**MPR-63**

**Modbus / Ethernet Gateway**

**Modbus**   **Memory**   **Analogue Output**   **Max. Demand**

**Harmonics**   **Digital Input**   **Alarm Contact**

## General

- **MPR-50**  : Network Analyser.
- **MPR-52S** :  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 31th Harmonics measurement, RS-485 (MODBUS), Alarm Contact and 1MB Memory.
- IEC 61000-6-2, IEC 61000-6-4, IEC 61010-1

| Product Code | % THD I, THD V | 2-31th Harmonics | I neutral | Alarm Contact | Digital Input | Energy Pulse Output | RS-485 Comm. | 0(2)-10V | 0(4)-20mA | Memory | Real Time Clock | LCD Display | Pcs / Carton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MPR-50 (new) | | | ● | | | | | | | | | ● | 8 |
| MPR-52S (new) | ● | | ● | ● | | ● | ● | | | | | ● | 8 |
| MPR-52S-10 (new) | ● | | ● | ● | ● | ● | ● | | | | | ● | 8 |
| MPR-60S | ● | | ● | ● | | ● | ● | | | ● | ● | ● | 8 |
| MPR-60S-10 | ● | | ● | ● | ● | ● | ● | | | ● | ● | ● | 8 |
| MPR-60S-20 | ● | | ● | ● | ● | ● | ● | ● | | ● | ● | ● | 8 |
| MPR-60S-40 | ● | | ● | ● | ● | ● | ● | | ● | ● | ● | ● | 8 |
| MPR-60S-41 | ● | | ● | ● | ● | ● | ● | | ● | ● | ● | ● | 8 |
| MPR-63 | ● | ● | ● | ● | | ● | ● | | | ● | ● | ● | 8 |
| MPR-63-10 | ● | ● | ● | ● | ● | ● | ● | | | ● | ● | ● | 8 |
| MPR-63-20 | ● | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | 8 |
| MPR-63-40 | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | ● | 8 |
| MPR-63-41 | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● | ● | 8 |

**PC Interface Software (MPR-SW) :**
MPR-SW is a graphic based software, which enables remote monitoring via internet or intranet.
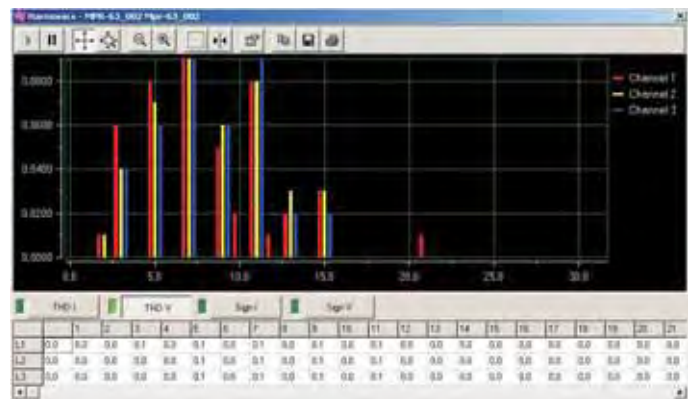
Please refer to page 20 for MPR-SW Software.



**Front Panel View**



**Harmonics View**



**Table View**

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

**Measured Parameters ( MPR-50 )**

+

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

**Measured Parameters ( MPR-52S / MPR-60S )**

+

| | |
|---|---|
| Individual Harmonics for Voltage - up to 31th | Individual Harmonics for Current - up to 31th |

