

PERMACONN PM1048-4G

Install Manual



PERMACONN™

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Introduction

The Permaconn system provides two-way communication between supervised premises and the Monitoring Centre. The PM1048 is a versatile state of the art microprocessor based 4G and IP security communicator. This unit can interface with a range of alarm panels using serial or Contact ID.

- The Permaconn PM1048 reports Contact ID events on the 4G and IP networks with optional PSTN.
- The Permaconn PM1048 polls according to the registered fault recognition time.

Features of the Permaconn PM1048

- Three (3) Inputs and a dedicated box tamper
- Three (3) Outputs
- Contact ID reporting through Alarm panel Dialler
- Up to 14.4K baud Modem for upload / download
- The IP Module acquires an IP address automatically using the customers DHCP service
- Serial interface to Cardax, Concept, Tecom, MCM and Siemens
- Optional DI400 module for PSTN reporting
- IP reporting
- 4G Reporting
- Monitors and reports status of alarm panel interface lead
- Monitors and reports battery status
- Monitors and reports DC power status
- Non volatile memory stores all setup information in the event of a power failure
- Dual Networks – Telstra & Optus 3G & 4G
- 13.8V battery charging circuit
- Various LED status indicators for easy onsite diagnostics

Data Plans

Supervisory Period	Single SIM	Single SIM + IP	Dual SIM	Dual SIM + IP
Class 2 12 Hour	P2			
Class 2+ 1 Hour		P8	P9	
Class 3 120 Seconds		P13	P14	P15
Class 4 60 Seconds			P19	P20
Class 5 20 Seconds				P25

Atlas Web Platform



Atlas is a secure web portal that enables users to activate and interrogate their Permaconn 4G/IP 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

