

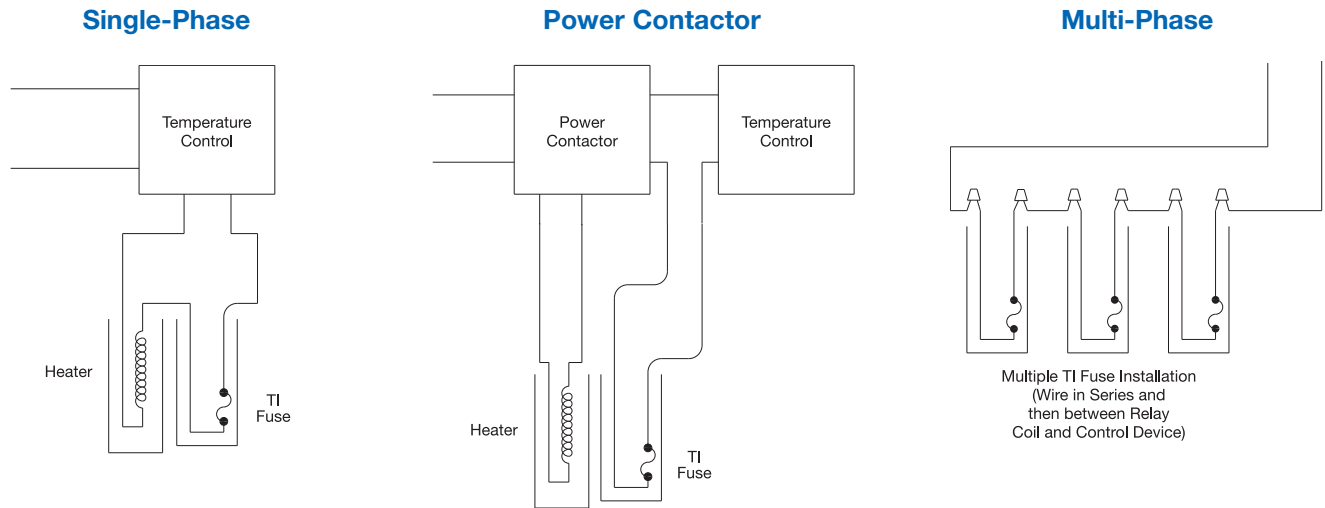


Application Guide for Thermal Over-Temperature Devices

T1 Thermal Fuse Devices

The T1 Over-Temperature Device is a eutectic switch with a pre-specified melt temperature. The “one shot” characteristic is useful in alerting operators to identify and remedy the cause of the over-temperature condition in the course of T1 fuse replacement.

UL listed rating of 15 Amps up to 277 Vac

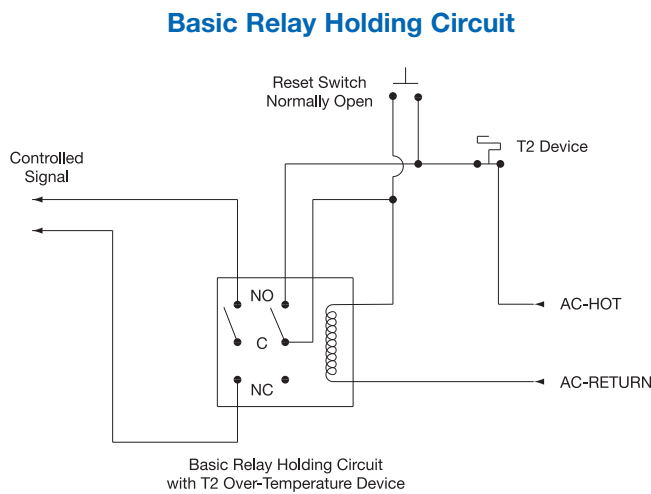


T2 Bi-Metal Switch

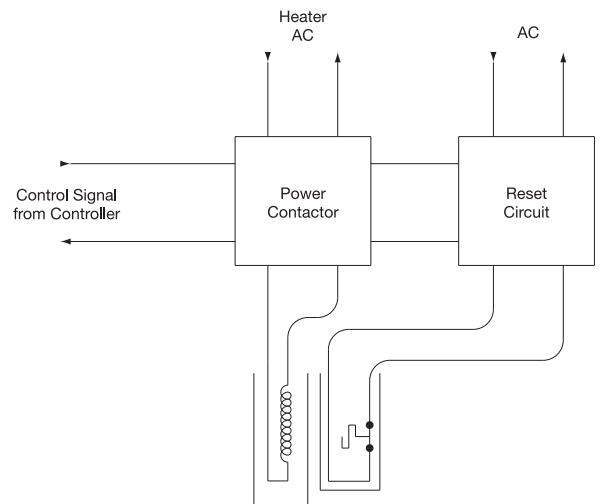
The T2 Over-Temperature Device is a slow make/slow break bimetallic thermostat with a pre-specified calibration temperature. The slow break characteristic coupled with the pushbutton reset feature is extremely useful when a low liquid level occurs.

