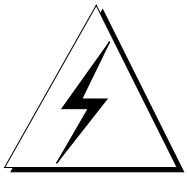
Installation Note

Cardax Prox Plus 125 Reader



CAUTION

This equipment contains components that can be damaged by electrostatic discharge. Ensure both you and the equipment are earthed before beginning any servicing.

Before you Begin

Unpack the Cardax Prox Plus 125 reader and check the shipment contains the following items:

- 1 x Cardax Prox Plus 125 base with cable and Processor Box attached
- 1 x Cardax Prox Plus 125 facia
- 1 x printed circuit board (PCB) assembly
- 1 x dispatch kit containing the following;
  - 1 x 4-way IDC connector
  - 1 x grommet plug
  - 4 x self tapper pan head screws
  - 4 x plastic caps

Power Supply Requirements

The Prox Plus 125 reader requires a supply of 13.6 V DC +/- 15% at 200 mA.

Prox Plus 125 readers require a good quality linear power source.

Note: Switch mode power supplies are not recommended as they may reduce the read range of the Prox Plus 125 reader.

Cabling

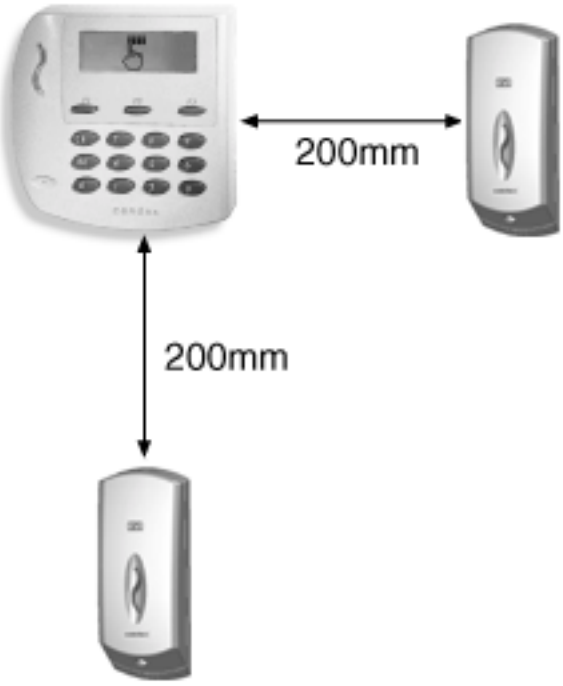
Use 4 core, 0.2 mm^2 (AWG 24) cabling with a maximum, nominal capacitance of 120 pf/m. The maximum external diameter of the cable must not exceed 5mm ($^1/_5$ inch).

The maximum distance between the URI and the Prox Plus 125 reader with this cable is 200m (650ft).

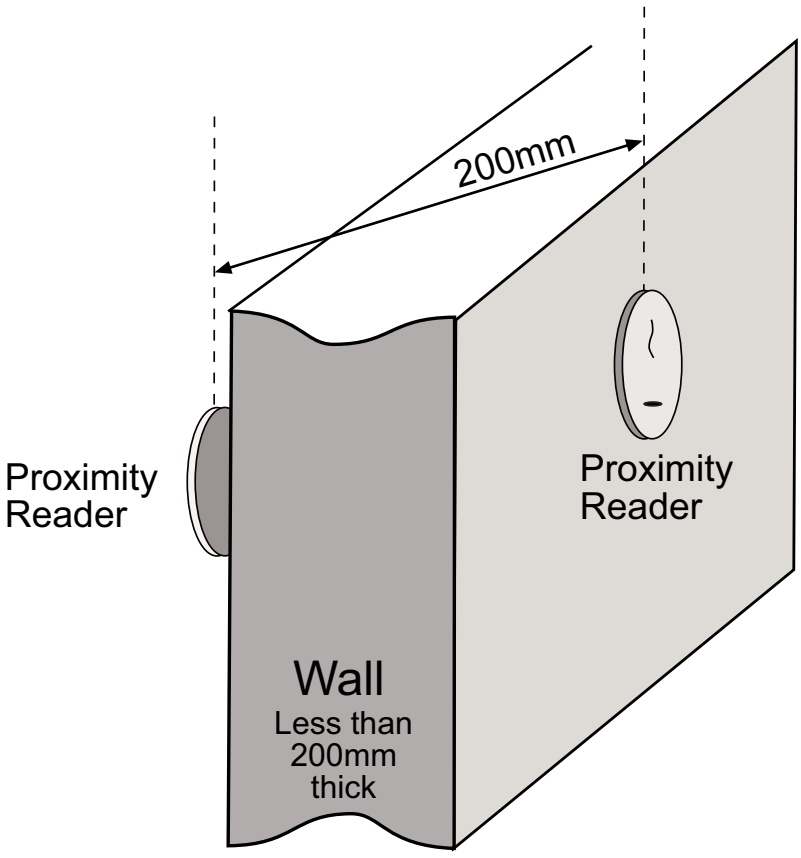
Note: You need a special cable terminating tool to connect the building cabling to the Prox Plus 125. The tool has a head (Part No. C861145) and handle (Part No. C861115).

