



**MTSCV/SUPER, MTSCV24/SUPER Series**

**MTSCVW/SUPER, MTSCVW24/SUPER Series**

**MTSV/SUPER, MTSV24/SUPER Series**

**MTSVW/SUPER, MTSVW24/SUPER Series**

Owner's manual and technician settings





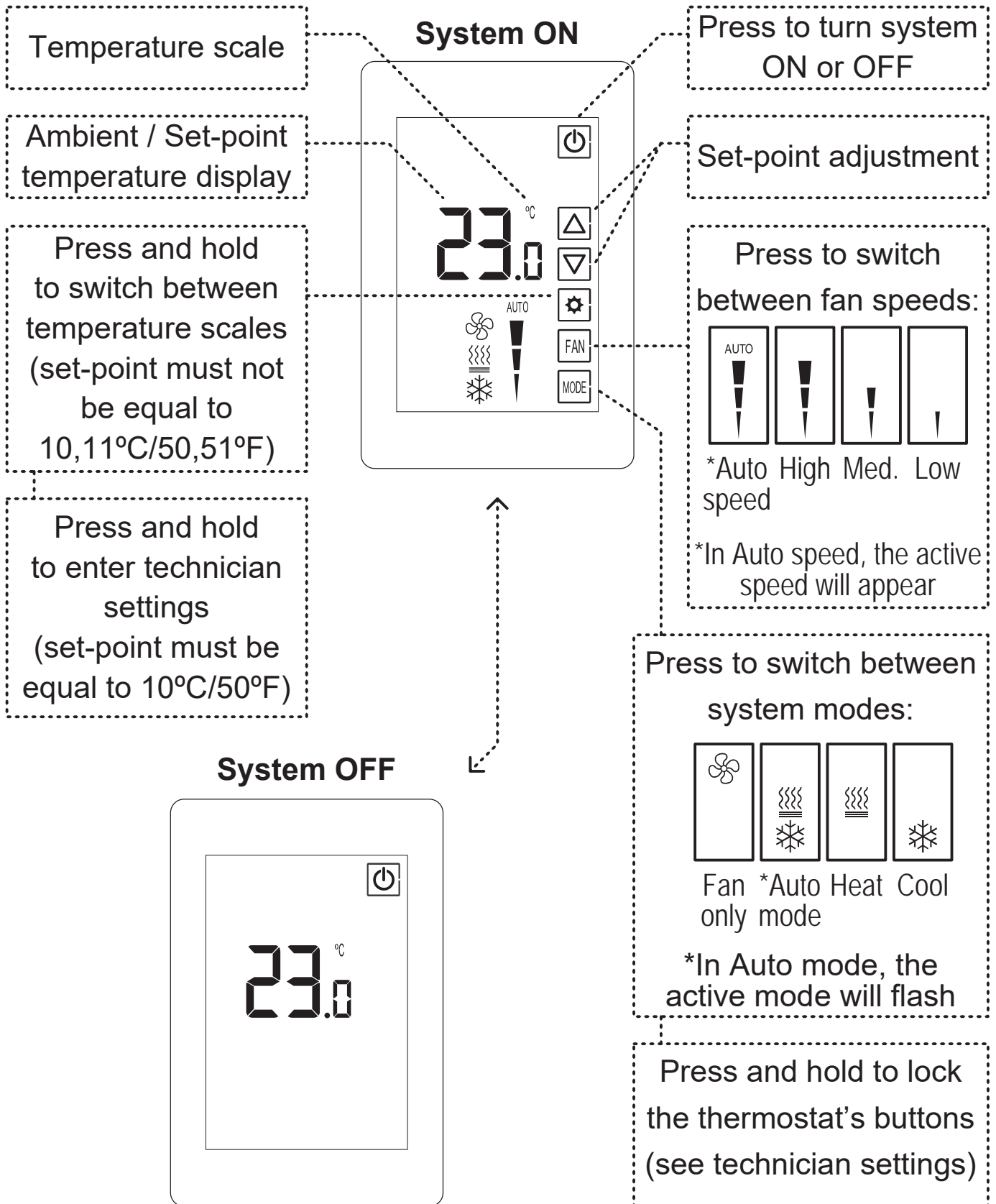
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# 1. Owner's manual

## 1.1 Quick Guide



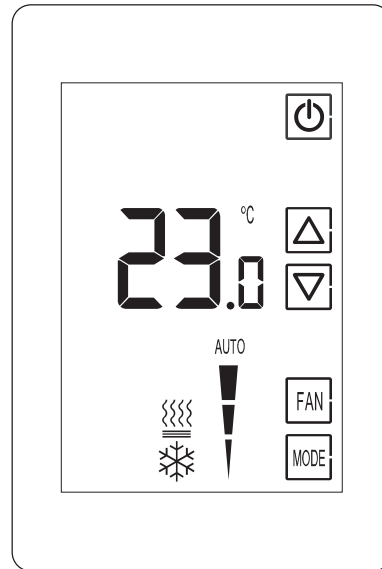
## 1.2 Turning the unit ON or OFF

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- Press the  button to turn the unit ON – system mode and fan speed symbols will appear on display.
- Press again to turn the unit OFF – the symbols will disappear.





Unit OFF



Unit ON


## 1.3 Adjusting the set-point temperature

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- While the thermostat is ON, press the  or  buttons – the set-point temperature will flash.
- Press again to adjust the set point.


## 1.4 Switching between temperature scales

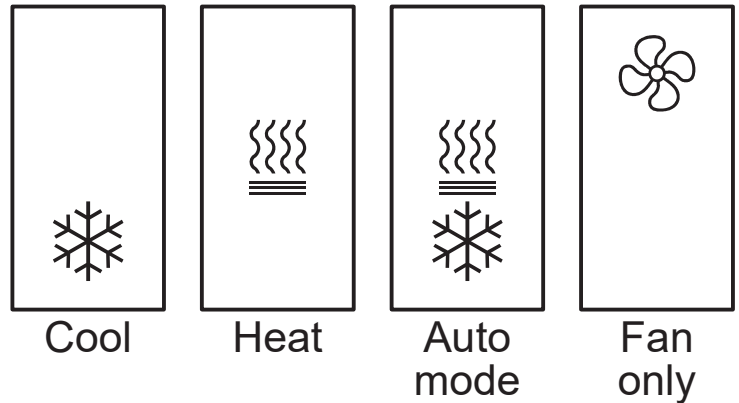
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- Press and hold the  button to switch between temperature scales.



Note: set-point must be other than 10°C, 11°C/50°F, 51°F

## 1.5 Switching between system modes

- Press the  button to switch between system modes:



Notes:

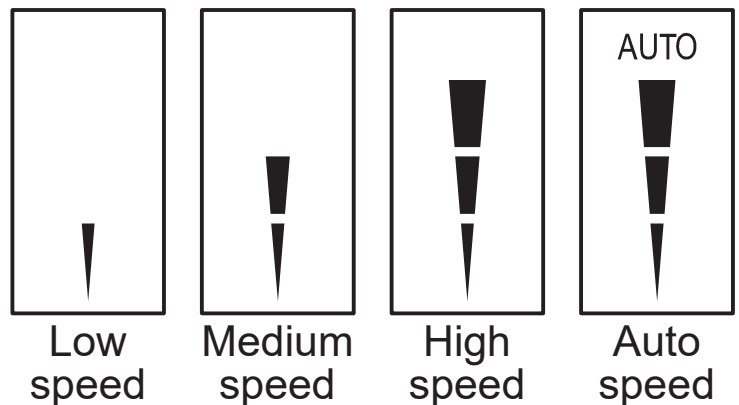
- During demand for cooling (cooling active), the  will flash.
- During demand for heating (heating active), the  will flash.

