TM-1100 Series Room Command Module

Installation Instructions

Part No. 24-10225-4, Rev. —
Issued January 19, 2006

Applications

The TM-1100 Series Room Command Module provides room temperature sensing in fan coil operations and can work as a local room temperature setpoint adjustment. Some models provide fan speed override. Johnson Controls designed the TM-1100 as an input for the TC-9102 Series controllers.

Some of the TM-1100 models allow the local user to adjust the temperature setpoint and fan speed by turning one of the dials. With those models, the user can override the Command Mode from Unoccupied to Temporarily Occupied by pressing the Occupancy Button (shown in Figure 2 and Figure 3) on the side of the module that also features an optional Mode Light-Emitting Diode (LED).

IMPORTANT: The TM-1100 Series Room Command Modules are intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the TM-1100 Command Module could lead to personal injury or property damage to the controlled equipment or other property, other precautions must be designed into the control system. Incorporate and maintain other devices such as supervisory or alarm systems or safety or limit controls intended to warn of, or protect against, failure or malfunction of the TM-1100 Command Module.

Installation

Parts Included

The TM-1100 comes with two No. 6-32 x 7/8 in. (22 mm) wallbox mounting screws.

Special Tools Needed

To mount the TM-1100 Series Room Command Module to a wall, order the optional tool (T-4000-119) from the Johnson Controls® representative.

Dimensions

TM-1141 Modules

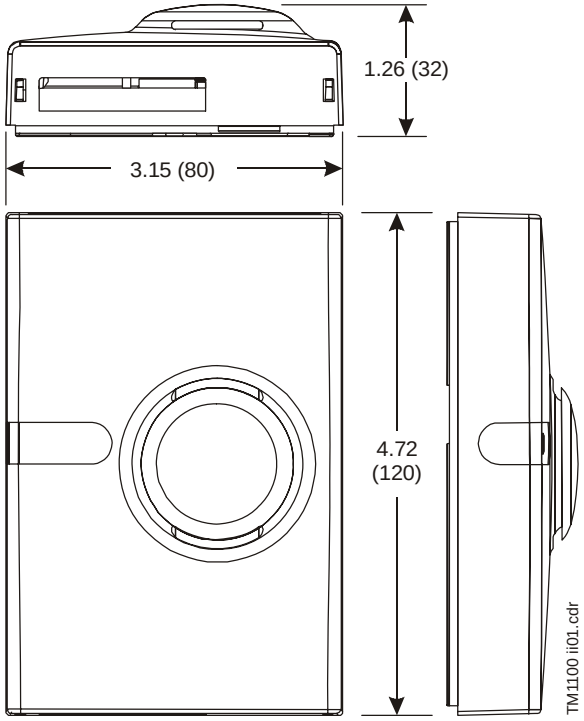

Figure 1: TM-1141 Dimensions, in. (mm)

TM-1151 Modules

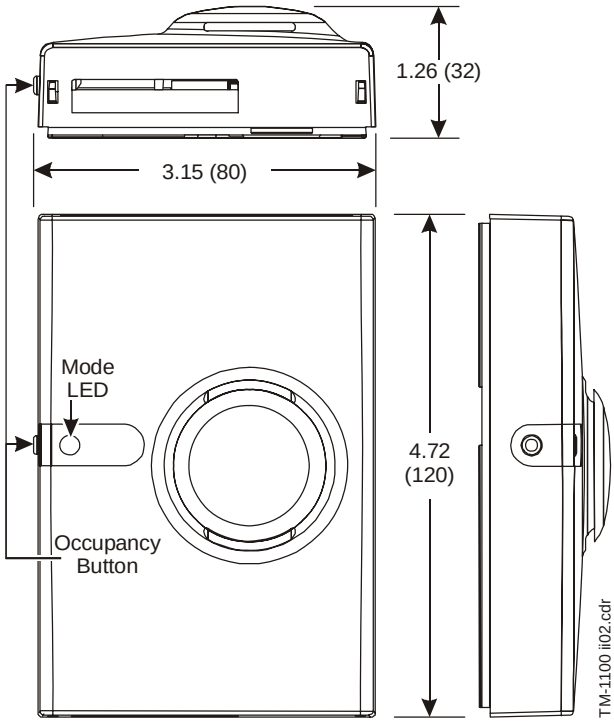

Figure 2: TM-1151 Dimensions, in. (mm)

