EIMeter® Future proof your submetering

Designed to meet retrofit and new install requirements

Introducing the DIN 96x96 panel mounting Electronic kWh Meter: easy to install and convenient to use. Equally suitable for both 3 wire and 4 wire 3phase unbalanced loads (optionally for single phase or balanced 3phase systems), these EIMeters have been designed to measure accurately irrespective of the type of load – ideal for a motor or heater, or for a modern electronically controlled load.

Easy to install and to configure

The EIMeter is fitted with large Rising Cage terminals – allowing connection to a wide range of cables from 0.25 mm^2 to 4.0 mm^2. EIMeters are configured from the front panel to suit installations using Current and/or Voltage Transformers, with decimal point and legend being automatically set to provide optimum resolution.

Easy and safe to use

The EIMeter can be read from any angle. The bold LCD display overcomes small character size, poor visibility and short life associated with electromechanical counters and provides the necessary legends (Wh, kWh, MWh) to simplify reading. The programmable isolated pulse output or RS485 provides an interface to a remote data collection system or BEMs. Furthermore, with fully isolated current inputs, installation safety is assured. Current input isolation allows these meters to be directly connected under certain conditions and provides versatility of connection. Installation in conjunction with other instrumentation can be carried out safely, without affecting accuracy.

Easy to commission - Right First Time

CT, VT & Pulse configuration can be displayed at the touch of a button. Links at the rear of the meter can be removed to disable configuration.

Wiring

With kW displayed at the push of a button, installations can be quickly and simply tested – connections confirmed & the load measured. To remove the possibility of reading errors, the display reverts to kWh after 60 seconds.

Accurate real world measurement

A precision measurement system maintains full accuracy in the presence of harmonics and randomly and/or periodically interrupted waveforms — as commonly found on modern electronically controlled loads.

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Pulse and MODBUS output

With a Pulse Test facility, pulses can be generated – without any load present – to test all downstream equipment. High speed internal RS485 MODBUS® communications allows all readings to be read remotely.

Fully supported

Comprehensive operating instructions - supplied with every EIMeter, include full information on installation. These include connection schematics and configuration details for virtually all CT ratios.

Versatility of connections

For maximum convenience, all EIMeter Meters can be powered from the measurement voltage. Where supplies may be subject to unusually wide variations, the Meters may be powered from a separate auxiliary supply. Standard Meters are suitable for both 3 wire and 4 wire 3phase unbalanced loads, and can be used on single phase.

Main features

INPUTS

+ System: 3phase 3 or 4 Wire Unbalanced Load 3phase Balanced & Single Phase to order
+ Voltage: 400/230V. 3phase 3 or 4 Wire 110/63V & 208/120V optional. Others possible to order.
+ Current: 5A, 1A or mV from external CTs. Fully isolated
+ Measurement Range: Voltage 50% to 120% and Current 0.2% to 120%
+ Frequency Range: Fundamental 45 to 65Hz and Harmonics Up to 20th harmonic
+ Burden Voltage <0.1VA per phase
+ Current <0.1VA per phase
+ Overload Voltage x4 for 1 hour
+ Current x40 for 0.5 second max

ACCURACY

+ kWh: Better than Class 1 per EN 61036 & EN 62053-21 Better than Class 1 per BS 8431
+ kW Better than ±1% reading; Class 1 BS 8431

DISPLAY

+ Type Custom, Supertwist, LCD
+ Data Retention 10 years min. Stores kWh & Meter set-up
+ Format 8 x 6.66mm high digits with DPs & 3.2mm legends
+ Scaling Direct reading.
+ User programmable CT & VT:
  ◇ CT primary programmable from 10A to 25kA
  ◇ VT primary programmable from 11V to 55kV
+ Legends Wh, kWh, MWh etc. depending on user settings

AUXILIARY SUPPLY

+ Standard: 230V 50/60 Hz ±15%
+ Options: 110V 50/60 Hz ±15%
+ Load: 2VA max.
+ Overload: x1.2 continuous

PULSE OUTPUT

+ Function: 1 Pulse per unit of energy
+ Scaling: Settable between 1 & 1000 counts of kWh register
+ Pulse Period 0.1 sec. default; Settable between 0.1 and 20 sec
+ Rise & Fall Time < 2.0 ms
+ Type N/O Volt free contact. Optically isolated BiFET
+ Contacts 100mA AC/DC max., 100V ac/dc max.
+ Isolation 2.5kV 50Hz 1 minute

MODBUS® Serial Communication

+ Bus Type RS485 2 wire + 0v. ½ Duplex, ¼ unit load
+ Protocol MODBUS® RTU with 16 bit CRC
+ Baud Rate 4800, 9600 or 19,2000 User settable
+ Address 1 – 247 User settable
+ Latency Reply within 250ms max.
+ Command Rate New command within 5ms of previous one.

GENERAL

+ Tariff Change
+ Signal:
  ◇ Normal Vin < 35V AC or DC
  ◇ Alternate 60V < V in < 300V AC or DC Isolated at 2.5kV from all other inputs & outputs
+ Temperature:
  ◇ Operating -10°C to +65°C
  ◇ Storage -25°C to +70°C
+ Humidity < 75% non-condensing
+ Environment IP54 standard, IP65 optional

MECHANICAL

+ Terminals: Rising Cage. 4mm² (12 AWG) cable max.
+ Enclosure: DIN 43700 96 x 96
+ Material: Mablex® with fire protection to UL94-V-O. Self-extinguishing
+ Dimensions 96 x 96 mm x 83.5 mm (72 mm behind panel)
+ Weight ~ 250 gms

SAFETY

+ Conforms to EN 61010-1 Installation Category III

Product references

EMTR 000001

EM EIMeter Type MV

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