**Remote Monitor**

**Description**

The RM2000 Series is a motor-monitoring device to be used in conjunction with the 777 family of products (excluding the P1 Series), 77C family of products and the Model 601 voltage monitors, via Modbus protocol with a communications module. The RM2000/777 motor management system combines unsurpassed electronic motor protection and critical, user-friendly, motor monitoring.

The RM2000 has membrane keypad controls which allow both monitoring and control of a 777 MotorSaver® through an RS-485 network using Modbus RTU protocol. A second communication port allows monitoring and control of up to 99 RM2000 devices from a PLC, DCS, or SCADA system or a PC with Solutions software installed. The RM2000 will act as a repeater for its motor protector when accessed from the host computer or PLC. In addition to the monitoring functions, the RM2000 can be used to reset a tripped MotorSaver® or PumpSaver®.

The RM2000 is easily mounted remotely and improves safety for service and operations personnel by allowing them to control and monitor the device without opening the electrical cabinet.

Using the RM2000 is a simple, cost-effective method for aiding compliance with arc flash safety regulations. The enclosure and keypad assembly is water and ultraviolet light resistant.

**Wiring Diagram**

![Wiring Diagram](image)

**Ordering Information**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM2000</td>
<td>Remote display monitor for 777 family relays</td>
</tr>
<tr>
<td>RM2000-CBM+</td>
<td>Coal Bed Methane Special. Optimizes gas production from coal bed methane wells while protecting submersible pump</td>
</tr>
<tr>
<td>RM2000-RTDW</td>
<td>Includes additional input for ground-fault module</td>
</tr>
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</table>
RM2000 SERIES

Features

Displays:
- Average current, individual line currents and current unbalance
- Current to ground
- Average voltage, line-line voltages and voltage unbalance
- Instantaneous power
- Power factor
- Last four faults
- All parameters programmed into 777 MotorSaver®
- Remaining restart delay times

Controls:
- Start and stop buttons
- Key lock input to prevent setpoint changes
- Change 777 setpoints from keypad

The RM2000 is also equipped with a real-time clock, which allows access to the following motor management information (most readings can be reset):
- Total motor run-time
- Time and date of last four faults, along with voltage and current at time of trip
- Time and date of last 10 motor starts
- Total number of motor restarts
- Minimum time between any two starts with time and date
- Run-time since last start
- kWh consumed
- kVARs consumed

Specifications

Input Characteristics
- Control Voltage
  115VAC ±10%; 50/60Hz
- Transient Protection
  (Internal)
  2500V for 10ms

Functional Characteristics

Communication
- Port #1 for 777
- Port #2 for PC, PLC, etc.
  1200-28800
- Even Parity
  None, Odd, or Even Parity
- Setup
  1 Stop Bit
  1 or 2 Stop Bits
- Protocol
  Modbus RTU
- Modbus RTU
- Available Addresses
  RS-485
  RS-485
- Real-time Clock
- Battery Back-up Life
  10 years @ 25°C without external power
- Last fault memory
  Stores up to 4 faults with time and date stamp, includes voltages and currents at time of trip
- Two independent electro-mechanical
  Form C (SPDT)
- Contact Material
  Silver/Tin Oxide

Output Characteristics

- Pilot Duty Rating
  240VA @ 120VAC
- General Purpose Rating
  5A @ 120VAC

General Characteristics

- Ambient Temperature Range
  Operating
  -20° to 70°C (-4° to 158°F)
  Storage
  -30° to 70°C (-22° to 158°F)
- Maximum Input Power
  3 W
- Class of Protection
  NEMA 3R and/or UL Type 12
- Relative Humidity
  Up to 85%, non-condensing
- Safety Marks
  UL
  UL508 (File #E68520)
  CSA
  C22.2 No. 14 (File #48510)
  CE
  IEC 60947-6-2

Enclosure

Material
- Black polycarbonate

Display
- Liquid crystal with extended temp. range

Size
- 2 rows x 20 characters

Lighting
- LED Backlight
- Eight 0.5" stainless steel dome buttons for tactile feedback

Keypad
- 100,000 actuations

Overlay Material
- Polyester

Mechanical Life

Overlay Material
- 2000 hrs.

UV Exposure
- w/o degradation
- 3 in.-lbs.

Terminal Torque
- (depluggable terminal block) 3 in.-lbs.

Dimensions
- H 162.56 mm (6.4")
- W 154.94 mm (6.1")
- D 27.94mm (1.1")

Weight
- 1.2 lbs. (19.2 oz., 544.31 g)

Mounting Method
- Surface mountable on backplane using 4 screws

Accessories

RS485-RS232 Converter with cable & plug
- Allows RS485 devices to be connected to a PC via the RS232 (serial) port. Provides convenient terminal blocks for making signal and DC power supply connections. Pre-wired.

RS485-USB Converter with cable & plug/RS232:USB
- Allows RS485 devices to be connected to a PC via the USB port. Provides convenient terminal blocks for making signal and DC power supply connections. Pre-wired.

Solutions Software: Solutions-M
- Software features include data logging, real-time data monitoring and fault and event monitoring.