EP300

Electronic Potentiometer

Rev. 2, November 2010

ComAp

User guide

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Prague, Czech Republic

ComAp, spol. s r.o.
Kundratka 2359, 180 00 Praha 8, Czech Republic
Tel: +420 246012111, Fax: +420266316647
E-mail: info@comap.cz, www.comap.cz

ISO 9001 CERTIFIED
ComAp, spol. s r.o. Quality Management

Description

EP300 is a microprocessor controlled device with variable resistance (3 wires potentiometer) at the output terminals. The value of output resistance is changed by contact inputs. EP300 is equipped with a LED display for indication of current position and for parameters setting. The device is shipped in a plastic box equipped with DIN lock for mounting to the switchboard.

Features:

- Adjustable ramp speed from 1 to 50 % per sec, separately for increasing and decreasing the value
- Adjustable start-point from 0% to 100% with step 1%
- Adjustable lower and upper limit
- Control contact inputs INC and DEC are galvanic separated from the internal circuits of the device
- Special contact input for start-point setting init value
- After power on, the start-point is set automatically
- Output can be controlled also manually by micro-buttons
- LED display for current position indication and for parameter setting

Usage

The device is designed for application in control and/or regulation systems, where the input to the controlled device is a potentiometer (variable voltage divider) and the output from the controlling device are two binary (contact) signals – regulated value “higher” and “lower”.

Typical application is speed governor for combustion engine or voltage regulators for alternators.

Technical data

Supply voltage:	230 V AC, 24(18-30)V DC, 12(9-15)V DC **Modules EP300/24V manufactured in 2010 and later have extended supply voltage range to 8-36VDC.**
Consumption:	1,2W/12V DC; 2,4W/24V DC; 1,8VA/220V AC
Supply voltage for bin. Inputs:	8-30V DC **(8-36V, see note at the power supply voltage)**
Inputs common terminal:	Positive
Min. input pulse length:	5ms
Nominal resistance:	500Ω-100kΩ in series 1-2-5-10
Output resistance step:	1/256 $R_{nominal}$
Ramp speed:	adjustable separately for increasing and decreasing in range from 1 to 50% per second
Max. load of output resistance:	min. 0,6W
Max. voltage on the output:	150V
Galvanic separation:	-power supply separated by transformer (230V version only) 4kV -inputs separated by optocouplers 2kV -output separated by relays 1kV
Degree of protection:	IP20
Operation temperature:	-20 to +70°C
Storage temperature:	-40 to +70°C
Dimensions (WxHxD):	160x90x73 mm

Parameters setting

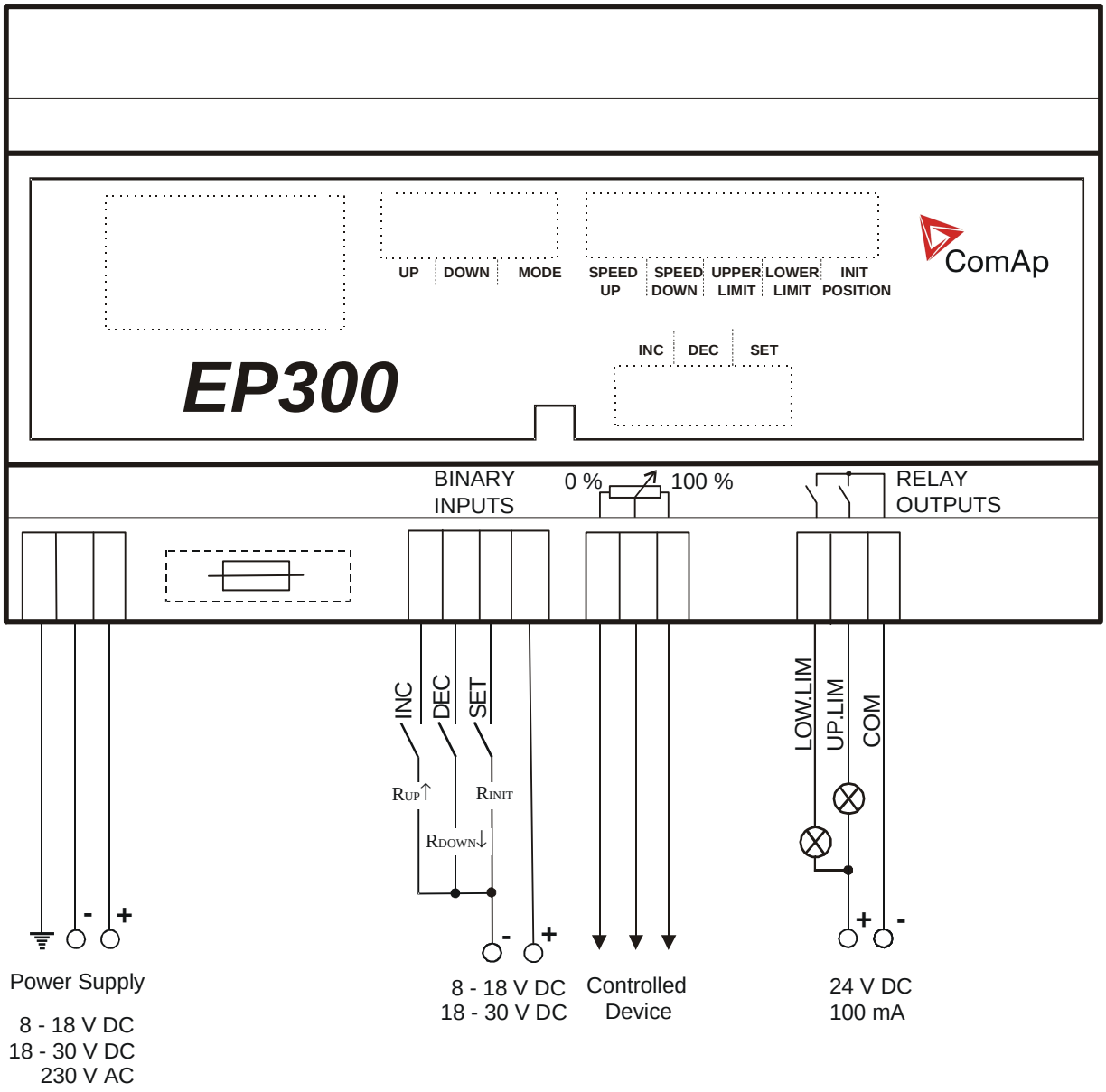
(SPEED UP, SPEED DOWN, UPPER LIMIT, LOWER LIMIT, INIT POSITION)

