Automatic Transfer Switch Option
Multifunction Metering

Introduction
This option provides a multifunction meter (MFM) on the load output that may be setup to monitor single or three phase systems and may be ordered on Automatic or Manual Transfer Switches. For three phase transfer switches, the unit can be setup to monitor delta or wye, 3-wire or 4-wire, systems.

The unit measures the following:
1. Phase Voltage (V)
2. Phase to Neutral Voltage (V)
3. Phase Current (I)
4. Frequency (Hz)
5. Active Power (W)
6. Active Energy (kWh)
7. Reactive Power (VAR)
8. Apparent Power (VA)
9. Reactive Energy (VARh)
10. Power Factor (PF)
11. Instantaneous Amp Demand
12. Instantaneous Watt Demand
13. Instantaneous VA Demand
14. Maximum Amp Demand
15. Maximum Watt Demand
16. Maximum VA Demand

Standard RS-485 MODBUS communications are included with the MFM option. Ethernet 10/100 base connectivity available upon request. If other communication types are required, a conversion module may be used convert the RS-485 to the appropriate protocol. Please consult the factory for the appropriate converter.

Product Features
- UL 1008 Listed
- Complete 1φ or 3φ Digital Metering System
- Continuous display of kW.h or kVAr.h
- THD option for Current and Voltage
- Front Access Keypad for MFM Controls
- RS-485 MODBUS Communication, Standard
- RS-485 Daisy Chain Capable with up to 32 Other Devices
- Programmable, Non-volatile Memory which retains:
  - CT Current Ratios
  - Demand Time Periods
  - Calibration Data in Power Down (Power Loss) Conditions
- Auxiliary Power Input will be One of the Following
  - 120Vac
  - 12Vdc
  - 24Vdc

Operation Instructions
Currently, Lake Shore Electric utilizes the PC&S Power Monitor, mfg. part# M850-LCD, on transfer switches which this option has been ordered. Reference the user guide for operating this meter. This is subject to change without notice so be sure to consult the factory when ordering new equipment. If there are any technical questions for a multifunction meter provided with a Lake Shore Electric ATS, please give technical support a call.

Figure 1 shows the current wiring capabilities of the PC&S meter, mfg. part# M850-LCD.

Order Guide
Part Number Examples:
1. ICFA32000BPSB/MFM – Insulated Case ATS, 3 pole, 2000 Amp, 120/208Vac, 24Vdc Microprocessor Controls, 65kAIC @ 480Vac, NEMA 1 Free Standing Enclosure with Option LDI.
2. MCDA30400CESA/25 - Molded Case ATS, 3 pole, 400 Amp, 277/480Vac, Electromechanical Controls, 35kAIC @ 480Vac, NEMA 1 Wall Mount Enclosure with Option 25.
3. MCDM30400CESA/25 – Molded Case MTS, 3 pole, 400 Amp, 277/480Vac, Manual Transfer Switch, 35kAIC @ 480Vac, NEMA 1 Wall Mount Enclosure with Option 25.

Product Specifications
PC&S MULTIFUNCTION METER, M850-LCD

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>TYPE</th>
<th>LCD</th>
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<tbody>
<tr>
<td>SCREEN SIZE</td>
<td>Blue, Green, White (User-Selectable)</td>
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</tr>
<tr>
<td>ENERGY</td>
<td>1 line 99999999</td>
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</tr>
<tr>
<td>DIGIT SIZE</td>
<td>6mm, 7 segment</td>
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<tr>
<td>BRIGHTNESS</td>
<td>8 user-selectable levels</td>
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<tr>
<td>COMMUNICATIONS</td>
<td>RS485, MODBUS Protocol</td>
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<tr>
<td>PULSED OUTPUT</td>
<td>W.h, VAr.h</td>
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</table>

ENVIRONMENTAL
- Working Temperature: -20°C to +70°C [-4°F to 158°F]
- Storage Temperature: -30°C to +80°C [-22°F to 176°F]
- Relative Humidity: 0 to 95% RH, no condensation
- Shock: 30G in 2 planes

APPROVAL
- UL File No. E337752-1

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