TE246 ON/OFF SINGLE OUTPUT – HEATING COOLING – 2 PIPE SYSTEM – AUTOMATIC CHANGEOVER – ECM FAN CONTROL

Description

The TE246 microprocessor-based controller for Fan Coil Units is specifically designed to run a single ON/OFF valve for heating/cooling mode for a 2-pipe system, and a variable airflow ECM fan.

The thermostat measures the temperature of a room with an integral sensor. The changeover is measured with a 10K sensor strapped on the supply side of the valve. The TE246 is controlling the ON/OFF valve and simultaneously controlling a 0-10Vdc signal to an ECM modulate fan in the fan coil unit system to maintain the room space at a desired set point temperature. The ECM variable airflow fan speed will vary depending on the heating or cooling load, and while in Run Mode it will run continuously when set point is reached delivering minimum CFM as pre-set by the contractor.

The TE246 incorporates a coil freeze protection that will open the valve when reaching an emergency freezing setpoint. It also incorporates a digital input that can be used in conjunction with a dew point sensor or condensate pump that will close the cooling valve.

The thermostat features a battery-backed real time clock providing separate programming and a 7-day schedule. It also has a large backlit LCD screen showing room temperature or set point, time, day, and related status.

Features

- CFM minimum and maximums can be set on the room thermostat in 'Engineer Mode'
- Freeze protection
- Digital input for dew point sensor or condensate pump
- Backlit display for clear readability
- Pre-set 7 day program with 4 daily schedules
- 12- or 24- hour format with battery backed day and time
- Full proportional control for electronically commutated (ECM) fan
- The Fan speed in AUTO mode:
  The fan mode can be selected in AUTO in which the fan will deliver variable CFM controlled by the room temperature. It will stop when the set point is reached
- The Fan speed in RUN mode:
  The fan CFM is controlled by the room temperature and it will continously deliver the minimum CFM when the set point is reached
- The ON/OFF button will turn the fan coil unit off and the valves will go to their default position
- Room temperature or setpoint temperature selectable for display
- Full configurable parameters such as switching differential, cycle time, etc are set in 'Engineer Mode'
- Proportional plus integral (PI) algorithm applied for accurate temperature control
- Non-volatile memory (EEPROM) retains user settings during power loss
- Adjustable HI/LOW limit set point range
- Agency approval: CE directive 2004/108/EC
  Low voltage Class 2 as per UL/CSA standards
- Warranty 2 years

Specifications

- **Supply Voltage:** 24Vac/Vdc (+/-10%), 50/60 Hz
- **Display Range:** 30 to 120.0 ˚C (-22.0 to 248.0 ˚F) with suitable sensor
- **Display Temperature Unit Resolution:** 0.1 ˚C/˚F
- **Indication Accuracy:** +/-1.0 ˚C (1.8 ˚F) at 25 ˚C and output off
- **Set-point Range:** 0~50 ˚C / 32~122 ˚F (default-10~30 ˚C /50~86 ˚F, adjustable), 0.5 ˚C/˚F per setting step
- **Set-point Adjust:** By up and down arrows buttons
- **Fan Button:** To toggle between fan modes Auto/Run
- **Remote Sensor (RS) Input Interface:** For connecting to external NTC Thermistor 10K ohm for changeover
- **Digital Output Signal:** DO1, 24Vac/24Vdc
- **Fan Control:** 0-10V modulating output
- **Analog Output Signal:** AO2, Terminal 12 for variable speed ECM fan
- **Dimensions:** 94 × 118 × 34 mm (W × H × D)
- **Mounting:** Mounts directly onto wall, panel, standard 65×65 mm junction box (hole pitch 60 mm) or standard 2×4 inch vertical junction box (hole pitch 83.5 mm)
- **Operating Ambient Temperature:**
  0 - 50˚C, 5~95% RH (non-condensing)

Note: The 10k strap-on sensor needs to be ordered separately

Recommended Sensor: Spartan 10K, with enclosure TS31-200EE7A2

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Energy Saving Occupied Unoccupied Schedule :

Temperature set point can be programmed for maximum 4 periods for a whole week, 5-2, 5-1-1, or each day.

