

## PS2.20 TDR20/QDR20 Touchscreen and SlimLine Touchscreen Room Display Interfaces (°C/°F, rH, VOC, CO<sub>2</sub>, PIR)



The TDR20/QDR20 Touchscreen and SlimLine Touchscreen Room Displays are used together with the TCR80 series ceiling mounted room controllers. The room interfaces have colour touchscreen and integrated temperature measurement. The colour touchscreen can be used for the setpoint adjustment, changing the controller operating mode and fan speed. Configurable boost button also available. The touchscreen room displays can also have optional CO<sub>2</sub>, VOC, humidity and occupancy monitoring.

In addition the BMS can send through the TCR80 series controllers additional information such as energy or water consumption figures, or outside air temperature readings.

### Features

- 2.4" Colour Touchscreen Room Interface with Built-In Temperature Measurement.
- Wall surface mounting or Wall junction box mounting
- SlimLine 14mm Models for compact installations
- Setpoint, Fan Speed and Operating Mode Adjustment.
- Boost Button option overriding the space to Occupied Mode.
- Touchscreen is Customisable to the User Requirements.
- Optional CO<sub>2</sub> Measurement and Indication.
- Optional Relative Humidity Measurement and Indication.
- Optional VOC (Volatile Organic Compound) Air Quality Monitoring.
- Option for PIR Occupancy Sensor.
- Fast and Efficient RS485 over USB-C cable connection to the TCR80 Ceiling Controllers (Power & Communications)
- Rising Cage Screw Terminals for optional retrofit wiring
- Configuration wirelessly through Smart Config Windows Software or SmartPhone App (using Bluetooth Dongle).
- Available in both White and Black. The display has number of different skin colour options for customisation.
- User display language customisable using the language packs.

## Technical Specifications

|                                    |  |  |   |
|------------------------------------|--|--|---|
| <b>Power Supply:</b>               | Power:                                   | 5Vdc via USB-C Cable or Wiring Terminals   |   |
| <b>Measurements:</b>               | Temperature:                             |  |   |
|                                    | Range:                                   | 0..50° (32..122°F)   |   |
|                                    | Accuracy:                                | +/-0.5°C   |   |
|                                    | CO2 (QDR Models)                         |  |   |
|                                    | Range:                                   | 0..10,000ppm   |   |
|                                    | Accuracy:                                | +/-50ppm + 5% of the reading   |   |
|                                    | Humidity (Option)                        |  |   |
|                                    | Range:                                   | 0..100%rH  |   |
|                                    | Accuracy:                                | +/-2%rH (within 20 to 80%rH)   |   |
|                                    | VOC (Volatile Organic Compound) (Option) |  |   |
| Range:                             | 0..500 (Air Quality Index)               |  |   |
| <b>Communication (Sensor Bus):</b> | PIR Movement (Option)                    |  |   |
|                                    | Type/Range:                              | Passive Infrared Movement Detection, Range up to 5m  |   |
|                                    | Physical Interface                       | RSRS485 driver with Modbus Connection<br>(over USB-C cable or standard wiring cables)      |   |
|                                    | Protocol:                                | Modbus RTU   |   |
| <b>Display:</b>                    | Addressing:                              | Via PC Device Configuration Tool, via SmartPhone Tool, or via Display (Default Address 1)  |   |
|                                    | Touchscreen:                             | 2.4" Full Colour Touchscreen Display with Glass Overlay, 240 x 320px                       |   |
| <b>Mechanical:</b>                 | Wiring Terminals:                        | USB-C Connector<br>Rising Cage Screw Terminals, 0.2 to 1.5mm <sup>2</sup> (16AWG to 30AWG) |   |
|                                    | Enclosure:                               | ABS ULV0 Plastics - White or Black   |   |
|                                    | Mounting:                                | Wall or Junction Box Mounting (60mm screw distance)  |   |
|                                    | Dimensions                               |  | Standard: W86 x H86 x D24mm   |
|                                    |  |  | SlimLine: W86 x H86 x D14mm (Surface Part)<br>W86 x H86 x D39mm (Total) |
| <b>Country of Origin:</b>          |  | United Kingdom   |   |

## Model Selection

Refer to the below table to select the required model. The part number offers descriptive method for the product and options selection, and the SKU# number provides unique reference number. It is possible to order products using either.

| Part Number                 |   | SKU# Number  |   |                 |    |       |
|-----------------------------|---|--------------|---|-----------------|----|-------|
| Example                     | TDR20-MOD-TS-RH-W   | 2000         | 1 | 02              | 01 | 00 02 |
| <b>Product Name</b>         |   | Product Code |   | Product Options |    |       |
| TDR20                       | Touchscreen Room Display, Temperature Measurement         | 2000         |   |                 |    |       |
| QDR20                       | Touchscreen Room Display, Temperature and CO2 Measurement | 2100         |   |                 |    |       |
| <b>Serial Communication</b> |   |              |   |                 |    |       |
| MOD                         | Modbus RS485  |              | 1 |                 |    |       |
| <b>User Interface</b>       |   |              |   |                 |    |       |
|                             | No Display  |              |   |                 | 00 |       |
| TS                          | Colour Capacitive Touchscreen                             |              |   |                 | 02 |       |
| <b>Measurement Options</b>  |   |              |   |                 |    |       |
|                             | No Extra Measurements                                     |              |   |                 |    | 00    |
| RH                          | Relative Humidity   |              |   |                 |    | 01    |
| RH-VOC                      | Volatile Organic Compound and Humidity                    |              |   |                 |    | 02    |
| OE                          | Passive Infrared Movement (PIR)                           |              |   |                 |    | 03    |
| RH-OE                       | Relative Humidity and Movement (PIR)                      |              |   |                 |    | 04    |
| RH-VOC-OE                   | VOC, Relative Humidity and Movement (PIR)                 |              |   |                 |    | 05    |
| <b>Mounting Options</b>     |   |              |   |                 |    |       |
|                             | Standard Wall Surface or Junction Box                     |              |   |                 |    | 00    |
| F                           | SlimLine Flush Mounting on Junction Box                   |              |   |                 |    | 30    |
| <b>Colour Options</b>       |   |              |   |                 |    |       |
| B                           | Black   |              |   |                 |    | 01    |
| W                           | White   |              |   |                 |    | 02    |

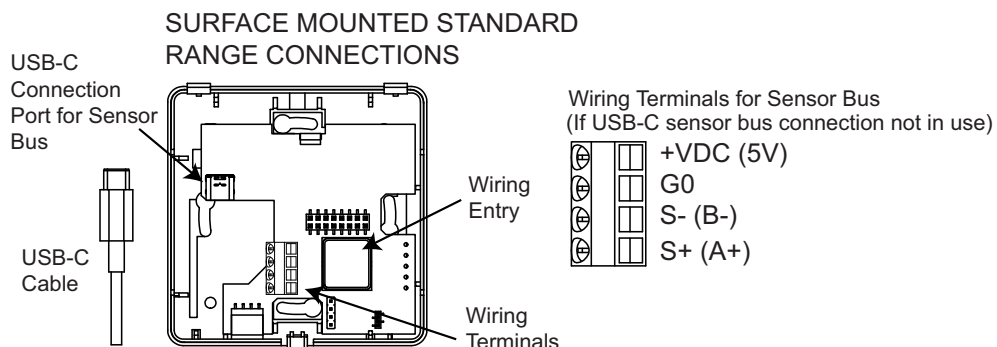
| Part Number        | Description   | SKU# Number       |
|--------------------|---|-------------------|
| <b>Accessories</b> |   |                   |
| USB-C-CAB-6        | 6m USB-C Male to USB-C Male for Room Interface Units, Black | 8510 0 00 0005 01 |
| USB-C-EXT-6        | 5m USB-C Female to USB-C Male Extension Cable, Black        | 8520 0 00 0006 01 |

## Wiring Connections

The diagram below illustrates USB-C connection to the Room Display Interfaces. Bring the USB-C cable through the Wiring Entry hole.

Alternatively, TDR20/QDR20 can be wired with 4-core cable (5V, 0V, Sensor Bus-, Sensor Bus+).

