TE154 Modulating 2-15 Vdc,
Single Output LCD Electronic Room Thermostat 20 Vdc

Description

Single output modulating proportional plus integral (P+I) 2-15 Vdc electronic room thermostat with digital display and set point adjustment. The TE154 digital display room thermostat is a direct replacement for the Barber Colman TP8101, TP8101-116, TP8102 and TP8103.

It has the same features as the TP8101 series:-
- It is powered by a external device with 20Vdc
- It has an internal and optional external sensor selectable by switch no 3, use 10K type 3 NTC
- Selectable °C and °F with switch No1 (no need for two models TP8101 or TP8101-116)
- Heat/Cooling changeover terminal 2 and 3
- Energy conservation mode terminal 4 and 5

Additional Features

- Direct or reverse mode to match the actuator action, use switch no. 2
- Full or limited set point adjustment use switch no 5
- P+I control loop
- Selectable proportional band - use switch no 6 and 7

Quality, affordable electronic room thermostat with digital display

Specifications

Operating voltage:	20Vdc, 13mA
Power consumption:	Maximum 3Va
Control output:	2-15VDC
Sensing Element:	10K NTC Thermistor internal or external
Optional Remote Sensor:	Use 10KΩ Type 3 NTC thermistor in terminals 7 & 8. Contact Spartan for many other types of sensors.
Connection terminals:	Use solid wire 22 AWG to 14 AWG
Digital Display:	Temperature and set point in °C or °F, heating, cooling or economy mode symbols
Full Set point range:	40-95°F in 1°F; 5-35°C in 0.5°C resolution
Limited Set point range:	65-75°F in 1°F; 18-24°C in 0.5°C resolution
Operating temperature:	32-122 °F or 0-50 °C, < 95% RH
Housing cover/base color:	Cover white, base grey
Wall mounting plate:	Color white, mounting holes for European and North American standards, fits 2 x 4 electric box
Shipping weight:	0.5Lbs (0.225 Kg)
Agency approval:	Conforms to CE/ROHS requirements Class 2 as per UL/CSA

TE154 Dip switch Selections

Internal DIP switches selects the following features

Pole	ON	OFF
1	°F Scale	°C Scale
2	US version for actuator	EU version for actuator
3	External sensor	Internal sensor
4	Fast response	Normal response
5	Normal temperature range	Limited temperature range
6	Proportional band selection 1	
7	Proportional band selection 2	

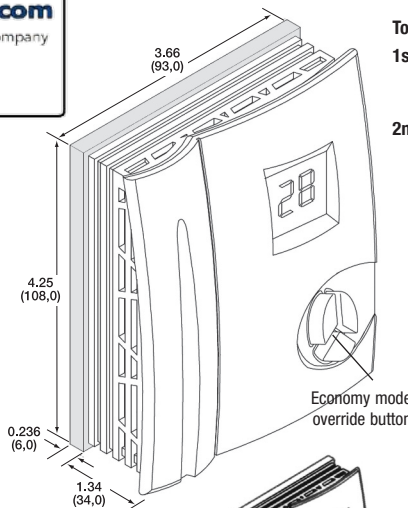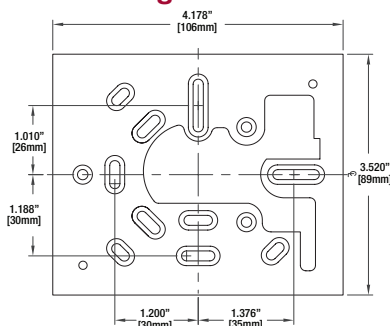Fast response: update output every 10secs. Normal response: update output every 30secs.

Proportional band selection:

Pole 6	Pole 7	Proportional band
OFF	OFF	2^F
OFF	ON	3^F
ON	OFF	6^F
ON	ON	20^F

Wiring Diagram

20Vdc + | **+**
Common/ GND | **-**
Heat/Cool Selection | **2** **3**
Occupancy Sensor | **4** **5** **6**
Ext. Sensor | **7** **8**

Red (+20)
Blue (Com)
Yel (IV1)

Actuator
MP52XX
MP54XX

Black
Black — **Vac Power**
Green

To additional actuators

hvacUSA.com
A MechTronics Controls Company
www.hvacusa.com
Phone (877) 632-4876
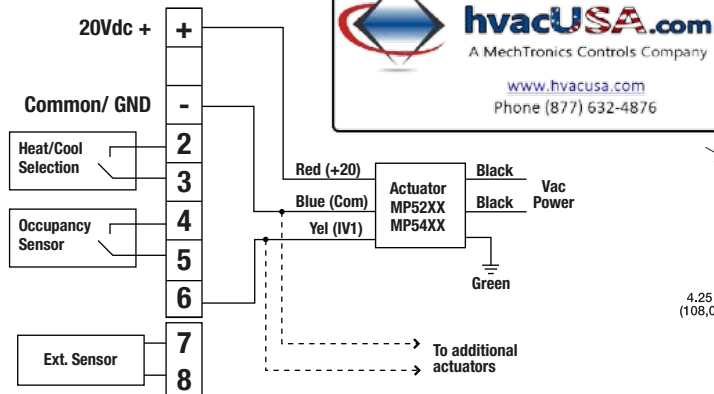
To Set Up D.A. /R.A. Action:

1st Step Set up Heating Mode (no jumper) or Cooling Mode (with jumper) on terminal 2-3

2nd Step When set in Heating Mode and the Switch #2 is in the ON Position, if the set point is higher than the room temperature (call for heat), the output is 2Vdc

When set in Cooling Mode (jumper on 2-3) and the Switch #2 is in the ON Position, if the set point is higher than room temperature (cooling not required), the output is 15Vdc.

Changing the Set Point
To change set point use the increase or decrease keys. LCD display will illuminate after pressing hand key.

When the thermostat is in heating mode a thermometer will appear in the display. It will flash when there is a demand for heat.

When the thermostat is in cooling mode a snow flake will appear in the display. It will flash when there is a demand for cooling. Selectable by jumper on terminal 2 and 3

On Power Failure
The set-point will remain in the memory.

Mounting Dimensions

4.178" [106mm]
1.010" [26mm]
3.520" [89mm]
1.188" [30mm]
1.200" [30mm]
1.376" [35mm]

3.66 (93,0)
4.25 (108,0)
0.236 (6,0)
1.34 (34,0)

Economy mode override button

TE154 Cover Removal Instructions

To remove the cover simply remove the screws at the bottom of the unit with a screwdriver (1 and 2). The cover then is removed by pulling it out and then up.

Installation: Thermostats can be installed on a standard 20-20 2X4 electric box, or directly on the flat wall surface, and away from the heat source.
Do not expose to water.

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TE154Thermostat
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