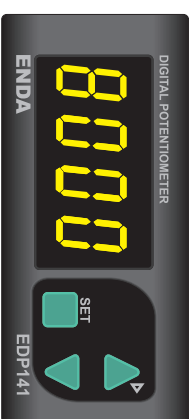




Read this document carefully before using this device. The guarantee will be expired by damaging of the device if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

# ENDA EDP 141 DIGITAL POTENTIOMETER

Thank you for choosing ENDA EDP 141 potentiometer.



- \* 35x77mm sized.
- \* 4 digits display.
- \* Easy to use by front panel keypad.
- \* Communication via RS-485 Modbus protocol or synchronous running between two or more potentiometers.
- (Optional)
  - \* Preset value can be adjusted from external buttons.
  - \* Display scale can be adjusted between -1999 and 8000.
  - \* Decimal point can be adjusted between 1. and 3. digits.
  - \* 0-10V output with adjustable minimum and maximum values.
  - \* ‘Soft on’ and ‘soft off’ properties can be selected.
  - \* Parameter access protection on 3 levels.
  - \* CE marked according to European Norms.

Order Code : **EDP141-**□□□□□□□□□□  
  **1**    **2**

- 1- Supply Voltage  
230V AC...230V AC  
24V AC... 24V AC  
SM.....9-30V DC / 7-24V AC
- 2- Modbus Option  
RS.....RS-485 Modbus communication  
Empty.....Don't support RS-485 Modbus communication

## TECHNICAL SPECIFICATIONS

### ENVIRONMENTAL CONDITIONS

Ambient/storage temperature	0 ... +50°C/-25 ... +70°C (with no icing)	
Max. relative humidity	80% up to 31°C decreasing linearly 50% at 40°C.	
Rated pollution degree	According to EN 60529	Front panel : IP65 Rear panel : IP20
Height	Max. 2000mm	

**!** Do not use the device in locations subject to corrosive and flammable gases.

### ELECTRICAL CHARACTERISTICS

Supply	230V AC +10% -20%, 50/60Hz or 24V AC ±10% 50/60Hz or optional 9-30V DC / 7-24V AC ±10% SMPS
Power consumption	Max. 7VA
Wiring	2.5mm <sup>2</sup> screw-terminal connections
Date retention	EEPROM (Min. 10 years)
EMC	EN 61326-1: 1997, A1; 1998, A2; 2001 (Performance criterion B for the EMC standard)
Safety requirements	EN 61010-1: 2001 (pollution degree 2, overvoltage category II, measurement category I)

### INPUTS

Upwards input (UP)	Contact input
Downwards input (DOWN)	Contact input

### OUTPUT

0-10V output	Maximum 10mA, digitally adjusted potentiometer output. Resolution : 1/10000 V Fluctuation : Maximum 30mV Rise time from 0 to 10V is maximum 300ms
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### HOUSING

Housing type	Suitable for flush-panel mounting according to DIN 43 700.
Dimensions	W77xH35xD71mm
Weight	Approx. 350g (after packing)
Enclosure material	Self extinguishing plastics

**!** While cleaning the device, solvents (thinner, benzene, acid etc.) or corrosive materials must not be used.

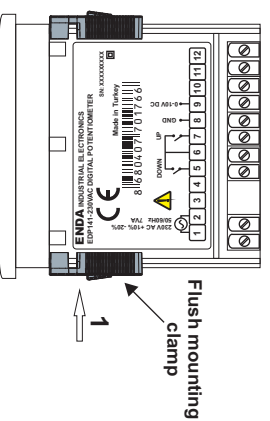
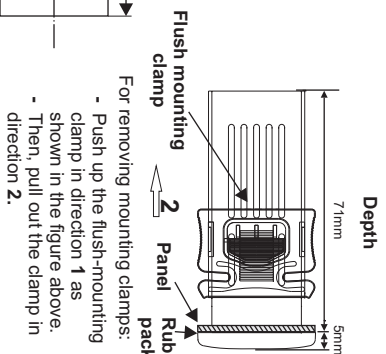
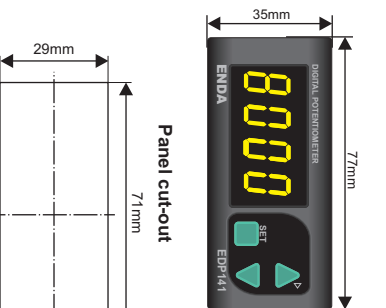
## TERMS



