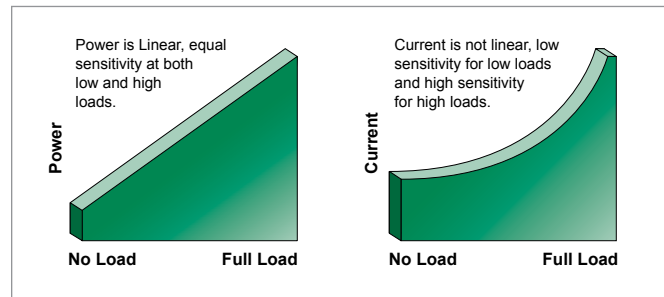


# Motor and Pump Protection Relays

## 777-KW/HP-P2 Series

### 3-Phase Current & Voltage Monitor



## Description

The 777-KW/HP-P2 is a 3-phase current and voltage monitor that provides unsurpassed protection by combining overload, voltage, phase loss and reversal, voltage and current unbalance, power monitoring\*, and underload trip based on power into one efficient unit. 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. The low and high power protection feature increases reliability for non-linear motors where the load characteristic has little change.

For standalone applications, these 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. These units also feature a communications network 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.

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

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

## Features & Benefits

FEATURES	BENEFITS
<b>Built-in display</b>	Visual indication for programming, viewing real-time voltage, current, kilowatts, horsepower, and last fault code
<b>Programmable voltage and current settings</b>	Allows usage on wide range of systems
<b>3 selectable restart options</b>	Choose from automatic, semi-automatic, or manual to best meet individual application needs
<b>3 programmable restart delay timers</b>	Program separate restart delay time for rapid cycle protection, motor cool down, and dry-well recovery
<b>Remote display compatibility</b>	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.
<b>Flexible reset</b>	Reset can be done through a push button on the relay or remotely with optional 777-MRSW or OL-Reset remote reset kit

## Applications

- Conveyor systems
- HVAC equipment
- Saws and grinders
- Fan motors

# Motor and Pump Protection Relays

777-KW/HP-P2 Series

## Specifications

<b>Frequency</b>	50/60Hz
<b>Functional Characteristics</b>	
<b>TC-Overcurrent Trip Class</b>	02-60, J02-J60, L00-L60 or OFF
<b>Output Characteristics</b>	
<b>Output Contact Rating (SPDT - Form C):</b>	
Pilot duty rating	480VA @ 240VAC, B300
General purpose	10A @ 240VAC
Pilot duty rating for HVR model	470VA @ 600VAC, B600
<b>General Characteristics</b>	
<b>Ambient Temperature Range:</b>	
Operating	-20° to 70°C (-4° to 158°F)
Storage	-40° to 80°C (-40° to 176°F)
<b>Accuracy:</b>	
Voltage	±1%
Current	±3% (<100 amps direct)
Power	±4% (<100 amps direct)
GF Current	±15%
Timing	±0.5 second
<b>Repeatability:</b>	
Voltage	±0.5% of nominal voltage
Current	±1% (<100 amps direct)
Power	±2%
Maximum Input Power	10 W
<b>Pollution Degree</b>	3
<b>Class of Protection</b>	IP20
<b>Relative Humidity</b>	10-95%, non-condensing per IEC 68-2-3
<b>Terminal Torque</b>	7 in.-lbs.
<b>Standards Passed</b>	
<b>Electrostatic Discharge (ESD)</b>	IEC 61000-4-2, Level 3, 6kV contact, 8kV air
<b>Radio Frequency Immunity (RFI), Conducted</b>	IEC 61000-4-6, Level 3 10V/m
<b>Radio Frequency Immunity (RFI), Radiated</b>	IEC 61000-4-3, Level 3 10V/m
<b>Fast Transient Burst</b>	IEC 61000-4-4, Level 3, 3.5 kV input power
<b>Short Circuit Rating</b>	100kA
<b>Surge</b>	
IEC	61000-4-5, Level 3, 2kV line-to-line; Level 4, 4kV line-to-ground
ANSI/IEEE	C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
Hi-potential Test	Meets UL508 (2 x rated V +1000V for 1 minute)
<b>Vibration</b>	IEC 68-2-6, 10-55Hz, 1mm peak-to-peak, 2 hours, 3 axis
<b>Shock</b>	IEC 68-2-27, 30g, 3 axis, 11ms duration, half-sine pulse
<b>Maximum Conductor Size (with insulation) through 777</b>	0.65"
<b>Dimensions</b>	<b>H</b> 77.47 mm (3.05"); <b>W</b> 97.79 mm (3.85"); <b>D</b> 128.27 mm (5.05")
<b>Weight</b>	1.56 lbs. (24.96 oz., 707.6 g)
<b>Mounting Method</b>	Surface mount (4 - #8 screws) or DIN rail mount

## Certification & Compliance

<b>UL</b>	UL508, UL1053 (File #E68520)
<b>CE</b>	IEC 60947-1, IEC 60947-5-1
<b>CSA</b>	C22.2

