

Model

TFC24F3XYZ3
with 7 Day Schedule



Description

The TFC24F3XYZ3 is a fully configurable controller designed specifically for 2 pipe and 4 pipe fan coil applications. No additional modules are required as the required inputs, outputs and control algorithms are built into the unit.



TFC24F3XYZ3

Applications

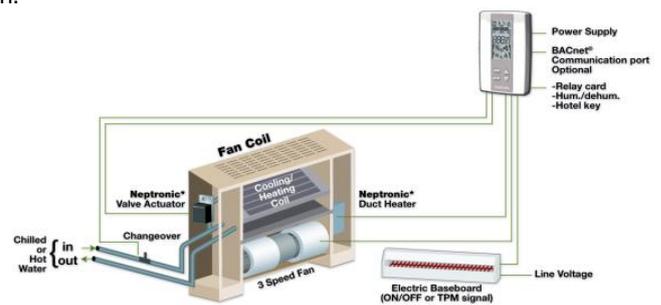
- Heating, cooling and reheat
- 2 pipes or 4 pipes
- Auxiliary heating sources, such as electric baseboards, can also be applied

Features

- Backlit LCD with simple icon and text driven menus
- Configurable inputs and outputs
- 2 Pipes with Analog, ON/OFF, or Floating option
- 4 Pipes with Analog, ON/OFF, or with local reheat function
- 7 day Programmable Schedule
- 2 or 4 daily events
- Temporary Setpoint Override
- Precise temperature control with programmable PI function
- Selectable Fahrenheit or Celsius scale
- Independent cool and heat setpoint for No Occupancy
- Lockable setpoint, control mode, and fan mode
- Selectable internal or external temperature sensor
- Changeover by contact or external temperature sensor
- Selectable proportional control band and dead band
- Anti-freeze protection

Typical Application

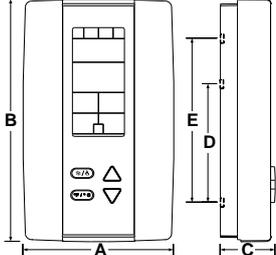
Fan coil applications provide heating and cooling to a zone by circulating hot and cold air depending on the demand to maintain an optimum temperature in the selected space. A fan coil setup typically consists of fan coil units, source for hot and cold water, and a pipe system for distribution. When there is a demand for heating, the hot water is supplied to the unit through the source and passes over the heating coil, and the hot air is pushed into the zone by the fan. When there is a demand for cooling, the cold water is supplied to the unit through the source and passes over the cooling coil, and the cold air is pushed into the zone by the fan.



* Consult www.neptronic.com for details on these Neptronic products.

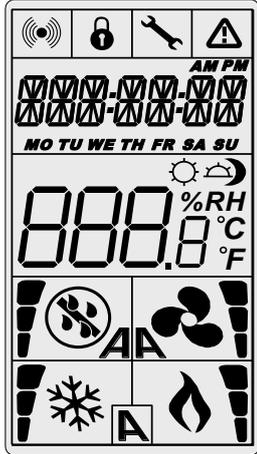
Technical Specifications

Description	Fan Coil Thermostat Controller
Inputs	1 Analog input (external temperature sensor 10Kohms) 1 Analog input (change over 10Kohms or dry contact)
Outputs	1 Fan analog or 3 Fan speed dry contracts 24Vac, 1A max 3A in-rush 2 Analog outputs (cooling and/or heating 0 to 10Vdc) 1 Analog output (local reheat 0 to 10Vdc) 2 TRIAC outputs (cooling and/or heating) 24Vac, 0.3A max fused/TRIAC 1 TRIAC output (local reheat) 24Vac, 0.3A max fused/TRIAC
Power Supply	22 to 26Vac 50/60Hz
Power Consumption	1VA max
Setpoint Range	10°C to 40°C [50°F to 104°F]
Control Accuracy	Temperature: ±0.4°C [0.8°F]
Proportional Band	0.5°C to 5°C [1°F to 10°F] adjustable (heat/cool/reheat independent)
Dead Band	0°C to 5°C [0°F to 10°F] adjustable (heat/cool/reheat independent)
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% RH non condensing
Degree of Protection of Housing	IP 30 (EN 60529)
Weight	160 g. [0.36 lb]

Description	Fan Coil Thermostat Controller
Dimensions A = 2.85" 73mm B = 4.85" 123mm C = 1.00" 24mm D = 2.36" 60mm E = 3.27" 83mm	

