



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 EPA742 PROGRAMMABLE AC/DC AMMETER

Thank you for choosing ENDA EPA742 Programmable AC/DC Ammeter.

- ▶ 72 x 72mm sized
- ▶ 4 digits display
- ▶ Easy to use with front panel keypad
- ▶ Can be used with current transformer or shunt
- ▶ Programmable scale between 5A and 9999A
- ▶ Multi-functional alarm output for Lower and Upper limits (NO)
- ▶ Communication feature over isolated RS485, using ModBus RTU protocol (Optional)
- ▶ Measuring type can be selected as AC, DC or true RMS
- ▶ Key lock feature
- ▶ CE marked according to European Norms



Order Code : EPA742 -

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1 - Output R.....(Out) Relay Blank.....No Relay	2 - Supply Voltage 230VAC...230V AC 110VAC...110V AC 24VAC.....24V AC SM.....9-30V DC / 7-24V AC	3 - Isolated ModBus RSI.....Isolated ModBus (Specify at Order).
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R^oHS
Compliant



TECHNICAL SPECIFICATIONS

ENVIRONMENTAL CONDITIONS	
Ambient/stroge temperature	0 ... +50°C/-25 ... 70°C
Max. Relative humidity	80% Relative humidity for temperatures up to 31°C, decreasing linearly to 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	2.5mm ² screw-terminal connections								
Scale	AC and RMS 0A...9999A (Specified by <i>c.t.r.r</i> parameter. For example:scale is 0A...5A for <i>c.t.r.r</i> =5.00) DC -999A...9999A (Specified by <i>c.t.r.r</i> parameter. For example:scale is -5A...5A for <i>c.t.r.r</i> =5.00)								
Sensitivity	0.002A x <i>c.t.r.r</i> (For example , 0.01A for <i>c.t.r.r</i> =5.00)								
Accuracy	AC ± 1% (full scale) (± 2% For square wave form) DC ± 1% (full scale) RMS ± 1% (full scale) (± 2% For square wave form)								
Input Range	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> & <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> -5A...5A (Device may be damaged at 10A and above currents) <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> & <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> -60mV...60mV (Device may be damaged at 50V and above voltages)								
Input Impedance	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> & <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> 12mΩ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> & <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr></table> 40kΩ								
Frequency Range	DC , 10Hz - 200Hz (10Hz - 70Hz For square wave form)								
EMC	EN 61326-1: 2013								
Safety requirements	EN 61010-1: 2010 (Pollution degree 2, overvoltage category II)								

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

HOUSING	
Housing type	Suitable for flush-panel mounting.
Dimensions	W72xH72xD97mm
Weight	Approx. 350g (after packing)
Enclosure material	Self extinguishing plastics.



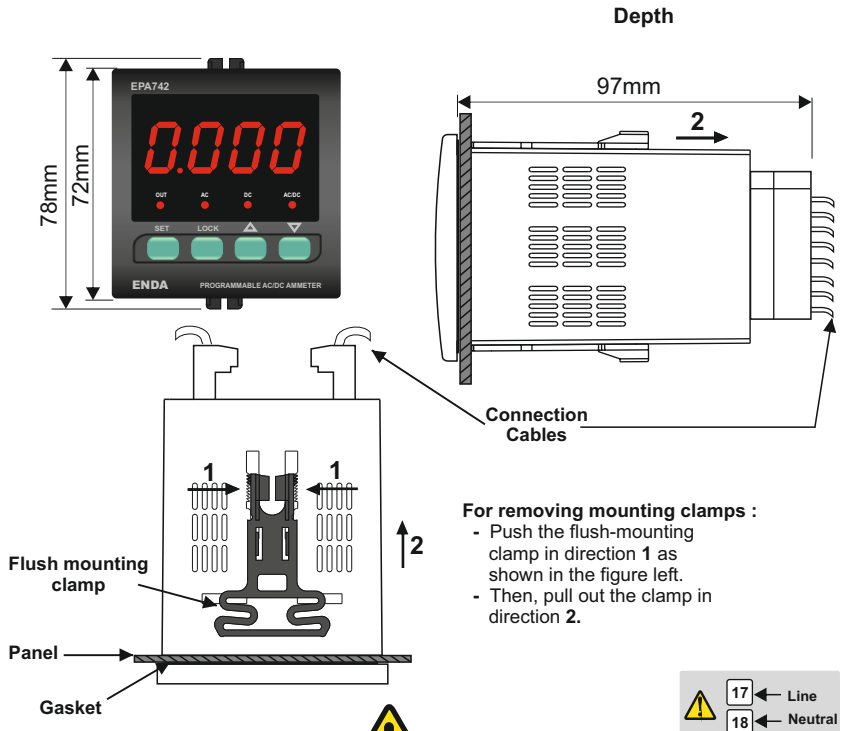
While cleaning the device, solvents (thinner, gasoline, acid etc.) or corrosive materials must not be used.