# Motor and Pump Protection Relays

## 777-KW/HP-P2 Series

### Ordering Information

MODEL	LINE VOLTAGE	MOTOR FULL AMP RANGE	DESCRIPTION
777-KW/HP-P2	200-480VAC (3-phase)	2-800A (external CTs required above 90A)	Provides 480VA @ 240VAC output SPDT relay contacts
777-LR-KW/HP-P2	200-480VAC (3-phase)	1-800A (external CTs required above 9A)	Provides 480VA @ 240VAC output SPDT relay contacts
777-HVR-KW/HP-P2	340-480VAC (3-phase)	2-800A (external CTs required above 90A)	Provides 470VA @ 600VAC output SPDT relay contacts. Required when a CPT (control power transformer) is not used on a 480V system. Commonly used in pumping applications to save the cost and extra wiring associated with a CPT
777-575-KW/HP-P2	500-600VAC (3-phase)	2-800A (external CTs required above 90A)	Provides 480VA @ 240VAC output SPDT relay contacts. Used in Canada and NE USA where 575V utility power services are common
777-MLR-KW/HP-P2	200-480VAC (3-phase)	0.5-21A and 40-740A with external CTs	Provides 480VA @ 240VAC 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™ 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.

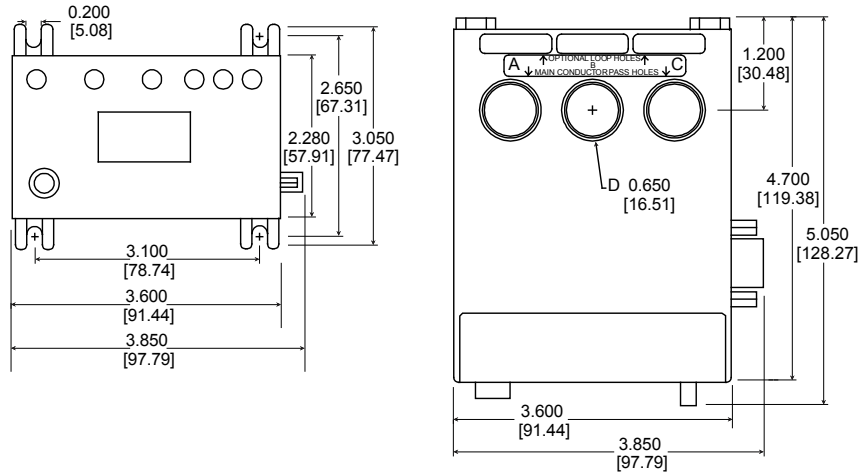
#### OL-Reset Manual Remote Reset Kit

Allows the 777 line of MotorSaver® and PumpSaver® products to be manually reset without opening the panel door.

# Motor and Pump Protection Relays

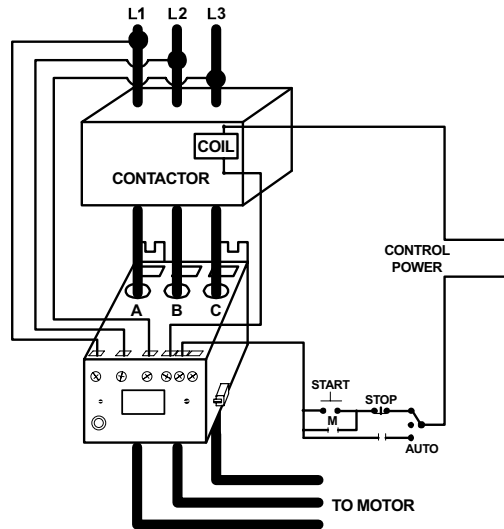
## 777-KW/HP-P2 Series

### Dimensions Inches (mm)

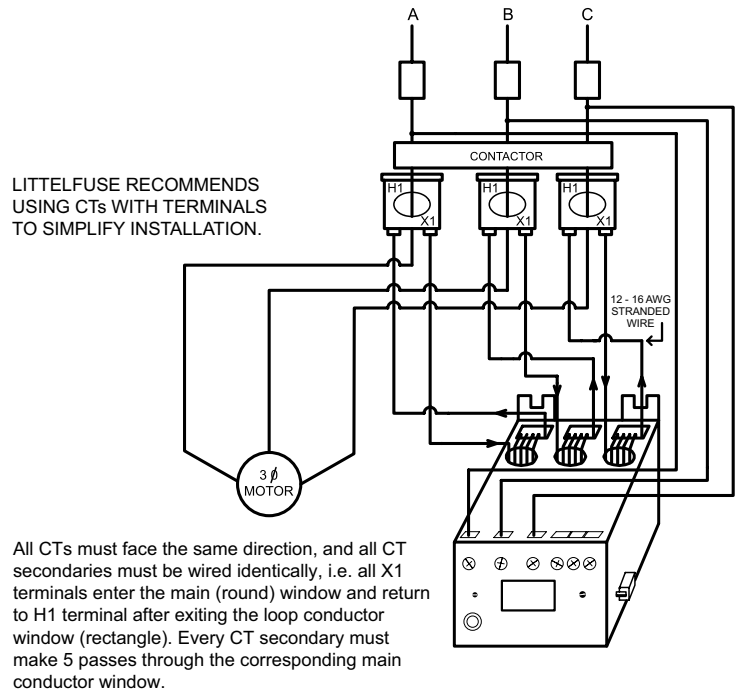


### Simplified Wiring Diagram

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



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



**Disclaimer Notice** – Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at [www.littelfuse.com/product-disclaimer](http://www.littelfuse.com/product-disclaimer).