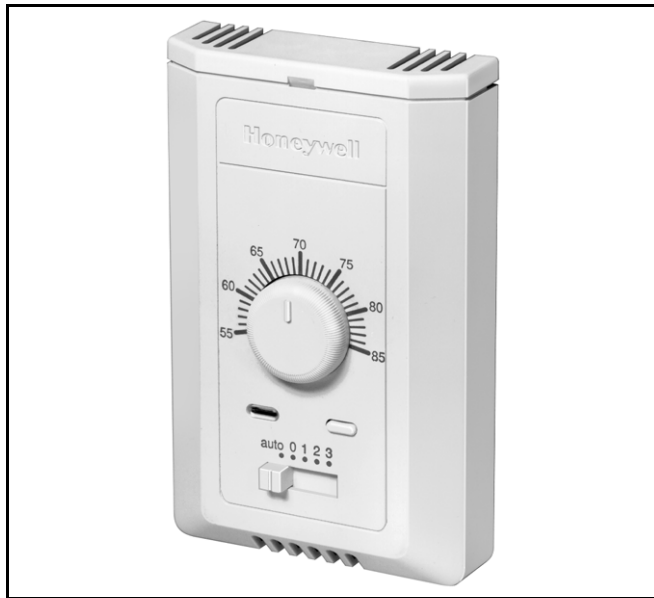


## T7770A-G Wall Modules

### SPECIFICATION DATA



### FEATURES

- Models with setpoint adjustment.
- Models with occupied/unoccupied override (bypass) with LED.
- Models with 3-position (auto/0/1) or 5-position (auto/0/1/2/3 speed) fan switch.
- Models with or without Honeywell logo.
- LONWORKS® bus jack on all models except low cost T7770A1006.
- Locking cover on all models.
- Operating range 45 to 99°F (7 to 37°C).

### GENERAL

The T7770A through G are a family of direct wired wall modules for use with Honeywell Excel 600, 500, 100, 80, 20 (all fully programmable) and W7750, W7751, W7752, W7753, W7761 Controllers. All models have a space temperature sensor; some models have setpoint adjustment, override with LED, and fan switch.

### SPECIFICATIONS

**Models:** See Table 1.

**Construction:** Two-piece construction, cover and internally wired subbase. Field wiring 14 to 22 AWG (2.0 to 0.34 sq. mm) connects to a terminal block in the subbase. Wall module is activated by plugging into prewired subbase.

**Mounting Options:**

The T7770 can be mounted on a standard two by four inch junction box or on a 60 mm diameter junction box. The subbase also provides the slotted hole pattern for the T7412 Wall Module series individual room control devices.

**Dimensions (H/W/D):** 5-1/16 x 3-1/8 x 1 in. (128 x 80 x 25 mm).

**Environmental Ratings:**

Operating Temperature: 45° to 99°F (7° to 37°C).  
Shipping Temperature: -40° to 150°F (-40° to 65°C).

**Relative Humidity:** 5% to 95% noncondensing.

**Temperature Sensor Operating Range:**

45 to 99°F (10 to 37°C).



**Accessories:**

209651A Universal Cover Plate; 5-3/4 x 7-3/8 in. (146 x 187 mm).

**Approvals:**

NEC Class II.  
Underwriter's Laboratories Inc. Listed: Meets UL916 standard.  
Canadian Underwriter's Laboratories Inc. Listed.  
CE.

## Temperature Sensor Accuracy

**T7770A-G 20K Ohm Nonlinearized Sensor:**

All T7770 models are furnished with a 20K Ohm nonlinear NTC temperature sensor that follows a specific temperature-resistance curve. See Fig. 1.

