VARITEL
INGENIERIA ELECTRONICA S.A.

PLUS A/B Series Drives

INTRODUCTION

- Stepping motor drives series with Step & Direction interface suitable for driving two-phase stepping motors, with four, six or eight terminals based on the following versions:
  - **PLUS A3 and PLUS A4:** with DC power supply (39-140 V_{DC})
  - **PLUS B3, PLUS B4 and PLUS B7:** with AC power supply (28-100 V_{AC})
- Compact, easy to use and cost effective solution. This system is designed for mounting inside a metallic electrical cabinet. Suitable for wall mounting.
- Target: medium and medium-high power applications requiring great dynamic performance, high reliability, low acoustic noise and mechanic vibrations reduction.

HIGHLIGHTS

- Microstepping function up to 4.000 step/rev.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- External fans not needed: ideal both for mounting inside a metallic electrical cabinet and for stand-alone applications.
- Operation with built-in oscillator with speed range from 14 to 450 rpm setting by means of dip-switches.

Series	Model	V_{AC} range	V_{DC} range	I_{NP} min. (Peak value)	I_{NP} max. (Peak value)	Dimensions
		(Volt)	(Volt)	(Amp)	(Amp)	(mm)
PLUS	A3		39 to 85	2.4	8.0	152x129x46
PLUS	A4		77 to 140	1.9	6.0	152x129x46
PLUS	B3	28 to 62		2.4	8.0	152x129x46
PLUS	B4	55 to 100		1.9	6.0	152x129x46
PLUS	B7	28 to 62		3.0	10.0	152x129x46

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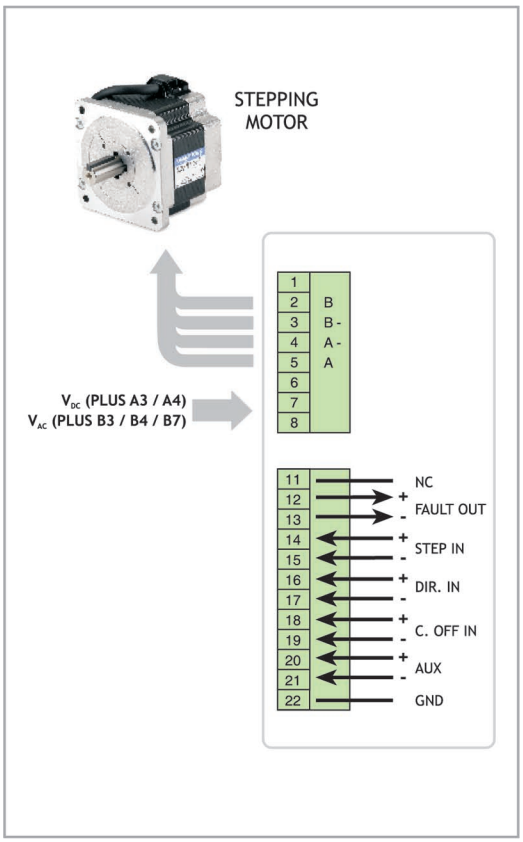
TECHNICAL FEATURES

