BT REDCARE

Essential IP

Installation Guide

Contents

Introduction

Product description
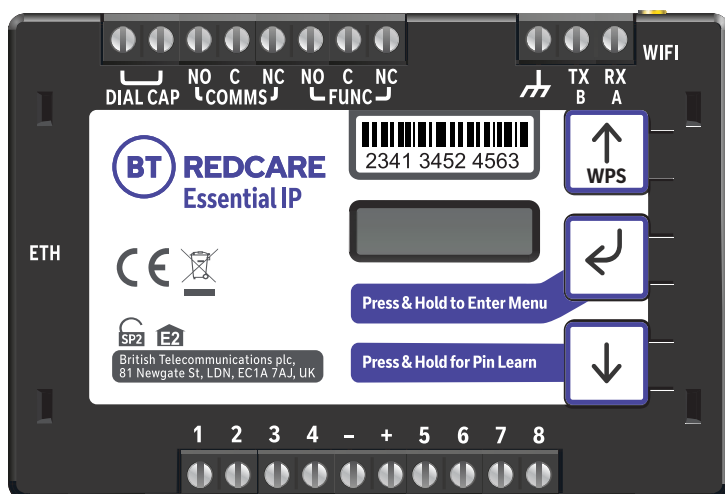
Figure 1 – Essential IP (not to scale)

Essential IP is a single path alarm signalling unit for transmitting alarm signals from a customer's alarm panel, via the BT Redcare network, to an Alarm Receiving Centre (ARC). It uses the pass-through mode of operation.

Essential IP uses IP for its alarm transmission path via the customer's router or network switch. The unit is designed for use in security systems. It communicates via the BT Redcare network; the customer must have a valid TA (Terminal Adapter) account for the unit to communicate. The unit's serial number will already be associated with the TA account.

Once connected to the platform, the unit uses a poll and response check to determine path status. When the path fails, a total path failure is generated by the platform.

The unit has eight general purpose alarm inputs and two outputs, making it suitable for connection to most common alarm panels.

Specifications

Primary path fail reporting 60 mins

Alarm transmission category EN standards / PD6669 (UK) SP2

PD6669, ENSO131 (2017) Grade 2

Grade option (Table 10 EN50131 2017) 2A, 2B

Environmental class II

Information and Substitution security AES256

Size: 95mm x 67mm x 17mm

Weight: 73g

Power: 9V – 30V

Current:	Average Normal Operation	Average Max loading (inc relays and dial capture operated)
IP (Ethernet) @12V	80mA	160mA
IP (wi-fi) @12V	80mA	160mA

Alarm inputs: Eight general purpose inputs numbered 1-8. (-0.5V – 30V)

Alarm threshold: High >2V, and Low <1.3V

Outputs: 2 X Relay NO C NC (COMMS, FUNC). Max rating 1A @ 30V DC

RS232 port: Remote panel access (UDL) and signalling to some intruder panel types

RS485 port: Remote panel access (UDL) and signalling to some intruder panel types

Configuration: Using on-board configuration buttons, web portal or app

Processor: STM32

Operating range: -10 to + 50 degrees Celsius, average 90% non-condensing humidity

Mounting and wiring

Removal of cover

Remove the top cover by gently releasing each of the four clips on the base of the unit. This can be done by pushing the clips outwards with a screwdriver blade.

You shouldn't need access to the inside of the unit.

Mounting

Mount the unit inside the alarm panel, or inside a separate powered housing, using the sticky mounting pads supplied.

For security installations, the enclosure must meet or exceed the protection requirements of the particular security grade for the whole installation, as per EN 50131-1.

For wi-fi installations, mount the supplied aerial vertically outside of the housing by removing the adhesive backing.
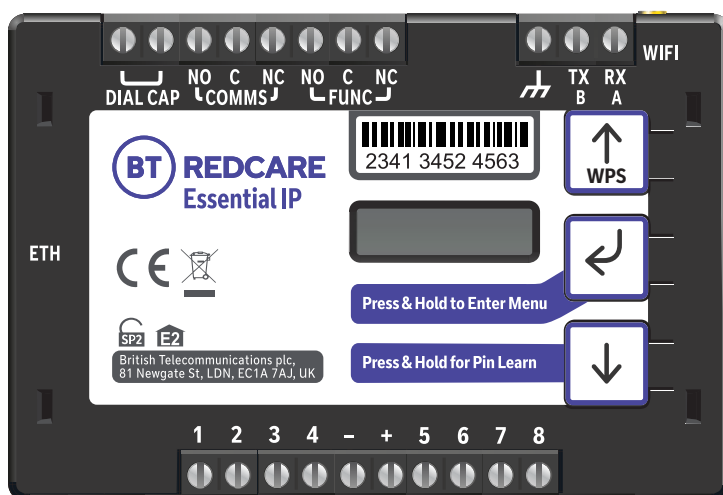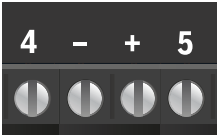

Figure 2 – Layout of terminals (not to scale)

Connection terminals

The screw terminals for the alarm inputs are suitable for use with a standard 3mm blade terminal screwdriver.

Power connections

Power to the unit is via two screw terminals at the centre, with positive to the right, nearest Pin 5.

The supply voltage range is 9V to 30V. We've designed the unit to be connected to the auxiliary power output on an associated alarm panel, or separate powered enclosure. For use with intruder alarm panels, the power supply must meet the requirements of EN 50131-6.

Make sure the power source is sufficient to power all devices connected (see power requirements in the specification section for more information). The account at the Alarm Receiving Centre (ARC) should be put 'on test' before powering up, as the unit will send signals following initialisation

Alarm inputs

The unit has eight alarm inputs, presented on screw terminals along the bottom of the unit. These are labelled as Pin 1-4 and 5-8.
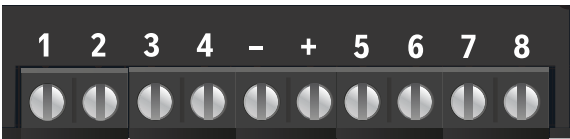
By default, the eight alarm inputs need a positive condition to be presented to send an alarm. (Default = Positive applied). This can be changed using the Pin Learn button or through the configuration menu. See later section on Configuration for details.

Input (Pin)	Use
1	
2	Hold up alarm
3	Intruder alarm
4	Open / Close (Set / Unset) (FUNC output can be set up as RPS in conjunction with Pin 4)
5 – 6	General alarm
7	Confirmed alarm
8	General alarm

Figure 3 – Alarm input allocations. Functions must be agreed with your ARC.

Outputs

There are two relay outputs on screw terminals at the top of the unit.

Output 1 is COMMS, Output 2 is FUNC.

See further sections on outputs for a detailed explanation.

Serial data connections

The serial data connection labelled TX, RX, B and A is configurable for RS485 or RS232 connection, depending on the panel.
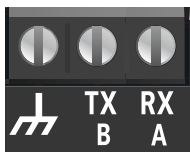
This is done in the configuration menu. These ports allow serial alarm panel connection. See the Panel Upload-Download section.

Dial capture

The dial capture (DIAL CAP) terminals allow the unit to interface with an alarm panel's digital communicator. The alarm panel can then send SIA, CID or Fast Format messages through the unit to the ARC.

You can also use dial capture for upload-download UDL, allowing remote access with some types of alarm panel.

Ethernet connection

Connect the Ethernet port to a suitable Ethernet network using CAT5 cable. For most IP installations you can use a standard Ethernet patch cable.

Wi-fi connection

2.4Ghz b/g/n wi-fi is available as an alternative to the wired Ethernet connection.

Aerial connection (for wi-fi only)

Connect the supplied aerial to the MMCX connector on the top right of the unit. Place the aerial in a vertical position that receives the best wi-fi coverage. Carry out a survey to establish the best location.

If necessary, a selection of high gain and extension aerials are available from the BT Redcare shop at btinstallershop.com

Programming
Simple set up, out of the box

Wi-fi

If you're going to connect over wi-fi, the easiest way to set up is using WPS.

Power up the unit. Press the WPS button on your customer's router and within two minutes, press and hold the up arrow marked with WPS on the Essential IP unit.

```
┌──────────────────────┐     ┌───────┐
│ ▌▌║▌║▌║║▌║▌║▌║▌║     │     │  ↑    │
│ 2341 3452 4563       │     │ WPS   │
└──────────────────────┘     └───────┘

┌──────────────────────┐     ┌───────┐
│                      │     │  ↵    │
│                      │     │       │
└──────────────────────┘     └───────┘
  Press & Hold to Enter Menu

  Press & Hold for Pin Learn   ┌───────┐
                               │  ↓    │
                               │       │
                               └───────┘
```
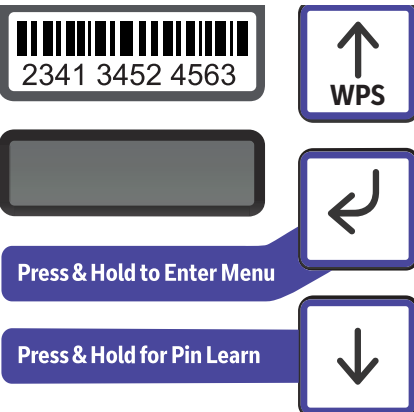
The display will initially show 'Discovering', then 'Connecting'. When successfully connected to the platform, it'll show 'Path Wi-fi Registered'.

Wired Ethernet

When not using wi-fi you can wire an Ethernet cable into the customers' router or network. The unit's default set-up is to use an Ethernet connection, unless WPS is used. Wire in the Ethernet cable, power up the unit, and it'll start to connect to the platform. When successfully connected, the display will read 'Path: Ethernet Registered'.

Unit initialisation

The unit will immediately attempt to connect to the BT Redcare platform. It'll typically complete path establishment to either Ethernet or wi-fi within 60 seconds from power up.

Ethernet/wi-fi	60s

Status display

The unit clearly displays its status on the OLED. This will differ slightly depending on how the device is connected to the customer router or network.

Wired Ethernet

In its normal working state, the unit will cycle through its display.

Path: Ethernet Registered	Service Grade Redcare SP2 IP

IP Path and if registered with the platform.

Service Grade – shows the EN Performance category.

The unit can only determine performance category while in contact with the platform. The unit will not show the performance category until it's registered and can retrieve the profile from the platform.

Alarms GPI Alarm 3	Alarms Battery Low Battery

Pin status – any outstanding alarm pins will be shown. If no pins are in the alarm state, then pin status will not be shown.

The unit may also show Low Battery, if the supply voltage is below the supply threshold.

Wi-fi

Path: Wifi
Registered

IP Path and if registered with the platform.

Wifi Strength [▪▪▪▪] [-52]	Service Grade Redcare SP2 IP

Wi-fi signal strength – two bars or more is the recommended signal level.

Service Grade – shows the EN Performance category.

The unit can only determine performance category while in contact with the platform. The unit will not show the performance category until it's registered and can retrieve the profile from the platform.

Alarms GPI Alarm 3	Alarms Battery Low Battery

Pin status – any outstanding alarm pins will be shown. If no pins are in the alarm state, then pin status will not be shown.

The unit may also show Low Battery, if the supply voltage is below the supply threshold.

Signal strength

- Below -90dBm = X will be displayed.

- Between -90 & -85, display will show one bar.

- Between -85 & -80, display will show two bars.

- Between -80 & -75, display will show three bars.

- Above -75dBm, display will show four bars.

X or 1 bar – try to improve the signal by moving the unit, aerial or using an extension or high gain aerial – available from btinstallershop.com

Guide to signal strength

Poor   Good   Very Good   Excellent

Figure 4 – Signal strength chart

Path: Wifi Registered	Wifi Strength [▪▫▪▪] [-54]	Alarms GPI Alarm 4	Service Grade Redcare SP2 IP
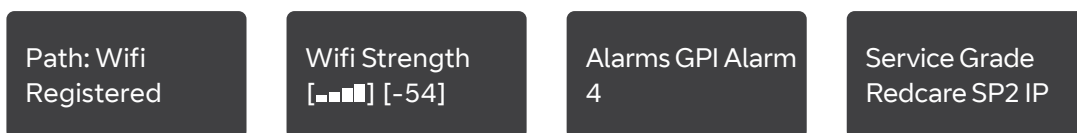
Figure 5 – Typical display cycling on a fully commissioned unit using a wi-fi connection

Path: Ethernet Registered	Alarms GPI Alarm 4	Service Grade Redcare SP2 IP
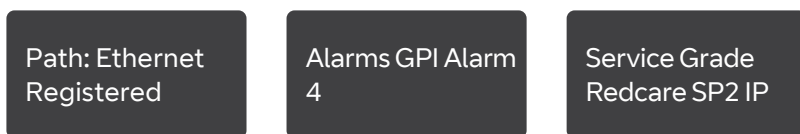
Figure 6 – Typical display cycling on a fully commissioned unit using a wired Ethernet connection

The OLED display shows the state of the communication path, as follows:

- **Up No Reg** – path is up but not registered with the platform.

- **Registered** – has contacted the platform and successfully registered.

- **Alarm/ACK** – Alarm is being transmitted and awaiting acknowledgement.

- **Down** – the path has lost connectivity to the platform and is trying to reconnect.

Pin inputs

Pin 4 can have an RPS output associated or key switch with it. (See Output 2).

Pins 1 – 8 can be set up for End of Line (EOL) and Dual End of Line (DEOL) interconnection monitoring.

Default outputs

Output 1 (COMMS)

Output 1 acts as the communications fail output.

1. **Single path fault**
   Will operate when the path fails.

Condition		Relay Terminal
Power Off	Output 1	C <-> NC
Path Up and Registered	Output 1	C <-> NO
Path fail	Output 1	C <-> NC

Relay status with path fail in operation

NO   C   NC

COMMS
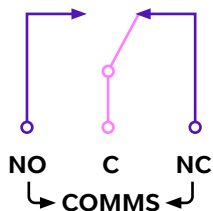
Output 2 (FUNC)

Output 2 has three configuration options:

1. **User control output**
   This can be remotely operated via the web portal or app.

2. **RPS output for Pin 4**
   This output will operate when input Pin 4 is triggered. It will return when an 'acknowledge' signal is returned from the BT Redcare platform. The output has a minimum operation time of one second. When the acknowledgement is received less than one second after Pin 4 is triggered, the output will remain operated for one second.

3. **Keyswitch**
   Set or unset the alarm system in conjunction with the BT Redcare app.

Defaults for Output 1 and 2

Output 1 is set to single path fault, Output 2 is set to User.

Configuration

Pin Learn

For speed of installation, a single button-press Pin Learn function is available.

All pins to be used should be wired in and in the non-alarm state. No tampers should be active if wired in, and Pin 4 (open /close) should represent the system being set/closed.

When ready, press and hold the down arrow for three seconds. 'Notice – Done!' is displayed when finished.

This has completed the Pin Learn. There's also an option to Pin Learn within the configuration menu.

Press & Hold for Pin Learn ↓

Notice –
Done!

Configuration menu programming

The unit comes pre-configured with factory default values. For most installations, you won't need to make changes to the configuration.

You can configure the unit using either the on-board configuration menu driven by the buttons, through the installer app or web portal, connecting a laptop to the Ethernet port or using the Essential IP access point.

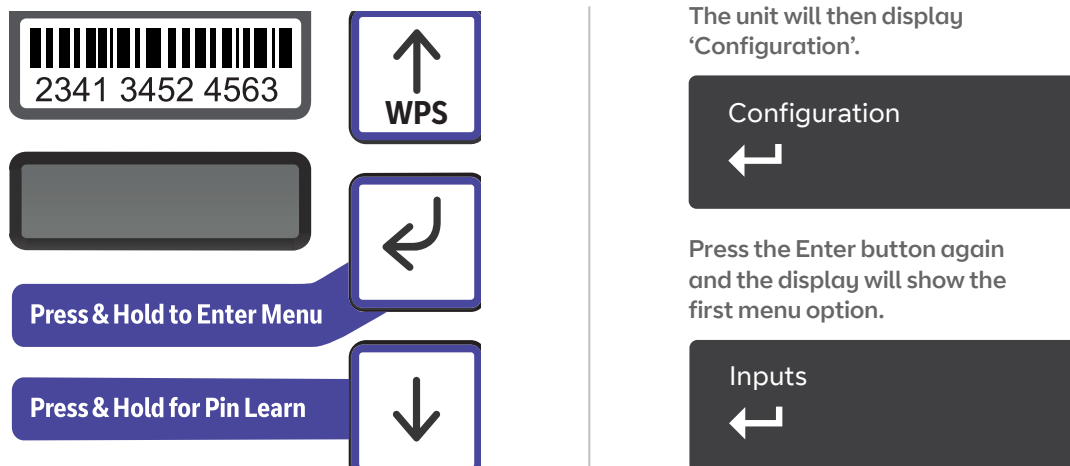A minority of sites may need minimal configuration changes at installation, and most of these will be achievable through the button configuration – for example:

- Change the individual pin status.
- Connect to wi-fi using WPS
- Enable Dual End of Line for interconnection monitoring.
- Change the IP mode from Ethernet to wi-fi.
- Change from dynamic to static IP addressing, and allocate a static IP address/subnet/gateway address.

Button configuration

Enter the button configuration mode by holding down the centre configuration button (Enter) for three seconds.

2341 3452 4563

WPS

Press & Hold to Enter Menu

Press & Hold for Pin Learn

The unit will then display 'Configuration'.

Configuration
↵

Press the Enter button again and the display will show the first menu option.

Inputs
↵

When in the main menu, each press of ↓ will step to the next menu item down.

Use ↑ to step back up and eventually return to the top of the menu. See figure 7 on the next page for the full main menu options.

Pressing the Enter button on any menu item will enter the sub-menu and take you into edit mode. This will allow the function to be changed. Depending on the menu item will depend on the structure of the sub-menu.

Output Type 2*
Keyswitch

You are in edit mode, and changes can be made, if you see a * next to the menu title.

