expected life 40,000 hrs at 85°C.

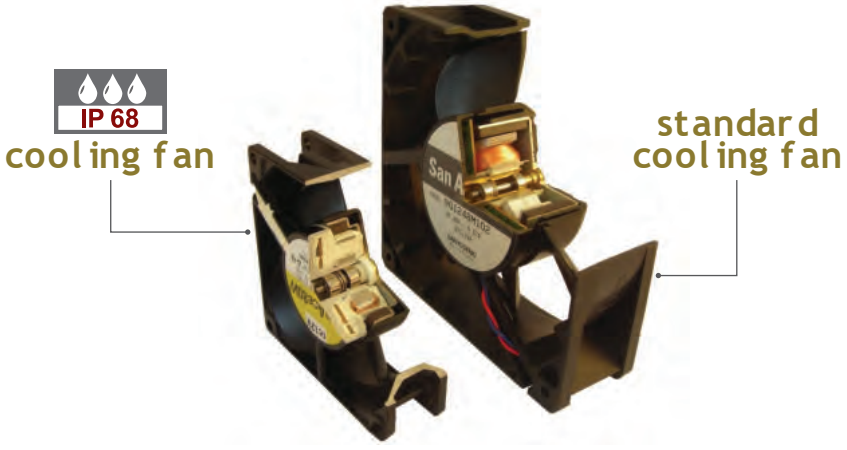
Oil-Proof Cooling Fans capable of operating in an oil-mist environment.

Air-Flow Tester A portable measuring device that enables you to easily measure the System Impedance and Operating Airfow of devices.

CABLING & CONNECTORS *Customized versions available*

IP68 versions: excellent water and dust protection

In order to obtain a real total water and dust protection, the windings and the printed circuit board are completely drowned into a resin, leaving only the cables out.



R.T.A. selection: 3 families, 25 models

5000+ MODELS AVAILABLE FROM SANYO DENKI San Ace COOLING SYSTEMS

1 DC AXIAL FANS

Operating voltage 12VDC and 24 VDC

Frame Size: 36 mm | 40 mm | 60 mm | 80 mm | 92 mm | 120 mm | 172 mm

Air Flow: 0.18 m³/min → 8.5 m³/min

IP 68

2 ACDC AXIAL FANS

ACDC fans operate by internally converting AC power into DC power, providing the superior performance of a DC fan with the flexibility of AC input.

Operating voltage range: from 100 VAC to 240 VAC

Frame Size: 120 mm

Air Flow: 3.0 m³/min

3 AC AXIAL FANS

Operaing Voltage: 230 VAC

Frame Size: 80 mm | 120 mm | 172 mm

Air Flow: 0.9 m³/min → 5.3 m³/min

Table of contents

COOLING FANS

Table of contents

ACCESSORIES

COOLING FANS

DC AXIAL FANS

SANYO DENKI
San Ace

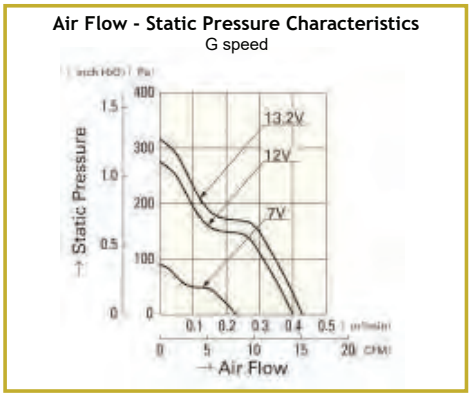
9GV3612G301

36x36x28 mm **12 V** **GV type**

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Tach output
- Lead Wire: ⊕ red ⊖ black Sensor yellow
- Storage Temperature: -20˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

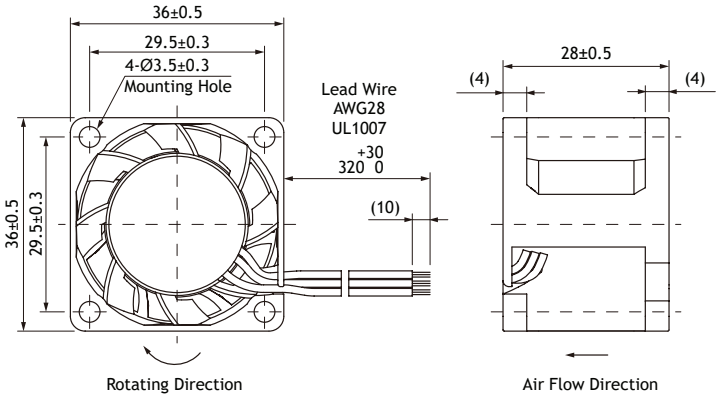
Air Flow - Static Pressure Characteristics



Specifications

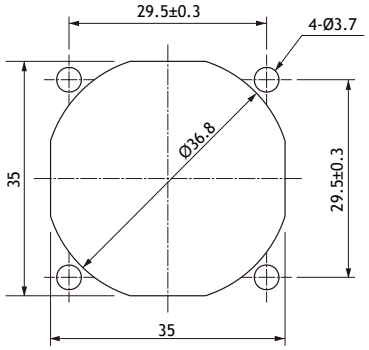
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9GV3612G301	12	7.0 to 13.2	0.34	4.08	14,000	0.40	14.1	275	1.104	52.0	-20 to +60	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)

Inlet side, Outlet side



36 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

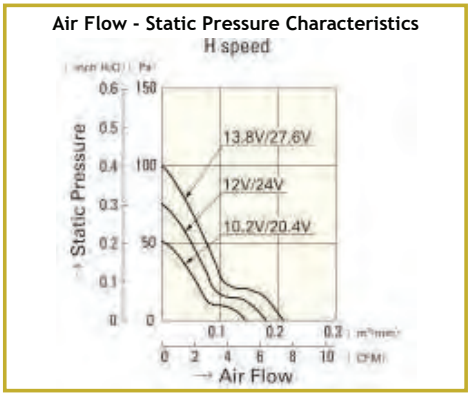
109P0424H702

40x40x15 mm 24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 60,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

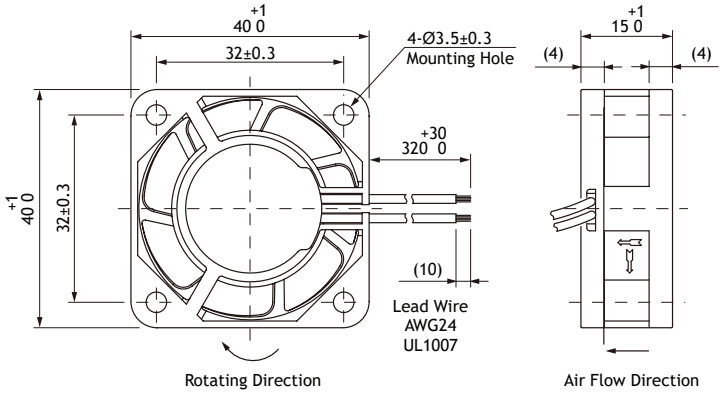
Air Flow - Static Pressure Characteristics



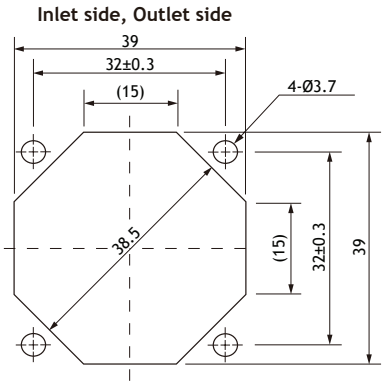
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109P0424H702	24	20.4 to 27.6	0.08	1.92	7,700	0.18	6.4	75.5	0.303	28	-20 to +70	60,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



40 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

109P0412H602

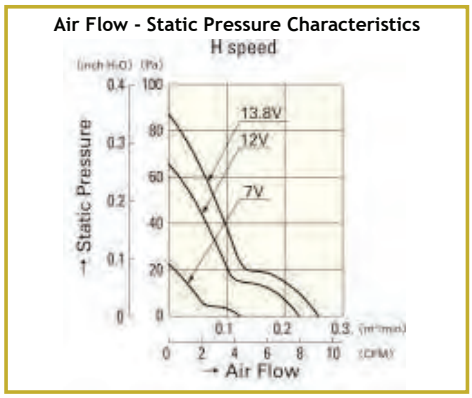
40x40x20 mm

12 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 60,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

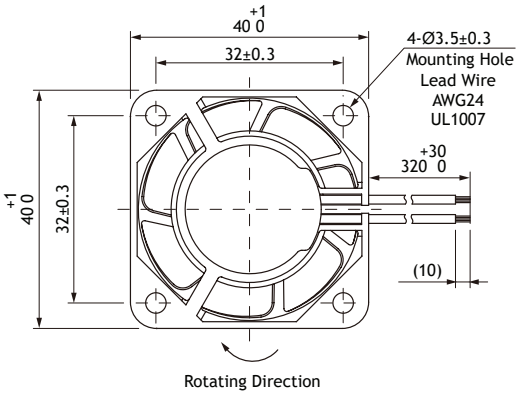
Air Flow - Static Pressure Characteristics

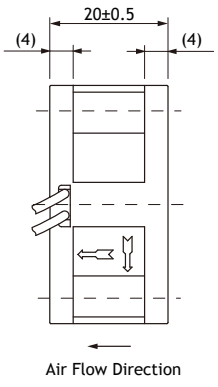


Specifications

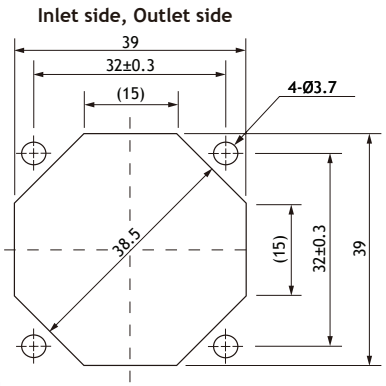
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109P0412H602	12	7 to 13.8	0.11	1.32	8,000	0.225	8.0	65.7	0.264	33	-20 to +70	60,000/60˚