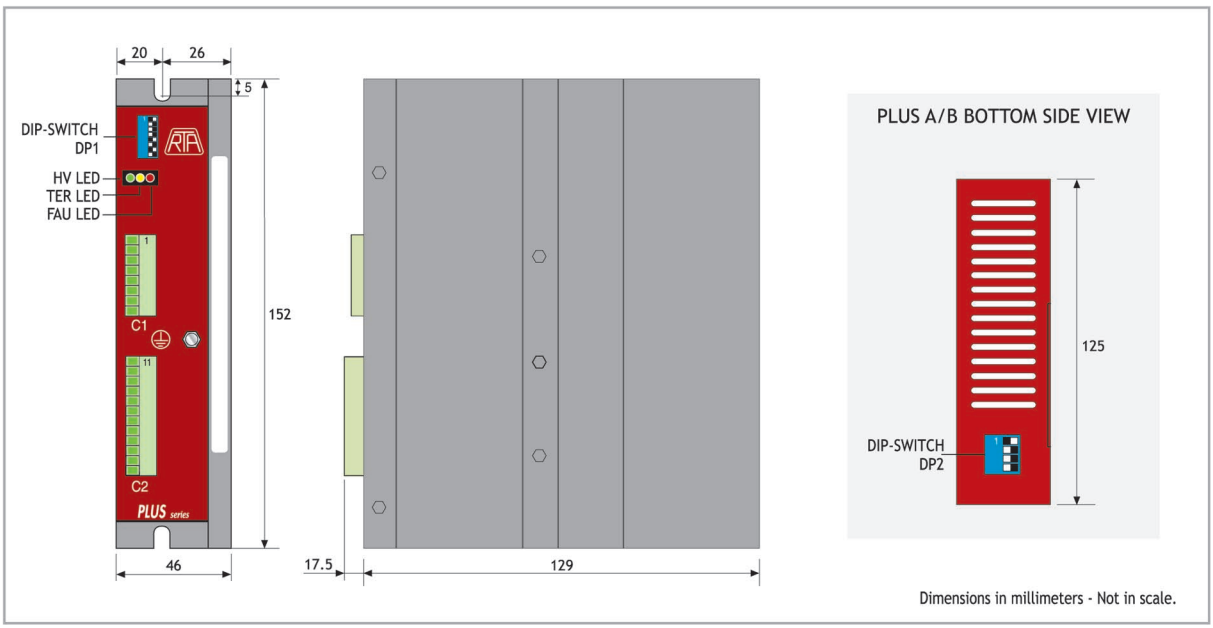
- Range of operating voltages: 39-140 V_{DC} (**PLUS A3** and **PLUS A4**) and 28-100 V_{AC} (**PLUS B3**, **PLUS B4** and **PLUS B7**).
- Range of current: 1.9-10.0 Amp. Setting up to eight possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps /revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overtheating protection with thermal sensor.
- Optoinsulated inputs compatible with differential control signals.
- Possibility to switch off motor current with an external logic signal.
- High efficiency CHOPPER with MOSFET final stage output.
- Operation with built-in oscillator with speed range from 14 to 450 rpm setting by means of dip-switch.
- Alarm memory by use of yellow blinking led.
- Version: boxed, equipped with crimp-type connectors. Maximum compactness.
- Warranty: 24 months.

POWER AND LOGIC CONNECTIONS



MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

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PLUS E Series Drives

STEP/DIR

STEP & DIRECTION

MOTOR LOSS OF SYNCHRONISM CONTROL FUNCTION ("CLOSED LOOP")

INTRODUCTION

- Stepping motor drives series with Step & Direction interface suitable for driving two-phase stepping motors, with four, six or eight terminals .
- Optimized for driving R.T.A. EM series stepping motors with encoder (86 mm and 60 mm flange sizes).
- Target: applications requiring 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.
- Setting of the sensitivity of the loss of synchronism alarm system.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed.
- 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	E3	28 to 62	2.4	8.0	152x129x46
PLUS	E4	55 to 100	1.9	6.0	152x129x46

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TECHNICAL FEATURES

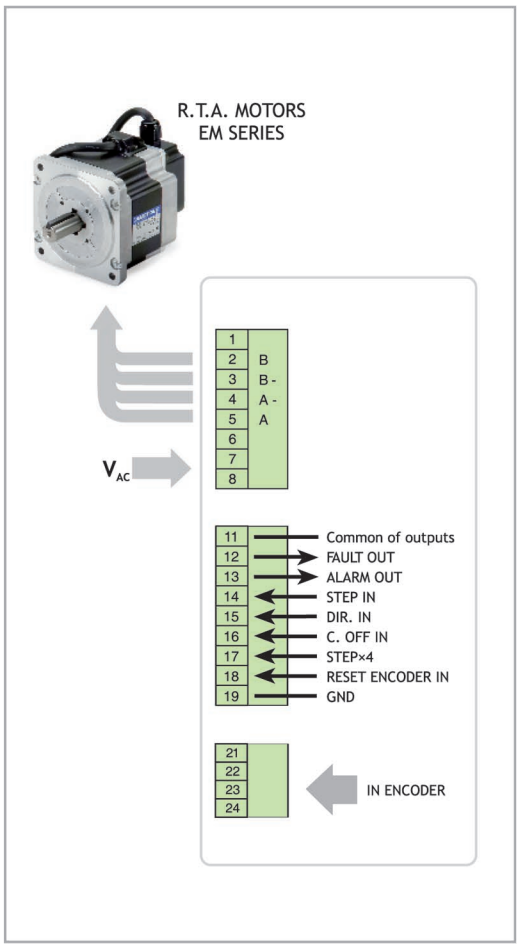
- Range of operating voltages: 28-100 $V_{AC.}$
- Range of current: 1.9-8.0 Amp. Setting up to eight possible values by means of dip-switches.
- Microstepping: 400, 800, 1.600, 3.200 and 500, 1.000, 2.000, 4.000 steps /revolution. Setting by means of dip-switches.
- Automatic current reduction at motor standstill.
- Protections:

  -Protection against under-voltage and over-voltage.
  -Protection against a short-circuit at motor outputs.
  -Overheating protection with thermal sensor.
- High efficiency CHOPPER with MOSFET final stage output.
- Electronic damping facility for further acoustic noise and mechanic vibrations reduction at low and medium speed
- Alarm memory by use of yellow blinking led.
- Version: boxed, equipped with crimp-type connectors. Maximum compactness.
- Warranty: 24 months.

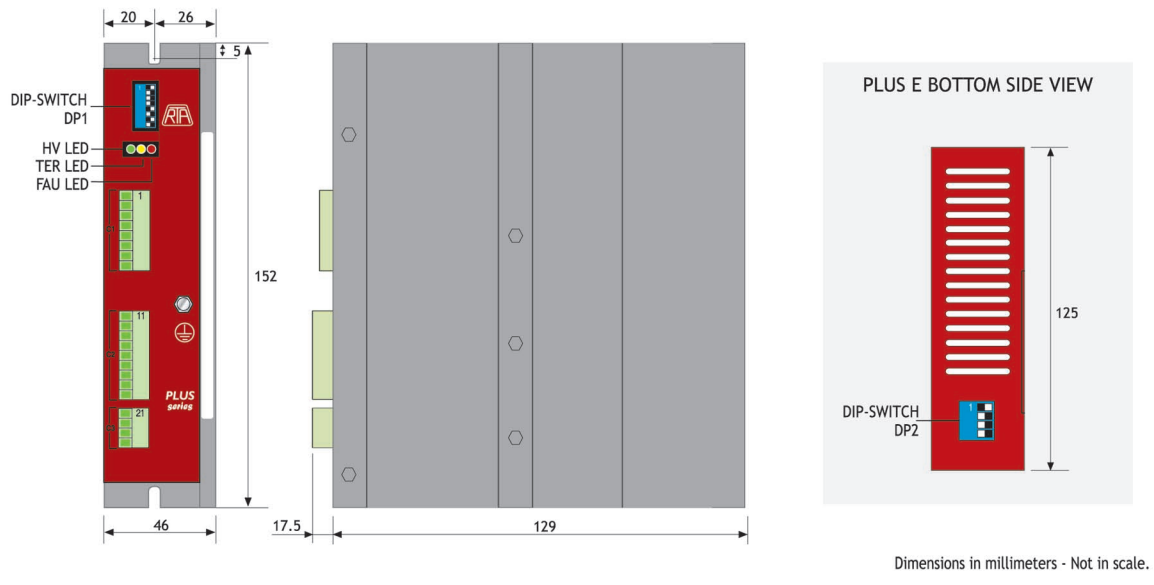
MOTOR LOSS OF SYNCHRONISM CONTROL FUNCTION

- 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 dip-switch, of the sensitivity of the loss of synchronism alarm system.

