



intercall
innovative care systems

Touch Documentation

Installation Guides

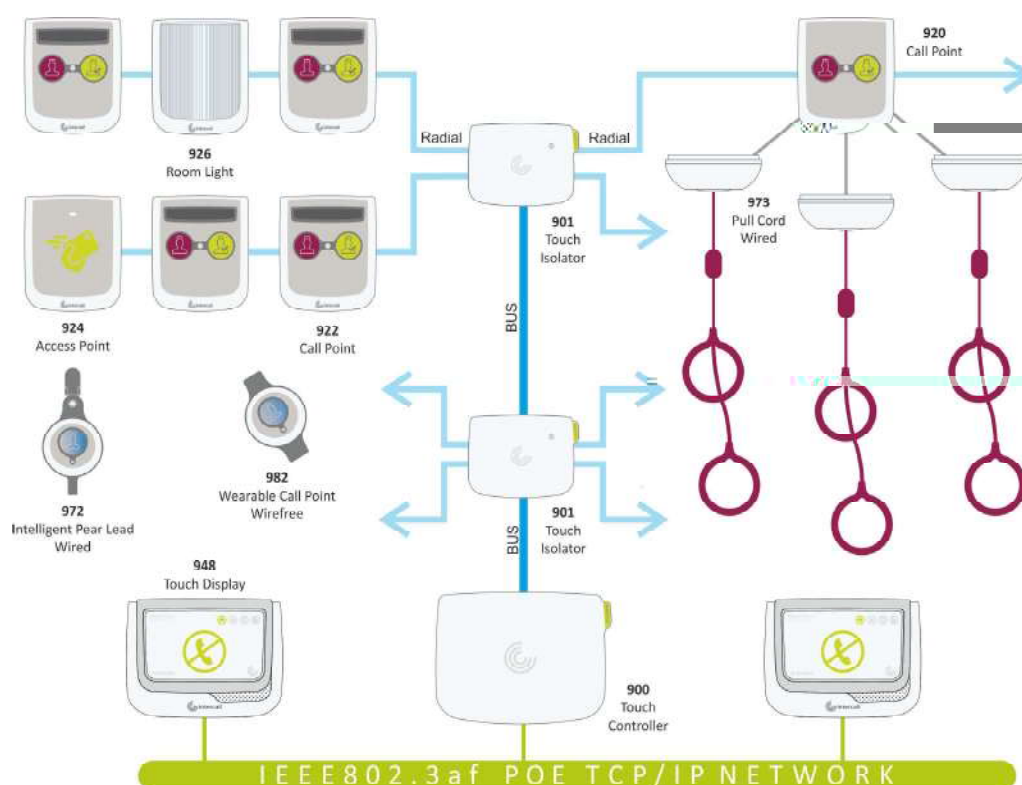
3 Installation Guides

The following guide contains the information required when designing and Intercall Touch installation. Please read all sections carefully and ensure you understand the principles.

3.1 System Overview

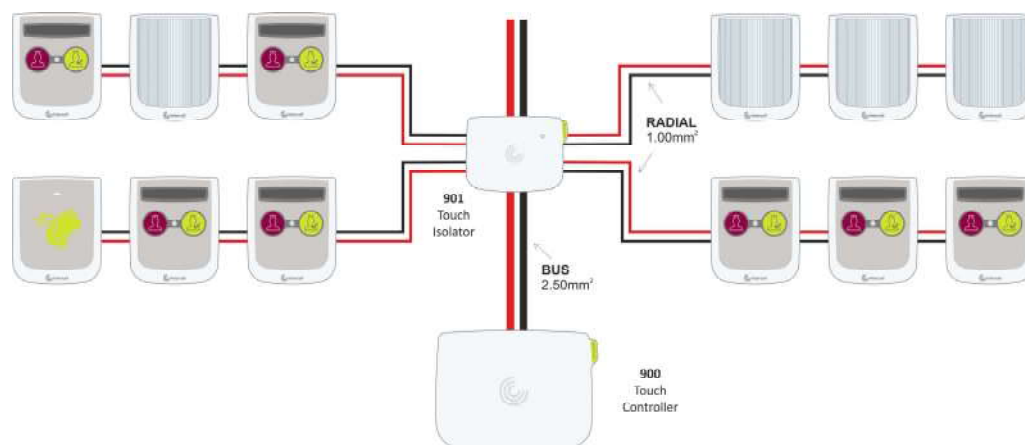
The Intercall Touch system uses a combination of Touch Bus Devices, connected to a common two core bus and Ethernet enabled devices which are connected to a Local Area Network. The heart of the system is the Touch Controller which provides the power for the Touch Bus Devices as well as the link to the Local Area Network. Touch Isolator(s) are installed in discrete areas to protect the Touch Devices. *Touch Devices* is a generic term and refers to the Call Points, Overdoor Lights and Access Points. The Local Area Network must be installed, tested and certified to IEEE802.3af

3.2 System Schematic



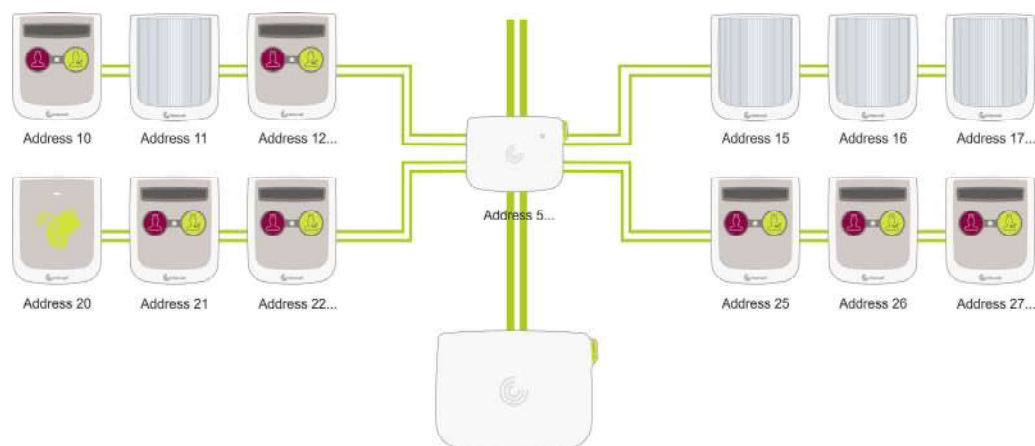
3.3 Two Core Cabling Structure

The Touch system uses a two core cabling structure with a Large **Bus Cable** delivering power from the Controller to the Isolators and smaller **Radials** from the Isolators to the individual Devices.



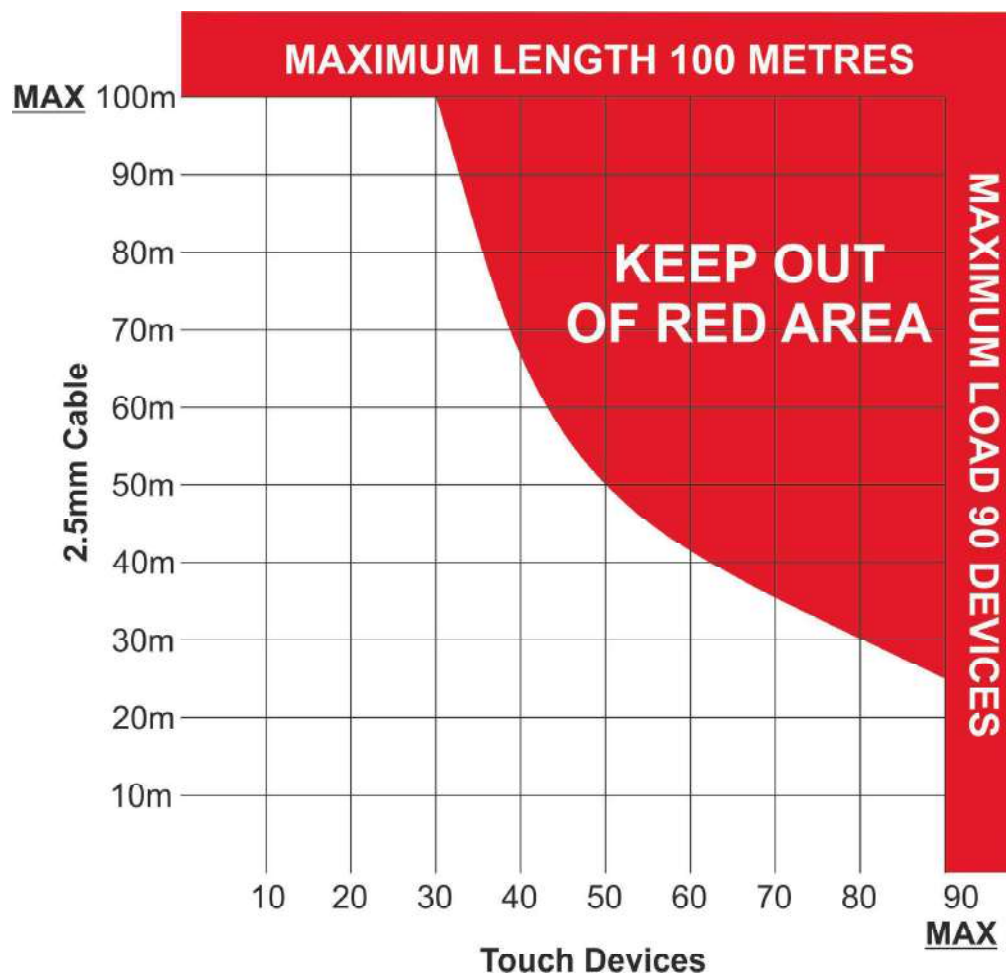
3.4 Device Address

Every Device on the Touch Bus occupies a **Unique Address** and all units are fitted with Address DIP Switches, which MUST be set to an individual Address.



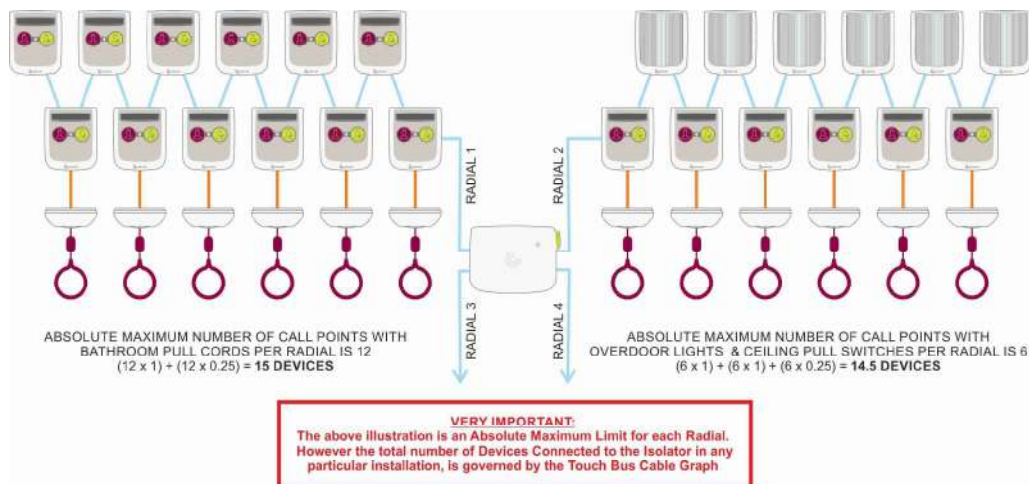
3.5 Bus Cable Graph

Use this graph to calculate the maximum allowed length of each **Bus Cable** depending on how many **Devices** it supports. When performing this calculation, remember to include the Isolator as one device and Bathroom Pull Cords as 0.25 (1/4) of a device. The Touch Bus is used to carry the larger currents over the longer distances and it is critical that cable installations are compliant with the Touch Bus Graph.



3.6 Radial Cables

Radial Cables carry the current from the Isolator to the individual Touch Bus Devices. **The total number of Devices connected to each Isolator is governed by the Touch Bus Graph on the previous page.** The absolute maximum limit for each Radial is 15 Devices and 100metres to the furthest Device using 1.00mm² cable, **providing there is capacity on the Touch Bus Graph.** Refer to the section on a Typical Installation showing the Touch Bus Graph in use.



3.7 Cabling Rules

Rules for the Touch Bus Cabling:

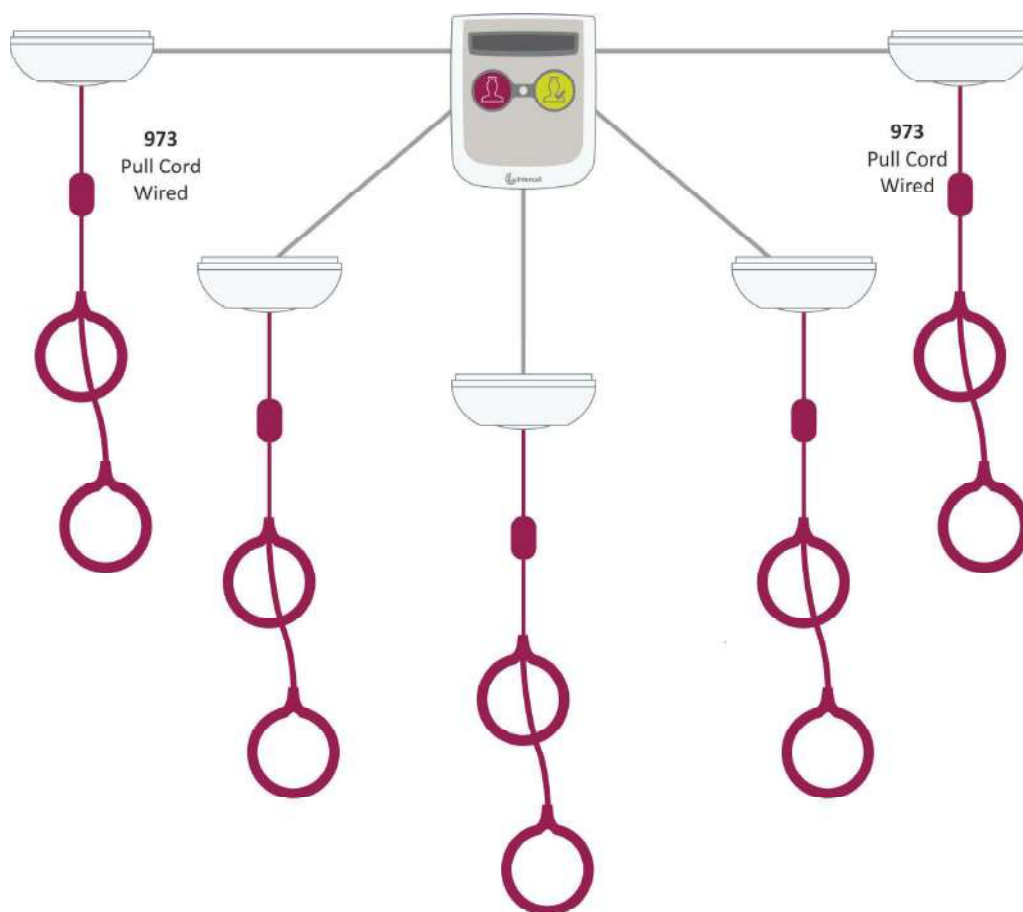
1. Touch Bus cable length and device load to furthest Isolator is in the white area of the **Bus Cable Graph**.
2. Absolute Maximum length of radial is 100 metres from the Isolator to the furthest device.
3. Absolute Maximum load per radial is 15 devices, providing there is capacity on the **Bus Cable Graph**
4. Up to 4 Bathroom Pull Cords Count as 1 Device, 5 Bathroom Pull Cords Count as 2 Devices.
5. **Touch Bus cable 2.50mm²**
6. **Radial cable 1.00mm²**

3.8 Maximum System Size

We recommend planning for smaller individual systems with a Touch Controller for each zone. This will reduce single point failure and improve the responsiveness of the system. Although the Touch Controller can support up to 254 devices, we recommend breaking a system into multiple controllers when there are more than 128 devices reducing the scan time to approximately 2 seconds. This is especially important when you are using signalling between Touch Devices such as Access Points working as a pair & Call Points working together in multi-bedded rooms. There are considerations to be taken into account when multiple controllers are used on a system and these are discussed below.

