

PERMACONN PM24

Installation Manual



PERMACONN™

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Introduction

The Permaconn system provides two-way communication between supervised premises and the Monitoring Centre. The PM24 is a versatile state of the art microprocessor based LTE CAT M1 security communicator. This unit can interface with a range of alarm panels using serial or Contact ID.

- The Permaconn PM24 reports Contact ID events on the CAT M1 network.
- The Permaconn PM24 polls according to the registered fault recognition time.

Features of the Permaconn PM24

- Three (3) Outputs
- Contact ID reporting through Alarm Panel Dialler
- High Speed RS232 interface
- Serial interface to Cardax, Concept, Tecom, MCM and Siemens
- Monitors and reports status of alarm panel interface lead
- Non-volatile memory stores all setup information in the event of a power failure
- Single SIM
- Various LED status indicators for easy onsite diagnostics

Data Plan

| Supervisory Period | Single SIM |
|---------------------------|-------------------|
| 12hrs | P2 |
| 1hr | P8 |

Atlas Web Platform



Atlas is a secure web portal that enables users to activate and interrogate their Permaconn communicators remotely for diagnostic and control purposes. This portal can be accessed via the web using any Smartphone, Tablet or PC. We strongly recommend using this application to verify your install. Apply online www.permaconn.com

Installation Procedure

- PM24 must be activated using the Atlas 'App' on your Smartphone, PC or Tablet before applying power. The PM24 will not operate unless it has been activated.
- Place the PM24 housing in the space where you intend to install it. Do not mount the PM24 yet, as it may need to be moved to obtain a better signal strength
- Screw the antenna onto the SMA connector.
- Connect 13.8V DC to power socket. Power is normally obtained from the Alarm Panel. If you are using an independent power supply make sure that you have a common negative.
- 'HB' LED indicates signal strength and if the microprocessor is operating.
 - ◊ Operational + Good Signal = [Green - Blinking]
 - ◊ Operational + Low Signal = [Red - Blinking]
- PM24 can take up to 3 minutes to come online.
- Connection to the cellular network is indicated by the:
"MOBILE" LED = [Green - Steady On]
- Alternatively "Ping" the PM24 using your Atlas 'App'. Signal strength must be better than -93dBm for reliable communications.
- If the signal strength is low you need to reposition the unit or install a high gain antenna.
- A four wire connection is required between the Alarm Panel dialler and the PM24.
 - Option 1:* Plug the original alarm panel dialler lead into the 611 socket on the PM24 to connect the alarm panel.
 - Option 2:* Use a 4 core cable between PM24 and alarm panel dialler terminals.
- 'R' & 'T' as the input and 'R1' & 'T1' as the return line. If the return line is not connected the 'CID' LED = [Red - On] indicating a fault. This lead is also used to monitor the interconnectivity between the Alarm Panel dialler and the PM24.
- The PM24 obtains the Panel ID directly from the Alarm Panel after the first valid contact ID event is sent.
- If a fixed Panel ID is required - inform the Monitoring Centre before activation.

Programming the Alarm Panel

The alarm panel must be programmed with:

- ◇ Contact ID
 - ◇ Tone / DTMF dialling
 - ◇ Four digit Panel ID number
 - ◇ 8 digit telephone number
 - ◇ Arm & Disarm reporting must be enabled. (This is required for the Pocket Secure App)
- Trigger an alarm event or test report from the alarm panel. The panel dialler will seize the line and send data on 'R' & 'T'. The "CID" LED = [Green - Blinking].
 - When a valid Contact ID event is sent from the alarm panel the 'CID' LED = [Green - Steady On].
 - Ping the PM24 using Atlas to verify status of installation.