Notice –
Saved!

Many menu items simply have two options. Use the down and up arrow to switch between the two. Press and hold the Enter button to save changes. Display will read 'Notice – Saved!'

Some menu items have more options. For example, Output 2 has three options: User, RPS and Keyswitch. On these menus, press the Enter button to enter the sub-menu, then use the down and up arrows to move through the options with each press. Holding the Enter button for five seconds will save changes – the display will read 'Notice – Saved!'

Some more complex menu items use the Enter button to scroll through additional items in the sub-menu, too – for example, Network IP Addresses to be input.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Main menu display
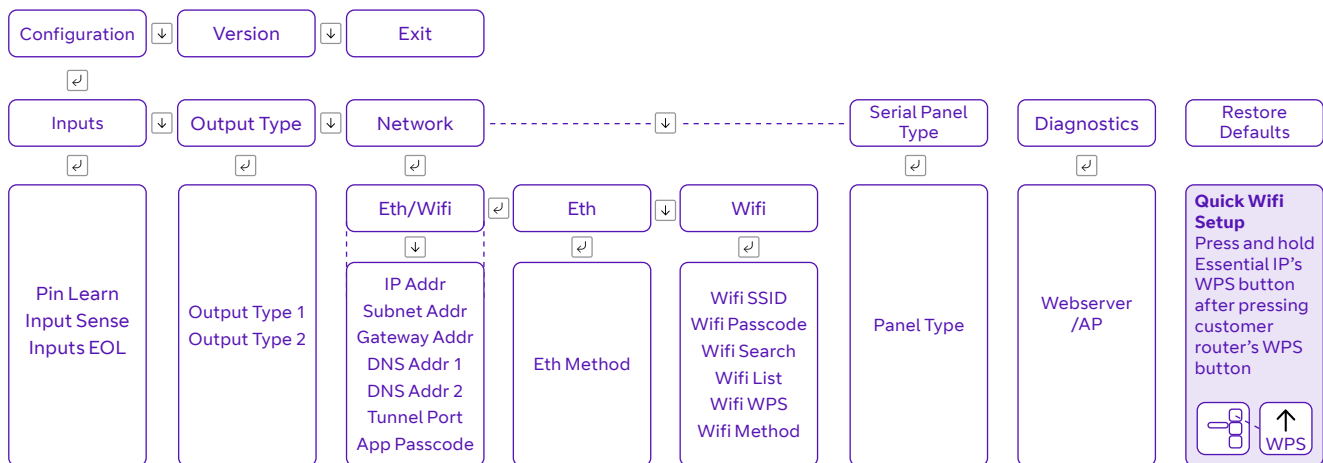
Figure 7 – Button configuration main menu options

Inputs

Pin Learn

The unit can learn the polarity of pins by pressing and holding the down arrow for five seconds. The display will read 'Notice – Done!'. You can also carry out Pin Learn through the configuration menu.

Example – to learn the pin polarity in the configuration menu:
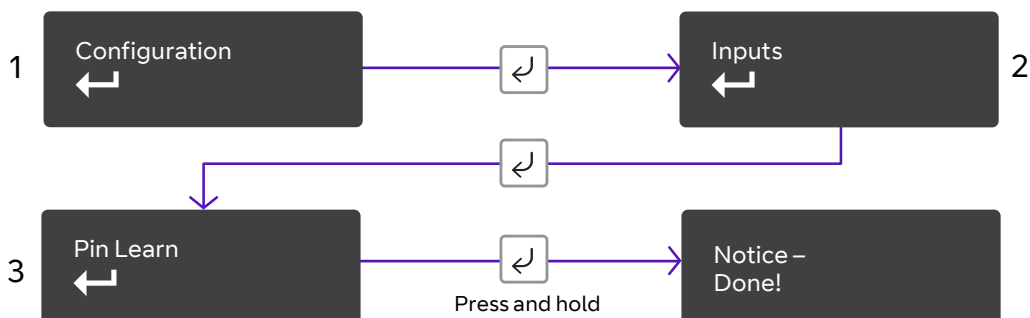
- Access the button configuration menu by holding the Enter button. Configuration is displayed.
- Press the Enter button again – the display now reads Pin Learn.
- Press and hold the Enter button – the display shows 'Notice – Done!'.

You can exit Edit mode at any time, without saving changes, by pressing ⬇ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ⬆ for five seconds. This will take you back to the scrolling status display.

Input Sense

You can also manually configure the polarity of the pins. This is in addition to the Pin Learn function described earlier.

Example – to configure Pin 4 to be positive removed:

1 | Configuration ↵ → ↵ → | Inputs ↵ | 2

↵

3 | Pin Learn ↵ → ↓ (Press until) → | Input Sense ↵ | 4

↵

5 | Input Sense 1 High → ↓ (Press until) → | Input Sense 4 High | 6

↵

7 | Input Sense 4* High → ↑ → | Input Sense 4* Low | 8

↵ (Press and hold)

9 | Notice – Saved!

High (positive applied) or Low (positive removed).

- Access the configuration menu by holding Enter button for three seconds, then press the Enter button again – the display will read Pin Learn. Press the down arrow. The display will show Input Sense. Press the Enter button again to enter Input Sense. Pin 1 and status will be shown.

- Use the down arrow to scroll through the pins. Once you reach the desired pin, press the Enter button. * will be displayed.

- Use down or up arrow to change to High or Low – High (positive applied) or Low (positive removed).

- Once selected, hold the Enter button down until 'Notice – Saved!' is displayed. Then it will return to the position in the menu for you to select another pin, or you can use the down arrow to scroll through all the pins to return to the Back option.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.
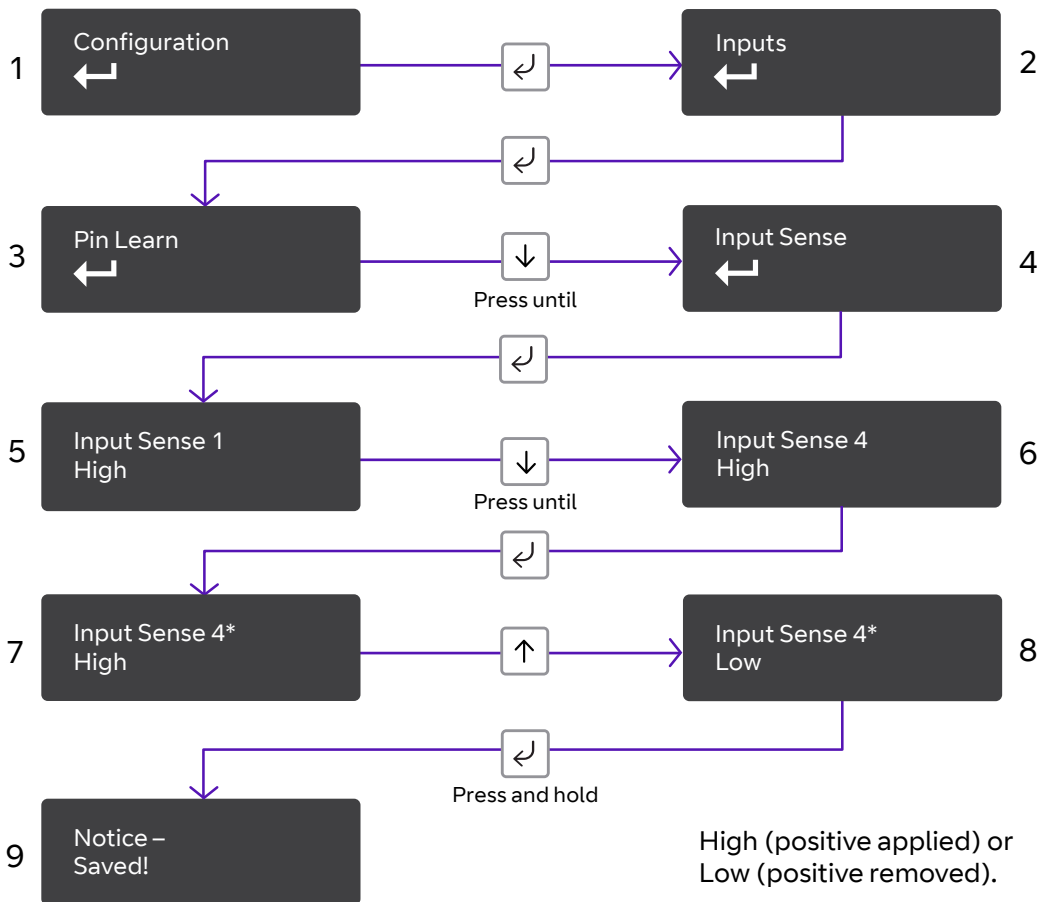
Inputs EOL (End of Line mode)

You can set the alarm inputs to the following modes:

- **None** – (Alarm and Restore)

- **EOL** (Single End of Line mode) – (Alarm, Restore and Cut)

- **DEOL** (Dual End of Line mode) – (Alarm, Restore, Cut and Short)

Example – configure Pin 1 for DEOL

1. Configuration ↵
   → ↵ →
2. Inputs ↵

   ↵

3. Pin Learn ↵
   → ↓ →
   Press until shows
4. Inputs EOL ↵

   ↵

5. EOL 1 None
   → ↵ →
6. EOL 1* None

   ↓
   Press twice

7. EOL 1* DEOL
   → ↵ →
   Press and hold
8. Notice – Saved!

This allows the unit to monitor the wiring to the alarm panel contacts.

- Access the configuration menu by holding the Enter button for three seconds. Press the Enter button again – the display will read 'Pin Learn'. Press the down arrow twice. The display will read 'Inputs EOL'. Press the Enter button again to enter Input EOL. 'EOL 1 = None' will be shown.

- Use the down arrow to scroll through the pins. Once you reach the desired pin, press the Enter button. * will be displayed. Use the down or up arrow to change to None, EOL or DEOL.

- Once selected, hold the Enter button down until 'Notice – Saved!' is displayed.

- You'll then be returned to the same position in the menu to either select another pin, or use the down arrow to scroll through all the pins to get to the Back option. Use the down arrow to step through all pins to get to the Back option.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Outputs
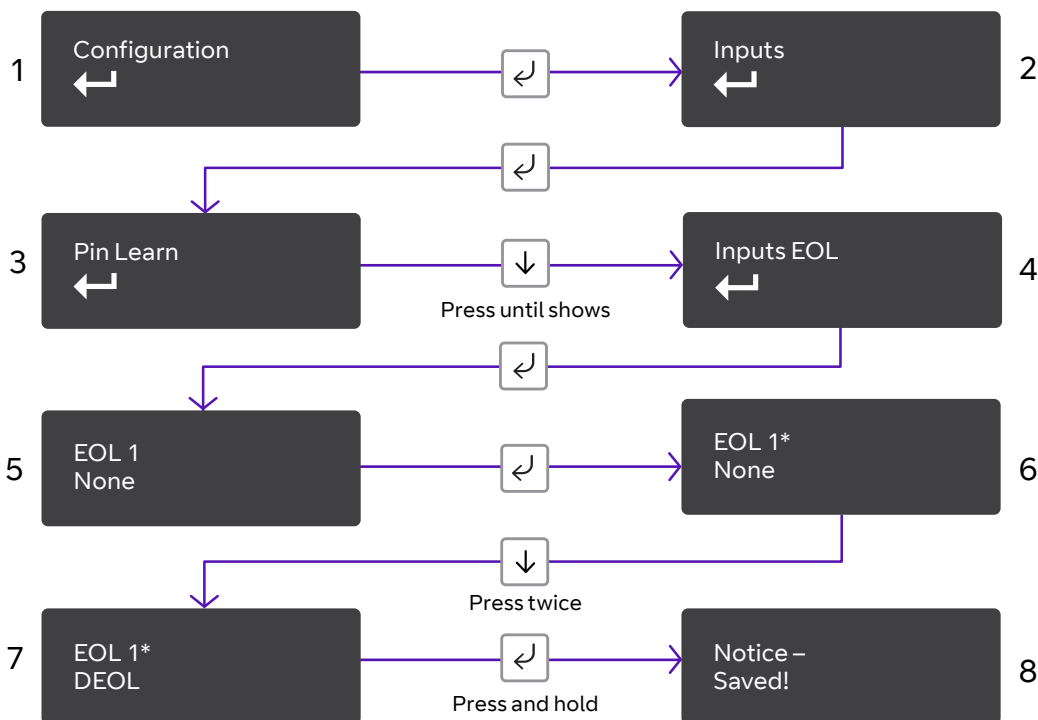
The two relay outputs can be configured as follows:

1. Output type 1 (COMMS):

- **Single path fault** – operates when path is in fault.

2. Output type 2 (FUNC):

- **User** – allow the relay to be operated remotely via the app or portal (default).

- **RPS** – return path signal operates in conjunction with Pin 4.

- **Keyswitch** – Operates in conjunction with Pin 4 and the app.

Keyswitch mode:

- **Momentary** – allow the FUNC relay, when set to Keyswitch, to be operated remotely via the app or portal by one pulse of the relay (default)

- **Latched** – allow the FUNC relay, when set to Keyswitch, to be operated remotely via the app or portal by latching the relay.

Example – configure Output 2 (FUNC) for RPS:
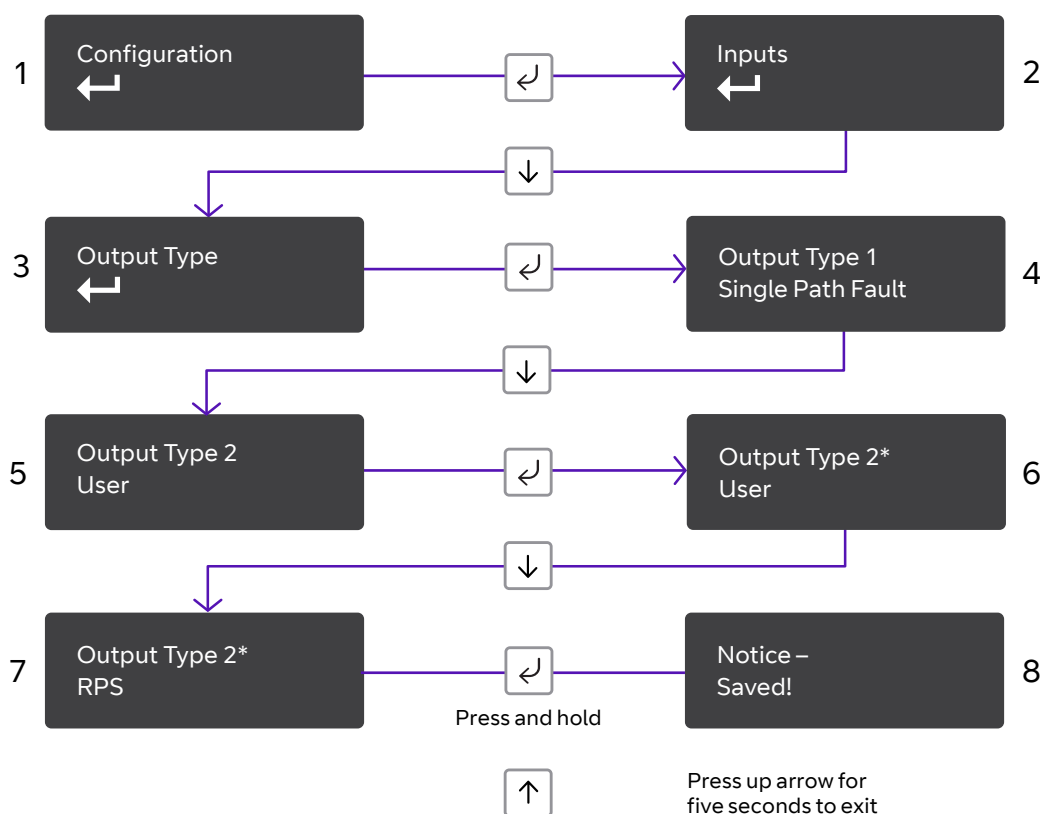
1 **Configuration** ↵	↵ →	2 **Inputs** ↵
	↓	
3 **Output Type** ↵	↵ →	4 **Output Type 1 Single Path Fault**
	↓	
5 **Output Type 2 User**	↵ →	6 **Output Type 2* User**
	↓	
7 **Output Type 2* RPS**	↵ Press and hold	8 **Notice – Saved!**

↑ Press up arrow for five seconds to exit

- Access the configuration menu by holding the Enter button for three seconds. Press the Enter button again – the display will read 'Inputs'. Press the down arrow – 'Output Type' is displayed. Press the Enter button again. The display will show the default setting for Output type 1.

- Use the down arrow to get to Output type 2. Press the Enter button. * will be displayed.
  Use down or up arrow to change to the required configuration for that output.

- Once selected, hold the Enter button down until 'Notice – Saved!' is displayed.

- You'll then be returned to the same position in the menu to either select another output, or use the down arrow to scroll through all the outputs to get to the Back option.

Edit mode for that part of the menu can be exited at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

The configuration menu can be exited at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Network

The programming options under the network sub-menu are Eth/Wifi. Choose whether you are going to use Ethernet or Wi-fi to connect to the customer's router – Ethernet is the default option.

If Eth is selected, the menu will show:

```
Eth/Wifi
Ethernet
```

Ethernet method

This allows the unit to be changed between Dynamic (DHCP client) or Static modes. The default setting is DHCP.

The Ethernet port will try to obtain an IP address from a DHCP server on the LAN.

```
ETH Method
DHCP
```

- **IP address:** shows current IP address but can also be configured for a static IP address.
- **Subnet mask address:** shows current subnet address but can also be configured for a customer's subnet address.
- **Gateway address:** shows current gateway address but can also be configured for a customer's gateway address.
- **DNS Address 1:** can be configured to use specific DNS servers.
- **DNS Address 2:** can be configured to use specific DNS servers.
- **Tunnel Port:** Port 443 is default but there is an option to use 10443.
- **App passcode:** used in conjunction with Installer and Customer apps.

