ComfortVu™ BACnet Thermostat Model Standard TB-HM (Line voltage)

Installation and Operation Guide

 • Catalog No. 11-808-725-01 • 1/26/2024

Verify that you have the most current version of this document from **www.hvacpartners.com**, the **Carrier Partner Community** website, or your local Carrier office.

Important changes are listed in **Document revision history** at the end of this document.

Contents

Overview

The Carrier Corporation ComfortVu™ BACnet Thermostat Model TB-HM can be used:

- As a stand-alone thermostat that can control equipment using built-in logic
- As part of an MS/TP network of BACnet Thermostats that can be managed from a BMS front-end system
- As part of a BACnet MS/TP network connected to the Carrier Corporation BACnet router in a i-Vu® system. The router's control programs provide trending and alarming of the BACnet Thermostat's data.

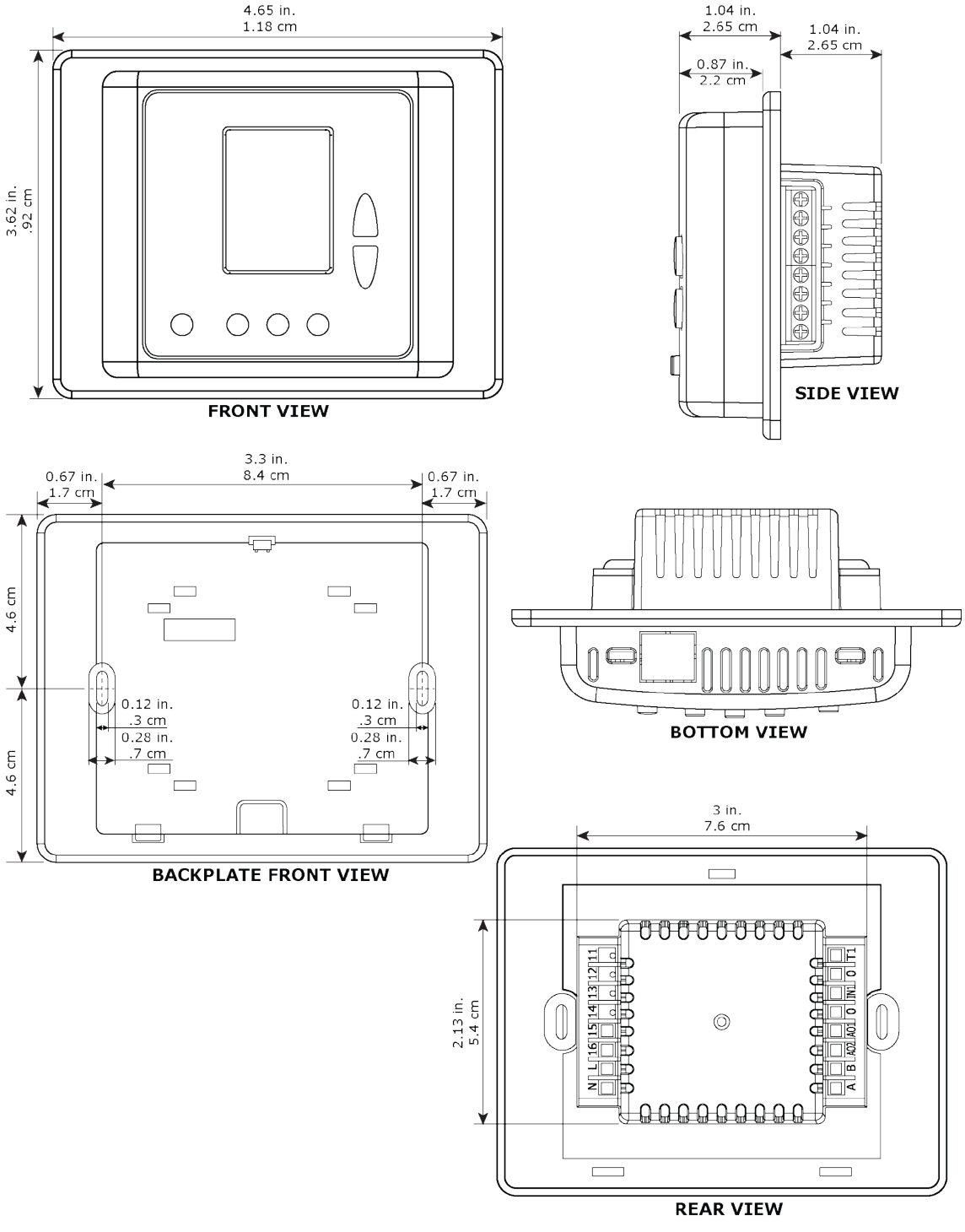
The TB-HM thermostat has a white plastic enclosure with an LCD display and buttons for user control. It has on-board temperature sensing, and its on-board inputs and outputs are used to control equipment and optional external sensing devices. Inputs and outputs are configured using DIP switches and jumpers. The TB-HM thermostat requires line voltage.

Specifications

Sensing element:	Range	Accuracy
Temperature	41° F to 95° F (5° C to 35° C)	±1.0° F (0.5° C)
Humidity	10% to 90 %	±3.0% typical
Motion Sensing:		
Sensor Type	PIR, quad, omnidirectional	
Distance	16.4 feet (5m)	
Detection range	(HxV) 90° x 30°	
Movement speed	2.62 to 3.94 ft/s (0.8 to 1.2 m/s)	
Detection object	15.75 x 9.84 in. (400 x 250 mm)	
Power	85-240 Vac line voltage: 1.5 VA unit, 920 VA full load **NOTE** Devices connected to outputs, such as a fan, will increase VA requirements.	
Communication	BACnet MS/TP with baud rates up to 76.8 kbps (default baud rate is 38.4 kbps), detected and set automatically by the BACnet Thermostat. Max 127 devices.	
Inputs	T1, 0 – Normally open or normally closed dry contract, or 0-10 Vdc analog input, or 50 kOhm thermistor @ 25°C A, B - Communication +/- (RS485) IN1, 0 - Normally open or Normally closed dry contract, or 0-10 Vdc analog input, or 50 kOhm thermistor @ 25°C C, R - Power: 24 Vac	
Outputs	11, 12, 13 – Digital outputs, 3A max. 14 – Digital outputs 0.3A max. 15 and 16 – Depends on application. Digital output 0.3A max., or Analog output 0-10 Vdc, 5 mA max., not isolated	
Environmental operating range	50° to 122° F (10° to 50° C), 10 to 90% relative humidity, non-condensing	
Mounting	ınt on a standard 4" x 2" electrical box using provided 6/32 x 1/2” mounting	
Weight	4.8 oz (0.14 kg)	

Compliance	United States of America: FCC CFR47, Chapter 1, Subchapter A, Part 15, Class B Canada: Industry Canada Compliant, ICES-003, Class B Europe: CE Mark, Low Voltage Directive: 2014/35/EU RoHS Compliant: 2011/65/EU Australia and New Zealand:  C-Tick Mark, AS/NZS 61000-6-3 Title 24 compliant if connected to a BMS with custom programming for economizer fault detection. CA Prop 65 Warning: This product can expose you to chemicals including Styrene and 1,3 - Propane sultone, which are known to the State of California to cause cancer. For more information, go to www.p65warnings.ca.gov.

TBPL-24-H Dimensions



Technician Settings Index

P75 – VFS High speed differential
P76 – Fan VFS Low limit in cooling
P77 – Fan VFS High limit in cooling
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P79 – Fan VFS High limit in heating
P83 – View T2 temperature sensor readings
P84 – View T3 temperature sensor readings
P85 – Deice in cool – cut-in temperature
P86 – Deice in cool – cut-out temperature
P87 – Deice in heat time
P88 – Deice in heat break time
P89 – Deice in heat – cut-in temperature
P90 – Deice in heat – cut-out temperature
P91 – Compressor delay
P98 – Display set point only (hide room temperature)
P99 – One or Two set points
P101 – Screen dimming delay
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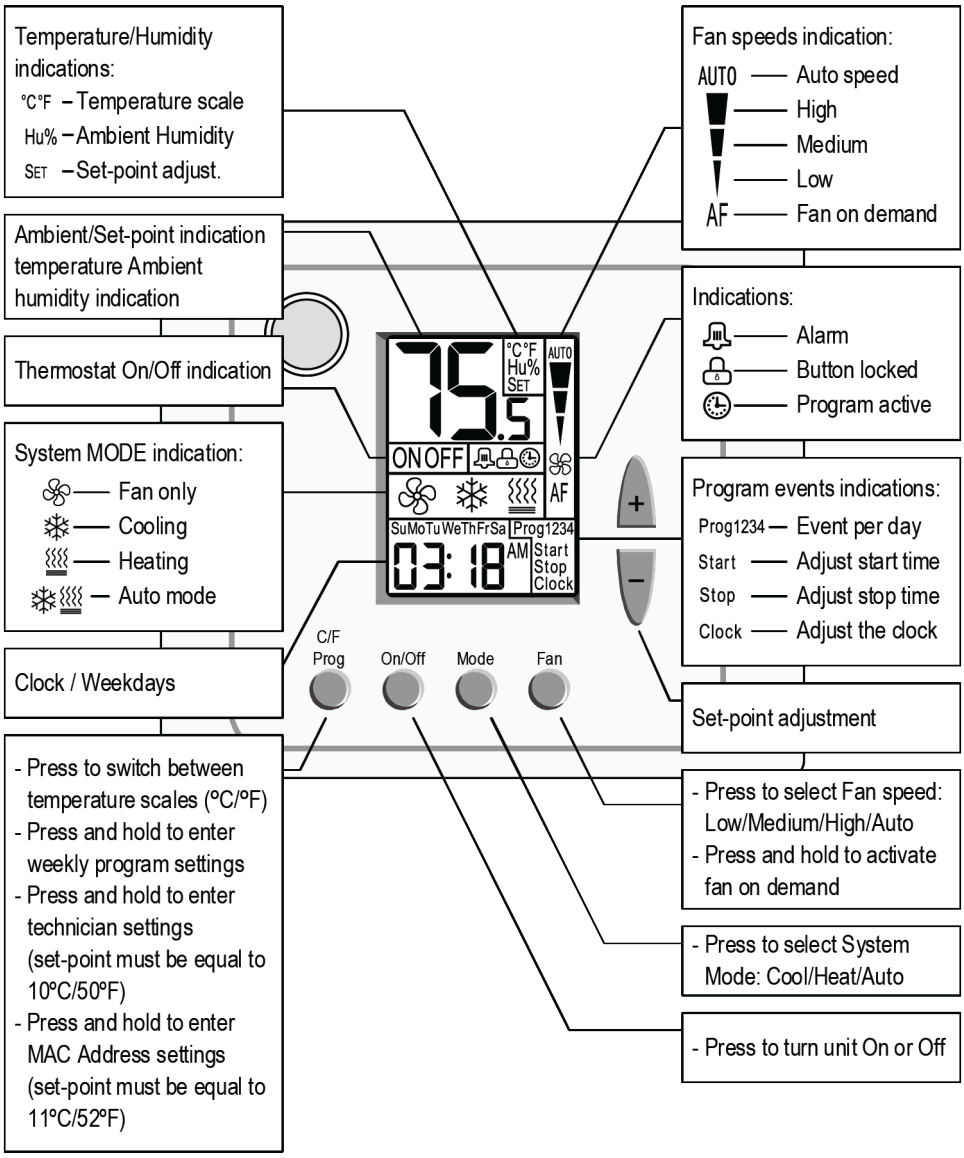
P170 – Economizer low limit temperature
P193 – Display switching time (between temp and hum)
P194 – Humidity differential band
P195 – Humidity sensor reading offset
Dead zone between humidification and dehumidification
Humidity setpoint
P198 – Not in use
P200 – Restore defaults

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

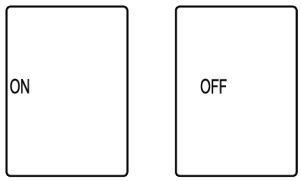
Operating Instructions

Quick Guide



Turning the thermostat ON and OFF

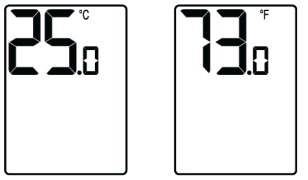
Press the [On/Off] button to turn the thermostat ON or OFF.



