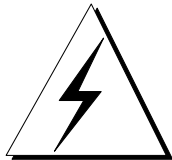# Cardax FT Intelligent Door Terminal (125 Series)

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

The Cardax FT Intelligent Door Terminal (125 Series)

The Cardax FT Intelligent Door Terminal (125 Series) is a "remote" proximity reader with text display and an inbuilt Intercom, designed to connect only to Cardax FT Controller 5000s.

It can be installed as either an entry and/or exit reader and the Intercom enables communication with the console operator.

The IDT has a back-lit keypad and an inbuilt Liquid Crystal Display (LCD). The LCD can display both text and graphics to aid the cardholder.

The IDT sends information to the Cardax FT Controller and acts upon information sent from the Cardax FT Controller. The IDT itself does not make any decisions.

The "Cardax FT Prox Reader and IDT Cover" can be fitted over the IDT to prevent the IDT being damaged by vandal attack and to increase protection against harsh weather. Refer to the "Prox Reader and IDT Covers" Installation Note (part number 3C4589).

Before you begin

Shipment contents

Unpack the Cardax FT IDT (125 Series) and check the shipment contains the following items:

- 1 x Cardax FT IDT (125 Series) base
- 1 x Cardax FT IDT (125 Series) facia (pre-assembled with Processor, Display and Keypad PCBs)
- 1 x Interconnect PCB
- 1 x Cardax FT Intelligent Door Terminal (125 Series) Installation Note (part number 3E0054)
- 1 x cable assembly
- 4 x self tapper pan-head fixing screws
- 4 x screw caps

Note: Once the reader is installed, you require a special tool to open the Cardax FT IDT (125 Series). Part number C41608 is a kit containing three delatching tools, of which one is the tool required to remove the cover off the Cardax FT IDT (125 Series).

Power Supply Requirements

The Cardax FT IDT (125 Series) requires a well regulated power source with good output filtering. Any "noise" on the power supply may reduce card read range.

Power required for the Cardax FT IDT (125 Series) is 13.6 V DC (± 15%) with current at 300mA per reader. This means that the voltage at the reader terminals, with the reader operating, should be at least 11.6 V DC. It is recommended you target a minimum of 12 V DC.

Cabling

Prior to installing a Cardax FT IDT (125 Series), the building cabling (RS485 and power) must have been carried out. For further cabling details, refer to Chapter 2 of the "Cardax FT Installation manual".

To avoid voltage drop in cable runs, it is recommended to run separate DC power and communications cabling. However, a single cable run is possible as long as the voltage and current do not drop below the required levels.

EMI Cable Shields

To comply with CE, C-Tick and FCC requirements, and improve noise suppression, an EMI Cable Shield (ferrite core) should be applied to the cable, with three turns of the cable running through it. Position the EMI Cable Shield as close to the entry point of the IDT as possible.

RS485 Communications

High quality twisted pair communications cable with low capacitance - typically Category 5 (CAT5) cable is used for communications cabling.

DC Power

The maximum recommended length of the DC power cable is dependant on the diameter of the conductor and the current drawn by the IDT.

Mounting

Note: The Cardax FT IDT (125 Series) has been designed to metric specifications therefore any imperial measurements provided are approximate only.

The Cardax FT IDT (125 Series) is designed to be mounted on any solid flat surface.
However, the card read range is reduced slightly when mounted on or near metal surfaces.
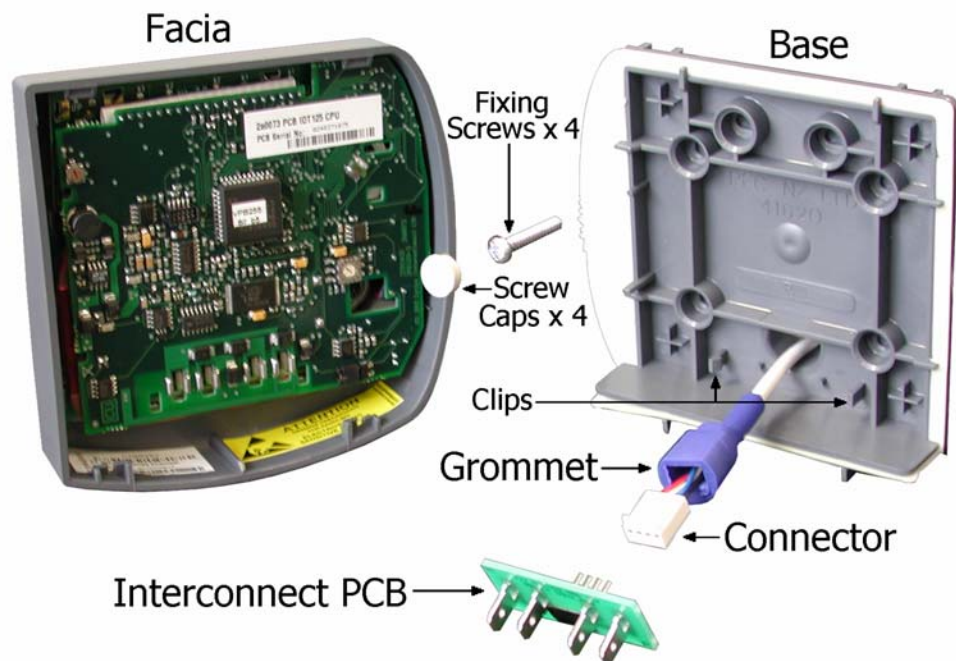
Height

The recommended mounting height (from the floor to the centre of the IDT) for the Cardax FT IDT (125 Series) is **1100mm**.
Check your local regulations for any variation to this recommended height.

