ENFORCER
two way wireless technology

Pyronix Cloud

PCX 46 App
Control Panel

Installation Reference Manual

PCX 46 App (Small): ②
EN50131-3:2009
EN50131-1:2008+A1:2009
Security Grade (SG) 2
Environmental Class (EC) II

PCX 46 App (Large): ③
EN50131-3:2009
EN50131-1:2008+A1:2009
Security Grade (SG) 3
Environmental Class (EC) II

Software version >10
RINS1829-3

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Pyronix
HIKVISION

A. Contents Page

1. System Overview

The **PCX 46 App** is wired control panel that can have a maximum of 46 inputs. There are two versions available: **PCX 46 App S** = Small box (Security Grade 2), **PCX 46 App L** = Large box (Security Grade 3).

They are both compatible with Two Way Enforcer wireless peripherals using the PCX-RIX32-WE.

| System Overview	PCX 46 App S	PCX 46 App L	Additional Information
Areas:			
Independent areas	8		
Sub areas	7		Each sub-area is created by a proximity reader
Inputs:			
Wired inputs	8 On board		Supports Double Pole (N/C), DEOL and 3EOL
Wireless inputs	32		32 = 1 x Wireless input expander: *PCX-RIX8*
Maximum inputs	46		46 = 4 x Wired/wireless input expanders: *PCX-RIX8, PCX-RIX8+, PCX-RIX8+PSU, PCX-RIX32-WE.* 3 x Keypads/readers: *PCX-LCD/EX, PCX-PROX/EXT, PCX-PROX/INT*
PGM Outputs:			
PCB	5 (3 and 2)		1 Relay, 4 transistor (Inputs 7 & 8 may be used as outputs)
ATE outputs	10		Low power ATE outputs
Maximum PGM outputs	69		69 = 3 x Outputs on the PCB 2 x Shared outputs: *XPGM 1&2 (Inputs 7&8)* 2 x Output expanders: *PCX-ROX8R8T, PCX-ROX16R+PSU* 4 x Wired input expanders: *PCX-RIX8+, PCX-RIX8+PSU* each have 4 outputs on board. 6 x Keypads or 1 x Keypad & 3 x Readers: 6 outputs 10 x ATE PGMs
User automation outputs	30		Allows users to activate these outputs via keypad (PCX-LCD/EX), mobile app, or keyfob (KF4-WE)
Codes:			
Wireless key fobs	32		Using 1 x Wireless expander: *PCX-RIX32-WE*
Maximum user codes	100 + 1 Master		Including wireless keyfobs: *KF4-WE*
Duress / guard codes	10		
Engineer codes	1		
Arming Devices			
Arming devices	6 Maximum		*PCX-LCD/EX, PCX-EXT-BK/W, PCX-PROX/INT*
Communication			
Phone numbers	25		
Modems / Communication paths	PSTN, GPRS, LAN, GSM		PSTN modem (DIGI-1200) GSM modem (DIGI-GSM) GPRS modem (DIGI-GPRS) LAN modem (DIGI-LAN)
Formats for ARC	*PSTN or VOICE PSTN: SIA Levels 1 & 3, CONTACT ID (Voice PSTN for future use)* *GPRS or LAN or WiFi: SIA IP, CONTACT ID IP (WiFi for future use)* *GSM: CONTACT ID*		
Formats for User	SMS		SMS signals to a user's mobile phone. Also allows user remote control panel via SMS commands
Event Signaling UDL	Yes		Using the upload/download software (UDL)
Logs:			
Memory logs	1250		
Memory type	EEPROM		
Power Rating:			
PSU	1.5A	2.0A	Power supply built onboard
Battery type	3-6Ah	7-17Ah	Recommended batteries
Dimensions and Compliance			
Dimensions:	250 x 297 x 82mm	390 x 305 x 100mm	PCB: 170 x 110 x 40mm
EN grading*	Grade 2	Grade 3	
Environment class	II	II	

Default Codes: <u>*Master Manager Code:*</u> 1234   <u>*Engineer Code:*</u> 9999

*EN50131 compliance labeling should be removed if non-compliant configurations are used.

NOTE: Technical functions for example fire, gas and flooding are not security graded as they are outside the scope of EN50131-1 and EN50131-3

1.1 The Devices

PCX 46 APP Control Panel
(Small or Large)
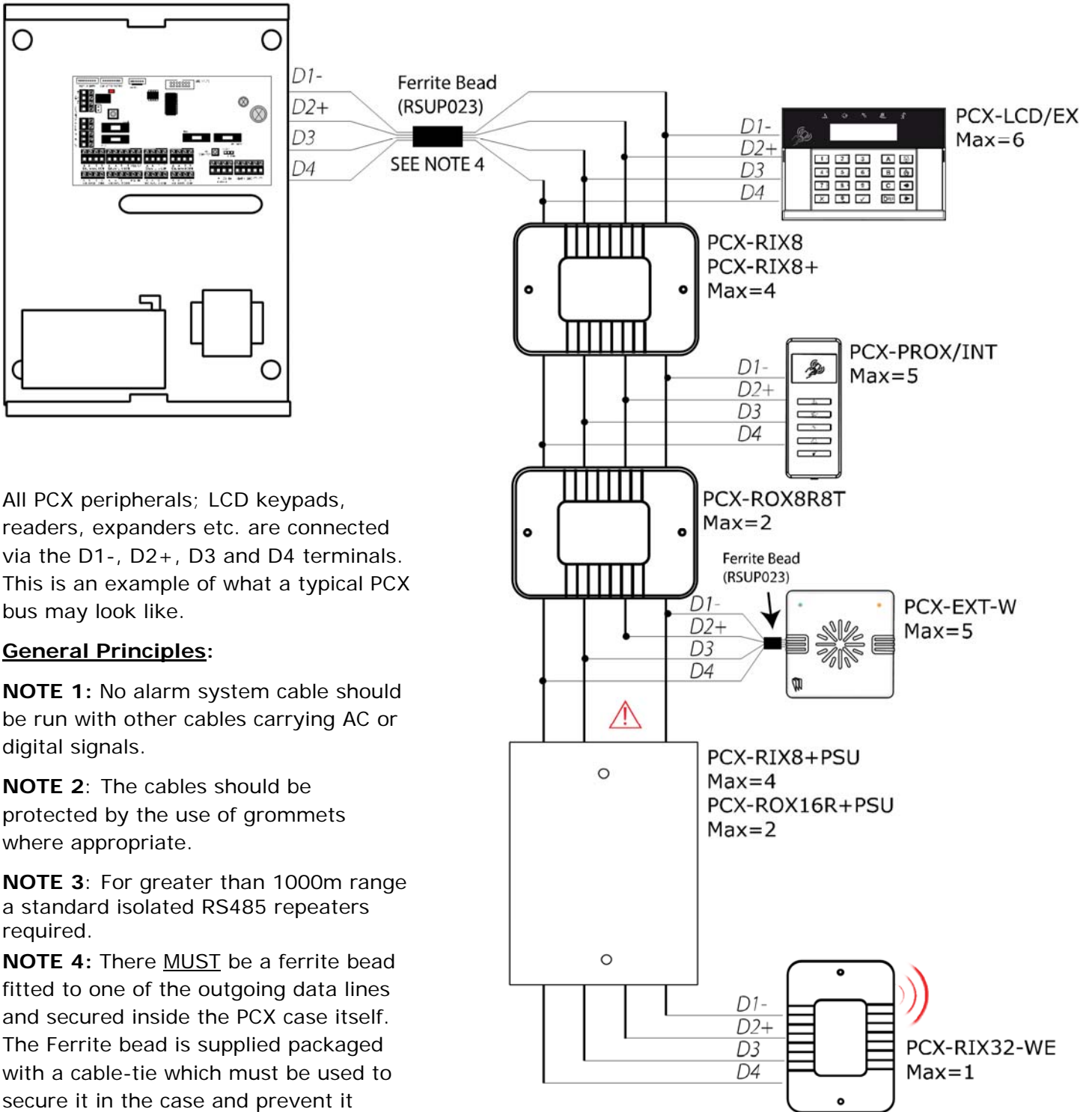
All PCX peripherals; LCD keypads, readers, expanders etc. are connected via the D1-, D2+, D3 and D4 terminals. This is an example of what a typical PCX bus may look like.

General Principles:

NOTE 1: No alarm system cable should be run with other cables carrying AC or digital signals.

NOTE 2: The cables should be protected by the use of grommets where appropriate.

NOTE 3: For greater than 1000m range a standard isolated RS485 repeaters required.

NOTE 4: There <u>MUST</u> be a ferrite bead fitted to one of the outgoing data lines and secured inside the PCX case itself. The Ferrite bead is supplied packaged with a cable-tie which must be used to secure it in the case and prevent it shorting any electrical contacts (Ferrite as shown).

There must also be a ferrite bead fitted to the data wires of a PCX-EXT-BK/W (if connected). The Ferrite bead is supplied with the reader.

NOTE 5: (IMPORTANT!) If an expansion module with a power supply on board is connected, the **D2+** terminal **MUST NOT** be connected between the main bus and module.

1.1.1 RS-485 Wiring

Cable type	Screened Cable	Bus range (m)	Wiring Format	
			Daisy Chain Range	*Star Range*
4 core alarm cable	Use when bus located near 230VAC mains power line	300m	No limit.	50m
6 core alarm cable doubling D1 (0v) and D2 (12v)		1000m		
Twisted pair		1000m		

Daisy Chain Wiring Diagram

Example #1
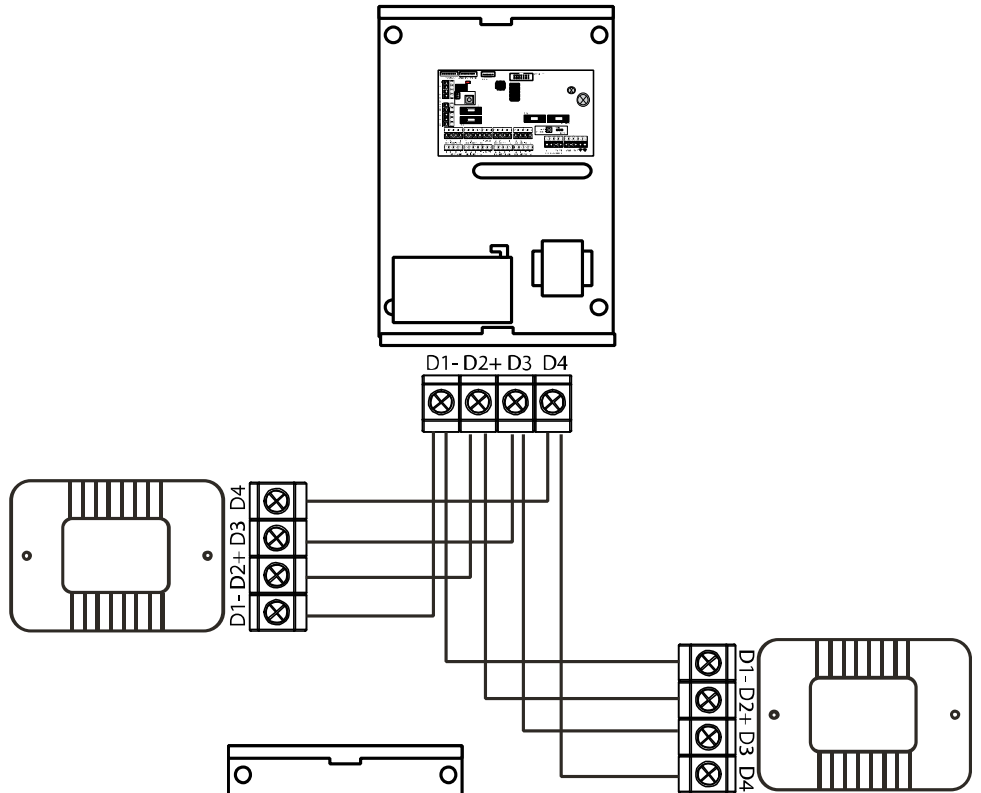
Daisy Chain Wiring Diagram

Example #2

1.2 PCX 46 App Input Mapping Overview:

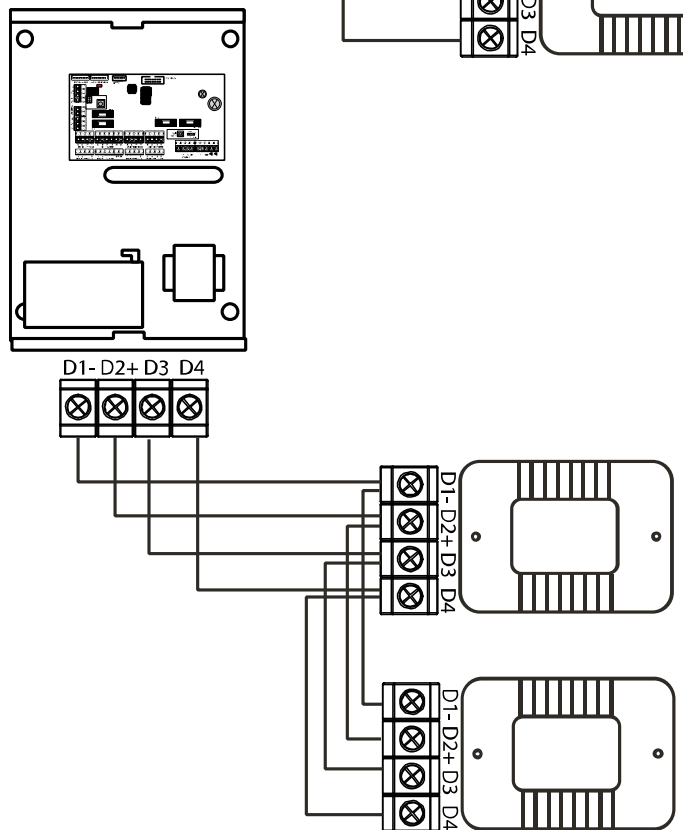| DEVICES	Address	Input Numbers
PCX 46 App PCB	PCB	1-8
PCX-RIX8 / PCX-RIX8+/ PCX-RIX8+PSU /PCX-RIX32-WE	0	9-16
PCX-RIX8 / PCX-RIX8+/ PCX-RIX8+PSU /PCX-RIX32-WE	1	17-24
PCX-RIX8 / PCX-RIX8+/ PCX-RIX8+PSU /PCX-RIX32-WE	2	25-32
PCX-RIX8 / PCX-RIX8+/ PCX-RIX8+PSU /PCX-RIX32-WE	3	33-40
PCX-LCD/EX	0	41-42
PCX-LCD/EX / PCX-PROX/INT*	1	43-44
PCX-LCD/EX / PCX-PROX/INT*	2	45-46
Total		*46*

NOTE 1: 1 x PCX-RIX32-WE can be connected to the PCX 46 App. This expander allows 32 inputs which are separated into 4 addresses (each address enables 8 wireless inputs). It is possible to mix the wired and wireless remote expanders. For more information please see page: 39.

*NOTE 2: If the PCX-PROX/INT (Internal Tag Reader) is programmed as an 'Arm/Disarm' device, 2 inputs are enabled. If the PCX-PROX/INT is programmed as 'Entry Control' or 'Access Control' only 1 input is enabled.

1.3 PCX 46 App Output Mapping

DEVICES	Address	Output Numbers
PCX 46 App PCB	PCB	5 (2 shared)
Digi/ATE Outputs (using communication loom)	Loom	10
PCX-ROX8R8T / PCX-ROX16R+PSU	0	1-16
PCX-ROX8R8T / PCX-ROX16R+PSU	1	17-32
PCX-RIX8+/ PCX-RIX8+PSU	0	1-4
PCX-RIX8+/ PCX-RIX8+PSU	1	1-4
PCX-RIX8+/ PCX-RIX8+PSU	2	1-4
PCX-RIX8+/ PCX-RIX8+PSU	3	1-4
PCX-LCD/EX	0	1
PCX-LCD/EX / PCX-PROX/INT / PCX-EXT-BK/W	1	1
PCX-LCD/EX / PCX-PROX/INT / PCX-EXT-BK/W	2	1
PCX-LCD/EX / PCX-PROX/INT / PCX-EXT-BK/W	3	1
PCX-LCD/EX / PCX-PROX/INT / PCX-EXT-BK/W	4	1
PCX-LCD/EX / PCX-PROX/INT / PCX-EXT-BK/W	5	1
Total		*69*

2. Out of the box

1. Unscrew and remove the cover of the **PCX 46 App** (Figure 1). The **PCX 46 App** Printed circuit board is located to the top right hand side. (Figure 2)

2. Install the supplied stand offs if needed before mounting the metal case to the wall (Figure 3).
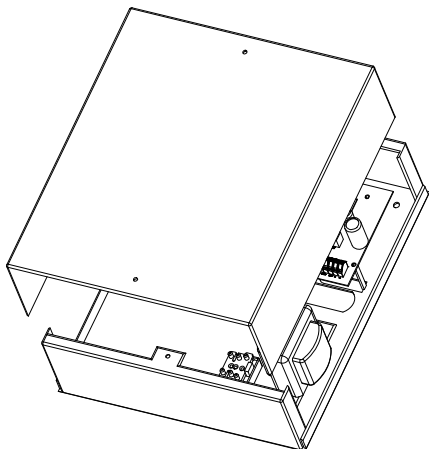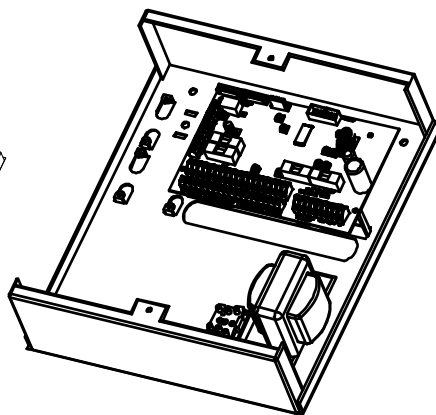
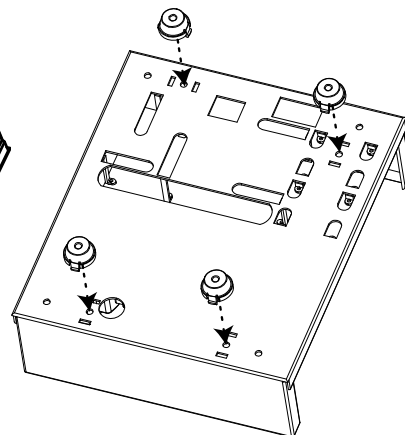Figure 1.   Figure 2.   Figure 3.

3. Connect any modems if required and any other devices (input expanders, output expanders etc.) before powering up the system.

4. Wire the telephone line if the DIGI-1200 modem (PSTN) is installed. See page 45.

5. Install the SIM card, connect the antenna and locate outside of the metal casing if the GPRS modem is used. See page 45.

6. Screw the back metal plate to the wall.

7. **PCX 46 App** **Large Box:** The tamper mechanism comes already fitted and will operate properly once the casing is fitted to the wall. If using the stand-offs, the following will need to be used for the rear tamper mechanism to work correctly.
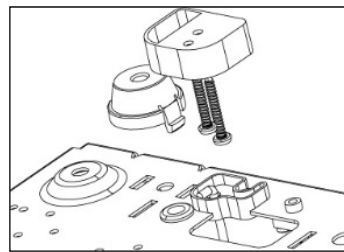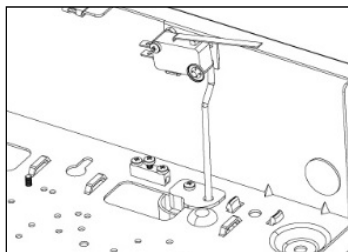
8. **PCX 46 App** **Small Box:** The tamper mechanism comes already fitted.
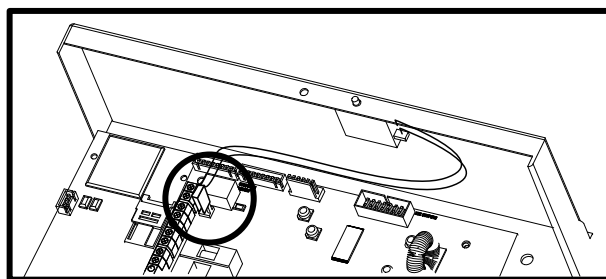
9. Secure all the wires and close the enclosure making sure the tamper is operational

10. Turn on the power to the **PCX 46 App**. The keypad will show:

OK 🔔 ✗ ⚠ 🔓	OK 🔔 ✗ ⚠ 🔓	OK 🔔 ✗ ⚠ 🔓
485 COMMS FAIL Pyronix	>>Please Wait<< Pyronix	PCX 46 Time 02:01 c Pyronix
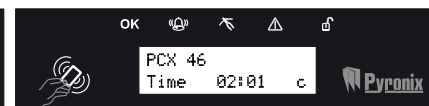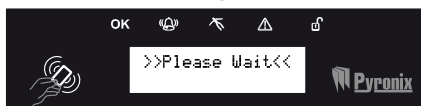
3. The Printed Circuit Board

1: Case Tamper Hold-Off Jumper
2: PGM 1 (Relay output. See page: 16)
3: Speaker connection
Connects a 16ohm speaker. See page: 16
4: External sounder connections
Connects an external sounder. See page: 17.
5: Input connections
8 Fully programmable inputs.
See page: 13.
6: Tamper Switch
Optional tamper protection for the metal casing
7: Auxiliary 12V power
12V power supply
8: Inputs or Outputs
Inputs 7 and 8 may be programmed as outputs if unused. See page: 16
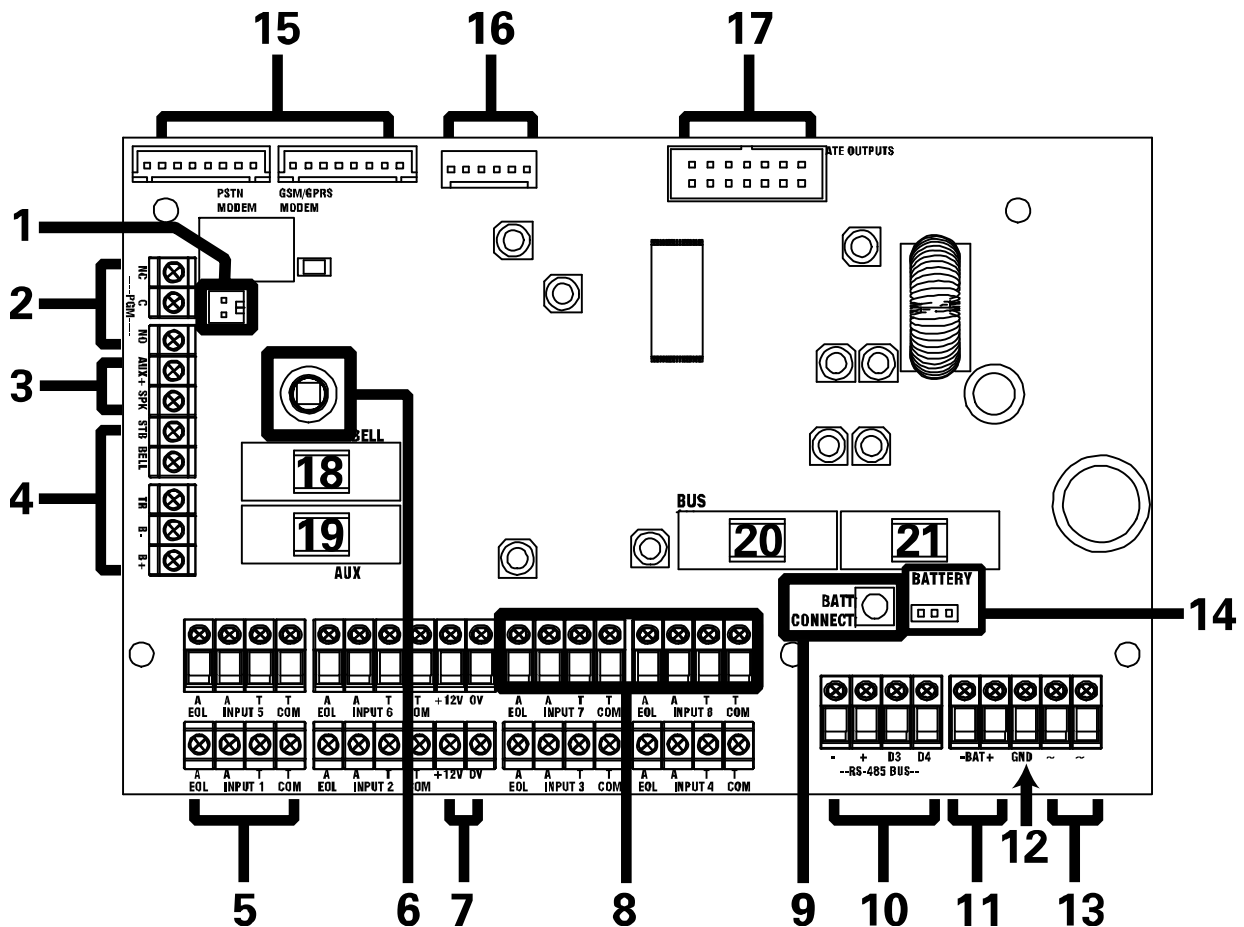**9: Battery Connect 'Kickstart' switch**
To power-up and program from battery power (when there is no mains power available).
10: RS485 bus terminals
Connects peripherals. See pages: 4 and 19
11: Battery connection:
For battery power up. See page: 12

12: Earth connection
Connects the earth
13: 17V connection
Connects the AC transformer 17V supply
14: Battery Charge Capacity Jumper
For battery power up. See page: 12
15: PSTN, GPRS & LAN Modems
Connects PSTN, GPRS & LAN modems.
See page: 45 onwards
16: RS232 Connection
This connection is used for an RS232 lead that will connect to a PC to allow uploading and downloading of data using the InSite software (see page: 48)
17: Communication Outputs
Connects the supplied communication loom to enable an additional 10 programmable outputs. These are low current and would normally be used when connecting a stand-alone communicator to the panel (see page: 11).

