

Protector 1 Over Temperature Protector (Part No. PTP1)

PTP1 is a eutectic switch with a pre-specified One-Shot melt temperature. Devices of this type are recommended for all heater installations. The One-Shot characteristic can alert operators to identify and remedy the cause of over temperature conditions as they replace spent fuses.

The UL/CSA rating permits direct connection in many applications for economical installations. All three- phase installations or those whose heater power requirements exceed the amperage or voltage rating require a power contactor to provide an indirect heating load connection.

UL Rating Requirements

- 5 amps at 115VAC or 230VAC

Per UL requirements, you must purchase replacement **PTP1** from the manufacturer.

Part # (prior part #)	Color	Lead Length	Bath Temp
PTP1 (PI)	White	18"/457 mm	to 180°F/82°C
PTP1 (PT-I/PQ-I)	Red ¹	26"/660 mm	to 190°F/88°C
PTP1 (PLI)	White	85"/2,159 mm	to 180°F/82°C
PTP1 (PTL-I)	Red ¹	48"/1,219 mm	to 190°F/88°C

¹ with green ground lead (same length as fuse lead)

Table 1: PTP1 Specifications

PTP1 Installation



Caution

Follow the replacement procedures outlined in this document. Failure to do so may result in a fire heater failure or premature burnout. Note UL Rating Requirements when determining heater system wiring.

- PTFE Systems—For steps 7, 8 and 11, take care not to damage or move the protector well. If you do, the heater must be factory-repaired.
- All Systems—After step 10, if moisture reoccurs, do not return the heater to service. Consult factory for advice.

1. Shut off/lock out heater electrical power.
2. Remove and retain heater head cover.
3. In the heater head, mark where the spent **PTP1** leads exit the Protector well.
4. Note the location of the wire nuts secured to the spent Protector leads (for reconnection).
5. Remove and retain wire nuts, separate wires.
6. Remove and retain electrical insulation putty from the spent Protector.
7. Remove and retain the spent Protector.
8. Using the spent Protector leads as a measuring guide, cut and strip the new Protector leads to a similar length.
9. Line up Protectors and transfer marks from the spent Protector leads to the new leads.
10. Examine the Protector well for moisture by inserting a long wooden dowel or similar suitable device. If moist, thoroughly dry the well using cloth swabs or similar means.

- Ensure no material is left in the well.
- Once dry, ensure that no further moisture is seeping into the Protector well. If moisture reoccurs, do not return the heater to service. Consult factory for advice.

11. Insert new Protector into the dry, empty well until Protector bottoms out. Verify position is at the bottom of the well by feeling it through the Protector or using a push rod.
- Use the Protector lead insulation marks to make sure leads are lined up with the top of the Protector well in the heater head. If the marks are above the top of the well, there is a possibility the Protector is not fully inserted.
- Unsafe operating conditions exist if heater is used with an improperly positioned Protector.
12. Reinstall connecting wires to the wire nuts.
13. Reapply electrical insulation putty. Seal the well opening to prevent moisture from entering.
14. Examine the heater head. If necessary, replace heater head cover and head gasket. If provided, cover hold-down screws to ensure a moisture tight seal when reinstalled.
15. Reinstall the new assembly.
16. Examine conduit connection at heater head; repair for liquid tight connection, if necessary.
17. Reconnect power to return heater to normal operating service.

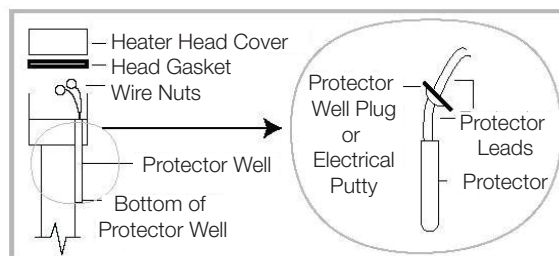
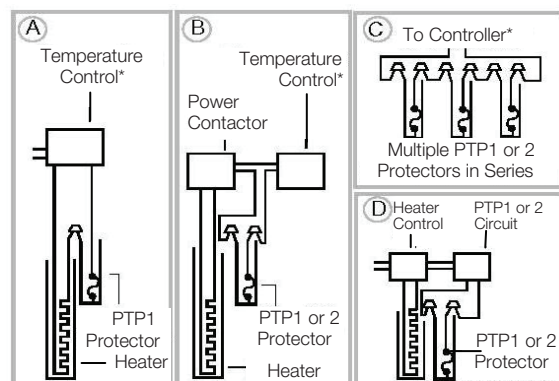


Figure 1: Typical over temperature protector installation.



*Temperature Control Requires Reset Circuitry for PTP2 Operation.

Figure 2: General wiring — Single phase (A) polyphase (B)

Protector 2 Over Temperature Protector (Part No. PTP2)

The **PTP2** series is recommended for heaters in metal or plastic tanks. The slow make/slow break bimetallic thermostat has a pre-specified switch temperature. The slow break characteristic coupled with a push button reset feature is extremely useful when a high temperature or low liquid level occurs.

UL Rating Requirements

Replacement Over Temperature Protector thermal cutoffs, **PTP2**, must be purchased from the manufacturer.

The **PTP2** UL/CSA rating is as follows:

- 2.6 amps at 115VAC



Warning

Never use **PTP2** to directly switch heater power. Always follow the replacement procedures outlined in this installation sheet. Failure to do so may result in a fire or premature heater burnout.

PTP2 Installation

The **PTP2** Over Temperature Protector is electrically installed with a holding circuit and a power contactor to energize the heater.

See Figure 2B, C and D for **PTP2** wiring.

Part # (prior part #)	Color	Lead Length	Bath Temp
PTP2 (PII)	White	80"/2,032 mm	to 190°F/88°C
PTP2 (PT-II/PQ-II)	White ¹	80"/2,032 mm	to 190°F/88°C
PTP2 (PLII)	White	80"/2,032 mm	to 180°F/82°C
PTP2 (PTL-II)	White ²	80"/2,032 mm	to 190°F/88°C
¹ with 26" green ground lead			
² with 48" green ground lead			

Table 2: PTP2 Specifications

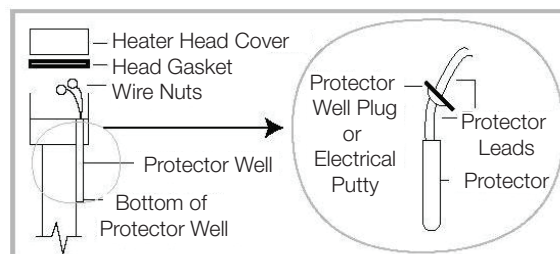
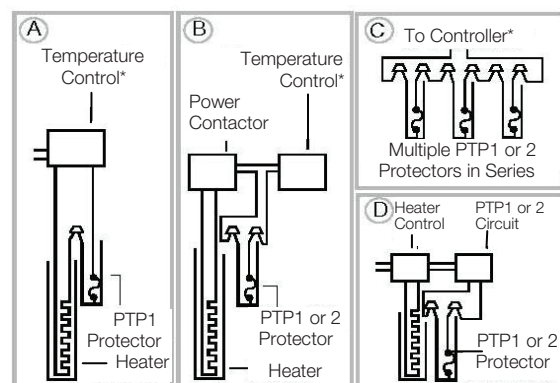


Figure 1: Typical over temperature protector installation.



*Temperature Control Requires Reset Circuitry for PTP2 Operation.

Figure 2: General wiring — Single phase (A) polyphase (B)



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