- 1) Adjusted potentiometer value is seen in run mode Parameter name, value or its unit in programming mode.
- 2) Increment key during run mode. Increment or parameter selection key during programming mode.
- 3) Decrement key during run mode. Decrement or parameter selection key during programming mode.
- 4) Used for selecting run or programming modes and for adjusting parameters.

( 1 ) Digital display	4 digits 7 segment yellow LED display
Character height	12,5mm
( 2 ), ( 3 ), ( 4 ) Keypad	Micro switch

## DIMENSIONS

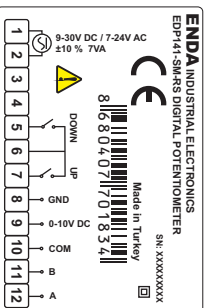
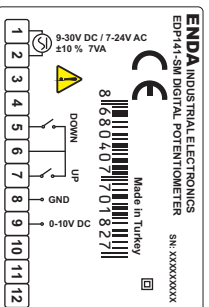
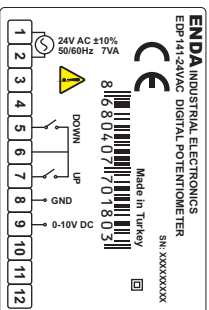
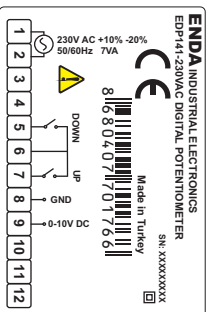


- Note :
- 1) Panel thickness should be maximum 7mm
  - 2) If there is no 60mm free space at back side of the device, it would be difficult to remove it from the panel.

## CONNECTION DIAGRAM



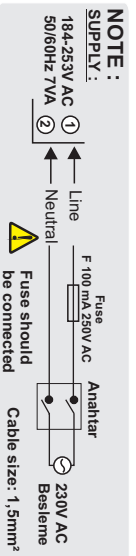
ENDA EDP141 is intended for installation in control panels. Make sure that the device is used only for intended purpose. The electrical connections must be carried out by a qualified staff and must be according to the relevant locally applicable regulations. During an installation, all of the cables that are connected to the device must be free of electrical power. The device must be protected against inadmissible humidity, vibrations, severe soiling. Make sure that the operation temperature is not exceeded. The cables should not be close to the power cables or components.



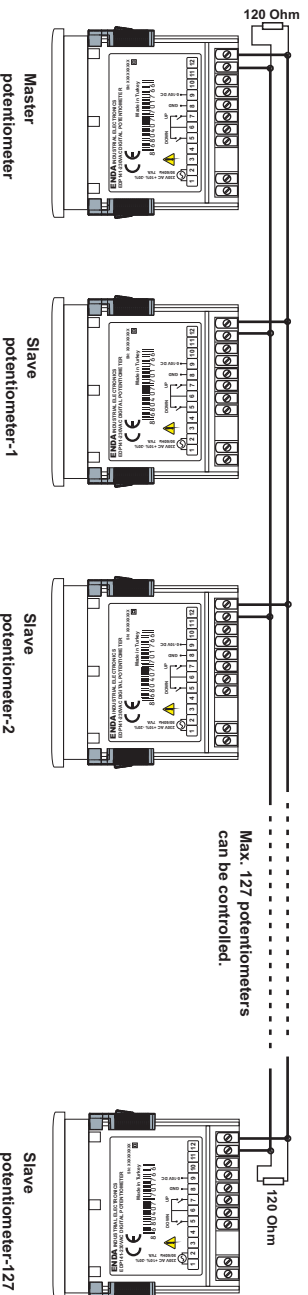
Equipment is protected through-out by DOUBLE INSULATION.

