



Power Quality and Energy

The products in “ENTES Power Quality and Energy” group are designed to measure various electrical parameters. With their communication features all measurements can be tracked from a single monitoring center. Energy quality and efficiency analysis can be performed with network analyzers in electrical distribution/transmission systems, such as industrial facilities and buildings.

Network Analyzers

- MPR-3X Series
- MPR-4X Series
- MPR-6X Series
- MPR-5X Series
- EPM-07 Series

Power and Energy Meters

- EPR-04 Series
- ES Series

Network Analyzers (LCD)

MPR-3X Series

NEW



MPR-3X Series (72x72)

MPR-3X Series New Generation Mini Network Analyzers

With 72x72x50mm size, MPR 3X series mini network analyzers occupies smaller space. These analyzers are preferred in Rack type panels due to their compact design and used in applications such as UPS, machine control panels, data processing and system rooms and security control. MPR- 3X series can detect the status and enable the control of the devices (breakers, keys, switches etc.) in the field with their digital inputs and outputs.



PRODUCT SELECTION TABLE

Product Code	Dimensions / mm	3xV, 3xI, Frequency, W, VAr, VA, P, Q, S, kWh, kVAh, Demand, Max., Min. Cos , Neutral	THD-I	THD-V	RS-485	Digital Input	Digital Output	Pulse Output	Real Time Clock (RTC)	Operating Hour Meter	Alarm	Event Logs	Outage Records	PCs/Box
MPR-32	72x72	●						●	●					24
MPR-34-11	72x72	●	●	●		1	1	●	●	●	●	●	●	24
MPR-34S-11	72x72	●	●	●	●	1	1	●	●	●	●	●	●	●
MPR-34-20	72x72	●	●	●		2		●	●	●	●	●	●	24
MPR-34S-20	72x72	●	●	●	●	2		●	●	●	●	●	●	24

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 68.

Network Analyzers (LCD)

MPR-3X Series



MEASURED PARAMETERS

Phase - Neutral Voltages (V_{LN})	Neutral Currents (I_n)	Active Power (P)
Phase - Phase Voltages (V_{LL})	Total Current (I)	Reactive Power (Q)
Max. / Min. Values	Phase Currents (I_L)	Apparent Power (S)
Power Factor (P.F)	Total Active Power (P)	Active Energy- Import (kWh or Mwh)
Cos ϕ	Total Reactive Power (Q)	Active Energy-Export (kWh or MWh)
Frequency (Hz)	Total Apparent Power (S)	Reactive Energy Inductive (kVArh or MVArh)
Max. Demand		Reactive Energy Capacitive (kVArh or MVArh)

MPR-32



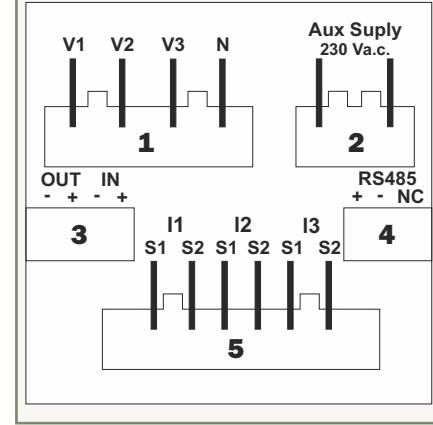
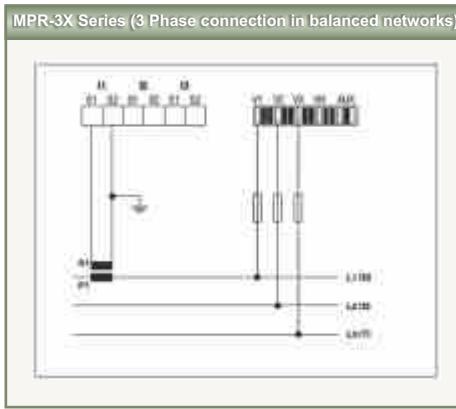
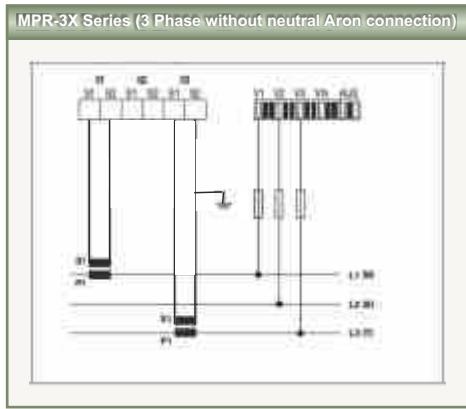
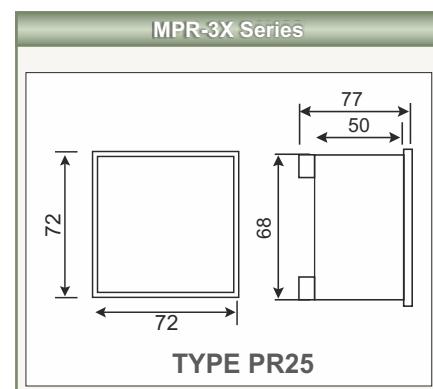
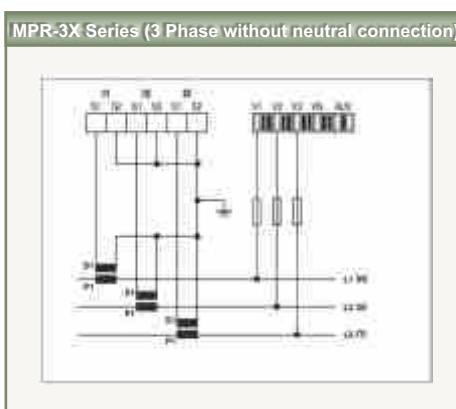
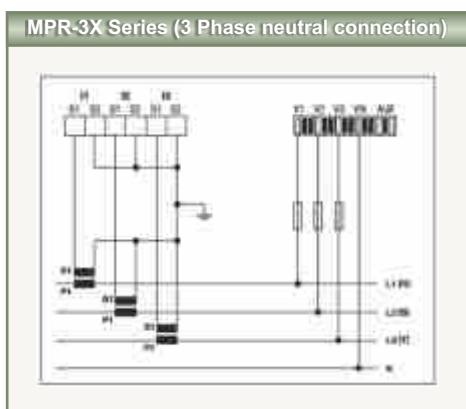
Total Harmonic Distortion for Voltage (THD-V)

