RTA

Motion Control Systems

NEW PRODUCTS 2016

230 VAC & 400 VAC

AC SERVOSYSTEMS CATALOGUE

AC SERVO SYSTEMS
CATALOGUE

SANYO DENKI

SANMOTION AC SERVO SYSTEMS

AC SERVO SYSTEMS
catalogue

SANYO DENKI

SANMOTION
AC SERVO SYSTEMS

Warning / *Attenzione*

- The sole purpose of this catalogue is as a general introduction to our products, in order to allow an orientation as well as a choice among them. Detailed information concerning limitations and installation/utilization procedures are described in the manuals relating to each product. It is therefore essential to strictly refer to these enclosed technical manuals for a correct use, in accordance with current standards.

- All those products for which a speci?c obligation is required, as per law regulation in force in the European Community countries, bear the EC marking stating they are in accordance with the related directives.

- All products are classed as components foreseen to be integrated in a more complex machine or installation by a professional assembler, expert in the ?eld of motor drives and in their related problems. Only a professional assembler can install and put in service this component. The necessary installation recommendations are included in the technical manuals.

- R.T.A. reserves the right to modify the products at any time and without prior notice (including, but not limited to, characteristics, availability and prices).

- *Unico scopo di questo catalogo è una presentazione generale dei prodotti atta a consentire un orientamento e una scelta tra gli stessi. Informazioni precise e dettagliate in merito alle limitazioni e modalità di installazione ed uso sono riportate nei manuali tecnici relativi ai singoli prodotti. Pertanto, per un loro uso corretto e conforme alle normative in vigore, è indispensabile fare riferimento a tali manuali tecnici.*

- *Tutti quei prodotti per i quali vi è obbligo speci?co, ai sensi delle disposizioni di legge vigenti nei paesi della Comunità Europea, recano la marcatura CE attestante la conformità alle direttive che li riguardano.*

- *Tutti i prodotti riportati nel catalogo sono componenti atti ad essere integrati in apparecchiature o macchine più complesse. La loro installazione e messa in servizio deve essere fatta da un assemblatore professionale competente nel settore degli azionamenti per motori e delle loro problematiche. Le necessarie prescrizioni e indicazioni per la installazione sono incluse nei manuali tecnici.*

- *R.T.A. si riserva il diritto di apportare modi?che ai prodotti (includendo, senza limitazione alcuna, caratteristiche, disponibilità e prezzi) in qualsiasi momento e senza preavviso.*

CONTENTS

NOTE: Codes between brackets refer to model with brake.
NOTA: I codici tra parentesi si riferiscono alla versione con freno.

R.T.A. GROUP

R.T.A. - HEADQUARTERS

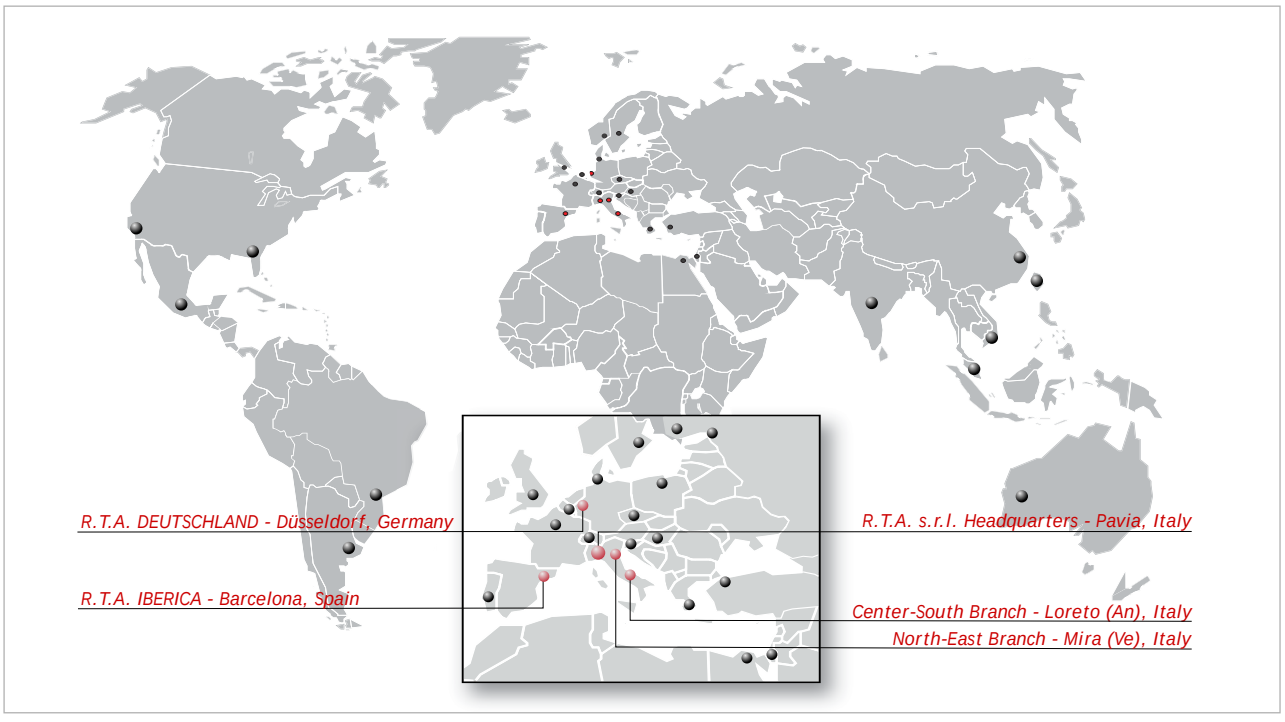
R.T.A. DEUTSCHLAND

R.T.A. IBERICA

- R.T.A. Group is a leading network of companies in the motion control industry. It is number one in Italy in the stepping systems market and number three in Europe in the stepping motor drives segment.
  [Source: IMS Research 2012]
- The Group is based on three operational companies: the headquarters, R.T.A. s.r.l. (ITALY), founded in 1976, R.T.A. Deutschland GmbH (GERMANY), founded in 2001 and R.T.A. IBERICA - Motion Control Systems S.L. (SPAIN), founded in 2008.
- R.T.A. has been producing stepping motor drives since 1976: since then more than 750.000 stepping motor drives have been sold in Italy and in more than 39 countries worldwide.
- Production and sales process quality is guaranteed by a Quality Assurance System certified under the UNI EN ISO 9001 (TUV-50 100 2153) Norm.
- Over time, R.T.A. product line has been enriched through the creation of a partnership with SANYO DENKI, a leading Japanese company producing stepping motors, brushless systems and fans. The Group has been its Italian sole distributor since 1989, while distributorship has been granted in 2001 for Germany and in 2008 for Spain.

R.T.A. WORLDWIDE

- Since its origins, the Group has always had a strong commitment for international business; that was the reason leading to the decision of opening direct branches in Germany and Spain.
- R.T.A. is also active worldwide through a wide network of distributors, composed by 29 companies operating in more than 39 countries.



R.T.A. PRODUCT LINES


STEPPING MOTOR DRIVES


STEPPING MOTORS


STEPPING MOTORS WITH ENCODER


STEPPING MOTORS WITH BRAKE


IP65 STEPPING MOTORS


AC SERVOSYSTEMS


COOLING FANS


PLANETARY GEARBOXES

R&D, PRODUCTION AND WAREHOUSE

R&D AND FIELD APPLICATION

- More than 30-years experience in the motion control industry
- 6 engineers fully dedicated to R&D
- 3 full-time field application engineers

STEPPING MOTOR DRIVES PRODUCTION

- More than 40.000 stepping motor drives produced yearly
- More than 750.000 drives sold since 1976
- Computerized testing line: every single drive is tested twice, by two different operators, guaranteeing a very high reliability
- Warranty: 24 months

INDUSTRIAL STRENGTH

- Wide warehouse of SANYO DENKI products:
  - more than 50.000 stepping motors
  - more than 3.000 AC servosystems
  - more than 5.000 cooling fans
- Very short time-to-market: 97% of orders is processed within one week from order.

MAIN PRODUCTION SITES

Kangawa Works (Japan)

Main Factories:

- Kangawa (Japan) Works since 2009
- Subic (Philippines) Works since 2000

Subic Works (Philippines)

SANYO DENKI BENEFITS

High Reliability & Quality

- Sound experience in manufacturing since 1959
- ISO 9001 & 14001 certification
- Strong vertical integration and focus on process control

Factory Support & Flexibility

- Large production volume: 310 000 motors/month
- Machine based assembling
- Through process control & quality checks

Technology Center

- SANYO DENKI'S main product research and development facility
- More than 300 Engineers
- Since 1997

Acoustic radio wave anechoic chamber

Laboratories

Production line

Design rooms

R.T.A. PRODUCT LINES: AC SERVOMOTORS & SERVOAMPLIFIERS

AC SERVOMOTORS

- R2 SERIES:
  Power range from 100W to 1000W, maximum speed up to 6000 rpm, IP67 protection degree, incremental or absolute encoder, with or without brake.
- Q SERIES:
  Power range from 1500W to 3000W, maximum speed up to 4500 rpm, IP67 protection degree, with or without brake .
- Q2CA SERIES:
  Power range from 4,5KW to 15KW, maximum speed up to 3000 rpm, IP67 protection degree .

MOTORI BRUSHLESS

- *SERIE R2:*
  Range di potenze da 100W a 1000W, velocità massima fino a 6000 rpm, grado di protezione IP67 con encoder incrementale o assoluto, con o senza freno.
- *SERIE Q:*
  Range di potenze da 1500W a 3000W, velocità massima fino a 4500 rpm, grado di protezione IP67, con o senza freno.
- *SERIE Q2CA:*
  Range di potenze da 4,5KW a 15KW, velocità massima fino a 3000 rpm, grado di protezione IP67.

100 W — **AC SERVOMOTOR NOMINAL POWER** → **15000 W**


R2 SERIES


Q1 SERIES


Q2 SERIES


Q2CA SERIES

230 VAC — **AC SERVOAMPLIFIER POWER SUPPLY** → **400 VAC**

AC SERVOAMPLIFIERS / AZIONAMENTI BRUSHLESS

RS1 SERIES

230 VAC | PULSE TRAIN ANALOG INPUT

- 230VAC power input. Control by pulse train and analog signal.
- *Alimentazione 230VAC, comando a treno di impulsi e segnale analogico.*

RS1 CANOPEN SERIES

230 VAC | CANopen

- 230VAC power input. CANopen interface, control by pulse train and analog signal.
- *Alimentazione 230VAC, interfaccia CANopen, comando a treno di impulsi e segnale analogico.*

RS2 ETHERCAT SERIES

230 VAC | SIL2 SAFE TORQUE OFF (STO) | EtherCAT

- 230VAC power input. ETHERCAT profile, Safe Torque Off (STO)-SIL2.
- *Alimentazione 230VAC, profilo ETHERCAT, Safe Torque Off (STO)-SIL2.*

RS3 SERIES

230 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE

- 230VAC power input. Control by pulse train and analog signal, Safe Torque Off (STO)-SIL3. Very compact size.
- *Alimentazione 230VAC, dimensioni compatte, comando a treno di impulsi e segnale analogico, Safe Torque Off (STO)-SIL3.*

RS1C 400VAC SERIES

400 VAC | PULSE TRAIN ANALOG INPUT | CANopen

- 400VAC power input. CANopen interface, control by STEP/DIR and analog signal.
- *Alimentazione 400VAC, interfaccia CANopen. Modalità di controllo: STEP/DIR e segnale analogico.*

AC SERVOAMPLIFIERS TABLE OF CONTENTS

SANYO DENKI AC Servoamplifiers	DRIVE TYPE *TIPO AZIONAMENTO* (Interface/Interfaccia)	POWER SUPPLY *ALIMENTAZIONE* (Vac.)	SAFE TORQUE OFF *SAFE TORQUE OFF* (STO)	MAX CURRENT *CORRENTE MASSIMA* (Amp)	DIMENSIONS *DIMENSIONI* (mm.)	TECHNICAL DATA *DATI TECNICI* (page/pagina)
RS1 SERIES						
RS1A01AA	Step/Dir & 0-10 Vdc	230	---	15	45x168x130	12
RS1A03AA	Step/Dir & 0-10 Vdc	230	---	30	50x168x130	12
RS1A05AA	Step/Dir & 0-10 Vdc	230	---	50	90x168x130	12
RS1A10AA	Step/Dir & 0-10 Vdc	230	---	100	100x205x235	12
RS1 CANOPEN SERIES						
RS1A01AL	Canopen	230	---	15	60x168x130	14
RS1A03AL	Canopen	230	---	30	60x168x130	14
RS1A05AL	Canopen	230	---	50	90x168x130	14
RS2 ETHERCAT SERIES						
RS2A03A0K	Ethercat	230	SIL2	30	50x160x130	16
RS2A05A8K	Ethercat	230	SIL2	50	85x160x130	16
RS3 SERIES						
RS3A02A0AL2	Step/Dir analog	230	SIL3	20	40x160x130	18
RS3A03A0AL2	Step/Dir analog	230	SIL3	30	50x160x130	18
Q2CA SERIES						
RS1C10AL	Canopen Step/Dir analog	400	---	100	175x235x235	20
RS1D15AA	Step/Dir analog	400	---	150	220x235x375	22

SIL2 SAFE TORQUE OFF (STO) · SIL3 SAFE TORQUE OFF (STO) · PULSE TRAIN ANALOG INPUT · ULTRA COMPACT SIZE · CANopen · EtherCAT

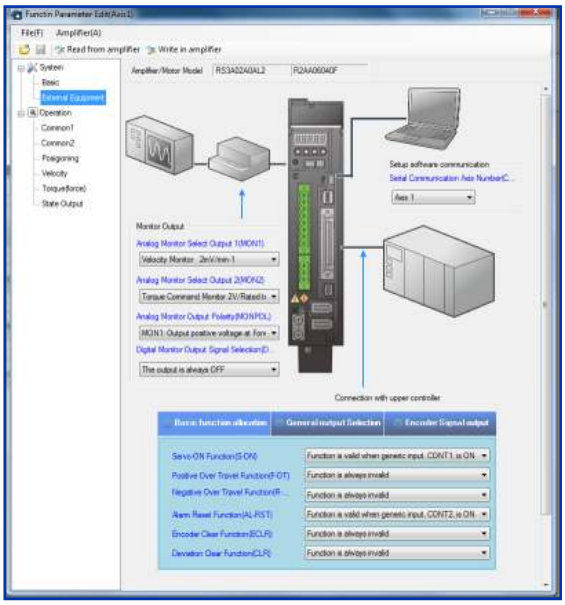
INPUT VOLTAGE 230 VAC 400 VAC

MULTITASKING SYSTEM SETUP

INPUT AND OUTPUT SETTING

Modify the I/O setting using an intuitive graphic interface.

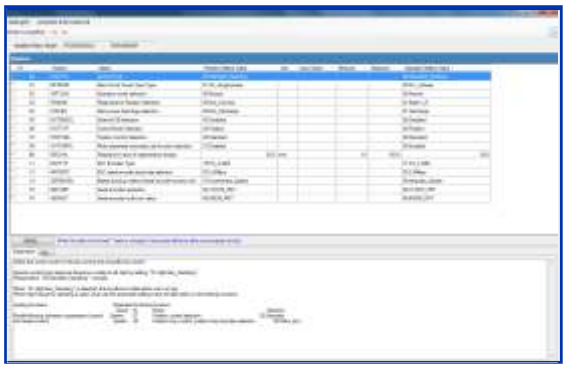
Definisci Ingressi e Uscite grazie alla interfaccia grafica semplificata.



PARAMETER SETUP

The «Group-Page»interface allows access to every parameter.