Installation Instructions

1. Considering the recommended mounting height, mark the position where the IDT is to be mounted.
   Note:
   It is very important the base of the IDT is flush with, and tight against, the mounting surface. If you are mounting the IDT on a rough surface, make the surface as smooth as possible under the IDT and up to 25mm (1 inch) around the IDT. Failure to do so may mean it could be difficult to remove the reader at a later date.

2. Drill a 20 mm ($3/4$ inch) diameter hole for the base extrusion through or into the mounting surface.

3. Optionally drill the four pilot holes for the fixing screws.
   Note:
   Six possible mounting points are provided on the base. Ensure the four you select will mount the IDT securely.

4. Run the building cabling through the base.

5. Fit the base to the 20 mm ($3/4$ inch) hole and secure it to the mounting surface using four self-tapper pan head fixing screws (supplied).

6. To comply with the environmental specification, fit the screw caps over each fixing screw. The screw caps prevent water from entering the Cardax FT IDT (125 Series) via the fixing holes.

7. Connect the cable assembly to the building cable.

   Red   = + 12 V DC (nominal)

   White   = Comms RS485 cable

   Blue   = Comms RS485 cable

   Black   = 0 V (GND)

   +---+
   | **Caution** |
   | The Cardax FT System does not require the RS485 cabling to be |
   | polarised but the DC power must be connected to the correct terminals. |
   +---+

8. Ensure the connector is pressed into grommet.

9. Plug the Interconnect PCB onto the connector and ensure it is clipped into the base.

10. Push the Interconnect PCB / Connector / grommet home into the base. Firmly clip the Interconnect PCB under the retaining clips in the base.

11. If this Cardax FT IDT (125 Series) is the last *unit* on this RS485 cable, connect the supplied jumper across the "RS485 Termination" link on the main board in the bottom right corner. (Refer to "Component layout" next.)

12. Set the unit address of the IDT as detailed later in this Installation Note.

13. Refit the facia onto the base.
    Clip the front over the top edge of the base and press the bottom of the facia down.
    Note:
    The pins on the Interconnect PCB in the base of the Cardax FT IDT (125 Series), fit into the slots on the main PCB. The connector should be fitted to the base, not the facia assembly.

Component layout
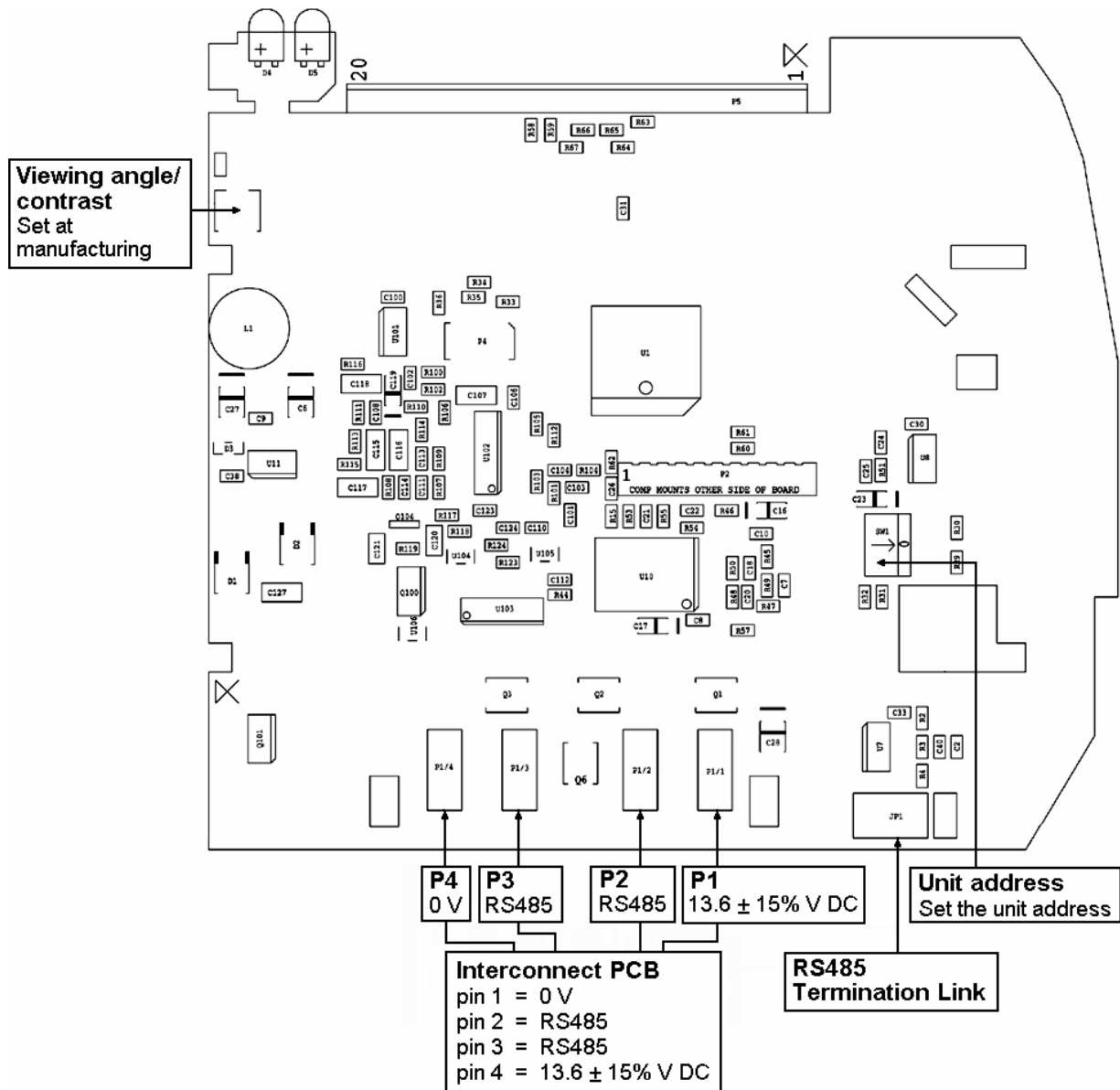
NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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.
Changes or modifications not expressly approved by Cardax (International) Ltd could void the user's authority to operate this equipment.

