

TCN-890x

Electronic Room Thermostat



Description

The TCN-8900 Series is a family of analog electronic controllers designed to control heating and/or cooling valves or dampers. The TCN-8901 has two 0 to 10 VDC proportional outputs, one for heating and one for cooling. The TCN-8906 has two On/Off

triac outputs, one for heating and one for cooling, capable of switching 0.5 A at 24 VAC.

The dual-scale setpoint dial enables the room occupant to adjust the thermostat setpoint within the range of 54 to 82°F (12 to 28°C). Johnson Controls offers an optional Dial Stop Screw Kit for applications where fixing or limiting adjustment to the temperature range is appropriate.

Features

- small, compact package provides similar look and feel to the Metastat sensors
- local setpoint provides easy wiring and installation
- globally scaled unit includes setpoint scale in both Fahrenheit and Celsius ranges 54 to 82°F (12 to 28°C)
- universal quick-mount design saves time and simplifies installation

- thermostat includes wallbox and surface mounting plates and all installation hardware to mount directly to drywall or a standard U.S. wallbox
- models include an adjustable deadband:
 - TCN-8901 has 0 to 10 VDC Reverse Action (RA) and Direct Action (DA) outputs that feature separate proportional band adjustments
 - TCN-8906 has two On/Off RA and DA triac outputs that feature separate differential adjustments

Applications

The TCN-8900 Series features separate RA/DA outputs for automatic changeover of heating and cooling applications.

To Order

Specify the code number in the following selection chart.

Specifications

TCN-890x Series Electronic Room Thermostat	
Power Requirements	24 VAC ±15% at 50/60 Hz, Class 2
Power Consumption	1.5 VA with No Load
Inputs	Unoccupied Input Remove Factory-Installed Jumper on Screw Terminal Block; Fixed 9F° (5C°) Nominal Offset
	RA/DA Remote Contact
Adjustments	Set Point 54 to 82°F (12 to 28°C)
	Dead Band 0 to 4F° (0 to 2C°)
	Differential (Model TCN-8906 Only) 0.4 to 4F° (0.2 to 2C°); Independent Adjustments for RA and DA Outputs
	Proportional Band (Model TCN-8901 Only) 2 to 7F° (1 to 4C°); Independent Adjustments for RA and DA Outputs
Output	TCN-8901 Analog, 0 to 10 VDC, 10 mA Maximum; Output Normal State is Off
	TCN-8906 On/Off, Triac 24 VAC, 0.5 A Maximum; Output Normal State is Off
Field Connections	Screw Terminals for 24 to 14 AWG Wire
Mounting	Standard Bases for Surface or U.S. Wallbox Mounting, Including Hardware
Housing	White Plastic Cover with Dark Gray Plastic Mounting Base
Protection	NEMA 1, IP30 (IEC 60529)
Ambient Conditions	Operating 32 to 122°F (0 to 50°C) 10 to 95% RH (Noncondensing)
	Storage -4 to 158°F (-20 to 70°C) 10 to 90% RH (Noncondensing)
Dimensions (H x W x D)	3.15 x 3.15 x 1.30 in. (80 x 80 x 33 mm)
Agency Listings	CE Compliance: EMC (89/336 EEC) According to the Standard EN 50081-1 and EN 50082-1 FCC and DOC Compliant

Selection Chart

Code Number	Description	Outputs (2)	Sensor Input
TCN-8901-2161	Electronic Room Thermostat	0 to 10 VDC Analog RA 0 to 10 VDC Analog DA	Built-in
TCN-8906-2161		On/Off RA Triac On/Off DA Triac	

Note: Setpoint range: 54 to 82°F (12 to 28°C)

Accessories

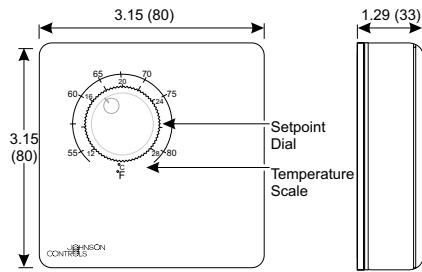
Code Number	Description
ACC-INSL-0	Foam Pad Kit for Wallbox Mounting (10 per package)
ACC-INSL-1	Foam Pad Kit for Surface Mounting (10 per package)
T-4000-119	Allen-Head Adjustment Tool (30 per package)
TM-9100-8901	Dial Stop Screws Kit (100 self-tapping screws per package)
TM-9100-8931	Plastic Surface Mounting Kit