The selection of system modes may be disabled depending on system configuration.

## 1.6 Switching between fan speeds

- Press the  button to switch between fan speeds:

Note: When Auto speed is selected, the word "AUTO" and the active fan speed will appear on display



The selection of fan speeds may be disabled depending on system configuration.

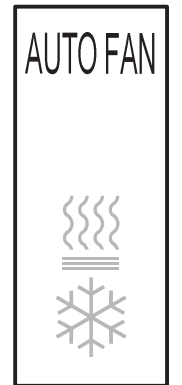
## 1.7 Fan on demand (Auto fan)

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- Press and hold the  button to activate or deactivate fan on demand (Auto fan) function.

Notes:

- When activated, the fan will run with demand for cooling or heating.
- The fan on demand function cannot be activated with “Fan only” mode.






AUTO FAN  
active

This option may be disabled, depending on system configuration.

## 1.8 Lock the thermostat's buttons




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- Press and hold the  button to lock or unlock the thermostat's buttons (except ).
- When locked, the  icon will appear on display.

Note: Use technician parameters P4 to P7 for other locking options.

## 1.9 Timer for turning the thermostat off

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- Press and hold the  button – the hours for the off-timer will appear on display. Adjust the timer using the  and  buttons.

Range: 0...10 Hours

Note: Set “0” to disable the timer.

## 1.10 Economy mode indications E1 – E6

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- Economy mode can be activated by triggering a window contact, door switch, key-tag or PIR sensor.
- When Economy mode is active, the thermostat will either turn off or use special economy set points for cooling and heating set by technician.

*Please refer to parameters P25 and P26 in the technician setting section of this manual.*

- The following indications will appear on display:
  - **E1** – Economy mode triggered by window contact
  - **E2** – Economy mode triggered by PIR (occupancy sensor)
  - **E4** – Economy mode triggered by door switch or key-tag
  - **E5** – OFF state triggered by door switch or key-tag
  - **E6** – Valves OFF and Fan low triggered by door switch or key-tag



## 1.11 Freeze protection

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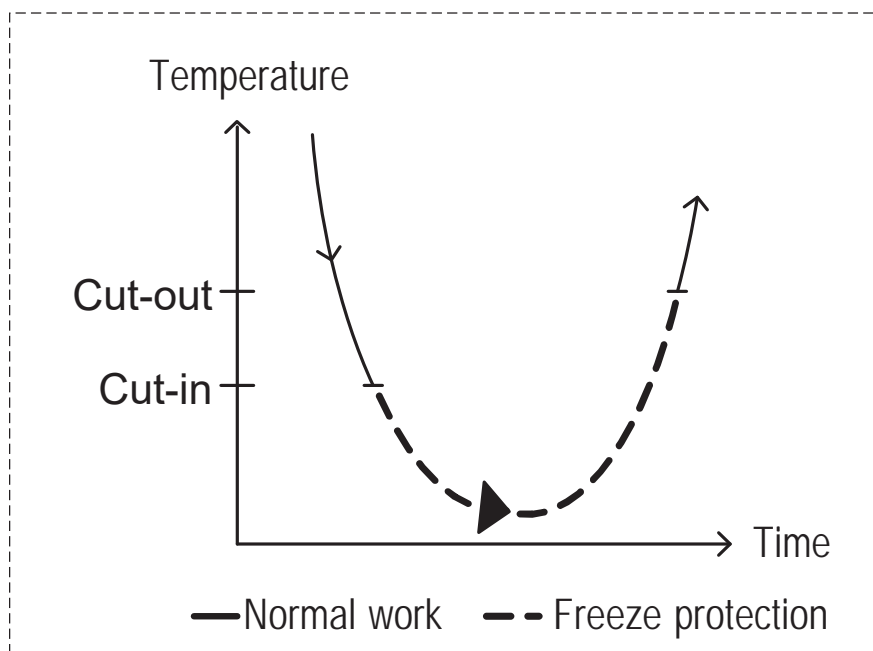
The Freeze protection feature will not allow the room temperature to drop below predefined cut-in temperature. Depending on which configuration the system is operating under (with or without Heat pump) this feature will force the system to operate in heat mode and activate the fan.

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.*

For selection of cut-in and cut-out temperatures, please refer to technician settings parameters P36 and P37.



## 2. Installation Instructions

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The MTSV/SUPER Thermostat designed for flush mounting in the room to be controlled. It should be located where the occupant can easily read the display and use the controls.

If the built in temperature sensor is being used to measure room temperature, the panel should be placed where the temperature is representative of the general room conditions, away from cold or warm air draughts, radiant heat and direct sunlight.

The panel should not be installed on an outside wall.

- The standard installation height is 1.5 meter (5 feet) from the floor.