Dimensions (Unit:mm)





Reference dimension of mounting holes and vent opening (Unit: mm)



40 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

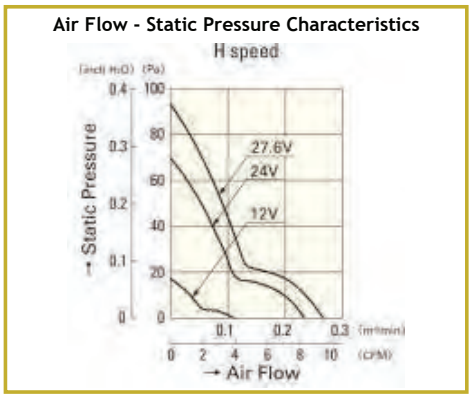
109P0424H602

40x40x20 mm 24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 60,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

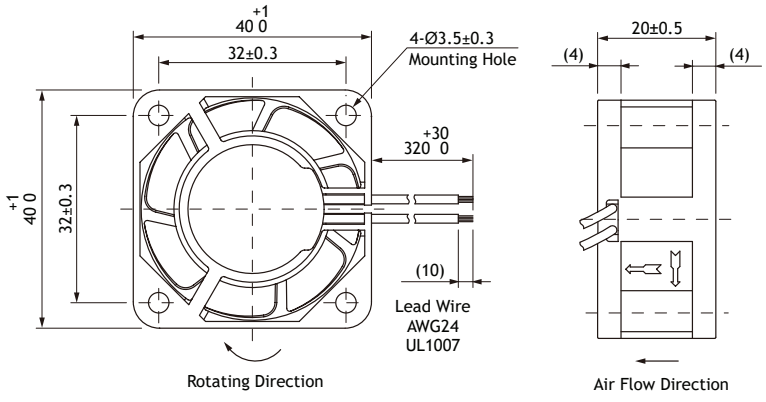
Air Flow - Static Pressure Characteristics



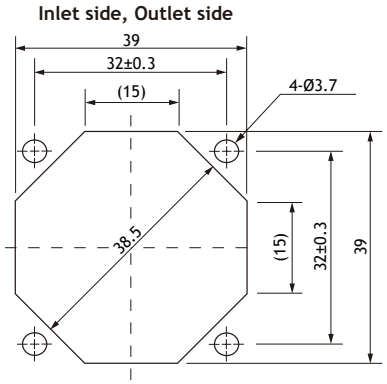
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109P0424H602	24	12 to 27.6	0.07	1.68	8,300	0.233	8.2	69.6	0.280	35	-20 to +70	60,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



40 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

109P0424J3023

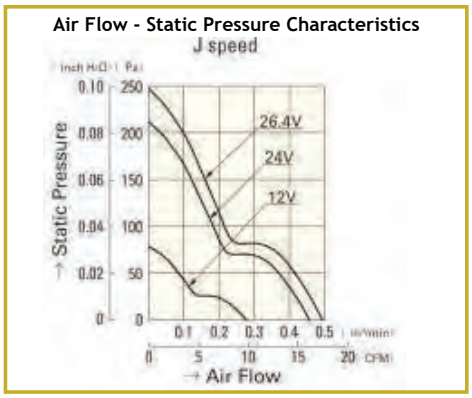
40x40x28 mm

24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

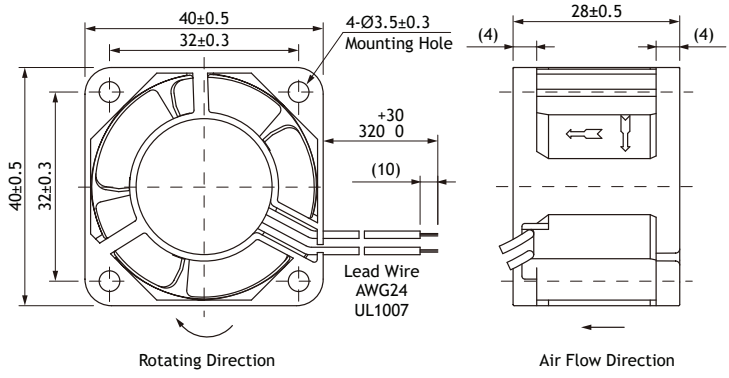
Air Flow - Static Pressure Characteristics



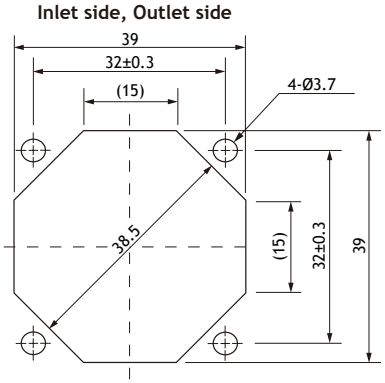
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109P0424J3023	24	12 to 26.4	0.18	4.32	12,500	0.46	16.2	210	0.843	44	-20 to +60	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



40 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

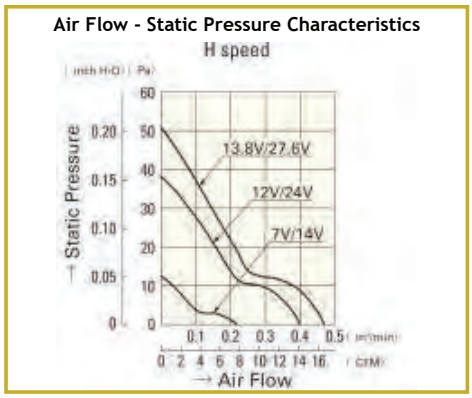
109P0624H702

60x60x15 mm 24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 60,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

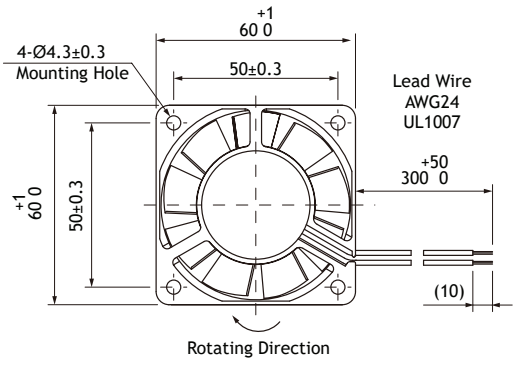
Air Flow - Static Pressure Characteristics

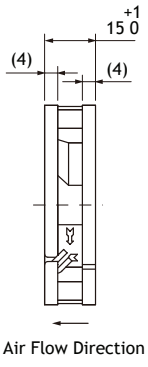


Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109P0624H702	24	14 to 27.6	0.06	1.44	4,100	0.40	14.1	38.2	0.153	32	-20 to +70	60,000/60˚

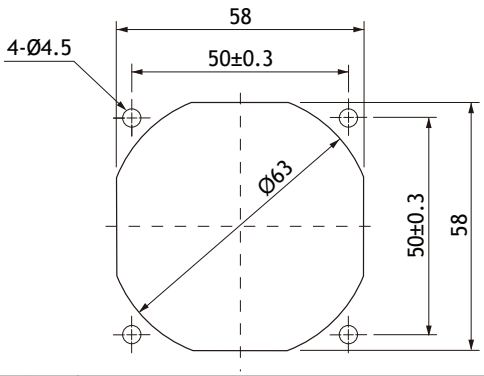
Dimensions (Unit:mm)





Reference dimension of mounting holes and vent opening (Unit: mm)

Inlet side, Outlet side



60 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

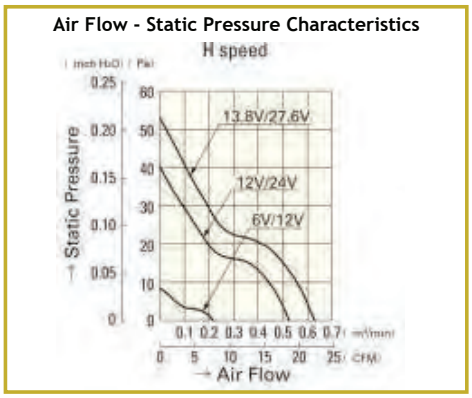
9A0612H402

60x60x25 mm 12 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

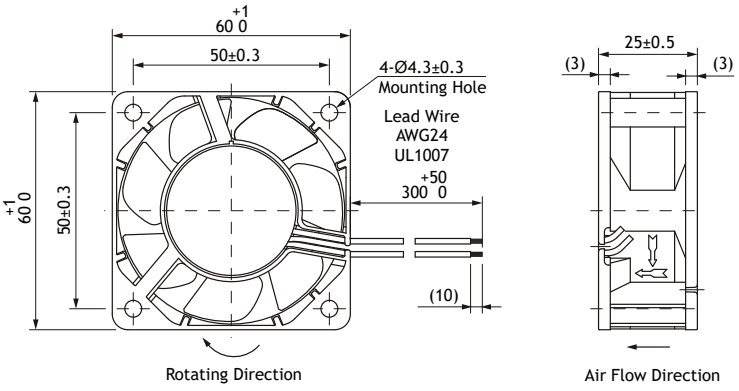
Air Flow - Static Pressure Characteristics



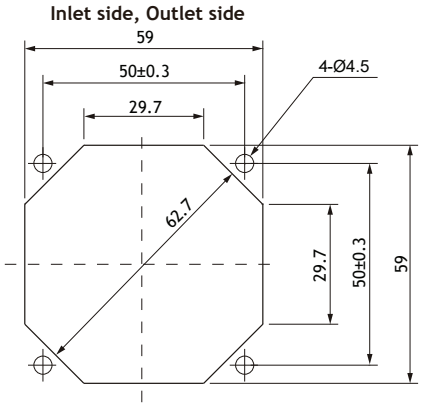
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9A0612H402	12	6 to 13.8	0.11	1.32	3,800	0.53	18.7	40.2	0.161	28	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



