Network Analyzers (LCD)

MPR-4 Series

NEW

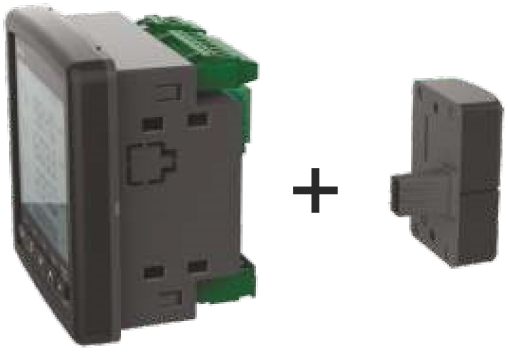
MPR-4 Series Network Analyzers

With their compact design and 45mm depth, MPR-4 series new generation network analyzers occupy less space in the panels and have a wide range of operating voltage (45-300 VAC/DC). In addition up to 16 MB internal memory, they offer wide I/O solutions with their replaceable modular structure based on customer requirements and areas of application.
MPR-4 Series offer a wide range of analog and digital inputs/outputs and relay outputs with their I/O modules.

PRODUCT SELECTION TABLE

Product Code	Dimensions / mm	3xV, 3xI, Frequency, W, VAr, VA,∠P, ∠Q, ∠S, kWh, kVArh,kVAh Demand, Max., Min. Cos∠, I neutral	Active Energy Class 0,5	Active Energy Class 1	% THD-I	% THD-V	Individual Harmonics	RS-485	Digital Input	Digital Output	Temperature Input	Analog Output	Relay Output	Clock (RTC)	Number of Samples In One Period	Memory	Voltage/Current Unbalances	Pulse Counter	Operating Hours Meter	Alarm	Event Logs	Profile Logs	X/5, X/1	plug&meter	24-60 VAC/DC	45-265 VAC/DC	Pcs/Box
MPR-45	96x96	●		●					*	*	*	*	*	●	128			*	●	●	●		●			●	24
MPR-45S	96x96	●		●				●	*	*	*	*	*	●	128	16MB		*	●	●	●	●	●			●	24
MPR-46	96x96	●		●	●	●			*	*	*	*	*	●	128			*	●	●	●		●			●	24
MPR-46S	96x96	●		●	●	●		●	*	*	*	*	*	●	128	16MB		*	●	●	●	●	●			●	24
MPR-47S	96x96	●		●	●	●	51	●	*	*	*	*	*	●	128	16MB	●	*	●	●	●	●	●			●	24
MPR-47S-D	96x96	●		●	●	●	51	●	*	*	*	*	*	●	128	16MB	●	*	●	●	●	●	●		●		24
MPR-47S-0,5	96x96	●	●		●	●	51	●	*	*	*	*	*	●	128	16MB	●	*	●	●	●	●	●			●	24
MPR-47S-D-0,5	96x96	●	●		●	●	51	●	*	*	*	*	*	●	128	16MB	●	*	●	●	●	●	●		●		24
MPR-47S-PM plug&meter	96x96	●		●	●	●	51	●	*	*	*	*	*	●	128	16MB	●	*	●	●	●	●		●		●	24

* Modular structure ● Standard



MPR-4 series network analyzers can be customized for various applications with I/O modules.

I/O Module Selection Table
2 DI (2 Digital Input, 5-24 VDC)
2 DO (2 Digital Output, 5-24 VDC)
2 Relay (2 Relay, 5A /250 VAC; NO)
2 DI-2 DO (2 Digital Input + 2 Digital Output, 5-24 VDC)
MM-202 (2 Analog Output, (0-10VDC)(0-5VDC)(±5 VDC)(±10VDC)(0-20mA)(0-24mA)(4-20mA))
4 DI-4 DO (4 Digital Input + 4 Digital Output 5-24 VDC)
Temperature Measurement (4 therm + 2 RTD)+(1 Digital Input - 1 Digital Output)

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.

entbus

* For more detailed information, see Page 84.

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MEASURED PARAMETERS

Phase - Neutral Voltages (V_{LN})	Neutral Current (In)	Active Power (P)	Active Energy Import (kWh or Mwh)
Phase - Phase Voltages (V_{LL})	Total Current (∑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∅	Total Active Power (∑P)	Reactive Energy Inductive (kVArh or MVArh)
Max. Demand	Frequency (Hz)	Total Reactive Power (∑Q)	Apparent Energy (kVAh or MVAh)
Phase Currents (IL)	Max. / Min. Values	Total Apparent Power (∑S)	

MPR-45 / MPR-45S

+

Total Harmonic Distortion for Voltage (THD-V)	Total Harmonic Distortion for Current (THD-I)

MPR-46 / MPR-46S

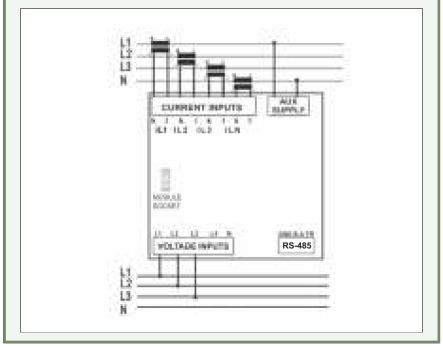
+

Voltage / Current Unbalances	1-51st Individual Voltage Harmonics	1-51st Individual Current Harmonics