3.9 Max 5 Bathroom Pull Cords

Bathroom Pull Cords are individually wired back to the Call Point thus allowing each unit to be identified specifically in the data log. A Maximum of five Bathroom Pull Cords may be connected to a 922 Call Point & three to a 920 Call Point. **Note:** Programming will be required to enable the X5 LED output.



3.10 RF Considerations with Multiple Controllers

When planning an installation, consideration must be made for how the RF Devices are going to be operated on the finished system. Each system should be configured to operate in an contained area, ward or floor.

3.10.1 More than one controller.

When more than one controller is installed into a single establishment, implementing **RF Channels** prevents calls being generated on each system in range. Even where units are exclusively paired to call points, it is paired to the Call Point Address, so therefore an installation with multiple controllers may have more that one Call Point with an identical Device Address. Using RF Channels allows the Portable devices to be exclusively contained in one area or directed towards a single area as required..

3.10.2 Dedicated call points for Roaming

When RF roaming is required, you should install dedicated Call Points into corridors and walk ways which can be activated from Roaming RF Devices, this will prevent residents being disturbed in their rooms by roaming RF devices. You may decide to allow call points in communal areas to accept roaming RF devices as well.

3.10.3 The use of RF Channel Numbers

The use of RF Channel numbers is ideal in multi-floor establishments, to prevent calls from one group of residents from transferring onto the other floors. This is because RF signals travel through walls and ceilings and the call point on the floor above may receive a stronger signal than the one in the next room.

3.11 Call Follower Feature with Mutliple Controllers

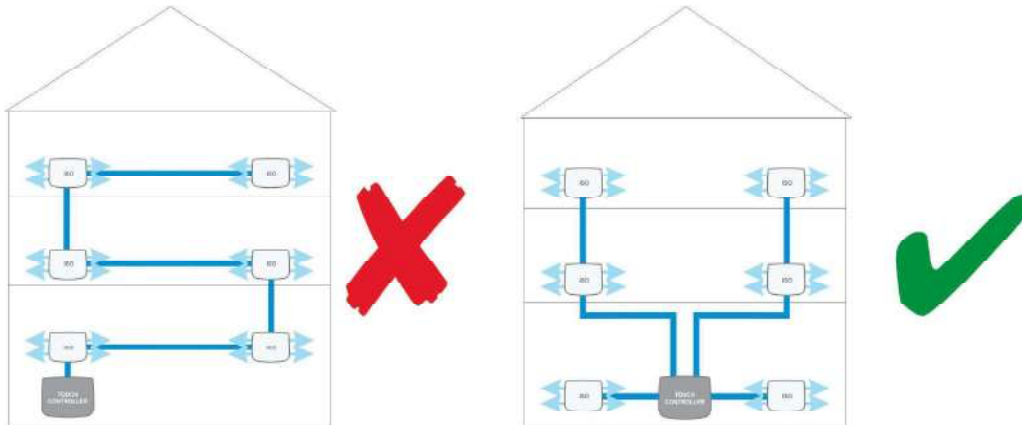
When more than one controller is installed into a single establishment, consideration should be given to the functionality of the call follower feature in the Call Point, which is limited to devices on the same physical Touch Bus. It is not possible for the Call Point Call Follower feature to show events originating from Touch Devices on other controllers.

3.12 Cabling Recommendations

We have prepared the following advice when planning an installation.

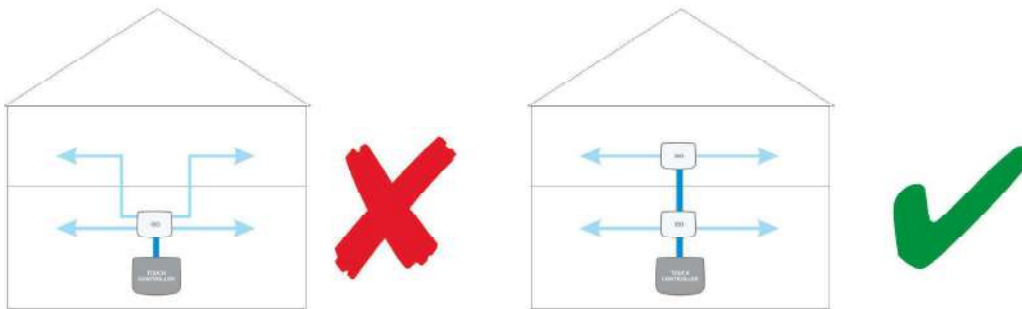
3.12.1 Multiple Bus Cable

Run multiple BUS cable(s) to minimise the length and loading while ensuring all Bus Cables comply with the Cabling Rules.



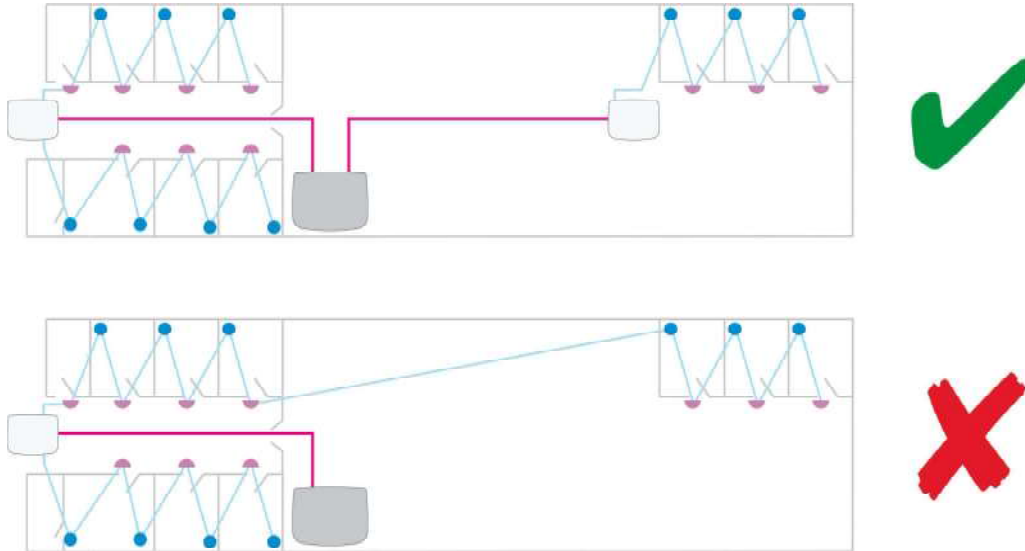
3.12.2 Locating Isolators

Avoid running Radial cables between floors, extend the [2,5mm²] BUS cable to the next level as necessary.



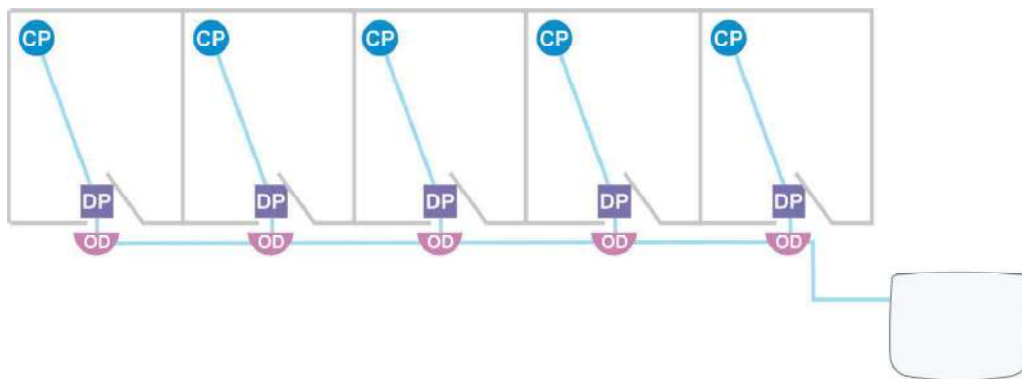
3.12.3 Additional Isolators

Isolators should be located locally to the Devices they support. Avoid running long Radials, consider installing another isolator and run another BUS cable.



3.12.4 Tee-Off/Spur from a Radial

You may 'Tee Off' from a radial, however, you must remain compliant with the Radial Cabling Rules.

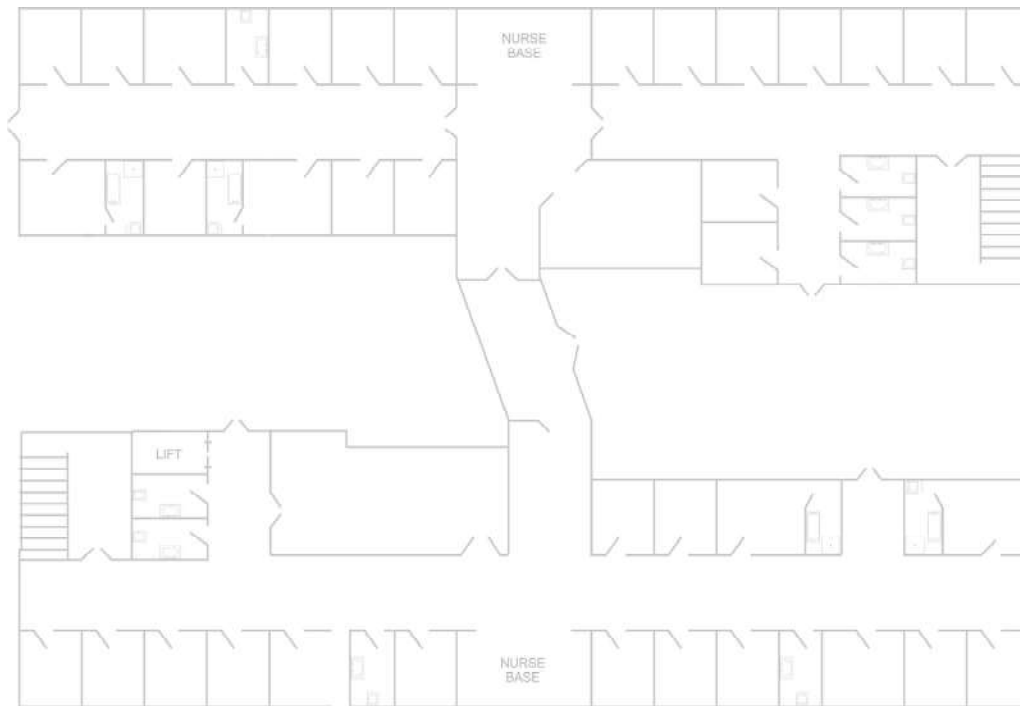


3.13 A Typical Installation

We have created a typical floor plan to show the principles used when planning an installation.

3.13.1 The Floor Plan

Below we show a typical floor plan for an installation.



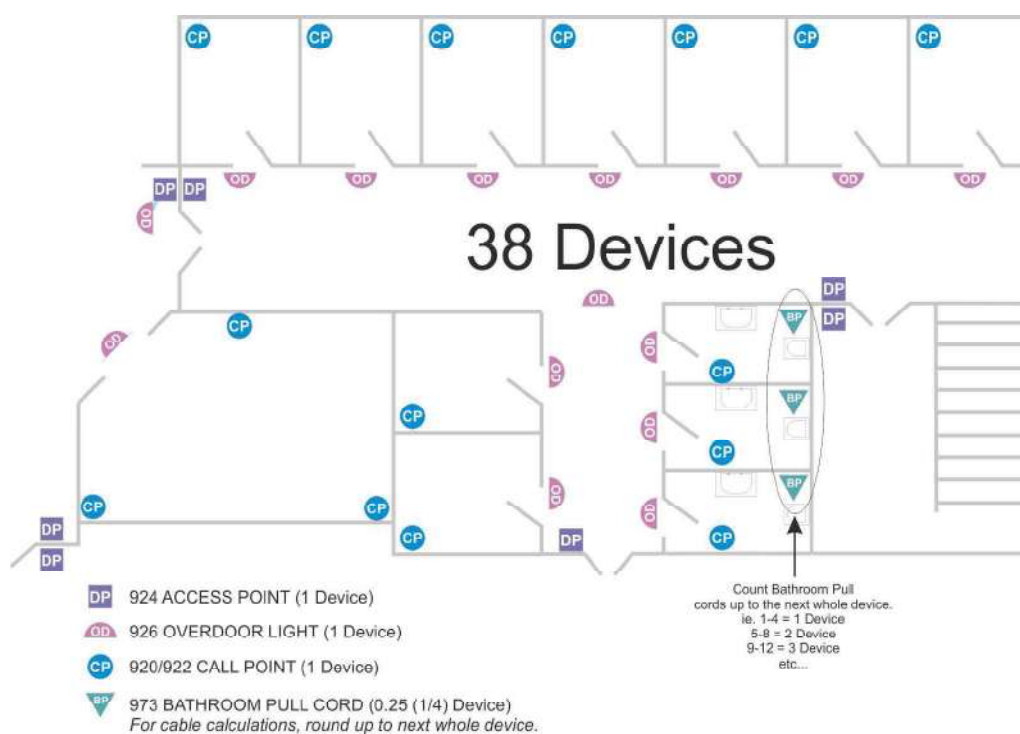
3.13.2 Marking up the Devices

The devices are marked up onto the floor plan, below we are showing all small portion of the floor plan for clarity.



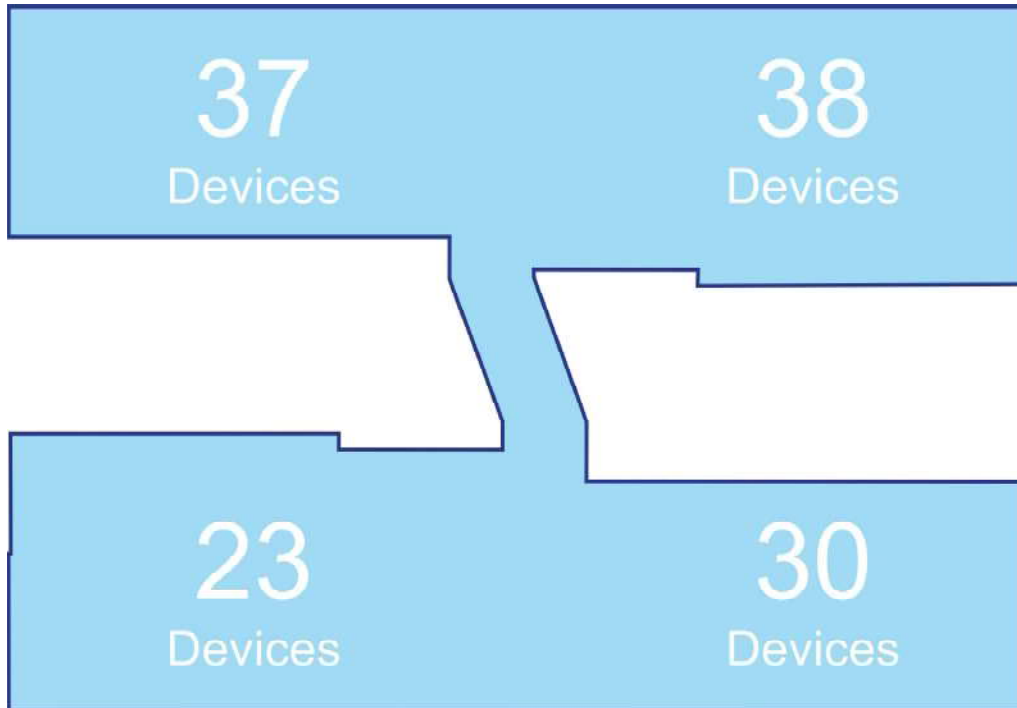
3.13.3 Calculating the Load

The device load is calculated for each area, below we are showing all small portion of the floor plan for clarity.



