

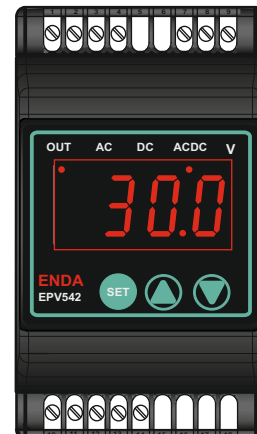


Read this document carefully before using this device. The guarantee will be expired by device damages if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

ENDA EPV542 PROGRAMMABLE AC/DC VOLTMETER

Thank you for choosing **ENDA EPV542** Programmable AC/DC voltmeter.

- ▶ 54 x 94 mm sized
- ▶ 3 digits display
- ▶ Selectable number of decimal point
- ▶ Easy to use front panel keypad
- ▶ Multi-function alarm output for lower and upper limits (NO + NC)
- ▶ Multi-function alarm setpoints with alarm output (NO)
- ▶ Communication feature over isolated RS485, using ModBus RTU protocol (Optional)
- ▶ Keylock feature
- ▶ Measuring type can be selected as AC, DC or true RMS (ACDC)
- ▶ CE Marked according to European Norms.



RoHS
Compliant



Order Code : EPV542 -

1	2	3
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1 - Supply Voltage

UV.....90-250V AC

LV.....10-30V DC /
8-24V AC

2 - Output

R.....08A Relay

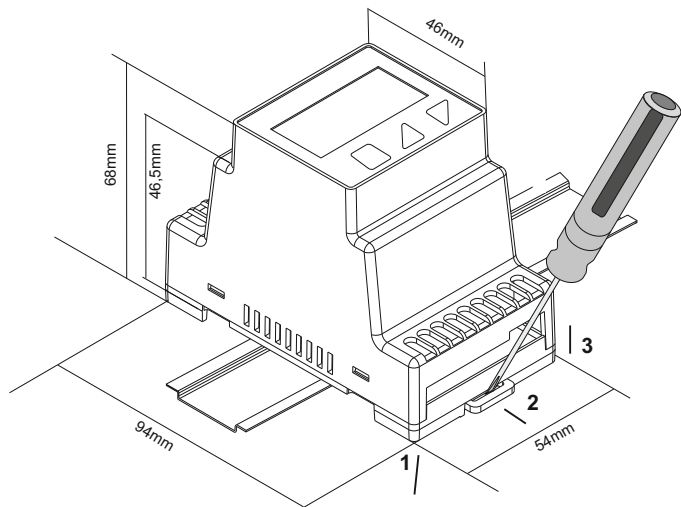
3 - Modbus

RSI.....RS485 Modbus Available
(Specify at order)

TECHNICAL SPECIFICATIONS

ENVIRONMENTAL CONDITIONS		
Ambient / Storage Temperature	0 ... +50°C/-25 ... +70°C (with no icing)	
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 Voltage	90-250V AC 50/60Hz ; 10-30V DC / 8-24V AC SMPS	
Power Consumption	Max. 5VA	
Wiring	2.5mm² screw-terminal connections	
Scale	AC and RMS If I.TYP 500 is selected, between 0 and 500V.	

Dimensions



For mounting the device to the panel;
Push the device in direction 1 , the rails
provide the key to keeping the rail.

For removing the device from rail;
Push the rail lock in direction 2 with a
screwdriver and pull the device in
direction 3 .

NOTE :
SUPPLY:
90-250V AC
veya
10-30V DC/
8-24VAC
50/60Hz 5VA

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.

Fuse F 100mA 250V AC
Switch
UV / LV Supply

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

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

Connection Diagram



ENDA EPV542 series voltmeters are rail mounted devices. 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.



If iTYP input type “500” is selected, the measurement terminals 1 and 4 of the terminals must be connected. Otherwise, measurement will be incorrect.

If iTYP input type “100” is selected, the measurement terminals 2 and 3 of the terminals must be connected. Otherwise, measurement will be incorrect.