**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.

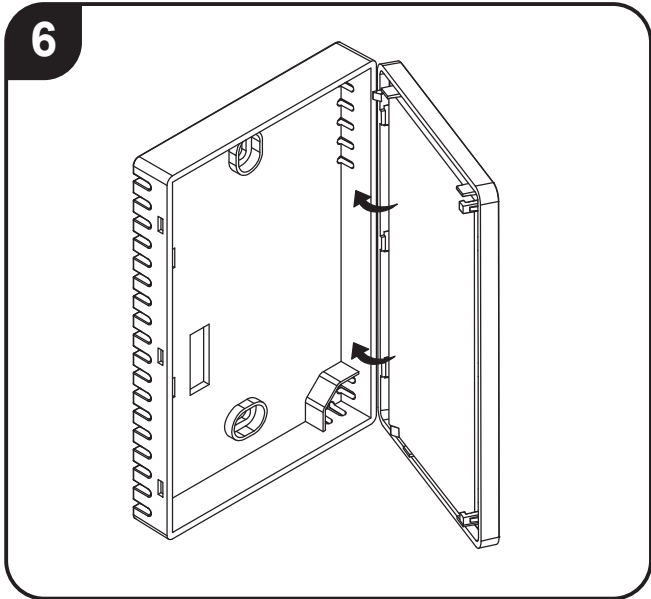
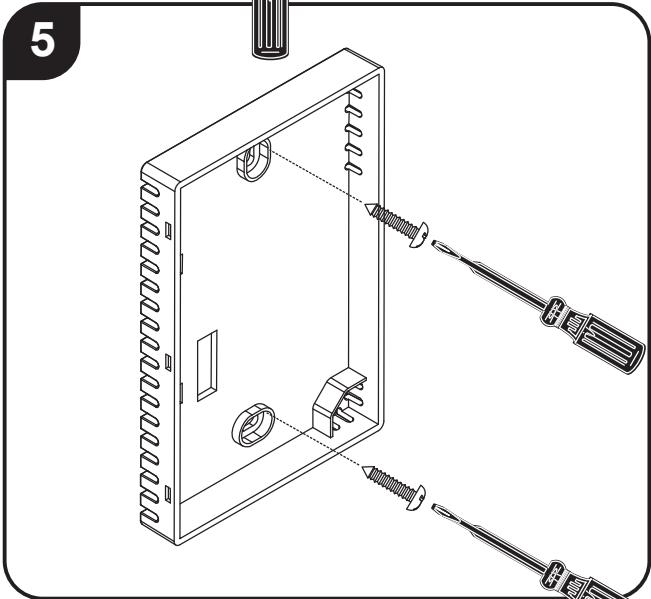
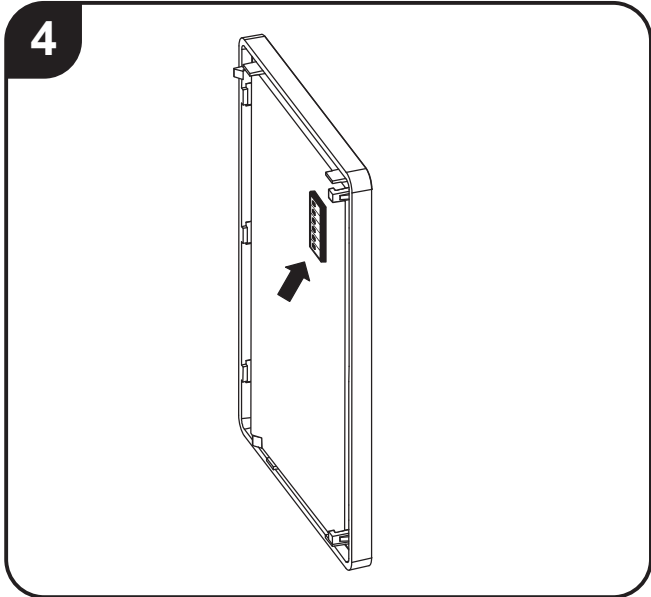
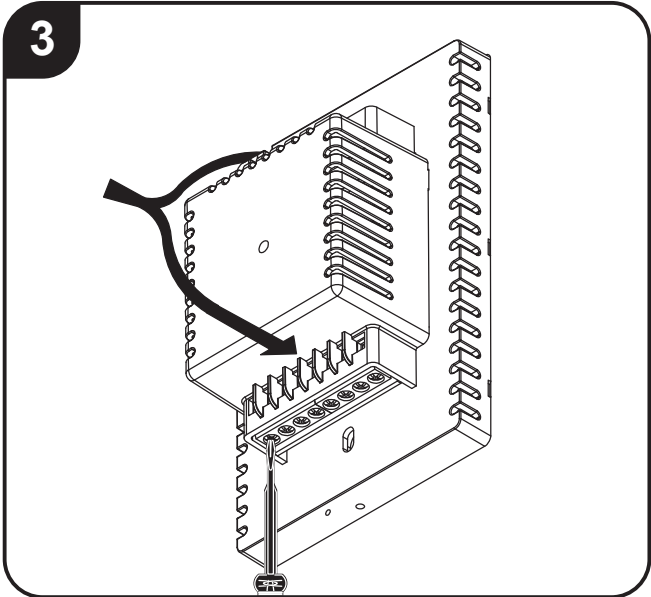
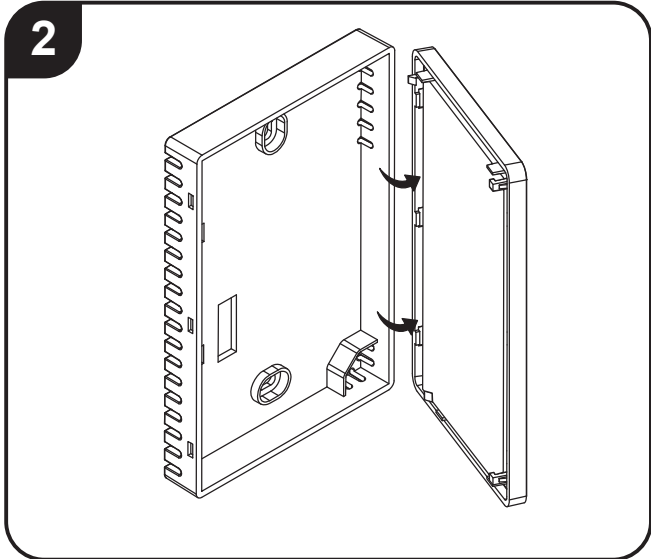
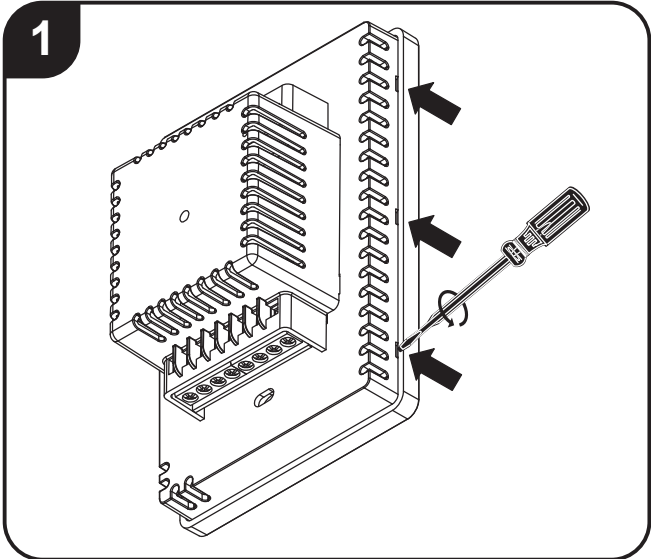
## 2. Installation Instructions (cont')