60 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

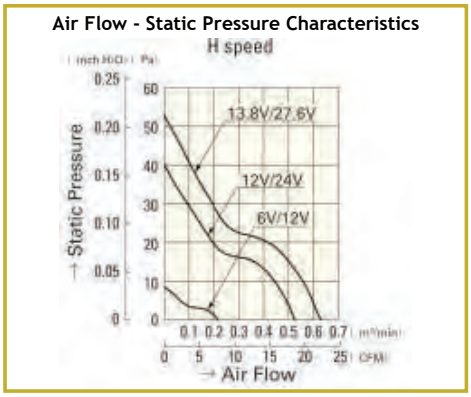
9A0624H402

60x60x25 mm 24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

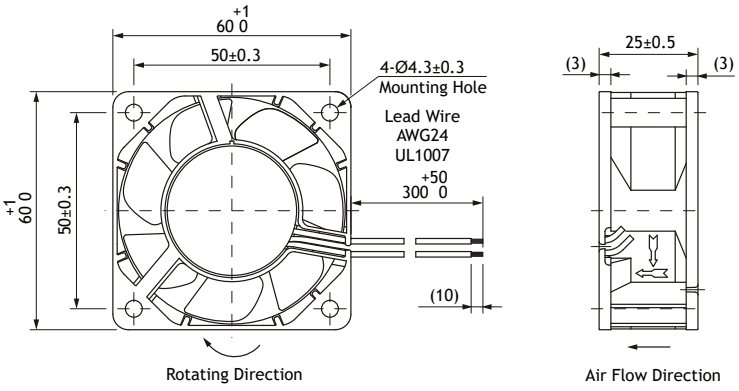
Air Flow - Static Pressure Characteristics



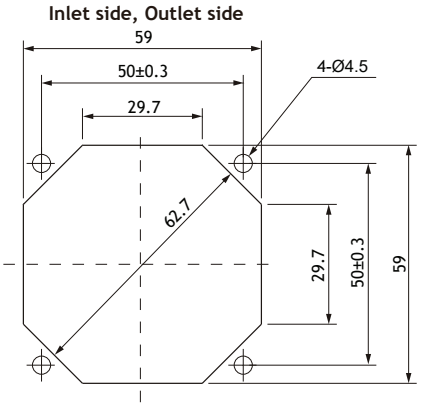
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9A0624H402	24	12 to 27.6	0.06	1.44	3,800	0.53	18.7	40.2	0.161	28	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



60 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

109R0624J402

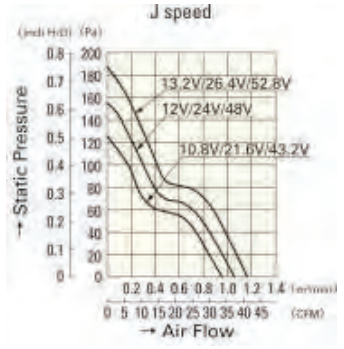
60x60x25 mm 24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

Air Flow - Static Pressure Characteristics

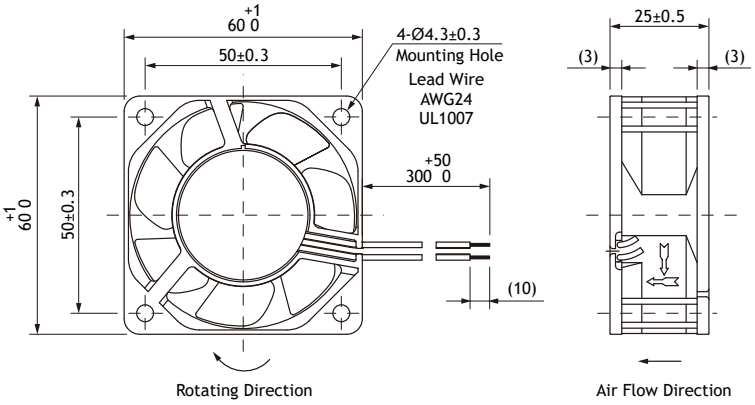
Air Flow - Static Pressure Characteristics



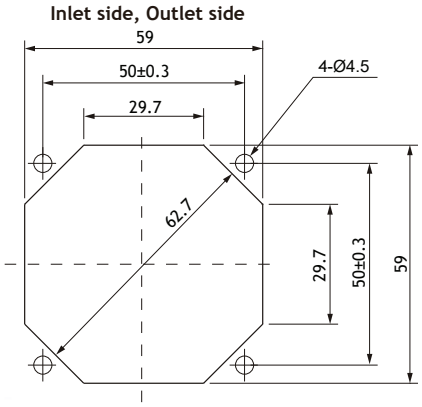
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109R0624J402	24	21.6 to 26.4	0.24	5.76	7,600	1.06	37.1	155.0	0.622	44	-20 to +60	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



60 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

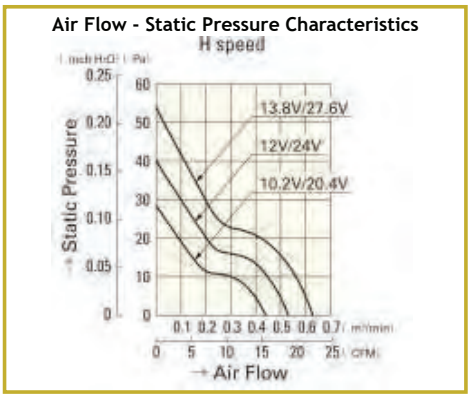
9WP0612H402

60x60x25 mm 12 V IP 68

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 60,000 h (Indoor, L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black
- Storage Temperature: -30°C to +70°C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

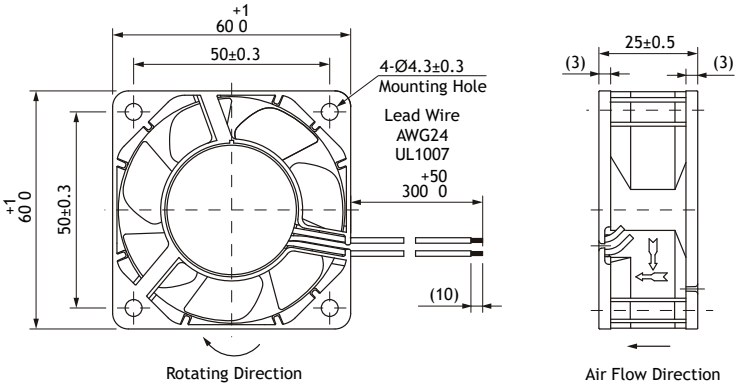
Air Flow - Static Pressure Characteristics



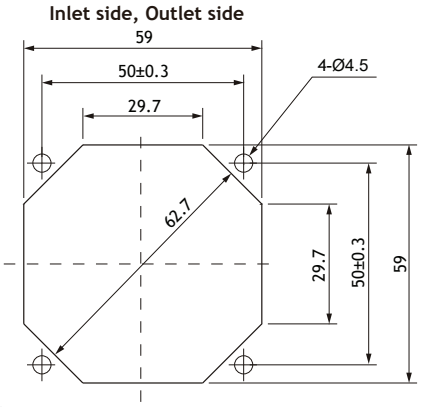
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9WP0612H402	12	10.2 to 13.8	0.11	1.32	3,800	0.53	18.7	40.2	0.161	28	-20 to +70	60,000/60°

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



60 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

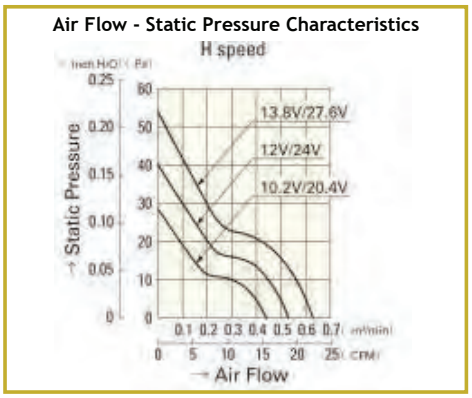
9WP0624H402

60x60x25 mm 24 V IP 68

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 60,000 h (Indoor, L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

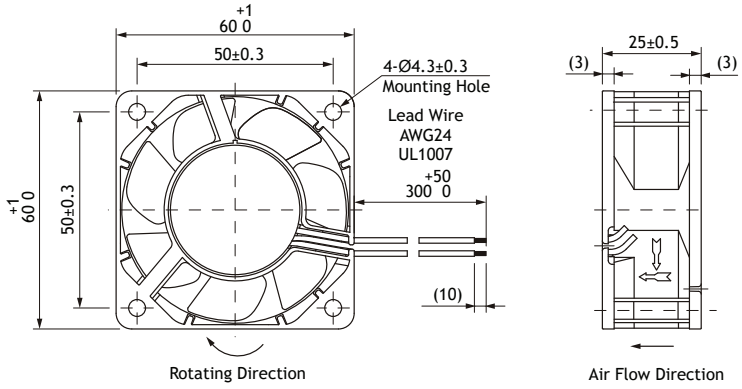
Air Flow - Static Pressure Characteristics



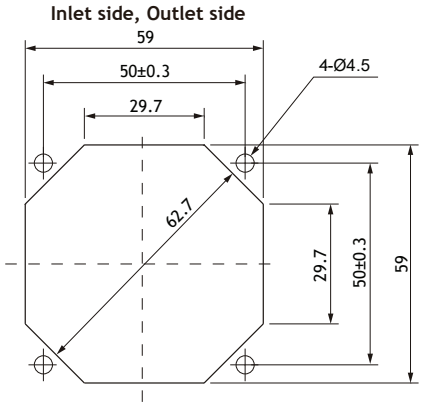
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9WP0624H402	24	20.4 to 27.6	0.06	1.44	3,800	0.53	18.7	40.2	0.161	28	-20 to +70	60,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



