

T-3311 Integral Thermostat and Piston Top Valve Actuator Dual Temperature, Dual Pressure

The T-3311 is a combination pneumatic thermostat and valve actuator that provides proportional control of a steam or water valve in a heating-cooling installation. This compact unit will fit most Johnson Controls normally open, normally closed, or mixing valves, sizes 1/2 through 2 inch NPT. It is designed primarily for use in a valve controlled terminal air conditioning unit.

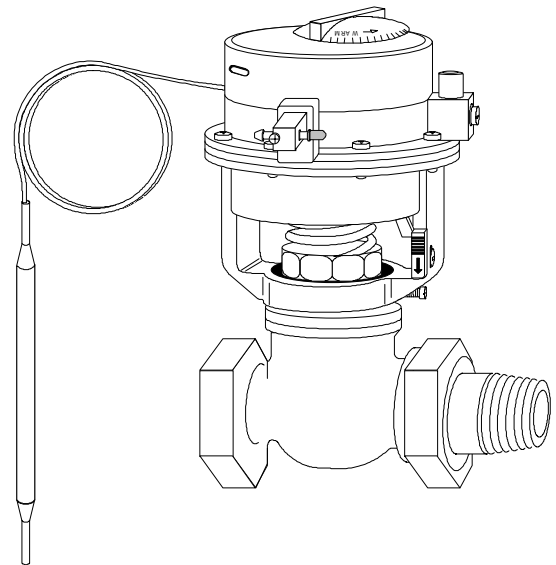


Figure 1: T-3311 Integral Thermostat and Piston Top Actuator

Features and Benefits

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| <input type="checkbox"/> Available in Direct-reverse Acting or Reverse-direct Acting | Allows seasonal change over from cooling to heating or heating to cooling automatically |
| <input type="checkbox"/> Equipped with an External Setpoint Adjustment | Each terminal unit can be adjusted to suit a particular space temperature need |
| <input type="checkbox"/> Compatible with VG7000 Series Valves | The T-3311 Series is a direct replacement for the T-3310 Series |

Features

Thermostat

The T-3311 has a liquid filled bulb temperature sensing element and external setpoint adjustment for space control based on return air temperature. The T-3311 is non-relay type controller requiring dual supply air pressures of 15 and 20 psig (105 and 140 kPa). The controller has two built-in restrictors in the switch stack assembly, eliminating the need for an external restrictor.

Changeover from heating to cooling is accomplished by switching the supply air pressure. Both setpoints on the controller may be calibrated individually for identical setpoints or for two different setpoints; turning the dial changes both setpoints by the same amount. The thermostat mechanism is protected by a snap-on cover.

A dial marked "Cool-Warm" and a pointer are located on the cover of the T-3311.

The pointer has tabs that permit restricting the temperature adjustment range to as little as $\pm 2.5^{\circ}\text{F}$ ($\pm 1.4^{\circ}\text{C}$). It is factory set for a nominal adjustment of $\pm 7.5^{\circ}\text{F}$ ($\pm 4^{\circ}\text{C}$).

Linear expansion and contraction of the liquid in the element permits uniform dial graduations and provides a high degree of accuracy over the entire range of operation.

Actuator

Rapid and accurate response to the demands of the integral thermostat is assured by the actuator of the T-3311. The design provides a constant effective diaphragm area throughout the entire stroke. The diaphragm will remain resilient through years of service.

Interchangeability

The T-3311 is a direct replacement for the T-3310. The T-3311 has been modified to be compatible with VG7000 Series valves.

Note: While the T-3311 is 100% backward compatible for T-3310 replacements, the T-3310 cannot be used on VG7000 Valves.