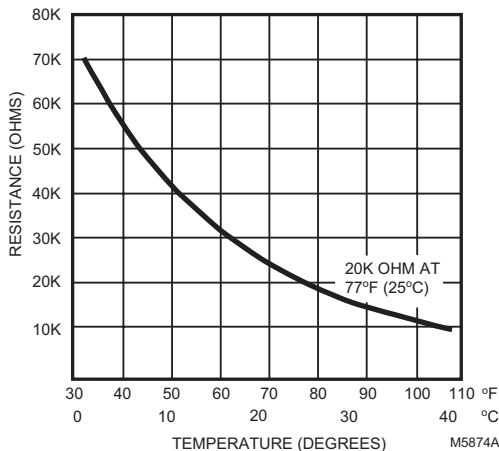
Honeywell controllers used with the T7770 employ an algorithm that provides readings close to the actual temperature. Sensor accuracy across the range of 41 to 99°F (5 to 37°C) is better than ±0.36°F (±0.2°C).

See form 63-7074 for detailed nominal temperature resistance output in table form.

**Table 1. T7770 Wall Module Models.**

Model Number		Setpoint Adjustment	Occupied/Unoccupied Button and LED	Fan Switch (3 or 5 Position)	Compatible With
Honeywell Logo	No Honeywell Logo				
T7770A1006	—	—	—	—	Excel 600, 500, 100, 80, 20 and Excel 10 W7750A,B W7751B,D,F,H W7752A,B,C W7753 W7761 Controllers
T7770A2004	T7770A2012	—			
T7770B1004	—	55 to 85°F			
T7770B1020	—	10 to 35°C			
T7770B1046	—	±			
T7770C1002	T7770C1010	55 to 85°F	X	—	
T7770C1028	—	10 to 35°C			
T7770C1044	T7770C1051	±			
T7770D1000	—	—	X	3	
T7770E1007	—	55 to 85°F			
T7770E1023	—	10 to 35°C			
T7770E1049	—	±	X	5	
T7770F1005	—	55 to 85°F			
T7770F1021	—	10 to 35°C			
T7770F1047	—	±			
T7770G1003	—	—	—	—	

NOTE: Refer to T7770A through G Installation Instructions, 95-7538, for wall module settings and wiring diagrams. Some T7770 features may not be available with all controllers.



**Fig. 1. Temperature vs. resistance for nonlinear sensor.**

**Communications:**

Except for the T7770A1006 model, these controllers all have a LONMARK® bus communications port. If needed, the jack plug must be removed in the field, and terminals 1 and 2 wired according to the installation instructions.

LONMARK® bus communication is not applicable when the wall modules are used with Excel 600/500/100/80/20 Controllers. The LONMARK® bus is insensitive to polarity, minimizing installation errors due to miswiring.

The recommended wire size for the LONMARK® bus is Level IV, 22 AWG (0.34 sq.mm) plenum or non-plenum rated, nonshielded, twisted pair, solid conductor wire.

**T7770B,C,E,F Setpoint Adjustment:**

For Wall Modules with a setpoint adjustment, the controller must be programmed for the values in Table 2.

Table 2. Setpoint Values.

Setpoint Value	Program Setting
55°F	2.773V
65°F	2.148V
75°F	1.345V
85°F	0.43V

### T7770C,D,E,F,G Wall Module Bypass Override/LED Operation

**When Used With Excel 10 Controllers:** The controller provides timed occupied and unoccupied temperature setpoints for the Wall Module, see Fig. 2. The bypass pushbutton is used to change the controller into the modes shown in Table 3 and Fig. 3. The override LED displays the override status of the controller.

**When Used With Excel 600/500/100/80/20 Controllers:** The application engineer/programmer can program the override and LED to operate in any manner desired. The override (bypass) input is a dry contact, normally open, momentary digital input when the wall module does not have a fan switch. When a fan speed switch (basically a series of resistances based on fan switch position) is present, the bypass button is an analog input. See Table 4 for resistances.

