

## Features

Voltage, current, and motor output power can be displayed in kilowatts or horsepower.

Device can easily be programmed from the front.

A 9-pin port can be used for RS-485 communication or with a 4-20mA output module.

The Model 777-AccuPower is UL and CSA listed as an overload relay.



## Applications

The 777-AccuPower monitors voltage, current, and power to protect 3-phase motors. Motor parameters can be programmed into the 777-AccuPower to assist in accurately estimating motor output power. The 9-pin communication port can be used for Modbus communication or for 4-20mA analog output of the calculated output power.

## Description

The 777-AccuPower is a fully-programmable motor and pump protection relay with motor output power display. Voltage, current and power measurements are displayed on the three-digit display, as well as fault information and setpoints. The built-in display simplifies troubleshooting and allows the user to easily and precisely configure setpoints. In addition, the 777-AccuPower allows the user to enter motor parameters such as full load current and power factor to provide a calculated output power display. The Model 777-AccuPower has the following adjustable protection settings:

- 1) Horsepower
- 2) Full load amps
- 3) Efficiency/power factor
- 4) Overcurrent
- 5) Trip class
- 6) Current unbalance
- 7) Power scale
- 8) Low power setting
- 9) High power setting
- 10) Rapid-cycle timer
- 11) Fault/overload restart delay
- 12) Underload restart delay
- 13) Full scale (used with 4-20mA module)

### Other user adjustable features include:

- 1) CT/loop multiplier so overcurrent and power setpoints can be made in actual amps and kW or hp.
- 2) Number of restarts after faults (manual, automatic and semiautomatic options).
- 3) Number of restarts after underload (manual, automatic and semiautomatic options).
- 4) Network Address

Adding the optional COM-4-20 module allows the 4-20mA output of calculated output power. The 4-20mA signal will range from 0 (4mA) to the full scale value (20mA) programmed into the 777-AccuPower depending on the motor output power.

**PumpSaver**<sup>®</sup>  
SUBMERSIBLE  
PUMP PROTECTOR

## 777-AccuPower

Power Monitor  
Motor Protection  
Overload Relay

•  
Engineered  
Protection

### Protects 3-Phase Motors and Pumps from:

- Low power
- High power
- Overload (UL listed)
- Jams
- Single-phasing
- Current unbalance
- Rapid cycling
- Phase reversal
- Voltage unbalance, high voltage, low voltage and ground fault (class II) can be enabled over a network

### Additional Features

- Fully programmable
- UL and CSA listed
- CE marked
- Automatic or manual reset
- Tamper guard
- RS-485 communications/ 4-20mA output port
- Surface or DIN rail mountable
- Alphanumeric LED diagnostic display
- Last fault memory
- Up to 99 programmable addresses
- 5-year warranty
- Made in USA

### New Features

- Network programmable
- Ability to clear last fault
- Remote setup, diagnostics and control
- Remote data logging

# PumpSaver®

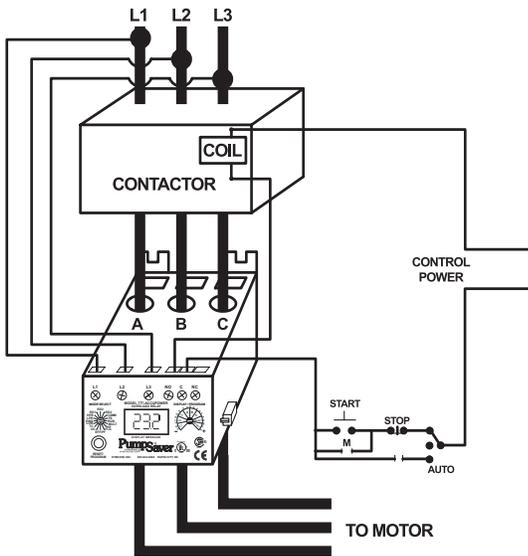
SUBMERSIBLE  
PUMP PROTECTOR

Specifications  
•  
Operating Points  
•  
Special Options

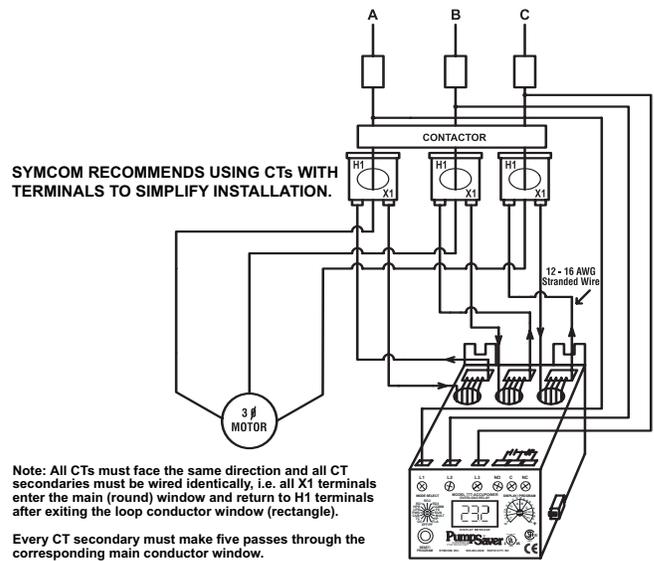
**777-AccuPower**  
Power Monitor/Motor Protection  
Overload Relay