POWER AND LOGIC CONNECTIONS

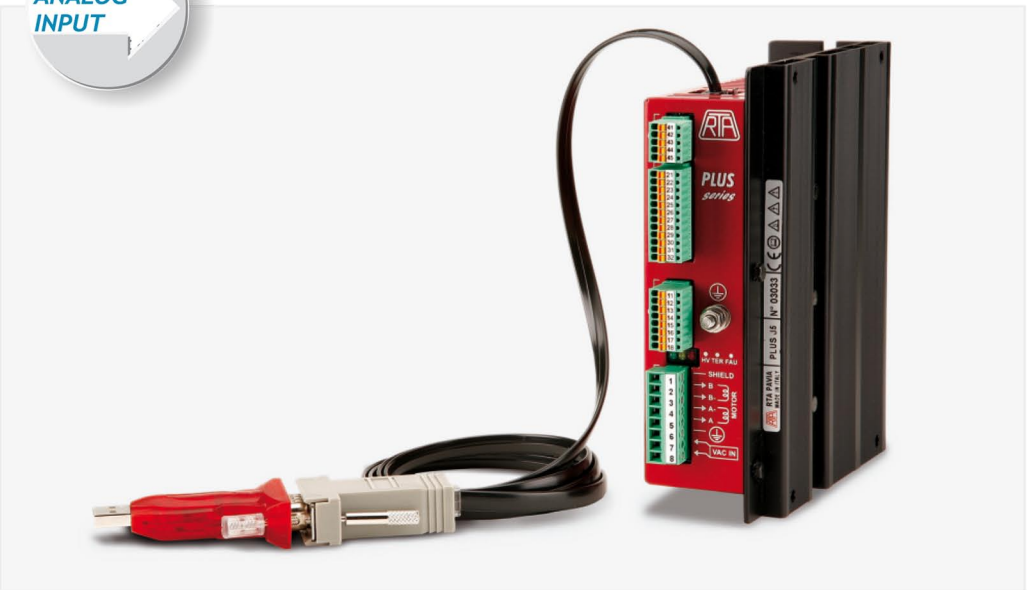


MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

ANALOG INPUT



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.
- 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:

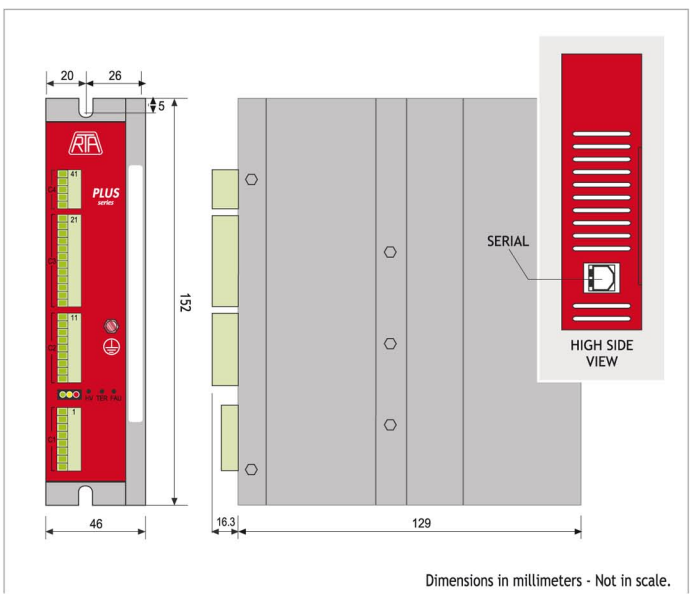
  - 3000 Hz- 48000 Hz (with ramp)
  - 0 Hz-4100 Hz or 0 Hz-510 Hz (without ramp)
- Possibility of matching with potentiometers of 2.2 KOhm.

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 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.

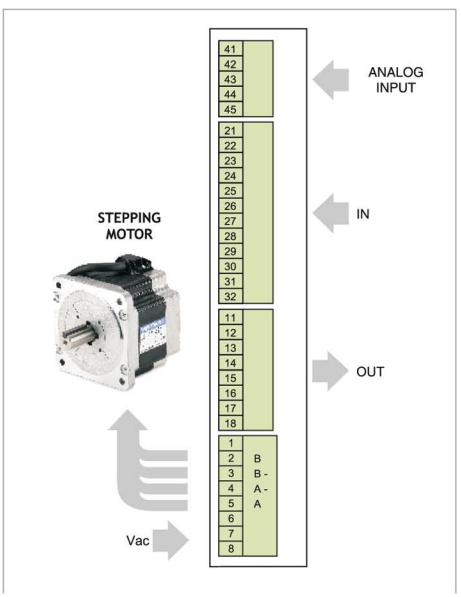
WARRANTY 2 YEARS GARANZIA

MECHANICAL DIMENSIONS



Dimensions in millimeters - Not in scale.

POWER AND LOGIC CONNECTIONS



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