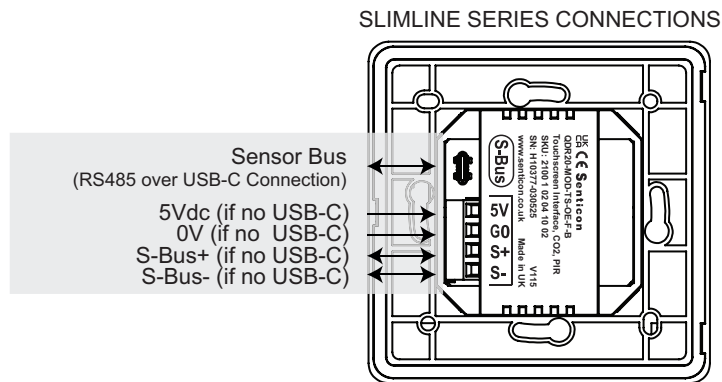
### STANDARD SURFACE MODEL WIRING



Note: Sensor bus uses RS485 over USB-C cable (requires full USB-C cable e.g. Senticon USB-C-CAB-6)

### SLIMLINE FLUSH MOUNTING WIRING

SlimLine models are mounted to standard junction boxes and are suitable to wide range of boxes.



## Device Configuration and Communications

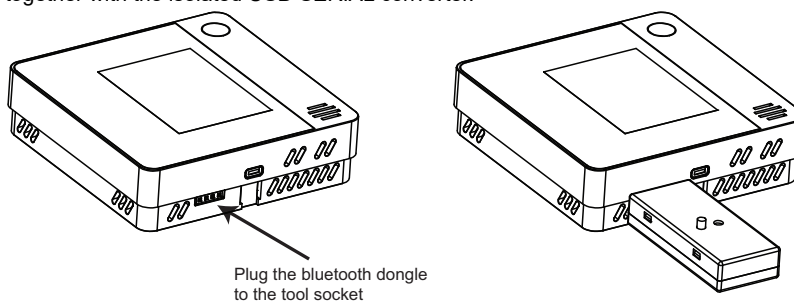
The devices come with Modbus RTU communication available through the USB-C cable connection. The Modbus communication is used between the TCR80 series controllers and TDR/QDR20 Room Display Interfaces. The TDR20/QDR20 device address is a default set 1, allowing plug-and-play connection for the Zone 1 of TCR80 Series controllers.

The following display functions have been activated in default configuration:-

- Room Temperature Setpoint (All Models)
- Room Temperature (TDR20)
- CO2 Measurement (QDR20)
- Humidity Measurement (with RH option)
- Operating Mode (Unoccupied/Occupied/Off) Button
- Heating/Cooling Status Icon, Condensation and Temperature limitation Icons

The displays can be configured locally using via PC Based Smart Config Tool, or via Smart Phone Application. Using these methods the device settings can be altered to suit the site requirements.

The Windows Smart Config Tool and SmartPhone Application (iOS) are connected to the device using Bluetooth dongle set (BLE-TOOLSET, connection to the device illustrated below). The PC Device Configuration tool can also be used together with the isolated USB-SERIAL converter.



To connect the TDR/QDR20 to Zone 2 change the device address to 2 using using the abovementioned tools, or through the display menu.

## Measurements

### **TEMPERATURE MEASUREMENT**

The TDR/QDR room displays have built-in temperature measurement. The measurement can be displayed on the touchscreen.

**NOTE: For accurate temperature measurement it is important that correct installation instructions are followed - see Dimensions and Installation Chapter.**

### **CO2 (CARBON DIOXIDE) MEASUREMENT (QDR MODELS)**

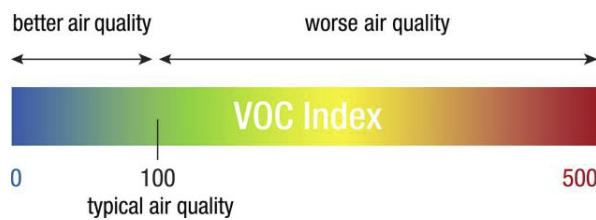
The QDR room displays have built-in CO2 measurement. The QDR CO2 sensor provides Automatic Self Calibration logic keeping measurement accurate over the time. The Automatic calibration can be disabled and the sensor can be manually calibrated (see Calibration Settings). The measurement is as default displayed on the touchscreen (can be hidden).

### **HUMIDITY MEASUREMENT (RH OPTION)**

With TDR and QDR Displays can be fitted optional humidity sensor that provides 2% accurate relative humidity measurement. The measurement is displayed as default on the touchscreen (can be hidden).

### **RH-VOC VOLATILE ORGANIC COMPOUND MEASUREMENT (RH-VOC OPTION)**

The VOC sensor option measures Volatile Organic Compounds with automatic humidity compensation providing relative indoor air quality index signal (see below diagram). The measurement can be displayed on the screen.



Measured air pollutants include harmful gases (acetone from paints and glues, toluene from furniture, mattresses and building products), other gases (ethanol from alcohol, perfumes and cleaners), odours (hydrogen sulfide and volatile sulfuric compounds from rotten food and farts; ammonia and amines from pet urine), smoke (benzene and nitrosamines from cigarette smoke).

### **WELL Building Standard <sup>®</sup> Compliant TVOC Concentration**

According to the Performance Guidebook v.2 of the WELL Building Standard<sup>®</sup>, performance of an IAQ monitor can be assessed by using ethanol as calibration gas and the Mølhave gas mixture to convert the ethanol concentration into the Mølhave equivalent of TVOC or TVOC<sub>Mølhave</sub>. The xDR20 interfaces can calculate and display TVOC<sub>Mølhave</sub> by selecting **587 VOC Measurement Mode = TVOC Molhave** from the *Calibration and VOC Mode Settings* Menu. The maximum value is or 5482 ug/m<sup>3</sup>.

Now Parameter **403 VOC Sensor (index)** shows the TVOC concentration based on the TVOC<sub>Mølhave</sub> index. .

### **RESET<sup>®</sup> Air compliant TVOC concentration**

The xDR20 interfaces can calculate and display TVOC<sub>Isobutylene</sub> by selecting **587 VOC Measurement Mode/TVOC Isobutylene** from the *Calibration and VOC Mode Settings* Menu. TVOC<sub>Isobutylene</sub> setting provides RESET<sup>®</sup> Air compliant TVOC concentration. The maximum value is 5482 ug/m<sup>3</sup>.

| Parameter                | Description  | Value Range / Enumerations  |
|--------------------------|--|---|
| VOC Mode                 | VOC Measurements Mode  | 0 = VOC Index<br>1 = TVOC Molhave, ug/m3<br>2 = TVOC Isobutylene, ug/m3 |
| VOC Learning Time Offset | VOC Learning Time Offset, set to 12 for Index mode, and 720 Building Standards Mode (Reset/Well) | 1..1000 hours (Default 12)  |

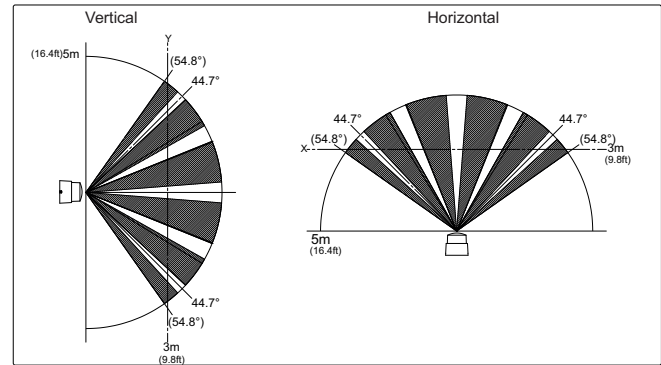
**NOTE:** The **588 VOC Learning Time Offset** parameter defines over what time span the VOC algorithm builds and updates its internal baseline (offset) from recent sensor history. Set to 720 for Building Standards.

### MOVEMENT DETECTION AND CONTROL (OE OPTION)

The displays can be fitted with an optional pyroelectric infrared motion sensor for the movement and occupancy detection. The sensor element is designed for optimal usability and reliability with low power consumption, better sensitivity and signal-to-noise ratio reducing the false detections. The diagram illustrates the detection area.

The movement will override the operating mode between Occupied - Unoccupied/Off modes on the xDR20 series and this status is automatically reflected on the TCR80 series controllers.

