

# Surveillant Demand Defrost Evaporator Control



**Indicator lights**

- **Red light** - critical alarm (system off)
- **Yellow light** - non-critical alarm (system running)
- **Green light** - compressor on
- **Green flashing** - compressor waiting on timer to start/stop

**To move through controller menus:**

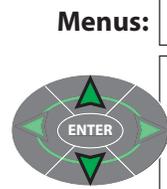
- Left and Right Arrows** Use to move between **Menus**
- Up Arrow and Down Arrow** Scroll through **Menu Parameters**

**To return to Main Menu:** **BACK** Press BACK to return to the previous view.

**To toggle between description and value:** **ENTER** Press ENTER to go from parameter to value.

**To change settings:** **ENTER** Press and hold ENTER for 3 seconds, when display begins blinking changes can be made

**To save setting changes:** **ENTER** Press and hold ENTER for 3 seconds to save change



**Menu Parameters:**

- Non-adjustable Variables**  
(view only)
- ROOM TEMP
  - COIL TEMP
  - SYSTEM MODE
  - SUPERHEAT
  - SUCTION PRESSURE
  - T1 SUCTION TEMP<sup>1</sup>
  - SATURATION TEMP
  - VALVE % OPEN
  - T4 AUX TEMP<sup>1</sup>
  - COMPRESSOR RELAY
  - DEFROST RELAY
  - FAN RELAY
  - AUX RELAY
  - DIG 1 STATUS
  - DIG 2 STATUS
  - DIG 3 STATUS
  - IP OCTET 1
  - IP OCTET 2
  - IP OCTET 3
  - IP OCTET 4
  - SUBNET MASK OCTET 1
  - SUBNET MASK OCTET 2
  - SUBNET MASK OCTET 3
  - SUBNET MASK OCTET 4
  - FIRMWARE VERSION

- Alarms**  
(view only)
- NO ALARM
  - PRESSURE SENSOR
  - SUCTION TEMP SENSOR
  - AIR TEMP SENSOR
  - COIL TEMP SENSOR
  - AUX TEMP SENSOR
  - HIGH SUPERHEAT
  - LOW SUPERHEAT
  - HIGH AIR TEMP
  - LOW AIR TEMP
  - EXCESS DEFROST
  - DEFR TERM ON TIME
  - DOOR SWITCH
  - COMMUNICATION ERROR
  - EXT ALARM

- Setpoints**
- ROOM TEMP**<sup>2</sup>
  - DEFROST TYPE**<sup>2</sup>
  - VALVE TYPE**<sup>2</sup>
  - MOTOR STEP RATE*<sup>3</sup>
  - MAX VALVE STEPS*<sup>3</sup>
  - SUPERHEAT*<sup>4</sup>
  - MAX OPERATING PRES*<sup>4</sup>
  - REFRIGERANT*
  - AUX TEMP 4 MODE
  - AUX TEMP 1 MODE<sup>5</sup>
  - AUX RELAY MODE
  - DAC FAN
  - MIN COMP RUN TIME
  - MIN COMP OFF TIME
  - REFRIG FAN MODE
  - DEFROST MODE
  - DEFROSTS / DAY
  - 1ST DEFROST DELAY
  - DEFROST FAN STATE
  - DEFROST TERM TEMP
  - DEFROST PARAMETER
  - DRAIN TIME
  - COMP RUN TIME
  - ELEC DEFROST MODE
  - FAN DELAY TEMP
  - MAX FAN DELAY TIME
  - PUMP DOWN TIME
  - MULTI AIR TEMP CTRL
  - MULTI EVAP COOL**<sup>6</sup>
  - MULTI EVAP DEFROST**<sup>6</sup>
  - MULTI EVAP SENSOR**<sup>6</sup>
  - HIGH TEMP ALARM OFFSET
  - HIGH TEMP ALARM DELAY
  - LOW TEMP ALARM OFFSET
  - LOW TEMP ALARM DELAY
  - DOOR ALARM DELAY
  - DIG IN 1 MODE
  - DIG IN 1 STATE
  - DIG IN 2 MODE
  - DIG IN 2 STATE
  - DIG IN 3 MODE
  - DIG IN 3 STATE
  - 2ND ROOM TEMP
  - SUCT PRES OFFSET
  - SUCT TEMP OFFSET
  - AIR TEMP OFFSET
  - COIL TEMP OFFSET
  - AUX TEMP OFFSET
  - TEMP UNITS
  - AIR TEMP DIFF
  - EXTREME TEMP DIFF

- Manual**
- MANUAL CONTROL
  - MANUAL VALVE
  - CLEAR ALARMS
  - MANUAL COMPRESSOR RELAY
  - MANUAL DEFROST RELAY
  - MANUAL FAN RELAY
  - FACTORY RESET

1 T1 and T4 are parameters that can be set to various functions. The default for T1 is Suction Temp, the T4 is Coil Temp.