18: Bell Fuse   **19: Auxiliary Fuse**

20: Bus Fuse   **21: Battery Fuse**

3.1 Technical Specification

Programmable Outputs	Power Rating	Normal State	Active State
PGM 1	Relay, 3A, max 30V	Changeover NC & NO	Changeover NC & NO
Speaker	16 ohms	No tones	Repeat RKP tones & internal sounder
Strobe Output	500mA	12v	0v
Bell Output	500mA	12v	0v
XPGM 1 (Input 7)	50mA	Floating	0v
XPGM 2 (Input 8)	50mA	Floating	0v
ATE Outputs	2mA	5v	0v

All outputs are programmed in "PROGRAM OUTPUTS?" in the Engineer menu.

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9
Burglary Alarm	1k5 to 5k9	4k2 to 7k8
Tamper	<0k5 or <17k	<1k4 or >22k

All inputs are programmed in "PROGRAM INPUTS?" in the Engineer menu.

Fuses	Value	Type
Bell Fuse for bell terminals	F800mA quick blow 250V	Glass
Aux Fuse for aux terminals	F800mA quick blow 250V	Glass
RS485 Bus Fuse for bus terminals	F800mA quick blow 250V	Glass
Battery Fuse for battery terminals	T 1.5A anti-surge slow blow 250V	Glass
230V Mains Fuse for mains terminals	T500mA H anti-surge slow blow 250V	Ceramic

Panel Power Supply Output	Nominal	Range
Output Voltage	13.7V DC	10-15V DC
Output Current **PCX 46 APP S**	1A Continuous	1.5A peak, during battery charging
Output Current **PCX 46 APP L**	1.5A Continuous	2.0A peak, during battery charging
Power Supply Type A.		
Maximum output peak voltage: Max 100 mV		
SD Voltage which the deep discharge protection function will operate at: 10V		
Over Voltage Protection Trigger Voltage: 18V		

NOTE 1. **PCX 46 APP** power supplies are NOT designed for use with multiple batteries connected.

NOTE 2. System load should not exceed the panel power supply output shown above, or the maximum load supportable by the battery for the specified backup time, as in the table shown below.

NOTE 3. The power ratings are based on battery shown in table – but ANY battery capable of supporting the system load for the required time may be used without affecting these ratings.

Panel Power Supply Input	Nominal	Range
Mains Supply Voltage AC	230V AC at 50Hz	-15% +10%
Transformer Rating **PCX 46 APP S**	18VA	18V at 1.0A
Transformer Rating **PCX 46 APP L**	45VA	18.5V at 2.5A

Battery Charging Specification			
Float Voltage	13.8v DC	**Control Panel Type**	
Battery low voltage cut off	10.5v	Standby battery capacity current	300mA (3A to 6A)
Recharge time	<24 Hours	Standby battery capacity current	700mA (7A to 17A)

EN50131-6:2008 Rated Output

In accordance with EN50131-6:2008, the **PCX 46 APP** standby times and effective output currents depend on the **Security Grade** of the system and how 230V mains missing fault is signalled to the Alarm Receiving Centre. Power supplies are rated in accordance with the requirements of EN50131-6, which are related to the maximum battery size that can be accommodated in the housing and vary according to the grade of the system in which they are installed, as per the following table:

Electrical Capability	EN50131-6 Rating. Maximum Load
Example Battery Model	Grade 2
Yuasa NP7-12	0.5A
Yuasa NP17-12	1.2A

PCX 46 APP PCB Current Consumption			**Environmental**	
Quiescent	80mA		Operational	-10°C to +40°C, Certified
User Code and Tag Guessing			Storage	-20°C to +60°C
4-digit codes	10,000		Humidity	75%
6-digit codes	100,000		**Dimensions**	
Disallowed codes	None		**PCX 46 APP** L	390 x 305 x 100mm Weight: 11.5kg inc battery
All codes	16^{12}		**PCX 46 APP** S	250 x 297 x 82mm Weight: 4.8kg inc battery
According to EN50131-3:2009 Annex B			**PCX 46 APP** Printed Circuit Board	170 x 90 x 30mm
According to spec of manufacturer of RFID components used			**EN50131 Grading**	
			PCX 46 APP S = Grade 2. **PCX 46 APP** L = Grade 3	

The below table specifies ATS (Alarm Transmission System) performance criteria in accordance with the requirements of EN50136-1:2012 and EN50136-2.

Notification Equipment	Grade 2 Criteria			
	Option A	Option B	Option C	Option D
Remotely powered external sounder	2	Optional	Optional	Optional
Self-powered external sounder	Optional	1	Optional	Optional
Main Communication Path (ATS)	ATS 2	ATS 2	ATS 2	ATS 3
Second Communication Path (ATS)	Optional	Optional	ATS 1	Optional

GRADE 2 option A, B, C and D with DIGI-LAN (SP5) or DIGI-GSM (SP2) and DP1 (DIGI-LAN or DIGI-GSM with DIGI-1200)

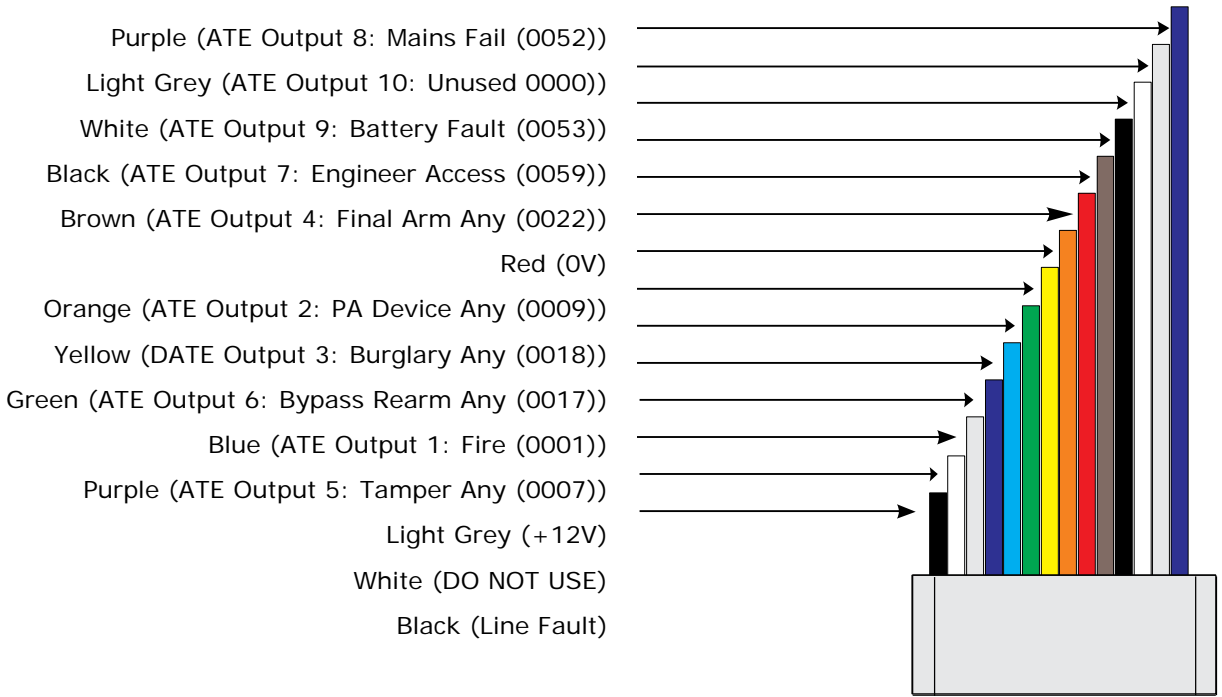The use of the DIGI-GPRS (SP5) or DIGI-LAN (SP5) Option "Grade 3 Option A, B and D are supported."

3.2 Important Installation Notes

- Ensure wiring is done to the national wiring regulations in the country where the installation is taking place. In the UK, this is BS 7671 Requirements for electrical installations; IET Wiring Regulations (17th edition). If in doubt, consult a local qualified electrician.

- Ensure that a readily accessible disconnect device incorporated in the premises installation wiring shall be provided external to the equipment with a contact separation of at least 3,0mm and connected as closely as possible to the supply. Example: Fused Spur Unit

- When fixing external wires, ensure that means are provided in the installation to prevent the SELV (Safety Electrical Low Voltage) or signal circuits from coming into contact with live parts of the power supply circuit. Wires shall be fixed near their terminal blocks.

- The end of stranded conductor shall not be consolidated by soft soldering at places where the conductor is subjected to contact pressure. Example: Must not solder ends of wires which are to be secured in detector and control panel terminal connectors.

- On completion of wiring use tie-wraps to prevent any loose wires causing a safety hazard (material of cables tie shall be rated at least HB or better).

- Cables ties and hoses shall be separate for power supply cable and SELV (Safety Electrical Low Voltage) wirings.

- Size of protective bonding conductors: minimum section 1.5mm². Example: Electrical Earth wire connections.
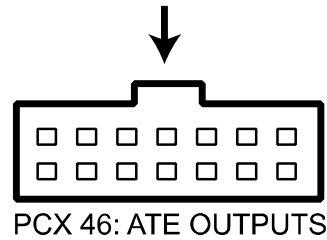
3.3 Communication Loom

The ATE low power outputs are programmed in the engineer function:
**'Program Outputs->Endstation PGMs".**

Purple (ATE Output 8: Mains Fail (0052))

Light Grey (ATE Output 10: Unused 0000))

White (ATE Output 9: Battery Fault (0053))

Black (ATE Output 7: Engineer Access (0059))

Brown (ATE Output 4: Final Arm Any (0022))

Red (0V)

Orange (ATE Output 2: PA Device Any (0009))

Yellow (DATE Output 3: Burglary Any (0018))

Green (ATE Output 6: Bypass Rearm Any (0017))

Blue (ATE Output 1: Fire (0001))

Purple (ATE Output 5: Tamper Any (0007))

Light Grey (+12V)

White (DO NOT USE)

Black (Line Fault)

Normal Status: 5V

Active Status: 0V

Current: 2mA

PCX 46: ATE OUTPUTS

The polarity of the ATE outputs can be inverted from the function:

'SYSTEM OPTIONS' -> 'Options' -> 'Invert ATE PGMs'
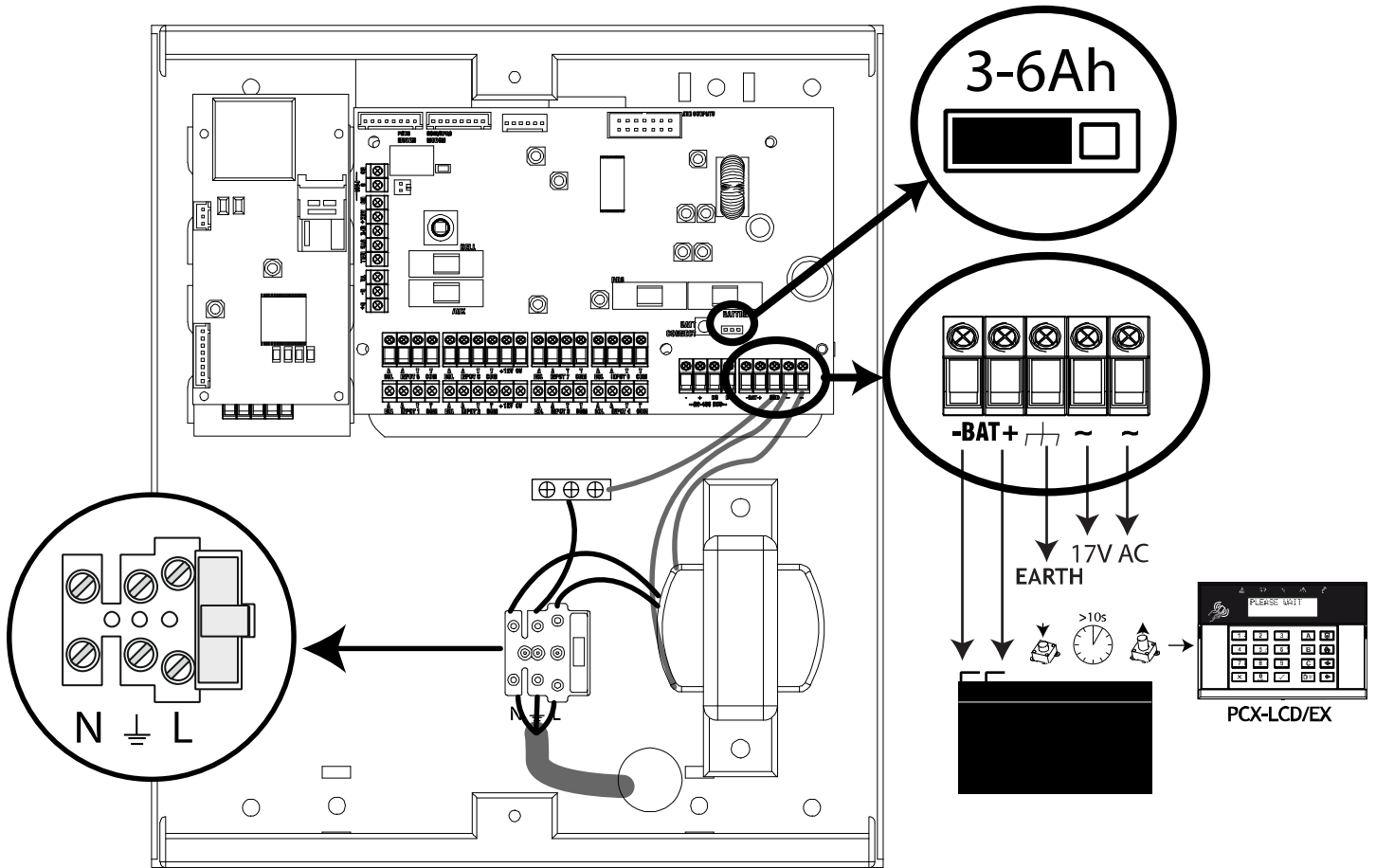
3.4 Power and Battery Connections for the PCX 46 APP L
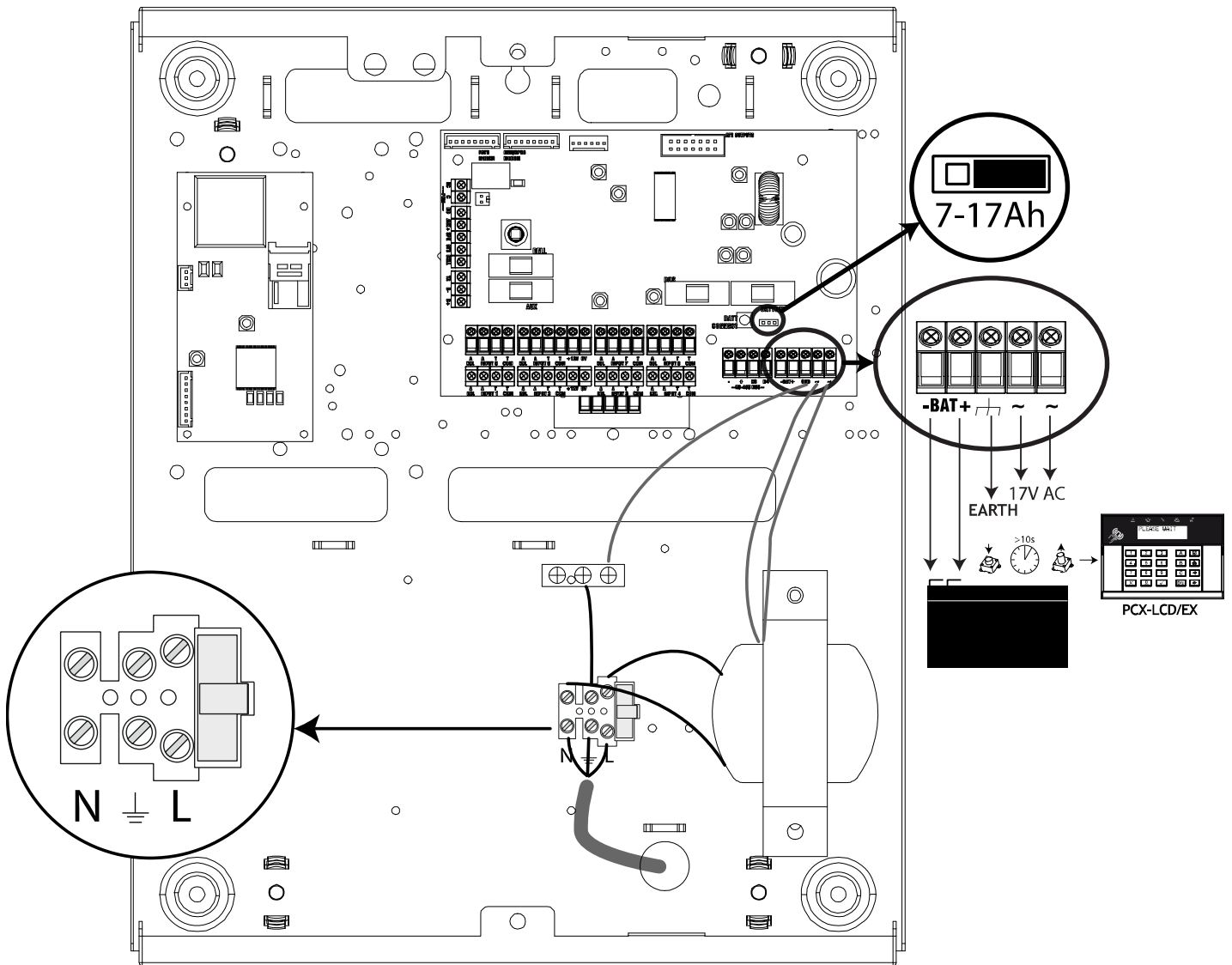
Panel Power Supply Input	Nominal	Range
Mains Supply Voltage AC	230V AC at 50Hz	-15% +10%
Transformer Rating PCX 46 APP L	45VA	18.5V at 2.5A
Panel Power Supply Output	**Nominal**	**Range**
Output Voltage	13.7V DC	10-15V DC
Output Current PCX 46 APP L	1.5A Continuous	2.0A peak, during battery charging
Power Supply Type A.		

Battery Charging Specification			
Float Voltage	13.8v DC	**Control Panel Type**	
Battery low voltage cut off	10.5v	Standby battery capacity current	300mA (3Ah to 6Ah)
Recharge time	<24 Hours	Standby battery capacity current	700mA (7Ah to 17Ah)

Fuses	Value	Type
230V Mains Fuse for mains terminals	T500mA H anti-surge slow blow 250V	Ceramic

NOTE: The battery connect 'kickstart' button (see Item 9, page 8) is used to power-up the control panel when there is no mains supply present. For example: if you wish to program a panel that is being fitted in a new-build premises before the mains supply has been fully installed. To use it – Hold for 5 seconds and then release.

IMPORTANT: Ensure that the battery Jumper is in the correct position for the capacity of battery that you have connected – otherwise the panel may under-charge a large battery or over-charge and damage a smaller battery.

## 3.5 Power and Battery Connections for the PCX 46 APP S

Panel Power Supply Input	Nominal		Range	
Mains Supply Voltage AC	230V AC at 50Hz		-15% +10%	
Transformer Rating PCX 46 APP S	18VA		18V at 1.0A	
Panel Power Supply Output	Nominal		Range	
Output Voltage	13.7V DC		10-15V DC	
Output Current PCX 46 APP S	1A Continuous		1.5A peak, during battery charging	
Power Supply Type A.				
Battery Charging Specification				
Float Voltage	13.8v DC	Control Panel Type		
Battery low voltage cut off	10.5v	Standby battery capacity current	300mA (3Ah to 6Ah)	
Recharge time	<24 Hours	Standby battery capacity current	700mA (7Ah to 17Ah)	
Fuses		Value		Type
230V Mains Fuse for mains terminals		T500mA H anti-surge slow blow 250V		Ceramic

NOTE: The battery connect 'kickstart' button (see Item 9, page 8) is used to power-up the control panel when there is no mains supply present. For example: if you wish to program a panel that is being fitted in a new-build premises before the mains supply has been fully installed. To use it – Hold for 5 seconds and then release.

IMPORTANT: Ensure that the battery Jumper is in the correct position for the capacity of battery that you have connected – otherwise the panel may under-charge a large battery or over-charge and damage a smaller battery.

4. Input Connections
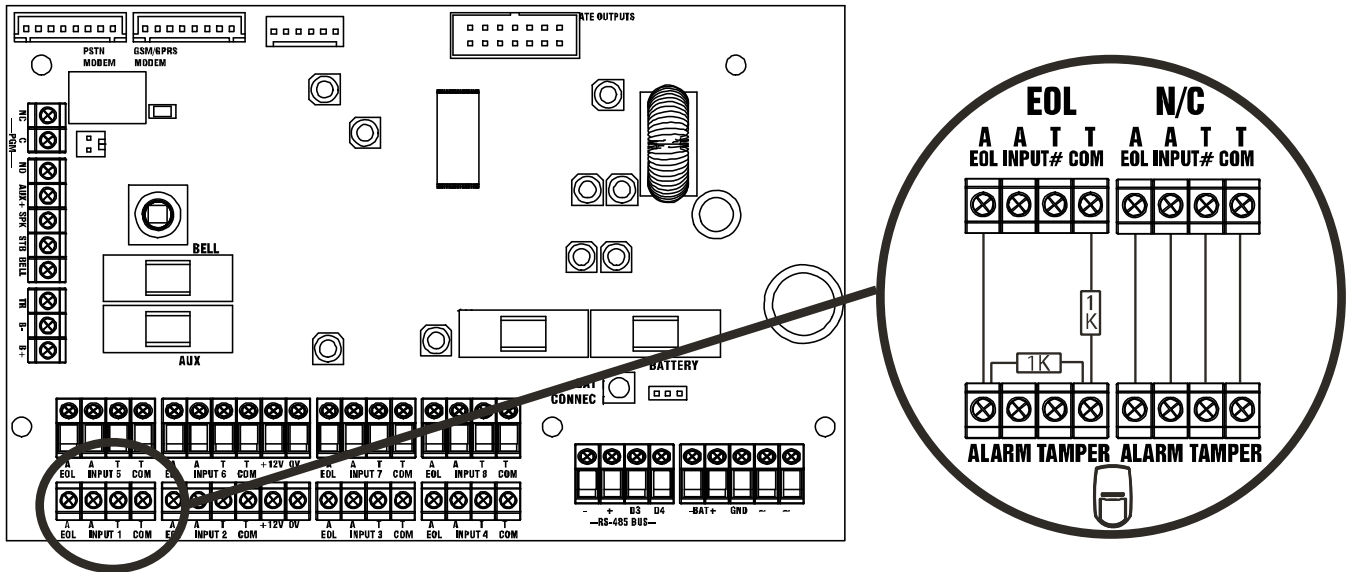
NOTE: If 'Normally Closed' (double pole) wiring is selected, the Diagnostics on the keypad will show "4K Alarm and 2K2 Tamper".
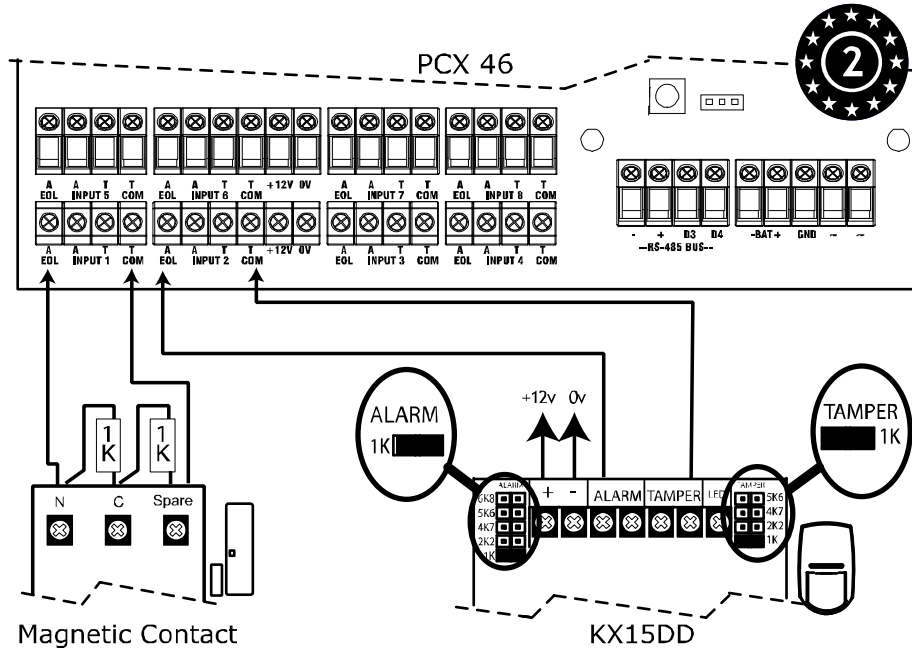
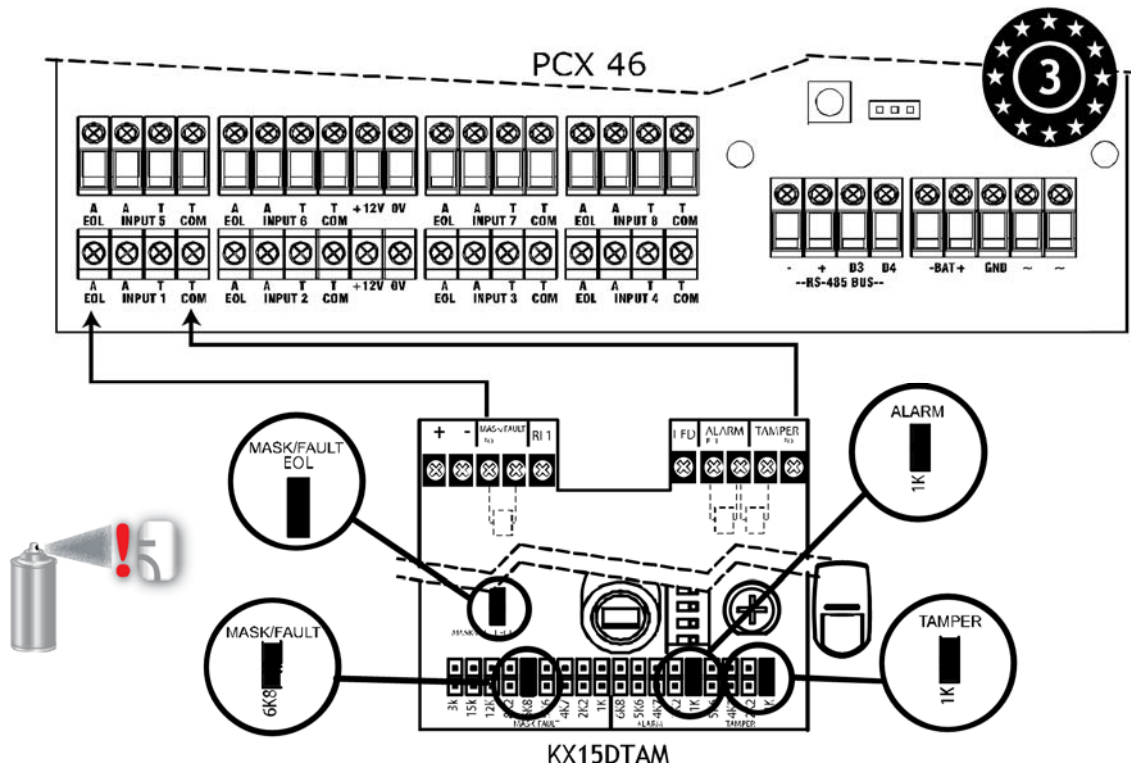| Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or <17k	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