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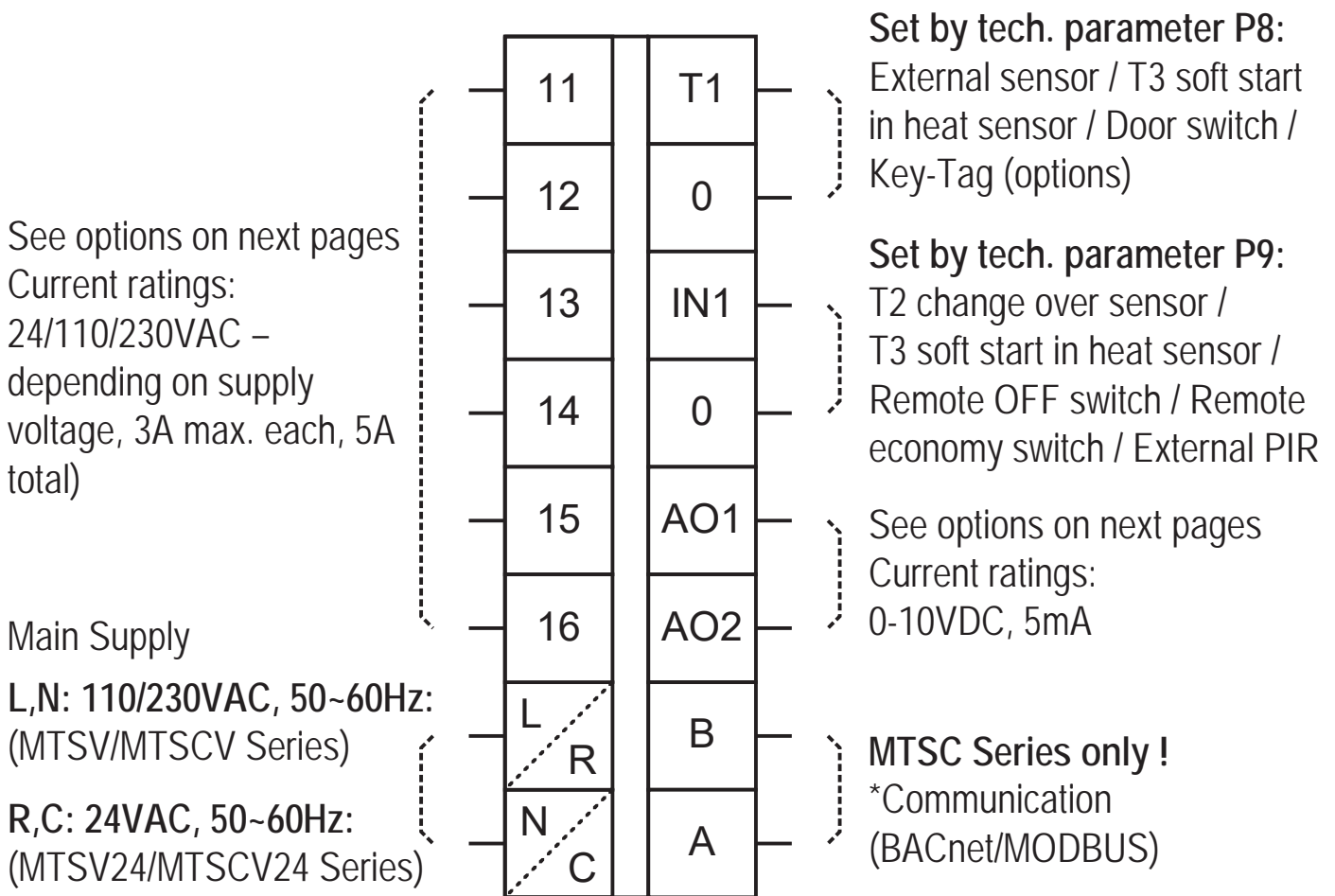
Installation procedure:

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.
2. Remove the front display and keep it in a safe place.
3. Connect the wires as shown in the enclosed wiring diagram. All terminals accept 1x0.5mm<sup>2</sup>/24 AWG.
4. If necessary, make changes to the DIP switches position as explained in this manual.
5. 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
6. Adapt the front frame-panel into its place, by pushing it towards the wall.

# 2. Installation Instructions (cont')



### 3. Wiring configuration and DIP Switches



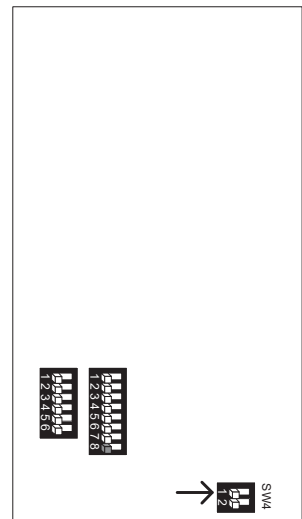
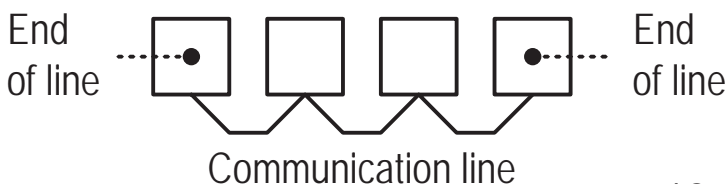
\*Communication protocol (MTSCV Series only) is set by DIP Switch S1.8 as follows:

S1.8 ON – BACnet,    S1.8 OFF – MODBUS

#### DIP Switch SW4.1 - End of line resistor 120Ω (MTSCV Series only)

First and last units in comm. line must be configured with  
120Ω End of line resistor.

Use DIP switch SW4.1 as follows:

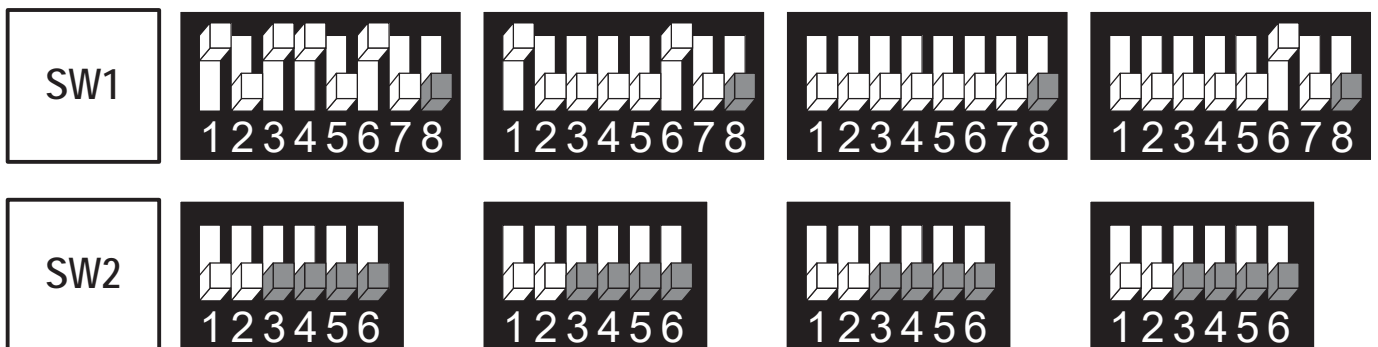


### 3. Wiring configuration and DIP Switches – AC systems

	HC32 1 Speed fan	HP42 1 Speed fan	HP22 3 Speed fan	HP21 3 Speed fan
11	Heat element 3	Heat element 2	Fan high	Fan high
12	Heat element 2	Heat element 1	Fan medium	Fan medium
13	Fan (1 speed)	Fan (1 speed)	Fan low	Fan low
14	Compressor 2	Compressor 2	Compressor 2	Heat element
15	Compressor 1	Compressor 1	Compressor 1	Compressor 1
16	Heat element 1 (see SW1.4 HC)	Heat pump (see SW1.4 HP)	Heat pump (see SW1.4 HP)	Heat pump (see SW1.4 HP)
A01	X	X	X	X
A02	X	X	X	X

Fan on/off: 24/110/230VAC, 3A max.

Control - Heat elements, Heat pump, Compressors: 24/110/230VAC, 0.3A max.