TYPICAL WIRING DIAGRAM FOR  
MODEL 777-AccuPower (25-90 AMPS)  
& 777-LR-AccuPower (1-9 AMPS)



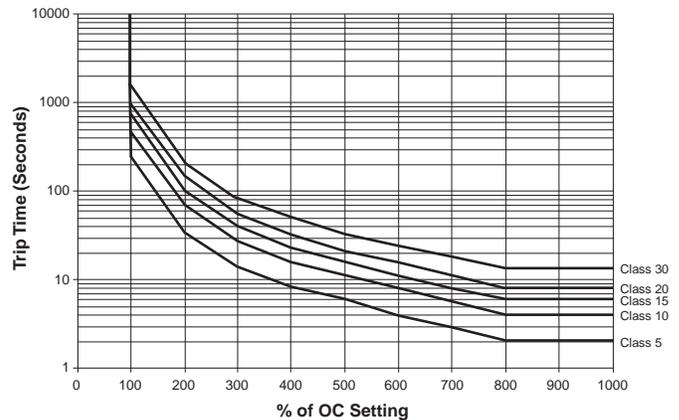
CURRENT TRANSFORMER WIRING DIAGRAM FOR  
MODEL 777-AccuPower (80-800 AMPS)



## Wiring configuration based on motor amps.

Model	Full Load Amps	# of Loops	# of Conductors through A, B and C	MULT to Program (CT Ratio)
777-LR-AccuPower	1 - 2	1	2	2
	2 - 9	0	1	1
777-AccuPower	8 - 12	2	3	3
	12 - 25	1	2	2
	25 - 90	0	1	1
External CTs required. See wiring diagram for external CTs	80 - 110	4	5	100 (100:5)
	110 - 160	4	5	150 (150:5)
	160 - 220	4	5	200 (200:5)
	220 - 320	4	5	300 (300:5)
	320 - 420	4	5	400 (400:5)
	400 - 520	4	5	500 (500:5)
	480 - 600	4	5	600 (600:5)
	560 - 800	4	5	800 (800:5)

## Overload Trip Classes



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SUBMERSIBLE PUMP PROTECTOR

Specifications  
 •  
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## 777-AccuPower Power Monitor/Motor Protection Overload Relay

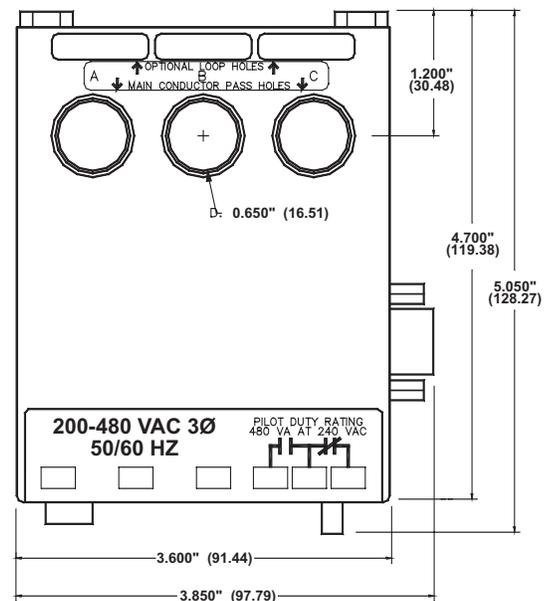
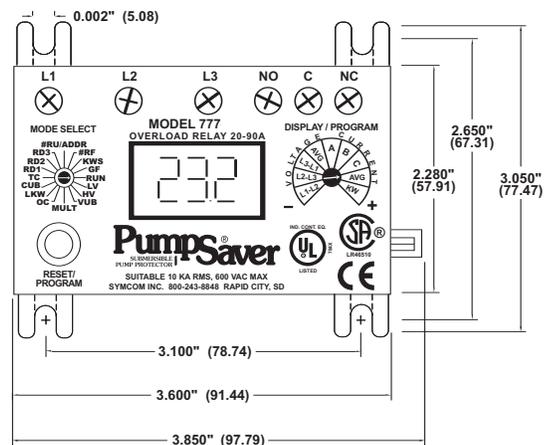
### Advantages:

- Integrated UL listed/CSA approved
- Greater underload sensitivity than power factor or current monitors
- Built-in undervoltage, overvoltage and unbalance protection
- Digitally programmable
- Remote programmability
- Digital display
- Optional remote display
- Data-logging capabilities