The T2 Over-Temperature Device is electrically installed with a holding circuit in conjunction with a power contactor to energize the heater. **The T2 device must never be used to directly control heater power.**

UL listed rating of 6 Amps @ 120 Vac or 4 Amps @ 240 Vac



Typical Installation



- NOTE:**
- Multiple heaters are hooked up according to standard electrical practices.
 - Multiple T2 devices are hooked up in series on one reset circuit.



Replacement Thermal Protection Accessories

Various construction methods are used in the manufacture of PTFE, Quartz and Metal Tube Over-the-Side Immersion Heaters.

The T1 or T2 Thermal Protection Devices are matched to the item they protect for lead length and mounting style.

T1 Thermal Fuse Devices

Description	Catalog Number
T1 Thermal Fuse for PTFE Over-the-Side Heaters (to 190°F)	TMC90001
T1 Thermal Fuse for PTFE L-Shaped Over-the-Side Heaters (to 190°F)	TMC90004
T1 Thermal Fuse for Quartz Over-the-Side Heaters (w/SS Braid Sleeving)	
• Low Temperature Range (to 180°F)	TMC90002
• Medium Temperature Range (to 220°F)	TMC90003
T1 Thermal Fuse for Straight Metal Over-the-Side Heaters	
• Low Temperature Range (to 180°F)	TMC90005
• Medium Temperature Range (to 220°F)	TMC90006
• High Temperature Range (to 300°F)	TMC90007
T1 Thermal Fuse for L-Shaped Metal Over-the-Side Heaters	
• Low Temperature Range (to 180°F)	TMC90008
• Medium Temperature Range (to 220°F)	TMC90009
• High Temperature Range (to 300°F)	TMC90010

T2 Bi-Metal Switch

Description	Catalog Number
T2 Bi-Metal Switch for PTFE Over-the-Side Heaters (rated to 190°F)	TMC90101
T2 Bi-Metal Switch for PTFE L-Shaped Over-the-Side Heaters (to 190°F)	TMC90111
T2 Bi-Metal Switch for Quartz Over-the-Side Heaters (w/SS Braid Sleeving)	
• Low Temperature Range (to 180°F)	TMC90102
• Medium Temperature Range (to 220°F)	TMC90103
T2 Bi-Metal Switch for Straight Metal Over-the-Side Heaters	
• Low Temperature Range (to 180°F)	TMC90105
• Medium Temperature Range (to 220°F)	TMC90106
• High Temperature Range (to 300°F)	TMC90107
T2 Bi-Metal Switch for L-Shaped Metal Over-the-Side Heaters	
• Low Temperature Range (to 180°F)	TMC90108
• Medium Temperature Range (to 220°F)	TMC90109
• High Temperature Range (to 300°F)	TMC90110



- High Temperature Range**— Solutions from 220°F to 300°F (104.4°C to 149.0°C)
- Medium Temperature Range**— Solutions from 180°F to 220°F (82.2°C to 104.4°C)
- Low Temperature Range**— Solutions up to 180°F (82.2°C)

Thermal Over-Temperature Protection



The realities of any plating, cleaning, anodizing, etching or pickling operation are that something could go wrong such as:

- ◆ An undetected tank leak
- ◆ Undetected evaporation losses
- ◆ Failure to refill the system

Any of these conditions creates a situation where the potential for fire or other hazard is increased.

Standard Setup — All Tempco Over-the-Side Teflon®, quartz and metal tube heaters come equipped with a replaceable thermal fuse placed in a thermowell and positioned at the top of the heater's hot zone. When wired into the heater circuit, it will instantly cut power to the heater when the preset temperature is reached. If the heater is over 15 amp, the thermal fuse would be wired into the control relay circuit. Also available is the T2 bi-metal switch which would be wired into the control relay circuit and used with additional components to form a resettable system.

We highly recommend the use of liquid level switches tied into control circuitry to provide a failsafe backup to the thermal fuse.