**PLUS L** Series Drives

**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.

- Optimized for driving R.T.A. EM series stepping motors with encoder (86 mm and 60 mm flange sizes).

- Target: applications requiring a programmable motion controller and EM stepping motors. Control in a standard way (“OPEN LOOP”) but also give an alarm in case of loss of synchronism (“CLOSED LOOP”).

**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.

- Setting of the sensitivity of the loss of synchronism alarm system.

- External fans not needed: ideal both for mounting inside a metallic electrical cabinet and for stand-alone applications.

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<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>$V_{ac}$ range (Volt)</th>
<th>$I_{p}$ min. (Peak value)</th>
<th>$I_{p}$ max. (Peak value)</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLUS</td>
<td>L5</td>
<td>28 to 62</td>
<td>4.4</td>
<td>8.0</td>
<td>152x129x46</td>
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**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.
- External fans not needed.
- 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.

**MOTOR LOSS OF SYNCHRONISM CONTROL FUNCTION**
- Input for the connection of the R.T.A. motors EM series encoder (NEMA 34 and 60 mm flange size).
- Output for the loss of synchronism alarm.
- Setting, by means of RS485, of the sensitivity of the loss of synchronism alarm system.

**MECHANICAL DIMENSIONS**

**POWER AND LOGIC CONNECTIONS**