

Rentokil



Connect Control Panel Instruction Manual

**Relates to: Connect Control Panel 2G R868 - 304769
Connect Control Panel 3G R915 - 304768
Connect Control Panel 4G R915 - 304906
Connect Control Panel LTE-M 868 - 305104
Connect Control Panel LTE-M 915 - 305103**

This manual is based on the latest information and is provided subject to alteration. We reserve the right to change the construction and/or configuration of the product and versions at any time without obligation.

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Introduction

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Introduction

Safety Instructions

- This product is intended for indoor use only.
- Only use the power supply that is supplied with the product.
- Do not use the device if it is damaged.
- Only trained personnel should open the device.
- Do not expose the device to corrosive liquids.
- Do not use this device near to water sources.
- This device contains Radio Emitting devices and should not be used near to life support systems.

Note:

- A.** If the equipment is used in a manner not specified by the manufacturer then the protection provided by the equipment may be impaired.
- B.** Save these instructions.

System Overview

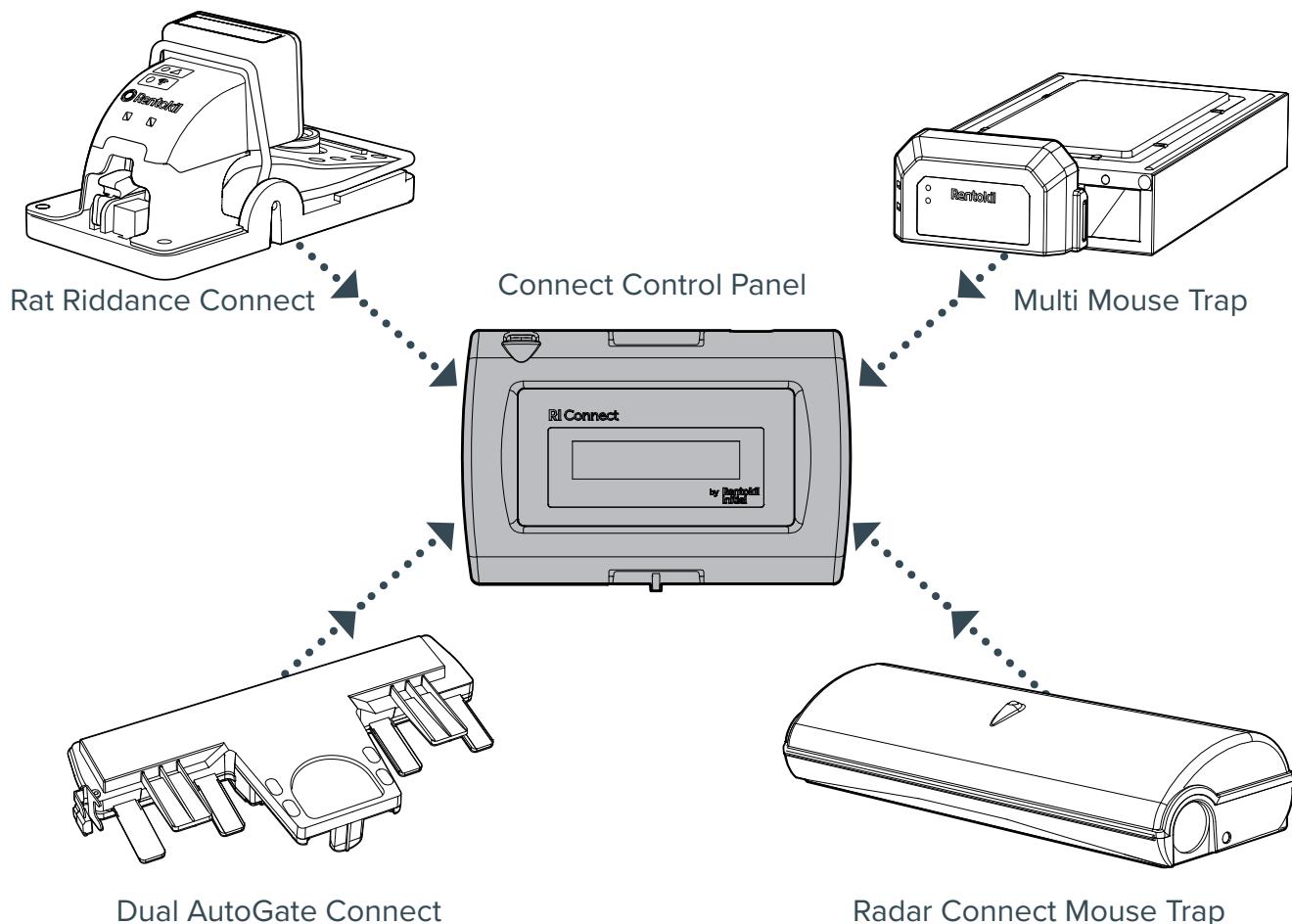
Pest Connect System

Pest Connect is a system that enables remote monitoring of devices. Data from sensors is sent to a Connect Control Panel which establishes a secure connection to a central server where the data is entered into a database.