Antenna Installation

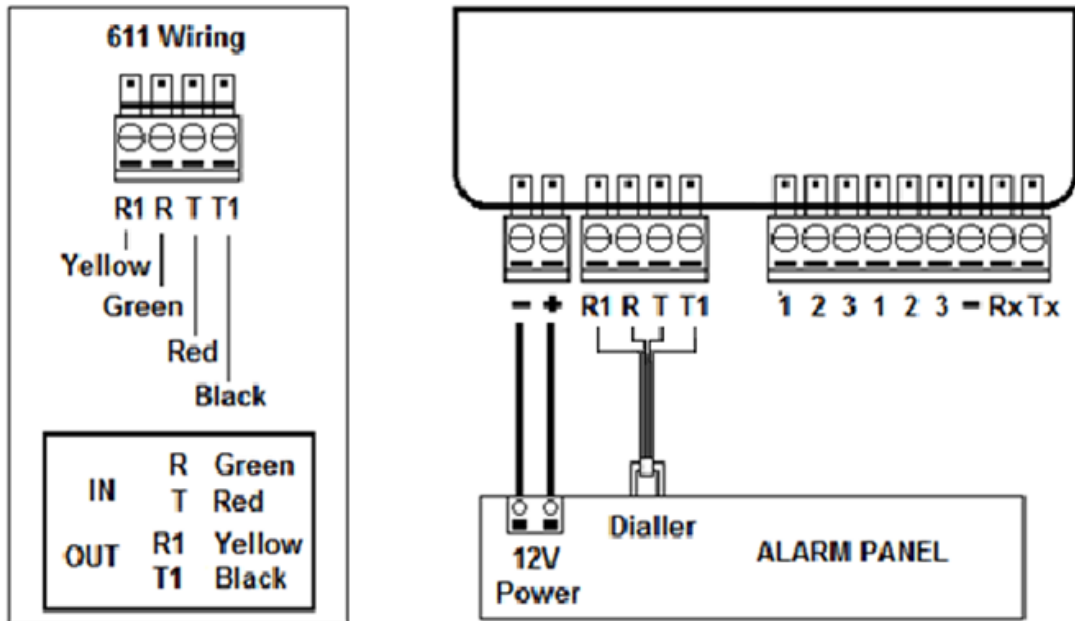
Antennas can have their performance maximised using a "Ground Plane", any metal mounting surface will suffice. Please use the supplied "Ground Plane" plate if you are not mounting this antenna on a metal surface. A significant reduction in performance occurs if an antenna does not have an adequate ground plane.

- If signal strength is low, a high gain aerial may be required. The Permaconn Part N# is '**ANTH3G**'
- Extension cables for the high gain aerial are available

| Length in Meters | Part N# |
|------------------|--------------|
| 3 | EXT3 |
| 5 | EXT5 |
| 10 | EXT10 |

NB: Do not exceed 10 meters.

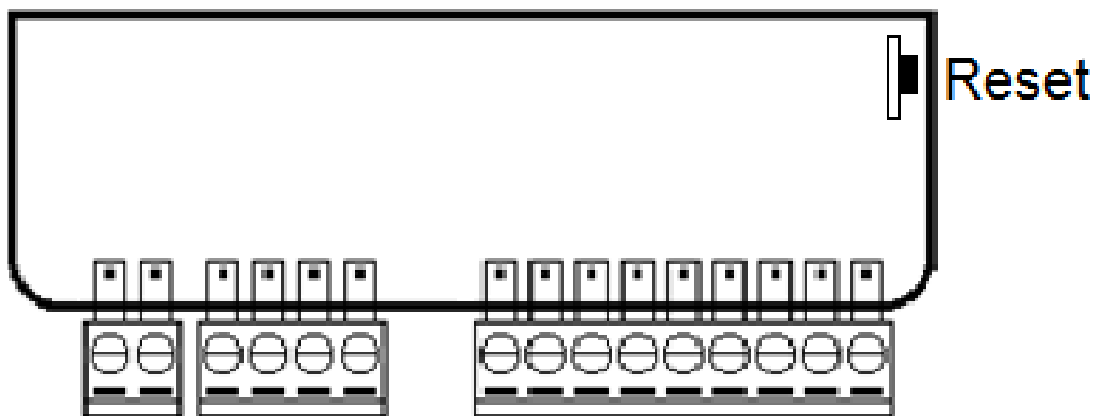
PM24 - Powered from Alarm Panel



Defaulting the PM24

Apply DC power and depress reset button for:

- Three (3) seconds to reset CAT M1 settings.
- Green LEDs will all flash Green together to confirm successful default.



Outputs

There are three (3) outputs available.

- Outputs are 'Open Collector' @50mA switching 12vDC negative—for heavier loads a relay must be used.
- Ensure there is a common negative between the PM24 and the device being switch.
- The outputs can be opened, closed or pulsed using the Atlas web portal
- The output can only be pulsed when using the Pocket Secure App.
- Refer to the technical addendums for detail keyswitch information.
<https://www.permaconn.com / Installer Zone / Technical Addendums>