**Measured Parameters ( MPR-63 )**

247 DEVICES CAN BE CONNECTED SERIALLY BY USING REPEATERS.



MAX. 1200 mt.          MAX. 1200 mt.          RS485/USB or ETHERNET CONVERTER

MPR-63 #247     MPR-63 #246     REPEATER RPT-1     MPR-63 #31     MPR-63 #1
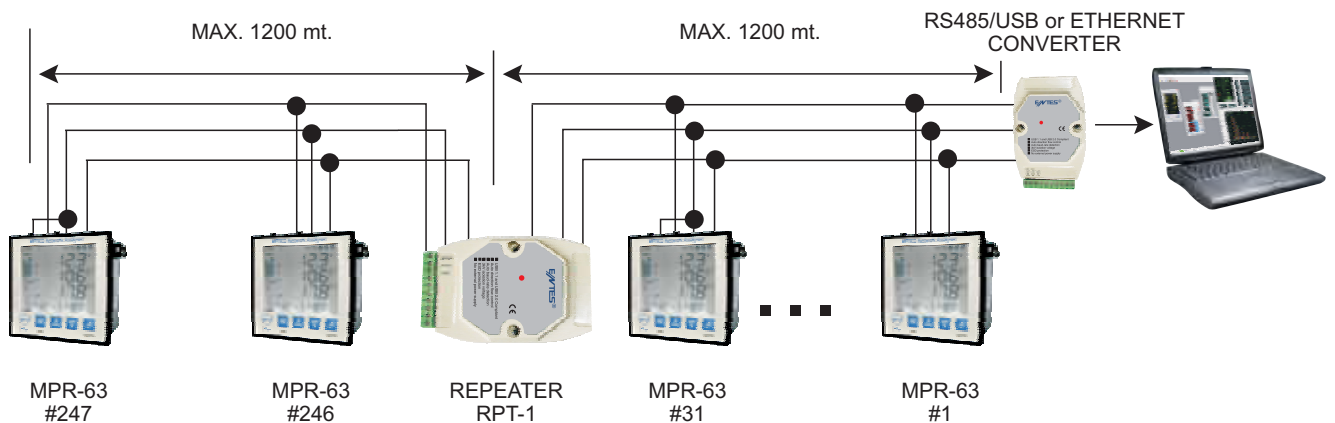
# NETWORK ANALYSER
## MPR-50 / MPR-52S / MPR-60S / MPR-63

| MODEL | (new)<br>MPR50 | (new)<br>MPR52S | MPR60S | MPR-63 |
|---|---|---|---|---|
| **SPECIFICATIONS** | | | | |
| **Electrical Parameters** | | | | |
| **Harmonic Measurement** | - | THD V%, THD I% | | 2 - 31th separately voltage & current THD V%, THD I% |
| **Operating Voltage** | 85-265V AC / DC ; 50/60 Hz | | | |
| **Network Type** | 3-phase / 4-wire (Star) ; 3-phase / 3-wire (Delta) ; 3-phase / 3-wire (Aron) | | | |
| **Accuracy** | | | | |
| *Voltage* | 0,5 % ± 2 digit | | | |
| *Current* | 0,5 % ± 2 digit | | | |
| *Frequency* | 0,1 % ± 2 digit | | | |
| *Active Power* | 1 % ± 2 digit | | | |
| *Reactive Power* | 2 % ± 2 digit | | | |
| **Current Transformer Ratio** | 1...2000 (programmable) | | | |
| **Voltage Transformer Ratio** | 1,0…4000,0 (programmable) | | | |
| **Measurement input** | | | | |
| *Voltage* | 1,0 - 300,0 V AC (P-N), 2,0 - 500,0 V AC (P-P) | | | |
| *Current* | 5 mA - 5,5 A | | | |
| **Measurement Ranges** | | | | |
| *Voltage* | 1,0 - 400,0 kV | | | |
| *Current* | 5 mA - 10.000 A | | | |
| *Frequency* | 45,0 - 65,0 Hz | | | |
| *Power* | 0 - 4.000 M (W, VAr, VA) | | | |
| *Energy* | 0 - 99.999.999 kWh, kVArh | | | |
| **Power Consumption** | < 6 VA | | | |
| **Burden** | < 1 VA (Current burden), < 0,5 VA (Voltage burden) | | | |
| **Demand Time** | 15 min. (Programmable via MPR-SW) | | | |
| **Communication Interface** | - | MODBUS RTU (RS-485) | | |
| *Baud Rate / Adress / Parity* | - | 1.200 - 38.400 bps / 1 - 247 / None, Odd, Even | | |
| **Alarm Contact Output** | - | Output 1 / Output 2 : 2 NO relays , 5A, 1250 VA (resistive) | | |
| **Digital Input** | - | Output 3 / Output 4 : 2 Digital Inputs | | |
| *Functions* | - | Real Time / Latch | | |
| *Input Pulse Width* | - | 50 msec. (Min.) | | |
| *Operation Voltage* | - | 5...24VDC, 30VDC (Max.) | | |
| **Digital Output** | | ● | | |
| **Energy Pulse Output** | - | Output 3 :<br>Active Energy Pulse Output<br>(1 kWh...50 MWh / pulse)<br>Output 4 :<br>Reactive Energy Pulse Output<br>(1 kVArh...50 MVArh / pulse) | | |
| *Switch Period* | - | Min. 1 sec.<br>(100...2500 msec. pulse width) | | |
| *Operation Current* | - | Max. 50 mA | | |
| *Operation Voltage* | - | 5...24V DC, max. 30V DC | | |
| **Analog Output (optional)** | 0/4-20mA (MPR6X-40, MPR6x-41) / 0/2-10V (MPR6x-21) | | | |
| **Display** | 3,6" LCD with Backlight, 12 mm Height | | | |
| **Data Logging** | - | Selectable 28 parameters with Time Stamp (15.000 records) | | |
| **Memory** | - | 1 MB Internal Memory | | |
| **Mechanical Parameters** | | | | |
| **Equipment Protection** | Double Isolation ( ▢ ) | | | |
| **Degree of Protection** | IP40 (front panel), IP54 (Optional) | | | |
| **Ambient Operating Temperature** | -5°C, +55°C | | | |
| **Connection / Installation** | Terminal / Flush-mounting with rear terminals | | | |
| **Dimensions** | 96x96 mm (PR19) | | | |
| **Weight / each** | 0,9 kg | | | |
| **Quantity in 1 package** | 8 pcs | | | |