Mounting Distance Between Proximity Readers

The distance between any 2 proximity readers must be greater than 200mm in all directions.



Please note that 200mm in all directions includes the distance through walls.

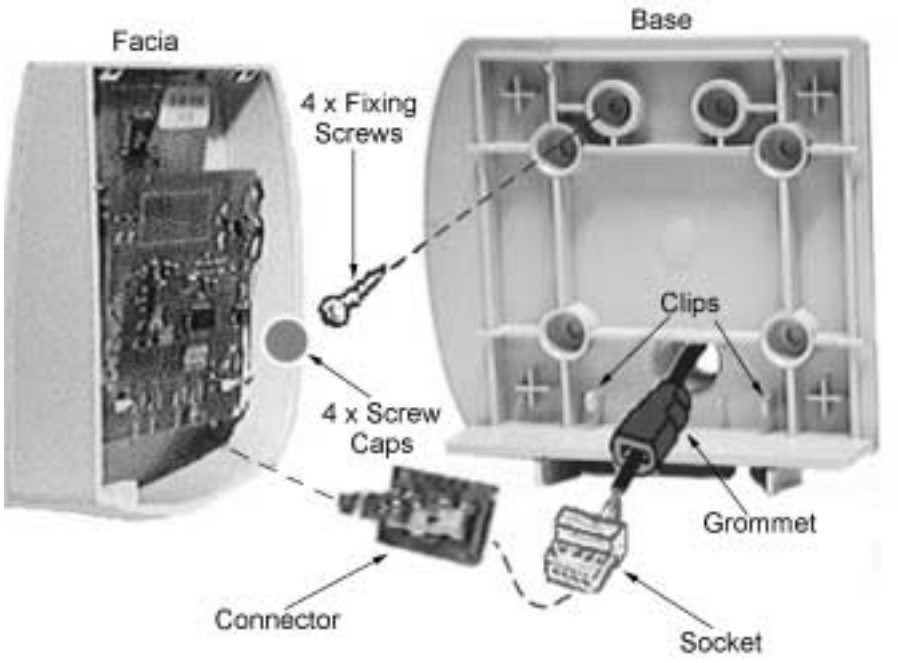


Mounting

Note: The Prox Plus 125 reader has been designed to metric specifications therefore any imperial measurements provided are approximate only.

The Prox Plus 125 reader is designed to be mounted on any solid flat surface including metal surfaces.

The recommended mounting height for the Prox Plus 125 reader is 1100mm from floor level to the centre of the reader unit. However this may vary in some countries and you should check local regulations for variations to this height.



Note: The grommet through which the cables feed into the base of the Prox Plus 125 reader helps to keep the unit waterproof.

Drill a 20mm ($^3/_4$ inch) diameter hole for the base extrusion through or into the mounting surface to a minimum depth of 40mm ($1^1/_2$ inch).

Run the building cabling through the base and grommet.