TM-1161 Modules

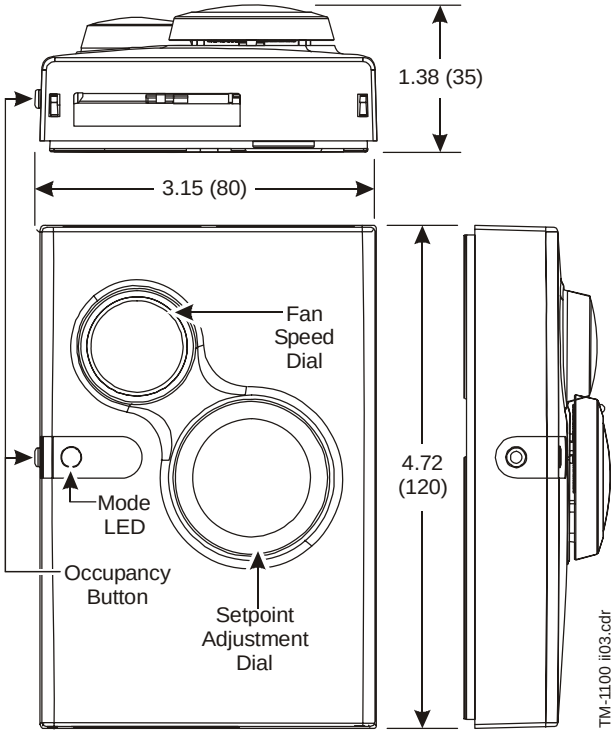

Figure 3: TM-1161 Dimensions, in. (mm)

TM-1191 Modules

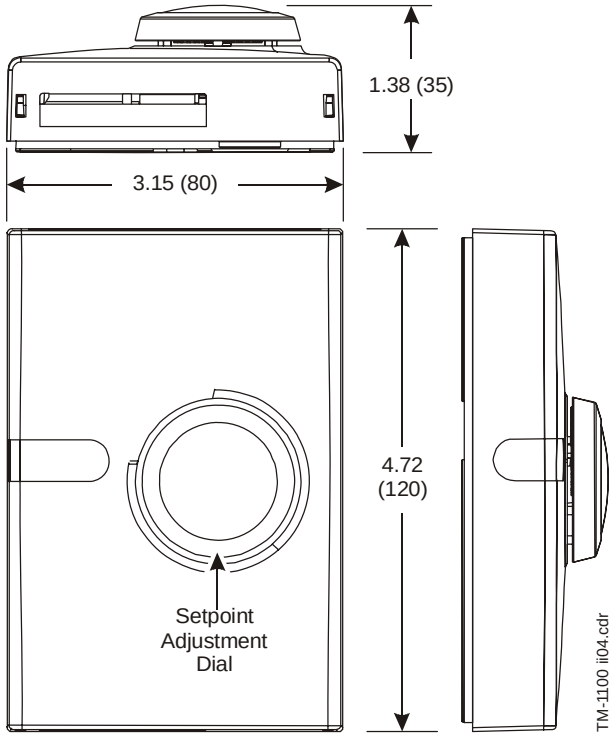

Figure 4: TM-1191 Dimensions, in. (mm)

Installing the TM-1100

To install the TM-1100 Series Room Command Module:

1. Remove the base from the cover by inserting a flat or pointed tool (T-4000-119) into the small hole at the center top of the cover, while gently pressing down to pry the base from the cover.
2. Pull the wires through the base and then position the base on the wallbox with the tabs facing down.
3. Mount the base to the wallbox using the two No. 6-32 mounting screws (included).
4. See the *Wiring* section for correct wiring.
5. Attach the cover to the base and tighten the cover screw.

Mounting

Location Considerations

Mount the TM-1100 Series Room Command Module on a wall in the room to be controlled where the occupant can easily read and adjust the setpoint dial or fan speed override adjustment knob. Following are more mounting location guidelines:

- Avoid areas subject to excessive vibration, electrical noise, direct sunlight, or the effects of radiant heat.
- Keep electrical wiring as short as possible to minimize temperature error.
- Install modules in areas where the temperature is representative of the general room conditions.

Wiring

To wire a TC-9102, TC-9109, or TCU Series controller to the TM-1100 Series Room Command Module, see the appropriate wiring diagram (Figure 5 to Figure 9).