for MPR-52S-10 & MPR6x-10

MPR63-MPR60s MPR63-41 / 21

MPR60s- 21 / 41

## Connection Diagram

## Dimensions

### (PR19- 96x96mm)

3 Phase with neutral connection



**MPR-63**

3 Phase without neutral connection



**MPR-63**
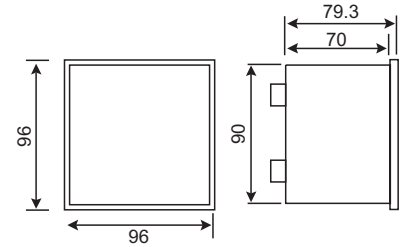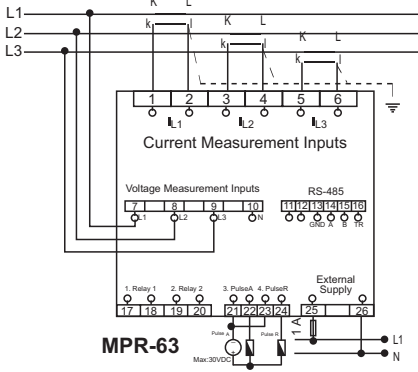
**TYPE PR 19**

3 Phase with neutral connection



**MPR-63-10**
**MPR-60S-10**
**MPR-52-10**
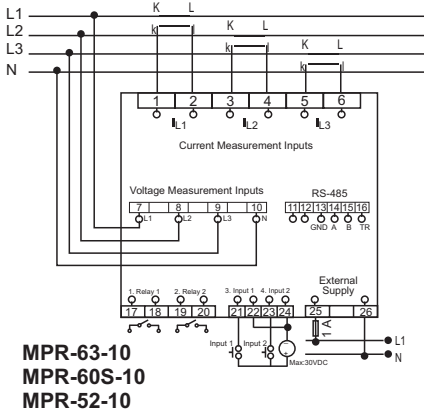
3 Phase without neutral Aron connection.
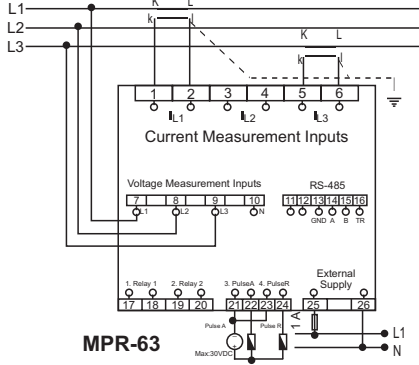


