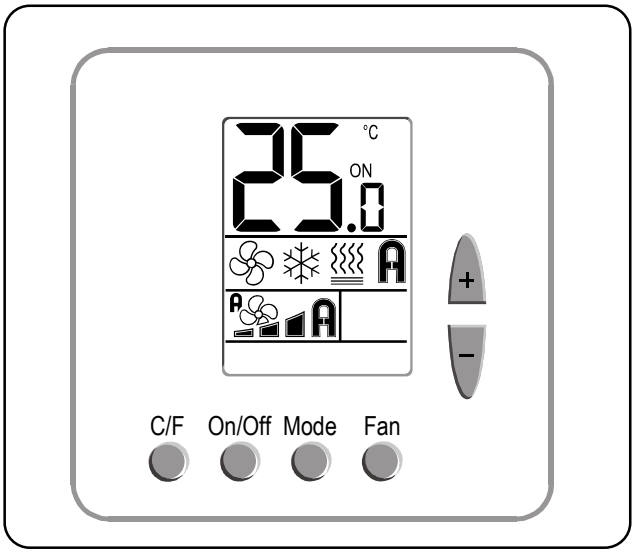


ALT24-SUPER

Owner's manual & Technician Settings

meitav-tec

Rev.1

Index

Index

Operating instructions

Quick guide

Ambient/Set-point indication
temperature Ambient

System MODE indication:

- Fan only
- Cooling
- Heating
- Auto mode

Heating and Auto mode indication is not available in cool only configuration

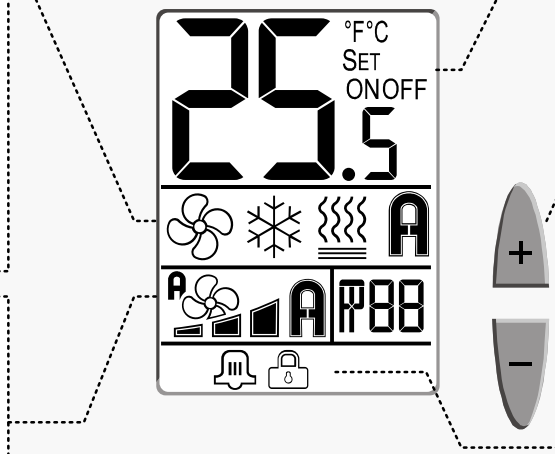
Fan speeds indication:

- Auto speed
- High
- Medium
- Low
- Fan on demand

Speeds indication is not available in 1 speed configuration

Medium speed indication is not available in 1 and 3 speeds configuration

- Press to switch between temperature scales (ºC/ºF)
- Press and hold to enter technician settings (set-point must be equal to 10ºC/50ºF)



Temperature indication:

°C°F -- Temperature scale
SET -- Set-point adjust.
ONOFF -- Thermostat On/Off indication

Set-point adjustment

Indications:

- Alarm
- Button locked

- Press to select Fan speed: Low/Medium/High/Auto
- Press and hold to activate fan on demand

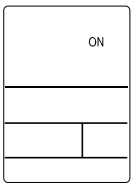
- Press to select System Mode: Cool/Heat/Auto

- Press to turn unit On or Off

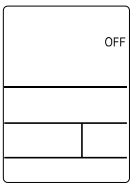
Operating instructions

Turning the thermostat ON and OFF

- Press the [On/Off] button to turn the thermostat ON or OFF.



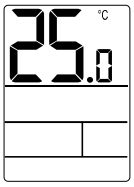
ON



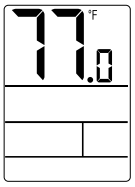
OFF

Selecting temperature scale

- Press the [C/F] button to switch between temperature scales.



Celsius

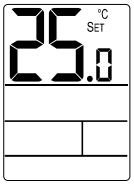


Fahrenheit

Adjusting the Set point temperature

In <u>One</u> set point configuration:

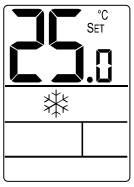
- Press the [+] or [-] buttons once to view the set point temperature.
- Use the [+] or [-] buttons to adjust the set point.



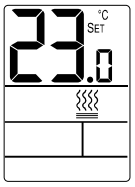
Set point

In <u>Two</u> set points configuration:

- Press the [+] or [-] buttons once – "❄" and the set point temperature for cooling will appear on display.
- Use the [+] or [-] buttons to adjust the set point for cooling.
- Press the [Mode] button or wait 3 seconds – "≋" and the set point temperature for heating will appear on display.
- Use the [+] or [-] buttons to adjust the set point for heating.



Set point
For cooling



Set point
For heating

Notes:

- The set point for cooling must be higher than the set point for heating.

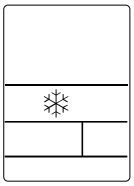
Operating instructions (Cont')

Selecting system mode

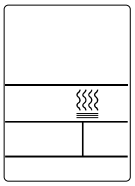
- Press the [Mode] button to switch between system modes.

  Notes:

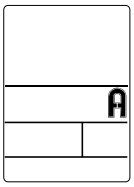
  1. During demand for cooling or heating, the active mode will flash.
  2. In Auto mode, the active mode icon (Cool or Heat) will flash.
  3. Auto mode is not available in 2-Pipe system configuration.
  4. Auto mode can be disabled by technician.
  5. Heat and Auto modes are not available in Cool only system.



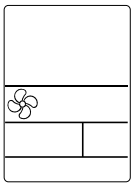
Cool



Heat



Auto



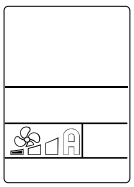
Fan only

Selecting Fan speeds (for 2 and 3 fan speeds configuration)

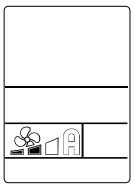
- Press the [Fan] button to switch between fan speeds.

  Notes:

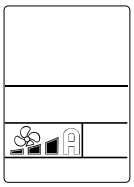
  1. In Auto speed, the active fan speed icon will appear on display.
  2. Medium speed available in 3 speeds configuration.
  3. Fan speeds selection is not available in 1 speed configuration.



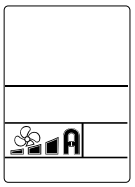
Low



Medium



High



Auto

Turning Auto fan ON or OFF (fan on demand)

In 1 speed configuration:

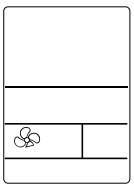
- Press the [Fan] button to turn Auto fan ON or OFF.

In 2 and 3 speeds configuration:

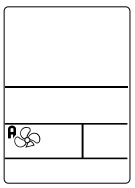
Press and hold the [Fan] button for 7 seconds to turn Auto fan ON or OFF.

- When ON, the fan will run on demand for cooling or heating,
- When OFF, the fan will run continuously.

  Note: Auto fan cannot be selected in Fan only mode.



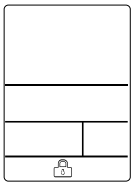
Auto fan OFF



Auto fan ON

Locking the thermostat buttons

- Press and the [Mode] button for 7 seconds to lock or unlock the thermostat buttons.
- When locked, the lock icon will appear on display with any attempt to press the buttons.
- Enable or disable the option to lock different buttons using technician parameters P04-P07.

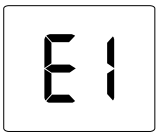


Lock indications

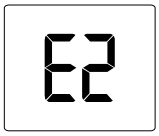
Operating instructions (Cont')

Economy mode

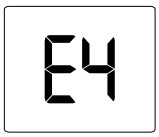
- Economy mode can be activated by triggering a Window contact - Remote on/off switch, Window contact - remote economy switch, door switch, key-tag, the external PIR sensor (passive infrared sensor) When Economy mode is active, the thermostat will use special economy set points for cooling and heating set by technician.
  Please refer to objects "EconomySetpointinHeat" and "EconomySetpointinCool" in the technician setting section of this manual.



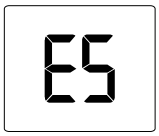
Economy by:
- Window contact - Remote on/off switch
- Window contact - Remote economy switch



Economy by: External PIR



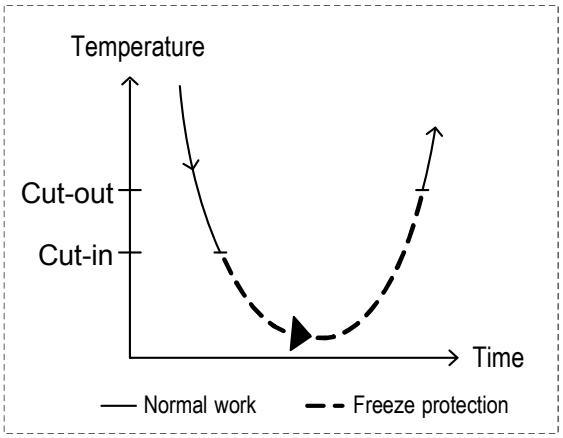
Economy by door switch



Economy by key-tag

Freeze Protection

The Freeze protection feature will not allow the room temperature to drop below predefined cut-in temperature. Depending on which configuration the system is operating under (W/WO Heat pump) this feature will force the system to operate in heat mode and activate the fan.
This feature will take effect when the thermostat is either ON or OFF. When the room temperature rises above the predefined cut-out temperature, the thermostat will return to its previous state.
When freeze protection is activated, the display alternates between "AL" and room temperature.



Economizer

Economizer is used to reduce the energy consumed by the cooling systems, by using low external air temperatures to assist in the chilling process. When outdoor temperatures are lower relative to indoor (room) temperatures, the system utilizes the cool outdoor air as a free cooling source.

The outdoor temperature (Teconomizer) triggering the activation of the economizer, can be measured by the temperature sensor connected to T1,0 terminals (technician parameter P08="05").

Whenever there is demand for cooling and the outdoor temperature conditions allow the operation of the economizer, it will operate together with the regular cooling system and will not replace it.

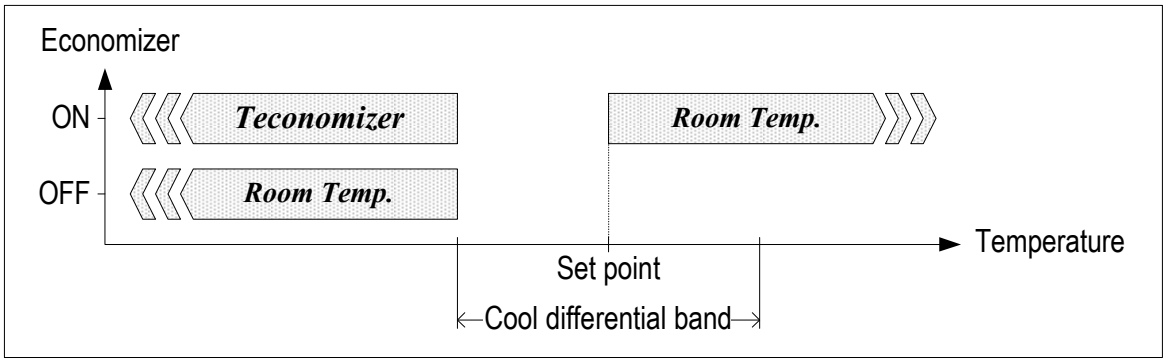
Economizer will start and run as long as both of the following conditions are satisfied:

1. $$Teconomizer\ temperature < Room\ temperature - \frac{Cool\ differential\ band}{2}$$

2. $$Room\ Temperature > Set\ point\ temperature$$

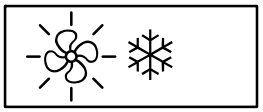
Economizer will stop when the following condition is satisfied:

1. $$Room\ Temperature < Set\ point\ temperature - \frac{Cool\ differential\ band}{2}$$



Indication for the Economizer operation:

When Economizer is active, the “Cool” symbol will appear (or flash when active) on display and the “Fan” symbol will flash.



Economizer active

Installation

The ALT24-SUPER is designed for wall mounting in the room to be controlled. It should be located where the occupant can easily read the LCD display and use the controls. If the built in temperature sensor is being used to measure room temperature, the module should be placed where the temperature is representative of the general room conditions. Cold or warm air draughts; radiant heat and direct sunlight should be avoided.

General points to follow:

- Disconnect power to the main board before installing the unit.
- The standard height to install this unit is 1.5 meter (5 feet) from the floor.