SİSEL MÜHENDİSLİK ELEKTRONİK SAN. VE TİC. A.Ş.
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Tel : +90 216 499 46 64 Pbx. Fax : +90 216 365 74 01
url : www.enda.com.tr



DIMENSIONS



For removing mounting clamps :

- Push the flush-mounting clamp in direction 1 as shown in the figure left.
- Then, pull out the clamp in direction 2.

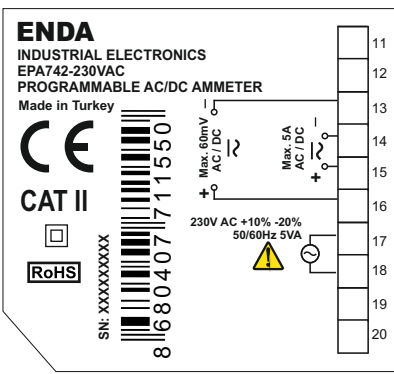
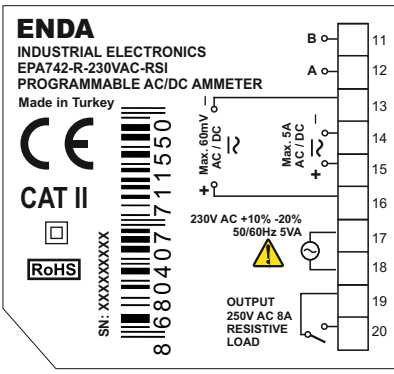
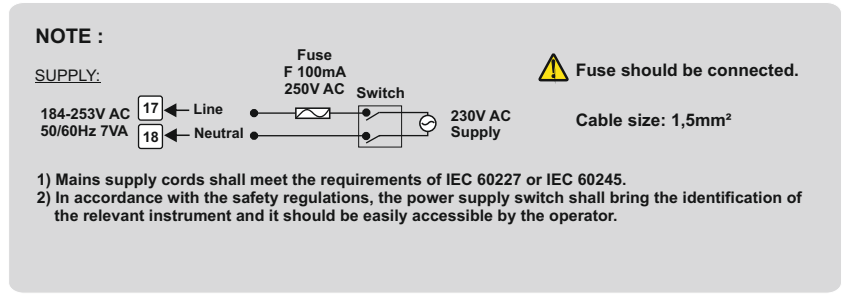
Note :

- 1) Panel thickness should be maximum 10mm.
- 2) There must be at least 90mm free space behind the device, otherwise it would be difficult to remove it from the panel.