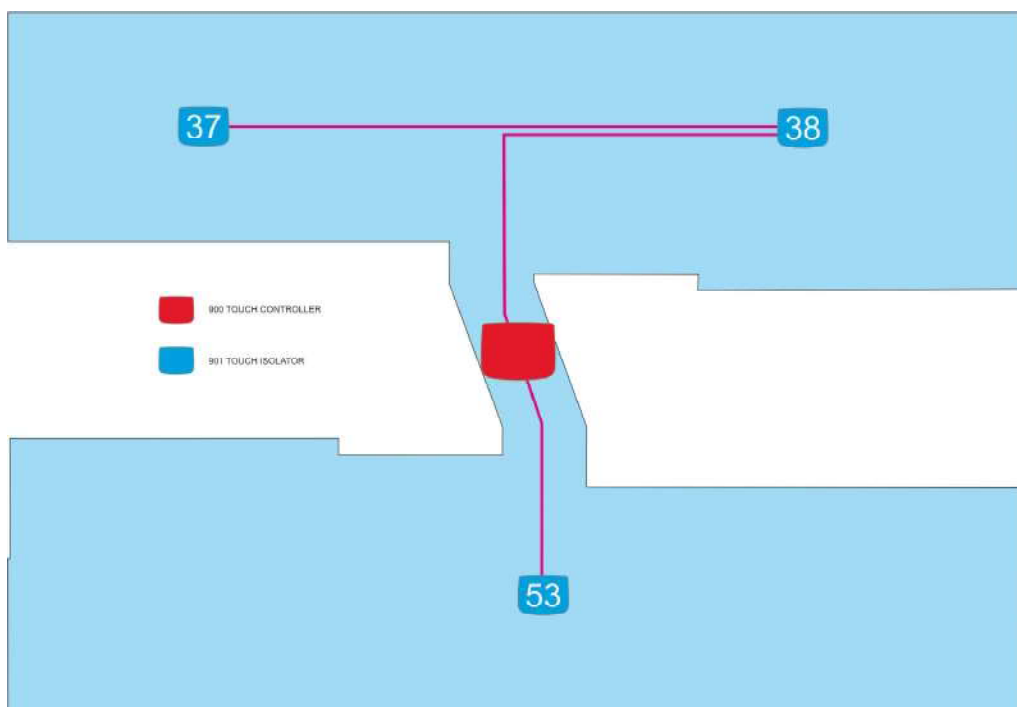
3.13.4 Full System Load

This is repeated on all areas until we have a picture of loads in all areas across the floor plan.



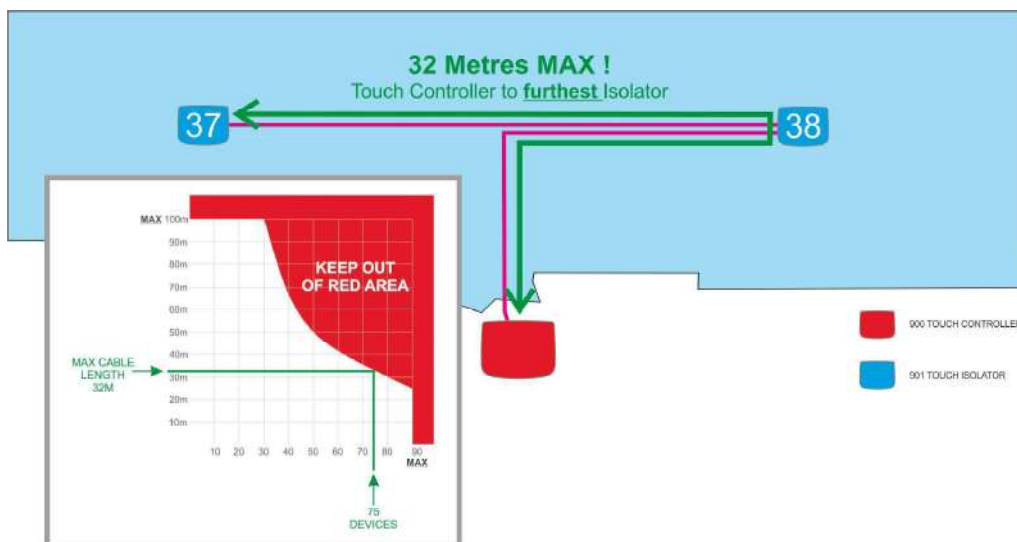
3.13.5 Locating the Controller & Isolators

Locate the Controller in a Central Location so the Touch Bus cables can be kept to a minimum length.



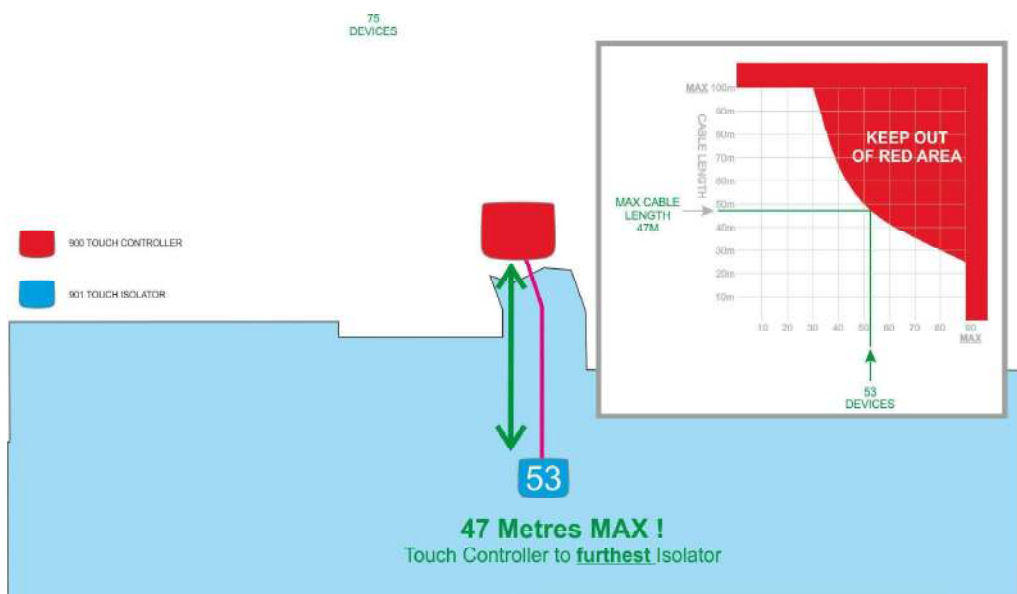
3.13.6 Calculating the Maximum Cable Length of Bus 1

Calculate the Maximum BUS Cable Length to the furthest Isolator for all Touch Bus Cables. On the Upper BUS cable the load is 75 Devices so using the Touch Bus Graph we can see the Maximum Cable Length is 32 Metres. You must carry out this check on all Touch Bus Cables from the Controller.



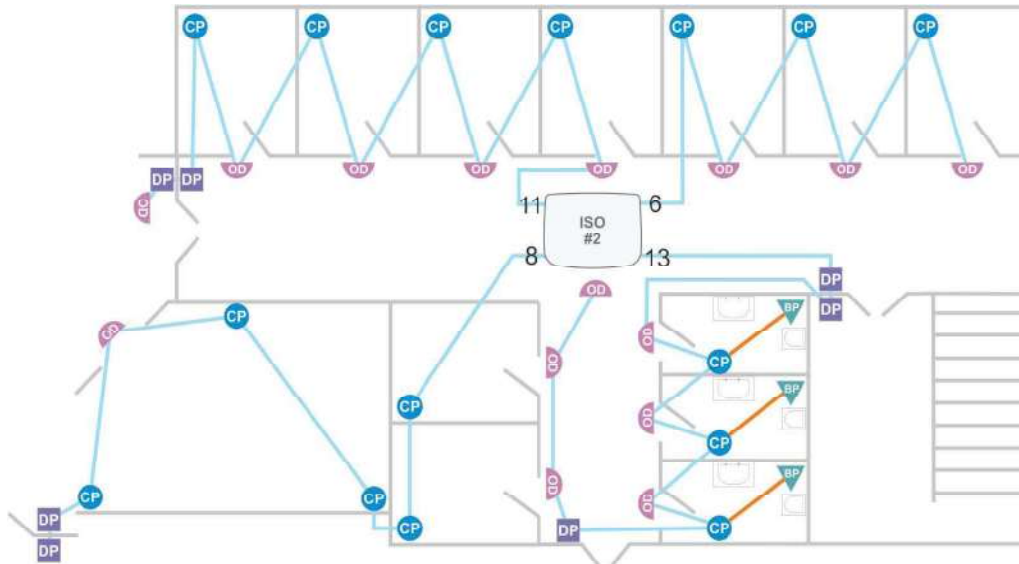
3.13.7 Calculating the Maximum Cable Length of Bus 2

Calculate the Maximum BUS Cable Length to the furthest Isolator for all Touch Bus Cables. On the Lower BUS cable the load is 53 Devices so using the Touch Bus Graph we can see the Maximum Cable Length is 47 Metres. You must carry out this check on all Touch Bus Cables from the Controller.



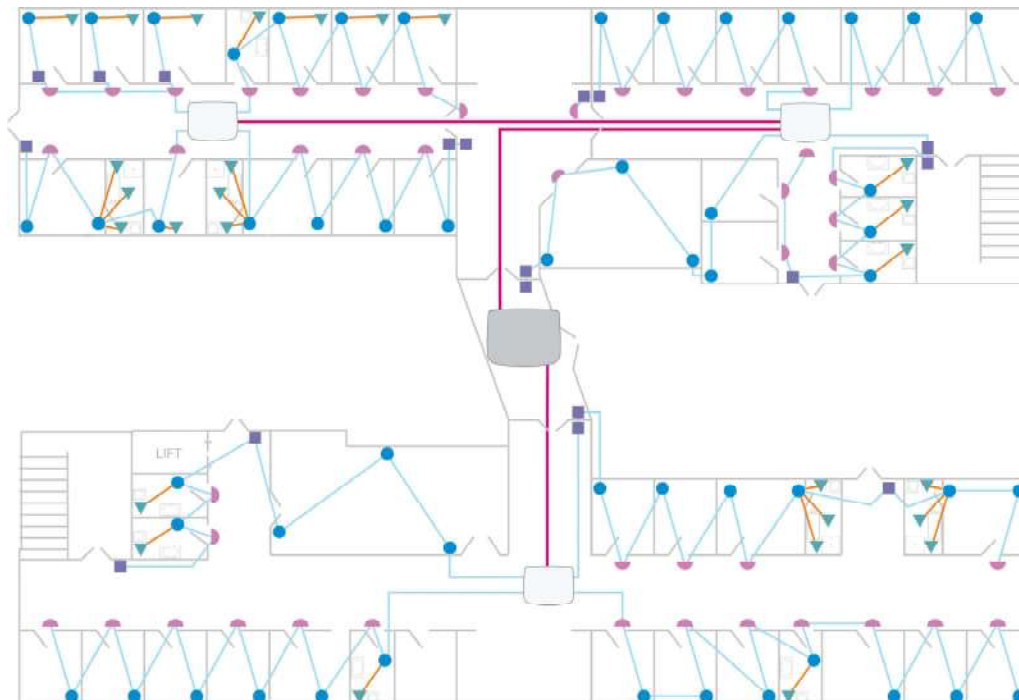
3.13.8 Connecting up the Radials

Ensure the Radial cables comply with the Radial Cabling Rules, below we are showing all small portion of the floor plan for clarity.



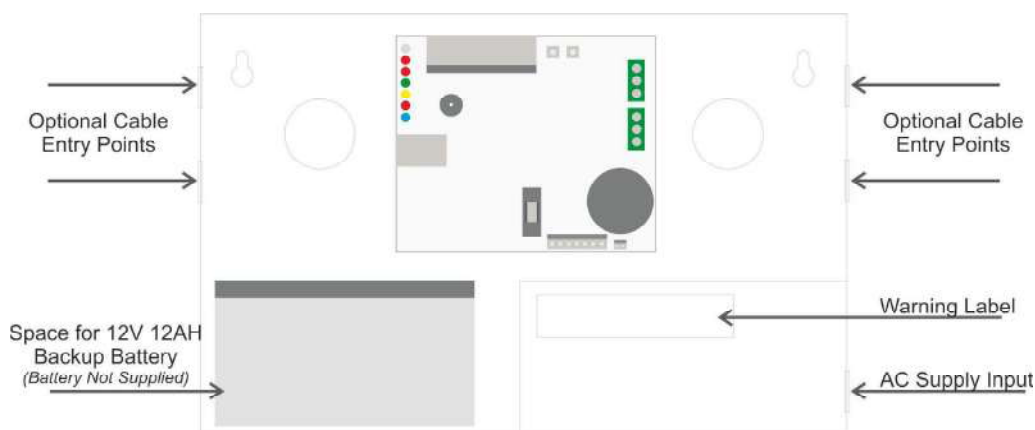
3.13.9 Completed Floor Plan

The completed floor plan.

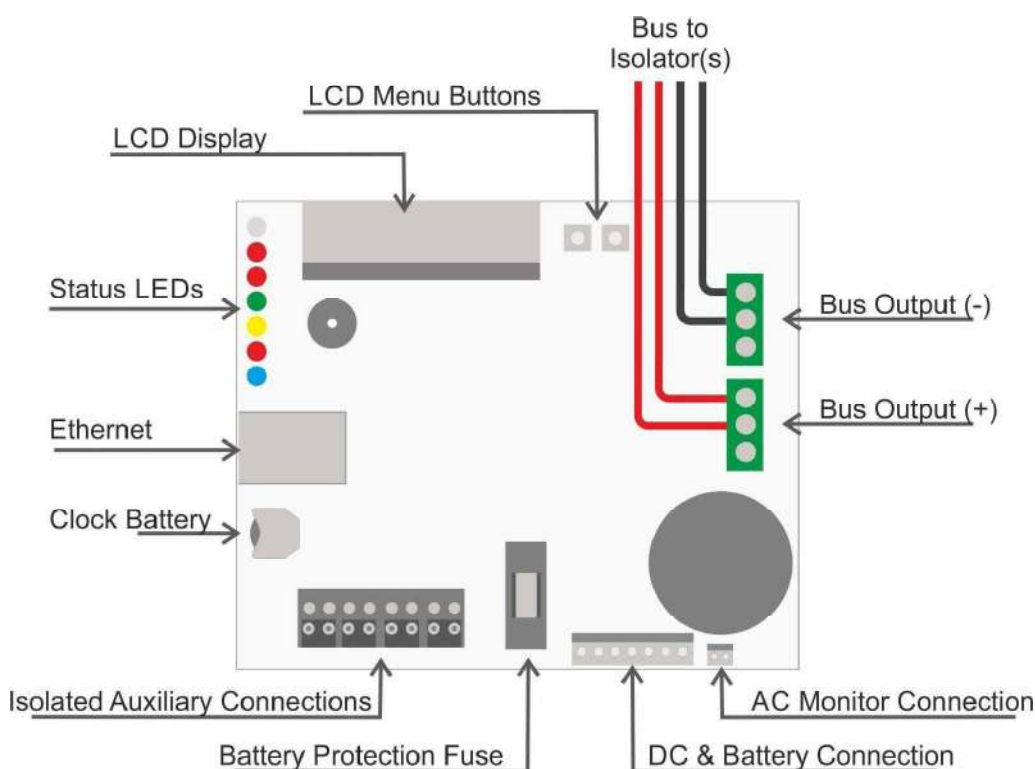


3.14 900 Touch Controller

The Touch Controller is the heart of the system, providing the power for the Touch Bus devices, together with the link to the Local Area Network. The unit features LCD with menu control, Touch Bus output terminals, auxillary terminals, battery float charger, relay output, RS232 Output, Battery Float Charger, Status LEDs.



Touch Controller Circuit Board Detail.



3.14.1 Bus Output Terminals

Three sets of Bus Output terminals are provided in parallel. Caution Observe Polarity when connecting to these terminals.

3.14.2 LCD and Buttons

The integral LCD menu for essential Ethernet settings is controlled via the two menu buttons, OK and MENU.

3.14.2.1 LCD Menu

The LCD menu is used to provide essential settings. Use the MENU button to advance to the next item and the OK button to action it.



3.14.2.1.1 IP Address

Displays the current IP Address of the controller, this may be manually assigned by the engineer or the IP Address allocated to the controller by the DHCP Server.

3.14.2.1.2 Serial No

Displays the Serial Number of the Controller which is also the MAC Address.

3.14.2.1.3 Bus Volts

Displays a snapshot of the DC Voltage Level at the Controller Bus Terminals.

3.14.2.1.4 Bus Current

Displays a snapshot of the DC Current load at the Controller Bus Terminals.

3.14.2.1.5 Free Entry Space

Displays the available capacity in the controller SD Card.

3.14.2.1.6 Firmware Version

Displays the version of Controller Firmware and Touch Bus Firmware.

3.14.2.1.7 Build Date

Displays the Build Date of the Firmware only.

3.14.2.1.8 Clear System Fault

Sends a System OK Event to the IP Devices to clear System Faults from the Touch Displays.

3.14.2.1.9 Full Reset

Press OK to restart the Controller. **Important:** This will not perform a reset to the Touch Bus Devices.

