

multitek



MultiPower

Multifunction power meter
M850-LCD

MultiPower

The M850-LCD (MultiPower LCD) is a complete 3 phase digital universal metering system in a standard 96 x 96 mm DIN case. It can be used on any voltage system with a wide range of inputs. It incorporates a universal AC or DC auxiliary power supply.

The one unit covers the majority of applications without any modification required, making the M850-LCD ideal for stocking.

The M850-LCD has a unique LCD display with user selectable options of Blue, Green or White back-lighting.

Parameters Measured

- * Phase Voltage (V)
- * Phase to Neutral (V)
- * Phase Current (I)
- * Frequency (Hz)
- * Active Power (W)
- * Reactive Power (Var)
- * Apparent Power (VA)
- * Active Energy (W.h)
- * Reactive Energy (Var.h)
- * Power Factor (P.F.)
- * Instantaneous Demand Amp
- * Instantaneous Demand Active Power
- * Instantaneous Demand Apparent Power
- * Maximum Demand Amps
- * Maximum Demand Active Power
- * Maximum Demand Apparent Power
- * Neutral Current
- * THD Voltage Option
- * THD Current Option

Accuracy

Volts & Amps	0.5% of reading \pm 2 digits 0.1Hz \pm
Frequency	1 digit
Active Power	1% of reading \pm 2 digits
Reactive Power	1% of reading \pm 2 digits
Apparent Power	1 % of reading \pm 2 digits
Power Factor	1% of range
Energy	Class 1 to IEC EN62053-21:2003

System Types

The M850-LCD can be used on the following measuring systems without any changes apart from wiring configuration.

Single Phase,

Single Phase 3 wire

3 Phase 3 Wire Balanced Load

3 Phase 4 Wire Balanced Load

3 Phase 3 Wire Unbalanced Load

3 Phase 4 Wire Unbalanced Load

Controls & Programming

The four front control buttons are used for scrolling up or down through the parameters being measured and displayed. These buttons also allow programming of different Current and Voltage transformer ratios, Demand times, Baud rates etc.

Display

The unique 3 colour option LCD FSTN display is designed to be read in a variety of conditions over wide viewing angles and distances. There are 3 colour options of the back lighting available Blue, Green or White which are user selectable through the front control buttons.

Communications

An integrated RS485 port enables the MultiPower to communicate with up to 31 other meters or controllers using the popular Modbus RTU protocol.

The protocol allows the MultiPower to be used with PC, PLC, RTU, Data loggers and Scada programs

Pulsed Output

An integrated solid-state relay can be assigned to W.h, or VAr.h

Memory

Current ratios, demand time periods and calibration data is stored in non volatile eeprom. In power down (power loss) conditions this data is retained.

Ordering Codes

M850-LCDN	Standard Meter
M850-LCDN-RS	+RS485
M850-LCDN-PO	+Pulsed Output
M850-LCDN-RS-PO	+RS485 and Pulsed Output

Options Part Numbers

M850-LTHN has THD measurement.

M850-LMVN has 333mVAC input on CT input.

M850-LCDN-BAC-MS/TP has BACNet protocol

M850-LCDN-BAC-I/P has BACnet via ethernet connection

M850-LCDN-CT has internal current transformers.

Please Note :

All Standard M850 meters are fitted with internal shunts on their current inputs. If the M850 current input is being used in series with other meters or devices, the M850 should be ordered with internal current transformers.

Use the part numbers as above with suffix CT

Example M850-LTHN-RS-CT is a meter with THD measurement plus RS485 and fitted with internal current transformers

General Specification

INPUT

Rated Un 28V to 330V L.N. 48V to 570V L.L.
(280V L.N. nominal)

Overload 800V continuous

Burden 0.5VA

Cut Off Point 2% Un nominal

Rated In 0.5A to 6A (5A nominal) via C.T.

