

# MOTOR PROTECTORS

## 3450 (MP50) GARD-PAK® V MOTOR PROTECTOR WITH TIME DELAY AND LOW VOLTAGE MONITORING

The 3450 Gard-Pak V®, motor protector utilizes three PTC (Positive Temperature Coefficient) sensors connected in parallel or series depending on application. The 3450 may serve as a direct replacement for Robertshaw's MP50 Series or as a functional replacement for Texas Instrument 3AA and 15AA Series modules. (Refer to ordering information for specific models.)

Models are available for 24, 120 or 208/240 volt control systems. 3450 models have the same resistance and voltage trip and reset points (depending on model) as Texas Instrument models. Models also offer the additional features of time delay on break and constant low voltage monitoring. The 3450 models incorporate three functions into one control:

1. The sensor circuitry, responding to varying resistance from the PTC sensors will automatically shut down the equipment if the temperature in the stator windings exceeds the factory-calibrated resistance trip point. The unit will automatically reset once the windings have cooled to a point where motor damage will not occur, provided the time delay and voltage reset requirements have also been met.
2. Models have a 2-minute delay on break to minimize shortcycling and to allow adequate time for pressures to equalize before any attempt is made to restart the system.
3. The constant low voltage monitoring circuitry is designed to shut down the equipment if the supply voltage drops below the factory-calibrated minimum. In the event of a low voltage shutdown, the equipment will not restart until both the time delay and voltage reset requirements have been met. Nuisance shutdowns, due to voltage spikes, are eliminated because the input voltage must remain below the low voltage trip point for at least



### SPECIFICATIONS

Ambient temp. limitations	-40°F to 150°F
Dimensions	4-3/4" x 3-1/2" x 1-3/4"
Time delay	
3450-001/002	2 minute (120 secs. ± 20%)
3450-003/004/005/006	4 minute (240 secs. ± 20%)
Supply voltage	
3450-001/006	300 VA @ 120 VAC, 50/60 Hz
3450-002/003	375 VA @ 208/240 VAC, 50/60 Hz
3450-004/005	60 VA @ 24 VAC, 50/60 Hz

**NOTE: For added convenience when equipment servicing is required, terminals "X" and "C" may be jumpered to reduce the time delay period from 2 minutes to 50 milliseconds.**

### ORDERING DATA

UNI-LINE ORDER NO.	DIVISION NUMBER	SUPPLY A.C.	LOW VOLTAGE		RESISTANCE		SENSOR TYPE	TIME DELAY ON BREAK	REPLACES O.E.M. NUMBER	REPLACES TEXAS INST. NUMBER
			TRIP	RESET	TRIP	RESET				
3450-001	MP50-1001	115	85 VAC	93.5 VAC	13K OHMS	3.25K OHMS	PARALLEL	120 SECONDS	071-0376-02	3AA7-2
									071-0397-01	
									071-0424-01	3AA17-6
									071-0441-01	
									998-0424-01†	
998-0424-05†										
3450-002	MP50-1201	208/230	170 VAC	184 VAC	13K OHMS	3.25K OHMS	PARALLEL	120 SECONDS	071-0376-01	3AA4-2
									071-0397-00	
									071-0424-00	3AA18-6
									071-0441-00	
									998-0424-00†	
									998-0424-04†	
3450-003*	MP50-8801				30K OHMS	9K OHMS	SERIES	240 SECONDS	071-9800-00	15AA1103C 15AA1603C 15AA1607C
									241375	
									241378	
									31F3101	
3450-006	MP50-8601	115	85 VAC	93.5 VAC	30K OHMS	9K OHMS	SERIES	071-9800-01	15AA1603B	

\*Modules have short sensor protection. If sensor value drops to less than 500 ohms control will trip (cut-out). Reset (cut-in) cannot be achieved until 500 ohms or higher is sensed.  
†Copeland service kit. Uni-Line offers replacement module only.

## 31 (ES50) PTC SENSORS



The ES50/31 sensor is an electrothermal, PTC (Positive Temperature Coefficient) sensing device that is embedded in the motor windings. At the calibration temperature these sensors exhibit an extremely large change in resistance which is detected by the MP50/3450 Gard-Pak V motor protector, thus shutting down the equipment.

### ORDERING DATA

UNI-LINE ORDER NO.	DIVISION NUMBER	SENSOR TYPE	CALIBRATION TEMP. (°C)	LEAD LENGTH	REPLACES
					TEXAS INST. NUMBER
31-105	ES50-1203	PTC	105	18"	3BA 105