

# M850-CTP Multifunction meter

## PLUG & PLAY MULTIFUNCTION METER

The new M850 range of multifunction meter with LCD display that offers a complete 3 phase metering system in a standard 96 x 96mm DIN case. It can be used on any low voltage system with a wide range inputs, this meter is self-powered so the auxiliary is taken from the phase to neutral voltage.

The new display has a customer selectable back light with user selectable options of Green, Blue or White. Additional new feature that gives the ability to wire CT quicker and easier and safer with mA current transformer. This new meter comes complete with RS485 and Pulse output as standard.

### Parameters Measured:-

- \* Phase Voltage (V)
- \* Phase to Neutral Voltage (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

### Accuracy:-

Volts & Amps	0.5% of reading $\pm$ 2 digits
Frequency	0.1 Hz $\pm$ 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	IEC 1036 Class 1

### System Types:-

Suitable for 3 Phase 4 Wire Unbalanced Load only

### Communications:-

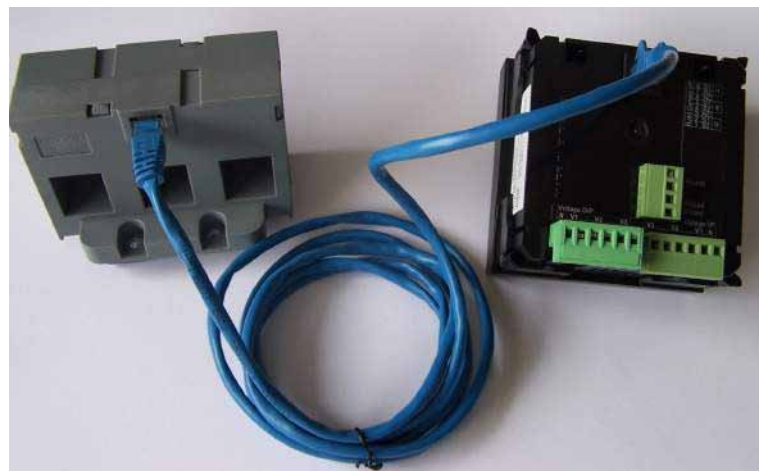
The unit comes complete with RS485 communications and Pulse Output.

The RS485 enables remote reading of up to 32 multifunction meters on a 2 wire bus using the Modbus protocol. The Modbus protocol allows the multifunction meter to be used with PC, PLC, RTU, Data loggers and scada programs.

The Pulsed Output via a relay can be assigned to W.h or Var.h



Selectable screen colour



### Controls and Programming:-

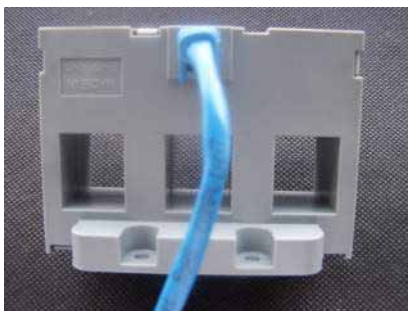
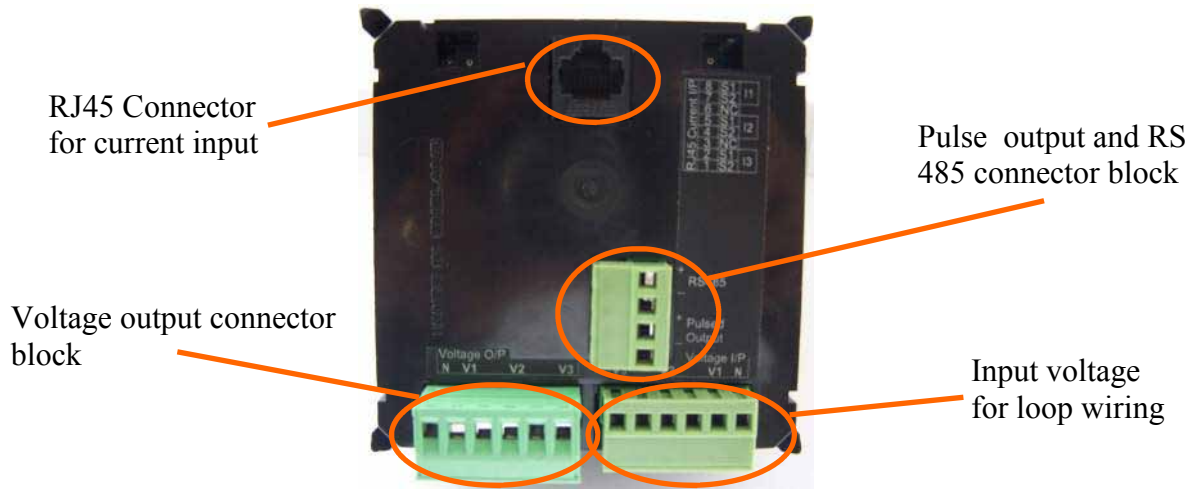
The four front control buttons are used for scrolling up or down through the parameters being measured and displayed. These buttons also allow programming of different current and voltage transformer ratios, demand times, Baud rates etc.