ON OFF

Selecting temperature scale

e [C/F] button to switch between temperature scales.



Celsius Fahrenheit

Adjusting the Setpoint temperature

Note: The setpoint must be different than 10, 11°C/50, 52°F.

Set point

In One setpoint configuration:

1 Press the [+] or [-]buttons once to view the setpoint temperature.

2 Press again to adjust the setpoint.

In Two setpoints configuration:

1 Press the [+] or [-] buttons once - "❄" and the setpoint temperature for cooling will appear on display.

2 Use the [+] or [-] buttons to adjust the setpoint for cooling.

3 Press the [Mode] button or wait 3 seconds. "♨" and the setpoint temperature for heating will appear on display.

4 Use the [+] or [-] buttons to adjust the setpoint for heating.

Setpoint For cooling

Setpoint For heating

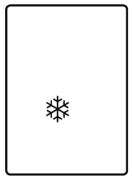
- The setpoint for cooling must be higher than the setpoint for heating.
- For humidity setpoint, see Technician Setting P197.

Selecting system mode

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

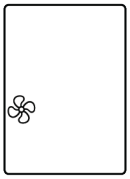
Notes:

- During demand for cooling or heating, the active mode will flash.
- In Auto mode, the active mode icon (Cool or Heat) will flash.
- Auto mode is not available in 2-Pipe system configuration.


Cool


Heat


Auto

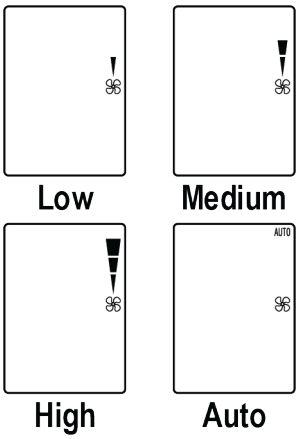

Fan only

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

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

Notes:

- In Auto speed, the active fan speed icon will appear on display.
- Medium speed available in 3 speeds configuration.
- Auto Speed in AC configurations: the differential parameter (speed change between stages) is determined by constant 0.7°C (1.4°F)
- Auto Speed in FC configurations: the differential parameter is determined by object AV#59 –DifferentialOnOffFanSpeed



Turning Auto fan ON or OFF (fan on demand)

In 1-speed configuration:

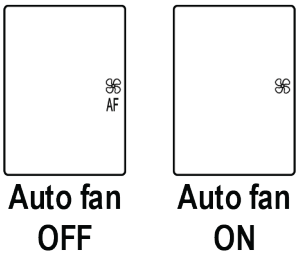
Press the [Fan] button to turn Auto fan ON or OFF.

In 2- and 3-speed configurations:

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

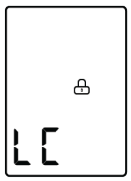
- When ON, the fan will run on demand for cooling or heating.
- When OFF, the fan will run continuously.

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



Locking the thermostat buttons

- Press and hold 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 Settings P04-P07.

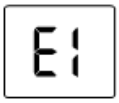
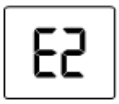
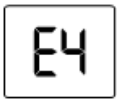
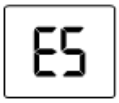


Lock indications

Lock indications

Economy mode

Activate Economy mode by triggering a window contact - remote on/off switch, window contact - remote economy switch, door switch, key-tag, External motion sensor (PIR - passive infrared sensor) or through communication - binary value “UnoccupiedByNetwork”.

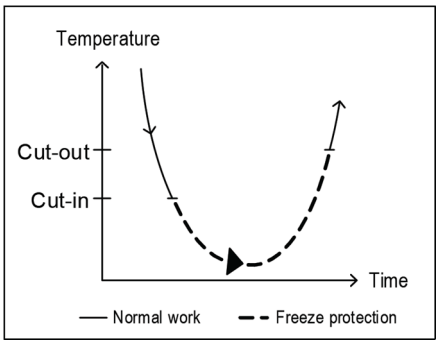
	• **Economy by Window contact – Remote On/Off switch** - Turning unit off • **Economy by Window contact – Remote economy switch** - Using economy set points Refer to technician parameters P25 and P26 for economy set points
	**Economy by External motion sensor (PIR**) or through **Communication** (binary value “UnoccupiedByNetwork”) Refer to technician parameter P15 “Occupancy sensor logic (PIR)”
	**Economy triggered by Door switch** Refer to technician parameter P18 “Door switch or key tag configuration”
	**Economy** by Key-tag Refer to technician parameter P18 “Door switch or key tag configuration”

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") or by setting a temperature value manually through communication - AV#129 "TEconomizerEffective".

When getting the temperature through communication, terminals T1,0 can be used for any other functionality like External sensor/Soft start in heat sensor/De-icing in cool/Door switch/Key tag.

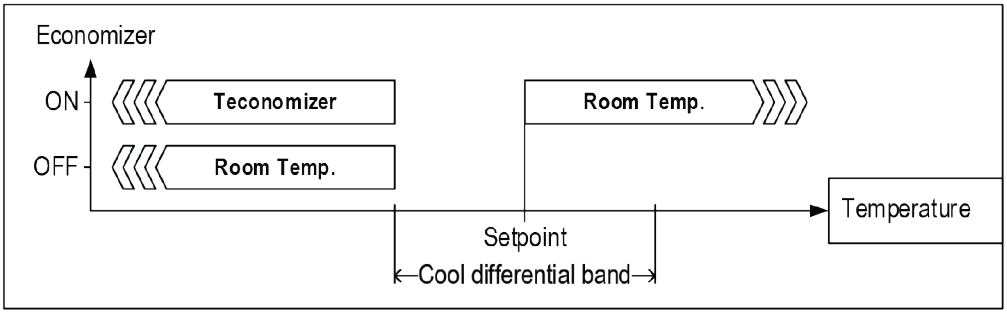
Whenever there is demand for cooling and the outdoor temperature conditions allow the operation of the economizer, it will operate together with the regular cooling system and will not replace it.

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

1. Teconomizer temperature < Room temperature - (Cool differential band / 2)
2. Room Temperature > Setpoint temperature

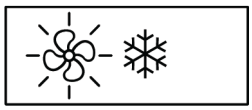
Economizer will stop when the following condition is satisfied:

Room Temperature < Setpoint temperature - (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

Weekly program

General

Prior to programming, make sure that Technician Settings P107, P108, and P109 are configured correctly.

Program types

The thermostat can be configured to run four different types of weekly programs (set by Technician Setting P107):

- 7-day program with same parameters for all days.
- 7-day program with different parameters for each day of the week.
- One schedule for the weekdays (Monday to Friday), one schedule for Saturday and another one for Sunday.
- One schedule for the weekdays (Monday to Friday) and another one for Saturday and Sunday.

Daily events

Each daily program can use 2 or 4 schedule events per day (set by Technician Setting P108).

There are two options for settings the schedule events (set by Technician Setting P109):

- **"EU Type"** - Start time and Stop time.
- **"US Type"** - Start time, setpoint temperatures, system mode and fan speed.

IMPORTANT

- Parameter P107 must not be equal to "0" in order to enable weekly program capabilities.
- Changing P107 to "0" will disable all program capabilities and reset programmed information.

Enabling/Temporarily Disabling/Overriding the program

- **Activate the program**
  - When the program is activated, a clock icon appears on the display. 
  - If a clock icon does not appear, ensure that the set-point temperature is not 10/11°C or 50/52°F, press and hold the  button to activate the program.

- **Temporarily disable the program** - without losing programmed information – for example, when out of the office or leaving for vacation:
  - Make sure that the set-point temperature is not 10/11°C or 50/52°F.
  - Press and hold the  button to temporarily disable the program.
  - Press and hold the  button again to reactivate to the program.

- **Override the program** - the occupant can temporarily change the set point temperature to be different than the set point temperature specified by the program. Changes remain in effect until the next program event begins.

Programming procedure

- The detailed programming procedure is described in the next sections. Make sure to follow the right programming procedure, suitable for the program type and features selected by Technician Settings.
- Press the [C/F-Prog] button to enter and proceed through the steps of the real time clock and programming procedure.
- Use the [+] or [-] buttons to select or change value of a flashing icon.
- It is recommended to select programming values prior to the actual programming.

Exit the programming procedure

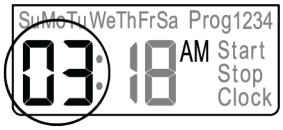
At any time during the programming procedure, press the [On/Off] button to exit and return to normal display. Any changed values will be saved.

Adjusting the time and day of the week

1. Press and hold the [C/F-Prog] button. The word “Clock” will appear on display, and the HOURS will flash.

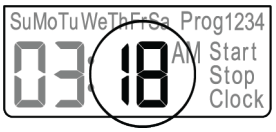
Hours

2. Use the [+] or [-] buttons to adjust the hours.



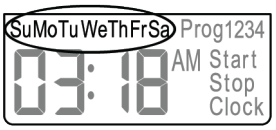
Minutes

3. Press the [C/F-Prog] button again. The MINUTES will flash.
4. Use the [+] or [-] buttons to adjust the hours.



Days

5. Press the [C/F-Prog] button again. The DAYS will flash.
6. Use the [+] or [-] buttons to select the day.



7. If Technician Setting P107 is not set to “00” (program is enabled), press the [C/F–Prog] button to enter programming procedure. Be sure to follow the right programming procedure, suitable for the program type and features selected by Technician Settings.

   Section C – “EU Type”

   Section D – “US Type”

Otherwise, press the [C/F-Prog] button to return to normal display.

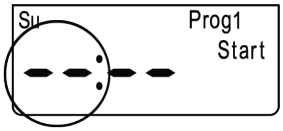
Adjusting “EU type” daily programs

Start time

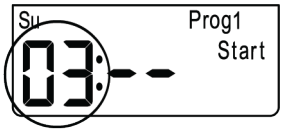
1. Press the [C/F–Prog] button. The programmed weekday(s), “Prog 1” indicating the first program event of the day and the word “Start” will appear on display.

   The HOURS will flash.

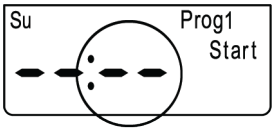
   Note: If this is the first time a program is being set, the symbols “--“ will flash.



2. Use the [+] and [-] buttons to adjust the start time hours of the first event.



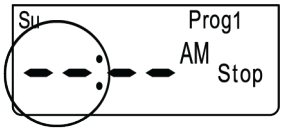
3. Press the [C/F–Prog] button again. The MINUTES will flash.



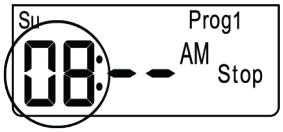
4. Use the [+] and [-] buttons to adjust the start time minutes of the first event.

Stop time

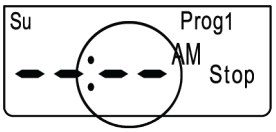
5. Press the [C/F – Prog] button again. T the word “Stop” will appear on display, and the HOURS will flash.