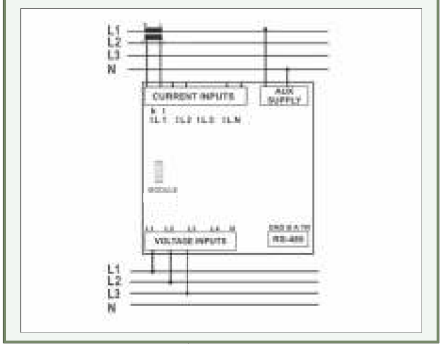
MPR-47S / MPR-47S-D / MPR-47S-05 / MPR-47S-D-0,5 / MPR-47S-PM

Connection Diagram PR19 - MPR 4 Series (96x96mm)

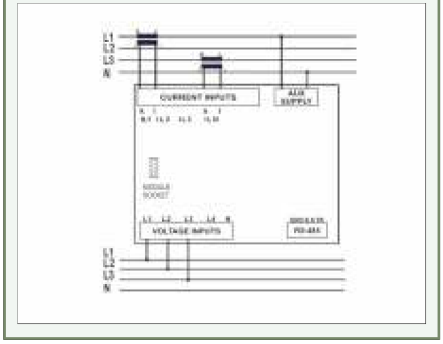
MPR-4 Series (3 Phase 3 Wire Connection)



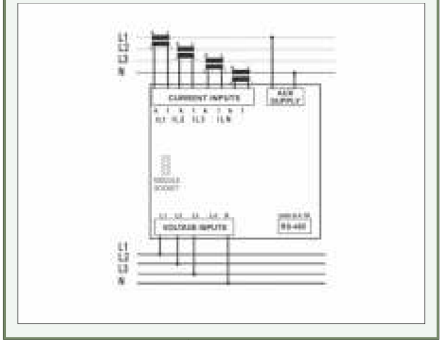
MPR-4 Series (3 Phase 3 Wire Balanced Conection)



MPR-4 Series (3 Phase, Aron connection)

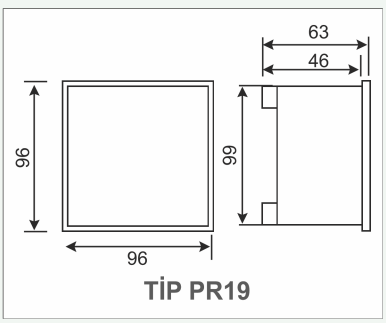


MPR-4 Series (3 Phase 4 Wire Connection)



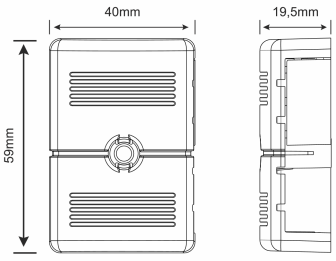
Dimensions

MPR-4 Series



TİP PR19

Module Dimensions



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SPECIFICATIONS

	MPR-45	MPR-45S	MPR-46	MPR-46S	MPR-47S	MPR-47S-D	MPR-47S-PM
ENCLOSURE							
Dimensions	96x96x45mm						
Protection Class	Terminals = IP20, Enclosure Protection Class = IP 51						
Display	LCD						
MEASUREMENTS							
VOLTAGE							
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						
Burden (Input Load)	<0,5 VA						
CURRENT							
Nominal Current	In : 5A / 1A						Compatible with Entes plug&meter current transformers.
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	0,5 VA						
Overload Current	1.2 x I nominal continuous						
Short Time Overload (1s)	10xIn						
POWER/ENERGY							
Active Power	Range: 0 - 1 GW,Accuracy: 1 % ± 1 Digit						
Reactive Power	Range: 0 - 1 GVAr,Accuracy: 1% ± 1 Digit						
Apparent Power	Range: 0 - 1 GVA, Accuracy: 1% ± 1 Digit						
Power Factor	Range: ±1.00, Accuracy : ± 0,02						
Active Energy	Range: 0 - 99 999 999 kWh or MWh, Accuracy: 1% class 1						
Reactive Energy	Range: 0 - 99 999 999 kVArh or MVArh, Accuracy : 2% class 2						
Individual Harmonics	-				2-51 Voltage(V) and Current(I)		
Demand Period	1,2,5,10,15,20,30,60 minute adjustable						
Frequency	45-65 Hz						
Number of Samples In One Period	128						
SUPPLY							
Operating Voltage	45 - 300 VAC/DC					24 - 60 VAC/DC	45 - 300 VAC/DC
Operating Frequency	50/60 Hz						
Power Consumption	<5 VA						
PULSE OUTPUT							
Energy Pulse Output	* Active Energy Output (1kWh/pulse - 50MWh/pulse) *Reactive Energy Output (1kVArh/pulse - 50MVArh/pulse)						
Switching Current	* Max. 50 mA						
Switching Voltage	* 5..24 VDC						
Pulse Width	* 100 …2500 ms						
Maximum Voltage	* Max. 30 VDC						
MEMORY							
Internal Memory Size	-	16MB	-	16MB			
COMMUNICATION							
Communication Interface/Protocol	-	RS-485 / MODBUS RTU	-	RS-485 / MODBUS RTU			
Transfer Speed	-	2400-115200	-	2400-115200			
AMBIENT CONDITIONS							
Operating Temperature	- 5 / +55°C						
Storage Temperature	- 25 / +70°C						
Overvoltage Category	III						
Pollution Degree	II						
Ambient Humidity	%90						
STANDARDS							
Applied Security 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						
CONNECTIONS							
Mounting	Front Panel Mounting with Rear Terminals						
Connection Terminals	Screw Terminal with Socket						
Connection Types	3P4W, 3P3W, 3 Phase (Aron), 3P4W Balanced, 3P3W Balanced						

* Provided with digital output I / O modules