

DT70 SERIES

DIGITAL FAN-COIL THERMOSTATS 2-PIPE FAN-COIL CONTROL

PRODUCT SPECIFICATION SHEET



FEATURES

- Elegant styling with digital display makes thermostat well harmonised with any interior decoration of office or hotel
- Digital display of room ambient temperature, with display of user selected setpoint on demand
- Push button adjustment of setpoint
- Push button setting of Heat/Cool changeover
- Switches allow manual control of system operation and fan speed
- Thermostat mounts directly onto a wall, a standard 65x65mm junction box (hole pitch 60mm) or a 85x85mm junction box
- Ability to set minimum relay off-times (heating or cooling) for applications requiring compressor short-cycle protection (0~10min.)
- Ability to set control-off-times for applications requiring starting-time reservation (0~24hr.)
- Ability to display temperature sensor failure for easier troubleshooting
- EEPROM permanently retains user settings in the event of power loss
- Suitable for use with Honeywell VC4000/VC6000 series and V4043/V4044 valves and compressor starters/relays up to 2A full load rating

APPLICATION

The DT70 digital thermostats are designed for ON/OFF control of the valve, or the valve and fan in 2-pipe fan-coil applications and also one-stage compressors in DX-type equipment.

The thermostat operates an on/off valve to provide control at the desired setpoint temperature.

Fan-coil thermostat models are available with constant or cycled fan operation, and have a three-speed fan selector switch with low, medium and high settings.

The fan can also be controlled from the thermostat. In some cases it is wired to run continuously, and can be switched off with the system ON/OFF switch.

Heat/cool changeover operation is also possible on all versions. This function can be accomplished by changing the Heat/Cool parameter in SETUP mode.

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SPECIFICATION

Table 1. Model selection guide

Model	Application	Fan Operation	Switches		Supply voltage	Aux-Mounting plate (note)
		Cycled / Constant	On / Off (SPDT)	3-Speed Fan(SP3T)	Vac±10%, 50/60Hz	
DT70-F002E	2-pipe Fan Coil	Cycled	Yes	Yes	220	NO
DT70-F012E	2-pipe Fan Coil	Cycled	Yes	Yes	110	NO
DT70-F002E-P	2-pipe Fan Coil	Cycled	Yes	Yes	220	YES
DT70-F002ET	2-pipe Fan Coil	Constant	Yes	Yes	220	NO
DT70-F012ET	2-pipe Fan Coil	Constant	Yes	Yes	110	NO
DT70-F002ET-P	2-pipe Fan Coil	Constant	Yes	Yes	220	YES

* Note : A aux-mounting plate is available for wall-box wider than 76mm width.

- | | | | |
|--------------------------|--|----------------------------|--|
| Set-point range | : 5...35°C | Mounting | : Mounts directly onto wall or wall-box - a standard 65x65mm junction box (hole pitch 60mm) or a 85x85mm junction box. Mounting screws supplied |
| Display and setting unit | : 0.5 °C | Wiring | : 7 screw –in terminals per unit, capable of accepting wires up to 14AWG. |
| Differential | : 1 °C max (0.5 °Ctyp) | Enclosure | : Plastic 2-piece housing (front cover, rear cover) |
| Thermostat switch | : 1 S.P.D.T. relay | Dimensions | : 76 x 125 x 30mm(W x H x D). |
| Control Performance | : ON/OFF control | Environmental requirements | : Operating temperature range 5 to 45°C
Shipping and storage temperature range -20 to 55°C.
Humidity range 5 to 95% RH, non-condensing at 26 °C. |
| Electrical ratings | : 5(2) A, 220 V~, 12A inrush
Typical loads are fans, zone valves and relays. Inductive loads of greater than 400W should be switched via a contactor. | | |
| Operational life | : Greater than 100,000 cycles (all loads) for thermostat contacts at 220 V~ Greater than 10,000 operations for all manually operated switches | | |