Total Harmonic Distortion for Current (THD-I)

MPR-34-11 / MPR-34S-11 / MPR-34-20 / MPR-34S-20

Connection Diagram PR25 - MPR-3X Series (72x72mm)

Dimensions



Network Analyzers (LCD)

MPR-3X Series

SPECIFICATIONS

	MPR-32	MPR-34-11	MPR-34S-11	MPR-34-20	MPR-34S-20				
ENCLOSURE									
Dimensions	72x72x50 mm								
MEASUREMENTS									
Voltage	LCD, with backlight								
Measurement Range	10-300 VAC (L-N), 10-500 VAC (L-L)								
Measurement Range with Transformer	10-999 kV								
Voltage Accuracy	0,5% ± 1 digit								
Input Impedance	1,8 MΩ								
Burden (Input Load)	<0,5 VA								
Current									
Current Accuracy	0,5% ± 1 digit								
Nominal Current	1A,5A								
Measurement Minimum Current	5mA								
Measurement Range	50mA-5A 0,5% ± 1 digit								
Measurement with Transformer	50mA-10kA								
Burden (Input Load)	<1 VA								
Overload Current	1,2 In								
Power/Energy									
Active Power Accuracy	0,5% ± 1 digit								
Reactive Power Accuracy	1(s)% ± 1 digit								
Active Energy Accuracy	Class 1								
Reactive Energy Accuracy	Class 2								
Active Power Range	0-1 GW								
Reactive Power Range	0-1 GVar								
Apparent Power Range	0-1 GVA								
Active Energy Indicating Range	9 999 999,9 kWh								
Reactive Energy Indicating Range	9 999 999,9 kVArh								
SUPPLY									
Supply Voltage	185-315 VAC								
Supply Frequency	45-65 Hz								
Power Consumption	<4 VA								
INPUT/OUTPUT STRUCTURE									
Digital Input Pulse Width	-	20/500 ms							
Digital Input Operating Voltage	-	12...48 VAC/DC							
Switching Current	-	Max. 50mA							
Switching Voltage	-	Max. 30 VDC							
Pulse Width	-	20-500 ms (Adjustable)							
AMBIENT CONDITIONS									
Operating Temperature	-10 / +55°C								
Storage Temperature	-20 / +70°C								
Ambient Humidity	95%								
STANDARDS									
Applied Standards	IEC 61326-1,61010,62053,61557-12								
CONNECTIONS									
Mounting	Front Panel Mounting								
Connection Terminals	Screw terminal with socket								
Connection Types	3 phase neutral, 3 phase, 3 phase (Aron)								
COMMUNICATION									
Communication Interface/Protocol	-	-	RS-485/ MODBUS RTU	-	RS-485/ MODBUS RTU				
Transfer Speed	-	-	1200 - 115200 bps	-	1200 - 115200 bps				

Network Analyzers (LCD)

MPR-4X Series

NEW



MPR-4X Series (96x96)

MPR-4X Series New-Generation Network Analyzers

With their compact design and 45mm depth, MPR-4X series new generation network analyzers occupy less space in the panels and have a wide range of operating voltage (45-265 VAC/DC). In addition up to 8 MB internal memory, they offer wide I/O solutions with their replaceable modular structure based on customer requirements and areas of application.

MPR-4X 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, kVAh,Demand, Max., Min.,Cos , Neutral	THD-I	THD-V	Harmonics 1-51st	RS-485	Digital Input	Digital Output	AImA/V	AO mA	AO V	Relay Output	Pulse Output	Real Time Clock	Memory	Voltage/Current Unbalances	Pulse Counter	Operating Hours Meter	Alarm	Event Logs	Outage Records
MPR-45	96x96	●				*	*	*	*	*	*	*	*	●			●	*	*	●	
MPR-45S	96x96	●				●	*	*	*	*	*	*	*	●	8MB		●	●	●	●	
MPR-46	96x96	●	●	●		*	*	*	*	*	*	*	*	●			*	●	*	●	
MPR-46S	96x96	●	●	●		●	*	*	*	*	*	*	*	●	8MB		*	●	●	●	
MPR-47S	96x96	●	●	●	●	●	*	*	*	*	*	*	*	●	8MB	●	*	●	●	●	

* Modular structure ● Standard

I/O Modules:

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

I/O Module Selection Table	
Type	Operating Range
Digital Output Module (2DO)	5-24 VDC
Digital Input Module (2DI)	5-24 VDC
Digital I/O Module (2DI-2DO)	5-24 VDC
Relay Output Module (2 Relays)	5A/250 VAC;NO
Analog Output Module (2 AO)	(0/2-10V);(0/4-20mA)
Analog Input Module (2 AI)	(0/2-10V);(0/4-20mA)

* I/O module can be attached to a single device

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, data storage, optimum energy consumption control with the analysis of stored data, improvements in energy costs, and sustainable goals for energy systems are accomplished.



* For more detailed information, see Page 68.