60 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

9A0812H402

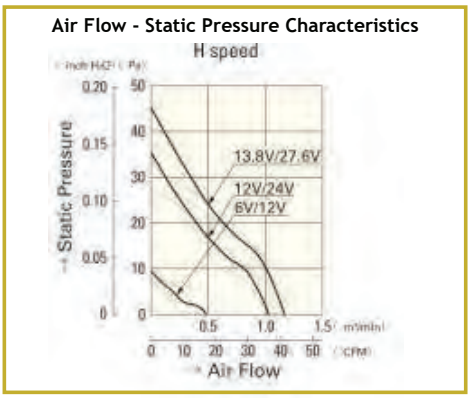
80x80x25 mm

12 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

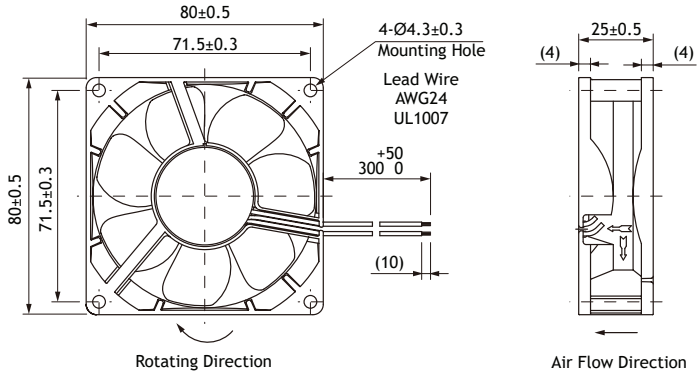
Air Flow - Static Pressure Characteristics



Specifications

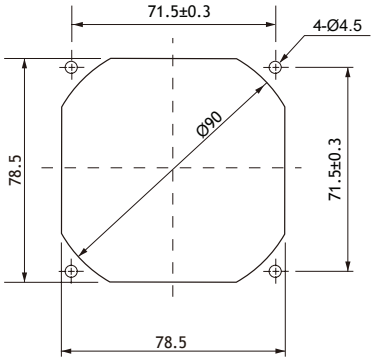
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9A0812H402	12	6 to 13.8	0.13	1.56	2,900	1.03	36.4	35.3	0.142	29	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)

Inlet side, Outlet side



80 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

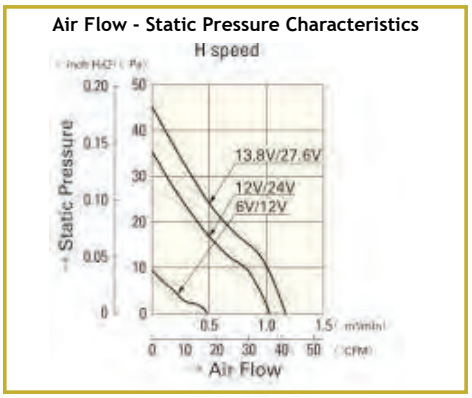
9A0824H402

80x80x25mm 24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

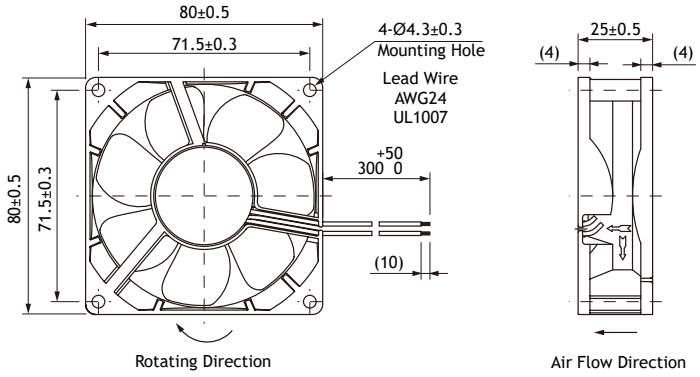
Air Flow - Static Pressure Characteristics



Specifications

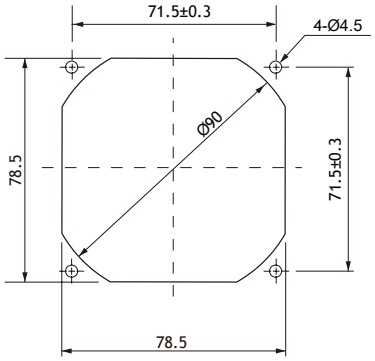
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9A0824H402	24	12 to 27.6	0.07	1.68	2,900	1.03	36.4	35.3	0.142	29	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)

Inlet side, Outlet side



80 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

9A0824G402

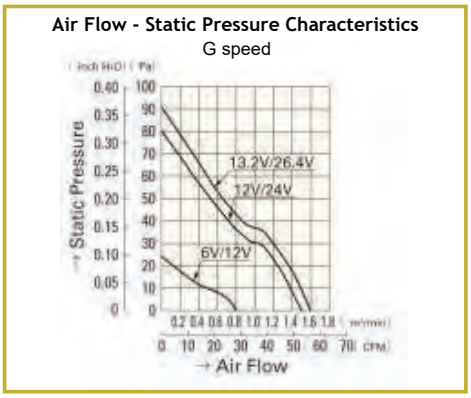
80x80x25 mm

24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 30,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

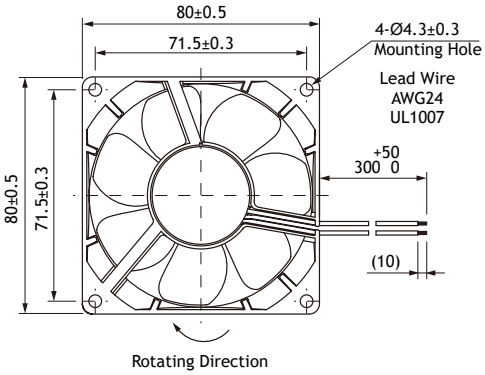
Air Flow - Static Pressure Characteristics

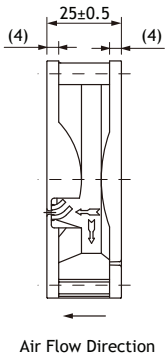


Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9A0824G402	24	12 to 26.4	0.21	5.04	4,500	1.5	53.0	80.3	0.323	40	-20 to +60	30,000/60˚

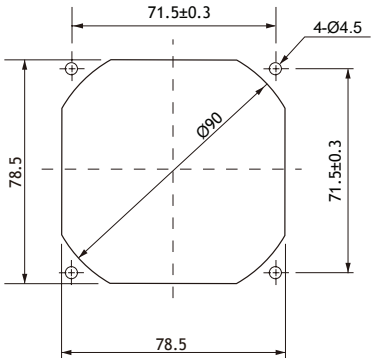
Dimensions (Unit:mm)





Reference dimension of mounting holes and vent opening (Unit: mm)

Inlet side, Outlet side



80 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

9G0824G102

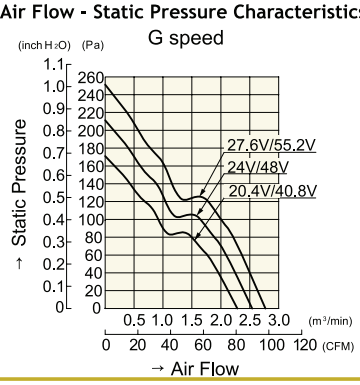
80x80x38 mm

24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

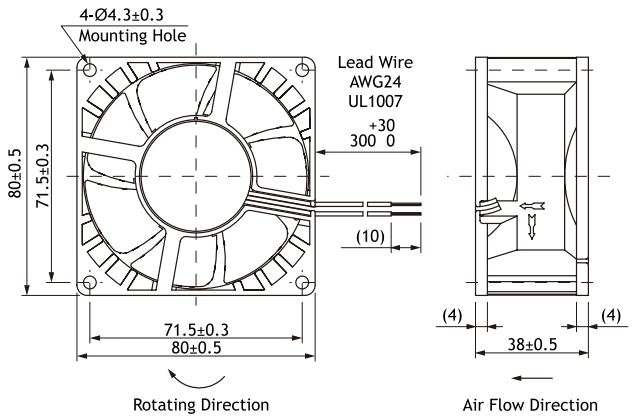
Air Flow - Static Pressure Characteristics



Specifications

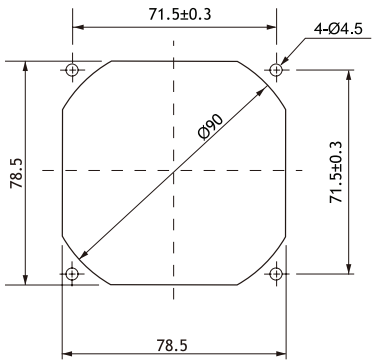
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH₂O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9G0824G102	24	20.4 to 27.6	0.56	13.4	6,300	2.55	90	211	0.847	51	-20 to +70	30,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)

Inlet side, Outlet side



80 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

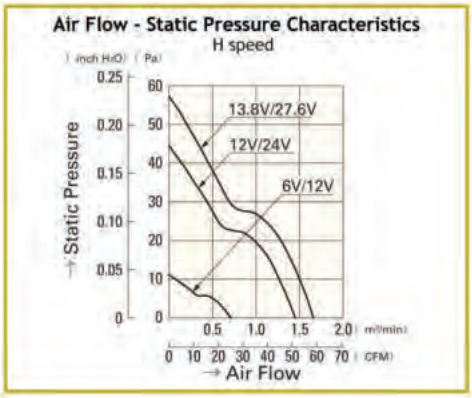
9A0912H402

92x92x25 mm **12 V**

General Specifications

- **Material:**
  - **Frame: Plastics (Flammability: UL 94V-0)**
  - **Impeller: Plastics (Flammability: UL 94V-1)**
- **Expected Life: 40,000 h (L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)**
- **Lead Wire: ⊕ red ⊖ black or blue**
- **Storage Temperature: -30°C to +70°C (Non-condensing)**
- **Ball bearings**
- **International Standards: UL/CSA, TÜV, RoHS**