When Eth Method is set to Static, the unit is in Static IP addressing mode.
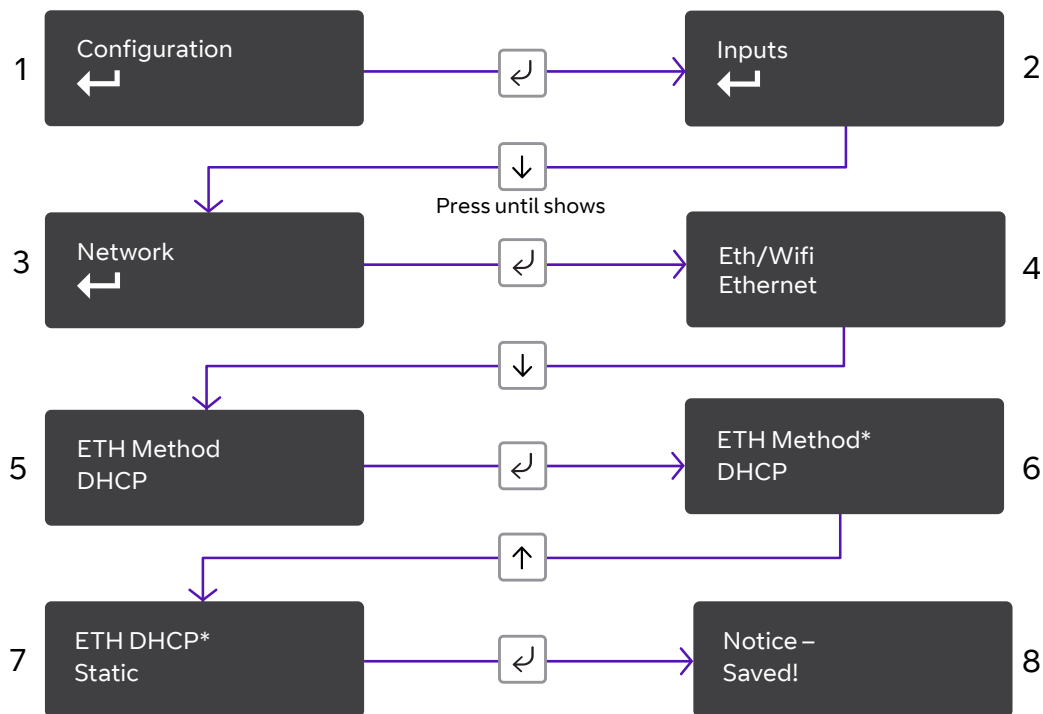
Example – to change from DHCP to Static mode:

1 Configuration ↵	↵ →	Inputs ↵ **2**

↓
Press until shows

3 Network ↵	↵ →	Eth/Wifi Ethernet **4**

↓

5 ETH Method DHCP	↵ →	ETH Method* DHCP **6**

↑

7 ETH DHCP* Static	↵ →	Notice – Saved! **8**

- Access the configuration menu by holding the Enter button for three seconds. Press the Enter button again – the display will read 'Inputs'. Press the down arrow until 'Network' is displayed. Press the Enter button again. 'Eth/Wifi' is displayed. Press the down arrow. 'Eth Method DHCP' is displayed. Press the Enter button. * will be displayed.

- Use the up arrow to switch to Static IP addressing.

- Once selected, hold the Enter button down until 'Notice – Saved!' is displayed.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Setting a static IP address, netmask and gateway address

If you're connecting the unit to a LAN that requires the unit to have a static IP address (i.e. no DHCP server on the LAN), set Eth Method to Static then configure as follows:

1
ETH Method
Static

↓

2
ETH IP Addr
0.0.0.0

↵

3
ETH IP Addr*
000.000.000.000

First digit
highlighted

↑

Press until correct number

4
ETH IP Addr*
100.000.000.000

↵

Press to get to next digit

5
ETH IP Addr*
1**0**0.000.000.000

Second digit
highlighted

↑

Press until correct number

6
ETH IP Addr*
1**9**0.000.000.000

↵

Press to get to next digit

7
ETH IP Addr*
19**0**.000.000.000

Third digit
highlighted

↑

Press until correct number

8
ETH IP Addr*
19**2**.000.000.000

↵

Press and hold

↑ ↓ ↵

Use enter to step along IP address digits 4–12
Use up and down to change individual digits
Press and hold Enter when finished

ETH IP Addr*
192.168.1.56

9
Notice –
Saved!

Then use ↓ to step to subnet address and use the same process as above to set the subnet address

1
ETH IP Addr
192.168.1.56

↓

2
ETH Subnet Addr
255.255.255.0

↵

3
ETH Subnet Addr*
255.255.255.000

First digit
highlighted

↵

Press until required digit

4
ETH Subnet Addr*
255.255.255.0**0**0

11th digit
highlighted

↑

Press until correct number

5
ETH Subnet Addr*
2**5**5.255.255.000

Second digit
highlighted

↵

Press to get to next digit

6
ETH Subnet Addr*
255.255.255.01**0**

12th digit
highlighted

↑

Press until correct number

7
ETH Subnet Addr*
2**5**5.255.255.01**5**

↵

Press and hold

ETH ISubnet Addr
255.255.255.15

8
Notice –
Saved!

Then use ↓ to step to gateway address, and use the same process as above to set the subnet address.

1
ETH Subnet Addr
255.255.255.15

→ ↓ →

ETH GW Addr
0.0.0.0
2

↵

3
ETH IP Addr*
000.000.000.000

First digit
highlighted

→ ↑ →
Press until correct number

ETH GW Addr*
100.000.000.000
4

↵
Press to get to next digit

5
ETH GW Addr*
1**0**0.000.000.000

Second digit
highlighted

→ ↑ →
Press until correct number

ETH GW Addr*
1**9**0.000.000.000
6

↵
Press to get to next digit

7
ETH GW Addr*
19**0**.000.000.000

Third digit
highlighted

→ ↑ →
Press until correct number

ETH GW Addr*
19**2**.000.000.000
8

↵
Press and hold

↑ ↓ ↵
Use enter to step along IP address digits 4-12
Use up and down to change individual digits
Press and hold Enter when finished

9
Notice –
Saved!

ETH GW Addr
192 .168.1.254

Note that IP addresses are made up of 12 digits in four batches of three, separated by dots. You must enter addresses through the buttons as 12 digit numbers, with zeros used to the left of each batch where necessary to pad out the addresses – as follows:

- IP Address = 192.168.001.056
- Subnet mask = 255.255.255.015
- Gateway = 192.168.001.254

The display will show the full address for each of the above.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.
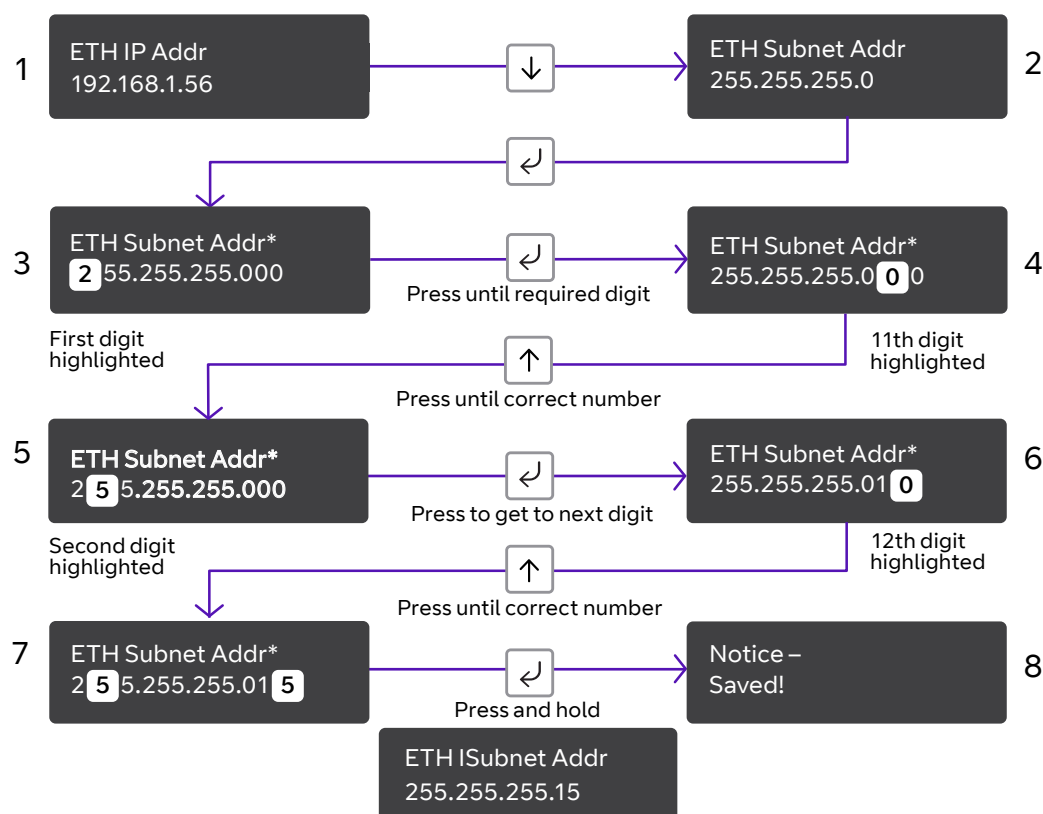
Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

DNS Addr 1

Required to convert host names used to contact the server.

DNS Addr 2

Alternative DNS addresses – for example 8.8.8.8 or 1.1.1.1

Then use [↓] to step to DNS address and use the same process as above to set new DNS addresses.

You shouldn't normally need to change defaults.

1
```
ETH GW Addr
192.168.1.254
```
→ [↓] →
2
```
ETH DNS Addr 1
1.1.1.1
```

[↵]

3
```
ETH DNS Addr 1*
[0]01.001.001.001
```
First digit highlighted
→ [↑] →
Press until correct number
4
```
ETH GW Addr*
[1]01.001.001.001
```

[↵]
Press to get to next digit

5
```
ETH GW Addr*
1[0]1.001.001.001
```
Second digit highlighted
→ [↑] →
Press until correct number
6
```
ETH GW Addr*
1[9]1.001.001.001
```

[↵]
Press to get to next digit

7
```
ETH GW Addr*
19[1].001.001.001
```
Third digit highlighted
→ [↑] →
Press until correct number
8
```
ETH GW Addr*
19[2].001.001.001
```

[↵]
Press and hold

[↑] [↓] [↵]
Use enter to step along IP address digits 4-12
Use up and down to change individual digits
Press and hold Enter when finished

9
```
Notice –
Saved!
```

```
ETH GW Addr
192 .168.100.001
```

You shouldn't normally need to change defaults.

1
ETH DNS Addr1
192.168.100.001

[↓]

ETH DNS Addr 2
8.8.8.8
2

[↵]

3
ETH DNS Addr 2*
[0]08.008.008.008

First digit
highlighted

[↑]
Press until correct number

ETH DNS Addr 2*
[1]08.008.008.008
4

[↵]
Press to get to next digit

5
ETH DNS Addr 2*
1[0]8.008.008.008

Second digit
highlighted

[↑]
Press until correct number

ETH DNS Addr 2*
1[9]8.008.008.008
6

[↵]
Press to get to next digit

7
ETH DNS Addr 2*
19[1].008.008.008

Third digit
highlighted

[↑]
Press until correct number

ETH DNS Addr 2*
19[2].008.008.008
8

[↵]
Press and hold

[↑] [↓] [↵]

Use enter to step along IP address digits 4-12
Use up and down to change individual digits
Press and hold Enter when finished

9
Notice –
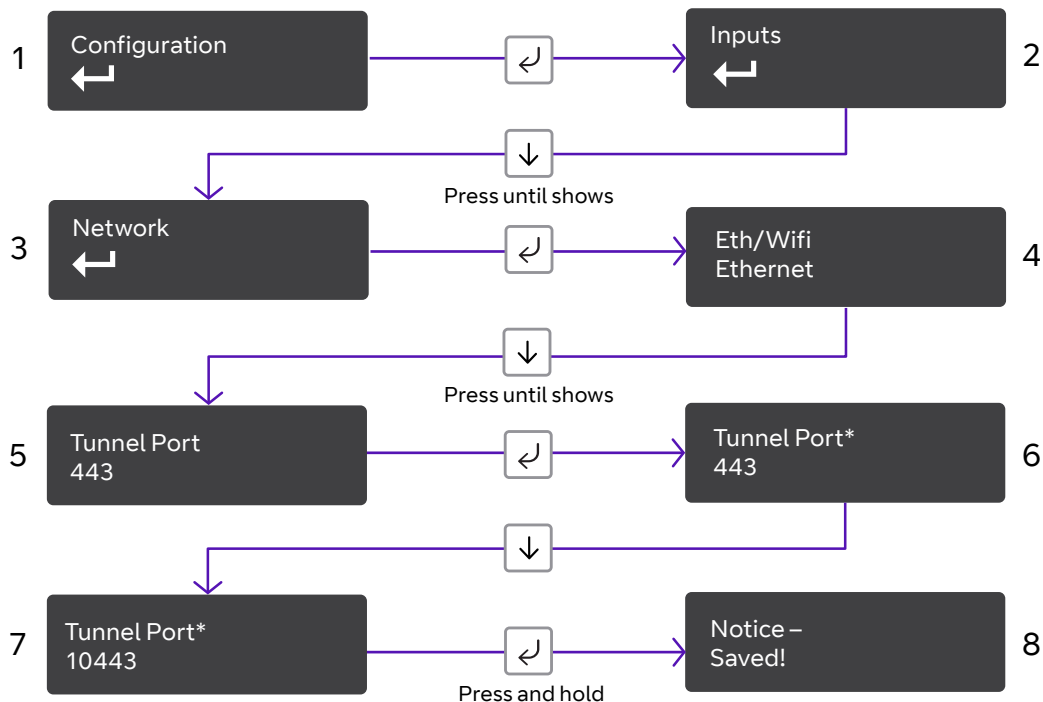Saved!

ETH GW Addr
192.168.100.002

Tunnel port

You can select an alternative tunnel port by accessing the Tunnel Port menu under Network. The options are:

- 443 (default)
- 10443

Example – changing the unit to use Port 10443:

1 Configuration ↵ → ↵ → Inputs ↵ 2

↓ Press until shows

3 Network ↵ → ↵ → Eth/Wifi Ethernet 4

↓ Press until shows

5 Tunnel Port 443 → ↵ → Tunnel Port* 443 6

↓

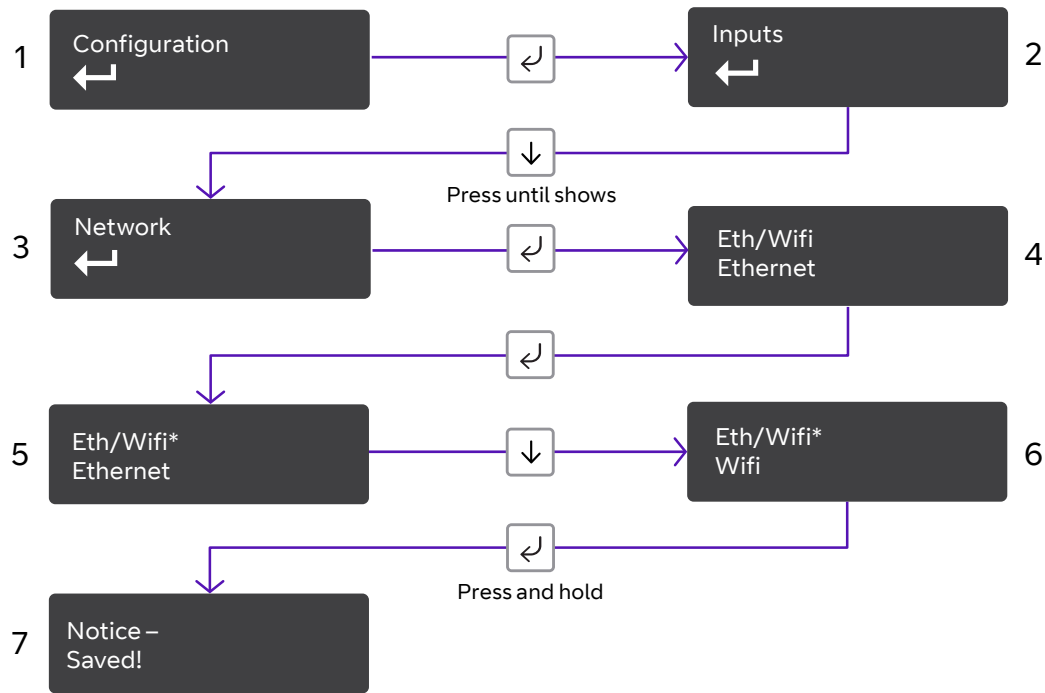7 Tunnel Port* 10443 → ↵ → Notice – Saved! 8

Press and hold

The unit will try to connect to the BT Redcare servers by signalling on IP port 443. On most LANs, this will work correctly; on some advanced LAN configurations the network manager might not allow outgoing access on port 443, but may do on port 10443. If this is the case, you can configure the unit to use the alternative port 10443. The BT Redcare servers are set to accept both ports, so you'll only need to make changes on the unit.

- Access the configuration menu by holding the Enter button for three seconds. Press the Enter button again – the display will read 'Pin Learn'. Press the down arrow until Network is displayed. Press the Enter button again. 'Eth/Wifi' is displayed.

- Use the down arrow to scroll through to Tunnel Port 443. Press Enter again. * will be displayed. Use the down arrow to change the Tunnel Port to 10443.