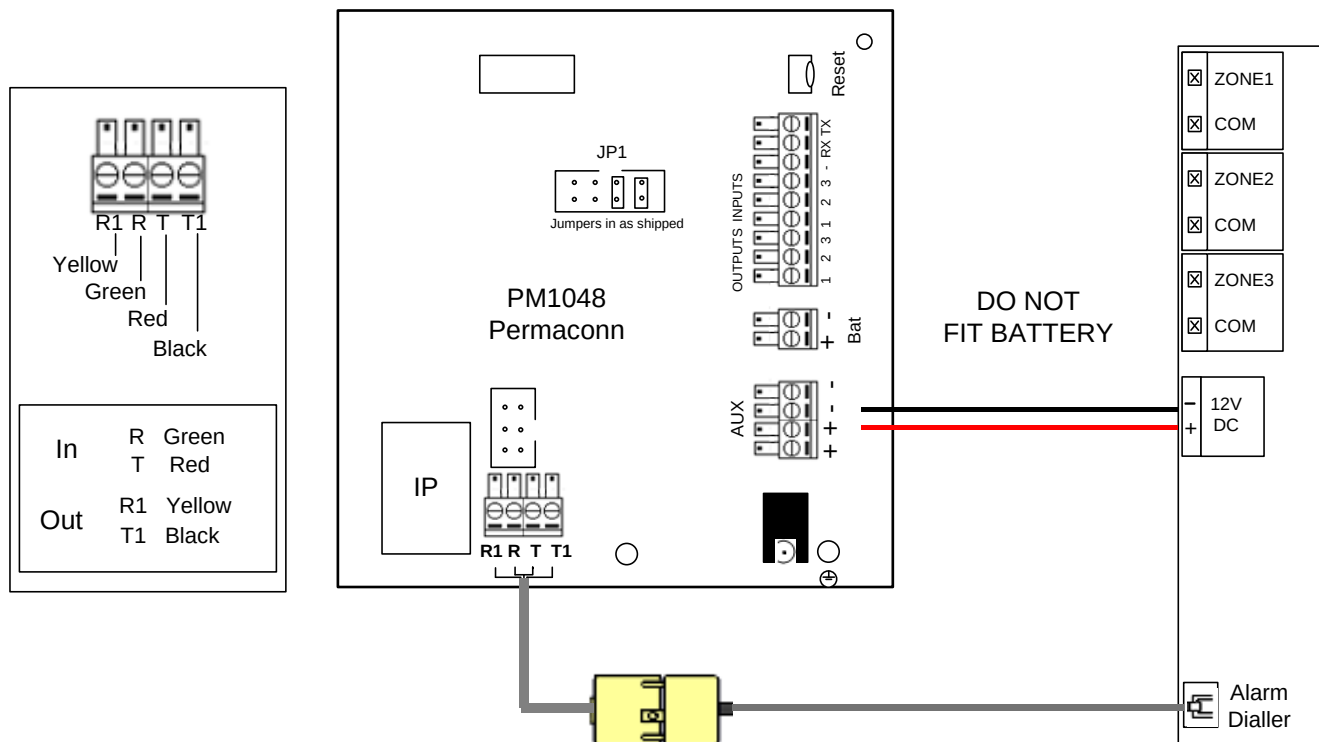
- PM1048 must be activated using the Atlas 'App' on your Smartphone, PC or Tablet before applying power. The PM1048 will not operate unless it has been activated. If a DI400 PSTN interface is being used this module must be selected on activation.
- Place the PM1048 housing in the space where you intend to install it. Do not mount the PM1048 yet, as it may need to be moved to obtain a better signal strength.
- Screw the antenna onto the SMA connector.
- Connect 14.5V DC plug pack (supplied) to power socket.
- A common negative between the alarm panel and the PM1048 is required.
- 'HB' LED indicates signal strength and if the microprocessor is operating.
 - Operational + Good Signal = [Green - Blinking]
 - Operational + Low Signal = [Red - Blinking]
- PM1048 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 PM1048 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.
- Once satisfactory signal strength is obtained, use appropriate fixing screws to secure the housing.
- If you are using the Ethernet path, connect a CAT5 cable between the PM1048 and the local router or network point. Power cycle the PM1048 after connecting the cable. Ports 55300 & 59650 UDP must be opened in the client's router for successful IP communication.
- PM1048 will automatically obtain an IP address if it is set to DHCP (default).
- Connection to the internet is indicated by the 'IP' LED = [Green – Steady On].
- A four wire connection is required between the Alarm Panel dialler and the PM1048.
 - *Option 1:* Plug the original alarm panel dialler lead into the 611 socket on the PM1048 to connect the alarm panel.
 - *Option 2:* Use a 4 core cable between PM1048 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 PM1048.

