

# Cardax FT GBUS I/O Devices

Cardax FT GBUS I/O Devices provide flexible, cost effective input and output expansion options with an option to connect readers.



Cardax FT GBUS I/O Devices include the:

- Cardax FT 8-Input Expansion Interface
- Cardax FT I/O Expansion Interface
- Cardax FT GBUS Universal Reader Interface.

They connect to Cardax FT Controllers via asynchronous RS485 Cardax proprietary GBUS protocol.

### Controlling Inputs and Outputs

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

### Monitoring Inputs

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

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

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

Relays may be used as:

- Door control
- 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

The Cardax FT GBUS Universal Reader Interface provides connections for readers:

- Using 4-core cable, up to 2 Cardax IV format readers
- Using 6-core cable, up to 1 Wiegand format reader.

### Data Protection

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

# Cardax FT GBUS I/O Devices

The family of cost effective Cardax FT GBUS I/O Devices provide flexible options for system configuration.

## Cardax FT GBUS Universal Reader

### Interface

The Cardax FT GBUS Universal Reader Interface is designed to provide an interface for up to 2 doors to the Cardax FT system.

Connections are provided for:

- 8 inputs
- 2 outputs
- 2 Cardax IV readers (125, Mifare

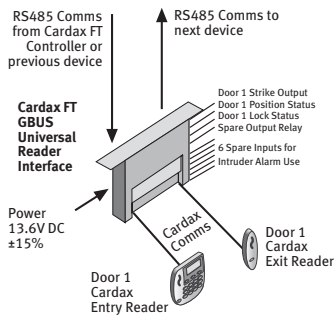
and Swipe Series) using 4-core cable or 1 Wiegand reader using 6-core cable.

Ideal for retrofits, the Cardax FT GBUS Universal Reader Interface, when configured in conjunction with the Cardax FT Controller 5000GL, will deliver a cost effective solution for sites using daisy-chained door wiring.

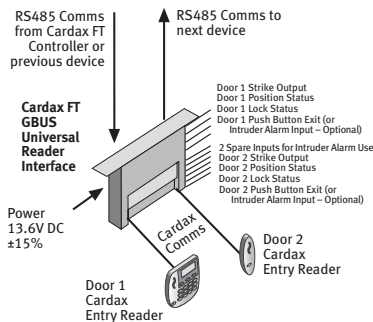
Its small design size and plastic enclosure allow cavity wall mounting, installation in a flush box or installation in the Cardax FT GBUS I/O Accessory Cabinet.



### Connectivity Diagrams: Cardax Readers

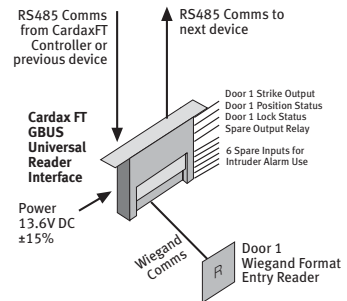


Cardax entry and exit readers connected to the Cardax FT GBUS Universal Reader Interface for the access control of one door.



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

### Connectivity Diagram: Wiegand format Readers



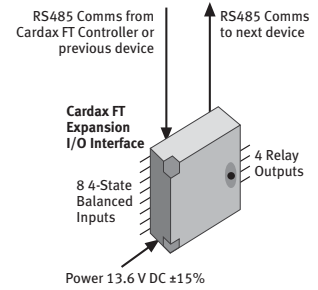
One Wiegand format reader connected to the Cardax FT GBUS Universal Reader Interface for the access control of one door.

### Cardax FT I/O Expansion Interface

The Cardax FT I/O Expansion Interface is an input monitoring and output control panel containing 8 balanced inputs and 4 relay outputs. It is normally used for intruder alarms, however it can also provide I/O for up to 2 doors.



### Connectivity Diagram

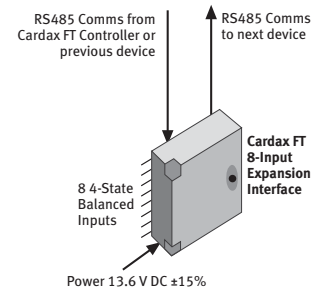


### Cardax FT 8-Input Expansion Interface

The Cardax FT 8-Input Expansion Interface is an input monitoring panel containing 8 balanced inputs. It is normally used as an input panel for intruder alarms.



### Connectivity Diagram



Variable end of line resistance is supported for all Cardax FT GBUS I/O Devices and the Cardax FT Controllers 3000 5000GL.

