

# Cardax FT LOCAL BUS I/O Devices

Supporting higher speed communications, Cardax FT LOCAL BUS I/O Devices provide connections for readers and greater flexibility with system configuration of inputs and outputs.



Supported by the Cardax FT Controller 5000GL via high speed RS485, Cardax FT LOCAL BUS I/O Devices include the:

- Cardax FT Reader I/O Interface
- Cardax FT Universal Reader Interface
- Cardax FT I/O Interface
- Cardax FT Relay Interface
- Cardax FT Strike Controller.

### Controlling Inputs and Outputs

Making no high level decisions, the Cardax FT LOCAL BUS I/O Devices monitor the state of their balanced inputs and switch the output relays as instructed by their Cardax FT Controller 5000GL.

### Monitoring Inputs

The inputs on Cardax FT LOCAL BUS I/O Devices are 4-state balanced inputs. The four states monitored are:

- Open
- Closed
- Short Circuit (Tamper)
- Open Circuit (Tamper).

Inputs are typically configured to provide door status monitoring including:

- “Door Open” state
- “Door Locked” state
- Push Button Exit.

Inputs may be used for:

- Access controlled doors
- Passive Infra-Red detectors (PIRs)
- Uncontrolled doors
- Equipment alarms
- Any other devices that provide a clean contact.

### Outputs

Relay outputs available on Cardax FT LOCAL BUS I/O Devices may be used for:

- Access control doors
- Alarm outputs e.g. to activate sirens
- Logic activated outputs e.g. to switch on air conditioning
- Time activated outputs e.g. to switch on lighting.

### Integrating Readers

Two of the Cardax FT LOCAL BUS I/O Devices provide connections for readers:

- The Cardax FT Reader I/O Interface supports up to 8 Cardax IV format readers using 4-core cable
- The Cardax FT Universal Reader Interface supports up to 2 Cardax IV format readers using 4-core cable or 2 Wiegand format readers and 1 Wiegand keypad using 6-core cable.

### Data Protection

All communications between the Cardax FT Controller 5000GL and its connected Cardax FT LOCAL BUS I/O Devices are encrypted and checksummed to protect data from manipulation during transmission.

# Cardax FT LOCAL BUS I/O Devices

The family of high speed Cardax FT LOCAL BUS I/O Devices provide extensive options for system configuration.

## Cardax FT LOCAL BUS Universal Reader Interface

The Cardax FT LOCAL BUS Universal Reader Interface contains 6 balanced inputs and 2 relay outputs. It provides an interface for connecting Cardax door readers, and selected Wiegand format third party readers to the Cardax FT system. A third party keypad can also be connected.

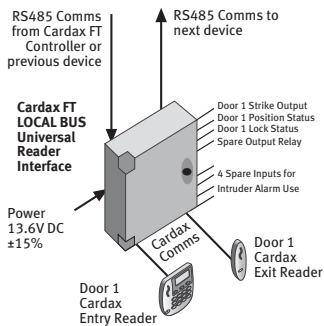
The Cardax FT LOCAL BUS Universal Reader Interface is capable of

supporting two Cardax readers using 4-core cable. It supports Cardax IV format card readers (125, Mifare, TIRIS, and Swipe Series).

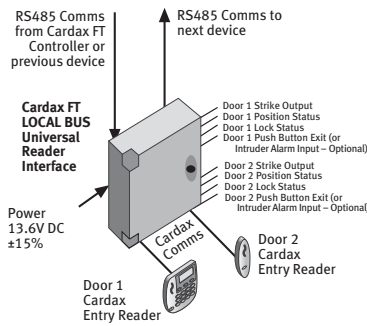
Using a 6-core cable connection, the Cardax FT LOCAL BUS Universal Reader Interface is capable of supporting two Wiegand format readers and selected Wiegand data formats. In addition to the readers, it can also support one third party keypad using 4 x 3 matrix wiring.