Programming the Alarm Panel

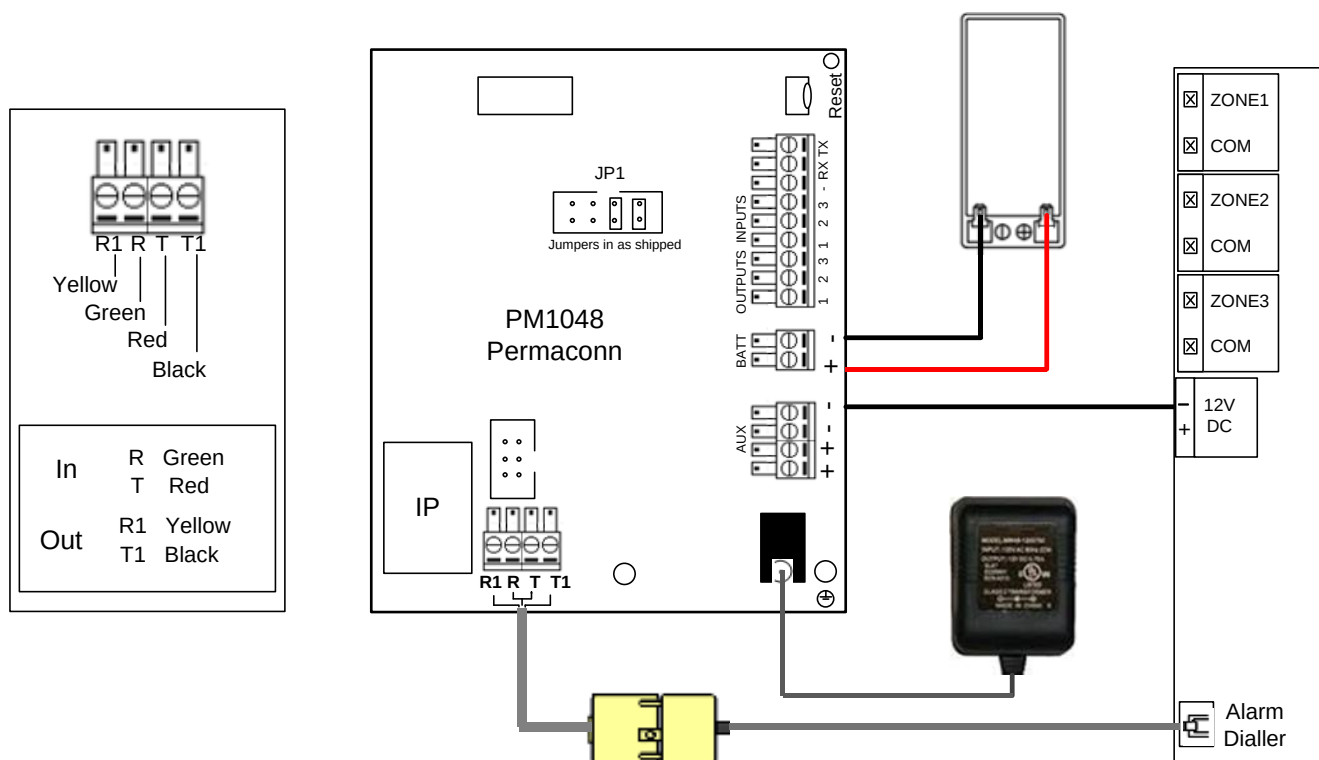
- The PM1048 obtains the Panel ID directly from the Alarm Panel after the first valid contact ID event is sent.
- If a fixed Panel ID is required inform the Monitoring Centre before activation.
- The alarm panel must be programmed with:
 - Contact ID
 - Tone / DTMF dialling
 - Four digit Panel ID number
 - 8 digit telephone number
- 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 PM1048 using Atlas to verify status of installation.

PM1048 - Powered from Alarm Panel



PM1048 – Powered using Plug Pack (supplied)

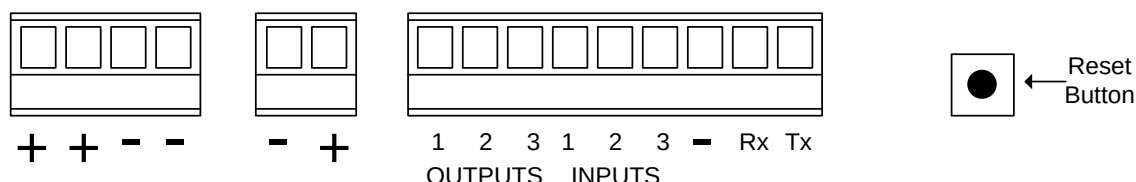
A dedicated 14.5V power supply is required if a back-up battery is installed.



Defaulting the PM1048

Apply DC power and depress reset button for:

- Five (5) seconds to reset 4G settings.
- Ten (10) seconds to reset IP configuration.
- LEDs will all flash together for four (4) seconds to confirm successful default.