ENDA INDUSTRIAL ELECTRONICS
EPV542-UV
AC/DC VOLT METER **RoHS**

8 680407 1719778

90-250V AC
50/60Hz 5VA

Max. 500V AC/DC
Max. 100V AC/DC

1 2 3 4

CAT II
Made in Turkey
SN: XXXXXXXXX

ENDA INDUSTRIAL ELECTRONICS
EPV542-UV-RSI
AC/DC VOLT METER **RoHS**

8 680407 1719785

90-250V AC +10% -20%
50/60Hz 5VA

Max. 500V AC/DC
Max. 100V AC/DC

1 2 3 4

COM 7 8 9
B 0
A 6

CAT II
Made in Turkey
SN: XXXXXXXXX

ENDA INDUSTRIAL ELECTRONICS
EPV542-LV-R
AC/DC VOLT METER

8 680407 1719914

10-30V DC/8-24V AC
50/60Hz 4,5VA

Max. 500V AC/DC
Max. 100V AC/DC

1 2 3 4

OUTPUT 250V AC 8A
RESISTIVE
LOAD

10 11 12 13 14

CAT II **RoHS**
Made in Turkey
SN: XXXXXXXXX

ENDA INDUSTRIAL ELECTRONICS
EPV542-LV-R-RSI
AC/DC VOLT METER **RoHS**

8 680407 1719921

10-30V DC/8-24V AC
50/60Hz 4,5VA

Max. 500V AC/DC
Max. 100V AC/DC

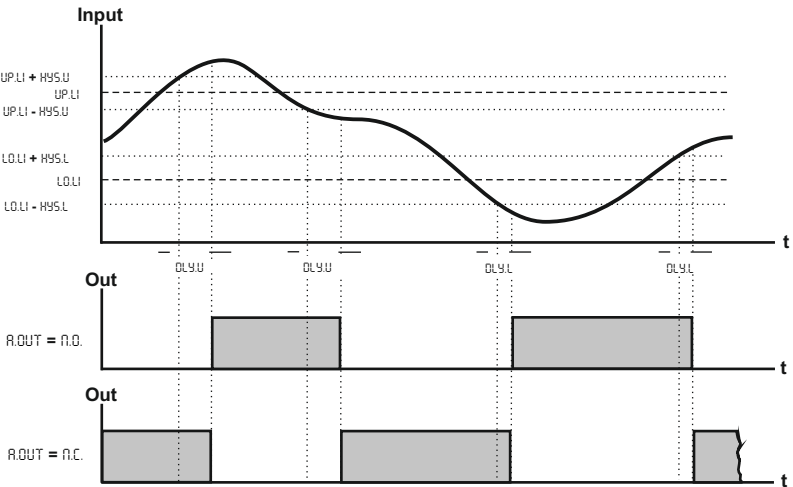
1 2 3 4

OUTPUT 250V AC 8A
RESISTIVE
LOAD

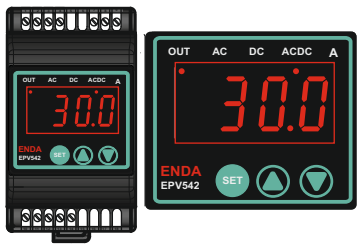
10 11 12 13 14

COM 7 8 9
B 0
A 6

CAT II
Made in Turkey
SN: XXXXXXXXX



	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	$A \frac{1}{\sqrt{3}}$

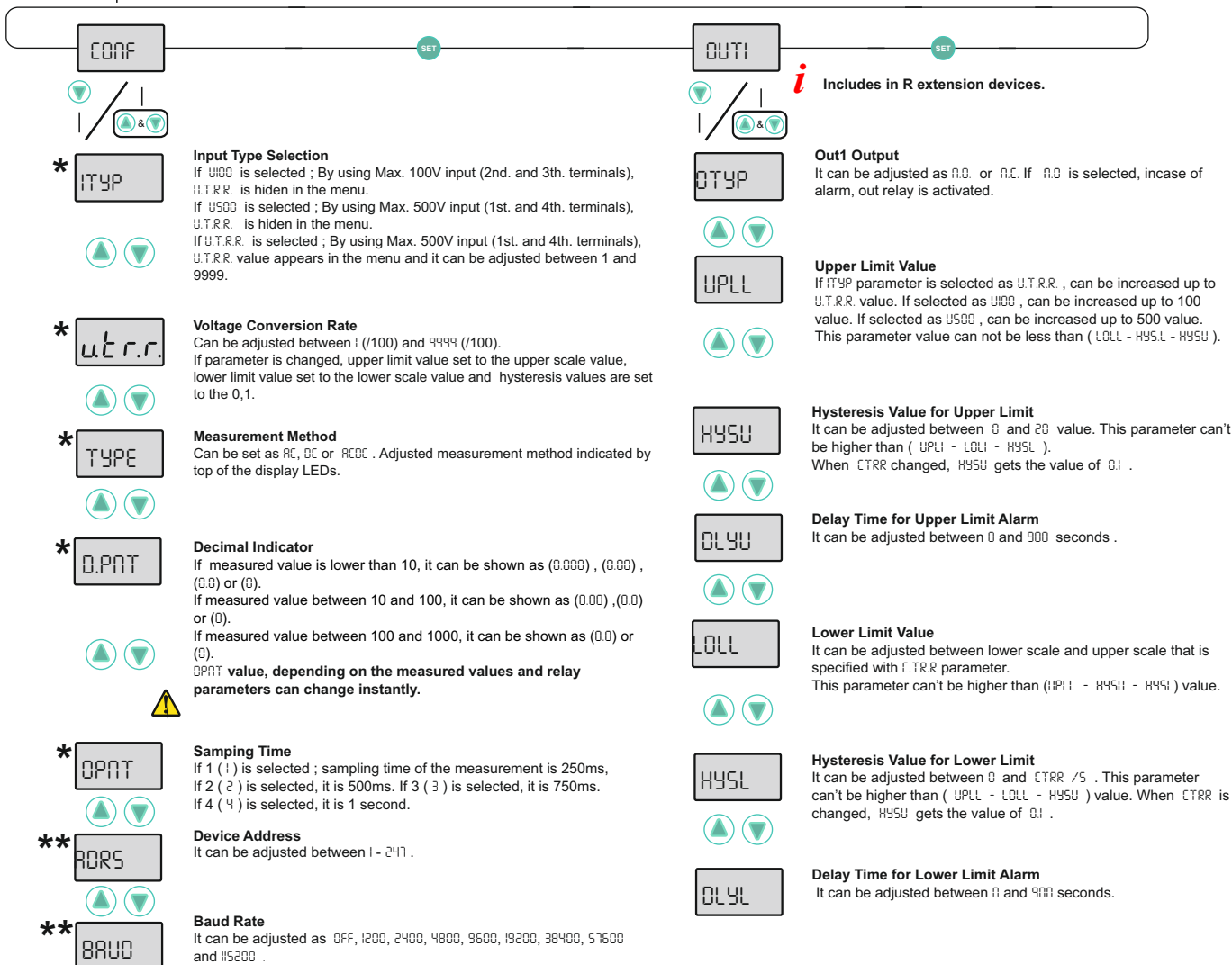


EPV542 PROGRAMMING DIAGRAM

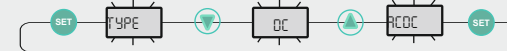
Increment Key & Keylock	Used for increasing the setpoint value and changing parameters. When held down for a few seconds, configured numeric value increases faster. In "Runnig Mode", pressed for 3 seconds continuously, activates or deactivates keylock.