4.1 Normally Closed Input Wiring

Magnetic Contact   KX15DD
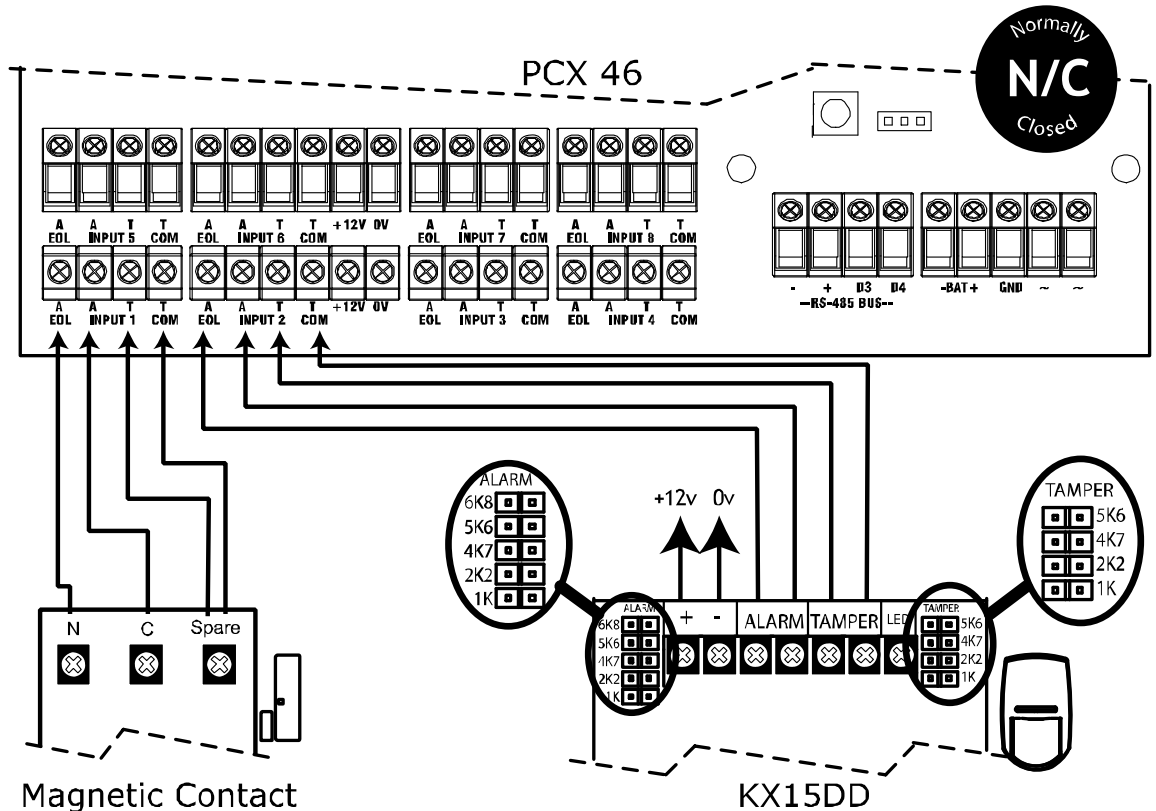
4.2 Grade 2 DEOL (Double End of Line) Input Wiring

Magnetic Contact   KX15DD

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Tamper	<0k5 or <17k	<1k4 or >22k	<3k7 or >23k

4.3 Grade 3 Mask/Fault Input Wiring

KX15DTAM

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or <17k	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

5. Output (PGM) Connections

PCX 46

Normal State: 12V
Active State: 0V
Current: 100mA
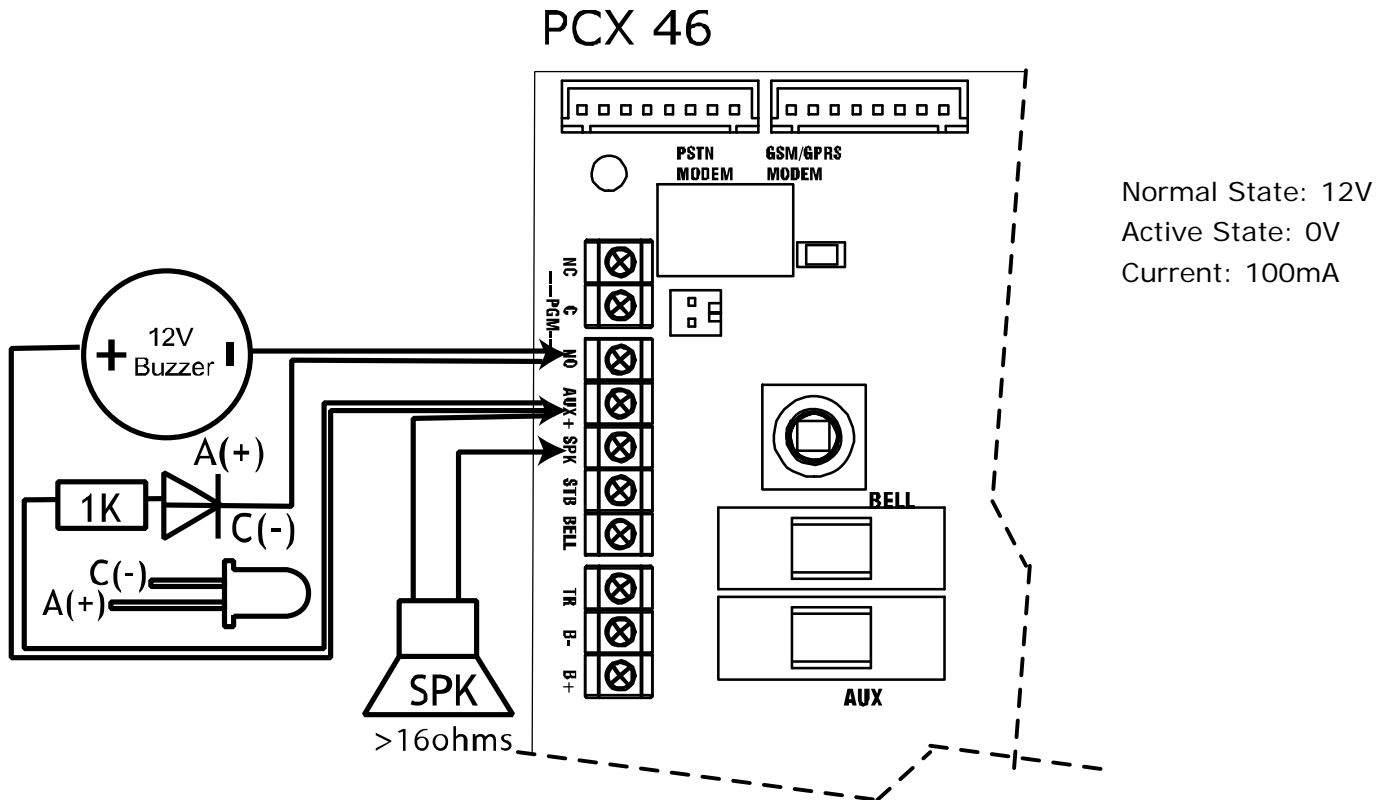
5.1 XPGM Connections

If Inputs 7 and 8 are programmed as 'unused', these inputs can be used as 2 further outputs (known as XPGM1 and XPGM2 which can be programmed in 'PROGRAM OUTPUTS').

PCX 46

Normal State: Floating
Active State: 0V

Current: 50mA switched to 0V
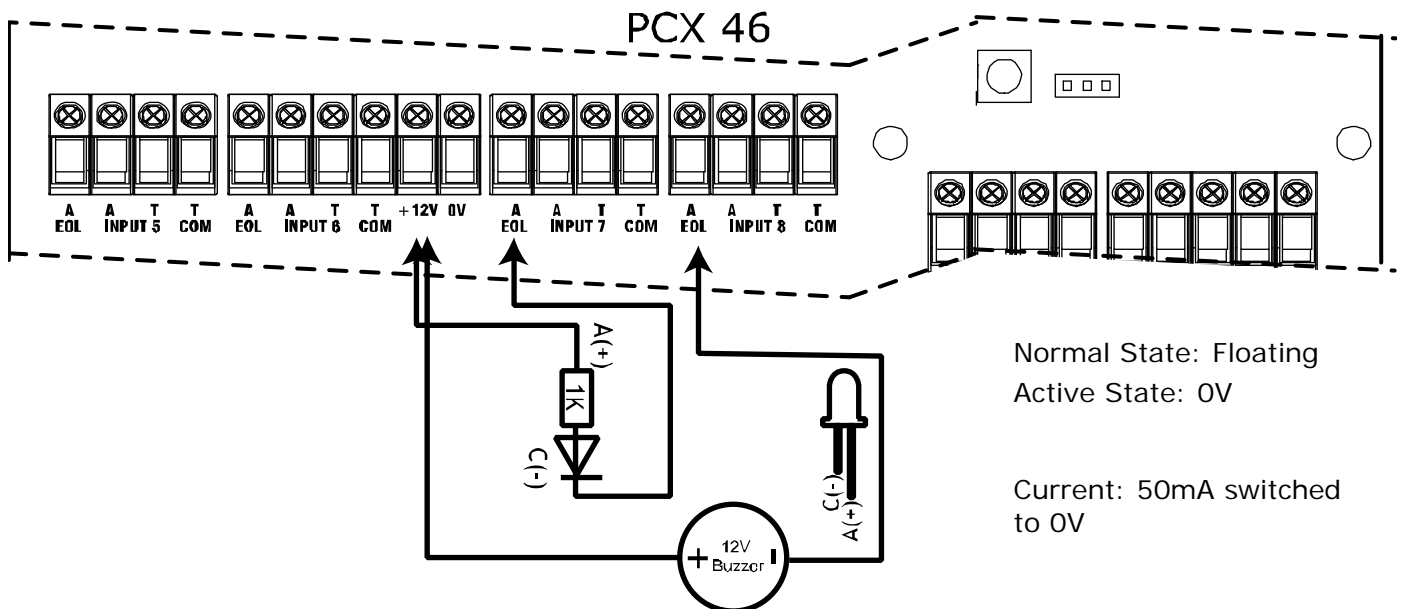
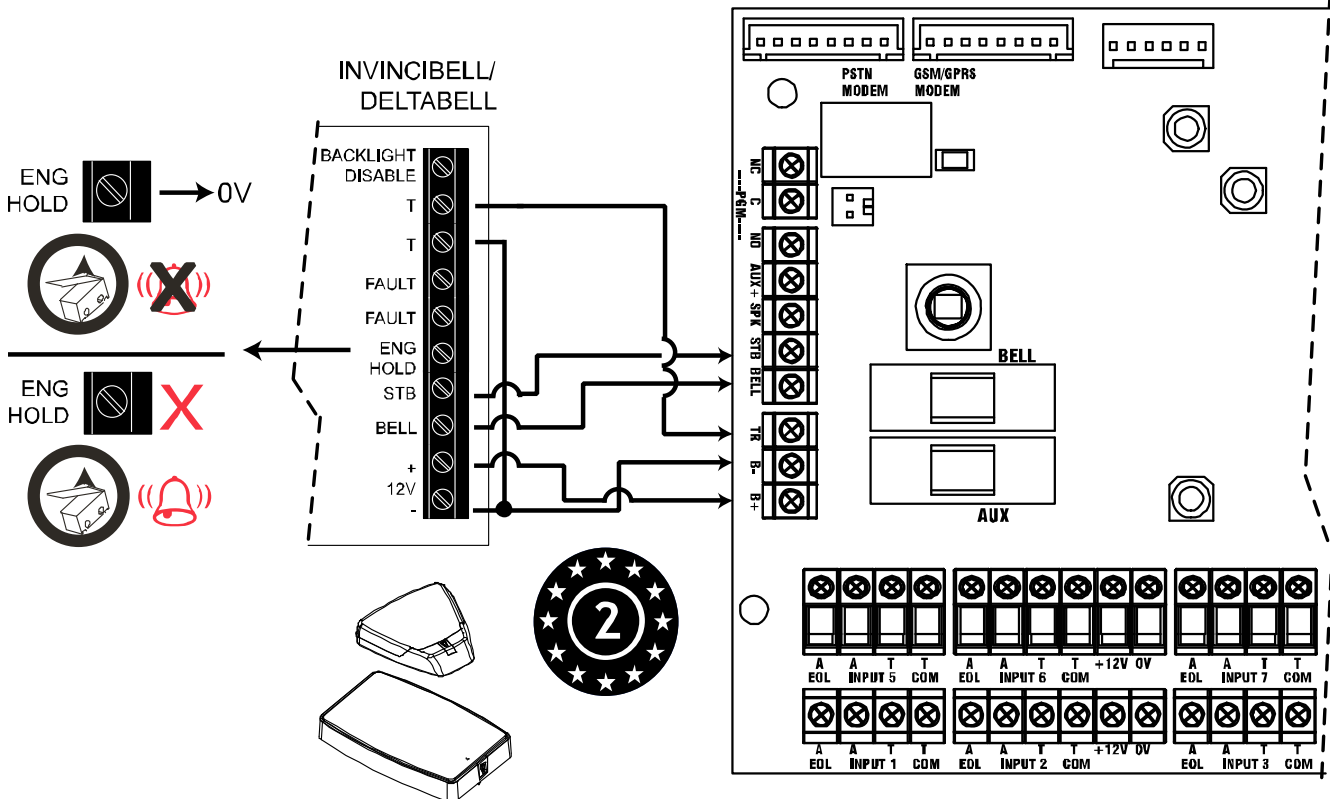# 6. External Sounder Connections

6.1 Grade 3 External Sounder Wiring

Pyronix Grade 3 External Sounders: *Deltabell Plus,*   *Deltabell X,*   *Invincibell Plus,*   *Invincibell X*
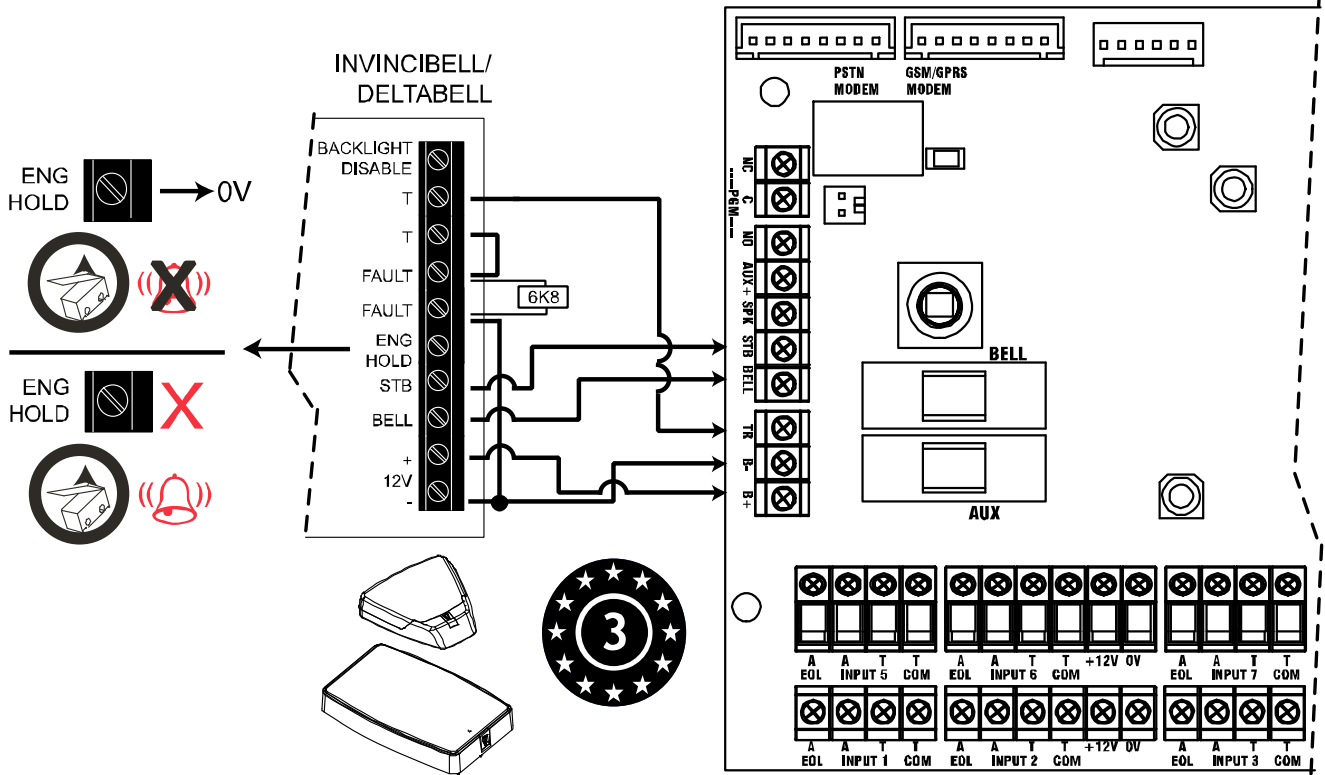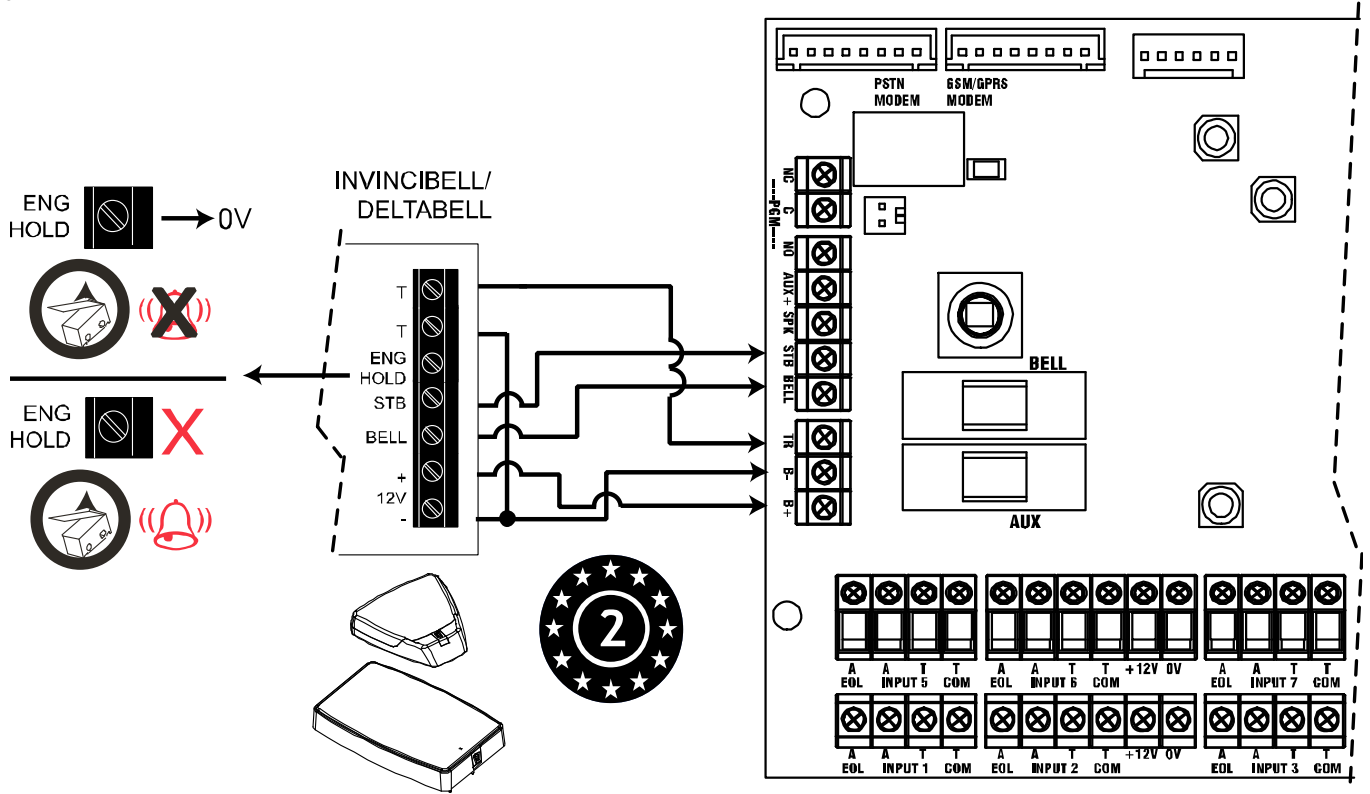

6.2 Grade 2 External Sounder Wiring with a Grade 3 Bell

Pyronix Grade 3 External Sounders: *Deltabell Plus,*   *Deltabell X,*   *Invincibell Plus,*   *Invincibell X*

6.3 Grade 2 External Sounder Wiring

Pyronix Grade 2 External Sounders: *Deltabell E,   Invincibell E*

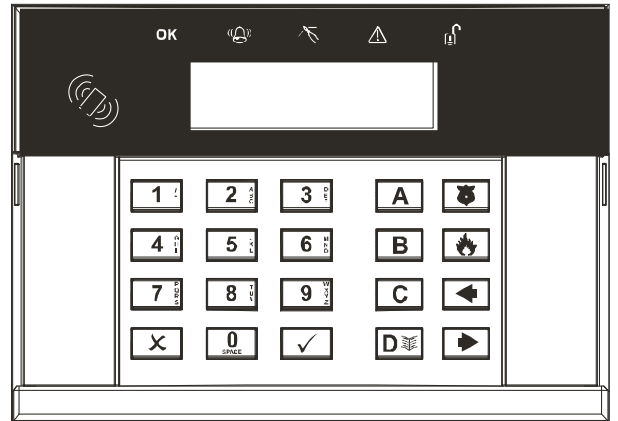# 7. Connecting the PCX Peripherals

7.1 Connecting The PCX-LCD Keypad (PCX-LCD/EX)

The PCX LCD keypad is used for programming and user operation.

The **PCX 46 APP** can have up to 6 x PCX-LCD/EX keypads installed.

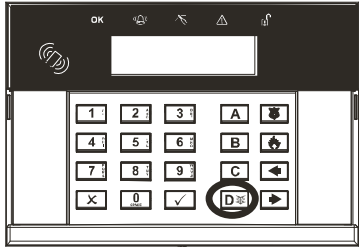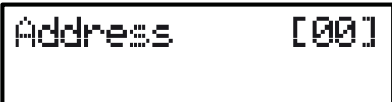**NOTE:** See the keypad installation manual for the LED and button explanations.