Repair Parts

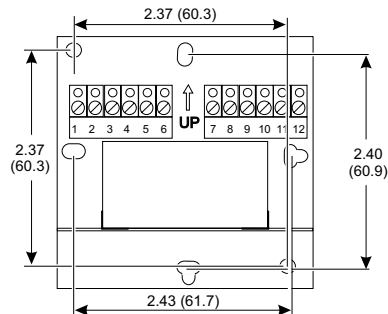
Code Number	Description
TE-67E0-600	Replacement End Caps (10 per package)
TE-67W-600	Wallbox Mounting Kit

TCN-890x Electronic Room Thermostat (Continued)

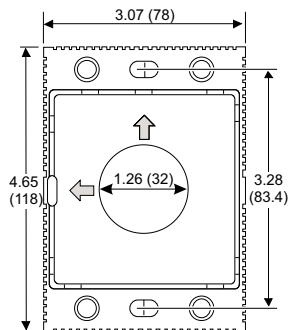
Dimensions



TCN-890x Cover Dimensions, in. (mm)

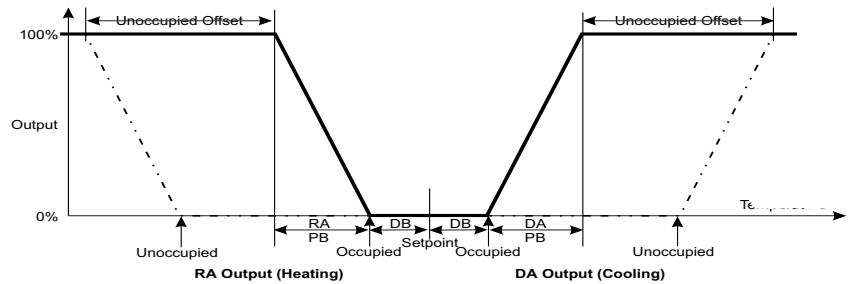


TCN-890x Base Dimensions, in. (mm)

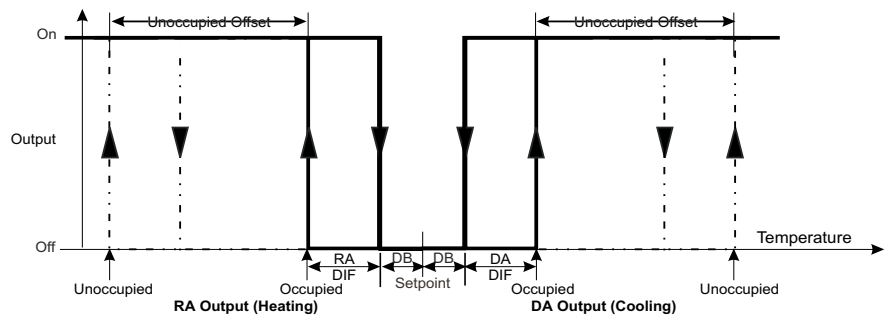


TCN-890x Wallplate Dimensions, in. (mm)

Control Sequence Diagrams

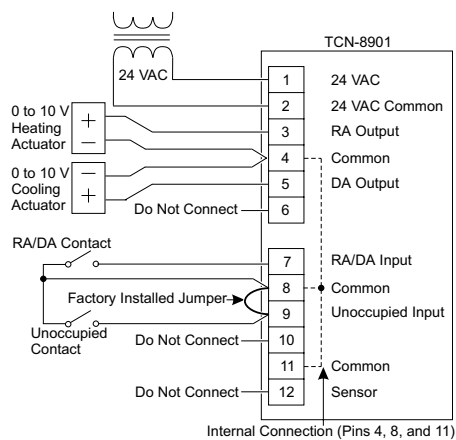


TCN-8901 0 to 10 VDC Control Sequence

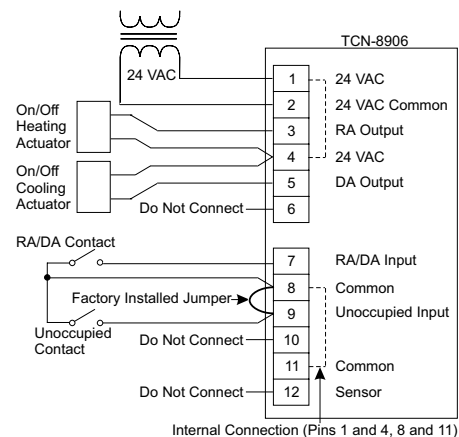


TCN-8906 On/Off Control Sequence

Wiring Diagrams



Wiring the TCN-8901, 0 to 10 V



Wiring the TCN-8906, On/Off