### Connectivity Diagrams: Cardax Readers

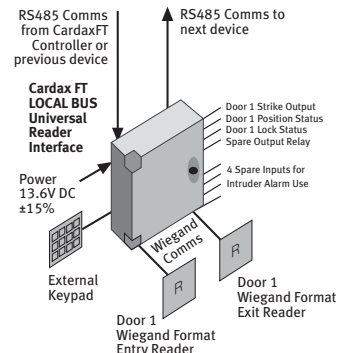


Cardax entry and exit readers connected to the Cardax FT LOCAL BUS Universal Reader Interface for the access control of one door.



Two Cardax entry readers (with push button exits) connected to the Cardax FT LOCAL BUS Universal Reader Interface for the access control of two doors.

### Connectivity Diagram: Wiegand format Readers



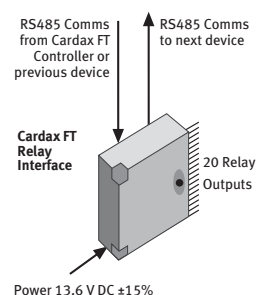
Two Wiegand format readers and one third party keypad connected to the Cardax FT LOCAL BUS Universal Reader Interface for the access control of one door.

## Cardax FT Relay Interface

The Cardax FT Relay Interface is an output control panel containing 20 relay outputs. It is used where a large number of output relays are required in a control environment or as the output interface for low level lift access control.



### Connectivity Diagram



### Cardax FT Reader I/O Interface

The Cardax FT Reader I/O Interface contains 24 balanced inputs, 8 relay outputs and connections for 16 Cardax readers. It is designed to provide an interface for up to 8 doors to the Cardax FT system, matching the capacity of the Cardax FT Controller 5000GL.

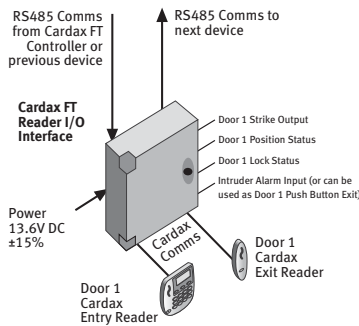
If more than one Cardax FT Reader I/O Interface is connected to the

Cardax FT Controller 5000GL, then the total number of doors that can be configured across Cardax FT Reader I/O Interfaces remains 8. Further field devices connected to the Cardax FT Controller 5000GL can be configured for I/O functionality.

The Cardax FT Reader I/O Interface only supports Cardax IV format door readers (125, Mifare and Swipe Series). Each of the door readers

connects to the Cardax FT Reader I/O Interface using 4-core cable.

With support for downloadable code, software upgrades for the Cardax FT Reader I/O Interface can be easily and quickly delivered via the network through its connected Cardax FT Controller 5000GL.



This diagram shows connectivity for one door. Up to 16 Cardax entry and exit readers can be connected to the Cardax FT Reader I/O Interface for the access control of 8 doors.

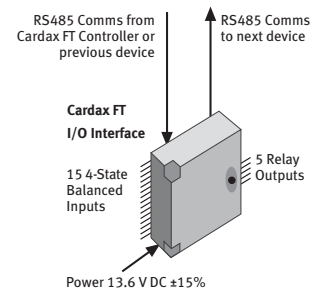


### Cardax FT I/O Interface

The Cardax FT I/O Interface is an input monitoring and output control panel containing 15 balanced inputs and 5 relay outputs. It is normally used as an input panel for intruder alarms, however it can also provide I/O for up to 5 Cardax FT controlled doors.



#### Connectivity Diagram



### Cardax FT LOCAL BUS I/O Devices Configuration Table

DEVICES	Input	Output	Cardax Reader	Wiegand Reader	Proportion of One Footprint
Reader I/O Interface	24	8	16	-	1
Universal Reader Interface	6	2	2	or 2	1/2
I/O Interface	15	5	-	-	1
Relay Interface	-	20	-	-	1
Strike Controller	6	2	-	-	1/2

\* The Cardax FT Cabinet accommodates 1 footprint while the Cardax FT Dual Cabinet accommodates 2 footprints.