### Cardax FT GBUS Devices Configuration Table

DEVICES	Input	Output	Cardax Reader	Wiegand Reader	Proportion of One Footprint
GBUS Universal Reader Interface	8	2	2	or 1	1/4
8-Input Expansion Interface	8	-	-	-	1/4
I/O Expansion Interface	8	4	-	-	1/2

\* The Cardax FT GBUS I/O Accessory Cabinet accomodates 1 footprint while the Cardax FT Dual Cabinet accomodates 2 footprints.

### Cardax FT Cabinets

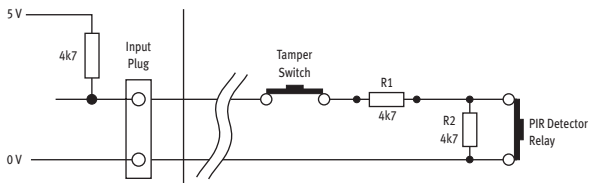
Two Cardax FT Cabinets are available to accommodate the Cardax FT Controllers 3000 and 5000GL and the Cardax FT GBUS I/O Devices:

- Cardax FT Cabinet
- Cardax FT Dual Cabinet

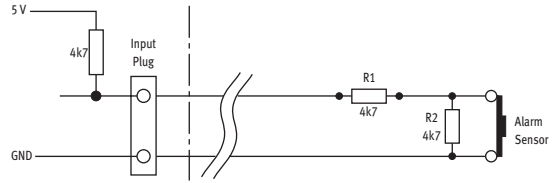
The Cardax FT Dual Cabinet is available with or without a power supply.

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

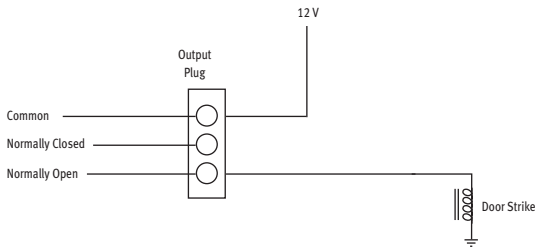
#### Input to sensor connection – with tamper



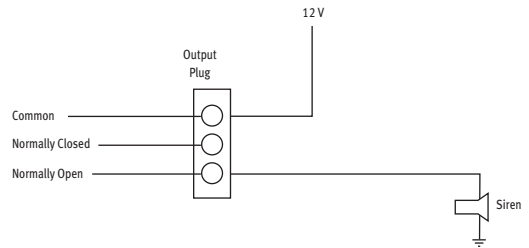
#### Input to sensor connection – without tamper



#### Relay Output to door strike connection



#### Relay Output to siren connection



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**TECHNICAL SPECIFICATIONS**      **Cardax FT GBUS 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	Default: using dual 4k7 ohm termination resistors, configurable
	Relay Outputs	Dry contact relays (c/o contacts)
<b>Relay Specifications</b>	Resistive load	3 Amps at 24V DC/AC
	Inductive load	1 Amp at 24V DC/AC
<b>Communications</b>	Between Cardax FT Controller and GBUS I/O Devices	RS485 at 38.4 Kbits per second
	Wiring format – data	2 wire (using Cat5)
	Wiring format – power	2 wire (gauge selected to suit cable length)
<b>Cable Specifications</b>	Cardax GBUS to Cardax FT Controllers	1200m max
	Cardax readers	4 wire, 200m max
	Wiegand readers	6 wire (see manufacturer’s specifications or max. cable length)

**TECHNICAL SPECIFICATIONS**      **Cardax FT GBUS I/O Devices – Specifications applicable to individual units**

<b>Cardax FT 8-Input Expansion</b>	4-State balanced inputs	8
	Power supply current	45 mA
	Shipping weight (nominal)	175 gm
	Proportion of Cabinet footprint	1/4
<b>Cardax FT I/O Expansion</b>	4-State balanced inputs	8
	Relay Outputs	4
	Power supply current (without relays operated)	45 mA
	Power supply current (all relays operated)	175 mA
	Shipping weight (nominal)	250 gm
	Proportion of Cabinet footprint	1/2
<b>GBUS Universal Reader Interface</b>	Cardax format reader connections	2
	3rd party (Wiegand) format reader connections	1
	4-State balanced inputs	8
	Dry contact relays (c/o contacts)	2
	Power supply current - all relays operated	100 mA
	- no relays operated	40 mA
	Shipping weight (nominal)	250 gm
Proportion of Cabinet footprint	1/4	

**Compliance Standards**



All equipment complies with CE, C-Tick, UL 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.



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

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