Note: Use 20 AWG (0.8 mm diameter) wire minimum. Do not exceed 164 ft. (50 m) between the controller and the command module.

Table 1: Nominal Values for 2,252 ohm Sensors

Temperature		Resistance
°F	**°C**	**2,252 ohms**
20	-7	10,595
30	-1	7,739.2
40	4	6,010.0
50	10	4,482.3
60	16	3,378.3
70	21	2,689.6
80	27	2,063.9
90	32	1,666.9
100	38	1,300.2
110	43	1,063.9
120	49	842.47
130	54	697.65

TM-1141-0000

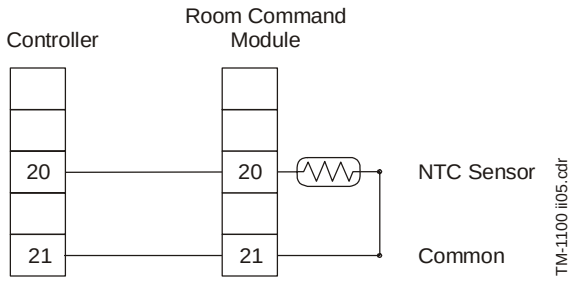

Figure 5: Wiring to an NTC Room Sensor

TM-1151-0000

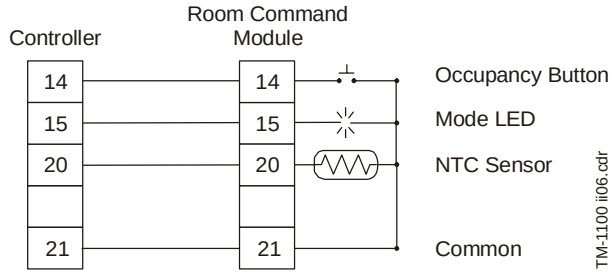

Figure 6: Wiring to a Room Command Module Featuring an NTC Sensor with Occupancy Override

TM-1161-0000 and TM-1161-0005

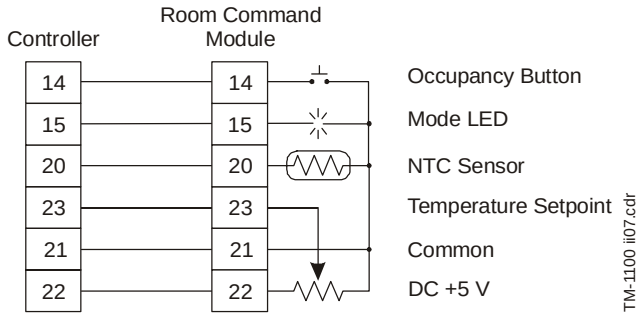

Figure 7: Wiring to a Room Command Module Featuring an NTC Sensor with Temperature Setpoint Adjustment, and Occupancy Override

TM-1161-0002 and TM-1161-0007

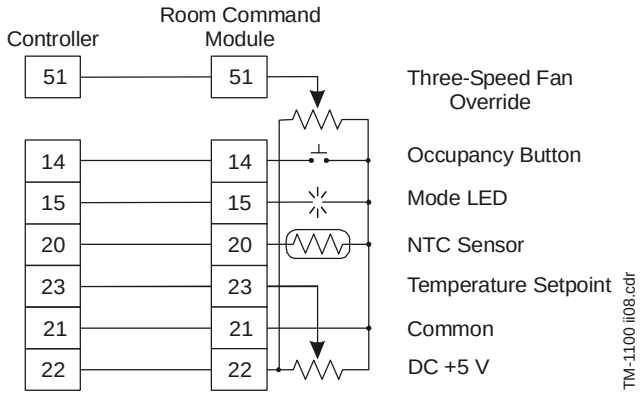

Figure 8: Wiring to a Room Command Module Featuring an NTC Sensor with Temperature Setpoint Adjustment, Occupancy Override, and Three Speed Fan Override

TM-1191-0000 and TM-1191-0005

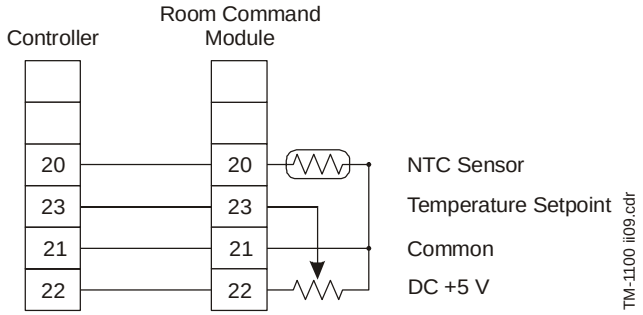

Figure 9: Wiring to a Room Command Module Featuring an NTC Sensor with Temperature Setpoint Adjustment without Occupancy Override

The following messages apply to wiring this product.