Typical sensors that are used in the Pest Connect system are the Radar Connect Mouse Trap and the AutoGate Connect, shown below in **Figure 1**.

A typical installation will have many sensors communicating to the Connect Control Panel and a single control panel can manage up to 300 sensors. Where necessary multiple Control Panels could be deployed onto a site and up to 8 co-located control panels are permitted. In such a system if the sensors fail to connect to the Control Panel they will scan for alternative Control Panels to ensure high levels of connectivity.

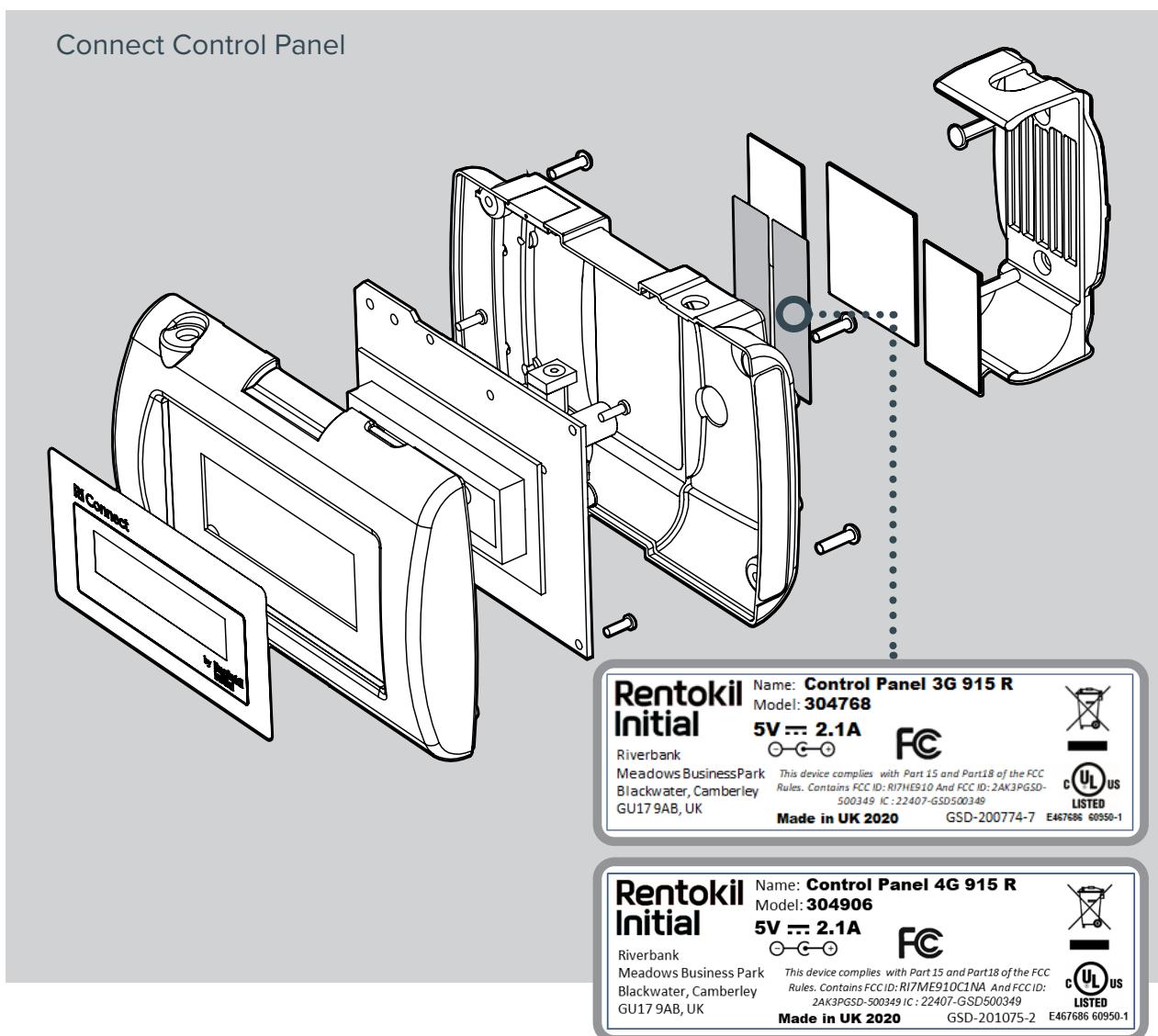
Figure 1: Connect System Compatible Sensors