Decrement Key	Used for decreasing the setpoint value and changing parameters. When held down for a few seconds, configured numeric value decreases faster.
Programming Key	Used for displaying and configuring the selected parameter value.

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.

PROGRAMMING MODE



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.

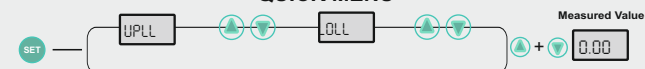
After the setting up the parameters, if set key is pressed again, adjusted parameter name appears on display.

LOCKING & UNLOCKING KEYPAD



In "Running Mode" , by pressing to key for 3 seconds, keypad locked or unlocked.

QUICK MENU



By pressing to key for 3 seconds, quick menu is entered.

REVISION NUMBER



If these keys are pressed and held together, revision date appears as day, month and year.

While revision information displayed and if one of the pressed key is released, measured value is displayed again.

DEFAULT SETTINGS



Powered on device by pressing key. DPARR message appears on display and device reset to default settings.

ERROR MESSAGES



Measured current value is higher than maximum scale.



Measured current value is lower than minimum scale.

(*) There are only ITYP , U.T.R.R. , TYPE , DPNT , OPNT parameters in the devices those have no relay.

(**) The ADDR5 and BAUD parameters are only in the devices those have modbus.