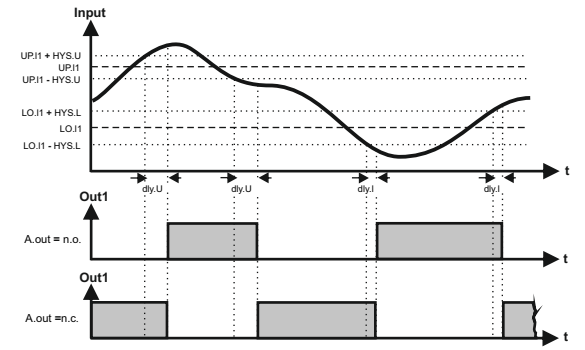
CONNECTION DIAGRAM

ENDA EPA742 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 electrical power. The device must be protected against inadmissible humidity, vibrations and severe soiling. Make sure that the operation temperature is not exceeded. The cables should not be close to the power cables or components.

CAUTION : If 5A and 60mV inputs are connected at the same time, the measurement will be incorrect.



OUTPUT CHART



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

Holding screw 0.4-0.5Nm.

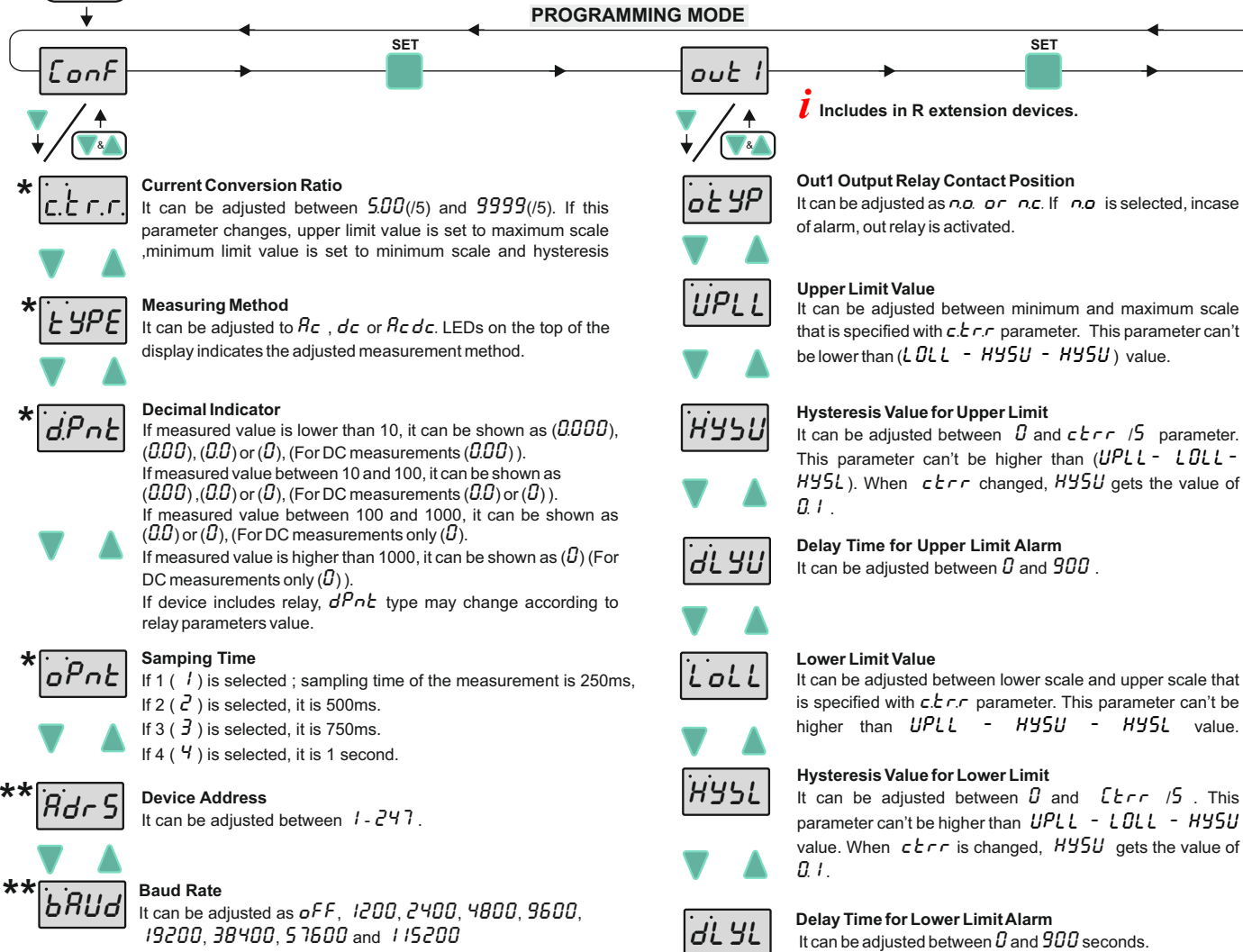
Equipment is protected throughout by DOUBLE INSULATION