- Once selected, hold the Enter button down until 'Notice – Saved!' is displayed.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.
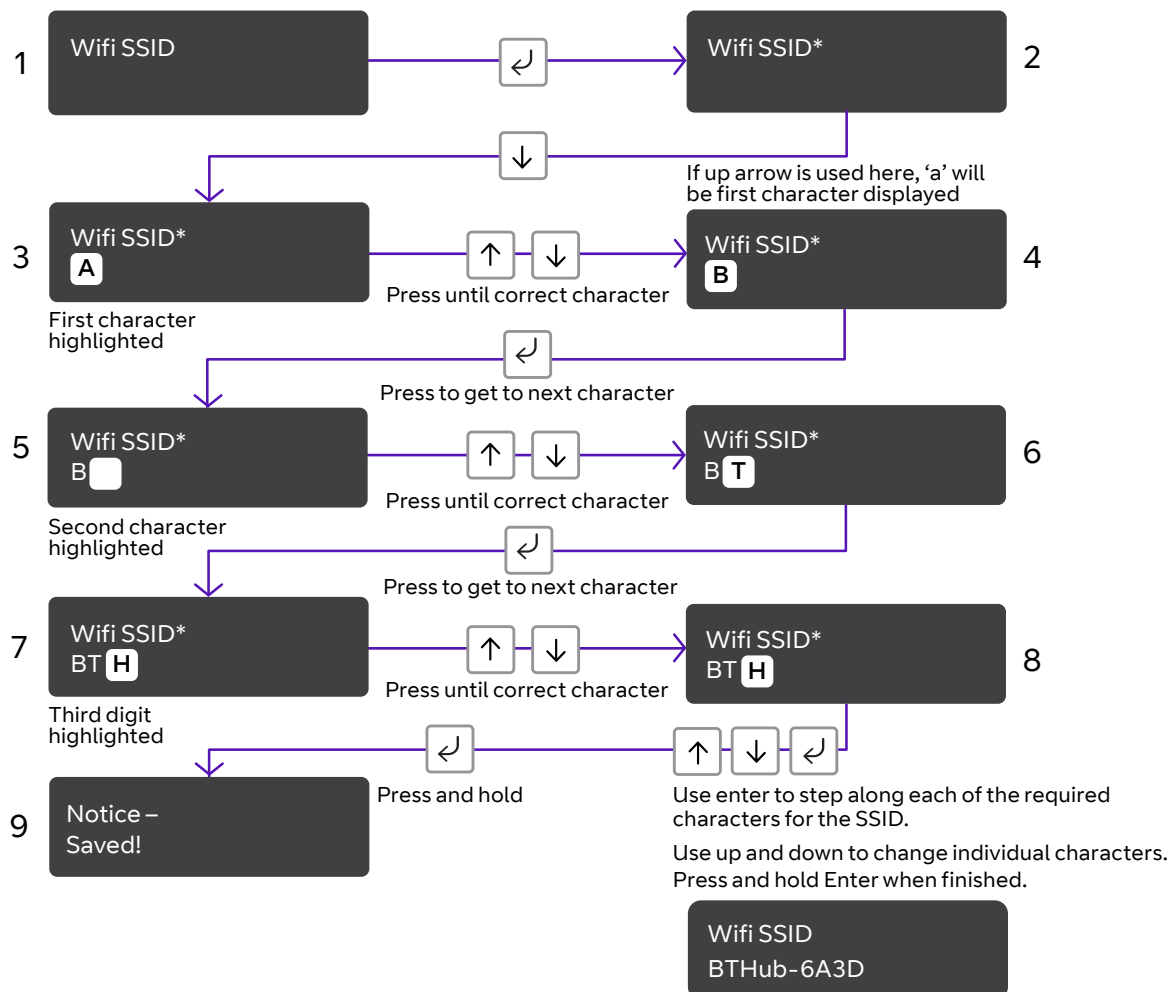
Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Switching to wi-fi using the programming buttons

1 Configuration ⏎

→ ⏎ →

2 Inputs ⏎

↓ Press until shows

3 Network ⏎

→ ⏎ →

4 Eth/Wifi Ethernet

⏎

5 Eth/Wifi* Ethernet

→ ↓ →

6 Eth/Wifi* Wifi

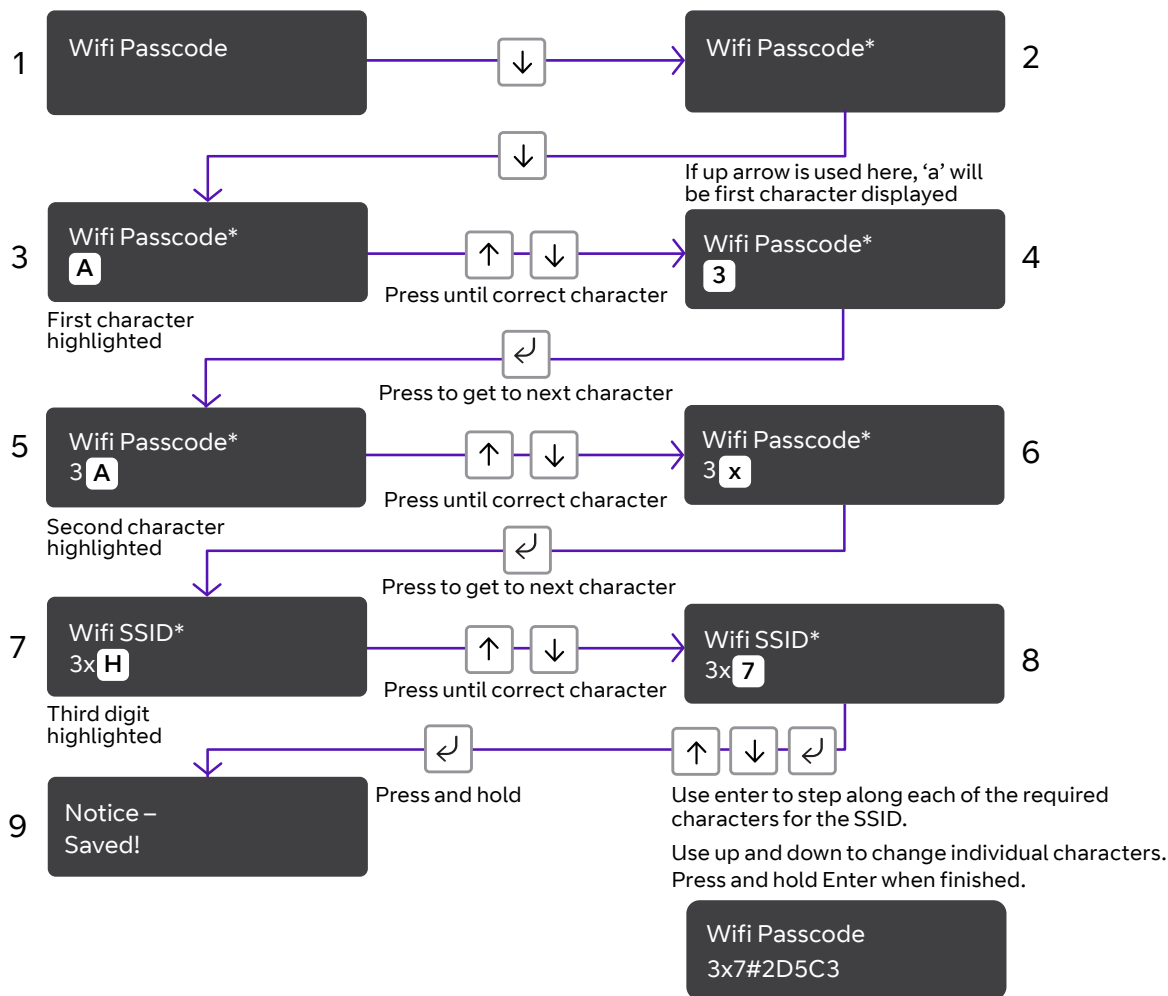⏎ Press and hold

7 Notice – Saved!

You'll now see the following menu options:

Wi-Fi SSID: Here, you can manually enter the SSID of the network you want to connect to, or be shown the SSID of the customer wi-fi network you're connected to. If you wish to search for the wi-fi network you want to connect to, press the down arrow until you get to wi-fi search.

1 Wifi SSID

→ ⏎ →

2 Wifi SSID*

↓ If up arrow is used here, 'a' will be first character displayed

3 Wifi SSID* A

First character highlighted

→ ↑ ↓ →

Press until correct character

4 Wifi SSID* B

⏎ Press to get to next character

5 Wifi SSID* B▯

Second character highlighted

→ ↑ ↓ →

Press until correct character

6 Wifi SSID* B T

⏎ Press to get to next character

7 Wifi SSID* BT H

Third digit highlighted

→ ↑ ↓ →

Press until correct character

8 Wifi SSID* BT H

⏎ Press and hold

↑ ↓ ⏎ Use enter to step along each of the required characters for the SSID.

Use up and down to change individual characters. Press and hold Enter when finished.

9 Notice – Saved!

Wifi SSID BTHub-6A3D

Wifi Passcode: This shows the passcode for the wi-fi network you're connected to, or allows you to enter a passcode.

1 | Wifi Passcode | ↓ → | Wifi Passcode* | 2

↓

If up arrow is used here, 'a' will be first character displayed

3 | Wifi Passcode*
A | ↑ ↓ | Wifi Passcode*
3 | 4

First character highlighted

Press until correct character

↵ Press to get to next character

5 | Wifi Passcode*
3 **A** | ↑ ↓ | Wifi Passcode*
3 **x** | 6

Second character highlighted

Press until correct character

↵ Press to get to next character

7 | Wifi SSID*
3x **H** | ↑ ↓ | Wifi SSID*
3x **7** | 8

Third digit highlighted

Press until correct character

↵ Press and hold   ↑ ↓ ↵

9 | Notice –
Saved!

Use enter to step along each of the required characters for the SSID.

Use up and down to change individual characters. Press and hold Enter when finished.

Wifi Passcode
3x7#2D5C3

When manually entering the wi-fi SSID or passcode, pressing the down arrow will take you to character A. Pressing the down arrow again will take you to B and so on, through the following:

ABCDEFGHIJKLMNOPQRSTUVWXYZ][}{=_+-)
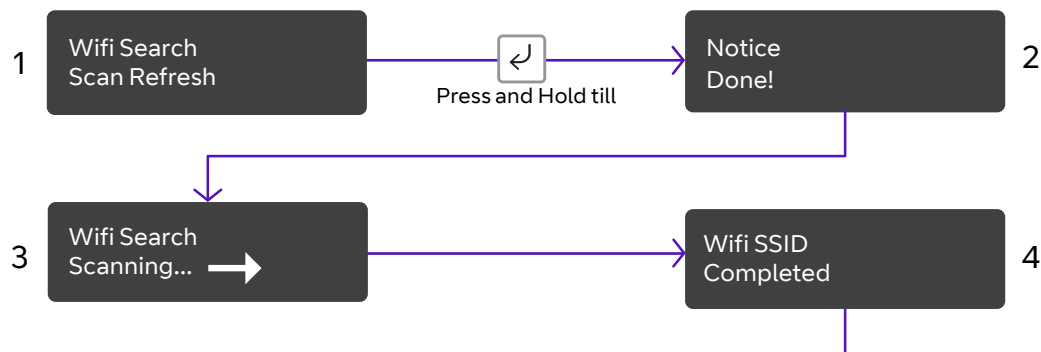(*&^%$#@!9876543210zyxwvutsrqponmlkjihgfedcba

Pressing and holding the down arrow allows you to fast-scroll through characters. Note that holding the down arrow for more than five seconds will take you out of programming mode.

Pressing the up arrow will take you to character a. Pressing it again will take you to b and so on through the following:
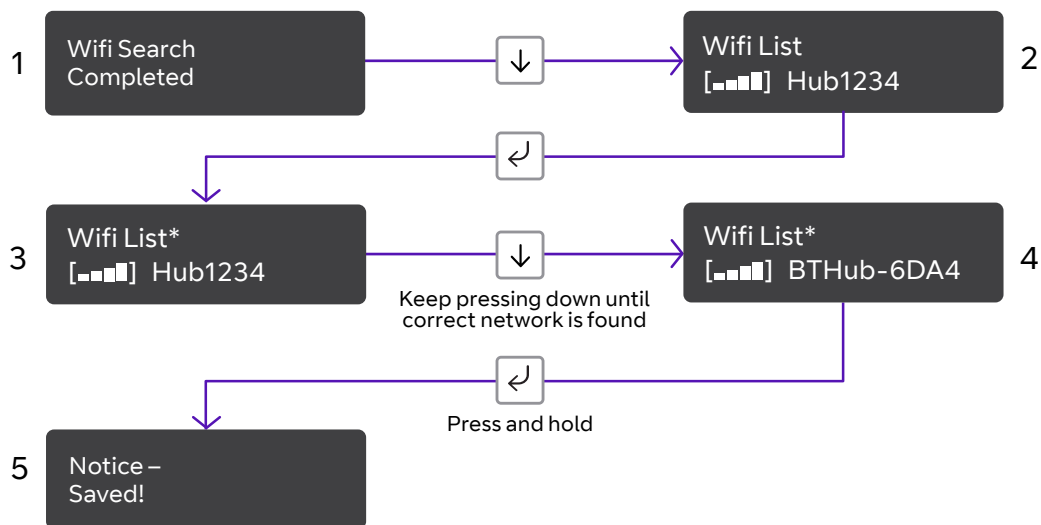
abcdefghijklmnopqrstuvwxyz0123456789!@#$%^&*()-+_={}[]
ZYXWVUTSRQPOMNLKJIHGFEDCBA

Holding down the up arrow lets you fast-scroll through characters. Note that holding the down arrow for more than five seconds will take you out of programming mode and back to the status display.

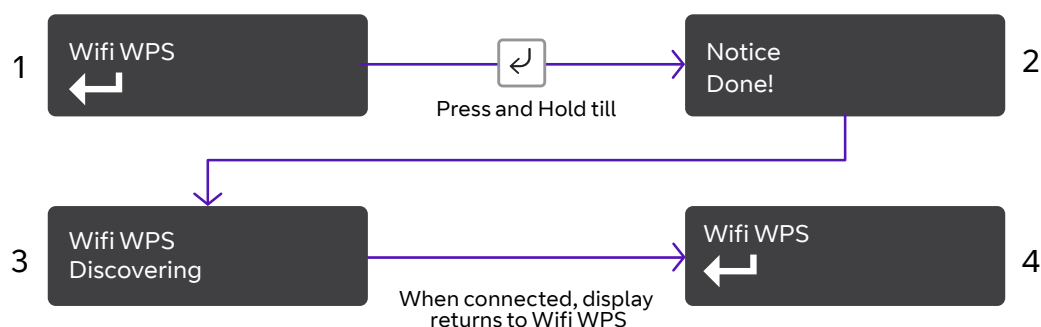**Wifi Search:** starts a search for all available wi-fi networks.

| 1 | Wifi Search
Scan Refresh | → ↵ →
Press and Hold till | Notice
Done! | 2 |

| 3 | Wifi Search
Scanning... → | → | Wifi SSID
Completed | 4 |

You can see the results of this search by pressing ↓ to go to **Wi-Fi List**.

| 1 | Wifi Search
Completed | → | Wifi List
[▪▪▪▪] Hub1234 | 2 |

↵

| 3 | Wifi List*
[▪▪▪▪] Hub1234 | → ↓ →
Keep pressing down until
correct network is found | Wifi List*
[▪▪▪▪] BTHub-6DA4 | 4 |

↵
Press and hold

| 5 | Notice –
Saved! |

Press the down arrow from Wi-fi Search to get to Wi-fi List. This will show a list of available wi-fi networks in order of signal strength – those with four bars are the networks with the best strength. Press Enter, * will be displayed. This allows you to scroll though all networks to find the customer network you need. Press the down arrow to find the correct network. Once selected, press and hold Enter, to save the network. 'Notice – Saved!' will be displayed.

Use the up arrow to get to Wi-fi SSID to check you've saved the correct SSID. Then use the down arrow to go to Wi-fi Passcode. Follow the instructions above to enter the passcode for the customer wi-fi network.

Wifi WPS: Lets you initiate a WPS connection.

| 1 | Wifi WPS
← | → ↵ →
Press and Hold till | Notice
Done! | 2 |

| 3 | Wifi WPS
Discovering | →
When connected, display
returns to Wifi WPS | Wifi WPS
← | 4 |

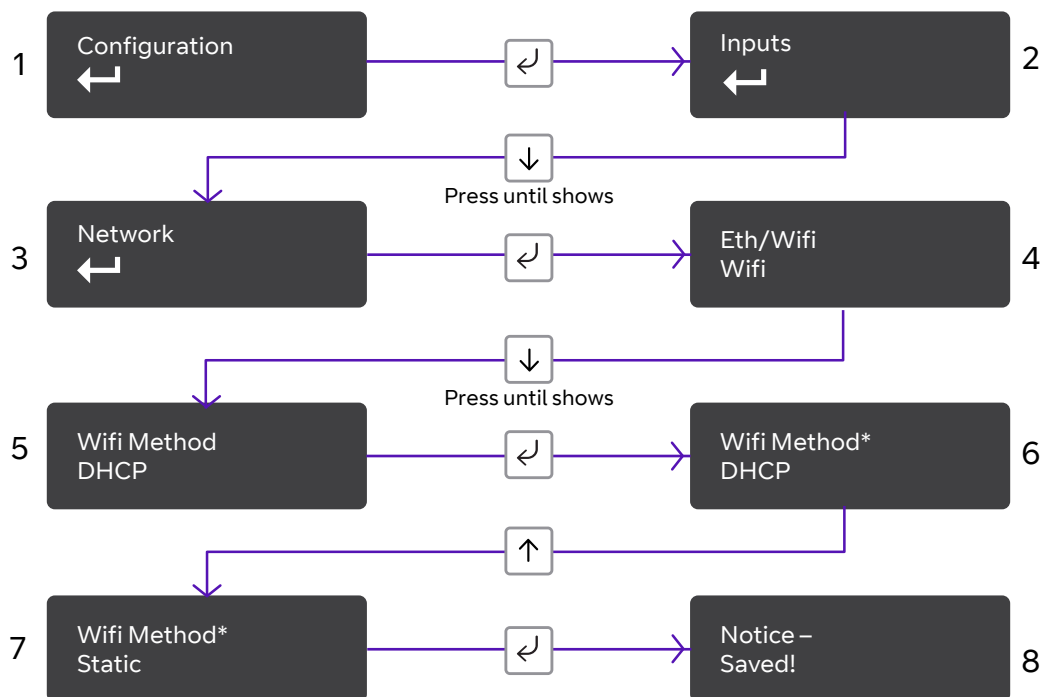To get back to the status display, press and hold ↑ for 5 seconds.

