

Model
 TFP24C3Y1

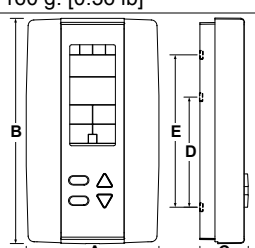
Features
Outputs & Inputs

- Stages: 1 heat & 1 cool
- 3 dry contact outputs
 - Fan
 - Compressor
 - Reversing valve
- External temperature sensor input

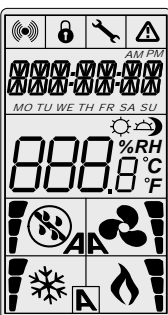







Operation & Display


- Wall mounted controller
- Precise temperature control with programmable PI function
- Adjustable and lockable setpoint
- Selectable control mode and fan mode
- Selectable internal or external temperature sensor
- Backlit LCD with simple icon and text driven menus
- Selectable Celsius or Fahrenheit scale


TFP24C3Y1
Technical Specifications

Description	TFP24C3Y1
Input	1 input (external temperature sensor 10KΩ)
Outputs	1 Fan (G) dry contract 24Vac, 1A max 3A in-rush
	1 Compressor (Y1) dry contract 24Vac, 1A max 3A in-rush
	1 Reversing valve (O/B) dry contract 24Vac, 1A max 3A in-rush
Power supply	22 to 26 Vac 50/60Hz
Power consumption	1 VA max
Set point range	10°C to 40°C [50°F to 104°F]
Control accuracy	Temperature: +/-0.4°C [0.8°F]
Electrical connection	0.8 mm ² [18 AWG] minimum
Operating temperature	0°C to 50°C [32°F to 122°F]
Storage temperature	-30°C to +50°C [-22°F to +122°F]
Relative Humidity	5 to 95 % non condensing
Degree of protection of housing	IP 30 to (EN 60529)
Weight	160 g. [0.36 lb]
Dimensions A = 2.85" 73mm B = 4.85" 123mm C = 1.00" 24mm D = 2.36" 60mm E = 3.27" 83mm	

Interface

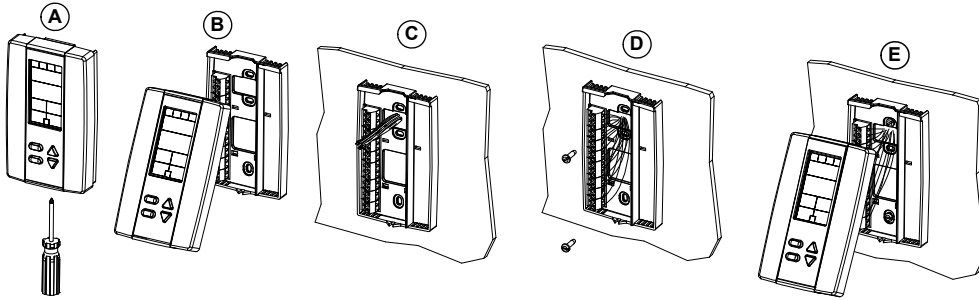
	 Cooling ON A: Automatic	 Menu set-up Lock	 Alarm status	
	 Heating ON A: Automatic	 Programming mode (Technician setting)	 °C or °F °C: Celsius scale °F: Fahrenheit scale	
	 Fan ON A: Automatic			


 Recycling at end of life: please return this product to your Neptronic local distributor for recycling. If you need to find the nearest Neptronic authorized distributor, please consult www.neptronic.com.

Mounting Instructions

 **CAUTION: Remove power to avoid a risk of malfunction.**

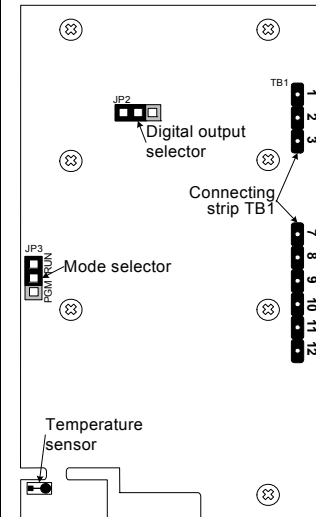
- Remove the captive screw that's holding the base and the front cover of the unit together.
- Lift the front cover of the unit to separate it from the base.
- Pull all wires through the holes in the base.
- Secure the base to the wall using wall anchors and screws (supplied). Make the appropriate connections.
- Mount the control module on the base and secure using the screw.



