Senticon
SENTIENT CONTROL SOLUTIONS

CDI20 Corridor Interfaces for Hotels, Hospitality and Meeting Rooms







The CDI devices are corridor interfaces typically used in hotels and hospitality but also in offices. The interfaces integrate with the room environmental/HVAC control system, and can communicate to BMS/ Hotel Booking system. The interfaces are available with both hard-wired and the communicating interface to the room controls such as Senticon's TCR80 and TCR/QCR10 series.

The CDI interfaces are available with both colour touchscreen as well colour LCD display with button for a doorbell. The CDI devices are Slimline, mounted on standard wall boxes, providing attractive architectural solution to modern buildings.

Features

- 2.4" Colour Touchscreen or 2.4" Colour LCD Interface
- Slimline 13.8mm design for architectural requirements
- Large Configurable Room number and Description (Room, Suite, Cabin, Office, Apartment, Meeting Room)
- Do Not Disturb icon integrated with room controls
- Clean My Room icon synchronised with room control
- Occupancy Icon displayed the Room Occupancy status
- Doorbell button (touchscreen or button) to activate doorbell (automatically muted when Do Not Disturb activated)
- Red and Amber Alarm states for Silent Alarm Activation
- Connection with TCR80 Series Controllers using plug& go RS485 over USB-C cable connection / 4-wire connection
- Relay Output and 0-10Vdc Input options for hard-wired integration to TCR10/QCR10 series
- CDI21 Series have generic Modbus functions for integrating with any BMS/Modbus Master
- 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

Power Supply:	Power:	CDI20: 5Vdc via USB-C Cable or Wiring Terminals CDI21: 24Vac/dc -10%/+15%, max 80mA with display
Communication (Senticon Sensor Bus):	Physical Interface	CDI20: RS485 communication to TCR80 Series (over USB-C cable or standard wiring cables) CDI21: 1 x RS485 driver with up to 60V industrial Isolation, recommended max 63 devices
	Protocol:	CDI20: Senticon Sensor Bus CDI21: Modbus RTU
	Addressing:	CDI20: Fixed Sensor Bus Address (10) CDI21: 1..247 for Modbus (Configurable using DCT Tool or App)
Display:	LCD Models	2.4" Full Colour Display with Glass Overlay, 240 x 320px
	TS Models:	2.4" Full Colour Capacitive Touchscreen Display with Glass Overlay, 240 x 320px
Inputs (CDI21 Model):	Voltage Input:	CDI21: 1 x 0-10Vdc Input for Display Status
Output (RL Option):	Relay Output:	1 x 24V Pilot Relay, max 0.5A (Doorbell Output)
Mechanical:	Wiring Terminals:	USB-C Connector or Rising Cage Screw Terminals, 0.2 to 1.5mm^2 (16AWG to 30AWG)
	Enclosure:	ABS ULV0 Plastics - White or Black
	Protection Class:	IP30 (when mounted on a wall or a junction box)
	Mounting:	Wall or Junction Box Mounting (60mm screw distance)
	Dimensions:	W86 x H86 x D24mm (Surface Mounted Models) Flush Mounted (-F) Models: W86 x H86 x D13.8mm (Surface Part) W86 x H86 x D39mm (Total)
Country of Origin:		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.

Part Number		SKU# Number				
Example	CDI20-TS-F-B	2400 3	02	00	00	01
Product Name		Product Code				
CDI20	Corridor Interface, Sensor Bus to TCR80 Series, USB-C / 4-Wire Connection	2400 3				
CDI21-MOD	Corridor Interface, Modbus RS485, 1UI (0-10Vdc), 24V Power Supply (Generic, Hard-Wired)	2410 1				
User Interface						
LCD	Colour LCD Display		01			
TS	Colour Capacitive Touchscreen Interface		02			
LCD-1B	Colour LCD Display with Doorbell Button (only available in White)		21			
Output Options						
	No Outputs			00		
RL	24V Relay Output (Doorbell Output)			01		
Mounting Options						
	Standard Wall Surface or Junction Box				00	
F	13.8mm Slimline Flush Mounting				30	
Colour Options						
B	Black					01
W	White					02