Network Analyzers (LCD)

MPR-4X Series

MEASURED PARAMETERS

Phase - Neutral Voltages (V_{LN})	Neutral Currents (I_n)	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)	Voltage/Current Unbalances
Phase Currents (I_L)	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)
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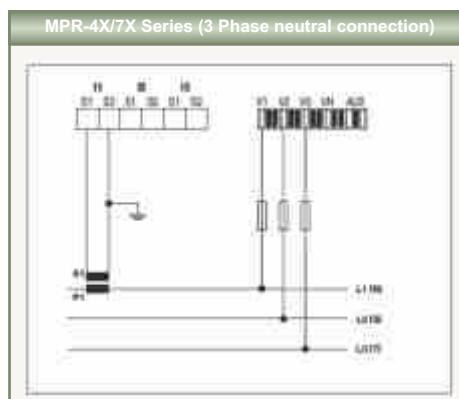
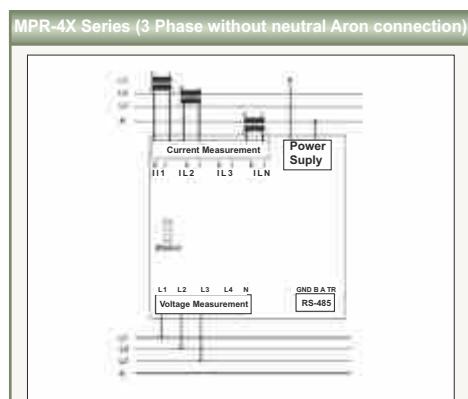
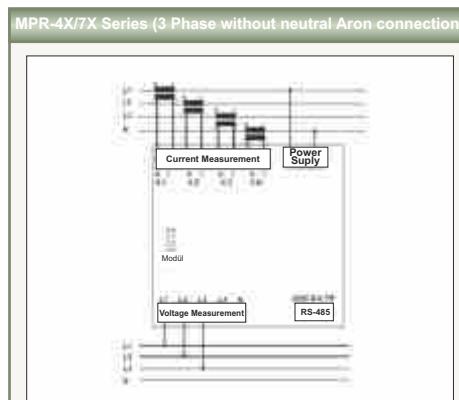
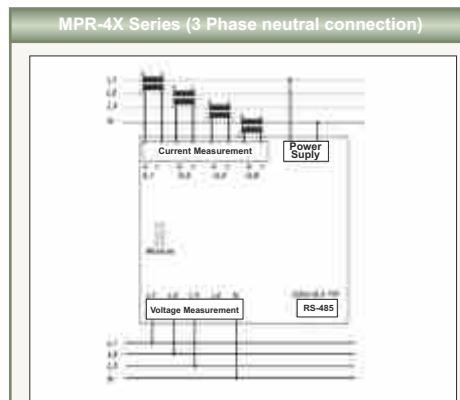
MPR-46 / MPR-46S



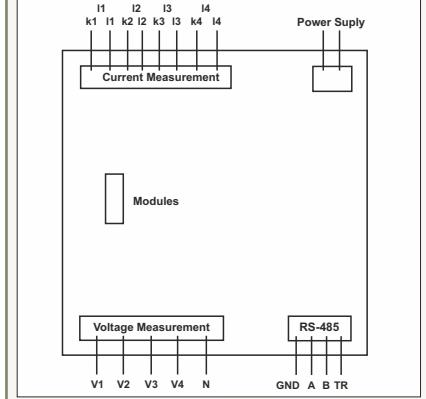
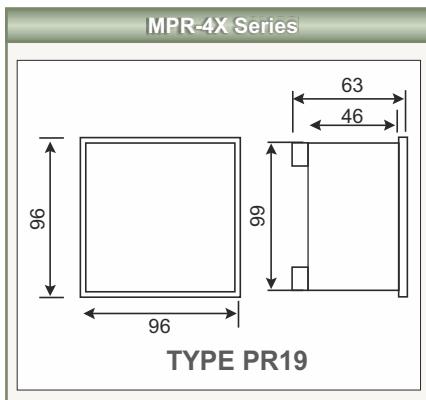
Voltage / Current Unbalances	1-51 st Individual Voltage Harmonics	1-51 st Individual Current Harmonics
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MPR-47S

Connection Diagram PR19 - MPR 4X Series (96x96mm)



Dimensions



Network Analyzers (LCD)

MPR-4X Series

SPECIFICATIONS

	MPR-45	MPR-45S	MPR-46	MPR-46S	MPR-47S
ENCLOSURE					
Dimensions			96x96x45mm		
Protection Class			Terminals = IP20, Enclosure Protection Class = IP51		
Display			LCD, with backlight		
MEASUREMENTS					
VOLTAGE					
Measurement Range			5 - 690 VAC (L-N) 5-400 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		
CURRENT					
Nominal Current			In : 5A / 1A		
Minimum Current			5 mA		
Measurement Range			50 mA - 6 A Accuracy: 0.5% ± 1 Digit		
Measurement Range with Transformer			50 mA -10000 A		
Burden			0,5 VA		
Overload Current			1,2 In continuous		
Short Time Overload (1s)			10xIn		
POWER/ENERGY					
Active Power			Range: 0 - 1 GW, Accuracy: 0.5% ± 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		
Demand Period			1,2,5,10,15,20,30,60 minimum adjustable		
Frequency			45-65 Hz		
SUPPLY					
Operating Voltage			45 - 265 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	-	8MB	-		8MB
COMMUNICATION					
Communication Interface/Protocol	-	RS-485 / MODBUS RTU	-		RS-485 / MODBUS RTU
Transfer Speed	-	2400-115200 bps	-		2400-115200 bps
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			3 phase neutral, 3 phase, 3 phase (Aron)		

(* Provided with digital output I / O modules)

Network Analyzers (LCD)

MPR-50 / MPR-52S / MPR-60S / MPR-63



Power and Energy Measuring for all Series

MPR-50: Network Analyser

MPR-52S-10: Network Analyser with THD Measurement RS-485 (MODBUS) and Alarm Contact

MPR-60S: Network Analyser with THD Measurement

RS-485 (MODBUS), Alarm Contact and 1MB Memory

MPR-63: Network Analyser with THD, up to 31st Harmonics Measurement, RS-485 (MODBUS), Alarm Contact and 1MB Memory