3.14.3 Status LEDs

The Touch Controller is fitted with Status LEDs, Red LEDs indicate Faults.

3.14.3.1 Disk LED (White)

The Disk LED indicates activity of the datalog media.

3.14.3.2 SD Fault LED (Red)

When lit there is a fault with the datalog SD Card. Note this LED will be lit when the SD Card is not in use.

3.14.3.3 BATT Fault LED (Red)

When lit, indicates the Backup Battery is not charging.

3.14.3.4 DC OK LED (Green)

Indicates the DC input voltage is within limits.

3.14.3.5 AC OK LED (Yellow)

Indicates the incoming AC supply has been detected.

3.14.3.6 EARTH Fault LED (Red)

Indicates a cabling fault as there is a low resistance between the BUS output and Mains Electrical Earth. **Important** This condition exposes the controller to high potential voltage spikes and must be corrected.

3.14.3.7 BUS LED (Blue)

Flashing to indicate BUS polling.

3.14.4 Auxiliary Connections

Auxiliary Terminals provide access to the inputs and outputs. **Important** The Inputs, outputs and RS232 Port are isolated from the Bus cabling.

3.14.4.1 TXD Terminal

Isolated RS232 Data Transmit Output. **Note** This terminal operates at RS232 voltage levels. (Typically +/- 15V)

3.14.4.2 CTS Terminal

Isolated RS232 Flow Control Input. **Note** This terminal operates at RS232 voltage levels. (Typically +/- 15V)

3.14.4.3 OUT 1A/B Terminals

Isolated Volt-Free relay output. **Caution:** Solid state relay, Contacts On-Resistance; 1-10 Ohms, Contact Rating; Maximum 24Volts DC 200mA (0,2A) **Important** Not suitable for inductive loads.

3.14.4.4 Input 1 Terminal

Isolated contact input number 1, active when shorted to the 0V terminal. This input can be configured to perform various functions on the Touch Controller.

3.14.4.5 Input 2 Terminal

Isolated contact input number 2, active when shorted to the 0V terminal. This input can be configured to perform various functions on the Touch Controller.

3.14.4.6 0V Terminal

Isolated 0V rail for inputs and RS232 Output Only. **Important** This terminal is isolated from the Bus cabling.

3.14.5 Ethernet RJ45

The Touch controller connects to the Local Area Network using a copper Ethernet.

3.14.6 Clock Battery

The on-board clock/calendar is supported by a 3V lithium coin cell.

3.14.7 Battery Protection Fuse

Protection fuse 20mm 5A Quick Blow.

3.14.8 DC and Battery Connections

Connects to the chassis wiring loom from the AC-DC Converter.

3.14.9 AC Monitor Connection

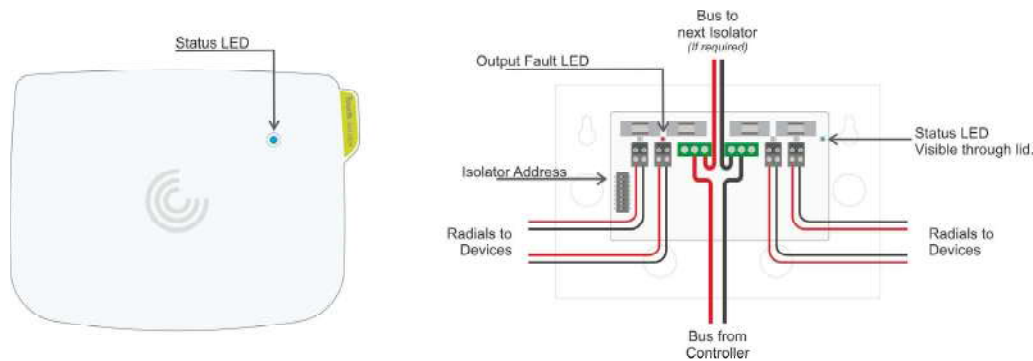
Connects to the monitor point for the incoming AC Supply.

3.14.10 Size & Weight

The unit is supplied in a surface mounting self contained enclosure Size: W420xH320xD150mm. Weight (Excluding Battery) 3.9Kg.

3.15 901 Touch Isolator

The Touch Isolator is used to protect the output from the Touch Controller and limiting the current available to the radials and Touch Devices. The Bus cable connects to the Input and provides four current limited outputs for connection the the Radial cables with Touch Devices.



3.15.1 Input Terminals

The green input terminals accept the Bus cable from the Touch Controller, there are 3 sets of Bus + and Bus - terminals in parallel. Caution observe polarity when making these connections !

3.15.2 Output Terminals

There are 4 sets of output terminals to connect the Radial cables to the Touch Bus Devices. Caution Observe Polarity when making these connections !

3.15.3 Output Protection Fuses

Each output is over-current protected by an individual fuse rating 1Amp Anti-Surge / Slow Blow.

3.15.4 Output Fault LEDs

Each output has a fault LED indicator which lights RED to confirm an over-current event.

3.15.5 Status LED

The status LED is visible with the isolator cover fitted and normally it will be flashing blue. The Status LED indicates Red if any of the output fault LEDs are lit.

3.15.6 Address DIP Switches

The Isolator occupies an address on the touch bus and the DIP switches must be set to a unique Device Address.

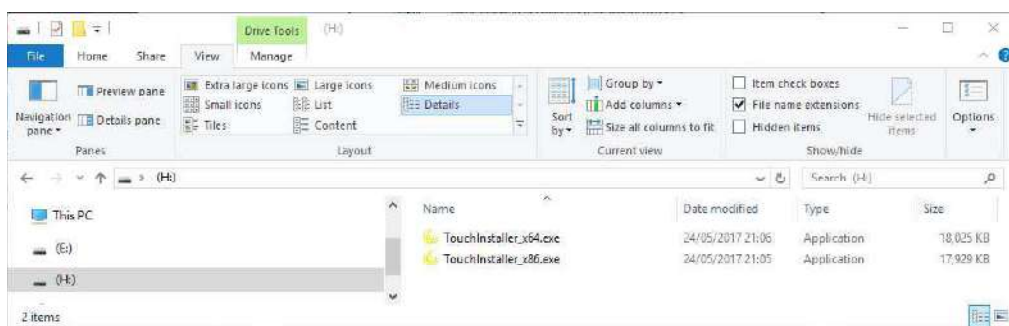
3.16 902 Care Card Programmer

The Care Card Programmer is a USB device which connects to a PC. The software is part of the *Touch Installer* software which also contains the software and driver for the Wearable Tech Programmer for use with the RF devices. **Very Important: Install this software Before connecting the USB Programmer to the PC.**



3.16.1 Installing the PC Software

The software is supplied as two files for x86 or x64 machines, simply double click the correct file for your computer. **Important: Install this software Before connecting the USB Programmer to the PC.**



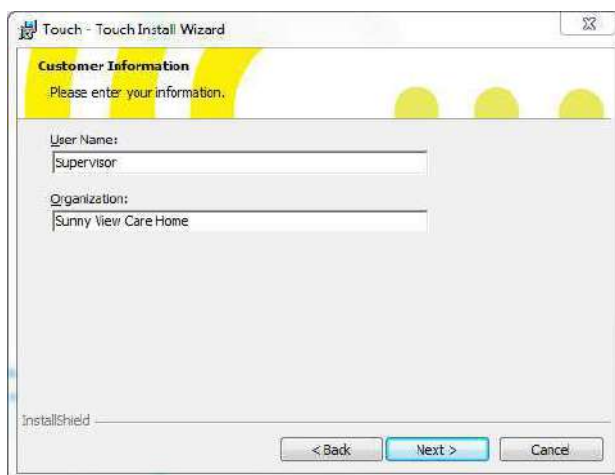
3.16.1.1 Installing the Software

Start installing the software by running the version suitable for the destination computer. **Caution:** You may require administrator permissions in order to install this software.



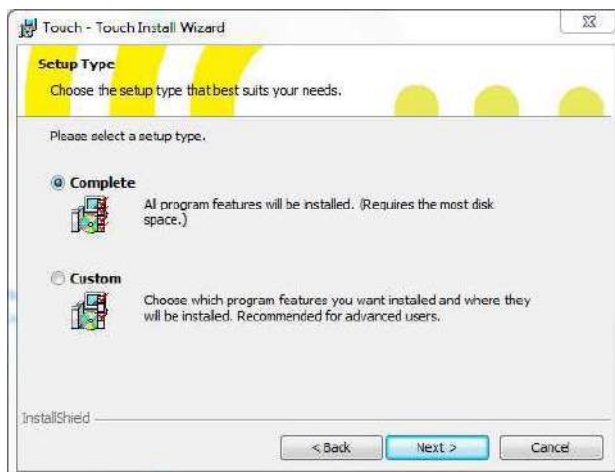
3.16.1.2 Customer Information

Enter the User and Organisation details to which this installation is to be associated.



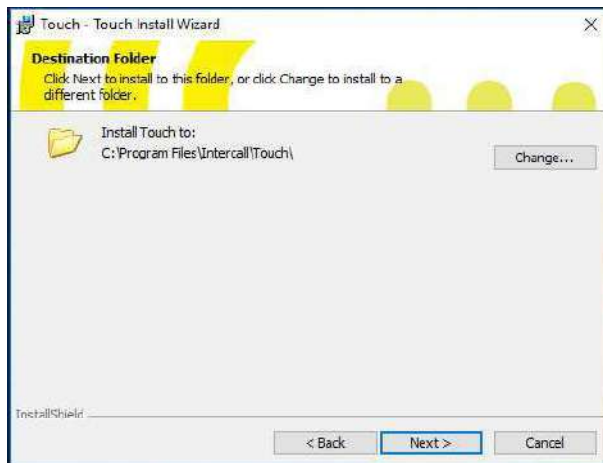
3.16.1.3 Customising the Installation

You can customize which parts of the software are installed if required. By default the Installer will include all components for the Care Card Programmer and Wearable Programmer.



3.16.1.4 Select Install File Location

Select the location you wish to install the file, the default settings are shown the dialog below.



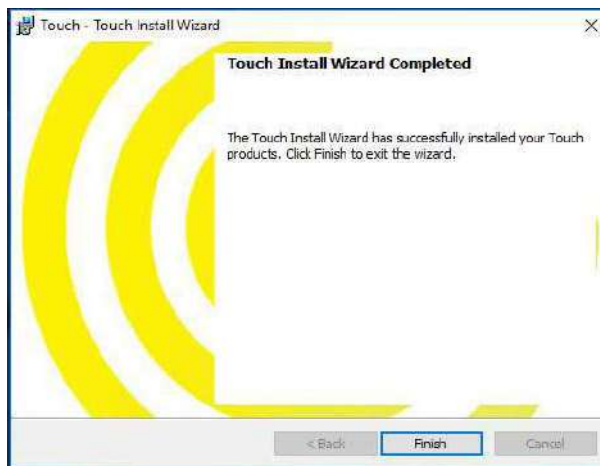
3.16.1.5 Installing the USB Drivers

The USB drivers for the Touch Care Card Programmer and Touch Wearable Programmer are also installed.



3.16.1.6 Finish this Installation

The Installation is complete, select Finish to complete the installation process.



3.16.1.7 Attach Care Card Programmer

Once the installation is complete, you may attach the USB Care Card Programmer.



3.16.1.8 Launch Icons

You should have the launch icons on the desktop. Information on use of the software can be found in the *User Guide* section.



3.17 903 Wearable Tech Programmer

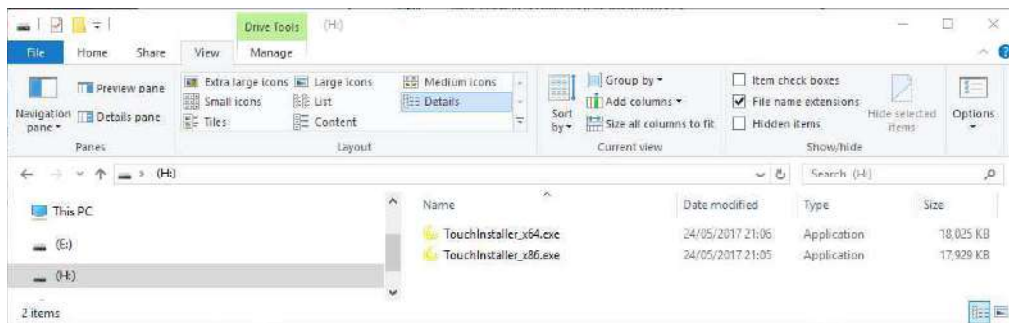
The Wearable Programmer is a USB device which connects to a PC. The software is part of the *Touch Installer* software which also contains the software and driver for the Care Card Programmer for use with the Care Cards.

Very Important: Install this software Before connecting the USB Programmer to the PC.



3.17.1 Installing the PC Software

The software is supplied as two files for x86 or x64 machines. **Important:** Install this software ***Before*** connecting the USB Programmer to the PC.



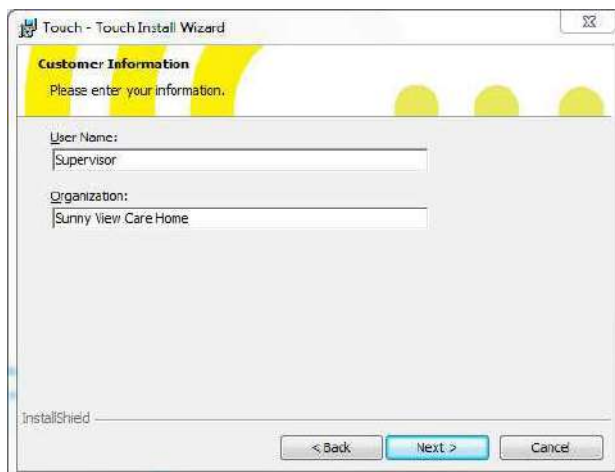
3.17.1.1 Installing the Software

Start installing the software by running the version suitable for the destination computer. **Caution:** You may require administrator permissions in order to install this software.



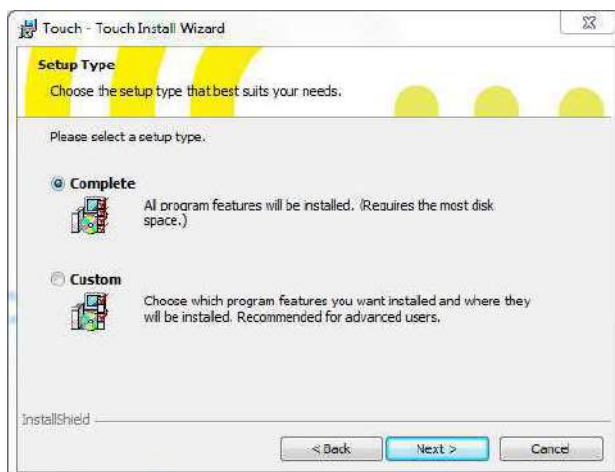
3.17.1.2 Customer Information

Enter the User and Organisation details to which this installation is to be associated.



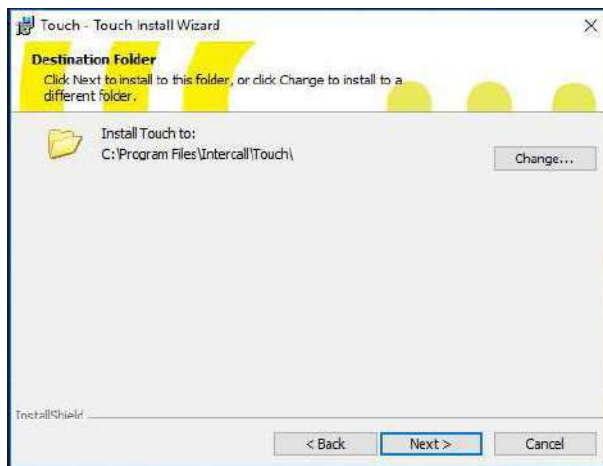
3.17.1.3 Customising the Installation

You can customize which parts of the software are installed if required. By default the Installer will include all components for the Care Card Programmer and Wearable Programmer.



3.17.1.4 Select Install File Location

Select the location you wish to install the file, the default settings are shown the dialog below.