MTSCV Series: SW1.8 = Communication Protocol: ON – BACnet, OFF – MODBUS

SW1.4 = HP: ON – Heat pump active in cool, OFF – Heat pump active in heat

HC: ON – Electrical heater, OFF – Oil/Gas heater (no fan)

SW1.5 = ON: Disable compressor delay, OFF – Enable compressor delay

S2.3 – S2.6 – Not in use

HP - Heat pump system    HC - Non heat pump system    ## - Heating/Cooling stages

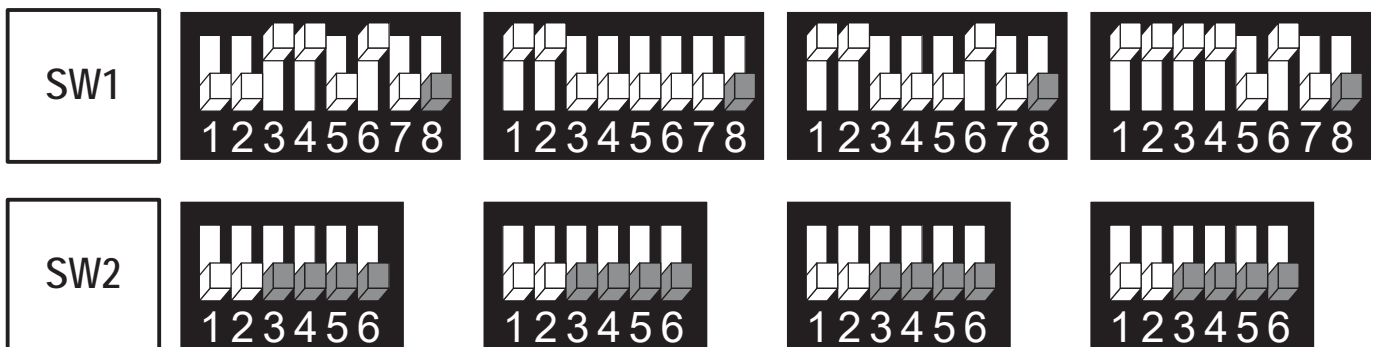
### 3. Wiring configuration and DIP Switches – AC systems

	HC21 3 Speeds fan	HP22 Fan VFS	HP21 Fan VFS	HC21 Fan VFS
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Fan medium	Fan medium
13	Fan low	Fan low	Fan low	Fan low
14	Heat element 2	Compressor 2	Heat element	Heat element 2
15	Compressor 1	Compressor 1	Compressor	Compressor 1
16	Heat element 1 (see SW1.4 HC)	Heat pump (see SW1.4 HP)	Heat pump (see SW1.4 HP)	Heat element 1 (see SW1.4 HC)
A01	X	X	X	X
A02	X	Fan VFS	Fan VFS	Fan VFS

Fan on/off: 24/110/230VAC, 3A max.

Fan VFS: 0-10VDC. 5mA Not isolated

Control - Heat elements, Heat pump, Compressors: 24/110/230VAC, 0.3A max.



MTSCV Series: SW1.8 = Communication Protocol: ON – BACnet, OFF – MODBUS

SW1.4 = HP: ON – Heat pump active in cool, OFF – Heat pump active in heat

HC: ON – Electrical heater, OFF – Oil/Gas heater (no fan)

SW1.5 = ON: Disable compressor delay, OFF – Enable compressor delay

S2.3 – S2.6 – Not in use

HP - Heat pump system    HC - Non heat pump system    ## - Heating/Cooling stages

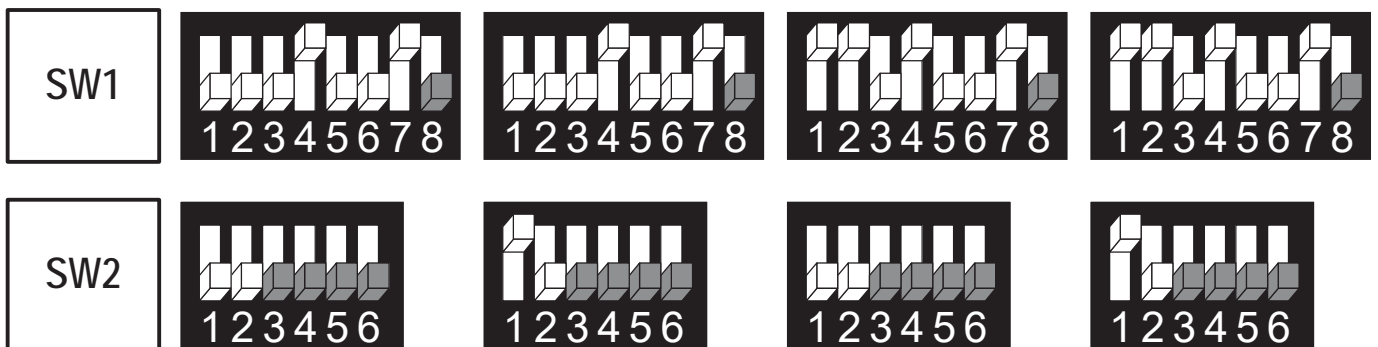
### 3. Wiring configuration and DIP Switches – Fan coil systems

	2-Pipe 3 Speed	2-Pipe, 3 Speed Cool/Heat PID	2-Pipe Fan VFS	2-Pipe, Fan VFS Cool/Heat PID
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Fan medium	Fan medium
13	Fan low	Fan low	Fan low	Fan low
14	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)
15	Cool/Heat valve	X	Cool/Heat valve	X
16	X	X	X	X
A01	X	Cool/Heat valve PID	X	Cool/Heat valve PID
A02	X	X	Fan VFS	Fan VFS

Fan on/off: 24/110/230VAC, 3A max.

Fan VFS, PID valves: 0-10VDC. 5mA Not isolated

Control - Heat elements, Cool/Heat valves, Compressors: 24/110/230VAC, 0.3A max.



MTSCV Series: SW1.8 = Communication Protocol: ON – BACnet, OFF – MODBUS

SW1.4 = Enable/Disable 2<sup>nd</sup> heating stage: ON – Enable, OFF – Disable

SW1.5 = Chilled beam option (fan will not run with 1<sup>st</sup> stage cooling) – SW1.5 ON

S2.3 – S2.6 – Not in use



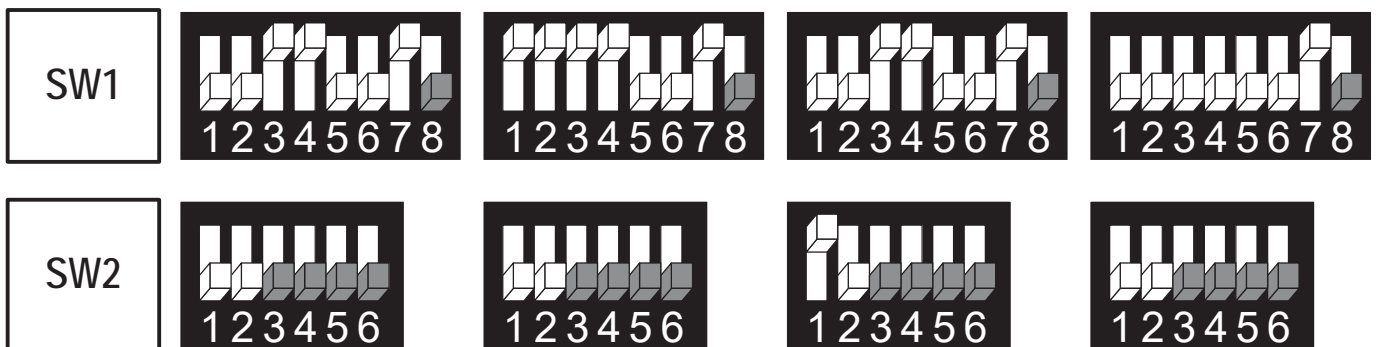
### 3. Wiring configuration and DIP Switches – Fan coil systems