Wifi Method: This allows the unit to be changed between Dynamic (DHCP client) or Static modes. The default setting is enabled.

The wi-fi modem will try to obtain an IP address from a DHCP server on the LAN.

- **IP address:** shows current IP address but can also be configured for a static IP address.
- **Subnet mask address:** shows current subnet address but can also be configured for a customer's subnet address.
- **Gateway address:** shows current gateway address but can also be configured for a customer's gateway address.
- **DNS Address 1:** can be configured to use specific DNS servers.
- **DNS Address 2:** can be configured to use specific DNS servers.
- **Tunnel Port:** Port 443 is default but there is an option to use 10443.
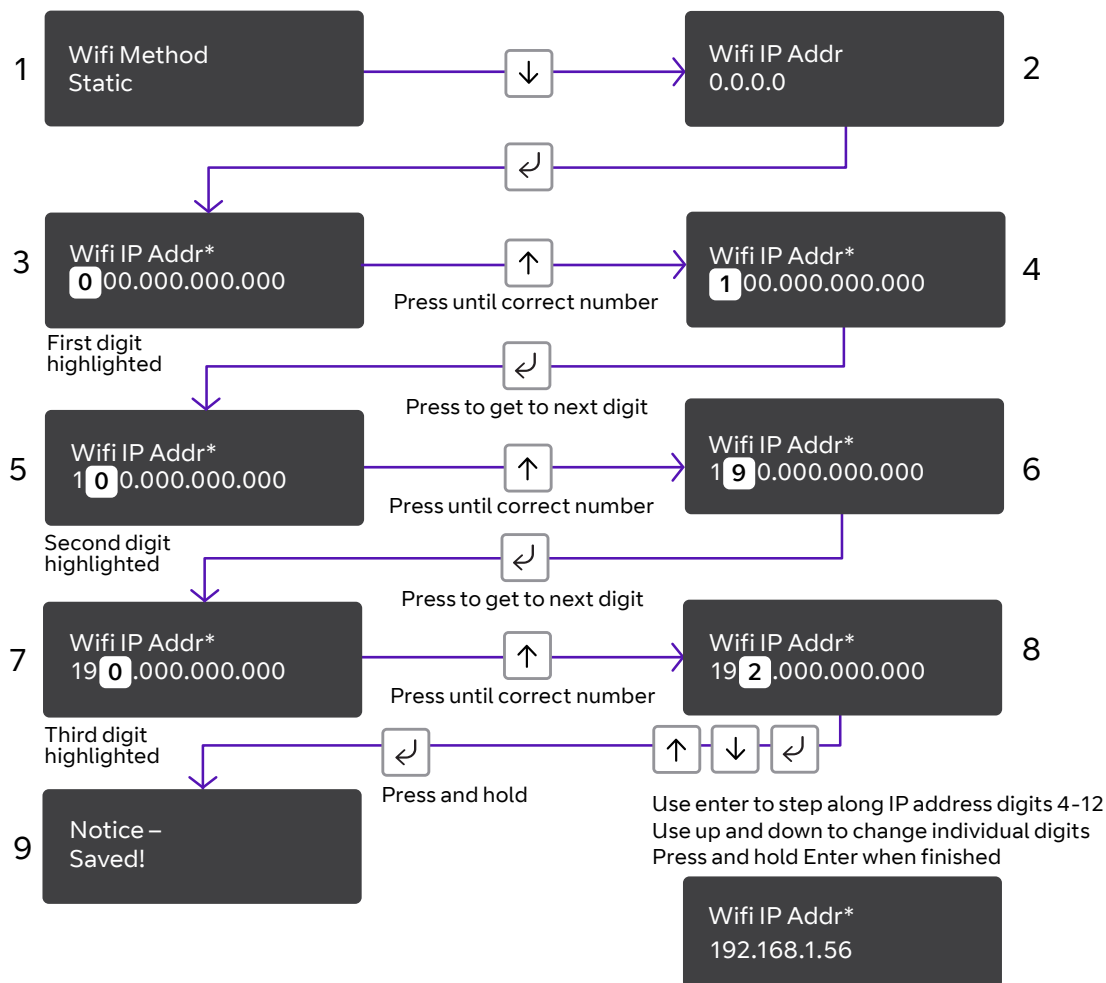- **App passcode:** used in conjunction with Installer and Customer apps.

When Wifi Method is set to Static, this sets the unit in Static IP addressing mode.

Example – to change from DHCP to Static mode:

1	Configuration ↵	→ ↵ → Inputs ↵ 2

1 Configuration ↵ → ↵ → Inputs ↵ 2

↓ Press until shows

3 Network ↵ → ↵ → Eth/Wifi Wifi 4

↓ Press until shows

5 Wifi Method DHCP → ↵ → Wifi Method* DHCP 6

↑

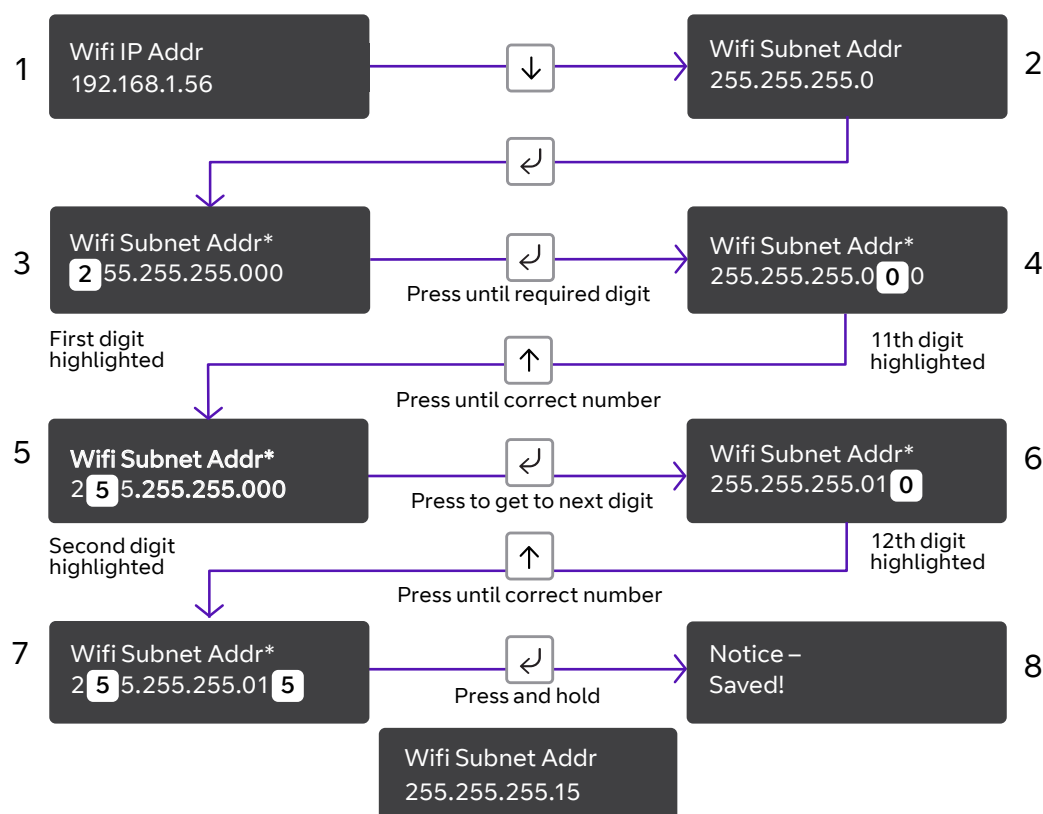7 Wifi Method* Static → ↵ → Notice – Saved! 8

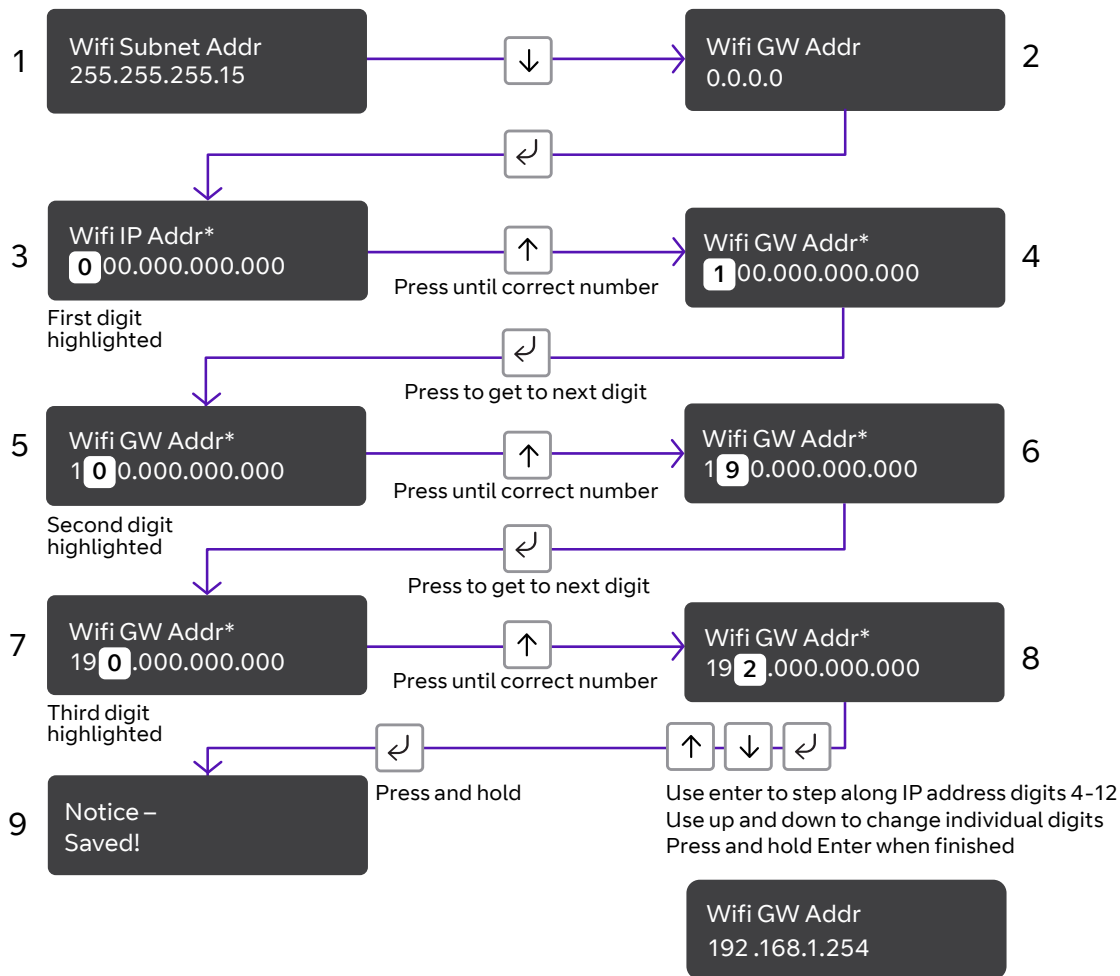## Setting a static IP address, netmask and gateway address in Wi-fi mode

If you're connecting the unit to a LAN that requires the unit to have a static IP address (i.e. no DHCP server on the LAN), set Wifi Method to Static then configure as follows:

1
Wifi Method
Static

↓

Wifi IP Addr
0.0.0.0
2

↵

3
Wifi IP Addr*
000.000.000.000

First digit
highlighted

↑
Press until correct number

Wifi IP Addr*
100.000.000.000
4

↵
Press to get to next digit

5
Wifi IP Addr*
1**0**0.000.000.000

Second digit
highlighted

↑
Press until correct number

Wifi IP Addr*
1**9**0.000.000.000
6

↵
Press to get to next digit

7
Wifi IP Addr*
19**0**.000.000.000

Third digit
highlighted

↑
Press until correct number

Wifi IP Addr*
19**2**.000.000.000
8

↵
Press and hold

↑ ↓ ↵

Use enter to step along IP address digits 4-12
Use up and down to change individual digits
Press and hold Enter when finished

Wifi IP Addr*
192.168.1.56

9
Notice –
Saved!

Then ↓ use to step to subnet address and use the same process as above to set the subnet address.

1
Wifi IP Addr
192.168.1.56

↓

Wifi Subnet Addr
255.255.255.0
2

↵

3
Wifi Subnet Addr*
255.255.255.000

First digit
highlighted

↵
Press until required digit

Wifi Subnet Addr*
255.255.255.0**0**0
4

11th digit
highlighted

↑
Press until correct number

5
Wifi Subnet Addr*
2**5**5.255.255.000

Second digit
highlighted

↵
Press to get to next digit

Wifi Subnet Addr*
255.255.255.01**0**
6

12th digit
highlighted

↑
Press until correct number

7
Wifi Subnet Addr*
2**5**5.255.255.01**5**

↵
Press and hold

Notice –
Saved!
8

Wifi Subnet Addr
255.255.255.15

Then use ↓ to step to gateway address and use the same process as above to set subnet address.

1
Wifi Subnet Addr
255.255.255.15

↓

2
Wifi GW Addr
0.0.0.0

↵

3
Wifi IP Addr*
0 00.000.000.000

First digit highlighted

↑ Press until correct number

4
Wifi GW Addr*
1 00.000.000.000

↵ Press to get to next digit

5
Wifi GW Addr*
1 **0** 0.000.000.000

Second digit highlighted

↑ Press until correct number

6
Wifi GW Addr*
1 **9** 0.000.000.000

↵ Press to get to next digit

7
Wifi GW Addr*
19 **0** .000.000.000

Third digit highlighted

↑ Press until correct number

8
Wifi GW Addr*
19 **2** .000.000.000

↵ Press and hold

↑ ↓ ↵
Use enter to step along IP address digits 4-12
Use up and down to change individual digits
Press and hold Enter when finished

9
Notice –
Saved!

Wifi GW Addr
192 .168.1.254

Note that IP addresses are made up of 12 digits in four batches of three, separated by dots. You must enter addresses through the buttons as 12 digit numbers, with zeros used to the left of each batch where necessary to pad out the addresses – as follows:

- IP Address = 192.168.001.056
- Subnet mask = 255.255.255.015
- Gateway = 192.168.001.254

The display will show the full address for each of the above.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds.

This will take you back to the scrolling status display.

Then use ⟨↓⟩ to scroll to DNS Address and use the same process as above to set new DNS addresses.

You shouldn't normally need to change any defaults.

1 | **Wifi GW Addr**
192.168.1.254

⟨↓⟩ →

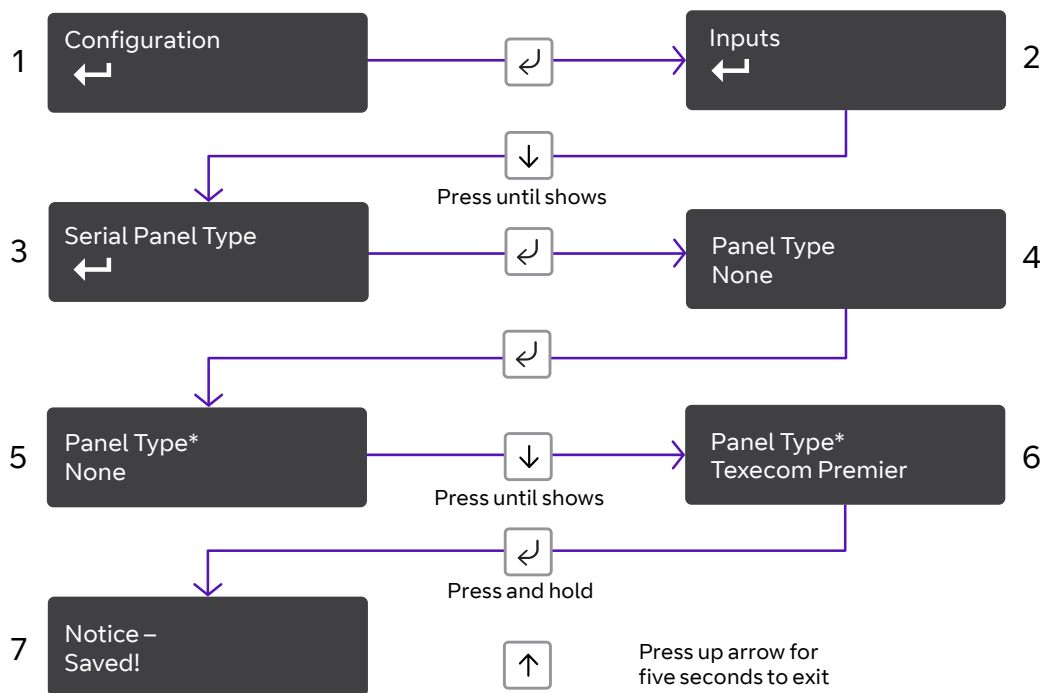2 | **Wifi DNS Addr 1**
1.1.1.1

⟨↵⟩

3 | **Wifi DNS Addr 1***
001.001.001.001

First digit
highlighted

⟨↑⟩ →
Press until correct number

4 | **Wifi GW Addr***
101.001.001.001

⟨↵⟩
Press to get to next digit

5 | **Wifi DNS Addr 1***
1**0**1.001.001.001

Second digit
highlighted

⟨↑⟩ →
Press until correct number

6 | **Wifi DNS Addr 1***
1**9**1.001.001.001

⟨↵⟩
Press to get to next digit

7 | **Wifi DNS Addr 1***
19**1**.001.001.001

Third digit
highlighted

⟨↑⟩ →
Press until correct number

8 | **Wifi DNS Addr 1***
19**2**.001.001.001

⟨↵⟩
Press and hold

⟨↑⟩ ⟨↓⟩ ⟨↵⟩
Use enter to step along IP address digits 4–12
Use up and down to change individual digits
Press and hold Enter when finished

9 | **Notice –**
Saved!