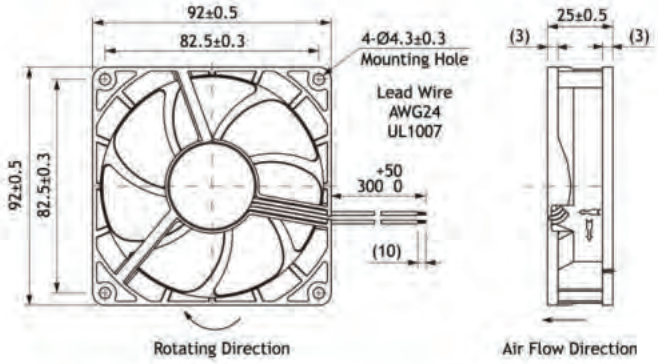
Air Flow - Static Pressure Characteristics



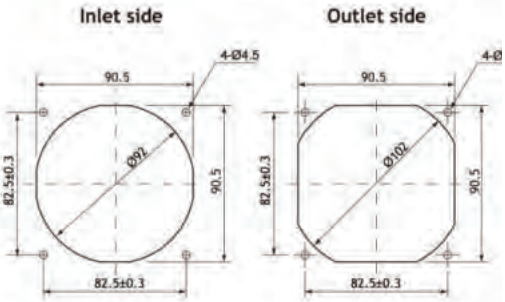
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH₂O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9A0912H402	12	6 to 13.8	0.21	2.52	3,150	1.45	51.2	44	0.177	33	-20 to +70	40,000/60°

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



92 mm sq.

- **Model always available on stock at R.T.A.**
- **Also available for online purchasing at www.rta-store.com**

SANYO DENKI
San Ace

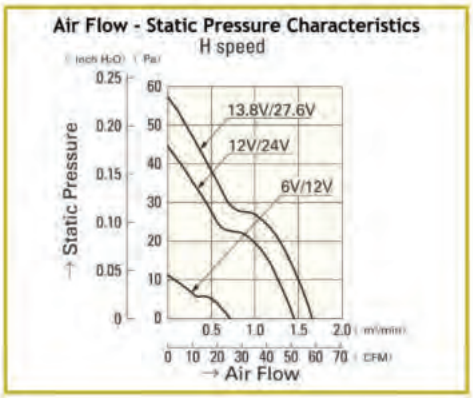
9A0924H402

92x92x25 mm **24 V**

General Specifications

- **Material:**
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- **Expected Life: 40,000 h (L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)**
- **Lead Wire: ⊕ red ⊖ black or blue**
- **Storage Temperature: -30°C to +70°C (Non-condensing)**
- **Ball bearings**
- **International Standards: UL/CSA, TÜV, RoHS**

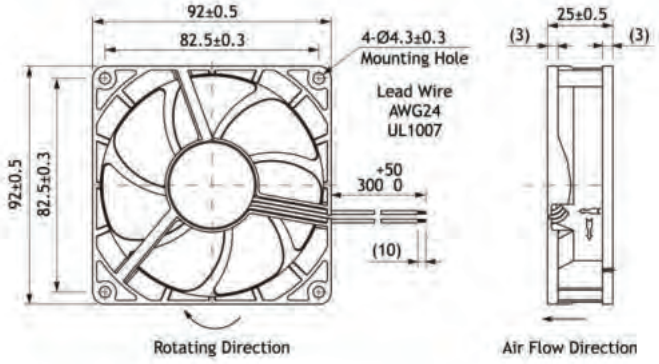
Air Flow - Static Pressure Characteristics



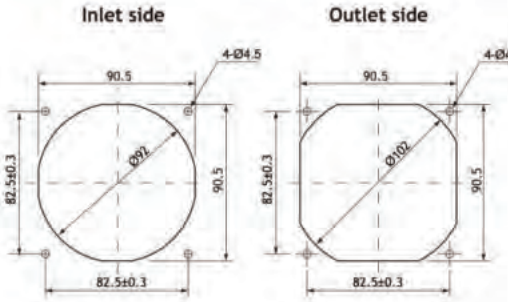
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH₂O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9A0924H402	24	12 to 27.6	0.1	2.4	3,150	1.45	51.2	44	0.177	33	-20 to +70	40,000/60°

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



92 mm sq.

- **Model always available on stock at R.T.A.**
- **Also available for online purchasing at www.rta-store.com**

SANYO DENKI
San Ace

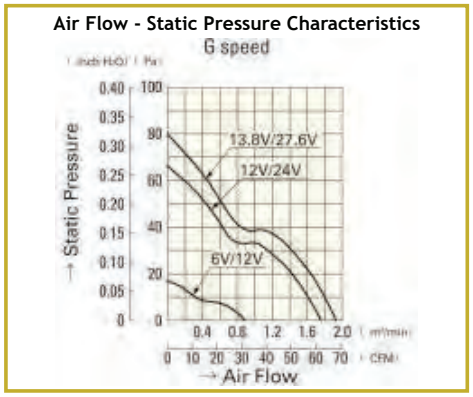
9A0912G4021

92x92x25 mm 12 V Ribless

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 30,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

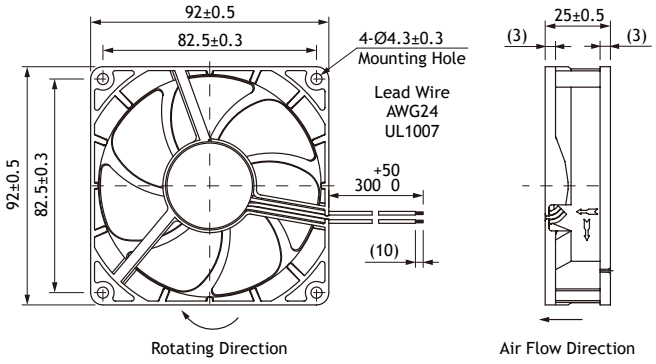
Air Flow - Static Pressure Characteristics



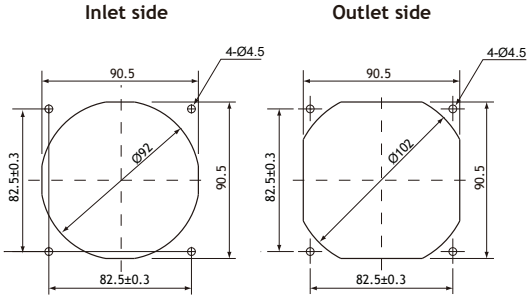
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9A0912G4021	12	6 to 13.8	0.39	4.68	3,900	1.76	62.1	66.5	0.267	43	-20 to +60	30,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



92 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

9G1224H402

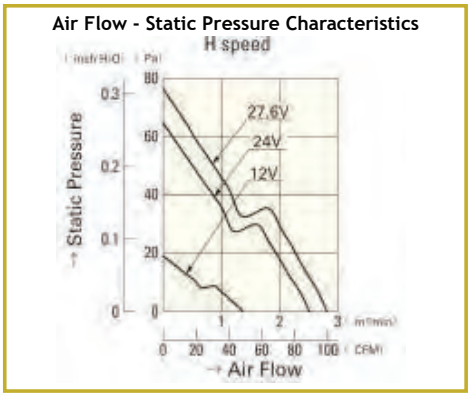
120x120x25 mm

24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

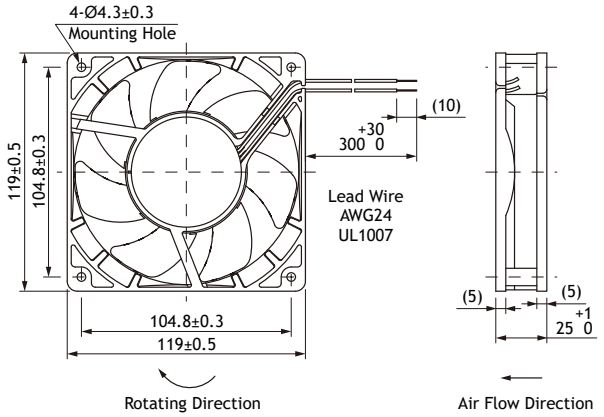
Air Flow - Static Pressure Characteristics



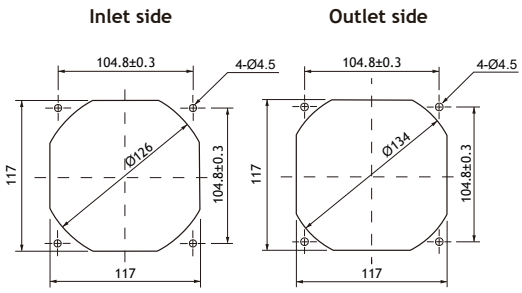
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9G1224H402	24	12 to 27.6	0.17	4.08	2,850	2.50	88	64	0.257	40	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

9G1224H102

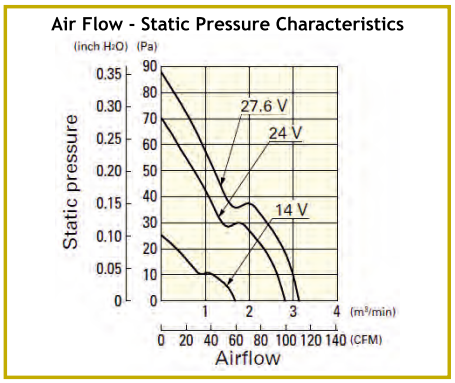
120x120x38 mm

24 V

General Specifications

- Material:
  - Frame: Plastics (Flammability: UL 94V-0)
  - Impeller: Plastics (Flammability: UL 94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30°C to +70°C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