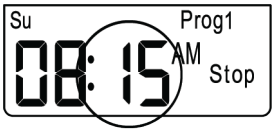
6. Use the [+] and [-] buttons to adjust the stop time hours of the first event



7. Press the [C/F–Prog] button again. The MINUTES will flash



8. Use the [+] and [-] buttons to adjust the stop time minutes of the first event



- **Follow the steps above for the other schedule events of the same daily period (P2 for two events per day, or P2, P3, and P4 for four events per day).**
- **Follow the steps above for all daily periods.**

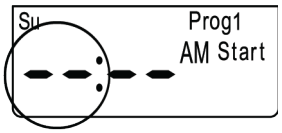
Adjusting “US type” daily programs

Start time

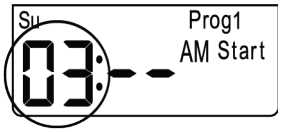
1. Press the [C/F–Prog] button. The programmed weekday(s), “Prog 1” indicating the first program event of the day and the word “Start” will appear on display.

The HOURS will flash.

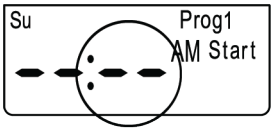
Note: If this is the first time a program is being set, the symbols “--“ will flash.



2. Use the [+] and [-] buttons to adjust the start time hours of the first event.



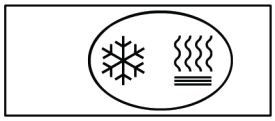
3. Press the [C/F–Prog] button again. The MINUTES will flash.



4. Use the [+] and [-] buttons to adjust the start time minutes of the first event.

System mode and fan speed

5. Press the [C/F–Prog] button again. The system MODES will flash.



6. Use the [+] and [-] buttons to select the system mode of the first event

7. Press the [C/F–Prog] button again. The FAN SPEEDS will flash.

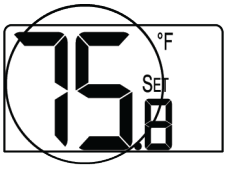
8. Use the [+] and [-] buttons to select the fan speed of the first event.

Setpoint

1. Press the [C/F – Prog] button again. The setpoint will flash.

Note: If the thermostat is configured to have two setpoints, first adjusts the setpoint for cooling and then the setpoint for heating.

2. Use the [+] and [-] buttons to adjust the setpoint of the first event.



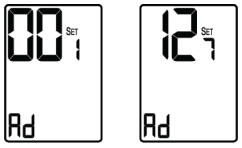
- **Follow the steps above for the other schedule events of the same daily period (P2 for two events per day, or P2, P3 and P4 for four events per day).**
- **Follow the steps above for all daily periods.**

MAC Address and BACnet Device Instance Number

MAC Address

To set the communication MAC Address:

1. Adjust the setpoint temperature to 11°C or 52°F.
2. Press and hold the [C/F] button for 10 seconds to enter MAC Address configuration mode.
3. Use the [+] or [-] buttons to define the MAC Address (range 1...127).
4. When finished, press the [On/Off] button and readjust the setpoint.
5. Switch power supply off and on again for the MAC address changes to take effect.



MAC Address
1...127

Caution: Do not use the same MAC address for two devices on the same communication bus!

BACnet Device Instance Number

By default, the BACnet Device Instance Number is generated automatically by the thermostat (Vendor ID + MAC address). For example, Carrier Corporation vendor ID is 16, and if the MAC address is 075, the BACnet Device Instance Number is 16075.

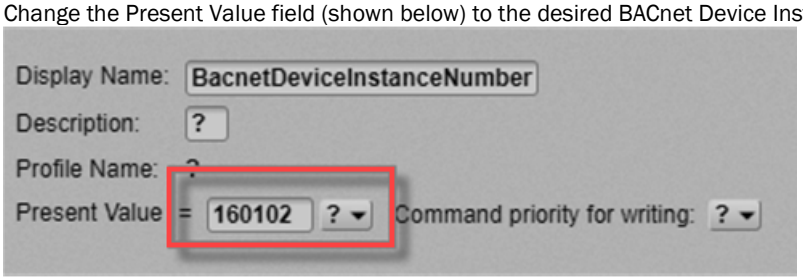
Note: If you change the MAC address, you must cycle the thermostat's power to reset the BACnet Device Instance Number.

You can override the automatically-generated BACnet Device Instance Number using the i-Vu® application, an Analog Network Output microblock in a control program, or some other BACnet utility. Write the new BACnet Device Instance Number to the present_value property of Analog Value 42 (BACnetDeviceInstanceNumber).

Examples:

In the i-Vu® application

1. Use the BACnet Discovery feature to discover the BACnet Thermostat and its BACnet objects.
2. In the navigation tree, select the Analog Value called BacnetDeviceInstanceNumber.
3. Change the Present Value field (shown below) to the desired BACnet Device Instance Number.



4. Click Accept.

In an Analog Network Output microblock

To change the BACnet Device Instance Number from 16075 to 16113, the microblock's address would be:

`bacnet://16075/AV:42/present_value`, or

`bacnet://16075/BACnetDeviceInstanceNumber`

Subsequent reads/writes of this value will need to be done with the new device instance:

`bacnet://16113/AV:42/present_value`, or

`bacnet://16113/BACnetDeviceInstanceNumber`

Installation

Mount the BACnet Thermostat on an interior wall in the room to be controlled. Locate it 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, place the thermostat where the temperature is representative of the general room conditions. Avoid cold or warm air drafts, radiant heat, and direct sunlight.

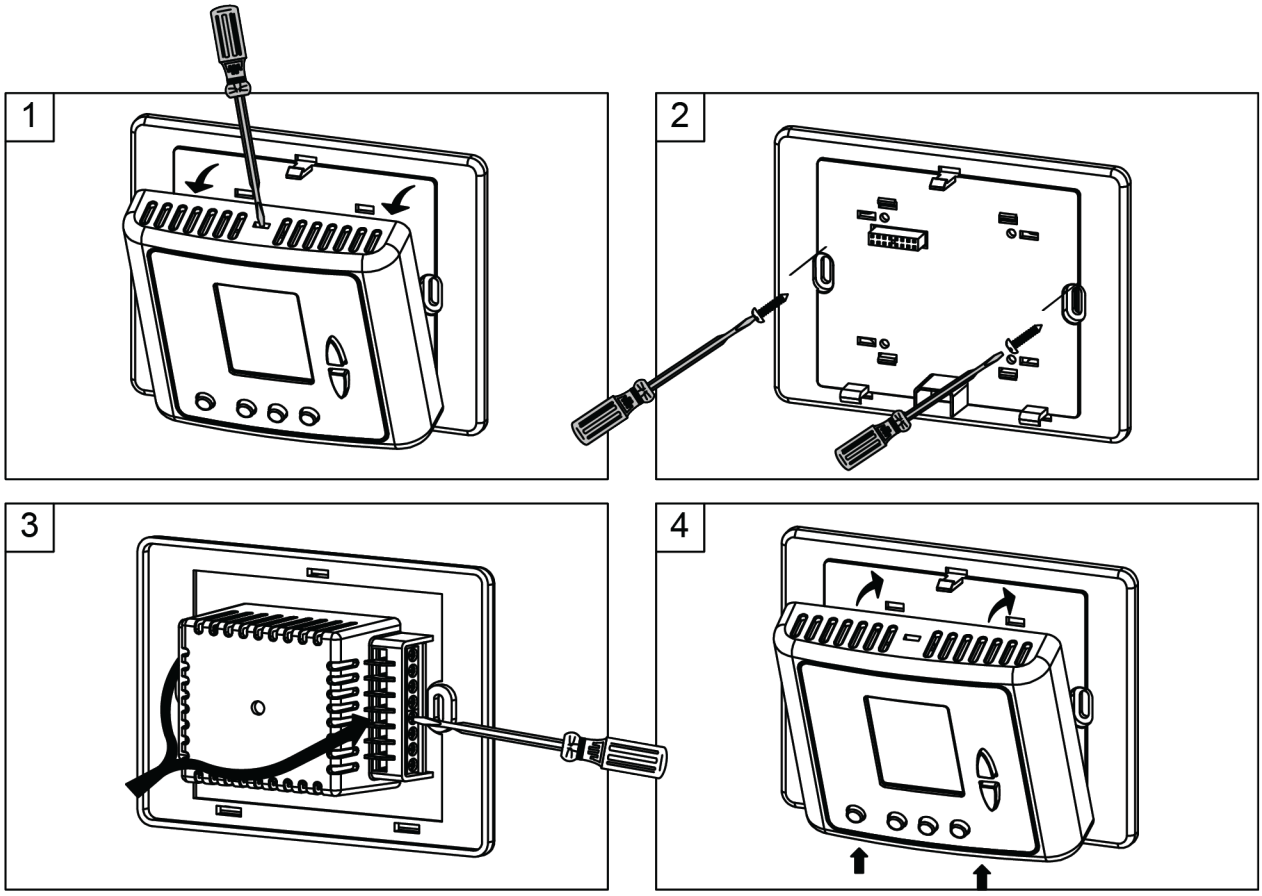
WARNING: Risk of electric shock and property damage. Disconnect power supply before making electrical connections. The installation is to be performed by a qualified electrician.

WARNING: The integrated circuits in the controller are sensitive to static currents. Take suitable precautions.