Wifi DNS Addr 1
192 .168.100.001

Example only – please check with the network
IT provider to confirm exact address

You shouldn't normally need to change any defaults.

1 **Wifi DNS Addr 1**
192.168.100.001

→ ↓ →

2 **ETH DNS Addr 2**
8.8.8.8

↵

3 **Wifi DNS Addr 2***
008.008.008.008

First digit
highlighted

→ ↑ →
Press until correct number

4 **Wifi DNS Addr 2***
108.008.008.008

↵
Press to get to next digit

5 **Wifi DNS Addr 2***
1**0**8.008.008.008

Second digit
highlighted

→ ↑ →
Press until correct number

6 **Wifi DNS Addr 2***
1**9**8.008.008.008

↵
Press to get to next digit

7 **Wifi DNS Addr 2***
19**8**.008.008.008

Third digit
highlighted

→ ↑ →
Press until correct number

8 **ETH DNS Addr 2***
19**2**.008.008.008

↵
Press and hold

↑ ↓ ↵
Use enter to step along IP address digits 4-12
Use up and down to change individual digits
Press and hold Enter when finished

9 **Notice –**
Saved!

Wifi DNS Addr 2
192.168.100.002

Example only – please check with the network
IT provider to confirm exact address

Tunnel port

You can select an alternative tunnel port by accessing the Tunnel Port menu under Network. The options are:

- 443 (default)
- 10443

Example – changing the unit to use Port 10443:

The unit will try to connect to the BT Redcare servers by signalling on IP port 443. On most LANs, this will work correctly; on some advanced LAN configurations the network manager might not allow outgoing access on port 443, but may do on port 10443. If this is the case, you can configure the unit to use the alternative port 10443. The BT Redcare servers are set to accept both ports, so you'll only need to make changes on the unit.

- Access the configuration menu by holding the Enter button for three seconds. Press the Enter button again – the display will read Pin Learn. Press the down arrow until Network is displayed. Press the Enter button again. Eth/Wifi is displayed.

- Use the down arrow to scroll through to Tunnel Port 443. Press Enter again. * will be displayed. Use the down arrow to change the Tunnel Port to 10443.

- Once selected, hold the Enter button down until 'Notice – Saved!' is displayed.

App passcode

Use this code to set up both the installer and customer app.
You can change it from its default.
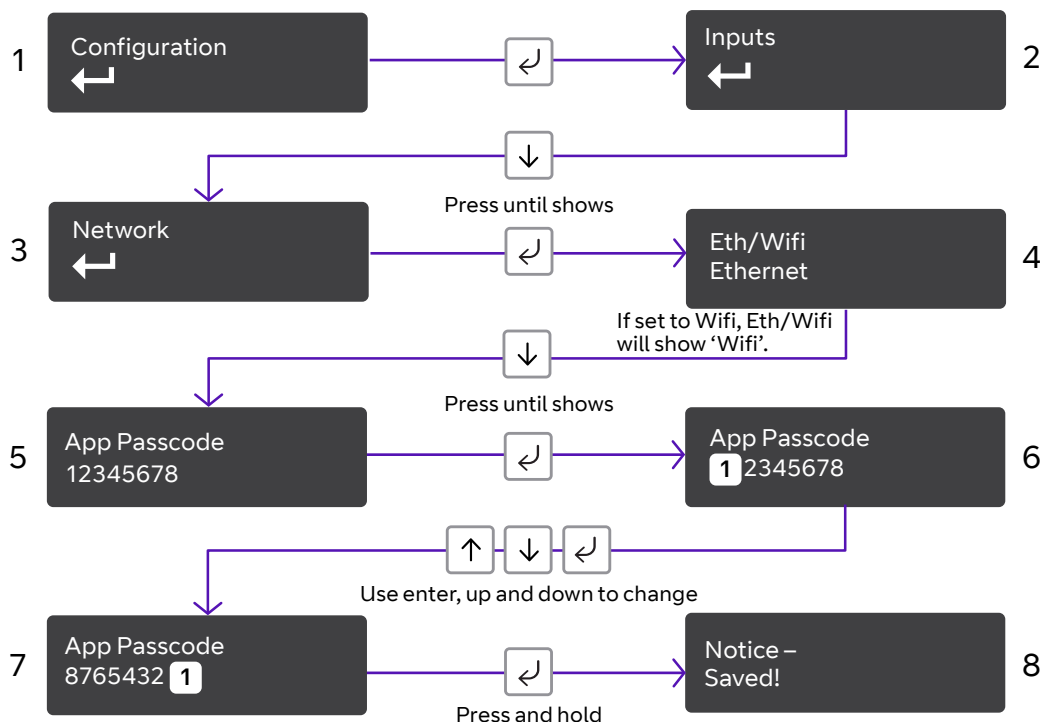
1	Configuration ↵	→↵→	Inputs ↵ 2

1 Configuration ↵

2 Inputs ↵

↓ Press until shows

3 Network ↵ →↵→ Eth/Wifi Ethernet **4**

If set to Wifi, Eth/Wifi will show 'Wifi'.

↓ Press until shows

5 App Passcode 12345678 →↵→ App Passcode **1**2345678 **6**

↑ ↓ ↵ Use enter, up and down to change

7 App Passcode 8765432 **1** →↵→ Notice – Saved! **8**

Press and hold

You can exit Edit mode at any time, without saving changes, by pressing ⌊↓⌋ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ⌊↑⌋ for five seconds. This will take you back to the scrolling status display.

Serial connection panel type

This menu selects the panel connection type for serial connected panels (RS232 or RS485).

Settings:

- None
- Menvier
- Dimension GD 232 (Galaxy Dimension 48/96/264/520 (RS232 9600 8n1))
- Dimension GD 485 (Galaxy Dimension 48/96/264/520 (RS485))
- Galaxy G3 232 (G3 48/144/520 (RS232 9600 8n1))
- Galaxy G3 485 (G3 48/144/520 (RS485))
- Galaxy G2 485 (G212/20/44 (RS485))
- Galaxy Classic 485 L (Classic 8/18/60/128 (RS485))

- Galaxy Classic 485 H (Classic 500/504/512 (RS485))
- Texecom 816 (Texecom 412/816/832 (RS232 19200 8n2 inv))
- Texecom 48 88 (Texecom 48/88/168 Com – IP(RS232 19200 8n2 inv))
- Texecom Premier(Texecom Premier Elite 48 Com-IP (RS232 19200 8n2 inv))
- Bespoke Panel
- Pyronix (RS232 9600 8n2) Europe only not UK
- Contact IP (RS232 9600/2400/1200 8n1)
- Panel RS232 UDL (RS232 8n1)

Example – changing the unit to connect to a Texecom Premier Elite panel via RS485

1	Configuration ↵	→ ↵ →	Inputs ↵	2

↓

Press until shows

3	Serial Panel Type ↵	→ ↵ →	Panel Type None	4

↵

5	Panel Type* None	→ ↓ →	Panel Type* Texecom Premier	6

Press until shows

↵

Press and hold

| 7	Notice – Saved!	↑	Press up arrow for five seconds to exit

- Access the configuration menu by holding the Enter button for three seconds. Press the Enter button again – the display will read 'Pin Learn'. Press the down arrow until 'Serial Panel Type' is displayed. Press the Enter button again and enter serial panel type. 'Default status = None' will be shown.

- Use the down arrow to scroll through the available panels. Once you reach the desired panel, hold the Enter button down until 'Notice – Saved!' is displayed.

- You'll then be returned to the same position in the menu to either select another panel, or use the down arrow to scroll through all the panels to get to the Back option.

- Should you subsequently change from one panel to another, the unit will reboot to make the panel type change take effect.

You can exit Edit mode at any time, without saving changes, by pressing ↓ for five seconds. This will return you to the sub-menu that you were making changes in.

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Diagnostics

Web server

To program the unit using a laptop connected to the ETH port, or via your smart device using the wi-fi access point, the web server needs to be set to enabled. This allows it to be accessed.

```
1  Configuration ↵        →    ↵    →    Inputs ↵              2

                              ↓
                       Press until shows

3  Diagnostics ↵         →    ↵    →    Web Server/AP          4
                                        Disabled

                              ↵

5  Web Server/AP*        →    ↓    →    Web Server/AP*         6
   Disabled                             Enabled

                              ↵
                       Press and hold

7  Notice –
   Saved!
```
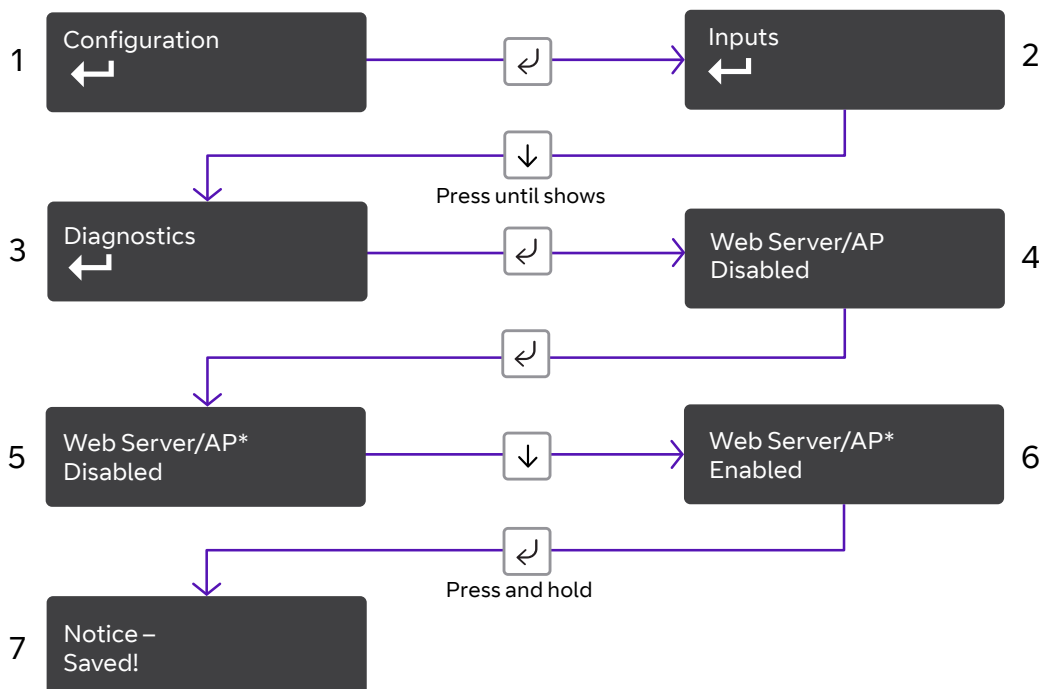
You'll then need to plug in your laptop and log in to the device. Open your web browser and enter http://192.168.222.222

You can get the username and password from your BT Redcare account manager.

The unit will have a static IP address of 192.168.222.222 while the web console is enabled. To access the web server via the Ethernet port, connect a PC. If you're using an Ethernet switch to allow connectivity to the customer's network and your laptop, the unit will still be able to communicate with the platform over the IP path.

If you plug the cable direct from the PC to the unit, it'll be unable to communicate across the IP path. This will send a total comms fault signal to the ARC after the normal time out (normally 60 minutes for SP2). The COMMS output will also operate after the time out (normally 60 minutes), indicating a path fail. This is a normal occurrence.

- Web server will automatically exit after 20 minutes.

- Installer can disable the web server at any time.

- Web server will revert to disabled if the unit is restarted.

- To access the web server, a PC needs to be connected to the Ethernet port.

- Configure the PC to have a static IP address within the range 192.168.222.xxx.

  E.g. set the PC to have the following static details:

  - IP address = 192.168.222.10

  - Subnet mask = 255.255.255.0

  - Gateway = 192.168.222.222.

To enable the web server, access the configuration menu by holding Enter button for three seconds. Press the Enter button again – the display will read 'Pin Learn'. Press the down arrow until 'Diagnostics' is displayed. Press the Enter button again to enter Diagnostics. 'Web Server, Disabled' is displayed. Press the Enter button again. * is displayed. Press the down arrow – 'Enabled' is displayed. Press and hold Enter button to save changes.

Web server using the Essential IP access point

When the web server is enabled, search for wi-fi networks on your smart device or laptop. You'll identify the Essential IP access point by its name, which will be in the format **Redcare-XXXX** – where XXXX is the last four digits of serial number of the unit.
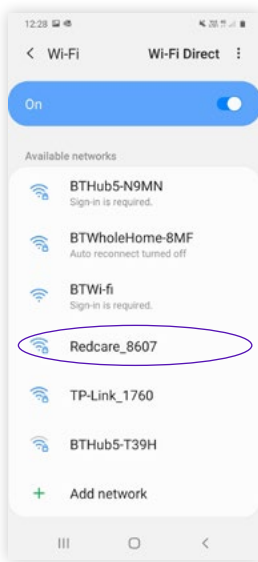
Connect to this wi-fi access point. You'll be asked for a password, which is the first eight digits of the device's serial number. Once connected, it may read 'Connected without internet'.
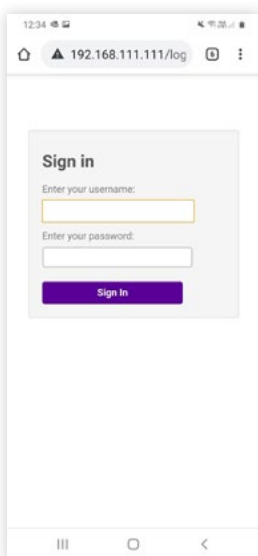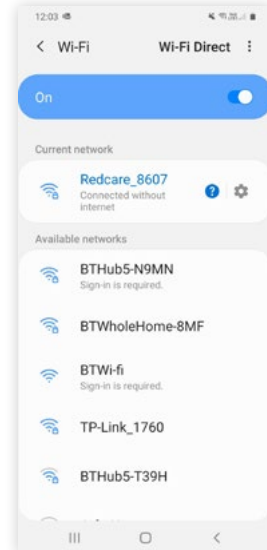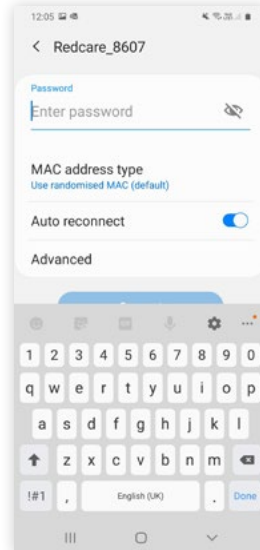
If you aren't taken directly to the web server login page, open a browser on your smart device or laptop and enter http://192.168.111.111 – see the Web server section.

Restore defaults

You can use the Restore defaults option on the menu to set the unit back to its factory defaults, and reset all settings to their standard values.
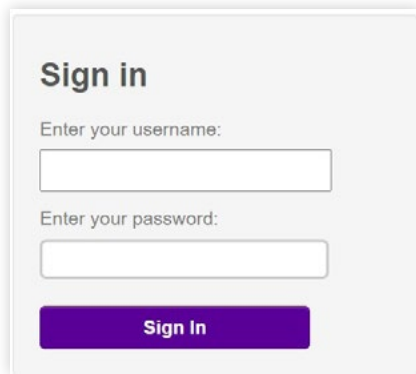
Example – setting the unit back to factory default:
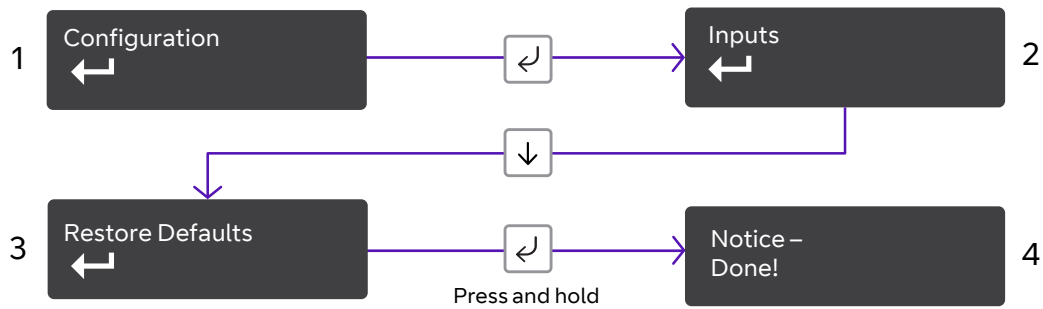
1 Configuration ⏎   → ⏎ →   Inputs ⏎ 2

↓

3 Restore Defaults ⏎ → ⏎ → Notice – Done! 4

Press and hold

Exit the configuration menu at any time without saving any changes by pressing ↑ for five seconds. This will take you back to the scrolling status display.

Web server

Sign in with your BT username and password. This is available from the BT Redcare Technical Helpdesk, or your Redcare account manager.

