T7560A,B,C Digital Wall Module

HONEYWELL EXCEL 5000 OPEN SYSTEM

SPECIFICATION DATA

FEATURES

- Fully compatible with all current Excel 10, Excel 12, Excel 1000, and Excel 20 to 800 controllers

- Low power consumption

- Integral sensors:
  - 20kΩ NTC temperature sensor
  - Humidity sensor with 0…10 Vdc output (T7560B)

- LCD display options T7560A and B:
  - Temperature Setpoint (°C and °F options), or
  - Temperature Setpoint plus Actual Temperature
  - Actual Temperature and Humidity alternating (T7560B)
  - Occupancy Status (Occupied/unoccupied/standby)
  - Fanspeed
  - Temperature Offset adjustment for displayed temperature

- Manual override options:
  - Setpoint dial for setpoint adjustment, absolute or relative
  - Single-touch occupancy override
  - Fan Speed (Auto/On-Off or Auto/Speed 1,2,3)
  - Light on/off/dimming

- Allows Central Reset of local overrides that a room user has done at the wallmodule, like room-temperature-setpoint, fan-speed and occupancy mode. This is typically required in Hotels.

- Blue and white color options (see table 1) for:
  - Setpoint Wheel
  - Setpoint Wheel Cover
  - Buttons

- Separate mounting base for easy installation

- Tamper-resistant locking cover

- IP30 housing

GENERAL

The T7560A/B/C wall modules display and provide space temperature, space tempeature setpoint, humidity, Occupied/Unoccupied override, and fan mode/speed selection for the Honeywell Excel 10, 20, 50, 100, 500, 800, and 1000 controllers, as applicable, (see also Table 5).

A software module ModAL is available to adapt the wall module to the respective Excel 20, 50, 100, 500, 600, 800, and 1000 controller. See T7560A/B/C Installation Instructions (product literature no.: EN1B-0146GE51) for details. In the case of the T75460A1036, see T7560A1036 Installation Instructions (EN1B-0547GE51) for details.

Using the three buttons, the user can change room temperature setpoint, fan mode/speed or lighting on/off/diming, initiate/cancel bypass, and change configuration information such as the wall modules engineering units.

CE

EN0B-0237GE51 R0214

SPECIFICATIONS
Models

Table 1. Types of wall modules

	sensor[1]	colors (dial / housing)	pre-conf. units
T7560A1000	Temp	blue/white	°C
T7560A1026	Temp	white/white	°C
T7560A1018	Temp	white/white	°F
T7560A1036**	Temp	blue/white	°C
T7560A1042*	Temp	white/white	°F
T7560B1008	Temp/Hum	blue/white	°C
T7560B1024	Temp/Hum	white/white	°C
T7560B1016	Temp/Hum	white/white	°F
T7560B1032*	Temp/Hum	white/white	°F
T7560C1006	Temp/Hum	blue/white	n.a.

[1] Temp = Temperature sensor; Hum = Humidity sensor

* U.S. versions with mounting base.

** Lighting Control version to be used with Excel 12 only

Temperature Sensor Accuracy

The wall module is furnished with a 20kΩ NTC temperature sensor that follows a specific temperature-resistance curve. See Fig. 1. Honeywell controllers used with the wall module employ an algorithm providing readings close to the actual temperature. Table 2 summarizes the wall module sensor accuracy for normal operating temperatures. Across the range of 43 to 104 °F (6 to 40 °C), the accuracy is better than ±0.75 °F (±0.42 °C).
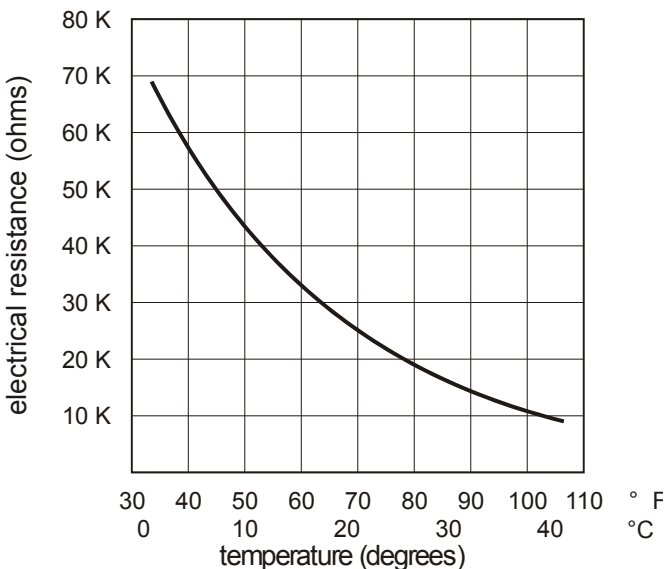