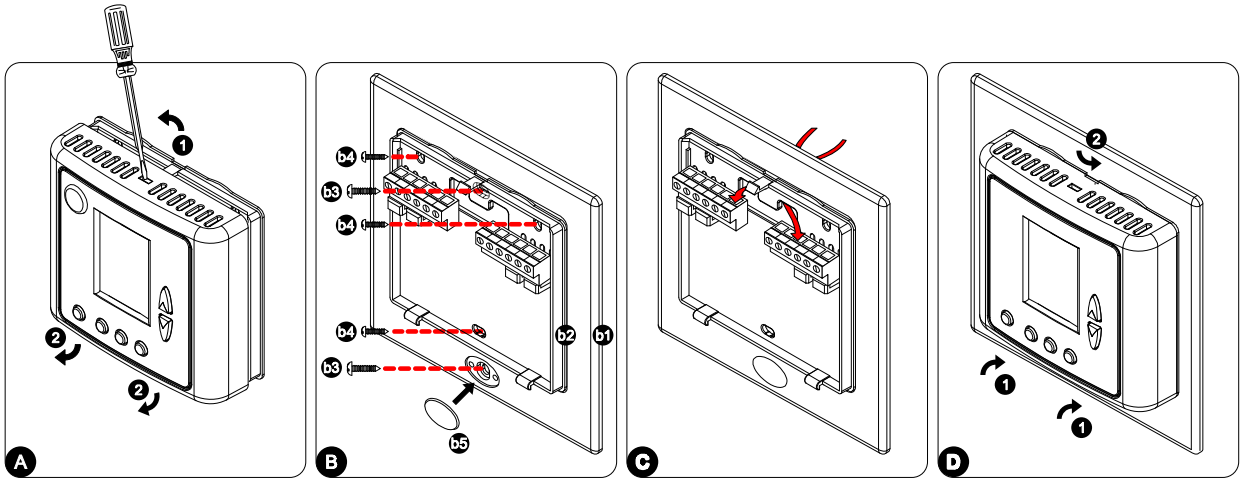
Installation procedure:

A. Separate the front panel from back panel by pressing the tongue located in the top of the unit and pull the back panel out.

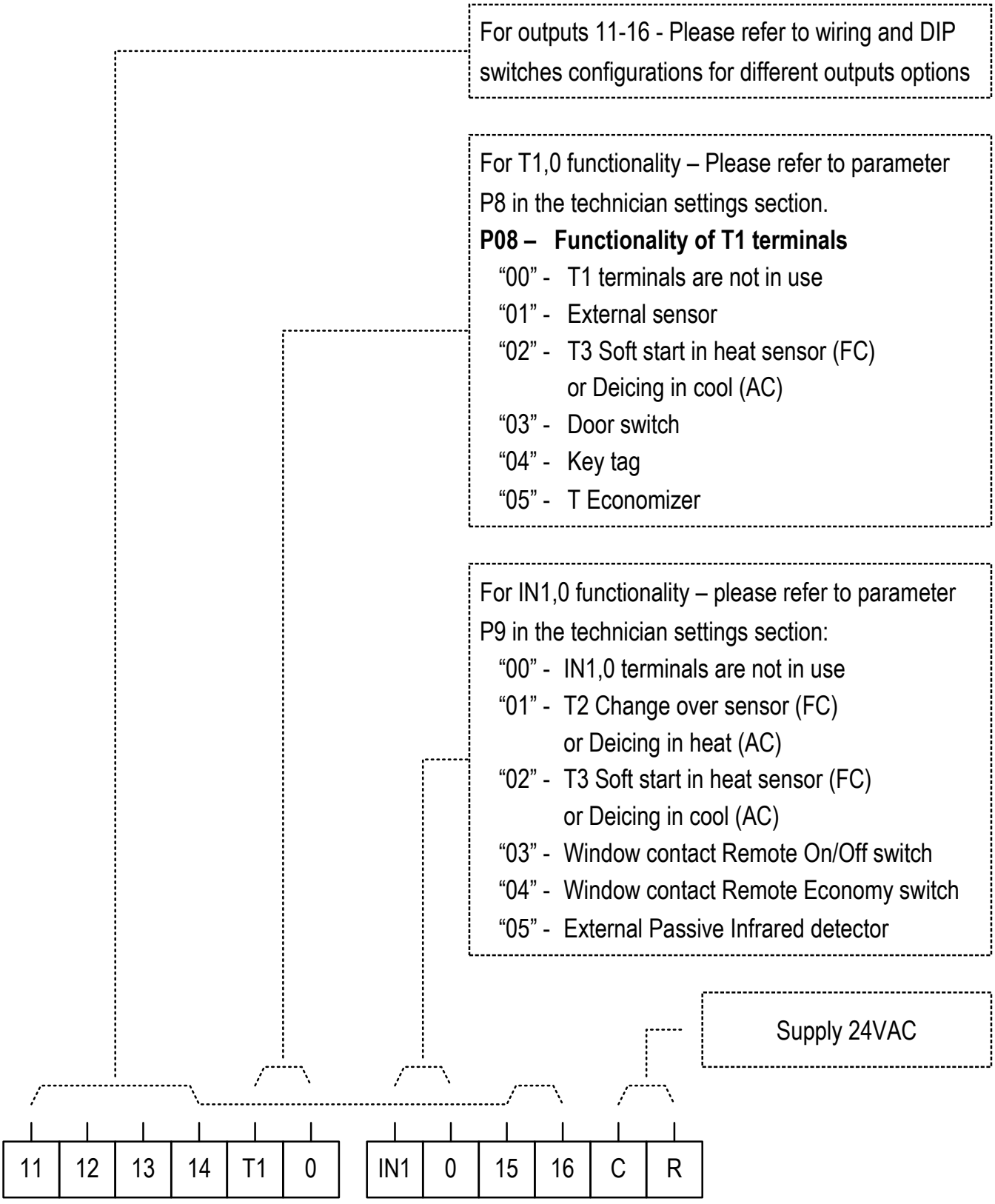
B. Use two 2 X ½" screws (b3) to attach the adapter plate (b1) to a 4 X 2 electrical box.
Use three 3 X ¼" screws (b4) to attach the back panel (b2) to the adapter plate (b1).
Cover the adaptor's bottom screw hole using the screw cap (b5).

C. Make electrical connections as shown on enclosed electrical wiring diagram.

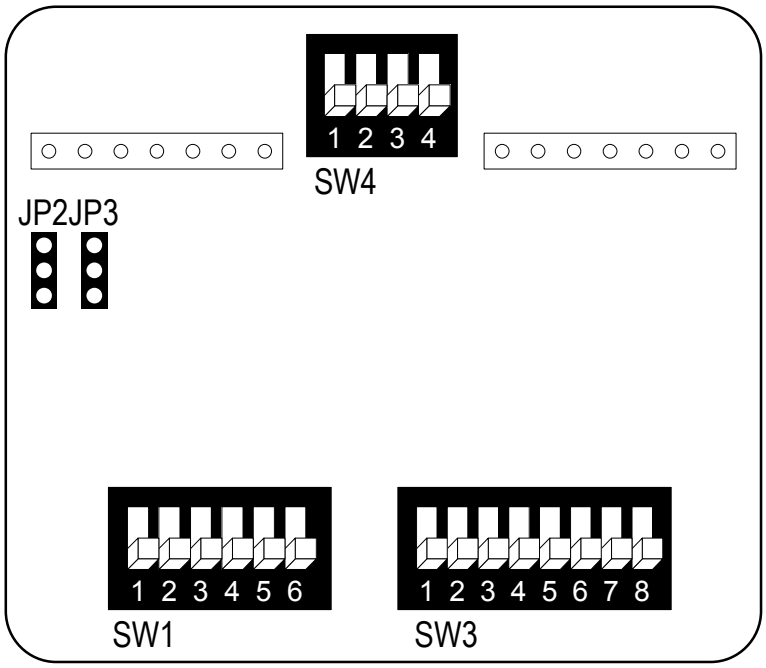
D. Install the cove to the back panel; first the two bottom tabs and then the top tongue. Push until tight against the wall.



Wiring


For outputs 11-16 - Please refer to wiring and DIP switches configurations for different outputs options
For T1,0 functionality – Please refer to parameter P8 in the technician settings section.
P08 – Functionality of T1 terminals
"00" - T1 terminals are not in use
"01" - External sensor
"02" - T3 Soft start in heat sensor (FC) or Deicing in cool (AC)
"03" - Door switch
"04" - Key tag
"05" - T Economizer
For IN1,0 functionality – please refer to parameter P9 in the technician settings section:
"00" - IN1,0 terminals are not in use
"01" - T2 Change over sensor (FC) or Deicing in heat (AC)
"02" - T3 Soft start in heat sensor (FC) or Deicing in cool (AC)
"03" - Window contact Remote On/Off switch
"04" - Window contact Remote Economy switch
"05" - External Passive Infrared detector
Supply 24VAC
11
12
13
14
T1
0
IN1
0
15
16
C
R

DIP Switch and Jumpers configuration



SW4.1 – Without valves control in FC config.

OFF - Enable valves control

ON - Disable valves control

SW4.2, SW4.3, SW4.4 – Not in use

Always OFF

SW1.1-SW1.6, SW3.1-SW3.8

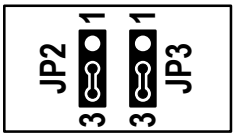
See pages 15-30 for different configurations

JP2, JP3 – Outputs 15,16 – Analog or Digital

JP2 – Output 16

Position 1 - Analog output

Position 3 - Digital output



JP3 – Output 15

Position 1 - Analog output

Position 3 - Digital output

AC Configurations index

Cool and Heat, Non Heat pump systems (HC)

Options / Configuration:	1	3	17	19	25	27
Max. number of Heat elements	1/2/3	1/2	1/2	1/2	1	1
Max. number of Compressors	1/2	1/2	1	1	1	1
Fan speeds / VFS	1	1	1/2/3	1/2	VFS	VFS
Economizer		+		+		+

Cool only, Non Heat pump systems (HC)

Options / Configuration:	2	4	18	20	26	28
Max. number of Compressors	1/2	1/2	1	1	1	1
Fan speeds / VFS	1	1	1/2/3	1/2	VFS	VFS
Economizer		+		+		+

Cool and Heat, Heat pump systems (HP)

Options / Configuration:	5	7	9	11	13	15	21	23
Max. number of Heat elements	0/1/2	1			0/1	0/1		
Max. number of Compressors	1/2	1/2	1/2	1/2	1	1	1	1
Fan speeds / VFS	1	1	1/2/3	1/2	1/2/3	1/2	VFS	VFS
Economizer		+		+		+		+

Cool only, Heat pump systems (HP)

Options / Configuration:	6	8	10	12	14	16	22	24
Max. number of Compressors	1/2	1/2	1/2	1/2	1	1	1	1
Fan speeds / VFS	1	1	1/2/3	1/2	1/2/3	1/2	VFS	VFS
Economizer		+		+		+		+

FC Configurations for 2-Pipe systems index

2-Pipe, Cool and Heat systems, without Economizer

Options / Configuration:	29	33	37	41
Coo/Heat valve / PID	+	PID	+	PID
Heat element (2nd stage) - option	+	+	+	+
Fan speeds / VFS	1/2/3	1/2/3	VFS	VFS

2-Pipe, Cool and Heat systems, with Economizer

Options / Configuration:	31	35	39	43
Coo/Heat valve / PID	+	PID	+	PID
Heat element (2nd stage) - option	+	+	+	+
Fan speeds / VFS	1/2	1/2	VFS	VFS

2-Pipe, Cool only systems, without Economizer

Options / Configuration:	30	33	38	42
Cool valve / PID	+	PID	+	PID
Fan speeds / VFS	1/2/3	1/2/3	VFS	VFS
Economizer				

2-Pipe, Cool only systems, with Economizer

Options / Configuration:	32	36	40	44
Cool valve / PID	+	PID	+	PID
Fan speeds / VFS	1/2	1/2	VFS	VFS
Economizer	+	+	+	+

FC Configurations for 4-Pipe systems / Floor heating systems index

4-Pipe systems without Economizer

Options / Configuration:	45	49	53	55	57	59	61
Cool valve / PID	+	PID	PID	+	+	+	PID
Heat valve / PID	+	+	+	PID	PID	+	PID
Heat element (2nd stage) - option	+	+		+			+
Fan speeds / VFS	1/2/3	1/2/3	VFS	1/2/3	VFS	VFS	1/2/3