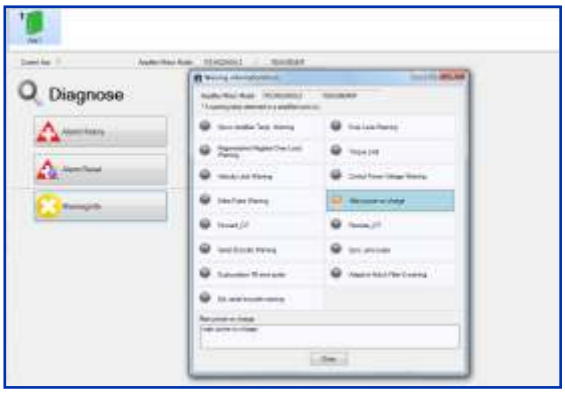
Accesso diretto ad ogni parametro dell'azionamento.



SYSTEM DIAGNOSE

Keep your warning information under control.

Tieni sotto controllo tutte le segnalazioni.



ADVANCED JOGGING OPERATION

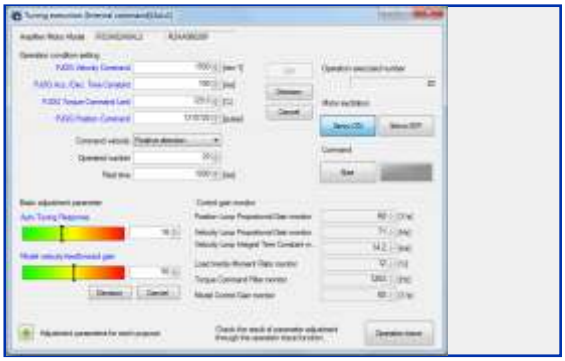
Create linked movements to test the mechanics.

Crea una serie di movimenti collegati tra loro al fine di testare la meccanica.

REAL TIME AUTOTUNING FUNCTION

Tune the System using the Automatic Tuning Response.

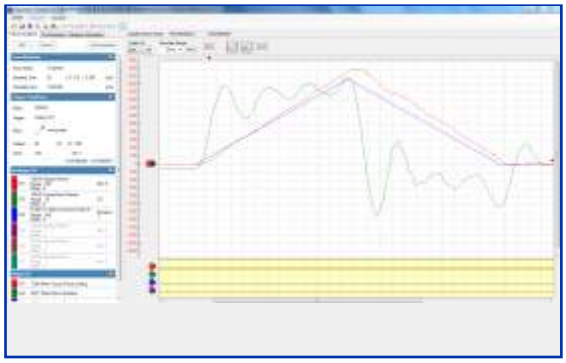
Scegli la rigidità del sistema mediante l'Automatic Tuning Response.



TRACE OPERATION

Check the result with the functionality of the embedded Oscilloscope.

Verifica i risultati utilizzando la funzione Oscilloscopio.



AC SERVOMOTORS TABLE OF CONTENTS

SANYO DENKI AC Servomotors	NOMINAL POWER *POTENZA NOMINALE* (W.)	NOMINAL SPEED *VELOCITÀ NOMINALE* (RPM.)	MAXIMUM SPEED *VELOCITÀ MASSIMA* (RPM.)	NOMINAL TORQUE *COPPIA NOMINALE* (Nm.)	STALL TORQUE *COPPIA DI STALLO* (Nm.)	MAXIMUM TORQUE *COPPIA MASSIMA* (Nm.)	INERTIA *INERZIA* ($Kg*m^2$)	ENCODER *ENCODER* (imp./rev)	TECHNICAL DATA *DATI TECNICI* (page/pagina)
R2 SERIES									
R2AA04010FXH1CM	100	3000	6000	0.318	0.318	1.18	$0.0627x10^{-4}$	131072 (17 bit)	26
R2AA06020FXH11M	200	3000	6000	0.637	0.686	2.20	$0.219x10^{-4}$	131072 (17 bit)	27
R2AA06040FXH11M	400	3000	6000	1.270	1.370	4.80	$0.412x10^{-4}$	131072 (17 bit)	28
R2AA08075FXH11M	750	3000	6000	2.390	2.550	8.50	$1.820x10^{-4}$	131072 (17 bit)	29
R2AAB8100HXH29M	1000	3000	3000	3.180	3.920	11.60	$2.383x10^{-4}$	131072 (17 bit)	30
Q1 SERIES									
Q1AA10150DXS00M	1500	3000	4500	4.79	4.9	14.7	$1.61x10^{-4}$	8000	31
Q1AA13300DXS00M	3000	3000	4500	9.50	10.8	28.4	$4.92x10^{-4}$	8000	32
Q2 SERIES									
Q2AA10150BXS48M	1500	2000	2000	7.2	7.7	20.5	$7.99x10^{-4}$	8000	33
Q2AA13150HXS00M	1500	2000	3500	7.5	9.0	20.3	$7.94x10^{-4}$	8000	34
Q2CA SERIES									
Q2CA18450HXS00M	4500	2000	3000	21.5	21.5	70	$46.5x10^{-4}$	8000	35
Q2CA22700HXS00M	7000	2000	3000	33.4	50.1	86	$185x10^{-4}$	8000	36
Q2CA2215KVXS00M	15000	1500	2000	96	96	230	$255x10^{-4}$	8000	37

NOTE 1: All the R2, Q1 and Q2 Series Motors can be supplied with 24 VDC holding brake (codes between brackets).
NOTA 1: tutti i motori serie R2, Q1 e Q2 possono essere forniti nella versione con freno di stazionamento a 24 VDC (indicati tra parentesi nel catalogo).

NOTE 2: the R Series Motors can be supplied, on demand, with absolute encoder.
NOTA 2: i motori serie R possono essere forniti, su richiesta, nella versione con encoder assoluto.

AC SERVOMOTORS OVERLOAD CURVES

This example shows the R2 100W motor's overload curve.

Note that a torque equal to 200% of the nominal torque can be kept for approx. 14 seconds.

A torque that is 400% of the nominal torque can be kept for approx. 3 seconds.

The overload curves of all the other motors have similar characteristics.

The possibility of using the motor in overload conditions for rather long time allows to choose, in different applications, smaller and compact motors, reducing mechanical volumes and cutting costs.

CURVE DI SOVRACCARICO

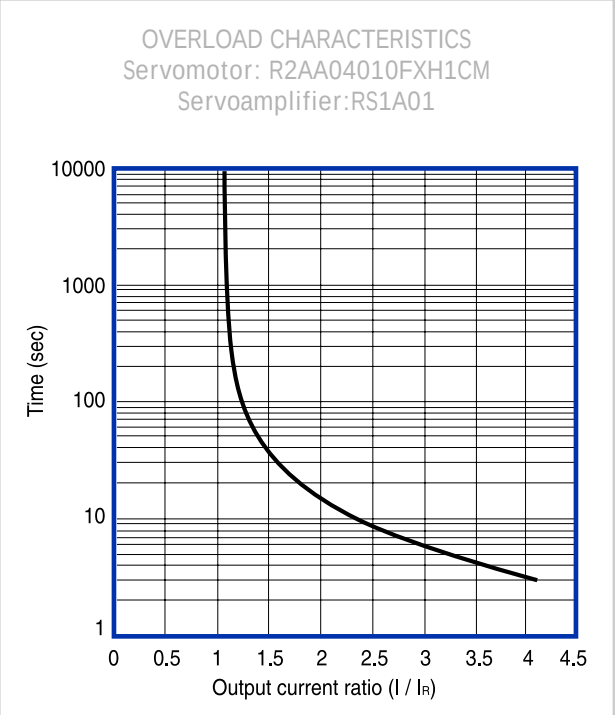
L'esempio mostra la curva di sovraccarico del motore R2 da 100W.

Si può osservare come una coppia pari al 200% della coppia nominale può essere mantenuta per circa 14 secondi.

Una coppia pari al 400% della nominale può essere mantenuta per circa 3 secondi.

Le curve di sovraccarico di tutti gli altri motori proposti presentano caratteristiche simili.

La possibilità di utilizzare il motore in condizioni di sovraccarico per tempi elevati permette di scegliere, in molte applicazioni, motori più piccoli e compatti, riducendo così ingombri meccanici e costi.



AC SERVOMOTOR & AC SERVOAMPLIFIER COUPLING

- The following table shows suggested SANYO DENKI AC servomotors coupling between servoamplifiers.
- *Nella tabella seguente sono indicati gli accoppiamenti motore brushless / azionamenti brushless SANYO DENKI.*

AC SERVOMOTORS	AC SERVOAMPLIFIERS SERIES / *SERIE AZIONAMENTI BRUSHLESS* *												
	RS1 230 VAC PULSE TRAIN ANALOG INPUT				RS1 CANOPEN 230 VAC CANopen			RS2 230 VAC EtherCAT		RS3 230 VAC SIL3		RS1C 400 VAC PULSE TRAIN ANALOG INPUT CANopen	
	RS1A01AA	RS1A03AA	RS1A05AA	RS1A010AA	RS1A01AL	RS1A03AL	RS1A05AL	RS2A03A0K	RS2A05A8K	RS3A02A0AL2	RS3A03A0AL2	RS1C10AL	RS1D15AA
R2 SERIES 230 VAC													
R2AA04010FXH1CM	■				■			■		■			
R2AA06020FXH11M	■				■			■		■			
R2AA06040FXH11M		■				■		■		■			
R2AA08075FXH11M		■				■		■			■		
R2AAB8100HXH29M		■				■		■			■		
Q1 SERIES 230 VAC													
Q1AA10150DXS00M			■				■		■				
Q1AA13300DXS00M				■									
Q2 SERIES 230 VAC													
Q2AA10150BXS48M		■				■							
Q2AA13150HXS00M			■				■		■				
Q2CA SERIES 400 VAC													
Q2CA18450HXS00M												■	
Q2CA22700HXS00M												■	
Q2CA2215KVXS00M													■

*For more info, please refer to www.rta.it
Per ulteriori informazioni, si veda www.rta.it

SG SERIES PLANETARY GEARBOXES OPTIONS

NEW!

MADE IN ITALY | IP64 | IN STOCK

- New RTA SG Series planetary gearboxes
- All based on SANYO DENKI stepping motors and AC servomotors, all models at stock at RTA.
- 16 models on stock at RTA
- Sizes: 050, 070, 090 & 120
- Ratios (i): from i=05 to i=25
- All motors with gearbox are mounted and tested by R.T.A., following rigorous standards in accordance with R.T.A. best practices developed over more than 30 years of activity.

- *Nuova serie di riduttori epicicloidali serie SG*
- *Tutti i riduttori sono adatti per essere montati su servomotori SANYO DENKI e sono disponibili a stock presso RTA.*
- *16 modelli disponibili a stock*
- *Taglie: 050, 070, 090 & 120*
- *Ratio (i): da i=05 a i=25*
- *Tutti i motori con riduttore sono montati e testati da R.T.A., seguendo rigorose norme in conformità con le migliori pratiche sviluppate da R.T.A. in più di 30 anni di attività.*

SANMOTION AC SERVO SYSTEMS RS1 | 230 VAC | PULSE TRAIN ANALOG INPUT

230 VAC SERVOAMPLIFIERS
AZIONAMENTI BRUSHLESS 230 VAC

R SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE
AZIONAMENTI SERIE R - INTERFACCIA TRADIZIONALE

FIVE DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behavior of the system.
DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE: Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer RS232 interface.
CONNETTORE PC: Impostazioni e monitor tramite personal computer via RS232.

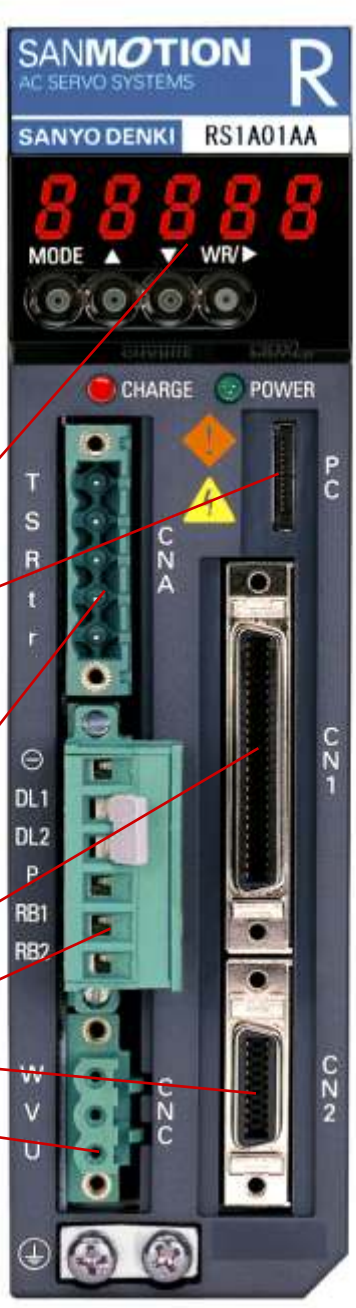
POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.
CONNETTORE ALIMENTAZIONE: 230 VAC, monofase e trifase (configurabile dall'utente). Sezioni di alimentazione separate per elettronica di logica/segnale e di potenza. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

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.
CONNETTORE SEGNALI: Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia). 8 ingressi e 8 uscite configurabili dall'utente.

CONNECTOR for external regenerative resistor (optional).
CONNETTORE per resistenza di frenatura esterna (opzionale).

ENCODER CONNECTOR
CONNETTORE ENCODER

MOTOR POWER CONNECTOR
CONNETTORE POTENZA MOTORE



REAL DIMENSIONS
(45x168x130)

TECHNICAL DATA *DATI TECNICI*	Position, Velocity, Torque Control (Control Mode Switching available) *Controllo in Posizione, Velocità, Coppia (con possibilità di Switching Control Mode)*			
MODEL *MODELLO*	RS1A01AA	RS1A03AA	RS1A05AA	RS1A10AA
MAX CURRENT *CORRENTE MAX. EROGABILE*	15 Amp	30 Amp	50 Amp	100 Amp
MOTOR OUTPUT STAGE *STADIO DI USCITA MOTORE*	IGBT, PWM control, sinusoidal current			
POWER SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE POTENZA*	Single-phase or three-phase (configurable by the user)* 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)			
LOGIC SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE LOGICA*	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)			
DIMENSIONS (mm) *DIMENSIONI (mm)*	45x168x130	50x168x130	90x168x130	100x205x235
MASS (kg) *MASSA (kg)*	0.9	1.0	2.2	5.2

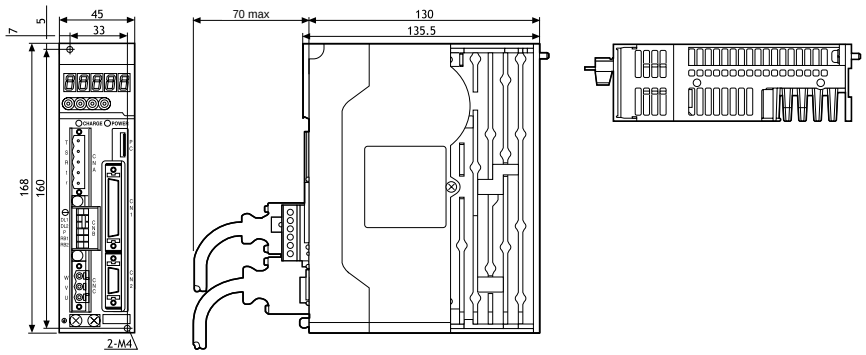
*Model RS1A10AA needs 230 VAC three-phase power supply.
**Il modello RS1A10AA richiede un'alimentazione di potenza 230 VAC trifase.*

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

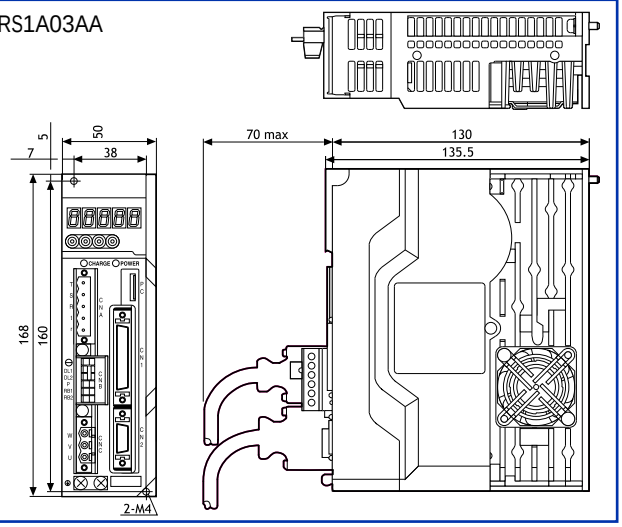
SANMOTION AC SERVO SYSTEMS RS1 | 230 VAC | PULSE TRAIN ANALOG INPUT

"RS1A" SERIES AC SERVOAMPLIFIERS:
PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS

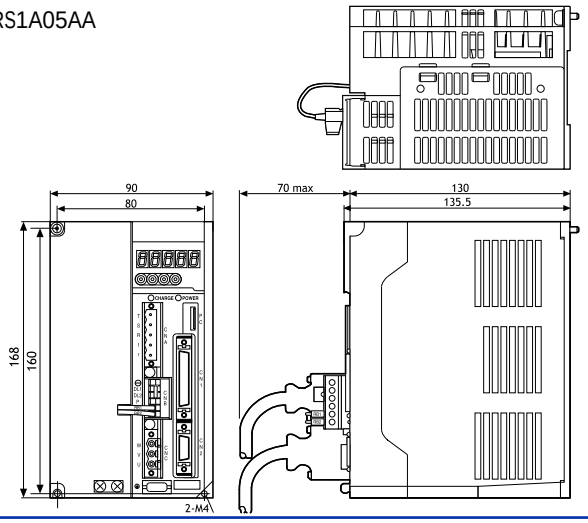
RS1A01AA



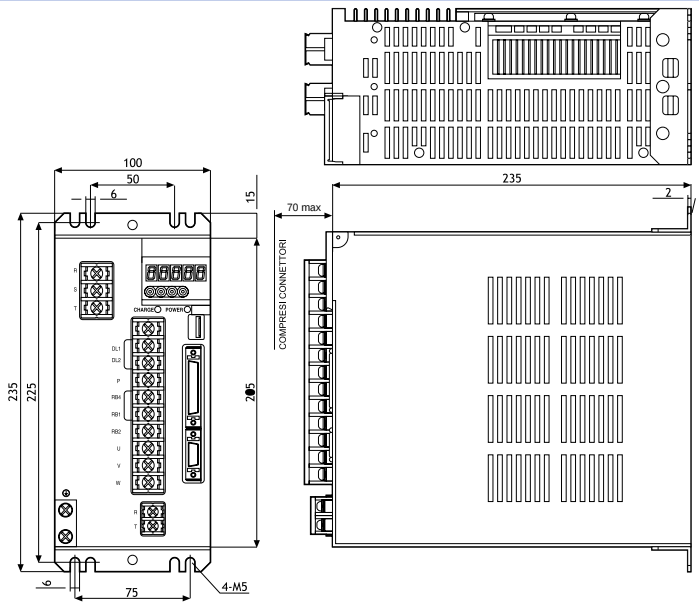
RS1A03AA



RS1A05AA



RS1A10AA



Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS1 | 230 VAC | CANopen

230 VAC SERVOAMPLIFIERS
AZIONAMENTI BRUSHLESS 230 VAC

R SERIES AC SERVOAMPLIFIERS - CANopen INTERFACE
AZIONAMENTI SERIE R - INTERFACCIA CANopen

SEVEN SEGMENT LED DISPLAY: It allows to monitor amplifier and CAN bus.
DISPLAY 7 SEGMENTI LED: con funzioni di monitor stato azionamento e rete CAN.

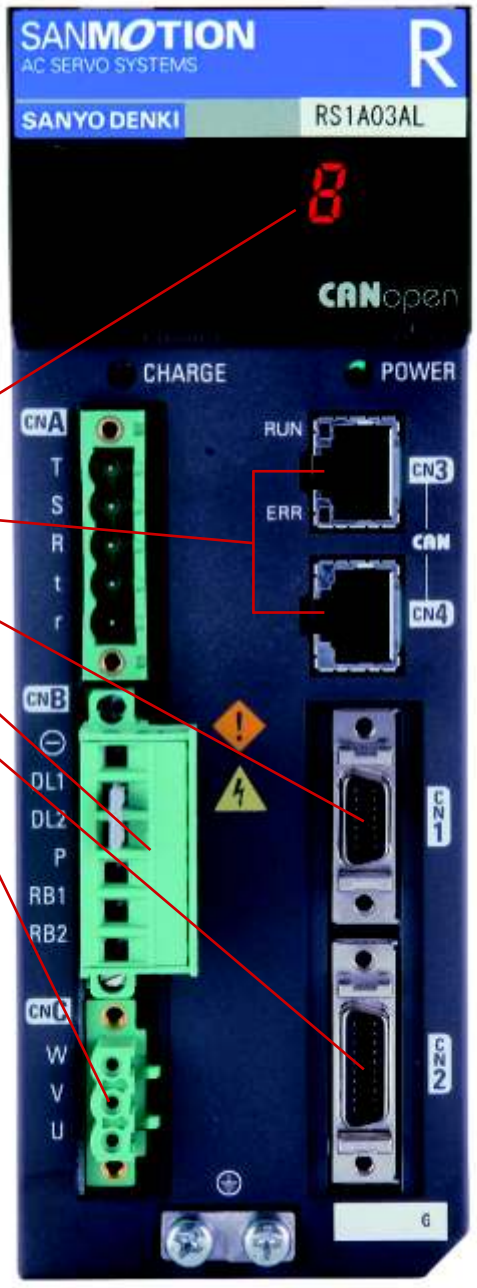
CANopen interface CONNECTOR: RJ45 with integrated termination resistor.
CONNETTORE INTERFACCIA CANopen: Rj45 con resistenza di terminazione integrata.

I/O CONNECTOR: 6 inputs and 2 outputs setting by user.
CONNETTORE SEGNALI: 6 ingressi e 2 uscite configurabili dall'utente.

CONNECTOR for external regenerative resistor (optional).
CONNETTORE per resistenza di frenatura esterna (opzionale).

ENCODER CONNECTOR - CONNETTORE ENCODER

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE



REAL DIMENSIONS
(60x168x130)

CANopen MAIN FEATURES

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Interpolated Position Mode.
- Fast capture "freeze" function.
- EDS file available.

TECHNICAL DATA *DATI TECNICI*	CANopen Control *Controllo CANopen*		
MODEL *MODELLO*	RS1A01AL	RS1A03AL	RS1A05AL
MAX CURRENT *CORRENTE MAX. EROGABILE*	15 Amp	30 Amp	50 Amp
MOTOR OUTPUT STAGE *STADIO DI USCITA MOTORE*	IGBT, PWM control, sinusoidal current		
POWER SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE POTENZA*	Single-phase or three-phase (configurable by the user) 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
LOGIC SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE LOGICA*	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)		
DIMENSIONS (mm) *DIMENSIONI (mm)*	60x168x130	60x168x130	90x168x130
MASS (kg) *MASSA (kg)*	1.0	1.11	2.2

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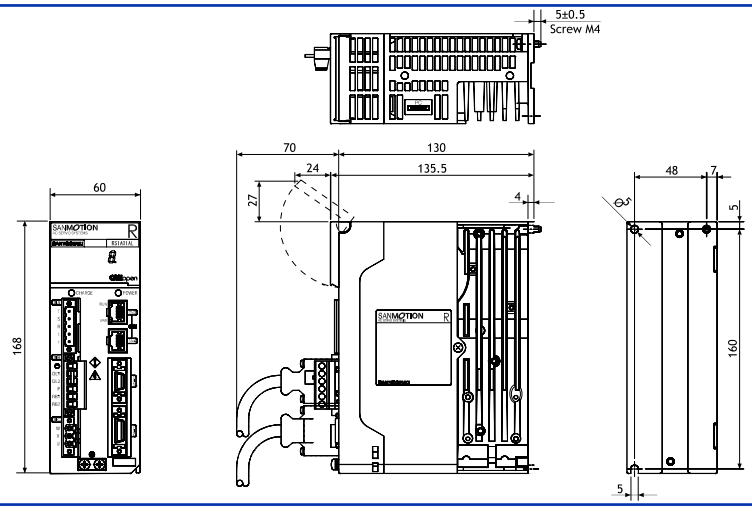
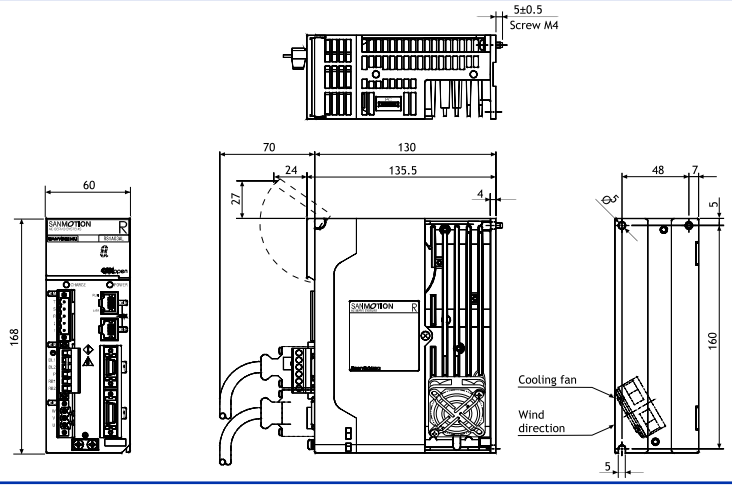
"RS1A" SERIES AC SERVOAMPLIFIERS:
CANopen VERSION OUTLINE DRAWINGS

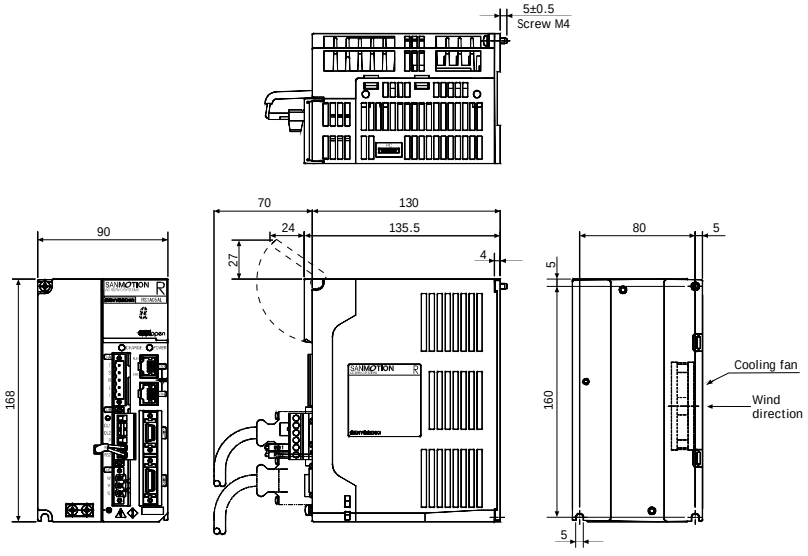
RS1A01AL



RS1A03AL



RS1A05AL

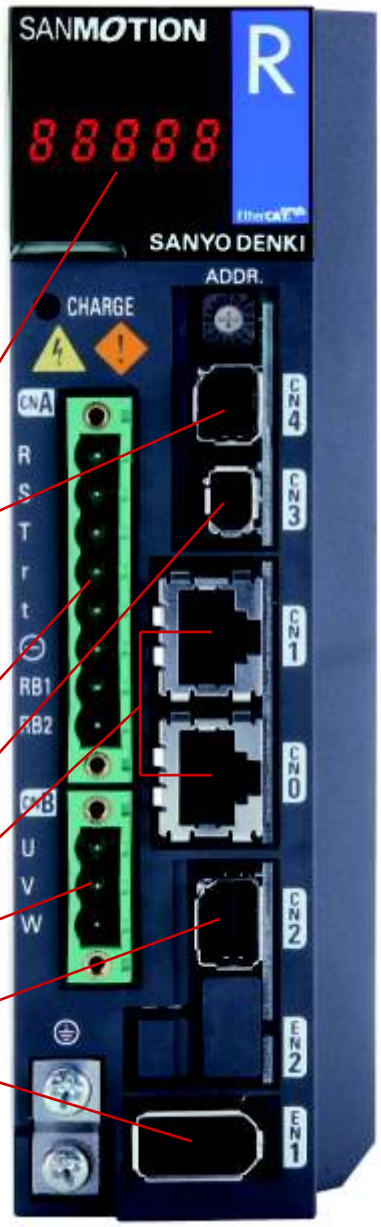


Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS2 | 230 VAC | SIL2 SAFE TORQUE OFF (STO) | EtherCAT®

230 VAC SERVOAMPLIFIERS
AZIONAMENTI BRUSHLESS 230 VAC

R-ADVANCED SERIES AC SERVOAMPLIFIERS - EtherCAT INTERFACE
AZIONAMENTI SERIE R-ADVANCED - INTERFACCIA EtherCAT



REAL DIMENSIONS
(50x160x130)

FIVE DIGIT DISPLAY: It allows to monitor amplifier and EtherCAT Network.
DISPLAY A 5 CIFRE: Con funzioni di monitor stato azionamento e rete EtherCAT

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer RS232 interface.
CONNETTORE PC: Impostazioni e monitor tramite personal computer via RS232.

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.
Internal regenerative resistor. External regenerative resistor (optional).
CONNETTORE ALIMENTAZIONE: 230 VAC, monofase e trifase (configurabile dall'utente). Sezioni di alimentazione separate per elettronica di logica/segnale e di potenza. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.
Resistenza di frenatura interna. Resistenza di frenatura esterna (opzionale).
I/O CONNECTOR: 2 inputs and 2 outputs setting by user.
CONNETTORE SEGNALI: 2 ingressi e 2 uscite configurabili dall'utente.

EtherCAT INTERFACE CONNECTOR: RJ45 - CAT5e.
CONNETTORI INTERFACCIA EtherCAT: RJ45 - CAT5e.

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE

SAFE TORQUE OFF - SIL2 CONNECTOR
CONNETTORE SAFE TORQUE OFF - SIL2

ENCODER CONNECTOR - CONNETTORE ENCODER

EtherCAT MAIN FEATURES

- 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.