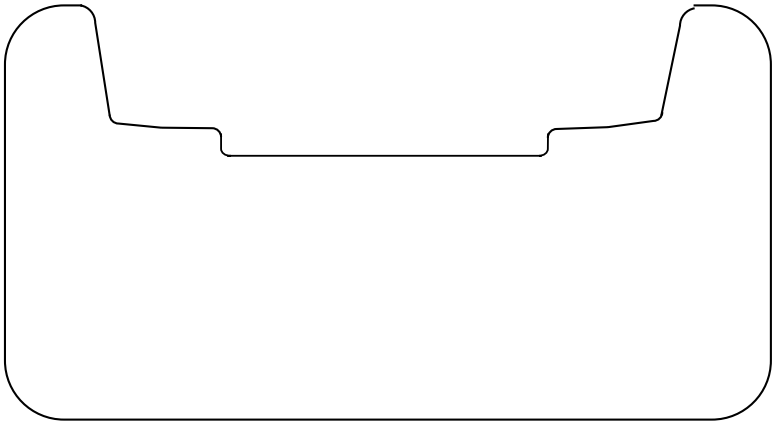
Fit the base to the 20mm ($^3/_4$ inch) hole and secure it to the mounting surface using the four fixing screws.

Fit the screw caps over each fixing screw. The screw caps prevent water from entering the reader via the fixing holes. The caps must be installed for the Prox Plus 125 reader to comply with the environmental specification.

Note: It is very important that the base of the reader is flush with and tight against the mounting surface. If you are mounting the Prox Plus 125 reader on a rough surface you should make the surface as smooth as possible under the reader and up to 25mm (1 inch) around the reader.

Removing the Facia

To remove the facia from the Prox Plus 125 base you need the plastic de-latching tool (Part No. C41612) shown below.



Slide the de-latching tool firmly under the bottom of the Prox Plus 125 reader.

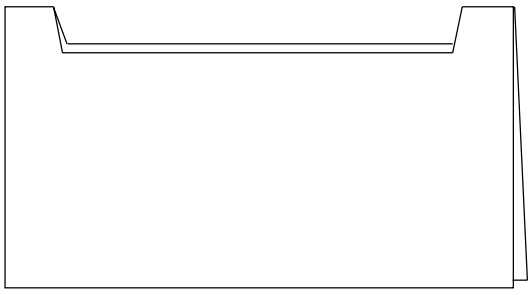
Hold the top of the reader with your fingers and squeeze the de-latching tool up, towards the top of the reader with your thumb.

Lift the facia away from the base.

If the base is not flush to the wall, or the screws have become loose you may need to pack the space between the de-latching tool and the wall. A thin piece of cardboard is usually all that is necessary, i.e. a business card folded in two.

Cut a notch in the folded edge of the card similar in shape to the notch in the de-latching tool as shown below.

Slide the card under the bottom of the facia and then use the de-latching tool with the card as packing.



Connecting to the URI

The Prox Plus 125 reader can connect to either a Cardax IV or CardaxFT URI.

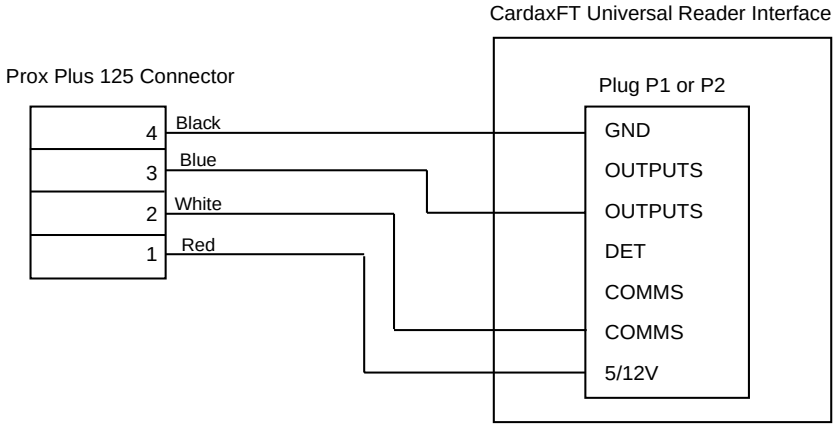
Use the cable terminating tool to connect the cables to the socket as described in the following sections.

