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 Europan Norms.**
*** Measuring type can be selected AC, DC or True RMS**

CE RoHS Compliant

Order Code : EPA141□-□-□□□□□□
1 2 3

1 - Input Type
S.....Internal Shunt Resistor
None...External Shunt Resistor

2 - Output
R.....Relay
None...No Relay

3 - Supply Voltage
230VAC...230V AC
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.	

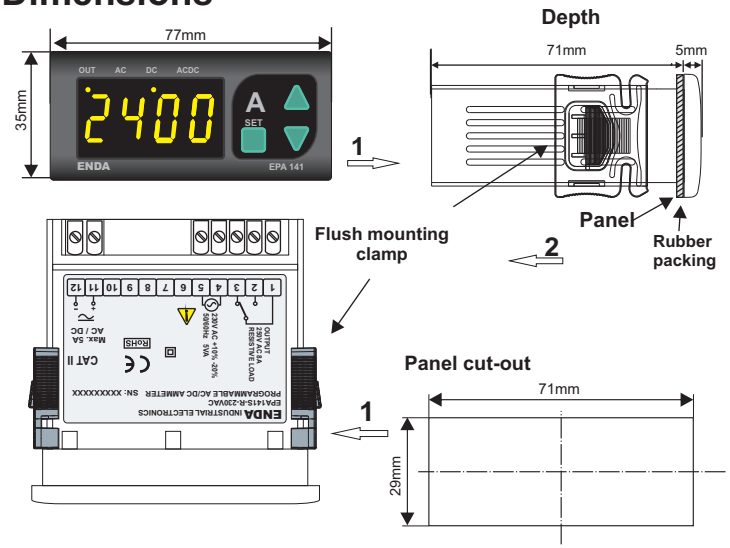
ELECTRICAL CHARACTERISTICS		
Supply	230V AC +10% -20%, 50/60Hz or 24V AC ±10% , 50/60Hz or optional 9-30V DC / 7-24V AC ±10% SMPS	
Power consumption	Max. 5VA	
Wiring	1.5mm² screw-terminal connections	
Scale	AC and RMS DC	0A...9999A (Specified c.tr.r parameter. For example:scale is 0A...5A for c.tr.r=5.00) -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 DC RMS	± 1% (full scale) (For square wave form ± 2%) ± 1% (full scale) ± 1% (full scale) (For square wave form ± 2%)
Input Range	EPA141Sxx EPA141xx	-5A...5A (Device is damaged 10A peak and more current.) -60mV...60mV (Device is damaged 50V peak and more voltage.)
Input impedance	EPA141Sxx EPA141xx	12mΩ 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 EPA141-24	Approx. 250g (after packing) 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.		

SİSEL MÜHENDİSLİK ELEKTRONİK SAN. VE TİC. A.Ş.
Yukarı Dudullu Barbaros Cad. Kutup Sok. No:20 34775 - ÜMRANİYE/İSTANBUL/TÜRKİYE
Tel : +90 216 499 46 64 Pbx. Fax : +90 216 365 74 01
url : www.enda.com.tr

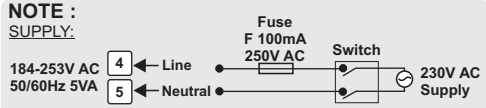
Dimensions



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.

NOTE :
SUPPLY:

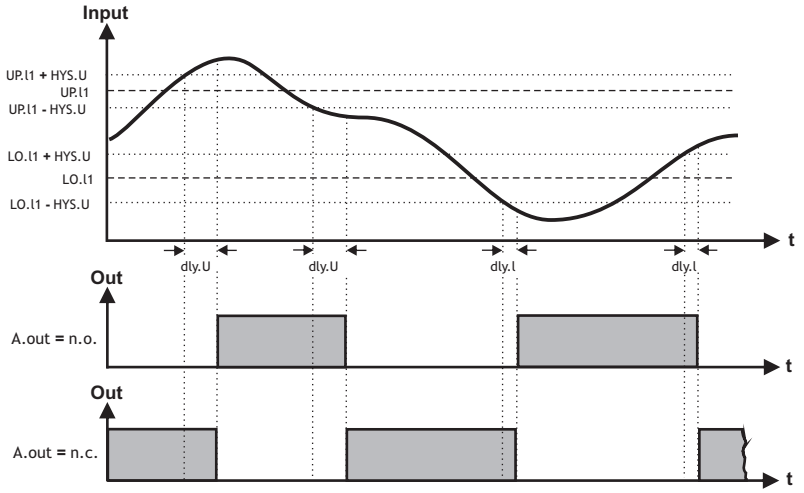


Not: 1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

⚠ **Fuse should be connected.** **Cable Size: 1,5mm²;**

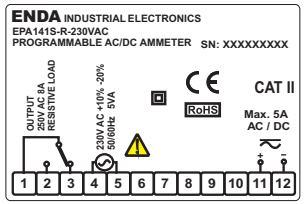
Equipment is protected throughout by DOUBLE INSULATION