EPA742 PROGRAMMING DIAGRAM

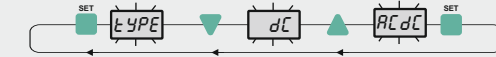
- Increment Key** Used for increasing the setpoint value and changing parameters. When held down for a few seconds, configured numeric value increases faster.
- Decrement Key** Used for decreasing the setpoint value and changing parameters. When held down for a few seconds, configured numeric value increases faster.
- Programming Key** Used for displaying and configuring the selected parameter value.
- Lock / Unlock Keypad** Locks / Unlocks keypad.

If these keys are pressed and held for 3 seconds, "Programming Mode" is entered or it returns to "Running Mode". If and keys are pressed while parameter names are displayed, than it returns to measured value.

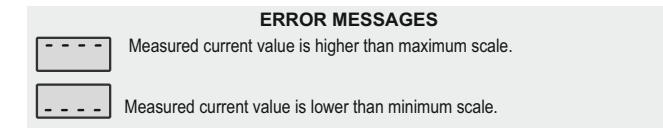
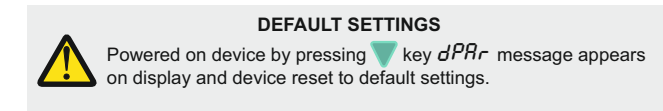
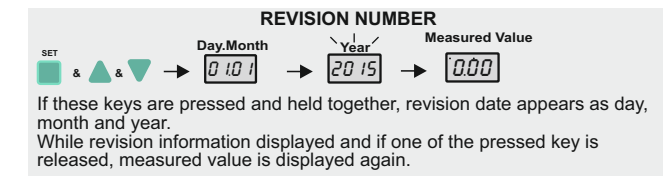
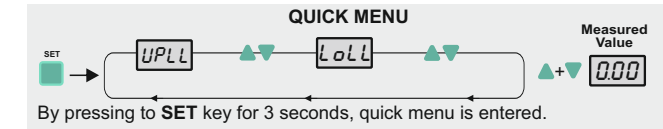


(*) *cterr*, *TYPE*, *dPnt* and *OPnt* parameters are available for only that devices have no relays.
 (**) *AdrS* and *BAUD* parameters are available for only that devices have ModBus.

SETTING UP THE PARAMETERS



- If key is pressed, the current value of the parameter appears by flashing on the display.
- By using "UP" or "DOWN" navigation keys, selected parameter can be adjusted to the desired value.
- After the setting up the parameters, if set key is pressed again, adjusted parameter name appears on display.