The PIR movement sensor *Delay Off Timer* (10..28,800 seconds) parameter sets the time that the status latches ON after detection of movement.



NOTE: Any new detected movement resets the timer. The movement sensor has 30 seconds warm-up delay on power up.

### MULTI-TRIGGER MODE

The PIR mode can be changed to multi-trigger mode. In this mode during the *Trigger Period* the number of movement detections must reach the *PIR Trigger Count* amount for the controller to activate the Occupied Mode. If within the *Trigger Period* the trigger count is not reached, it is reseted to 0. After each movement detection, there is delay of 10 seconds until further movement is registered to the trigger count. This feature can be used, for example, prevent the system to switch on if a person enters temporarily to the room space. Available settings are shows in the table below.

| Parameter                 | Description   | Value Range / Enumerations                    |
|---------------------------|---|---|
| PIR Tigger Mode           | Selects the Mode of the PIR Sensor                                | 0 - Standard (default)<br>1 - Multi-Trigger   |
| PIR Trigger Count         | Trigger Count in Multi-Trigger Mode                               | 1..10 (default 3)                             |
| Trigger Period            | Trigger Period for monitoring Trigger Count                       | 30.1,800 seconds (default 300 secs)           |
| PIR Off Delay             | Delay Off Timer for the PIR Movement/Occupancy sensor             | 10..28,800 seconds (default 600 secs)         |
| Operating Mode Off Action | Operating Mode when the PIR (OE-option) does not detect movement. | 0 = Unoccupied Mode (Default)<br>1 = Off Mode |

## Colour Touchscreen

The xDR20 Series Touchscreen is used to show the TCR80 series controller status information and built-in measurements. The touchscreen also provides the user interface for changing the TCR80 controller settings. The touchscreen display elements can be tailored to the site specific requirements.

### TOUCHSCREEN DISPLAY (SKIN COLOUR SELECTABLE)

**TOUCHSCREEN DISPLAY (SKIN COLOUR SELECTABLE)**

Menu Icon - Press For Settings, Dim and Lock

Additional Icons Displayed after Pressing Menu

Action Bar with Buttons

**STATUS BAR ICONS**

- Menu Icon (Access to settings and dimming)
- Fan Speed Indication
- Occupied / Unoccupied / Night - Off
- Screen Locked
- Heating / Cooling
- Limit Function / Frost Mode
- Condensation

**TOP MENU BUTTONS**

- Menu Icon (Access to settings, screen lock and dimming)
- Access to Configuration
- Button to Dim (no backlight)
- Button to Lock Screen (no access)

**ACTION BAR BUTTONS**

- Fan Speed Selection Button
- Mode Selection Button
- Boost (Timed) Button

**MAIN DISPLAY LOCATIONS**

- Alarm Indication
- Descriptive Text Indication (Low / Normal / High)

Setpoint Adjustment view displayed

Text 'Set' indicating setpoint (press to change)

The touchscreen is divided to three different main elements; Status Bar, Measurement/Setpoint Display Locations and Buttons (accessible on the Action Bar on the bottom or via the Menu Icon on the top).

The Status Bar Indicates the controller status.

- Heating / Cooling Mode (enable/disable)
- Limit Function / Frost Mode
- Unoccupied / Occupied / Off (enable/disable)
- Fan Speed (enable/disable)
- Lock Icon
- Condensation Icon
- Menu

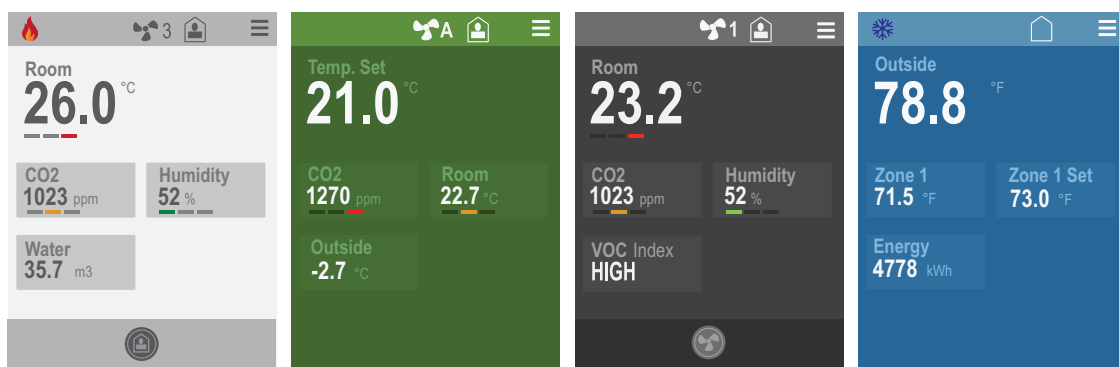
The TDR20/QDR20 displays have up to 5 different Measurement/Display Locations that can be tailored to show different measurements and show/hide the room temperature setpoint.

The display locations can also show alarm indications and additional information (energy, water usage) from the network. It is also possible to configure actual measurements to be in 'Descriptive Text' mode that makes the measurement information descriptive.

Each of the four display locations can be configured to show

- Zone Temperature Loop Setpoint
- CO2, VOC, Temperature, or Humidity Measurement

- Network Signals (e.g. Energy, Water Consumption, Pressure)
- Alarm Conditions of the Measurements (Green, Amber, Red)
- Descriptive Text instead of Measurement Value (Low / Normal / High )
- The description and units of each location can be customised
- Using Language Pack it is possible to change the text language
- The skin colour of the display can be changed according to the preference; White, Blue, Green, Grey and Black
- Brightness of the display can be adjusted
- Action Bar can have Boost button with an adjustable timer (overrides the controller output as configured), Fan speed adjustment option (A - 0 - 1 - 2 - 3), and/or Mode Button (selecting between Occupied / Unoccupied and Night Off modes)
- The display can be dimmed through the Menu button
- The display can be locked from unauthorised access through the Menu button
- Menu Button provides access to the Configuration Menu (network settings)



**OPERATING MODE**

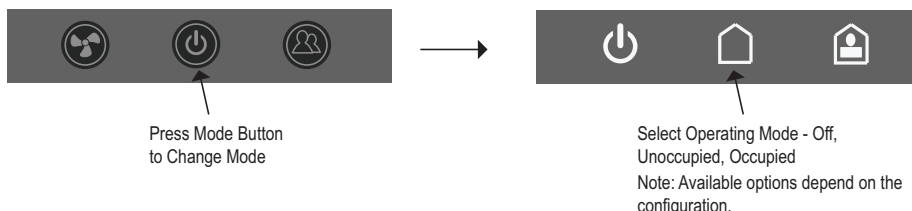
The TDR20/QDR20 Room Display Interfaces are used to control the operating mode on the TCR80 Series controllers. The operating mode states are:-

- Occupied (Comfort)
- Unoccupied (Relaxed)
- Off (Night)

The operating mode is changed via the touchscreen, via PIR Occupancy Sensor (-OE option), or by the TCR80 controller over the USB-C network connection.

NOTE: The PIR movement sensor (-OE option) changes the controller mode both with On and Off transitions.

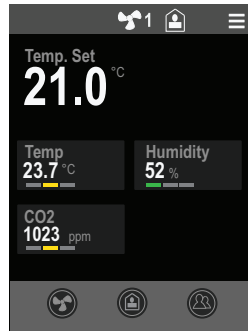
NOTE: On power up the display starts in Occupied (Comfort) mode (once the communication between the TCR80 and TDR/QDR20 is established, the TCR80 will automatically transmit current state to the display). If OE-option is fitted the xDR20 starts in unoccupied/off mode.



**SETPOINT ADJUSTMENT**

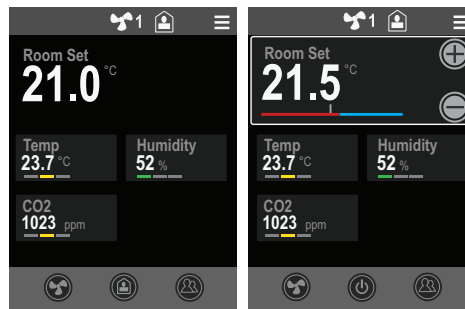
The display is as default configured to show the temperature setpoint. This shows the current calculated setpoint used by the TCR80 series controllers. The setpoint can be adjusted through the plus and minus buttons within the minimum and maximum adjustment limits (configurable), or by using the slider. Pressing the plus or minus button continuously repeats the change with accelerating pace.