Outputs

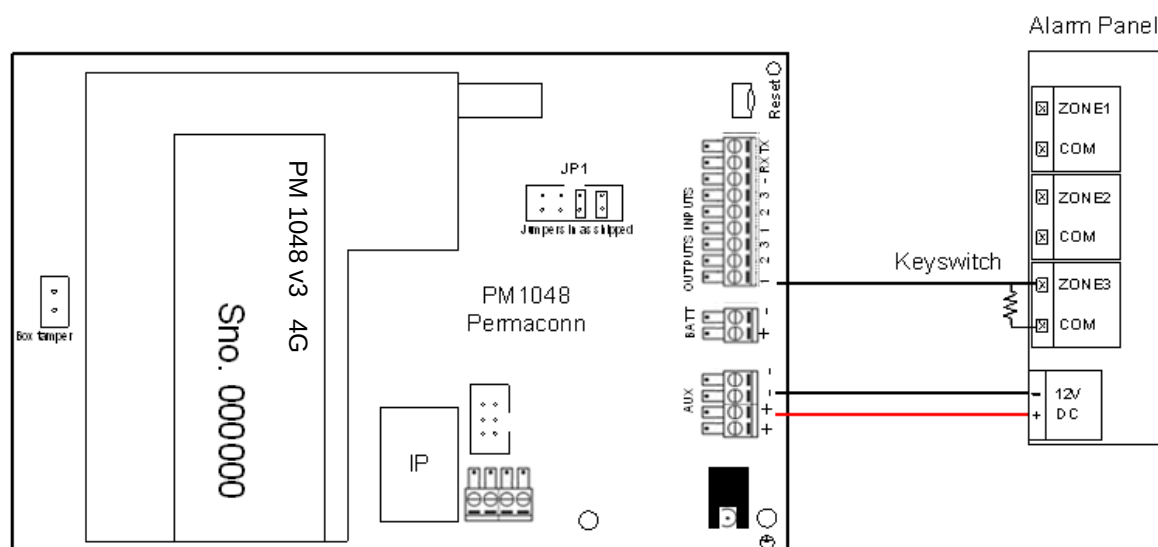
There are three (3) outputs available.

- Outputs are 'Open Collector' @50mA switching negative - for heavier loads a relay must be used.
- Ensure there is a common negative between PM1048 and the device being switched.
- The outputs can be Opened, Closed or Pulsed remotely using the Permaconn Atlas web portal.
- Refer to technical addendum for detailed key switch information.



Compatible with 'Pocket Secure' remote control 'App', available now on Apple, Google Play and Windows stores.

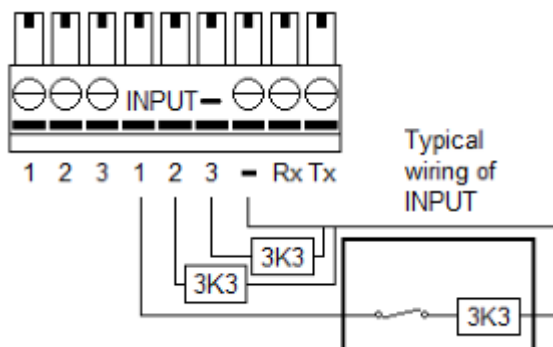
Wiring Diagram for key switch connection



Inputs

- There are three (3) inputs available.
- Inputs are programmed as 24 hour instant zones.
- Inputs only need to be terminated with a 3K3 resistor if used.

Wiring Diagram for inputs



Input	CID	Part	Zone
Aux 1	140	0	981
Aux 2	140	0	982
Aux 3	140	0	983

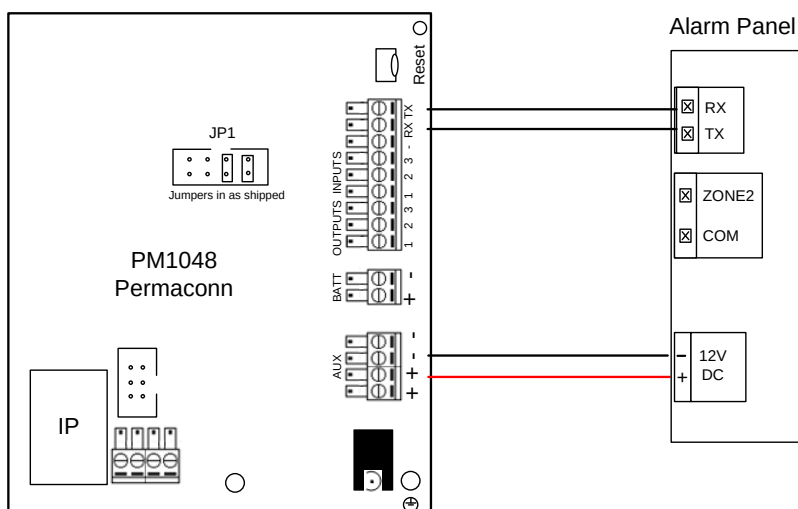
PM1048 LED Status Indicators (*Normal Operation)