Interface

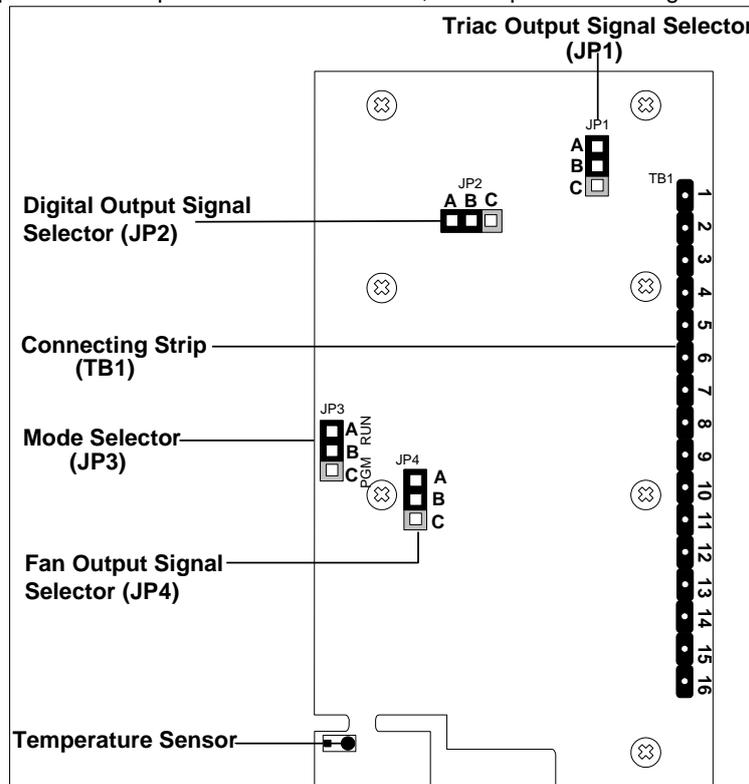
Symbols on Display



	Cooling ON A: Automatic		Alarm status	°C or °F	°C: Celsius scale °F: Fahrenheit scale
	Heating ON A: Automatic		Menu set-up Lock		Morning
	Fan ON A: Automatic		Programming Mode (Technician setting)		Day
	Night		Day		Evening
AM PM	Morning Afternoon	MO TU WE TH FR SA SU	Day of the week		

Wiring

We strongly recommend that all Neptronic products be wired to a separate grounded transformer and that transformer shall service only Neptronic products. This precaution will prevent interference with, and/or possible damage to incompatible equipment.



Wiring - 2 Pipe Terminal Description Details - 2 Pipe

For 2 pipe signal configuration, refer to step 4 on page 5.
For fan output configuration, refer to step 28 on page 8.

Terminals		Analog				On/Off				Floating				Step
1	Common	Common				Common				Common				-
2	24 Vac	24 Vac				24 Vac				24 Vac				-
3	Common TRIAC	Common TRIAC				Common TRIAC				Common TRIAC				
4	TRIAC Output 1 (TO1)	-				2 pipe on/off				2 pipe floating (close)				4
5	TRIAC Output 2 (TO2)	-				-				2 pipe floating (open)				4
6	TRIAC Output 3 (TO3)	Local reheat *				Local reheat *				Local reheat *				16
Fan		1 speed	2 speed	3 speed	Analog	1 speed	2 speed	3 speed	Analog	1 speed	2 speed	3 speed	Analog	
7	Common Relay	Common Relay				Common Relay				Common Relay				
8	Digital Output 1 (DO1)	-	-	High	-	-	-	High	-	-	-	High	-	28
9	Digital Output 2 (DO2)	-	High	Med	-	-	High	Med	-	-	High	Med	-	28
10	Digital Output 3 (DO3)	Low	Low	Low	AO4	Low	Low	Low	AO4	Low	Low	Low	AO4	28
11	Not used	-				-				-				-
12	Analog Input (AI1)	External Temp Sensor *				External Temp Sensor *				External Temp Sensor *				33
13	Analog Input (AI2)	External Changeover *				External Changeover *				External Changeover *				8
14	Analog Output 1 (AO1)	2 pipe analog				-				-				4
15	Analog Output 2 (AO2)	-				-				-				4
16	Analog Output 3 (AO3)	Local reheat *				Local reheat *				Local reheat *				16

* optional

Wiring - 4 Pipe Terminal Description Details - 4 Pipe

For 4 pipe signal configuration, refer to step 15 and 13 on page 6.
For fan output configuration, refer to step 28 on page 8.

Terminals		Cool: Analog Heat: Analog				Cool: On/Off Heat: On/Off				Cool: Analog Heat: On/Off or Pulse				Cool: On/Off Heat: Analog				Step
1	Common	Common				Common				Common				Common				-
2	24 Vac	24 Vac				24 Vac				24 Vac				24 Vac				-
3	Common TRIAC	Common TRIAC				Common TRIAC				Common TRIAC				Common TRIAC				
4	TRIAC Output 1 (TO1)	-				4 pipe cool (on/off)				-				4 pipe cool (on/off)				9
5	TRIAC Output 2 (TO2)	-				4 pipe heat (on/off or pulse)				4 pipe heat (on/off or pulse)				-				9
6	TRIAC Output 3 (TO3)	Local reheat *				Local reheat *				Local reheat *				Local reheat *				16
Fan		1 speed	2 speed	3 speed	Analog	1 speed	2 speed	3 speed	Analog	1 speed	2 speed	3 speed	Analog	1 speed	2 speed	3 speed	Analog	
7	Common Relay	Common Relay				Common Relay				Common Relay				Common Relay				
8	Digital Output 1 (DO1)	-	-	High	-	-	-	High	-	-	-	High	-	-	-	High	-	33
9	Digital Output 2 (DO2)	-	High	Med	-	-	High	Med	-	-	High	Med	-	-	High	Med	-	33
10	Digital Output 3 (DO3)	Low	Low	Low	AO4	Low	Low	Low	AO4	Low	Low	Low	AO4	Low	Low	Low	AO4	33
11	Not used	-				-				-				-				-
12	Analog Input (AI1)	External Temp Sensor *				External Temp Sensor *				External Temp Sensor *				External Temp Sensor *				8
13	Analog Input (AI2)	-				-				-				-				-
14	Analog Output 1 (AO1)	4 pipe cool (analog)				-				4 pipe cool (analog)				-				13
15	Analog Output 2 (AO2)	4 pipe heat (analog)				-				-				4 pipe heat (analog)				10
16	Analog Output 3 (AO3)	Local reheat (analog)*				Local reheat (analog)*				Local reheat (analog)*				Local reheat (analog)*				16