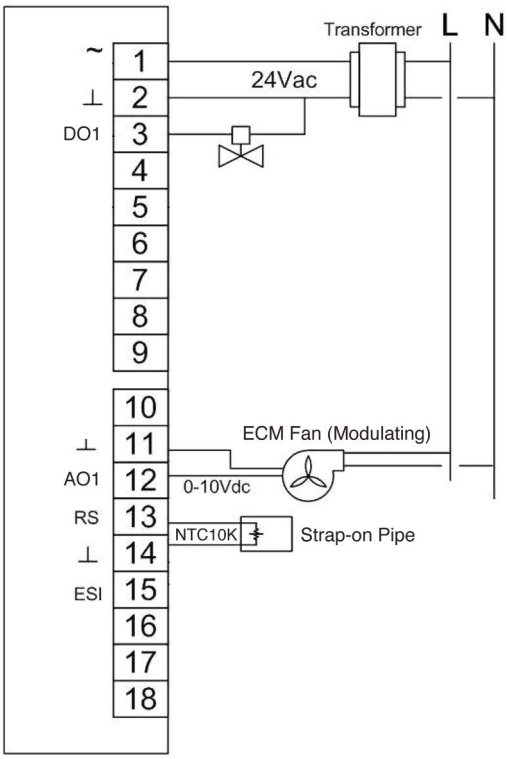
Schedule	Period	Set point
1	Wake	Morning temperature
2	Leave	Daytime temperature
3	Return	Evening temperature
4	Sleep	Night temperature

Default Set Point Schedules - can be easily switched between ˚F or ˚C scales.

COOL	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Sch. 1 ①	6:00 26.0℃	6:00 26.0℃	6:00 26.0℃	6:00 26.0℃	6:00 26.0℃	6:00 26.0℃	6:00 26.0℃
Sch. 2 ②	8:00 29.5℃	8:00 29.5℃	8:00 29.5℃	8:00 29.5℃	8:00 29.5℃	8:00 29.5℃	8:00 29.5℃
Sch. 3 ③	18:00 26.0℃	18:00 26.0℃	18:00 26.0℃	18:00 26.0℃	18:00 26.0℃	18:00 26.0℃	18:00 26.0℃
Sch. 4 ④	22:00 26.0℃	22:00 26.0℃	22:00 26.0℃	22:00 26.0℃	22:00 26.0℃	22:00 26.0℃	22:00 26.0℃

HEAT	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Sch. 1 ①	6:00 21.0℃	6:00 21.0℃	6:00 21.0℃	6:00 21.0℃	6:00 21.0℃	6:00 21.0℃	6:00 21.0℃
Sch. 2 ②	8:00 16.0℃	8:00 16.0℃	8:00 16.0℃	8:00 16.0℃	8:00 16.0℃	8:00 16.0℃	8:00 16.0℃
Sch. 3 ③	18:00 21.0℃	18:00 21.0℃	18:00 21.0℃	18:00 21.0℃	18:00 21.0℃	18:00 21.0℃	18:00 21.0℃
Sch. 4 ④	22:00 16.0℃	22:00 16.0℃	22:00 16.0℃	22:00 16.0℃	22:00 16.0℃	22:00 16.0℃	22:00 16.0℃

Wiring Diagram



Control Performance

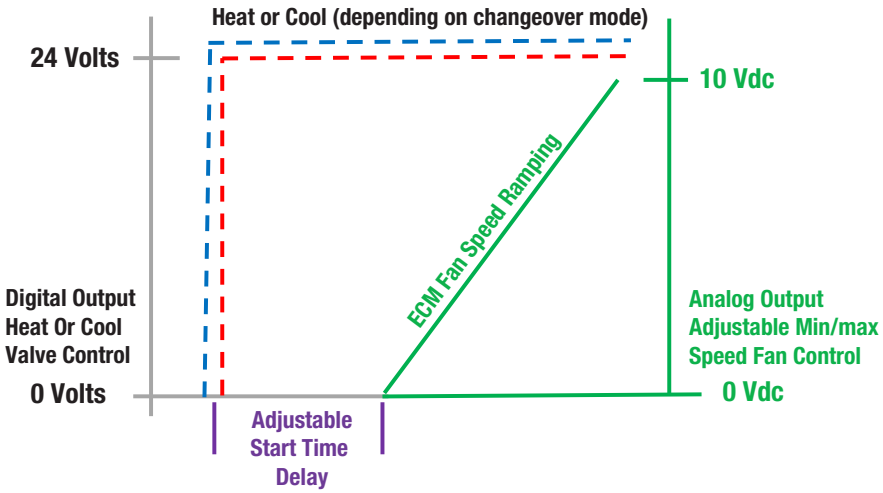
TE246 Room Thermostat outputs are as follows:

DO1 – 24Vac/24Vdc On/Off.

AO1 – 0-10Vdc – adjustable start/end value

In sequence on-demand with adjustable temperature dead band and time differential to accommodate fast gear type actuators or slow 3 minute thermoelectric (wax) actuators.

Thermostat Control Outputs



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