Terminal description

TB1	1	Common	C
	2	24 VAC	24V
	6	Not used	-
	7	Separate external 24 VAC	R
	8	Compressor output	Y
	9	Reversing valve output	O/B
	10	Fan output	G
	11	Not used	-
	12	External Temp. Sensor (optional)	-

Settings on PC Board



Digital output selection (JP2)

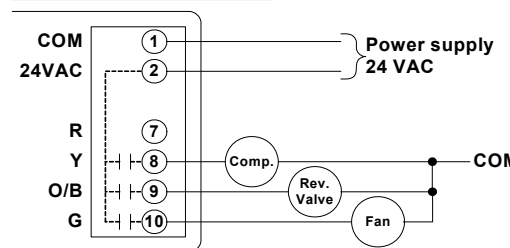
JP2
24V

Jumper (JP2) on 24V:
All digital outputs are linked to (24V) terminal 2.

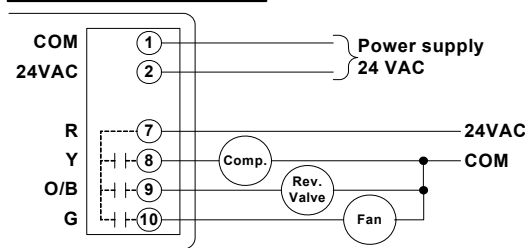
JP2
R

Jumper (JP2) on R:
All digital outputs are linked to (R) terminal 7.

TFP24C3Y1 Terminal



TFP24C3Y1 Terminal



Connect 24 VAC on pin 7 (R) only if a separate 24V transformer is used. Jumper JP2 on R.

Mode Selection (JP3)






JP3
RUN
PGM



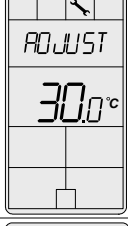

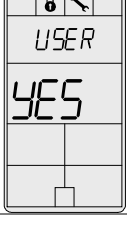

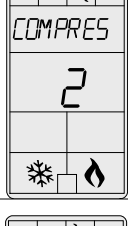


Jumper (JP3) on RUN:
Thermostat is in **operation mode**.
Thermostat must be set in this mode to operate properly.
If not locked, set point, control mode and speed fan (Heating & Cooling ON, Cooling only ON or Heating only ON) may be modified by end user.


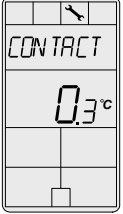

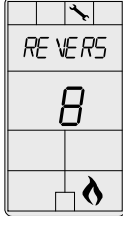
JP3
RUN
PGM

Jumper (JP3) on PGM:
Thermostat is set in **Programming mode**.
Refer to following section about all settings description

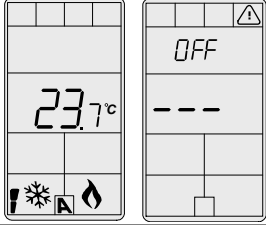

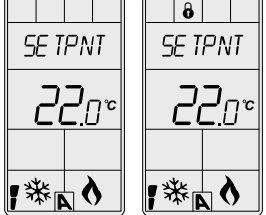

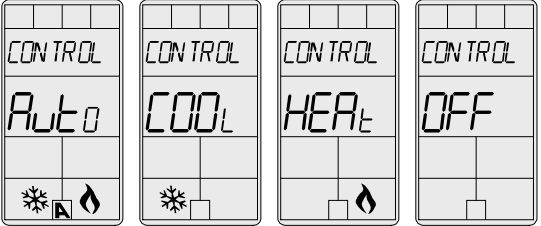



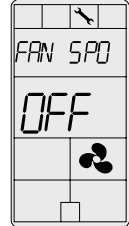



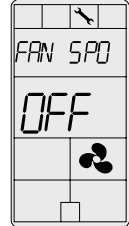

Programming mode

When in this mode this symbol  is displayed. Please press on button  to advance to the next program function, press on button  to return to preceding stage and press on button  or  to change value. You can leave the programming mode at any time, changed values will be recorded.