4-Pipe systems with Economizer

Options / Configuration:	46	50	54	56	58	60	62
Cool valve / PID	+	PID	PID	+	+	+	PID
Heat valve / PID	+	+	+	PID	PID	+	PID
Heat element (2nd stage) - option	+	+		+			+
Fan speeds / VFS	1/2	1/2	VFS	1/2	VFS	VFS	1/2

Floor heating systems without Economizer

Options / Configuration:	47	51
Cool valve / PID	+	PID
Heat valve / PID	+	+
Fan speeds / VFS	1/2/3	1/2/3

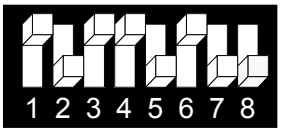
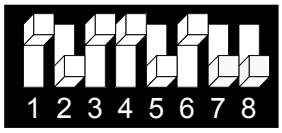
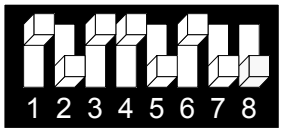
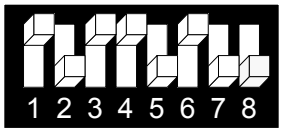
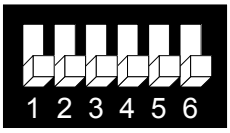
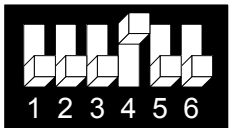
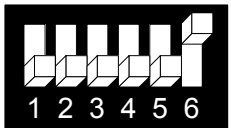
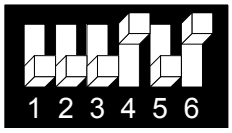
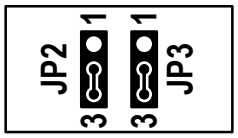
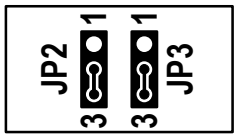
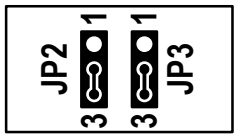
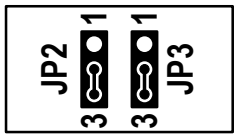
Floor heating systems with Economizer

Options / Configuration:	48	52
Cool valve / PID	+	PID
Heat valve / PID	+	+
Fan speeds / VFS	1/2	1/2

Wiring and DIP Switches – AC systems

	1 HC32 1 Speed fan	2 HC32 1 Speed fan (Cool only)	3 HC22 1 Speed fan Economizer	4 HC22 1 Speed fan Economizer (Cool only)
11	Heat element 3 (3rd stage heat)	x	Heat element 2 (2nd stage heat)	x
12	Heat element 2 (2nd stage heat)	x	Economizer	Economizer
13	Fan (1 speed)	Fan (1 speed)	Fan (1 speed)	Fan (1 speed)
14	Compressor 2	Compressor 2	Compressor 2	Compressor 2
15	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)
16	Heat element 1(2) (1st stage heat)	x	Heat element 1(2) (1st stage heat)	x

Control – Fan on/off, Heat elements, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

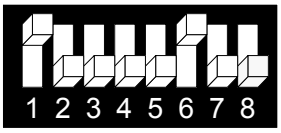
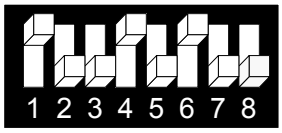
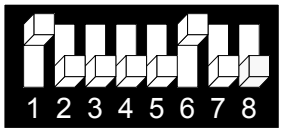
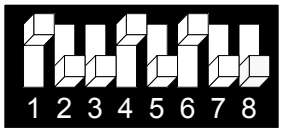
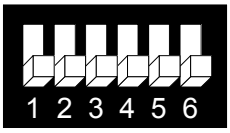
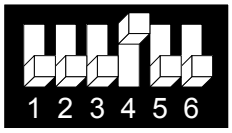
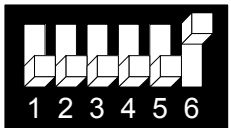
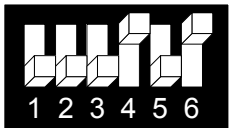
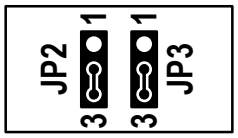
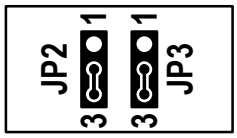
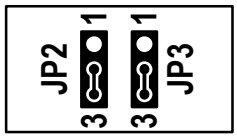
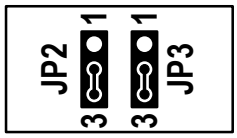
(2) SW3.4 = Heater type: ON – Electrical heater, OFF – Oil/Gas heater (no fan)

(3) SW3.5 = Compressor delay: ON – Disable compressor delay, OFF – Enable compressor delay

Wiring and DIP Switches – AC systems

	5 HP42 1 Speed fan	6 HP42 1 Speed fan (Cool only)	7 HP32 1 Speed fan Economizer	8 HP32 1 Speed fan Economizer (Cool only)
11	Heat element 2 (4th stage heat)	x	Heat element 1 (3rd stage heat)	x
12	Heat element 1 (3rd stage heat)	x	Economizer	Economizer
13	Fan (1 speed)	Fan (1 speed)	Fan (1 speed)	Fan (1 speed)
14	Compressor 2	Compressor 2	Compressor 2	Compressor 2
15	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)
16	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)

Control – Fan on/off, Heat elements, Heat pump, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

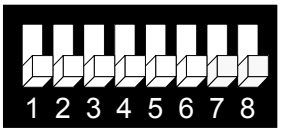
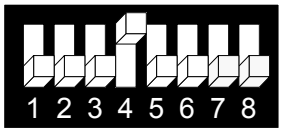
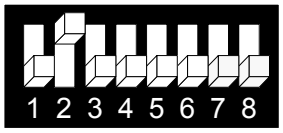
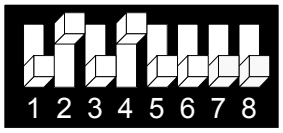
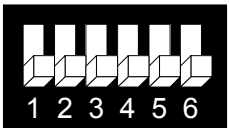
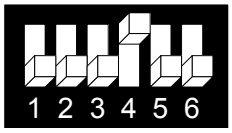
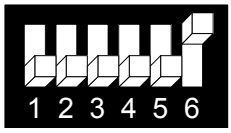
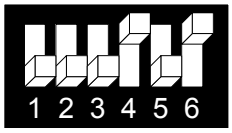
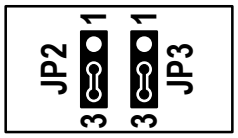
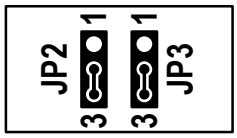
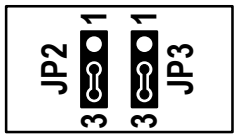
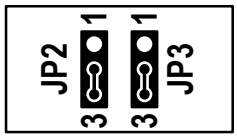
(2) SW3.4 = Heat pump: ON – Heat pump active in cool, OFF – Heat pump active in heat

(3) SW3.5 = Compressor delay: ON – Disable compressor delay, OFF – Enable compressor delay

Wiring and DIP Switches – AC systems

	9 HP22 1/2/3 Speeds fan(1)	10 HP22 1/2/3 Speeds fan(1) (Cool only)	11 HP22 1/2 Speeds fan(1) Economizer	12 HP22 1/2 Speeds fan(1) Economizer (Cool only)
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Economizer	Economizer
13	Fan low	Fan low	Fan low	Fan low
14	Compressor 2	Compressor 2	Compressor 2	Compressor 2
15	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)
16	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)

Control – Fan on/off, Heat pump, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

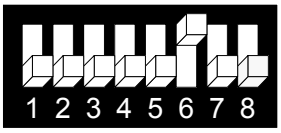
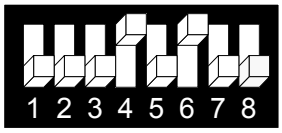
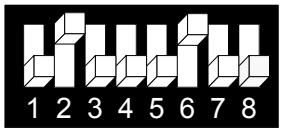
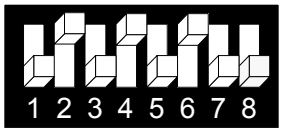
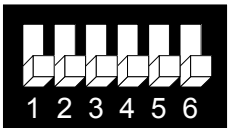
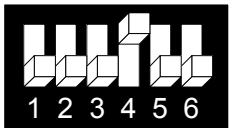
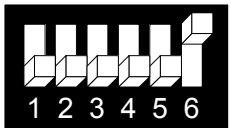
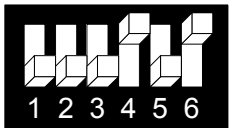
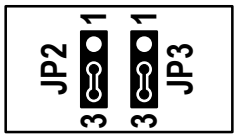
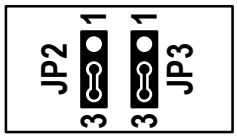
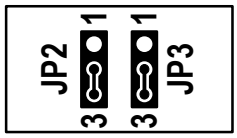
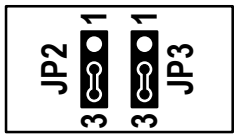
(2) SW3.4 = Heater type: **ON – Electrical heater, OFF – Oil/Gas heater (no fan)**

(3) SW3.5 = Compressor delay: **ON – Disable compressor delay, OFF – Enable compressor delay**

Wiring and DIP Switches – AC systems

	13 HP21 1/2/3 Speeds fan(1)	14 HP21 1/2/3 Speeds fan(1) (Cool only)	15 HP21 1/2 Speeds fan(1) Economizer	16 HP21 1/2 Speeds fan(1) Economizer (Cool only)
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Economizer	Fan medium
13	Fan low	Fan low	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	x	Heat element(2) (2nd stage heat)	x
15	Compressor(3)	Compressor(3)	Compressor(3)	Compressor(3)
16	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)

Control – Fan on/off, Heat elements, Heat pump, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

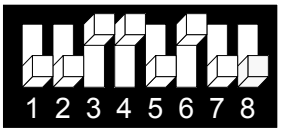
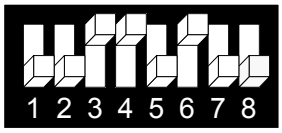
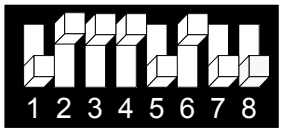
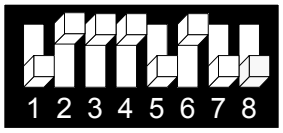
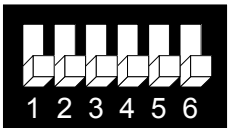
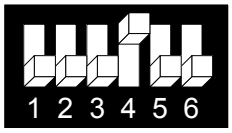
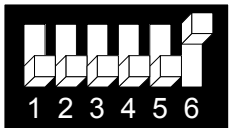
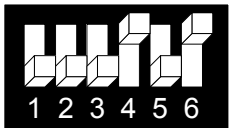
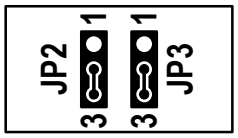
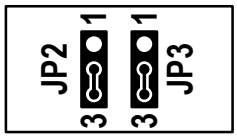
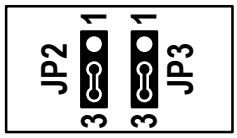
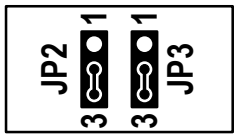
(2) SW3.4 = Heat pump: ON – Heat pump active in cool, OFF – Heat pump active in heat

(3) SW3.5 = Compressor delay: ON – Disable compressor delay, OFF – Enable compressor delay

Wiring and DIP Switches – AC systems

	17 HC21 1/2/3 Speeds fan(1)	18 HC21 1/2/3 Speeds fan(1) (Cool only)	19 HC21 1/2 Speeds fan(1) Economizer	20 HC21 1/2 Speeds fan(1) Economizer (Cool only)
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Economizer	Economizer
13	Fan low	Fan low	Fan low	Fan low
14	Heat element 2 (2nd stage heat)	x	Heat element 2 (2nd stage heat)	x
15	Compressor(3)	Compressor(3)	Compressor(3)	Compressor(3)
16	Heat element 1(2) (1st stage heat)	x	Heat element 1(2) (1st stage heat)	x

Control – Fan on/off, Heat elements, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = Heater type: **ON – Electrical heater, OFF – Oil/Gas heater (no fan)**