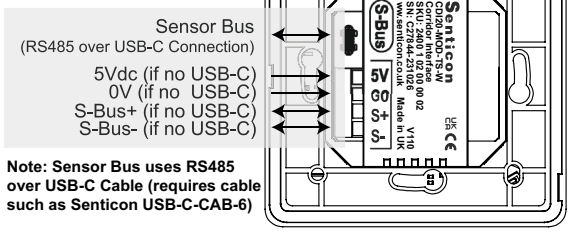
Part Number	Description	SKU# Number
Accessories		
USB-C-CAB-6	6m USB-C Male to USB-C Male for Room Interface Units, Black	8510 0 00 0005 01
USB-C-EXT-6	5m USB-C Female to USB-C Male Extension Cable, Black	8520 0 00 0006 01

Wiring Connections

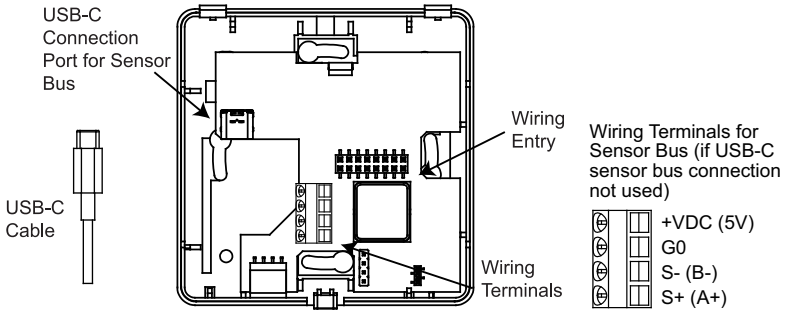
CDI20 SENTICON SENSOR BUS MODEL

The diagram below illustrates USB-C connection to the Corridor Display Interfaces when connected to TCR80 Series Room Controllers using the Senticon Sensor bus. Alternatively, CDI20 can be wired with 4-core cable (5V, 0V, Sensor Bus-, Sensor Bus+).

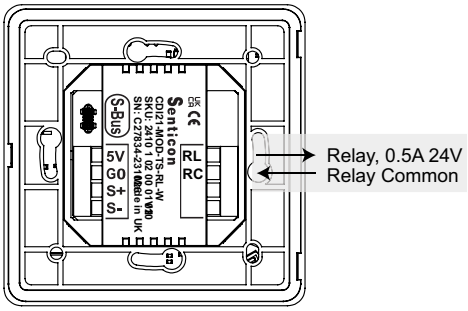
CDI20 SLIMLINE FLUSH MOUNTED INTERFACE CONNECTIONS



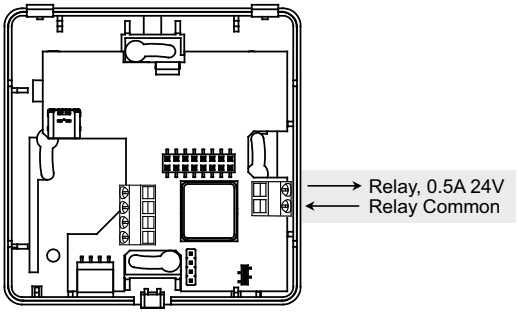
Note: Sensor Bus uses RS485 over USB-C Cable (requires cable such as Senticon USB-C-CAB-6)



RL RELAY OPTION (DOORBELL)