Pin number 4 of the Prox Plus 125 connector feeds into the cable terminating tool first.

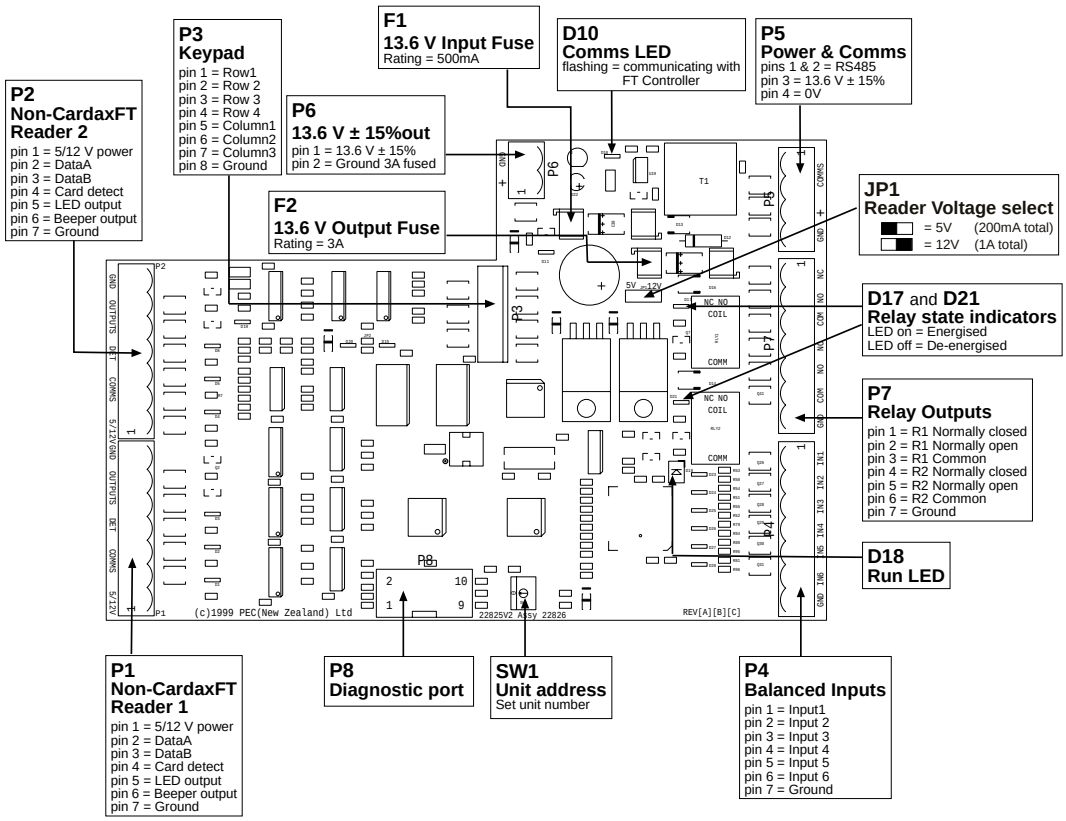
The pin numbers are marked on the connector.

Connecting to the CardaxFT URI

Connect the cables to the socket as shown.



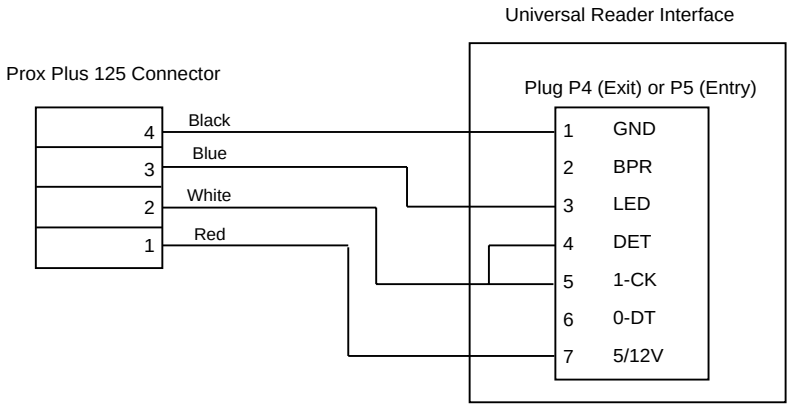
Connect the Prox Plus 125 connector to either the P1 or P2 plug on the CardaxFT URI. Refer to the CardaxFT URI component layout diagram, below, for the location of the plugs.