* optional

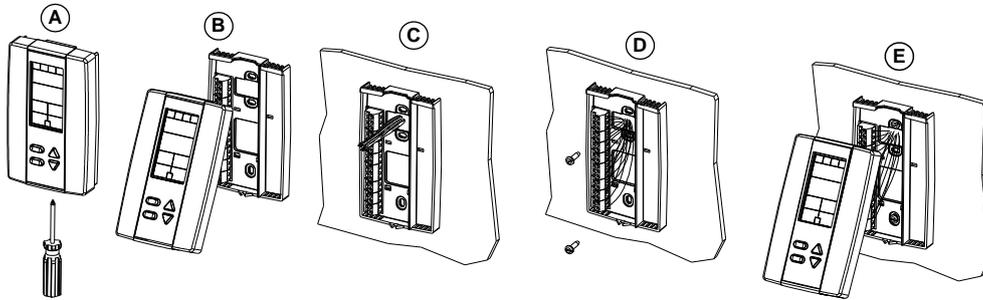
Jumpers

Jumpers		Description
JP1	TRIAC Output Signal Selector	A&B = Internal: All TRIAC output signals are linked to internal 24 Vac (same as thermostat). B&C = External: All TRIAC output signals are linked to external 24 Vac (different than thermostat).
JP2	Digital Output Signal Selector	A&B = Internal: All digital output signals are linked to internal 24 Vac (same as thermostat). B&C = External: All digital output signals is linked to external 24 Vac (different than thermostat).
JP3	Mode Selection	A&B = RUN: Thermostat is in Operation Mode. (See Operation Mode, page 14) B&C = PGM: Thermostat is in Programming Mode. (See Programming Mode, page 4)
JP4	Fan Output Signal Selection	A&B: Pin 10 of TB1 is set to digital output signal (DO3). (See Step 28) B&C: Pin 10 of TB1 is set to analog output signal (AO4). (See Step 28)

Mounting Instructions

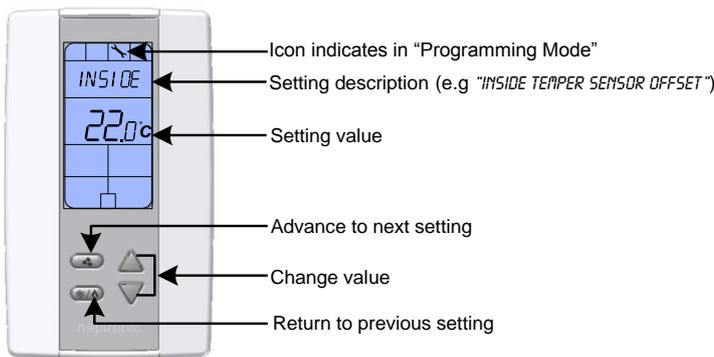
CAUTION: Remove power to avoid a risk of malfunction.

- 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.



Programming Mode

i The Mode Selector Jumper JP3 must be set to the "PGM" mode (Programming Mode). Refer to Wiring on page 2. To exit, set the Jumper JP3 back to the "RUN" mode (Operation Mode). All changes will be saved.



Symbols used in this Manual

Icon	Description	Icon	Description	Icon	Description	Icon	Description
	Temperature		Heating		Cooling		Analog Output 1
	Fan Coil		Fan		Pipe		Event
	Time						

Setpoint and User Control

1. "INSIDE TEMPER SENSOR OFFSET"

	Range:	10.0°C to 40.0°C	[50°F to 104.0°F]
	Offset	Max. ± 5°C	
	Increment:	0.1°C	[0.2°F]

Compare the displayed temperature reading with a known value from a thermometer. To offset or calibrate the sensor, use the arrows button to set the desired temperature reading. This is useful for thermostats installed in areas where the temperature read is slightly different than the room's actual temperature. For example, a thermostat placed right under the air diffuser.

2. "ENABLE ON OFF CONTROL MODE"



Default: Yes (Enable)
Range: Yes (Enable)/No (Disable)

If you select Yes, the user can set the unit to "Off" via the Control Mode (see page 15). If you select No, the "Off" selection does not appear in the Control Mode.

Pipe System Selection

3. "SELECT 2 PIPE 4 PIPE SYSTEM"



Default: 2P (2 pipe)
Range: 2P (2 pipe)/4P (4 pipe)

Select the number of pipes that you want to use.

If you selected the 4 pipes option, go to Step 10.

4. "SELECT 2 PIPE SIGNAL"



Default: AnLG (Analog)
Range: AnLG (Analog), OnOf (On/Off), Flt (Floating)

Select the desired signal output for your 2 pipe system from the available options. The cooling ❄️ and heating 🔥 symbols are also displayed.

- If you select analog signal, AO1 will be set to automatic heat/cool changeover.
- If you select OnOf, TO1 will be set to automatic heat/cool changeover.
- If you select Flt, TO1 will be set to close and TO2 will be set to open.

If you selected AnLG (analog) signal, go to Step 6.

If you selected OnOf (on/off) signal, go to Step 8.

5. "SET FLOATING TIME IN SECONDS"



Default: 100 seconds
Range: 15 to 250 seconds
Increment: 5 seconds

This option appears if you have selected Flt at step 4. Select the desired value for the floating time signal and go to Step 8.

Outputs

6. "MIN VDC ANALOG OUTPUT"



Default: 0.0 Volt
Range: 0.0 to 10.0 Volt
Increment: 0.1 Volt

Select the desired minimum voltage (zero value) for the analog ramp. The minimum value (Step 6) is restricted by the maximum value (Step 7). In other words, the minimum value should be less than the maximum value.

7. "MAX VDC ANALOG OUTPUT"



Default: 10.0 Volt
Range: 0.0 to 10.0 Volt
Increment: 0.1 Volt

Select the desired maximum voltage (span value) for the analog ramp. The maximum value (Step 7) is restricted by the minimum value (Step 6). In other words, the maximum value should be greater than the minimum value.