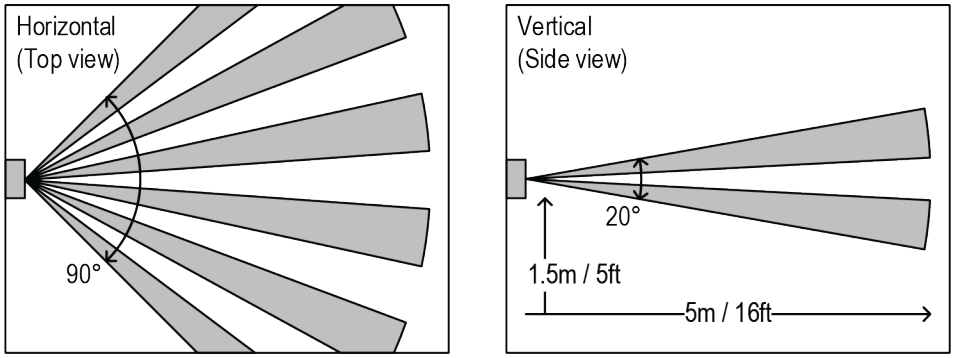
General

Installation

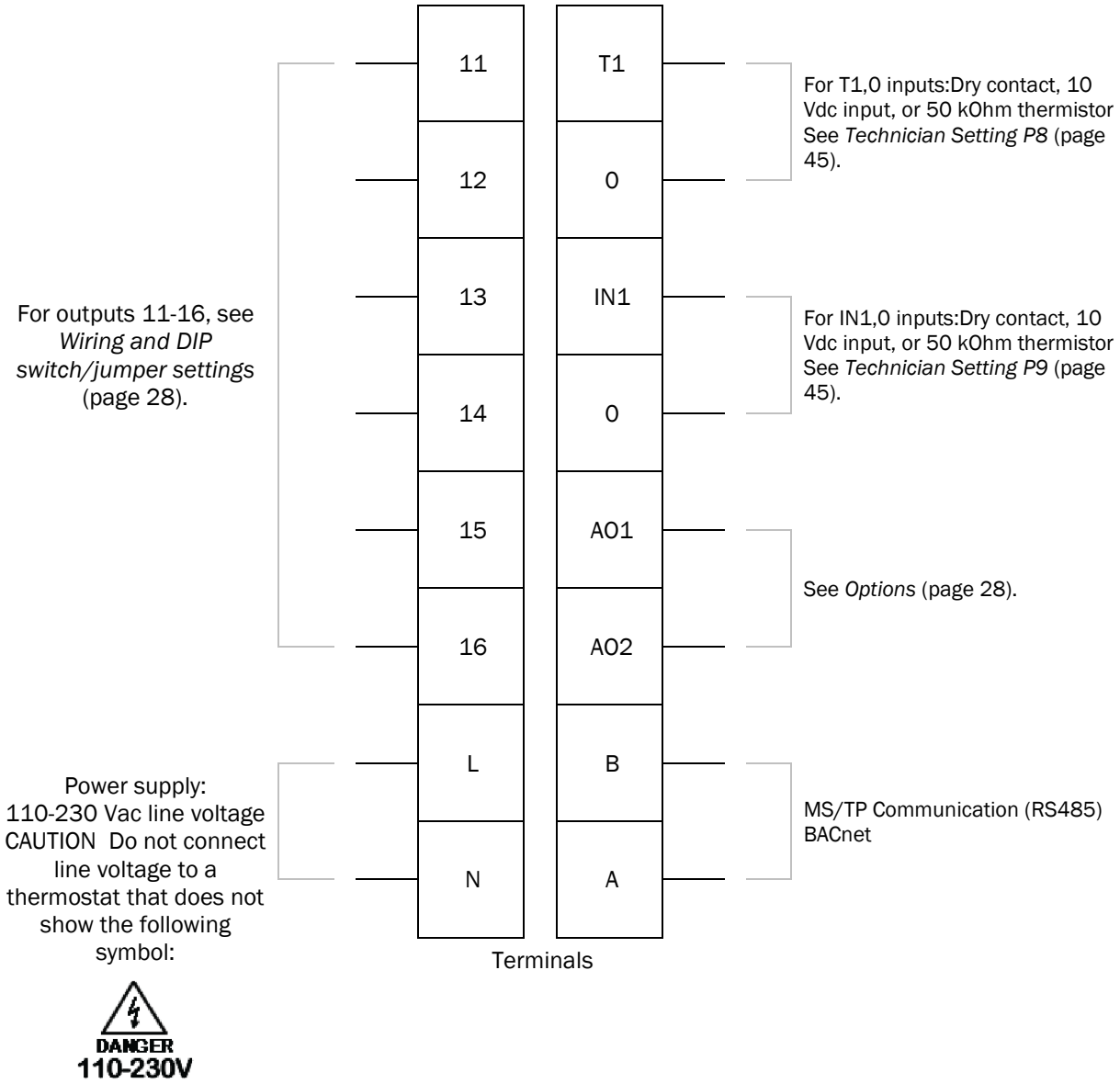
1. Separate the front display from the back plastic cover by inserting a small flat screwdriver into each of the three slots as shown in the picture and rotating it gently. Keep the front display in a safe place.
2. Connect the wires as shown in the enclosed wiring diagram. All terminals accept 1x0.5mm2/24 AWG. If necessary, make changes to the DIP switches position as explained in this manual.
3. Place the thermostat in the electrical box and tighten up the 2 screws:
   Europe - Gewiss Box - GW 24 203 or similar / US - Carlon – B114R or similar or similar
4. Adapt the front frame-panel into its place, by pushing it towards the wall.



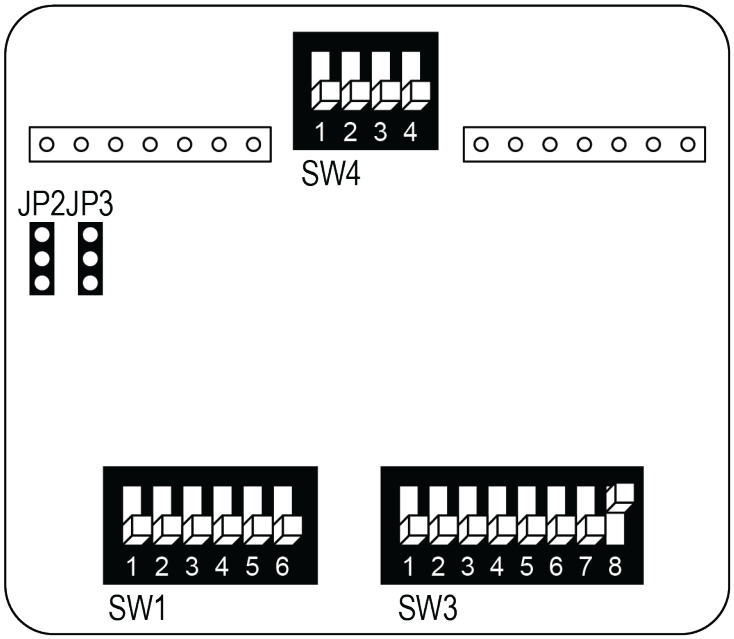
PIR detection area



Wiring terminals



DIP switch and jumper configurations

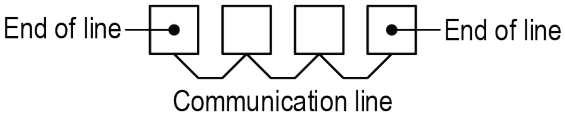


SW4.1 – Without valves control in FC config.
Enable = OFF (Open)
Disable = ON (Closed)

SW4.2 – Enable/Disable PIR detector
OFF - Enable PIR detector
ON - Disable PIR detector

SW4.3 – Not used
Always OFF

SW4.4 - End of line resistor (120Ω)
OFF = Not end of line
ON = End of line



SW1.1 through SW1.6, and SW3.1 through SW3.8

See *Wiring and DIP switch/jumper settings* (page 28).

AC configurations

Find the configuration you want in the tables below, then find that configuration number (1 through 9) on the *Wiring and DIP switch/jumper settings* (page 28).

AC Configurations **without** humidification/dehumidification

Outputs / Configuration	1	2	3	4	5	6	7	8	9
Heat elements (max.)	3	2		1	2		1	2	1
Compressors (max.)	2	2	2	1	1	1	1	2	2
Heat pump		•	•	•		•			•
Fan VFS						•	•		
Fan speeds	1	1	2 or 3	2 or 3	2 or 3			1	1
Economizer			○	○	○	○	○	○	○
Humidifier									
Dehumidifier									
Reheat (Dehumidify)									

AC Configurations with humidification/dehumidification

Outputs / Configuration	10	11		13	14	15	16	17	18	19
Heat elements	2	2	1	1	1	1	2	1		1
Compressors	2	1	1	1	2	1	1	1	1	1
Heat pump		•		•		•			•	•
Fan VFS										
Fan speeds	1	1	2 or 3	2 or 3	1	1	1	1	1	1
Economizer			○	○	○	○		○	○	
Humidifier	•	•	•		•	•	•	•	•	•
Dehumidifier							•	•	•	•
Reheat (Dehumidify)	•	•	•	•		•				

• Yes ○ Option

FC configurations for 2-pipe systems

Find the configuration you want in the tables below, then find that configuration number (20 through 23) on *Wiring and DIP switch/jumper settings* (page 33).

FC Configurations for 2-Pipe systems **without** humidification/dehumidification

Outputs / Configuration	20	21	22	23
Cl/Ht valve / Cl/Ht valve PID	•	PID	•	PID
Heat element (2nd stage)	•	•	•	•
Fan VFS			•	•
Fan speeds	1 2 3	1 2 3		
Economizer	○	○ ○	○	○
Humidifier				
Dehumidifier				
Reheat (Dehumidify)				

FC Configurations for 2-Pipe systems **with** humidification/dehumidification

Outputs / Configuration	24	25	26	27	28	29	30
Cl/Ht valve / Cl/Ht valve PID	•	PID	•	PID	•	PID	•
Heat element (2nd stage)	•	•	•	•		•	
Fan VFS			•	•			•
Fan Speeds	1 2 3	1 2 3			1 2 3	1 2 3	
Economizer	○ ○	○ ○	○	○	○ ○	○ ○	○ ○
Humidifier	•	•			•		
Dehumidifier					•	•	•
Reheat (Dehumidify)	•	•	•	•			

• Yes ○ Option

FC configurations for 4-pipe systems / Floor heating

Find the configuration you want in the tables below, then find that configuration number (31 through 39) on the *Wiring and DIP switch/jumper settings* (page 36).

FC Configurations for 4-Pipe systems without humidification/dehumidification

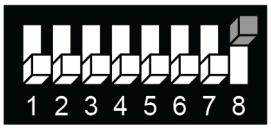
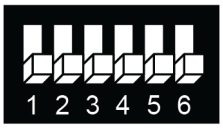
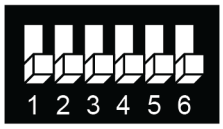
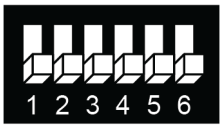
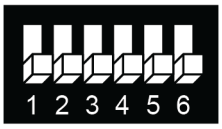
Outputs / Configuration	31	32	33	34	35	36	37	38	39
Cool valve / Cool valve PID	•	•	PID	PID	•	•	•	PID	PID
Heat valve / Heat valve PID	•	•	•	•	•	PID	PID	•	PID
Heat element (2nd stage)	•		•			•			•
Fan VFS					•		•	•	
Fan speeds	1 2 3	1 2 3	1 2 3	1 2 3		1 2 3			1 2 3
Economizer	○ ○	○ ○	○ ○	○ ○	○	○ ○	○	○	○ ○
Humidifier									
Dehumidifier									
Reheat (Dehumidify)									
Floor heating		•		•					

FC Configurations for 4-Pipe systems with humidification/dehumidification

Outputs / Configuration	40	41	42	43	44	45	46	47
Cool valve / Cool valve PID	•	PID	•	PID	•	•	PID	•
Heat valve / Heat valve PID	•	•	•	•	PID	•	•	PID
Heat element (2nd stage)	•	•						
Fan VFS								
Fan speeds	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
Economizer	○ ○	○ ○	○ ○	○ ○	○	○ ○	○	○
Humidifier			•	•	•			
Dehumidifier						•	•	•
Reheat (Dehumidify)	•	•						
Floor heating								

• Yes ○ Option

Wiring and DIP Switch configurations – AC systems 1 to 4

Outputs	Config. 1: HC32 1 Speed fan	Config. 2: HP42 1 Speed fan	Config. 3: HP22 2/3 Speeds fan	Config. 4: HP21 2/3 Speeds fan(1)
11	Heat element 3 (3rd stage heat)	Heat element 2 (4th stage heat)	Fan high	Fan high
12	Heat element 2 (2nd stage heat)	Heat element 1 (3rd stage heat)	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))
13	Fan (1 speed)	Fan (1 speed)	Fan low	Fan low
14	Compressor 2(3)	Compressor 2(3)	Compressor 2(3)	Heat element (2nd stage heat)
15	Compressor 1(3)	Compressor 1(3)	Compressor 1(3)	Compressor(3)
16	Heat element 1(2) (1st stage heat)	Heat pump(2)	Heat pump(2)	Heat pump(2)
SW3				
SW1				
A01	X	X	X	X
A02	X	X	X	X

(1) SW3.1, SW3.2 – Fan speeds: 2 speeds (Low and High): SW3.1 = OFF, SW3.2 = ON
3 speeds (Low, Med., and High): SW3.1 = OFF, SW3.2 = OFF

(2) SW3.4 – HP (Heat pump): ON = Heat pump active in cool, OFF = Heat pump active in heat
HC (not heat pump): ON = Electrical heater, OFF = Oil/Gas heater (no fan)

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

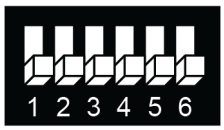
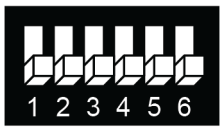
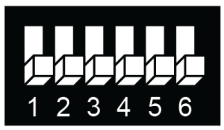
(4) SW1.3 – Dehumidification: ON = Use dehumidifier, OFF = Use reheat for dehumidification