### Cardax FT Strike Controller

The Cardax FT Strike Controller contains 6 balanced inputs and 2 relay outputs. The primary purpose of the Cardax FT Strike Controller is to provide:

- Electrical isolation for the power and communications of an externally mounted Cardax FT Intelligent Door Terminal, protecting the remainder of the system from being compromised by any ‘electrical’ attack on the connections to these readers

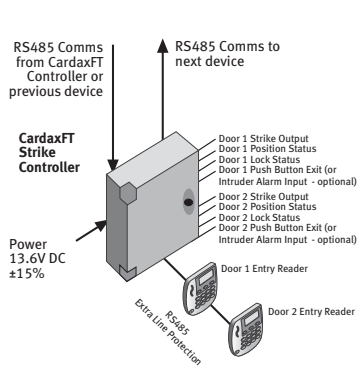
- A communications repeater to enable another 500m of RS485 cable to be added to the system
- Inputs and outputs for the control of two doors.

Should the power on the attached field device be compromised, the Cardax FT Strike Controller prevents any potential flow-on effect from impacting the rest of the Cardax FT system.

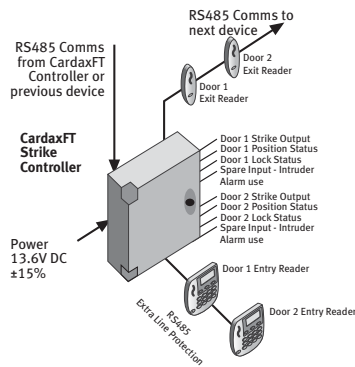
Communications between the Cardax FT Strike Controller and the attached field device are isolated. This prevents anyone tampering with the communications wiring on the attached field device from having an impact on communications in the remainder of the system.

Gallagher Security Management Systems recommends that the field devices located outside secured areas, for example, readers on external doors, are attached to Cardax FT Strike Controllers.

### Connectivity Diagrams: Cardax Readers



Extra line protection provided by the Cardax FT Strike Controller to two entry readers (push button exits)



Extra line protection provided by the Cardax FT Strike Controller to two entry readers. Their corresponding exit readers are in a secured area and therefore do not need to be on this protected line.



### Cardax FT Cabinets

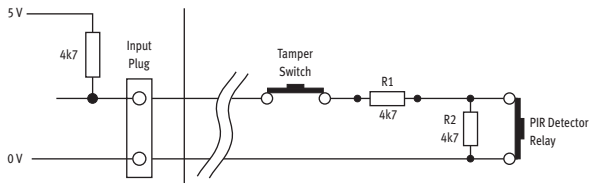
Two Cardax FT Cabinets are available to accommodate the Cardax FT Controller 5000GL and I/O Devices:

- Cardax FT Cabinet
- Cardax FT Dual Cabinet

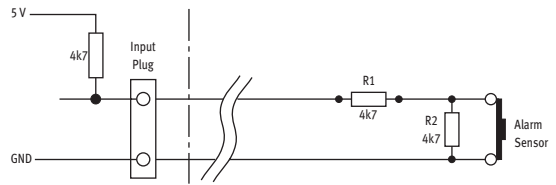
The Cardax FT Dual Cabinet is available with or without a power supply.

Refer to the Cardax FT Cabinets data sheet for further information.