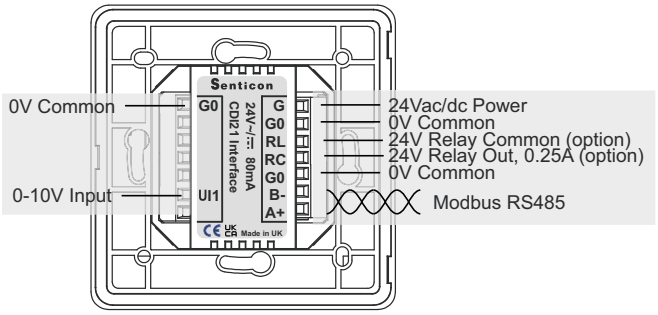
RL RELAY OPTION (DOORBELL)



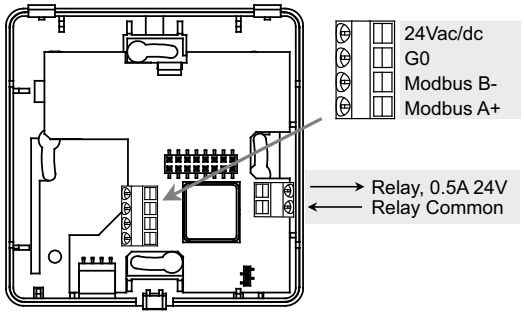
CDI21 MODBUS / HARD-WIRED GENERIC MODEL

CDI21 models can be connected via Modbus communication bus to BMS or using hard-wiring by sending 0-10Vdc signal to the U1 of the CDI21 interface. Optional 24V relay output is available for the doorbell connection.

CDI21 SLIMLINE FLUSH INTERFACE CONNECTIONS



CDI21 SURFACE MOUNTED INTERFACE CONNECTIONS

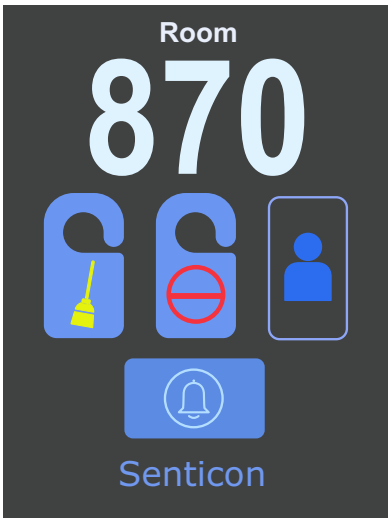


Colour LCD Screen

The CDI Corridor Interface is designed to show:-

- Room Number e.g. 808
- Indication to "Clean My Room" - set on the TDR20 (via comms) or via 0-10V input (e.g.with TCR10 series)
- Indication to "Do Not Disturb" - set on the TDR20 (via comms) or via 0-10V input (e.g.with TCR10 series)
- Indication of the "Occupancy Status" - set by BMS/Hotel Booking System
- Alarm / Panic Alarm
- Logo

In addition either touchscreen button or push button can be used for the doorbell.



ALARM / PANIC ALARM DISPLAY

The CDI Corridor Interfaces can be used to show an alarm condition. This can be either an alarm set by the BMS or linked to the TDR20/QDR20 series room interface that activated the panic alarm. In the alarm condition, the background colour has the following options:-

- 1 = Amber
- 2 = Red
- 3 = Flashing Red

The alarm is acknowledged via the BMS or from the TCR20/QDR20 interface (the operation configurable on the TCR80 series controller).