System Overview (Continued)

Connect Control Panel

The control panel is the hub of the on-site installed system as all the data from the sensors is collected here. The Control Panel passes the information onto Rentokil's system servers using mobile data technology. Every significant event is communicated to the servers, together with hourly 'health check' reports, and daily sensor reports. The Control Panel also monitors for devices which fail to make contact for a significant time and reports these to the Rentokil servers to enable further action to be taken.

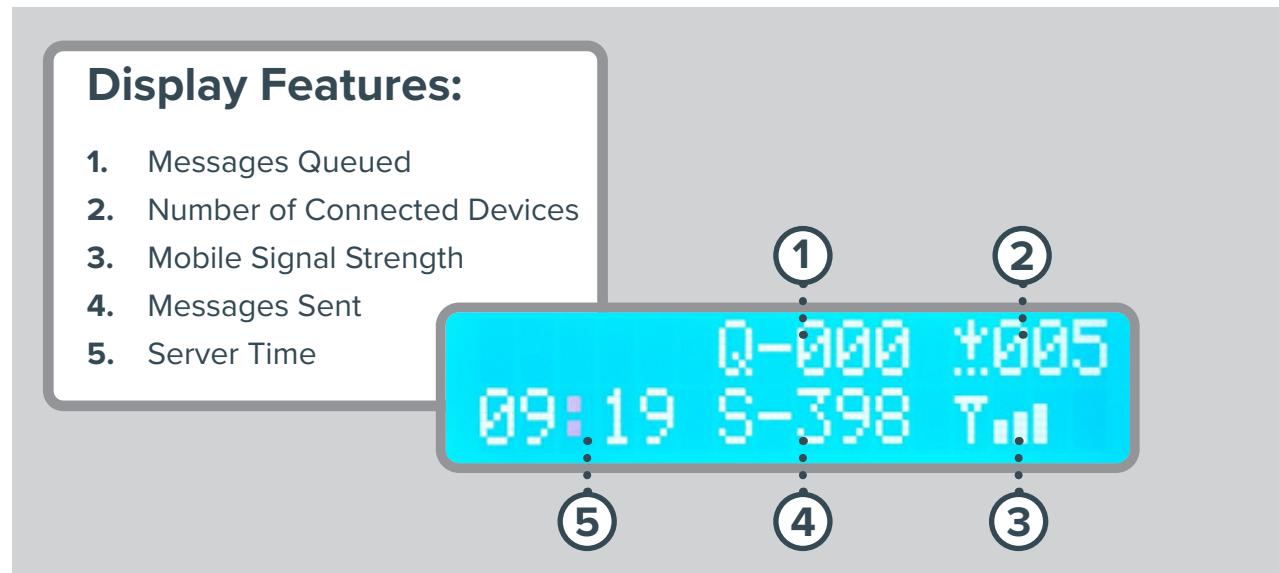


Sample Product Labels

The Control Panel display shows a number of areas of information that show the current status of the system. These are useful for providing confidence that all devices are connected and can aid limited diagnostics onsite. The parameters displayed are shown in **1. Screen Features** on the following page.

Using the Interface

1. Screen Features



Feature Descriptions:

The module features a number of switch sensors which detect the trap status:

Item 1. Messages Queued

This is the number of messages from the sensors that are waiting to be sent to the server. An attempt to send the messages to the server is made every minute. After three attempts if the Control Panel could not connect to the server it will not make any further attempts to contact the server for one hour. Messages received during this hour will be entered on the queue.

Item 2. Number of Connected Devices

This is the number of sensors that are connected to the Control panel. The Control Panel will expect regular data from these devices. If the sensors fail to connect for 3 hours then this number will decrease.

Item 3. Mobile Signal Strength

This is an indicative value of the strength of the mobile signal. If there is no connection then the telephone symbol will be flashing.

Item 4. Messages Sent

This is the number of messages from the sensors that have been sent to the server. NOTE: If more than 1000 messages have been sent then the S- will become S+ in this field.

