RM2000 SERIES

Remote Monitor

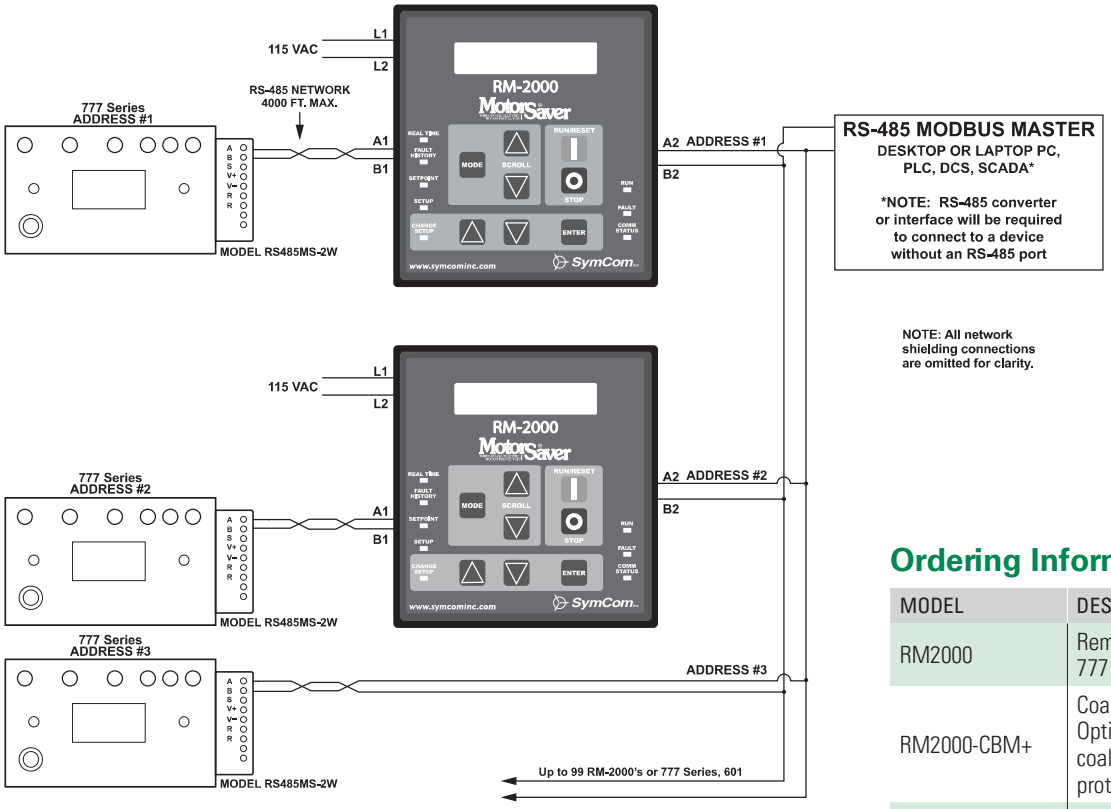
Description

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



For dimensional drawing see: Appendix, page 508, Figure 5.

Ordering Information

MODEL	DESCRIPTION
RM2000	Remote display monitor for 777 family relays
RM2000-CBM+	Coal Bed Methane Special. Optimizes gas production from coal bed methane wells while protecting submersible pump
RM2000-RTDW	Includes additional input for ground-fault module

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

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.

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.**
Baud Rate	1200-28800	1200-28800
Setup	Even Parity 1 Stop Bit	None, Odd, or Even Parity 1 or 2 Stop Bits
Protocol	Modbus RTU	Modbus RTU
Serial Interface	RS-485	RS-485
Available Addresses	01	A01-A99
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	
Configuration	Two independent electro-mechanical Form C (SPDT)	
Contact Material	Silver/Tin Oxide	
Output Characteristics (RM2000-RTDW version only)		
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 #46510)	
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	
Keypad	Eight 0.5" stainless steel dome buttons for tactile feedback	
Mechanical Life	100,000 actuations	
Overlay Material	Polyester	
UV Exposure w/o degradation	2000 hrs.	
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	