Step	Display	Description	Values
1		Internal temperature sensor Calibration: Display shows "INSIDE TEMPER SENSOR OFFSET" and temperature read by internal temperature sensor. You can adjust the calibration of the sensor by comparison with a known thermometer. For example if thermostat has been installed in an area where temperature is slightly different than the room typical temperature (thermostat place right under the air diffuser).	Range : 10 to 40°C [50 to 104°F] (max. offset ± 5 °C) Increment: 0.1°C [0.2°F]
2		Minimum set point: Display shows "ADJUST MINIMUM USER SETPNT" and the minimum set point temperature. Please select the desired minimum set point temperature. The minimum value is restricted by the maximum value. (step #3).	Minimum range: 10 to 40°C [50 to 104°F] Increment: 0.5°C [1°F] Default value: 15°C [59°F]
3		Maximum set point: Display shows "ADJUST MAXIMUM USER SETPNT" and the maximum set point temperature. Please select the desired maximum set point temperature. The maximum value is restricted by the minimum value. (step #2)	Maximum range: 10 to 40°C [50 to 104°F] Increment: 0.5°C [1°F] Default value: 30°C [86°F]
4		Locking the set point: Display shows "USER SETPNT LOCKED" and the status of the function. You can lock or unlock the set point adjustment by end user. If locked, "YES" and lock symbol will appear.	 Default value: Unlocked (NO)
5		Adjust internal set point: Display shows "ADJUST INTERN SETPNT" and the set point temperature. Select the desired set point temperature; this one should be within the temperature range. Lock symbol will appear if the set point was locked at the previous step. Set point value is restricted by the minimum and maximum value. (step #2 & 3)	Set point range: 10 to 40°C [50 to 104°F] Increment: 0.5°C [1°F] Default value: 22°C [72°F]
6		Anti-cycling delay compressor contact (protection for compressor): Display shows "COMPRES ANTI CYCLE MINUTES" and the value (in minutes) of the delay to activate / deactivate compressor contact. Please select the desired value of the delay compressor contact.	Range: 2, 4 or 6 min. Increment: 2 min. Default value: 2 min.
7		External sensor selection: Display shows "EXTERN SENSOR TEMPER". Please select which sensor is rewired to the analog input: OFF (input none rewired), t10.0 (external temperature sensor 10.0 KΩ) When nothing "OFF" is selected, the thermostat is controlled by its internal temperature sensor. When external sensor "t10.0" is selected, the thermostat is controlled by an external temperature sensor. If you have selected OFF, go directly to step #26.	 Default value: Off

Step	Display	Description	Values
8		External temperature sensor Calibration: Display shows "EXTERNAL TEMPER SENSOR OFFSET" and temperature read by external temperature sensor. If the sensor is not connected or short circuited, the display shows "Error". You can adjust the calibration of the external sensor by comparison with a known thermometer.	Range: 0 to 50°C [41 to 122.0°F] (max. offset ± 5 °C) Increment: 0.1°C [0.2°F]
9		Compressor contact operating differential: Display shows "CONTACT DIFFER". Please select the desired value of compressor contact operating differential.	Differential range: 0.3 to 3.0°C [0.6 to 6.0°F] Increment: 0.1°C [0.2°F] Default value: 0.5°C [1.0°F]
10		Reversing valve energize: Display shows "REVERS VALVE O/B". Cooling or heating symbols are also displayed. Please select if the reversing valve is energized in cooling mode (O) or in heating mode (B).	 Default value: Energizes in cooling (O)

Operation mode

Step	Description	Display														
A	<ul style="list-style-type: none"> Upon power up, the LCD illuminates, activates all LCD segments for 2 seconds and then displays the model and version number. Pressing any of the 4 buttons illuminates the LCD for 4 seconds. In operation mode, the thermostat displays the room temperature. If "OFF", "---" and the alarm symbol are displayed, the temperature sensor is not connected or short circuited. To toggle the scale between °C and °F, press on both Δ and ∇ for 3 seconds. 															
B	Temperature set point display and adjustment Press the Δ or ∇ button twice to display the setpoint for 3 seconds. To adjust set point, press Δ or ∇ while the temperature set point is displayed. <i>Note: If set point adjustment has been locked,  symbol will be displayed.</i>															
C	Control mode selection : To change the control mode, press  . Control mode will be displayed for 5 seconds. You can choose one of the following: <ul style="list-style-type: none"> ✓ Automatic Cooling or Heating ✓ Cooling and Heating OFF ✓ Cooling only ✓ Heating only 															
D	Fan speed mode selection: To change the fan speed mode, press  . Fan speed mode will be displayed for 5 seconds. You can choose one of the following: <table border="1" data-bbox="172 1854 938 1955"> <thead> <tr> <th>Control mode = Auto, Cool or Heat</th> <th>Control mode = Off</th> </tr> </thead> <tbody> <tr> <td>✓ Auto</td> <td>✓ Off</td> </tr> <tr> <td>✓ On</td> <td>✓ On</td> </tr> </tbody> </table>	Control mode = Auto, Cool or Heat	Control mode = Off	✓ Auto	✓ Off	✓ On	✓ On	<table border="1" data-bbox="962 1753 1513 2022"> <thead> <tr> <th colspan="2">Control mode = Auto, Cool or Heat</th> <th colspan="2">Control Mode = Off</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Control mode = Auto, Cool or Heat		Control Mode = Off					
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