



# Programmable Multifunction Transducer (PMT-R42)

Instrument Division

## 1. Product Perspective

PMT-R 42 is developed specific for utility substation applications. PMT-R 42 computes-Monitor, stores and communicate up to 38 major electrical parameters, including true RMS Voltage, Current, PF, Frequency, Active power, Reactive power, Apparent power, Active energy. Reactive energy and Apparent energy and also monitor 4 Discrete input and 2 Digital output.Simple user-friendly Programming of Voltage, current, and power Measurement parameters The AE-PMT-R 42 has for digital RS485 Communication. The protocol used is a standard MODBUS and is ideal for Energy Management System.

## 2. Operation

AE-PMT-R 42 offers high functionality and uncomplicated operation. AE-PMT-R 42 measures all the values needed to monitor power and Energy.

## 3. Product Features

- ▶ Fully programmable CT and PT ratio (Primary / Secondary).
- ▶ Fully programmable selection of three phase 3 wire or 4 wire configuration.
- ▶ RS 485 interface for data configuration,communication,controlling.
- ▶ The true RMS measurement.
- ▶ Separate registers for Import and Export energy measurement.
- ▶ Energy summation (Import + Export) for Active, Reactive & Apparent Energy.
- ▶ Neutral Current Measurement.( Optional )
- ▶ Real Time clock
- ▶ Universal Auxiliary Power Supply.
- ▶ DIN rail mounting
- ▶ Monitoring 4 Digital input signal
- ▶ Monitoring & Controlling 2 Digital output
- ▶ Programmable modbus id
- ▶ Programmable modbus baudrate

## 4. Monitors

- ▶ Voltage- Line – Line , Line - Neutral & System voltage.
- ▶ Current- Individual Phase, Average & Neutral
- ▶ Frequency
- ▶ Power (Active, Reactive and Apparent)
- ▶ Energy (Active, Reactive and Apparent)
- ▶ Power Factor per phase & average
- ▶ Digital input & output

## 5. System Input

Designed for all low, medium and high voltage switchgear and electricity distribution systems, PMT-R has customer programmable PT and CT ratio capability. Both primary & secondary are configurable. The standard nominal inputs Voltage are 415 or 110 V AC (L-L) & Current – 1A or 5AAC.

## 6. Typical Applications

- ▶ Energy Generation & Distribution Systems
- ▶ Industrial & Commercial Generator sets.
- ▶ Building management System.
- ▶ Energy Management System.
- ▶ Control & Monitoring Systems.
- ▶ Process Control industries & automation.





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## PMT-R42

- ▶ Volts L1 - N
- ▶ Volts L2 - N
- ▶ Volts L3 - N
- ▶ Avg. Voltage L - N
- ▶ Volts L1 - L2
- ▶ Volts L2 - L3
- ▶ Volts L3 - L1
- ▶ Avg. Voltage L - L
- ▶ Current L1
- ▶ Current L2
- ▶ Current L3
- ▶ Avg. Current
- ▶ Frequency
- ▶ pf L1
- ▶ pf L2
- ▶ pf L3
- ▶ System PF
- ▶ kWh Total
- ▶ kWh Import
- ▶ kWh Export
- ▶ kVAh Total
- ▶ kVAh Import
- ▶ kVAh Export
- ▶ kVAh Total
- ▶ kVAh Import
- ▶ kVAh Export
- ▶ 3P4W3E
- ▶ 3P3W2E
- ▶ 1P1E
- ▶ Total & Per Phase Power - Active, Reactive & Apparent.
- ▶ System THD % Current (Optional)
- ▶ System THD % Voltage (Optional)
- ▶ Current THD % Per Phase (Optional)
- ▶ Voltage THD % Per Phase (Optional)
- ▶ min & max value for V & I.(Optional)
- ▶ Maximum Demand KW & KVA (Optional)
- ▶ Total Run Hrs. (Optional)
- ▶ Total ON Hrs. (Optional)

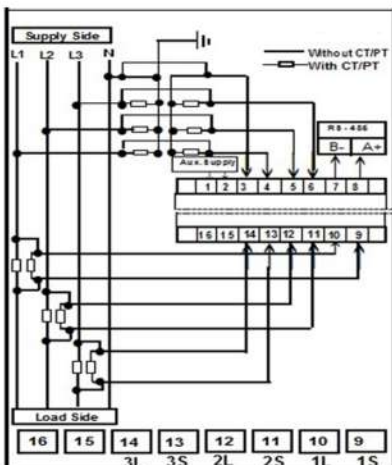
## 8. Specifications

Type	1 / 3-Phase
Input Voltage V AC	110V or 415V (L-L)
Voltage Overload	1.5 time for 10 sec
Input Current AAC	1A or 5A
Current Overload	50A max for 1 sec
Auxilliary supply	85 - 285 VAC / DC <b>OR</b> 18 - 60 VAC / DC
Burden	For Voltage / Current - 0.2 VA max per Volt/Amp input, Auxiliary - 3VA max.
Digital input / output	4 digital input ( 24V ± 5V ), 2 digital open collector output ( +24VDC )
Frequency	45 Hz - 55Hz
Accuracy Class	0.5%for Voltage & Current, 0.2%for Frequency. 0.5%for Power / Energy
RS485 communication	Two wire half duplex Baud rates - 4800 / 19600 / 19200 / 38400
Isolation	2k VAC isolation for 1min. between communication and other circuit.
Environmental	Operating Temp. -10 to +60 °C. Storage temp.-20 to +85°C, Humidity [95% RH non condensing.
Mounting	35mm DIN rail channel

## 9. Digital Communication

An RS485 communication Port is available for direct connection to SCADA systems ( EMS / BMS) using the Modbus RTU protocol. Remote monitoring enables the user to record the systems parameters in real time basis.

## 10. Wiring Diagram



## Mechanical Dimensions

