

Installation

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

CAUTION

Disconnect the power supply before connecting wiring to prevent electrical shock and equipment damage.

MOUNTING

Locate the bulb where it will sense the average temperature of the controlled air or liquid.

Mount the case and the bulb of these controllers within 2 ft (0.6m) above or below each other. If the case is more than 2 ft (0.6m) above or below the bulb, the calibration can change (Fig. 2). The controller case mounts on a wall or panel using the two screws through the knockouts on the rear of the case. Bulb mounts with a bulb holder, pressure fitting or immersion well assembly.

When running the capillary tubing, avoid kinks by making sure all bends have at least 2 in. (51 mm) radius. Kinking the tubing renders the controllers inoperable. Leave any excess tubing coiled under the controller case.

A bulb holder for mounting the bulb in an air duct is furnished with models having copper elements. If the installation requires a pressure tight fit, use a pressure fitting (Figs. 3 and 4).

If the bulb is located in an agitated liquid, support it firmly or protect it with a separable well (Fig. 5). Refer to the TRADELINE® Catalog for more detailed information on accessories.

Mount low temperature controller where the case and the capillary tubing are always warmer than the bulb; mount high temperature controllers where the case and capillary tubing are colder than the bulb.

When these instructions are followed, ambient temperature will not affect temperature control point.

Fig. 2—Installation of control and sensing element.

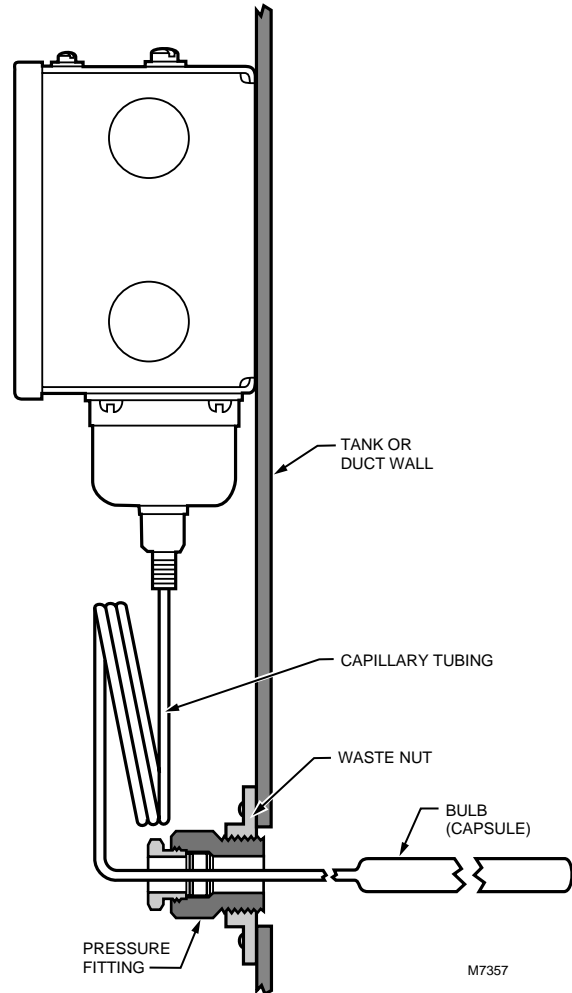


Fig. 3—Assembly of pressure fitting.