(5) SW1.6 – Terminal 12 operation: ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (2 speeds)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max.
Control - Heat elements, Heat pump, Compressors, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 5 to 7 – AC systems

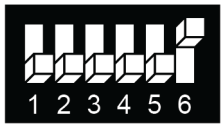
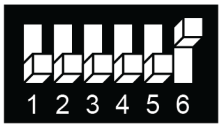
Outputs	Config. 5: HC21 2/3 Speeds fan	Config. 6: HP11 Fan VFS	Config. 7: HC11 Fan VFS
11	Fan high	X	X
12	Fan medium (or Economizer[5])	Economizer[5] (option – SW1.6 ON)	Economizer[5] (option – SW1.6 ON)
13	Fan low	X	X
14	Heat element 2 (2nd stage heat)	Heat pump[2]	Heat element[2]
15	Compressor [3]	Compressor[3]	Compressor 1[3]
16	Heat element 1(2) (1st stage heat)	X	X
AO1	X	X	X
AO2	X	Fan VFS	Fan VFS
SW3			
SW1			

[1] SW3.1, SW3.2 – Fan speeds:	2 speeds (Low and High): 3 speeds (Low, Med., and High):	SW3.1 = OFF, SW3.2 = ON SW3.1 = OFF, SW3.2 = OFF
[2] SW3.4 – HP (Heat pump): HC (not heat pump):	ON = Heat pump active in cool, OFF = Heat pump active in heat ON = Electrical heater, OFF = Oil/Gas heater (no fan)	
[3] SW3.5 – Compressor delay:	ON = Disable, OFF = Enable	
[4] SW1.3 – Dehumidification:	ON = Use dehumidifier, OFF = Use reheat for dehumidification	
[5] SW1.6 – Terminal 12 operation:	ON = Economizer OFF = Fan Medium (3 speeds) / Terminal not in use (2 speeds) Important: Economizer will not work in 3 fan speeds configuration.	

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Fan VFS: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Heat pump, Compressors, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 8 to 9 – AC systems

Outputs	Config. 8: HC22 1 Speed fan, Economizer,	Config. 9: HP32 1 Speed fan, Economizer
11	Heat element 2 (2nd stage heat)	Heat element (3rd stage heat)
12	Economizer(5) (option – SW1.6 ON)	Economizer(5) (option – SW1.6 ON)
13	Fan (1 speed)	Fan (1 speed)
14	Compressor 2	Compressor 2
15	Compressor 1(3)	Compressor 1(3)
16	Heat element 1(2) (1st stage heat)	Heat pump(2)
A01	X	X
A02	X	X
SW3		
SW1		

(1) SW3.1, SW3.2 – Fan speeds: 2 speeds (Low and High): SW3.1 = OFF, SW3.2 = ON
3 speeds (Low, Med., and High): SW3.1 = OFF, SW3.2 = OFF

(2) SW3.4 – HP (Heat pump): ON = Heat pump active in cool, OFF = Heat pump active in heat
HC (not heat pump): ON = Electrical heater, OFF = Oil/Gas heater (no fan)

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

(4) SW1.3 – Dehumidification: ON = Use dehumidifier, OFF = Use reheat for dehumidification

(5) SW1.6 – Terminal 12 operation: ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (2 speeds)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max.
Control - Heat elements, Heat pump, Compressors, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 10 to 13 – AC systems

w/wo Humidifier for humidification, with Reheat for dehumidification

Outputs	Config. 10: HC22 1 Speed fan, Humidifier, Reheat for Dehumidification	Config. 11: HP31 1 Speed fan, Humidifier, Reheat for Dehumidification	Config. 12: HC11 2/3 Speeds fan, Humidifier, Reheat for Dehumidification	Config. 13: HP21 2/3 Speeds fan, Reheat for Dehumidification
11	Heat element 2 (2nd stage heat)	Heat element 2 (3rd stage heat)	Fan high	Fan high
12	Heat element 1(2) (1st stage heat)	Heat element 1(2) (2nd stage heat)	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))
13	Fan (1 speed)	Fan (1 speed)	Fan low	Fan low
14	Compressor 2	Heat Pump(2)	Heat element(2)	Heat element(2) (2nd stage heat)
15	Compressor 1(3)	Compressor(3)	Compressor(3)	Compressor(3)
16	X	X	X	Heat pump(2)
AO1	X	X	X	X
AO2	Humidifier	Humidifier	Humidifier	
SW3				
SW2				

(1) SW3.1, SW3.2 – Fan speeds: 2 speeds (Low and High): SW3.1 = OFF, SW3.2 = ON
3 speeds (Low, Med., and High): SW3.1 = OFF, SW3.2 = OFF

(2) SW3.4 – HP (Heat pump): ON = Heat pump active in cool, OFF = Heat pump active in heat
HC (not heat pump): ON = Electrical heater, OFF = Oil/Gas heater (no fan)

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

(4) SW1.3 – Dehumidification: ON = Use dehumidifier, OFF = Use reheat for dehumidification

(5) SW1.6 – Terminal 12 operation: ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (2 speeds)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Humidifier: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Heat pump, Compressors, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 14 to 15 – AC systems

with Humidifier for humidification

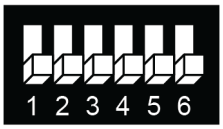
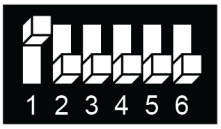
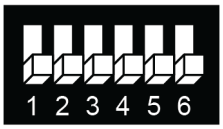
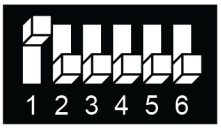
Outputs	Config. 14: HC12 1 Speed fan, Humidifier	Config. 15: HP31 1 Speed fan, Humidifier, Reheat for Dehumidification
11	Heat element 2(2)	Heat element(2) (2nd stage heat)
12	Economizer(5) (option – SW1.6 ON)	Economizer(5) (option – SW1.6 ON)
13	Fan (1 speed)	Fan (1 speed)
14	Compressor 2	Heat Pump(2)
15	Compressor 1(3)	Compressor(3)
16	X	X
AO1	X	X
AO2	Humidifier	Humidifier
SW3		
SW1		

(1) SW3.1, SW3.2 – Fan speeds:	2 speeds (Low and High): 3 speeds (Low, Med., and High):	SW3.1 = OFF, SW3.2 = ON SW3.1 = OFF, SW3.2 = OFF
(2) SW3.4 – HP (Heat pump): HC (not heat pump):	ON = Heat pump active in cool, OFF = Heat pump active in heat ON = Electrical heater, OFF = Oil/Gas heater (no fan)	
(3) SW3.5 – Compressor delay:	ON = Disable, OFF = Enable	
(4) SW1.3 – Dehumidification:	ON = Use dehumidifier, OFF = Use reheat for dehumidification	
(5) SW1.6 – Terminal 12 operation:	ON = Economizer OFF = Fan Medium (3 speeds) / Terminal not in use (2 speeds) Important: Economizer will not work in 3 fan speeds configuration.	

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Humidifier: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Heat pump, Compressors, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switches configurations 20 to 23 – FC systems - 2-pipe

Outputs	Config. 20: 2-Pipe, 1/2/3 Speeds fan[1]	Config. 21: 2-Pipe, 1/2/3 Speeds fan[1], Cool/Heat PID	Config. 22: 2-Pipe, Fan VFS	Config. 23: 2-Pipe, Fan VFS, Cool/Heat PID
11	Fan high	Fan high	X	X
12	Fan medium (or Economizer[5])	Fan medium (or Economizer[5])	Economizer[5] (option – SW1.6 ON)	Economizer[5] (option – SW1.6 ON)
13	Fan low	Fan low	X	X
14	Heat element[2] (2nd stage heat)	Heat element[2] (2nd stage heat)	Heat element[2] (2nd stage heat)	Heat element[2] (2nd stage heat)
15	Cool/heat valve[3]	X	Cool/heat valve[3]	X
16	X	X	X	X
AO1	X	Cool/Heat valve PID[3]	X	Cool/Heat valve PID[3]
AO2	X	X	Fan VFS	Fan VFS
SW3				
SW1				

[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)

[4] SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

[5] SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Fan VFS, PID valves: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 24 to 27 – FC systems - 2-pipe

Outputs	Config. 24: 2-Pipe, 1/2/3 Speeds fan(1), Humidifier, Reheat for Dehumidification	Config. 25: 2-Pipe, 1/2/3 Speeds fan(1), Cool/Heat PID, Humidifier, Reheat for Dehumidification	Config. 26: 2-Pipe, Fan VFS, Reheat for Dehumidification	Config. 27 2-Pipe, Fan VFS, Cool/Heat PID, Reheat for Dehumidification
11	Fan high	Fan high	X	X
12	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))	Economizer(5) (option – SW1.6 ON)	Economizer(5) (option – SW1.6 ON)
13	Fan low	Fan low	X	X
14	Heat element (2nd stage heat)	Heat element (2nd stage heat)	Heat element (2nd stage heat)	Heat element (2nd stage heat)
15	Cool/Heat valve(3)	X	Cool/Heat valve(3)	X
16	X	X	X	X
A01	X	Cool/Heat valve PID(3)	X	Cool/Heat valve PID(3)
A02	Humidifier	Humidifier	Fan VFS	Fan VFS
SW3				
SW1				

(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)

(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

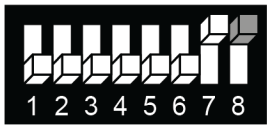
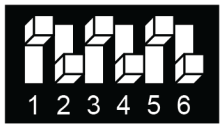
(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Fan VFS, PID valves, Hum.: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 28 to 30 – FC systems - 2-pipe

with Dehumidifier, w/wo Humidifier

Outputs	Config. 28: 2-Pipe, 1/2/3 Speeds fan(1), Humidifier, Dehumidifier	Config. 29: 2-Pipe, 1/2/3 Speeds fan(1), Cool/Heat PID, Dehumidifier	Config. 30: 2-Pipe, Fan VFS, Dehumidifier
11	Fan high	Fan high	X
12	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))	Economizer(5) (option – SW1.6 ON)
13	Fan low	Fan low	X
14	Cool/Heat valve(3)	Heat element(2) (2nd stage heat)	Cool/Heat valve(3)
15	X	X	X
16	X	X	X
A01	Humidifier	Cooll/Heat valve PID(3)	Fan VFS
A02	Dehumidifier	Dehumidifier(4) (option - See SW1.3)	Dehumidifier
SW3			
SW1			

(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)

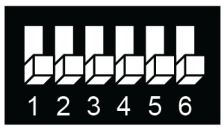
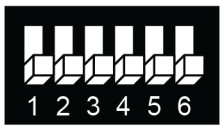
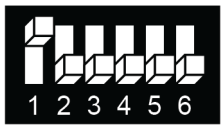
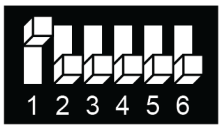
(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Fan VFS, PID valves, Hum., Dehum.: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 31 to 34 – FC systems - 4-pipe