NOTE: The total number of keypads and readers that can be installed on the **PCX 46 APP** is 6.

7.1.1 Technical Specification

PCX-LCD/EX (LCD Keypad)			
Supply Voltage:	9-15V DC		
Current Consumption:	<50mA		
Inputs 1 & 2	Programmable, DEOL, SEOL, 3 Resistor		
Input EOL Resistor Values	**1k / 1k DEOL Range**	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	**0k5 to 1k4**	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	**1k5 to 5k9**	4k2 to 7k8	8k4 to 10k2
Fault	**6k to 8k1**	8k to 11k3	10k3 to 14k9
Masking (6k8)	**8k2 to 17k**	11k6 to 22k	15k to 22k
PGM:	100mA		
PGM Normal State:	Floating		
PGM Active State:	0V		
Dimensions:	144 x 99 x 34mm		
EN50131 Certified:	Grade 3		
Colour and Casing:	White 3mm ABS		
Indication:	LEDs (OK, Fault, Alarm, Disarmed, Tamper)		
NOTE:	The LCD display may not function correctly at temperatures below +2°C but this will not affect the system operation.		
Temperature	Storage: -10°C to +40°C Certified: -10°C to +40°C Nominal: -10°C to +40°C		
Front and rear tamper protected			

7.1.2 Addressing The PCX LCD Keypad (From the Keypad)

Addressing Hold the D🕮 key for more than 5 seconds. D🕮 → 🕮 >5s	
'SECURITY CODE' will be displayed. Enter '**2000**'	SECURITY CODE [******]
The default address given is '00'.	Address [00]

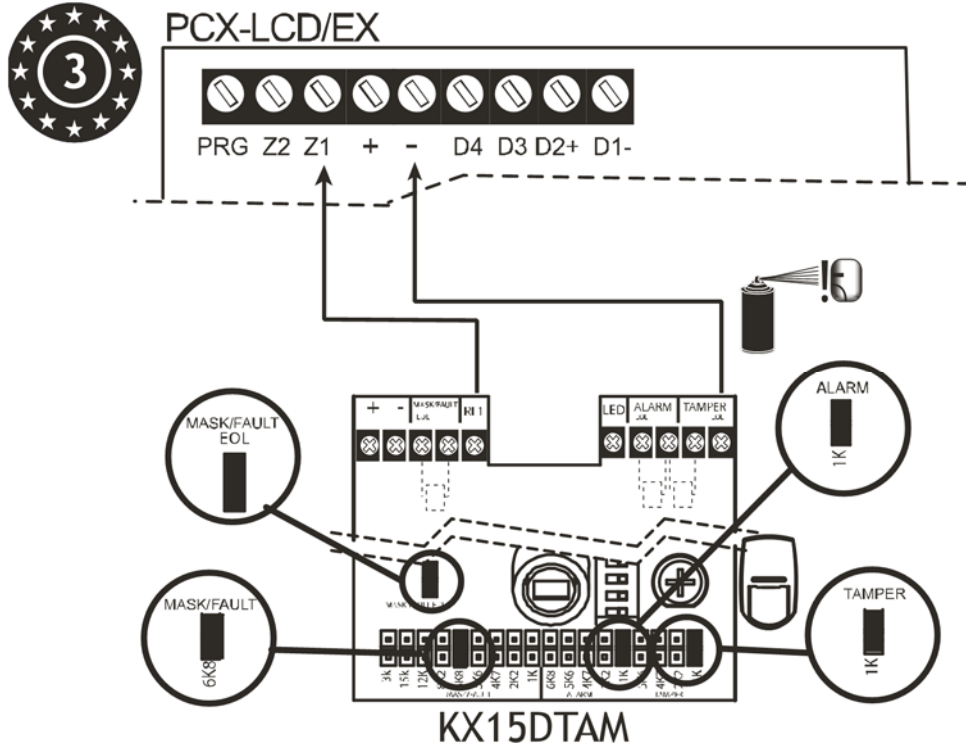|	
Enter the required Address [0-6] and press ☑ Press Ⓐ to exit. You must now address is from the menu "INSTALL KEYPADS/READERS".	Address [01]

7.1.3 Adding The PCX LCD Keypad (From the Engineer Menu)

Enter the engineers menu and scroll to 'INSTALL KEYPADS/READERS' and press ☑. Please see the Programming Manual for more information.

7.1.4 Connecting The PCX LCD Keypad Inputs (Grade 3)

The same connections are used when wiring the TMD or XD Grade 3 detectors

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	**0k5 to 1k4**	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	**1k5 to 5k9**	4k2 to 7k8	8k4 to 10k2
Fault	**6k to 8k1**	8k to 11k3	10k3 to 14k9
Masking (6k8)	**8k2 to 17k**	11k6 to 22k	15k to 22k
Tamper	**<0k5 or >17K**	<1k4 or >22k	<3k7 or >23k

7.1.5 Connecting The PCX LCD Keypad Inputs (Grade 2)
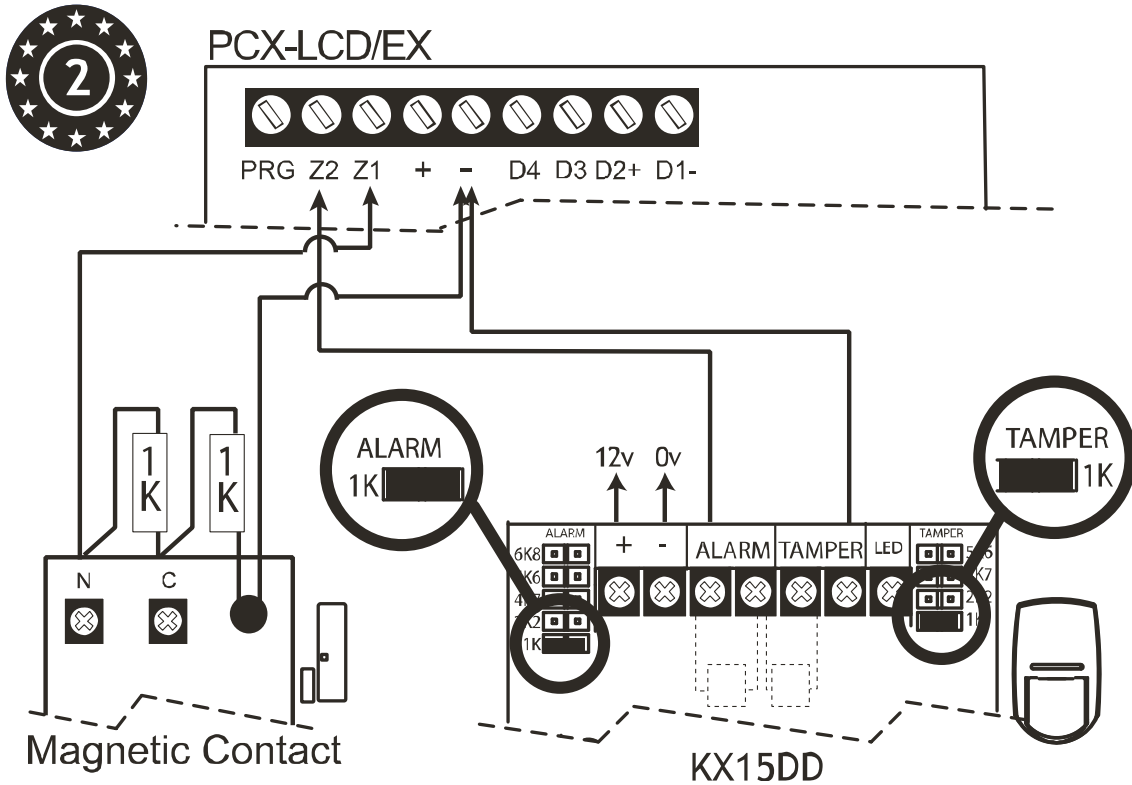
PCX-LCD/EX

PRG Z2 Z1 + - D4 D3 D2+ D1-

ALARM
1K

12v 0v

TAMPER
1K

Magnetic Contact

KX15DD

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k

7.1.6 Connecting The Outputs

PCX-LCD/EX

PRG Z2 Z1 + - D4 D3 D2+ D1-

C(-)
A(+)
1K

C(-)
A(+)

Normal State: 12V
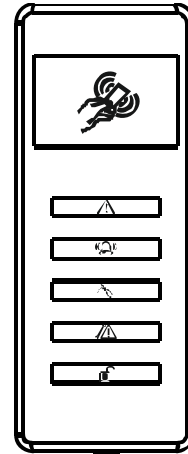Active State: 0V
Current : 100mA
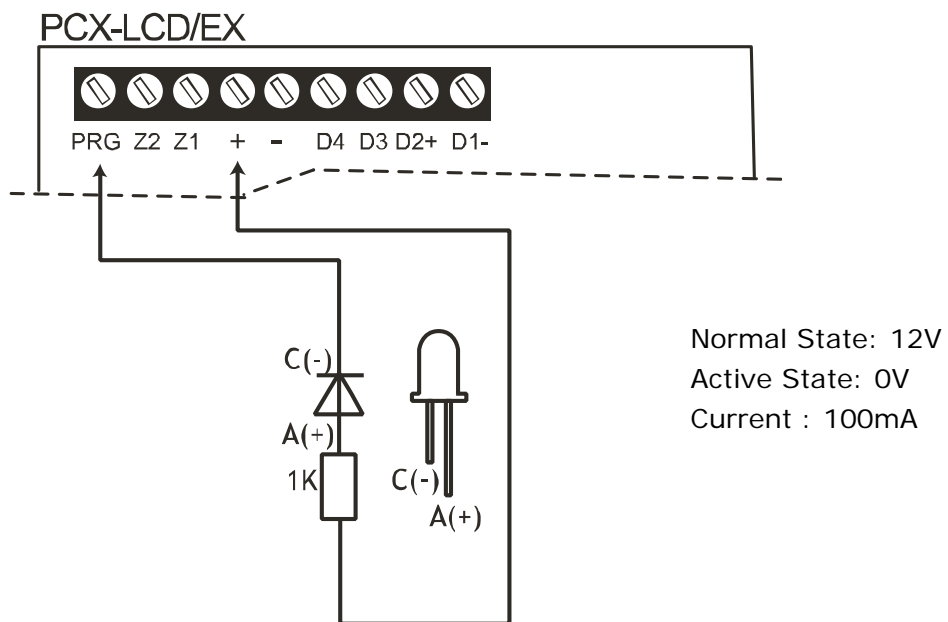
7.2 Connecting The Internal Tag Reader (PCX-PROX/INT)

The Internal Tag Reader can have 2 inputs connected. It can be used as an arm, disarm, entry control or an access control device.

NOTE: See the reader installation manual for the LED and button explanations.

NOTE: The total number of readers that can be installed on the **PCX 46 APP** is 5. The readers are installed on the same bus as the keypads.

7.2.1 Technical Specification

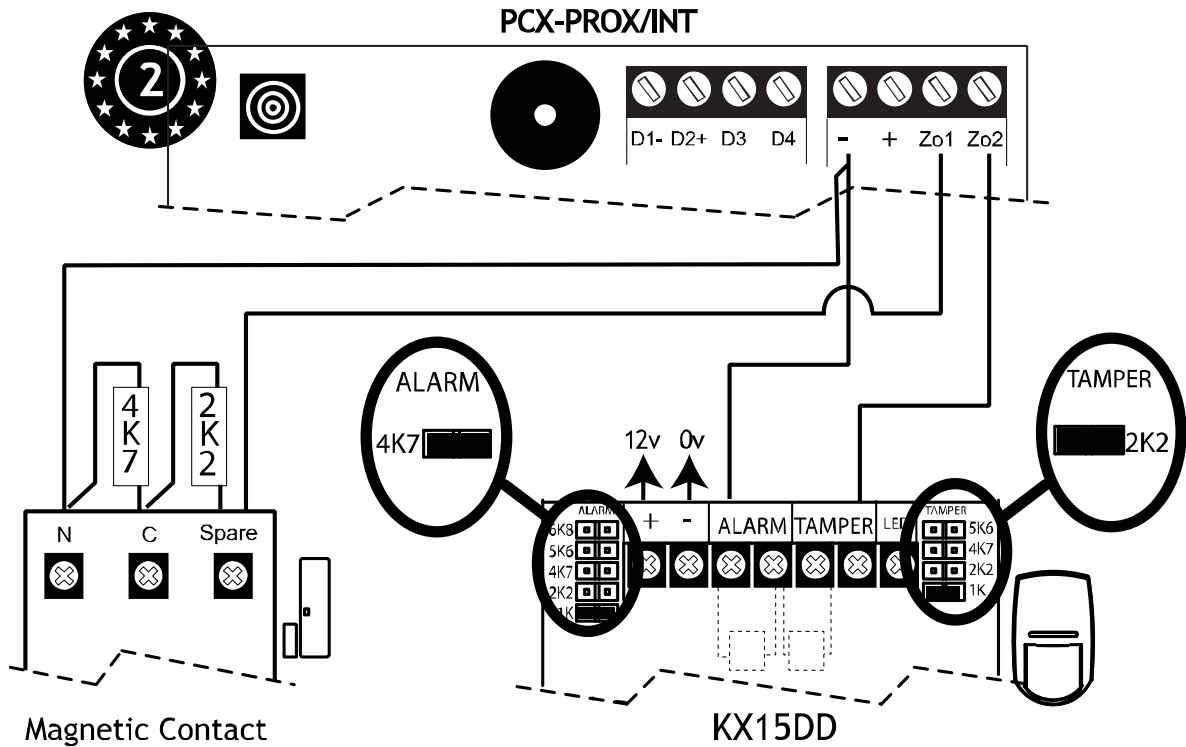| PCX-PROX/INT (Internal Tag Reader)	
Input Voltage:	12VDC (9-15V DC range)
Supply Current:	<30mA Quiescent. <90mA Maximum
Inputs:	Programmable. 2 inputs; DEOL
Input EOL Fixed Resistor Values:	Alarm=4K7 / Tamper=2K2 Normal: 1k4 to 2k9 Burglary Alarm:4k2 to 7k8 Tamper: <1k4 or >22k
Shared Outputs:	Switched negative 150mA (Max)
Colour and Casing:	White 3mm ABS
Indication:	LEDs (Alert, Alarm, Fault, Tamper, Disarmed)
Temperature:	Storage:-20°C to 60°C Certified: -10°C to 40°C Nominal: -20°C to 60°C
Dimensions (H x W x D):	97 x 40 x 23mm
Front and rear tamper protected	
NOTE: If the PCX-PROX/INT (Internal Tag Reader) is programmed as an 'Arm/Disarm' device, 2 inputs are enabled. If the PCX-PROX/INT is programmed as 'Entry Control' or 'Access Control' only 1 input is enabled.	

7.2.2 Addressing The Internal Tag Reader (From the Reader)
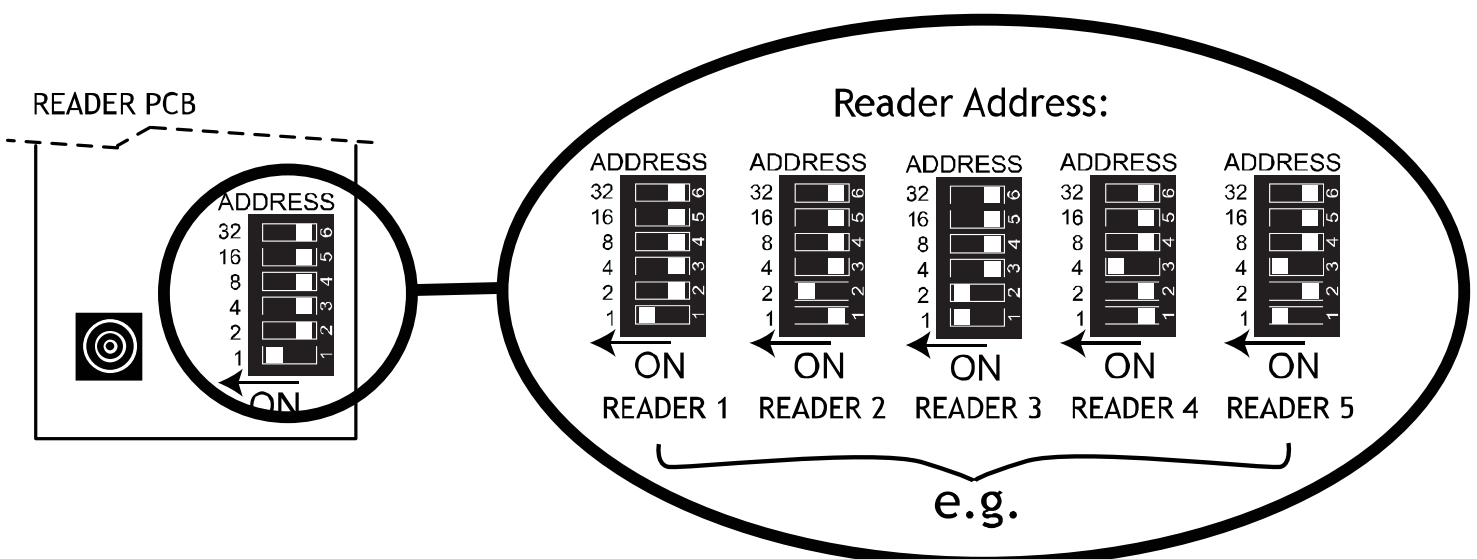
7.2.3 Adding The Internal Tag Reader (From the Engineer Menu)

Enter the engineers menu and scroll to 'INSTALL KEYPADS/READERS' and press ☑. Please see the Programming Manual for more information.
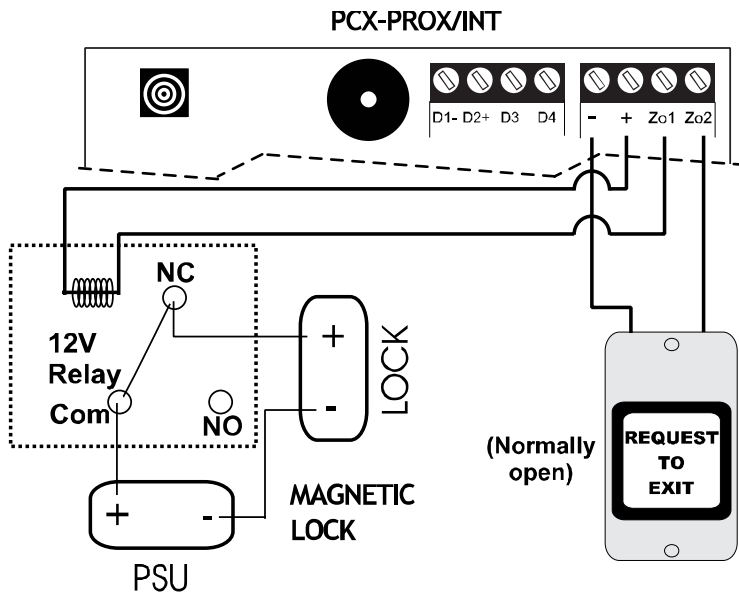
7.2.4 Connecting The Internal Tag Reader Inputs

Input Resistance: 4k7 / 2k2 DEOL Range	
Normal:	1k4 to 2k9
Burglary Alarm:	4k2 to 7k8
Tamper:	<1k4 or >22k

NOTE: The resistance values are fixed to 4K7 Alarm and 2K2 Tamper in the PCX-PROX/INT Reader

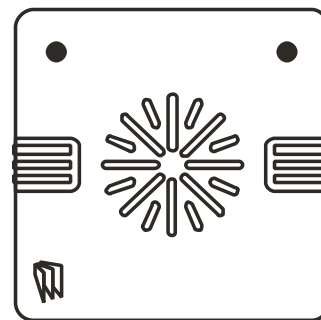### 7.2.5 Using the Internal Tag Reader as Access Control/Entry Control

Normal State: 12V
Active State: 0V
Current : 150mA

7.3 Connecting The External Proximity Reader (PCX-EXT-BK)

The External Proximity Reader can be used as either an arm, disarm, entry control or an access control device.

**NOTE:** See the reader installation manual for the LED and button explanations.

NOTE: The total number of readers that can be installed on the **PCX 46 APP** is 5. The readers are installed on the same bus as the keypads.

7.3.1 Technical Specification

PCX-EXT-BK / W (External Tag Reader)	
Supply voltage:	9-15VDC
Current consumption:	Max 22mA
Input status when reader is Arm/Disarm or Sub-Area Control:	
Input:	Programmable. DEOL
Input EOL fixed resistor value:	Alarm=4K7 / Tamper=2K2 Normal: 1k4 to 2k9 Burglary Alarm: 4k2 to 7k8 Tamper: <1k4 or >22k
Input status when reader is used as Access or Door Entry Control:	
Input 1:	Programmable
Input Function:	Door monitor feature. Door opening time limit is programmable from the Engineer Menu
Input 2:	Not programmable
Note: Access control falls outside the scope of EN 50131	
Output 1:	Not programmable. Activates the Door Lock Relay
Output 2:	Not programmable. Door monitor alarm activation (forced or open for longer than programmed time).
Output 1/2 Normal state:	Floating
Output 1/2 Active state:	0V
Colour and Casing:	3mm ABS (Black: PCX-EXT-BK, White: PCX-EXT-W)
Potted	Type B
Temperatures:	Storage: -10°C to 50°C Certified: -25°C to 60°C Nominal: -25°C to 60°C
Dimensions (H x W x D):	85 x 85 x 21mm
IP65 Rated. If the control panel fails to arm, this is indicated by a broken tone on the external proximity reader and the red LED will not illuminate. If this occurs, please check the information at the nearest keypad.	

### 7.3.2 Addressing the External Tag Reader (From the Reader)
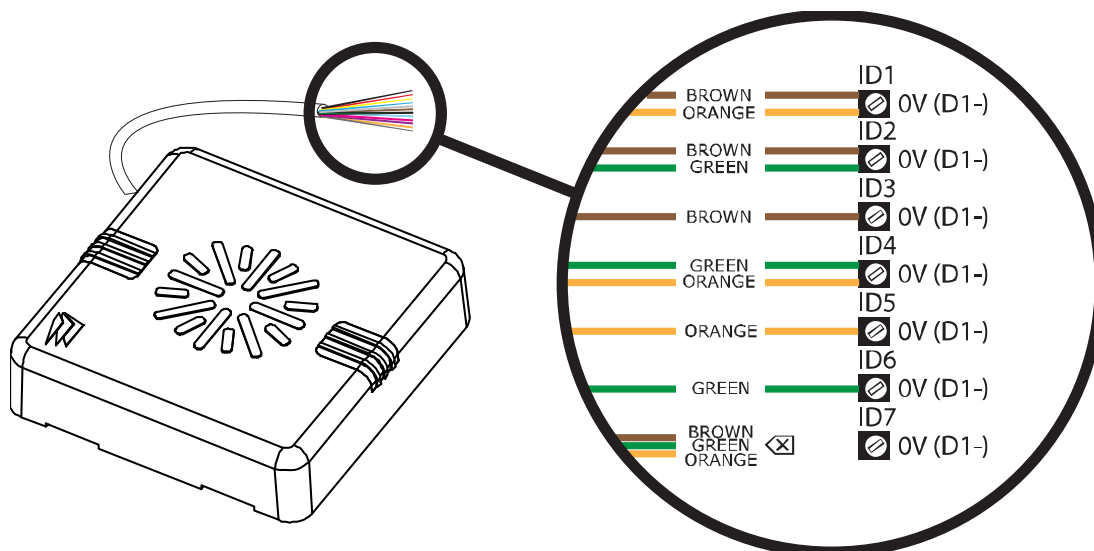
7.3.3 Adding the External Tag Reader (From the Engineer Menu)

Enter the engineers menu and scroll to 'INSTALL KEYPADS/READERS' and press ☑. Please see the Programming Manual for more information.