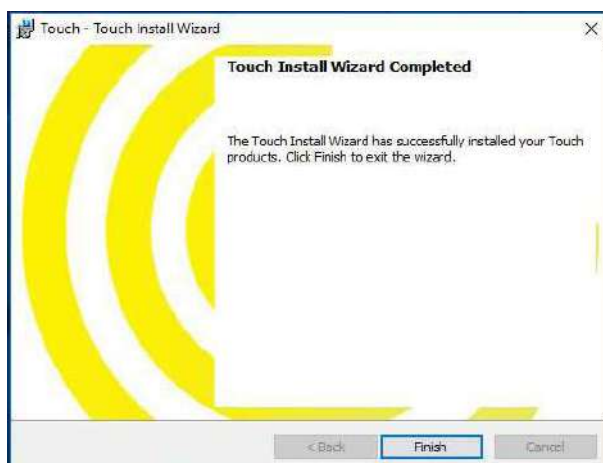
3.17.1.5 Installing the USB Drivers

The USB drivers for the Touch Wearable Programmer and Touch Care Card Programmer will be installed.



3.17.1.6 Finish this Installation

The Installation is complete, select Finish to complete the installation process.



3.17.1.7 Attach Wearable Programmer

Once the installation is complete, you may attach the USB Wearable Programmer to your computer.



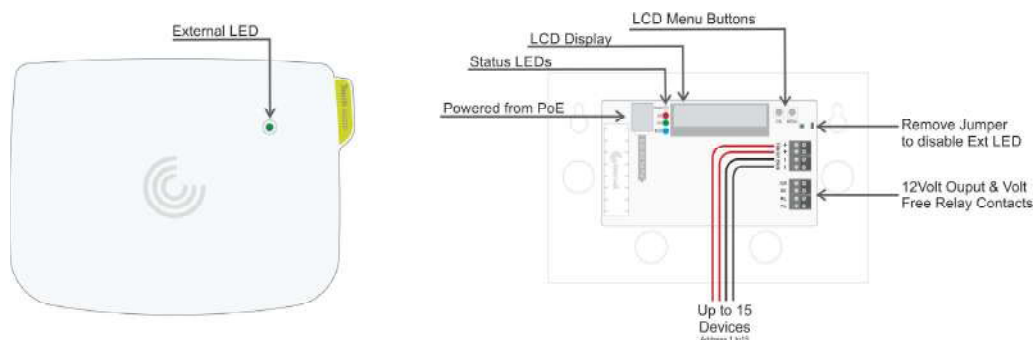
3.17.1.8 Launch Icons

You should have the launch icons on the desktop. Information on use of the software can be found in the *User Guide* section.



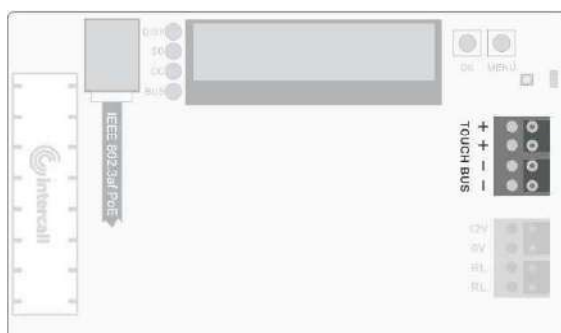
3.18 905 Room Controller

The Room Controller is designed to support up to 15 Touch Bus Devices. Powered by Power-Over-Ethernet.



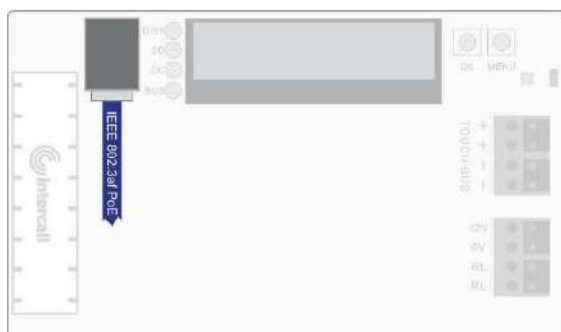
3.18.1 Bus Output Terminals

Two sets of Bus Output terminals are provided in parallel. Caution Observe Polarity when connecting to these terminals.



3.18.2 Ethernet POE

The Touch Room Controller requires a connection to the Local Area Network using this RJ45 socket. The device is powered from PoE (Power-Over-Ethernet) and is compliant with IEEE802.3af Class 0.



3.18.3 LCD and Buttons

The integral LCD menu for essential Ethernet settings is controlled via the two menu buttons, OK and MENU.



3.18.3.1 LCD Menu

The LCD menu is used to provide essential settings. Use the MENU button to advance to the next item and the OK button to action it.



3.18.3.1.1 IP Address

Displays the current IP Address of the controller, this may be manually assigned by the engineer or the IP Address allocated to the controller by the DHCP Server.

3.18.3.1.2 Serial No

Displays the Serial Number of the Controller which is also the MAC Address.

3.18.3.1.3 Bus Volts

Displays a snapshot of the DC Voltage Level at the Controller Bus Terminals.

3.18.3.1.4 Bus Current

Displays a snapshot of the DC Current load at the Controller Bus Terminals.

3.18.3.1.5 Free Entry Space

Displays the available capacity in the controller SD Card.

3.18.3.1.6 Firmware Version

Displays the version of Controller Firmware.

3.18.3.1.7 Build Date

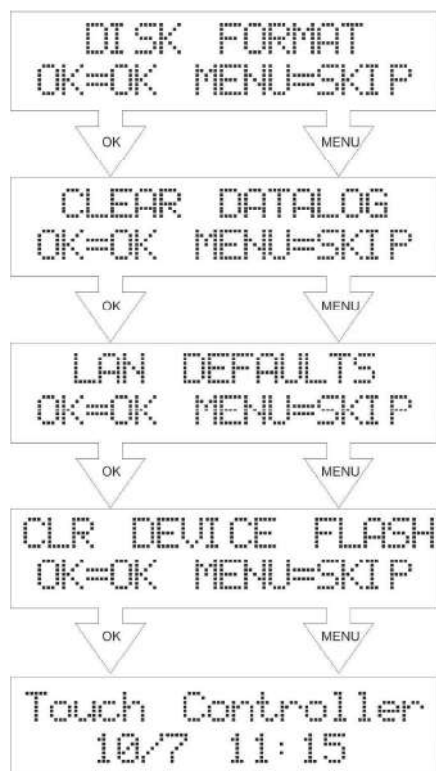
Displays the Build Date of the Firmware only.

3.18.3.1.8 Full Reset

Press OK to restart the Controller. **Important:** This will not perform a reset to the Touch Bus Devices.

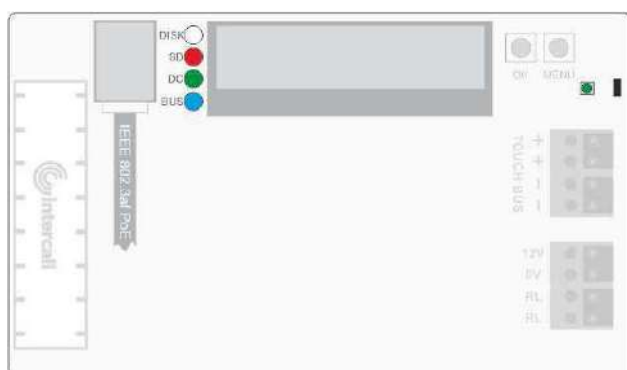
3.18.3.2 Factory Default

There is an additional menu which allows the unit to be reset to the Factory Default Settings. To access this menu, reset the unit and, while the unit is initialising, Press and Hold down the MENU key, the first item on the menu will appear. Press the Menu button to skip each item or press the OK button to perform the displayed action. Caution Formatting the Disk will remove all user configuration.



3.18.4 Status LEDs

The Touch Controller is fitted with Status LEDs, Red LEDs indicate Faults.



3.18.4.1 Disk LED (White)

The Disk LED indicates activity of the datalog media.

3.18.4.2 SD Fault LED (Red)

When lit there is a fault with the datalog SD Card. Note this LED will be lit when the SD Card is not in use.

3.18.4.3 DC OK LED (Green)

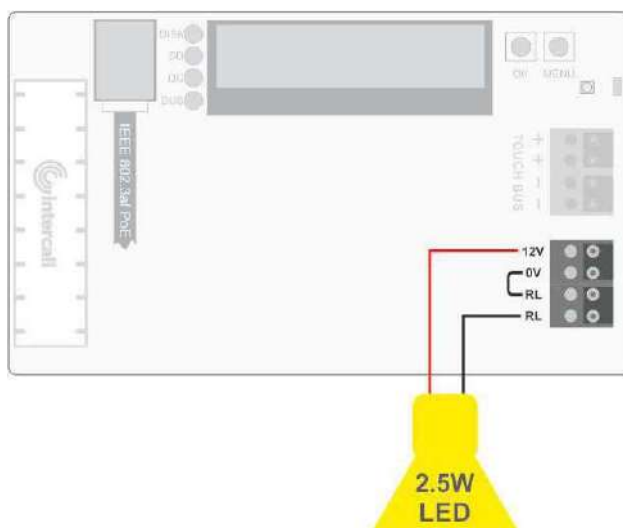
Indicates the 12VDC voltage is within limits.

3.18.4.4 BUS LED (Blue)

Flashing to indicate BUS polling.

3.18.5 Auxiliary Connections

Auxiliary Terminals provide access to the inputs and outputs.



3.18.5.1 12V Terminals

Power-Over-Ethernet derived 12V DC Voltage Output. **Caution:** Available current is shared with Touch Bus Devices. Maximum Total = 11Watts @ 12Volts.

3.18.5.2 RL Terminals

Programmable Volt Free relay output. **Caution:** Solid state relay, Contacts On-Resistance; 1-10 Ohms, Contact Rating; Maximum 24Volts DC 200mA (0,2A) **Important** Not suitable for inductive loads.

3.18.5.3 0V Terminal_2

On-board 0V common rail.

3.18.6 Size & Weight

The unit is supplied in a surface mounting self contained enclosure Size: W0xH0xD0mm. Weight 00Kg

3.18.7 Clock Battery

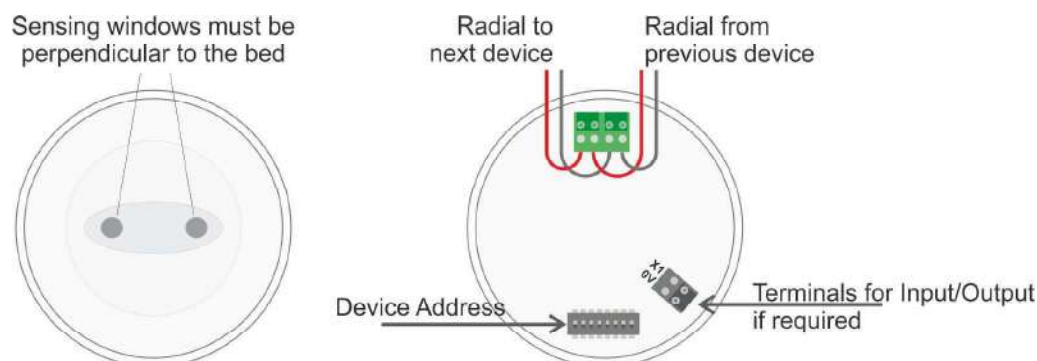
The on-board clock/calendar is supported by a 3V lithium coin cell.

3.18.8 Ethernet RJ45

The Touch controller connects to the Local Area Network using a copper RJ45 Connector.

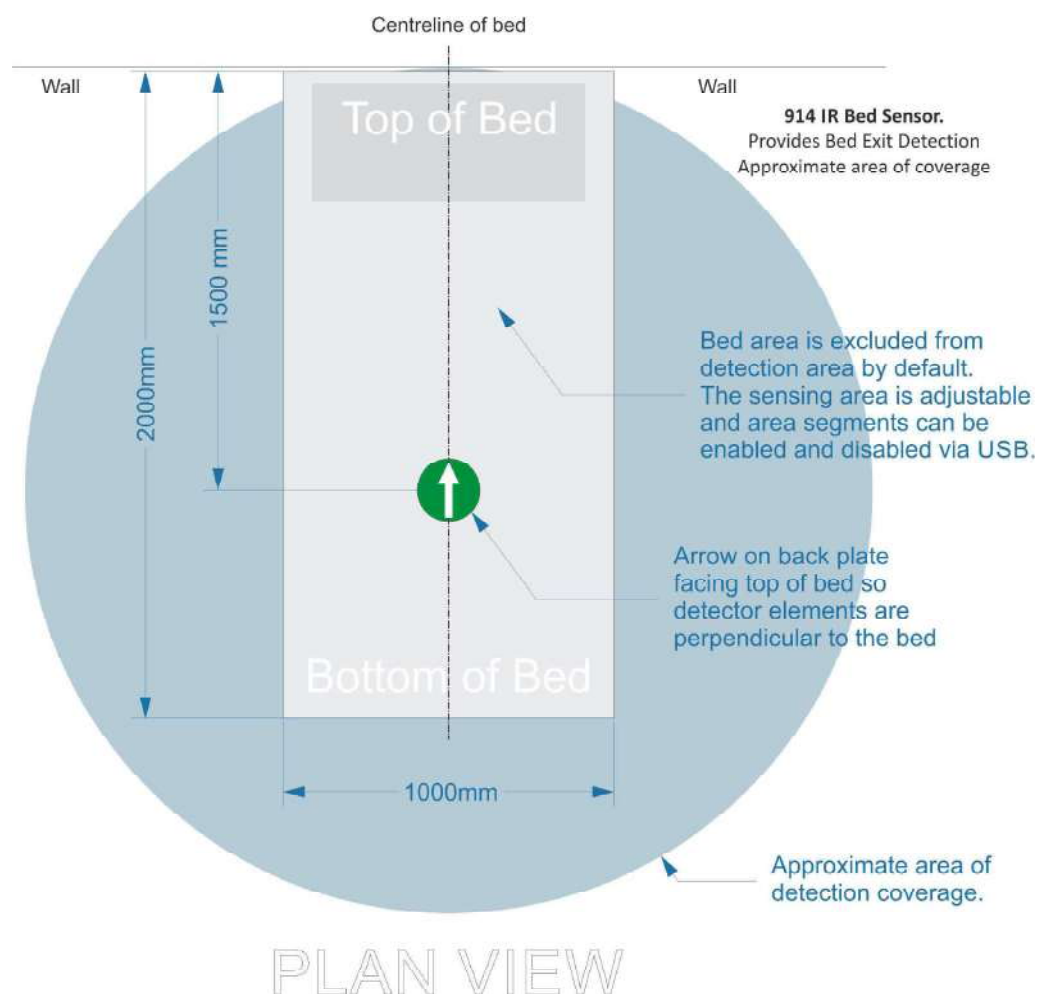
3.19 914 Bed Sensor

The 914 Bed Sensor is used to passively monitor bed occupancy. Located above the bed, it detects activity within a pre-defined area around the bed.



3.19.1 Location & Mounting

The unit is ceiling mounted above the bed to be monitored.

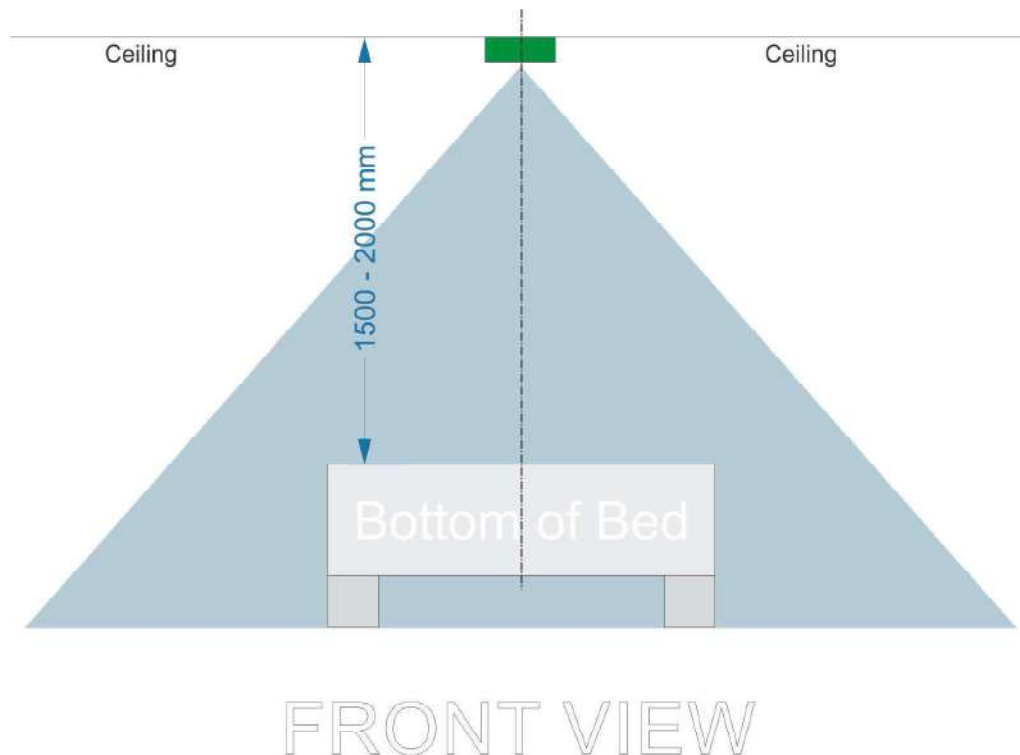


3.19.1.1 Position from the top of the bed

The bed is positioned so that the head of the bed is against the wall and the unit is ceiling mounted 1500mm from the top of the bed on the centre line of the bed.

