

# 777-KW/HP-P2 SERIES

### 3-Phase Current & Voltage Monitor

# **@CE**



### **Wiring Diagram**

TYPICAL WIRING DIAGRAM FOR 777-KW/HP-P2 SERIES



CURRENT TRANSFORMER WIRING DIAGRAM FOR 777-KW/HP-P2 SERIES



### Description

The 777-KW/HP-P2 series has the overload, voltage, phase loss and reversal, voltage and current unbalance, current and power monitoring\*, and underload trip based on power in one package. The underpower trip feature is desirable anytime the current vs. load characteristic is non-linear or has little change. In general terms, smaller motors and slow-speed motors have little change in current over the normal load range. Larger motors that are running light loads will also show small current changes over the operating load range. For standalone applications, the units incorporate a 3-digit LED display that is used for programming, providing real-time operational information and displaying diagnostic codes to aid in troubleshooting a fault condition.



The units also feature a communications port that can be used with communication modules listed in the 777 accessories section to form a Modbus, DeviceNet\*\*, Profibus, or Ethernet network. Up to 99 units can be remotely monitored and controlled from a PC, PLC, or SCADA system, and data logging through a PC with the optional Solutions software.

### Features & Benefits

FEATURES	BENEFITS
Low and High Power Protection	Increases reliability for non-linear motors where the load characteristic has little change
Built-in Display	Visual indication for programming, viewing real-time voltage, current, kilowatts, or horsepower, and last fault code
Programmable voltage and current settings	Allows usage on wide range of systems
3 selectable restart options	Choose from automatic, semi-automatic, or manual to best meet individual application needs
3 programmable restart delay timers	Program separate restart delay time for rapid cycle protection, motor cool down, and dry-well recovery
Remote display compatibility	Increases safety through remote display of real-time data and fault history, without the need to open the cabinet. Aids with arc flash safety regulations
Flexible reset	Reset can be done through pushbutton on relay or remotely with optional 777-MRSW or OL-RESET remote reset kit
Network communications capability	Compatible with Modbus, DeviceNet**, Profibus, or Ethernet using optional communications module



Ordering Information

777-KW/HP-P2 SERIES

MODEL	LINE VOLTAGE	MOTOR FULL AMP RANGE	DESCRIPTION
777-KW/HP-P2	200-480 V ac (3-phase)	2-800 A (external CTs required above 90 A)	Provides 480 VA @ 240 V ac output SPDT relay contacts
777-LR-KW/HP-P2	200-480 V ac (3-phase)	1-800 A (external CTs required above 9 A)	Provides 480 VA @ 240 V ac output SPDT relay contacts
777-HVR-KW/HP-P2	340-480 V ac (3-phase)	2-800 A (external CTs required above 90 A)	Provides 470 VA @ 600 V ac output SPDT relay contacts. Required when a CPT (control power transformer) is not used on a 480 V system. Commonly used in pumping applications to save the cost and extra wiring associated with a CPT
777-575-KW/HP-P2	500-600 V ac (3-phase)	2-800 A (external CTs required above 90 A)	Provides 480 VA @ 240 V ac output SPDT relay contacts. Used in Canada and NE USA where 575 V utility power services are common
777-MLR-KW/HP-P2	200-480 V ac (3-phase)	0.5-21 A and 40-740 A with external CTs	Provides 480 VA @ 240 V ac output SPDT relay contacts. It is wired directly without the need to loop conductors for 5-21 amps (under 5 amps requires looping of conductors), and can be used with external CTs for 40-740 amps

### Accessories



### **RS485MS-2W Communication Module**

(for limited Modbus capabilities) Required to enable the Modbus communications function on Model 77X-type products.



CIO-MB/CIO-120-MB Communication Module Modbus-RTU interfaces capable of providing discrete control and monitoring of an overload relay over a Modbus network.