Initialisation

Setting the unit address

A maximum of 16 *units* can be connected to one Cardax FT Controller 5000. Each connected *unit* must have its own unique address. Typically, the addresses are set at the *units* when the site is commissioned.

1. If the Cardax FT IDT (125 Series) facia is not already removed, remove the facia.
    (This is detailed in the later section titled "Removing the Facia".)
2. Using full antistatic precautions, locate the rotary switch SW1 on the PCB.
3. Using the appropriate sized screwdriver, carefully set the rotary switch to the relevant unit address.

Unit address	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Switch setting	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

4. Replace the facia.

The addresses of the units, must also be set up at the Cardax FT Command Centre Server. Refer to the Cardax FT Command Centre documentation.

Viewing angle adjustment

The LCD is temperature compensated which enables it to maintain optimum contrast.

The viewing angle is factory set and you should not need to alter the setting of the *Viewing angle potentiometer*.

Removal and replacement

Note: Ensure you follow full antistatic precautions.

Removing the Facia

To remove the facia from the Cardax FT IDT (125 Series) base you need the plastic de-latching tool (part of part number C41608) shown below. The end of the tool is used for removing the facia.
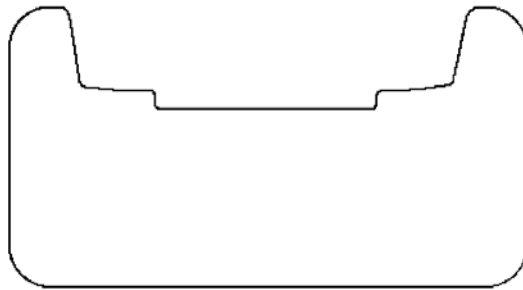

De-latching tool

1. Slide the de-latching tool firmly under the bottom of the IDT.

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

3. 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.

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

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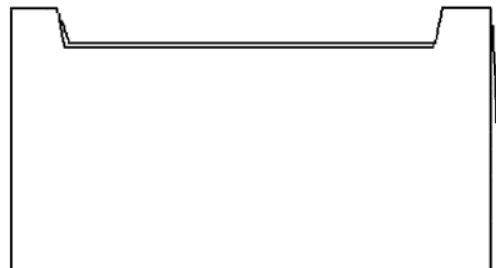
Technical specifications

Routine maintenance and serviceable parts

Not applicable for a Cardax FT IDT (125 Series)

Cleaning

The Cardax FT IDT (125 Series) should be only be cleaned with clean, lint free, damp cloth

Power required:

Voltage	$13.6 \pm 15\%$ V DC
Current	300mA

Environmental:

Operating temperature	-10°C to $+55^{\circ}$C
Humidity	95% non-condensing

Recommended Mounting height:

1100 mm (3 ft) to centre

EMI Cable Shields:

Impedance at 25MHz must be greater than 120 Ohms

Impedance at 100MHz must be greater than 200 Ohms

Recycle
Refer to the product's marketing for recycle information.

C E

ACN: 002132493