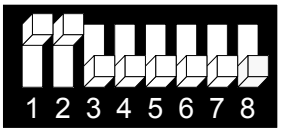
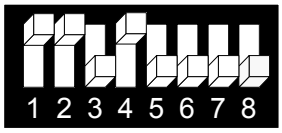
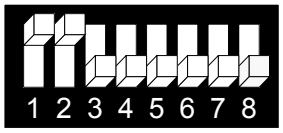
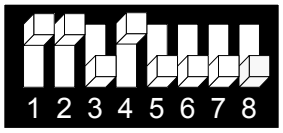
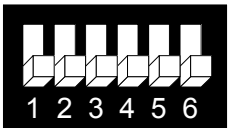
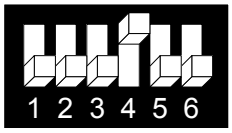
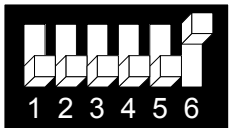
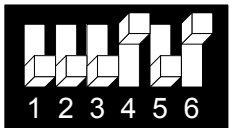
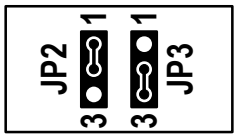
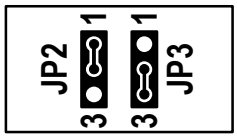
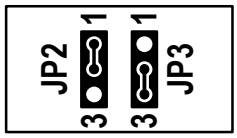
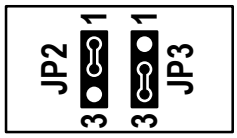
(3) SW3.5 = Compressor delay: **ON – Disable compressor delay, OFF – Enable compressor delay**

Wiring and DIP Switches – AC systems

	21 HP11 VFS fan	22 HP11 VFS fan (Cool only)	23 HP11 VFS fan Economizer	24 HP11 VFS fan Economizer (Cool only)
11	x	x	x	x
12	x	x	Economizer	Economizer
13	x	x	x	x
14	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)	Heat pump(2) (Active in heat)	Heat pump(2) (Active in cool)
15	Compressor(3)	Compressor(3)	Compressor(3)	Compressor(3)
16	Fan VFS	Fan VFS	Fan VFS	Fan VFS

Fan VFS: 0-10VDC. 0.5mA Not isolated

Control – Heat pump, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(2) SW3.4 = Heat pump: ON – Heat pump active in cool, OFF – Heat pump active in heat

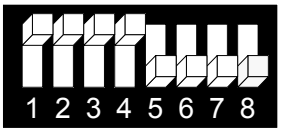
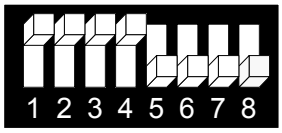
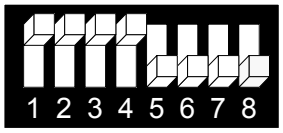
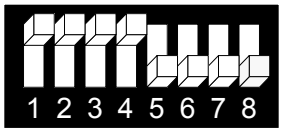
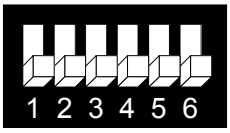
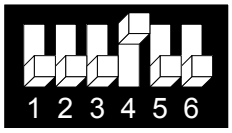
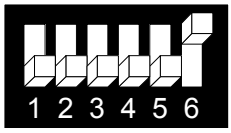
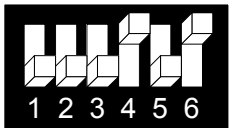
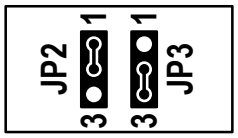
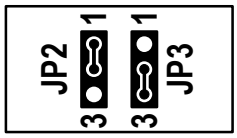
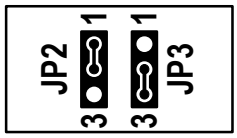
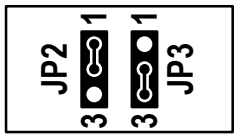
(3) SW3.5 = Compressor delay: ON – Disable compressor delay, OFF – Enable compressor delay

Wiring and DIP Switches – AC systems

	25 HC11 VFS fan	26 HC11 VFS fan (Cool only)	27 HC11 VFS fan Economizer	28 HC11 VFS fan Economizer (Cool only)
11	x	x	x	x
12	x	x	Economizer	Economizer
13	x	x	x	x
14	Heat element(2)	x	Heat element(2)	x
15	Compressor(3)	Compressor(3)	Compressor(3)	Compressor(3)
16	Fan VFS	Fan VFS	Fan VFS	Fan VFS

Fan VFS: 0-10VDC. 0.5mA Not isolated

Control – Fan on/off, Heat elements, Compressors, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

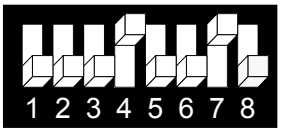
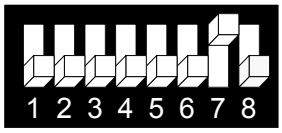
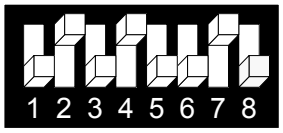
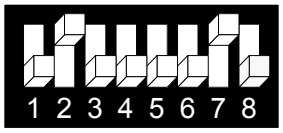
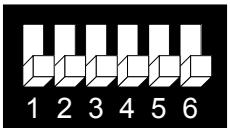
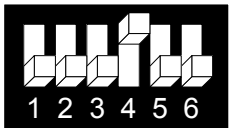
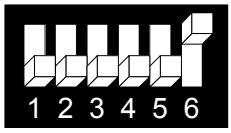
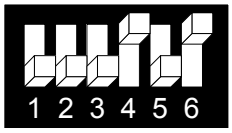
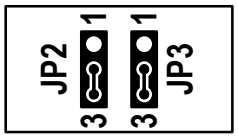
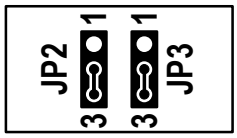
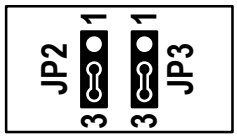
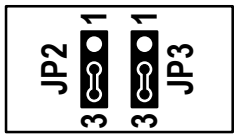
(2) SW3.4 = Heater type: ON – Electrical heater, OFF – Oil/Gas heater (no fan)

(3) SW3.5 = Compressor delay: ON – Disable compressor delay, OFF – Enable compressor delay

Wiring and DIP Switches – FC systems – 2-Pipe

	29 2-Pipe 1/2/3 Speeds fan(1)	30 2-Pipe 1/2/3 Speeds fan(1) (Cool only)	31 2-Pipe 1/2 Speeds fan(1) Economizer	32 2-Pipe 1/2 Speeds fan(1) Economizer (Cool only)
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Economizer	Economizer
13	Fan low	Fan low	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	x	Heat element(2) (2nd stage heat)	x
15	Cool/Heat valve(3) (1st stage heat)	Cool valve(3)	Cool/Heat valve(3) (1st stage heat)	Cool valve(3)
16	x	x	x	x

Control – Fan on/off, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = 2nd heating stage: **ON – Enable, OFF – Disable**

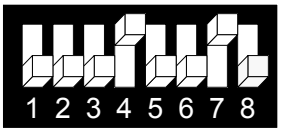
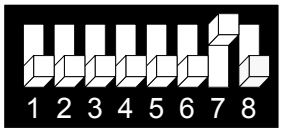
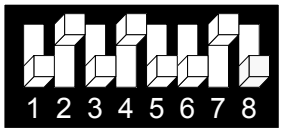
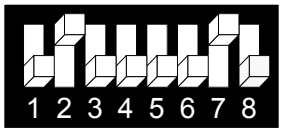
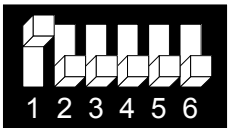
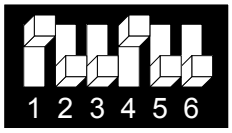
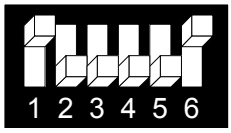
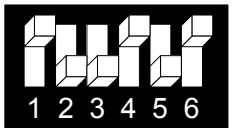
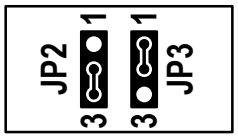
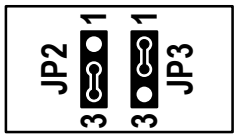
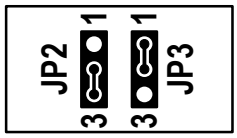
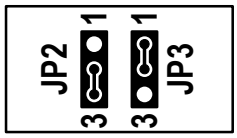
(3) SW3.5 = Chilled beam option **ON – Enable chilled beam (fan will not run with cooling)**

Wiring and DIP Switches – FC systems – 2-Pipe

	33 2-Pipe 1/2/3 Speeds fan(1) Cool/Heat PID	34 2-Pipe 1/2/3 Speeds fan(1) Cool PID (Cool only)	35 2-Pipe 1/2 Speeds fan(1) Economizer Cool/Heat PID	36 2-Pipe 1/2 Speeds fan(1) Economizer Cool PID (Cool only)
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Economizer	Economizer
13	Fan low	Fan low	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	x	Heat element(2) (2nd stage heat)	x
15	Cooll/Heat valve PID(3) (1st stage heat)	Cool valve PID(3)	Cooll/Heat valve PID(3) (1st stage heat)	Cool valve PID(3)
16	x	x	x	x

PID valves: 0-10VDC. 0.5mA Not isolated

Control – Fan on/off, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = 2nd heating stage: **ON – Enable, OFF – Disable**

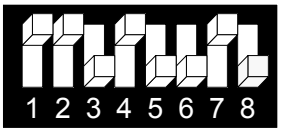
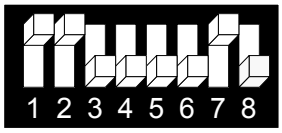
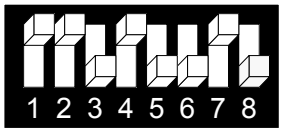
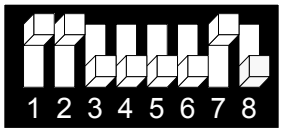
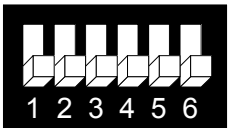
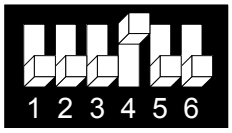
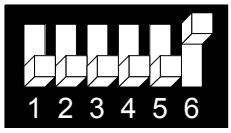
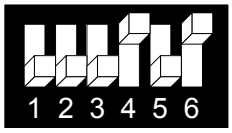
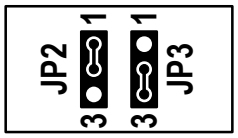
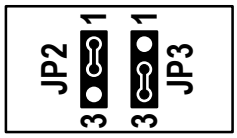
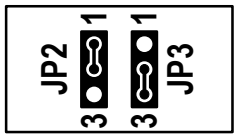
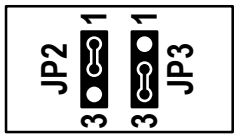
(3) SW3.5 = Chilled beam option **ON – Enable chilled beam (fan will not run with cooling)**

Wiring and DIP Switches – FC systems – 2-Pipe

	37 2-Pipe VFS fan	38 2-Pipe VFS fan (Cool only)	39 2-Pipe VFS fan Economizer	40 2-Pipe VFS fan Economizer (Cool only)
11	x	x	x	x
12	x	x	Economizer	Economizer
13	x	x	x	x
14	Heat element(2) (2nd stage heat)	x	Heat element(2) (2nd stage heat)	x
15	Cool/Heat valve(3) (1st stage heat)	Cool valve(3)	Cool/Heat valve(3) (1st stage heat)	Cool valve(3)
16	Fan VFS	Fan VFS	Fan VFS	Fan VFS

Fan VFS: 0-10VDC. 0.5mA Not isolated

Control – Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(2) SW3.4 = 2nd heating stage: ON – Enable, OFF – Disable