PRODUCT SELECTION TABLE

Product Code	THD-I, THD-V	2-31st Harmonics	Neutral Current	Alarm Contact	Digital Input	Energy Pulse Output	RS-485 Comm.	0/2-10V Analog Output	0/4-20mA Analog Output	Memory	Real Time Clock	LCD Display	Pcs/Box
MPR-50		●								●		●	8
MPR-52S-10	●		●	●	●		●				●	●	8
MPR-60S	●		●	●	●		●	●	●	●	●	●	8
MPR-60S-10	●		●	●	●		●			●	●	●	8
MPR-60S-20	●		●	●	●		●	●	●	●	●	●	8
MPR-60S-21	●		●	●	●		●	●	●	●	●	●	8
MPR-60S-40	●		●	●	●		●		●	●	●	●	8
MPR-60S-41	●		●	●	●		●	●	●	●	●	●	8
MPR-63	●	●	●	●	●		●	●	●	●	●	●	8
MPR-63-10	●	●	●	●	●		●			●	●	●	8
MPR-63-20	●	●	●	●	●		●	●	●	●	●	●	8
MPR-63-21	●	●	●	●	●		●	●	●	●	●	●	8
MPR-63-40	●	●	●	●	●		●		●	●	●	●	8
MPR-63-41	●	●	●	●	●		●	●	●	●	●	●	8
MPR-63-42	●	●	●	●	●		●	2	●	●	●	●	8

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, data storage, optimum energy consumption control with the analysis of stored data, improvements in energy costs, and sustainable goals for energy systems are accomplished.



* For more detailed information, see Page 68.

Network Analyzers

MPR-50 / MPR-52S / MPR-60S / MPR-63

MEASURED PARAMETERS

Phase - Neutral Voltages (V_{LN})	Neutral Currents (I_n)	Active Power (P)	Active Energy Import (kWh veya Mwh)
Phase - Phase Voltages (V_{LL})	Total Current (I)	Reactive Power (Q)	Active Energy Export (kWh veya Mwh)
Average Phase-Neutral Voltage	Power Factor (P.F)	Apparent Power (S)	Inductive Reactive Energy (kVArh veya MVArh)
Average Phase-Phase Voltage	Cos	Total Active Power (P)	Capacitive Reactive Energy (kVArh veya MVArh)
Max. Demand	Frequency (Hz)	Total Reactive Power (Q)	
Phase Currents (IL)	Max. / Min. Values	Total Apparent Power (S)	

MPR-50



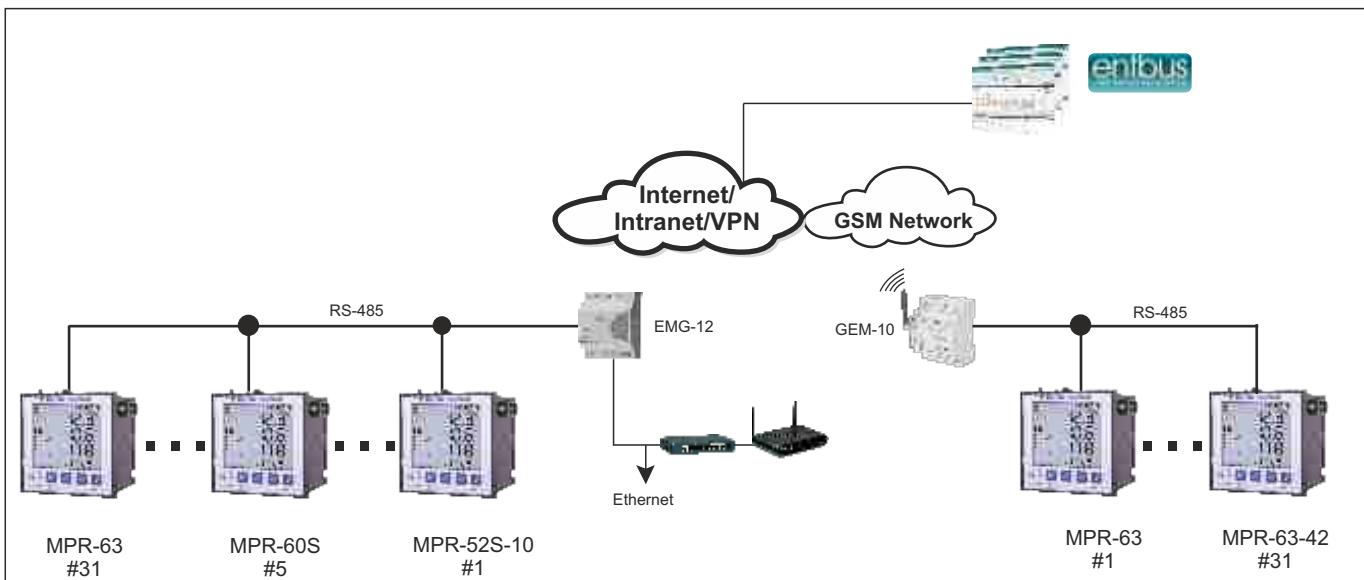
Total Harmonic Distortion for Voltage (THD-V)	Total Harmonic Distortion for Current (THD-I)
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MPR-52S / MPR-60S



1-31 st Individul Voltage Harmonics	1-31 st Individul Current Harmonics
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MPR-63



