

# Network Analyzers

MPR-1 Series

NEW



MPR-1 Series

## MPR-1 Series Power Analyzer

MPR-1 Series DIN type power analyzers have been designed for the purpose of measurement of electrical parameters at machines and wall boxes. With its screen-free design it is a measurement device suitable for power monitoring software.



## PRODUCT SELECTION TABLE

Product Code	Dimensions	% THD I	% THD V	Harmonics 1-51.	RS-485	Digital Input	Digital Output	Analog Output (mA/V)	Relay Output	Number of Samples In One Period	Memory	Current - Voltage Unbalances	X5/X1	85-300 VAC/DC
MPR-14-S	DIN4				●					128			●	●
MPR-15S-22	DIN4	●	●		●	2	2			128	4 MB		●	●
MPR-16S-21	DIN4	●	●	51	●	2			1	128	4 MB	●	●	●
MPR-17S-23	DIN4	●	●	51	●	2	2	1		128	4MB	●	●	●

### Remote Monitoring Software:

With the energy management software developed by ENTES, energy consumption and quality can be monitored in real time by reading the values measured by devices. As a result, comprehensive energy monitoring and data storage is provided.

With the analysis of stored data, improvements in energy costs and sustainable savings are accomplished.



\* For more detailed information, see Page 84.

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## MEASURED PARAMETERS

Phase - Neutral Voltages ( $V_{LN}$ )	Neutral Current ( $I_n$ )	Active Power (P)	Active Energy Import (kWh or MWh)
Phase - Phase Voltages ( $V_{LL}$ )	Total Current ( $\Sigma I$ )	Reactive Power (Q)	Active Energy Export (kWh or MWh)
Average Phase-Neutral Voltage	Power Factor (P.F)	Apparent Power (S)	Reactive Energy Capacitive (kVarh or MVarh)
Average Phase-Phase Voltage	$\cos\phi$	Total Active Power ( $\Sigma P$ )	Reactive Energy Inductive (kVarh or MVarh)
Max. Demand	Frequency (Hz)	Total Reactive Power ( $\Sigma Q$ )	Apparent Energy (kVAh or MVAh)
Phase Currents (IL)	Max. / Min. Values	Total Apparent Power ( $\Sigma S$ )	

**MPR-14S**



Total Harmonic Distortion for Voltage (THD-V)

Total Harmonic Distortion for Current (THD-I)

**MPR-15S-22**



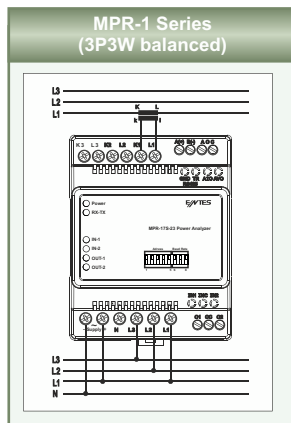
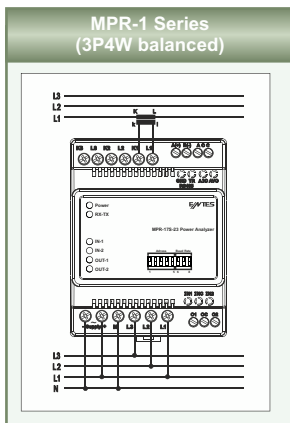
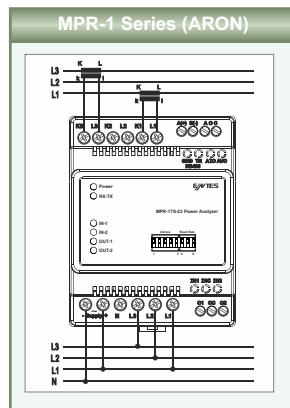
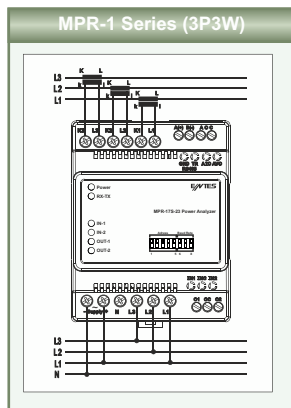
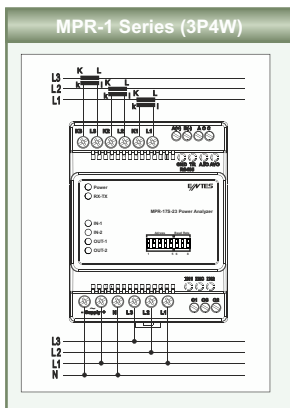
Voltage / Current Unbalances