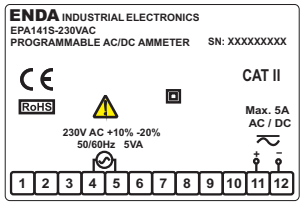
Holding screw 0.4-0.5Nm.

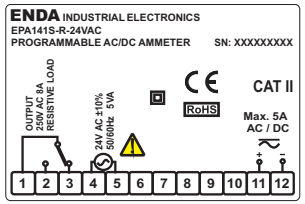


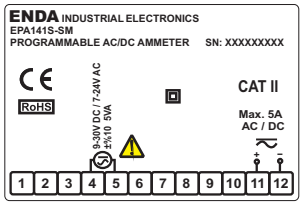
Connection Diagram

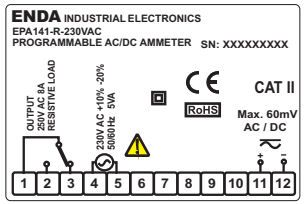
ENDA EPA141 is intended for installation in control panels.Make sure that the device is used only for intended purpose.The electrical connections must be carried on by a qualified staff and must be according to the relevant locally applicable regulations. During an installation, all of the cables that 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.

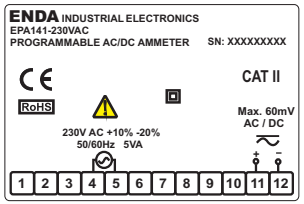


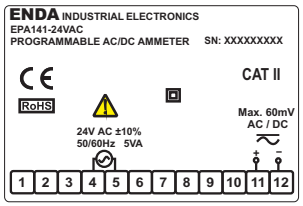


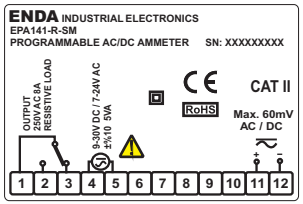


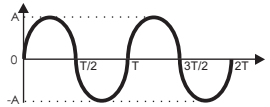
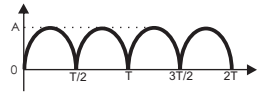
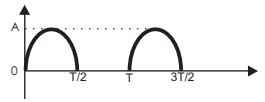
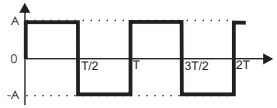
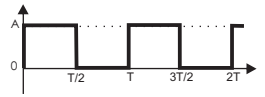
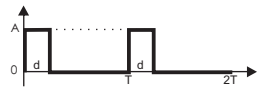
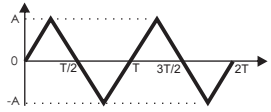










	ac	dc	Ac.dc (rms)
	$A\frac{1}{\sqrt{2}}$	0.000	$A\frac{1}{\sqrt{2}}$
	0.308 A	$A\frac{2}{}$	$A\frac{1}{\sqrt{2}}$
	0.386 A	$A\frac{1}{}$	$A\frac{1}{2}$
	A	0.000	A
	$A\frac{1}{2}$	$A\frac{1}{2}$	$A\frac{1}{\sqrt{2}}$
	$A\sqrt{\frac{d}{T}-\frac{d^2}{T^2}}$	$A\frac{d}{T}$	$A\sqrt{\frac{d}{T}}$
	$A\frac{1}{\sqrt{3}}$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

