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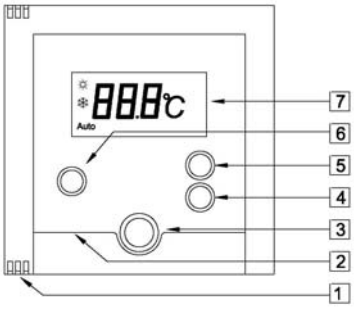
Digital Room Thermostats with LCD

Installation and Operation Instructions

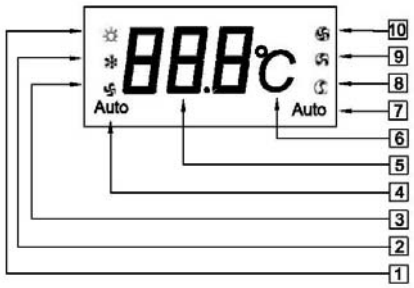
Display Control Unit

Display Control Unit



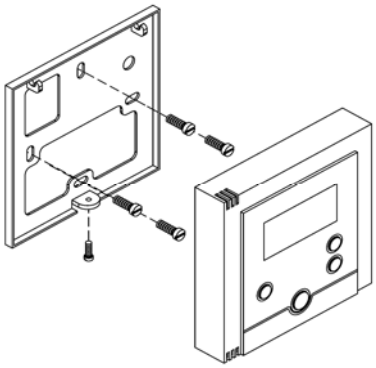
1 Built-in Temperature Sensor
2 Infra-red sensor
3 Fan Speed Touch Key
4 Temperature Set Point Touch Key -
5 Temperature Set Point Touch Key +
6 System Modes Touch Key
7 LCD Unit

LCD Unit



1 Heating Mode
2 Cooling Mode
3 Fan Only Mode
4 Auto Operation Mode
5 Temperature Indication
6 Degree Celsius or Degree Fahrenheit
7 Auto Fan Mode
8 Low Fan Speed
9 Medium Fan Speed
10 High Fan Speed

DCU Mounting Details



Mounting

The display control unit can be surface mounted or secured to a standard European 75 x 75 x 35 mm electrical box. Two mounting screws for the Display Control Unit only are included.

Trouble-Shooting

Before trouble-shooting starts, ensure that the voltage output from Terminals 1 (GND) and 2 (+5 Vdc) on the power supply unit is between 5 Vdc and 5.25 Vdc and not higher. Higher voltage may damage the internal circuitry and components of the display control unit.

When abnormal power voltages are found, return the thermostat to the manufacturer for repair.

When there is no 5 Vdc power output, check the line voltage power and its 5 A fuse.

Operation Notes

- LCD shows ambient temperature constantly except when set point adjustment is being made.
- Press the system control key to enter the desired operating mode: Cool-Heat-Auto-Fan Only-Off, etc.
- Press the fan control key to change the fan speed mode: High-Med-Low-Auto.
- Increase or decrease temperature set point by pressing adjustment keys + and – respectively. When the adjustment key is pressed, the LCD shows the existing set point setting.
- In unoccupied mode, the factory temperature set points are 26 ^{o}C for cooling and 16 ^{o}C for heating and the fan speed is always set at "low".
- Unoccupied mode can be activated in the following manner when the unoccupied contact closes:

  For Models "1", "1A" and "1F", the unoccupied cooling or heating mode is determined by the status of the SR2 seasonal changeover sensor and the valve output is activated according to the measured temperature.

  For Models "1M" and "1AM", while in unoccupied mode, the valve output is never activated.

  For Models "2", "2A", "2F" and "2AH", the unoccupied cooling or heating mode is always determined by the measured temperature and valve output is also activated according to the measured temperature.

  Unoccupied mode activation in operating mode only or in both standby and operating mode will be determined by activation setting in setup menu. Low fan will run according to fan action setting in setup menu.

  When unoccupied mode is activated, all keys are locked out and no settings can be entered.
- The thermostat allows authorized service agent to make changes to the operating parameters in the field. For details, refer to the Procedure for Accessing and Exiting the Parameter Setup Menu.

Thermostat Errors Reporting

When the following errors are reported on the LED display unit, these errors will prevent the thermostat from normal operation:

E-1 EEPROM read/write error
E-2* Temperature sensor open-circuited
E-3 Temperature sensor short-circuited

* If jumper JP1 is cut open and external sensor is used, E-2 means the external sensor may have been disconnected from Terminals SR1 and GND. Check the external sensor's connectivity and resistive value. If E-2 error is still reported, return the thermostat to the manufacturer for repair.

When the error E-1 or E-3 is reported or when the error E-2 is reported without jumper JP1 being cut and external sensor being installed, return the thermostat to the manufacturer for repair.

Wiring Diagrams

The thermostats consist of two basic units: the Display Control Unit and the Power Supply Unit. While all line-voltage wiring is terminated at the Power Supply Unit, all connections between the Display Control Unit and Power Supply Unit are of low-voltage signaling wires.

Wiring Notes

- Cut jumper JP1 open if remote sensor is wired to SR1 and GND. Run the wiring away from any electrical motors or power wiring. Failure to do so may result in poor thermostat performance due to electrical noise.
- 22 or 24 AWG twisted shielded pair double-insulated cable is recommended as remote sensor wiring and its length must not exceed 50 m.
- Connecting wires between Display Control Unit and Power Supply Unit must not exceed 15 m.
- Do not bundle and run power wiring and remote sensor wiring in the same conduit.
- External seasonal changeover sensor or switch is applicable to heat only or cool only 2-pipe model only. Changeover to heating mode will take place when sensor temperature reaches 30ºC or above.
- Unoccupied contact closure activates unoccupied mode.
- Hidden-line wiring for Terminals V2 and 6 are applicable to dual-output models only.
- The thermostat output are designed for controlling zone valves. If used for controlling electric heaters, external contactors must be used.

Wiring Diagram for Multiple-FCU Power Supply Units in Cascade Connections

Sensor wires: 22 or 24 AWG twisted shielded pair double-insulated cable

WARNING

Incorrect wiring connection may cause

Piping Notes:

1. On a single-output unit, V1 can be either a cooling or a heating valve.
2. On a dual-output unit, V1 must be a