Network Analyzers

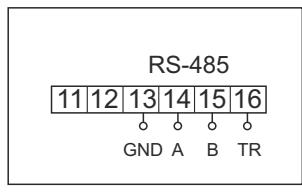
MPR-50 / MPR-52S / MPR-60S / MPR-63

SPECIFICATIONS

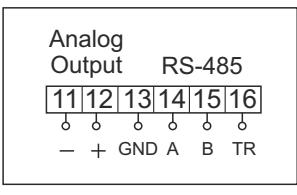
	MPR-50	MPR-52S-10	MPR-60S	MPR-63
ENCLOSURE				
Dimensions		96x96mm PR19		
Protection Class		IP 40 front panel; IP 54 optional		
Weight		0,75kg/pcs		
Display		3,6" LCD, with backlight		
MEASUREMENTS				
Voltage				
Measurement Range		1.0-300 VAC (L-N); 2.0-500 VAC (L-L)		
Measurement Range with Transformer		1-400,0kV Transformer Ratio: 1.0-4000.0		
Accuracy		0.5% ± 2 digits		
Input Impedance		1.8MΩ		
Burden (Input Load)		<0.5 VA		
Overload Voltage		1.2 x measurement range		
Current				
Nominal Current		In : 5A		
Minimum Current		5 mA		
Measurement Range with Transformer		5 mA - 5,5 A Accuracy : 0.5% ± 2 digits		
Measurement		5 mA -10000 A Transformer Ratio : 1 - 5000.0		
Burden		0,5 VA		
Overload Current		2xIn		
Short-Time Overload		10xIn		
Power/Energy				
Active Power		Range: 0 - 4000 MW, Accuracy: 1% ± 2 digits		
Reactive Power		Range: 0 - 4000 MVar, Accuracy: 2% ± 2 digits		
Apparent Power		Range: 0 - 4000 MVA, Accuracy: 2% ± 2 digits		
Power Factor		Range: ±1.00 Accuracy: ± 0,01		
Active Energy		Range: 0 - 99 999 999 kWh or Mwh Accuracy: 1% ± 2 digits		
Reactive Energy		Range: 0 - 99 999 999 kVArh or MVArh Accuracy: 2% ± 2 digits		
Demand Period		15 min.		
Frequency		45-65 Hz		
SUPPLY				
Operating Voltage		85 - 265 VAC/DC		
Operating Frequency		50/60 Hz		
Power Consumption		<6 VA		
INPUT/OUTPUT/STRUCTURE				
Digital Input	-	2	2 (MPR60S-10/20/40)	2 (MPR63-10/20/40/42)
Digital Output	-	-	2 (MPR60S-21/41)	2 (MPR63-21/41)
Analogue Output	-	-	0/4-20 mA (MPR60S-40/41; MPR63-40/41/42) 0/2-10 V (MPR60S-20/21; MPR63-20/21)	
Contact Output	-		2 NO contact 5A ; 1250 VA cosφ=1.00	
Energy Pulse Output		-	Active energy output (1kWh/pulse - 50MWh/pulse) Reactive energy output (1kVArh/pulse - 50MVArh/pulse)	
Delay Time		-	Voltage Parameters 0-300 sec; Current and power parameters 0-900 sec; Frequency,PF,Cosφ and Harmonic parameters 0-600 sec	
PULSE OUTPUT				
Switching Current	-		Max. 50 mA	
Switching Voltage	-		5..24 VDC	
Pulse Width	-		100 ...2500 ms	
Maximum Voltage	-		Max. 30 VDC	
MEMORY				
Data Record	-		Selectable 28 parameters with time stamp (15000 record)	
Memory Size	-		1MB	
COMMUNICATION				
Communication Interface/Protocol	-		RS-485 / MODBUS RTU	
Transfer Speed	-		1200 - 38400 bps	
AMBIENT CONDITIONS				
Ambient Temperature		- 5 / +55°C		
Storage Temperature		- 25 / +70°C		
Overvoltage Category		III		
Pollution Degree		II		
Ambient Humidity		90%		
STANDARDS				
Applied Security Standards		EN-61010-1		
Applied EMC Standards		EN-61000-6-2, EN-61000-6-4		
Applied Mechanical Endurance Standards		EN 60529		
CONNECTIONS				
Mounting		front panel mounting		
Connection Terminals		screw terminal with socket		
Connection Types		3 phase neutral (3P4W); 3 phase (3P3W); 3 phase (Aron)		

Network Analyzers

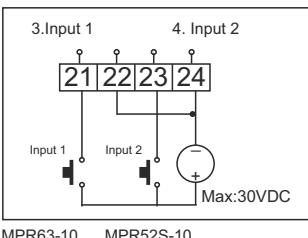
MPR-50 / MPR-52S / MPR-60S / MPR-63



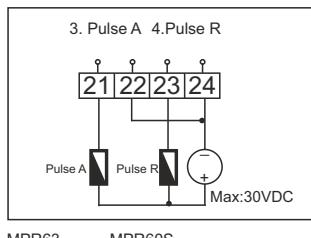
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MPR63-10 MPR60S-10



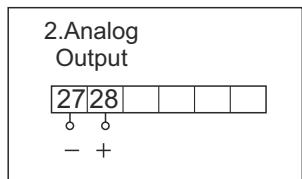
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MPR63-42



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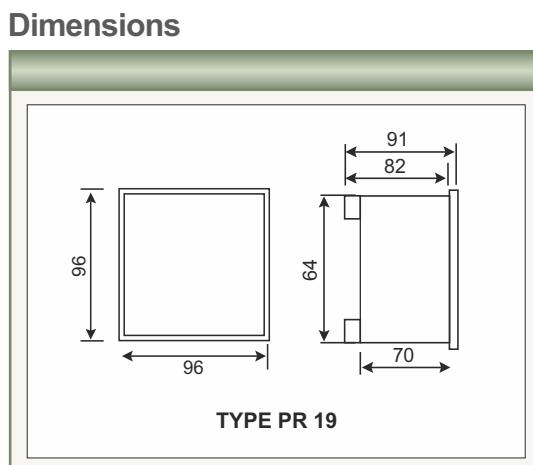
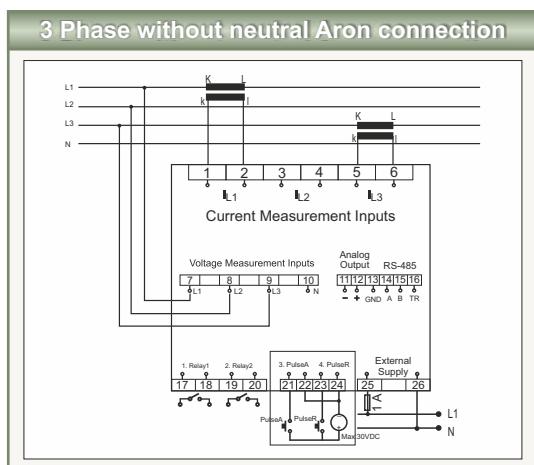
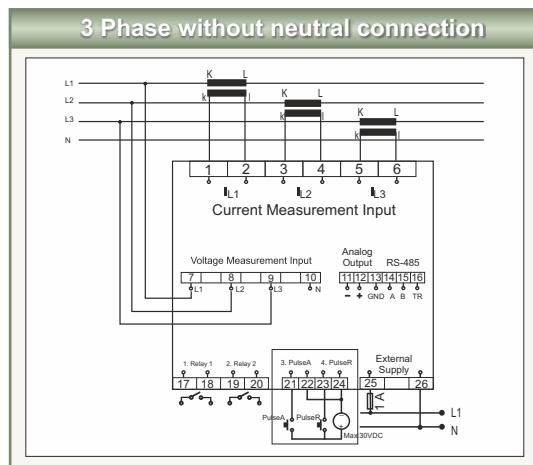
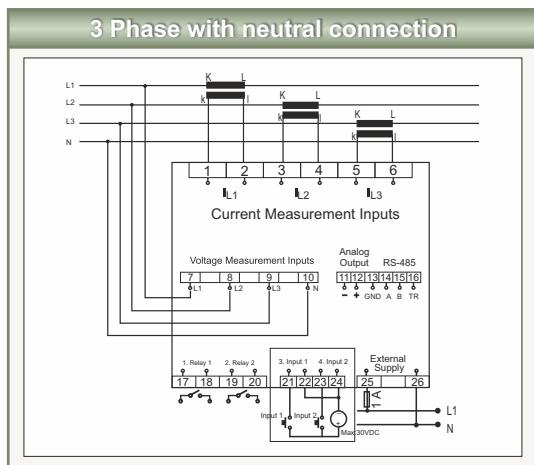