The adjustment steps (resolution) can also be controlled.



It is also possible to show the setpoint adjustment overlay on the main screen, by setting the parameter 618 Setpoint Slider Screen : 0 = Disabled.

**ALTERNATIVE SETPOINT VIEW**

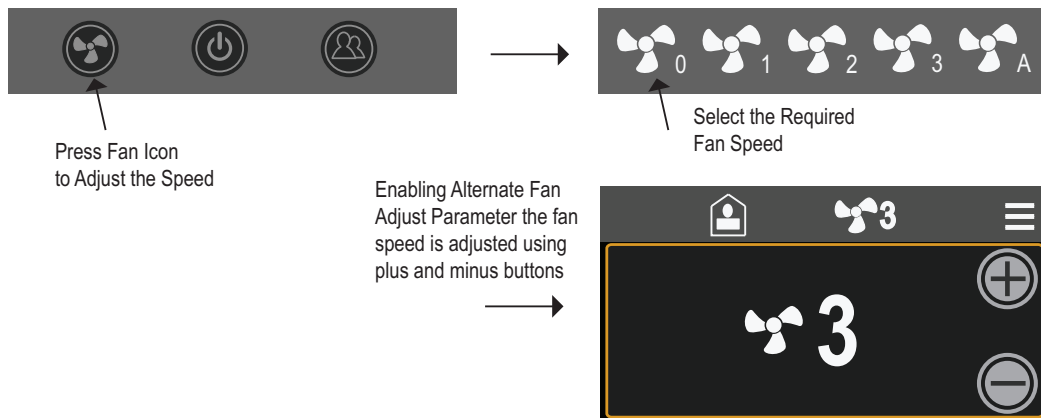


**FAN SPEED DISPLAY / ADJUSTMENT**

The current fan speed can be displayed and adjusted through the TDR20/QDR20 touchscreen. The fan speed display / adjustment has the following options:-

- Disabled (no fan speed is shows).
- Display Only (the fan speed is dispyled on the status bar on top).
- Touch-0-1-A (fan speed adjustable between off, speed 1 and auto). In auto the fan speed is determined by the TCR80 series control logic demand.
- Touch-0-1-2-A (fan speed adjustable between off, speed 1, speed 2 and auto).
- Touch-0-1-2-3-A (fan speed adjustable between off, speed 1, speed 2, speed 3 and auto).

With the Touch configuration options by pressing the Fan button the fan speed adjustment is displayed on the screen. If *Alternate Fan Adjust* parameter is disabled the fan speed is selected by from the bottom action bar. If *Alternate Fan Adjust* parameter is enabled, the fan speed is adjusted using plus and minus buttons



**BOOST BUTTON (TIMED)**

It is possible to activate the Boost button on the display via *Enable Boost Button* parameter. By pressing the Boost Button the TDR20/QDR20 activates the Occupied Mode which is transmitted to the TCR80 series controllers. When the Boost is active the Button Colour Changes. The boost button has adjustable timer between 0..28,800 seconds. By setting boost time to 0 seconds, the Boost is permanent. The boost can be cancelled by pressing the boost button again.

When the Boost is cancelled (by pressing the button or on timeout), the TDR20 returns to the Operating Mode prior to the Boost.



**DISPLAY STATUS ICONS**

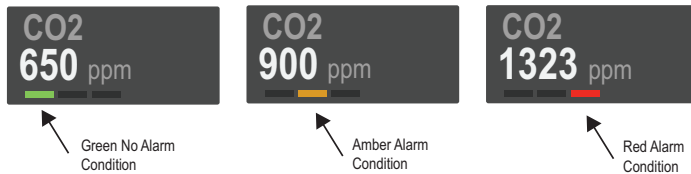
The TDR/QDR20 room display interfaces show the TCR80 Series controller status information to the user on the status bar. These icons are activated/deactivated automatically by the TCR80 series controllers.



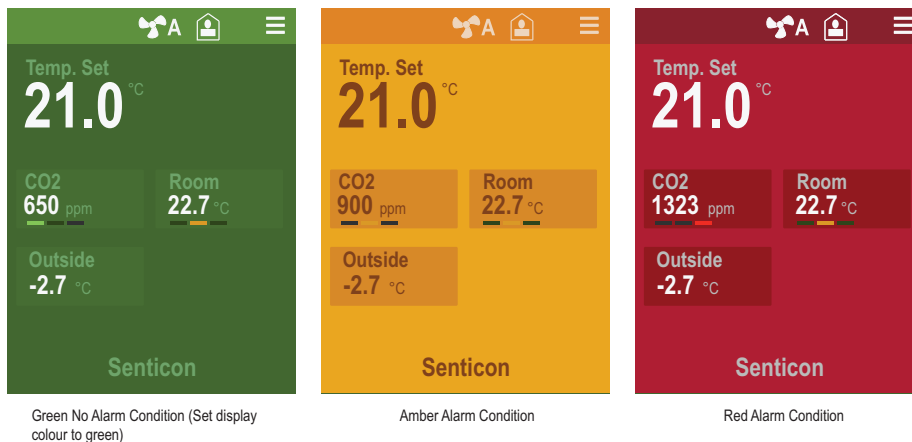
**TRAFFIC LIGHT ALARM FUNCTION**

Each of the 5 locations can be activated to display alarm condition based on the Amber and Red Limits. When measurement is above the Amber Limit, the location goes to Amber alarm (amber bar icon, or amber skin colour). When measurement is above the Red Limit, the location goes to Red Alarm (red bar icon or red skin colour).