### Display:-

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

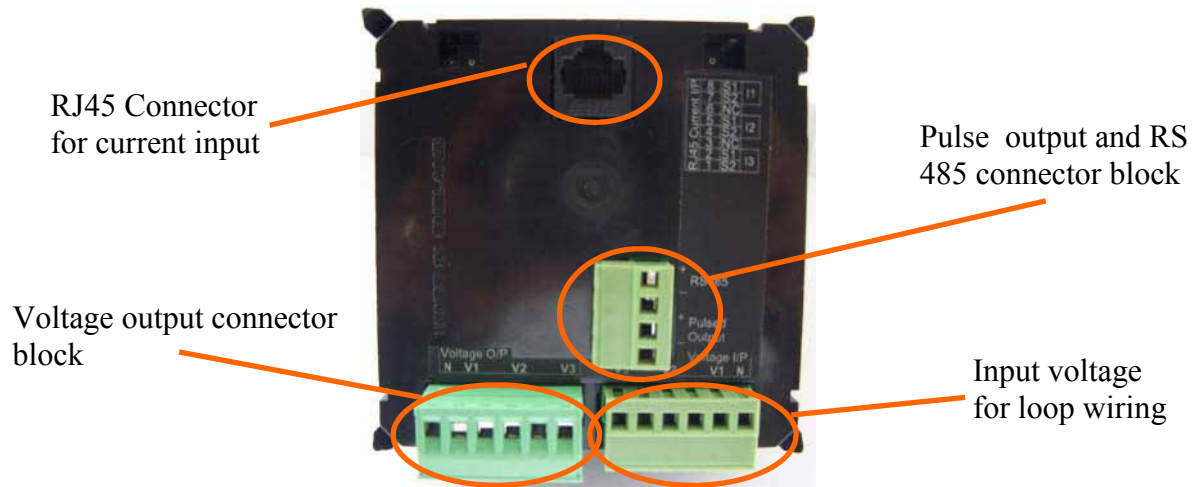
### Memory:-

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



3 phase current transformer with RJ45 connector block





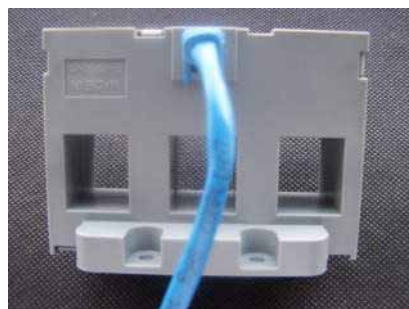
RJ45 to 8 pin terminal block used when 3 phase CT is not suitable for the application. Ideal for retro-fitting (split core CT)



Standard CAT45 lead of various size able on request



milliAmp current transformer



CTP140 picture

# General Specification

## Input:-

Rated Un	28V to 330V L/N
Overload	800V Continuous
Burden	0.5VA
Rated In	200mA Via special current transformers
Overload	10In for 1 sec
Frequency	45/65Hz
Input working range:	
Voltage & current	2% to 100%

## Auxiliary Voltage

This unit is self-powered, uses the Line to neutral voltage as its power source.