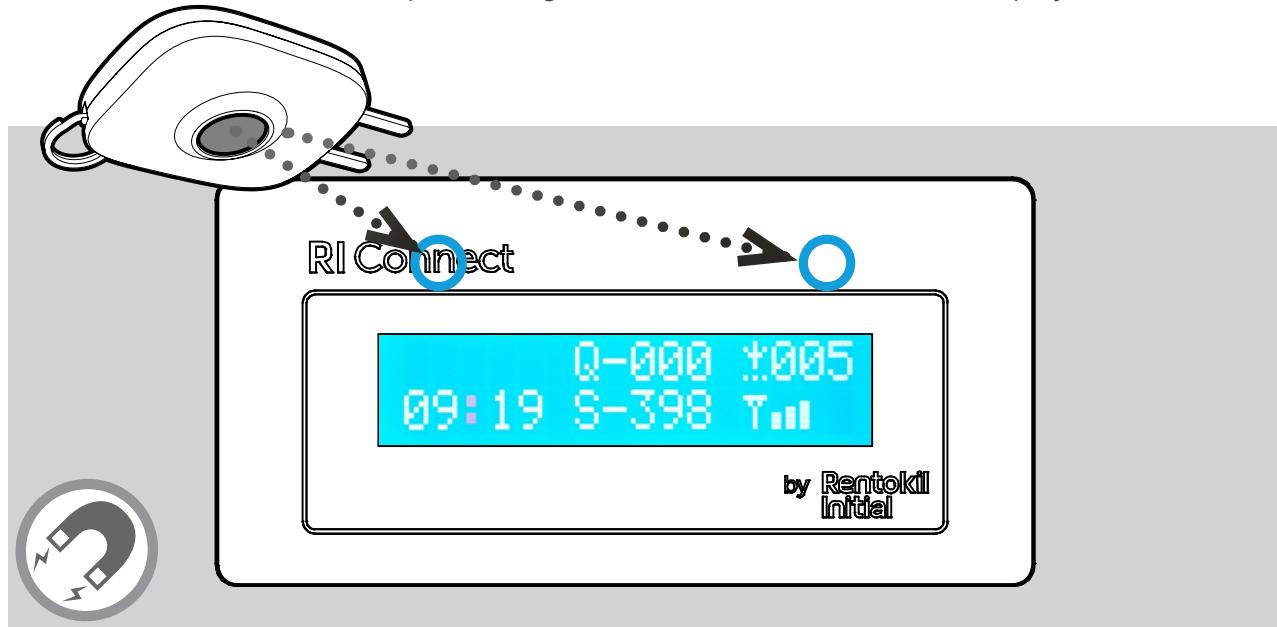
Item 5. Server Time

This is always set to Greenwich Mean Time (GMT+00) and so does not change for daylight saving time.

Using the Interface (Continued)

2. Diagnostic Screen

Using the magnet on the service key it is possible to display the diagnostic screen on the Control Panel. Swipe the magnet on the left hand side of the display.



- (A)  By swiping the magnet over the left hand point (shown above) the diagnostic screen will be shown. This shows firmware versions and the RF network region.
- (B)  The MCC shows the country that the SIM card connected to and the RGN shows the radio region scheme that was used.
- (C)  Additional swipes on the left hand point will move to the next screen in the menu. If you swipe over the right hand point this would send a Network Status report to the server.
- (D)  Similarly, swiping on the left hand point will bring up the next menu and swiping the right will send the Control Panel report to the server.
- (E)  Once the right hand point has been activated, it will indicate that it is indeed sending the report.

Installation Instructions

1. Network Coverage

Before fixing the Control Panel to the wall it is important to verify that the location has suitable mobile network coverage. Power up the unit and then temporarily place (or hold) the Panel in the desired location.

2. Connecting the Device

When you first power up the unit you will see that the time in the bottom left of the display is 00:00. Within 5 minutes the time is updated to show the server time (Note: The server time is Greenwich Mean Time and so will not necessarily correspond to local time). This means that the Control Panel has successfully made contact with the Rentokil server. The reception strength bars on the bottom right of the display are shown and if the Control Panel is correctly located then this should show 3 or more bars. If the time is not updated or the Signal Strength indicator shows less than 3 bars, then you should investigate alternative locations for the Panel. Note: if the Control Panel does not update the time within 5 minutes of being powered on then no further attempts to connect with the server will be made for 1 hour. During a setup phase if power is removed from the Control Panel and re-applied then another sequence of 5 minute attempts will occur.