SIL2 SAFE TORQUE OFF (STO)

TECHNICAL DATA *DATI TECNICI*	EtherCAT Control *Controllo EtherCAT*	
MODEL *MODELLO*	RS2A03A0K	RS2A05A8K
MAX CURRENT *CORRENTE MAX. EROGABILE*	30 Amp	50 Amp
MOTOR OUTPUT STAGE *STADIO DI USCITA MOTORE*	IGBT, PWM control, sinusoidal current	
POWER SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE POTENZA*	Single-phase or three-phase (configurable by the user) 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
LOGIC SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE LOGICA*	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
DIMENSIONS (mm) *DIMENSIONI (mm)*	50x160x130	85x160x130
MASS (kg) *MASSA (kg)*	0.9	1.65

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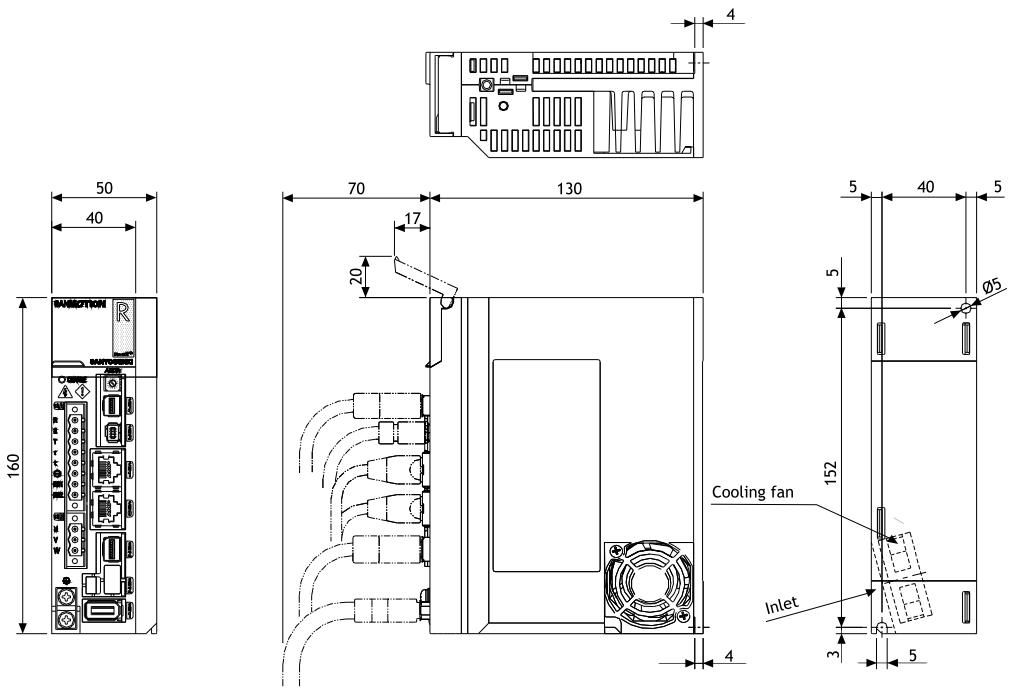
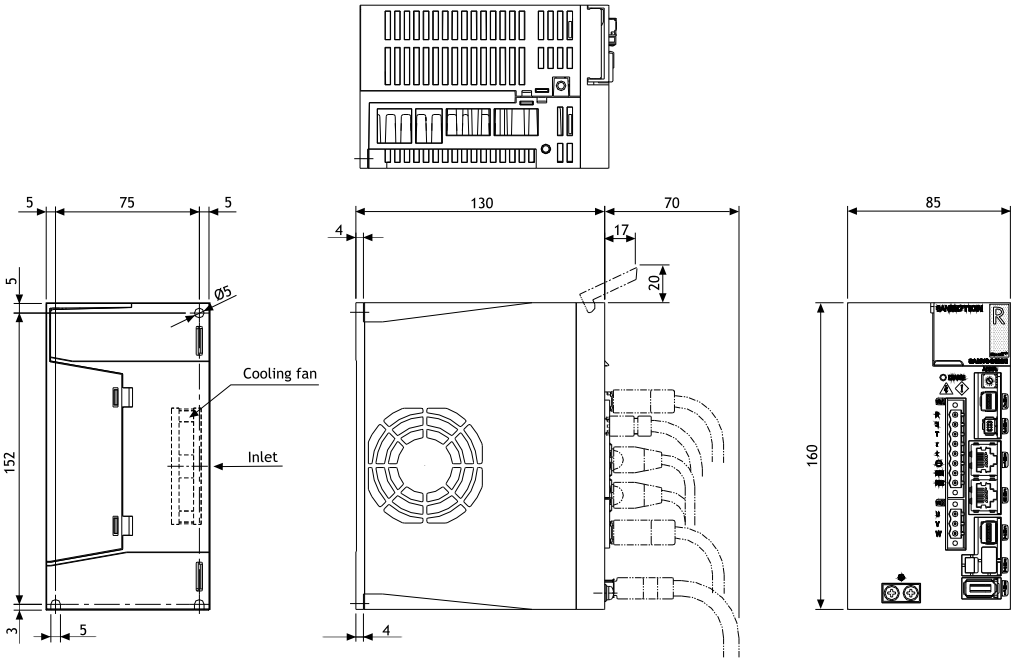
SANMOTION AC SERVO SYSTEMS RS2 | 230 VAC | SIL2 SAFE TORQUE OFF (STO) | EtherCAT®

"RS2A" SERIES AC SERVOAMPLIFIERS:
EtherCAT VERSION OUTLINE DRAWINGS

RS2A03



RS2A05



Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE

230 VAC SERVOAMPLIFIERS
AZIONAMENTI BRUSHLESS 230 VAC

R SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE
AZIONAMENTI SERIE R - INTERFACCIA TRADIZIONALE

FIVE DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behavior of the system.
DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE: Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer USB interface.
CONNETTORE PC: Impostazioni e monitor tramite personal computer via USB.

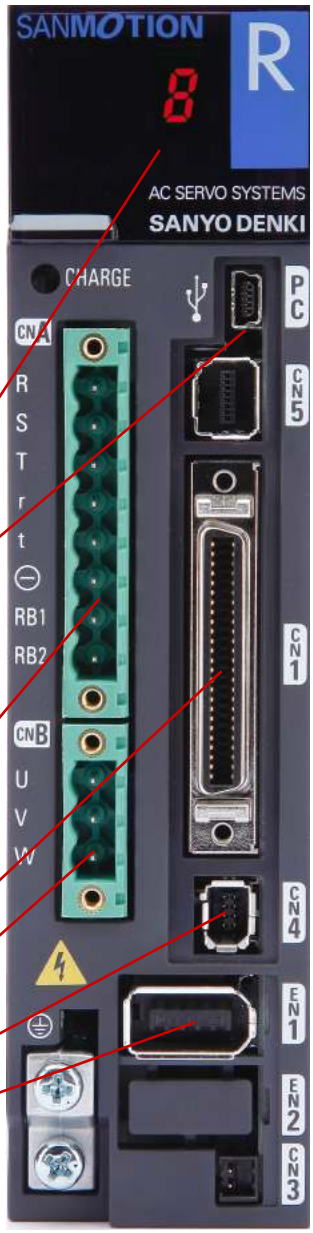
POWER CONNECTOR: 230VAC, single-phase or three-phase (configurable by user). Power sections kept separated for logic/signal and power electronics. Built-in protection circuits against overload and input overvoltage.
Internal regenerative resistor.
CONNETTORE ALIMENTAZIONE: 230 VAC, monofase e trifase (configurabile dall'utente). Sezioni di alimentazione separate per elettronica di logica/segnale e di potenza. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso. Resistenza di frenatura interna.

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.
CONNETTORE SEGNALI: Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia). 8 ingressi e 8 uscite configurabili dall'utente.

MOTOR POWER CONNECTOR - CONNETTORE POTENZA MOTORE

SAFE TORQUE OFF - SIL3 CONNECTOR
CONNETTORE SAFE TORQUE OFF - SIL3

ENCODER CONNECTOR - CONNETTORE ENCODER



REAL DIMENSIONS
(40x160x130)

MAIN FEATURES

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

TECHNICAL DATA *DATI TECNICI*	Position, Velocity, Torque Control (Control Mode Switching available) *Controllo in Posizione, Velocità, Coppia (con possibilità di Switching Control Mode)*	
MODEL *MODELLO*	RS3A02A0AL2	RS3A03A0AL2
MAX CURRENT *CORRENTE MAX. EROGABILE*	20 Amp	30 Amp
MOTOR OUTPUT STAGE *STADIO DI USCITA MOTORE*	IGBT, PWM control, sinusoidal current	
POWER SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE POTENZA*	Single-phase or three-phase (configurable by the user)* 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
LOGIC SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE LOGICA*	Single-phase from 200 VAC to 230 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)	
DIMENSIONS (mm) *DIMENSIONI (mm)*	40x160x130	50x160x130
MASS (kg) *MASSA (kg)*	0.75	1.65

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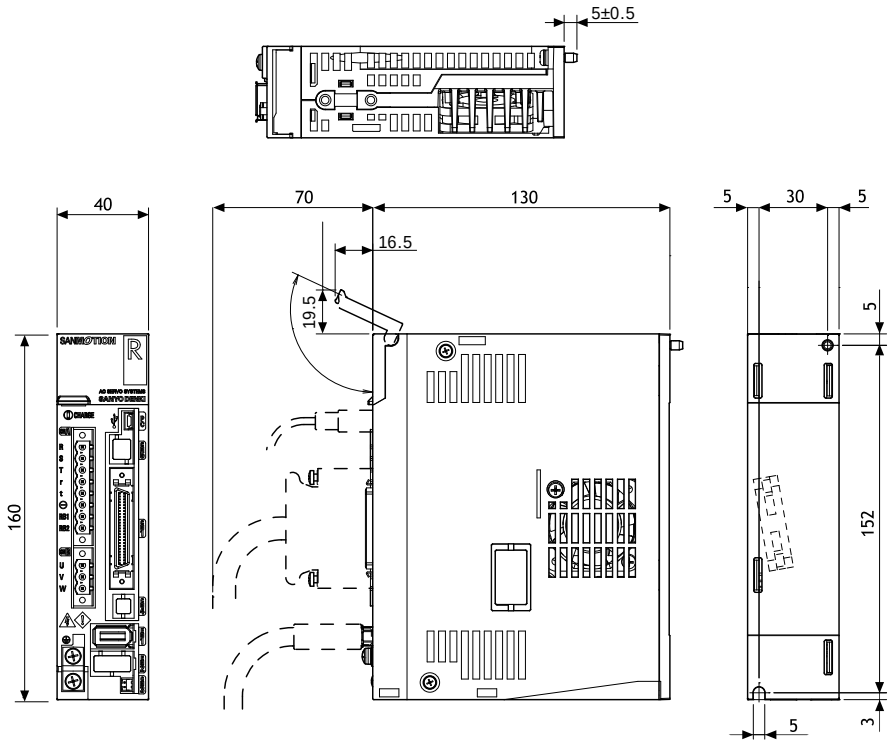
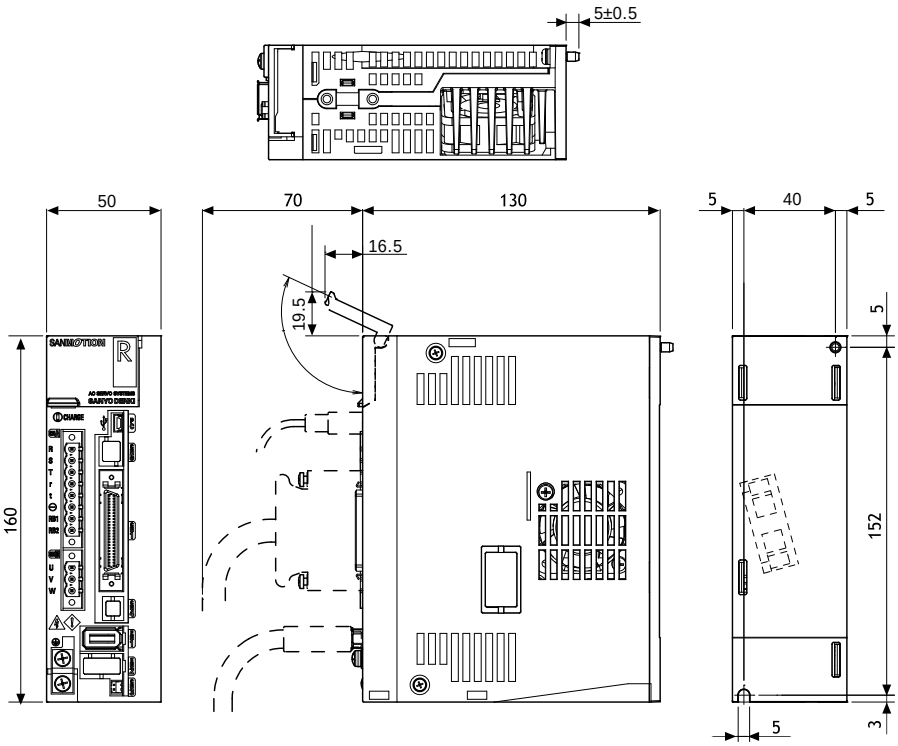
SANMOTION AC SERVO SYSTEMS RS3 | 230 VAC | SIL3 SAFE TORQUE OFF (STO) | PULSE TRAIN ANALOG INPUT | ULTRA COMPACT SIZE

"RS3A" SERIES AC SERVOAMPLIFIERS:
PULSE TRAIN AND ANALOG INPUT VERSION OUTLINE DRAWINGS

RS3A02A0AL2



RS3A03A0AL2



Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS1C | 400 VAC | PULSE TRAIN ANALOG INPUT | CANopen

400 VAC SERVOAMPLIFIERS
AZIONAMENTI BRUSHLESS 400 VAC

RS1C SERIES AC SERVOAMPLIFIERS - CANOPEN VERSION
AZIONAMENTI SERIE RS1C - VERSIONE CANOPEN

FIVE DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behavior of the system.
DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE: Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

POWER CONNECTION: 400 VAC, three-phase. Built-in protection circuits against overload and input overvoltage.
CONNESSIONE ALIMENTAZIONE: 400 VAC, trifase. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

CANopen INTERFACE CONNECTOR: RJ45 with integrated termination resistor.
CONNETTORI INTERFACCIA CANopen: RJ45 con resistenza di terminazione integrata.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer RS232 interface.
CONNETTORE PC: Impostazioni e monitor tramite personal computer via RS232.

CONNECTION for external regenerative resistor (optional).
CONNESSIONE per resistenza di frenatura esterna (opzionale).

CONTROL POWER SUPPLY CONNECTOR 24 VDC.
CONNETTORE ALIMENTAZIONE LOGICA 24 VDC.

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.
CONNETTORE SEGNALI: Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia).

MOTOR POWER CONNECTION - CONNESSIONE POTENZA MOTORE

ENCODER CONNECTOR - CONNETTORE ENCODER

CANopen MAIN FEATURES

- Mode of Operation: Homing Mode, Profile Velocity Mode, Profile Position Mode, Profile Torque Mode, Interpolated Position Mode.
- Fast capture "freeze" function.
- EDS file available.

TECHNICAL DATA *DATI TECNICI*	CANopen Control and STEP/DIRECTION Analog Input *Controllo CANopen e STEP/DIRECTION Analog Input*
MODEL *MODELLO*	RS1C10AL
MAX CURRENT *CORRENTE MAX. EROGABILE*	100 Amp
MOTOR OUTPUT STAGE *STADIO DI USCITA MOTORE*	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE POTENZA*	Three-phase 380 VAC to 480 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE LOGICA*	24 VDC (+15%, -15%)
DIMENSIONS (mm) *DIMENSIONI (mm)*	175x235x235
MASS (kg) *MASSA (kg)*	8.5

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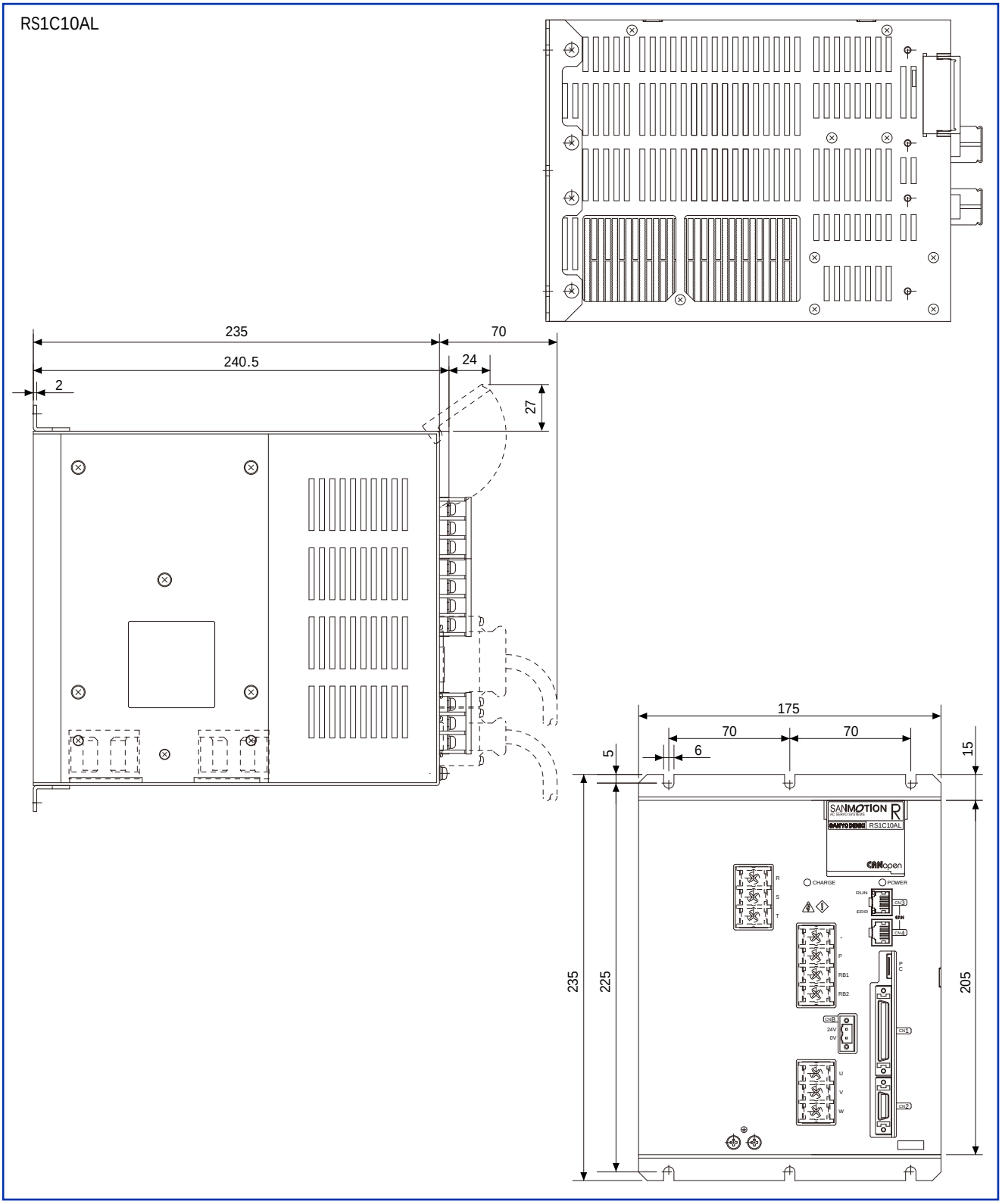
SANMOTION AC SERVO SYSTEMS RS1C | 400 VAC | PULSE TRAIN ANALOG INPUT | CANopen