**ALARMING USING BAR DISPLAY**

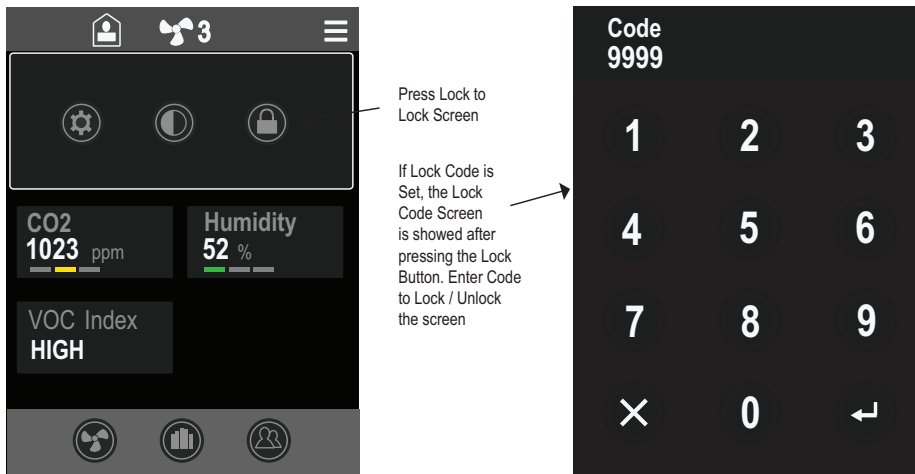


**ALARMING USING SKIN COLOUR**



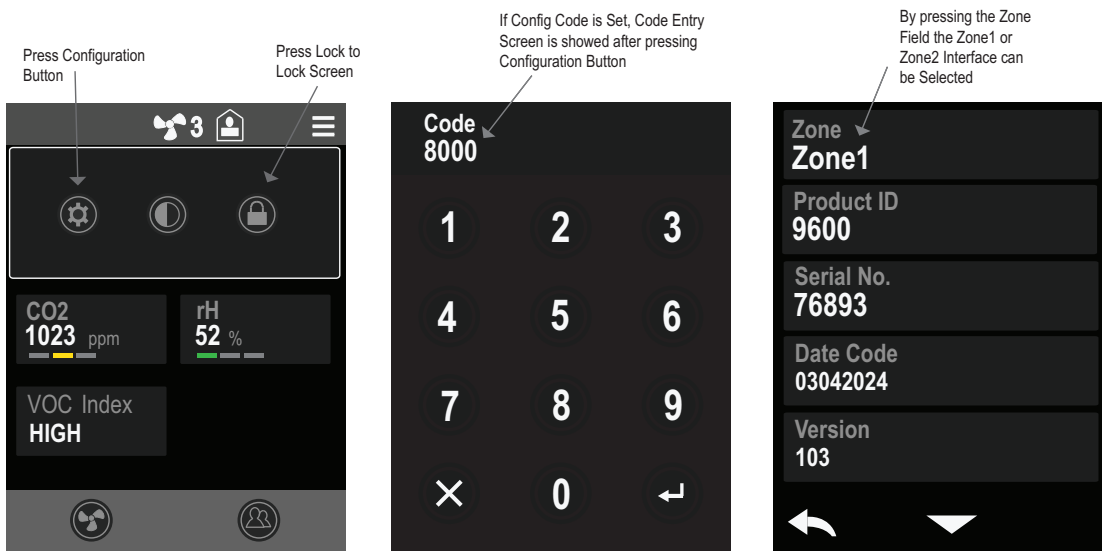
**SCREEN LOCK**

By selecting the Lock icon from the menu bar the screen is locked (buttons disabled, except menu and lock icons). If the Lock code is 0000, no code is required to lock and unlock the screen. By setting the lock code to any other value, the user needs to enter the code to lock and unlock the screen.



### CONFIGURATION SCREEN

To access the Configuration Screen (for network settings), Press the Configuration Icon. If the configuration code is set, default 8000, the Configuration Menu is displayed where the Sensor Zone can be selected. If the code is set to 0000 then no passcode is required. To store the new configuration settings in the Non Volatile memory press the back arrow to return to the main screen.



## Device Parameters (Modbus Registers)

The following tables explain the device configuration parameters available.

| LIVE DATA           |   |  |        |                         |   |     |
|---------------------|---|--|--------|-------------------------|---|-----|
|                     |   | MODBUS INPUT REGISTERS - FUNCTION CODE 04<br>MODBUS HOLDING REGISTER - FUNCTION CODES 03, (06), 16 |        |                         |   |     |
| Parameter           | Description   | Reg  | Type   | Data Range (multiplier) | Value Range / Enumerations  | R/W |
| Temperature Sensor  | Displays current temperature measurement reading (built-in sensor)<br>Note: Value depends on the temperature unit °C/°F selection | 400  | int16  | -400..2480 (x10)        | -40.0..120.0°C / -40.0..248.0°F                                       | R   |
| Humidity Sensor     | Displays current humidity measurement reading (With RH option)  | 401  | int16  | 0..1000 (x10)           | 0..100%rH   | R   |
| CO2 Sensor          | Displays current measurement CO2 reading (QDR20)  | 402  | int16  | 0..10,000 (x1)          | 0..10,000ppm  | R   |
| VOC Sensor          | Display current VOC (Volatile Organic Compound) Index Value   | 403  | int16  | 0..500 (x1)             | 0..500 index  | R   |
| Fan Level           | Current Fan Level (Range depends on the fan mode configuration). The fan level can be set from touchscreen or from TCR80 series.  | 417  | uint16 | 0..4                    | 0 = Off<br>1 = Speed 1<br>2 = Speed 2<br>3 = Speed 3<br>4 = Automatic | R/W |
| Calculated Setpoint | Calculated Setpoint (Nominal Network Setpoint + User Adjustment)  | 418  | uint16 | -32000..32000 (x10)     | -3200.0..3200.0   | R   |
| Control Mode        | Reports Current Control Mode Status   | 424  | int16  | 0..2 (x1)               | 0 = Occupied<br>1 = Unoccupied<br>2 = Off                             | R   |
|                     |   | DISCRETE INPUTS - FUNCTION CODE 02   |        |                         |   |     |
| Boost Status        | Boost Button Status - Shows if Boost Button has been activated by the user.   | 204  |        | 0..1                    | 0 = No Boost<br>1 = Boost   | R   |
| Screen Lock Status  | Screen Lock Status  | 205  |        | 0..1                    | 0 = Not Locked<br>1 = Locked  | R   |

| CALIBRATION AND VOC MODE SETTINGS |   |                 |   |                         |  |     |
|-----------------------------------|---|-----------------|---|-------------------------|--|-----|
|                                   |   | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         |  |     |
| Parameter                         | Description   |                 | Type  | Data Range (multiplier) | Value Range / Enumerations   | R/W |
| Temperature Offset                | Built-In Temperature Single Point Sensor Calibration Offset   | 580             | int16   | -100..100 (x10)         | -10.0..+10.0deg (Default 0)  | R/W |
| Humidity Offset                   | Humidity Single Point Calibration Offset  | 581             | int16   | -100..100 (x10)         | -10.0..+10.0%rH (Default 0)  | R/W |
| CO2 Offset                        | CO2 Single Point Calibration Offset (adjusts CO2 reading the specified amount)  | 582             | int16   | -500..500 (x1)          | -500..+500ppm (Default 0)  | R/W |
| CO2 Auto-Calibration              | Shows if the auto-calibration of the CO2 has been Activated   | 583             | uint16  | 0..1                    | 0 = Disabled<br>1 = Enabled (Default)  | R/W |
| CO2 Calibration Value             | Single Point Calibration Value for the CO2 Sensor.<br>Note: Writing this value will reset the calibration settings of the sensor to the value set. Only recommended for advanced users. | 584             | uint16  | 350..3,000 (x1)         | 350..3,000ppm  | R/W |
| Force CO2 Calibration             | Forces CO2 Calibration to the CO2 Calibration Value. Use when CO2 level known e.g with calibration gas or outside air.  | 585             | uint16  | 0..1                    | 0 = None<br>1 = Force Calibration  | R/W |
| Store CO2 Calibration             | Store CO2 Calibration Settings in the Permanent Memory  | 586             | uint16  | 0..1                    | 0 = None<br>1 = Save Data  | R/W |
| VOC Measurement Mode              | VOC Measurement Mode Selection (Index, Well Standard, Reset Air Standard)   | 587             | uint16  | 0..2                    | 0 = VOC Index<br>1 = TVOC Molhave, ug/m3 (Well)<br>2 = TVOC Isobutylene, ug/m3 (Reset) | R/W |
| VOC Learning Time Offset          | VOC Learning Time Offset. Set to 12 for Index mode and 720 for Building Standards Mode  | 588             | uint16  | 1..1,000 (x1)           | 1..1,000hours (Default 12)   | R/W |