3. Mounting Preparation

Having successfully selected a location and proved that the signal is good, the bracket can be mounted to the wall (as shown in the next section), the Control Panel is attached and then powered up. Once the time has updated you are ready to proceed with the installation of the system (please refer to the equipment manuals for the devices that are being installed for more details).

NOTE: There are a number of error messages that can be displayed when the panel is first connecting to the server, this often occurs when a Control Panel is connecting via a new network, the Panel will continue to try to connect, so these messages may clear after a short while. If they are still showing after 10 minutes then you should restart the Panel. If the messages continue to show for 5 minutes a second time, then you should refer to your PestConnect system contact.

Installation Instructions (Continued)

4. Mounting the Wall Bracket

Once the best position for mounting the control panel is decided, mount the bracket to the wall. Mark the position of the bracket holes on the wall (57mm between Ø4mm hole centres, see **Figure 2**). Drill the appropriate holes to mount the bracket. Care should be taken to avoid any hazards when drilling.

5. Mounting the Control Panel

The Connect Control Panel is mounted to the bracket by firstly locating the top edge of the Control Panel into the wall bracket and then pushing the bottom edge into place (see **Figure 3**).

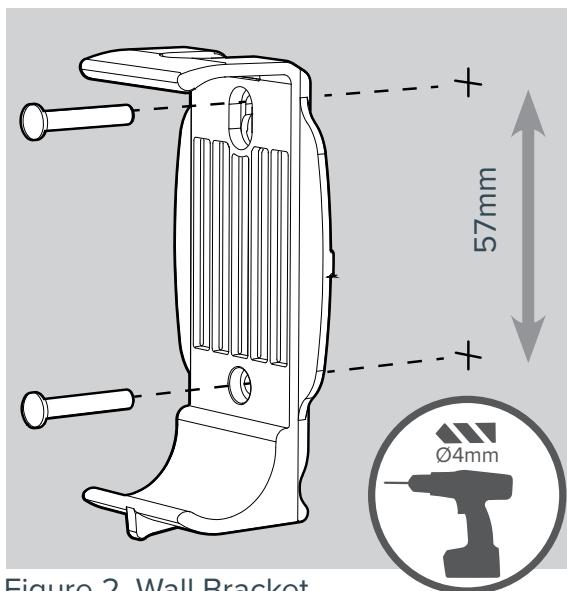


Figure 2. Wall Bracket

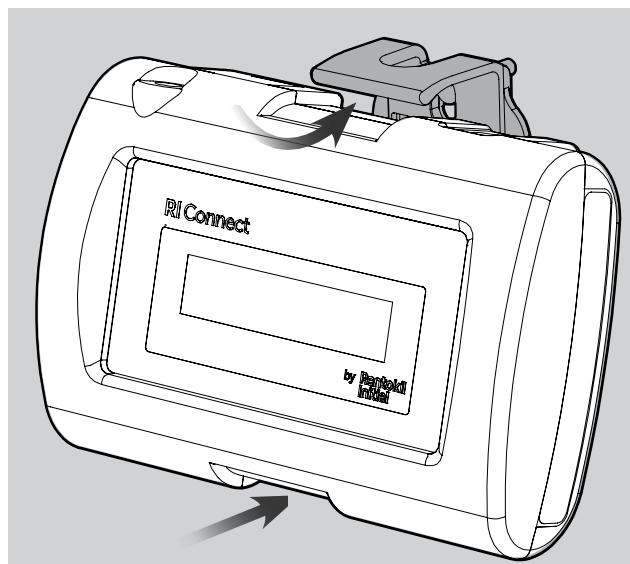


Figure 3. Mounting to Wall Bracket

Installation Instructions (Continued)

6. Preparing the Extended Antenna

The extended antenna that is supplied has a 3m (~9ft) cable and should always be mounted at a distance greater than 30cm from the enclosure (**Figure 6**). The antenna is simply attached to a surface with adhesive tape as shown below (**Figure 4**).