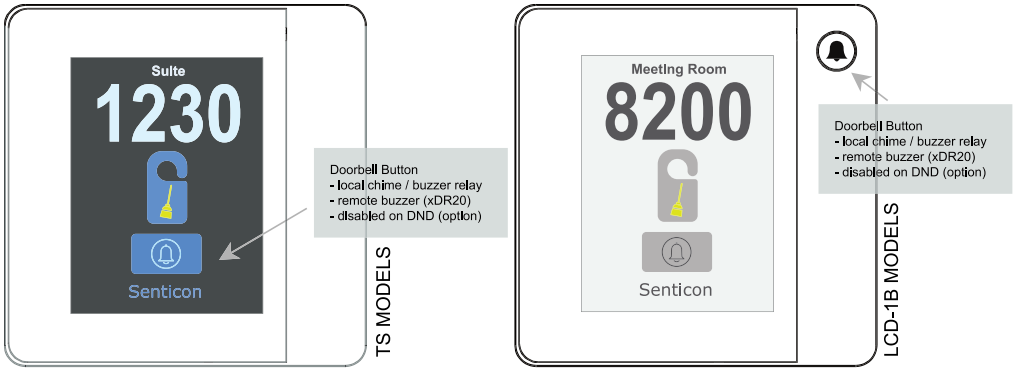
Doorbell Function

The CDI Corridor interface can also be configured act as a doorbell. With Touchscreen models (TS-RL), the display can be configured to show the doorbell button. Pressing the doorbell, the built-in relay activates the doorbell. With the LCD-1B-RL model the doorbell can be activated by pressing the doorbell button.

The Doorbell ring time is configurable through the *Parameter 607: Bell Ring Time*. It is also possible to disable the Doorbell output if the user has activated Do Not Disturb through the TDR20/QDR20 Room Interface. This is set by *608: Bell Dnd Disable*.

If the Doorbell is driven locally by the relay, set the *609: Bell Relay = Enabled*. The doorbell state can also be read on the TCR80 series controllers, or it can be linked to xDR20 series room interfaces.

NOTE: Select RL hardware option to have doorbell relay (max 24V).



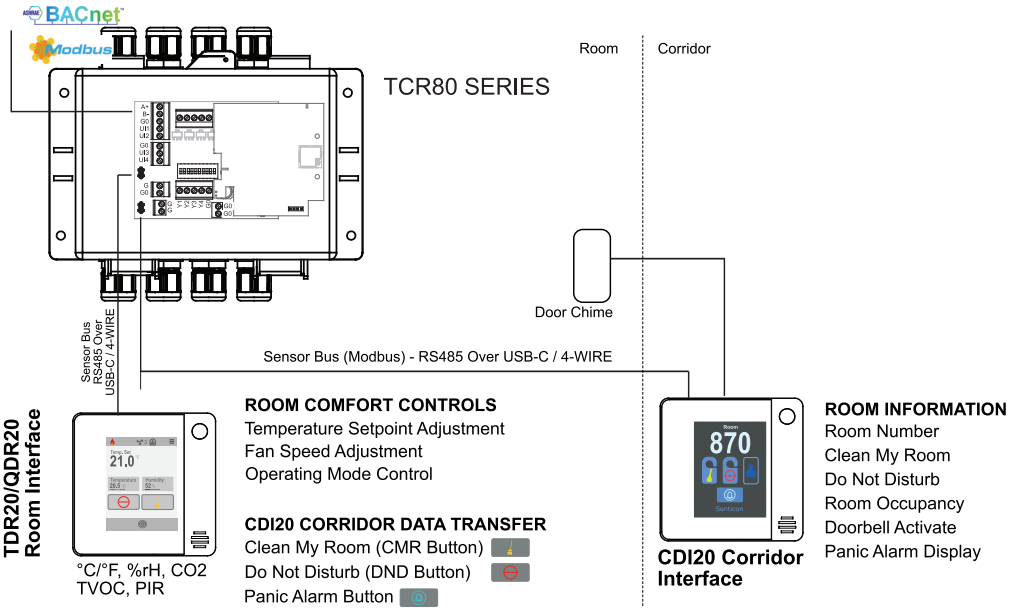
CDI20 Series Device Configuration and Communications

SENSOR BUS COMMUNICATIONS (CDI20)

The CDI20 series devices come with Sensor Bus (Advanced Modbus) communication available through the USB-C cable/4-wire connection. The communication is used between the TCR80 series controllers and CDI20 Series Corridor Display Interfaces. The system allows plug-and-play connection to TCR80 Series controllers, and communication of the room status from the TCR80 (and TDR20/QDR20 room interfaces).