Holding screw 0,4-0,5Nm

- Note :
- 1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
  - 2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.



## CONNECTION DIAGRAM FOR SYNCHRONOUS RUNNING



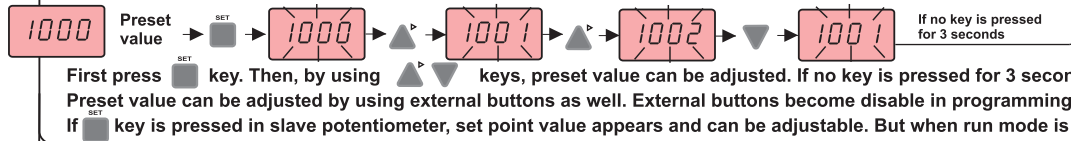
**NOTE :**

- $dRdr$  parameter should be selected in master potentiometer. In this case  $dHDr$  parameter of other potentiometers aren't used. But be sure that  $LPot$  isn't selected in slave potentiometers to prevent confusion. Settings of slave potentiometers change proportional to setting of master potentiometer. For example; When Max. output of master potentiometer is changed from 10V to 5V, max. output of slave potentiometers decrease half of previous value proportional to this. If previous output of slave potentiometer is 6V, it decreases 3V.  $POrC$  parameter of slave potentiometer should be selected  $oFF$  in order to understand master potentiometer when slave is energized.

- Computer should be used to change only a few potentiometers. In this case, there is not master potentiometer. Output of the required potentiometer is changed according to  $dRdr$  parameter.

- Baud rate of potentiometers must be same in both conditions. 120 Ohm termination resistor should be used at the ends and beginning of transmission line. See [www.enda.com.tr/EDP141.htm](http://www.enda.com.tr/EDP141.htm) for detailed information.

## Run mode



If *o.E.t.y* and *o.d.t.y* parameters is adjusted to any value except *d5Rb* parameter, output can be controlled with ▲ and ▼ buttons.