**MPR-63**

3 Phase with neutral connection



Analog Out    RS-485

| 11 | 12 | 13 | 14 | 15 | 16 |
|----|----|----|----|----|----|
| −  | +  | GND | A | B | TR |

**MPR-63-41**
**MPR-60S-41**

**MPR-53S-96**

KEMA KEUR  CE
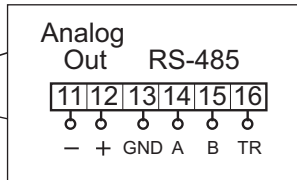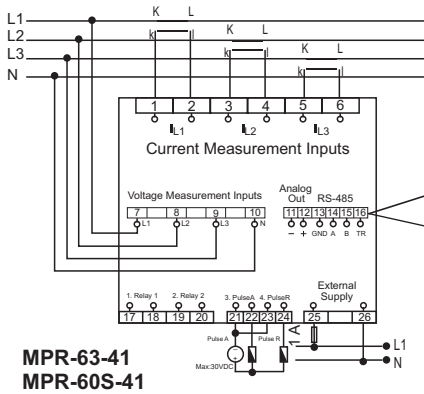
Modbus / Ethernet Gateway

### General

MPR-53 / EPM-07 series measures many parameters of an electric network. More than 50 parameters are displayed.

- **EPM-07** : Network Analyser.
- **EPM-07S** : Network Analyser with RS-485 (MODBUS).
- **MPR-53** : Network Analyser with THD measurement.
- **MPR-53S** : Network Analyser with THD measurement and RS-485 (MODBUS).

- IEC 61000-6-2, IEC 61000-6-4, IEC 61010-1

**Modbus**   **Harmonics**   **Alarm Contact**   **MD Max. Demand**

| Product Code | % THD I | % THD V | Neutral Current | Digital Input | Energy Pulse Output | Dual Energy Meter | 6 Different Energy Calculation Methods | .../5A | CT-25 (210A) | Alarm Contact | RS-485 Comm. | Pcs / Carton |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPM-07 -96 | | | ● | ● | ● | ● | ● | ● | | | | 12 |
| EPM-07 -DIN | | | ● | ● | ● | ● | ● | ● | | | | 12 |
| EPM-07S -96 | | | ● | ● | ● | ● | ● | ● | | | ● | 12 |
| EPM-07S -DIN | | | ● | ● | ● | ● | ● | ● | | | ● | 12 |
| MPR-53 -96 | ● | ● | ● | ● | ● | ● | ● | ● | | | | 12 |
| MPR-53 -DIN | ● | ● | ● | ● | ● | ● | ● | ● | | | | 12 |
| MPR-53S -96 | ● | ● | ● | ● | ● | ● | ● | ● | | ◒ | ● | 12 |
| MPR-53S -DIN | ● | ● | ● | ● | ● | ● | ● | ● | | ◒ | ● | 12 |
| MPR-53S -DIN-CT25 (new) | ● | ● | ● | ● | ● | ● | ● | | ○ | | ● | 12 |
| EPM-07S -DIN-CT-25 (new) | | | ● | ● | ● | ● | ● | | ○ | | ● | 12 |

○ Optional - Min. Order Quantity is 200pcs/device.
◒ (Soon)

**PC Interface Software (MPR-SW) :**
MPR-SW is a graphic based software, which enables remote monitoring via intranet or internet.

Please refer to page 20 for MPR-SW Software.





new

**MPR-53S-DIN-CT25**

CT-25 is a Current Transformer, which is used together with MPR-53S-DIN-CT25 model.

It is a unique solution, which replaces conventional type CTs up to 210A.