MPR63 MPR60S
MPR63-21 MPR60S-21
MPR63-41 MPR60S-41



MPR63-42

Connection Diagram (PR19- 96x96mm)



Connection diagrams are given as references. For the latest connection diagrams, please refer to the user manual or www.entes.com.tr.

Network Analyzers

MPR-53 / EPM-07



Power and Energy Measuring for all Series

MPR-53 / EPM-07 series network analyzers allow monitoring more than 50 electrical parameters on their display

EPM-07 : Network Analyzer

EPM-07S : Network Analyzer with RS-485 (MODBUS)

MPR-53 : Network Analyzer with THD measurement

MPR-53S : Network Analyzer with THD measurement and RS-485 (MODBUS)

MPR-53CS : Network Analyzer with THD measurement , RS-485, Pulse Counter, Digital Hour Meter, Alarm Contact



PRODUCT SELECTION TABLE

Product Code	THD-I	THD-V	Neutral Current	Digital Input	Energy Pulse Output	Dual Energy Meter	6 Different Energy Calculation Methods	CT-25 (120A)	Alarm Contact	Digital Hour Meter	Pulse Counter	RS-485 Comm.	Pcs/Box
MPR-07-96	●	●	●	●	●	●							12
MPR-07-DIN	●	●	●	●	●	●							12
MPR-07S-96	●	●	●	●	●	●						●	12
MPR-07S-DIN	●	●	●	●	●	●						●	12
MPR-53-96	●	●	●	●	●	●							12
MPR-53-DIN	●	●	●	●	●	●							12
MPR-53S-DIN	●	●	●	●	●	●						●	12
MPR-53CS-DIN	●	●	●	●	●	●	●		●	●	●	●	12
MPR-53S-96	●	●	●	●	●	●						●	12
MPR-53CS-96	●	●	●	●	●	●	●		●	●	●	●	12
MPR-53S-DIN-CT25	●	●	●	●	●	●	●	●				●	12
MPR-07S-DIN-CT25	●	●	●	●	●	●						●	12



CT-25 is a unique solution to reduce measurement costs in low current systems (up to 120A).

* For CT-25, see page 65

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, data storage, optimum energy consumption control with the analysis of stored data, improvements in energy costs, and sustainable goals for energy systems are accomplished.



* For more detailed information, see Page 68.

Network Analyzers

MPR-53 / EPM-07

MEASURED PARAMETERS

Phase - Neutral Currents (V_{LN})	Total Current (I)	Apparent Power (S)	Reactive Energy Inductive (kVArh or MVarh)
Phase - Phase Voltages (V_{LL})	Cos	Total Active Power (P)	Reactive Energy-Capacitive (kVArh or MVarh)
Average Phase-Neutral Voltage	Frequency (Hz)	Total Reactive Power (Q)	Maximum Demand
Average Phase - Phase Voltage	Active Power (P)	Total Apparent Power (S)	Maximum / Minimum Values
Phase Currents (I_L)	Reactive Power (Q)	Active Energy-Import (kWh or Mwh)	
Neutral Current (I_n)		Active Energy-Export (kWh or Mwh)	