CAUTION: Risk of Electric Shock. Disconnect power supply before making electrical connections to avoid electric shock.

CAUTION: Risk of Property Damage. Do not run low voltage cable in the same conduit or wiring troughs with high voltage wires. Running low and high voltage wires in the same conduit or wiring troughs may damage the equipment or cause system malfunction.

CAUTION: Risk of Property Damage. Do not apply power to the system before checking all wiring connections. Short circuited or improperly connected wires may result in permanent damage to the equipment.

IMPORTANT: Use copper conductors only. Make all wiring connections in accordance with local, national, and regional regulations. Do not exceed the Command Module electrical ratings.

Setup and Adjustments

Make temperature or fan speed adjustments to the appropriate modules using the rotating dial, shown in Figure 3 and Figure 4.

Repairs and Replacement

Do not field repair the TM-1100 Series Room Command Module. As with any electrical device, keep the air vents clean and free from dust and obstruction. To order replacement parts, contact the nearest Johnson Controls representative.

Technical Specifications

TM-1100 Series Room Command Module (Part 1 of 2)

Models	**TM-1141-0000**	Temperature Output Only
	TM-1151-0000	Temperature Output with Occupancy Override
	TM-1161-000x	Temperature Output with Setpoint Adjustment and Occupancy Override and Optional Fan Speed Adjustment
	TM-1191-000x	Temperature Output with Setpoint Adjustment
Power Requirements		**Powered from Controller:** TC-9102 Series
Power Consumption		N/A: Refer to individual component specification.
Inputs		None
Adjustments		Temperature Setpoint, Fan Speed (Optional by Model)
Mode Indicator		Green LED (5 V, 4 mA)
Occupancy Button		Momentary Contact (Switches 5 V at 1 mA)
Output	**Temperature Sensing Element**	Resistance Temperature Device (RTD) Thermistor Negative Temperature Coefficient (NTC) 2,252 ohms at 77°F (25°C)
	Fan Speed	10k ohm Potentiometer, with Mechanically-Guided Positions at 0, 25, 50, 75, and 100% for Auto, Off, I (Low Speed), II (Medium Speed), and III (High Speed)
Setpoint Range	**-0000[1] =**	10k ohm Potentiometer marked for: 55 to 85°F (12 to 28°C)
	-0002[1] =	10k ohm Potentiometer marked for: 55 to 85°F (12 to 28°C); Fan Speed Adjustment: Auto, Off, I, II, and III
	-0005[1] =	10k ohm Potentiometer marked for: ±5F° (±3C°)
	-0007[1] =	10k ohm Potentiometer marked for: ±5F° (±3C°); Fan Speed Adjustment: Auto, Off, I, II, and III
Accuracy		±0.9°F (±0.5°C)
Field Connection		18 to 26 AWG (1.0 to 0.4 mm diameter); 22 AWG (0.6 mm diameter) recommended
Mounting		Wallbox Mount

TM-1100 Series Room Command Module (Part 2 of 2)

Housing Material		ABS + PC, Self-Extinguishing HB UL94
Protection		IP30 (EN 60529)
Ambient Operating Conditions	**Temperature**	32 to 122°F (0 to 50°C)
	Humidity	10 to 95% RH (Noncondensing)
Ambient Storage Conditions	**Temperature**	-4 to 158°F (-20 to 70°C)
	Humidity	10 to 90% RH (Noncondensing)
Dimensions	**TM-1140, TM-1150** **TM-1160, TM-1190**	4.72 x 3.15 x 1.26 in. (120 x 80 x 32 mm) 4.72 x 3.15 x 1.38 in. (120 x 80 x 35 mm)
Shipping Weight		0.44 lb (0.2 kg)
Compliance	**European Union**	CE Mark: EMC Directive 89/336/EEC, EN-61000-6-3, EN-61000-6-2

1. This number refers to the final four digits of the TM-1100 series model numbers.

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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