



HBUS 4 In 2 Out Door Module - Wiegand: C300665



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Contents

1	Introduction	4
2	Before you begin	4
3	Installation	6
4	Connections	7
5	Component layout	9
6	LED indications.....	9
7	Technical specifications.....	10
8	Approvals and Compliance Standards.....	11
9	Mounting dimensions	12

1 Introduction

The Gallagher HBUS 4 In 2 Out Door Module - Wiegand extends the existing connectivity of the Gallagher Controller 6000 via the HBUS communications protocol.

The device provides connection for:

- 4 inputs
- 2 outputs
- 2 Wiegand readers

The blue coloured PCB signifies HBUS for ease of identification. The PCB is enclosed in a two part clip-together clear ABS casing. Indicator LEDs are readily visible through the casing.

2 Before you begin

2.1 Shipment contents

Check the shipment contains the following items:

- 1 x Gallagher HBUS 4 In 2 Out Door Module - Wiegand
- 1 x Gallagher HBUS 4 In 2 Out Door Module - Wiegand component decal
- 4 x self-tapping screws
- 8 x 4k7 ohm resistors

2.2 Software

Important: The Gallagher HBUS 4 In 2 Out Door Module - Wiegand can only be used with Gallagher Command Centre vEL7.90 software (or later). Earlier versions of Command Centre do not support this device.

The device software is factory-loaded prior to shipment. New device software for the HBUS 4 In 2 Out Door Module - Wiegand is automatically downloaded from the Controller 6000 from vGR7.90 (or later).

To view the version of device software, as last reported by the device itself, click the **Connections** tab of the HBUS I/O item in Command Centre.

Note: The HBUS I/O item will display as offline until the item is fully configured.

2.3 Power supply

The Gallagher HBUS 4 In 2 Out Door Module - Wiegand requires a $13.6 \text{ Vdc} \pm 15\%$ power supply. This is connected through the terminals labelled "Vin" and "GND". An onboard 1.5 A resettable polyfuse provides over current protection.

Auxiliary DC Output

The terminals "VOOUT" and "GND" provide a $13.6 \text{ Vdc} \pm 15\%$ output rated at 750 mA suitable for Wiegand reader connections.

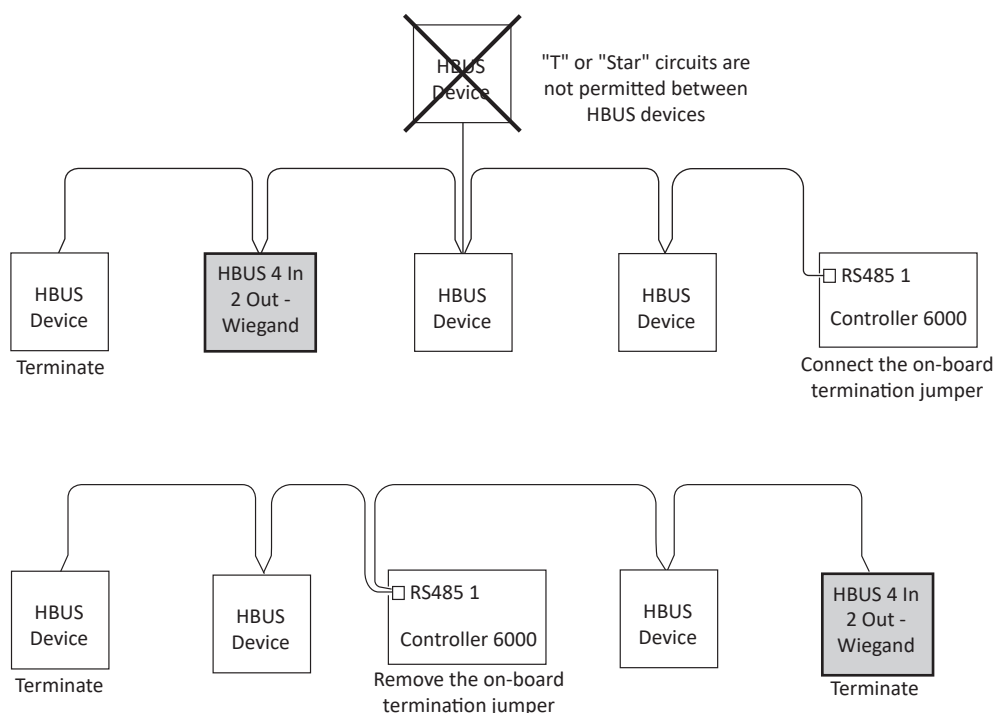
Note: It is recommended that lock power be supplied via a separate cable from the control electronics, to minimise the possibility of high current spikes resulting from lock switching causing other electronic equipment to malfunction.

