

3 PHASE MONITORS

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MODEL 257

3 PHASE MONITORS

FEATURES

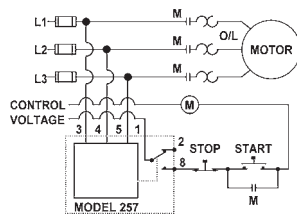
- Detects Phase Loss, Low Voltage, Phase Reversal
- 50Hz, 60Hz, and 400Hz Models
- Automatic or Manual Reset

DESCRIPTION

The Model 257 continuously monitors 3-phase power lines for abnormal conditions. When properly adjusted, the Model 257 will detect phase loss on a loaded motor even when regenerated voltage is present. This device consists of a solid-state voltage and phase-angle sensing circuit, driving an electro-mechanical relay. When correct voltage and phase rotation are applied, the internal relay will energize. A fault condition will de-energize the relay. When the fault is corrected, the monitor will automatically reset. (A manual version is also available)

The Model 257 does not require a neutral connection and can be used with Wye or Delta systems. Voltage ranges are sufficiently wide to allow for proper adjustment to existing conditions. Both TRIP and NORM condition indicators are provided to aid in adjustment and system trouble-shooting.

Typical Application

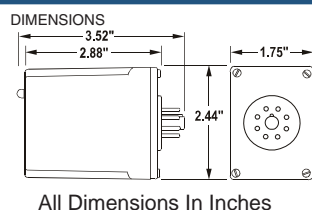


SPECIFICATIONS MODEL 257

AUTO Reset	B257B	257B	A257B	EX257B	B257B-400	257B-400
Manual Reset	B257BM	257BM	A257BM	WX257BM	B257BM-400	257BM-400
Nominal AC Voltage	120VAC	208/240VAC	480VAC	380VAC	120VAC	208/240VAC
Phase-to-Phase						
Case Color	Gray	Red	Yellow	Yellow	Gray	Red
Adjustment Range	85-120VAC	160-240VAC	380-480VAC	300-400VAC	85-120VAC	160-240VAC
Frequency	60Hz	60Hz	60Hz	50Hz	400Hz	400Hz
Power Consumption	1.4W	2.4W	3.7W	3.0W	1.4W	2.4W
Transient Protection	2500VAC for 10msec					
Repeat Accuracy	±0.1% of set point (fixed conditions)					
Response Time	50msec (set or reset)					
Dead Band	Approximately 2%					
Output Contacts	SPDT 10 Amps at 240VAC					
Expected Relay Life	Mechanical: 10 Million Operations Electrical: 100,000 Operations at rated load					
Operating Temp.	-20°F to +131°F					
Humidity Tolerance	0-97% w/o condensation					
Enclosure Material	Dust Cover: ABS Plastic Header: Nylon					
Mounting	8-Pin Socket (**Sold separately)					
Weight	5 ounces					
Agency Approvals	UL Recognized* and CSA Certified					
	*Conditions of acceptability:					
	(1) The 380V and 480V versions must be used with a UL Recognized 600Vac socket					
	(2) For use in a Pollution Degree 2 Environment					
	(3) To Be Installed on the load side of branch circuit protection rated 10A.					

**Order 8-Pin Socket Number 51X120 (UL Listing E126447)
Smart Socket Available for 480 to 635Vac Circuits

DIMENSIONS



All Dimensions In Inches



INSTALLATION

Mount the 8-pin socket in a suitable enclosure. A NEMA-1 rated enclosure, designed for socket-mounted relays is available upon request. Connect 3-phase power to terminals 3, 4, and 5 on the socket. Phase rotation should be verified. Connect the load control wiring to the appropriate terminals on the socket:

Motor Control Application Use terminals 1 and 8
Phase Loss Alarm Applications..... Use terminals 1 and 2

Insert the Model 257 into the socket and apply power. If the contact does not transfer (green light ON), check that all phases are present, and of the correct voltage. If power is correct, rotate the level adjustment counter-clockwise. If the contact still does not transfer, remove power and reverse two of the three phase wires at the socket (phase rotation reversed). Re-apply power. The contact should transfer to provide a signal path between pins 1 and 8.

ADJUSTMENT SETTING

The following procedure will allow the Model 257 to be adjusted to achieve a trip point just below the nominal phase-to-phase voltage, where the unit is applied.

Rotate the adjustment control fully clockwise, or until the red (TRIP) indicator illuminates. Slowly rotate the adjustment control in a counter-clockwise direction, just until the green (NORM) indicator illuminates. At this point, the Model 257 is the most sensitive to irregular power line conditions. If nuisance tripping occurs, turn the control slightly further counter-clockwise. A more accurate setting will require the use of a 3-phase variac to lower the voltage to an exact measurable setting. A factory set version of all models and voltage ranges are available. (Consult factory for details.)

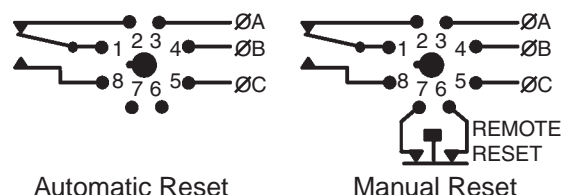
TROUBLESHOOTING

Should the Model 257 fail to operate properly, check that all three voltages are present, and are of the correct voltage level and phase rotation. Check all fuses and verify that all wiring connections are correct. If problems persist, consult the factory for assistance.