3.19.1.2 Height above the top of the bed

The unit is ceiling mounted between 1500mm and 2000mm from the top of the bed.

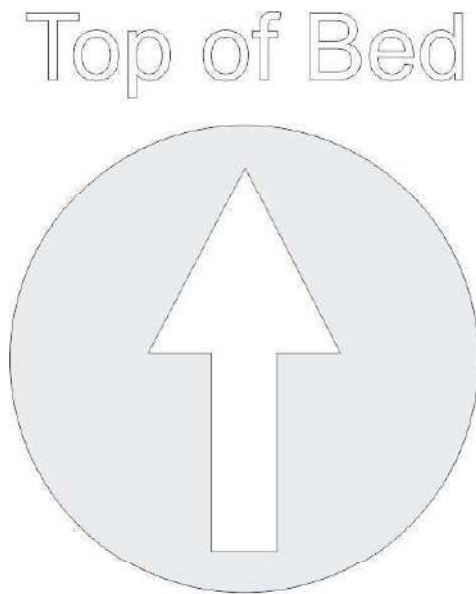


3.19.1.3 Bed Size

The unit is designed to operate on a bed typically 1000mm width and 2000mm length.

3.19.1.4 Mounting Plate

The unit is supplied with a mounting plate, secured to the ceiling with the arrow pointing towards the top of the bed. **Important:** The arrow on the mounting plate must be pointing towards the top of the bed.



914 Mounting Plate.

3.19.1.5 Locking Screw

The unit is supplied with a locking screw which prevents unauthorized removal from the mounting plate.

3.19.2 Touch Bus Terminals

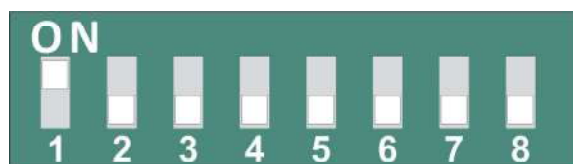
There are two sets of terminals in parallel for connection to the Radial from the Isolator. **Caution:** Observe polarity when making these connections !

3.19.3 X1 Terminal

Output Terminal, factory configured as an output to drive the 975 Relay Module to control additional room lighting.

3.19.4 Address DIP Switches

The unit occupies a **Device Address** which is configured using the Address DIP Switches. **Caution:** The Unit Must be set to a unique Device Address. The unit must be power cycled in order for Address DIP Switch changes to take effect.



ADDRESS = 1

3.19.5 USB Socket

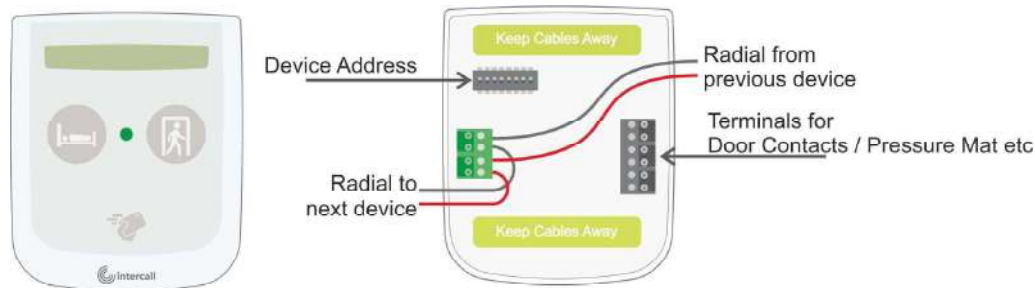
The unit features a mini USB connector used to connect to a laptop for configuration purposes. **Important:** The device must be powered from the Touch Bus terminals when using the USB facility.

3.19.6 Size and Weight

Diameter 125mm Depth (Max inc mounting plate) 45mm Weight (including Mounting Plate) 120g

3.20 915 Room Control Point

The Room Control Point is used to control the monitoring functions within a Bedroom.



3.20.1 Touch Bus Terminals

There are two sets of terminals in parallel for connection to the Radial from the Isolator. **Caution:** Observe polarity when making these connections !

3.20.2 X1 Terminal

Input Terminal, factory configured for a standard bed mat contact which will be closed when the bed is occupied. **Important:** This terminal must be linked to 0V if not required. X1 and X3 inputs can not be used simultaneously.

3.20.3 X2 Terminal

Input Terminal, factory configured for a door contact to allow the bedroom door to be monitored. **Important:** Factory default is that contact must be closed when the door is opened, however this can be reversed in the programmer if required.

3.20.4 X3 Terminal

Input Terminal, factory configured for a auxiliary bed occupied detector where the contact will be open when the bed is occupied. This is the inverse of X1. **Important:** X1 and X3 inputs can not be used simultaneously.

3.20.5 X4 Terminal

Output Terminal, factory configured as an output to drive the 975 Relay Module to control additional room lighting.

3.20.6 X5 Terminal

Not implemented by factory default, but can be programmed as required.

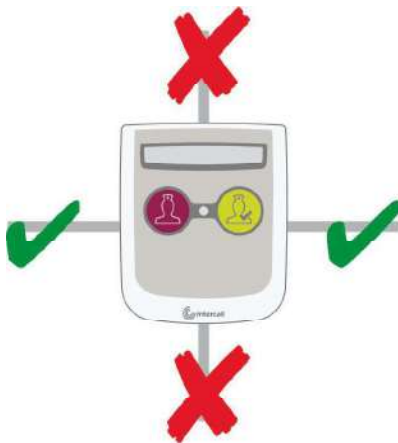
3.20.7 Address DIP Switches

The unit occupies a **Device Address** which is configured using the Address DIP Switches. **Caution:** The Unit Must be set to a unique Device Address. The unit must be power cycled in order for Address DIP Switch changes to take effect.



3.20.8 Cable Routes

All Cabling should be brought into the rear of the unit. **Caution:** Avoid running any cables into the top or bottom of the unit as this reduces the performance of the wireless functionality. Keep cables away from the hatched areas of the circuit board.



3.20.9 Keep Cables Away

The hatched areas of the unit shown below, contain sensitive RF antennas which may be affected by the presence of cables and other metallic objects. Please keep cables away from these areas.

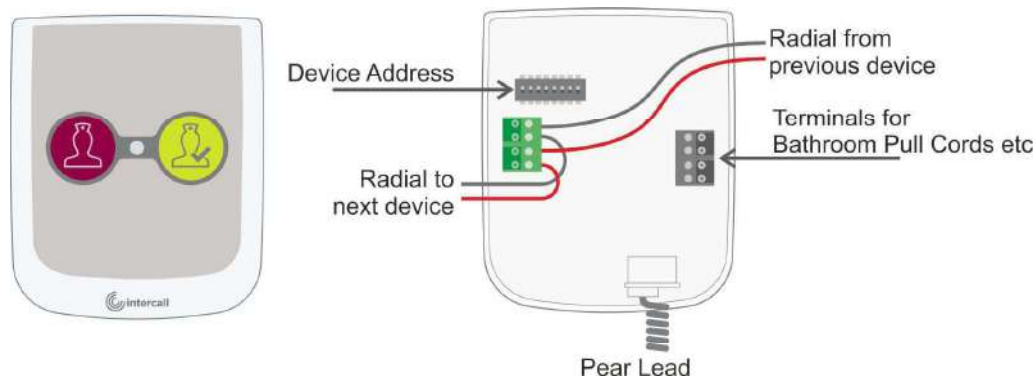


3.20.10 Size and Weight

The unit is supplied in a surface mounting self contained enclosure Size: W95 x H115 x D50mm Weight: 150g.

3.21 920 Call Point Basic

The Call Point Basic is designed to provide a patient calling point with staff reset button. The unit features Red call button, green Staff button, reassurance LED and terminals for connection to bathroom pull cords and a single input for door contacts. The unit connects to the radial cabling from the isolator, and may also connect to three external inputs for bathroom pull cords.



3.21.1 Touch Bus Terminals

There are two sets of terminals in parallel for connection to the Radial from the Isolator. **Caution:** Observe polarity when making these connections !

3.21.2 X1 Terminal

Input Terminal, factory configured for "X1 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.21.3 X2 Terminal

Input Terminal, factory configured for "X2 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

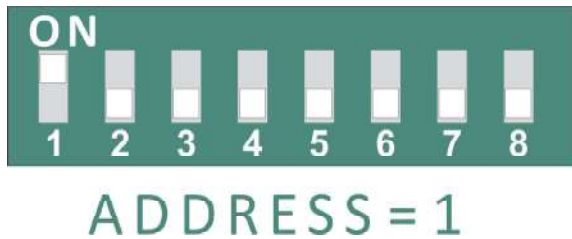
3.21.4 X3 Terminal

Input Terminal, factory configured for "X3 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.21.5 Address DIP Switches

The Call Point occupies a Device Address which is configured using the Address DIP Switches. **Caution:** The Unit Must be set to a unique Device

Address. The device must be power cycled in order for Address DIP Switch changes to take effect..



3.21.6 Pear Lead Socket

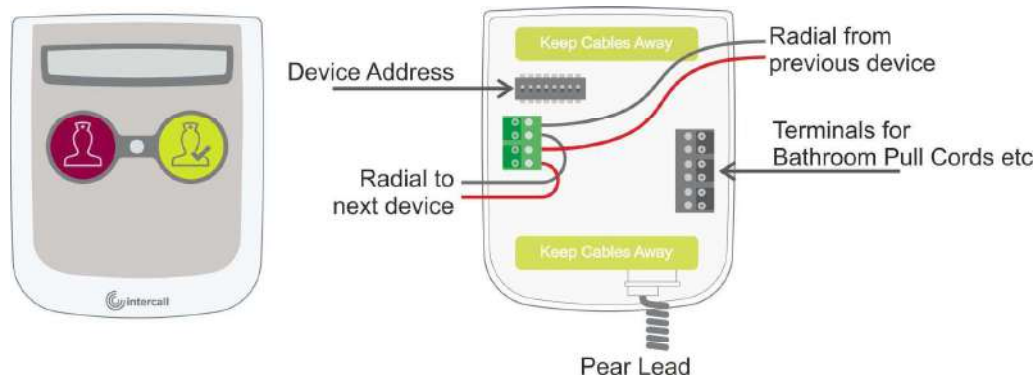
The RJ10 pear lead socket only accepts intelligent Intercall pear leads. **Caution**
The Intercall Touch Pear Lead is not compatible with closing contact systems.

3.21.7 Size and Weight

The unit is supplied in a surface mounting self contained enclosure Size: W95 x H115 x D30mm Weight: 130g.

3.22 922 Call Point Standard

The Call Point Standard is designed to provide a patient calling point with additional staff functions. The unit features Red call button, green Staff button, LCD Display, RFID Reader, RF Transceiver, re-assurance LED and terminals for connection to bathroom pull cords and a single input for door contacts.



3.22.1 Touch Bus Terminals

Bottom of Bed

3.22.2 X1 Terminal

Input Terminal, factory configured for "X1 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.22.3 X2 Terminal

Input Terminal, factory configured for "X2 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.22.4 X3 Terminal

Input Terminal, factory configured for "X3 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.22.5 X4 Terminal

Input Terminal, factory configured for "Toilet Call" designed for a Bathroom Pull Cord. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.22.6 X5 Terminal

Input terminal factory configured for "Door Alarm", a normally open contact between this terminal and the 0V terminal. There is no LED output configured.

on this terminal by default.

3.22.7 Address DIP Switches

The device occupies a **Device Address** which is configured using the Address DIP Switches. **Caution:** The Unit Must be set to a unique Device Address. The unit must be power cycled in order for Address DIP Switch changes to take effect.

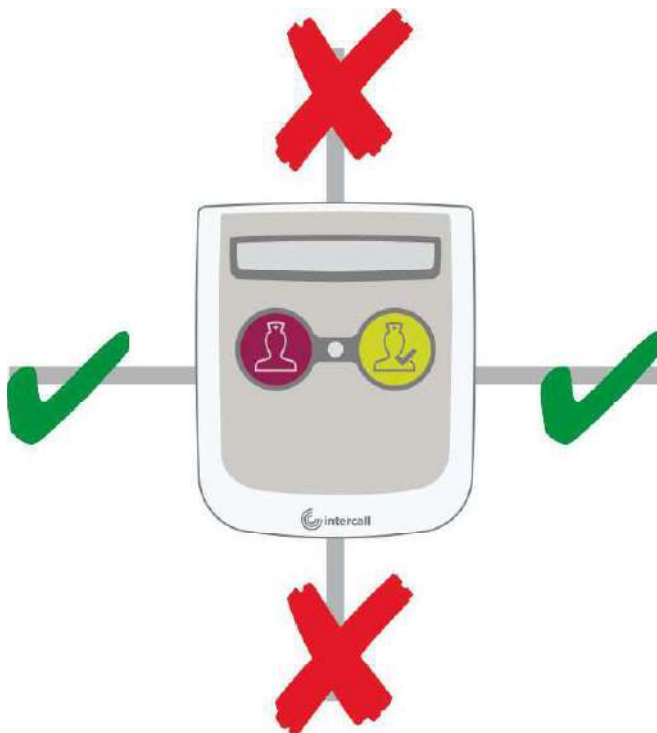


3.22.8 Pear Lead Socket

The RJ10 pear lead socket only accepts intelligent Intercall pear leads. **Caution** The Intercall Touch Pear Lead is not compatible with closing contact systems.

3.22.9 Cable Routes

All Cabling should be brought into the rear of the unit. Caution avoid running any cables into the top or bottom of the unit as this reduces the performance of the wireless functionality.



3.22.10 Keep Cables Away

The hatched areas of the unit shown below, contain sensitive RF antennas which may be affected by the presence of cables and other metallic objects. Please keep cables away from these areas.

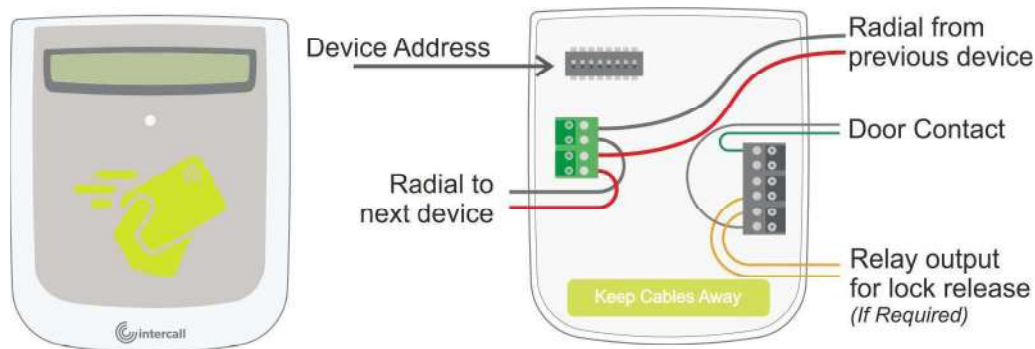


3.22.11 Size and Weight

The unit is supplied in a surface mounting self contained enclosure Size: W95 x H115 x D30mm Weight: 140g.

3.23 924 Access Point

The Access Point is designed to protect doors and other sensitive areas from unauthorised access. The unit features RFID card reader with LED, contact input terminals and volt free relay output for connection to lock release system. The unit is powered from the radial cabling from the isolator.