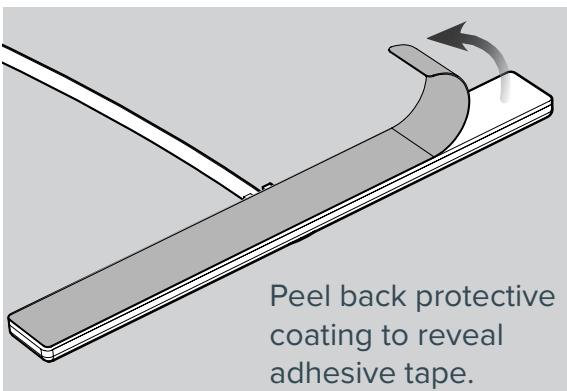


Figure 4. Adhesive Tape

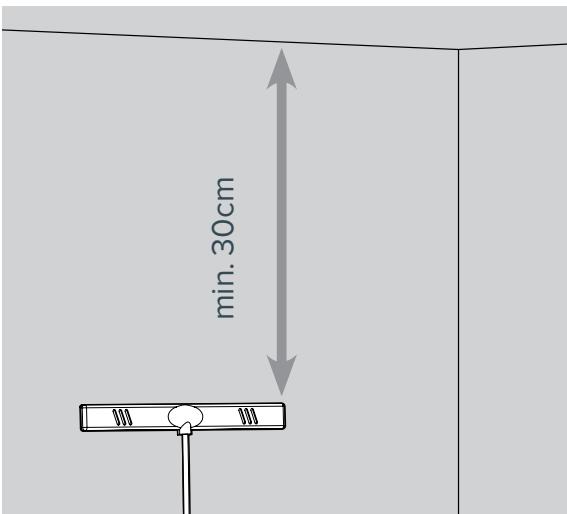


Figure 5. Distance from Ceiling

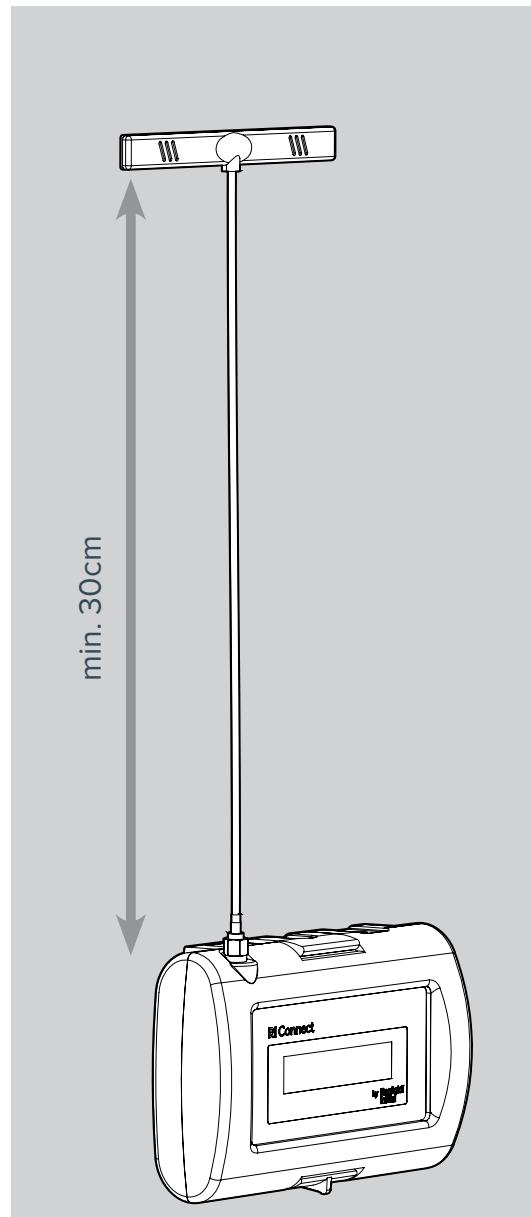


Figure 6. Distance from Enclosure

7. Mounting the Extended Antenna

The antenna should be mounted as high as possible but at least 30cm from the ceiling (**Figure 5**). It is also advisable to avoid mounting the antenna near to metal shelving or cabinets as this will attenuate the signals.

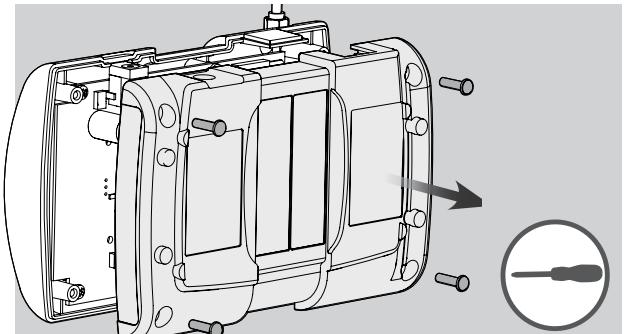
To obtain the best possible signal strength the antenna should be stuck to a non-conductive surface such as glass or wood. If the surface is metallic then ensure that there is a spacer of at least 5cm from the surface.