DIMENSIONS

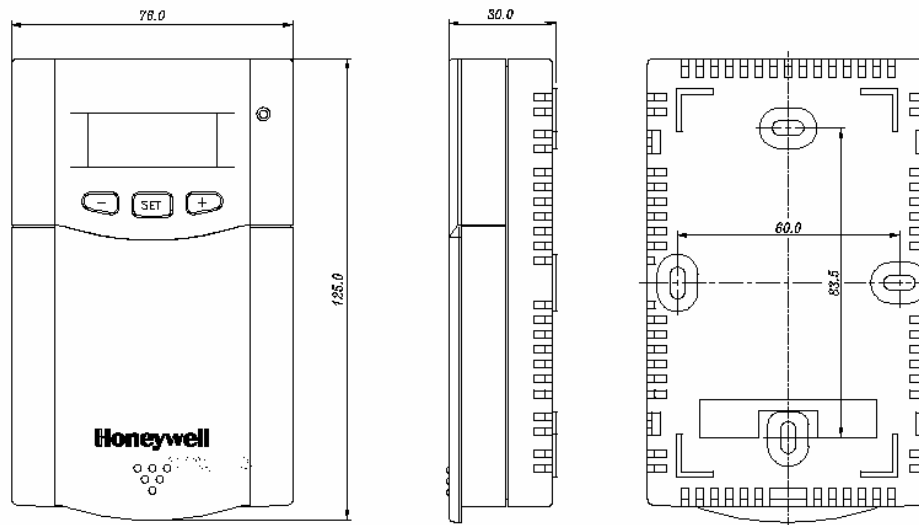
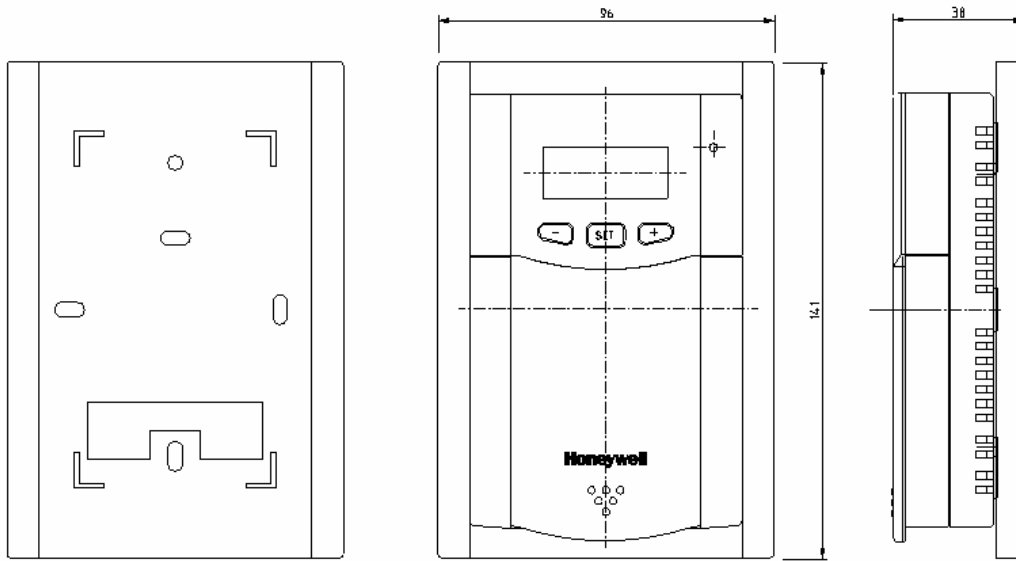


Fig. 1 DT70 Dimensions (mm)



Aux-Mounting Plate

Fig. 2 DT70 Dimensions with aux-mounting plate (mm)

INSTALLATION

Location

The DT70 Series thermostat is the temperature control element in the fan-coil or air-conditioning system, and must be located about 1.5m above the floor in a position with good air circulation at room temperature. Do not mount it where it could be affected by :

- draughts or dead spots behind doors or in corners
- hot or cold air from ducts
- radiant heat from the sun or appliances
- unheated (uncooled) areas such as an outside wall behind the thermostat
- concealed pipes or chimneys

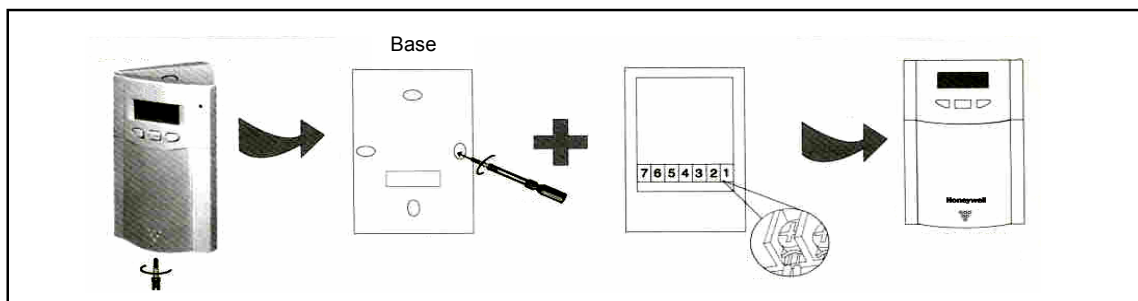
Mounting the thermostat

The DT70 Series thermostat can be directly mounted on the wall or on either a 65x65mm standard junction box or a 85x85mm junction box. Mounting screws are supplied for both alternatives.