2.4 HBUS cabling

The HBUS communications protocol is based on the RS485 standard. HBUS communications requires a minimum cable size of 4 core 24 AWG (0.2 mm^2) stranded security cable. This cable allows the transmission of data (2 wires) and power (2 wires). When using a single cable to carry both power supply and data, both the power supply voltage drop and data requirements must be considered.

The cabling between HBUS devices should be done in a "daisy chain" topology, (i.e. A "T" or "Star" topology should not be used between devices). The Gallagher HBUS 4 In 2 Out Door Module - Wiegand can communicate over a distance of up to 500 m (1640 ft) from the Controller.

The start and end devices on an HBUS circuit should be terminated using 120 ohm resistance. If the door module is the start or end device on an HBUS circuit terminate the door module by connecting a short wire between "TRM Link" and "COM A" connectors



3 Installation



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

The installation of the Gallagher HBUS 4 In 2 Out Door Module - Wiegand will differ depending on the installation location. Options are in a Gallagher Cabinet or in a standard flush mounting electrical box.

3.1 Installation in a Gallagher Cabinet

1. Install the Gallagher Cabinet. For cabinet installation instructions, refer to the install note provided with the cabinet.
2. Install a Gallagher Mounting Plate (C200001, C200002 or C200003) directly into the cabinet.
3. Using the 4 self-tapping screws supplied, mount the door module to the installed Gallagher Mounting Plate.
4. Connect the connections to the door module (HBUS comms, Wiegand readers, inputs, and outputs) as described in the section "*Connections*" later in this note.

Note: The cables should stow neatly into the base of the cabinet.

5. Fix the component identification decal inside the cabinet door. This decal enables you to enter wiring and connection details for the door module.

Note: Do not fix the decal over the reflective label. This label is required for front optical tamper detection (if an optical tamper detector is present in the cabinet).

6. Configure the door module in Command Centre. Refer to the topic "*Configuring an HBUS IO Interface*" in the Command Centre Configuration Client Online Help.

3.2 Installation in flush boxes

1. Connect the connections to the door module (HBUS comms, Wiegand readers, inputs, and outputs) as described in the section "*Connections*" later in this note.
2. Mount the door module into the flush box using 2 of the self-tapping screws provided, through the screw tabs on the end of the door module.

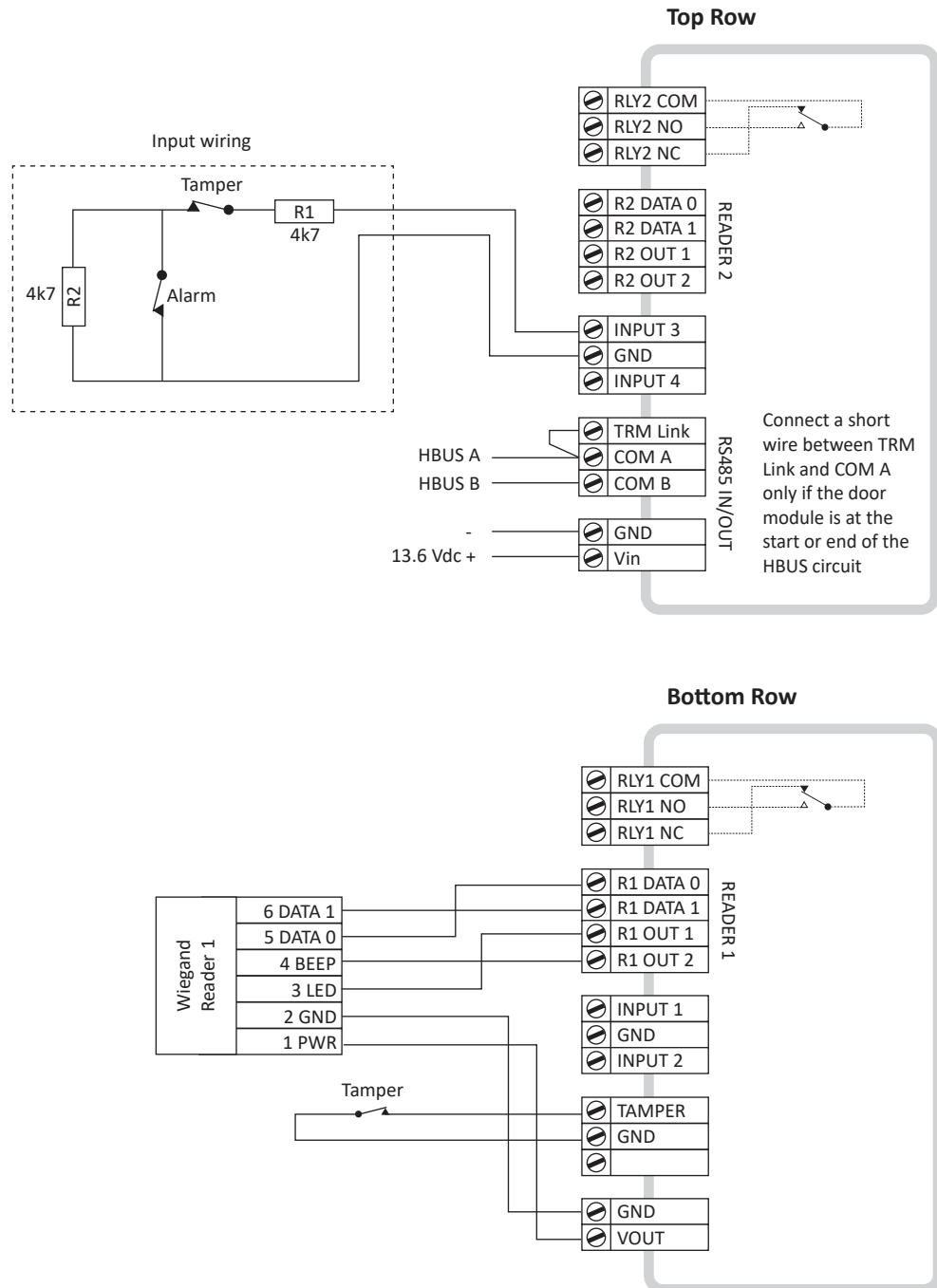
Note: If the screws tabs are not used, they may be snapped off should space requirements necessitate.