	4-Pipe 3 Speed fan	4-Pipe, 3 Speed Fan VFS	4-Pipe, 3 Speed Cool-PID	2-Pipe, 3 Speed Cool only**
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Fan medium	Fan medium
13	Fan low	Fan low	Fan low	Fan low
14	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)	X
15	Cool valve	Cool valve	X	Cool valve
16	Heat valve (1 <sup>st</sup> stage heat)	Heat valve (1 <sup>st</sup> stage heat)	Heat valve (1 <sup>st</sup> stage heat)	X
A01	X	X	Cool valve PID	X
A02	X	Fan VFS	X	X

Fan on/off: 21/110/230VAC, 3A max.

Fan VFS, PID valves: 0-10VDC. 5mA Not isolated

Control - Heat elements, Cool/Heat valves, Compressors: 24/110/230VAC, 0.3A max.



MTSCV Series: SW1.8 = Communication Protocol: ON – BACnet, OFF – MODBUS

SW1.4 = Enable/Disable 2<sup>nd</sup> heating stage: ON – Enable, OFF – Disable

SW1.5 = Chilled beam option (fan will not run with 1<sup>st</sup> stage cooling) – SW1.5 ON

S2.3 – S2.6 – Not in use

\*\*For Cool only configuration, change technician parameter P9 to "01" (change over sensor) and leave contact IN,0 open.

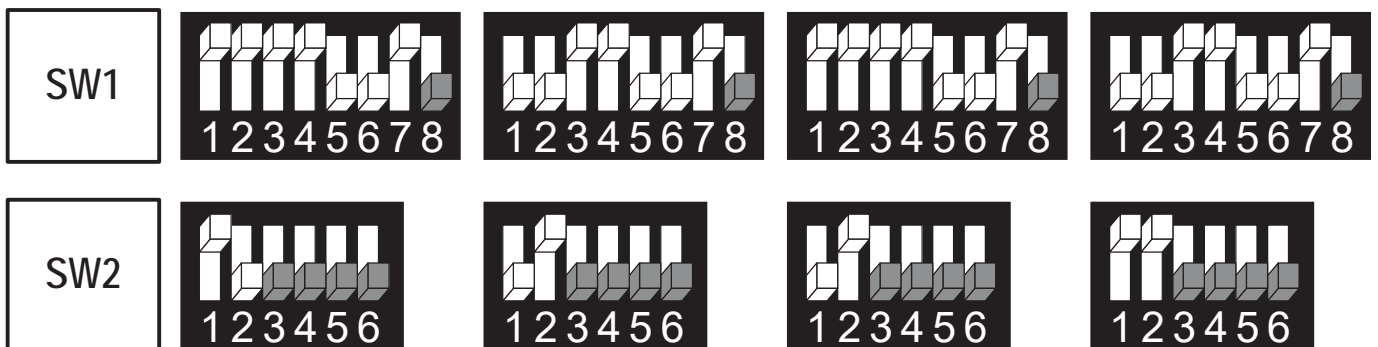
### 3. Wiring configuration and DIP Switches – Fan coil systems

	4-Pipe, Fan VFS Cool PID	4-Pipe, 3 Speed Heat PID	4-Pipe, Fan VFS Heat PID	4-Pipe, 3 Speed Heat PID, Cool PID
11	Fan high	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Fan medium	Fan medium
13	Fan low	Fan low	Fan low	Fan low
14	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)	Heat element (2 <sup>nd</sup> stage heat)
15	X	Cool valve	Cool valve	X
16	Heat valve (1 <sup>st</sup> stage heat)	X	X	X
A01	Cool valve PID	Heat valve PID (1 <sup>st</sup> stage heat)	Heat valve PID (1 <sup>st</sup> stage heat)	Cool valve PID
A02	Fan VFS	X	Fan VFS	Heat valve PID (1 <sup>st</sup> stage heat)

Fan on/off: 24/110/230VAC, 3A max.

Fan VFS, PID valves: 0-10VDC. 5mA Not isolated

Control - Heat elements, Cool/Heat valves, Compressors: 24/110/230VAC, 0.3A max.



MTSCV Series: SW1.8 = Communication Protocol: ON – BACnet, OFF – MODBUS

SW1.4 = Enable/Disable 2<sup>nd</sup> heating stage: ON – Enable, OFF – Disable

SW1.5 = Chilled beam option (fan will not run with 1<sup>st</sup> stage cooling) – SW1.5 ON

S2.3 – S2.6 – Not in use

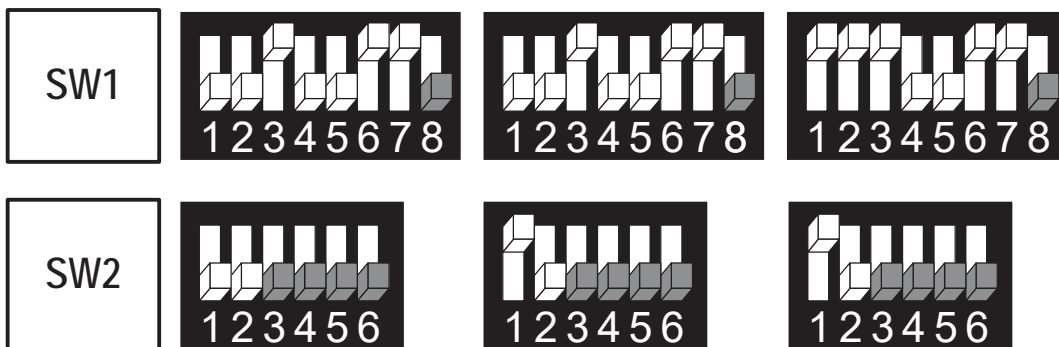
### 3. Wiring configuration and DIP Switches – Fan coil systems

	<b>4P-3S Floor heating</b>	<b>4-Pipe 3S C-PID Floor heating</b>	<b>4-Pipe VFS C-PID Floor heating</b>
11	Fan high	Fan high	Fan high
12	Fan medium	Fan medium	Fan medium
13	Fan low	Fan low	Fan low
14	Floor heating (1 <sup>st</sup> stage heat)	Floor heating (1 <sup>st</sup> stage heat)	Floor heating (1 <sup>st</sup> stage heat)
15	Cool	X	X
16	Heat (2 <sup>nd</sup> stage heat)	Heat (2 <sup>nd</sup> stage heat)	Heat (2 <sup>nd</sup> stage heat)
A01	X	Cool valve PID	Cool valve PID
A02	X	X	Fan VFS

Fan on/off: 24/110/230VAC, 3A max.