"RS1C" SERIES AC SERVOAMPLIFIERS:
CANopen VERSION OUTLINE DRAWINGS

RS1C10AL

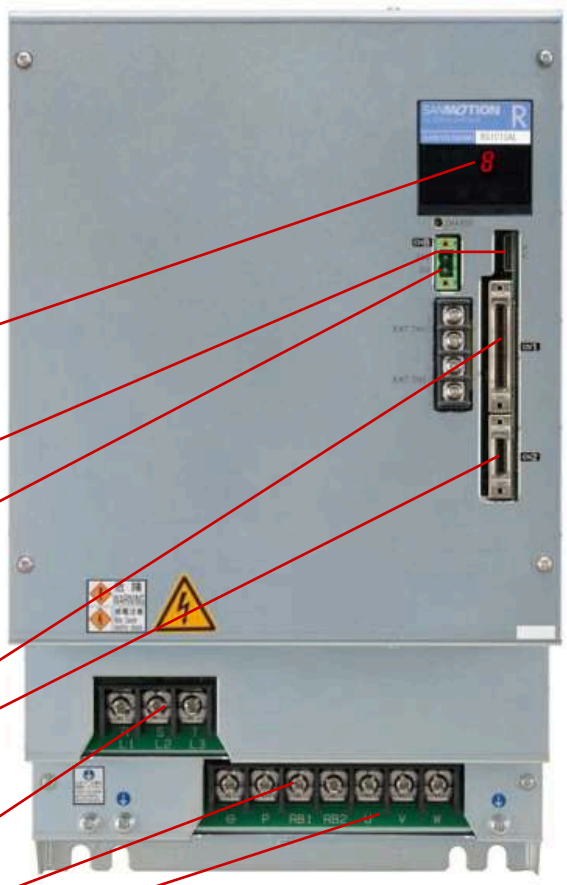


Dimensions mm.

SANMOTION AC SERVO SYSTEMS RS1C | 400 VAC | PULSE TRAIN ANALOG INPUT

400 VAC SERVOAMPLIFIERS
AZIONAMENTI BRUSHLESS 400 VAC

RS1C SERIES AC SERVOAMPLIFIERS - TRADITIONAL INTERFACE
AZIONAMENTI SERIE RS1C - INTERFACCIA TRADIZIONALE



FIVE DIGIT DISPLAY AND OPERATION KEY: It allows to view and modify parameters and monitor in real time the behavior of the system.
DISPLAY A 5 CIFRE e TASTIERA DI PROGRAMMAZIONE: Per visualizzare e modificare i parametri e monitorare in tempo reale il funzionamento del sistema.

PC CONNECTOR: The amplifier can be set and monitored by means of Personal Computer RS232 interface.
CONNETTORE PC: Impostazioni e monitor tramite personal computer via RS232.

CONTROL POWER SUPPLY CONNECTOR 24 VDC.
CONNETTORE ALIMENTAZIONE LOGICA 24 VDC.

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.
CONNETTORE SEGNALI: Comando a treno d' impulsi (clock + direzione; forward + backward pulse; 90° phase shift) o con segnale analogico (proporzionale a Velocità o Coppia).

ENCODER CONNECTOR - CONNETTORE ENCODER

POWER CONNECTION: 400 VAC, three-phase. Built-in protection circuits against overload and input overvoltage.
CONNESSIONE ALIMENTAZIONE: 400 VAC, trifase. Circuiti di protezione integrati contro sovraccarichi, extra-tensioni in ingresso.

CONNECTION for external regenerative resistor (optional).
CONNESSIONE per resistenza di frenatura esterna (opzionale).

MOTOR POWER CONNECTION - CONNESSIONE POTENZA MOTORE

TECHNICAL DATA *DATI TECNICI*	Position, Velocity, Torque Control (Control Mode Switching available) *Controllo in Posizione, Velocità, Coppia (con possibilità di Switching Control Mode)*
MODEL *MODELLO*	RS1D15AA
MAX CURRENT *CORRENTE MAX. EROGABILE*	150 Amp
MOTOR OUTPUT STAGE *STADIO DI USCITA MOTORE*	IGBT, PWM control, sinusoidal current
POWER SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE POTENZA*	Three-phase 380 VAC to 480 VAC (+10%, -15%) 50/60 Hz (± 3 Hz)
LOGIC SUPPLY VOLTAGE *TENSIONE DI ALIMENTAZIONE LOGICA*	24 VDC (+15%, -15%)
DIMENSIONS (mm) *DIMENSIONI (mm)*	220x235x375
MASS (kg) *MASSA (kg)*	11.0

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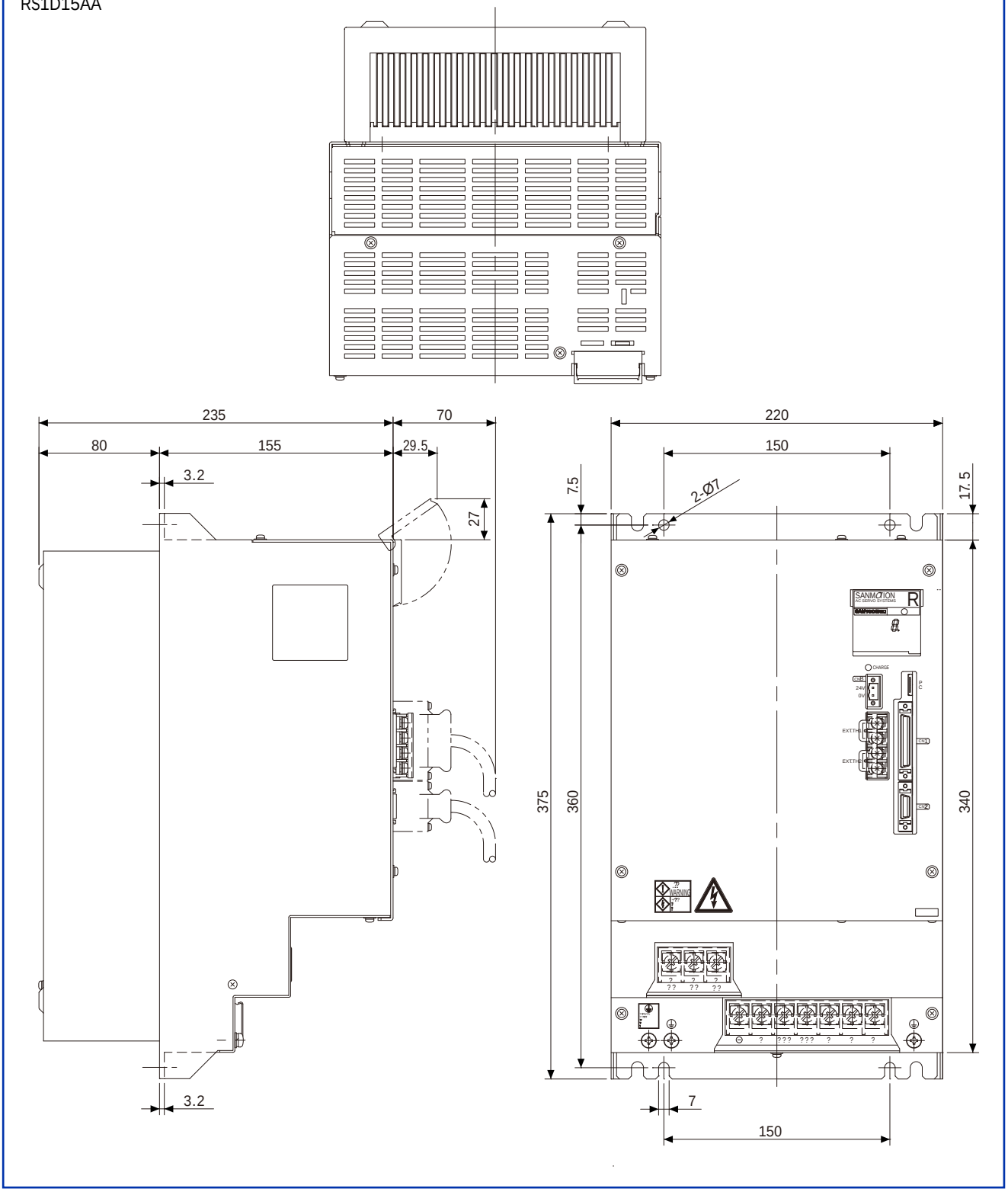
SANMOTION AC SERVO SYSTEMS RS1C | 400 VAC | PULSE TRAIN ANALOG INPUT

"RS1C" SERIES AC SERVOAMPLIFIERS:
STEP/DIRECTION ANALOG INPUT VERSION OUTLINE DRAWINGS

RS1D15AA

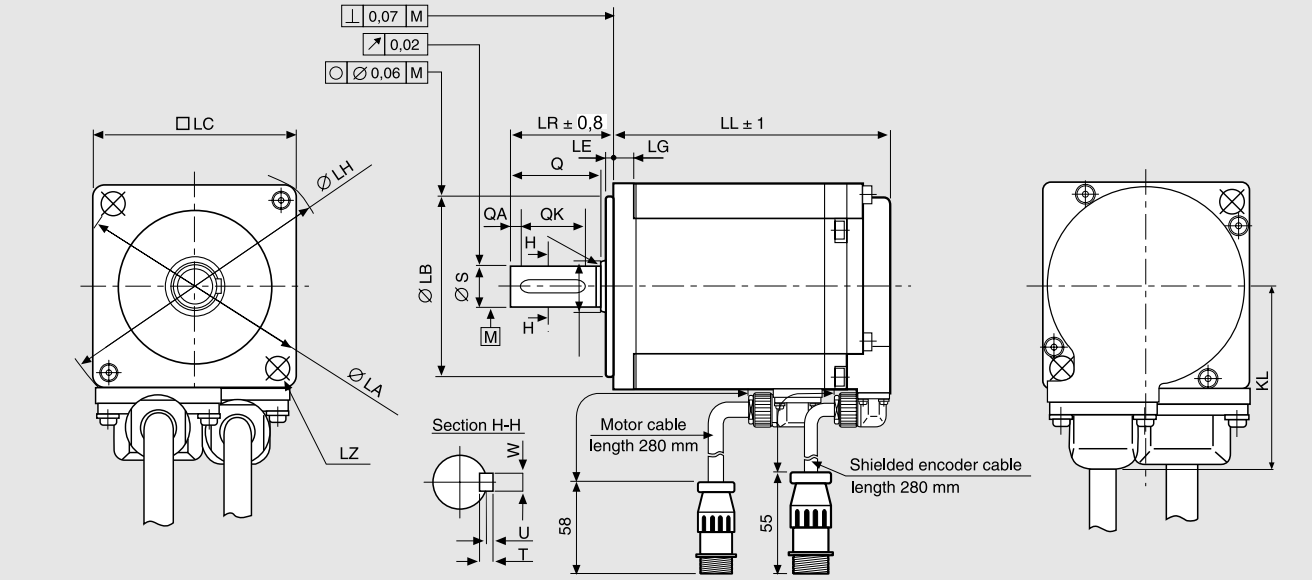


Dimensions mm.

R2AA04010FXH1CM (R2AA04010FCH1CM6)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)



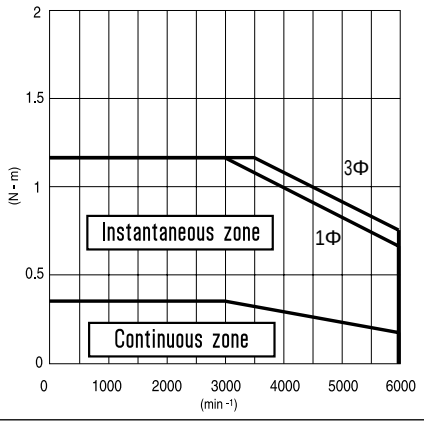
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
72	108	5	35.4	46	0 30-0.021	2.5	56	40	2-Ø4.5	25	0 8-0.009	20	2	12	3	3	1.2	--	--

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] + RS1A01



WITHOUT BRAKE
R2AA04010FXH1CM

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

WITH BRAKE
R2AA04010FCH1CM6

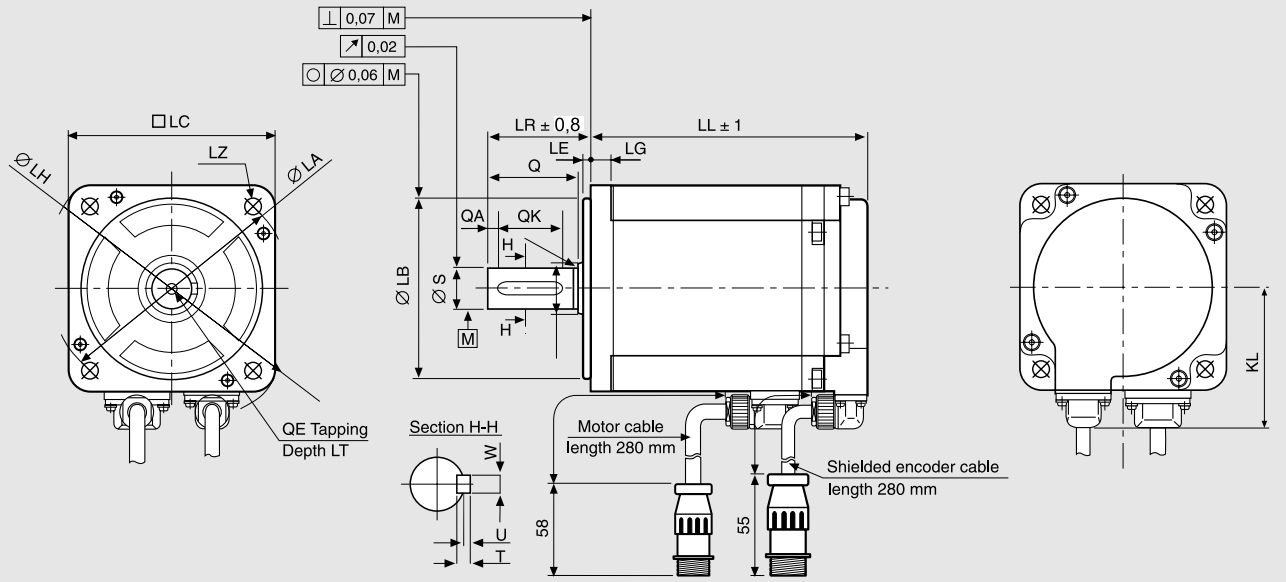
Suggested amplifiers: RS1A01AA, RS1A01AL, RS2A03A0K, RS3A02A0AL2

