

MotorSaver®

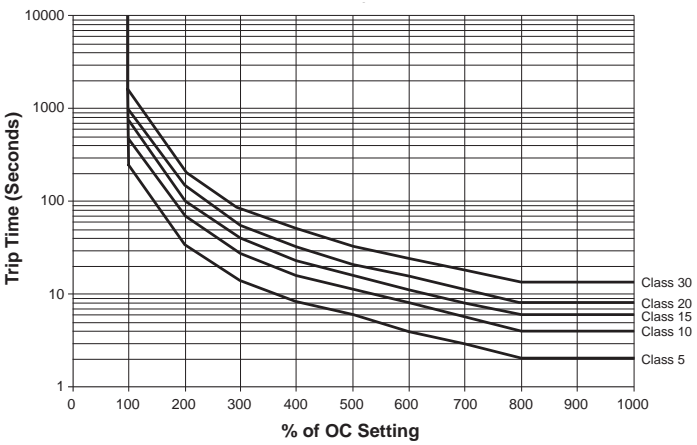
SINGLE-PHASE ELECTRIC MOTOR PROTECTOR



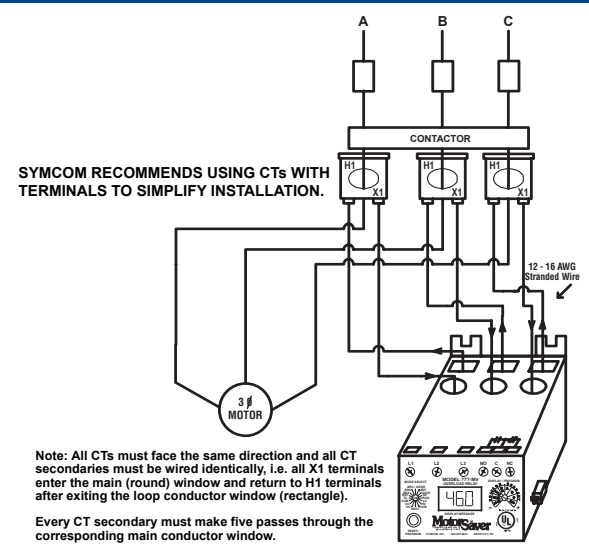
- Specifications
-
- Operating Points
-
- Special Options

Model 777-MV Overload Relay

Overload Trip Classes



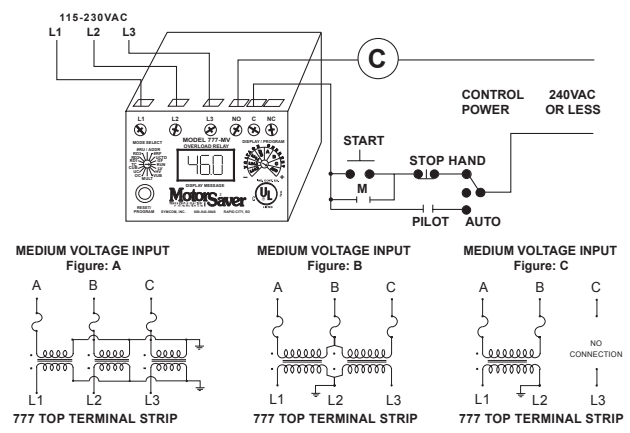
Current Transformer Wiring Diagram for Model 777-MV (12.5 to 600 amps)



Wiring configuration based on motor amps

Model	Full Load Amps	CT Ratio	Passes through 777 with CT Secondary	MULT Program Setting
777-MV External CTs required.	12.5 - 25	(50:5)	2	25
	25 - 50	(50:5)	1	50
	50 - 75	(75:5)	1	75
	75 - 100	(100:5)	1	100
	100 - 150	(150:5)	1	150
	150 - 200	(200:5)	1	200
	200 - 300	(300:5)	1	300
	300 - 400	(400:5)	1	400
	400 - 500	(500:5)	1	500
500 - 600	(600:5)	1	600	

Voltage Wiring Diagram for 777-MV



Note: Most potential transformers have 120VAC secondaries. The 777-MV may be installed with 3-phase voltage input (Figure: A & B); for full voltage monitoring and protection. If the single-phase voltage input is used (Figure: C), the 777-MV is a current monitor only.



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Programming the Model 777-MV is an easy four step process:

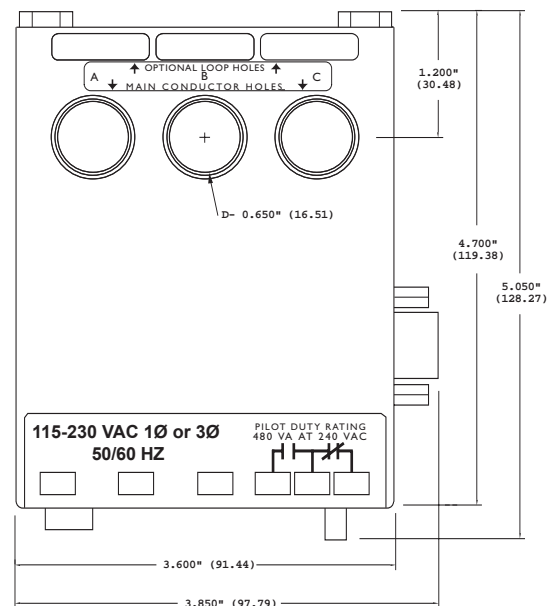
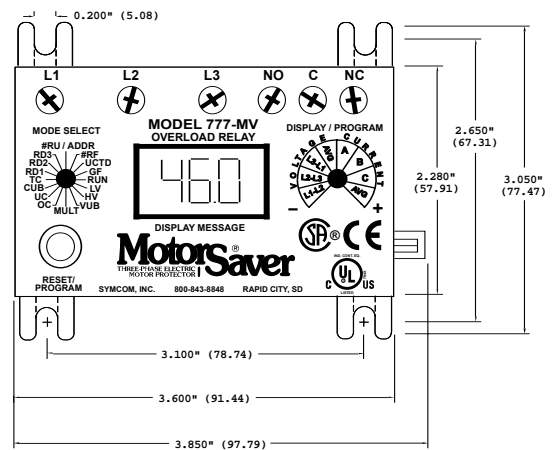
- 1) Rotate the MODE SELECT switch to the parameter to be programmed.
- 2) Press and hold the RESET/PROGRAM button.
- 3) Rotate the DISPLAY/PROGRAM knob to the desired setting as shown in the LED display.
- 4) Release the RESET/PROGRAM button.

The Model 777-MV is a fully programmable electronic overload relay designed to monitor medium voltage 3-phase systems. It can be used as a stand alone product or the RS-485 communication port can be used to send data to an RM-1000, RM-2000, PC, or PLC using Modbus.

The RM-2000/777-MV motor management system combines critical, unsurpassed, electronic motor protection with user-friendly motor monitoring. This combination provides valuable motor management information such as motor run time, power factor, kWh, and much more (see RM-2000 data sheet).

SymCom's Solutions software can communicate with 99 networked units located up to 4000 feet from the PC. It can log voltages, currents, power factor, and kWh. Solutions software also gives the user the ability to start and stop the 777-MV from a remote location.

Dimensions for 777- MV





Specifications Model 777-MV

MODEL 777-MV SPECIFICATIONS	
Electrical	
Input Voltage	115-230VAC single-phase or 115-230VAC three-phase
Frequency	50/60 Hz
Motor Full Load Amp Range	12.5-600 Amps, CTs Required
Short Circuit	100kA
Power Consumption	10 Watts (max.)
Output Contact Rating SPDT (Form C)	Pilot duty rating: 480VA @ 240VAC General purpose: 10A @ 240VAC
Expected Life	Mechanical: 1 x 10 ⁶ operations, Electrical: 1 x 10 ⁶ operations at rated load
Accuracy at 25° C (77° F)	
Voltage	±1%
Current	±3% (<10 Amps Direct)
GF Current	±15% (<10 Amps Direct)
Timing	5% ± 1 second
Repeatability @ Fixed Temperature	
Voltage	± 0.5% of nominal voltage
Current	± 1% (<10 amps direct)
Trip Times (Those not shown have user selectable trip times.)	
Ground Fault Trip Time	Trip time
101%-200% of Setpoint	8 seconds ± 1 second
201%-300% of Setpoint	4 seconds ± 1 second
301%-400% of Setpoint	3 seconds ± 1 second
401% or Greater	2 seconds ± 1 second
Current Unbalance Trip Times	Trip time
% Over Setpoint	
1%	30 seconds
2%	15 seconds
3%	10 seconds
4%	7.5 seconds
5%	6 seconds
6%	5 seconds
10%	3 seconds
15%	2 seconds
Safety Marks	
UL	UL508, UL1053
CE	IEC 60947-1, IEC 60947-5-1
Standards Passed	
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
Surge	
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
Mechanical	
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 Through 777	0.65" with insulation
Environmental	
Temperature Range	Ambient Operating: -40° to 70° C (-40° 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
Programmable Operating Points	
Range	
LV- Low Voltage Threshold	85- HV Setting
HV- High Voltage Threshold	LV Setting - 264V
VUB- Voltage Unbalance Threshold	2- 15% or 999 (for single-phase voltage Input)
MULT- # of Loops or CT Ratio (XXX:5)	25- 600
OC- Overcurrent Threshold	40- 110% of CT Primary
UC- Undercurrent Threshold	(0, 10-98A) / MULT or 40-100% of CT Primary
CUB- Current Unbalance Threshold	2- 25% or 999 (OFF)
TC- Overcurrent Trip Class *	5, J5, 10, J10, 15, J15, 20, J20, 30, J30
RD1- Rapid-cycle Timer	0, 2- 500 Minutes
RD2- Restart Delay After All Faults Except Undercurrent (motor cool-down timer)	2- 500 Minutes
RD3- Restart Delay After Undercurrent (dry well recovery timer)	2- 500 Minutes
#RU- Number of Restarts After Undercurrent	0, 1, 2, 3, 4, A(Automatic)
ADDR- RS-485 Address	A01-A99
#RF- Number of Restarts After All Faults Except Undercurrent**	0, 1, oc1, 2, oc2, 3, oc3, 4, oc4, A, ocA
UCTD- Undercurrent Trip Delay	2- 60 Seconds
GF- Ground Fault Current Threshold	10- 20% of CT Primary or OFF

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.

* If "J" is displayed in the trip class setting, jam protection is enabled.

** If "oc" is displayed in the #RF setting, overcurrent will be included as a normal fault and the relay will automatically restart after RD2 expires, otherwise, manual reset is required after an overcurrent fault.