8. "CH OVER TEMPER SENSOR"



Default: SENs (External Changeover Sensor)
Range: SENs, NoCl, NoHt

- If SENs is selected: heating mode activates when the temperature read by the external sensor is above the Changeover Setpoint and cooling mode activates when the temperature read by the external sensor is below the Changeover Setpoint. (see Step 9)
- If NoHt is selected: heating mode activates if the contact is opened and the cooling mode activates if the contact is closed. (see Step 9)
- If NoCl is selected: heating mode activates if the contact is closed and cooling mode activates if the contact is open.

If you selected NoCl or NoHt option, go to Step 16.

9. "CH OVER SETPNT TEMPER"



Default: 24.0°C [75°F]
 Range: 10.0°C to 40.0°C [50°F to 104°F]
 Increment: 0.5°C [1°F]

This option appears if you have set one of the analog inputs to **SENS** (External Changeover Sensor) at Step 8. Set the desired changeover temperature setpoint. Note that the heating mode activates when the temperature read by the external sensor is above the changeover setpoint and cooling mode activates when the temperature read by the external sensor is below the changeover setpoint.

Go to Step 16.

10. "SELECT 4 PIPE HEATING SIGNAL"



Default: AnLG (Analog)
 Range: AnLG (Analog), OnOf (On/Off), PULs (Pulse)

This option appears if you have selected **4P** at Step 3. Select the heating signal for your 4 pipe system.

- If you select *AnLG (Analog)*, AO2 will be set to heating.
- If you select *OnOf (On/Off)*, or *PULs (Pulse)*, TO2 will be set to heating.

If you selected OnOf or PULs signal, go to Step 13.

11. "MIN VDC ANALOG OUTPUT HEATING"



Default: 0.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired minimum voltage (zero value) for heating ramp. The minimum value (Step 11) is restricted by the maximum value (Step 12). In other words, the minimum value must be less than the maximum value.

12. "MAX VDC ANALOG OUTPUT HEATING"



Default: 10.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired maximum voltage (span value) for heating ramp. The maximum value (Step 12) is restricted by the minimum value (Step 11). In other words, the maximum value must be greater than the minimum value.

13. "SELECT 4 PIPE COOLING SIGNAL"



Default: AnLG (Analog)
 Range: AnLG (Analog), OnOf (On/Off)

This option appears if you have selected **4P** at Step 3. Select the desired cooling signal output for your 4 pipe system.

- If you select the *AnLG (analog) signal*, AO1 will be set to cooling.
- If you select the *OnOf (on/off) signal*, TO1 will be set to cooling.

If you selected the OnOf signal, go to Step 16.

14. "MIN VDC ANALOG OUTPUT COOLING"



Default: 0.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired minimum voltage (zero value) for cooling ramp. The minimum value (Step 14) is restricted by the maximum value (Step 15). In other words, the minimum value must be less than the maximum value.

15. "MAX VDC ANALOG OUTPUT COOLING"



Default: 10.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired maximum voltage (span value) for cooling ramp. The maximum value (Step 15) is restricted by the minimum value (Step 14). In other words, the maximum value should be greater than the minimum value.

16. "SET LOCAL REHEAT SIGNAL"



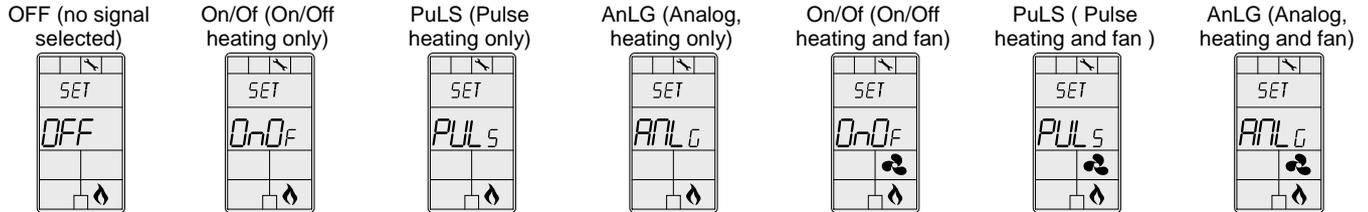
Default: OFF (no signal selected)
 Range: OFF, AnLG, AnLG, On/Of, On/Of, PuLS, PuLS

Select the desired signal output for reheat.

- If you select AnLG (Analog, heating and fan), AO3 will be set to reheat.
- If you select On/Of (On/Off heating and fan) or PuLS (Pulse heating and fan), TO3 will be set to reheat.

If you selected On/Of (On/Off heating and fan), or or PuLS (Pulse heating and fan), go to Step 19.

If you selected OFF, go to Step 21.



17. "MIN VDC ANALOG OUTPUT REHEAT"



Default: 0.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired minimum voltage (zero value) of reheat ramp. The minimum value (Step 17) is restricted by the maximum value (Step 18). In other words, the minimum value must be less than the maximum value.

18. "MAX VDC ANALOG OUTPUT REHEAT"



Default: 0.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired maximum voltage (span value) of reheat ramp. The maximum value (Step 18) is restricted by the minimum value (Step 17). In other words, the maximum value must be greater than the minimum value.

Control Ramps

19. "CONTROL RAMP REHEAT"



Default: 2.0°C [4°F]
 Range: 0.5°C to 5.0°C [1°F to 10°F]
 Increment: 0.5°C [1°F]

Select the desired value for the reheat proportional band. The heating  symbol is also displayed.