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

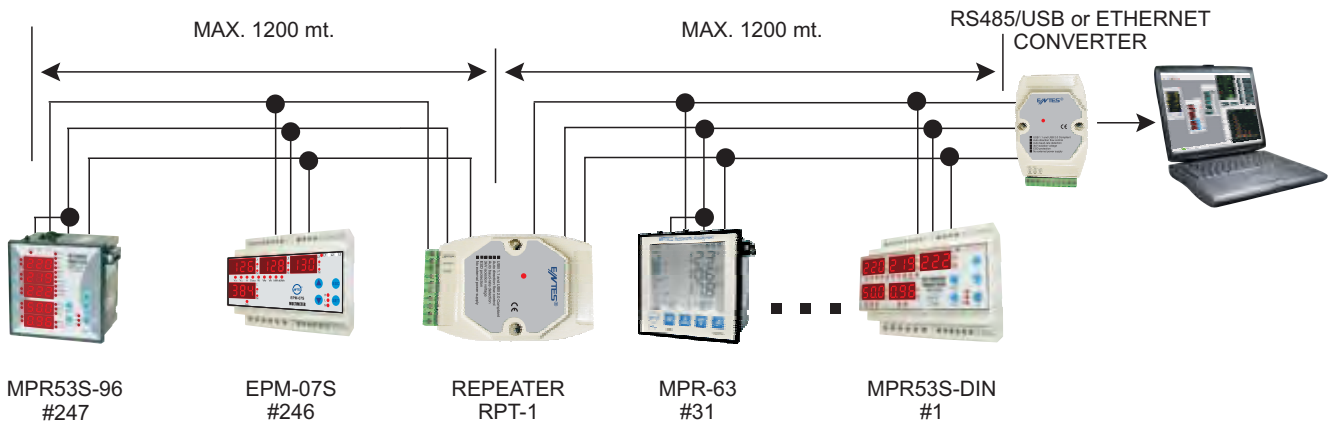**Measured Parameters ( EPM-07 / 07S )**

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

**Measured Parameters ( MPR-53 / MPR-53S )**

## 247 DEVICES CAN BE CONNECTED SERIALLY BY USING REPEATERS

MAX. 1200 mt.          MAX. 1200 mt.          RS485/USB or ETHERNET CONVERTER



MPR53S-96 #247     EPM-07S #246     REPEATER RPT-1     MPR-63 #31     MPR53S-DIN #1
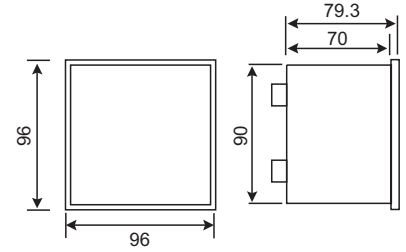
# DIGITAL NETWORK ANALYSER
## MPR-53 / EPM-07 Series