7.3.4 Connecting a Mag Lock and a Request to Exit Button to the External Tag Reader
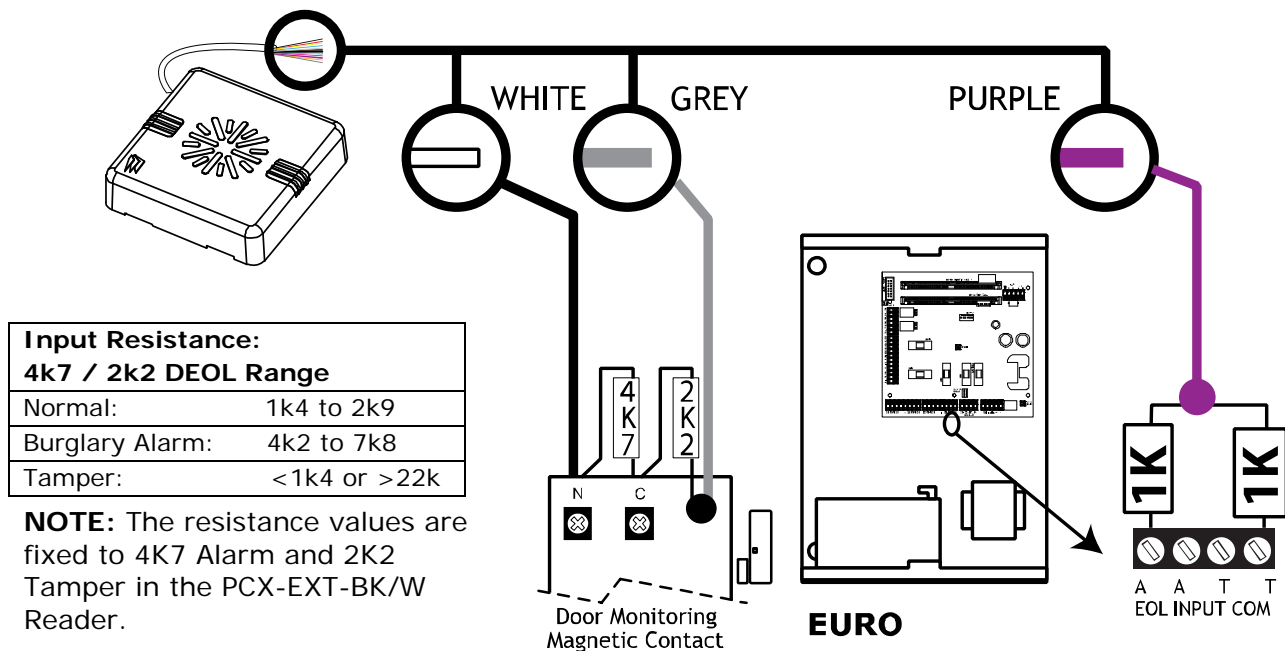
The diagram show the relay mag lock control switching positive and shows a normally open request to exit button, and takes "0V" from the control panel.
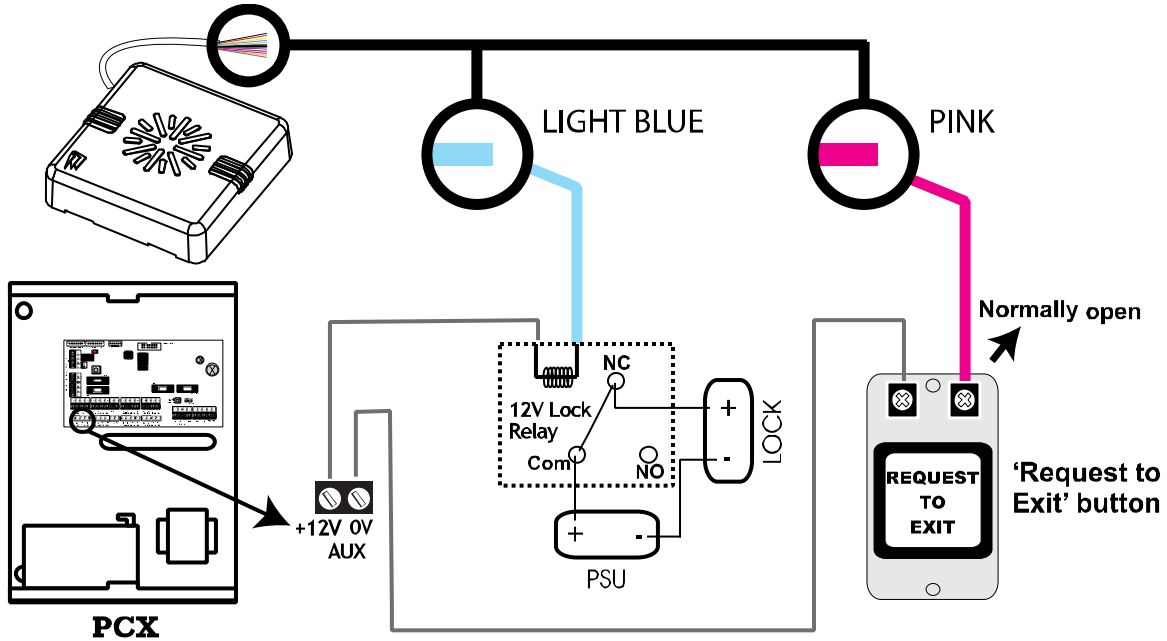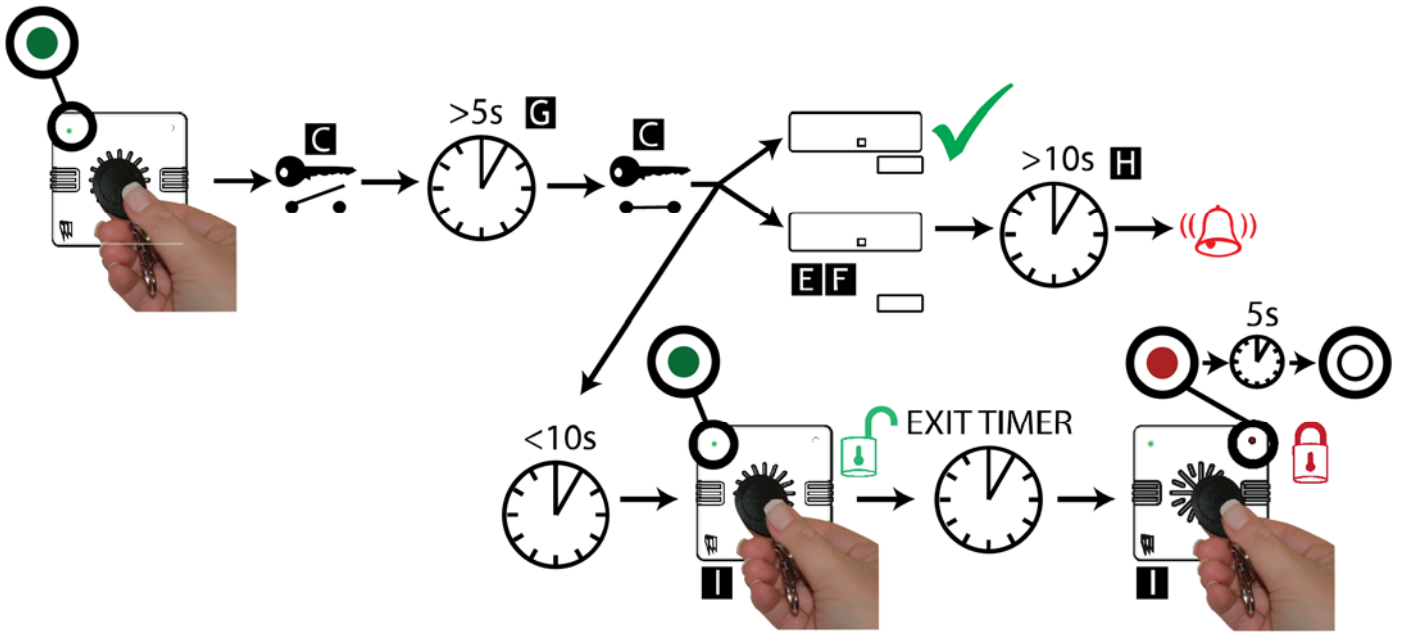

7.3.5 Connecting Door Monitoring and Door Alarm Monitoring to the External Tag Reader

Connecting Door Monitoring: Use the white and grey wire. The door monitor input needs to be programmed as the first input number of the reader address (programmed as "Entry Delay"). If the door contact is forced open without presenting a valid tag or pressing the push to exit button, then the panel will go into an alarm. **NOTE:** The DEOL values must be 4K7, 2K2 as shown. This does not affect the control panel DEOL values.

Connecting Door Alarm Monitoring: Use the purple wire. When the door monitor exceeds the door open time or if the door is forced open then the alarm PGM will generate an alarm. The input at the control panel should be programmed as "24 Hour" and the attribute programmed as "Normally Open".

Please see the next page for the wiring diagrams.

Input Resistance: 4k7 / 2k2 DEOL Range	
Normal:	1k4 to 2k9
Burglary Alarm:	4k2 to 7k8
Tamper:	<1k4 or >22k

NOTE: The resistance values are fixed to 4K7 Alarm and 2K2 Tamper in the PCX-EXT-BK/W Reader.

7.3.6 Using the External Tag Reader for Arming and Entry Control

7.3.7 Using the Request to Exit button

REQUEST
TO
EXIT
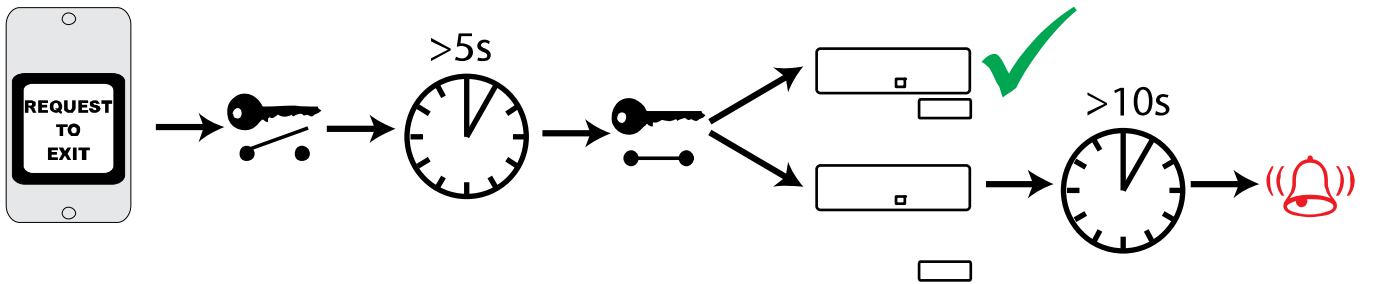
7.3.8 Using the External Tag Reader Disarming
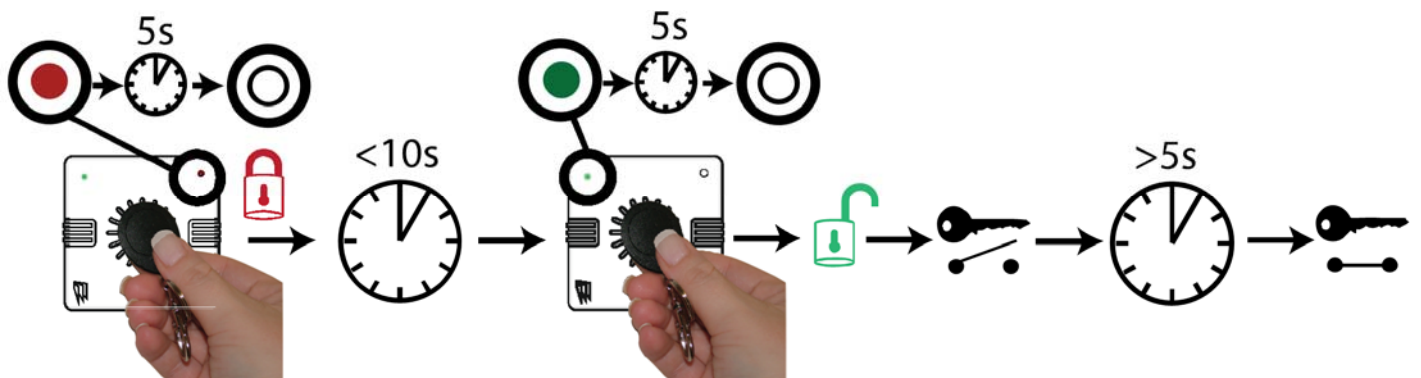
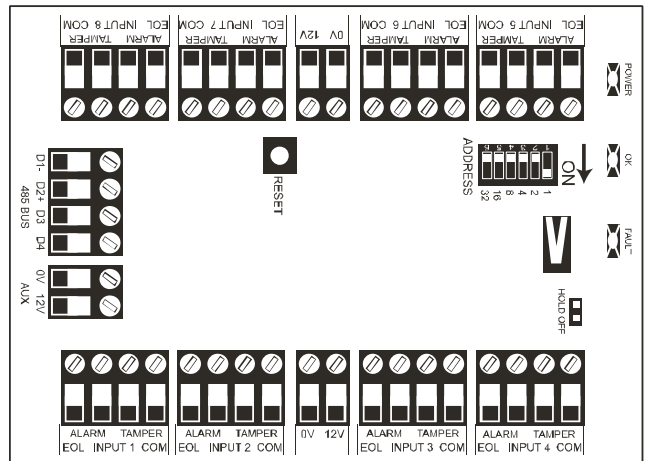## 7.1 Connecting The PCX-RIX8i (Remote Input Expander with Inertia)

7.1.1 The PCX-RIX8i Expander

PCX-RIX8i

The PCX-RIX8i is an input expander that supports 8 normal or inertia inputs (also known as fast inputs).

It also supports NC (normally closed), DEOL and SEOL input wiring.

The PCX 46 will support up to 4 x Remote Inputs Expanders.

7.1.2 PCX-RIX8i Technical Specification

PCX-RIX8i (Inertia Input Expander)	
Input Voltage	9-15V
Current Consumption	45mA
Inputs	DEOL, NC, Inertia (Fast inputs)
Input EOL Fixed Resistor Values	1k / 1k DEOL Range
	Normal: 0k5 to 1k4
	Burglary Alarm: 1k5 to 5k9
	Tamper: <0k5 or >17K
Dimensions (plastic box)	173 x 125 x 32mm
Dimensions (PCB)	128 x 87 x 16mm
Colour and Casing	White 3mm ABS with clear polycarbonate window
Grade 2 Indication	LEDs (Power, OK and Fault)
Temperature	Storage: -20°C to +60°C
	Certified: -10°C to +40°C
	Nominal: -10°C to +50°C
Front and rear tamper protected	
NOTE: This product is only compliant to Security Grade 2	

7.1.3 Addressing The PCX-RIX8i (From The Expander)

Input Resistance:
1k / 1k DEOL Range
Normal: 0k5 to 1k4
Burglary Alarm: 1k5 to 5k9
Tamper: <0k5 or >17k

NOTE: The resistance values are fixed to 1K Alarm and 1K Tamper on the PCX-RIX8i expander.
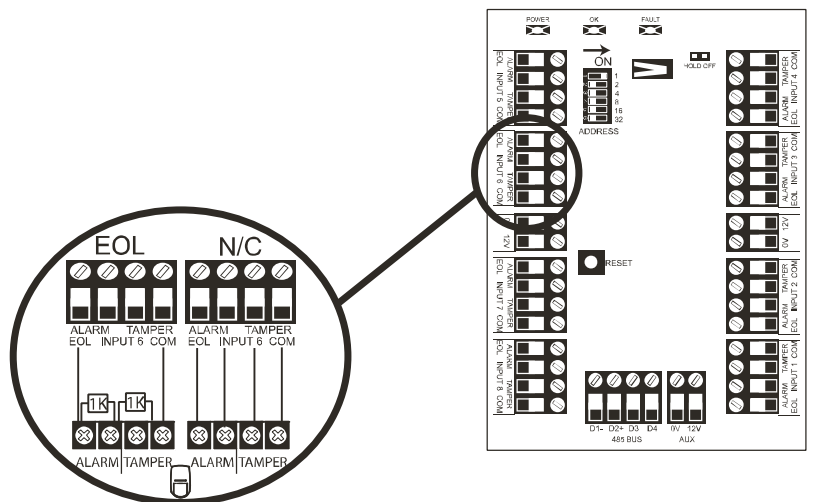
7.1.4 Addressing the PCX-RIX8i (From The Expander)
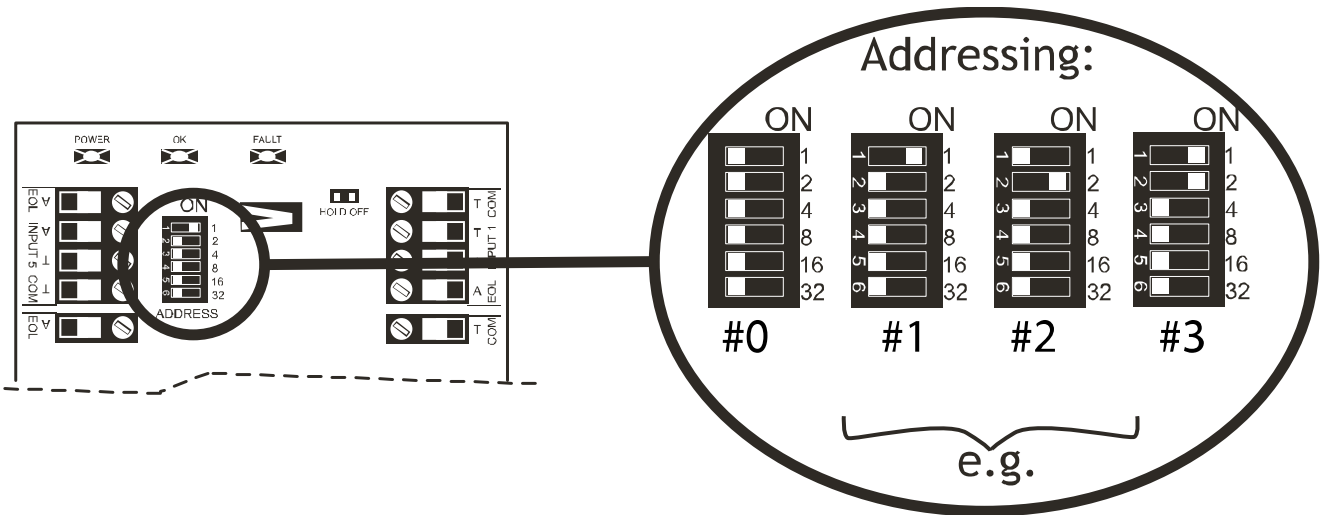
7.1.5 Adding the PCX-RIX8i (From the Engineer Menu)

Enter the Engineers menu and scroll to 'INSTALL RIX' and press ☑. Please see the Programming Manual for more information.

7.1.6 Wiring Inputs on the PCX-RIX8i (Normally Closed)

7.1.7 Wiring Inputs on the PCX-RIX8i (DEOL: Grade 2)
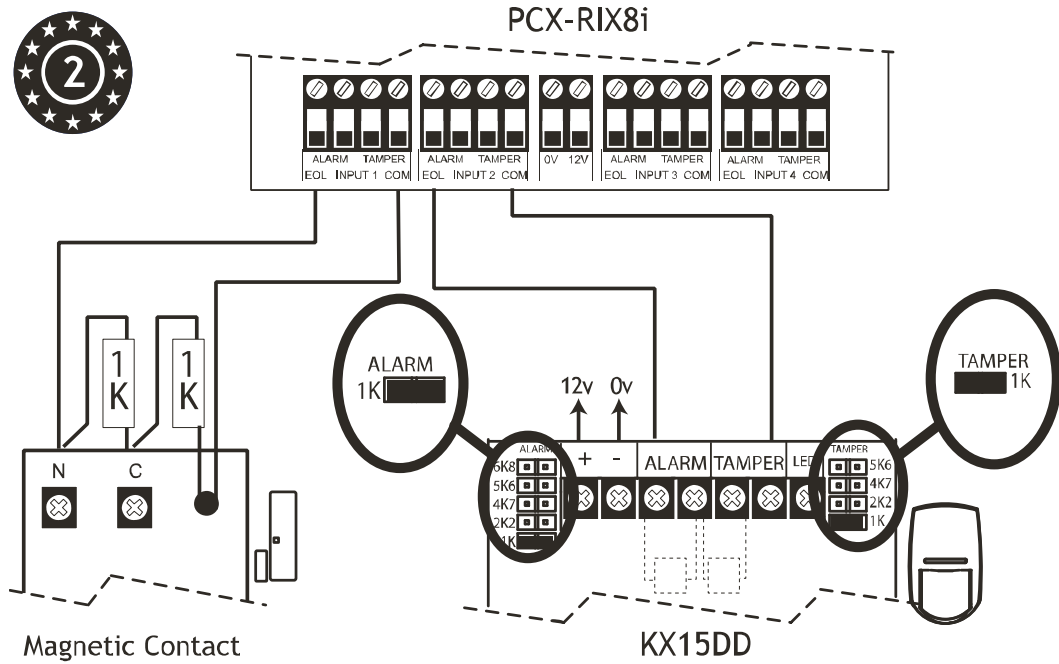
Magnetic Contact

KX15DD

Input Resistance: 1k / 1k DEOL Range	
Normal:	0k5 to 1k4
Burglary Alarm:	1k5 to 5k9
Tamper:	<0k5 or <17k

NOTE: The resistance values are fixed to 1K Alarm and 1K Tamper on the PCX-RIX8i expander.

7.1.8 Wiring Fast Inputs on the PCX-RIX8i (Normally Closed)

Connecting a Roller Shutter

Connecting a Shock Sensor
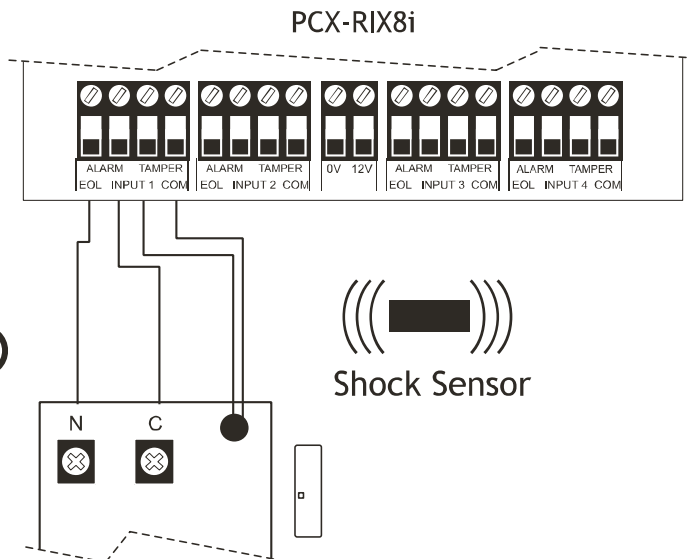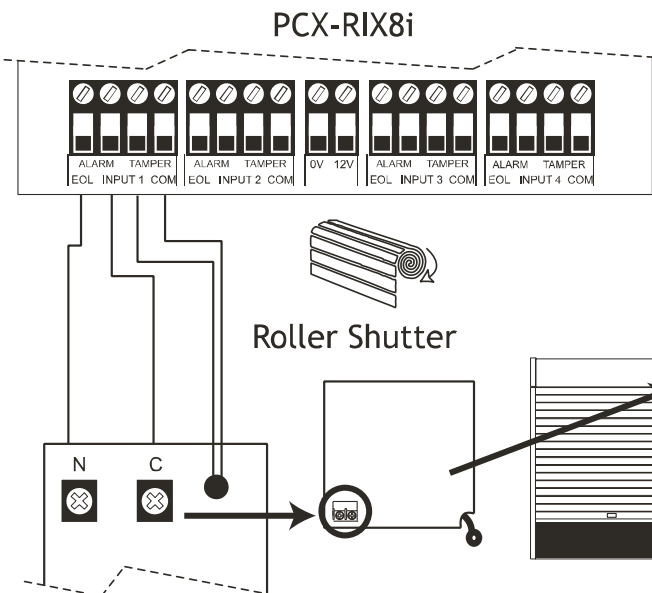
Roller Shutter

Shock Sensor

NOTE: The programming menu "PROGRAM INPUTS" has a sub-menu called 'Input Attributes'. This has an option to enable or disable Inertia inputs.