LED	Activity	Indication
HB	Green Blinking *	Signal strength OK / Processor OK
	Red Blinking	Signal strength LOW or trying to reconnect to network
	LED Off	PM1048 has no power
Mobile	Green On *	Unit has registered and is online
	Green Blinking	Only one SIM active
	Red Blinking	Data traffic on 3G/4G
IP	Green On *	Unit is connected on IP network
	Red Blinking	Data traffic on IP
	LED Off	No IP connected
CID	Green On *	Alarm panel has sent a valid CID event
	Red Fast Blinking	Requires DI400 module or serial connection
	Red On	Dialler lead not connected (No return line 1&5)
	LED Off	Normal status when panel off hook
Serial	Green Blinking *	Serial data between alarm panel or DI400 and PM1048
	LED Off	Serial data not detected between alarm panel or DI400 and PM1048
B-LOW	Red On	Low battery or no battery detected.
	LED Off *	Battery OK

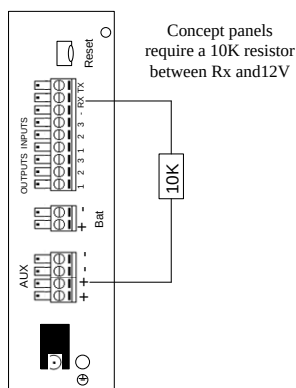
Serial Interface

- 'Serial' MUST be selected on activation otherwise it will not operate.
- The PM1048 comes standard with Securitel / serial interfaces for:
 - Tecom
 - MCM Icon
 - C&K (Sierra STU)
 - Siemens
 - Cardax / Gallagher (IFM-CDX cable 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



- Refer below for other interfaces that are available.