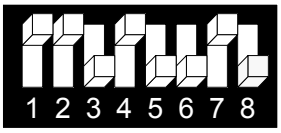
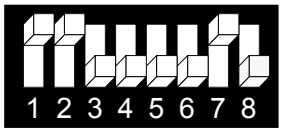
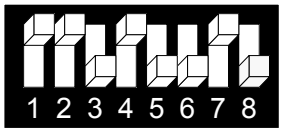
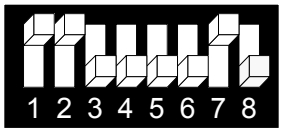
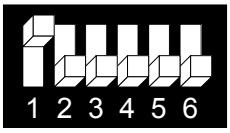
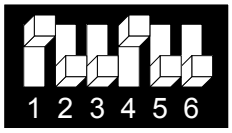
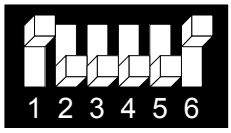
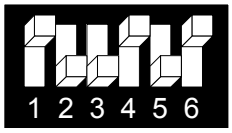
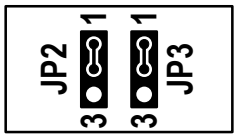
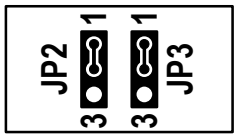
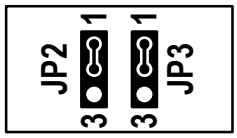
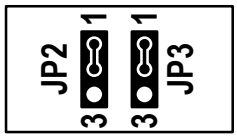
(3) SW3.5 = Chilled beam option ON – Enable chilled beam (fan will not run with cooling)

Wiring and DIP Switches – FC systems – 2-Pipe

	41 2-Pipe VFS fan Cool/Heat PID	42 2-Pipe VFS fan Cool PID (Cool only)	43 2-Pipe VFS fan Economizer Cool/Heat PID	44 2-Pipe VFS fan Economizer Cool PID (Cool only)
11	x	x	x	x
12	x	x	Economizer	Economizer
13	x	x	x	x
14	Heat element(2) (2nd stage heat)	x	Heat element(2) (2nd stage heat)	x
15	Cooll/Heat valve PID(3) (1st stage heat)	Cooll valve PID(3)	Cooll/Heat valve PID(3) (1st stage heat)	Cooll valve PID(3)
16	Fan VFS	Fan VFS	Fan VFS	Fan VFS

Fan VFS, PID valves: 0-10VDC. 0.5mA Not isolated

Control – Fan on/off, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

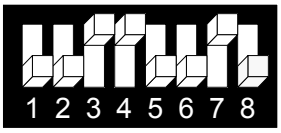
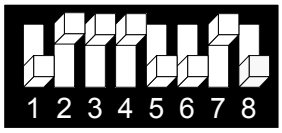
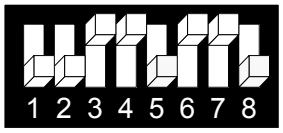
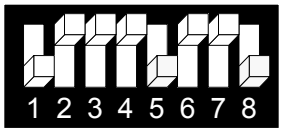
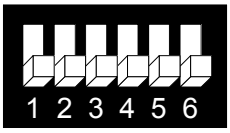
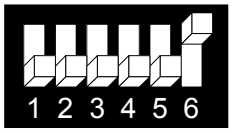
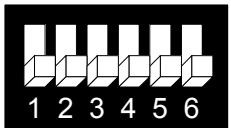
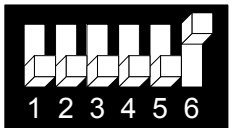
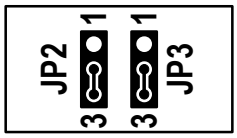
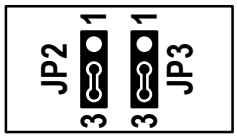
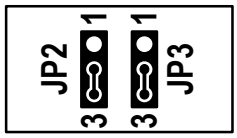
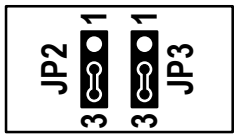
(2) SW3.4 = 2nd heating stage: ON – Enable, OFF – Disable

(3) SW3.5 = Chilled beam option ON – Enable chilled beam (fan will not run with cooling)

Wiring and DIP Switches – FC systems – 4-Pipe w/wo Floor heating

	45 4-Pipe 1/2/3 Speeds fan(1)	46 4-Pipe 1/2 Speeds fan(1) Economizer	47 4-Pipe 1/2/3 Speeds fan(1) Floor heating	48 4-Pipe 1/2 Speeds fan(1) Economizer Floor heating
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Economizer	Fan medium	Economizer
13	Fan low	Fan low	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	Heat element(2) (2nd stage heat)	Floor heating (1st stage heat – no fan)	Floor heating (1st stage heat – no fan)
15	Cool valve(3)	Cool valve(3)	Cool valve(3)	Cool valve(3)
16	Heat valve (1st stage heat)	Heat valve (1st stage heat)	Heat valve (2nd stage heat)	Heat valve (2nd stage heat)

Control – Fan on/off, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = 2nd heating stage: **ON – Enable, OFF – Disable**

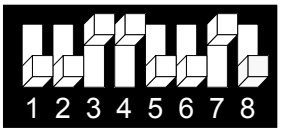
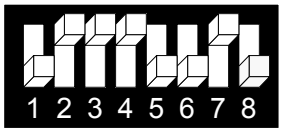
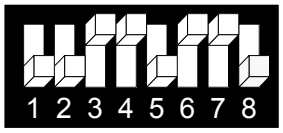
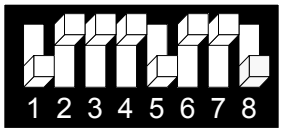
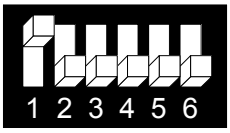
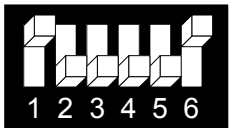
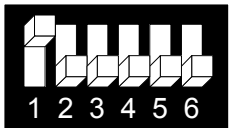
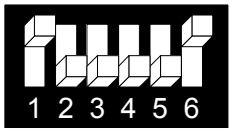
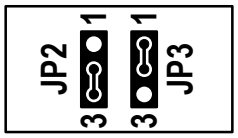
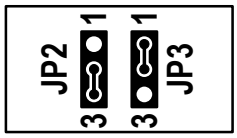
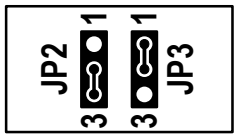
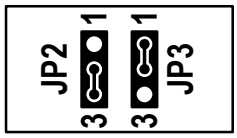
(3) SW3.5 = Chilled beam option **ON – Enable chilled beam (fan will not run with cooling)**

Wiring and DIP Switches – FC systems – 4-Pipe w/wo Floor heating

	49 4-Pipe 1/2/3 Speeds fan(1) Cool valve PID	50 4-Pipe 1/2 Speeds fan(1) Economizer Cool valve PID	51 4-Pipe 1/2/3 Speeds fan(1) Cool valve PID Floor heating	52 4-Pipe 1/2 Speeds fan(1) Cool valve PID Economizer Floor heating
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Economizer	Fan medium	Economizer
13	Fan low	Fan low	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	Heat element(2) (2nd stage heat)	Floor heating (1st stage heat – no fan)	Floor heating (1st stage heat – no fan)
15	Cool valve PID(3)	Cool valve PID(3)	Cool valve PID(3)	Cool valve PID(3)
16	Heat valve (1st stage heat)	Heat valve (1st stage heat)	Heat valve (2nd stage heat)	Heat valve (2nd stage heat)

PID valves: 0-10VDC. 0.5mA Not isolated

Control – Fan on/off, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = 2nd heating stage: **ON – Enable, OFF – Disable**

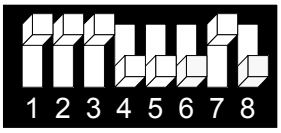
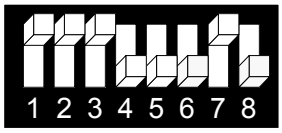
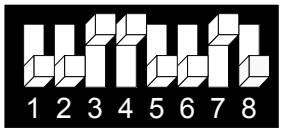
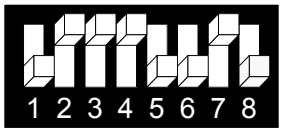
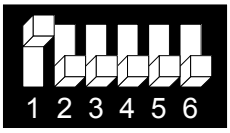
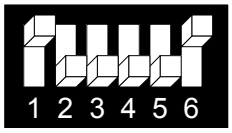
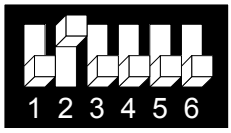
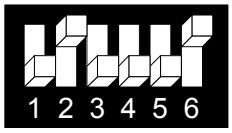
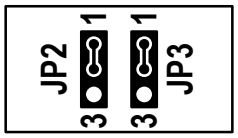
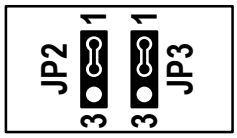
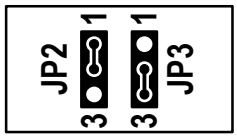
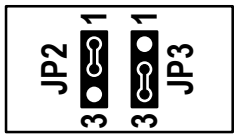
(3) SW3.5 = Chilled beam option **ON – Enable chilled beam (fan will not run with cooling)**

Wiring and DIP Switches – FC systems – 4-Pipe

	53 4-Pipe VFS fan Cool valve PID	54 4-Pipe VFS fan Economizer Cool valve PID	55 4-Pipe 1/2/3 Speeds fan(1) Heat valve PID	56 4-Pipe 1/2 Speeds fan(1) Economizer Heat valve PID
11	x	x	Fan high	Fan high
12	x	Economizer	Fan medium	Economizer
13	x	x	Fan low	Fan low
14	Heat valve	Heat valve	Heat element(2) (2nd stage heat)	Heat element(2) (2nd stage heat)
15	Cool valve PID(3)	Cool valve PID(3)	Cool valve(3)	Cool valve(3)
16	Fan VFS	Fan VFS	Heat valve PID (1st stage heat)	Heat valve PID (1st stage heat)

Fan VFS, PID valves: 0-10VDC. 0.5mA Not isolated

Control – Fan on/off, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = 2nd heating stage: **ON – Enable, OFF – Disable**

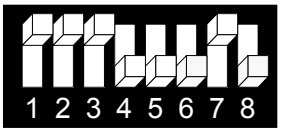
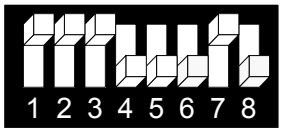
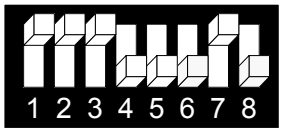
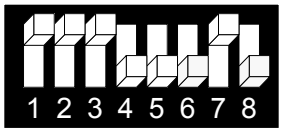
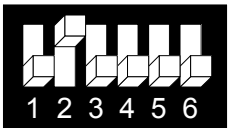
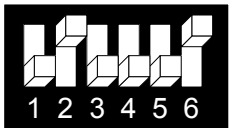
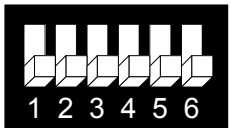
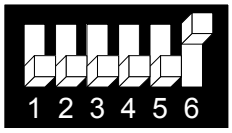
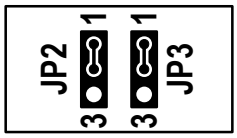
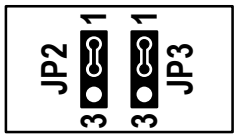
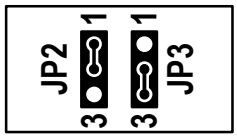
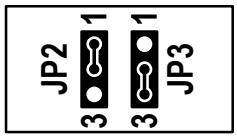
(3) SW3.5 = Chilled beam option **ON – Enable chilled beam (fan will not run with cooling)**

Wiring and DIP Switches – FC systems – 4-Pipe

	57 4-Pipe VFS fan Heat valve PID	58 4-Pipe VFS fan Economizer Heat valve PID	59 4-Pipe VFS fan	60 4-Pipe VFS fan Economizer
11	x	x	x	x
12	x	Economizer	x	Economizer
13	x	x	x	x
14	Cool valve(3)	Cool valve(3)	Heat valve	Heat valve
15	Heat valve PID	Heat valve PID	Cool valve(3)	Cool valve(3)
16	Fan VFS	Fan VFS	Fan VFS	Fan VFS

Fan VFS, PID valves: 0-10VDC. 0.5mA Not isolated

Control – Fan on/off, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

SW3				
SW1				
Jumpers JP2, JP3 for analog outputs				

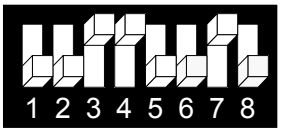
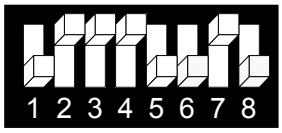
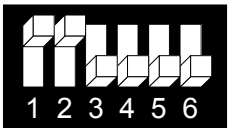
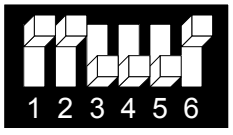
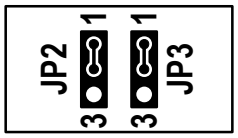
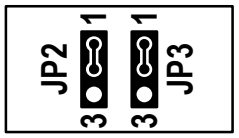
(3) SW3.5 = Chilled beam option ON – Enable chilled beam (fan will not run with cooling)

Wiring and DIP Switches – FC systems – 4-Pipe

	61 4-Pipe, 1/2/3 Speeds fan(1) Heat valve PID Cool valve PID	62 4-Pipe, 1/2 Speeds fan(1) Economizer Heat valve PID Cool valve PID
11	Fan high	Fan high
12	Fan medium	Economizer
13	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	Heat element(2) (2nd stage heat)
15	Cool valve PID(3)	Cool valve PID(3)
16	Heat valve PID (1st stage heat)	Heat valve PID (1st stage heat)

PID valves: 0-10VDC. 0.5mA=Not isolated

Control – Fan on/off, Heat elements, Economizer: 24VAC, 0.5A max.