ENDA EPV542 DIGITAL VOLTMETER MODBUS PROTOCOL ADDRESS MAP

HOLDING REGISTERS FOR R EXTENSION DEVICES

Holding Register Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission	Status Value
Decimal	Hex					
0000d	0x0000	word	Alarm output status	OTYP	Readable/Writable	no
0001d	0x0001	word	Input type selection	ITYP	Readable/Writable	U.T.R.R
0002d	0x0002	word	Voltage Conversion Rate	U.T.R.R	Readable/Writable	100
0003d	0x0003	word	LSW = Low Significant Word Upper limit of the setpoint	UPLL	Readable/Writable	100.0
0004d	0x0004	word	MSW = Most Significant Word (Hex. format must be sent 32bit MSW and LSW)			
0005d	0x0005	word	LSW = Low Significant Word Lower limit of the setpoint	LOLL	Readable/Writable	0
0006d	0x0006	word	MSW = Most Significant Word (Hex. format must be sent 32bit MSW and LSW)			
0007d	0x0007	word	Upper limit of the hysteresis value	HYSU	Readable/Writable	0 1
0008d	0x0008	word	Delay time for the upper limit alarm	OLYU	Readable/Writable	0
0009d	0x0009	word	The lower limit of the hysteresis value	HYSL	Readable/Writable	0 1
0010d	0x000A	word	Delay time for the lower limit alarm	OLYL	Readable/Writable	0
0011d	0x000B	word	Measurement method (0=AC, 1=DC, 2=ACDC)	TYPE	Readable/Writable	ACDC
0012d	0x000C	word	Decimal point. (0=X, 1=X.X, 2=X.XX, 3=X.XXX)	DPNT	Readable/Writable	0.0
0013d	0x000D	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.	OPTN	Readable/Writable	4
0014d	0x000E	word	Device address for RS485 network connection. Adjustable between 1-247.	RORS	Readable/Writable	1
0015d	0x000F	word	Baudrate (0=Off;1=1200;2=2400; 3=4800; 4=9600; 5=19200 6= 38400; 7= 57600; 8= 115200)	BAUD	Readable/Writable	OFF

*Holding Register Parameter Table (No Relay Models)

0000d	0x0000	word	Input type selection	ITYP	Readable/Writable	U.T.R.R
0001d	0x0001	word	Voltage Conversion Rate	U.T.R.R	Readable/Writable	100
0003d	0x0003	word	Measurement method (0=AC, 1=DC, 2=ACDC)	TYPE	Readable/Writable	ACDC
0004d	0x0004	word	Decimal point. (0=X.XX,1=X.X,2=X)	DPNT	Readable/Writable	0.0
0005d	0x0005	word	Sampling time of the measurement value	OPTN	Readable/Writable	4
0006d	0x0006	word	Device address for RS485 network connection. Adjustable between 1-247.	RORS	Readable/Writable	1
0007d	0x0007	word	Baudrate (0=Off;1=1200;2=2400; 3=4800; 4=9600; 5=19200 6= 38400; 7= 57600; 8= 115200)	BAUD	Readable/Writable	OFF

INPUT REGISTERS FOR EPV542-x-xxx-RSI DEVICES

Input Register Addresses		Data Type	Data Content	Parameter Name	Read/Write Permission
Decimal	Hex				
0000d	0x0000	word	Measured voltage 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=OFF; 1=ON)	--	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	Alarm output state (0=no; 1=yes)	OTYP	Readable/Writable	no

* Coil and Discrete input parameters are not available in the devices those have no relay

Note 1 : OTYP menu parameters can be used as "Holding Register" or "Coil."

Note 2 : Received "ModBus input register value" is multiplying by 1000 (based on DPNT) and mV value reached.

For example ;

if modbus value is 2842, (for DPNT = 2 (0.00)) 28.42x1000 = 28420 mV, ie 28.42V

if modbus value is 2842, (for DPNT = 3 (0.000)) 2.842x1000 = 2842 mV, ie 2.842V

Note 3 : UPLL and LOLL value should be written and read in 2 bytes. Calculations in the input register is also valid for that value.

For example ; Read value (for UPLL) is 150200 and if DPNT = 1, this value is actually (150.2).

It is, 150200d (24A88h) ; LSW = 4A88h, MSW = 0002h.