ENDA EPA742-xx-x-xxx-RSI INPUT REGISTERS DEVICES

Holding Register Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission	Status Value
Decimal	Hex					
0000d	0x0000	word	Alarm Output Relay Contact Position	<i>OLYP</i>	Readable/Writable	<i>no</i>
0001d	0x0001	word	Current change ratio.	<i>ctrr</i>	Readable/Writable	<i>5</i>
0002d	0x0002	word	The upper limit of the setpoint	<i>UPLL</i>	Readable/Writable	<i>5.000</i>
0003d	0x0003	word	The upper limit of the hysteresis value	<i>HYSU</i>	Readable/Writable	<i>0.100</i>
0004d	0x0004	word	Delay time for the upper limit alarm	<i>dLYU</i>	Readable/Writable	<i>0</i>
0005d	0x0005	word	The lower limit of the setpoint	<i>LOLL</i>	Readable/Writable	<i>0.000</i>
0006d	0x0006	word	The lower limit of the hysteresis value	<i>HYSL</i>	Readable/Writable	<i>0.100</i>
0007d	0x0007	word	Delay time for the lower limit alarm	<i>dLYL</i>	Readable/Writable	<i>0</i>
0008d	0x0008	word	Measurement method (0=AC, 1=dC, 2=ACdC)	<i>TYPE</i>	Readable/Writable	<i>ACdC</i>
0009d	0x0009	word	Decimal point. (0=X, 1=X.X, 2=X.XX, 3=X.XXX)	<i>dPnt</i>	Readable/Writable	<i>0.000</i>
0010d	0x000A	word	Sampling time of the measurement value. If 1 is selected, it is 250ms. If 2 is selected, it is 500ms. If 3 is selected, it is 750ms. If 4 is selected, it is 1 second.	<i>oPtn</i>	Readable/Writable	<i>4</i>
0011d	0x000B	word	Device address for RS485 network connection. Adjustable between 1-247.	<i>Adrs</i>	Readable/Writable	<i>1</i>
0012d	0x000C	word	Baudrate (0=Off;1=1200;2=2400; 3=4800; 4=9600; 5=19200 6= 38400; 7= 57600; 8= 115200)	<i>bAUD</i>	Readable/Writable	<i>oFF</i>

***HOLDING REGISTER PARAMETER TABLE (NO RELAY MODELS)**

0000d	0x0000	word	Current change ratio.	<i>ctrr</i>	Readable/Writable	<i>5</i>
0001d	0x0001	word	Measurement method (0=AC, 1=dC, 2=ACdC)	<i>TYPE</i>	Readable/Writable	<i>ACdC</i>
0002d	0x0002	word	Decimal point. (0=X.XX,1=X.X,2=X)	<i>dPnt</i>	Readable/Writable	<i>0.000</i>
0003d	0x0003	word	Sampling time of the measurement value	<i>oPtn</i>	Readable/Writable	<i>4</i>
0004d	0x0004	word	Device address for RS485 network connection. Adjustable between 1-247.	<i>Adrs</i>	Readable/Writable	<i>1</i>
0005d	0x0005	word	Baudrate (0=Off;1=1200;2=2400; 3=4800; 4=9600; 5=19200 6= 38400; 7= 57600; 8= 115200)	<i>bAUD</i>	Readable/Writable	<i>oFF</i>

INPUT REGISTERS FOR R EXTENSION DEVICES

Input Register Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission
Decimal	Hex				
0000d	0x0000	word	Measured current value	--	Only Readable

DISCRETE INPUTS FOR R EXTENSION DEVICES

Discrete Input Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission
Decimal	Hex				
0000d	0x0000	Bit	Relay output state (0= <i>oFF</i> ; 1= <i>oN</i>)	--	Only Readable

COILS FOR R EXTENSION DEVICES

Coil Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission	Status Value
Decimal	Hex					
0000d	0x0000	Bit	Output Relay Contact Position (0= <i>no</i> ; 1= <i>nc</i>)	<i>OLYP</i>	Readable/Writable	<i>no</i>

* Coil and Discrete input parameters are not available that devices have no relays.

Note 1 : *OLYP* menu parameter can be used as "Holding Register" or "Coil".

Note 2 : Received "ModBus input register value" is multiplying by 1000 (based on *dPnt*) and mA value reached. For example ;

if modbus value is 2842, (for *dPnt* = 2 (0.00)) 28.42x1000 = 28420 mA, ie 28.42A

if modbus value is 2842, (for *dPnt* = 3 (0.000)) 2.842x1000 = 2842 mA, ie 2.842A