Fig. 1. Temperature vs. resistance for 20kΩ sensor

Table 2. Temperature sensor accuracy

ambient tem. (°C)	max. error (°C)	nominal resistance (Ω)
15.5	±0.29	31543
18.3	±0.27	27511
21.1	±0.27	24047
26.7	±0.27	18490
29.5	±0.29	16264

Humidity Sensor

Table 3. Humidity sensor specifications

parameter	value
humidity sensing range	10…95% r.h.
output signal	1…10 Vdc (10…100% r.h.)
accuracy	±5% (full-scale)

Fan Speed Button (T7560A,B, only, not T7560A1036)

Table 4. Switch position and fan behavior

switch position	fan behavior
auto	runs as scheduled
0	OFF
1	runs at speed 1
2	runs at speed 2
3	runs at speed 3
bypass activated	unchanged

NOTE: If connected to Excel 10 UV Controller W7753, fan output will not be shorted to ground on pressing the BYPASS button; with every other Excel 10 Controller, it will be shorted.
See T7560A,B,C Installation Instructions (product literature no.: EN1B-0146GE51) for configuration. In the case of the T75460A1036, see T7560A1036 Installation Instructions (EN1B-0547GE51) for configuration.

Power Supply

24 Vac/dc with a valid range of 18...27 V

5 Vdc via LED input with a valid range of 5...15 V

See T7560A,B,C Installation Instructions (product literature no.: EN1B-0146GE51) for details. In the case of the T75460A1036, see T7560A1036 Installation Instructions (EN1B-0547GE51) for details.

Power Consumption

<0.2 VA at 24 Vac, 50/60 Hz

Setpoint Adjustment

The setpoint accuracy is ± 0.3 K (± 0.54 °F).

Field Wiring

- 16 to 22 AWG (1.5 to 0.34 mm^2) depending on application.
- 18 AWG (1.0 mm^2) min. for 24 Vac power wiring.
- Max. length of wire from a device to a wall module is 164 ft (50 m).
- Twisted pair wire recommended for wire runs longer than 100 ft (30.5 m).

Setpoint Adjustment Range (A and B)

Setpoint can be configured for

- Fahrenheit absolute (55...85 °F)
- Fahrenheit relative ($\pm$ 10)
- Celsius absolute (12...30 °C)
- Celsius relative ($\pm$ 5)

Temperature Value Display Resolution (A and B)

Degree Celsius $\Rightarrow$ 0.1 °C

Degree Fahrenheit $\Rightarrow$ 0.1 °F

Setpoint Value Display Resolution (A and B)

Degree Celsius $\Rightarrow$ 0.5 °C

Degree Fahrenheit $\Rightarrow$ 1.0 °F

Mounting Options

Wall mounting

Dimensions (H/W/D)

4-1/8 x 3-15/16 x 1-3/16 in. (104 x 99 x 30 mm)

Environmental Ratings

Shipping temperature: -22...+140 °F (-30...60 °C)

Operating temperature: 32...104 °F (0...+40 °C)

Relative humidity: 5...95% non-condensing

Measurement range: +6…+40 °C

Approval Bodies

UL 916, NEC Class 2

CE

Table 5. Wall module functions with Excel 10/12

	bypass	unit enable	fan override	setpt.	humidity	room temp.	controller SW requirements*
CVAHU W7750	✔	N/A	N/A	✔	✔	✔	--
VAV W7751H	✔	N/A	N/A	✔	N/A	✔	1.02.15
VAV W7751A/C/E/G				Not supported			
FCU W7752	✔	✔	✔	✔	N/A	✔	1.00.04
UV W7753	✔	✔	✔	✔	✔	✔	--
RIO W7761	N/A	N/A	N/A	N/A	✔	✔	--
FCU W7754	✔	✔	✔	✔	N/A	✔	1.00.02
HYD W7762	✔	N/A	N/A	✔	N/A	✔	1.00.03
CHC W7763	✔	N/A	N/A	✔	✔	✔	1.00.03
XL12 W7704	✔	N/A	N/A	✔	N/A	✔	all versions
Minimum software version which the Excel 10 controllers must have in order for them to be able to provide, via terminal 5 of the respective wall module, a) power and b) additional information on the controller's status for display in the LCD.							