1. Select parameter by “UP”/”DOWN” buttons
   Corresponding LED should continuously lit.
2. Press “MODE” button to enter edit mode.
   Corresponding LED should blink.
3. Adjust parameter by “UP”/”DOWN” buttons.
4. Press “MODE” button to write parameter into memory.
5. Repeatedly press “UP”/”DOWN” buttons until all green LEDs are turned off.
   Current value **R_{out}** should be visible on display.

Rout – manual setting

1. Repeatedly press “UP”/”DOWN” buttons until all green LEDs are turned off.
2. Press “MODE” button to enter edit mode.
   All green LEDs should blink.
3. Adjust **R_{out}** by “UP”/”DOWN” buttons
4. Press “MODE” button to return.

Wiring Diagram



Power Supply

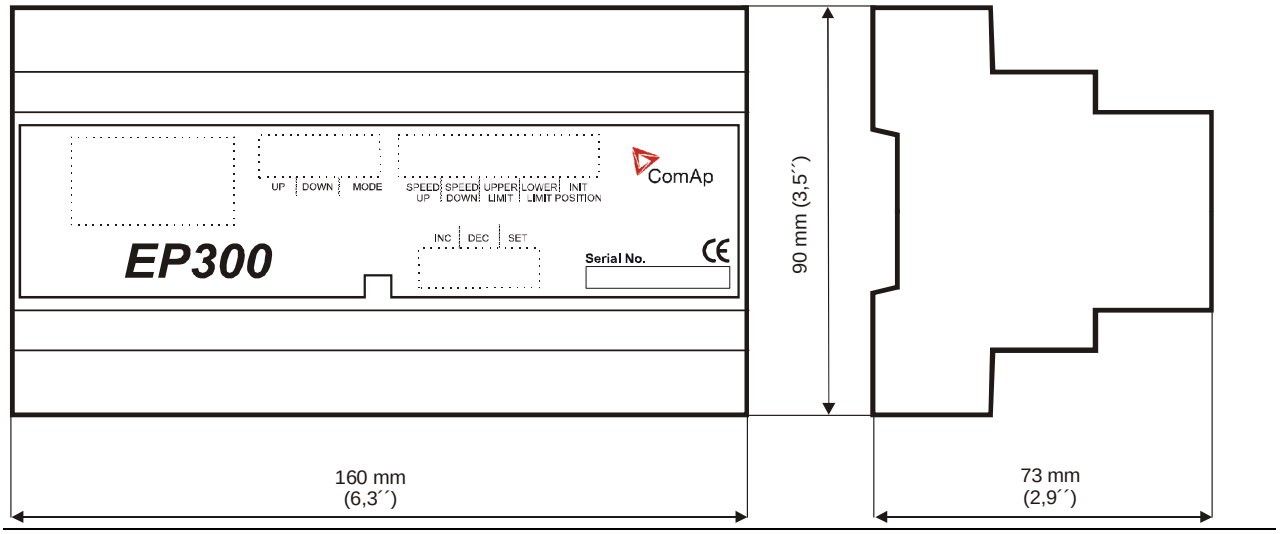
8 - 18 V DC
18 - 30 V DC
230 V AC

8 - 18 V DC
18 - 30 V DC

Controlled Device

24 V DC
100 mA

Note to the installation of RM300 module:
To change the module, remove the rear part of the plastic box and the printed circuit board. The module is plugged in this board. When plugging a new one, check the proper orientation! The pinched-off pin must be against to the blocked contact in the connector.



Ordering codes for RM modules:

RM300/120R	Nominal Resistance 120 Ω
RM300/250R	Nominal Resistance 250 Ω
RM300/500R	Nominal Resistance 500 Ω
RM300/1k	Nominal Resistance 1 kΩ
RM300/2k	Nominal Resistance 2 kΩ

RM300/5k	Nominal Resistance 5 kΩ
RM300/10k	Nominal Resistance 10 kΩ
RM300/20k	Nominal Resistance 20 kΩ
RM300/50k	Nominal Resistance 50 kΩ
RM300/100k	Nominal Resistance 100 kΩ

Ordering codes for EP300:

EP300/230 V	Power supply 230 V AC
EP300/24 V	Power supply 8-36 V DC