Fan VFS, PID valves: 0-10VDC. 5mA Not isolated

Control - Heat elements, Cool/Heat valves, Compressors: 24/110/230VAC, 0.3A max.



Floor heating – the fan will not run with 1<sup>st</sup> stage heat

MTSCV Series: SW1.8 = Communication Protocol: ON – BACnet, OFF – MODBUS

SW1.4 = Enable/Disable 2<sup>nd</sup> heating stage: ON – Enable, OFF – Disable

SW1.5 = Chilled beam option (fan will not run with 1<sup>st</sup> stage cooling) – SW1.5 ON





S2.3 – S2.6 – Not in use

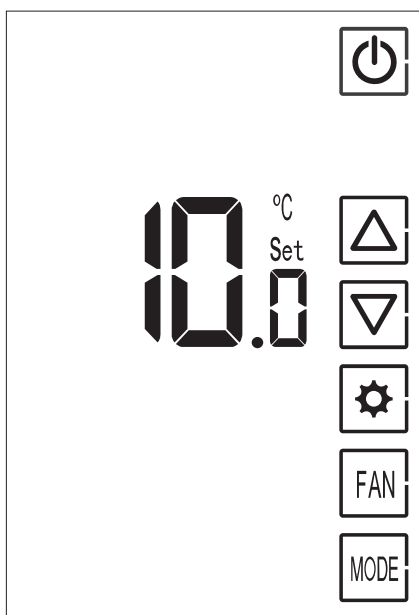
C-PID = Cool valve PID      H-PID = Heat valve PID      VFS = Fan VFS

## 4. Technician Settings

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### Enter technician settings

- Adjust the set-point temperature to 10°C / 50°F.
- To enter technician settings, press and hold the  button for 5 seconds.
- Use the  button to advance to the next parameter.
- Use the  button to return to return to the previous parameter.
- Press the  button or wait 60 seconds to exit technician settings and return to normal display.



(Press and hold)

Note: The displayed parameters may depend on system configuration

## 4. Technician settings (cont')

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### **P1 – Offset for temperature readings calibration**

Range: -6...+6°C / -9...+9°F.

Default: 0°C / 0°F.

---

### **P2 – Set point limit for cooling**

Range: 5...35°C / 41...90°F.

Default: 5°C / 35°F.

---

### **P3 – Set point limit for heating**

Range: 5...35°C / 41...95°F.

Default: 35°C / 95°F.

---

### **P4 – Lock the [Fan] button**

“01” - [Fan] button Locked

“00” - [Fan] button unlocked

---

### **P5 – Lock the [Mode] button**

“01” - [Mode] button Locked

“00” - [Mode] button unlocked (default)

---

### **P6 – Lock the [On/Off] button**

“01” - [On/Off] button Locked

“00” - [On/Off] button unlocked (default)

---

## 4. Technician settings (cont')

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### **P7 – Lock the [+] and [-] buttons (Set buttons)**

- “01” - [+] and [-] buttons Locked
  - “00” - [+] and [-] buttons unlocked (default)
- 

### **P8 – Functionality of T1 terminals**

- “00” - T1 terminals are not in use (default)
- “01” - External sensor
- “02” - T3 (soft start in heat sensor)
- “03” - Door switch\*
- “04” - Key-tag\*

\*Voltage free contacts - for polarity and time delay –  
see technician parameters P12 and P13

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### **P9 – Functionality of IN1,0 terminals**

- “00” - IN1,0 terminals are not in use (default)
- “01” - T2 (Change over sensor) in FC / De-Ice in Heat in A/C  
In Cool only configuration, select “01” and leave  
contact open.
- “02” - T3 (soft start in heat sensor)
- “03” - Voltage free contact - Remote On/Off\*\*
- “04” - Voltage free contact - Remote Economy\*\*
- “05” - External Passive Infrared detector (PIR)

\*\*Voltage free contacts - for polarity and time delay –  
see technician parameters P10 and P11

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## 4. Technician settings (cont')

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**P10 – Polarity of remote switch contact on terminals IN,0  
(P09 = “03” or “04”)**

“00” - Normally close (default)

“01” - Normally open

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**P11 – Time delay of remote switch contact on terminals IN,0  
(P09 = “03” or “04”)**

Range: 0...999 seconds.

Default: 600 seconds.

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**P12 – Polarity of door switch/key-tag contact on terminals T1,0  
(P08 = “03” or “04”)**

“00” - Normally close (default)

“01” - Normally open

---

**P13 – Door switch / Door key-tag delay time**

Range: 0...999 seconds

Default: 180 seconds

---

**P14 – Enable/Disable Auto change over mode**

“00” - Disable Auto change over mode

“01” - Enable Auto change over mode (default)

---

**P15 – Occupancy sensor logic (PIR)**

“00” - Thermostat turns off when unoccupied  
and back on when re-occupied

“01” - Thermostat turns off when unoccupied  
and remains off when re-occupied

“02” - Thermostat uses economy set points (default)

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## 4. Technician settings (cont')

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### **P16 – Enable/Disable Occupancy sensor**

- “00” - Disable
  - “01” - Enable (default)
- 

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

Range: 0...250 minutes, Default: 20 minutes

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### **P18 – Door switch/key-tag logic**

- “00” - Thermostat turns off when unoccupied and back on when re-occupied.
  - “01” - Thermostat uses economy set points when unoccupied.
  - “02” - Valves turn OFF and fan running on low speed when unoccupied.
- 

### **P19 – PIR (Occupancy sensor) polarity**

- “00” - Normally open (default)
  - “01” - Normally close
- 

### **P25 – Economy set point for cooling**

Range: 5...35°C / 41...90°F  
Default: 30°C / 86°F

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### **P26 – Economy set point for heating**

Range: 5...35°C / 41...90°F  
Default: 10°C / 50°F

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## 4. Technician settings (cont')

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**P27 – Time on-delay between heating stages**

Range: 0...600 seconds

Default: 5 seconds

---

**P28 – Time off-delay between heating stages**

Range: 0...600 seconds

Default: 1 seconds

---

**P30 – Beeper ON or OFF**

“01” - Beeper ON (default)

“00” - Beeper OFF

---

**P31 – Fan ON delay in cooling (seconds) (FC only!)**

Range: 0...120 seconds

Default: 0 seconds (no delay)

---

**P32 – Fan OFF delay in cooling (seconds)**

Range: 0...120 seconds

Default: 0 seconds (no delay)

---

**P33 – Fan ON delay in heating (seconds) (FC only!)**

Range: 0...120 seconds

Default: 0 seconds (no delay)

---

**P34 – Fan OFF delay in heating (seconds)**

Range: 0...120 seconds

Default: 30 seconds

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## 4. Technician settings (cont')

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### **P35 – Enable/Disable Freeze protection**

“01” - Enable freeze protection (default)