EPM-07 / 07S



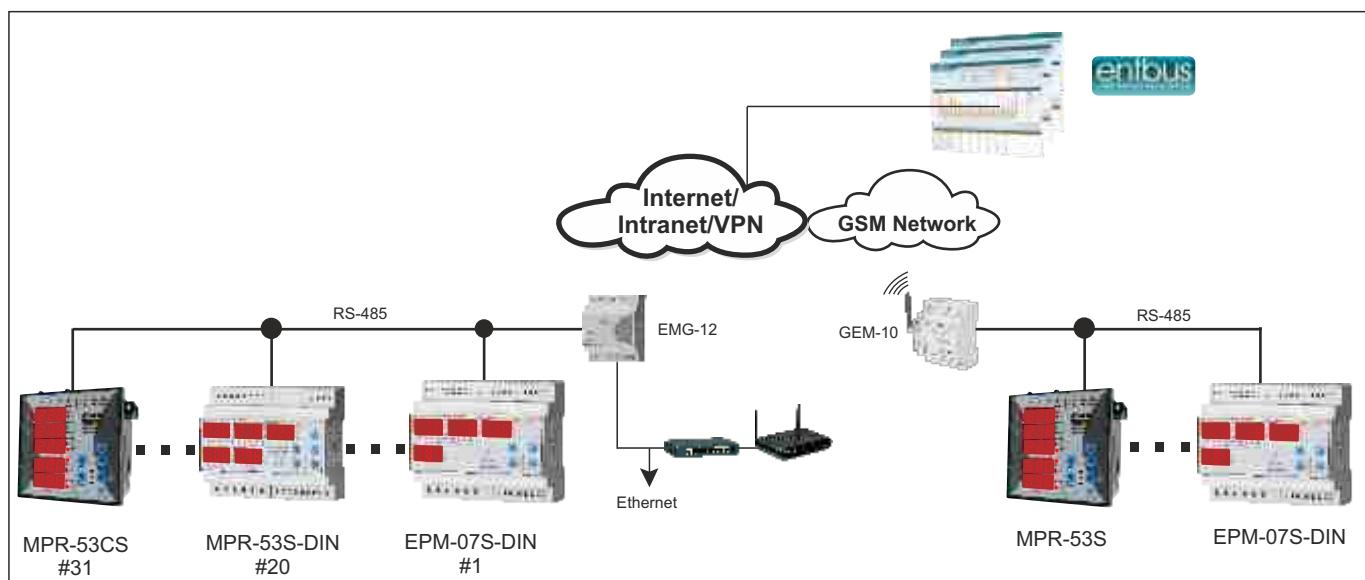
Total Harmonic Distortion for Voltage (THD-V)	Total Harmonic Distortion for Current (THD-I)
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MPR-53 / MPR-53S



Digital Hour Meter	Digital Pulse (Counter)
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MPR-53CS



Network Analyzers

MPR-53 / EPM-07

SPECIFICATIONS

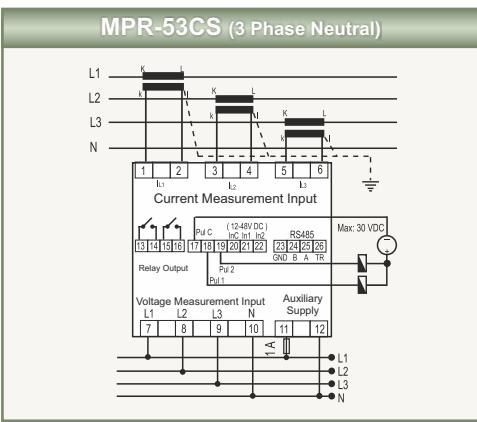
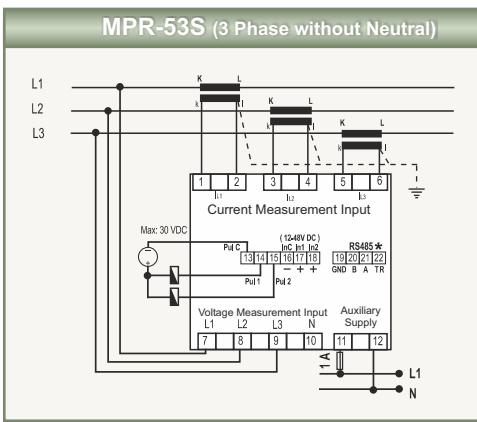
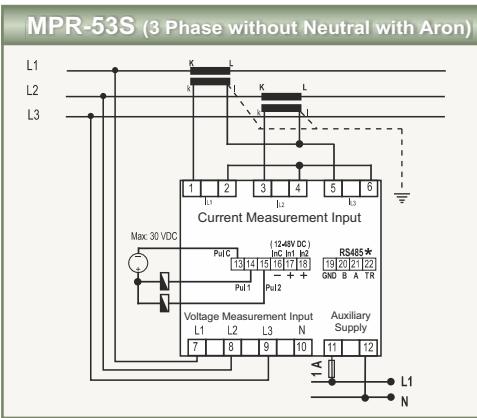
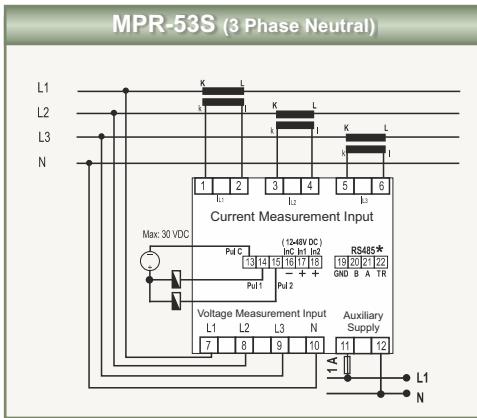
	EPM-07	EPM-07S	MPR-53S	MPR-53CS	MPR-53
ENCLOSURE					
Dimensions			96x96mm Pr19, DIN6 PK26		
Protection Class			IP40 Front Panel, IP54 Optional		
Weight			0,6kg/pcs		
Display			Red LED; height 10mm		
MEASUREMENTS					
Voltage					
Measurement Range			10-300 VAC (L-N), 10-500 VAC (L-L)		
Measurement Range with Transformer			10-200kV, Voltage transformer ratio: 0.1-4000.0		
Accuracy			1%±1 digit [(10%-110%)xFull scale]		
Input Impedance			1.8 MΩ		
Burden (Input Load)			<0.5 VA		
Current					
Nominal Current			In: 5,5A		
Minimum Current			50mA		
Measurement Range			50mA-5,5A Accuracy: 1%±1 digit [(10%-110%)xFull scale]		
Measurement Range with Transformer			50mA-10.000A Transformer ratio: 1-2000		
Burden			<1 VA		
Over Load Current			1,2 In		
Power/Energy					
Active Power			Range: 0-215 MW Accuracy: 1%±1 digit [(10%-110%)xFull scale]		
Reactive Power			Range: 0-215 MVAr, Accuracy: 1%±1 digit [(10%-110%)xFull scale]		
Apparent Power			Range: 0-215 MVA, Accuracy: 1%±1 digit [(10%-110%)xFull scale]		
Power Factor			4 quadrant		
Active Energy			Range: 0-99 999 999 999,9 kWh		
Reactive Energy			Range: 0-99 999 999 999,9 kVArh		
Demand Period			1-60 minute		
Frequency			45-65 Hz		
SUPPLY					
Operating Voltage			110 VAC/230 VAC ±% 10 or 45-265 110 VAC/DC		
Operating Frequency			45-65 Hz		
Power Consumption			<4VA		
INPUT/OUTPUT STRUCTURE					
Digital Input			2		
Digital Input Pulse Width			20ms.		
Digital Input Operating Voltage			12...48 VAC/DC		
Digital Hour Meters			3 hourmeters HH HH HH HH.HH, total hours (non-resettable), run hours (resettable), setpoint hours (resettable). (for MPR-53CS)		
Delay Time			Delay on and delay off 0-999,9 sec (for MPR-53CS)		
Contact Output			2NO contact 5A; 1250VA (for MPR 53 CS)		
Energy Pulse Output			NPN transistor		
Switching Current			Maximum 50 mA		
Switching Voltage			5..24VDC Maximum 30V DC		
Pulse			100ms pulse period, 80ms pulse width		
COMMUNICATION					
Communication Interface/Protocol	-		MODBUS RTU(RS-485)		-
Parity	-		no, odd, even		-
Address	-		1_247		-
Transfer Speed	-		2400-38400 bps		-
AMBIENT CONDITIONS					
Ambient Temperature			-5 / +50°C		
Over Voltage Category			III		
Pollution Degree			II		
STANDARDS					
Applied Security Standards			EN 61010-1		
Applied EMC Standards			EN 61000-6-2, EN 61000-6-4		
Applied Mechanical Endurance Standards			EN 60529		
CONNECTIONS					
Mounting			Front Panel Mounting (PR 19) / Rail mounting (PK 26)		
Connection Terminals			screw terminal with socket		
Connection Types			3 phase neutral, 3 phase, 3 phase (Aron)		