#### CIO-DN-P/CIO-120-DN-P **Communication Module**

DeviceNet<sup>™</sup> interfaces capable of providing discrete control and monitoring of motor starters, drives and other devices over a DeviceNet\*\* network.



**CIO-777-PR Communication Module** Profibus interface capable of providing discrete control and monitoring of motor starters, drives and other devices over a Profibus network.



**CIO-EN (non-POE) Communication Module** Modbus-TCP and Modbus-RTU interface capable of providing discrete control and monitoring of an overload relay over a Modbus network.



#### **Communication Adapters**

- RS485-RS232-Converter with cable & plug • RS485-USB-Converter with cable & plug
- RS232-USB-Converter
- Specifications match industry standard.



#### **RM1000 Remote Monitor**

The RM1000/777 motor management system combines unsurpassed electronic motor protection and critical, user-friendly, motor monitoring for up to 16 devices.



#### **RM2000 Remote Monitor** The RM2000/777 motor management system combines unsurpassed electronic motor protection and critical, user-friendly, motor monitoring with event storage and real-time clock for date and time stamp.



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



777-MRSW Manual Remote Reset Kit Allows the 777 line of MotorSaver® and

PumpSaver® products to be manually reset without opening the panel door.



**OL-RESET Manual Remote Reset Kit** Allows the 777 line of MotorSaver® and PumpSaver® products to be manually reset without opening the panel door.

## 777-KW/HP-P2 SERIES



### Specifications

#### Frequency **Functional Characteristics TC-Overcurrent Trip Class Output Characteristics Output Contact Rating** (SPDT - Form C) Pilot duty rating **General purpose** Pilot duty rating for HVR model **General Characteristics** Ambient Temperature Range Operating Storage Accuracy Voltage Current Power **GF** Current Timing Repeatability Voltage Current Power Maximum Input Power Pollution Degree **Class of Protection Relative Humidity Terminal Torque Standards Passed Electrostatic Discharge**

(ESD) Radio Frequency Immunity (RFI), Conducted Radio Frequency Immunity (RFI), Radiated Fast Transient Burst Short Circuit Rating 50/60 Hz

02-60, J02-J60, L00-L60 or OFF

480 VA @ 240 V ac, B300 10 A @ 240 V ac

470 VA @ 600 V ac, B600

-20 °C to 70 °C (-4 °F to 158 °F) -40 °C to 80 °C (-40 °F to 176 °F)

±1 % ±3 % (<100 A direct) ±4 % (<100 A direct) ±15 % ±0.5 second

±0.5 % of nominal voltage ±1 % (<100 A direct) ±2 % 10 W 3 IP20 10-95 %, non-condensing per IEC 68-2-3 7 in.-Ibs.

IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air

IEC 61000-4-6, Level 3 10 V/m

IEC 61000-4-3, Level 3 10 V/m IEC 61000-4-4, Level 3, 3.5 kV input power 100 kA Surge IEC

ANSI/IEEE

Hi-potential Test

Vibration

Theration

Shock

#### Safety Marks UL

CE CSA Maximum Conductor Size (with insulation) through 777 Dimensions

Weight Mounting Method 61000-4-5, Level 3, 2 kV line-to-line; Level 4, 4 kV line-to-ground C62.41 Surge and Ring Wave Compliance to a level of 6 kV line-to-line Meets UL 508 (2 x rated V +1000 V for 1 minute) IEC 68-2-6, 10-55Hz, 1 mm peak-to-peak, 2 hours, 3 axis IEC 68-2-27, 30g, 3 axis, 11 ms duration, half-sine pulse

UL 508, UL 1053 (File #E68520) IEC 60947-1, IEC 60947-5-1 C22.2

0.65" **H** 77.47 mm (3.05"); **W** 97.79 mm (3.85"); **D** 128.27 mm (5.05") 1.56 lbs. (24.96 oz., 707.6 g) Surface mount (4 - #8 screws) or DIN-rail mount

\* Low current trip and high power trip are network programmable only

\*\*DeviceNet is a trademark of its respective owner