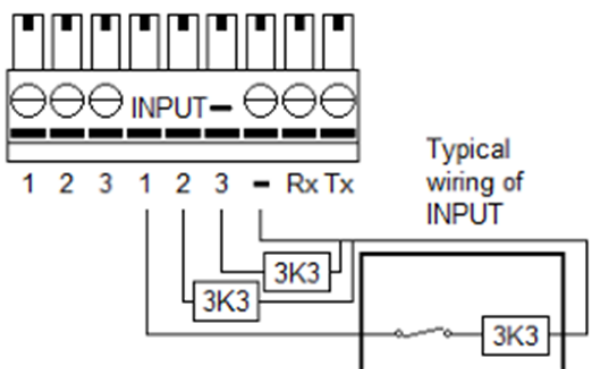


Compatible with 'Pocket Secure' remote control App. Available on the Apple , Google Play and Windows store

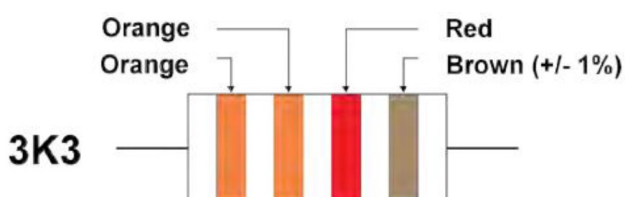
Inputs

- There are three (3) inputs on the PM24
- Inputs are programmed as 24hour Instant Zone types.
- Inputs are sealed with a 3k3Ω resistor if used.

NB: Do not seal inputs if not in use.



| Input | CID | Part | Zone |
|-------|-----|------|------|
| AUX 1 | 140 | 0 | 981 |
| AUX 2 | 140 | 0 | 982 |
| AUX 3 | 140 | 0 | 983 |



EOL resistor colour code for Inputs on the PM24

Serial Interface

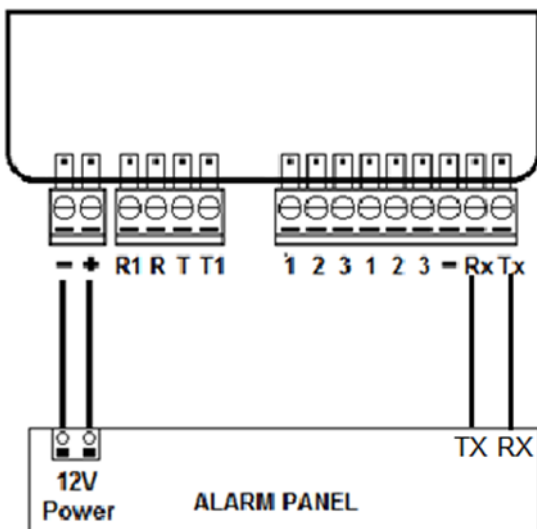
'Serial' MUST be selected on activation otherwise it will not operate.

The PM24 comes standard with Securitel / serial interfaces to suit:

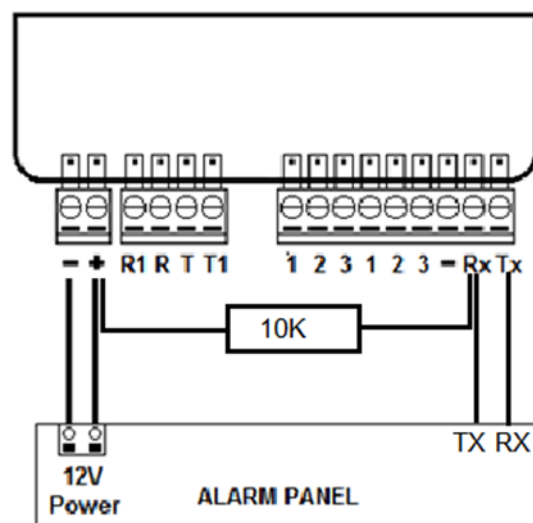
- Tecom
- MCM Icon
- C & K (Sierra STU)
- Siemens
- Cardax / Gallagher (IFM-CDX required)
- Concept (10K resistor must be fitted between +12v and Rx)

Serial LED [Green - Blink] to indicate successful Securitel or serial interface.

Wiring Diagram for Serial Connection



Additional Wiring for Concept STU Connection



Transmission Delay Times

- Messages originating from the Alarm Panel are forwarded immediately.
- Alarm Panel 'Dialler Interface Lead Fail' is sent if not restored within 90 seconds.
- Arm / Disarm reporting may occur at the end of exit delay (Pocket Secure).