3.23.1 Touch Bus Terminals

There are two sets of terminals in parallel for connection to the Radial from the Isolator. Caution observe polarity when making these connections !

3.23.2 X1 Terminal

Input Terminal factory configured for Door Alert, a normally open contact between this terminal and the 0V terminal.

3.23.3 X2 Terminal

Input Terminal factory configured for Door Alarm, a normally open contact between this terminal and the 0V terminal.

3.23.4 X3 Terminal

Input Terminal factory configured for Access, a normally open button between this terminal and the 0V terminal for a remote access button.

3.23.5 RL Terminals

Volt Free relay output active in Access Event by default. **Caution:** Solid state relay, Contacts On-Resistance; 1-10 Ohms, Contact Rating; Maximum 24Volts DC 200mA (0,2A) **Important:** Always protect against back EMF when switching inductive loads such as Mag-Locks.

3.23.6 0V Terminal

Common Terminal for the X1, X2 and X3 inputs.

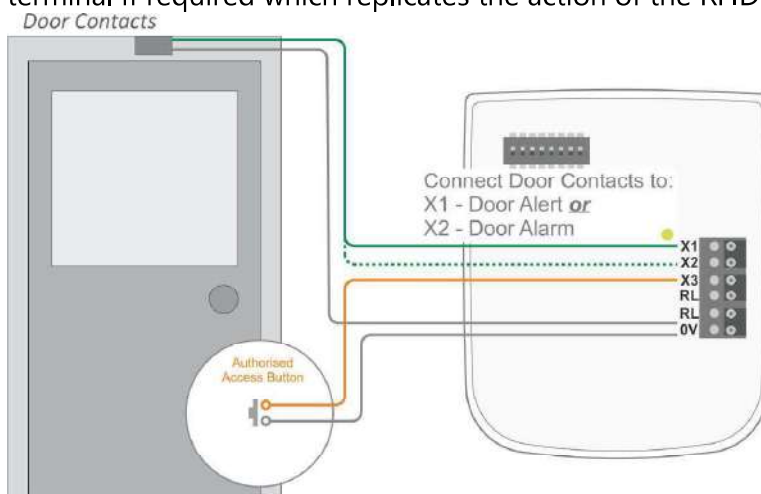
3.23.7 Address DIP Switches

The Access Point occupies a Device Address which is configured using the Address DIP Switches. **Caution:** The Unit Must be set to a unique Device Address. The unit must be power cycled in order for Address DIP Switch changes to take effect..



3.23.8 Door Contact and Access Button Connections

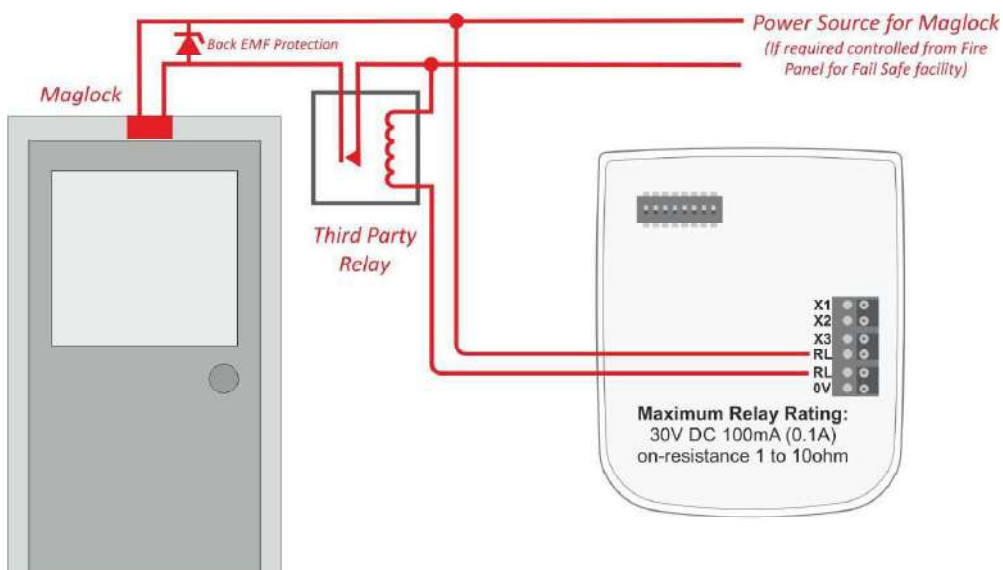
The door contacts are connected to either X1 for Door Alert (lower level) or X2 for Door Alarm (high level) **Note:** The door contacts are in short circuit when the door is open. Authorised Access Button may be connected to the X3 terminal if required which replicates the action of the RFID card.



3.23.9 Connecting the Access Point to Maglock

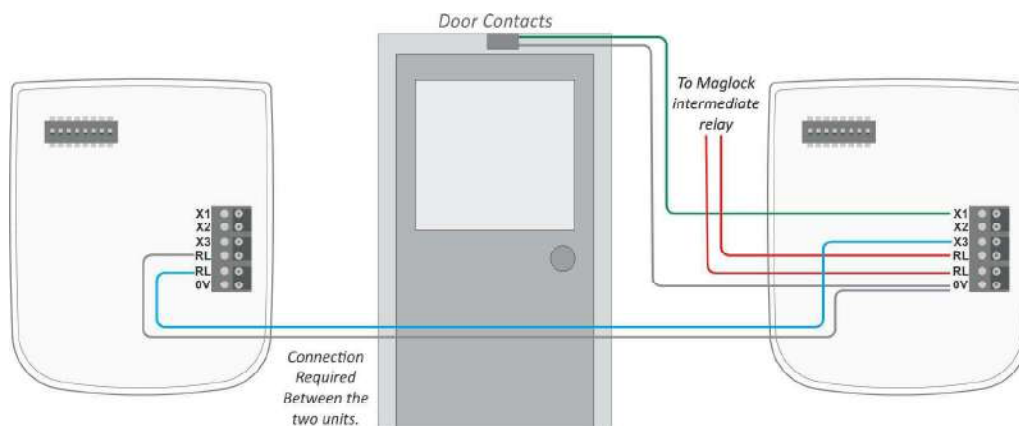
The relay output may be used to interface with door locking, below we show the use of a third party relay to control larger loads such as maglocks.

Important: Ensure suitable back EMF protection is provided for the electric locking circuit.



3.23.10 Connecting Two Access Points to one door

The Access Points can be configured to operate 'Back to Back' so there is a unit either side of the door. In this configuration, there is only one unit which is connected to the door contact and maglock. The other unit is connected only to the master unit as shown below, both units will obviously require connection to the Touch Radial which is not shown on this illustration. Programming will be required on both units, to disable the second swipe mode as this will interfere with the operation.

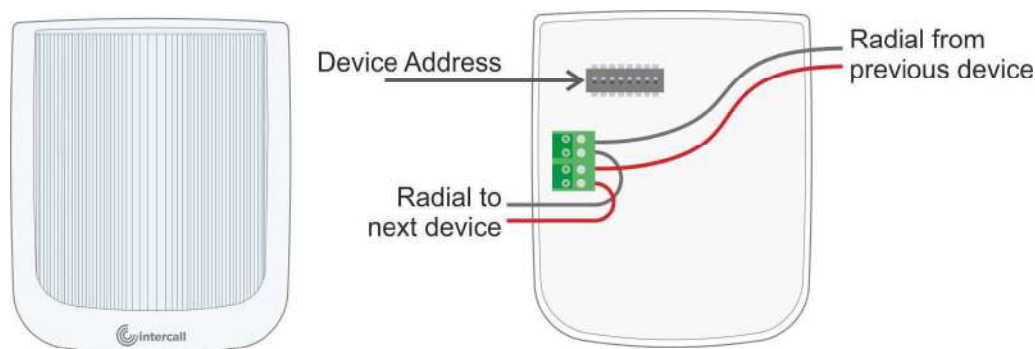


3.23.11 Size and Weight

The unit is supplied in a surface mounting self contained enclosure Size: W95 x H115 x D30mm Weight: 130g.

3.24 926 Over Door Light

The Overdoor Light is designed to indicate the status of one or more call points and the unit connects to the a radial from the isolator.



3.24.1 Touch Bus Terminals

There are two sets of terminals in parallel for connection to the Radial from the Isolator. **Caution:** Observe polarity when making these connections !

3.24.2 Address DIP Switches

The device occupies a **Device Address** which is configured using the Address DIP Switches. **Caution:** The Unit Must be set to a unique Device Address. The unit must be power cycled in order for Address DIP Switch changes to take effect.

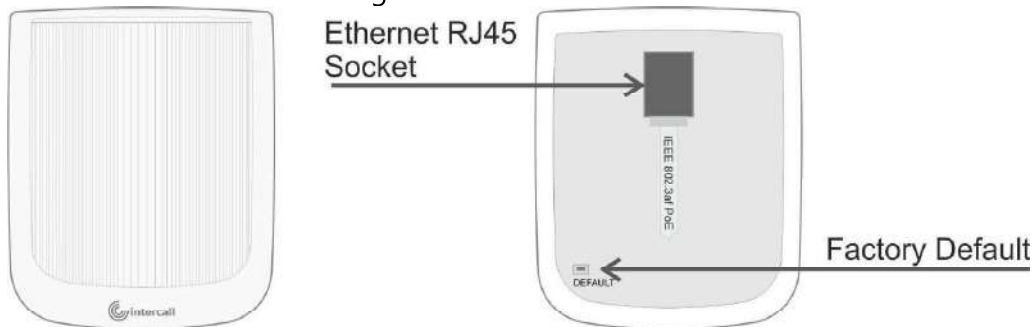


3.24.3 Size and Weight

The unit is supplied in a surface mounting self contained enclosure Size: W95 x H115 x D50mm Weight: 150g.

3.25 946 Over Door Light Plus

The Call Point Plus is a PoE (Power-Over-Ethernet) device, and simply connects to the Local Area Network via a copper Ethernet RJ45 socket and features an embedded website for configuration.



3.25.1 Ethernet POE

This unit simply requires a connection to the POE Local Area Network using the RJ45 socket, Deriving power from POE, it is compliant with IEEE802.3af as a Class 0 device.

3.25.2 Default Button

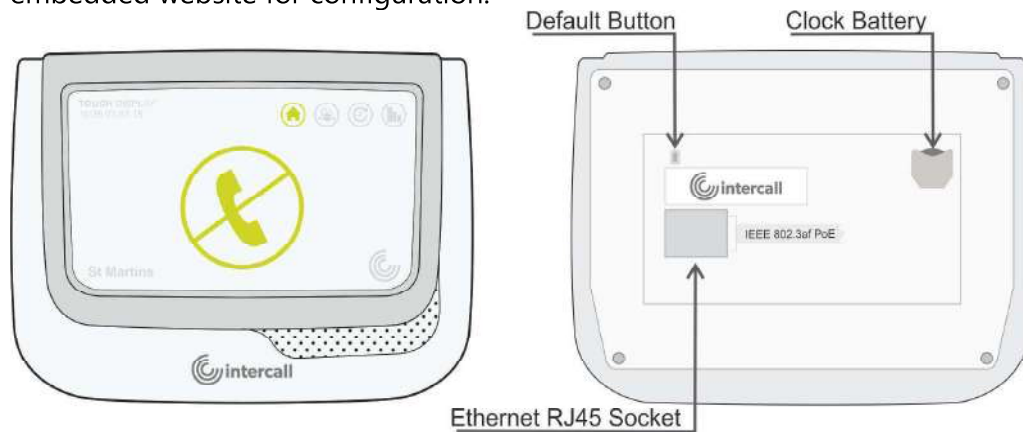
The default button is used to return the unit to the factory configuration. All user data will be erased and the device will return to the factory default IP Address of 192.168.0.192.

3.25.3 Size and Weight

The unit is supplied in a surface mounting self contained enclosure Size: W95 x H115 x D50mm Weight: 170g.

3.26 948 Touch Display

The Touch Display is a PoE (Power-Over-Ethernet) device and simply connects to the Local Area Network via a copper Ethernet RJ45 socket and features an embedded website for configuration.



3.26.1 Ethernet POE

This unit simply requires a connection to the POE Local Area Network using the RJ45 socket. Deriving power from POE, it is compliant with IEEE802.3af as a Class 0 device.

3.26.2 Default Button

The default button is used to return the unit to the factory configuration (Including LAN settings) and to perform the touch screen calibration routines. Warning all user settings will be erased and you will need to perform a touch screen calibration once the unit is defaulted.

3.26.3 Clock Battery

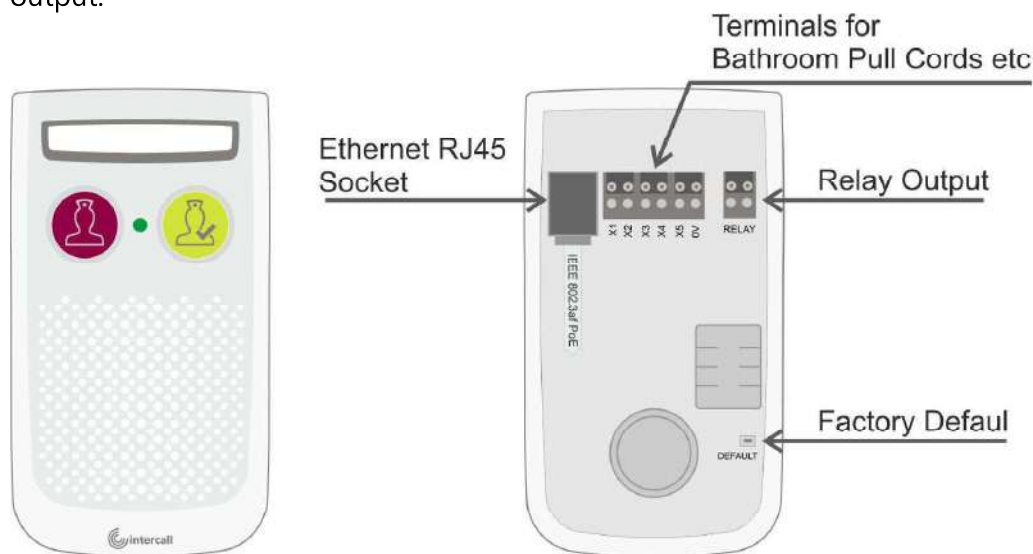
The on-board clock/calendar is supported by a 3V lithium coin cell.

3.26.4 Size and Weight

The unit is supplied in a surface mounting self contained enclosure measuring; Width (Max)202mm x Height (Max)158mm x Depth(Max) 45mm.

3.27 952 Call Point Plus

The Call Point Plus is a PoE (Power-Over-Ethernet) device, and simply connects to the Local Area Network via a copper Ethernet RJ45 socket and features an embedded website for configuration. Terminals are also provided for Bathroom Pull Cords etc and the unit contains a programmable volt free relay output.



3.27.1 Ethernet POE

This unit simply requires a connection to the POE Local Area Network using the RJ45 socket, Deriving power from POE, it is compliant with IEEE802.3af as a Class 0 device.

3.27.2 X1 Terminal

Input Terminal, factory configured for "X1 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.27.3 X2 Terminal

Input Terminal, factory configured for "X2 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.27.4 X3 Terminal

Input Terminal, factory configured for "X3 Call" designed for a Bathroom Pull Cord generating a patient level call. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input.

3.27.5 X4 Terminal

Input Terminal, factory configured for "Toilet Call" designed for a Bathroom Pull Cord. The terminal also drives the LED in the Bathroom Pull Cord. Caution only one Bathroom Pull Cord can be connected to this input

3.27.6 X5 Terminal

Input terminal factory configured for "Door Alarm", a normally open contact between this terminal and the 0V terminal. There is no LED output configured on this terminal by default.

3.27.7 Relay Terminals

Volt Free relay output which may be programmed to be active on any Event.
Caution: Solid state relay, Contacts On-Resistance; 1-10 Ohms, Contact Rating; Maximum 24Volts DC 200mA (0,2A) **Important:** Do not exceed rating and Always protect against back EMF when switching inductive loads such as Mag-Locks.