3. Configure the door module in Command Centre. Refer to the topic "*Configuring an HBUS IO Interface*" in the Command Centre Configuration Client Online Help.

4 Connections

Notes:

- For UL installation the minimum cable size is 22 AWG.
- Run a common ground (-ve) from the Controller for all HBUS devices.

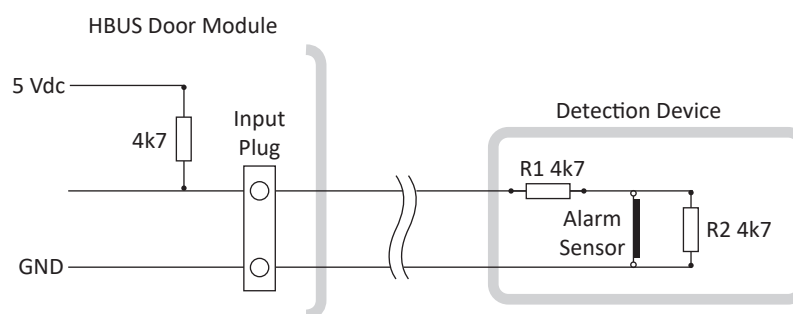


4.1 Balanced inputs

Cabling should be a minimum size of 24 AWG (0.2 mm²) for all balanced inputs.

To ensure correct tamper detection (closed or open circuit), the balanced inputs require 4k7 ohm resistors to be connected as close as possible to the device being monitored.

When the monitored device incorporates a normally-closed tamper switch, it can be wired in series with resistor R1.



Resistor values can be configured for the door module in Command Centre (via the EOL Resistors property page). Refer to the topic "*Configuring EOL Resistors for devices*" in the Command Centre Configuration Client Online Help.

4.2 Output relays

The cabling to and from the relay connectors must be capable of carrying sufficient current for the device the relay is controlling. Each relay circuit is rated:

- 3 A at 24 Vdc/ac for a resistive load
- 1 A at 24 Vdc/ac for an inductive load

Ensure back EMF snubbing components (a diode or Metal Oxide Varistor) are fitted to inductive loads to prevent voltage spikes from causing equipment to malfunction.