Overload 10In for 1 sec

Burden 0.5VA per phase

Cut Off Point 2% In nominal

Auxiliary Voltage

100 to 440V AC 100 to 420V DC

45 to 65Hz, burden < 10VA

Insulation

Installation category III (480 VAC ph/ph)

Degree of pollution 2

Rated impulse withstand voltage IEC 60947-1-V imp: 4kV

Meters Front Class II

Electrical security IEC 61010-1

Inputs + Aux to case: 4 kV rms 50 Hz for 1 min

Inputs + Aux to RS485 port: 3kV rms 50 Hz for 1 min

Inputs + Aux to relay output: 1k5V rms 50 Hz for 1 min

Low voltage dc Aux to Inputs: 1k5V rms 50 Hz for 1 min

Electromagnetic compatibility

Immunity to :

electrostatic discharges: IEC 61000-4-2-Level III

radiated radio-Hz fields: IEC 61000-4-3-Level III

electrical fast transient/brusts: IEC 61000-4-4-Level III

impulse waves: IEC 61000-4-5-Level III

conducted disturbances: IEC 61000-4-6-Level III

voltage dips & short interruptions: IEC 61000-4-11

Emissions to:

Conducted and radiated CISPR11-Class A

Approvals

UL File No . 337752-1

Display

Custom LCD

Backlight Blue, Green or White

Update time 1 second

Response Time

RS 485 Modbus Less than 10mS

Options

1. Integrated RS485 module (Modbus or BACnet)
Baud Rates:76800,57600,38400,19200,9600,4800
Parity :Odd, Even, No Parity

2. Integrated pulsed-output solid-state relay module
W.h or VAr.h

3. 19V-69V dc auxiliary (see 'Insulation' above)

4. 1 Amp input

5. THD option.

6. BACnet option.

7. Ethernet Module

Environmental

Working Temperature -20 to +70 deg C

Storage Temperature -30 to +80 deg C

Relative Humidity 0-95% non condensing

Shock 30G in 2 planes

Enclosure

Standard DIN case DIN 96x96x

Panel mount Via 4 retaining brackets

Panel cutout 92 + 0.8 mm x 92 + 0.8 mm

Material Black Polycarbonate

Terminals Current 6mm²

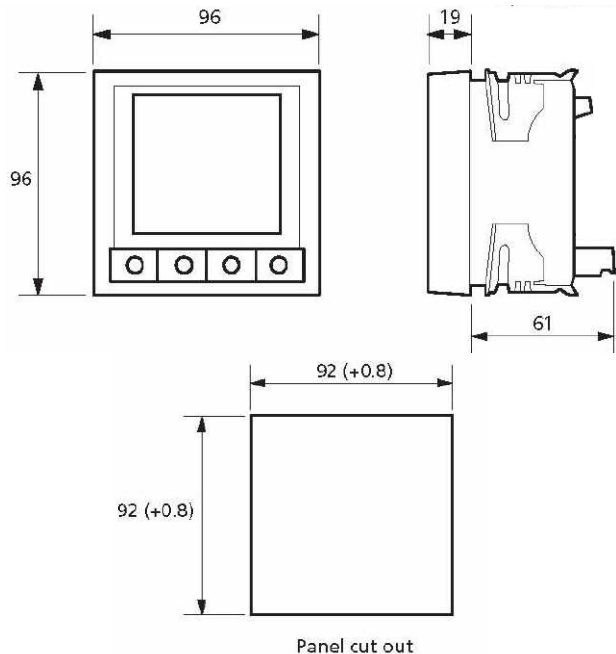
All others 2.5mm²

IP rating front IP52 / Nema 12

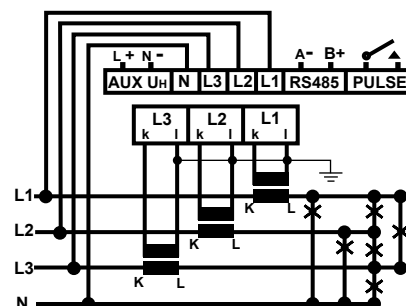
IP rating case IP30 / Nema 1

Weight 0.25kg / 0.66lb

Case Dimensions



Connection Diagram



	Voltage				Current		
	L1	L2	L3	N	L1	L2	L3
1ph	✓	✗	✗	✗	✓	✗	✗
1ph 3W	✓	✓	✗	✓	✓	✓	✗
3ph 3W	✓	✓	✓	✗	✓	✗	✗
3ph 4W	✓	✓	✓	✓	✓	✓	✓
3ph 3W BAL	✓	✓	✓	✗	✓	✗	✗
3ph 4W BAL	✓	✗	✗	✓	✓	✗	✗

Unused Voltage terminals are internally connected
Secondary of CTs must be connected to earth

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