*IFM	Panel
B	DAS NX
D	Bosch Solution
P	Crow Runner
Q	DAS DL & L

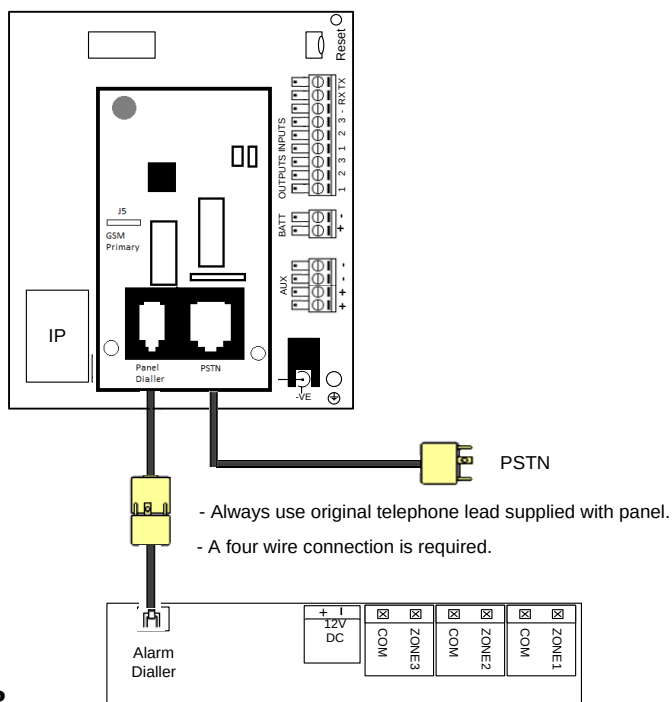
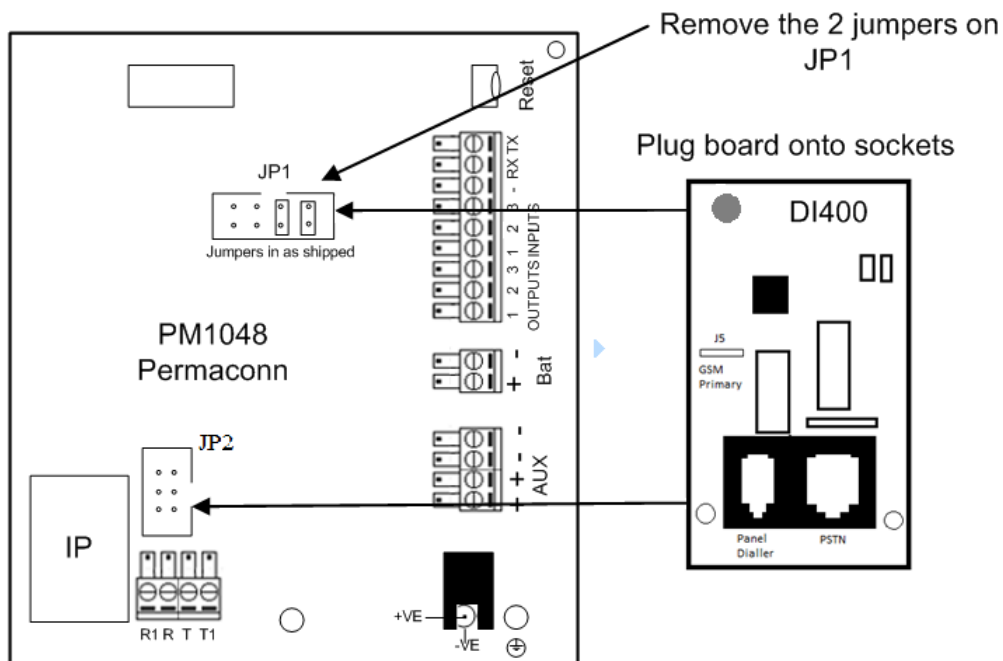
**Remove the two (2) jumpers from JP1 and fit interface module (IFM).*

DI400 PSTN Interface

The DI400 module is designed to operate with the PM1048 and provides an optional PSTN path.

- The DI400 interface option **MUST** be selected on activation otherwise this module will not operate.
- Remove jumpers from JP1 and insert the module.

Insert diagram for DI400



DI400 inserted into PM1048

DI 400 LED Status Indicators *(*Normal Operation)*

LED	Activity	Indication
HB	Blinking *	CPU has completed a power up test and is working properly
	Off	Unit is faulty
RX	Blinking *	Connectivity between the PM1048 and the DI400
	Off	Connectivity fault between PM1048 and DI400
PSTN	On	No incoming PSTN line voltage
	Off	PSTN line voltage is present
PANEL	On	Alarm panel dialler is on-hook or No return line on R1 & T1
	Off *	Alarm panel is not attempting to dial
4G	On	Messages being sent on Permaconn network
HB RX PSTN PANEL	All Flashing	PM1048 has not been activated for operation with a DI400 PSTN module.

Upload / Download *(Using Permaconn 4G or IP)*

Panel Client Software (PCS) is a virtual modem application that enables remote access to the alarm panels using wireless 4G or hardwired Ethernet connection.

Note: Disable fax machine defeat and enable one (1) call to answer.

