

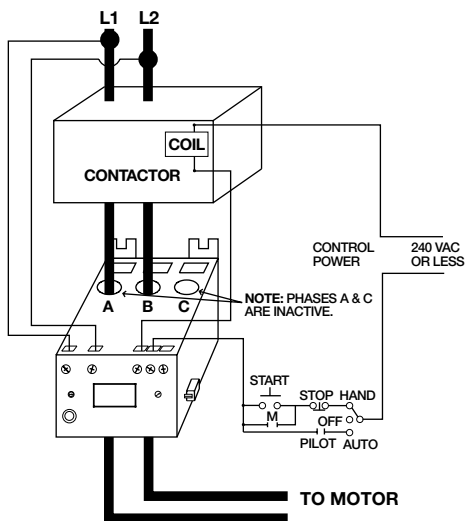
# 77C-KW/HP SERIES

## Single-Phase Current & Voltage Monitor

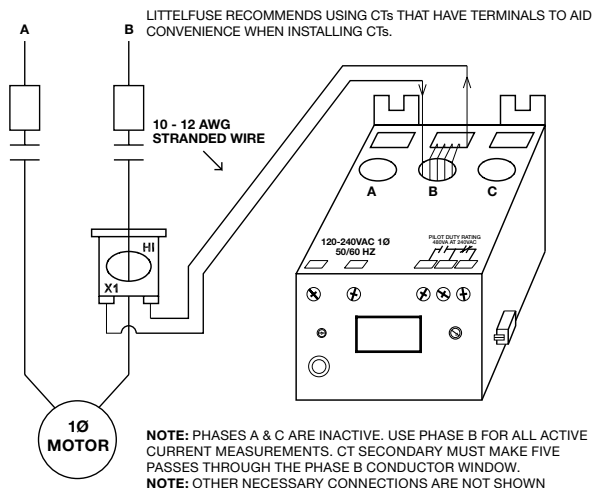


### Wiring Diagram

TYPICAL WIRING DIAGRAM FOR MODEL 77C-KW/HP WITH MOTOR CONTROL

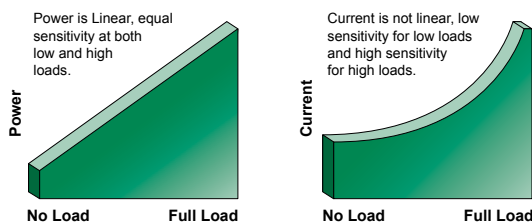


TYPICAL WIRING DIAGRAM FOR MODEL 77C-KW/HP WITH EXTERNAL CT



### Description

The 77C-KW/HP and 77C-LR-KW/HP are fully programmable pump protection relays which will monitor the voltage and current for high or low voltage, overload and underload conditions 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. Common uses include pumping applications where motors run slower than around 3400 rpm and usually have small current vs load changes; such as slow speed mixer or agitator motors up to 50 hp, and magdrive or can pumps.



The Littelfuse PumpSaver® relay provides the high sensitivity of a power monitor to protect pump motors from dry run and dead-head conditions.

### Features & Benefits

FEATURES	BENEFITS
<b>Underload protection</b>	Increases reliability for non-linear motors where the load characteristic has little change
<b>Built-in display</b>	Visual indication for programming, viewing real-time voltage, current, kilowatts or horsepower, and last fault code
<b>15 programmable criteria settings</b>	Allows user flexibility to fine-tune the relay for maximum protection in any application.
<b>Last fault memory</b>	Provides instant troubleshooting diagnostics
<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 options: automatic, manual using pushbutton on relay, or remotely with optional 777-MRSW or OL-RESET remote reset kit.
<b>Network communications capability</b>	Compatible with Modbus using optional communications module (RS485MS-2W)

### Ordering Information

MODEL	LINE VOLTAGE	MOTOR FULL AMP RANGE	DESCRIPTION
77C-KW/HP	100-240 V ac	2-90 A (external CTs required above 90 A)	Provides 480 VA @ 240 V ac output SPDT (Form C) relay contacts
77C-LR-KW/HP	100-240 V ac	1-9 A (external CTs required above 9 A)	Provides 480 VA @ 240 V ac output SPDT (Form C) relay contacts