2 The Setpoint parameters shown in **BOLD** (Valve Type, Room Temp Setpoint and Defrost Mode) need to be set by the user prior to start up. The other Setpoint Parameters can also be adjusted, however the factory setpoints are generally correct for most applications.

3 The Setpoint parameters shown in *ITALIC* are only displayed when a Custom EEV is used.

4 Displayed when an EEV is used.

5 Only available if mechanical valve is selected. When using an electric valve the default, suction temperature, is required.

6 The Setpoint parameters shown in **BOLD ITALIC** are used for bonded controllers only.

- Variables for DIG IN MODE**
- DISABLED
  - 2ND (ROOM) TEMP
  - DOOR SWITCH
  - EXT ALARM
  - SYSTEM OFF
  - DEFROST LOCKOUT
  - DEFROST INTERLOCK

# Step-by-Step QuickStart

Mechanical Valve TEV - 3 steps	Standard EEV - 4 steps	Custom EEV - 6 steps
Room Temp	Room Temp	Room Temp
Defrost Type	Defrost Type	Defrost Type
Valve Type	Valve Type	Valve Type
	Refrigerant	Refrigerant
		Motor Step Rate
		Max Valve Steps

## Quick Start with a TEV

- Power up the newly installed controller
- The **ROOM TEMP** display will show a blinking number. Use the left or right arrow to move between digits, use the up or down arrow to adjust the blinking digit higher or lower.
- Once new setpoint is displayed, press and hold ENTER for 3 seconds
- Now, the **DEFROST TYPE** is displayed. Wait until **ELEC** (Electric Defrost) is displayed, if other than ELEC is needed, use the up or down arrow to scroll through list and select **AIR, HOT GAS COMP ON, HOT GAS COMP OFF**
- Once desired option is shown, press and hold ENTER key for 3 seconds.
- **VALVE TYPE** is displayed. **MECHANICAL** will appear.
- Press and hold ENTER for 3 seconds.
- The controller will now begin controlling the system.

## Quick Start with a Pre-programmed EEV

- Power up the newly installed controller
- The **ROOM TEMP** display will show a blinking number. Use the left or right arrow to move between digits, use the up or down arrow to adjust the blinking digit higher or lower.
- Once new setpoint is displayed, press and hold ENTER for 3 seconds
- Now, the **DEFROST TYPE** is displayed. Wait until **ELEC** (Electric Defrost) is displayed, if other than ELEC is needed, use the up or down arrow to scroll through list and select **AIR, HOT GAS COMP ON, HOT GAS COMP OFF**
- Once desired option is shown, press and hold ENTER key for 3 seconds.
- **VALVE TYPE** is displayed. **MECHANICAL** will appear, use the up or down arrows to scroll through pre-programmed EEV options.
- Once the desired EEV is displayed, press and hold ENTER for 3 seconds.
- **REFRIGERANT** is displayed. 404A will appear. Use the up or down arrows view the other options.
- Once the desired refrigerant is displayed, press and hold ENTER for 3 seconds.
- The controller will now begin controlling the system.

## Quick Start with a Custom EEV

- Power up the newly installed controller
- The **ROOM TEMP** display will show a blinking number. Use the left or right arrow to move between digits, use the up or down arrow to adjust the blinking digit higher or lower.
- Once new setpoint is displayed, press and hold ENTER for 3 seconds
- Now, the **DEFROST TYPE** is displayed. Wait until **ELEC** (Electric Defrost) is displayed, if other than ELEC is needed, use the up or down arrow to scroll through list and select **AIR, HOT GAS COMP ON, HOT GAS COMP OFF**
- Once desired option is shown, press and hold ENTER key for 3 seconds.
- **VALVE TYPE** is displayed. **MECHANICAL** will appear, use the up or down arrows to scroll to **CUSTOM**.
- Press and hold ENTER for 3 seconds.
- **REFRIGERANT** is displayed. 404A will appear. Use the up or down arrows to view the other options.
- Once the desired refrigerant is displayed, press and hold ENTER for 3 seconds.
- **MOTOR STEP RATE** is displayed. Wait until **200** is displayed. Use the left and right arrows to move between the digits. Use the up or down arrows to adjust the blinking digit higher or lower.
- Press and hold ENTER for 3 seconds.
- **MAX VALVE STEPS** is displayed. Wait until **1300** is displayed. Use the left or right arrows to move between digits. Use the up or down arrows to adjust the blinking digit higher or lower.
- Press and hold ENTER for 3 seconds.
- The controller will now begin controlling the system.