Outputs	Config. 31: 4-Pipe, 1/2/3 Speeds fan[1]	Config. 32: 4-Pipe, 1/2/3 Speeds fan[1], Floor heating	Config. 33: 4-Pipe, 1/2/3 Speeds fan[1], Cool valve PID	Config. 34: 4-Pipe, 1/2/3 Speeds fan[1], Cool valve PID, Floor heating
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium (or Economizer[5])	Fan medium (or Economizer[5])	Fan medium (or Economizer[5])	Fan medium (or Economizer[5])
13	Fan low	Fan low	Fan low	Fan low
14	Heat element[2] (2nd stage heat)	Floor heating (1st stage heat-no fan)	Heat element[2] (2nd stage heat)	Floor heating (1st stage heat–no fan)
15	Cool valve[3]	Cool valve[3]		
16	Heat valve (1st stage heat)	Heat valve (2nd stage heat)	Heat valve (1st stage heat)	Heat valve (2nd stage heat)
A01	X	X	Cool valve PID[3]	Cool valve PID[3]
A02	X	X	X	X
SW3				
SW1				

[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)

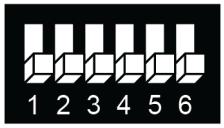
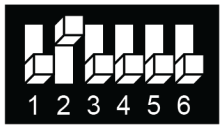
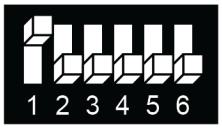
[4] SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

[5] SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., PID valves: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 35 to 38 – FC systems - 4-pipe

Outputs	Config. 35: 4-Pipe, Fan VFS	Config. 36: 4-Pipe, 1/2/3 Speeds fan(1), Heat valve PID	Config. 37: 4-Pipe, Fan VFS, Heat valve PID	Config. 38: 4-Pipe, Fan VFS, Cool valve PID
11	X	Fan high	X	X
12	Economizer(5) (option – SW1.6 ON)	Fan medium (or Economizer(5))	Economizer(5) (option – SW1.6 ON)	Economizer(5) (option – SW1.6 ON)
13	X	Fan low	X	X
14	Heat valve	Heat element(2) (2nd stage heat)	Cool valve(3)	Heat valve
15	Cool valve(3)	Cool valve(3)	X	X
16	X	X	X	X
A01	X	X	Heat valve PID	Cool valve PID(3)
A02	Fan VFS	Heat valve PID (1st stage heat)	Fan VFS	Fan VFS
SW3				
SW1				

(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)

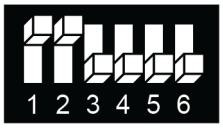
(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., Fan VFS, PID valves: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configuration 39 – FC systems - 4-pipe

Outputs	Config. 39: 4-Pipe, 1/2/3 Speeds fan(1), Heat valve PID, Cool valve PID
11	Fan high
12	Fan medium (or Economizer(5))
13	Fan low
14	Heat element(2) (2nd stage heat)
15	X
16	X
A01	Cool valve PID(3)
A02	Heat valve PID (1st stage heat)
SW3	
SW1	

(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)

(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

PID valves: 0-10VDC, 0.5mA Not isolated
Control - Fan on/of, Heat elements, Cool/Heat valves, Economizer: 24VAC, 0.5A max.

Wiring and DIP Switch configurations 40 to 41 – FC systems - 4-pipe

with Reheat for dehumidification, without Humidifier

Outputs	Config. 40: 4-Pipe, 1/2/3 Speeds fan(1), Heat valve PID	Config. 41: 4-Pipe, 1/2/3 Speeds fan(1), Cool valve PID, Reheat for Dehumidification
11	Fan high	Fan high
12	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))
13	Fan low	Fan low
14	Heat element(2) (2nd stage heat)	Heat element(2) (2nd stage heat)
15	Cool valve(3)	X
16	Heat valve	Heat valve
A01	X	Cool valve PID(3)
A02	X	X
SW3		
SW1		

(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)

(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., PID valves: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 42 to 44 – FC systems - 4-pipe

with Humidifier, without Reheat for dehumidification

Outputs	Config. 42: 4-Pipe, 1/2/3 Speeds fan(1), Humidifier	Config. 43: 4-Pipe, 1/2/3 Speeds fan(1), Cool valve PID, Humidifier	Config. 44: 4-Pipe, 1/2/3 Speeds fan(1), Heat valve PID, Humidifier
11	Fan high	Fan high	Fan high
12	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))
13	Fan low	Fan low	Fan low
14	Heat valve	Heat valve	Cool valve(3)
15	Cool valve(3)	X	X
16	X	X	X
A01	X	Cool valve PID(3)	Heat valve PID
A02	Humidifier	Humidifier	Humidifier
SW3			
SW1			

(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)

(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., PID valves, Humidifier: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Wiring and DIP Switch configurations 45 to 47 – FC systems - 4-pipe

with Dehumidifier

Outputs	Config. 45: 4-Pipe, 1/2/3 Speeds fan(1), Dehumidifier	Config. 46: 4-Pipe, 1/2/3 Speeds fan(1), Cool valve PID, Dehumidifier	Config. 47: 4-Pipe, 1/2/3 Speeds fan(1), Heat valve PID, Dehumidifier
11	Fan high	Fan high	Fan high
12	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))	Fan medium (or Economizer(5))
13	Fan low	Fan low	Fan low
14	Heat valve	Heat valve	Cool valve(3)
15	Cool valve(3)	X	X
16	X	X	X
A01	X	Cool valve PID(3)	Heat valve PID
A02	Dehumidifier	Dehumidifier	Dehumidifier
SW3			
SW1			

(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)

(4) SW1.3 = Dehumidification: ON – Use dehumidifier, OFF – Use reheat for dehumidification

(5) SW1.6–Terminal 12 operation:
ON = Economizer
OFF = Fan Medium (3 speeds) / Terminal not in use (1/2 speeds/VFS)
Important: Economizer will not work in 3 fan speeds configuration.

See drawing for *DIP switch and jumper locations* (page 24).

Fan on/off: 110-230VAC, 2.5A max., PID valves, Dehumidifier: 0-10VDC, 0.5mA Not isolated
Control - Heat elements, Cool/Heat valves, Economizer: 110-230VAC, 0.3A max.

Technician Settings

Enter Technician Settings mode:

1. Adjust the setpoint temperature to 10°C or 50°F.
2. Press and hold the [C/F] button for 10 seconds to enter Technician Settings mode. “P01” will appear on the display.

View objects and make adjustments:

- Use the [Mode] button to step forward between different settings.
- Use the [Fan] button to step backward between different settings.
- 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 [+] or [-] button to make adjustments when required.

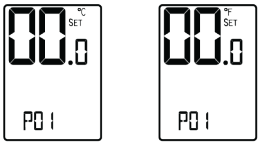
Technician Settings P01 to P03

P01 – Offset for temperature readings calibration

Range: -6...+6°C / -9...+9°F.

Default: 0°C / 0°F.

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



Offset for temperature calibration

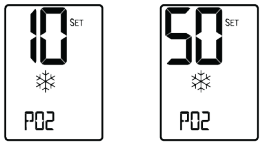
(°C) (°F)

P02 – Setpoint limit for cooling

Range: 5...35°C / 41...95°F.

Default: 10°C / 50°F.

Note: The thermostat will stop cooling regardless of the user's setpoint



Set point limit for cooling

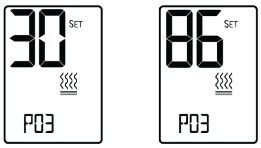
(°C) (°F)

P03 – Setpoint limit for heating

Range: 5...35°C / 41...95°F.

Default: 30°C / 86°F.

Note: The thermostat will stop heating regardless of the user's setpoint



Setpoint limit for heating

(°C) (°F)

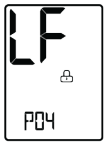
Technician Settings P04 to P07

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] buttons for 7 seconds to unlock or relock the buttons.



[Fan] Can be locked

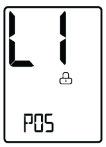
[Fan] Cannot be locked

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

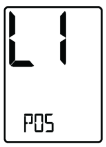
"L1" + "🔒" [Mode] button can be locked

"L1" only [Mode] button cannot be locked

Note: When enabled, press and hold [-] and [Fan] buttons for 7 seconds to unlock or relock the buttons.



[Mode] Can be locked



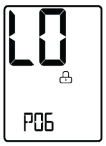
[Mode] Cannot be locked

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

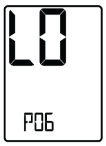
"L0" + "🔒" [On/Off] button can be locked

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

Note: When enabled, press and hold both [-] and [Fan] buttons for 7 seconds to unlock or relock the buttons.



[On/Off] Can be locked



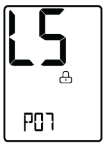
[On/Off] Cannot be locked

P07 – Enable/Disable the option to lock the ▲or ▼button (SET)

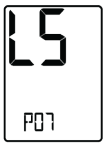
"LS" + "🔒" [+] or [-] button can be locked

"LS" only [+] or [-] button cannot be locked

Note: When enabled, press and hold both [-] and [Fan] buttons for 7 seconds to unlock or relock the buttons.



[+] and [-] Can be locked



[+] and [-] Cannot be locked

P04-P07 Note:

When the option to lock one or more buttons is enabled, these buttons will be automatically locked when leaving technician settings and returning to normal display.

In normal display, press and hold the [Mode] button for 7 seconds to unlock/relock these buttons.

Technician Settings P08 to P10

P08 – Functionality of T1 terminals

"00" - T1 terminals are not in use

"01" - External sensor

"02" - T3 Soft start in heat sensor (FC) * or
De-icing in cool (AC) **

"03" - Door switch

"04" - Key tag

"05" - T Economizer
(DIP switch SW2.6 must be ON)

* In heating mode, the fan will not start before there is hot water in the coil.
Note: To view T3 on the BACnet Thermostat, see Technician Settings P84.

** Allow de-icing operation of indoor coil in cooling.

T1 terminals Not in use

T1 sensor (External sensor)

T3 Soft start in heat sensor (FC) or De-icing 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
De-icing in heat (AC)

"02" - **T3 (Soft start in heat sensor) (FC) or
De-icing 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.

Note: To view T2 on the BACnet Thermostat, see Technician Settings P83.

** Where T1 terminals are used for external sensor, the IN1,0 terminals can be used for T3 sensor.

Note: To view T3 on the BACnet Thermostat, see Technician Settings P84.

"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

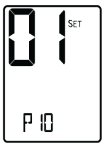
External PIR sensor

P10 – Window contact (terminals IN1,0) polarity

"01" - Normally open

"00" - Normally closed

Window contact Normally close



Window contact Normally open

Technician Settings P11 to P15

P11 – Window contact delay time

Range: 0...999 seconds.

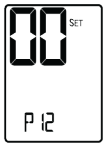
Default: 600 seconds.

Window contact delay time (sec.)

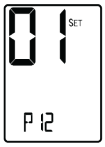
P12 – Door switch (terminals T1,0) polarity

"01" - Normally open

"00" - Normally closed



Door switch Normally close

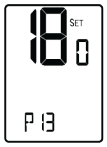


Door switch Normally open

P13 – Door switch delay time

Range: 0...999 seconds.

Default: 180 seconds.

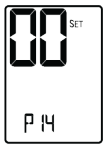


Door switch delay time (sec.)

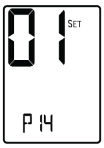
P14 – Enable/Disable Auto change over mode

"00" - Disable Auto change over mode

"01" - Enable Auto change over mode



Disable Auto mode



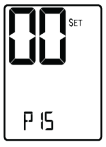
Enable Auto mode

P15 – Motion sensor logic (PIR)

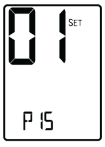
"00" - Thermostat turns off when unoccupied and back on when re-occupied.

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

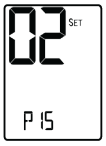
"02" - Thermostat uses economy setpoints when unoccupied.