Connecting to the Cardax IV URI

Connect the cables to the socket as shown.

Note: The colours shown in the diagram below are those used in the cable assembly (Part No. 190810) which may be ordered already assembled.



Note: Refer to the *Cardax IV URI Settings* section, later in this Installation Note, for the location of the Cardax IV URI components.

Replacing the Facia

Push the socket back into the grommet.

Push the connector into the socket and grommet combination.

Push the connector, socket and grommet back into the Prox Plus 125 base.

Firmly clip the interconnect PCB under the retaining clips in the base.

Fit the facia assembly onto the base by clipping the front over the top edge of the base and pressing the bottom of the facia down un til it clicks into place.

Note: The pins on the interconnect PCB in the base of the Prox Plus 125 reader, fit into the slots on the main PCB. The connector should be fitted to the base, not the facia.

Initialisation

Initialising with the CardaxFT URI

The CardaxFT URI must be allocated a unique unit address which is set up at the CardaxFT URI and at the Command Centre FT Server. Refer to the CardaxFT Universal Reader Interface Installation Note and the Command Centre FT documentation.

Note: When configuring Command Centre FT you will need to know the plug (P1 or P2) to which the Prox Plus 125 reader is connected.

Initialising with the Cardax IV URI

Type of Door Lock

Depending on the type of lock fitted to the door that the reader is controlling, you will need to initialise the URI with the door either closed or open.

If you initialise the URI with the door held open, it sets the door to unlock and remains unlocked until the door is fully closed again. If you initialise the URI with the door closed it sets the door to unlock and resets to lock as soon as the door is opened.

Push-Button Exit

If the door has a push button exit, ensure the URI Exit terminal has the push-button fitted and correctly terminated with a 10 kΩ resistor before you power on.

Check Software Version

You should check the URI software version to ensure it is correct for your installation. The software version number is written on the label of the EPROM mounted at the bottom right of the URI processor board.

URI software versions that are compatible with the Prox Plus 125 reader are shown below:

URI Software	Reader Type
vW6.10 or later version	One door Cardax Prox or Swipe Readers
vW7.10 TC or later version	URI Special Options : Cardax Turnstile format
vW9.10 or later version	Two door Cardax Prox or Swipe Readers

Note : The vW6.xx and vW9.xx versions will have one of the following suffixes:

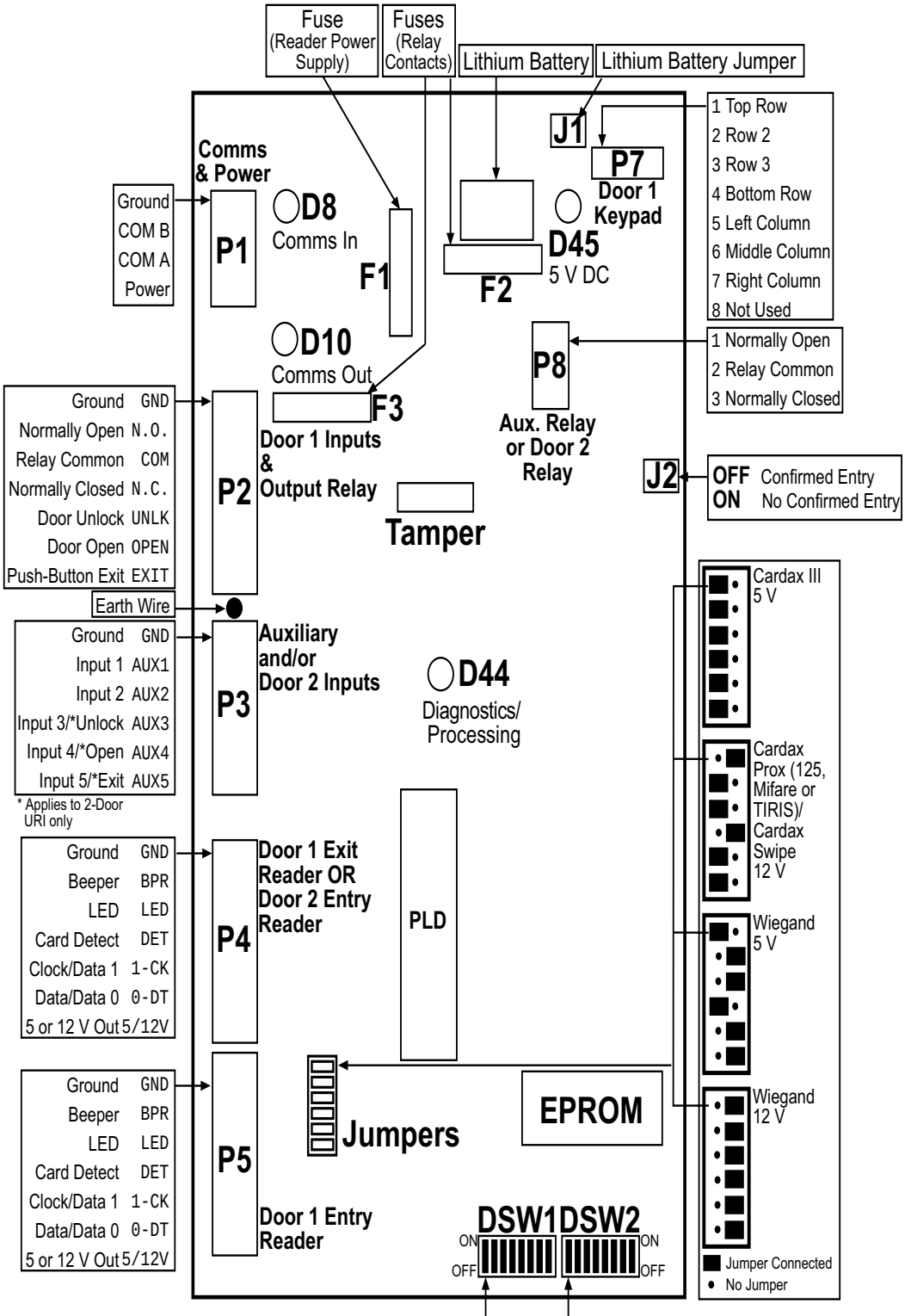
GT = 2 wire modem connection

G = 4 wire modem connection

// = direct connection via comms lines ie. no modem

Cardax IV URI Settings

Please refer to the diagram below for the location of the URI components.



Switch	On	Off
1	1	
2	2	
3	4	Unit Address
4	8	
5	16	
6	32	
7	Initialise	Normal
8*	*see note below	

Switch	On	Off
1		
2	Card Format	
3		
4		
5		
6*	Validated Exit*	Normal*
7*	*see note below	
8	Keypad	No Keypad

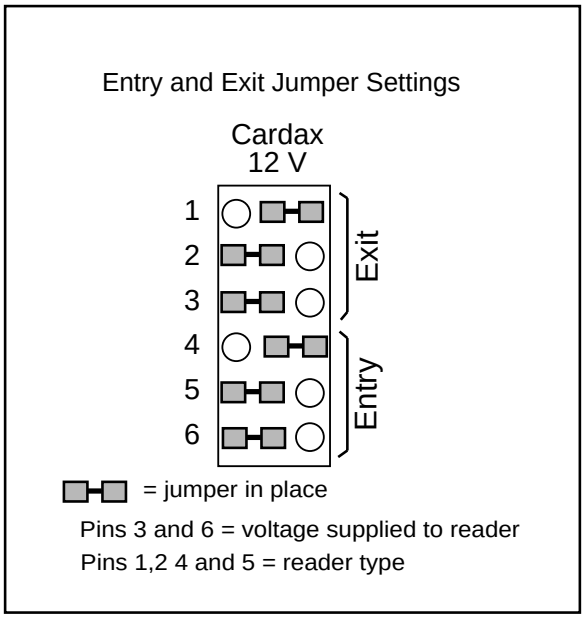
* Depends on Software Version.