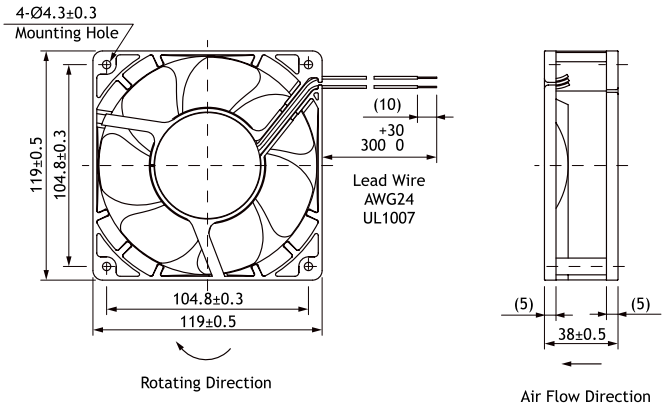
Air Flow - Static Pressure Characteristics



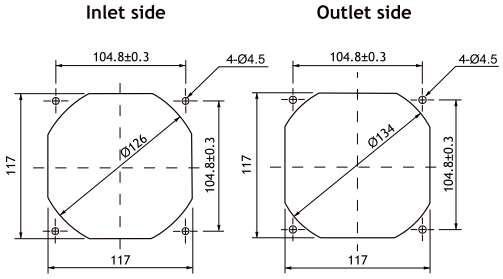
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9G1224H102	24	14.0 to 27.6	0.22	5.28	2,600	2.8	99	70.4	0.283	39	-20 to +70	40,000/60°

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

9G1224G102

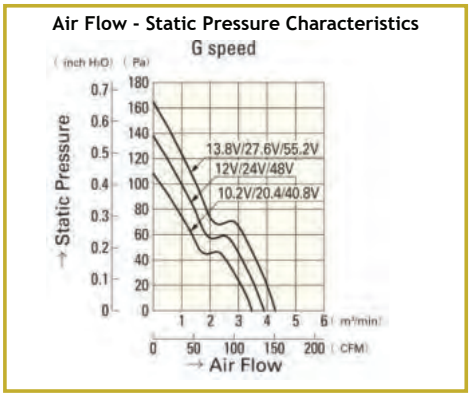
120x120x38 mm

24 V

General Specifications

- **Material:**
  - **Frame: Plastics (Flammability: UL 94V-0)**
  - **Impeller: Plastics (Flammability: UL 94V-1)**
- **Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)**
- **Lead Wire: ⊕ red ⊖ black or blue**
- **Storage Temperature: -30˚C to +70˚C (Non-condensing)**
- **Ball bearings**
- **International Standards: UL/CSA, TÜV, RoHS**

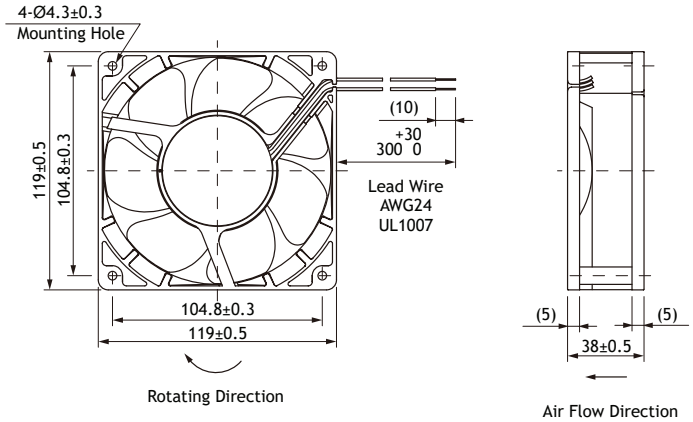
Air Flow - Static Pressure Characteristics



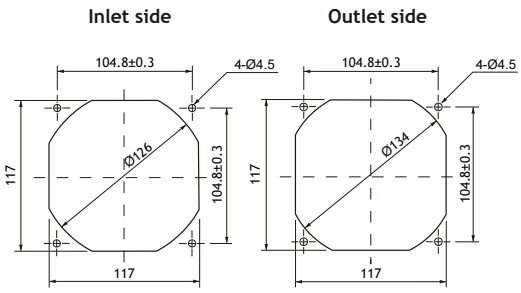
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH₂O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9G1224G102	24	20.4 to 27.6	0.50	12	3,600	3.88	137	135	0.542	49	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.

- **Model always available on stock at R.T.A.**
- **Also available for online purchasing at www.rta-store.com**

SANYO DENKI
San Ace

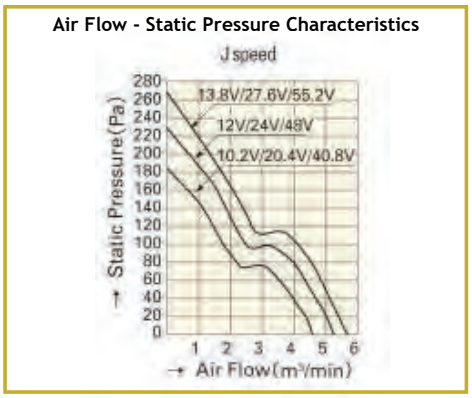
9GL1224J102

120x120x38 mm 24 V LONG LIFE

General Specifications

- Material:
  - Frame: Aluminum
  - Impeller: Plastics (Flammability: UL94V-1)
- Expected Life: 60,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings

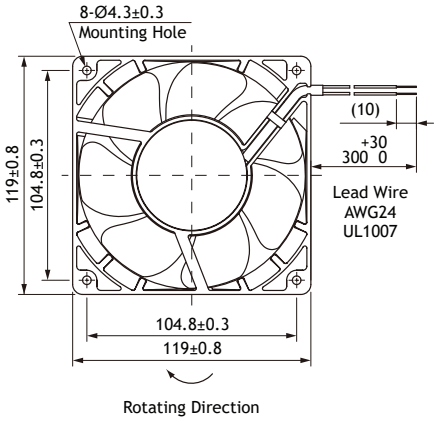
Air Flow - Static Pressure Characteristics

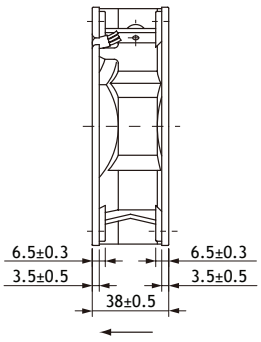


Specifications

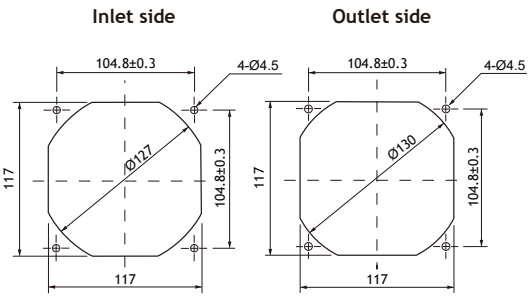
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
9GL1224J102	24	20.4 to 27.6	1.0	24	4,800	5.10	180	230	0.924	57	-10 to +70	60,000/60˚

Dimensions (Unit:mm)





Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

109E5724H502

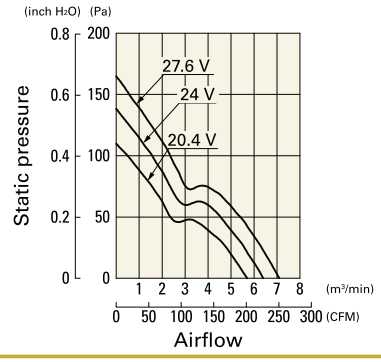
172x150x51 mm

24 V

General Specifications

- Material:
  - Frame: Aluminum
  - Impeller: Plastics (Flammability: UL94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black or blue
- Storage Temperature: -30°C to +70°C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

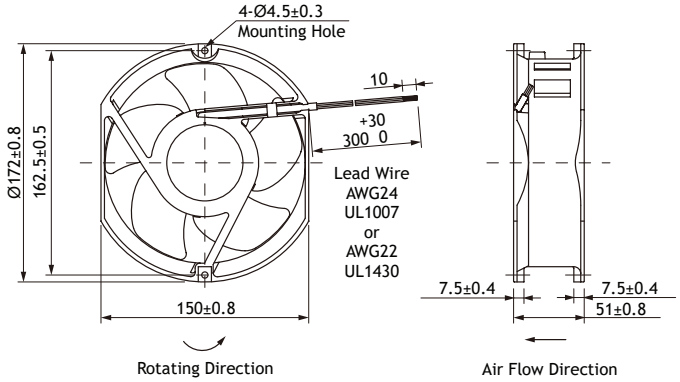
Air Flow - Static Pressure Characteristics



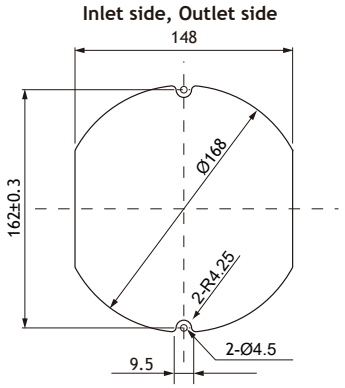
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109E5724H502	24	20.4 to 27.6	0.58	13.92	3,050	6.4	226	137.2	0.551	52	-20 to +70	40,000/60°