7.1.9 Wiring Fast Inputs on the PCX-RIX8i (DEOL: Grade 2)

Connecting a Roller Shutter

PCX-RIX8i

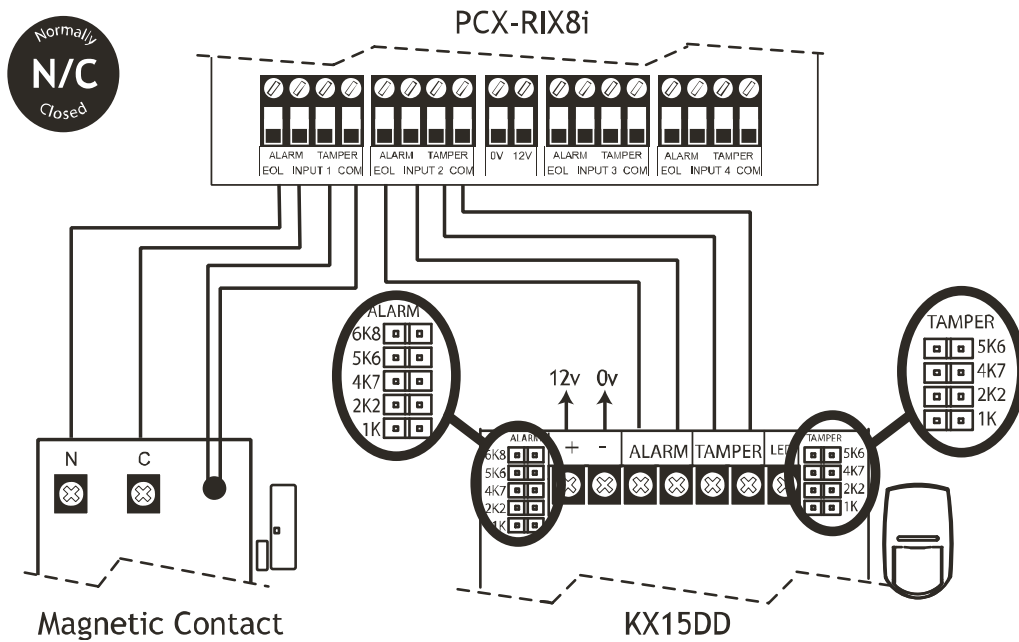Roller Shutter

Connecting a Shock Sensor

PCX-RIX8i

Shock Sensor

Input Resistance: 1k / 1k DEOL Range	
Normal: 0k5 to 1k4	
Burglary Alarm: 1k5 to 5k9	
Tamper: <0k5 or >17k	

NOTE: These resistances are fixed to 1K Alarm and 1K Tamper and cannot change.
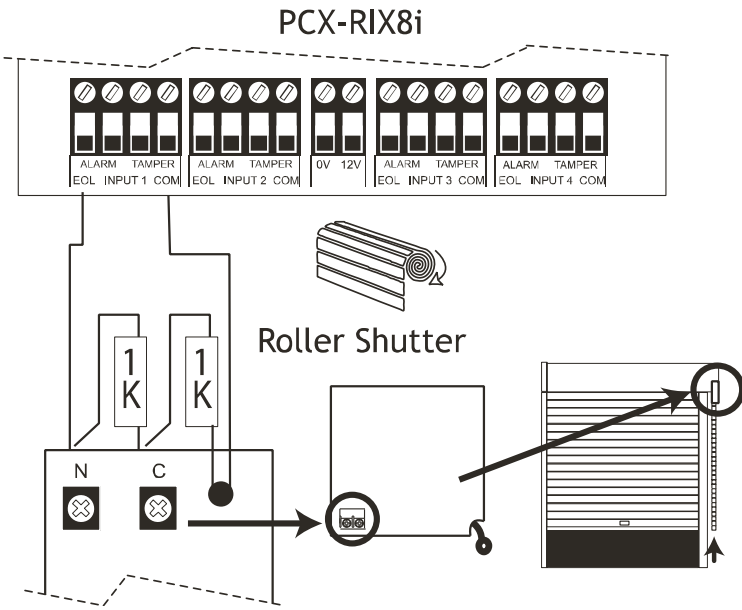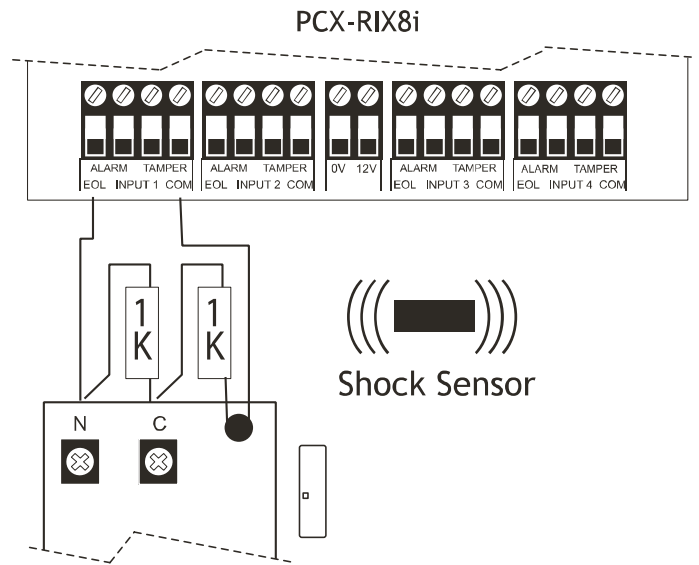
NOTE: The programming menu "PROGRAM INPUTS" has a sub-menu called 'Input Attributes'. This has an option to enable or disable Inertia inputs.

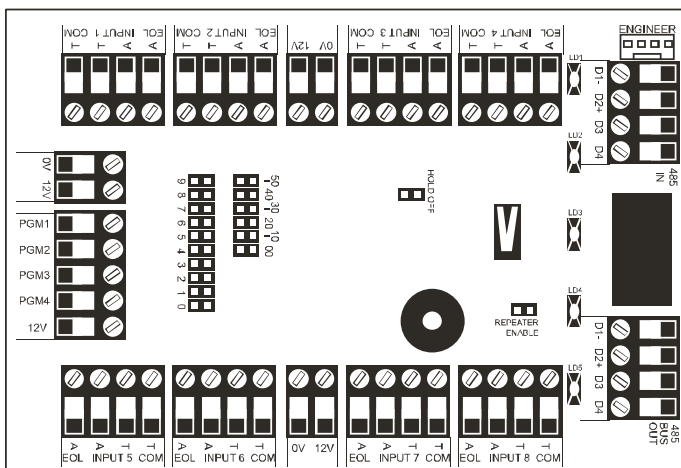## 7.2 Connecting The PCX-RIX8+ (Remote Input Expander with 4 PGMs)

PCX-RIX8+

The PCX-RIX8+ is an input expander that supports 8 inputs (not inertia).

It also supports normally closed (double pole), DEOL and SEOL input wiring.

There are 4 programmable PGMs.

The PCX 46 will support up to 4 x Remote Input Expanders.

7.2.1 PCX-RIX8+ Technical Specification

PCX-RIX8+ (Input Expander)			
Input Voltage	9-15V		
Current Consumption	30mA		
Inputs	Programmable DEOL, NC, 3 Resistor (Grade 3)		
Input EOL Resistor Values	**1k / 1k DEOL Range**	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	**0k5 to 1k4**	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	**1k5 to 5k9**	4k2 to 7k8	8k4 to 10k2
Fault	**6k to 8k1**	8k to 11k3	10k3 to 14k9
Masking (6k8)	**8k2 to 17k**	11k6 to 22k	15k to 22k
PGM1 - PGM4	100mA each		
PGM1 - PGM4	Normal state: 12V		
PGM1 - PGM4	Active state: 0V		
Dimensions (plastic box)	173 x 125 x 32mm		
Dimensions (PCB)	128 x 87 x 16mm		
Colour and Casing	White 3mm ABS with clear polycarbonate window		
Indication	LEDs (Power, OK and Fault)		
Temperature	Storage: -20°C to +60°C Certified: -10°C to +40°C Nominal: -10°C to +50°C		
Front and rear tamper protected			

7.2.2 PCX-RIX8+ Input Configuration
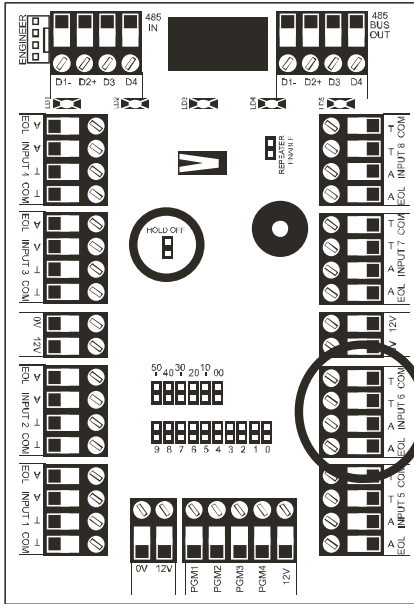
Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k
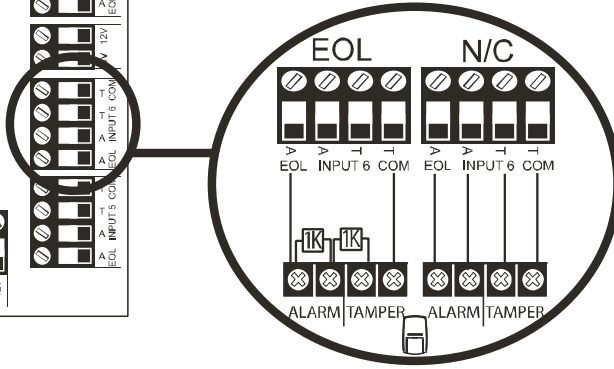
7.2.3 Addressing the PCX-RIX8+

Addressing:
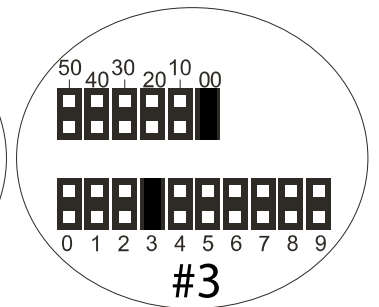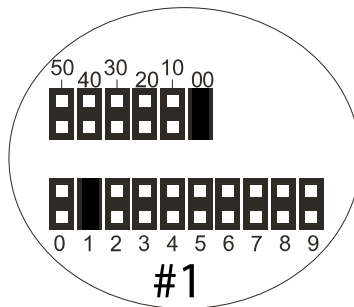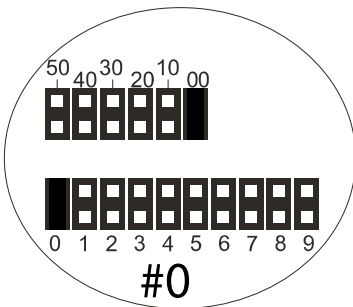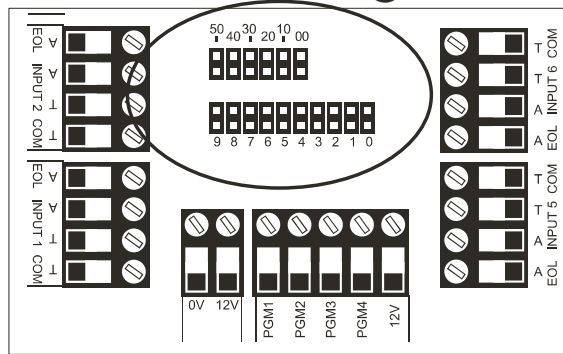
7.2.4 Adding the PCX-RIX8+ (From the Engineer Menu)

Enter the engineers menu and scroll to 'INSTALL RIX' and press ☑. Please see the Programming Manual for more information.

7.2.5 Wiring Inputs on the PCX-RIX8+ (Normally Closed)
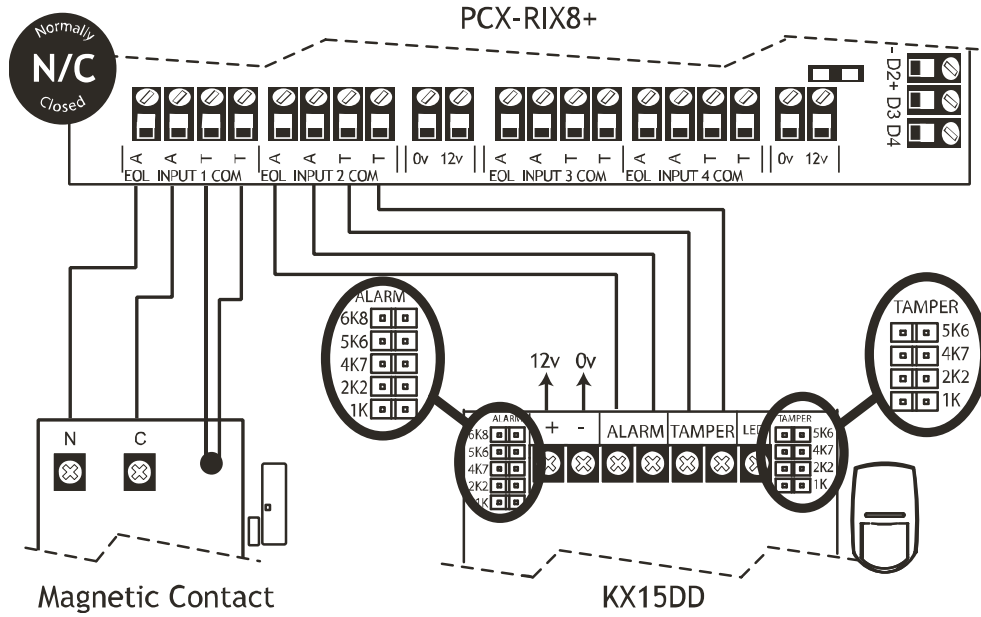
Magnetic Contact   KX15DD

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

7.2.6 Wiring Inputs on the PCX-RIX8+ (DEOL - Grade 2)
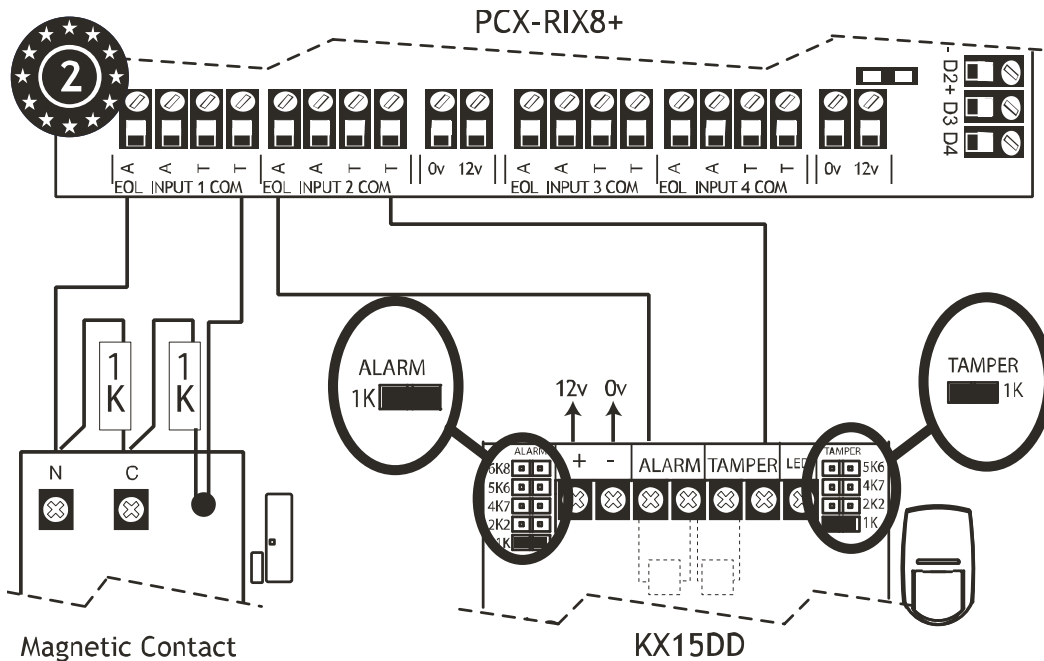
Magnetic Contact   KX15DD

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Tamper	<0k5 or <17k	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

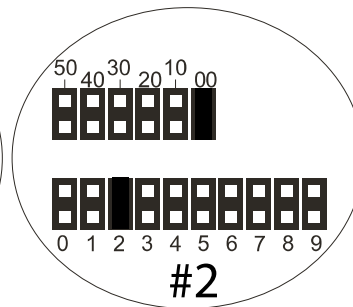## 7.2.7 Wiring Inputs on the PCX-RIX8+ (DEOL - Grade 3)

KX15DTAM

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or <17k	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

7.2.8 Output Wiring on the PCX-RIX8+

Normal State: 12V
Active State: 0V
Current: 100mA

7.3 Connecting The PCX-RIX8+PSU (Remote Input Expander with PSU)

PCX-RIX8+PSU

The PCX-RIX8+ is an input expander that supports 8 inputs (not inertia) and has a 2.5A power supply.

It supports normally closed (N/C), DEOL and 3EOL input wiring.

The PCX 46 will support up to 4 x Remote Input Expanders.

NOTE: The D2+ terminal should not be connected.

7.3.1 PCX-RIX8+PSU Technical Specification

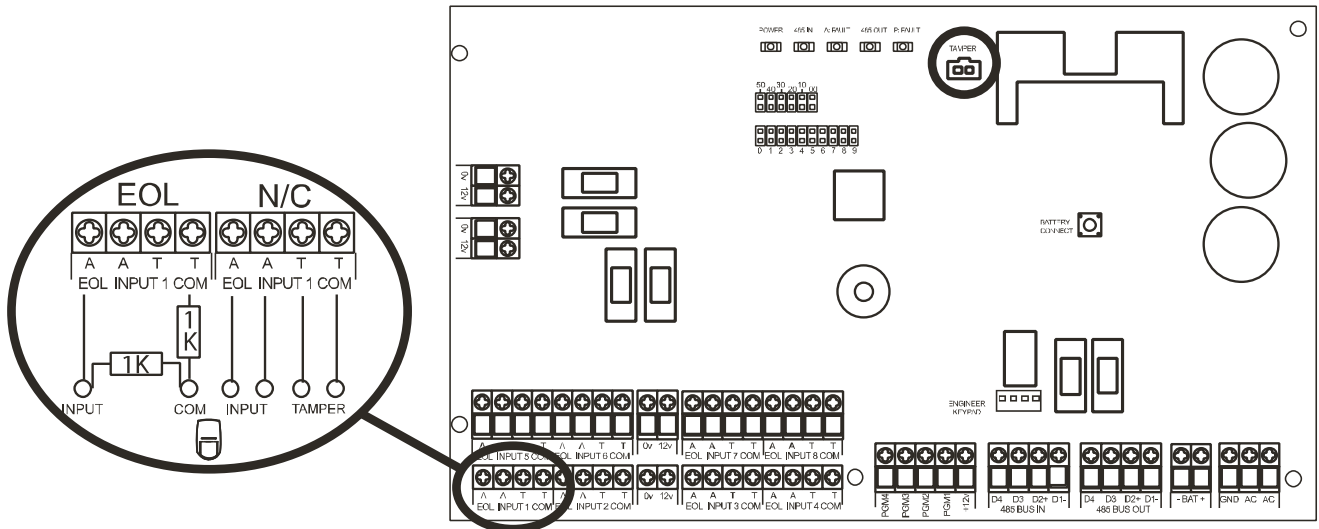| PCX-RIX8+PSU (Input Expander with Power Supply)			
Input Voltage	9-15V		
Current Consumption	65mA		
Inputs	Programmable DEOL, N/C, 3 Resistor (Grade 3)		
Input EOL Resistor Values	**1k / 1k DEOL Range**	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	**0k5 to 1k4**	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	**1k5 to 5k9**	4k2 to 7k8	8k4 to 10k2
Fault	**6k to 8k1**	8k to 11k3	10k3 to 14k9
Masking (6k8)	**8k2 to 17k**	11k6 to 22k	15k to 22k
PGM1 - PGM4	100mA each		
PGM1 - PGM4	Normal state: 12V		
PGM1 - PGM4	Active state: 0V		
Power Supply Rating	2.0A continued and 2.5A in peak when charging battery		
Transformer Rating	44VA		
Dimensions (metal box)	390 x 305 x 100mm		
Dimensions (PCB)	215 x 125 x 65mm		
Colour and Casing	White metal casing		
Indication	LEDs (Power, RS485 In, A-Fault, RS485 Out, P-Fault)		
Temperature	Storage: -20°C to +60°C Certified: -10°C to +40°C Nominal: -10°C to +50°C		
EN50131 Certified Grade 3 Front and rear tamper protected with one tamper switch PD6662:2010 Installations – Back up battery time = 12hrs providing that a mains fail signal is reported to the ARC. A 17Ah battery, will support a maximum load of 1350mA for a period of 12 hours. EN50131-1:2006+A1:2009 Installations - Back up battery time = 30hrs providing that a mains fail signal is reported to the ARC. A 17Ah battery, will support a maximum load of 497mA for a period of 30 hours. Installations which are not supported by an ARC mains fail reported signal = 60 hours. A 17Ah battery, will support a maximum load of 248mA for a period of 60 hours.			

7.3.2 PCX-RIX8+PSU Input Configuration

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

7.3.3 Addressing the PCX-RIX8+PSU
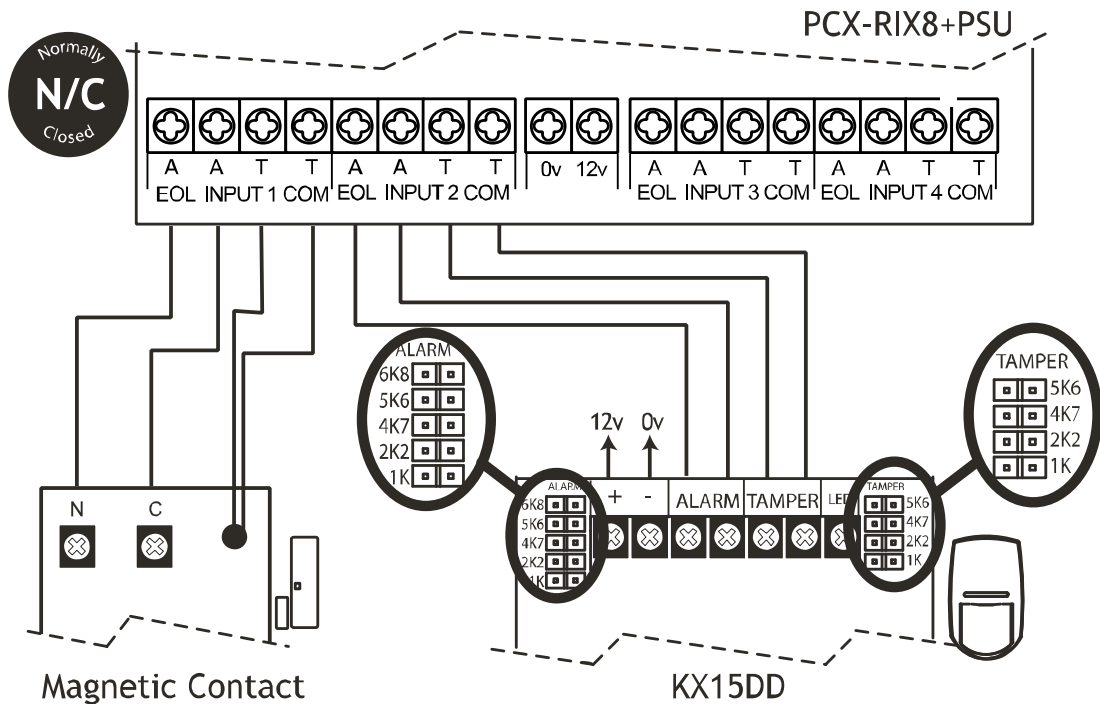
Addressing:

#0   #1   #2   #3
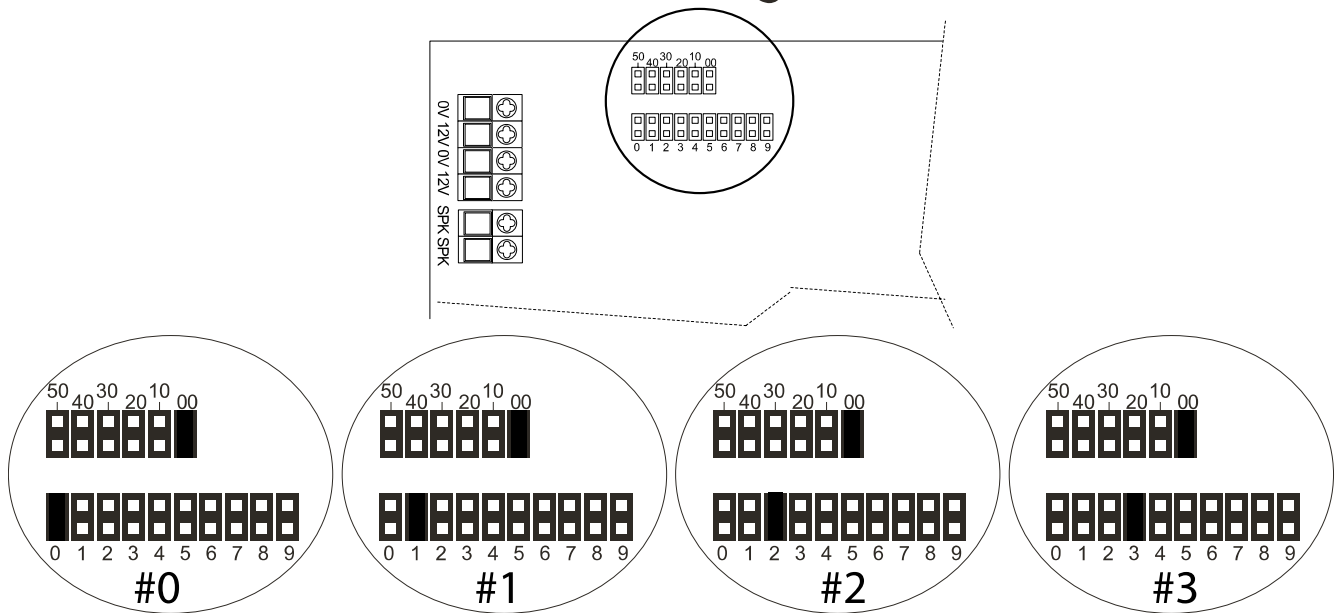
7.3.4 Adding the PCX-RIX8+PSU (From the Engineer Menu)

Enter the Engineers menu and scroll to 'INSTALL RIX' and press ☑. Please see the Programming Manual for more information.
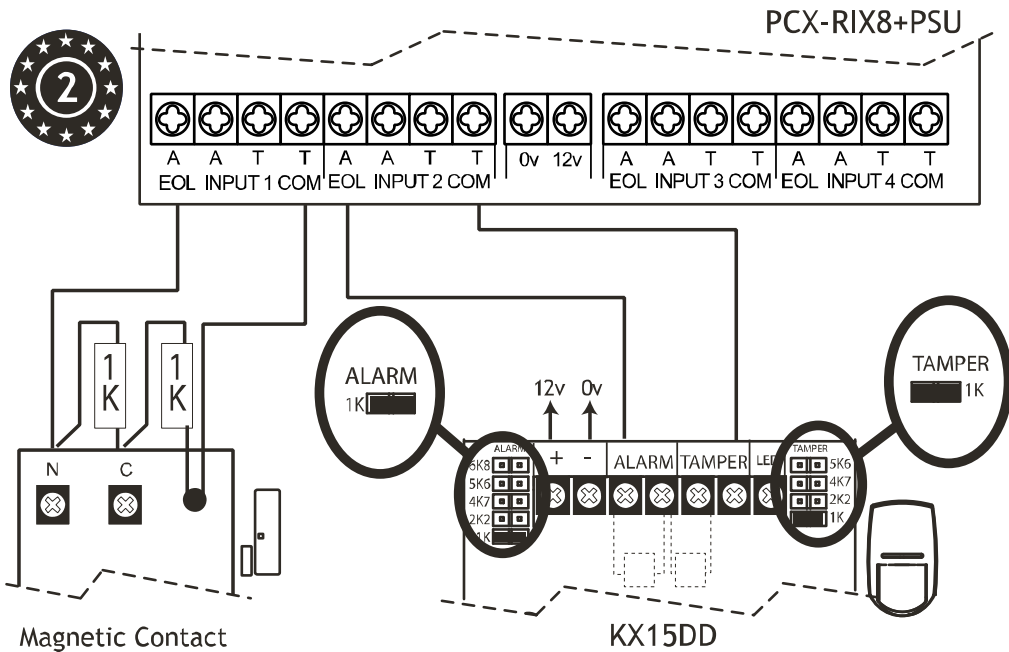
7.3.5 Wiring Inputs on the PCX-RIX8+PSU (Normally Closed)