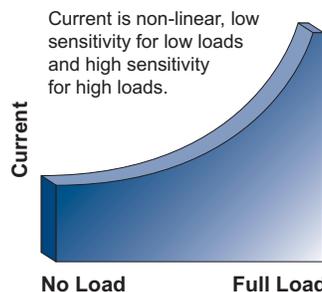
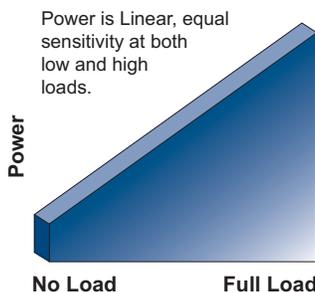
The Model 777-AccuPower displays the motor output power. Instead of just monitoring the input current and voltage and displaying input power, the 777-AccuPower actually calculates the power output from the motor. This is very useful when using tables from a pump manufacturer to determine flow rates based on pump power.

The Model 777-AccuPower can be used with the COM-4-20 module to output a 4-20mA signal to a PLC or other display device. This signal is proportional to the motor output power. The 4-20mA signal will range from 0(4mA) to the full scale value programmed into the 777-AccuPower depending on the motor output power.

### Dimensions for All 777 Units



777-AccuPower uses power measurements for sensitive underload protection, while using current measurements for UL listed overload protection.



## Specifications

<b>Electrical</b>			
Input Voltage	190-480VAC 480-600VAC (777-575-AccuPower)		
Frequency	50/60Hz		
Motor Full Load Amp Range	2-25 Amps (looped) 25-90 Amps (direct) 80-800 Amps (external CTs) 1-9 Amps (777-LR-AccuPower)		
Power Consumption	10 Watts (max.)		
Output Contact Rating SPDT (Form C)	Pilot duty rating: 480VA @ 240VAC General purpose: 10A @ 240VAC		
<b>Expected Life</b>			
Mechanical	1 x 10 <sup>6</sup> operations		
Electrical	1 x 10 <sup>5</sup> operations at rated load		
<b>Accuracy at 25° C (77° F)</b>			
Measured horsepower/kilowatt	±3%*		
Voltage	±1%		
Current	±3% (<100 amps direct)		
GF Current	±15%		
Timing	5% ±1 second		
<b>Repeatability</b>			
Voltage	±0.5% of nominal voltage		
Current	±1% (<100 amps direct)		
<b>Current Unbalance Trip Times</b>			
<u>% Over Setpoint</u>	<u>Trip time</u>	<u>% Over Setpoint</u>	<u>Trip time</u>
1%	30seconds	5%	6seconds
2%	15seconds	6%	5seconds
3%	10seconds	10%	3seconds
4%	7.5seconds	15%	2seconds
<b>Safety Marks</b>			
UL	UL508, UL1053		
CSA	LR46510		
CE	IEC 60947-1, IEC 60947-5-1		
<b>Standards Passed</b>			
Electrostatic Discharge (ESD)	IEC 1000-4-2, Level 3, 6kV contact, 8kV air		
Radio Frequency Immunity (RFI), Conducted	IEC 1000-4-6, Level 3 10V/m		
Radio Frequency Immunity (RFI), Radiated	IEC 1000-4-3, Level 3 10V/m		
Fast Transient Burst	IEC 1000-4-4, Level 3, 3.5 kV input power		
<b>Surge</b>			
IEC	1000-4-5, 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)		
Vibration	IEC 68-2-6, 10-55Hz, 1mm peak-to-peak, 2 hours, 3 axis		
Shock	IEC 68-2-27, 30g, 3 axis, 11ms duration, half-sine pulse		
<b>Mechanical</b>			
Dimensions	3.0"H x 5.1"D x 3.6"W		
Terminal Torque	7 in.-lbs.		
Enclosure Material	Polycarbonate		
Weight	1.2 lbs.		
Maximum Conductor Size	0.65" with insulation		
<b>Environmental</b>			
Temperature Range	Ambient Operating: -20° to 70° C (-4° to 158°F) Ambient Storage: -40° to 80° C (-40° to 176°F)		
Pollution Degree	3		
Class of Protection	IP20, NEMA 1		
Relative Humidity	10-95%, non-condensing per IEC 68-2-3		

SymCom warrants its microcontroller based products against defects in material or workmanship for a period of five (5) years from the date of manufacture. All other products manufactured by SymCom shall be warranted against defects in material and workmanship for a period of two (2) years from the date of manufacture. For complete information on warranty, liability, terms returns, and cancellations, please refer to the SymCom Terms and Conditions of Sale document.

NOTES: SymCom's 777-AccuPower can be programmed prior to installation by applying 120VAC between the L1 and L2 terminals.

\* On a well-balanced system within recommended current range.