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



Ø172 mm

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

109E5724K501

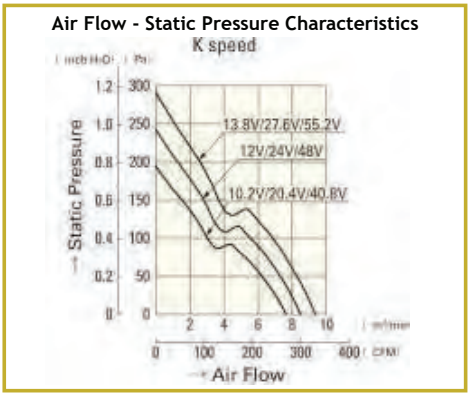
172x150x51 mm

24 V

General Specifications

- Material:
  - Frame: Aluminum
  - Impeller: Plastics (Flammability: UL94V-1)
- Expected Life: 40,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Tach output
- Lead Wire: ⊕ red ⊖ black or blue Sensor yellow
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS

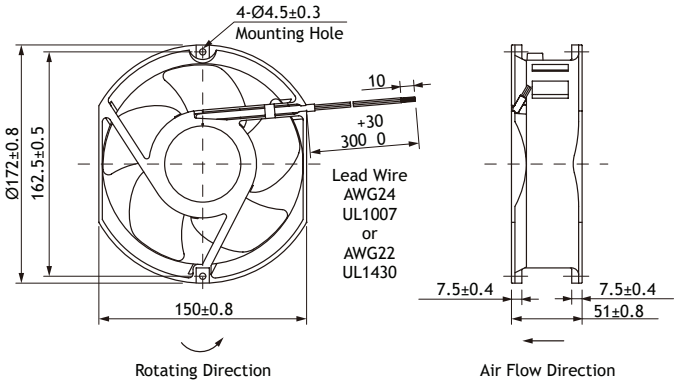
Air Flow - Static Pressure Characteristics



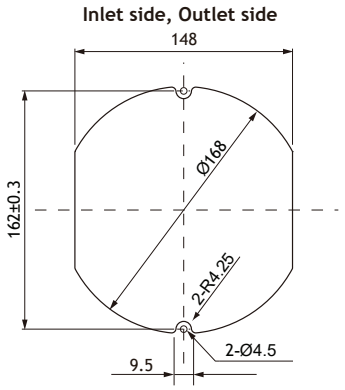
Specifications

Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109E5724K501	24	20.4 to 27.6	1.3	31.2	4,100	8.5	300	243.0	0.976	60	-20 to +70	40,000/60˚

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



Ø172 mm

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

COOLING FANS

ACDC AXIAL FANS

SANYO DENKI
San Ace

9AD1201H12

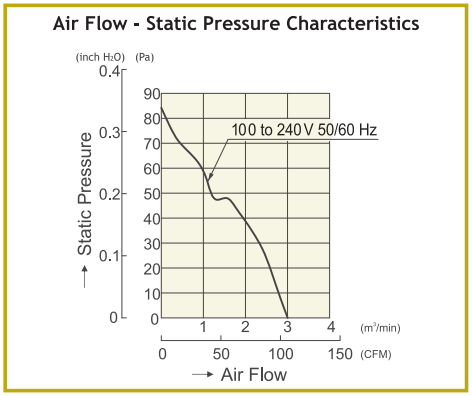
120x120x38 mm

ACDC

General Specifications

- **Material:**
  - **Frame: Plastics (Flammability: UL 94V-0)**
  - **Impeller: Plastics (Flammability: UL 94V-1)**
- Expected Life: 60,000 h (L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Motor construction: Brushless DC motors
- Motor Protection System: Burnout protection at locked rotor condition
- Ball bearings
- Dielectric Strength: 50/60 Hz, 1,500 VAC, 1 minute (between power terminal and frame or between lead conductor and frame)
- Insulation Resistance: 10MΩ or more at 500 VDC megger (between lead conductor and frame)
- Storage Temperature: -30°C to +75°C (Non-condensing)
- International Standards: CE, UL/CSA, TÜV, RoHS

Air Flow - Static Pressure Characteristics

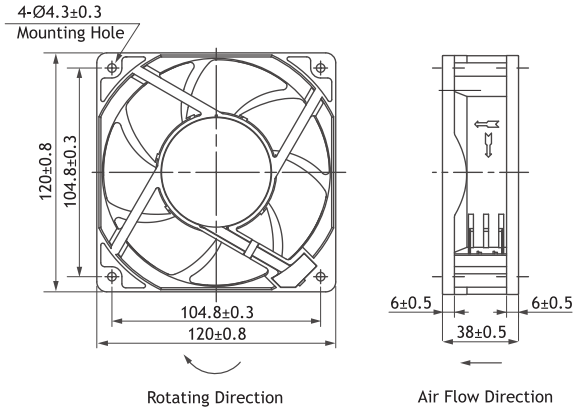


Specifications

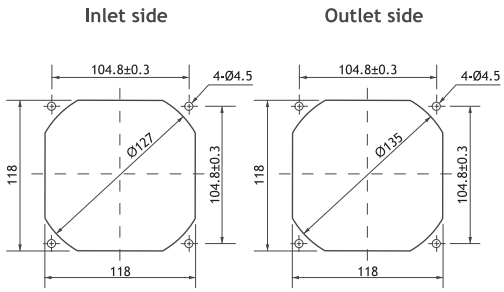
Model No.	Rated Voltage [V]	Operating Voltage Range [V]	Frequency * [Hz]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH₂O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
9AD1201H12	100 to 240	90 to 264	50/60	0.08	4.4	3,250	3.0	106	84	0.34	42	-20 to +75	60,000/60°

*NOTE: 50/60 Hz compatible.

Dimensions (Unit:mm)



Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

COOLING FANS

AC AXIAL FANS

SANYO DENKI
San Ace

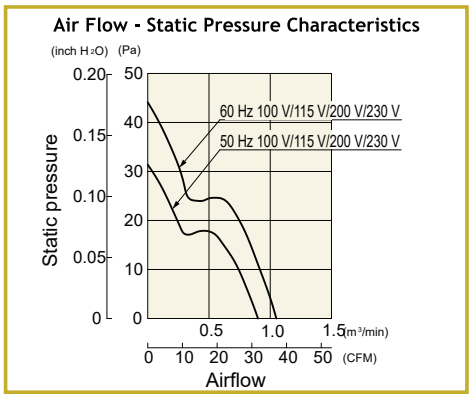
109-154

80x80x38 mm

General Specifications

- Material:
  - Frame: Aluminum
  - Impeller: Plastics (Flammability: UL94V-1)
- Expected Life: 25,000h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Lead Wire: ⊕ red ⊖ black
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: CE,UL/CSA, TÜV, RoHS

Air Flow - Static Pressure Characteristics

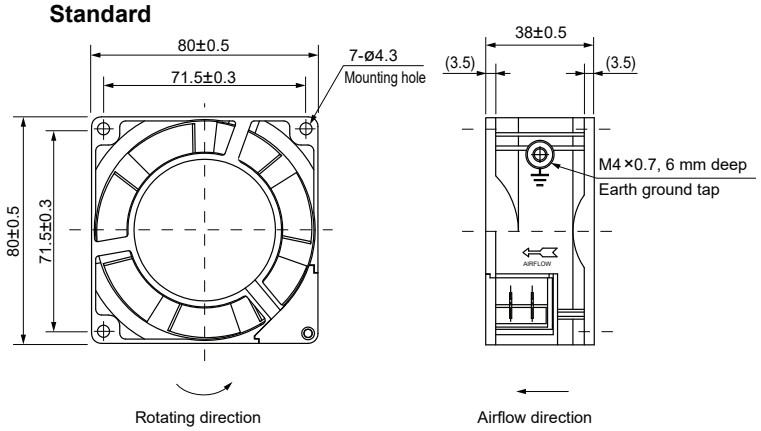


Specifications

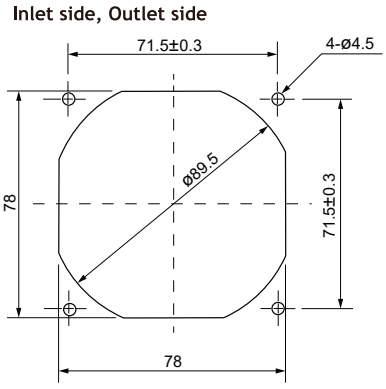
Model No.	Rated Voltage [V]	Frequency [Hz]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH₂O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109-154	230	50/60	0.06/0.05	9/8	2,700/3,150	0.9/1.05	31.8/37.1	31.4/44.1	0.126-0.177	35/39	-30 to + 60	25,000/60˚C

Dimensions (Unit:mm)

Standard



Reference dimension of mounting holes and vent opening (Unit: mm)



80 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

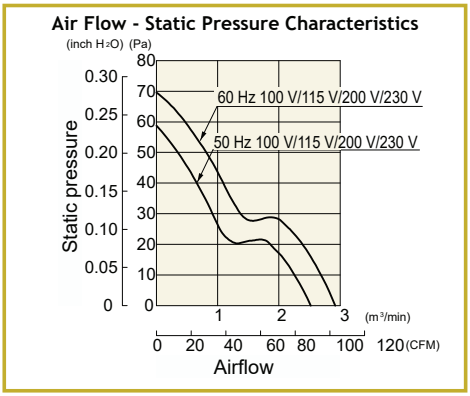
109S072-UL

120x120x38 mm

General Specifications

- Material:
  - Frame: Aluminum
  - Impeller: Plastics (Flammability: UL94V-1)
- Expected Life: 25,000 h (L10:Survival rate: 90% at 60°C, rated voltage, and continuously run in a free air state)
- Storage Temperature: -30°C to +70°C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS, CE

Air Flow - Static Pressure Characteristics

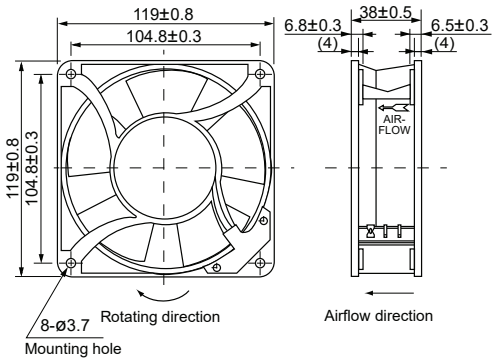


Specifications

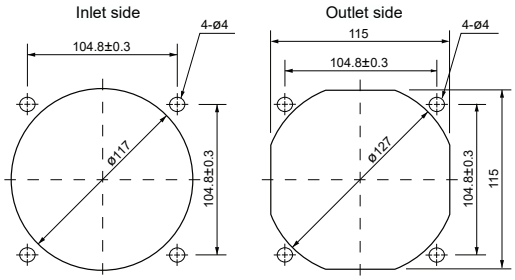
Model No.	Rated Voltage [V]	Frequency [Hz]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [°C]	Expected Life [h]
109S072-UL	230	50/60	0.11/0.9	18/16	2,700/3,100	2.5/2.9	88./102.5	57.9/68.7	0.233/0.276	42/45	-30 to +60	25,000/60°C

Dimensions (Unit:mm)

Standard



Reference dimension of mounting holes and vent opening (Unit: mm)



120 mm sq.