LED Status Indicators * *Normal Operation*

| LED | Activity | Indication |
|---------------|------------------|---|
| HB | Green Blinking * | Signal strength OK / Processor OK |
| | Red Blinking | Signal strength LOW or trying to reconnect to network |
| | LED Off | No power |
| Mobile | Green On * | Unit has registered and is online |
| | Red Blinking | Data traffic on Mobile Network |
| Serial | Red Blinking | Data traffic on Serial Interface |
| | Green | Serial Interface OK |
| CID | Green On * | Alarm panel has sent a valid CID event |
| | Red On | Dialler lead not connected (No return line R1&T1) |
| | LED Off | Normal status when panel off hook |
| | Orange | Events sent but R1 & T1 did not restore |



Contact ID Reporting Codes

To comply with AS2201.5 these event IDs must be mapped correctly at the monitoring centre

| PERMACONN CONTACT ID EVENT TEMPLATE | | | |
|-------------------------------------|-----------|------|--|
| Event ID | Partition | Zone | Description |
| 313 | 0 | 954 | Engineering Reset (changed encryption key) No action required. |
| 350 | 0 | 953 | Fail To Communicate – Permaconn experienced trouble sending signals do not expect restore. |
| 352 | 0 | 956 | Dialer Interface Lead Fail – Issue with dialer lead between Permaconn unit and the alarm panel. |
| 356 | 0 | 969 | Permaconn communicator – Cellular network poll fail |
| 356 | 0 | 970 | Permaconn communicator is offline. |
| 140 | 0 | 981 | Auxiliary 1 – Auxiliary input alarm on Permaconn communicator |
| 140 | 0 | 982 | Auxiliary 2 – Auxiliary input alarm on Permaconn communicator. |
| 140 | 0 | 983 | Auxiliary 3 – Auxiliary input alarm on Permaconn communicator. |
| 300 | 0 | 984 | Panel ID Clash— When two (2) Permaconn devices are reporting to the same Control Room on the same line number using the same account number. Check in Atlas for duplicate account number. |

PM24 Specifications

| | |
|------------------------------|---|
| Housing Material | ABS Plastic – Green |
| Dimensions | 108mm (H) x 15.5mm (D) x 80mm (W) |
| Weight | 96g |
| Operating Environment | 0° - 50° @ 15% to 85% humidity (non condensing) |
| Frequency Band | B3, B5, B28 |
| Modem | Quectel BG96 |
| Power | 8-15vDC Terminal or Plug pack (Must be powered from approved supplied) |
| Power Consumption | Standby: 0.04A @ 13.8vDC Transmitting: 0.19A @ 13.8vDC |
| Auxiliary Input | Three (3) 24Hr inputs, state change detected every second. EOL 3.3k |
| Auxiliary Output | Three (3) Open collector outputs @50mA (max). Function control using Atlas web portal and/or 'Pocket Secure' app. |
| Data Security | AES Encryption |
| Serial Interface | High Speed RS232 interface |
| Approvals | EN62311: 2008, AS/NZS 2772.2: 2016, AS/NZS 60950.1:2015, AS/NZS CISPR 22: 2009+A1: 2010 AS/CA S042.4: 2015, AS/NZS 60950. 1:2015 EN 55032: 2015, EN 55024:2010+A1:2015, EN 61000-3-2: 2014, EN 61000-3-3: 2013 ETSI EN 301 489-1 V 2.1.1 (2017-02), Draft ETSI EN 301 489-52 V1.1.0 (2016-11) ETSI EN 301 908-1 V11.1.1(2016-07), ETSI EN 301 908-2 V11.1.1(2016-07) ETSI EN 301 908-1 V11.1.1 (2016-07), ETSI EN 301 908-13 V11.1.1 (2016-07), EN62479: 2010 EN 60950-1:2006+A11:2009+A1:2010+A12: 2011+A2:2013 |

Liability

INSTALLATION MUST BE CARRIED OUT BY SERVICE PERSONNEL ONLY
THE EARTHING TERMINAL ON THE PM24 MUST BE PERMANENTLY CON-
NECTED TO EARTH.

The socket-outlet must be installed near the equipment and easily accessible.

The unit must only be operated with the supplied antenna. Install the PM24 in a loca-
tion that no person[s] is closer than 200 mm to the antenna at all times.

Telephone plugs and connectors must be installed inside the metal enclosure of the
unit. Interconnecting cables must be placed in conduit.

The unit must be installed in accordance with this manual for proper operation.

Standards require regular service by qualified and licensed technicians and regular
testing.

Warning

**ANY LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES IS EX-
PRESSLY DISCLAIMED. RDCCO Pty Ltd AND PERMACONN LIABILITY IN
ALL EVENTS IS LIMITED TO, AND SHALL NOT EXCEED, THE PURCHASE
PRICE PAID.**

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