

# Gallagher GBUS Devices



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

## Gallagher GBUS I/O Devices include the:

- Gallagher 8-Input Expansion Interface
- Gallagher I/O Expansion Interface
- Gallagher High Density I/O Interface
- Gallagher GBUS Universal Reader Interface

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

## Controlling Inputs and Outputs

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

### Monitoring Inputs

The inputs on Gallagher 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 Gallagher 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 Gallagher Controller and its connected Gallagher GBUS I/O Devices are encrypted and check summed to protect data from manipulation during transmission.



### Gallagher GBUS Universal Reader Interface

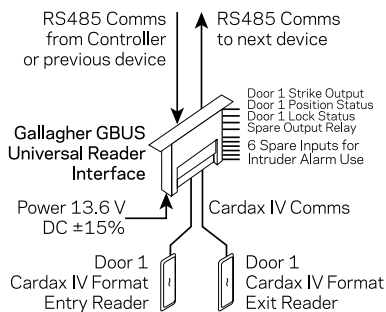
The Gallagher GBUS Universal Reader Interface is designed to provide an interface for up to 2 doors to the Gallagher system. Ideal for retrofits, the Gallagher GBUS Universal Reader Interface, when configured in conjunction with a Gallagher Controller, will deliver a cost effective solution for sites 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 Gallagher GBUS I/O Accessory Cabinet.

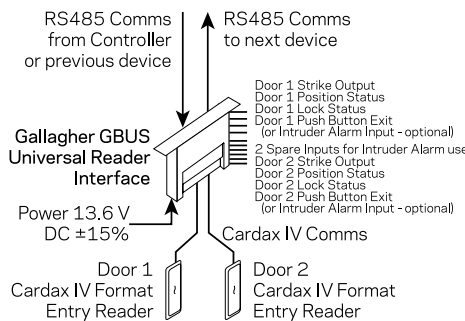
### Gallagher GBUS Universal Reader Interface Wiegand Variant

The Gallagher GBUS Universal Reader Interface Wiegand variant is a 2 Wiegand reader variant. It provides connections for 2 Wiegand readers only and 4 inputs and 2 outputs.

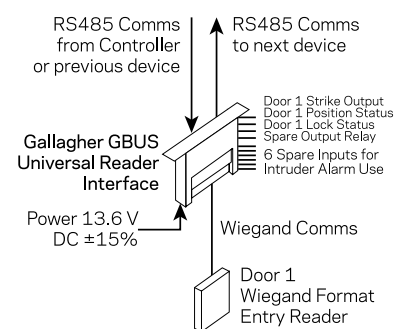
### Connectivity diagrams



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



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



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



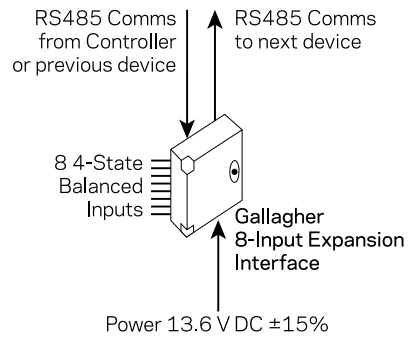
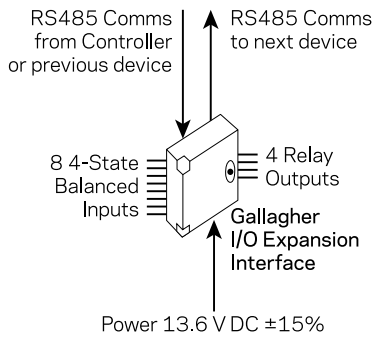
### Gallagher I/O Expansion Interface

The Gallagher I/O Expansion Interface is an input monitoring and output control panel and is normally used for intruder alarms, however it can also provide I/O for up to 2 doors.

### Gallagher I/O Expansion Interface

The Gallagher 8-Input Expansion Interface is an input monitoring panel and is normally used as an input panel for intruder alarms.

### Connectivity diagrams





---

## Gallagher High Density I/O Interface

The Gallagher High Density I/O Interface is an input monitoring and output control panel and is normally used for intruder alarms, however it can also provide I/O for up to 4 doors. The Gallagher High Density I/O Interface includes onboard tamper protection.

## Variable End of Line Resistance

Variable end of line resistance is supported for all Gallagher GBUS I/O Devices and the Gallagher Controllers.