4.3 Tamper

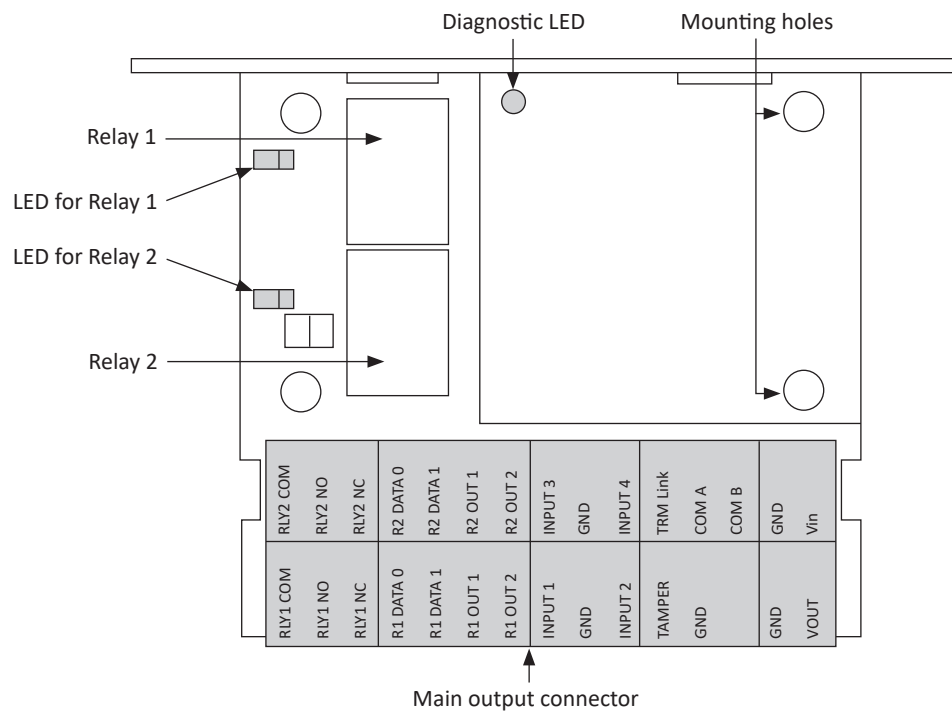
The HBUS 4 In 2 Out Door Module - Wiegand has a separate tamper input for use if required. To use this tamper, a normally closed switch should be wired from the "TAMPER" input to the "GND". If this switch is opened, a tamper event will be sent to the Controller.

IMPORTANT: If not using this tamper, open the properties for the HBUS I/O item in Command Centre, click the **Status and Overrides** tab and select the **Disable Tamper** check box.

4.4 Reader connection

The terminals are designed to suit Wiegand reader wiring. When connecting Wiegand format readers, refer to the Wiegand reader's datasheet to establish the maximum cable length.

5 Component layout



6 LED indications

LED	Indication
3 Flash (Red)	No communications with the Controller.
2 Flash (Red)	Communications with the Controller, but door module is not configured.
1 Flash (Red)	Fully configured and functioning normally.

7 Technical specifications

Power supply Operating voltage (Vin): Fuse: Operating current: DC output (VOUT): Fuse: Maximum current (relays on and VOUT supplying 750 mA): Power rating:	13.6 Vdc $\pm$ 15% Onboard 1.5 A resettable polyfuse 50 mA DC (relays off) 135 mA DC (relays on) 13.6 Vdc $\pm$ 15% 750 mA 983 mA 0.68 W (relays off) 1.84 W (relays on)
Environmental Temperature range: Humidity:	-10 °C to +50 °C (+14 °F to +122 °F) 95% non condensing *
Connections Inputs: Format: Outputs: Format: RS485 In/Out: Wiegand readers:	4 4 state monitoring (configured in Command Centre) 2 24 Vdc/ac, 3 A resistive, 1 A inductive 1 standard connection (connects to Controller 6000) 2 Wiegand readers
Dimensions Height: Depth: Width:	30 mm (1.2 inches) 75 mm (3 inches) 98 mm (3.9 inches)

* The Gallagher HBUS 4 In 2 Out Door Module - Wiegand is UL humidity tested and certified to 85% and has been independently verified to 95%.

8 Approvals and Compliance Standards



This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.



This product complies with the environmental regulations for the Restriction of Hazardous Substances in electrical and electronic equipment (RoHS). The RoHS directive prohibits the use of electronic equipment containing certain hazardous substances in the European Union.

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: Changes or modifications not expressly approved by Gallagher Limited could void the user's authority to operate this equipment.

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.

Industry Canada

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Industrie Canada

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

UL Installations

For a guide to configuring the Gallagher system to the UL Standard, please refer to the document appropriate to your location:

- "3E2793 Gallagher Command Centre UL Configuration Requirements" (for USA), or
- "3E5960 Gallagher Command Centre ULC Configuration Requirements" (for Canada).

Installers must ensure these instructions are followed to ensure the installed system is UL compliant



UL294 - Access Control
UL2610 - Commercial Burglary
CAN/ULC-S304- Commercial Burglary
CAN/ULC 60839-11-1- Access Control

AS/NZS IEC 60839.11.1:2019 Grade 4, Class II

EN50130-4
EN50131-3 Grade 4, Class II
EN55032



This picture is not to scale, therefore use the measurements provided.