Model M850-LCD MultiPower

Multifunction DC power meter

Features

- Complete 1-phase and 3-phase digital universal metering system.
- Measures a standard range of 19 different parameters.
- Continuous display of kW.h or kVAr.h.
- THD option for Current and Voltage.
- Four easy to access front control buttons to scroll up or down through the parameters.
- Unique LCD FSTN display with customer selectable back lighting with user-selectable color options of blue, green or white.
- MODBUS RTU and BACnet MS/TP communications protocols for use with PC, PLC, RTU, Data Loggers and SCADA programs.
- Communicate with up to 32 other meters or controllers on 2-wire bus.
- UL listed.
- Non-volatile eeprom memory retains all current ratios, demand time periods, and calibration data in power down (power loss) conditions.
- Auxiliary power supply is a universal supply for both AC and DC volts.
- Fast response times: Display, less than 50ms; RS485 (Modbus), less than 10ms.
- Free software for monitoring and logging

Electrical Specifications

SYSTEM TYPES

Single Phase	3-Phase 3-Wire Unbalanced
Single Phase	3-Wire 3-Phase 4-Wire Balanced
3-Phase 3-Wire Balanced	3-Phase 4-Wire Unbalanced

INPUTS

Voltage	28V to 347V,AC (L-N) 48V to 600V,AC (L-L)
Overload	800V,AC continuous
Burden	0.5VA per phase
Current Input	Via CT: 5A; 1A,AC CT Option: 0.5 to 6A,AC; 0.1 to 1.2A
Input Overload	10 x In for 1 sec.
Input Burden	0.5VA per phase
Frequency	45-65Hz (Optional 360-440Hz)
Input Working Range	V&I from 1.7% to 100%

ACCURACY

Volts/Amps	0.5% of reading ± 2 digits
Frequency	0.1Hz ± 1 digit
Active Power	1% of reading ± 2 digits
Reactive Power	1% of reading ± 2 digits
Apparent Power	1% of reading ± 2 digits
Power Factor	1% of range
Energy	IEC 1036, Class I

AUXILIARY VOLTAGE

100 to 440V,AC; 100 to 420V,DC (Optional 19 to 69V,DC)
45-65Hz, Burden <10VA

INSULATION

Insulation Category	III (480V,AC L-L)
Degree of Pollution	2
Rated Impulse	IEC 60947-1-V
Withstand Voltage	imp: 4kV
Meters, Front Class	II
Electrical Security	IEC 61010-1

ELECTROMAGNETIC COMPATIBILITY

Immunity to:	
Electrostatic Discharges (ESD) I	EC 61000-4-2-Level III
Radiated Radio-Hz Fields	IEC 61000-4-3-Level III
Electrical Fast Transient/Bursts	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-Level III
Emissions to:	
Conducted and Radiated	CISPR11-Class A

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General Specifications

DISPLAY

Type	LCD
Screen Size	14.2mm high
Backlight	Blue, Green, White (User-selectable)
Update Time	1 second
Energy	1 line 99999999
Digit Size	6mm, 7 segment
Brightness	8 user-selectable levels

COMMUNICATIONS

RS485	MODBUS Protocol
Pulsed Output	W.h, VAr.h

APPROVAL

UL	File No. E337752-1

ENVIRONMENTAL

Working Temperature	-4°F to +158°F (-20°C to +70°C)
Storage Temperature	-22°F to +176°F (-30°C to +80°C)
Relative Humidity	0-95% non-condensing
Shock	30G in 2 planes

ENCLOSURE

Standard DIN Case	DIN 96 x 96 x 80mm
Panel Mount	via 4 retaining brackets
Panel Cutout	92 + 0.8 mm x 92 + 0.8 mm
Materials	Black Polycarbonate
Terminals	Current: 6 mm2 All others 2.5 mm2
IP rating	Front: IP52; NEMA 12 and 12X Case: IP30; NEMA 3 and 3X
Weight	0.66 lbs; 0.25kg

Ordering Information

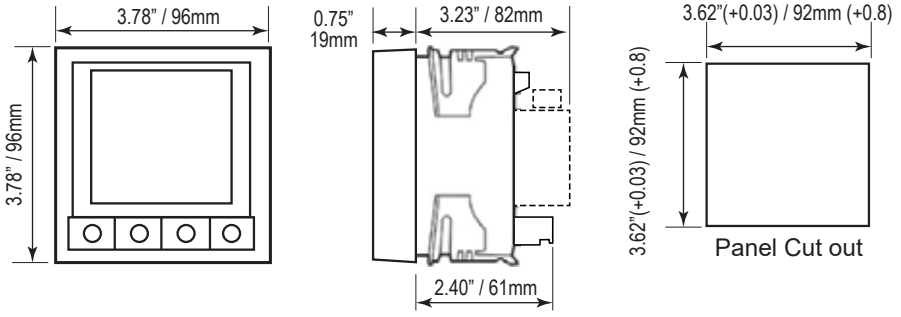
Part #	*Description*	*Input / Aux Supply**
M850LCD	Standard AC MultiPower unit	
M850LCDAB	with 1A,AC input	1A,AC
M850LCDFC	measures 400Hz	
M850LCDPE	with 19-69V,DC auxiliary	19-69V,DC
M850LCDBAC	with BACnet protocol (requires M850RS485 output module)	
M850TLC	THD option (measures voltage and current inputs)	
M850LCDOP	Standard M850LCD with pulsed output	
M850LCDOS	Standard M850LCD with RS485 (MODBUS protocol)	
M850LCDRTV	NEMA4 with RTV internal sealing and panel gasket	

* All M850 versions shown above have a standard input 48-600V,AC (L-L)@5A,AC, 45-65Hz with 100-440V,AC / 100-420V,DC aux. supply unless otherwise noted.

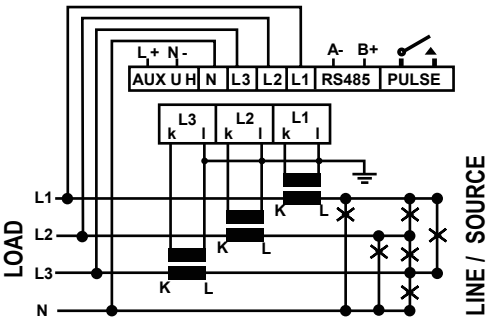
Measured Parameters

Phase Voltage (V)
Phase to Neutral (V)
Phase Current (I)
Frequency (Hz)
Active Power (W)
Reactive Power (VAR)
Apparent Power (VA)
Active Energy (kW.h)
Reactive Energy (VAR.h)
Power Factor (P.F.)
Instantaneous Amp Demand
Instantaneous Watt Demand
Instantaneous VA Demand
Maximum Amp Demand
Maximum Watt Demand
Maximum VA Demand
Neutral Current
THD Voltage (option)
THD Current (option)

Dimensions



Connection Diagram



Wiring Connections	
k = X1 (white)	
l = X2 (black)	= Grounded
K = H1	= faces Source
L = H	

	Voltage				Current		
	L1	L2	L3	N	L1	L2	L3
1ph	V	X	X	V	V	X	X
3ph 3W	V	V	X	V	V	V	X
3ph 4W	V	V	V	X	V	X	V
1ph 3W	V	V	V	V	V	V	V
3ph 3W BAL	V	V	V	X	V	X	X
3ph 4W BAL	V	X	X	V	V	X	X

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

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