The TCR80 Series controllers can communicate to the CDI:-

- Clean My Room status
- Do Not Disturb status
- Panic Alarm Status (Amber/Red/Flashing Red)
- Occupancy Status
- Manual Alarm Status (Amber/Red/Flashing Red)



HARD WIRED / MODBUS SIGNALLING (CDI21 SERIES)

The CDI21 series can receive Clean My Room and Do Not Disturb status via hard-wired 0-10Vdc input signal.

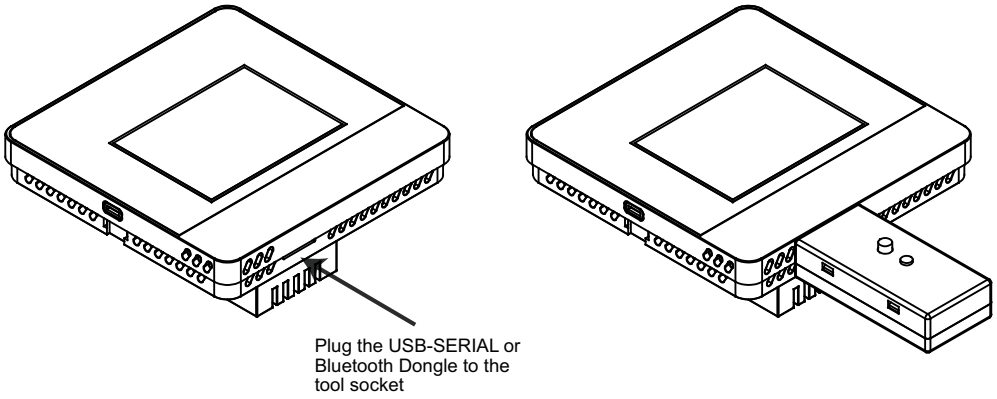
- Clean My Room status - 3.5V
- Do Not Disturb status - 6.5V
- Both - 9.5V

DISPLAY CONFIGURATION

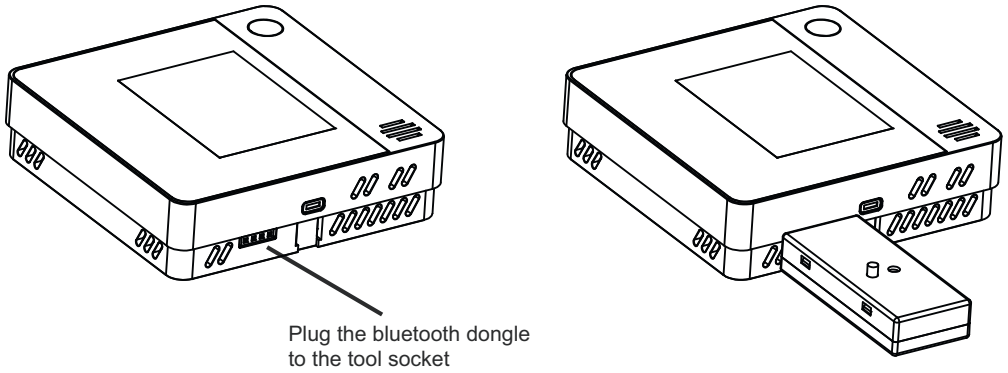
The displays can be configured locally using via PC Based Smart Config Tool, or via Smart Phone Application. Using these methods the device settings can be altered to suit the site requirements.

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.

SLIMLINE TOOL CONNECTION



SURFACE MODELS TOOL CONNECTION



Device Parameters (Modbus Registers)

The following tables explain the device configuration parameters available.