# Protection Relays

Motor and Pump Protection - Single-Phase Pump Protection

## 77C-KW/HP SERIES

### Accessories



**RS485MS-2W Communication Module**  
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.

### Specifications

<b>Input Voltage</b>	100-240 V ac, 1Ø
<b>Frequency</b>	50-60 Hz
<b>Motor Full Load Amp Range</b>	
<b>77C-KW/HP</b>	2-25 A (Loops Required) 26-90 A (Direct) 91-800 A (External CT's)
<b>77C-LR-KW/HP</b>	1.0 A - 2.0 A (additional Loop) 2.0 A - 9.0 A (Direct)
<b>Short Circuit Withstand Rating</b>	100 kA per UL and CSA
<b>Power Consumption</b>	5 W (Maximum)
<b>Output Contact Rating SPDT (Form C)</b>	Pilot duty rating: 480 VA @ 240 V ac General purpose: 10 A @ 240 V ac
<b>Expected Life</b>	1 x 10 <sup>6</sup> operations
<b>Mechanical Accuracy at 25 °C (77 °F)</b>	1 x 10 <sup>5</sup> operations at rated load
<b>Electrical Voltage</b>	±1 %
<b>Current</b>	±3 % (Direct, No External CT's)
<b>Timing</b>	5 % ± 1 second
<b>Repeatability</b>	
<b>Voltage</b>	± 0.5 % of nominal voltage
<b>Current</b>	± 1 % (Direct, No External CT's)
<b>Safety Marks</b>	
<b>UL</b>	UL 508, UL 1053
<b>CE</b>	IEC 60947-1, IEC 60947-5-1
<b>Standards Passed</b>	
<b>Electrostatic Discharge (ESD)</b>	IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air
<b>Radio Frequency Immunity (RFI), Conducted</b>	IEC 61000-4-6, Level 3 10 V/m
<b>Radio Frequency Immunity (RFI), Radiated</b>	IEC 61000-4-3, Level 3 10 V/m
<b>Fast Transient Burst Surge</b>	IEC 61000-4-4, Level 3, 3.5 kV input power
<b>IEC</b>	IEC 61000-4-5, Level 3, 2 kV line-to-line; Level 4, 4 kV line-to-ground
<b>ANSI/IEEE</b>	C62.41 Surge and Ring Wave compliance to a level of 6 kV line-to-line
<b>Hi-potential Test</b>	Meets UL 508 (2 x rated V +1000 V for 1 min.)
<b>Vibration</b>	IEC 68-2-6, 10-55 Hz, 1 mm peak-to-peak, 2 hours, 3 axis
<b>Shock</b>	IEC 68-2-27, 30 g, 3 axis, 11 ms duration, half-sine pulse
<b>Mechanical Dimensions</b>	<b>H</b> 78.74 mm (3.1"); <b>W</b> 99.06 mm (3.9"); <b>D</b> 129.54 mm (5.1")
<b>Terminal Torque</b>	7 in.-lbs.
<b>Enclosure Material</b>	polycarbonate
<b>Weight</b>	1.2 lbs
<b>Maximum Conductor Size Through 777</b>	0.65" with insulation

# Protection Relays

Motor and Pump Protection - Single-Phase Pump Protection

## 77C-KW/HP SERIES

### Environmental

<b>Temperature Range</b>	
<b>Ambient Operating</b>	-20 °C - 70° C (-4 °F - 158 °F)
<b>Ambient Storage</b>	-40 °C - 80° C (-40 °F - 176 °F)
<b>Pollution Degree</b>	3
<b>Class of Protection</b>	IP20, NEMA 1
<b>Relative Humidity</b>	10-95 %, non-condensing per IEC 68-2-3
<b>Programmable</b>	
<b>Operating Points</b>	Range
<b>LV- Low Voltage Threshold</b>	85 V - HV Setting
<b>HV- High Voltage Threshold</b>	264 V - LV Setting
<b>MULT- # of Conductors or CT Ratio (XXX:5)</b>	
<b>77C:</b>	1-10 Conductors or 100-800 Ratio
<b>77C-LR:</b>	1 or 2
<b>OC- Overcurrent Threshold</b>	(20-100 A) ÷ MULT or 80-120 % of CT Primary
<b>TC- Overcurrent Trip Class *</b>	5, J5, 10, J10, 15, J15, 20, J20, 30, J30, or Lln (linear)
<b>RD1- Rapid Cycle Timer</b>	0, 2 - 500 seconds
<b>RD2- Restart Delay After All Faults Except Undercurrent (motor cool down timer)**</b>	2 - 500 minutes/seconds

### RD3- Restart Delay

<b>After Undercurrent (dry well recovery timer)</b>	2 - 500 minutes/seconds	
<b>#RU- Number of Restarts After Undercurrent</b>	0, 1, 2, 3, 4, A (Automatic)	
<b>ADDR- RS485 Address</b>	A01- A99	
<b>#RO-Number of Restarts After Overcurrent</b>	0, 1, 2, 3, 4, A (Automatic)	
<b>LP/PWS (PWS = LP Range)</b>	<b>1</b> = 0.01 - 0.99 KW	<b>5</b> = 0.01 - 1.30 HP
	<b>2</b> = 1.00 - 9.95 KW	<b>6</b> = 1.34 - 13.3 HP
	<b>3</b> = 10.0 - 99.5 KW	<b>8</b> = 13.4 - 133 HP
	<b>4</b> = 100 - 650 KW	<b>9</b> = 134 - 871 HP

SETTING	RD2	RD3	SETTING	RD2	RD3
0	Minutes	Minutes	2	Seconds	Minutes
1	Minutes	Seconds	3	Seconds	Seconds

\* If J Prefix is displayed in trip class setting, jam protection is enabled. If programmed to Lln position, overcurrent trip delays are fixed linear-type delays set in OPT1 position.

\*\* RD2 & RD3 can be changed from minutes to seconds under program position OPT2.

单击下面可查看定价，库存，交付和生命周期等信息

[>>Littelfuse\(美国力特\)](#)