## Insulation:-

Installation category	III (280V AC Ph/N)
Degree of pollution	2
Rated implused withstand voltage	IEC 60947-1-V imp: 4kV
Meter front	Class II
Electrical security	IEC 61010-1

## Applied Standard:-

General	IEC 688, BSEN60688 BS4889 & IEC 359
EMC	Emissions BSEN50081/1 Immunity BSEN50082/2
Safety	IEC 1010, BSEN601010

## Display:-

Custom	LCD
Backlight	Blue, Green or White
Update time	1 Second
Response time	less than 10ms

## Optional parts

Voltage looping wire  
Category 5E RJ45 Cable to suit required size  
Split core CT connector block (RJ45 to 8 pin terminal)  
3 phase current transformers (3 sizes ranging from 60A to 630A)

## Environmental:-

Working Temperature	-20 to +60 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 96x96mm
Panel cut out	92 x 92 mm ± 0.8mm
Panel mount	via 4 retaining corner brackets
Material	Black Polycarbonate
Terminals	1mm <sup>2</sup> JR45
IP rating front	IP52 / NEMA
IP rating case	IP30 / NEMA
Weight of basic meter	320grams / 0.7 lb

## Case Dimensions:-

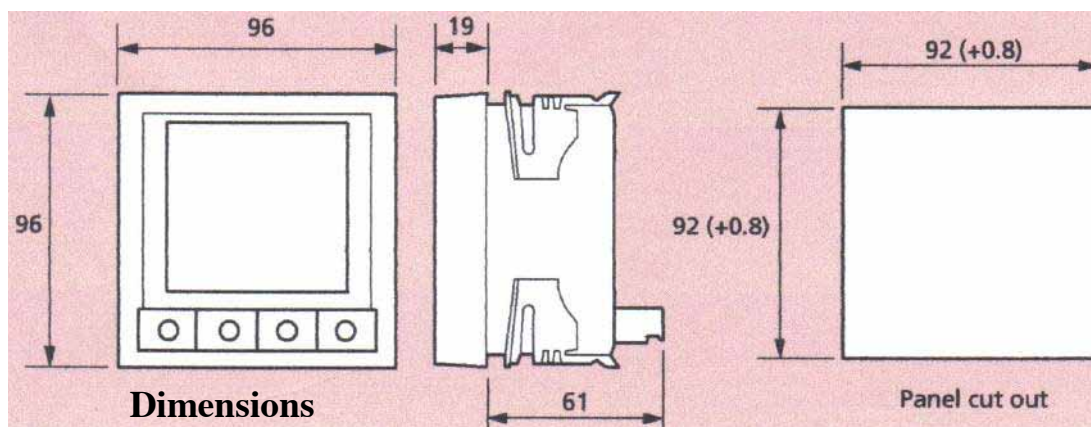
Bazel size	96mm x 96mm
Depth of meter	65mm

## Electromagnetic compatibility

Immunity to:	
Electrostatic discharged:	IEC6100-4-2-Level III
Radiated radio-Hz fields:	IEC6100-4-3-Level III
Electrical fast transient/bursts:	IEC6100-4-4-Level III
Impulse waves:	IEC6100-4-5-Level III
Conducted disturbances:	IEC6100-4-6-Level III
Voltage dips & short interruptions:	IEC6100-4-11
missions to: Conducted and radiated	CISPR11-Class A

## Additional information:-

RS485 Modbus	
Baud Rates	38400, 19200, 9600, 4800 or 2400
Parity	odd, even, no parity
Address	1 to 247
Response time	less than 10ms
Pulsed output relay	
Programmable to work with either W.h or VAr.h	



Our policy is one of continuous development and therefore specifications may change without notice.