3.27.8 Default Button

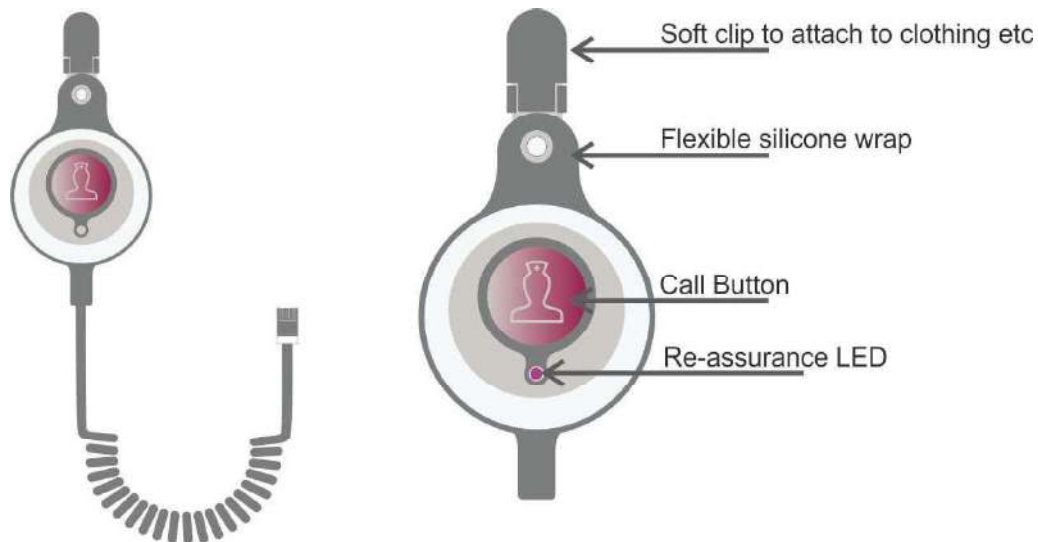
The default button is used to return the unit to the factory configuration. All user data will be erased and the device will return to the factory default IP Address of 192.168.0.192.

3.27.9 Size and Weights

The unit is supplied in a surface mounting self contained enclosure measuring; Width (Max)105mm x Height (Max)185mm x Depth(Max) 35mm.

3.28 972 Pear Lead

The Pear Lead plugs into the Call Point to allow a call to be made away from the Call Point.



3.28.1 Cable

The Pear Lead comes complete with a 3M extend-able cable with anti-bacterial properties.

3.28.2 Connector

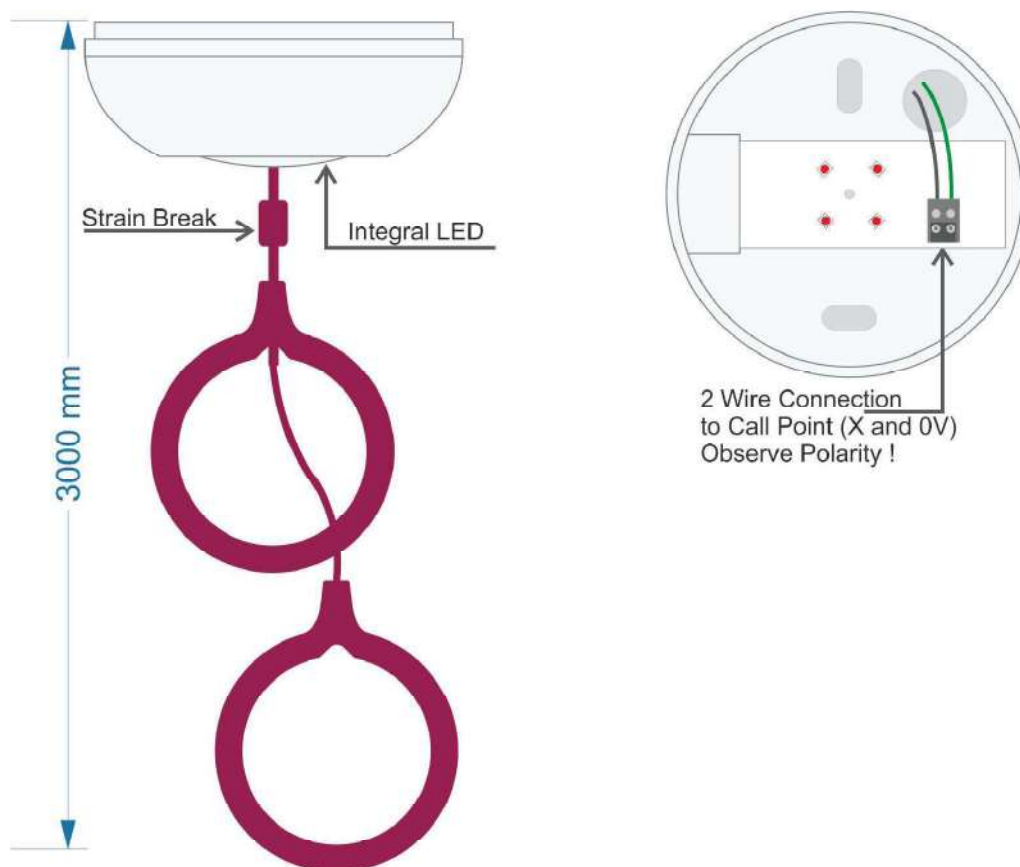
The cable is terminated with an RJ10 plug. **Caution** The Intercall Touch Pear Lead is not compatible with closing contact systems.

3.28.3 Technical Spec

Sealed to IP54. Operational Voltage 5VDC Current Draw <3mA. **Caution** The Intercall Touch Pear Lead is not compatible with closing contact systems.

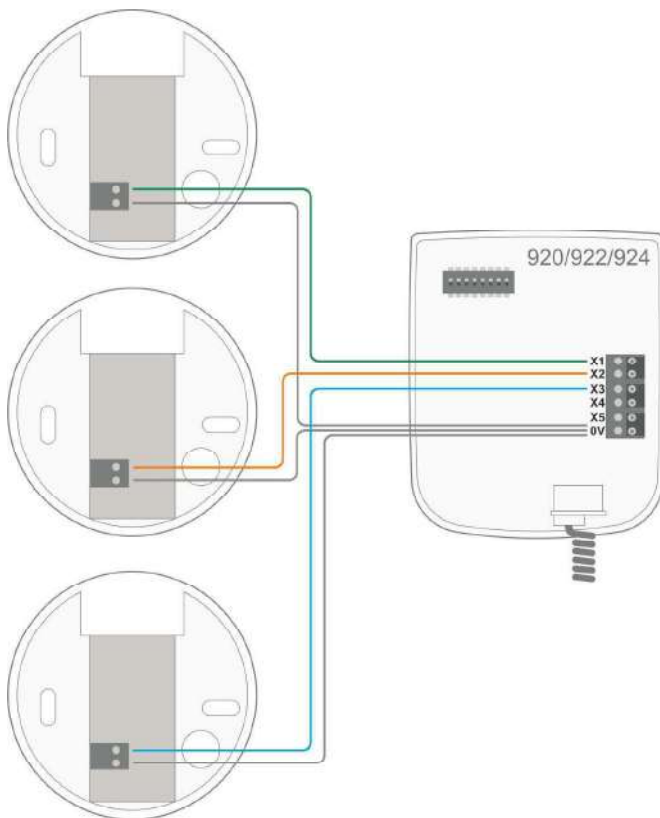
3.29 973 Bathroom Pull Cord

The Bathroom Pull Cord is supplied in a self contained enclosure which is fixed to the ceiling or suitable surface. The unit is designed to operate in the horizontal plane as shown. The unit features antibacterial pull with cord, together with integral Re-assurance LED. The maximum length of the cord and pull is 3000mm.



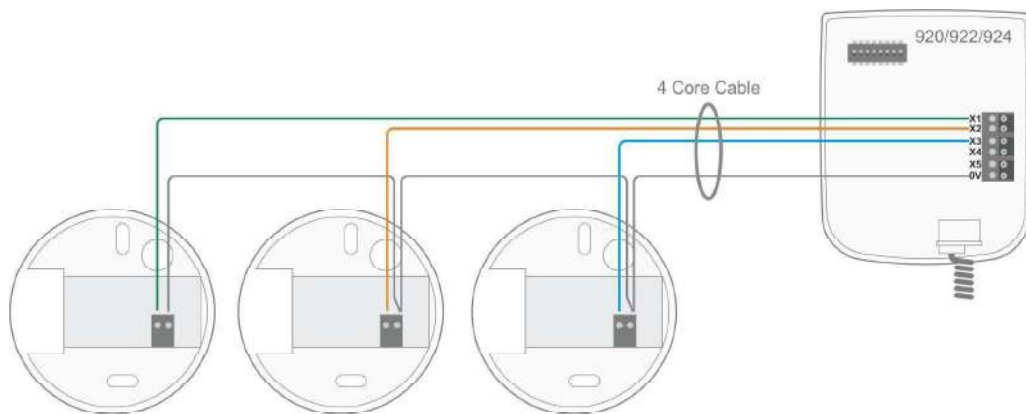
3.29.1 Connection to Call Point

The Bathroom Pull Cord connects to the call point using a two wire connection with one Bathroom Pull Cord connected to each Call Point X terminal. The diagram below shows three bathroom pull cords connected to a single call point. **Caution:** The maximum cable length between the call point and the bathroom pull cord is 10metres.



3.29.2 Connection to Call Point using 4 core cable

The Bathroom Pull Cord connects to the call point using a two wire connection. The diagram below shows three bathroom pull cords connected to a single call point using a single 4 core cable. **Caution:** The maximum cable length between the call point and the bathroom pull cord is 10metres.

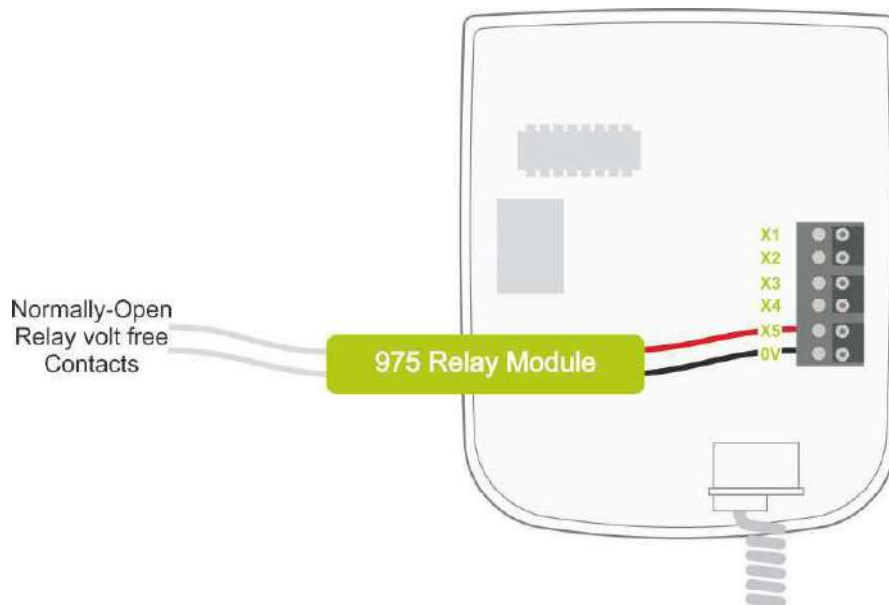


3.29.3 Size and Weights

The unit is supplied in a surface mounting self contained enclosure Size: Diameter 105 x H45mm. Weight 120g. The unit is designed to operate in the vertical plane only.

3.30 975 Relay Module

The 975 Relay Module is used to convert the X output from the Touch Devices into a volt free relay contact. A 975 can be used to operate LED lighting, Lock Releases or drive a contactor for switching mains powered lighting. Below we show a typical installation with the X5 terminal programmed to control a bed light.



3.30.1 Connections

The 975 is fitted with four trailing wires. The Red wire connects to the call point X terminal and the black wire connects to the call point 0V. The White wires are the volt free normally open relay contacts.



3.30.2 Relay Rating

Volt Free relay output Maximum 24Volts DC @ 1 Amp. **Caution:** Solid state relay, Contacts On-Resistance; 1-10 Ohms. **Important:** Always protect against back EMF when switching inductive loads such as Mag-Locks.

3.30.3 Status LED

The 975 is fitted with a green status LED which lights when the relay is activated.

3.31 982 Wearable Callpoint

The Wearable Call Point is operated in the same way as the Pear Lead.



3.31.1 Ingress Protection

The Wearable Call Point is protected to IPX4, it is protected against splashing water from all directions. It is not suitable for use in a shower or water immersion.

3.31.2 Size and Weight

Diameter 50mm Height 8.7mm Weight 150g including battery.

3.31.3 Operating Frequency

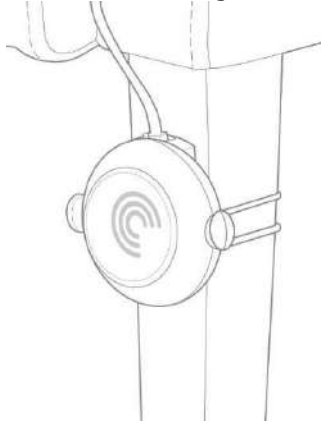
The unit operating frequency is 868MHz

3.31.4 Replacement Battery

The unit is powered from a non-rechargeable lithium 'Coin Cell' battery 3V type CR2477.

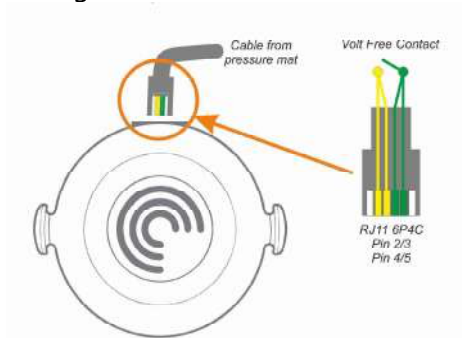
3.32 980 Accessory Transmitter

The Accessory Transmitter is used to wirelessly connect a pressure mat (or any closing contact device) to the Intercall Touch System. The unit remains in the room, exclusively programmed to the call point in the room. It should be fixed to furniture using the silicon band provided.



3.32.1 Connections

The Accessory Transmitter is fitted with an RJ11 type connection which accepts a closing contact. The Connector has four connections and the contacts are arranged as shown below.



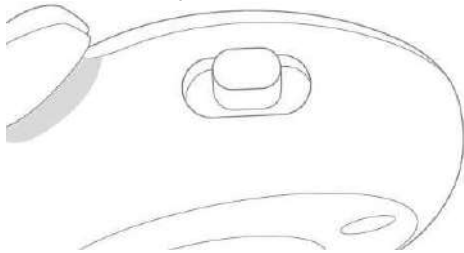
3.32.2 Slide Switch

The Accessory Transmitter features a three position switch located on the side of the unit. The switch has three positions; centre OFF, *Normal Mode* and *Reverse Mode*.



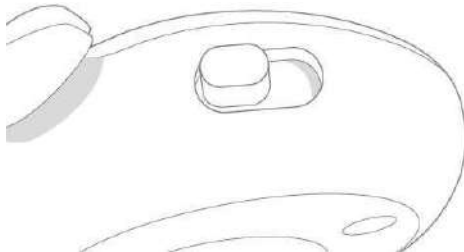
3.32.3 Off Position

In the centre position the device is switched off.



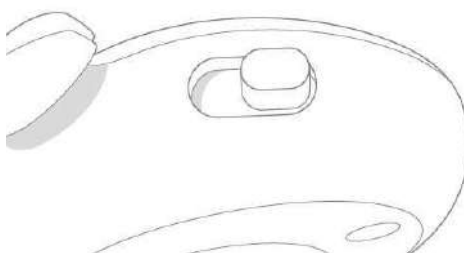
3.32.4 Normal Mode

When the contact closes, the unit transmits and sends a signal to the call point. Opening the contact has no effect. For Normal mode, slide the switch to the left.



3.32.5 Reverse Mode

When the contact opens, the unit transmits and sends a signal to the call point. Closing the contact has no effect. For Reverse mode, slide the switch to the right.



3.32.6 Ingress Protection

The Accessory Transmitter is not designed to be exposed to moisture of any kind and carries no protection rating (IPXX) The unit should be kept away from the floor and fixed to furniture using the silicon band provided.

3.32.7 Size and Weight

Diameter 83mm (*max*) Height 26mm (*max*) Weight 50g including battery.

3.32.8 Operating Frequency

The unit operating frequency is 868MHz

3.32.9 Replacement Battery

The unit is powered from a non-rechargeable lithium 'Coin Cell' battery 3V type CR2477.