LIVE DATA						
		MODBUS INPUT REGISTERS - FUNCTION CODE 04 MODBUS HOLDING REGISTER - FUNCTION CODES 03, (06), 16				
Parameter	**Description**	**Reg**	**Type**	**Data Range (multiplier)**	**Value Range / Enumerations**	**R/W**
Doorbell Status	Doorbell Status	**400**	int16	0..1 (x1)	0 = Off 1 = On	R
Clean Status	Clean Icon Status	**401**	int16	0..1 (x1)	0 = Off 1 = On	R
Do Not Disturb Status	Do Not Disturb Icon Status	**402**	int16	0..1 (x1)	0 = Off 1 = On	R
Analogue Input 1	Analogue Input 1 Level	**403**	int16	0..1000 (x10)	0..100% = 0..10V	R
Room Occupancy	Room Occupancy Icon Status	**463**	int16	0..1 (x1)	0 = Off 1 = On	R
Room Panic Button	Room Panic Button Status	**464**	int16	0..1 (x1)	0 = Off 1 = On	R

SETTINGS						
		Modbus Register	**MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16**			
Parameter	**Description**		**Type**	**Data Range (multiplier)**	**Value Range / Enumerations**	**R/W**
Display Colour	Sets the display colour (display skin).	**600**	uint16	0..4	0 = White 1 = Green 2 = Blue 3 = Grey (default) 4 = Black	R/W
Occupied Display Brightness	Controls display brightness when Occupancy flag is set.	**601**	uint16	0..6	0 = Off 1 = 5% 2 = 10% 3 = 25% 4 = 50% 5 = 75% (default) 6 = 100%	R/W
Vacant Display Brightness	Controls display brightness when Occupancy flag is not set.	**602**	uint16	0..6	0 = Off 1 = 5% 2 = 10% 3 = 25% 4 = 50% 5 = 75% (default) 6 = 100%	R/W
Room Description	Description Text on the Display	**620**	uint16	0..6	0 = None 1 = Room (Default) 2 = Suite 3 = Apartment 4 = Office 5 = Cabin 6 = Meeting Room	R/W
Room Number	Room Number Display	**603**	unit16	0..9999 (x1)	0.9999 (Default 0)	R/W
Room Number Mode	Room Number Display Mode. Min 3/4 digits modes add '0' in front of the number to show 3 or 4 digits.	**604**	unit16	0..2 (x1)	0 = Number 1 = Min. 3 Digits 2 = Min. 4 Digits	R/W
Show Logo	Defines if the Logo is displayed on the screen (custom logos are possible).	**605**	unit16	0..1 (x1)	0 = Hide 1 = Show	R/W
Bell Display	Doorbell Button Display	**606**	unit16	0..1 (x1)	0 = Disabled 1 = Enabled	R/W
Bell Ring Time	Doorbell Ring Time	**607**	unit16	0..20 (x1)	0..20 secs (Default 0 - Disabled)	R/W
Bell DnD Disable	If set the Bell is disabled if Door Not Disturb has been activated from the room.	**608**	unit16	0..1 (x1)	0 = Off 1 = On	R/W

Bell Relay	Bell Relay Activation (-RL models)	**609**	unit16	0..1 (x1)	0 = Disabled 1 = Enabled	R/W
Door Hanger 1 Display	Sets the Door Hanger Location 1 Display Mode	**621**	unit16	0..5 (x1)	0 = None 1 = Clean 2 = DoNotDisturb 3 = Clean_Dnd 4 = Occupancy 5 = Occupancy_Clean_Dnd	R/W
Door Hanger 2 Display	Sets the Door Hanger Location 2 Display Mode	**622**	unit16	0..5 (x1)		
Door Hanger 2 Display	Sets the Door Hanger Location 3 Display Mode	**623**	unit16	0..5 (x1)		
Screen Redraw	Redraws the Screen after Changes (alternatively press Apply Changes to store the changes permanently)	**930**	unit16	0..1 (x1)	0 = Normal 1 = Redraw	R/W

MODBUS (CDI21 MODELS)