| DISPLAY SETTINGS               |  |                 |   |                         |   |     |
|--------------------------------|--|-----------------|---|-------------------------|---|-----|
| Parameter                      | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|                                |  |                 | Type  | Data Range (multiplier) |   |     |
| <b>GENERAL</b>                 |  |                 |   |                         |   |     |
| Display Colour                 | Sets the display colour (display skin).  | 600             | uint16  | 0..4                    | 0 = White<br>1 = Green<br>2 = Blue<br>3 = Grey (default)<br>4 = Black                                     | R/W |
| Display Brightness             | Controls display brightness. By setting to Off, the display switches off after the timeout. Display wakes up when it is touched (TS models only) | 601             | uint16  | 0..6                    | 0 = Off<br>1 = 5%<br>2 = 10%<br>3 = 25%<br>4 = 50% (default)<br>5 = 75%<br>6 = 100%                       | R/W |
| Temperature Units              | Selects between Celcius and Fahrenheit<br>Note: The display and network measurements will automatically reflect reading in the selected units.   | 522             | uint16  | 0..1 (x1)               | 0 = Celcius (Default)<br>1 = Fahrenheit   | R/W |
| Temperature Display Resolution | Sets temperature display resolution (for built-in sensor only)   | 602             | uint16  | 0..2 (x1)               | 0 = Fine (0.1°C/F)<br>1 = Normal (0.5°C/F)<br>2 = Coarse (1°C/F)  | R/W |
| Mode Icon Display              | Activates Mode Icon display on the top status bar (Occupied / Unoccupied / Off).   | 603             | uint16  | 0..1                    | 0 = Disabled (default)<br>1 = Enabled   | R/W |
| Enable Fan Display             | Enables Fan Speed Display and/or Fan Speed Button for touchscreen models.  | 605             | uint16  | 0..4                    | 0 = Disabled (default)<br>1 = Display Only<br>2 = Touch-0-1-A<br>3 = Touch-0-1-2-A<br>4 = Touch-0-1-2-3-A | R/W |
| Alternate Fan Adjust           | Alternative Fan Speed Adjustment setting. Uses the temperature setpoint adjustment location with +/- buttons                                     | 609             | uint16  | 0..1 (x1)               | 0 = Disabled (Default)<br>1 = Enabled   | R/W |
| Enable Mode Button             | Enables the Mode Button on the action bar.   | 607             | uint16  | 0..3                    | 0 = Disabled<br>1 = Occupied / Unoccupied<br>2 = Occupied / Unocc/ Off (default)<br>3 = Occupied / Off    | R/W |
| Enable Boost Button            | Enables Boost Button on the bottom action bar  | 608             | uint16  | 0..1                    | 0 = Disabled (default)<br>1 = Enabled   | R/W |
| Enable Heat/Cool Icon          | Enables Heat/Cool Icon Display on the status bar (from Fw1.18)   | 619             | uint16  | 0..1                    | 0 = Disabled<br>1 = Enabled (default)   | R/W |
| Lock Code                      | Screen Lock Code - 0000 = User requires no code to lock the screen   | 613             | uint16  | 0..9,999 (x1)           | 0..9,999 (Default 0000)   | R/W |
| Screen Lock Override           | Overrides the Current State of the Screen Lock   | 614             | uint16  | 0..2 (x1)               | 0 = No Override<br>1 = Unlock Screen<br>2 = Lock Screen   | R/W |
| Configuration Code             | Code to Enter Configuration Screen, Set to 0000 to bypass the requirement to enter the code.   | 615             | uint16  | 0..9,999 (x1)           | 0..9,999 (Default 8000)   | R/W |

| DISPLAY LOCATION 1 to 5 SETTINGS                     |  |                 |   |                         |   |     |
|--|--|-----------------|---|-------------------------|---|-----|
| Parameter  | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|  |  |                 | Type  | Data Range (multiplier) |   |     |
| <b>DISPLAY LOCATION 1 (PRIMARY DISPLAY LOCATION)</b> |  |                 |   |                         |   |     |
| Location 1 Display                                   | Location 1 Display Source. Sets what is displayed in Location 1.   | 620             | uint16  | 0..7                    | 0 = None<br>1 = Network Decimal Value<br>2 = Network Integer Value<br>3 = Temperature<br>4 = Humidity<br>5 = CO2<br>6 = VOC Index<br>7 = Temp Setpoint (Default)  | R/W |
| Location 1 Description                               | Location 1 Description. Sets description for Location 1.   | 621             | uint16  | 0..24                   | 0 = None<br>1 = Temperature<br>2 = Humidity<br>3 = CO2<br>4 = VOC<br>5 = Light Level<br>6 = Pressure<br>7 = Room<br>8 = Outside<br>9 = Fan<br>10 = Energy<br>11 = Water<br>12 = Electricity<br>13 = Heating<br>14 = Cooling<br>15 = Zone 1<br>16 = Zone 2<br>17 = Temp. Set (Default)<br>18 = Room Set<br>19 = Zone 1 Set<br>20 = Zone 2 Set<br>21 = Windows<br>22 = Blinds<br>23 = TVOC<br>24 = Flow | R/W |
| Location 1 Unit                                      | Location 1 Unit. Sets unit for Location 1.   | 622             | uint16  | 0..14                   | 0 = None<br>1 = °C (Default)<br>2 = °F<br>3 = ppm<br>4 = Lux<br>5 = Pa<br>6 = kWh<br>7 = m3<br>8 = %<br>9 = index (air quality index)<br>10 = l/s<br>11 = m3/h<br>12 = cfm<br>13 = ppb<br>14 = ug/m3  | R/W |
| Location 1 Alarm                                     | Activates Location 1 Alarm Bar, Alarm Skin Colour or Descriptive Text indication. Using 1=Bar activates Green, Amber, Red alarm icon indication underneath the current displayed parameter. Using 3=Text activates LOW, MEDIUM HIGH text indication instead of the measurement. Using 3= Skin activates the skin colour changing based on alarm condition. | 623             | uint16  | 0..3                    | 0 = Disabled<br>1 = Bar<br>2 = Text<br>3 = Skin   | R/W |
| Location 1 Red Alarm Limit                           | Red Limit for Alarm 1 / High Limit for Descriptive Display   | 624             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 30)  | R/W |
| Location 1 Amber Alarm Limit                         | Amber Limit for Alarm 1 / Medium Limit for Descriptive Displays  | 625             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 25)  | R/W |
| Location 1 Hysteresis                                | Hysteresis for Alarm 1 / Low Limit for Descriptive Displays  | 626             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 1)   | R/W |
| Location 1 Read Only                                 | Sets the location 1 to be Read Only or Read/Write. In Read Only mode touch functions are disabled for this location.   | 655             | uint16  | 0..1                    | 0 = Read-Write (default)<br>1 = Read Only   | R/W |

| Parameter                    | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|------------------------------|--|-----------------|---|-------------------------|---|-----|
|                              |  |                 | Type  | Data Range (multiplier) |   |     |
| <b>DISPLAY LOCATION 2</b>    |  |                 |   |                         |   |     |
| Location 2 Display           | Location 2 Display Source. Sets what is displayed in Location 2.   | 627             | uint16  | 0..7                    | 0 = None<br>1 = Network Decimal Value<br>2 = Network Integer Value<br>3 = Temperature (Default)<br>4 = Humidity<br>5 = CO2<br>6 = VOC Index<br>7 = Temp Setpoint  | R/W |
| Location 2 Description       | Location 2 Description   | 628             | uint16  | 0..24                   | 0 = None<br>1 = Temperature (Default)<br>2 = Humidity<br>3 = CO2<br>4 = VOC<br>5 = Light Level<br>6 = Pressure<br>7 = Room<br>8 = Outside<br>9 = Fan<br>10 = Energy<br>11 = Water<br>12 = Electricity<br>13 = Heating<br>14 = Cooling<br>15 = Zone 1<br>16 = Zone 2<br>17 = Temp. Set<br>18 = Room Set<br>19 = Zone 1 Set<br>20 = Zone 2 Set<br>21 = Windows<br>22 = Blinds<br>23 = TVOC<br>24 = Flow | R/W |
| Location 2 Unit              | Location 2 Unit  | 629             | uint16  | 0..14                   | 0 = None<br>1 = °C (Default)<br>2 = °F<br>3 = ppm<br>4 = Lux<br>5 = Pa<br>6 = kWh<br>7 = m3<br>8 = %<br>9 = index (air quality index)<br>10 = l/s<br>11 = m3/h<br>12 = cfm<br>13 = ppb<br>14 = ug/m3  | R/W |
| Location 2 Alarm             | Activates Location 1 Alarm Bar, Alarm Skin Colour or Descriptive Text indication. Using 1=Bar activates Green, Amber, Red alarm icon indication underneath the current displayed parameter. Using 3=Text activates LOW, MEDIUM HIGH text indication instead of the measurement. Using 3= Skin activates the skin colour changing based on alarm condition. | 630             | uint16  | 0..3                    | 0 = Disabled (default)<br>1 = Bar<br>2 = Text<br>3 = Skin   | R/W |
| Location 2 Red Alarm Limit   | Red Limit for Alarm 2 / High Limit for Descriptive Display   | 631             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 30)  | R/W |
| Location 2 Amber Alarm Limit | Amber Limit for Alarm 2 / Medium Limit for Descriptive Displays  | 632             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 25)  | R/W |
| Location 2 Hysteresis        | Hysteresis for Alarm 2 / Low Limit for Descriptive Displays  | 633             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 1)   | R/W |
| Location 2 Read Only         | Sets the location 2 to be Read Only or Read/Write. In Read Only mode touch functions are disabled for this location.   | 656             | uint16  | 0..1                    | 0 = Read-Write (default)<br>1 = Read Only   | R/W |