20. "CONTROL DEAD BAND REHEAT"



Default: 0°C [0°F]
 Range: 0°C to 5.0°C [0°F to 10.0°F]
 Increment: 0.1°C [0.2°F]

Select the desired value for the reheat dead band. The heating  symbol is also displayed.

21. "CONTROL RAMP HEATING"



Default: 2.0°C [4°F]
 Range: 0.5°C to 5.0°C [1°F to 10°F]
 Increment: 0.5°C [1°F]

Select the desired value for the heating proportional band. The heating  symbol is also displayed.

22. "CONTROL RAMP COOLING"



Default: 2.0°C [4°F]
 Range: 0.5°C to 5.0°C [1°F to 10°F]
 Increment: 0.5°C [1°F]

Select the desired value for the cooling proportional band. The cooling  symbol is also displayed.

23. "CONTROL DEAD BAND HEATING"



Default: 0°C [0°F]
 Range: 0°C to 5.0°C [0°F to 10.0°F]
 Increment: 0.1°C [0.2°F]

Select the desired value for the heating dead band. The heating  symbol is also displayed.

24. "CONTROL DEAD BAND COOLING"



Default: 0°C [0°F]
 Range: 0°C to 5.0°C [0°F to 10.0°F]
 Increment: 0.1°C [0.2°F]

Select the desired value for the cooling dead band. The cooling  symbol is also displayed.

Other Settings

25. "COOLING ANTI CYCLE MINUTES"



Default: 2 minutes
 Range: 0 to 15 minutes
 Increment: 1 minute

To protect the compressor, set the delay in minutes before activating or reactivating the cooling contact. The cooling  symbol is also displayed.

26. "ADJUST INTEGRAL TIME IN SECONDS"



Default: 0 second
 Range: 0 to 250 seconds
 Increment: 5 seconds

Select the desired value for the integration factor compensation.

27. "ADJUST DAMPING FACTOR SECONDS"



Default: 0 second
 Range: 0 to 10 seconds
 Increment: 1 second

Select the desired value for the damping factor. The fan  symbol and the cooling  symbol are also displayed.

Fan Settings

28. "SELECT FAN SPEED SIGNAL"



Default: 3 (speed fan contact)
 Range: 1 (speed fan contact), 2 (speed fan contact), 3 (speed fan contact), AnLG (Analog)

Select the desired fan speed. If you have selected the speed fan contact option, select the speed, and go to Step 31. The fan  symbol is also displayed.

29. "MIN VDC ANALOG OUTPUT FAN"



Default: 0.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired minimum voltage (zero value) for fan ramp. The minimum value (Step 29) is restricted by the maximum value (Step 30). In other words, the minimum value should be less than the maximum value. The fan  symbol is also displayed.

30. "MAX VDC ANALOG OUTPUT FAN"



Default: 10.0 Volt
 Range: 0.0 to 10.0 Volt
 Increment: 0.1 Volt

Select the desired maximum voltage (span value) for fan ramp. The maximum value (Step 30) is restricted by the minimum value (Step 29). In other words, the maximum value must be more than the minimum value. The fan  symbol is also displayed.

31. "ENABLE FAN AUTO MODE"



Default: Yes (Enable)
 Range: Yes (Enable)/No (Disable)

Select the Enable or Disable option to allow the user to adjust the Automatic mode. The fan  symbol is also displayed.

32. "FAN AUTO TIMEOUT MINUTES"



Default: 2 minutes
 Range: 0 to 15 minutes
 Increment: 1 minute

Select the desired value for the automatic shutoff delay. The fan  symbol is also displayed.

External Temperature Sensor

33. "EXTERN SENSOR TEMPER"



Default: OFF (input none rewired)
 Range: OFF (input none rewired), t10.0 (external temperature sensor 10.0 KΩ)

Select the sensor that should be rewired to the analog output.

- If you select OFF, the thermostat will be controlled by its internal temperature sensor.
- If you select t10.0, the thermostat will be controlled by an external temperature sensor.

If you selected the OFF option, go to Step 35.

34. "EXTERN TEMPER SENSOR OFFSET"



Offset: Max. ± 5°C
 Range: 0.0°C to 50.0°C [41.0°F to 122.0°F]
 Increment: 0.1°C [0.2°F]

This option appears if you have set one of the analog inputs to **t10.0** (External temperature sensor 10.0 KΩ) at step 33. When the thermostat is connected to the appropriate analog input (AI1 or AI2), the display shows the temperature read by the external temperature sensor. Adjust the offset by comparing it with a known value (e.g. thermometer). If the sensor is not connected or short circuited, the display is blank "Error", and the error symbol  is displayed.

Anti-Freeze

35. "ENABLE ANTI FREEZE PROTECT"



Default: No (Disable)
 Range: No(Disable)/Yes (Enable)

If this option is enabled, heating starts automatically when the temperature drops to 4°C [39°F], even if the thermostat is in OFF mode. Once the temperature reaches 5°C [41°F], the heating stops.

Scheduling Mode Selection

This menu is accessible through normal operation mode.

1. The Mode Selector Jumper (JP3) must be set to "RUN" position (Operation Mode). Refer to Wiring on page 2.
2. Press the  button for 5 seconds, the  symbol is displayed indicating that the Scheduling Mode has been activated.
3. Use the  and  arrow buttons to increase or decrease the values.
4. Press the  and  buttons to navigate through the program functions.

The thermostat will return to normal mode if you navigate through the entire menu and do not make any selection, or if you do not press any button for 5 minutes. The changed values will be saved automatically.

Time and Date

1. "SET TIME DISPLAY FORMAT"



Default: 24
 Range: 12 hours, 24 hours
 Selection: Desired time format

Select the desired time format.

2. "SET HOURS"



Range: 00 to 23 hours
 Increment: 1 hour
 Selection: Time in hours

Set the time in hours.