Tecom V8 & V10	Titan v3.02+/ Forcefield v6.4+
NX4 / 16 / 128 Reliance	DL900 v4.01+
DL150 / 250 / 300	DL900 v4.01+
Solution 844 / 16 / 880	A-Link Plus v4.12+
Solution 16i / 16 Plus / 64	Solution Link v1.2.3+
Solution 6000	Solution Link v2.1.1+
Solution 2000 & 3000	A-Link Plus v4.12+
DSC PC4020 / PC1616	DLS2002
DSC PC1616 + PC1864 / NEO HS2128	DLS-5 (v4.2)
Crow Runner 8 / 16	ULD16 (v2.0.0.1+)
Paradox MG-5050 & EVO-192	Winload (v5.50+)
Ness D8	NessComms (v5.6.0.0+)
Risco LightSYS	Config Software (v2.1+)
MCM Icon8	MCM Connect v5.45
Concept 3000 & 4000	Insight Installer (v5.4.10) & Wdirect 6.0+
Digiflex Vision 16 / 64	Vision Link
Protege' LE	Protege' SE
Honeywell	V48, v50, v120 (Must use IFM-H module)
Texecom Elite 24	Wintex

How to change the IP & Port Numbers if required

Before you start you need the following:

- Access to Atlas portal.
- Connect the PM1048 to the same LAN with standard Ethernet cable).
- The PM1048 must be online and can be pinged with Atlas.
- **Important** – If the PM1048 is an online existing unit a power cycle may be required to enable the IP

To change values, simply modify the fields and select [Update]. When the PM45 is switched on it initialises with the default settings, so a large percentage of installations should work right away.

You only need to modify the setup for Static IP networks, if this is required un-tick the DHCP box and enter the settings the select [Update].

All settings below are also available using the Atlas web portal, if the PM PM45 has a cellular network connection.

The screenshot displays the configuration interface for a PM1048 unit. At the top, there are navigation tabs: Account, Billing, Cancel, Change Log, Ping, and a partially visible 'P' tab. Below these is a search bar and a prominent green 'Ping!' button. A navigation bar below the search bar contains tabs for Req, Info, I/O, IP (which is selected), and History. The main content area is titled 'Use DHCP for IP address detection' with a checked checkbox. Below this, several input fields are provided for network configuration: Address (192.168.0.1), Mask (255.255.255.0), Gateway (192.168.0.1), Use DNS below (unchecked checkbox), DNS 1 (61.9.194.49), DNS 2 (61.9.195.193), MAC Address (00:00:00:00:00:00), Local Port (55300), Remote Port (55300), Download Port (59680), Primary Server Address (203.45.70.112), and Secondary Server Address (125.7.41.129). A large 'Update' button is located at the bottom of the configuration area.

Req	Info	I/O	IP	History
Use DHCP for IP address detection ☒				
Address		192.168.0.1		
Mask		255.255.255.0		
Gateway		192.168.0.1		
Use DNS below		☐		
DNS 1		61.9.194.49		
DNS 2		61.9.195.193		
MAC Address		00:00:00:00:00:00		
Local Port		55300		
Remote Port		55300		
Download Port		59680		
Primary Server Address		203.45.70.112		
Secondary Server Address		125.7.41.129		
<button>Update</button>				

How to change the IP & Port Numbers if required *continued...*

To change values, simply modify the fields and select [WRITE]. When the PM1048 is switched on it initialises with the default settings, so a large percentage of installations should work right away. You only need to modify the setup for Static IP networks.

All settings below are also available using the Atlas web portal, if the PM1048 has a cellular network connection.

Obtain IP address automatically

If ticked, DHCP is enabled and the unit will obtain the **IP Address**, **IP Mask** and the **Gate Way** automatically. Otherwise you must enter these values yourself. Please note that these values must be specific for the clients LAN the PM1048 is communicating on.

Use DNS below

If ticked, you must enter valid IP addresses that point to the available domain name servers. If not ticked, it is filled in by the DHCP service of the LAN. Note that a DNS is only required if you are using a domain name for the primary and/or secondary server addresses.

Local Port

[55300] UDP

You can use any port above 10000, not critical.

Remote Port

[55300] UDP

This must match the 'listen' port of the Permaconn server, the default should be correct for your country. This port is vital - if incorrect the unit will not be able to connect.

Download Port

[59680] UDP

This is set by default and you must not change this port, it is not vital for communicating with the server during normal operations.