| Parameter                    | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|------------------------------|--|-----------------|---|-------------------------|---|-----|
|                              |  |                 | Type  | Data Range (multiplier) |   |     |
| <b>DISPLAY LOCATION 3</b>    |  |                 |   |                         |   |     |
| Location 3 Display           | Location 3 Display Source. Sets what is displayed in Location 3.   | 634             | uint16  | 0..7                    | 0 = None<br>1 = Network Decimal Value<br>2 = Network Integer Value<br>3 = Temperature<br>4 = Humidity<br>5 = CO2 (Default)<br>6 = VOC Index<br>7 = Temp Setpoint)   | R/W |
| Location 3 Description       | Location 3 Description   | 635             | uint16  | 0..24                   | 0 = None<br>1 = Temperature<br>2 = Humidity<br>3 = CO2 (Default)<br>4 = VOC<br>5 = Light Level<br>6 = Pressure<br>7 = Room<br>8 = Outside<br>9 = Fan<br>10 = Energy<br>11 = Water<br>12 = Electricity<br>13 = Heating<br>14 = Cooling<br>15 = Zone 1<br>16 = Zone 2<br>17 = Temp. Set<br>18 = Room Set<br>19 = Zone 1 Set<br>20 = Zone 2 Set<br>21 = Windows<br>22 = Blinds<br>23 = TVOC<br>24 = Flow | R/W |
| Location 3 Unit              | Location 3 Unit  | 636             | uint16  | 0..14                   | 0 = None<br>1 = °C<br>2 = °F<br>3 = ppm (Default)<br>4 = Lux<br>5 = Pa<br>6 = kWh<br>7 = m3<br>8 = %<br>9 = index (air quality index)<br>10 = l/s<br>11 = m3/h<br>12 = cfm<br>13 = ppb<br>14 = ug/m3  | R/W |
| Location 3 Alarm             | Activates Location 1 Alarm Bar, Alarm Skin Colour or Descriptive Text indication. Using 1=Bar activates Green, Amber, Red alarm icon indication underneath the current displayed parameter. Using 3=Text activates LOW, MEDIUM HIGH text indication instead of the measurement. Using 3= Skin activates the skin colour changing based on alarm condition. | 637             | uint16  | 0..3                    | 0 = Disabled (default)<br>1 = Bar<br>2 = Text<br>3 = Skin   | R/W |
| Location 3 Red Alarm Limit   | Red Limit for Alarm 3 / High Limit for Descriptive Display   | 638             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 1250)  | R/W |
| Location 3 Amber Alarm Limit | Amber Limit for Alarm 3 / Medium Limit for Descriptive Displays  | 639             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 750)   | R/W |
| Location 3 Hysteresis        | Hysteresis for Alarm 3 / Low Limit for Descriptive Displays  | 640             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 100)   | R/W |
| Location 3 Read Only         | Sets the location 3 to be Read Only or Read/Write. In Read Only mode touch functions are disabled for this location.   | 657             | uint16  | 0..1                    | 0 = Read-Write (default)<br>1 = Read Only   | R/W |

| Parameter                    | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|------------------------------|--|-----------------|---|-------------------------|---|-----|
|                              |  |                 | Type  | Data Range (multiplier) |   |     |
| <b>DISPLAY LOCATION 4</b>    |  |                 |   |                         |   |     |
| Location 4 Display           | Location 4 Display Source. Sets what is displayed in Location 4.   | 641             | uint16  | 0..7                    | 0 = None<br>1 = Network Decimal Value<br>2 = Network Integer Value<br>3 = Temperature<br>4 = Humidity (Default)<br>5 = CO2<br>6 = VOC Index<br>7 = Temp Setpoint  | R/W |
| Location 4 Description       | Location 4 Description   | 642             | uint16  | 0..24                   | 0 = None<br>1 = Temperature<br>2 = Humidity (Default)<br>3 = CO2<br>4 = VOC<br>5 = Light Level<br>6 = Pressure<br>7 = Room<br>8 = Outside<br>9 = Fan<br>10 = Energy<br>11 = Water<br>12 = Electricity<br>13 = Heating<br>14 = Cooling<br>15 = Zone 1<br>16 = Zone 2<br>17 = Temp. Set<br>18 = Room Set<br>19 = Zone 1 Set<br>20 = Zone 2 Set<br>21 = Windows<br>22 = Blinds<br>23 = TVOC<br>24 = Flow | R/W |
| Location 4 Unit              | Location 4 Unit  | 643             | uint16  | 0..14                   | 0 = None<br>1 = °C<br>2 = °F<br>3 = ppm<br>4 = Lux<br>5 = Pa<br>6 = kWh<br>7 = m3<br>8 = % (Default)<br>9 = index<br>10 = l/s<br>11 = m3/h<br>12 = cfm<br>13 = ppb<br>14 = ug/m3  | R/W |
| Location 4 Alarm             | Activates Location 1 Alarm Bar, Alarm Skin Colour or Descriptive Text indication. Using 1=Bar activates Green, Amber, Red alarm icon indication underneath the current displayed parameter. Using 3=Text activates LOW, MEDIUM HIGH text indication instead of the measurement. Using 3= Skin activates the skin colour changing based on alarm condition. | 644             | uint16  | 0..3                    | 0 = Disabled (default)<br>1 = Bar<br>2 = Text<br>3 = Skin   | R/W |
| Location 4 Red Alarm Limit   | Red Limit for Alarm 4 / High Limit for Descriptive Display   | 645             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 80)  | R/W |
| Location 4 Amber Alarm Limit | Amber Limit for Alarm 4 / Medium Limit for Descriptive Displays  | 646             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 60)  | R/W |
| Location 4 Hysteresis        | Hysteresis for Alarm 4 / Low Limit for Descriptive Displays  | 647             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 1)   | R/W |
| Location 4 Read Only         | Sets the location 4 to be Read Only or Read/Write. In Read Only mode touch functions are disabled for this location.   | 658             | uint16  | 0..1                    | 0 = Read-Write (default)<br>1 = Read Only   | R/W |

| Parameter                    | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|------------------------------|--|-----------------|---|-------------------------|---|-----|
|                              |  |                 | Type  | Data Range (multiplier) |   |     |
| <b>DISPLAY LOCATION 5</b>    |  |                 |   |                         |   |     |
| Location 5 Display           | Location 5 Display Source. Sets what is displayed in Location 4.   | 648             | uint16  | 0..7                    | 0 = None<br>1 = Network Decimal Value<br>2 = Network Integer Value<br>3 = Temperature<br>4 = Humidity<br>5 = CO2<br>6 = VOC Index (Default)<br>7 = Temp Setpoint  | R/W |
| Location 5 Description       | Location 5 Description   | 649             | uint16  | 0..24                   | 0 = None<br>1 = Temperature<br>2 = Humidity<br>3 = CO2<br>4 = VOC (Default)<br>5 = Light Level<br>6 = Pressure<br>7 = Room<br>8 = Outside<br>9 = Fan<br>10 = Energy<br>11 = Water<br>12 = Electricity<br>13 = Heating<br>14 = Cooling<br>15 = Zone 1<br>16 = Zone 2<br>17 = Temp. Set<br>18 = Room Set<br>19 = Zone 1 Set<br>20 = Zone 2 Set<br>21 = Windows<br>22 = Blinds<br>23 = TVOC<br>24 = Flow | R/W |
| Location 5 Unit              | Location 5 Unit  | 650             | uint16  | 0..14                   | 0 = None<br>1 = °C<br>2 = °F<br>3 = ppm<br>4 = Lux<br>5 = Pa<br>6 = kWh<br>7 = m3<br>8 = %<br>9 = index (Default)<br>10 = l/s<br>11 = m3/h<br>12 = cfm<br>13 = ppb<br>14 = ug/m3  | R/W |
| Location 5 Alarm             | Activates Location 1 Alarm Bar, Alarm Skin Colour or Descriptive Text indication. Using 1=Bar activates Green, Amber, Red alarm icon indication underneath the current displayed parameter. Using 3=Text activates LOW, MEDIUM HIGH text indication instead of the measurement. Using 3= Skin activates the skin colour changing based on alarm condition. | 651             | uint16  | 0..3                    | 0 = Disabled (default)<br>1 = Bar<br>2 = Text<br>3 = Skin   | R/W |
| Location 5 Red Alarm Limit   | Red Limit for Alarm 5 / High Limit for Descriptive Display   | 652             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 150)   | R/W |
| Location 5 Amber Alarm Limit | Amber Limit for Alarm 5 / Medium Limit for Descriptive Displays  | 653             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 110)   | R/W |
| Location 5 Hysteresis        | Hysteresis for Alarm 5 / Low Limit for Descriptive Displays  | 654             | uint16  | 0..10,000 (x1)          | 0..10,000 (default 10)  | R/W |
| Location 5 Read Only         | Sets the location 5 to be Read Only or Read/Write. In Read Only mode touch functions are disabled for this location.   | 659             | uint16  | 0..1                    | 0 = Read-Write (default)<br>1 = Read Only   | R/W |