Unocc. – Off Re-occ. - On



Unocc. – Off Re-occ. - Off



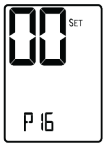
Economy set points

Technician Settings P16 to P25

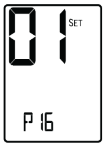
P16 – Enable/Disable Motion sensor

"00" - Disable

"01" - Enable



Disable occ. sensor

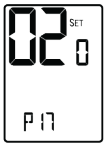


Enable occ. sensor

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

Range: 0...900 minutes

Default: 20 minutes



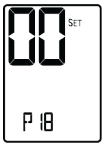
PIR ON delay (minutes)

P18 – Door switch or key tag configuration

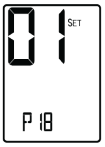
"00" - Switch On/Off by door switch or key tag

"01" - Changing the setpoint temperature

"02" - Switching fan speed to Low



Switch On or Off



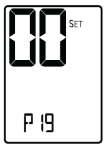
Change set-points

Switch to fan low

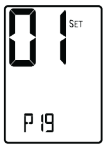
P19 – PIR (Motion sensor) polarity

"00" - Normally open

"01" - Normally closed



PIR Normally open



PIR Normally close

P25 – Economy setpoint for cooling

Range: 5...35°C / 41...95°F

Default: 30°C / 86°F

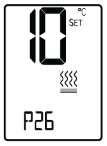
EC set point in cooling (°C) (°F)

Technician Settings P26 to P30

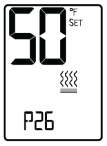
P26 – Economy setpoint for heating

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

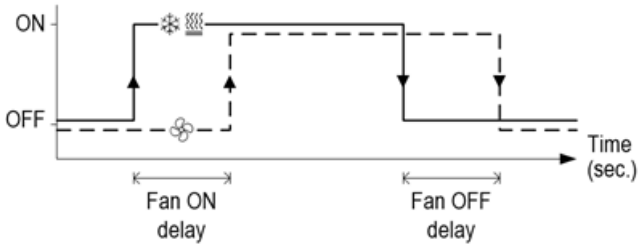
Technician Settings P31 to P34

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

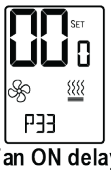
Default: 0 seconds (no delay)

Fan OFF delay in cooling (seconds)

P33 – Fan ON delay in heating (FC only)

Range: 0...120 seconds

Default: 0 seconds (no delay)

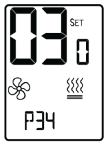


Fan ON delay in heating (seconds)

P34 – Fan OFF delay in heating

Range: 0...120 seconds

Default: 30 seconds



Fan OFF delay in heating (seconds)

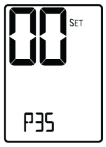
Technician Settings P35 to P42

P35 – Enable/Disable Freeze protection

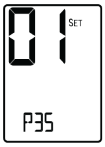
"00" - Disable Freeze protection

"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



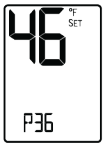
Enable freeze protection

P36 – Freeze protection cut-in setpoint

Range: 8...15°C / 46...59°F

Default: 8°C / 46°F

The room ambient temperature which will trigger Heating ON.



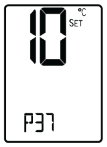
Freeze protection cut-in set point (°C) (°F)

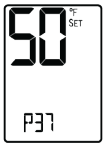
P37 – Freeze protection cut-out setpoint

Range: 10...17°C / 50...63°F

Default: 10°C / 50°F

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



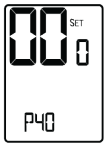


Freeze protection cut-out set point (°C) (°F)

P40 – View filter counter (hours) – Read only

Range: 0...999 hours

The filter counter is related to Fan running time.

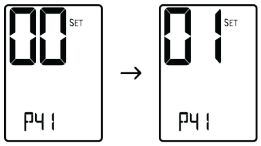


View filter Counter (hours)

P41 – Reset filter time

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

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

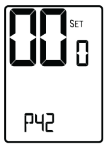


Reset filter counter

P42 – Adjust filter alarm delay time counter (hours)

Range: 0...999 hours

Default: 0 hours (0 = Disable)



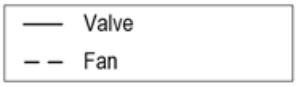
Adjust filter alarm delay time (hours)

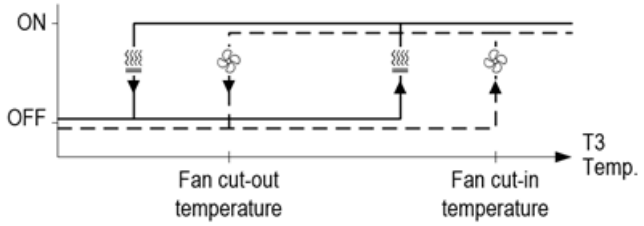
Technician Settings P43 to P44

P43 – P44

Soft start in heat

with fan on demand (auto fan) active.





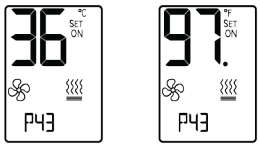
P43 – Soft start in heat – cut-in temperature (FC only)

The fan will not start before the temperature on T3 sensor reaches the cut-in temperature.

See Technician Settings P08/P09.

Range: 14...37°C / 57...99°F

Default: 36°C / 97°F



Soft start heat cut-in temperature

(°C) (°F)

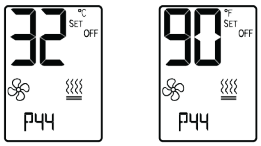
P44 – Soft start in heat – cut-out temperature (FC only)

The fan will stop if the temperature on T3 sensor drops below the cut-out temperature.

See Technician Settings P08/P09.

Range: 12...35°C / 54...95°F

Default: 32°C / 90°F



Soft start heat cut-out temperature

(°C) (°F)

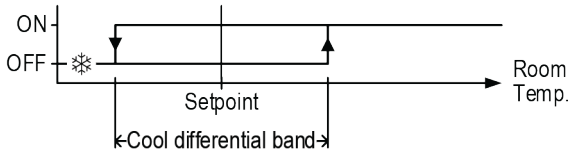
Technician Settings P45 to P46

P45 – P46

Cool differential band / offset

(with cool differential band offset = 0)

Compressor / Valve

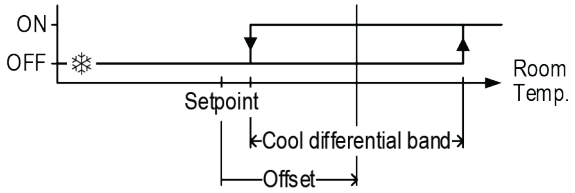


P45 – P46

Cool differential band / offset

(with cool differential band offset ≠ 0)

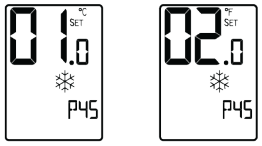
Compressor / Valve



P45 – Cool differential band

Range: 0.5…5°C / 1…10°F

Default: 1°C / 2°F



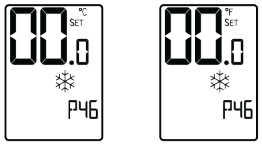
Cool differential band

(°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)

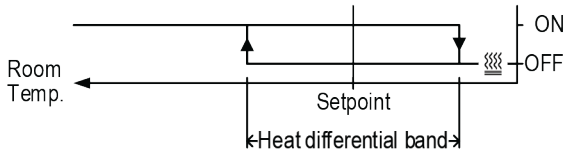
Technician Settings P47 to P48

P47-48

Heat differential band / offset

(with heat differential band offset = 0)

Compressor / Valve

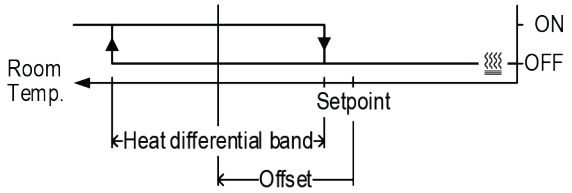


P47-48

Heat differential band / offset

(with heat differential band offset ≠ 0)

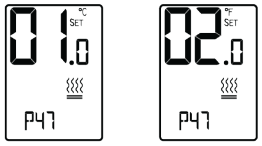
Compressor / Valve



P47 – Heat differential band

Range: 0.5…5°C / 1…10°F

Default: 1°C / 2°F



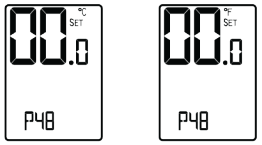
Heat differential band

(°C) (°F)

P48 – Heat differential band offset

Range: -5…+5°C / -9…+9°F

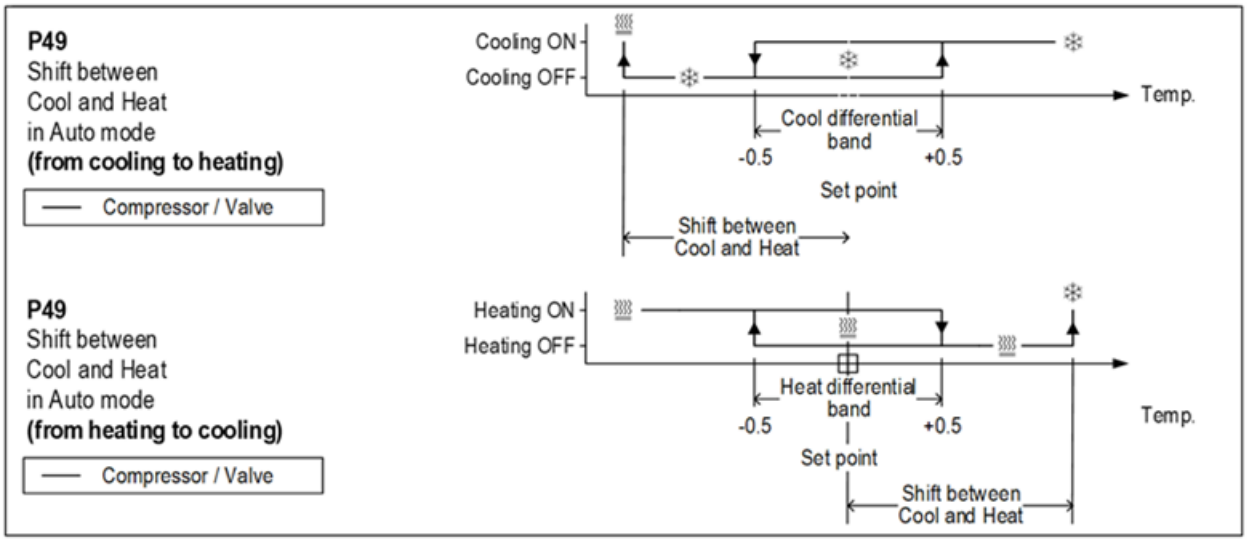
Default: 0°C / 0°F



Heat differential band offset

(°C) (°F)

Technician Settings P49 to P51



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

Range: 0...10°C / 0...20°F

Default: 2°C / 4°F

(°C)

(°F)

Shift between Cool & Heat in Auto mode

P50 – Shift between Cooling stages (AC only)

Range: 0...10°C / 0...20°F

Default: 2°C / 4°F

(°C)

(°F)

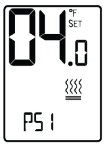
Shift between cooling stages

P51 – Shift between Heating stages

Range: 0...49°C / 0...98°F

Default: 2°C / 4°F

(°C)



(°F)

Shift between heating stages

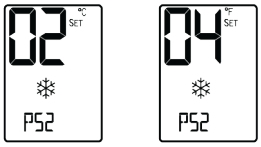
Technician Settings P52 to P57

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.

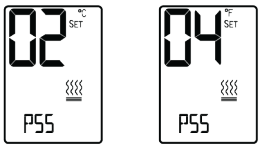
Cool prop.
high limit (%)

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.