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

R2AA06020FXH11M (R2AA06020FCH11M)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)



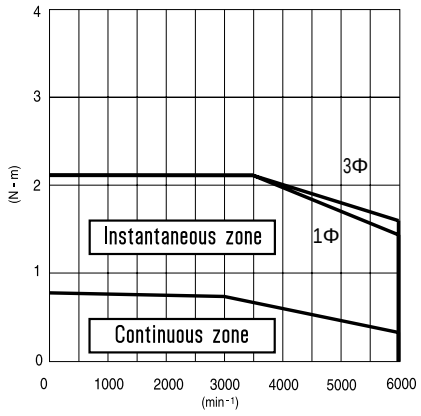
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
69.5	97.5	6	44.6	70	0 50-0.025	3.0	82	60	4-Ø5.5	30	0 14-0.011	25	2	20	5	5	2	M5	12

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] + RS1A01



WITHOUT BRAKE
R2AA06020FXH11M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

WITH BRAKE
R2AA06020FCH11M

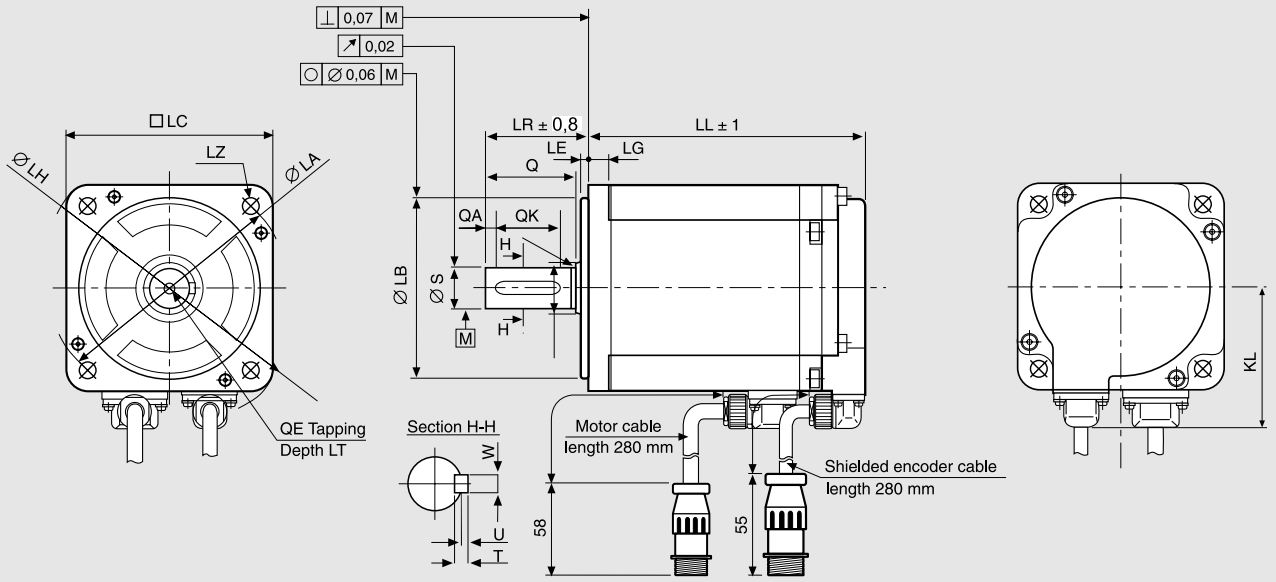
Suggested amplifiers: RS1A01AA, RS1A01AL, RS2A03A0K, RS3A02A0AL2

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

R2AA06040FXH11M (R2AA06040FCH11M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)



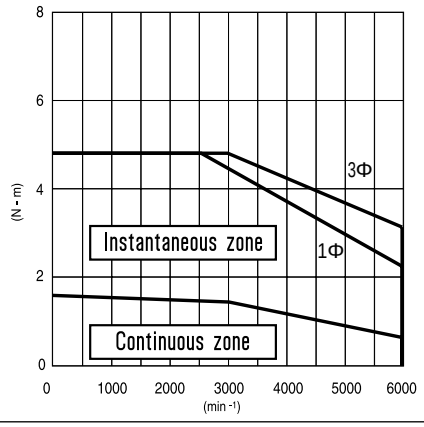
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
95.5	123.5	6	44.6	70	0 50-0.025	3.0	82	60	4-Ø5.5	30	0 14-0.011	25	2	20	5	5	2	M5	12

FEATURES

MODEL			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]

* Protection degree IP67 (except for the shaft hole and the edge of the cable).

TORQUE CURVE
R2AA06040F [400W] + RS1A03



WITHOUT BRAKE
R2AA06040FXH11M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

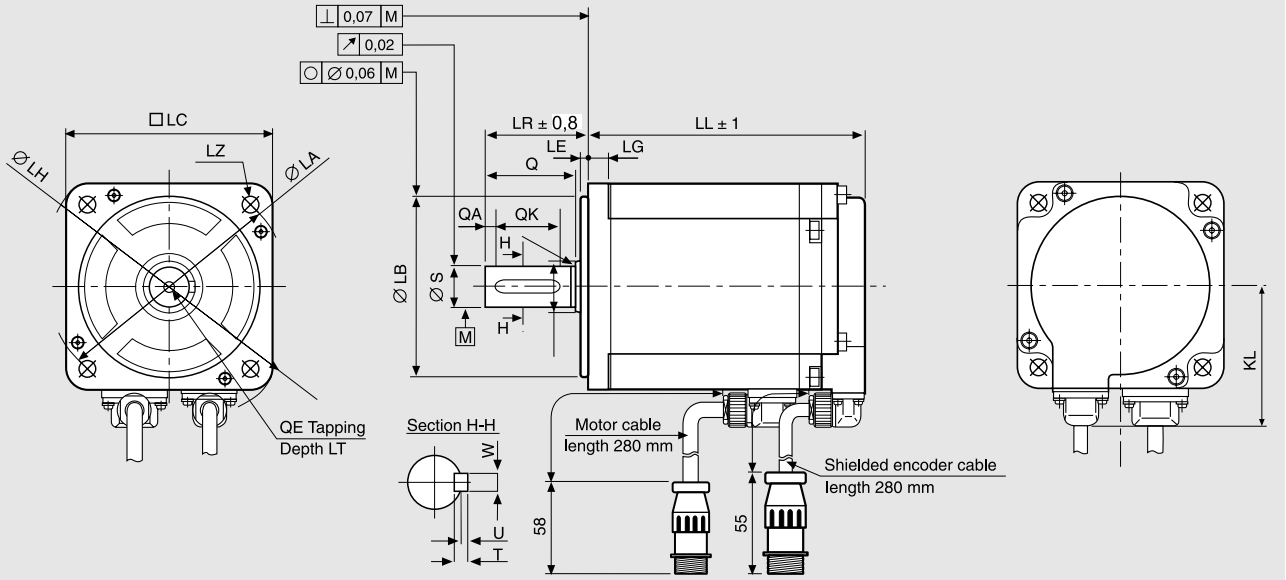
WITH BRAKE
R2AA06040FCH11M

Suggested amplifiers: RS1A03AA, RS1A03AL, RS2A03A0K, RS3A02A0AL2

R2AA08075FXH11M (R2AA08075FCH11M)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)



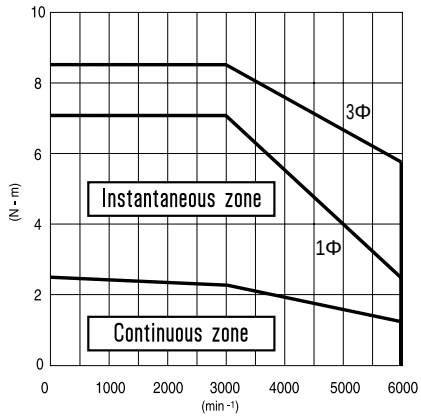
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
107.3	143	8	54.4	90	0 70-0.030	3.0	108	80	4-Ø6.6	40	0 16-0.011	35	4	25	5	5	2	M5	12

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] + RS1A03



WITHOUT BRAKE
R2AA08075FXH11M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

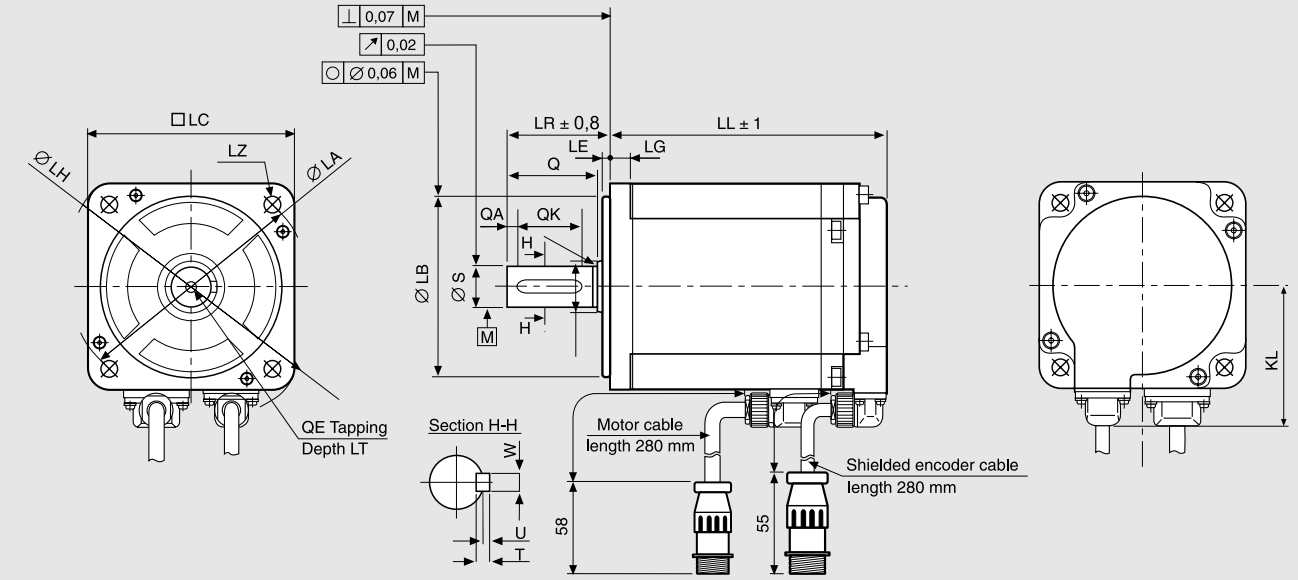
WITH BRAKE
R2AA08075FCH11M

Suggested amplifiers: RS1A03AA, RS1A03AL, RS2A03A0K, RS3A03A0AL2

R2AAB8100HXH29M (R2AAB8100HCH29M)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)



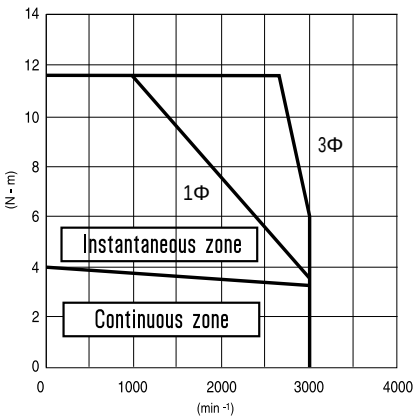
without brake LL	with brake LL	LG	KL	LA	LB	LE	LH	LC	LZ	LR	S	Q	QA	QK	W	T	U	QE	LT
137	163	8	59.4	100	0 80-0.003	3.0	115.5	86	4-Ø6.6	35	0 16-0.011	30	2	25	5	5	2	M5	12

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]

* Protection degree IP67 (except the edge of the cable).

TORQUE CURVE
R2AAB8100H [1kW] + RS1A03



WITHOUT BRAKE
R2AAB8100HXH29M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

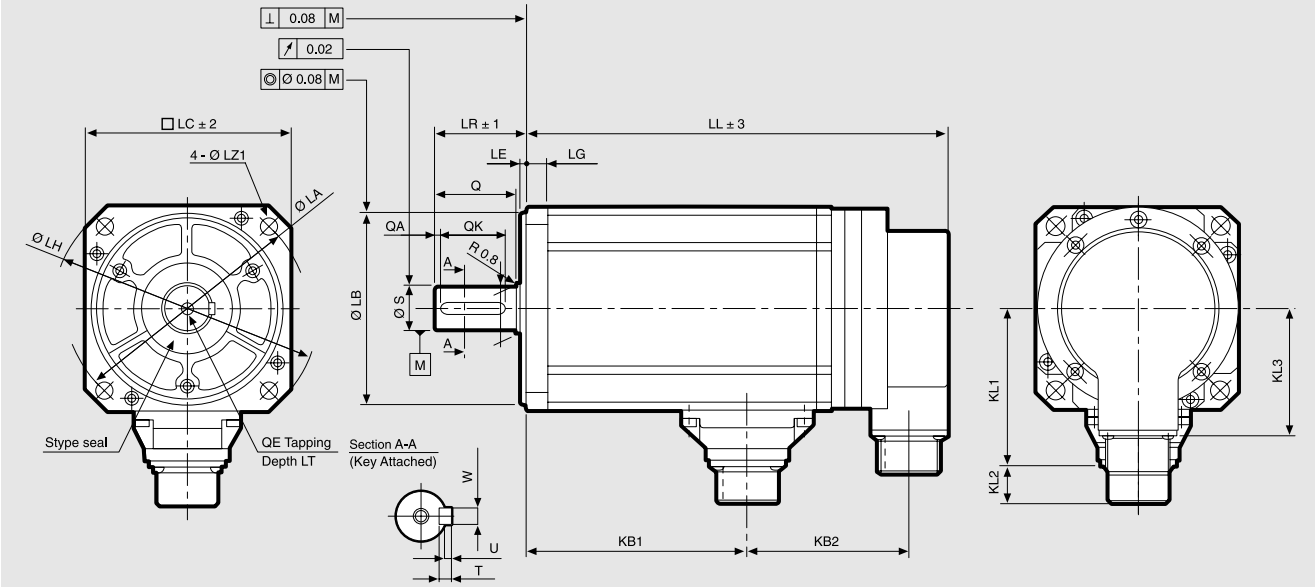
WITH BRAKE
R2AAB8100HCH29M

Suggested amplifiers: RS1A03AA, RS1A03AL, RS2A03A0K, RS3A03A0AL2

Q1AA10150DXS00M (Q1AA10150DCS00M)

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

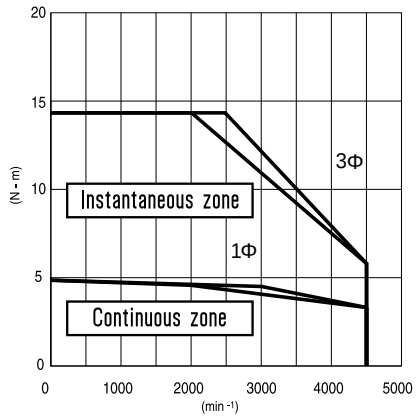


without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
208	80	244	116	78	19	70	10	115	0 95-0.035	3	130	100	9	--	45	0 22-0.013	40	3	32	0 6-0.030	6	2.5	109	M6	20

FEATURES

MODEL		Q1AA10150DXS00M
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	4500
NOMINAL TORQUE	(Nm)	4.79
STALL TORQUE	(Nm)	4.90
MAXIMUM TORQUE	(Nm)	14.7
INERTIA	($Kg*m^2$)	1.61×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	6.0 [8.0]

TORQUE CURVE
Q1AA10150D [1.5kW] + RS1A05



WITHOUT BRAKE
Q1AA10150DXS00M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