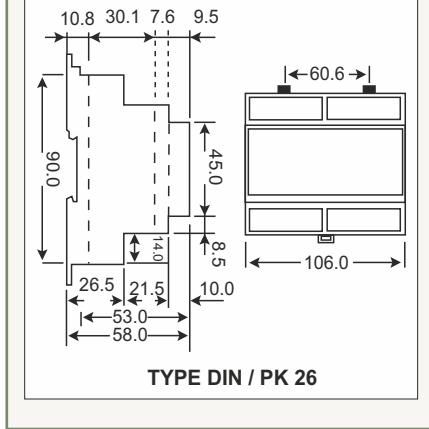
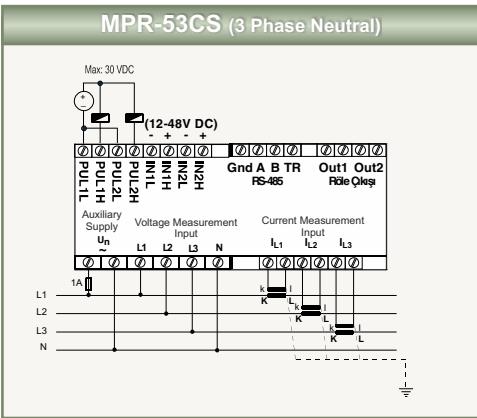
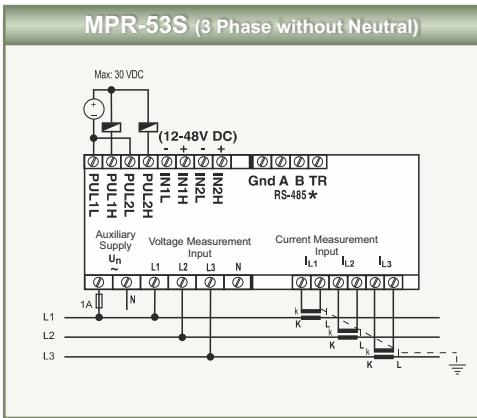
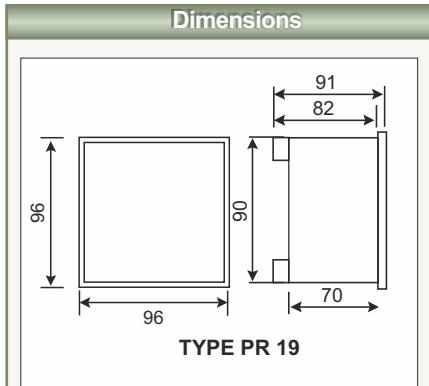
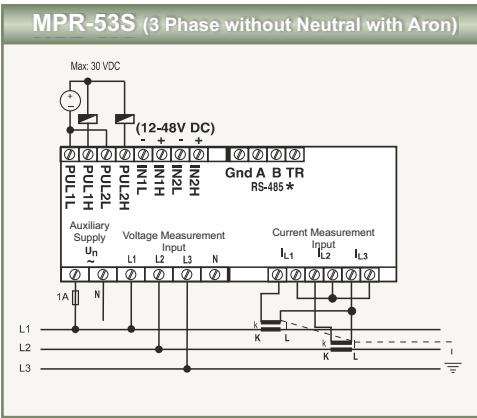
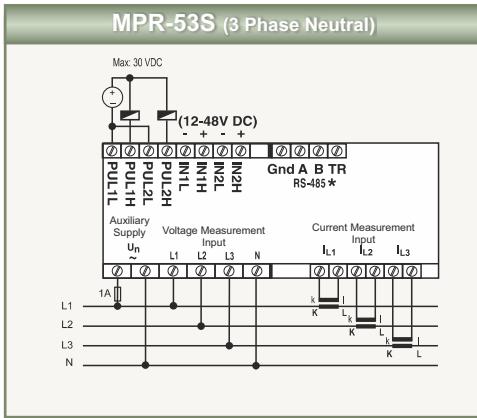
Network Analyzers

MPR-53 / EPM-07

Connection Diagram (PR19- 96x96mm)



(PK 26 - DIN6)



* RS-485 terminals are standard for EPM-07S and MPR-53S