## Gallagher Cabinets

Two Gallagher Cabinets are available to accommodate the Gallagher Controllers and the Gallagher GBUS I/O Devices:

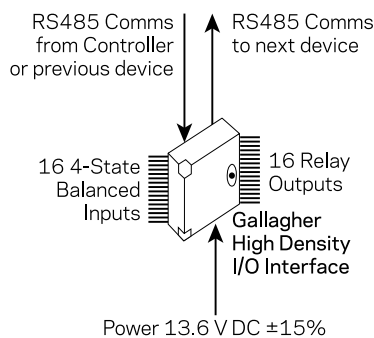
- Gallagher Cabinet
- Gallagher Dual Cabinet

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

Refer to the Gallagher Cabinets data sheet for further information.

---

## Connectivity diagrams





## Gallagher GBUS Devices Configuration Table

DEVICES	Input	Output	Cardax IV Reader	Wiegand Reader	Proportion of One footprint
GBUS Universal Reader Interface	8	2	2	1	1/4
GBUS Universal Reader Interface Wiegand variant	4	2	0	2	1/4
8-Input Expansion Interface	8	-	-	-	1/4
I/O Expansion Interface	8	4	-	-	1/2
High Density I/O Interface	16	16	-	-	1

It is possible to install 2 Gallagher High Density I/O interfaces in a single cabinet footprint by mounting one on top of the other. The Gallagher GBUS I/O Accessory Cabinet accommodates 1 footprint while the Gallagher Dual Cabinet accommodates 2 footprints.

GBUS I/O DEVICES		Standard specifications applicable to all devices		JANUARY 2013
Power Supply	Voltage	13.6 v DC±15%		
Inputs / Outputs	4-State balanced inputs	Default using dual 4k7 Ω termination resistors - configurable		
	Relay Outputs	Dry contact relays (c/o contacts)		
Relay Specifications	Resistive load	3 amps at 24V DC/AC		
	Inductive load	1 amp at 24V DC/AC		
Communications	Between Gallagher 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)		
Cable Specifications	Gallagher GBUS to Gallagher Controller	1200m max		
	Gallagher Readers	4 wire, 200m max		
	Wiegand Readers	6 wire (see manufacturer's specifications for max. cable length)		
GBUS I/O DEVICES		Standard specifications applicable to individual units		
Gallagher 8-Input Expansion	4-State balanced inputs	8		
	Power supply current	45 mA		
	Shipping weight (nominal)	175 gm		
	Proportion of cabinet footprint	¼		
Gallagher 8-Input Expansion	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	½		
Gallagher High Density I/O	4-State balanced inputs	16		
Expansion	Relay outputs	16		
	Power supply current (without relays operated)	85 mA		
	Power supply current (all relays operated)	650 mA		
	Shipping weight (nominal)	500 gm		
	Proportion of cabinet footprint	1		
Gallagher Universal Reader Interface		Standard	Wiegand	
	Cardax format reader connections	2	n/a	
	3rd party (Wiegand format) reader connections	1	2	
	4-State balanced inputs	8	4	
	Dry contact relays (c/o contacts)	2	2	
	Power supply current (without relays operated)	40 mA	40 mA	
	Power supply current (all relays operated)	100 mA	100 mA	
	Shipping weight (nominal)	250 gm	250 gm	
	Proportion of cabinet footprint	¼	¼	
Compliance Standards	All equipment complies with CE, C-Tick and FCC approvals. Please contact Gallagher for the latest list of approvals. In order to comply with international standards, all Gallagher units must be installed in Gallagher Cabinets following the directions in the installation instructions.			



---

**GALLAGHER WORLD HEADQUARTERS**

Kahikatea Drive, Hamilton 3206  
Private Bag 3026, Hamilton 3240  
New Zealand

**TEL:** +64 7 838 9800

**EMAIL:** sales@security.gallagher.com

**REGIONAL OFFICES**

New Zealand..... +64 7 838 9800  
Americas..... +1 877 560 6308  
Asia ..... +852 3468 5175  
Australia ..... +61 3 9308 7722  
India ..... +91 80 2661 1590  
Middle East..... +9615 808728  
South Africa ..... +27 11 974 4740  
United Kingdom / Europe..... +44 2476 64 1234

Disclaimer: System configuration, network capacities and the volume of system activity affect performance. Please contact Gallagher for advice. In accordance with the Gallagher policy of continuing development, design and specifications are subject to change without notice. Gallagher Group Limited is an ISO 9001:2008 Certified Supplier. Copyright © Gallagher Group Limited 2012. All rights reserved.