		Modbus Register	MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16			
Parameter	**Description**		**Type**	**Data Range (multiplier)**	**Value Range / Enumerations**	**R/W**
COMMUNICATIONS						
Address	Modbus Address	**800**	uint16	1..247 (x1)	Modbus: 1..247	R/W
Baud Rate	Baud Rate	**801**	uint16	0..5	0 = 9600 (default) 1 = 19200 2 = 38400 3 = 57600 4 = 76800 5 = 115200	R/W
Modbus Parity	Modbus Parity	**802**	uint16	0..2	0 = None (default) 1 = Odd 2 = Even	R/W
Modbus Stopbits	Modbus Stopbits	**803**	uint16	0..1	0 = 1 Stop Bit (default) 1 = 2 Stop Bits	R/W
COMMANDS						
Clean	Enable Clean My Room Hanger on the Display	**461**	uint16	0..1	0 = Off 1 = On	R/W
Do Not Disturb	Enable Do Not Disturb Hanger on the Display	**462**	uint16	0..1	0 = Off 1 = On	R/W
Room Occupancy	Enable Room Occupancy Icon on the Display	**462**	uint16	0..1	0 = Vacant 1 = Occupied	R/W
Room Alarm	Enable Room Alarm Icon on the Display	**464**	uint16	0..3	0 = None 1 = Amber 2 = Red 3 = Red Flash	R/W

SYSTEM SETTINGS

		Modbus Register	MODBUS HOLDING REGISTER - FUNCTION CODES 03, 06, 16			
Parameter	**Description**		**Type**	**Data Range (multiplier)**	**Value Range / Enumerations**	**R/W**
Enable Analogue Interface	Enables the Analogue Input (0..10Vdc) Interface	**804**	uint16	0..1 (x1)	0 = Disabled 1 = Enabled	R/W
Force Reset	Forces Device Reset	**810**	uint16	0..1	0 = Normal 1 = Reset	R/W
Persist	Persist (Store Parameters in Non-Volatile Memory)	**811**	uint16	0..1	0 = Normal 1 = Persist	R/W
Factory Defaults	Reload Defaults (NOTE: Resets all settings to factory defaults)	**812**	uint16	0..1	0 = Normal 1 = Factory Defaults	R/W
Language Pack Enable	Enables the Language Pack	**814**	uint16	0..1	0 = English 1 = Language Pack Enabled	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

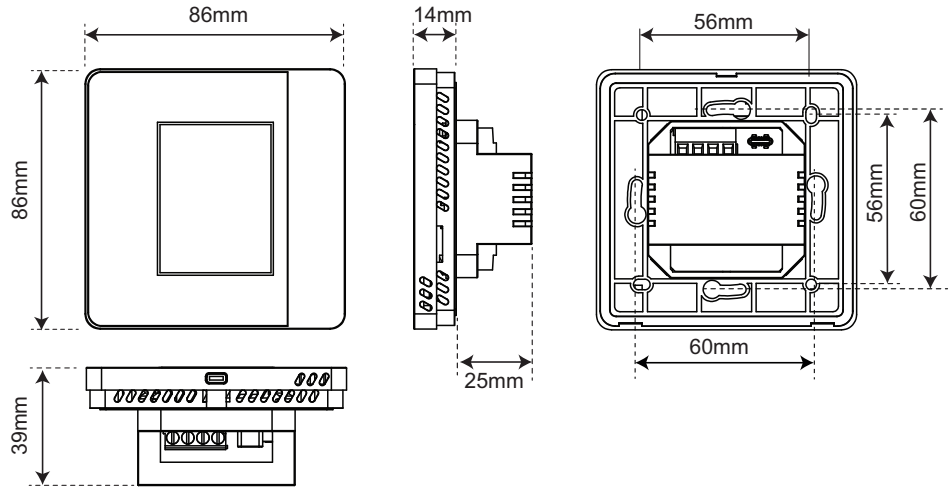
Dimensions and Installation

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.
- Bring the cables through the dedicated hole (black area) marked on the dimensions drawing.2

DIMENSIONS (SLIMLINE SERIES)



DIMENSIONS (SURFACE MOUNTED)

