



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 EPA141 PROGRAMMABLE AC/DC AMMETER

Thank you for choosing ENDA EPA141 programmable AC/DC ammeter.

- \* 35 x 77mm sized.
- \* 4 digits display.
- \* Easy to use by front panel keypad.
- \* With current trafo or shunt can be used.
- \* Programmable scale between 5A and 9999A.
- \* Multifunctional alarm output (NO+NC) for upper and lower limits.
- \* CE marked according to European Norms.
- \* Measuring type can be selected AC, DC or True RMS

**CE** **R<sup>HS</sup>**  
**Compliant**



Order Code : EPA141 --  
1 2 3

- |                                |                   |                            |
|--------------------------------|-------------------|----------------------------|
| <b>1 - Input Type</b>          | <b>2 - Output</b> | <b>3 - Supply Voltage</b>  |
| S.....Internal Shunt Resistor  | R.....Relay       | 230VAC...230V AC           |
| None...External Shunt Resistor | None...No Relay   | 24VAC.....24V AC           |
|                                |                   | SM.....9-30V DC / 7-24V AC |

## Technical Specifications

| ENVIRONMENTAL CONDITIONS   |  |
|--|--|
| Ambient/stroge temperature   | 0 ... +50°C/-25 ... 70°C                                     |
| 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. 2000m   |
| 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. 5VA   |
| Wiring                     | 1.5mm <sup>2</sup> screw-terminal connections  |
| Scale                      | AC and RMS 0A...9999A (Specified c.tr.r parameter. For example:scale is 0A...5A for c.tr.r=5.00)<br>DC -999A...9999A (Specified c.tr.r parameter. For example:scale is -5A...5A for c.tr.r=5.00) |
| Sensitivity                | 0.002A x c.tr.r ( For example , 0.01A for c.tr.r=5.00 )  |
| Accuracy                   | AC ± 1% (full scale) (For square wave form ± 2%)<br>DC ± 1% (full scale)<br>RMS ± 1% (full scale) (For square wave form ± 2%)  |
| Input Range                | EPA141Sxx -5A...5A (Device is damaged 10A peak and more current.)<br>EPA141xx -60mV...60mV (Device is damaged 50V peak and more voltage.)  |
| Input impedance            | EPA141Sxx 12mΩ<br>EPA141xx 40kΩ  |
| Frequency Range            | DC , 10Hz - 200Hz (For square wave form 10Hz-70Hz)   |
| 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)   |

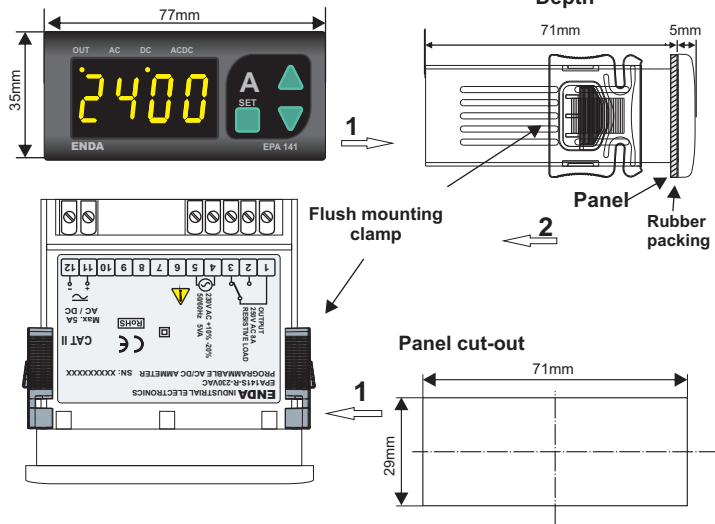
| OUTPUTS                   |   |
|---------------------------|---|
| Alarm output              | Relay: 250V AC, 8A (for resistive load), NO+NC        |
| Life expectancy for relay | Mechanical 30.000.000 ; Electrical 100.000 operation. |

| HOUSING            |   |
|--------------------|---|
| Housing type       | Suitable for flush-panel mounting.  |
| Dimensions         | W77xH35xD71mm   |
| Weight             | EPA141 Approx. 250g (after packing)<br>EPA141-24 Approx. 250g (after packing) |
| Enclosure material | Self extinguishing plastics.  |