SW3		
SW1		
Jumpers JP2, JP3 for analog outputs		

(1) SW3.1, SW3.2 = Fan speeds: **1 Speed (Low): SW3.1 ON, SW3.2 OFF**
2 Speeds (Low and High): SW3.1 OFF, SW3.2 ON
3 Speeds (Low, Medium and High): SW3.1 OFF, SW3.2 OFF

(2) SW3.4 = 2nd heating stage: **ON – Enable, OFF – Disable**

(3) SW3.5 = Chilled beam option **ON – Enable chilled beam (fan will not run with cooling)**

Technician Settings

Enter technician settings mode:

- Adjust the set point temperature to 10ºC or 50ºF.
- Press and hold the [C/F] button for 10 seconds to enter technician settings mode.
- “P01” will appear on display.

View objects and make adjustments:

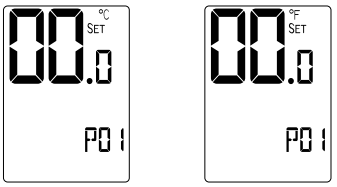
- Use the [Mode] button to step forward between different objects (parameters).
- Use the [Fan] button to step backward between different objects (parameters).
- Press the [On/Off] button to exit technician settings and return to normal display.
- If no button is pressed for 60 seconds, the thermostat will automatically exit technician settings and return to normal display.
- Use the [+] and [-] buttons to make adjustments when required.

P01 – Offset for temperature readings calibration

Range: -5…+5°C / -9…+9°F.

Default: 0°C / 0°F.

Note: The offset will influence both internal or external sensors.



Offset for temperature calibration

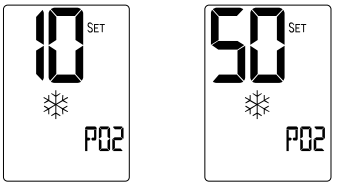
(°C) (°F)

P02 – Set point limit for cooling

Range: 5…35°C / 41…95°F.

Default: 10°C / 50°F.

Note: The thermostat will stop cooling regardless of the users set-point



Set point limit for cooling

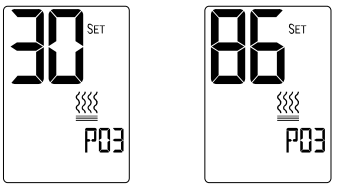
(°C) (°F)

P03 – Set point limit for heating

Range: 5…35°C / 41…95°F.

Default: 30°C / 86°F.

Note: The thermostat will stop heating regardless of the users set-point



Set point limit for heating

(°C) (°F)

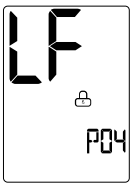
Technician Settings (Cont')

P04 – Enable/Disable the option to lock the [Fan] button

"LF" + "🔒" [Fan] button can be locked

"LF" only [Fan] button cannot be locked

Note: When enabled, press and hold the [Mode] button for 7 seconds to actually lock the buttons.



[Fan] Can be locked

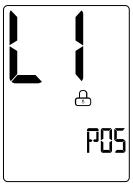
[Fan] Cannot be locked

P05 – Enable/Disable the option to lock the [Mode] button

"L1" + "🔒" [Mode] button can be locked

"L1" only [Mode] button cannot be locked

Note: When enabled, press and hold the [Mode] button for 7 seconds to actually lock the buttons.



[Mode] Can be locked

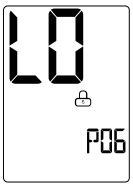
[Mode] Cannot be locked

P06 – Enable/Disable the option to lock the [On/Off] button

"L0" + "🔒" [On/Off] button can be locked

"L0" only [On/Off] button cannot be locked

Note: When enabled, press and hold the [Mode] button for 7 seconds to actually lock the buttons.



[On/Off] Can be locked

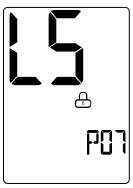
[On/Off] Cannot be locked

P07 – Enable/Disable the option to lock the [+] and [-] buttons (SET)

"LS" + "🔒" [+] and [-] buttons can be locked

"LS" only [+] and [-] buttons cannot be locked

Note: When enabled, press and hold the [Mode] button for 7 seconds to actually lock the buttons.



[+] and [-] Can be locked

[+] and [-] Cannot be locked

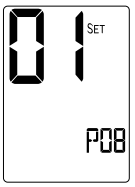
Technician Settings (Cont')

P08 – Functionality of T1 terminals

"00" - T1 terminals are not in use
"01" - External sensor
"02" - *T3 Soft start in heat sensor (FC) or **Deicing in cool (AC)
"03" - Door switch
"04" - Key tag
"05" - T Economizer

* In heating mode, the fan will not start before there is hot water in the coil.
** Allow deicing operation of indoor coil in cooling.

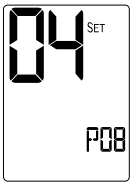
T1 terminals Not in use



T1 sensor (External sensor)

T3 Soft start in heat sensor (FC) or Deicing in cool sensor (AC)

Door switch



Key tag

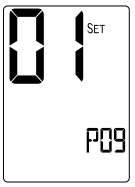
T Economizer

P09 – Functionality of IN1,0 terminals

"00" - IN1,0 terminals are not in use
"01" - *T2 Change over sensor (FC) or Deicing in heat (AC)
"02" - **T3 Soft start in heat sensor (FC) or Deicing in cool (AC)
"03" - Window contact Remote On/Off switch
"04" - Window contact Remote Economy switch
"05" - ***External Passive Infrared detector

* In 2-Pipe system, T2 will sense the water temperature in the pipe in order to select/allow effective system mode.
** Where T1 terminals are used for external sensor, the IN1,0 terminals can be used for T3 sensor.

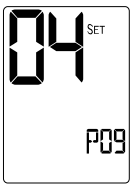
"IN1,0" terminals Not in use



T2 change over sensor (FC) or Deicing in heat (AC)

****T3 Soft start in heat sensor (FC) or Deicing in cool sensor (AC)**

Window contact Remote On/Off switch

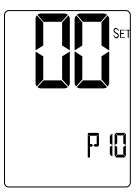


Window contact Remote Economy switch

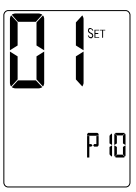
External PIR sensor

P10 – Window contact (terminals IN1,0) polarity

"01" - Normally open
"00" - Normally close



Window contact Normally close



Window contact Normally open

Technician Settings (Cont')

P11 – Window contact delay time

Range: 0…999 seconds.

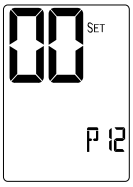
Default: 600 seconds.

Window contact delay time (sec.)

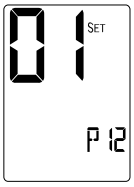
P12 – Door switch (terminals T1,0) polarity

"01" - Normally open

"00" - Normally close



Door switch Normally close

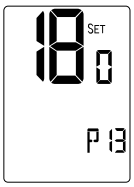


Door switch Normally open

P13 – Door switch delay time

Range: 0…999 seconds.

Default: 180 seconds.



Door switch delay time (sec.)

P14 – Enable/Disable Auto change over mode

"00" - Disable Auto change over mode

"01" - Enable Auto change over mode

Disable Auto mode

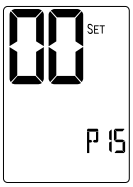
Enable Auto mode

P15 – Occupancy sensor logic (PIR)

"00" - Thermostat turns off when unoccupied and back on when re-occupied.

"01" - Thermostat turns off when unoccupied and remains off when re-occupied.

"02" - Thermostat uses economy set points when unoccupied.



Unocc. – Off Re-occ. - On

Unocc. – Off Re-occ. - Off

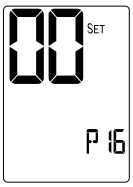
Economy set points

Technician Settings (Cont')

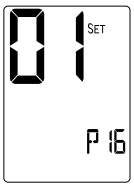
P16 – Enable/Disable Occupancy sensor

"00" - Disable

"01" - Enable



Disable occ. sensor



Enable occ. sensor

P17 – PIR (occupancy sensor) delay time before switching to unoccupied mode (ON delay)

Range: 0…900 minutes.

Default: 20 minutes.

PIR ON delay (minutes)

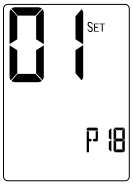
P18 – Door switch or key tag configuration

"00" - Switch On or Off by door switch or key tag

"01" - Changing the set point temperature

"02" - Switching fan speed to Low

Switch On or Off



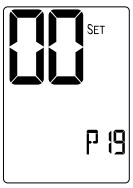
Change set-points

Switch to fan low

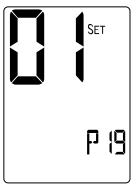
P19 – PIR (Occupancy sensor) polarity

"00" - Normally open

"01" - Normally close



PIR Normally open



PIR Normally close

P25 – Economy set point for cooling

Range: 5…35°C / 41…95°F.

Default: 30°C / 86°F.

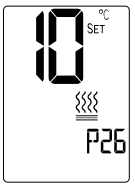
EC set point in cooling (°C) (°F)

Technician Settings (Cont')

P26 – Economy set point for heating

Range: 5…35°C / 41…95°F.

Default: 10°C / 50°F.



EC set point in heating

(°C) (°F)

P27 – On-delay time on-delay between heating stages

Range: 0….600 seconds

Default: 5 seconds

On delay heating stages

P28 – Off-delay time between heating stages

Range: 0….600 seconds

Default: 1 second

Off delay heating stages

P29 – LCD Backlight ON or OFF

"00" - LCD Backlight ON

"01" - LCD Backlight OFF

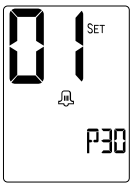
Backlight ON

Backlight OFF

P30 – Beeper ON or OFF

"01" - Beeper ON

"00" - Beeper OFF



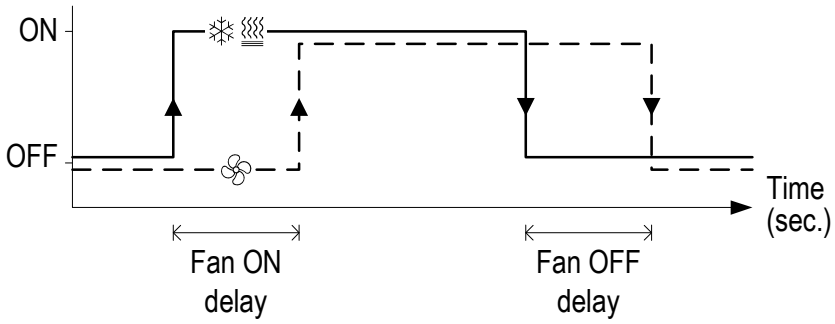
Beeper ON

Beeper OFF

Technician Settings (Cont')

P31 – P34
Fan on/off delay
with fan on demand (auto fan) active.

—— Valve
– – Fan



P31 – Fan ON delay in cooling (FC Only!)
Range: 0…120 seconds
Default: 0 seconds (no delay)

Fan ON delay in cooling (seconds)

P32 – Fan OFF delay in cooling
Range: 0…120 seconds
Default: 0 seconds (no delay)

Fan OFF delay in cooling (seconds)

P33 – Fan ON delay in heating (FC Only!)
Range: 0…120 seconds
Default: 0 seconds (no delay)

Fan ON delay in heating (seconds)

P34 – Fan OFF delay in heating
Range: 0…120 seconds
Default: 30 seconds

Fan OFF delay in heating (seconds)

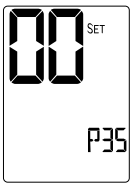
Technician Settings (Cont')

P35 – Enable/Disable Freeze protection

"00" - Disable Freeze protection

"01" - Enable Freeze protection

Note: If enabled, freeze protection will start when the thermostat is either ON or OFF and regardless of the current system mode.