IMPORTANT

*The installer must be a trained service engineer
Disconnect the power supply before beginning installation*

- ① Separate the base from the main unit
- ② Base mounting
- ③ Wiring
- ④ Carefully insert the main unit on the base



Twist ⊖ driver into the hole at the bottom of main unit

Mount the base on the junction box with the screws supplied

- ① Pull out wires through the square hole of base
- ② Wiring on the back of main unit

Fig. 3 DT70 Mounting

WIRING DIAGRAM

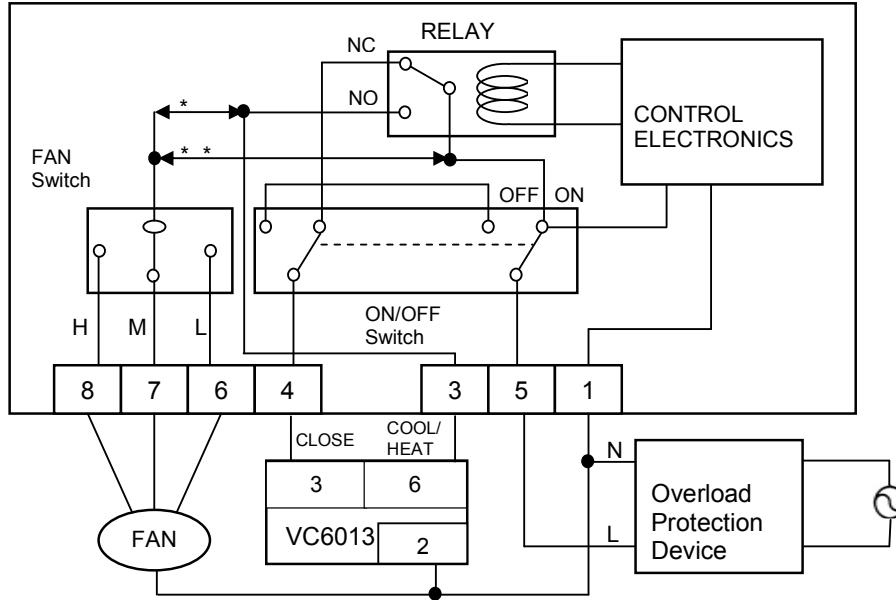


Fig. 4 Cool-Heat-Off wiring diagram with 3-speed fan

OPERATION

Switches

Fan Speed Switch (SP3T line voltage)

Where supplied, the fan switch allows the selection of 3 different settings - low, medium, or high.

System Switch

Thermostat and Fan-coil equipment are powered off or on. When in the off position, terminal four is powered to close the VC4000, VC6000 valve.

User Programming Modes

Temperature Setpoint

The temperature setpoint can be adjusted between 5°C and 35°C in steps of 0.5°C by using the - and + keys. The temperature set-point can be changed by pressing the + key to increase the setpoint, or pressing the - key to decrease the setpoint.

Display

The measured room temperature is normally displayed and the first press of the + or - keys will switch to displaying the user setpoint. If no key is pressed for 5 seconds, the display will return to showing the room temperature.

When the cooling relay is closed this will be indicated by a □ symbol, whereas closure of the heating relay will be indicated by a ● symbol.

User Programming Modes

NOTE : When a parameter setting is changed, If no activity is detected for five seconds, the user is exited from the installer setup mode and the display will return to showing the room temperature.

Cooling/Heating changeover

- (1) To change cooling/heating mode, press the SET key for 3 seconds and C(Cooling) is displayed.
- (2) Press the + or - key. These keys change the mode into H(Heating) or C(Cooling).

Minimum relay off-time setting

This is the function that prevents the relay from energizing the load for the setting time.

The default setting is zero minutes.
(no minimum relay off-time)

- (1) To adjust the minimum off-time, press the SET key for 3 seconds.
- (2) Press the SET key one time.
- (3) By using the + key, minimum off-time can be set between zero and 10 minutes.

Room temperature display biasing

When the measured room temperature is highly displayed, It is the function that the display can be biased with -1°C or -2°C.

- (1) Press the SET key for 3 seconds and "C0" is displayed.
- (2) Press the SET key two times.
- (3) By using the +,- keys, room temperature display can be decreased by 1°C or 2°C.

Time reservation mode

It is the function that relay on/off action is not operated for setting time.

- (1) To set the time, press the SET key one time.
- (2) By using +,- keys, time can be set between 0 and 24 hours.

NOTE : During the timer counting, If the power is failed or system switch is off the timer setting is cancelled

* : Cycled Fan Operation

* * : Constant Fan Operation