MANUAL RESET VERSIONS

If you do not wish to use the external reset switch on the manual reset version, you must jumper pins 6 and 7. Refer to the manual reset 8-pin diagram.

PIN DESIGNATIONS



Automatic Reset

Manual Reset

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3 PHASE MONITORS

SMART SOCKET (8-PIN SOCKET)

MODEL SMART SOCKET

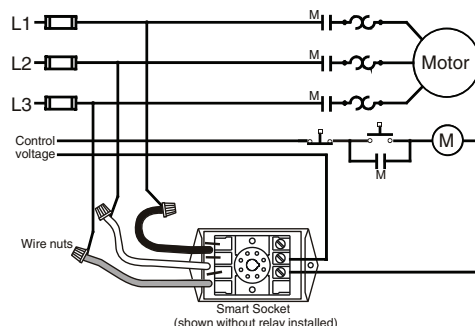
FEATURES

- Allows socket mounted phase loss monitors to operate up to 635VAC phase-to-phase
- No Adjustments required - simply connect power and control circuits
- CSA Certified



DESCRIPTION

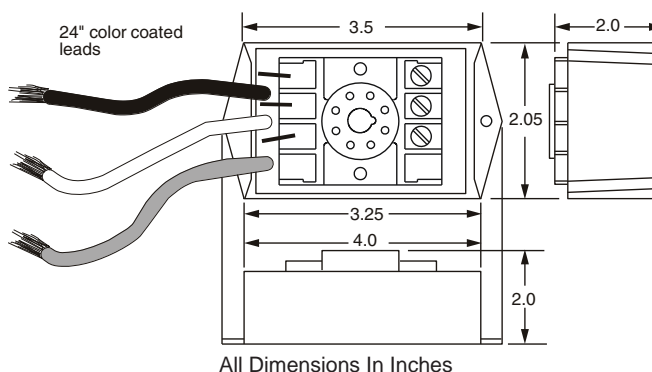
The Smart Socket is the first socket which will allow monitoring of voltages up to 635Vac with a socket mounted phase loss relay. The appropriate relay will allow monitoring for phase loss, phase reversal, low voltage and high voltage conditions. A key safety feature of the Smart Socket is it will not allow the voltage potential at the pin connections to rise to the full input voltage when the relay is removed. Refer to the charts for more information. Two versions of the Smart Socket are available, one for 480Vac and one for 575Vac applications. **The Smart Socket is designed to be used only with the Model 257B series.**



SPECIFICATIONS

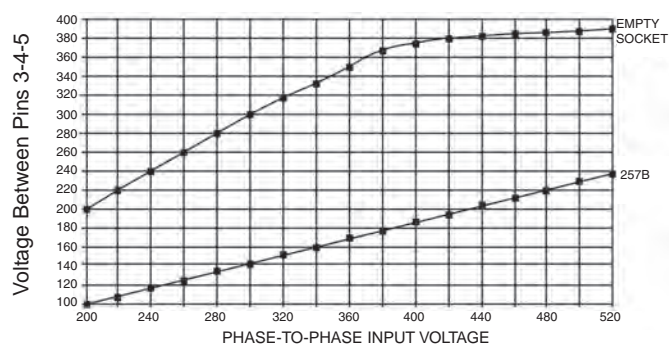
Model	Type C	Type D
Nominal Input Voltage	480Vac	575Vac
Maximum Input Voltage	520Vac	635Vac
Power Consumption	6 Watts Max.	
Operating Frequency	50-400Hz	
Humidity Tolerance	0-97% w/o Condensation	
Weight	9 Ounces	
Agency Approval	CSA Certified	

DIMENSIONS



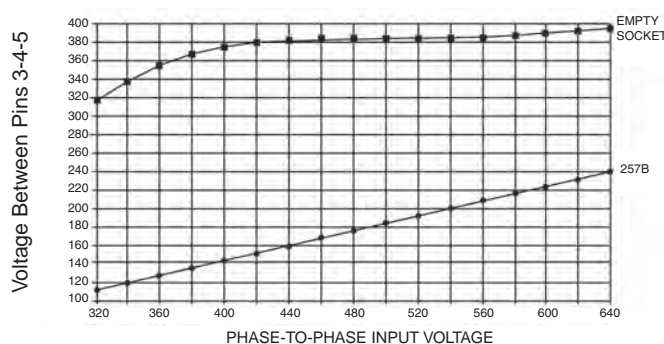
All Dimensions In Inches

Type C Socket for 480VAC Applications



As shown above, with a monitor inserted in the socket, the voltage on pins 3, 4, and 5 (inputs to the monitor) is limited to the operating range of the monitor. The voltage change is linear over the full adjustment range of the monitor. With the monitor removed (and power applied) the voltage potential rises to the input voltage level. However, from approximately 380Vac to 520Vac the Smart Socket limits the voltage potential so that it never rises above 395Vac.

Type D Socket for 600VAC Applications



As shown above, with a monitor inserted in the socket, the voltage on pins 3, 4, and 5 (inputs to the monitor) is limited to the operating range of the monitor. The voltage change is linear over the full adjustment range of the monitor. With the monitor removed (and power applied) the voltage potential rises to the input voltage level. However, at approximately 380Vac to 635Vac the Smart Socket limits the voltage potential so that it never rises above 390Vac.

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