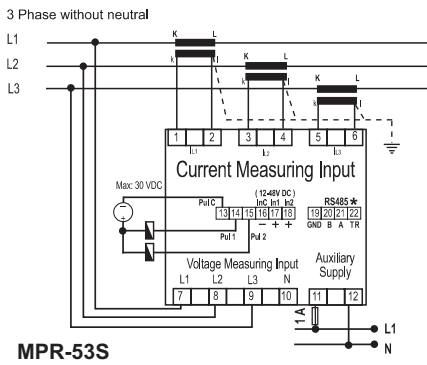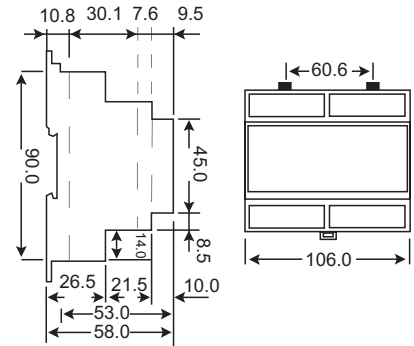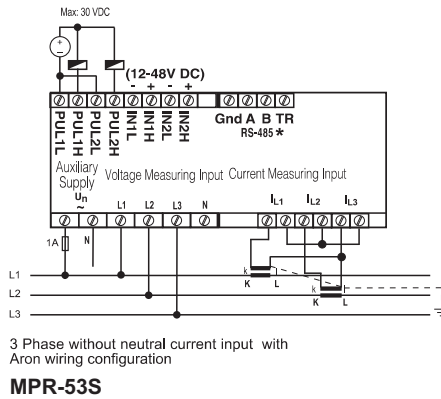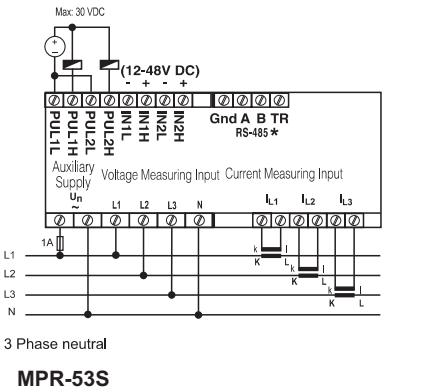| MODEL | EPM-07 | EPM-07S | MPR-53 | MPR-53S |
|---|---|---|---|---|
| **SPECIFICATIONS** | | | | |
| **Functions** | | | | |
| **THD %V, THD %I** | | | ● | ● |
| **RS-485 Communication** | | ● | | ● |
| **Energy Pulse Output** | ● | ● | ● | ● |
| **Display Demand Value** | ● | ● | ● | ● |
| **Display Max/Min Values** | ● | ● | ● | ● |
| **Password Protection** | ● | ● | ● | ● |
| **Electrical Parameters** | | | | |
| **Operating Voltage** | 230 V AC* ±10%; 45 / 65 Hz | | | |
| **Network Type** | 3-phase / 4-wire (Star)<br>3-phase / 3-wire (Delta)<br>3-phase / 3-wire (Aron) | | | |
| **Accuracy** | 1% ±1 digit | | | |
| **Current Transformer Ratio** | 1…2000 (programmable) | | | |
| **Voltage Transformer Ratio** | 0,1…4000,0 (programmable) | | | |
| **Measurement input** | | | | |
| *Voltage* | 10 - 300 V AC (L-N), 10 - 500 V AC (L-L) | | | |
| *Current* | 50 mA - 5,5 A | | | |
| **Measurement Ranges** | | | | |
| *THD* | - | | 0-99.9 % | |
| *Voltage* | 10 - 500 V (direct), 10 - 400 kV (with voltage transformer) | | | |
| *Current* | 50 mA - 5,5 A (direct), 50 mA - 10.000 A (with current transformer) | | | |
| *Frequency* | 20 - 90 Hz | | | |
| *Power Factor* | 4 quadrant | | | |
| *Power* | 0 - 200 M (W, VAr, VA) | | | |
| *Energy* | 0 - 99 999 999 999,9 kWh, kVArh | | | |
| **Power Consumption** | < 4 VA | | | |
| **Burden** | < 1 VA (Current burden), < 0,5 VA (Voltage burden) | | | |
| **Demand Time** | 1 - 60 min. (programmable) | | | |
| **Communication Interface** | MODBUS RTU (RS-485) [for EPM-07S & MPR-53S] | | | |
| *Baud Rate* | 1200 - 38400 bps | | | |
| *Address* | 1 - 247 | | | |
| *Parity* | No, odd, even | | | |
| **Digital Input** | 2 Digital Inputs | | | |
| *Input Pulse Width* | 50 msec. (Min.) | | | |
| *Operation Voltage* | 5...24 V DC, 30 V DC (Max.) | | | |
| **Energy Pulse Output** | NPN Transistor | | | |
| *Switch Period* | Min. 1,6 sec. (400 msec. pulse width) | | | |
| *Operation Current* | Max. 50 mA | | | |
| *Operation Voltage* | 5…24 V DC, max. 30 V DC | | | |
| **Display** | Red LED ; 10 mm Height | | | |
| **Mechanical Parameters** | | | | |
| **Equipment Protection** | Double Insulation ( ▢ ), Measurement Category III | | | |
| **Ambient Operating Temperature** | -5℃, +55℃ | | | |
| **Degree of Protection** | IP40 (front panel) | | | |
| **Connection / Installation** | Terminal / Flush-mounting with rear terminals | | | |
| **Dimensions** | 96x96 mm (PR19**), DIN6 (PK26**) | | | |
| **Weight / each** | 0,6 kg (PR19) ; 0,6 kg (DIN6) | | | |
| **Quantity in 1 package** | 12 pcs (PR19), 12 pcs (DIN6) | | | |

## Connection Diagram

## Dimensions

### (PR 19- 96x96mm)

3 Phase neutral



MPR-53S

3 Phase without neutral current input with Aron wiring configuration



MPR-53S

3 Phase without neutral



MPR-53S



TYPE PR 19

### (PK 26 - DIN6)



3 Phase neutral

MPR-53S

3 Phase without neutral current input with Aron wiring configuration



MPR-53S



3 Phase without neutral

MPR-53S



TYPE DIN / PK 26