Dimensions

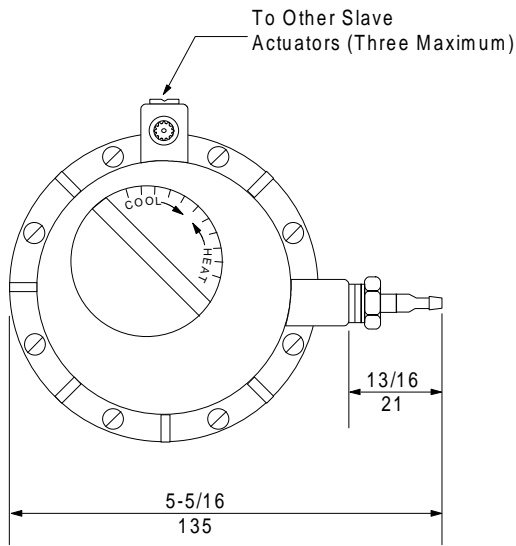


Figure 2: Supply Air Straight Connector Dimensions, in./mm

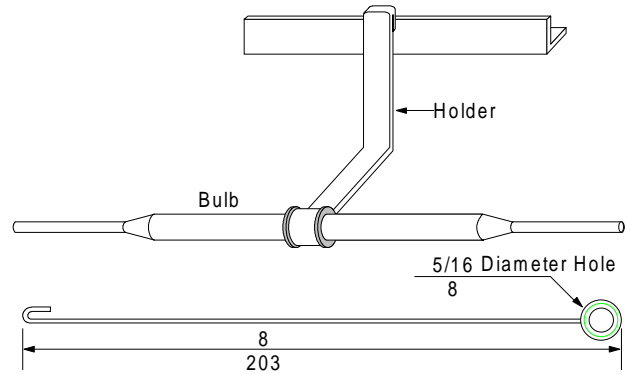


Figure 3: T-275-100 Bulb Element Holder Dimensions, in./mm

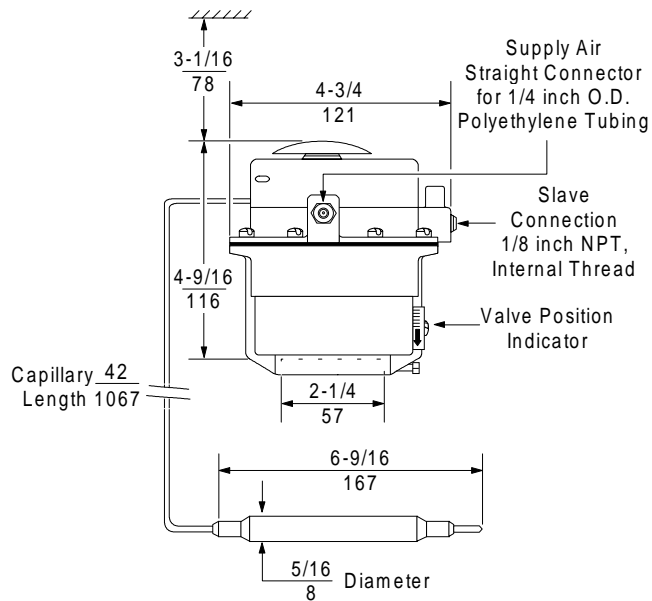


Figure 4: T-3311 Integral Thermostat and Piston Top Valve Actuator Dimensions, in./mm

Specifications

	Product	T-3311 Non-Relay Thermostat
Action	Proportional	T-3311-1 Direct Acting with 15 psig (105 kPa)
		Reverse Acting with 20 psig (140 kPa)
	T-3311-2	Direct Acting with 20 psig (140 kPa)
		Reverse Acting with 15 psig (105 kPa)
Switch Point	17 psig (119 kPa)	
Air Connections	Supply	Straight Connector for 1/4 inch (6.4 mm) O.D. Polyethylene Tubing; 1/8 inch NPT Barbed Fitting for 5/32 or 1/4 inch O.D. Polytubing*
	Slave	1/8 inch NPT, Internal Thread
	Maximum Supply Pressure	25 psig (175 kPa)
Element	Type	Bulb with 42 inch (1066 mm) Capillary
	Range	60 to 150°F (15 to 65°C)
	Sensitivity	2.5 psi/F° (31 kPa/C°)
	Span	20F° (11C°) Maximum
Dial	Range	Factory Set at ± 7.5°F (± 4°C)
	Marking	“Cool-Warm,” Graduated in One Degree “F” Increments
	Ambient Temperature Limits	-20 to +150°F (-29 to 65°C)
Material	Body	Die Cast Aluminum
	Yoke	Die Cast Aluminum
	Cover	Die Cast Zinc
	Diaphragm	Molded Synthetic Rubber
	Finish	Green Lacquer
	Accessory (Order Separately)	T-275-100 Bulb Element Holder

* The maximum length of 5/32 inch tubing is 15 feet. It is recommended that 1/4 inch tubing is used at all times to ensure proper switchover.

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



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FAN 717.1
Pneumatic Control Manual
Printed in U.S.A.