Single-Phase Current & Voltage Monitor







Description

The single-phase 77C unit is a fully-programmable, electronic overload relay designed to protect any motor drawing 2-800 full load A (external CTs are required above 90 A). Common applications include conveyor systems, HVAC equipment, saws and grinders, fan motors, and almost any pumping application. The 77C and 777-HVR-SP (family of products) are for single-phase 100-240 V ac applications.

All of the overload relays provide unsurpassed protection by combining overload, underload, and voltage in one unit. 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. 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. This capability allows for a simple, cost-effective way to meet new requirements for arc-flash safety.

Features & Benefits

FEATURES	BENEFITS
Built-in display	Visual indication for programming, viewing real-time voltage or current, and last fault code
Programmable voltage and current settings	Allows usage on a 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. 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

Applications

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



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Specifications

Functional Characteristics

Frequency 50/60 Hz

TC- Overcurrent Trip Class

(77C, 777 non-Plus Series units) 5, 10, 15, 20, 30 (J prefix enables jam protection feature)

Output Characteristics

Output Contact Rating (SPDT - Form C)

Pilot duty rating
General purpose
Pilot duty rating for HVR models
480 VA @ 240 V ac, B300
10 A @ 240 V ac
470 VA @ 600 V ac, B600

General Characteristics

Ambient Temperature Range

 Operating
 -20 °C to 70 °C (-4 °F to 158 °F)

 Storage
 -40 °C to 80 °C (-40 °F to 176 °F)

Accuracy

Voltage ±1 %

Current ±3 %(<100 amps direct)

GF Current ±15 %

Timing

(77C, 777 non-Plus Series units) 5 % +1 second

Repeatability

 $\begin{array}{ll} \textbf{Voltage} & \pm 0.5 \ \% \ \text{of nominal voltage} \\ \textbf{Current} & \pm 1 \ \% \ (<100 \ \text{amps direct}) \end{array}$

Maximum Input Power10 WPollution Degree3Class of ProtectionIP20

Relative Humidity 10-95 %, non-condensing per IEC 68-2-3

Terminal Torque 7 in.-lbs.

Standards Passed

Electrostatic Discharge (ESD)IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air

Radio Frequency Immunity (RFI)

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

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

Fast Transient Burst IEC 61000-4-4, Level 3, 3.5 kV input power

Short Circuit 100 kA

Surge

IEC 61000-4-5, Level 3, 2 kV line-to-line; Level 4, 4 kV line-to-ground
ANSI/IEEE C62.41 Surge and Ring Wave Compliance to a level of 6 kV line-to-line

Hi-potential TestMeets UL 508 (2 x rated V +1000V for 1 minute)VibrationIEC 68-2-6, 10-55 Hz, 1 mm peak-to-peak, 2 hours, 3 axisShockIEC 68-2-27, 30 g, 3 axis, 11 ms duration, half-sine pulse

Maximum Conductor Size

(with insulation) through 77C 0.65°

Dimensions H 77.47 mm (3.05"); **W** 97.79 mm (3.85"); **D** 128.27 mm (5.05")

Weight 1.56 lbs. (24.96 oz., 707.6 g)

Mounting Method Surface mount (4 - #8 screws) or DIN rail mount

Certification & Compliance

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



Accessories

RS485MS-2W Communication Module

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

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.

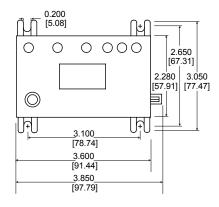
OL-RESET Manual Remote Reset Kit

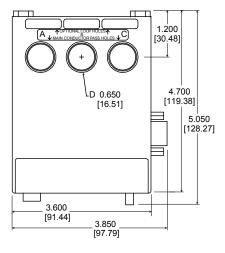
Allows the 777 line of MotorSaver® and PumpSaver® products to be manually reset without opening the panel door.

Ordering Information

MODEL	LINE VOLTAGE	MOTOR FULL AMP RANGE	DESCRIPTION
77C	100-240 V ac	2-800A (external CTs required above 90A)	Provides 480VA @ 240 V ac output SPDT relay contacts
77C-LR	100-240 V ac	1-9A only	Provides 480VA @ 240 V ac output SPDT relay contacts
777-HVR-SP	340-480 V ac	2-800A (external CTs required above 90A)	Provides 470VA @ 600 V ac output SPDT relay contacts. For systems with no control power transformer

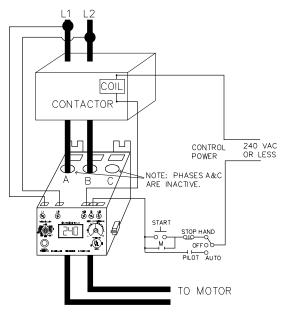
Dimensions Inches (mm)



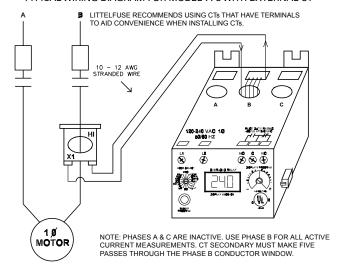


Simplified Wiring Diagram

TYPICAL WIRING DIAGRAM FOR MODEL 77C WITH MOTOR CONTROL



TYPICAL WIRING DIAGRAM FOR MODEL 77C WITH EXTERNAL CT



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