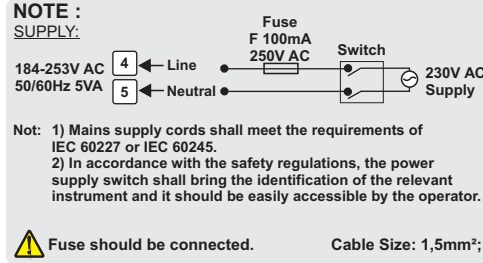
While cleaning the device, solvents (thinner, benzine, acid etc.) or corrosive materials must not be used.

# Dimensions

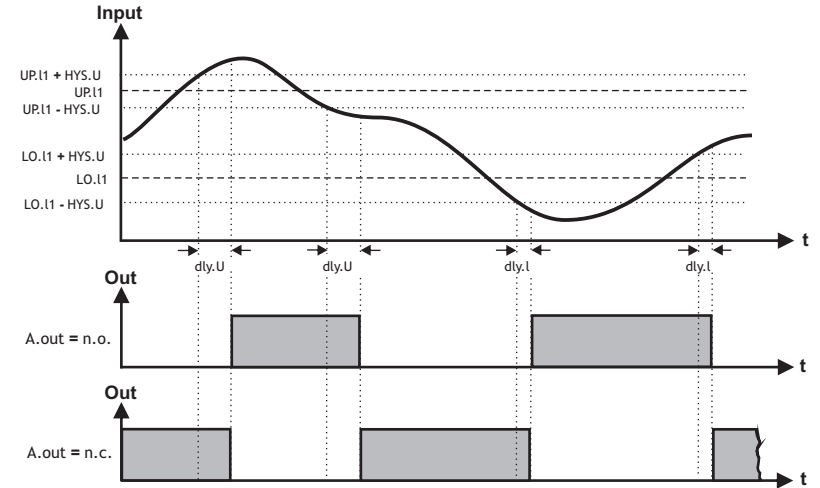


For removing mounting clamps:  
 - Push out the flush-mounting clamp  
 In direction 1 shown in figure below.  
 - Pull out the clamp in direction 2

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



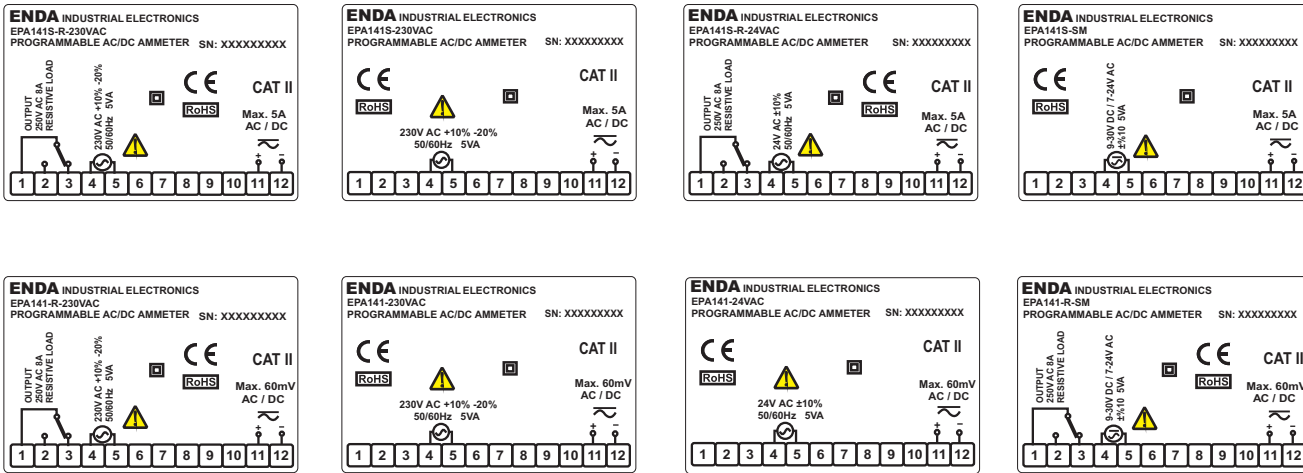
- Equipment is protected throughout by DOUBLE INSULATION
- Holding screw 0.4-0.5Nm.