Magnetic Contact   KX15DD

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

7.3.6 Wiring Inputs on the PCX-RIX8+PSU (DEOL: Grade 2)

Magnetic Contact   KX15DD

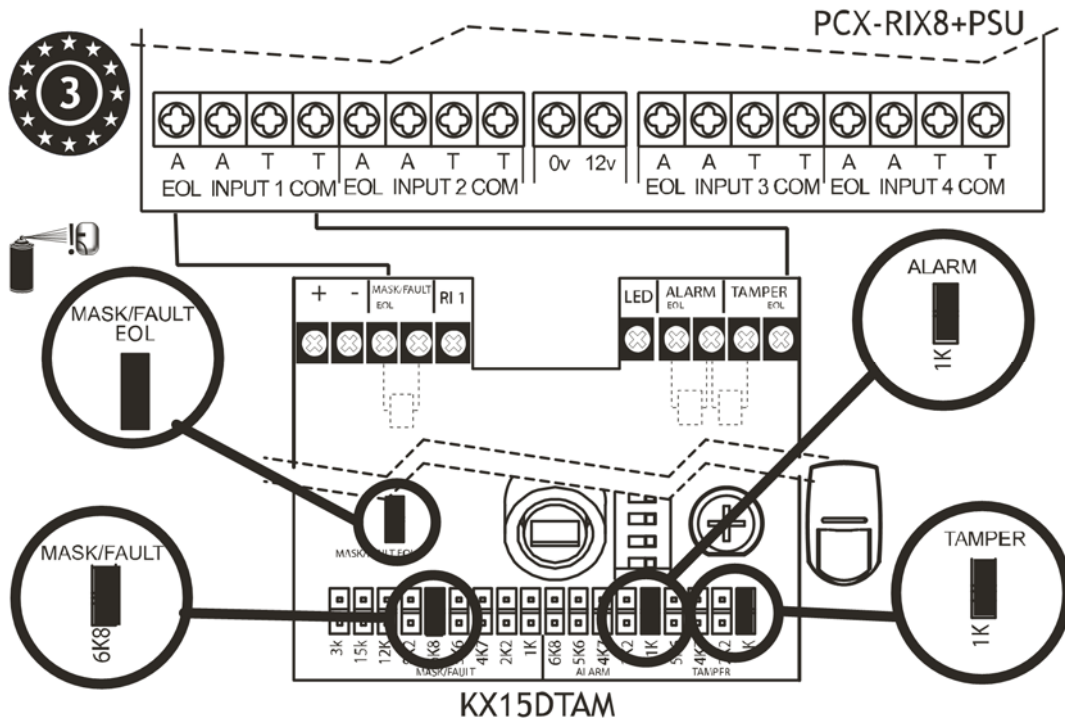| Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

7.3.7 Wiring Inputs on the PCX-RIX8+PSU (DEOL: Grade 3)

Input Resistance	1k / 1k DEOL Range	4k7 / 2k2 DEOL Range	4k7 / 4k7 DEOL Range
Normal	0k5 to 1k4	1k4 to 2k9	3k7 to 8k3
Burglary Alarm	1k5 to 5k9	4k2 to 7k8	8k4 to 10k2
Fault	6k to 8k1	8k to 11k3	10k3 to 14k9
Masking (6k8)	8k2 to 17k	11k6 to 22k	15k to 22k
Tamper	<0k5 or >17K	<1k4 or >22k	<3k7 or >23k
All inputs are programmed in "PROGRAM INPUTS" in the Engineer menu.			

### 7.3.8 Output Wiring on the PCX-RIX8+PSU
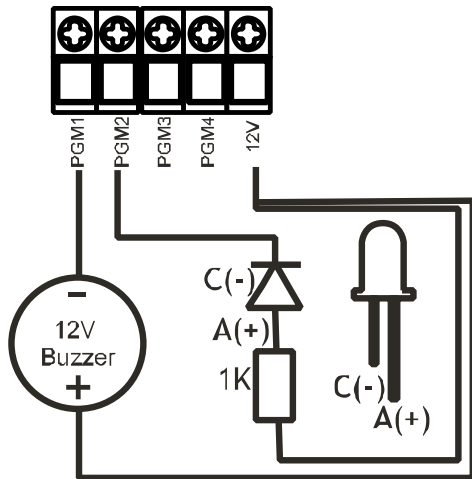
Normal State: 12V

Active State: 0V

Current : 100mA

7.4 Connecting The PCX-RIX32-WE (Remote Wireless Expander)

PCX-RIX32-WE

The PCX-RIX32-WE is a input expander that supports Two Way wireless Enforcer technology. It will allow 32 wireless inputs, 32 wireless keyfobs and 2 wireless bells to be learnt and programmed on the **PCX 46 APP** system.
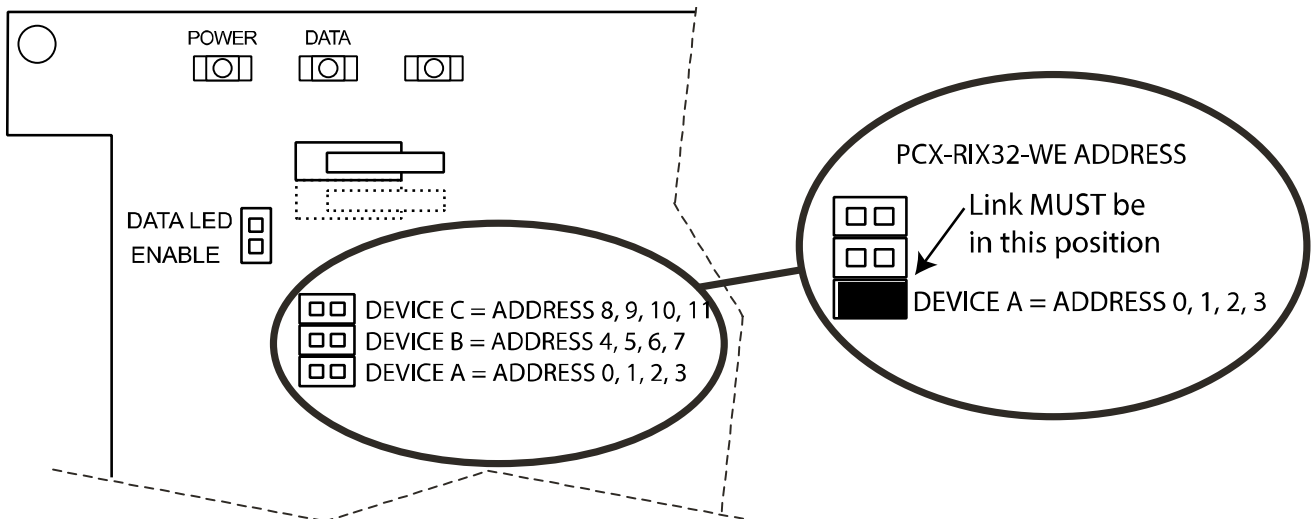
The **PCX 46 APP** will support only 1 x PCX-RIX32-WE.
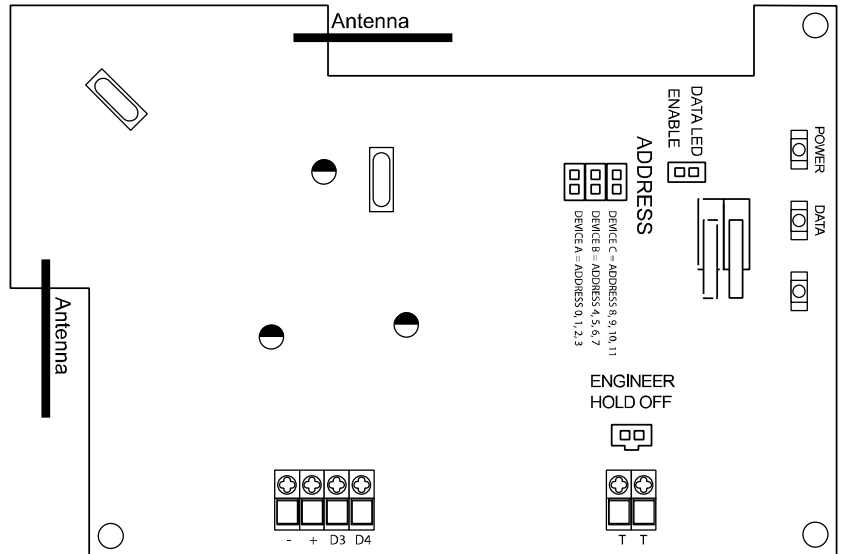

7.4.1 PCX-RIX32-WE Technical Specification

PCX-RIX32-WE (Two Way Wireless Input Expander)	
Input Voltage	9-14V
Current Consumption	60mA quiescent 115mA during transmission
Radio Frequency	868MHz FM Transceiver Narrow Band. Range: 1.6km
Dimensions (metal box)	173 x 125 x 32mm
Colour and Casing	White plastic casing
Indication	LEDs (Power and Data)
Temperature	Operational: -10°C to +50°C Certified: -10°C to +40°C Storage: -40°C to +80°C
Humidity	85% @ 25°C
Weight	0.24kg

7.4.2 Addressing the PCX-RIX32-WE (From the Expander)

The **PCX 46 APP** will support both wired and wireless expanders on the same bus. Wireless sounders and keyfobs must be learned to Address 0.

NOTE: Please make sure that you address the PCX-RIX32-WE while the tamper switch is open. The address will then be assigned when the tamper is closed.

Addressing Example: Having 32 wireless inputs on the PCX 46 APP

PCX-RIX32-WE

Link MUST be in this position

DEVICE A = ADDRESS 0, 1, 2, 3

PCX
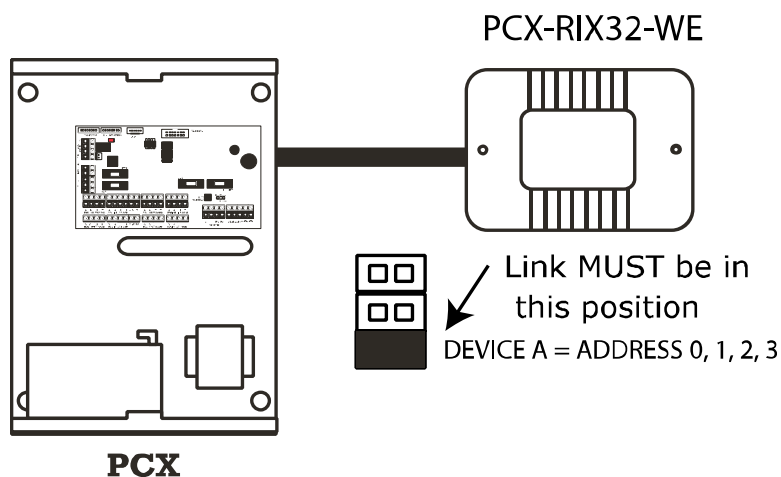
PCX-RIX32-WE: DEVICE A

This expander will learn all 32 wireless keyfobs and 2 wireless bells.

- **Address 0** = 8 wireless inputs (Inputs 9-16)
- **Address 1** = 8 wireless inputs (Inputs 17-24)
- **Address 2** = 8 wireless inputs (Inputs 25-32)
- **Address 3** = 8 wireless inputs (Inputs 33-40)

Wired expanders may also be used in conjunction with wireless expanders.

7.4.3 Adding the PCX-RIX32-WE (From the Engineer Menu)

Enter the engineers menu and scroll to 'INSTALL RIXs?' and press ☑. Please see the Programming Manuals for more information.

7.4.4 Learning Wireless Devices

All wireless devices are learnt in the Engineer function 'LEARN WIRELESS DEVICES?'. Please see the programming manuals (for inputs and bells) and user manual (keyfobs) for more information

7.5 Connecting The PCX-ROX8R8T (Remote Output Expander)

PCX-ROX8R8T

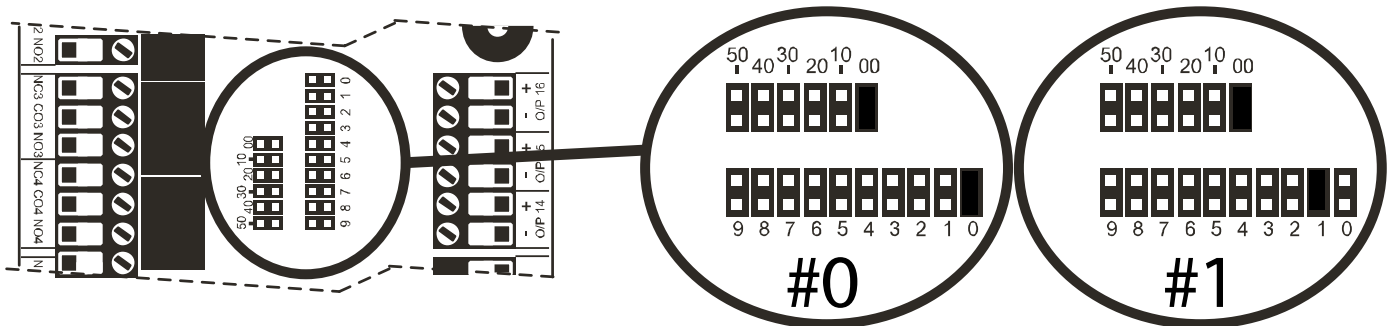The PCX-ROX8R8T is an output expander that supports 8 way relays and 8 transistor outputs.

The **PCX 46 APP** will support up to 2 x Remote Output Expanders.
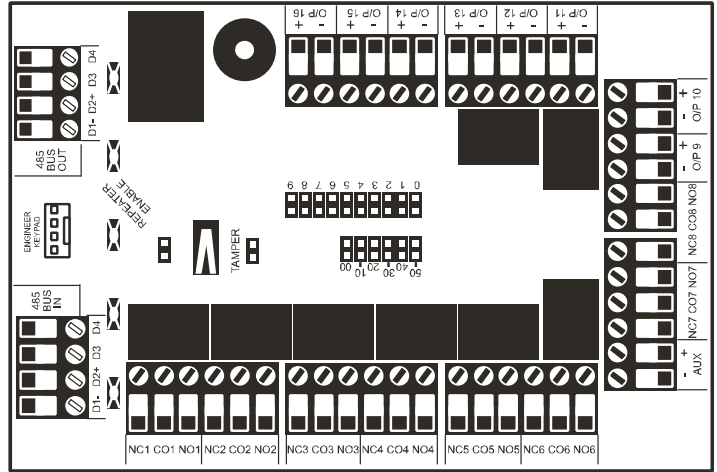
7.5.1 PCX-ROX8R8T Technical Specification

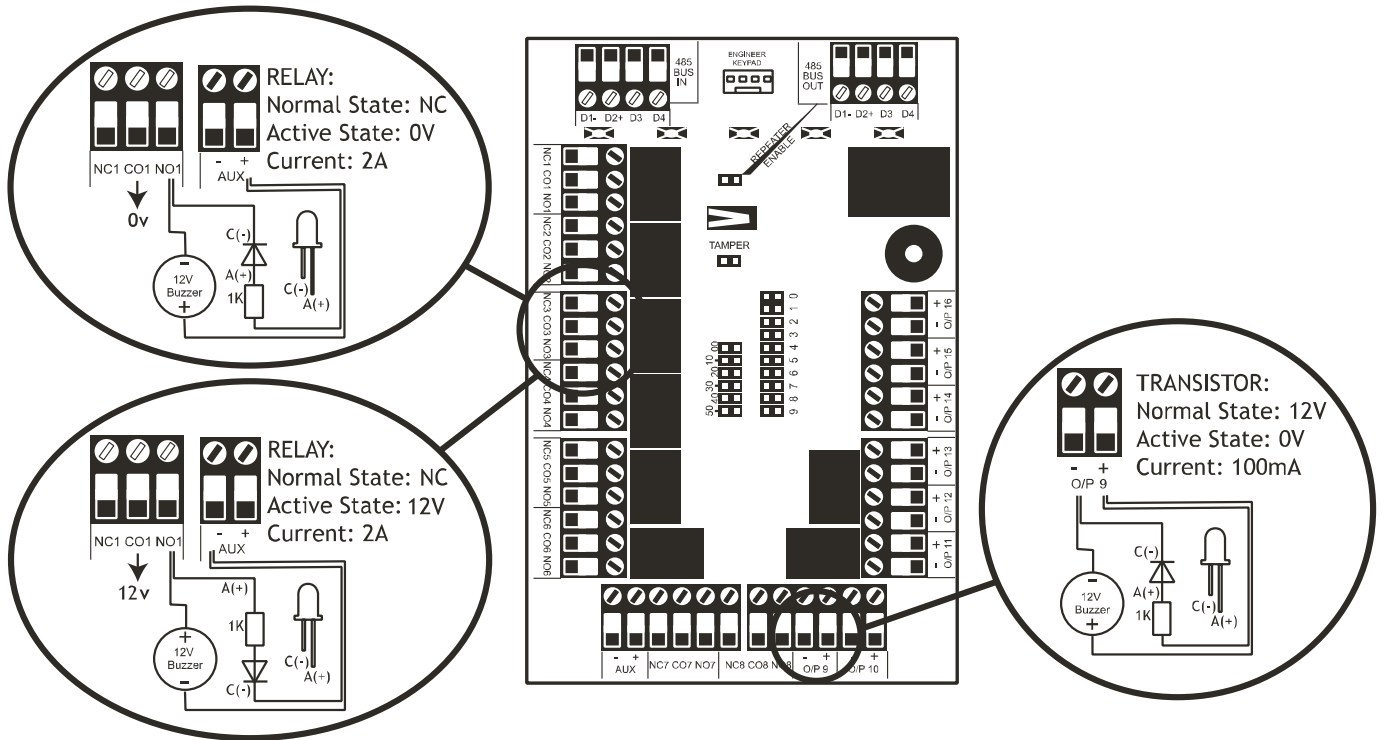| PCX-ROX8R8T (Output expander with 16 PGMs)	
Supply Voltage	9-15V DC
Current Consumption	25mA, Max 300mA when all outputs are active
PGM1 to PGM16	Programmable
PGM1 to PGM8 Type	Relay, 3A, max 30V
PGM1 to PGM8 Normal State	Changeover NC & NO
PGM1 to PGM4 Active State	Changeover NC & NO
PGM9 to PGM16 Type	Open Collector
PGM9 to PGM16 Normal State	Floating
PGM9 to PGM16 Active State	0V
Dimensions Plastic Box	173 x 125 x 32mm
Dimensions PCB	135 x 90 x 15mm
EN50131 Certified	Grade 3

7.5.2 Addressing The PCX-ROX8R8T (From the Expander)

7.5.3 Adding The PCX-ROX8R8T (From the Engineer Menu)

Enter the engineers menu and scroll to 'PROGRAM OUTPUTS' and then 'O/P Module O/Ps?' and press ☑. Please see the Programming Manuals for more information.

7.5.4 PCX-ROX8R8T Output Connections

RELAY:
Normal State: NC
Active State: 0V
Current: 2A

RELAY:
Normal State: NC
Active State: 12V
Current: 2A

TRANSISTOR:
Normal State: 12V
Active State: 0V
Current: 100mA

7.6 Connecting The PCX-ROX16R+PSU Expander (Remote Output Expander with PSU)

PCX-ROX16R+PSU

The PCX-ROX16R+PSU is an output expander that supports 16 way relays and has a 2.5A power supply.

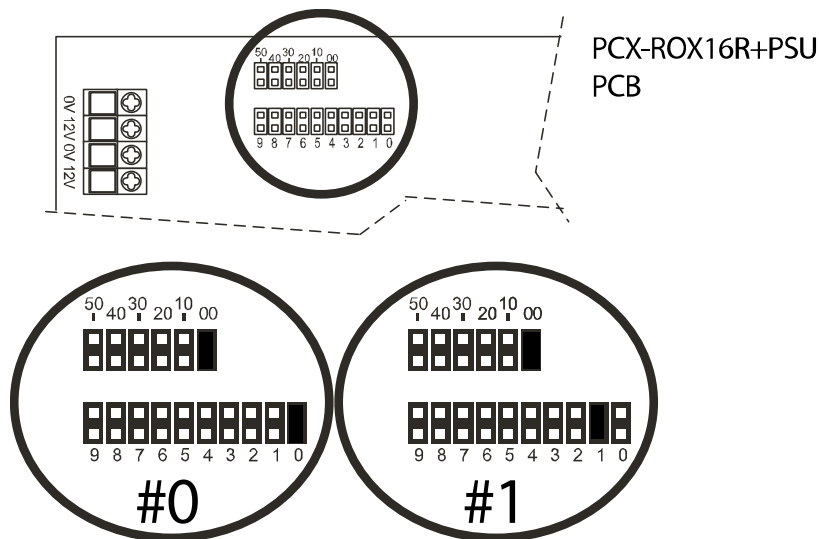The **PCX 46 APP** will support up to 2 x Remote Output Expanders.