3. "SET MINUTES"



Range: 00 to 59 minutes
 Increment: 1 minute
 Selection: Time in minutes

Set the time in minutes.

4. "ENTER YEAR"



Default: 2010
 Range: 2010 to 2099
 Increment: 1
 Selection: Year

Select the year.

5. "ENTER MONTH"



Range: 01 to 12 (January to December)
 Increment: 1 month
 Selection: Month

Select the month.

6. "ENTER DAY"



Range: 01 to 31 days
 Increment: 1 day
 Selection: Day

Select the day.

Scheduling and Internal Setpoint

7. "USED TIME SCHEDULE"



Default: No
 Range: Yes, No
 Selection - No: Proceed to adjust the intern setpoint at Step 8 "adjust intern sepnt".
 Selection - Yes: Proceed to schedule events at Step 9 "select 2 or 4 events per day"

Select whether you want to schedule events or not.

8. "ADJUST INTERN SEPNT"



Default: 22°C [72°F]
 Range: 10°C to 40°C [50°F to 104°F]
 Increment: 0.5°C [1°F]
 Selection: Desired setpoint and proceed to Step 29 "user setpnt locked".

Event Settings

9. "SELECT 2 OR 4 EVENTS PER DAY"



Default: 2 Events
 Range: 2 Events, 4 Events
 Display: ☀️ 🌙, 🌅 ☀️ 🌅 🌙
 Selection - 2 Events: Refer to Step 10 "6:00, e1"
 Selection - 4 Events: Refer to Step 16 "6:00, e1".

Select the desired number of events per day. You can choose between 2 events or 4 events per day. This selection will be applied for each day of the week.

Event 1 (2 Events/Day)

10. "6:00, E1"



Default: 6:00
 Range: 00:00 to Monday Event 2, start time -15 minutes
 Increment: 15 minutes
 Display: MO, E1, ☀️

Set the start time for Event 1 on Monday. The Monday Event 1 temperature setting will be effective from the time that is set here until the time set for the Event 2 on Monday.

11. "ADJUST EVENT 1 COOLING SEPNT"

- 
 Default: 22°C [72°F]
 Range: 10°C to 40°C [50°F to 104°F], Off
 Increment: 0.5°C [1°F]
 Display: MO, E1, ☀, ❄
 Selection - Off: Proceed to Event 2 settings at Step 13, "20:00, e2".

Select the desired cooling temperature setpoint for the duration of Event 1. The minimum value is restricted by the Event 1 heating setpoint, Step 12 "adjust event 1 heating sepnt".

- If you select the Off option, the thermostat will be off for this duration.

12. "ADJUST EVENT 1 HEATING SEPNT"

- 
 Default: 20°C [68°F]
 Range: 10°C to 40°C [50°F to 104°F]
 Increment: 0.5°C [1°F]
 Display: MO, E1, ☀, 🔥

Select the desired heating temperature setpoint for the duration of Event 1. The maximum value is restricted by the cooling setpoint of Event 1, Step 11 "adjust event 1 cooling sepnt".

Event 2 (2 Events/Day)

13. "20:00, E2"

- 
 Default: 20:00
 Range: Monday Event 1 +15 minutes, Monday 23:45
 Increment: 15 minutes
 Display: MO, E2, 🌙

Set the start time for Event 2 on Monday. The Monday Event 2 temperature setting will be effective from the time that is set here until the time set for the Event 1 on Tuesday.

14. "ADJUST EVENT 2 COOLING SEPNT"

- 
 Default: 28°C [82°F]
 Range: 10°C to 40°C [50°F to 104°F], Off
 Increment: 0.5°C [1°F]
 Display: MO, E2, 🌙, ❄
 Selection: Off: Proceed to the copy schedule section at Step 28 "copy schedul".

Select the desired cooling temperature setpoint for the duration of Event 2. The minimum value is restricted by the Event 2 heating setpoint, Step 15 "adjust event 2 heating sepnt".

- If you select the Off option, the thermostat will be off for this duration.

15. "ADJUST EVENT 2 HEATING SEPNT"

- 
 Default: 16°C [68°F]
 Range: 10°C to 40°C [50°F to 104°F]
 Increment: 0.5°C [1°F]
 Display: MO, E2, 🌙, 🔥

Select the desired heating temperature setpoint for the duration of Event 2. The maximum value is restricted by the cooling setpoint of Event 2, Step 14 "adjust event 2 cooling sepnt".

Event 1 (4 Events/Day)

16. "6:00, E1"

- 
 Default: 06:00
 Range: 00:00 to Monday Event 2, start time -15 minutes
 Increment: 15 minutes
 Display: MO, E1, ☀

Set the start time for event 1 on Monday. The Monday Event 1 temperature setting will be effective from the time that is set here until the time set for the Event 2 on Monday.

17. "ADJUST EVENT 1 COOLING SEPNT"

	Default:	22°C	[72°F]
	Range:	10°C to 40°C	[50 to 104°F], Off
	Increment:	0.5°C	[1°F]
	Display:	MO, E1,  , 	
	Selection - Off:	Proceed to Event 2 settings at Step 19 "20:00, e2".	

Select the desired cooling temperature setpoint for the duration of Event 1. The minimum value is restricted by the Event 1 heating setpoint, Step 18 "adjust event 1 heating sepnt".

- If you select the Off option, the thermostat will be off for this duration.

18. "ADJUST EVENT 1 HEATING SEPNT"

	Default:	20°C	[68°F]
	Range:	10°C to 40°C	[50°F to 104°F]
	Increment:	0.5°C	[1°F]
	Display:	MO, E1,  , 	

Select the desired heating temperature setpoint for the duration of Event 1. The maximum value is restricted by the cooling setpoint of Event 1, Step 17 "adjust event 1 cooling sepnt".