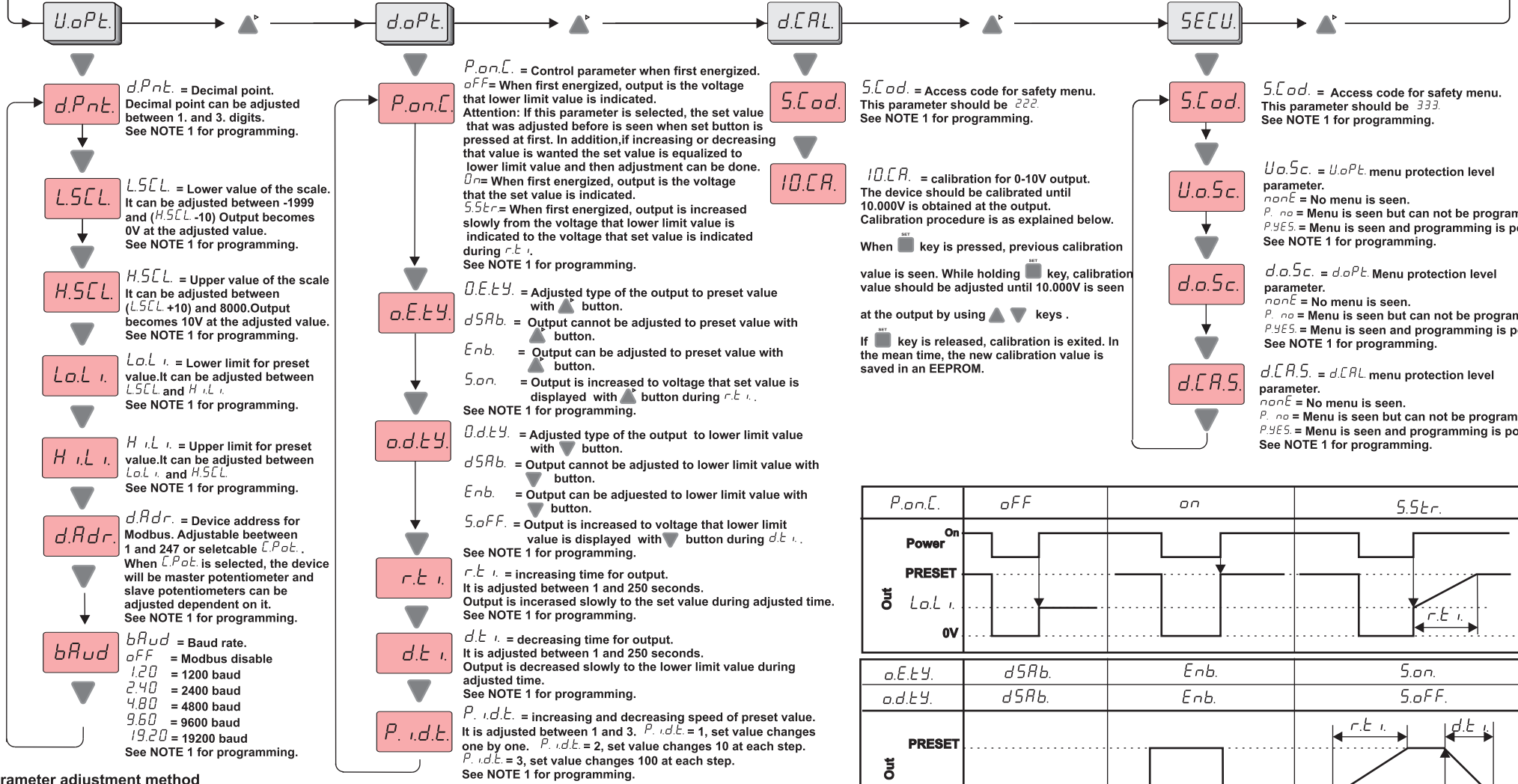
First press **SET** key. Then, by using ▲ ▼ keys, preset value can be adjusted. If no key is pressed for 3 seconds, run mode is returned. Preset value can be adjusted by using external buttons as well. External buttons become disable in programming mode. If **SET** key is pressed in slave potentiometer, set point value appears and can be adjustable. But when run mode is entered, adjusted value appears proportional to master slave value.

If **SET** key is pressed and held for 5 seconds programming mode is entered

## Entering from programming mode to run mode:

If no key is pressed within 20 seconds during programming mode data is stored automatically and the run mode is entered. Alternatively the same function occurs by pressing **SET** key and holding for 5 seconds

## Programming mode



### Parameter adjustment method

#### NOTE 1

For adjusting a selected parameter first press and hold **SET** key. Then, by using ▲ ▼ keys, adjustment can be made.

If increment key ▲ is pressed and held 0.6 seconds, the value of the selected parameter changes rapidly. If waited enough, the value increases 100 at each step. After 1 second following the release of the key, initial condition is returned. The same procedure is valid for the decrement key.

P.on.C.	oFF	on	S.Str.
	Power	On	Out
o.E.t.y.	d5Rb.	Enb.	S.on.
	o.d.t.y.	d5Rb.	Enb.
Out	PRESET	Lo.L.i.	0V
	Control can't be done with ▲ ▼ buttons.	by pressing the button	by pressing the button
P.i.d.t.	r.t.i.	d.t.y.	
	by pressing the button	by pressing the button	