| CONTROL SETTINGS AND OVERRIDES      |   |                                   |   |                         |   |     |
|-------------------------------------|---|-----------------------------------|---|-------------------------|---|-----|
| Parameter                           | Description   | Modbus Register / BACnet Property | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations  | R/W |
|                                     |   |                                   | Type  | Data Range (multiplier) |   |     |
| <b>SETPOINT SETTINGS</b>            |   |                                   |   |                         |   |     |
| Min Setpoint Adjustment             | Minimum Setpoint Adjustment Limit for Setpoint  | 671                               | int16   | -5000..0 (x1/x10)       | -500.0..0 (default -3.0)  | R/W |
| Max Setpoint Adjustment             | Maximum Setpoint Adjustment Limit for Setpoint  | 672                               | int16   | 0..+5000 (x1/x10)       | 0..500.0 (default +3.0)   | R/W |
| Setpoint Increment Adjustment       | Setpoint Increment Adjustment   | 673                               | uint16  | 1..100 (x1/x10)         | 0.1..10.0 (default 0.1)   | R/W |
| Setpoint Mode                       | Sets the setpoint user adjustment limits to use relative or absolute min/max settings.  | 669                               | uint16  | 0..1                    | 0 = Relative - Default<br>1 = Absolute                                  | R/W |
| Reset User Adjustment               | Resets the user setpoint adjustments (multi-stage, aux and humidity loops) when operating mode transitions away from the Occupied mode. | 675                               | uint16  | 0..1                    | 0 = Off (Default)<br>1 = On   | R/W |
| Setpoint Slider Screen              | When enabled shows the Setpoint Slider Screen when adjusting setpoint. Disabled shows setpoint on the main screen.                      | 618                               | uint16  | 0..1 (x1)               | 0 = Disabled<br>1 = Enabled (Default)                                   | R/W |
| <b>PIR MOVEMENT SENSOR SETTINGS</b> |   |                                   |   |                         |   |     |
| PIR Trigger Mode                    | Selects the Mode of the PIR Sensor  | 681                               | uint16  | 0..1 (x1)               | 0 - Standard (default)<br>1 - Multi-Trigger                             | R/W |
| PIR Trigger Count                   | Trigger Count in Multi-Trigger Mode   | 682                               | uint16  | 1..10 (x1)              | 1..10 (default 3)   | R/W |
| Trigger Period                      | Trigger Period for monitoring Trigger Count   | 683                               | uint16  | 30..1,800 (x1)          | 30.1,800 seconds (default 300 secs)                                     | R/W |
| PIR Off Delay                       | Delay Off Timer for the PIR Movement/Occupancy sensor   | 684                               | uint16  | 10..28,800 (x1)         | 10..28,800 seconds (default 600 secs)                                   | R/W |
| Operating Mode Off Action           | Display Operating Mode when the PIR (OE-option) does not detect movement.   | 680                               | uint16  | 0..1                    | 0 = Unoccupied Mode (Default)<br>1 = Off Mode                           | R/W |
| Boost Time                          | Delay Off Timer for the Boost Button  | 689                               | uint16  | 0..28,800 (x1)          | 0..28,800 seconds<br>0 = Timer disabled, toggle functionality (default) | R/W |

| SYSTEM AND COMMUNICATION SETTINGS |  |                 |   |                         |  |     |
|-----------------------------------|--|-----------------|---|-------------------------|--|-----|
| Parameter                         | Description  | Modbus Register | MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16 |                         | Value Range / Enumerations               | R/W |
|                                   |  |                 | Type  | Data Range (multiplier) |  |     |
| Zone                              | Sets the Sensor Zone   | 800             | uint16  | 1.2 (x1)                | 1..2                                     | R/W |
| Force Reset                       | Forces Device Reset  | 810             | uint16  | 0..1                    | 0 = Normal<br>1 = Reset                  | R/W |
| Persist                           | Persist (Store Parameters in Non-Volatile Memory)  | 811             | uint16  | 0..1                    | 0 = Normal<br>1 = Persist                | R/W |
| Factory Defaults                  | Reload Defaults (NOTE: Resets all settings to factory defaults)  | 812             | uint16  | 0..1                    | 0 = Normal<br>1 = Factory Defaults       | R/W |
| Language Pack Enable              | Enables the Language Pack (using language pack it is possible to change the user text entries on the screen)             | 814             | uint16  | 0..1                    | 0 = English<br>1 = Language Pack Enabled | R/W |
| Logo Timer                        | Time after which the Logo is displayed on the Display after background level is activated. Set to 0 to disable the logo. | 815             | uint16  | 0..255 (x1)             | 1..255 seconds<br>0 = Logo Disabled      | R/W |
| Firmware Version                  | Firmware Version   | 820             | uint16  | N/A                     | N/A                                      | R   |
| Serial Number                     | Serial Number  | 821             | uint16  | N/A                     | N/A                                      | R   |
| Date Code                         | Date Code  | 822             | uint16  | N/A                     | N/A                                      | R   |
| Product ID                        | Product ID   | 823             | uint16  | N/A                     | N/A                                      | R   |

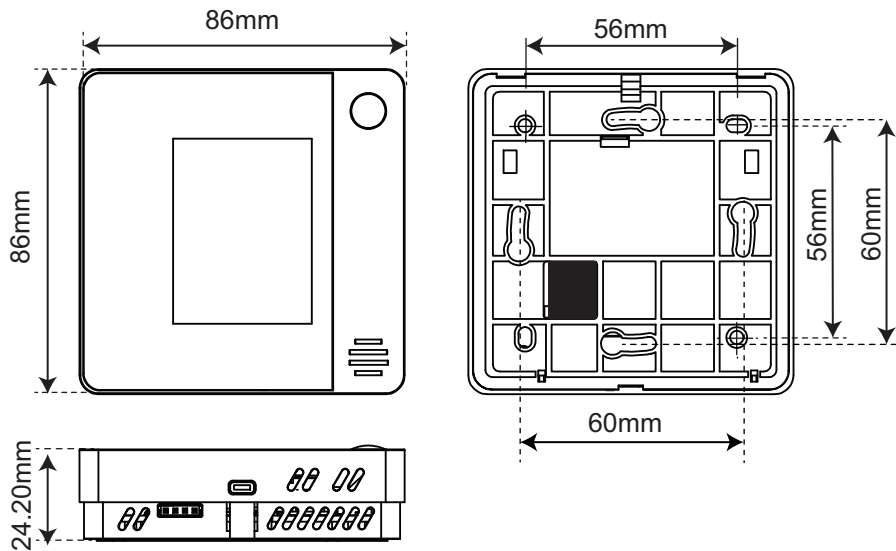
## Dimensions and Installation

The devices typically mounted on the flat wall surfaces or on the junction boxes. The enclosure has 56/60mm screw distance for standard mounting boxes.

**Installation Notes:**

- Follow the diagram below to open the enclosure to access the mounting holes and the wiring terminals.
- Install the sensors away from the sources of heat and cool e.g. from direct sunlight or cold external walls.
- Install the sensors at 120-150 cm height for optimal performance.
- For correct movement (PIR) sensor operation consider the location of the sensor carefully.
- Make sure that the cable entries and junction boxes are sealed from air flows. This is the most common reason for inaccuracies in temperature measurement.
- Bring the cables through the dedicated hole (black area) marked on the dimensions drawing.
- If surface mounted cable is required to be used, the top of the enclosure (center) has a thin wall section that can be cut.

**DIMENSIONS**



**DIMENSIONS (SLIMLINE SERIES)**