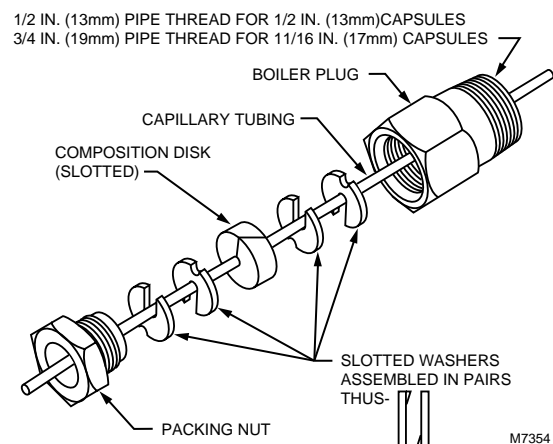
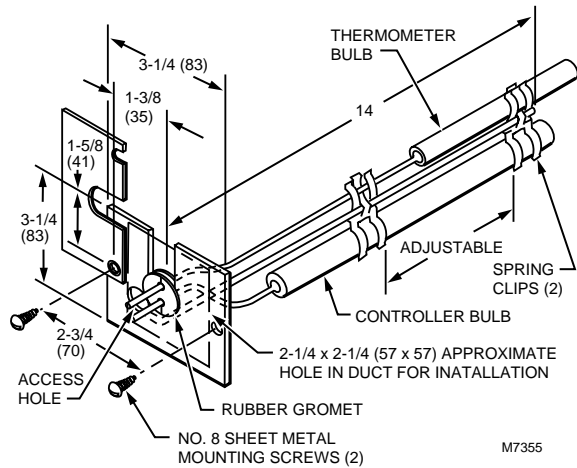
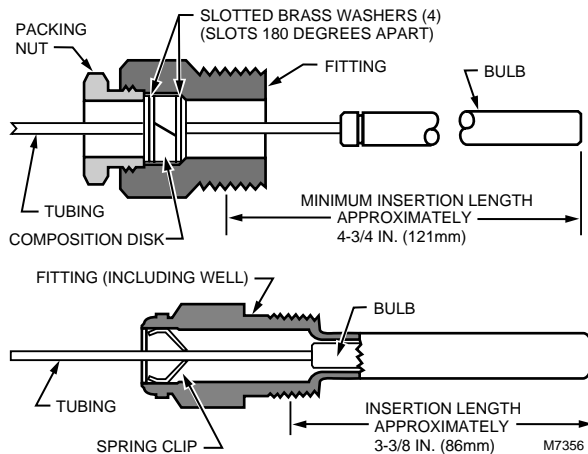


Fig. 4—Use of bulb holder for mounting sensing element in air duct application. Dimensions in in. (mm).



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Fig. 5—Use separable well for mounting sensing bulb in an agitated liquid.



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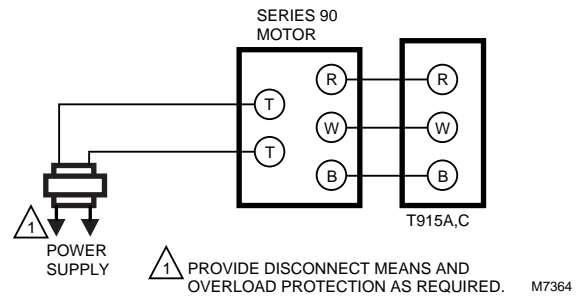
WIRING

Disconnect the power supply before connecting wiring to prevent electrical shock and equipment damage. All wiring must agree with local codes, ordinances, and regulations.

There are two 7/8 in. knockouts for 1/2 in. conduit on the right side of the case. When wiring, refer to the instructions packed with the motor or valve and the following typical wiring hookups (Fig. 6 through 8). Refer to Fig. 9 for internal schematics of T915 controllers.

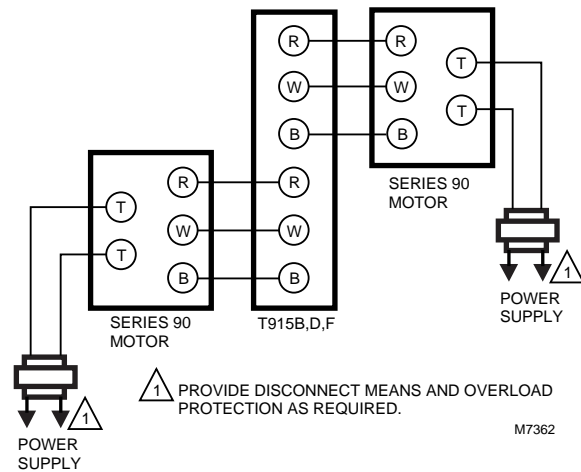
NOTE: Connect B models, which control two motors or valves in sequence on a temperature rise, so that the first motor or valve to operate is connected to the front potentiometer terminals (Fig. 7). Connect F models when used in the above application so that the first operator is connected to the rear potentiometer.

Fig. 6—Typical heating connections for T915A,C. For cooling, reverse B and W at motor.