The menu

The menu bar on the left hand side can take you to any of the menu options described below.
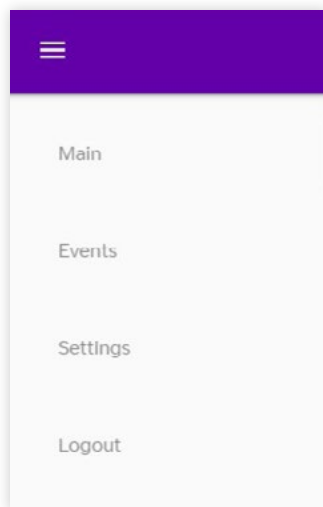
Should you need to make any changes in the following menu options, you'll need to click on Save to keep the changes.
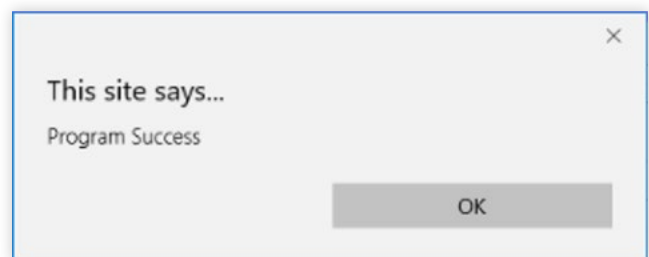
The pop-up above will be displayed when changes have been saved. Click OK to continue

Main status bar
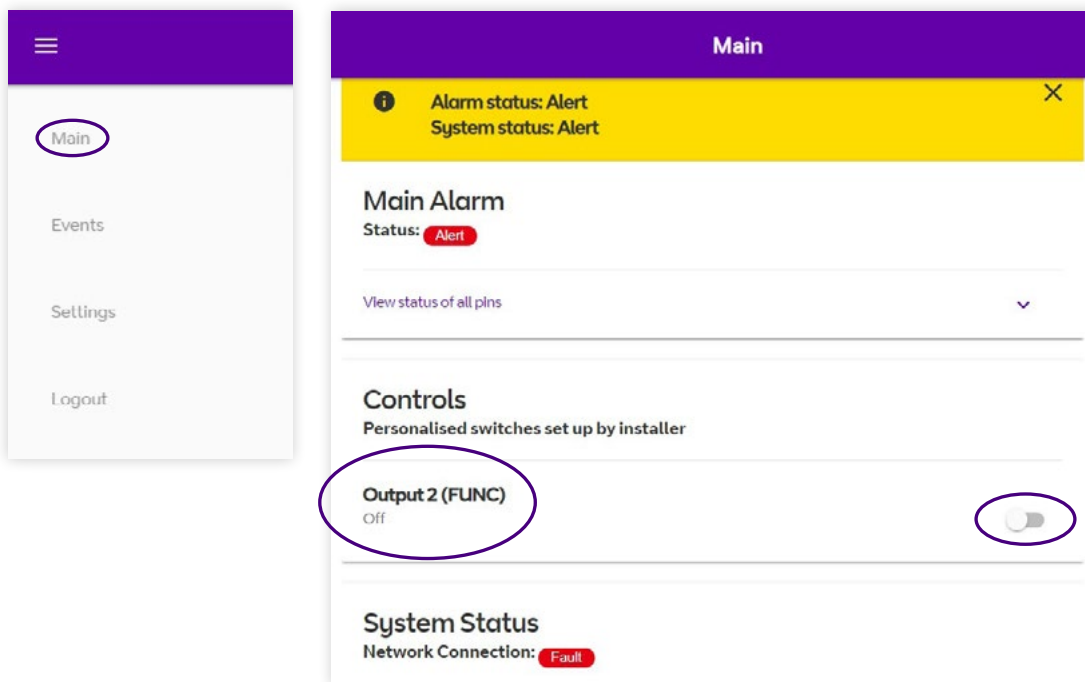
When you first sign in, you'll be presented with the main status page, as above. You can return to this page at any time by clicking Main on the menu bar.

The status page shows the user operated outputs. You can operate Output 2 (FUNC) – which can be renamed in the settings menu – by clicking on the slidebar if it's set up as User. When operated, the interactive slidebar turns from grey to blue, and back to grey when pressed again. Off will change to On and then back once more when pressed again.

In the example above, Output 2 is configured to be user-operated. This won't be shown if Output 2 is not set as User.

The example below shows Output 2 set as a Keyswitch.
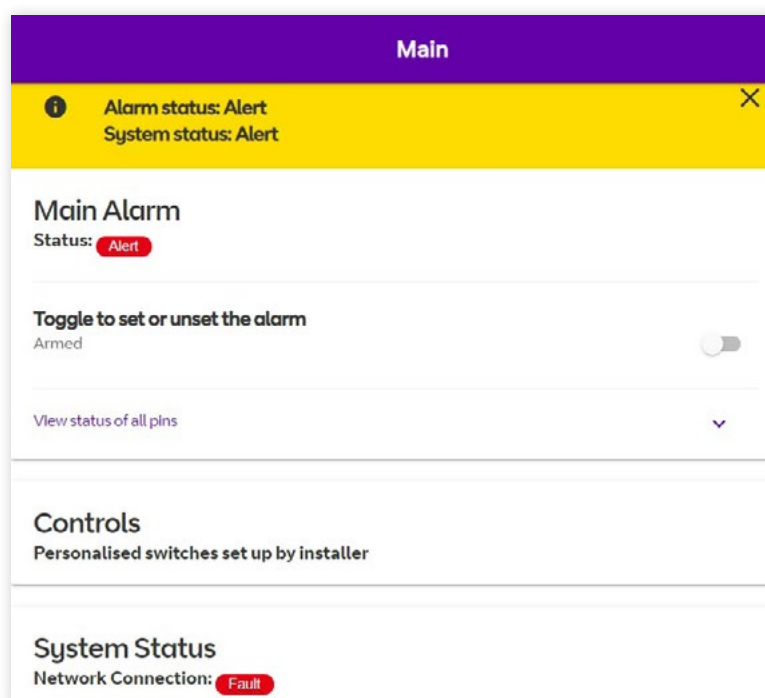
Status bar
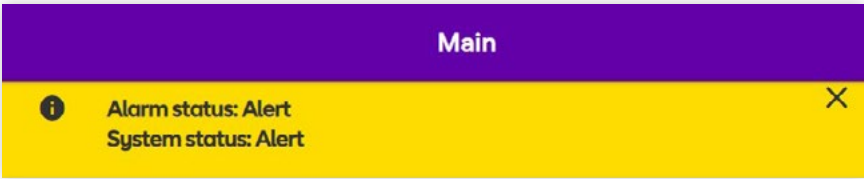
The status bar will indicate if there are any alerts on the system. You can close it down by clicking X.

Main Alarm status
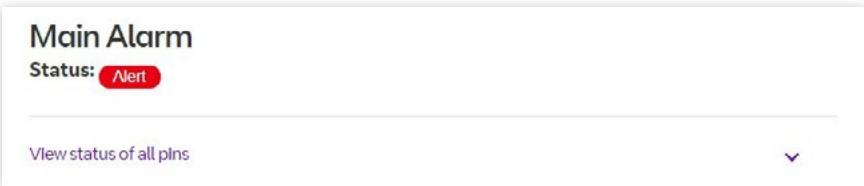
The display here will show 'Alert' or 'Good'. Click on the 'View status of all pins' drop-down arrow to show the status of all the alarm pins.

Pin	Alarm Name	Status
1	Pin 1	⊘ OK
2	Pin 2	⊘ OK
3	Pin 3	⊘ OK
4	Pin 4	▲ Alarm
5	Pin 5	⊘ OK
6	Pin 6	▲ Alarm
7	Pin 7	⊘ OK
8	Pin 8	⊘ OK
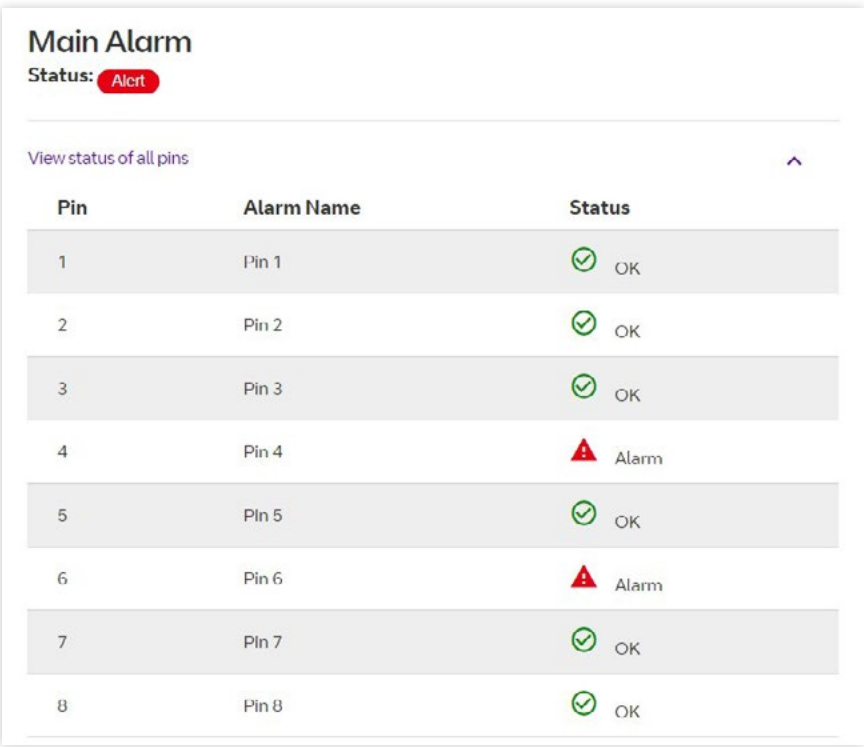
In the image above, Pin 4 (Open) and Pin 6 are in Alarm mode. Alarm pins can also be set up for interconnection monitoring where they will detect a cut or short on the pin input – see EOL and DEOL for details; when either a cut or short status is detected, the display will show this.

Pin	Alarm Name	Status
1	Pin 1	! Cut

Pin 1 set for DEOL and detecting a cut

System Status
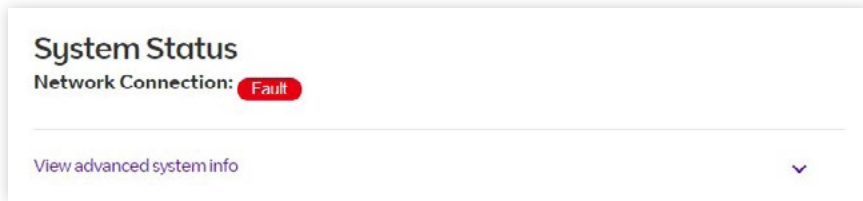
This shows the overall network connection status. The display will show 'Good' for a successful connection to the platform, and 'Fault' if there is no connection.

Note that if you're connected to the web server via the Ethernet port on the device or via the Essential IP access point, you will lose connection to the platform.

The information you get from the advanced system info drop-down will depend on your connection method. If connected via Ethernet, it will display path status and device power status.
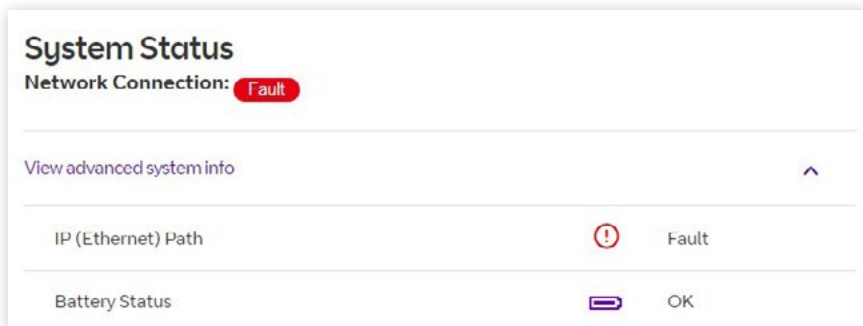
If the unit is connected via wi-fi, it'll display path status, wi-fi signal strength, the wi-fi SSID, and power status. If connected via the Essential IP access point, the connection status will read either 'Fault' or 'Alert'.
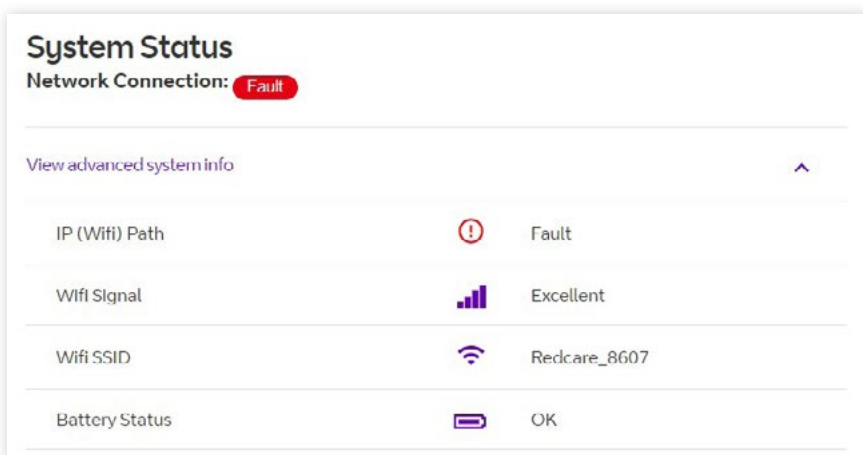
Events

This menu shows the most recent events recorded by the system. By clicking on the drop-down you can filter events by type – for example, Alarms, System, Configuration or Connection.

Settings

The Settings menu has sub-menus that let you program the unit.

The first item on the sub-menu is **Details**, which gives you device details, including MAC addresses and firmware version. Use the drop-down to access the sub-menus.
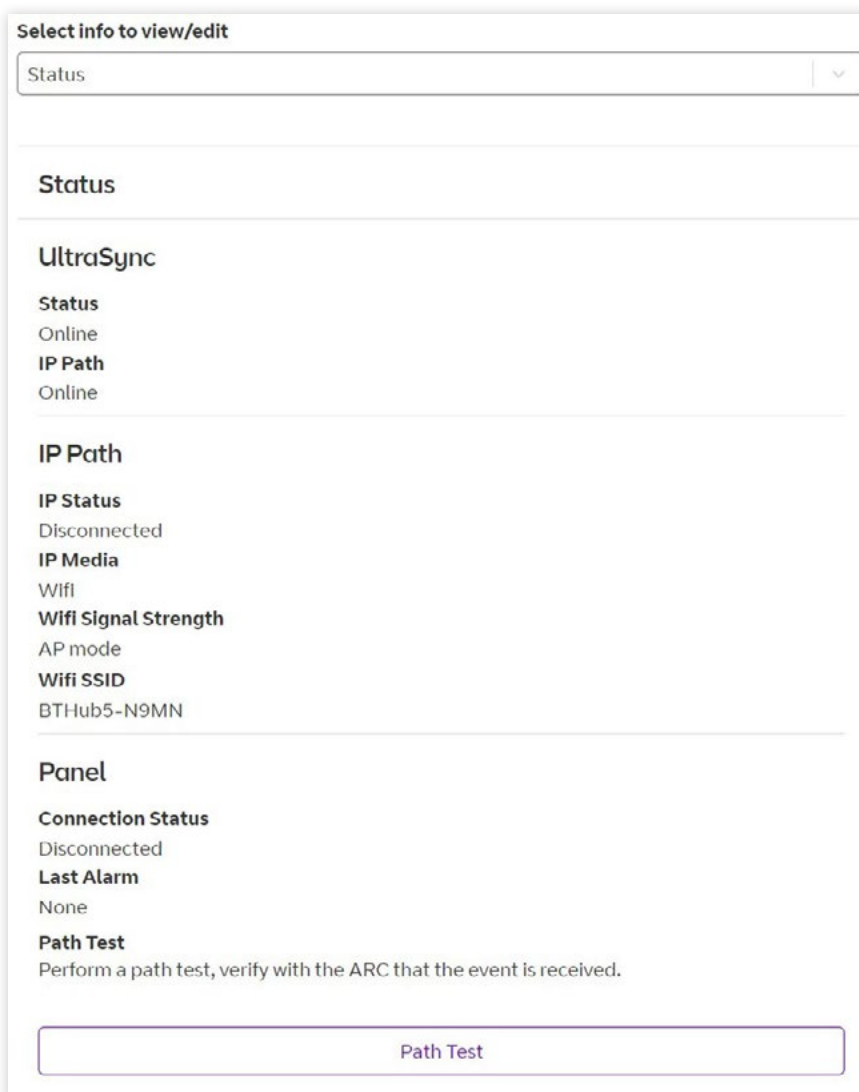
The Status sub-menu shows the status of the IP path. If the unit is connected via wi-fi, it'll also show signal strength and SSID.

The Network sub-menu allows you to change the interface between wi-fi or Ethernet, change from DHCP to Static, search and select wi-fi networks, and set up your app passcode.

To change from DHCP to a Static IP address when using an Ethernet connection, click on the drop-down arrow which will then show the choices DHCP and Static; click on Static. You'll then see additional boxes which allow you to add in the static IP, subnet and gateway addresses.

Make your changes and then click the Save button. The display will read 'Program Success'.

To change the connection from Ethernet to Wi-fi, select Wifi and click Save. You'll then see additional options.

There are a number of ways of connecting to wi-fi. Clicking WPS will start a WPS session. Press WPS on the customer's hub within two minutes. This will disconnect the Essential IP access point and, if successful, connect to customer's hub and the Redcare platform

Clicking Search will initiate a wi-fi network search. This will disconnect the Essential IP access point. Reconnect to the access point – use the drop-down arrow on the Select Wifi Network box.

This will show you all the wi-fi networks detected.

Select the network you need – this will populate the SSID box.

Enter the customer's hub wi-fi password in the password box. Scroll down and click save.

Or you can enter the SSID and password in the boxes and click save.

Disable the web server using the programming buttons on the unit, or wait for it to time out. The unit will connect to the customer's hub and to the Redcare platform.

Select info to view/edit

Users ⌄

Users

Add a new user

installer   Edit

Type: Master Installer

User 1   Edit

Type: Master

In **the Users sub-menu,** you can add new users and edit existing users.

User 1

Username

User 1

Pin

••••

Type

Master ⌄

Delete user

Save

In edit mode, you can change the username, PIN and type of user. You can also delete a user.

New user

Username

Pin

Type

Master Installer ⌄

Add user

When you click 'Add a new user' you'll see the screen on the left. Enter the required information and click 'Add user'.