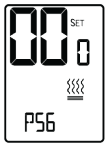
Cool valve proportional band
(°C) (°F)

P56 – Heat proportional low limit (FC only)

Range: 0...100%

Default: 0%

Minimum valve opening.



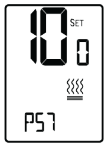
Heat prop.
low limit (%)

P57 – Heat proportional high limit (FC only)

Range: 0...100%

Default: 100%

Maximum valve opening.



Heat prop.
high limit (%)

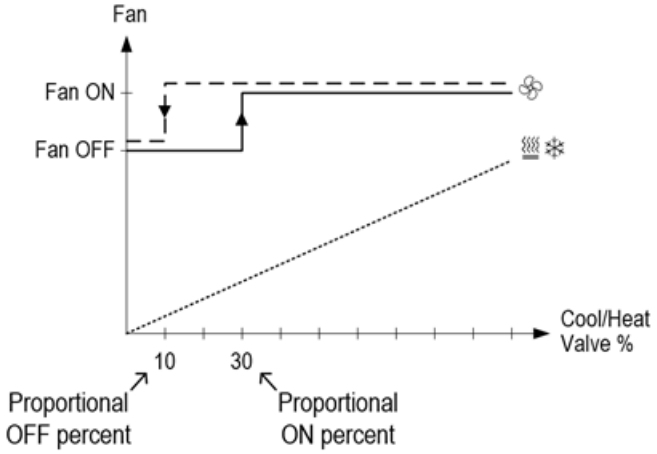
Technician Settings P60 to P64

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

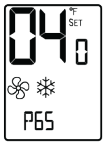
Technician Settings P65 to P70

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.



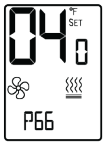
VFS Proportional band in cooling
(°C) (°F)

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%

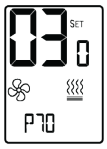
Default: 90%

VFS High %
in cooling

P70 – Fan VFS Low speed percent in heating

Range: 0...30%

Default: 30%



VFS Low %
in heating

Technician Settings P71 to P75

P71 – Fan VFS Medium speed percent in heating

Range: 30...60%

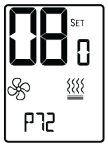
Default: 50%

VFS Med %
in heating

P72 – Fan VFS High speed percent in heating

Range: 60...100%

Default: 80%



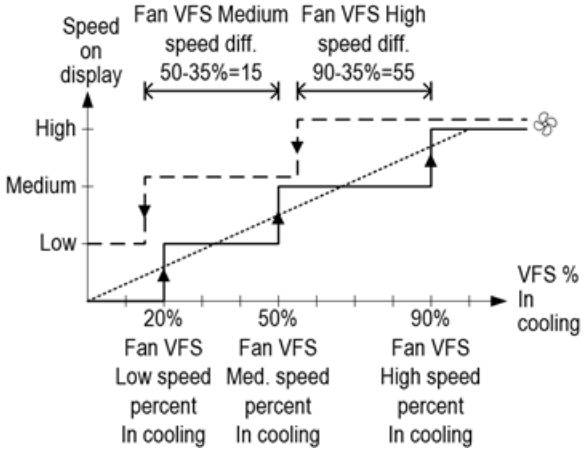
VFS High %
in heating

P74

VFS Medium speed differential (display from medium to low)

P75

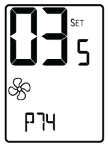
VFS High speed differential (display from high to medium)



P74 – VFS Medium speed differential

Range: 10...50%

Default: 35

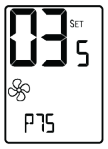


VFS Med speed
differential

P75 – VFS High speed differential

Range: 10...50%

Default: 35



VFS High speed
differential

Technician Settings P76 to P79

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%

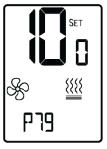
Default: 0%

VFS low limit in heating

P79 – Fan VFS High limit in heating

Range: 0...100%

Default: 100%

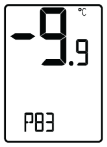


VFS high limit in heating

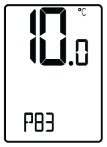
Technician Settings P83 to P88

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 – De-ice 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 de-icing will start.

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

P86 – De-ice 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 de-icing will stop.

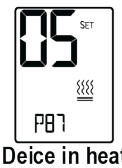
Deice in cool cut-out temperature (°C) (°F)

P87 – De-ice in heat time (AC only)

Range: 2...7 Minutes

Default: 5 Minutes

The length of de-icing procedure.



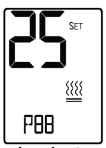
Deice in heat time

P88 – De-ice in heat break time (AC only)

Range: 10... 30 Minutes

Default: 25 Minutes

The time interval between de-icing cycles.



Deice in heat break time

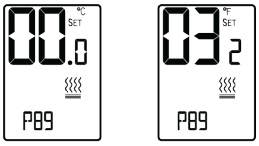
Technician Settings P89 to P99

P89 – De-ice 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 de-icing will start.



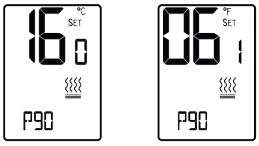
Deice in heat cut-in temperature (°C) (°F)

P90 – De-ice 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 de-icing will stop.



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

P91 – Compressor delay (AC only)

Range: 0…360 Seconds

Default: 240 Seconds

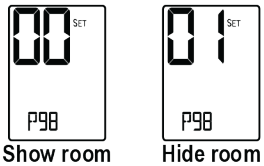
DIP Switch SW3.5 must be in "OFF" position – compressor delay enabled!

Compressor delay

P98 – Display setpoint only (hide room temperature)

"00" - Display both setpoint and room temperatures

"01" - Display only the setpoint temperature

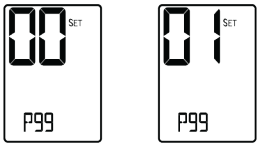


Show room temperature | Hide room temperature

P99 – One or Two setpoints (for cool and for heat)

"00" - One setpoint for cooling and heating

"01" - Two setpoints, one for cool and one for heat



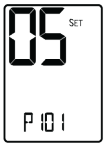
One set point | Two set points

Technician Settings P101 to P111

P101 – Screen dimming delay

Range: 0...99 minutes

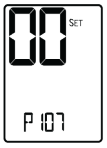
Default: 5 minutes



Screen dimming delay

P107 – Weekly program configuration

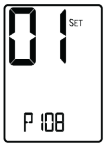
"00" - Disable weekly program (program parameters will be lost)
"01" - 7 days with the same program
"02" - One program for Monday to Friday and another program for Saturday and Sunday
"03" - One program for Monday to Friday, one for Saturday, and another for Sunday
"04" - 7 days with the different program for each day



Weekly program configuration

P108 – Weekly program - events per day

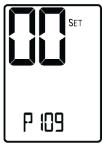
"00" - Two different events per day
"01" - Four different events per day



Weekly program events per day

P109 – Weekly program event configuration

"00" - US Program: Event start time, Mode, Fan speed, Setpoints (one or two)
"01" - Eu program: Event start time, Stop time

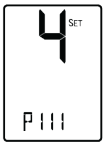


Weekly program event configuration

P111 – PIR Sensitivity

Range: 1...5 (1 – Less sensitive, 5 – More sensitive)

Default: 4



PIR Sensitivity

Technician Settings P114 to P119

P114 – Cool PID Kp (FC only)

Range: 0…100%

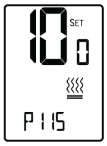
Default: 100%

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%

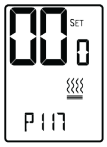
Default: 0%

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

Technician Settings P122 to P188

P122 – Cool Proportional output threshold time (seconds) (FC only)

Range: 0…100 seconds

Default: 60 seconds

Cool proportional threshold time

P123 – Heat Proportional output threshold time (seconds) (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…27°C / 48…80°F

Default: 17°C / 63°F

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

P187 – Display or hide humidity reading

“00” - Do not display humidity reading

“01” - Display humidity reading

Display or hide humidity readings

P188 – Room temperature limit for disabling dehumidification in unoccupied mode

Range: 10…30°C / 50…85°F

Default: 18°C / 64°F

Temp. for disabling dehum. In unocc mode (°C) (°F)

Technician Settings P189 to P195

P189 – Dehumidification cycle in unoccupied mode

Range: 0…600 minutes

Default: 20 minutes

Dehumidification cycle in unocc. mode

P190 – Dehumidification break time in unoccupied mode

Range: 0…900 minutes

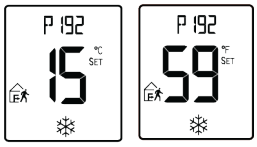
Default: 40 minutes

Dehumidification break in unocc. mode

P192 – Temperature setpoint for reheat in unoccupied mode

Range: 10…30°C / 50…86°F

Default: 15°C / 59°F



Setpoint for reheat in unocc. mode (°C) (°F)

P193 – Display switching time (between temperature and humidity)

Range: 0…11 seconds

Default: 5 seconds

Display switching time Hum./Temp.

P194 – Humidity differential band

Range: 0…10 %RH

Default: 5%RH

Humidity differential band

P195 – Humidity sensor reading offset

Range: -9…+9 %RH

Default: 0 %RH

offset

Technician Settings P196 to P200

P196 – Dead zone between humidification and dehumidification

Range: 0…100 %RH

Default: 0 %RH

Dead zone
Hum./Dehum.

P197 – Humidity setpoint

Range: 20…100 %RH

Default: 45 %RH

Humidity
setpoint

P198 – Not in use

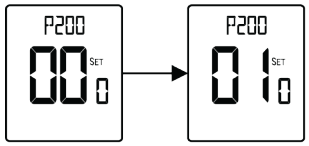
Communication
protocol indication

P200 – Restore defaults

Press the ▲button. The display changes from “00” to “01”.

Press the [On/Off] button to restore default settings.

The thermostat turns Off.



Restore defaults

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

Alarms and indications

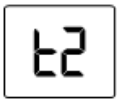
T1 Internal sensor or T1 External sensor fault

De-icer in cool indication

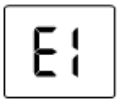
De-icer in heat indication

Overheat in heat

Overheat in cool

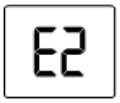


Teconomizer sensor fault



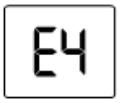
Economy by:

- Window contact - Remote on/off switch
- Window contact - Remote economy switch

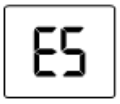


Economy by:

- External PIR
- Communication



Economy by door switch



Economy by key-tag

Document revision history

Date	Topic	Change description
1/25/24	Specifications	Updated Power specs
4/7/20	Installation	Updated installation height
	Alarms and indicators	Updated Teconomizer sensor fault image
2/26/20	Cover	Updated graphic
	MAC address and BACnet Device instance number - In an Analog Network Output microblock	Added subsequent values
2/18/20	Operating instructions	Multiple revisions
	Weekly program	Multiple revisions
	Wiring and DIP switch configurations – AC systems – Output 14	Added (3) to each Config
	Technician Settings	Multiple revisions
	Alarms and indications	Added E1, E2, E4, and E5
9/9/19	Operating Instructions, P10	Added AC and FC configurations
	Operating Instructions, P11	Changed Remote economy switch settings
	Technician Settings, P34	Changed P11 default from 60 to 600 seconds
	Technician Settings, P35	Changed P17 range from 250 to 900 minutes
5/22/19	Technician Settings, P03	Changed 86c to 30c, changed 30f to 86f
2/18/19	Specifications	Changed Mounting specification description
		Added CE and C-Tick icons to Compliance specification
	Installation	Changed step B and illustrations
	Technician Settings, P122 and P123	Changed from percent to time (seconds)