# Connection Diagram



ENDA EPA141 is intended for installation in control panels. Make sure that the device is used only for intended purpose. The electrical connections must be carried on 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 energy. The device must be protected against inadmissible humidity, vibrations, severe soiling and make sure that the operation temperature is not exceeded. The cables should not be close to the power cables or components.



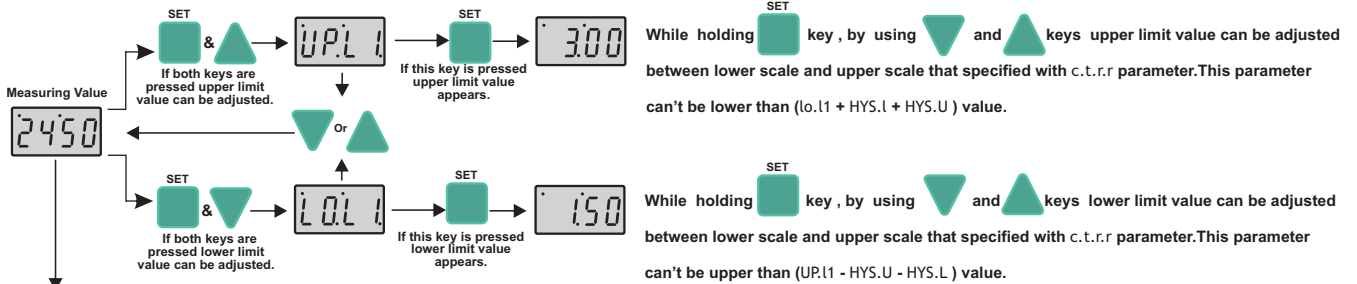
|  | ac                                       | dc                     | Ac.dc (rms)            |
|--|--|------------------------|------------------------|
|  | $A \frac{1}{\sqrt{2}}$                   | 0.000                  | $A \frac{1}{\sqrt{2}}$ |
|  | 0.308 A                                  | $A \frac{2}{\sqrt{2}}$ | $A \frac{1}{\sqrt{2}}$ |
|  | 0.386 A                                  | $A \frac{1}{\sqrt{2}}$ | $A \frac{1}{2}$        |
|  | A  | 0.000                  | A                      |
|  | $A \frac{1}{2}$                          | $A \frac{1}{2}$        | $A \frac{1}{\sqrt{2}}$ |
|  | $A \sqrt{\frac{d}{T} - \frac{d^2}{T^2}}$ | $A \frac{d}{T}$        | $A \sqrt{\frac{d}{T}}$ |
|  | $A \frac{1}{\sqrt{3}}$                   | 0.000                  | $A \frac{1}{\sqrt{3}}$ |