MAC Address

This is set by default and is unique for each unit. It should only be changed if the instructed by the IT department responsible for that network.

Primary and Secondary Server Connection

This is also set by default and is correct for your location. This is also a vital setting and must be correct; otherwise the unit will not be able to connect.

This field can be either an IP address or a domain name.

Upload / Download Connection

If the PM1048 has an IP connection and Upload / Download functionality is required ensure that port 55540 UDP is not blocked.

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.

Contact ID Reporting Codes

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

PERMACONN AUST CONTACT ID EVENT TEMPLATE			
Event ID	Partition	Zone	Description
300	0	956	Panel Faulty - No activity detected from alarm panel indicating possible problem with panel.
313	0	953 & 954	Engineering Reset (changed encryption key) No action required.
337	0	950	Expansion Module DC Loss – 13.8V DC voltage low or absent.
338	0	951	Expansion Module Battery Fail – Battery voltage is low or absent.
350	0	953	Fail To Communicate – Permaconn experienced trouble sending signals do not expect restore.
351	0	954 & 956	Phone Line Fail.
352	0	955 & 956	Dialer Interface Lead Fail – Issue with dialer lead between Permaconn unit and the alarm panel.
353	0	956	Serial Interface Fail – Issue with Permaconn unit serial connection to the alarm panel.
356	0	968	IP path poll fail.
356	0	969	3G/4G path poll fail.
356	0	970	Permaconn Outstation – Permaconn outstation is offline.
137	0	983	Tamper – Permaconn box tamper.
140	0	981	Auxiliary 1 – Auxiliary input on Permaconn unit.
140	0	982	Auxiliary 2 – Auxiliary input on Permaconn unit.
140	0	983	Auxiliary 3 – Auxiliary input on Permaconn unit.

PM1048 Specifications

Housing Material / Dimensions	Metal powder coated - White 170mm (w) x 205mm (h) x 48mm (d)
PCB Dimensions	138mm (w) x 100mm (h)
Weight	1.00 Kg
Operating Environment	0° - 50° @ 15% to 85% humidity (non condensing)
Antenna	Triple band 3G & Triple Band 4G
Modem	Quectel EC21
Communication Protocol	Ethernet (10/100BASE-T)
Power	14.5V DC Plug pack - Supplied (Plug pack must have approval if using other)
Power Consumption	Standby: 0.05A Transmitting: 0.60A
Power Reporting	Powered from 14.5V plug pack: DC -Fail: <11.8V DC DC - Restore: >12.8V DC Battery Status: Battery Fail: <11.6V DC (Event delayed for 10 mins) Battery Restore: >12.5V DC (Event sent immediately)
Backup Battery	12V/1.2AH Sealed lead acid battery
Typical Backup Time	16 hrs
Auxiliary Input	Three (3) 24Hr inputs, state change detected every second. EOL 3.3k
Tamper Input	24Hr input. No EOL
Auxiliary Output	Three (3) Open collector outputs @50mA (max). Function control using Atlas web portal and/or 'Pocket Secure' app.
Static IP Network Configuration	Ethernet interface using 'IpSetup' program Atlas web portal download using cellular 4G connection
Data Security	AES Encryption
Data Modem	14.4K baud rate modem for upload/download
Supported Modulation	Bell-103, ITU-V21/V22/V22B
Serial Interface	Consult PM1048 manual for compatible panels
Communications Class	As per compliance statement

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 DI400 AND THE PM1048 MUST BE PERMANENTLY CONNECTED 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 PM1048 in a location 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 EXPRESSLY DISCLAIMED. RDCCO PTY LTDs AND PERMACONN LIABILITY IN ALL EVENTS IS LIMITED TO, AND SHALL NOT EXCEED, THE PURCHASE PRICE PAID.

While every effort has been taken to ensure the accuracy of this document, RDCCO Pty Ltds assumes no responsibility or liability for any errors or omissions. RDCCO Pty Ltd reserves the right to make changes to this manual due to ongoing development.