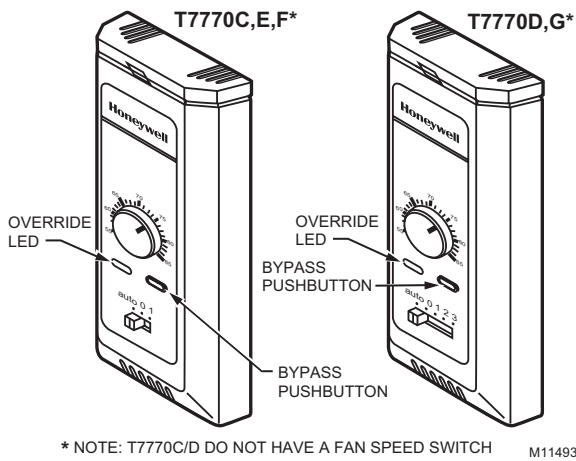


Fig. 2. LED and bypass pushbutton locations.

Table 3. Wall Module Operation.

Pushbutton Held Down	Controller Mode	LED Status
0 to 1 second	No override.	Off
1 to 4 seconds	Timed occupied override.	On
4 to 7 seconds	Unoccupied override.	Single blink per second
Longer than 7 seconds	No override.	Off
—	Continuous occupied override. <sup>a</sup>	Two blinks per second

<sup>a</sup> Remote function. Generated from the network.

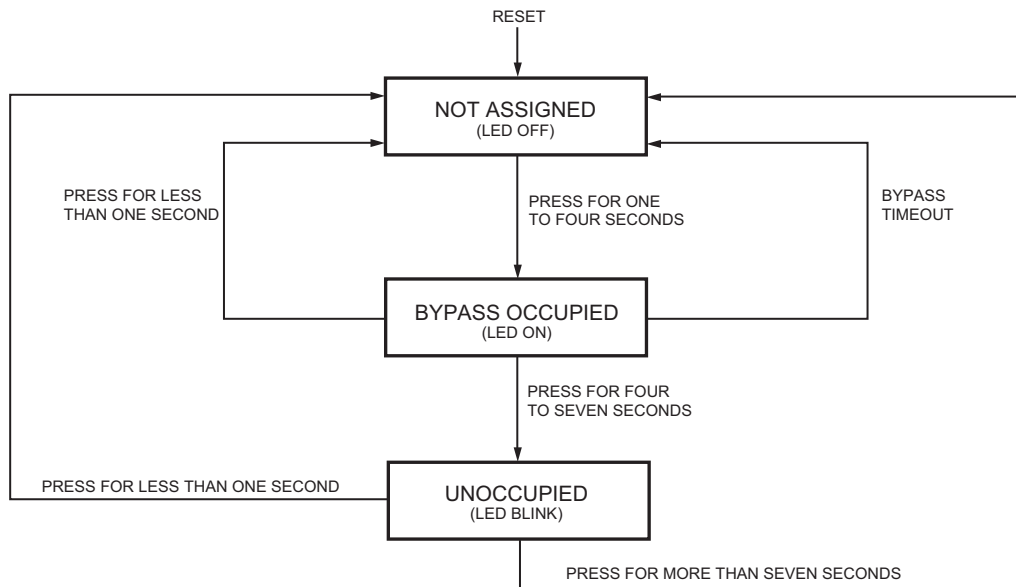


Fig. 3. Bypass pushbutton operation.

## T7770E,F,G Wall Module Fan Switch

### When Used With Excel 10 FCU Controller:

With the switch in the far left position, the fan automatically runs at the speed determined by the controller temperature control algorithm.

With the switch in the 0 position, the fan is off. Position 1 is fan speed 1, etc.

The wall module fan speed switch overrides the temperature control algorithm.

### When Used With Excel 600/500/100/80/20 Controllers:

Excel 600/500/100/80/20 Controllers can be programmed so that the fan speed switch and bypass button function the way that the application engineer/programmer wants. See Table 4 for controller-programming resistances.

**Table 4. Program Settings (Wall Modules with Fan Switch).**

For Switch Position	Resistance (ohms)
Auto	11.861K ±119
0	12.686K ±127
1	13.866K ±139
2	13.04K ±130
3	14.60K ±146
Bypass button closed	10K ±100

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