Tamper the URI by opening the door of the cabinet. This releases the tamper switch.

The URI has a set of six jumpers grouped into two sets of three. One group is labelled ENTRY and the other is labelled EXIT.

ENTRY jumpers set the voltage and card type of the reader connected to plug P5. EXIT jumpers set the voltage and card type of the reader connected to plug P4.

Set the Entry and Exit jumpers for the Prox Plus 125 reader as shown below:



Connector J2 controls the Confirmed Entry function. If you initialise the URI with no jumper fitted on J2 the Confirmed Entry function will be ON. To switch the Confirmed Entry function OFF, you must initialise the URI with one a mini jumper fitted across both pins of connector J2.

Connect the Prox Plus 125 reader to the URI Entry plug (P5).

Note: If you are installing two entry readers (2 door URI software) you must connect the second entry reader to Plug P4 to initialise the URI.

If you are installing only an Exit reader you must connect the reader to the Entry Plug P5 to initialise the URI. Ensure Entry and Exit jumpers are set to the same configuration. After you have initialised the URI you should connect the Exit reader to Exit Plug P4.

Set DIPSW1 as follows:

Switches	On	Off
1 1 **2** 2 **3** 4 **4** 8 **5** 16 **6** 32	Unit Addresses	
7	Initialise	Normal
8	1 door software = liftcar reader 2 door software = keypad on door 2	1 door software = door reader 2 door software = no keypad on door 2

Set DIPSW2 as follows, where 0 = OFF and 1 = ON:

URI Software	**vW6.10, vW7.10, vW9.10 or later versions.**
Reader	**DIPSW2 12345678**
Prox Plus 125, no authorised exit	00000001
Prox Plus 125, with authorised exit	00000101

For further details on software versions refer to *Check Software Version* in the *Initialisation* section earlier in this Installation Note.

CAUTION

Do not fit the lithium battery jumper (J1) before powering up the URI. If the jumper is fitted you must remove it and wait 10 seconds.

Power up the URI.

The yellow LED (D45) should be permanently ON. This indicates that 5 V is present on the board.

The green LED (D44) should flash twice, pause, then flash twice again. This is a continuous sequence while the URI is unitialised and indicates it is processing.

The red LED (D8) should flash if polls are received from the Commander.

Note: A URI can be initialised without being connected to a Commander

Set DIPSW1:7 to ON.

Present a Prox 125 card to the Prox Plus 125 reader.

Note: You must present the card within 30 seconds of setting DIPSW1:7 to ON. If you are initialising with two readers connected to the URI, you should present the card to the reader on URI plug P5.

Set DIPSW1:7 to OFF

The green LED (D44) will begin flashing continuously.

The other red LED (D10) will flash each time the URI replies to a poll from the Commander.

Replace the lithium battery jumper (J1).

Restore the tamper by closing the door of the cabinet.

Approvals and Standards

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

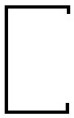
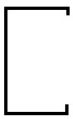
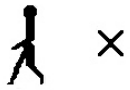
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Note: Changes or modifications not expressly approved by Cardax (International) Ltd could void the user's authority to operate the equipment.

Icons

The Prox Plus 125 reader displays the following icons on the liquid crystal display (LCD) to indicate the access status of the zone controlled by the reader.

Condition	Steady	Flashing
Secure		
PIN Only		
Free Access Access Granted		
Access Denied		
Card Plus PIN		
Wrong PIN		
Dual Auth or Escort		
Set Allowed		
Set Unset		
Set Unset plus PIN		
Set Failed		
Waiting for Commander		
Un-initialised