1-51<sup>st</sup> Individual Voltage Harmonics

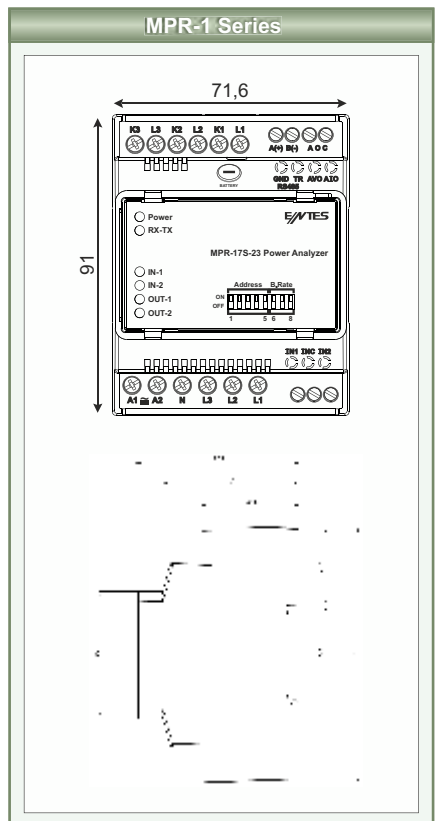
1-51<sup>st</sup> Individual Current Harmonics

**MPR-16S-21 / MPR-17S-23**

## Connection Diagram DIN4 - MPR-1 Series



## Dimensions



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## SPECIFICATIONS

	MPR-14S	MPR-15S-22	MPR-16S-21	MPR-17S-23
<b>ENCLOSURE</b>				
Dimensions	DIN4 Rail Mounting			
Protection Class	Terminals = IP20, Enclosure Protection Class = Ip40			
<b>MEASUREMENTS</b>				
<b>Voltage</b>				
Measurement Range	10-400 VAC (L-N) 10 - 690 VAC (L-L)			
Measurement Range with Transformer	1-400.0kV Transformer Ratio: 1-5000			
Accuracy	%0.5 ± 1 Digit			
Input Impedance	>1M Ω			
Burden (Input Load)	<0,5 VA			
<b>Current</b>				
Nominal Current	In : 5A / 1A			
Minimum Current	5 mA			
Measurement Range	50 mA - 5,5 A Accuracy : %0.5 ± 1 Digit			
Measurement Range with Transformer	50 mA -10000 A			
Burden	<1 VA			
Overload Current	1,2 In continuous			
Short Time Overload (1s)	10xIn			
<b>Power/Energy</b>				
Active Power	0 - 1 GW Accuracy : %1 ± 1 Digit			
Reactive Power	0 - 1 GVAr Accuracy : %1 ± 1 Digit			
Apparent Power	0 - 1 GVA Accuracy : %1 ± 1 Digit			
Power Factor	±1.00 Accuracy : ± 0,02			
Active Energy	0 - 99 999 999 kWh or MWh Accuracy : %1 class 1			
Reactive Energy	0 - 99 999 999 kVArh or MVarh Accuracy : %2 class 2			
Total Harmonic Distortion (THD)	-	-	THD V%, THD I%	
Individual Harmonics	-	-	1-51 Voltage (V) and Current (I)	
Demand Period	1,2,5,10,15,20,30,60 min.			
Frequency	45-65 Hz			
Number of Samples In One Period	128			
<b>SUPPLY</b>				
Supply Voltage	85 - 300 VAC/DC			
Operating Frequency	50/60 Hz			
Power Consumption	<6 VA			
<b>DIGITAL INPUT / OUTPUT</b>				
Digital Input Pulse Width	-	20/500 ms		
Digital Input Operating Voltage	-	12...48 VAC/DC		
Switching Current	-	Max 50mA		
Digital Output Supply Voltage	-	5-30 VDC (open collector)		
Pulse Duration	-	100ms pulse period 80ms pulse width		
Pulse Width	-	20-500 ms (Adjustable)		
<b>ANALOG OUTPUT</b>				
Current Output	-	0-20mA, 4-20mA, 4-24mA		
Voltage Output	-	0-5V, 0-10V, ±5V, ±10V		
<b>RELAY OUTPUT</b>				
Relay Output	-	1 NO Contact, 250 VAC/5A		
<b>TEMPERATURE INPUT</b>				
Sensor Input Type	-			
Thermocouple Type	-			
<b>MEMORY</b>				
Internal Memory Size	-	4MB		
<b>COMMUNICATION</b>				
Communication Interface/Protocol	RS 485 / MODBUS RTU			
Transfer Speed	2400-115200			
<b>AMBIENT CONDITIONS</b>				
Operating Temperature	- 10 / +55°C			
Storage Temperature	- 20 / +70°C			
Overvoltage Category	III			
Pollution Degree	II			
Ambient Humidity	%95			
<b>STANDARDS</b>				
Standards	EN 61557-12, EN 61326-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 EN 62053, EN 60068, EN 61010			
<b>CONNECTIONS</b>				
Mounting	Rail Mounting			
Connection Terminals	Screw Terminal			
Connection Types	3F4T, 3F3T, 3 Phase Aron, 3F4T Balanced, 3F3T Balanced			