Inserting the SIM

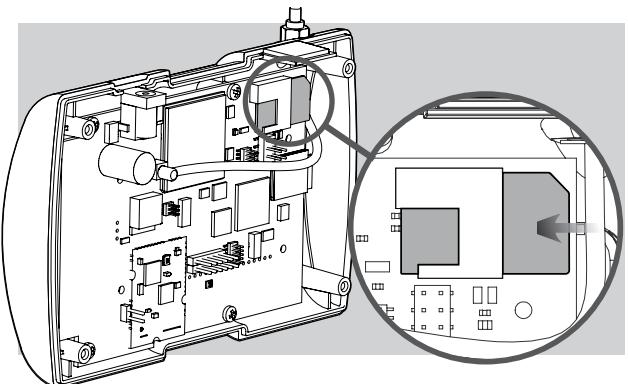
The LongReach Control Panels are supplied with a global SIM card but if the SIM card needs to be replaced then follow the following steps:

1 Ensure that the Control Panel is unplugged from the power supply.

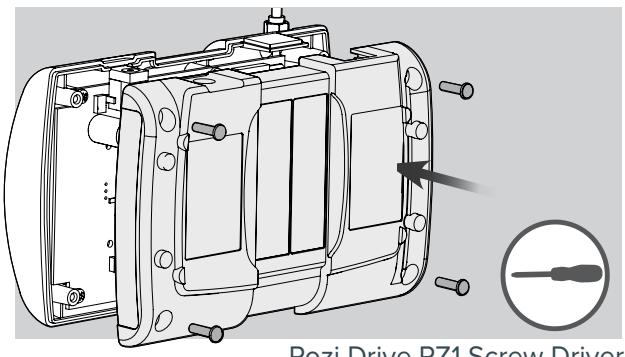
2 Open the Control Panel by unscrewing the 4 screws. Take care when the enclosure is open to not detach the antenna connector from the board.



3 Insert your SIM card into the slot as shown. The SIM card should be inserted with the gold contacts facing the front of the Control Panel, and with the cut-off corner outermost. **IMPORTANT:** Note the SIM card number and Control Panel barcode to report to the System Administrator.



4 Once you have inserted the SIM close up the Control Panel and re-tighten the screws.



NOTE: The correct APN details for the particular SIM card will need to be written to a file on the microSD card. Please contact central support for assistance with this.

Further Information

Technical Details

Power Supply	
Input Rating	110-240V AC 50-60Hz 0.35A
Output Rating	5V DC 2.1A current limited
Protection	Over Voltage: Output voltage clamped by internal Short Circuit: Output shutdown and auto restart Temperature: No ignition, smoke or deformation of the case
Interfaces	
Local Area Network (LAN)	868-928MHz depending on local approvals Rentokil Initial Proprietary Application Layer Protocol
Wider Area Network (WAN)	
Connect Control Panel 2G	4 Band GSM/GPRS/EDGE: 850.900.1800.1900MHz
Connect Control Panel 3G	Dual UMTS/HSDPA 900/1200 MHz with GSM/GPRS/EDGE 900/1800MHz
Connect Control Panel 4G	B2 (1900MHz), B4 (AWS1700MHz), B12 (700MHz)
Connect Control Panel LTE-M	B1(2100MHz), B2(1900MHz), B3(1800MHz), B4(AWS1700MHz), B5(850MHz), B8(900MHz), B12(700MHz), B13(700MHz), B18(800MHz), B19(800MHz), B20(800MHz), B26(850MHz), B28(700MHz)
WAN Antenna	
Gain	Moulded Antenna - T Bar GSM/GPRS/3G 2.5m cable SMA male - 2.15 dBi
Polarisation	Vertical
Connectivity	
Max. Number of Devices	300
Logging Capability	
Server Time Synchronisation	+500ms accuracy on the real time clock
Event Driven Logging	Capacity for 125 records of time tagged readings
SD Card-Long Term Audit Trail	

Further Information

Technical Details Continued...

Physical	
Dimensions	145mm x 95mm x 40mm
Weight	256g
Material	C130,7030 Acrylonitrile Butadiene Styrene/Polycarbonate (ABS/PC)
Operating Temperature	0°C to + 40°C
Environmental Rating	IP21
Mounting	Screw mounted with bracket - fixings enclosed

This product contains the LongReach radio module :

FCC ID: 2AK3PGSD-500349

IC: 22407-GSD500349

These will be shown on the approval label attached to the product.