WITH BRAKE
Q1AA10150DCS00M

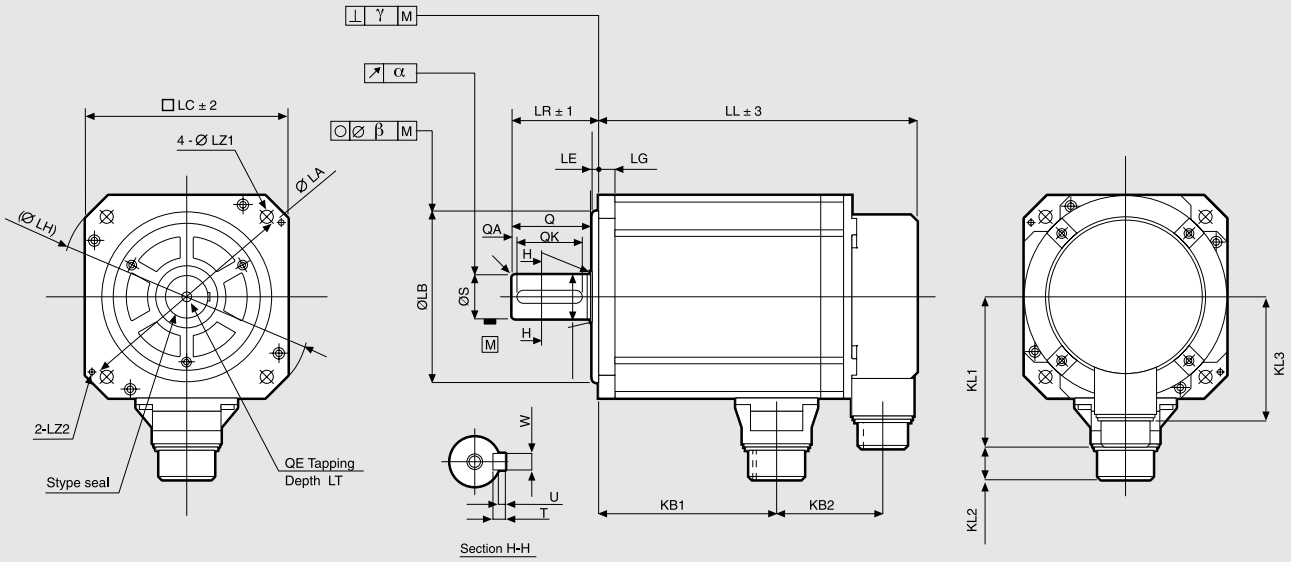
Suggested amplifiers: RS1A05AA, RS1A05AL, RS2A05A8K

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

Q1AA13300DXS00M (Q1AA13300DCS00M)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)

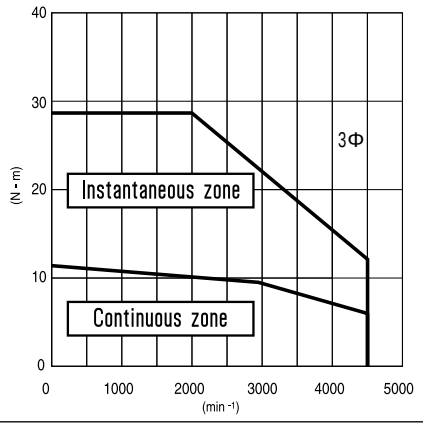


without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
205	67	254	117	98	21	78	12	145	0 110-0.035	4	165	130	9	M6	55	0 28-0.013	50	3	42	0 8-0.036	7	3	117	M8	25

FEATURES

MODEL		Q1AA13300DXS00M
NOMINAL POWER	(W)	3000
NOMINAL SPEED	(rpm)	3000
MAXIMUM SPEED	(rpm)	4500
NOMINAL TORQUE	(Nm)	9.50
STALL TORQUE	(Nm)	10.80
MAXIMUM TORQUE	(Nm)	28.4
INERTIA	($Kg*m^2$)	4.92×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	11.4 [13.0]

TORQUE CURVE
Q1AA13300D [3kW] + RS1A10



WITHOUT BRAKE
Q1AA13300DXS00M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

WITH BRAKE
Q1AA13300DCS00M

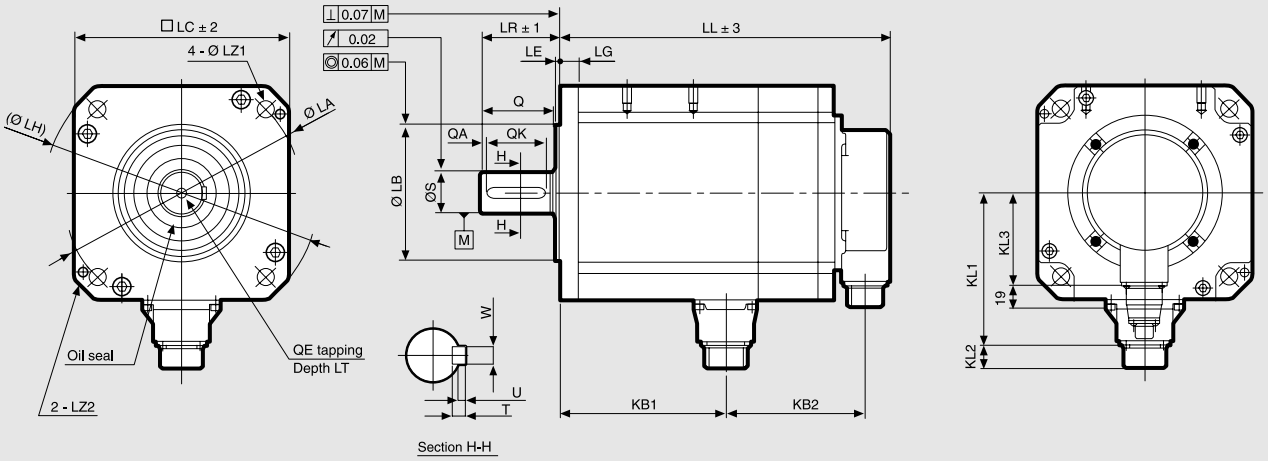
Suggested amplifiers: RS1A10AA

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

Q2AA13150HXS00M (Q2AA13150HCS00M)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)

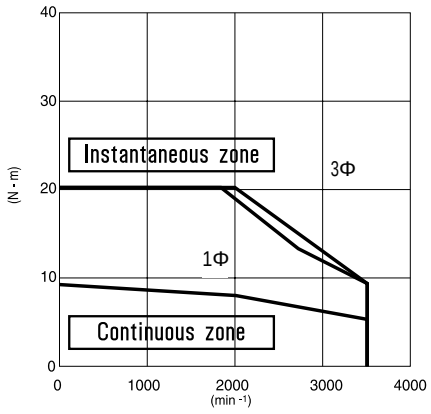


without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
169	67	205	103	98	21	80	12	145	0 110-0.035	4	165	130	9	M6	55	0 22-0.013	50	3	42	0 6-0.030	6	2.5	81	M6	20

FEATURES

MODEL		Q2AA13150HXS00M
NOMINAL POWER	(W)	1500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3500
NOMINAL TORQUE	(Nm)	7.5
STALL TORQUE	(Nm)	9.0
MAXIMUM TORQUE	(Nm)	20.3
INERTIA	($Kg*m^2$)	7.94×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	7.8 [9.4]

TORQUE CURVE
Q2AA13150H [1.5kW] + RS1A05



WITHOUT BRAKE
Q2AA13150HXS00M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

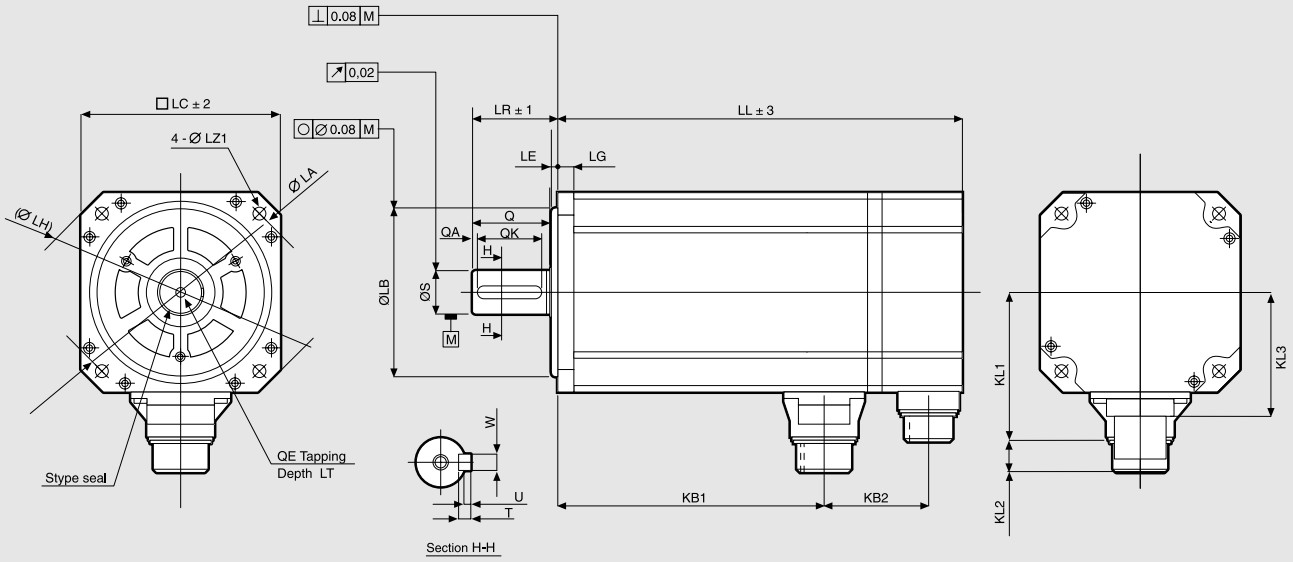
WITH BRAKE
Q2AA13150HCS00M

Suggested amplifiers: RS1A05AA, RS1A05AL, RS2A05A8K

Q2AA10150BXS48M (Q2AA10150BCS48M)

SANYO DENKI SANMOTION

Dimensions (Unit:mm)

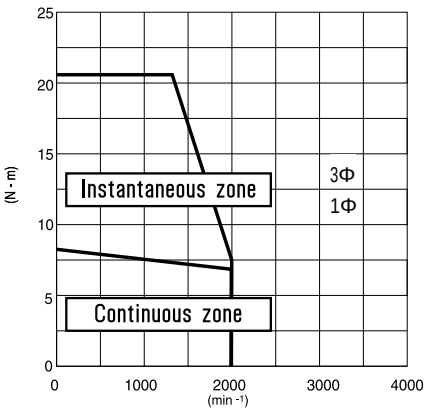


without brake LL	without brake KB2	with brake LL	with brake KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	W	T	U	KB1	QE	LT
226	77	261	113	78	19	67	10	115	0 95-0.035	3	130	100	9	--	45	0 22-0.013	40	3	32	0 6-0.030	6	2.5	128	M6	20

FEATURES

MODEL		Q2AA10150BXS48M
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	($Kg*m^2$)	7.99×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT [version with brake]	(Kg)	7.0 [8.5]

TORQUE CURVE
Q2AA10150B [1.5kW] + RS1A03



WITHOUT BRAKE
Q2AA10150BXS48M

Indicated performances refer to motor controlled by related RS1 standard amplifiers, RS2 EtherCAT and the new driver RS3.

1Φ = torque curve with single-phase power supply
3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione standard RS1, RS2 EtherCAT e il nuovo driver RS3.

1Φ = curva di coppia con alimentazione di potenza monofase
3Φ = curva di coppia con alimentazione di potenza trifase

WITH BRAKE
Q2AA10150BCS48M

Suggested amplifiers: RS1A03AA, RS1A03AL

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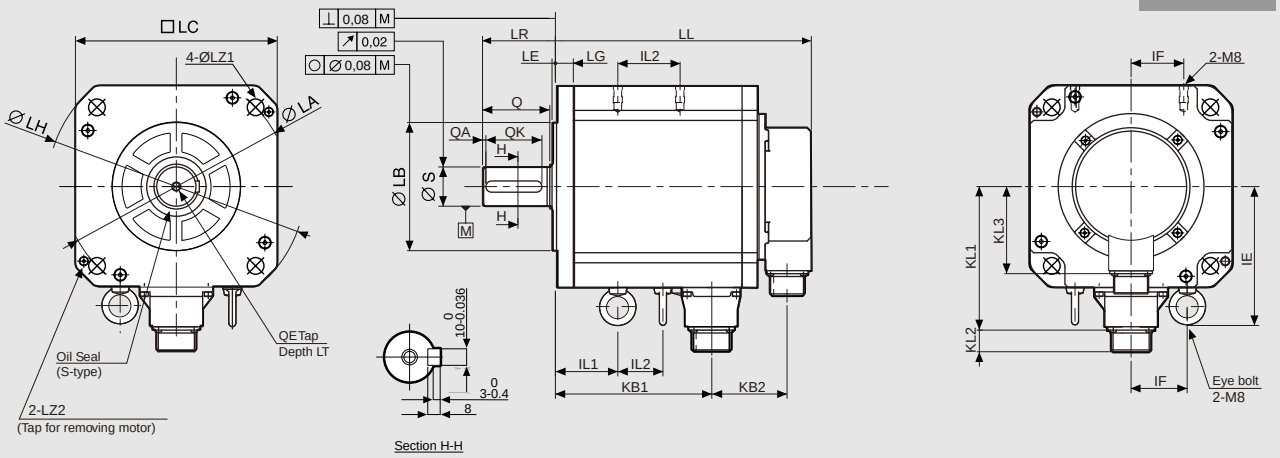
Q2CA18450HXS00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

400 VAC

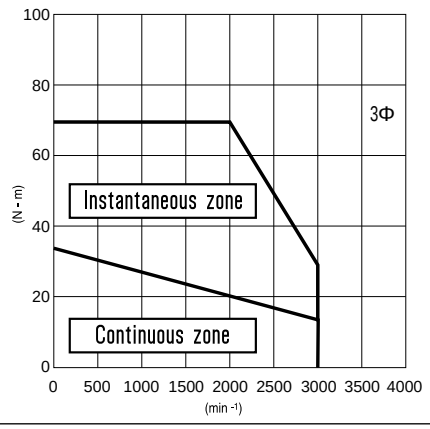


LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
220	68	123	19	78	16	200	0 Ø114.3-0.035	3	Ø230	□180	Ø13.5	M8	65±1	0 Ø35-0.016	60	3	50	61	35	50	124	130	M8	25

FEATURES

MODEL		Q2CA18450HXS00M
NOMINAL POWER	(W)	4500
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	21.5
STALL TORQUE	(Nm)	21.5
MAXIMUM TORQUE	(Nm)	70.0
INERTIA	($Kg*m^2$)	46.5×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	21.7

TORQUE CURVE
Q2CA18450H [4.5kW] + RS1C10AL



WITHOUT BRAKE

(Version with brake available on request)

Indicated performances refer to motor controlled by related *RS1C10AL CANopen and RS1D15AA standard amplifiers.*

3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione RS1C10AL CANopen e nella versione standard RS1D15AA .