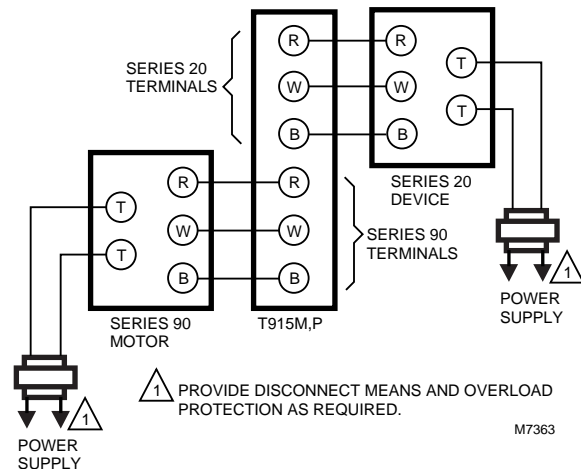
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Fig. 7—Typical connections for T915B,D and F.

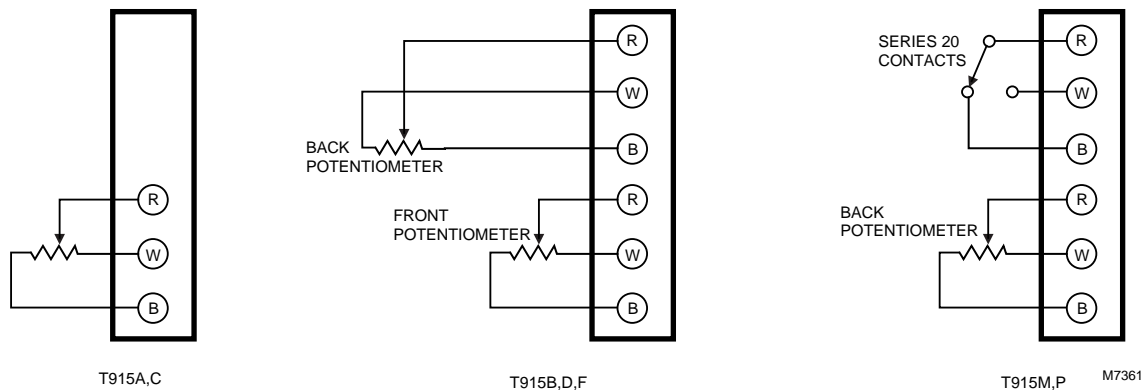


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Fig. 8—Typical connections for T915M and P.



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Fig. 9—Internal schematics of T915 temperature controllers.

Operation

Temperature changes at the remote sensing bulb cause a pressure change within the bulb and capillary of the T915 Proportional Temperature Controller. This pressure change is transmitted to the bellows inside the controller case that operate the potentiometer wiper. Proportional control of a valve or damper is obtained.

Operation of T915M and P models is the same except that at the high or low end of the proportioning range (depending on the model), an spdt switch is used to operate a Series 20 system component.

Settings and Adjustments

TEMPERATURE SETTING

Set the main scale setting at the desired temperature on all models except C,D, and F; set those models so the main scale indicator is at the low end of the desired proportioning range.

The T915B is factory set for simultaneous operation and is adjustable to full sequence. Depending on the setting, the first operator may complete its full cycle or any portion before the second operator starts.

Adjustable proportional ranges (differentials) on T915C,D, and F are additive to the main scale setting. The T915D is designed for simultaneous operation and has no sequence adjustment. The T915F is factory set for sequence operation and has a deadspot equal to about one-third of the proportional range. This deadspot cannot be increased, but it can be set to zero or to a partial overlap.

The T915M and P have one potentiometer and a set of Series 20 contacts for controlling one Series 90 operator and a Series 20 motor or relay in sequence.

The T915M contacts operate above the proportioning range about 1°F (0.6°C); the T915P contacts operate below the proportioning range. Both models have non-adjustable proportional ranges (Series 90) and differentials (Series 20).

Turn the adjustment screw (Fig. 10) until the indicator is opposite the desired mark on the scaleplate.

Fig. 10—Internal view of T915F (see Specifications for differences between models).