“00” - Disable freeze protection

---

### **P36 – Freeze protection cut-in set point**

Range: 8...15°C / 46...59°F

Default: 8°C / 46°F

---

### **P37 – Freeze protection cut-out set point**

Range: 10...17°C / 50...63°F

Default: 10°C / 50°F

---

### **P40 – View filter counter (hours) – Read only**

Range: 0...999 hours

---

### **P41 – Reset filter time**

“00” - No action - keep counting (default)

“01” - Reset filter counter

---

### **P42 – Adjust filter alarm delay time counter (hours)**

Range: 0...999 hours

Default: 0 hours (0 = Disable)

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## 4. Technician settings (cont')

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**P43 – Soft start in heat – cut-in temperature (FC Only!)**

Range: 14...37°C / 57...99°F

Default: 36°C / 97°F

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**P44 – Soft start in heat – cut-out temperature (FC Only!)**

Range: 12...35°C / 54...95°F

Default: 32°C / 90°F

---

**P45 – Cool differential band (On/Off)**

Range: 0...5°C / 0...10°F

Default: 1°C / 2°F

---

**P46 – Cool differential band offset**

Range: 0...5°C / 0...10°F

Default: 0°C / 0°F

---

**P47 – Heat differential band (On/Off)**

Range: 0...5°C / 0...10°F

Default: 1°C / 2°F

---

**P48 – Heat differential band offset**

Range: -5...0°C / -10...0°F

Default: 0°C / 0°F

---

#### 4. Technician settings (cont')

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

Range: 0...10°C / 0...20°F

Default: 2°C / 4°F

---

**P50 – Shift between Cooling stages (AC only!)**

Range: 0...10°C / 0...20°F

Default: 2°C / 4°F

---

**P51 – Shift between Heating stages**

Range: 0...49°C / 0...98°F

Default: 2°C / 4°F

---

**P52 – Cool proportional band (FC only!)**

Range: 2...10°C / 4...20°F

Default: 2°C / 4°F

---

**P53 – Cool proportional low limit (FC only!)**

Range: 0...100%

Default: 0%

---

**P54 – Cool proportional high limit (FC only!)**

Range: 0...100%

Default: 100%

---

#### 4. Technician settings (cont')

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**P55 – Heat proportional band (FC only!)**

Range: 2...10°C / 4...20°F

Default: 2°C / 4°F

---

**P56 – Heat proportional low limit (FC only!)**

Range: 0...100%

Default: 0%

---

**P57 – Heat proportional high limit (FC only!)**

Range: 0...100%

Default: 100%

---

**P60 – Proportional ON percent (FC only!)**

Range: 0...30%

Default: 30%

---

**P61 – Proportional OFF percent (FC only!)**

Range: 0...20%

Default: 10%

---

## 4. Technician settings (cont')

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**P63 – Time on-delay between cooling stages (AC only!)**

Range: 0...600 seconds

Default: 5 seconds

---

**P64 – Time off-delay between cooling stages (AC only!)**

Range: 0...600 seconds

Default: 1 seconds

---

**P65 – Fan VFS proportional band in cooling**

Range: 2...10°C / 4...20°F

Default: 2°C / 4°F

---

**P66 – Fan VFS proportional band in heating**

Range: 2...10°C / 4...20°F

Default: 2°C / 4°F

---

**P67 – Fan VFS Low speed percent in cooling**

Range: 0...30%

Default: 20%

---

**P68 – Fan VFS Medium speed percent in cooling**

Range: 30...60%

Default: 50%

---

**P69 – Fan VFS High speed percent in cooling**

Range: 60...100%

Default: 90%

---

## 4. Technician settings (cont')

---

**P70 – Fan VFS Low speed percent in heating**

Range: 0...30%

Default: 30%

---

**P71 – Fan VFS Medium speed percent in heating**

Range: 30...60%

Default: 50%

---

**P72 – Fan VFS High speed percent in heating**

Range: 60...100%

Default: 80%

---

**P74 – VFS Medium speed differential**

Range: 10...50%

Default: 35

---

**P75 – VFS High speed differential**

Range: 10...50%

Default: 35

---

## 4. Technician settings (cont')

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**P76 – Fan VFS Low limit in cooling**

Range: 0...100%

Default: 0%

---

**P77 – Fan VFS High limit in cooling**

Range: 0...100%

Default: 100%

---

**P78 – Fan VFS Low limit in heating**

Range: 0...100%

Default: 0%

---

**P79 – Fan VFS High limit in heating**

Range: 0...100%

Default: 100%

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**P83 – View T2 temperature sensor readings**

Note: If T2 is not connected, -9.8°C / -9.8°F  
will appear on display

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**P84 – View T3 temperature sensor readings**

Note: If T3 is not connected, -9.8°C / -9.8°F  
will appear on display

---



#### 4. Technician settings (cont')

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

Range: -20...99°C

Default: 0°C

---

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

Range: -20...99°C

Default: 8°C

---

**P87 – Deice in heat time (AC only!)**

Range: 120...420 Seconds

Default: 300 Seconds

---

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

Range: 600...1800 Seconds

Default: 1500 Seconds

---

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

Range: -20...99°C

Default: 0°C

---

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

Range: -20...99°C

Default: 16°C

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**P91 – Compressor delay (AC only!)**

Range: 0...360 Seconds

Default: 180 Seconds

---

## 4. Technician settings (cont')

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### **P99 – One or Two set points (for cool and for heat) (FC only!)**

“00” - One set point for cooling and heating (default)

“01” - two set points – one for cool and one for heat

---

### **P100 – Enable/Disable Screen dimming**

“00” - Disable

“01” - Enable (default)

---

### **P101 – Screen dimming delay**

Range: 0...99 minutes

Default: 30 seconds

---

### **P102 – Dimming percentage value**

Range: 1,5,10...90%

Default: 10%

---

### **P105 – Display brightness**

Range: 50...100%

Default: 100%

---

### **P114 – Cool PID Kp (FC only!)**

Range: 0...100%

Default: 100%

---

### **P115 – Heat PID Kp (FC only!)**

Range: 0...100%

Default: 100%

---

## 4. Technician settings (cont')

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### **P116 – Cool PID Ki (FC only!)**

Range: 0...100%

Default: 0%

---

### **P117 – Heat PID Ki (FC only!)**

Range: 0...100%

Default: 0%

---

### **P118 – Cool PID Kd (FC only!)**

Range: 0...100%

Default: 1%

---

### **P119 – Heat PID Kd (FC only!)**

Range: 0...100%

Default: 1%

---

### **P198 – Protocol indication (read only!)**

0 - MODBUS

1 - BACnet


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### **P200 – Restore defaults**

Press the  button to restore defaults

Press the  button twice to return to normal display






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**Press the  button to return to parameter P1 or wait 60 seconds to exit technician settings and return to normal display.**

## 5. MAC Address (MTSCV Series only)

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### Enter MAC Address settings

- Adjust the set-point temperature to 11°C – the button  will appear on display.
- To enter MAC Address settings, press and hold the  button for 5 seconds.
- Use the  and  buttons to change the MAC Address.  
Set “0” for no communication.
- Press the  button to return to normal display.