Event 2 (4 Events/Day)

19. "20:00, E2"

	Default:	20:00
	Range:	Monday Event 1 start time +15 minutes, Event 3 start time -15 minutes
	Increment:	15 minutes
	Display:	MO, E2, 

Set the start time for Event 2 on Monday. The Monday Event 2 temperature setting will be effective from the time that is set here until the time set for the Event 3 on Monday.

20. "ADJUST EVENT 2 COOLING SEPNT"

	Default:	28°C	[82°F]
	Range:	10°C to 40°C	[50°F to 104°F], Off
	Increment:	0.5°C	[1°F]
	Display:	MO, E2,  , 	
	Selection - Off:	Proceed to Event 3 settings at Step 22 "22:00, e3".	

Select the desired cooling temperature setpoint for the duration of Event 2. The minimum value is restricted by the Event 2 heating setpoint, Step 21 "adjust event 2 heating sepnt".

- If you select the Off option, the thermostat will be off for this duration.

21. "ADJUST EVENT 2 HEATING SEPNT"

	Default:	16°C	[68°F]
	Range:	10°C to 40°C	[50°F to 104°F]
	Increment:	0.5°C	[1°F]
	Display:	MO, E2,  , 	

Select the desired heating temperature setpoint for the duration of Event 2. The maximum value is restricted by the cooling setpoint of Event 2, Step 20 "adjust event 2 cooling sepnt".

Event 3 (4 Events/Day)

22. "22:00, E3"

	Default:	22:00
	Range:	Monday Event 2 start time +15 minutes, Event 4 start time -15 minutes
	Increment:	15 minutes
	Display:	MO, E3, 

Set the start time for Event 3 on Monday. The Monday Event 3 temperature setting will be effective from the time that is set here until the time set for the Event 4 on Monday.

23. "ADJUST EVENT 3 COOLING SEPNT"

- Default: 22°C [72°F]
- Range: 10°C to 40°C [50°F to 104°F], Off
- Increment: 0.5°C [1°F]
- Display: MO, E3,   
- Selection - Off: Proceed to Event 4 options at Step 25 "23:45, e4"

Select the desired cooling temperature setpoint for the duration of Event 3. The minimum value is restricted by the Event 3 heating setpoint, Step 24 "adjust event 3 heating sepnt".

- If you select the Off option, thermostat will be off for this duration.

24. "ADJUST EVENT 3 HEATING SEPNT"

- Default: 20°C [68°F]
- Range: 10°C to 40°C [50°F to 104°F]
- Increment: 0.5°C [1°F]
- Display: MO, E3,  

Select the desired heating temperature setpoint for the duration of Event 3. The maximum value is restricted by the cooling setpoint of Event 3, Step 23 "adjust event 3 cooling sepnt".

Event 4 (4 Events/Day)

25. "23:45, E4"

- Default: 23:45
- Range: Monday Event 3 +15 minutes, Monday 23:45
- Increment: 15 minutes
- Display: MO, E4, 

Set the start time for Event 4 on Monday. The Monday Event 4 temperature setting will be effective from the time that is set here until the time set for the Event 1 on Tuesday.

26. "ADJUST EVENT 4 COOLING SEPNT"

- Default: 28°C [82°F]
- Range: 10°C to 40°C [50°F to 104°F], Off
- Increment: 0.5°C [1°F]
- Display: MO, E4,  
- Selection - Off: Proceed to copy schedule section at Step 28 "copy schedul".

Select the desired cooling temperature setpoint for the duration of Event 4. The minimum value is restricted by the Event 4 heating setpoint, Step 27 "adjust event 4 heating sepnt".

- If you select the Off option, the thermostat will be off for this duration.

27. "ADJUST EVENT 4 HEATING SEPNT"

- Default: 16°C [68°F]
- Range: 10°C to 40°C [50°F to 104°F]
- Increment: 0.5°C [1°F]
- Display: MO, E4,  

Select the desired heating temperature setpoint for the duration of Event 4. The maximum value is restricted by the cooling setpoint of Event 4, Step 26 "adjust event 4 cooling sepnt".

Copy Schedule

The Copy Schedule program function enables you to copy the schedule of a particular day to another day, for example, copy Monday's schedule to Tuesday.

28. "COPY SCHEDULE"

- Default: No
- Range: Yes/No
- Selection - Yes: The schedule of the day that you want to copy appears on the display. The day to which you want to copy the schedule to is highlighted.
- Selection - No: Set the schedule for the day by choosing the 2 Events or 4 Events options.

29. "USER SETPNT LOCKED"



Default:	No (Unlocked)
Range:	Yes/No
Selection - Yes:	The user setpoint option is locked and the user cannot adjust the desired setpoint temperature. A lock symbol  appears, to indicate that the setpoint is locked.
Selection - No:	The user setpoint option is not locked and the user can adjust the desired setpoint temperature.

30. "ADJUST TEMPER CONTROL MODE"



Default:	Auto (Automatic)
Range:	Auto (Automatic), On (Cooling or Heating), Heat (Heating Only), Cool (Cooling Only)

Select the control mode that you want to authorize to the user. To authorize all the available modes, select Auto (Automatic Mode).

31. "USER CONTROL MODE LOCKED"

Default:	No (Unlocked)
Range:	Yes/No
Selection - Yes:	The control mode is locked and the user cannot change any settings.
Selection - No:	The user will be able to make changes.

Set this option to indicate whether the user can make any changes to the control mode or not.