3Φ = curva di coppia con alimentazione di potenza trifase

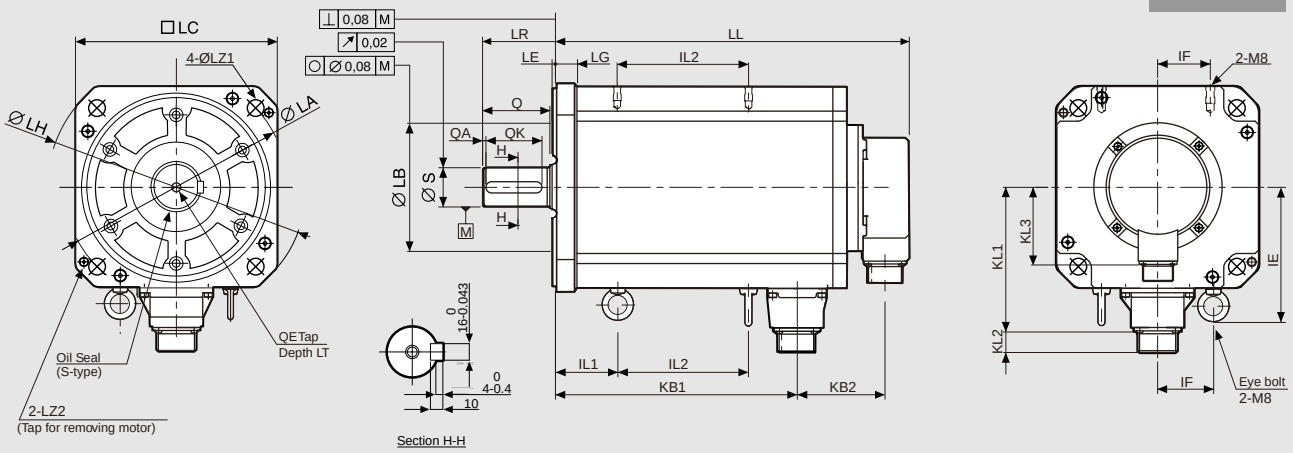
Suggested amplifiers: RS1C10AL (400V)

Q2CA22700HXS00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

400 VAC

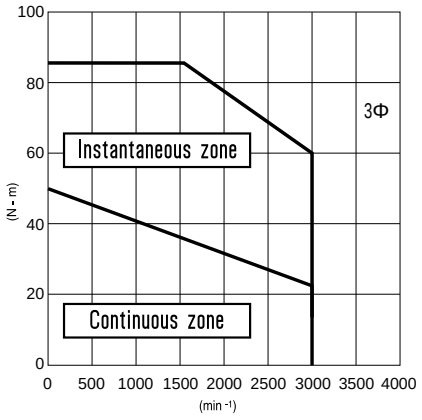


LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
310	82	162	22	79	19	235	0 Ø200-0.046	4	Ø270	□220	Ø13.5	M10	79	0 Ø55-0.019	--	3	67	55	110	60	142	207	M10	25

FEATURES

MODEL		Q2CA22700HXS00M
NOMINAL POWER	(W)	7000
NOMINAL SPEED	(rpm)	2000
MAXIMUM SPEED	(rpm)	3000
NOMINAL TORQUE	(Nm)	33.4
STALL TORQUE	(Nm)	50.1
MAXIMUM TORQUE	(Nm)	86.0
INERTIA	($Kg*m^2$)	185×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	52.8

TORQUE CURVE
Q2CA22700H [7.0kW] + RS1C10AL



WITHOUT BRAKE

(Version with brake available on request)

Indicated performances refer to motor controlled by related *RS1C10AL CANopen and RS1D15AA standard amplifiers.*

3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione RS1C10AL CANopen e nella versione standard RS1D15AA .

3Φ = curva di coppia con alimentazione di potenza trifase

Suggested amplifiers: RS1C10AL (400V)

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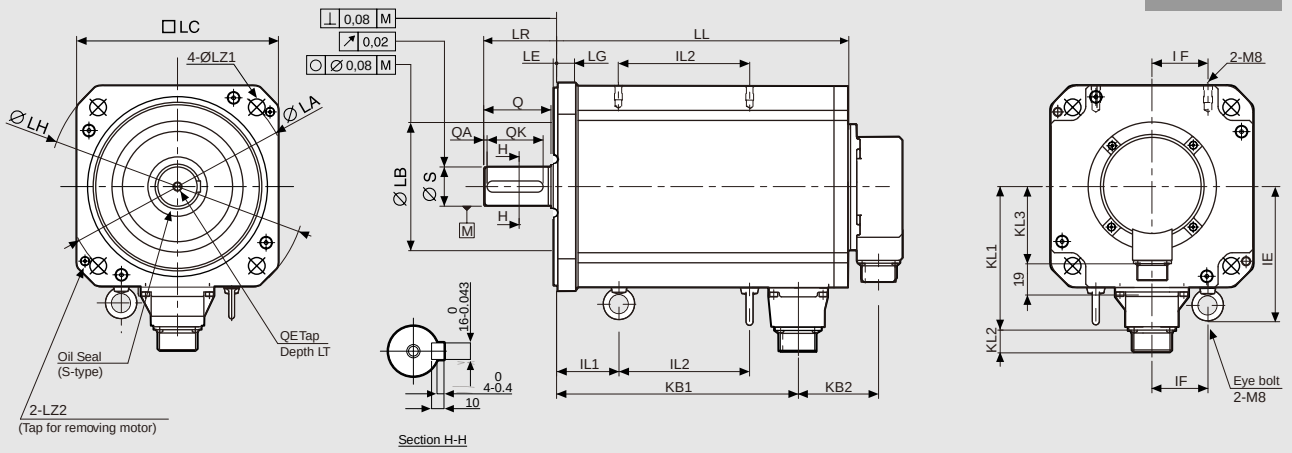
Q2CA2215KVXS00M

SANYO DENKI
SANMOTION

Dimensions (Unit:mm)

400 VAC

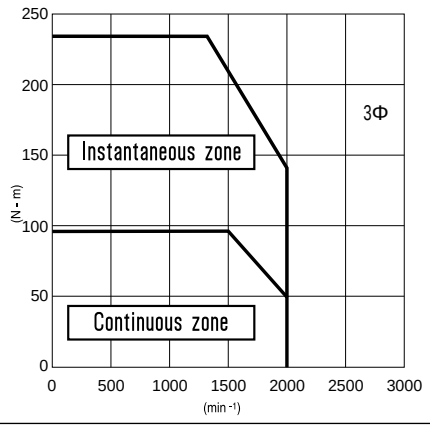


LL	KB2	KL1	KL2	KL3	LG	LA	LB	LE	LH	LC	LZ1	LZ2	LR	S	Q	QA	QK	IL1	IL2	IF	IE	KB1	QE	LT
394	73	162	22	79	19	235	0 Ø200-0.046	4	Ø270	□220	Ø13.5	M10	79	0 Ø55-0.019	--	3	67	69	180	60	142	300	M10	25

FEATURES

MODEL		Q2CA2215KVXS00M
NOMINAL POWER	(W)	15000
NOMINAL SPEED	(rpm)	1500
MAXIMUM SPEED	(rpm)	2000
NOMINAL TORQUE	(Nm)	95.5
STALL TORQUE	(Nm)	95.5
MAXIMUM TORQUE	(Nm)	230
INERTIA	($Kg*m^2$)	255×10^{-4}
ENCODER	(imp./rev)	8000
PROTECTION DEGREE		IP67
WEIGHT	(Kg)	70.0

TORQUE CURVE
Q2CA2215KV [15.0kW] + RS1C10AL



WITHOUT BRAKE

(Version with brake available on request)

Indicated performances refer to motor controlled by related *RS1C10AL CANopen and RS1D15AA standard amplifiers.*

3Φ = torque curve with three-phase power supply

Le prestazioni indicate si riferiscono ai motori pilotati con il relativo azionamento Serie R nella versione RS1C10AL CANopen e nella versione standard RS1D15AA .

3Φ = curva di coppia con alimentazione di potenza trifase

Suggested amplifiers: RS1D15AA (400V)

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

ACCESSORIES

CONNECTION CABLES: AMPLIFIER-MOTORS

All motors supplied are already equipped with high quality connectors.

To ease installastion, connection cables of different length are available, for any motor-amplifiers coupling. The available codes are detailed below:

CAVI DI CONNESSIONE: AZIONAMENTO-MOTORE

Tutti i motori forniti sono già corredati di connettore circolare.

Per facilitare le operazioni di installazione, sono disponibili i cavi di connessione, in diverse lunghezze, per tutti gli accoppiamenti motore-azionamento. Ecco il dettaglio dei codici disponibili:

CABLES		LENGHTS				
MOTORS	MODEL (STANDARD / CANopen)	1 meter	2 meters	3,3 meters	5 meters	10 meters
R2	POWER SUPPLY CABLE	CVABPY1M	CVABPY2M	CVABPY3M3	CVABPY5M	CVABPY10M
	MOTOR CABLE	CVMBPY1M	CVMBPY2M	CVMBPY3M3	CVMBPY5M	CVMBPY10M
	ENCODER CABLE	CVEBR01M	CVEBR02M	CVEBR03M3	CVEBR05M	CVEBR10M
	BRAKE CABLE	CVFRPM01M	CVFRPM02M	CVFRPM03M5	CVFRPM05M	CVFRPM10M
Q2	MOTOR CABLE (Q2AA10150BXS48M)	CVMBPYP21M	CVMBPYP22M	CVMBPYP23M3	CVMBPYP25M	CVMBPYP210M
	MOTOR CABLE (Q2AA13150HXS00M)	CVMBPYP61M	CVMBPYP62M	CVMBPYP63M3	CVMBPYP65M	CVMBPYP610M
	ENCODER CABLE	CVEBP61M	CVEBP62M	CVEBP63M3	CVEBP65M	CVEBP610M
	BRAKE CABLE	CVFPM01M	CVFPM02M	CVFPM03M5	CVFPM05M	CVFPM10M
Q1	MOTOR CABLE (Q1AA10150DXS00M)	CVMBPYP21M	CVMBPYP22M	CVMBPYP23M3	CVMBPYP25M	CVMBPYP210M
	MOTOR CABLE (Q1AA3300DXS00M)	CVMBQA10Q301M	CVMBQA10Q302M	--	CVMBQA10Q305M	CVMBQA10Q310M
	ENCODER CABLE	CVEBP61M	CVEBP62M	CVEBP63M3	CVEBP65M	CVEBP610M
	BRAKE CABLE	CVFPM01M	CVFPM02M	CVFPM03M5	CVFPM05M	CVFPM10M
MOTORS	MODEL (EtherCAT)	1 meter	2 meters	3,3 meters	5 meters	10 meters
R2	POWER SUPPLY CABLE	CVABRA01M	CVABRA02M	CVABRA03M3	CVABRA05M	CVABRA10M
	MOTOR CABLE	CVMBRAR01M	CVMBRAR02M	CVMBRAR03M3	CVMBRAR05M	CVMBRAR10M
	ENCODER CABLE	CVEBRAR01M	CVEBRAR02M	CVEBRAR03M3	CVEBRAR05M	CVEBRAR10M
	BRAKE CABLE	CVFRPM01M	CVFRPM02M	CVFRPM03M5	CVFRPM05M	CVFRPM10M
	SAFETY - SIL CABLE	CVSILBRA01M	CVSILBRA02M	CVSILBRA03M3	--	--
Q2	MOTOR CABLE (Q2AA10150BXS48M)	--	--	--	--	--
	MOTOR CABLE (Q2AA13150HXS00M)	CVMBP6AR01M	CVMBP6AR02M	CVMBP6AR03M3	CVMBP6AR05M	CVMBP6AR10M
	ENCODER CABLE	CVEBQAR01M	CVEBQAR02M	CVEBQAR03M3	CVEBQAR05M	CVEBQAR10M
	BRAKE CABLE	CVFPM01M	CVFPM02M	CVFPM03M5	CVFPM05M	CVFPM10M
	SAFETY - SIL CABLE	CVSILBRA01M	CVSILBRA02M	CVSILBRA03M3	--	--
Q1	MOTOR CABLE (Q1AA10150DXS00M)	CVMBP2AR01M	CVMBP2AR02M	CVMBP2AR03M3	CVMBP2AR05M	CVMBP2AR10M
	ENCODER CABLE	CVEBQAR01M	CVEBQAR02M	CVEBQAR03M3	CVEBQAR05M	CVEBQAR10M
	BRAKE CABLE	CVFPM01M	CVFPM02M	CVFPM03M5	CVFPM05M	CVFPM10M
	SAFETY - SIL CABLE	CVSILBRA01M	CVSILBRA02M	CVSILBRA03M3	--	--
MOTORS	MODEL (RS3)	1 meter	2 meters	3,3 meters	5 meters	10 meters
R2	POWER SUPPLY CABLE	CVABRA01M	CVABRA02M	CVABRA03M3	CVABRA05M	CVABRA10M
	MOTOR CABLE	CVMBRAR01M	CVMBRAR02M	CVMBRAR03M3	CVMBRAR05M	CVMBRAR10M
	ENCODER CABLE	CVEBRAR01M	CVEBRAR02M	CVEBRAR03M3	CVEBRAR05M	CVEBRAR10M
	BRAKE CABLE	CVFRPM01M	CVFRPM02M	CVFRPM03M5	CVFRPM05M	CVFRPM10M
	SAFETY - SIL CABLE	--	CVSI0RAD02M	--	--	--

MOTOR CABLE

ENCODER CABLE

POWER SUPPLY CABLE

BRAKE CABLE R2

SAFETY - SIL CABLE RS2

SAFETY - SIL CABLE RS3

Flex chain cables available under request.

Sono disponibili, su richiesta, i cavi flex chain per posa mobile.

ACCESSORIES

SERIAL CONNECTION KIT: STARTER KIT RSK

The kit includes:

- Serial connection cable [length 3 m]
- R.T.A. - R Series DVD-Rom: includes R-Setup Software and Manuals

KIT DI CONNESSIONE SERIALE: STARTER KIT RSK

Il kit comprende:

- *Cavo di connessione seriale [lunghezza 3 m]*
- *R.T.A. - R Series DVD-Rom: include R-Setup Software e Manuali*

SG SERIES PLANETARY GEARBOXES

The following table shows the servomotors coverage with SG Series planetary gearboxes:

RIDUTTORI EPICICLOIDALI SERIE SG

Nella tabella seguente sono indicati i servomotori e le taglie di riduttori SG disponibili:

MOTORS	SIZE 070 (i=10) 	SIZE 090 (i=10) 	SIZE 090 (i=25) 	SIZE 120 (i=10) 	SIZE 120 (i=25) 
R2AA06020	SG-P11-070-010-12-R2-0X00	--	SG-P11-090-025-15-R2-0X00	--	--
R2AA06040	SG-P11-070-010-12-R2-0X00	SG-P11-090-010-12-R2-0400	SG-P11-090-025-15-R2-0X00	--	--
R2AA08075	--	SG-P11-090-010-12-R2-0750	--	SG-P11-120-010-12-R2-0750	SG-P11-120-025-15-R2-0750
R2AAB8100	--	--	--	SG-P11-120-010-12-R2-1000	SG-P11-120-025-15-R2-1000

i = from 05 to 25

REGENERATIVE RESISTOR

Under special conditions of use, such as, for example, sudden decelerations with high inertial load, it could be necessary to dissipate the reverse energy generated by the motor.

This need is displayed by the amplifier through a specific alarm. Some amplifiers are equipped with an internal regenerative resistor. In case of worst conditions, an external regenrative resistor is necessary. The following models are available on demand:

RESISTENZE DI FRENATURA

In particolari condizioni di utilizzo, quali ad esempio brusche decelerazioni associate ad elevato carico inerziale, può essere necessario dissipare esternamente l'energia inversa generata dal motore.

Tale necessità viene segnalata dall'azionamento grazie ad un allarme specifico. Alcuni modelli di azionamenti sono dotati di una resistenza di frenatura interna. In casi particolarmente gravosi si rende necessario l'utilizzo di una resistenza di frenatura esterna. Ecco i modelli disponibili su richiesta:

AMPLIFIER	RESISTOR MODEL	VALUE [O]	POWER [W]
RS1A01AA - RS1A01AL	RB 10006 - 220W / 100 OHM	100	220
RS1A03AA - RS1A03AL - RS2A03A0K RS3A02A0AL2 - RS3A03A0AL2	RB 05005 - 220W / 50 OHM	50	220
RS1A05AA - RS1A05AL - RS2A05A8K	RB 02030 - 500W / 20 OHM	20	500
RS1A10AA	RB 01030 - 500W / 10 OHM	10	500
RS1C10AL	RB 02030 - 500W / 20 OHM	20	500
RS1D15AA	RB 01430 - 500W / 14 OHM	14	500

NOTES

R.T.A. s.r.l. - ITALY
CERTIFICATO DI SISTEMA
DI GESTIONE QUALITÁ
N°50 100 2153

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