There are three types of User, as follows:

- **Master Installer** – allows access to the programming of the device.
- **Master** – allows the customer to see device status, events, operate outputs and set up standard users.
- **Standard** – allows end customers to view status and operate outputs.

In **the GPIO sub-menu,** you can change any pin input status from High (positive removed) to Low (positive removed) by using the drop-down arrows on each section. You can set up either end of line (EOL) or dual end of line (DEOL) for each pin as required. You can configure the two outputs as described earlier in this guide.

On this page, you can see all the options available via the drop-down arrows.

Make all the changes to the pin inputs and outputs then click the save button to store your changes in the unit. 'Program Success' will be displayed.

When Output 2 is set to Keyswitch you will need to go to the Keyswitch section to select the correct settings.

Select info to view/edit

GPIO

GPIO

Input

Input

Input 8

Input Sense 8

High

Input EOL 8

DEOL

Output

Output

Output 2

Output Type 2

User

Save

In this example, we show Pin 8 as Active High, with DEOL monitoring. Output 2 is set to operate as a User output (operated by the customer via the app).

Make all your changes to the pin inputs and outputs, then click the save button to store them in the unit. 'Program Success' will be displayed.

Select info to view/edit

Name Editor ⌄

Name editor

Functions

Output 2 (FUNC)

_____

Pins

Pin 1

_____

Pin 2

_____

Pin 3

_____

Pin 4

_____

Pin 5

_____

Pin 6

_____

Pin 7

_____

Pin 8

_____

Save

The Name Editor sub-menu allows you to add names to the pin inputs, which will then show up on the customer app and notifications. You can choose a description for the User relay outputs. Click Save after you've entered all the information.

Select info to view/edit

Panel ⌄

Panel

Type

None	⌄

- **None**
- Menvier
- Galaxy Dimension 48/96/264/520 (RS232 9600 8n1)
- Galaxy Dimension 48/96/264/520 (RS485)
- Galaxy G3 48/144/520 (RS232 9600 8n1)
- Galaxy G3 48/144/520 (RS485)
- Galaxy G2 12/20/44 (RS485)
- Galaxy Classic 8/18/60/128 (RS485)
- Galaxy Classic 500/504/512 (RS485)
- Texecom Premier 412/816/832 (RS232 19200 8n2 inv)
- Texecom Premier 48/88/168 Com-IP (RS232 19200 8n1 inv)
- Texecom Premier Elite 24/48/88/168/640 Com-IP (RS232 19200 8n1 inv)
- E-Bound AVX (RS485 9600 8n1)
- Pyronix (RS232 9600 8n2)
- ContactIP (RS232 9600/2400/1200 8n1)
- Panel RS232 UDL (RS232 8n1)

The Panel sub-menu allows selection of the Serial connection for specific panel types. Select the drop down next to Type and you will get a list of panel types. Select the required panel type and connection type and then click Save. 'Program success' will be displayed.

Output

Output

Output 2

Output Type 2

Keyswitch

The following additional menus will be shown when Output 2 is set to Keyswitch.

Select info to view/edit

Keyswitch

Keyswitch

Name

Output Mode

Momentary

Output Pulse Period (ms)

1000

Input Mode

Pin Input

Input Pin

Input 4

Input Armed State

Armed=Low, Disarmed=High

Save

In **the Keyswitch sub-menu**, you can set up a keyswitch to operate in conjunction with the BT Redcare App. Any pin can be used, but will typically be Pin 4. It can be Latched or Momentary and armed low or high.

There is also the option to set up Keyswitch with extended format signalling.

If using the Keyswitch you will need to ensure the intrusion alarm system is set up to comply with the requirements of BS 8243 when implementing remote setting/unsetting via the app.

Output Mode

Momentary ⌄
Momentary
Latched

Input Mode

Pin Input ⌄
Pin Input
Alarm

Input Pin

Input 4 ⌄
Input 1
Input 2
Input 3
Input 4
Input 5
Input 6
Input 7
Input 8

Select the open/close pin to use for the Keyswitch. This is usually Pin 4.

Input Armed State

Armed=Low, Disarmed=High ⌄
Armed=Low, Disarmed=High
Armed=High, Disarmed=Low

Select the state of the pin for armed (set) and disarmed (unset).

Input Mode

Alarm ⌄

The Alarm option for Input Mode allows a Keyswitch to operate with extended format signalling.

		Arm	Disarm
	1	8340?01	8140?01
	2	8145?01	8345?01
	3	44444444	22222222
	4	ri1/*/C	ri1/*/O

Select info to view/edit

Reports

Reports

Email

Email 1

Email 1

Email 1 Address

☐ Video
☐ System
☐ Power
☐ Arm/Disarm
☐ Alarm

Save

The Reports sub-menu allows you to set up a number of email addresses that could receive emails on the various options. E.g. Alarms and System messages.

Select info to view/edit

UltraSync

UltraSync

IP Path
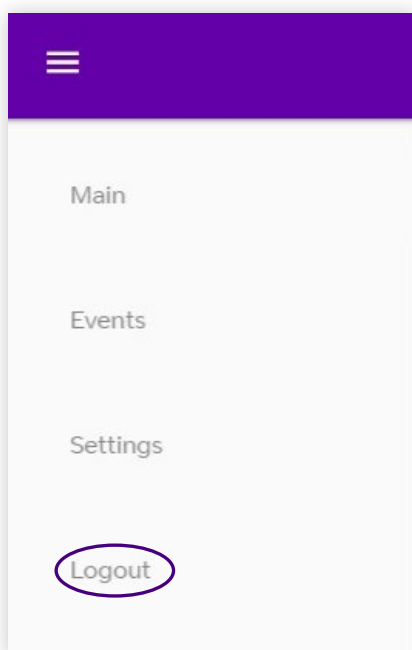
URL 1

redcare.bt.com

URL 2

redcare.bt.com

In **the Ultrasync sub-menu,** DO NOT alter any settings.

The Default sub-menu gives you the option to restore the unit to factory settings by clicking Reset to Defaults.

Logout

Clicking Logout will take you back to the sign-in screen.

Should the web server enablement time out, you won't be able to save changes – you'll need to re-enable the web server through the programming buttons.

Web portal and Redcare app

The device menus are accessible via the Redcare web portal and app. When using the web portal and app remotely after installation is completed then the following will apply.

Compliance with the user access level requirements of EN 50136

Access to the configuration options by an installer must be authorised by a level 2 user e.g. site owner. For the Next Generation alarm transmission equipment compliance is achieved at installation by requiring a one-time authorisation agreed as part of a service level agreement.

It is recommended the signed authorisation is retained with the 'as fitted' documentation. An example authorisation form is provided in the Appendix. To comply with EN 50136-2 Clause 5.2 Access levels, the PIN code access must be set to 6-digits. You can change the access PINs in the USER settings. This applies for all types of access to the device.

Interconnection monitoring

If the signalling unit is remote from the alarm panel, it's possible to wire the pin inputs to be able to detect open or short circuits on the interconnection wiring between the panel and the unit.

To enable interconnection monitoring, you need to program the unit via the configuration menu, app or web portal.
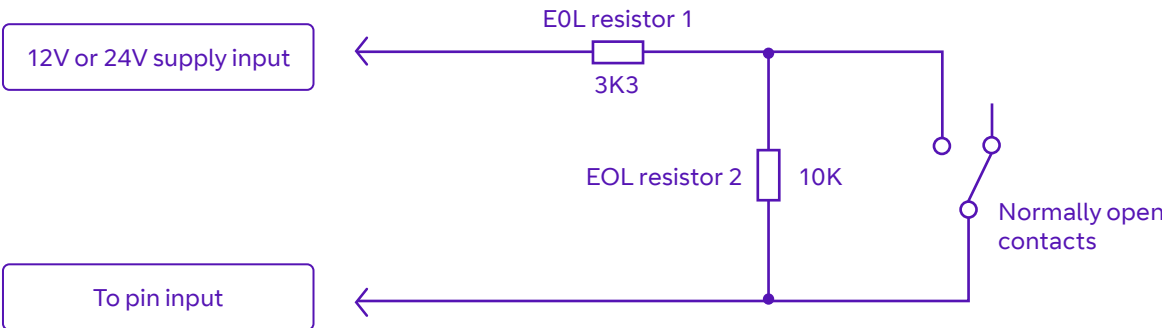
End of Line

Single EOL mode

Each of the required pins will need to be wired as shown below.

Dual EOL mode

Each of the required pins will need to be wired as shown below.

You will need 1 x 3K3 and 1 x 10K resistors for each pin with DEOL interconnection monitoring. These are available from the BT Redcare installer shop btinstallershop.com

3.3KΩ 1%

orange, orange, black, brown, brown

10KΩ 1%

brown, black, black, red, brown

Resistor	Item Code Label	Colour Code
3K3	089446	Red Dot in packet
10K	089447	Blue Dot in packet

What happens when pins are configured and wired in this way

When pins are configured and wired in this way, the dual resistor EOL mode is able to detect four states:

- Alarm event
- Restore
- Wire cut
- Wire shorted

The OLED display will indicate the wire cut condition for any of Pins 1-8 that are presently in the wire cut state.

```
Alarms GPI Cut
6
```

Above, example Cut on Pin 6.

The OLED display will indicate the wire short condition for any of Pins 1-8 that are presently in the wire cut state.

```
Alarms GPI Short
8
```

Above, example Short on Pin 8.

Panel Upload Download and Enhanced format signalling (SIA/CID)

You can have remote access to the alarm panel using the BT Redcare UDL facility. Additional panel set-up information is also available for enhanced format signalling. Contact your BT Redcare representative for further details.

Dial Capture

The Dial Capture pins present a 'phone line' to the panel's on-board digital communicator. Connect the alarm panel's digital communicator line connections to the terminals marked DIAL CAP on the unit. The terminals are not polarity-conscious.

Configure the alarm panel digital communicator to Dial 29 and use the last four digits of the TAID as the account number.

The dial capture board will auto-detect the panel protocol, as events are sent from the alarm panel – SIA, CID or FF.

Please check current panel compatibility listing.

You can easily spot any issues and put them right, by connecting a test phone or listening device to the dial capture inputs. The Dial Capture pins with a test phone connected and line seized (as if making a phone call) will give a continuous tone like a dialling tone. They will display a voltage of 45V.

Serial panel connections

Select the required panel in the Serial Panel Type menu option via the buttons, app or web portal.

Please contact your BT Redcare representative for the latest information on panel compatibility for Upload, Download and Enhanced format signalling via serial connections.

Then wire in the panel using the GND, TX/B and RX/A terminals.

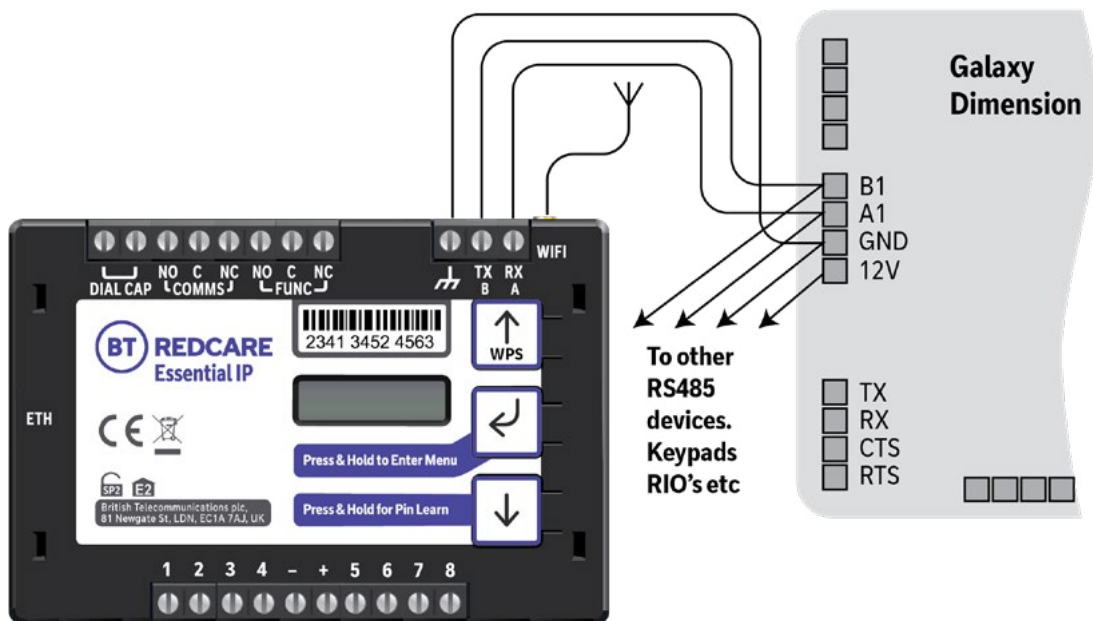**Example below shows connection via RS 485 to a Galaxy Dimension panel:**

Figure 8 (not to scale)

Connection advice

The unit should be connected to the Honeywell Galaxy panel as shown in figure 8 – RS485A to A1 and RS485B to B1. Do not use the secondary data line (if your panel has one – A2/ B2) as it will not work. Ensure that the GND of the unit is connected to the GND terminal on the panel.

It is recommended that good quality screened cable (Belden type, CAT5e or equivalent) is used in all wiring of this type to avoid interference on the panel's data bus. A 680Ω resistor should be used at the end of the 'daisy chain' line of devices in the normal way, taking care not to exceed the maximum number of devices allowed on that data line. If the unit is fitted less than 5m from the alarm panel then an additional termination resistor is generally not required.

The unit does not have a terminating resistor.

Alarm list

Description	Pin	CID (zone)
Inputs 1–16	1–8	323 (901–8)
Low Battery	985	302 (999)
Unit reboot	984	305 (995)
Panel dial fail	983	314 (999)
Software changed	979	304 (999)
Panel message error	958	311 (997)
Panel Connection (RS485)	n/a	356 (997)
BSIA 175 Test	n/a	354 (998/999)
Inputs 1–8 Cut alarm	n/a	325 (901–16)
Inputs 1–8 Short Alarm	n/a	324 (901–16)
Total Comms Fault	n/a	350 (999)

Figure 9 – alarms signals as delivered to your ARC

IMPORTANT NOTE: If intending to use dial capture or serial for sending alarms, please confirm beforehand with your ARC that their automation software is capable of differentiating correctly between pin alarms (Essential IP or Redcare Platform generated alarms), and alarm panel generated zone alarms.

IP specification notes

IP Protocol: TCP
Port: 443 or 10443

Data Usage/requirements

IP polling occurs every 300 seconds. A poll and response results in 288 total bytes transferred (including IP headers). Typically, a small number of alarms will also be generated per day, resulting in 296 bytes being transferred. Overall, this generates approximately 500K bytes per day, per site.

Traffic direction

The Essential IP establishes an outgoing TCP connection from your network to the BT Redcare platform. Once this outgoing TCP connection has been established, traffic over that connection is two-way.

Additional protocols

Only TCP is required from your network.

Port forwarding

No ports need to be forwarded in the incoming direction. The outgoing TCP connection connects to port 443 or 10443 on the BT Redcare network, so you need to allow outgoing access to port 443, or 10443 if you block that by default.

NAT: Not required

DHCP and static addressing

The communicators can be configured either as DHCP clients, or with specific static IP addresses on your internal network as you prefer.

DNS server

The device uses host names for establishing connection to the servers, so DNS addresses will be needed.

Disposal

The symbol shown here and on the product means that it's classed as Electrical or Electronic Equipment, and should not be disposed of with other household or commercial waste at the end of its working life.

The Waste Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC) has been put in place to recycle products using the best available recovery and recycling techniques, to minimise the impact on the environment, treat any hazardous substances and avoid increasing landfill.

Product disposal instructions for users

Please dispose of the product as per your local authority's recycling processes. For more information please contact your local authority or retailer where the product was purchased.

You can return the product to the freepost address below:

BT Supply Chain
Darlington Road
Northallerton
North Yorkshire
DL6 2PJ

Disclaimer

The manufacturer or his agents disclaim responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from any use of this equipment. The manufacturer is not liable for any purely economic loss arising from any use of this equipment. All responsibility and liability in the use of BT Redcare products are assumed by the user.

This unit is designed to be used in customer premises. Use of this equipment in other locations may void warranty.

This unit is not intended for use in marine environments or water borne vessels.

BT Redcare may make changes to features and specifications at any time without prior notification in the interest of ongoing product development and improvement.

Glossary

ADSL
Asymmetric digital subscriber line (Broadband)

ARC
Alarm Receiving Centre

BSIA
British Security Industry Association

DHCP
Dynamic Host Configuration Protocol

DNS
Domain Name Server

GMT
Greenwich Mean Time

IP
Internet Protocol

LAN
Local area Network

MMCX
Micro Miniature Coaxial Connector

OLED
Organic Light Emitting Diode

RSSI
Received Signal strength indicator

RPS
Return Path Signalling (An output that confirms delivery of Pin 4 to the ARC)

RX
Receive

SID
Serial Identity number – 12 digit unique identity number of a unit

TTL
Transistor Transistor Logic

TX
Transmit

Support

For assistance with your BT Redcare installation, please contact the BT Redcare Helpdesk on: 0800 800 628 – select option 3.

Approvals

BT Redcare, BT Plc
81 Newgate Street
London EC1A 7AJ
2020

CE

EN50136, EN50131, PD6669, PD6662

Essential IP is suitable for use in systems installed to conform to PD 6662:2017 at Grade 2 (SP2) and environmental class 2.

Additional parameters:

Description	Transmission Time	Information Security	Substitution Security	Reporting Time
Essential IP	SP6	SP6	SP6	SP2

Technical Data: see redcare.bt.com/installer-hub/brochures.html

Appendix

Example authorisation form

For the purposes of on-going maintenance and configuration

Company name

Authorises

Installer company name

Remote access to BT Redcare Next Generation Supervised Premises Transceiver

Serial No. number
Installed at: premises address

Date	Signature

BT REDCARE

CE