# EPA141 PROGRAMMING DIAGRAM



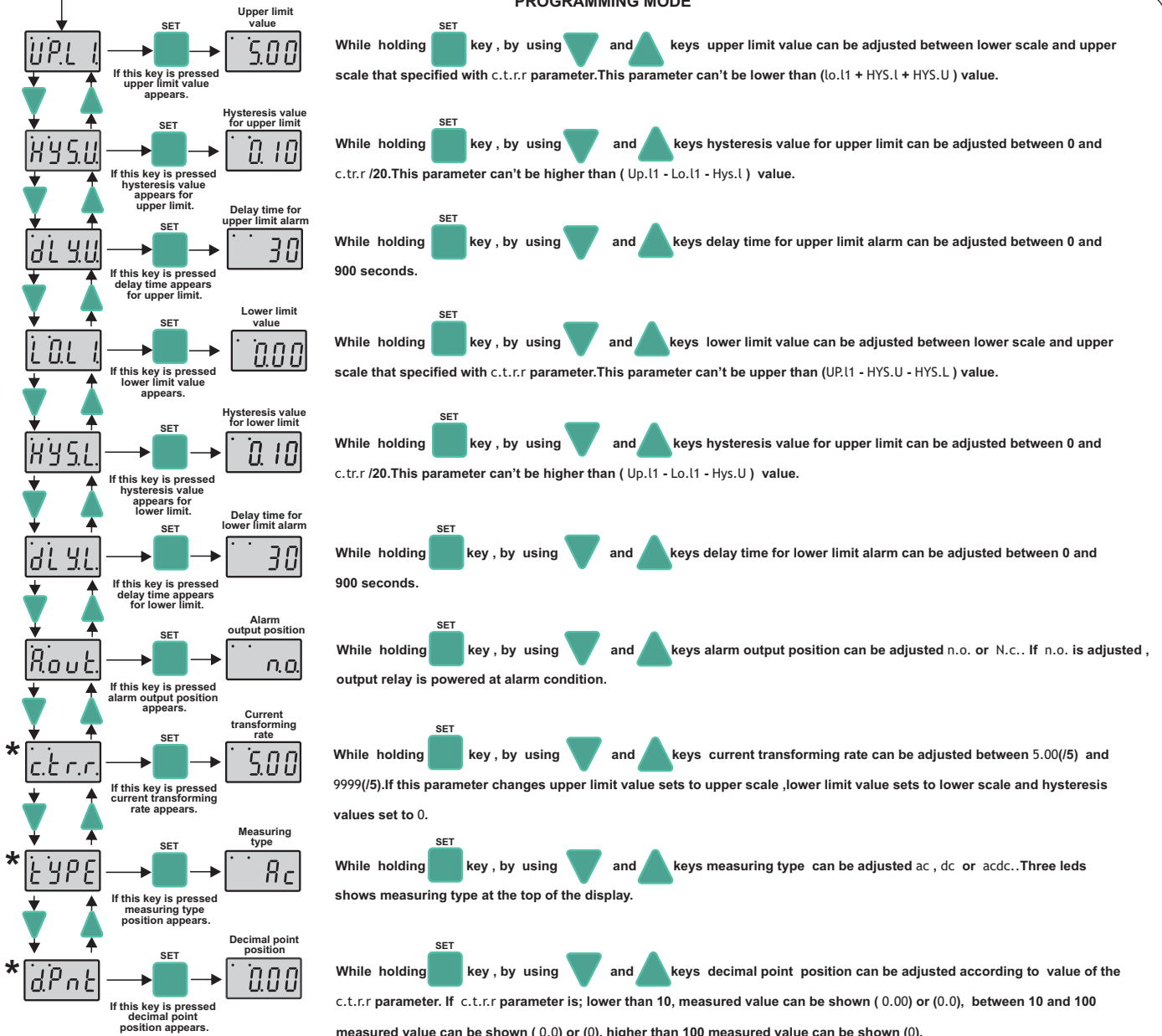
- Increment key** Used for increasing the setpoint value, as well as the parameter when in programming. When held down for a few seconds, the change rate accelerates.
- Decrement key** Used for decreasing the setpoint value, as well as the parameter when in programming. When held down for a few seconds, the change rate accelerates.
- Programming key** Used for adjusting the value of the setpoint in the run mode and for adjusting the selected parameter in the programming mode.

## ADJUSTING ALARM VALUE



If both & keys are pressed and held for 5 seconds, programming mode is entered or to running mode is returned.

## PROGRAMMING MODE



(\*) There are only c.t.r.r, type, d.p.n.t parameters at the models (EPA141, EPA141-24, EPA141S, EPA141S-24) that has no relay. If you wait 25 seconds before holding down the keys or power off and power up again, you skip to operation mode..

## ERROR MESSAGES



Means, measured current value is higher than up scale.



Means, measured current value is lower than down scale.