NOTE: The D2+ terminal MUST not be connected.
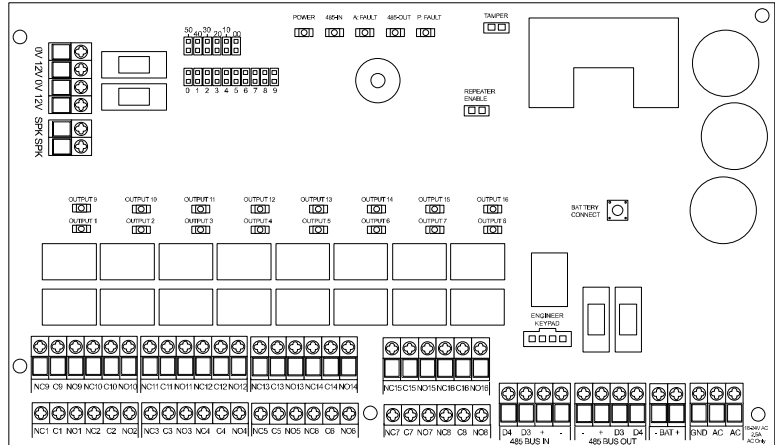
7.6.1 PCX-ROX16R+PSU Technical Specification

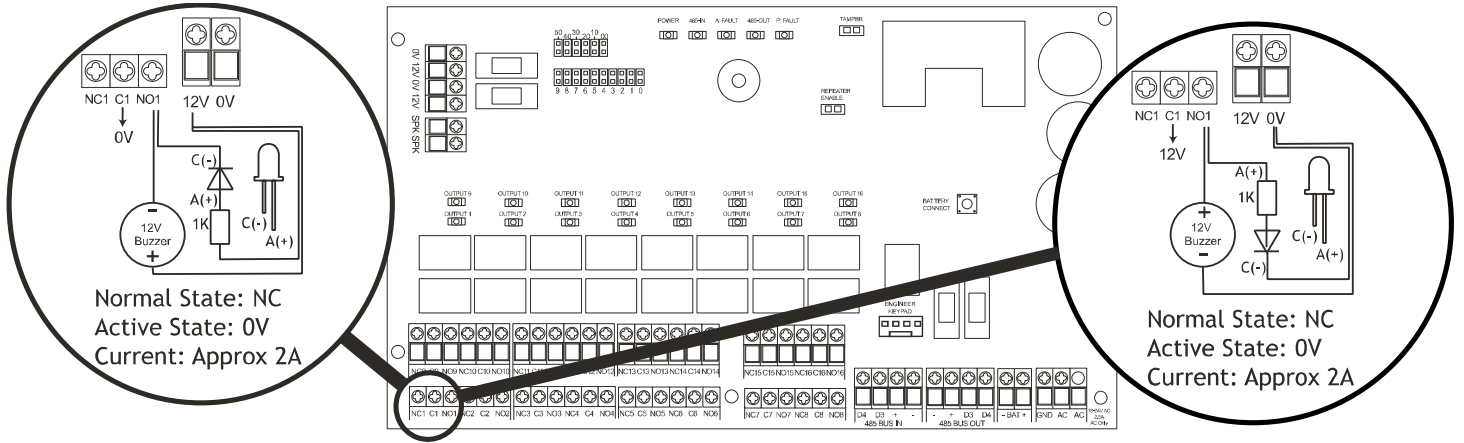| PCX-ROX16R/PSU (Output expander with 16 PGMs and Power Supply)	
Supply Voltage	9-15V DC
Current Consumption	25mA, Max 340mA when all outputs are active
PGM1 to PGM16	Programmable
PGM1 to PGM16 Type	Relay, 3A, max 30V
PGM1 to PGM16 Normal State	Changeover NC & NO
PGM1 to PGM16 Active State	Changeover NC & NO
Power Supply Rating	2.0A Continued and 2.5A in peak when charging battery
Transformer Rating	44VA
Dimensions Metal Box	390 x 205 x 100mm
Dimensions PCB	215 x 125 x 65mm
Front and rear tamper protected with one tamper switch	
Front and rear tamper protected with one tamper switch A 17Ah battery, will support a maximum load of 1350mA for a period of 12 hours. EN50131-1:2006+A1:2009 Installations - Back up battery time = 30hrs providing that a mains fail signal is reported to the ARC. A 17Ah battery, will support a maximum load of 497mA for a period of 30 hours. Installations which are not supported by an ARC mains fail reported signal = 60 hours. A 17Ah battery, will support a maximum load of 248mA for a period of 60 hours.	
EN50131 Certified	Grade 3

7.6.2 Addressing The PCX-ROX16R+PSU (From the Expander)

7.6.3 Adding The PCX-ROX16R+PSU (From the Engineer Menu)

Enter the engineers menu and scroll to 'PROGRAM OUTPUTS' and then 'O/P Module O/Ps?' and press ☑. Please see the Programming Manuals for more information.
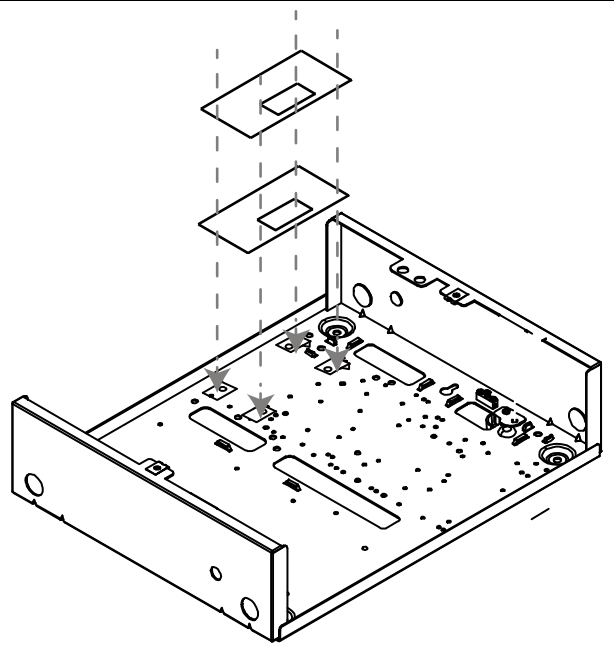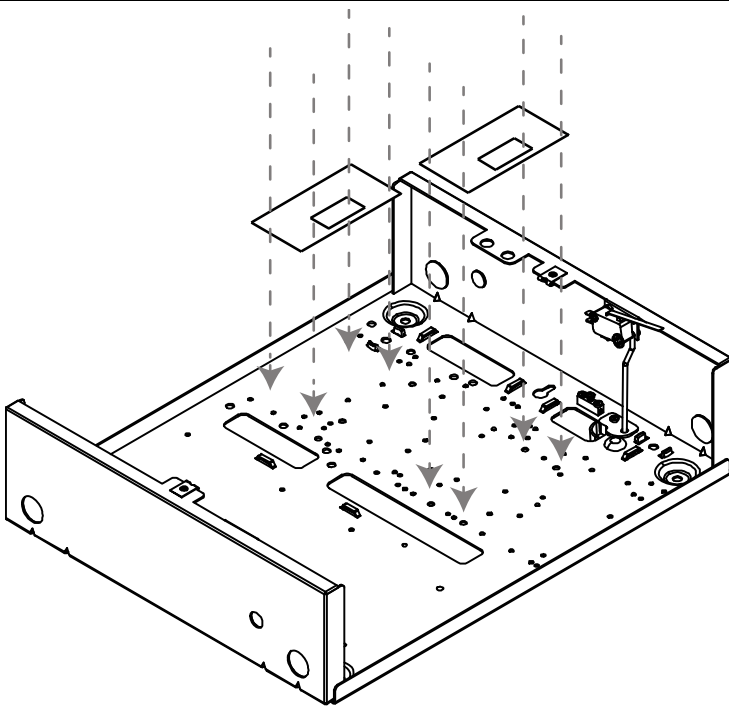
7.6.4 PCX-ROX16R+PSU Connections

Normal State: NC
Active State: 0V
Current: Approx 2A

Normal State: NC
Active State: 0V
Current: Approx 2A

8. The GPRS, LAN and PSTN Modems

Connecting the modems in the large box	*Connecting the modems in the small box*

GPRS or LAN Modem
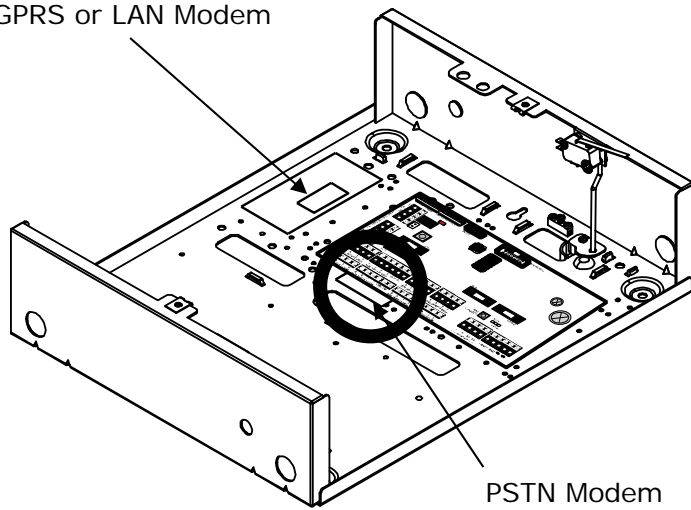
PSTN Modem

The PSTN modem should be located underneath the **PCX 46 APP** PCB and the GPRS or LAN modems should be located to the left of the **PCX 46 APP** PCB.

GPRS or LAN Modem

PSTN Modem

The PSTN modem should be located at the bottom (closest to the base) and the GPRS or LAN modems should be located at the top.

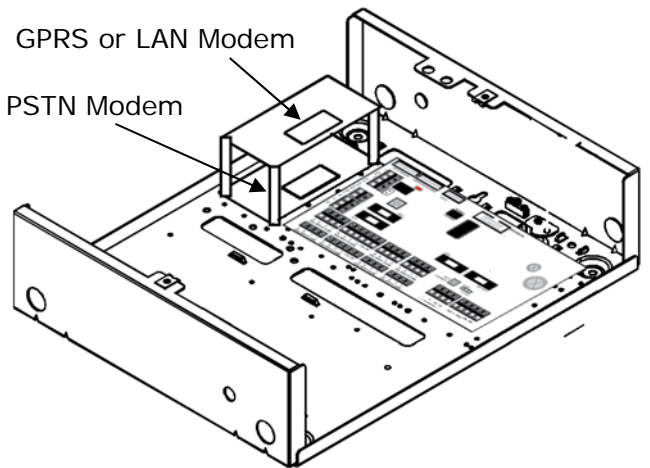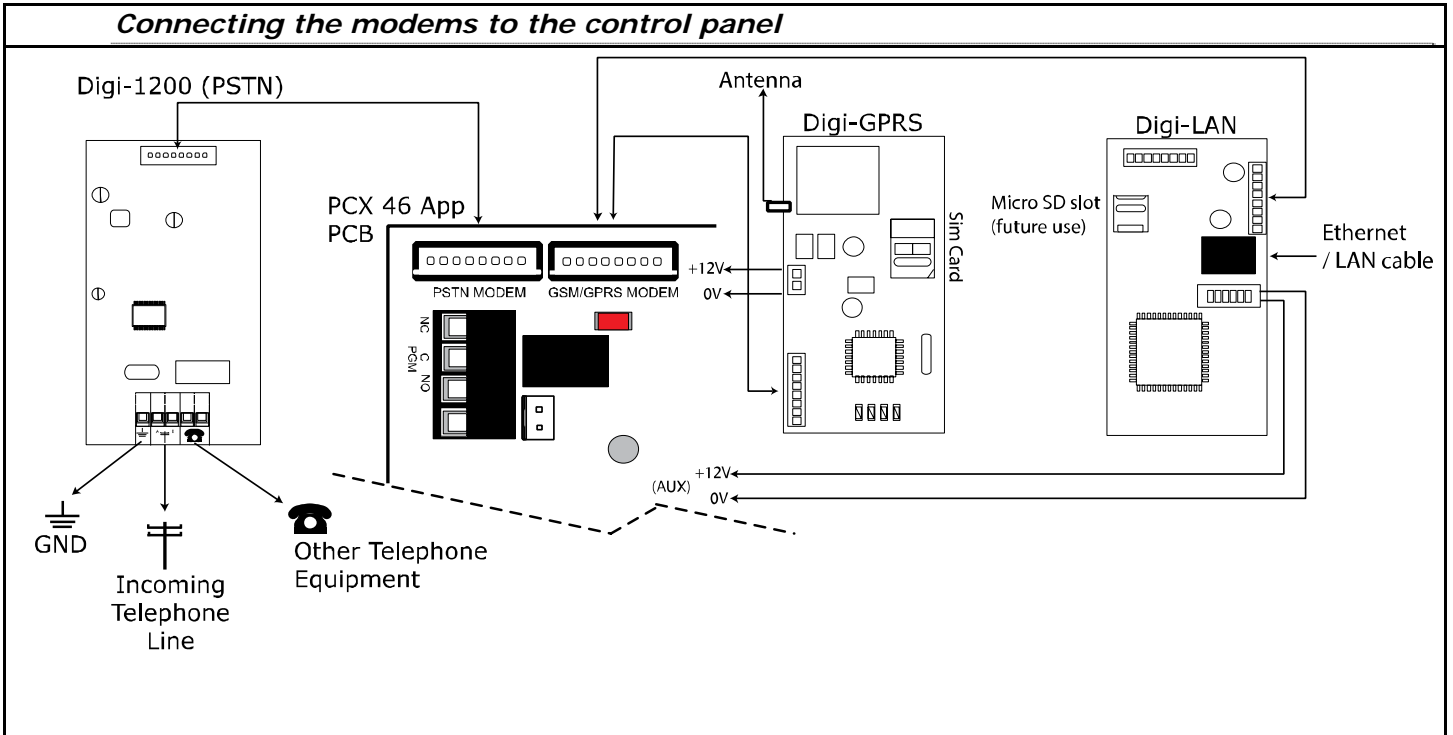## Connecting the modems to the control panel

8.1 The PSTN Modem (Digi-1200)

The PSTN DIGI-1200 card is a fast modem and enables communication via PSTN line using Contact ID and SIA Level 1/ Level 3 as well as remote uploading/ downloading.

A = Telephone line output for connection to analogue PSTN telephone line

B = Telephone line output for connection to analogue PSTN telephone line

A-1 = Telephone line output for connection to internal telecom equipment

B-1 = Telephone line output for connection to internal telecom equipment

Before making these connections, all power must be disconnected from the system.

NOTE: The ground terminal should ALWAYS be connected to earth in order to increase the effectiveness of the transient voltage protection on the unit.

IMPORTANT NOTE: POWER DOWN THE PCX 46 BEFORE DISCONNECTING THE MODEM.
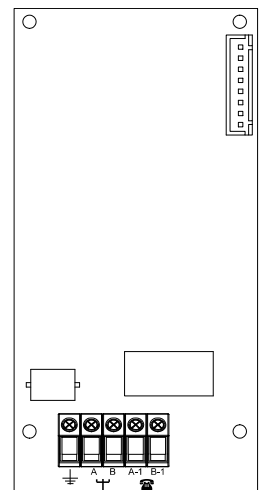
8.2 The GPRS Modem (DIGI-GPRS)

The GPRS modem card (**DIGI-GPRS)** fits inside the **PCX 46 APP.** Besides communications with the PyronixCloud and HomeControl+ App, it has the following operations:

Send Alarms to the ARC:

With the DIGI-GPRS it is possible to send alarm events the monitoring station via Contact ID IP an SIA IP protocols.

Send SMS Alarms to the user:

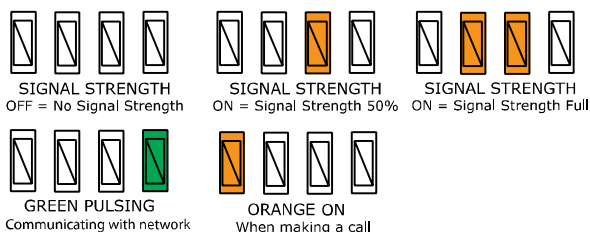With DIGI-GPRS it is possible to send SMS alarm messages to the user.

Programming the panel remotely via the GPRS network:

With the DIGI-GPRS is also possible to program the **PCX 46 APP** remotely. In order to be able to use this feature it is necessary that the CSD data channel for the SIM card used in the modem is activated. We recommend consulting with the GPRS service providers for the availability of the CSD services on their networks.

Fault Detection

Minimum time for the detection of a GPRS fault signal is 2 minutes, 30 seconds.

GPRS Status LEDs

SIGNAL STRENGTH
OFF = No Signal Strength

SIGNAL STRENGTH
ON = Signal Strength 50%

SIGNAL STRENGTH
ON = Signal Strength Full

GREEN PULSING
Communicating with network

ORANGE ON
When making a call

Antenna

The supplied antenna will need to be connected to the **PCX 46 APP** GPRS and placed in a suitable area where the signal strength is to its maximum.
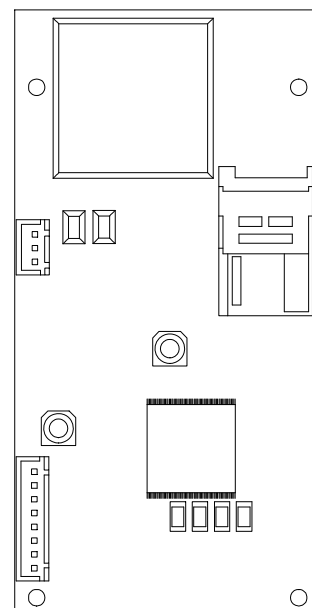
IMPORTANT NOTE: REMOVE THE POWER SUPPLY OF THE DIGI-GPRS MODEM FROM PANEL WHEN INSTALLING OR CHANGING THE SIM. NOTE: CHECK THE SIM CARD CREDIT REGULARLY.

8.3 The LAN Modem (Digi-LAN)

The LAN modem card (**DIGI-LAN)** fits inside the **PCX 46 APP.** It allows communications with the PyronixCloud and HomeControl+ App via a standard Ethernet internet connection cable and also has the following features:

Send Alarms to the ARC:

With the DIGI-LAN it is possible to send alarm events to the monitoring station via Contact ID IP and SIA IP protocols.

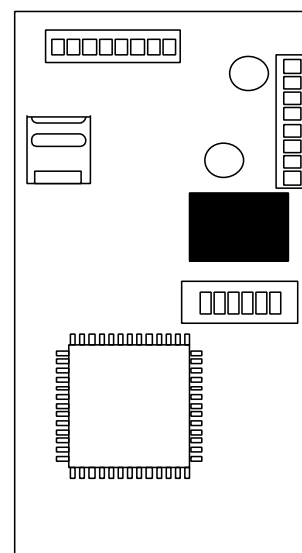Programming the panel remotely via secure network connection:

With the DIGI-LAN is also possible to program the **PCX 46 APP** remotely via a secure internet connection and use of the Insite UDL software.

Status LEDs

The Digi-LAN features the industry standard Ethernet /LAN cable connection status and activity LEDs.

Micro SD slot

(for future features in development)

8.4 Connecting to the Upload/Download Software

The **PCX 46 APP** control panel can be programmed by the LCD menu or the UDL InSite Software provided free of charge. It can be downloaded from http://www.pyronix.com/pyronix-downloads.php. The connection between control panel and UDL software can be done in the following ways:
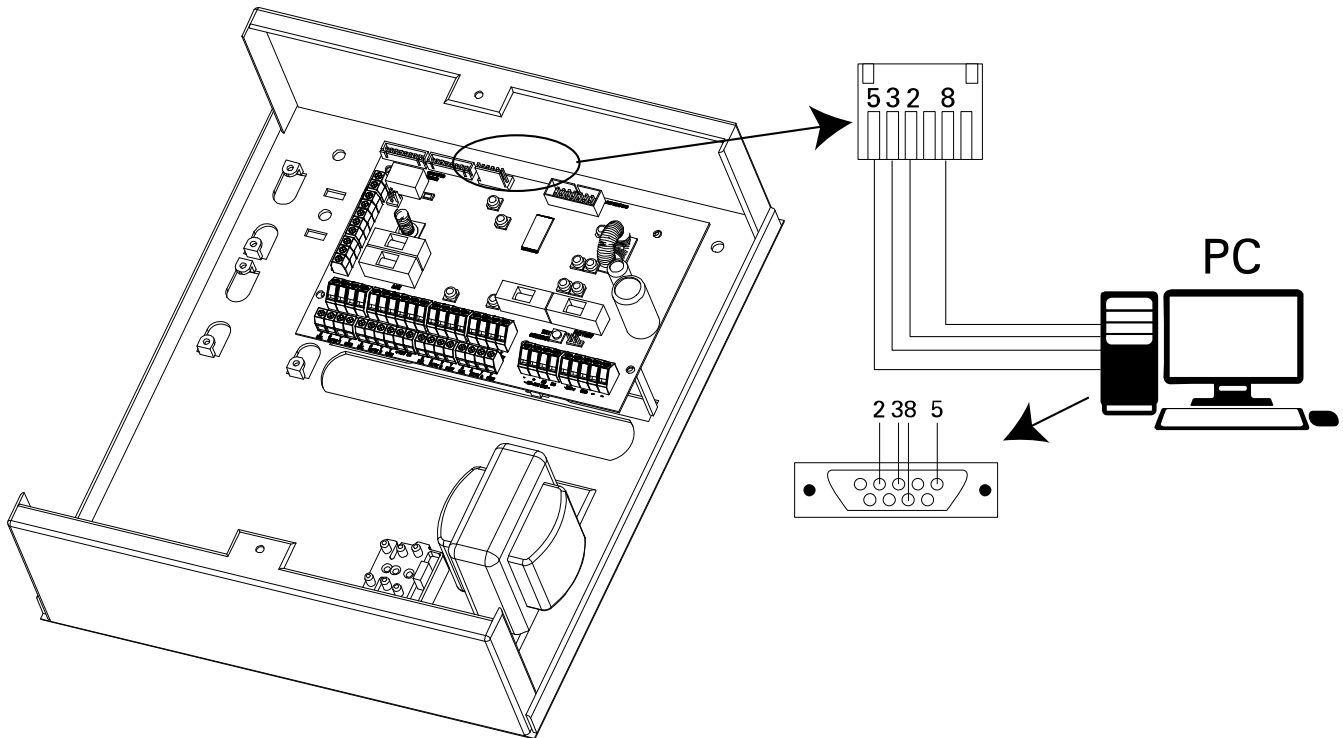
8.4.1 Serial Connection (RS232)

1. Enter the Engineer menu (code 9999)
2. Scroll the menu (✗ button) until the "Options Up/Downloading"
3. Choose RS-232 in the "Download by" option – Press ✓
4. Now on the 'UDL Password' screen – **DO NOT USE** – leave blank and Press ✓
5. Now on the 'Site Name' screen – this is optional – if you enter a site name, make sure that you take a note of it for use later in the Insite software – or leave blank – then press ✓
6. Now on the 'UDL Priority' screen – we recommend setting this to High [0] (which prevents HomeContol+ App events / notifications from disconnecting the UDL connection).

8.4.2 On InSite UDL software from a PC

1. To setup the COM port associated to "modem" open the software, click on "Configuration", - choose "Modem Settings" and select "RS-232" option
2. Make sure that the serial COM used by UDL is the set the same in the PC

   (Control Panel -> Device Manager -> Ports)

3. Make sure that the UDL Graphic user interface has the RS-232 icon green colored and glowing
4. Click on "Force Dial Customer"
5. Set "Dial Mode" field to "RS-232"
6. Enter the Engineer code in the "Engineer Code" field
7. Click on "dial"
8. If connection is successful, the RS-232 icon will become blue

8.4.3 Modem Connection DIGI-1200 (PSTN)

On the Panel: (Ensure that the panel and remote PC are connected to a suitable PSTN line).

1. Enter the Engineer Menu (code 9999)
2. Scroll the menu (☒ button) until the "Options Up/Downloading"
3. Choose Modem in the "Download by" option
4. Set the desired number of redials and Press ☑
5. Now on the 'UDL Password' screen – **DO NOT USE** – leave blank and Press ☑
6. Now on the 'Site Name' screen – this is optional – if you enter a site name, make sure that you take a note of it for use later in the Insite software – or leave blank – then press ☑
7. Now on the 'UDL Priority' screen – we recommend setting this to High [0] (which prevents HomeContol+ App events / notifications from disconnecting the UDL connection).

On InSite UDL software from a PC

1. To setup the COM port associated to "modem" open the software, click on "Configuration", choose "Modem Settings" and select "MODEM" option
2. Verify that COM port associated to "Modem" in the UDL is the same set in the PC
3. Verify that the modem Icon is green and glowing in the software Graphic User Interface
4. In the "Configurations" menu choose the "Modem Type" from the drop down menu. This is the modem connected to the PC and used to call the panel
5. Press "Load Default String" to program the right initialization string for the selected modem
6. Click on "Force Dial customer"
7. Set "Dial Mode" field to "MODEM" and insert the telephone number in "Telephone Number" field
8. Enter the Engineer code in the "Engineer Code" field and then Click on "dial"
10. If connection is successful, the modem Icon will become blue.

8.4.4 Modem Connection (DIGI-GPRS or DIGI-LAN)

On the Panel: Make sure that the panel is connected to the GPRS network (or the LAN cable to a suitable internet connection) on a Data enabled SIM card.

1. Enter the Engineer Menu (code 9999)
2. Scroll the menu (☒ button) until the "Options Up/Downloading" – Press ☑
3. Choose 'Cloud' (option 6) in the "Download by" option – Press ☑
4. Make a note of your System ID (to enter in the Insite software later) - Press ☑
5. Select Security level – for initial connections we recommend [0] (normal) - Press ☑
6. Create/enter a system password and take note of it - Press ☑
7. Now on the 'Poll Server' screen – select 'Yes' [1] and press ☑
8. Now on the 'UDL Password' screen – **DO NOT USE** – leave blank and Press ☑
9. Now on the 'Site Name' screen – this is optional – if you enter a site name, make sure that you take a note of it for use later in the Insite software – or leave blank – then press ☑
10. Now on the 'UDL Priority' screen – we recommend setting this to High [0] (which prevents HomeContol+ App events / notifications from disconnecting the UDL connection).

On InSite UDL software from a PC

1. Click on 'Roving Dial customer' (or hold Ctrl and press the F10 key).
2. Click on the 'Dial Out Mode' drop down list – and select 'Cloud'
3. Enter the 'System ID' of your Panel (See 'Set Up Downloading' in the panel Engineer menu)
4. Enter 'system password' (as entered in 'Set Up Downloading' in the panel Engineer menu)
5. Leave the UDL security at 'normal' for initial connection test in 'System Security Level' field).
6. Enter the engineer code as used on the panel you are trying to connect.
7. Enter 'Site Name' as entered in panel ONLY if it was entered on the panel –otherwise, leave blank.
8. Enter an appropriate panel name into the 'Enter Customer In Database As' field.
9. Click 'Dial'. If connection is successful, the Cloud Icon will become blue, and a dialogue box will appear asking if you would like to create a customer – click 'yes' to continue.
10. The **PCX 46 APP** control panel is now successfully connected to the Insite UDL software.

9. EN 50131 Terminology

PCX 46 APP *Language*	*EN50131 Language*
ARM	Set
Disarm	Unset
Day or Disarmed Mode	Unset State (may be relevant to a specific partition)
Personal Attack (PA)	Hold Up (HU)
Bypass	Inhibit
Unused	Isolated
Bell / External Sounder / SAB	External Warning Device (self-powered is assumed)
Main Sounder / Speaker	Device combining internal warning device with audible indicator (using different tones and volumes)
Prox card, Tag, or wireless keyfob	Digital Key

10. Access Levels

Level 1: Access by any person; for example the general public.
Level 2: User access by an operator; for example customers (systems users).
Level 3: User access by an engineer; for example an alarm company professional.
Level 4: User access by the manufacturer of the equipment.

Note: Alarm, tamper and fault indications will automatically be cleared within 3 minutes. If a user has finished viewing the information they can terminate the display instantly by pressing the ☑ key.

11. Compliance

As per EN 50131-1 the **PCX 46 APP** is capable of supporting all conditions A,B and C: -
In Grades 1 & 2 I&HAS when an I&HAS or part thereof is in a set state:
a) access to the supervised premises or part thereof, via an entry/exit route, shall be prevented, or
b) opening the door to the entry/exit route shall initiate an entry procedure, or
c) indication of the set/unset status shall be provided.
In Grades 3 & 4 I&HAS when an I&HAS or part thereof is in a set state:
a) access to the supervised premises or part thereof, via an entry/exit route, shall be prevented, or
b) opening the door to the entry/exit route shall initiate an entry procedure.

App HomeContol+ not certified IMQ-Security Systems.

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PCX 46 APP

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