OPERATION OF THE WALLMODULE

General

The T7560A and T7560B feature three buttons, a setpoint dial, and the LCD display (see Fig. 2). This section describes the functions of these elements. Table 5 shows the functions available with the different Excel 10/12 Controllers.
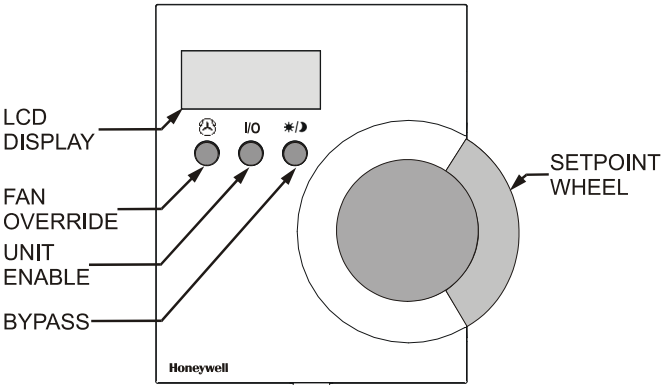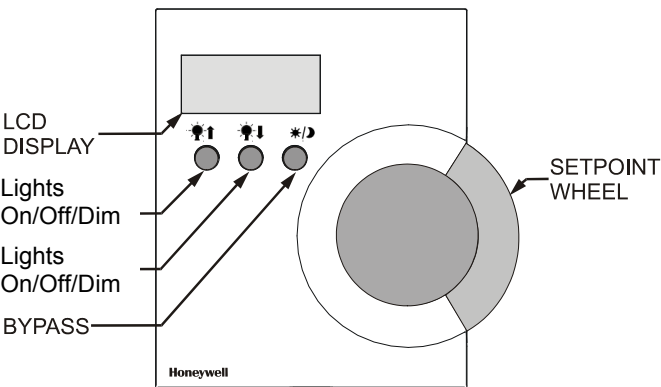

**Fig. 2. T7560A/B control elements**

Fig. 3. T7560A1036 control elements

NOTE: If not specified differently, the graphics given below show example display settings; depending on configuration, the actual indications may vary from those shown hereinafter.

Set Temperature

Depending on the configuration, you can adjust the temperature within the limits given below:

- °C absolute $\Rightarrow$ 12 to 30 °C (in 0.5 steps)
- °C relative $\Rightarrow$ -5 to +5 (in 0.5 steps)
- °F absolute $\Rightarrow$ 55 to 85 °F (in 1.0 steps)
- °F relative $\Rightarrow$ -10 to +10 (in 1.0 steps)

Turn the SETPOINT DIAL up/down to decrease/increase the room temperature setpoint.
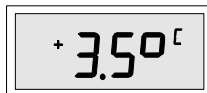
The display toggles the setpoint value (either relative or absolute, as configured).

After the new setpoint has been set, the display returns to normal mode after approx. 5 sec.
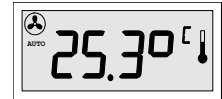
Set Fan Speed (not for T7560A1036)

The manually set fan speed is represented by a bargraph. Depending on configuration, the fan speed can be set as follows:

- Three-speed fan override $\Rightarrow$ AUTO, OFF, 1, 2, 3
- Two-speed fan override $\Rightarrow$ AUTO, OFF, 1, 2
- Fan mode override $\Rightarrow$ AUTO, OFF, ON

NOTE: The default setting after power-up is AUTO. The manually set fan speed overrides the controller's control algorithm.

Three-Speed Fan Override

Press the FAN OVERRIDE button to toggle between:

AUTO
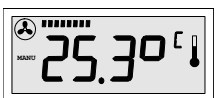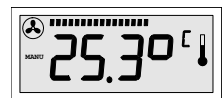(fan speed from controller)
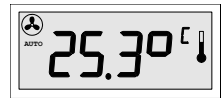
MANU OFF
(fan off)

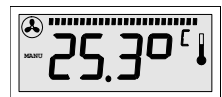With this setting, depending on configuration, the display may also read:
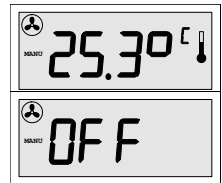
MANU 1
(fan speed 1)

MANU 2
(fan speed 2)

MANU3
(fan speed 3)

Two-Speed Fan Override

Press the FAN OVERRIDE button to toggle between:

- AUTO (fan speed from controller; display: see above)
- MANU OFF (fan off; display: see above)
- MANU 1 (fan speed 1; display: half bargraph)
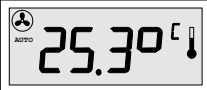- MANU 2 (fan speed 2; display: full bargraph)

Fan Mode Override

Press the FAN OVERRIDE button to toggle between:

- AUTO (fan speed from controller; display: see above)
- MANU OFF (fan off; display: see above)
- MANU ON (fan on; display: full bargraph)

Set Fan Mode (not for T7560A1036)

The UNIT ENABLE button switches the fan mode between AUTO and MANU OFF:

AUTO
(fan speed from controller)

MANU OFF
(fan off)

With this setting, depending on configuration, the display may also read:

Humidity Display

The T7560B is capable of displaying the relative humidity. To display the relative humidity, it must be configured in mode P2:3. The relative humidity (in %, together with the corresponding letters "rh") and the room temperature will then be displayed, alternating every 5 seconds.