FCC Warning Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Further Information

FCC Warning Statement Continued...

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

IC Warning Statement

ISED warning statement:

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Le dispositif est conforme aux limites d'exposition au rayonnement ci fixées pour un environnement non contrôlé. La distance minimale entre le radiateur et votre corps doit être de 20 cm lors de l'installation et du fonctionnement de cet appareil.

Further Information

Troubleshooting (Screen Messages)

Message	Meaning	Possible Cause
No SIM Card	Control panel cannot identify the SIM.	<ul style="list-style-type: none">• SIM inserted wrong way round or upside-down - check and re-insert.• SIM contacts dirty – try cleaning with eraser.• SIM faulty – try SIM in another communication device to check that it works correctly.
No Signal	The modem cannot detect a signal from the mobile network.	<ul style="list-style-type: none">• Antenna not fitted, or not screwed on fully.• Control Panel location does not have sufficient mobile network reception – try alternative locations (check other communication devices on the same network to see if they show signal).• Mobile network isn't working – try mobile phone on the same network to check this.• Faulty antenna – try another antenna if you have one.• Fault on the board – return to factory.
GPRS Fail	The modem can detect a network, but cannot connect to it.	<ul style="list-style-type: none">• Network problem - the Control Panel will automatically try to connect again. If this is still a problem after 5 minutes then try restarting the Control Panel.• SIM not authorised for data access – verify that the SIM has been enabled by the network provider. You could try the SIM in another communications device and try connecting to the internet to prove data is enabled.
Modem Fail	The Control Panel software is getting no response from the internal modem.	

Further Information

Troubleshooting (Connectivity)

Problems with connection to the Control Panel from Sensors are very rare. Connection issues are typically only related to low signal strength caused by obstructions in the Radio path. It is useful for the installer to understand the type of obstructions that can cause issues, although radio waves are very complex and sometimes work contrary to initial expectations, so the best method is to try it out.

Example	Solution
1. Warehouse area with large, closely stocked produce containers.	<p>Radio frequencies can easily be absorbed by buildings and stock, so it is worth considering this when installing the system. In particular, large, densely stored containers of produce (especially fine product such as grain or nuts) can reduce signals very quickly if you try to go through them.</p> <p>Finally be aware of empty racking when installing the system. What is empty today might not be tomorrow! This is where the technician's knowledge of the site can be very useful.</p>
2. Metalwork.	<p>Metal reflects radio signals, so often helps bounce the radio waves around. However, radio doesn't like going through metal, especially if the metal is continuous.</p> <p>A chilled storage area on one site showed much lower signal levels, because the foil coated insulation reduced the signal significantly, compared to those even just outside the room. The solution here was to move the control panel nearer to the effected area. In an extremely bad situation it may be necessary to add an additional control panel. Fixing PestConnect units to metalwork, electrical conduit or cable tray can reduce effectiveness of the system, so should be avoided if possible; ideally units should be at least 20cm clear of such objects.</p>
3. Adjacent Systems.	<p>Multiple Pestconnect systems will work perfectly well next to each other, and it is possible for many systems to be present on a single site. In many instances it can lead to a more robust system.</p> <p>It is important to remember that radio waves do not respect building boundaries. Just because a system is all set up in one building won't mean that it will connect that way. An example of this can be where the end sensors of two systems in separate buildings end up very close to one another. This can then provide a link between the units in both building.</p> <p>Equally the units don't have to be physically close. A sensor installed at the edge on a warehouse could quite likely find a better signal strength from a control panel in a building 200m away across an open courtyard or car park than it can get from the control panel in the same building 50m away the other side of several rows of fully stocked racking.</p> <p>Fortunately this doesn't matter, because each sensor is uniquely identifiable and registered to its location, so its data will correctly appear in the server, no matter which route or Control Panel it used to do this.</p>



Why Choose Rentokil?

Rentokil is the global leader in pest control, bringing expert, reliable and professional service to commercial and residential customers in over 60 countries worldwide. As the experts in pest control, we work closely with you to:

Give you peace of mind.

With over 12,000 qualified technicians worldwide, we have extensive experience across a wide range of industry sectors. Our experts work proactively in partnership with you to minimise the threat of pest infestations in your business.

Safeguard your reputation

We take a dual approach, incorporating both preventative and responsive strategies to enhance protection for your business through a consistent, continuous pest control programme.

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