Disable freeze protection

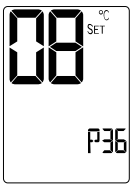
Enable freeze protection

P36 – Freeze protection cut-in set point

Range: 8...15°C / 46…59°F

Default: 8°C / 46°F

The room ambient temperature which will trigger Heating ON.



Freeze protection cut-in set point

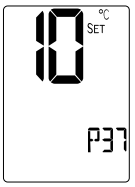
(°C) (°F)

P37 – Freeze protection cut-out set point

Range: 10...17°C / 50…63°F

Default: 10°C / 50°F

The room ambient temperature which will switch the Heating back OFF.



Freeze protection cut-out set point

(°C) (°F)

Technician Settings (Cont')

P40 – View filter counter (hours) – Read only

Range: 0…999 hours

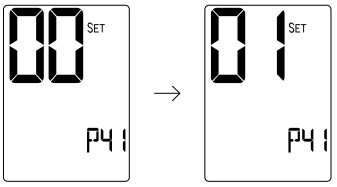
The filter counter is related to Fan running time.

View filter Counter (hours)

P41 – Reset filter time

Press the [+] button to reset the filter counter.

The display will change from "00" to "01" and back to "00".



Reset filter counter

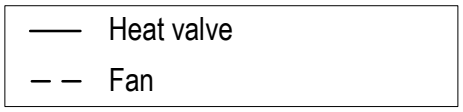
P42 – Adjust filter alarm delay time counter (hours)

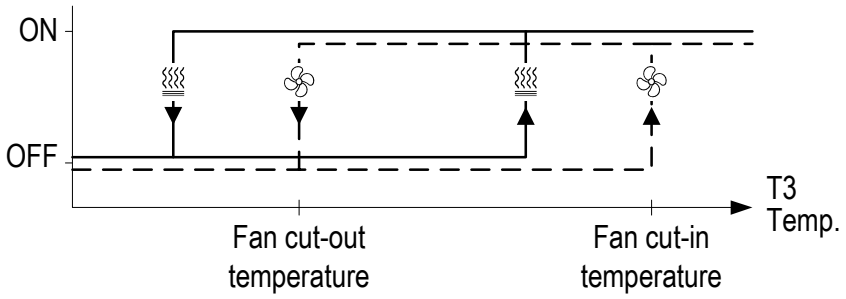
Range: 0…999 hours

Default: 0 hours (0 = Disable)

Adjust filter alarm delay time (hours)

P43 – P44
Soft start in heat
with fan on demand
(auto fan) active.

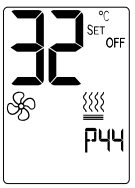




P43 – Soft start in heat – cut-in temperature (FC Only!)
The fan will not start before the temperature on T3 sensor reaches the cut-in temperature.
Please refer to technician parameters P08/P09.
Range: 14...37°C / 57…99°F
Default: 36°C / 97°F

Soft start heat cut-in temperature
(°C) **(°F)**

P44 – Soft start in heat – cut-out temperature (FC Only!)
The fan will stop if the temperature on T3 sensor drops below the cut-out temperature.
Please refer to technician parameters P08/P09.
Range: 12...35°C / 54…95°F
Default: 32°C / 90°F

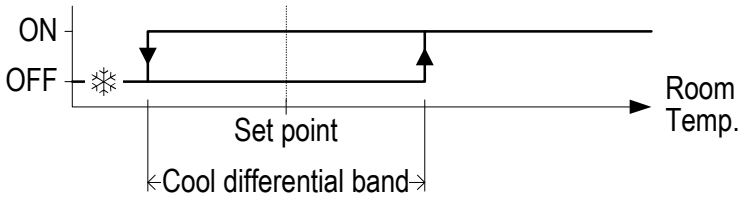


Soft start heat cut-out temperature
(°C) **(°F)**

Technician Settings (Cont')

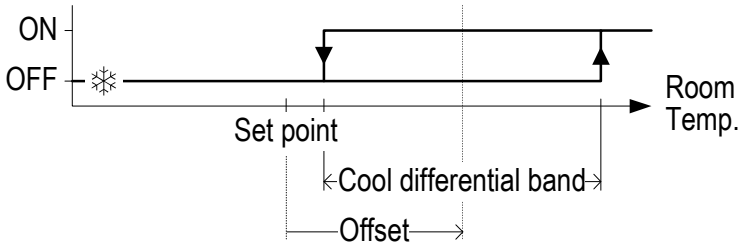
P45 – P46
Cool differential band / offset
(with cool differential band offset = 0)

—— Compressor / Valve



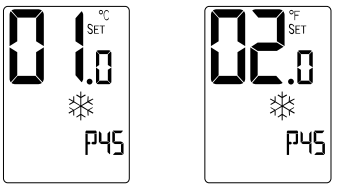
P45 – P46
Cool differential band / offset
(with cool differential band offset ≠ 0)

—— Compressor / Valve



P45 – Cool differential band

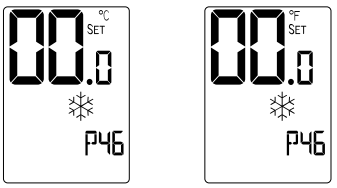
Range: 0.5...5°C / 1…10°F
Default: 1°C / 2°F



Cool differential band
(°C) (°F)

P46 – Cool differential band offset

Range: -5…+5°C / -9…+9°F
Default: 0°C / 0°F

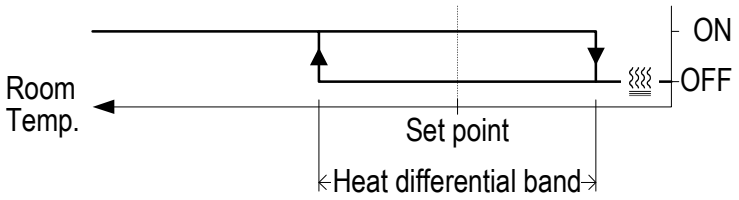


Cool differential band offset
(°C) (°F)

Technician Settings (Cont')

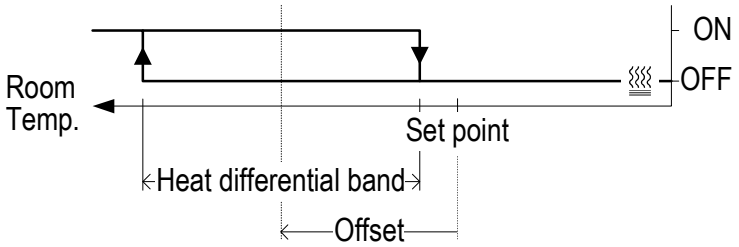
P47-48
Heat differential band / offset
(with heat differential band offset = 0)

—— Compressor / Valve



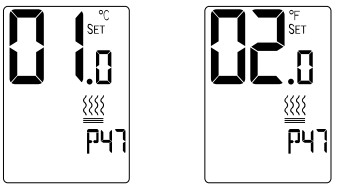
P47-48
Heat differential band / offset
(with heat differential band offset ≠ 0)

—— Compressor / Valve



P47 – Heat differential band

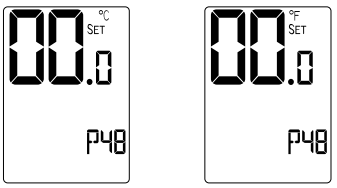
Range: 0.5...5°C / 1…10°F
Default: 1°C / 2°F



Heat differential band
(°C) (°F)

P48 – Heat differential band offset

Range: -5…+5°C / -9…+9°F
Default: 0°C / 0°F

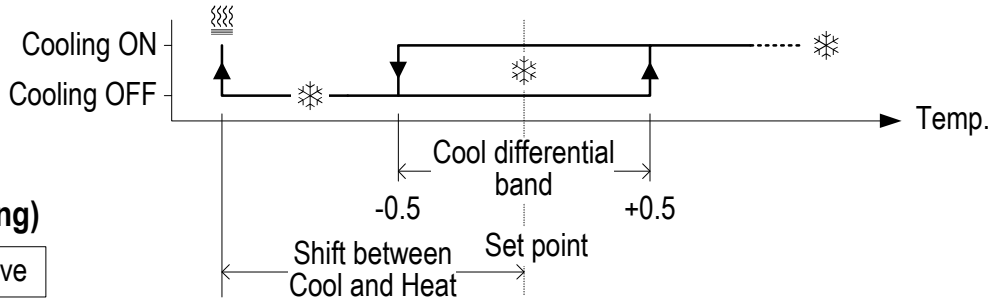


Heat differential band offset
(°C) (°F)

Technician Settings (Cont')

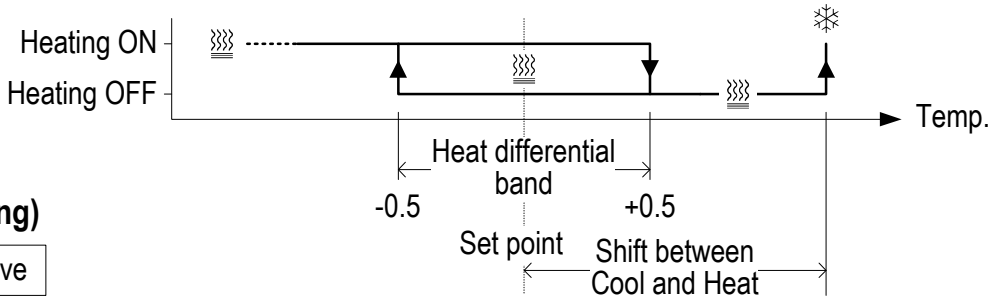
P49
Shift between
Cool and Heat
in Auto mode
(from cooling to heating)

—— Compressor / Valve



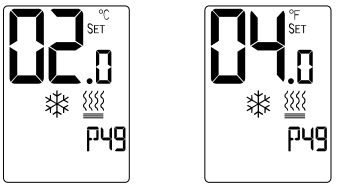
P49
Shift between
Cool and Heat
in Auto mode
(from heating to cooling)

—— Compressor / Valve



P49 – Shift between Cool and Heat in Auto change over mode

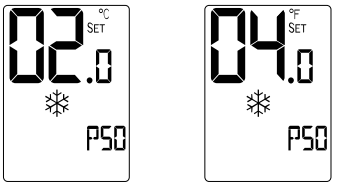
Range: 0...10°C / 0…20°F
Default: 2°C / 4°F



Shift between Cool & Heat in Auto mode
(°C) (°F)

P50 – Shift between Cooling stages (AC only!)

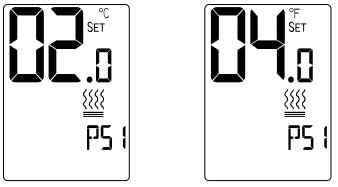
Range: 0...10°C / 0…20°F
Default: 2°C / 4°F



Shift between cooling stages
(°C) (°F)

P51 – Shift between Heating stages

Range: 0...49°C / 0…98°F
Default: 2°C / 4°F



Shift between heating stages
(°C) (°F)

Technician Settings (Cont')

P52 – Cool valve proportional band (FC Only!)

Range: 2...10°C / 4-20°F

Default: 2°C / 4°F

0-10V Valve opening from fully closed to fully open.

Cool valve proportional band (°C) (°F)

P53 – Cool proportional low limit (FC Only!)

Range: 0...100%

Default: 0%

Minimum valve opening.

Cool prop. low limit (%)

P54 – Cool proportional high limit (FC Only!)

Range: 0...100%

Default: 100%

Maximum valve opening.

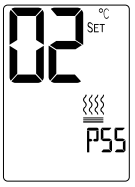
Cool prop. high limit (%)

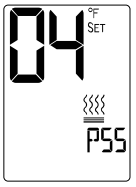
P55 – Heat valve proportional band (FC Only!)

Range: 2...10°C / 4-20°F

Default: 2°C / 4°F

0-10V Valve opening from fully closed to fully open.





Cool valve proportional band (°C) (°F)

P56 – Heat proportional low limit (FC Only!)

Range: 0...100%

Default: 0%

Minimum valve opening.

Heat prop. low limit (%)

P57 – Heat proportional high limit (FC Only!)