Humidity mode
(e.g., 25% relative humidity)

Set Bypass/Occupancy Mode Display

Via the application, the room temperature setpoint adjustment can be reset to 0, and the occupancy mode can be reset to "bypass."

The bypass function can be used to override the control algorithm generated by the controller (e.g., for an event after normal office hours, or for a room known to be unused).

The status of the occupancy mode can be seen from the sun, moon, and snowflake symbols. The following LCD behaviors are possible, depending on configuration. See T7560A,B,C Installation Instructions (product literature no.: EN1B-0146GE51) for configuration options. In the case of the T75460A1036, see T7560A1036 Installation Instructions (EN1B-0547GE51) for configuration options.

Occupancy Mode Display for Excel 10 LCD Signaling

(Excel 10 set to LCD_DISPLAY; with FCU, HYD, and CHC, only.)

Effective Occupancy or Bypass mode
(SUN continuously ON)

Effective Standby mode; generated by time program
(HALF-SUN continuously ON)

Effective Unoccupancy mode
(MOON continuously ON)

Unit Off, No Frost Protection
(OFF without snowflake)

Unit Off, With Frost Protection
(OFF WITH SNOWFLAKE)

Override Standby mode (from central)
(HALF-SUN FLASHING)

Wink mode (NEURON[©] ID sent)
(SUN/MOON/SNOWFL. FLASHING)
(Only with FCU, HYD, CHC)

Press the BYPASS button to set the desired mode:

- To activate Override Occupancy or Bypass mode, press and release the BYPASS button.

- To activate Override Unoccupancy mode, press and hold the BYPASS button for at least 5 sec.

- To return to normal mode, press and release the BYPASS button again.

NOTE: Pressing the BYPASS button for more than 5 seconds sends the NEURON[©] ID of the connected Excel 10 controller via the LONWORKS[©] network.

Override Occupancy or Bypass mode
(SUN FLASHING)

Override Unoccupancy mode
(MOON FLASHING)

Override Mode Display for Excel 10 LED Signaling
(Excel 10 set to LED_OVERRIDE)

Off Conditions, No Override, Overr.
Occupancy, Overr. Standby (NO
SYMBOLS)

Wink mode (NEURON© ID sent)
(SUN/MOON/SNOWFL. FLASHING)
(Only with FCU, HYD, CHC)

Press the BYPASS button to set the desired mode:

- To activate Override Bypass mode, press and release the BYPASS button.
- To activate Override Unoccupancy mode, press and hold BYPASS button for at least 5 sec.
- To return to normal mode, press and release the BYPASS button again.

NOTE: Pressing the BYPASS button for more than 5 seconds sends the NEURON© ID of the connected Excel 10 controller via the LONWORKS© network.

Override Bypass mode
(SUN FLASHING)

Override Unoccupancy mode
(MOON FLASHING)

Occupancy Mode Display for Excel 10 LED Signaling
(Excel 10 set to LED_OCCUPANCY)
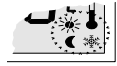
Effective Bypass mode
(SUN continuously ON)

Effective Standby mode; generated by time program
(HALF-SUN continuously ON)

Off Conditions, Effective Unoccupancy mode
(MOON continuously ON)

Wink mode (NEURON© ID sent)
(SUN/MOON/SNOWFL. FLASHING)
(Only with FCU, HYD, CHC)

Occupancy Mode Display for Excel 20…Excel 1000
Display of the currently active Excel 20...Excel1000 mode; further options depend on the configuration of the controller:

Occupancy mode
(SUN continuously ON)

Standby mode; generated by time program
(HALF-SUN continuously ON)

Unoccupancy mode
(MOON continuously ON)

To adapt the T7560 to the CARE control strategies for Excel 20…Excel 1000, a standard ModAL software module is available. Contact your local Honeywell distributor, or refer to T7560A,B,C I.I. (product literature no.: EN1B-0146GE51) for further details. The T75460A1036 does not require the ModAL software module insofar as its inputs/outputs are engineered in CARE.

ACCESSORIES

For mounting the following accessories, please refer to the T7560A,B,C Installation Instructions (product literature no.: EN1B-0146GE51).

T7460-LONJACK

The T7460-LONJACK is a small board and allows easy access to LONWORKS or BACnet via the correspondingly wired wall module (apply appropriate wiring guidelines for LONWORKS or BACnet networks, as the case may be). The T7460-LONJACK provides an additional 3.5 mm jack socket for a 3.5 mm jack plug.

Order quantity: Set of 5 pieces

T7560 Blinds

Blind covers for unused/undesired buttons. Same material and same white color as housing. Order quantity: Set of 50 pieces.

Honeywell