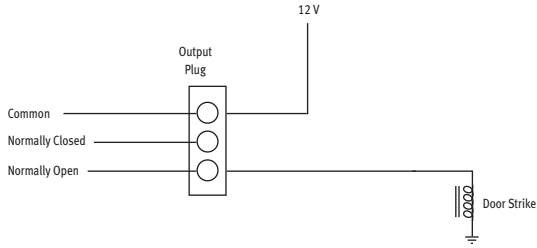
### Input to sensor connection – with tamper



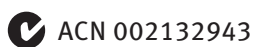
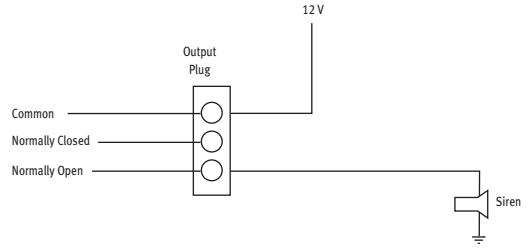
### Input to sensor connection – without tamper



### Relay Output to door strike connection



### Relay Output to siren connection



All equipment complies with CE, C-Tick and FCC approvals. Please contact Gallagher Security Management Systems for the latest list of approvals. In order to comply with international standards, all Cardax FT units must be installed in Cardax FT Cabinets following the directions in the installation instructions.

February 2009

**TECHNICAL SPECIFICATIONS**

**Cardax FT LOCAL BUS I/O Devices – Standard specifications applicable to all units**

<b>Power Supply</b>	Voltage	13.6 volts DC ± 15%
<b>Inputs/Outputs</b>	4-State balanced inputs Relay Outputs	Using dual 4k7 ohm termination resistors Dry contact relays (c/o contacts)
<b>Relay Specifications</b>	Resistive load Inductive load	3 Amps at 24V DC/AC 1 Amp at 24V DC/AC
<b>Communications</b>	Between Cardax FT Controller and LOCAL BUS I/O Devices Wiring format – data Wiring format – power Maximum distance	RS485 at 187.5 Kbits per second 2 wire (using Cat5) 2 wire (gauge selected to suit cable length) 500 m

**TECHNICAL SPECIFICATIONS**

**Cardax FT LOCAL BUS I/O Devices – Specifications applicable to individual units**

<b>Reader I/O Interface</b>	Cardax format reader connections 4-State balanced inputs Dry contact relays (c/o contacts) Power supply current Shipping weight (nominal)	16 24 8 300 mA 1862 gm (one PCB in cabinet)
<b>Universal Reader Interface</b>	Cardax format reader connections 3rd party (Weigand) format reader connections PIN pad connections (4 x 3 matrix) 4-State balanced inputs Dry contact relays (c/o contacts) Power supply current Shipping weight (nominal) PCB only	2 2 1 6 2 300 mA 1662 gm (one PCB in cabinet) 162 gm
<b>I/O Interface</b>	4-State balanced inputs Dry contact relays (c/o contacts) Power supply current Shipping weight (nominal)	15 5 500 mA 1752 gm (one PCB in cabinet)
<b>Relay Interface</b>	Dry contact relays (c/o contacts) Power supply current Shipping weight (nominal)	20 800 mA 1854 gm (one PCB in cabinet)
<b>Strike Controller</b>	Isolated RS485 communication port 4-State balanced inputs Dry contact relays (c/o contacts) Power supply current Shipping weight (nominal) PCB only	1 6 2 300 mA 1620 gm (one PCB in cabinet) 120 gm



[www.gallaghersms.com](http://www.gallaghersms.com)

**Gallagher Security Management Systems**

Kahikatea Drive  
Private Bag 3026  
Hamilton  
New Zealand  
Phone: +64-7-838 9800  
Fax: +64-7-838 9801  
Email: [cdxsales@cardax.com](mailto:cdxsales@cardax.com)

**Offices / Distributors are located in:**

Asia	Middle East
Australia	New Zealand
Canada	South Africa
China	United Kingdom
Europe	United States of America



**Disclaimer**

In accordance with the Gallagher policy of continuing development, designs and specifications are subject to change without notice. Gallagher Security Management Systems is a division of Gallagher Group Limited. Cardax is a registered trademark of Gallagher Group Limited. All other product, brand or trade names mentioned within are the property of their respective trademark owners. Copyright © Gallagher Group Limited 2009. All rights reserved.



Partner

business partner