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

SANYO DENKI
San Ace

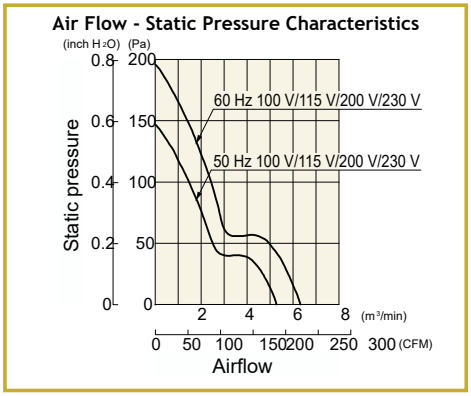
109-313

172x51 mm

General Specifications

- Material:
  - Frame: Aluminum
  - Impeller: Plastics (Flammability: UL94V-1)
- Expected Life: 25,000 h (L10:Survival rate: 90% at 60˚C, rated voltage, and continuously run in a free air state)
- Storage Temperature: -30˚C to +70˚C (Non-condensing)
- Ball bearings
- International Standards: UL/CSA, TÜV, RoHS, CE

Air Flow - Static Pressure Characteristics

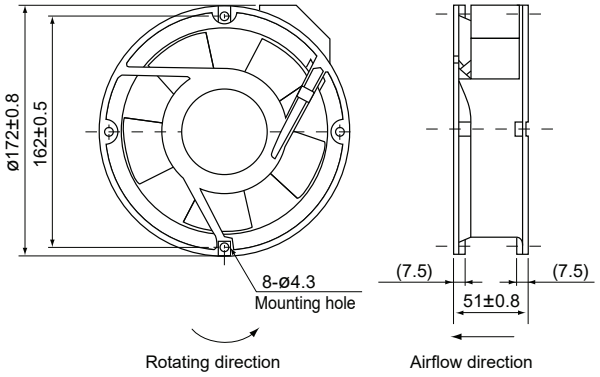


Specifications

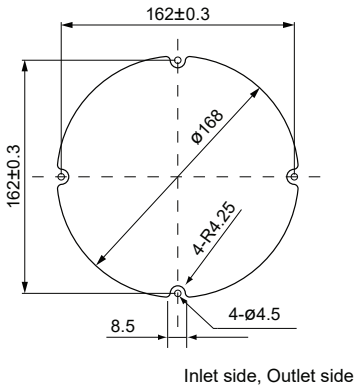
Model No.	Rated Voltage [V]	Frequency [Hz]	Rated Current [A]	Rated Input [W]	Rated Speed [min⁻¹]	Max. Air Flow [m³/min]	[CFM]	Max. Static Pressure [Pa]	[inchH2O]	SPL [dB(A)]	Operating Temperature [˚C]	Expected Life [h]
109-313	230	50/60	0.14/0.11	27/25	2,900/3,500	5.3/6.4	187.3/226.1	147/196	0.59/0.787	47/51	-30 to +70	25,000/60˚C

Dimensions (Unit:mm)

Standard



Reference dimension of mounting holes and vent opening (Unit: mm)



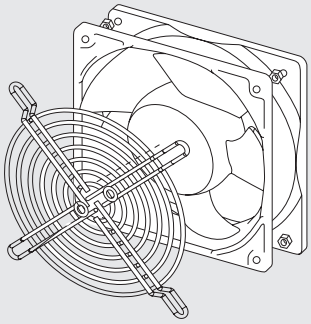
ø172 mm

- Model always available on stock at R.T.A.
- Also available for online purchasing at www.rta-store.com

Cooling Fans accessories

1 METAL FAN GUARDS

Fan Guards increases safety by preventing foreign objects from entering fans.



2 PLASTIC FAN FILTERS

Fan Filters assure protection to the fan blade allowing free passage of air with minimum resistance.

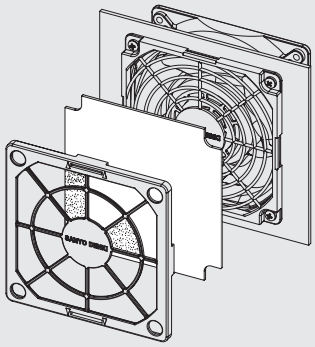


Table of contents

ACCESSORIES

	DESCRIPTION	SUITABLE FOR FANS (mm)	MATERIALS	SURFACE TREATMENT
METAL FAN GUARDS				
MF-040-13	Metal Fan Guard	40x40	C1010 Bright Basic Wire	Bright Nickel Chrome
MF-060-09	Metal Fan Guard	60x60	C1010 Bright Basic Wire	Bright Nickel Chrome
MF-080-01	Metal Fan Guard	80x80	C1010 Bright Basic Wire	Bright Nickel Chrome
MF-120-05	Metal Fan Guard	120x120	C1010 Bright Basic Wire	Bright Nickel Chrome

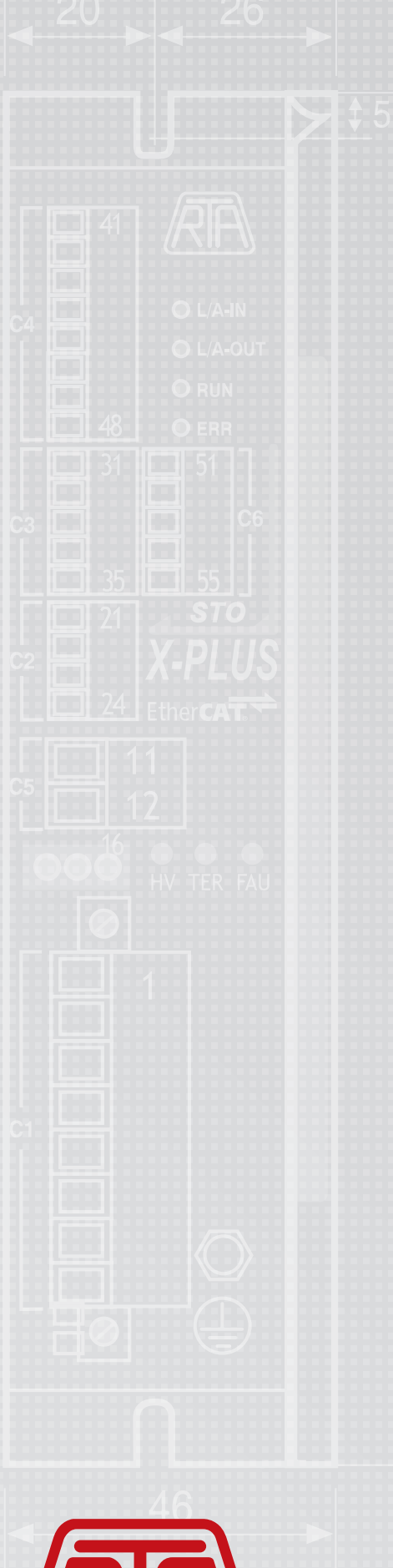
Other sizes Available

Table of contents

ACCESSORIES

	DESCRIPTION	SUITABLE FOR FANS (mm)	MATERIALS	COLOR
PLASTIC FAN FILTERS				
FRM-325-A080	Plastic Fan Filter	80x80	Guard: Plastic Filter: PU Foam	Black
FRM-450-A120	Plastic Fan Filter	120x120	Guard: Plastic Filter: PU Foam	Black

Other sizes Available



ITALY

Corporate Headquarters

R.T.A.srl
Via E. Mattei 15, Fraz. Divisa - 27020 Marcignago (PV) ITALY
T +39.0382.929.855 | F +39.0382.929.150 | info@rta.it

www.rta.it

Local Branches

R.T.A. Filiale Centro
Centro Direzionale Cavour
Via Cavour 2, 40055 Villanova di Castenaso (BO) ITALY
T +39.051.780141 | rtabo@rta.it

R.T.A. Filiale Nord-Est
Via D. Alighieri 4, 30034 Mira (VE) ITALY
T +39.041.5600332 | F +39.041.5600165 | rtane@rta.it

GERMANY

R.T.A. Deutschland GmbH
Bublitzer Strasse 34, 40599 Düsseldorf GERMANY
T +49.211.749.668.60 | F +49.211.749.668.66 | info@rta-deutschland.de

www.rta-deutschland.de

INDIA

R.T.A. India Pvt
Teerth Business Center
3rd Floor, Unit No. 7, Block EL - 15, MIDC Bhosari
Pimpri-Chinchwad, Pune 411026 INDIA
T +91 942.250.744.5 | rtain@rta-india.in

www.rta-india.in

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