32. "QUIT"

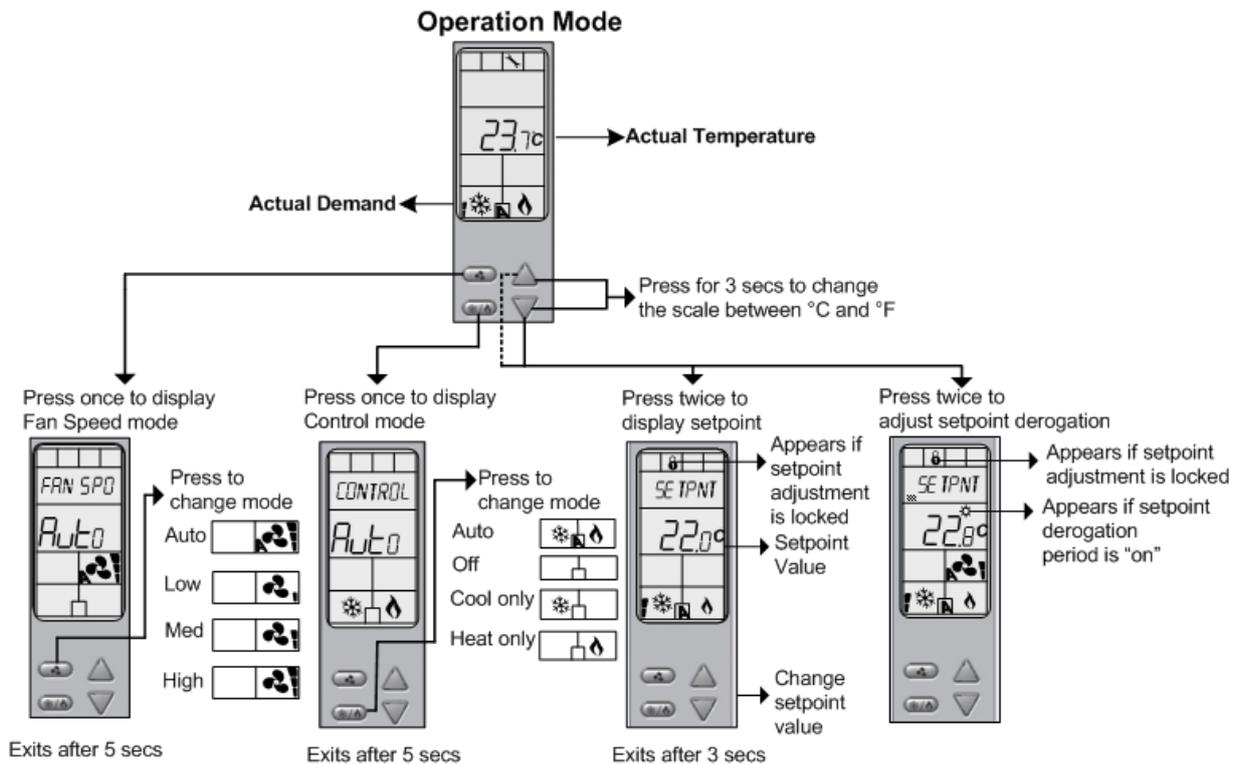
Default:	Yes (Quit)
Range:	Yes/No
Selection - Yes:	You will exit from the Scheduling Mode and return to the Operation Mode.
Selection - No:	You will remain in the Scheduling Mode.

Select whether you want to continue working in the Scheduling Mode or exit. If you want to revise your schedule, start over from Step 1 "Set time display format".

Operation Mode



The Mode Selector Jumper (JP3) must be set to the "RUN" mode (Operation Mode). Refer to Wiring on page 2. To exit, set the Jumper (JP3) back to the "PGM" mode (Programming Mode). All changes will be saved.



Power Up

Upon power up, the LCD illuminates and all segments appear for 2 seconds. The thermostat then displays its current version for 2 seconds.

LCD Backlight

Pressing any button on the thermostat illuminates the LCD for 4 seconds.

Temperature

The thermostat always displays the temperature reading. If the sensor is disconnected or short circuited then "OFF", "--",  (alarm symbol) are displayed. To toggle the temperature scale between °C and °F, press both the  and  buttons for 3 seconds.

Setpoint

To display the setpoint, press the  or  button twice. The setpoint appears for 3 seconds. To adjust the setpoint, press the  and  buttons while the temperature is displayed.

Setpoint Derogation Mode

This function is only available if you have set the **used time schedule** option to **Yes** at Step 7 on page 10. If the schedule is triggered, the thermostat enters the Setpoint Derogation Mode (the  symbol appears) and uses the heating and cooling setpoints defined at Steps 11,12,14,15, 23, 24, 26, and 27 on pages 11 and 13.

The user can press the  or  button twice to adjust the setpoint if the option is not locked or set to **No** (unlocked) at Step 0 on page 14. The  symbol flashes to indicate that the setpoint derogation period has begun. If the event symbol does not flash, it means that the derogation period is complete or that the adjustment is locked at Step 0 in Scheduling Mode Selection on page 9. If the setpoint is locked, a  symbol and "SETPNT LOCKED" message appear.

Control Mode

These selections can vary according to the selection made at Step 2 of Programming Mode and Step 30 of Scheduling Mode.

- Auto (Automatic Cooling or Heating)
- Cooling only (on)
- Heating only (on)
- OFF

Fan Speed Selection Mode

To access the Fan Speed selection mode, press the  button. The mode appears for 5 seconds. These options can vary depending on the fan speed signal and auto mode settings at Step 28 and Step 31 on page 8.

- Automatic speed. This option is available if you have selected **Yes** (Enable) at Step 31 in Programming Mode.
- Low speed
- Medium speed
- High speed
- Off