Range: 0...100%

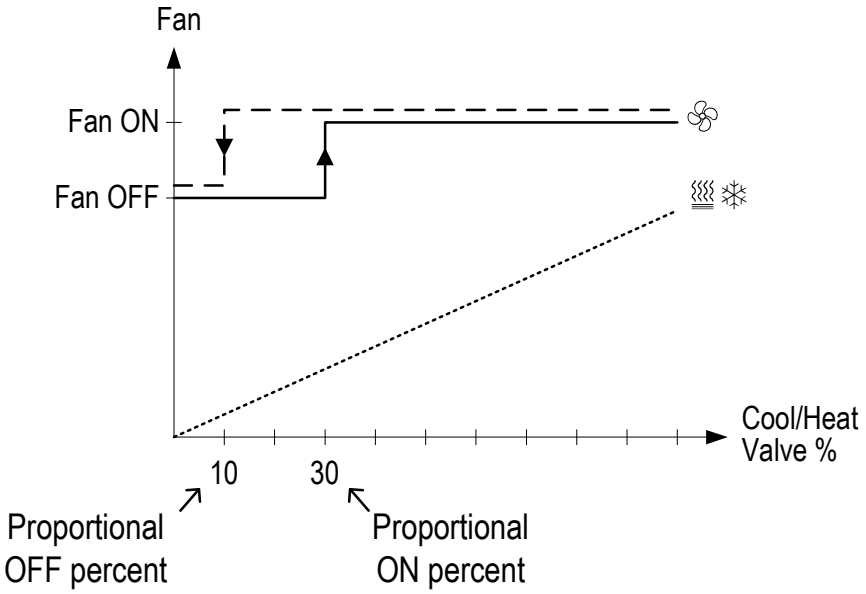
Default: 100%

Maximum valve opening.

Heat prop. high limit (%)

P60
Fan turns ON when the Cool or Heat valve reaches the "Proportional ON percent"

P61
Fan turns OFF when the Cool or Heat valve drops below the "Proportional OFF percent"



P60 – Proportional ON percent (FC Only!)
Range: 0...30%
Default: 30%

Proportional ON percent (%)

P61 – Proportional OFF percent (FC Only!)
Range: 0...100%
Default: 100%

Proportional OFF percent (%)

P63 – Time on-delay between cooling stages (AC only!)
Range: 0…600 seconds
Default: 5 seconds

On Delay cooling stages

P64 – Time off-delay between cooling stages (AC only!)
Range: 0…600 seconds
Default: 1 seconds

Off Delay cooling stages

Technician Settings (Cont')

P65 – Fan VFS proportional band in cooling

Range: 2...10°C / 4…20°F

Default: 2°C / 4°F

0-10V fan speed from off closed to fully running.

VFS Proportional band in cooling

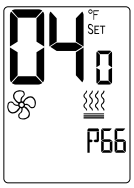
(°C) (°F)

P66 – Fan VFS proportional band in heating

Range: 2...10°C / 4…20°F

Default: 2°C / 4°F

0-10V fan speed from off closed to fully running.



VFS Proportional band in heating

(°C) (°F)

P67 – Fan VFS Low speed percent in cooling

Range: 0...30%

Default: 20%

VFS Low % in cooling

P68 – Fan VFS Medium speed percent in cooling

Range: 30...60%

Default: 50%

VFS Med % in cooling

P69 – Fan VFS High speed percent in cooling

Range: 60...100%

Default: 90%

VFS High % in cooling

P70 – Fan VFS Low speed percent in heating

Range: 0...30%

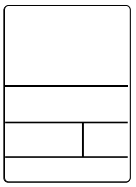
Default: 30%

VFS Low % in heating

P71 – Fan VFS Medium speed percent in heating

Range: 30...60%

Default: 50%

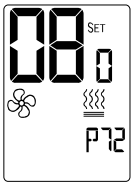


VFS Med % in heating

P72 – Fan VFS High speed percent in heating

Range: 60...100%

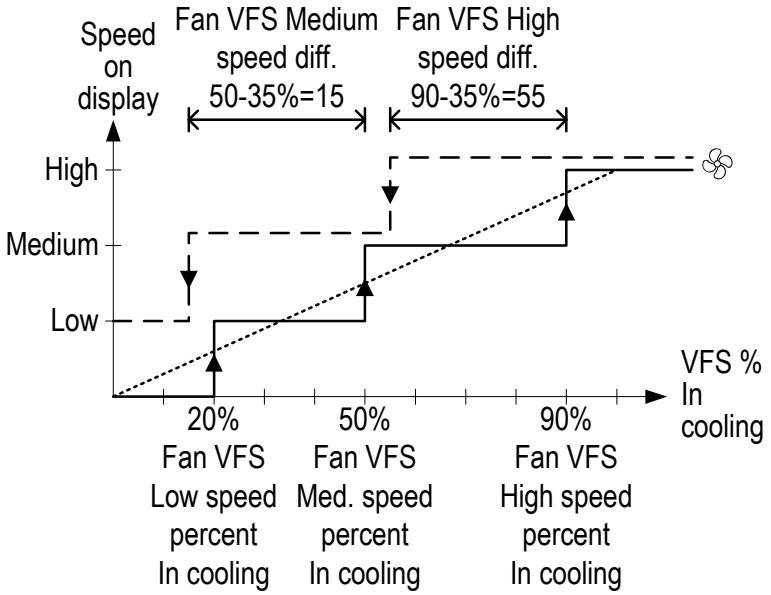
Default: 80%



VFS High % in heating

P74
VFS Medium speed differential
(display from medium to low)

P75
VFS High speed differential
(display from high to medium)



P74 – VFS Medium speed differential

Range: 10...50%

Default: 35

VFS Med speed differential

P75 – VFS High speed differential

Range: 10...50%

Default: 35

VFS High speed differential

Technician Settings (Cont')

P76 – Fan VFS Low limit in cooling

Range: 0...100%

Default: 0%

VFS low limit in cooling

P77 – Fan VFS High limit in cooling

Range: 0...100%

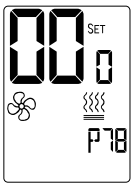
Default: 100%

VFS high limit in cooling

P78 – Fan VFS Low limit in heating

Range: 0...100%

Default: 0%

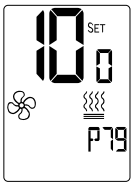


VFS low limit in heating

P79 – Fan VFS High limit in heating

Range: 0...100%

Default: 100%



VFS high limit in heating

Technician Settings (Cont')

P83 – View T2 temperature sensor readings

Note: If T2 is not connected, -9.9 will appear on display

T2 Sensor Not connected

T2 Sensor readings (°C)

P84 – View T3 temperature sensor readings

Note: If T3 is not connected, -9.9 will appear on display

T3 Sensor Not connected

T3 Sensor readings (°C/°F)

P85 – Deice in cool – cut-in temperature (AC only!)

Range: -9.5…+8°C / 15...46°F Default: 0°C / 32°F

The indoor unit coil temperature in which deicing will start.

Deice in cool cut-in temperature (°C) (°F)

P86 – Deice in cool – cut-out temperature (AC only!)

Range: 2...20°C / 36...68°F Default: 8°C / 46°F

The indoor unit coil temperature in which deicing will stop.

Deice in cool cut-out temperature (°C) (°F)

P87 – Deice in heat time (AC only!)

Range: 2...7 Minutes

Default: 5 Minutes

The length of deicing procedure.

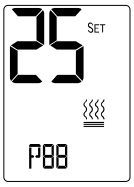
Deice in heat time

P88 – Deice in heat break time (AC only!)

Range: 10...30 Minutes

Default: 25 Minutes

The time interval between deicing cycles.



Deice in heat break time

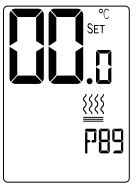
Technician Settings (Cont')

P89 – Deice in heat – cut-in temperature (AC only!)

Range: -9.5…+8°C / 15...46°F

Default: 0°C / 32°F

The outdoor unit coil temperature in which deicing will start.



Deice in heat cut-in temperature (°C)

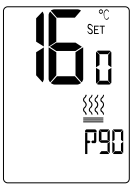
(°F)

P90 – Deice in heat – cut-out temperature (AC only!)

Range: 2...20°C / 35...68°F

Default: 16°C / 61°F

The outdoor unit coil temperature in which deicing will stop.



Deice in heat cut-out temperature (°C)

(°F)

P91 – Compressor delay (AC only!)

Range: 0...360 Seconds

Default: 240 Seconds

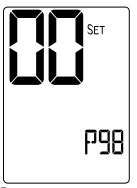
DIP Switch SW3.5 must be in "OFF" position – compressor delay enabled!

Compressor delay

P98 – Display set point only (hide room temperature)

"00" - Display both set point and room temperatures

"01" - Display only the set point temperature



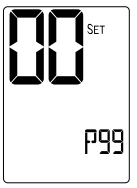
Show room temperature

Hide room temperature

P99 – One or Two set points (for cool and for heat)

"00" - One set point for cooling and heating

"01" - Two set points – one for cool and one for heat



One set point

Two set points

Technician Settings (Cont')

P114 – Cool PID Kp (FC Only!)

Range: 0...100%

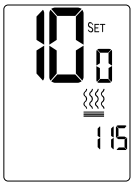
Default: 100%

Cool PID Kp

P115 – Heat PID Kp (FC Only!)

Range: 0...100%

Default: 100%

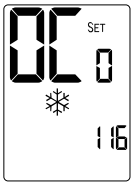


Heat PID Kp

P116 – Cool PID Ki (FC Only!)

Range: 0...100%

Default: 0%

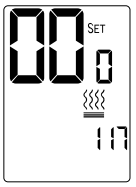


Cool PID Ki

P117 – Heat PID Ki (FC Only!)

Range: 0...100%

Default: 0%



Heat PID Ki

P118 – Cool PID Kd (FC Only!)

Range: 0...100%

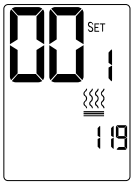
Default: 1%

Cool PID Kd

P119 – Heat PID Kd (FC Only!)

Range: 0...100%

Default: 1%



Heat PID Kd

P122 – Cool Proportional output threshold time (FC Only!)

Range: 0...100 seconds

Default: 60 seconds

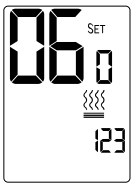
Cool proportional threshold time

Technician Settings (Cont')

P123 – Heat Proportional output threshold time (FC Only!)

Range: 0...100 seconds

Default: 60 seconds



Heat proportional Threshold time

P160 – Minimum compressor ON time (AC Only!)

Range: 0...20 minutes

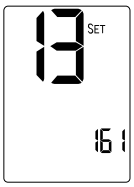
Default: 2 minutes

Minimum compressor ON time

P161 – Minimum compressor OFF time (AC Only!)

Range: 0...20 minutes

Default: 13 minutes

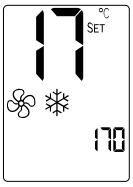


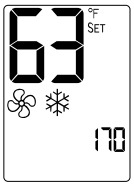
Minimum compressor OFF time

P170 – Economizer low limit temperature

Range: 9...27ºC / 48...80ºF

Default: 17ºC / 63ºF

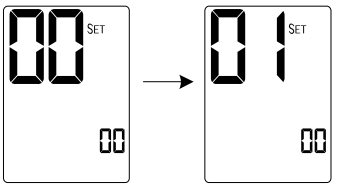




Economizer low limit temperature (°C) **(°F)**

P00 – Restore defaults

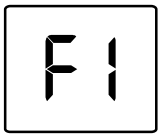
- Press the [+] button – the display will change from "00" to "01".
- Press the [On/Off] button to restore default settings.
- The thermostat will turn Off.



Restore defaults

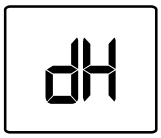
Press the [On/Off] button or wait 60 seconds to return to normal display.

Alarms and Indications



T1 Internal sensor or T1 External sensor fault

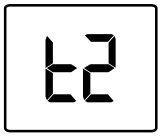
Deicer in cool indication



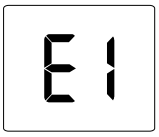
Deicer in heat indication

Overheat in heat

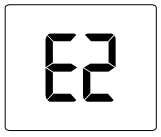
Overheat in cool



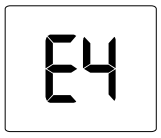
Teconomizer sensor fault



Economy by:
- Window contact - Remote on/off switch
- Window contact - Remote economy switch



Economy by External PIR



Economy by door switch

Economy by key-tag

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