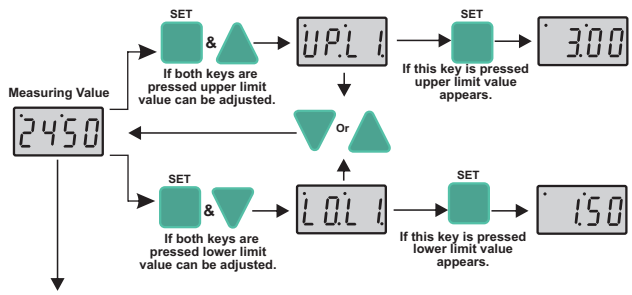
EPA141 PROGRAMMING DIAGRAM

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

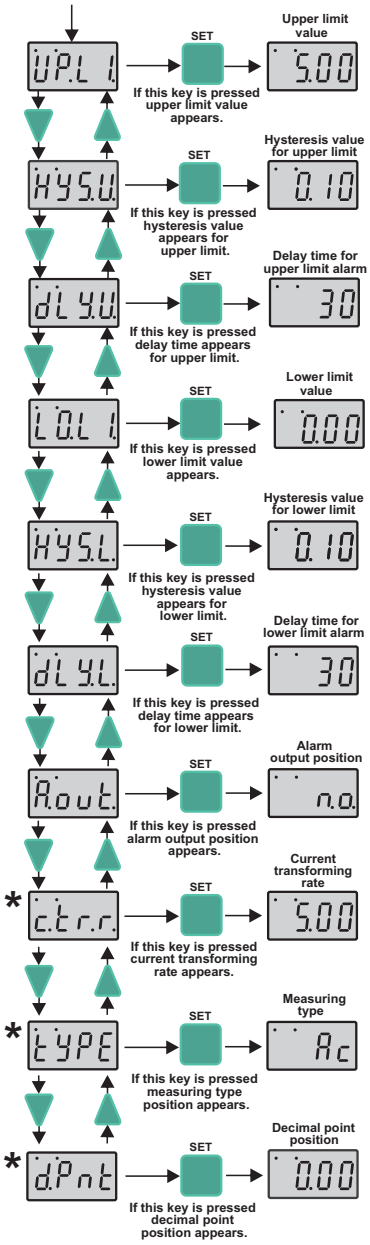


While holding SET key , by using ▼ and ▲ keys upper limit value can be adjusted between lower scale and upper scale that specified with c.t.r.r parameter.This parameter can't be lower than (lo.l1 + HYS.l + HYS.U) value.

While holding SET key , by using ▼ and ▲ keys lower limit value can be adjusted between lower scale and upper scale that specified with c.t.r.r parameter.This parameter can't be upper than (UP.l1 - HYS.U - HYS.L) value.

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

PROGRAMMING MODE



While holding SET key , by using ▼ and ▲ keys upper limit value can be adjusted between lower scale and upper scale that specified with c.t.r.r parameter.This parameter can't be lower than (lo.l1 + HYS.l + HYS.U) value.

While holding SET key , by using ▼ and ▲ keys hysteresis value for upper limit can be adjusted between 0 and c.tr.r /20.This parameter can't be higher than (Up.l1 - Lo.l1 - Hys.l) value.

While holding SET key , by using ▼ and ▲ keys delay time for upper limit alarm can be adjusted between 0 and 900 seconds.

While holding SET key , by using ▼ and ▲ keys lower limit value can be adjusted between lower scale and upper scale that specified with c.t.r.r parameter.This parameter can't be upper than (UP.l1 - HYS.U - HYS.L) value.

While holding SET key , by using ▼ and ▲ keys hysteresis value for upper limit can be adjusted between 0 and c.tr.r /20.This parameter can't be higher than (Up.l1 - Lo.l1 - Hys.U) value.

While holding SET key , by using ▼ and ▲ keys delay time for lower limit alarm can be adjusted between 0 and 900 seconds.

While holding SET key , by using ▼ and ▲ keys alarm output position can be adjusted n.o. or N.c.. If n.o. is adjusted , output relay is powered at alarm condition.

While holding SET key , by using ▼ and ▲ keys current transforming rate can be adjusted between 5.00(/5) and 9999(/5).If this parameter changes upper limit value sets to upper scale ,lower limit value sets to lower scale and hysteresis values set to 0.

While holding SET key , by using ▼ and ▲ keys measuring type can be adjusted ac , dc or acdc..Three leds shows measuring type at the top of the display.

While holding SET key , by using ▼ and ▲ keys decimal point position can be adjusted according to value of the c.t.r.r parameter. If c.t.r.r parameter is; lower than 10, measured value can be shown (0.00) or (0.0), between 10 and 100 measured value can be shown (0.0) or (0), higher than 100 measured value can be shown (0).

(*) There are only c.t.r.r , type , d.pnt 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.