



Gallagher

HBUS 8 In 2 Out Door Module

Installation Note

Gallagher HBUS 8 In 2 Out Door Module: C300660



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Contents

1	Introduction	4
2	Before you Begin.....	4
2.1	Shipment Contents	4
2.2	Software	4
2.3	Power Supply	4
2.4	Cabling	5
3	Installation	7
3.1	Installation in a Gallagher Cabinet.....	7
3.2	Installation in flush boxes	7
4	Connections	8
4.1	Balanced Inputs	8
4.2	Output Relays	9
4.3	Tamper.....	9
5	Component Layout	9
6	HBUS LED Diagnostic Indications	10
7	Technical Specifications	10
8	Approvals and Compliance Standards	11
9	Mounting Dimensions.....	12



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



IMPORTANT: The Gallagher HBUS 8 In 2 Out Door Module can only be used with Gallagher Command Centre vEL7.20 software (or later). Earlier versions of Command Centre do not support this device.

1 Introduction

The Gallagher HBUS 8 In 2 Out Door Module extends the existing connectivity of the Gallagher Controller 6000 via the HBUS communications protocol. The module provides connection for:

- 8 inputs
- 2 outputs
- 4 HBUS readers or HBUS terminals

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

2.2 Software

The HBUS I/O device software is factory-loaded prior to shipment. New device software for the HBUS 8 In 2 Out Door Module is automatically downloaded from the Controller 6000 vGR7.20//b672 (or later).

To view the version of device software, as last reported by the module 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 8 In 2 Out Door Module requires a 13.6 Vdc + 15% power supply. This is connected through the terminals labelled Vin and GND. An onboard 1.5 A resettable polyfuse provides over current protection.

The terminals VOUT and GND provide a 13.6 Vdc + 15% output rated at 750 mA suitable for HBUS 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 Cabling

The Gallagher HBUS 8 In 2 Out Door Module requires a minimum cable size of 4 core 24 AWG (0.2 mm²) 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.

HBUS Cabling Topology

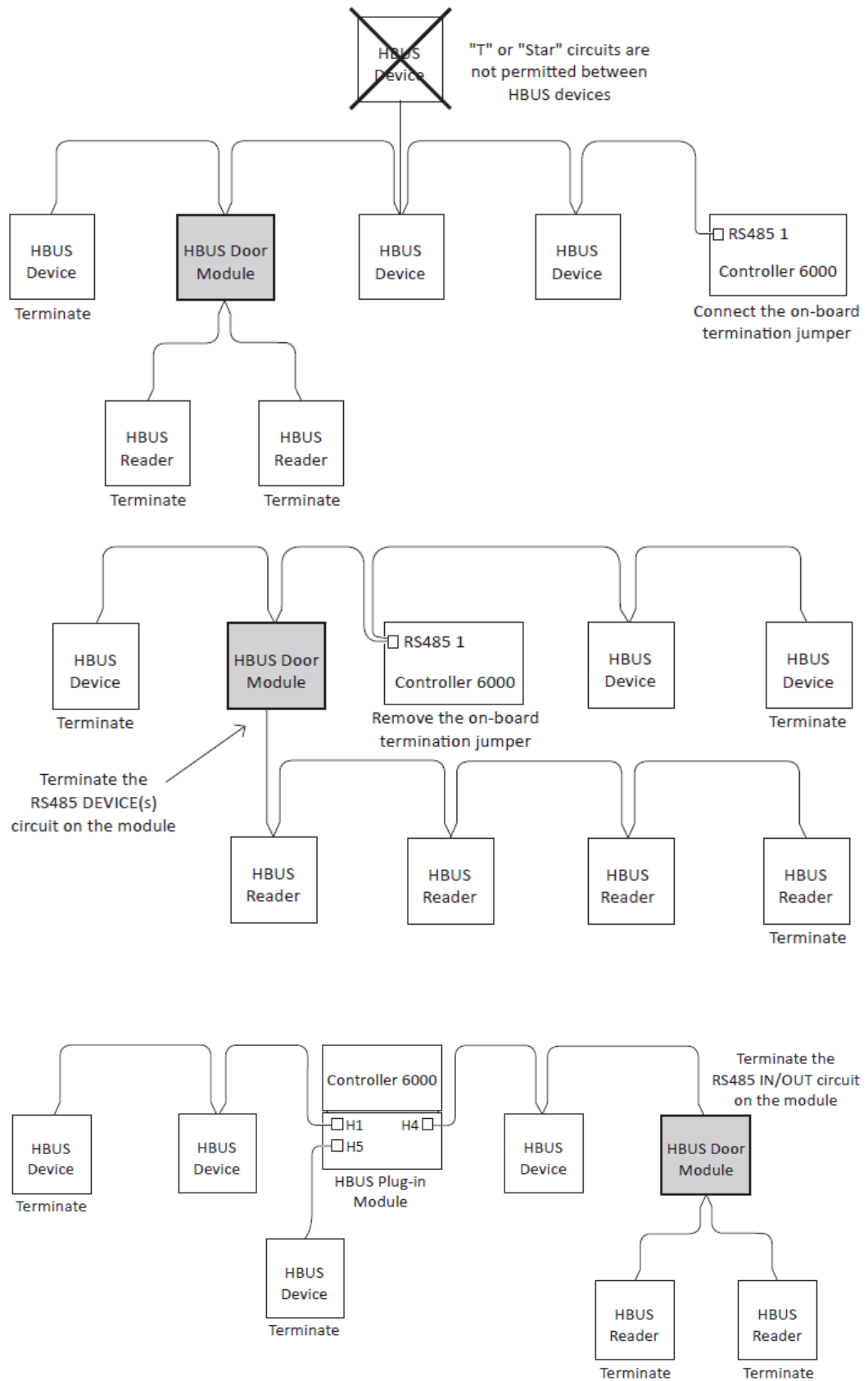
The HBUS communications protocol is based on the RS485 standard. The cabling between HBUS devices should be done in a "daisy chain" topology, (i.e. A "T" or "Star" topology should not be used between devices).

HBUS circuit	Definition
RS485 IN/OUT	Main circuit used for connecting back to a Controller 6000. The module can communicate over a distance of up to 500 m (1640 ft) from the Controller.
RS485 DEVICE(s)	Circuit used to connect up to 4 x HBUS readers or HBUS terminals. Note: Power requirements may reduce the number of HBUS terminals that can be connected to the module. HBUS readers or HBUS terminals can communicate over a distance of up to 400 m (1312 ft) from the module. This circuit is independent from RS485 IN/OUT and faults occurring on RS485 DEVICE(s) will not affect the operation of devices on the RS485 IN/OUT.

Termination

The start and end devices on an HBUS circuit should be terminated using 120 ohm resistance. If the module is the start or end device on an HBUS circuit terminate the module by connecting a short wire between "TRM Link" and "COM A" connectors. This applies for both RS485 IN/OUT and RS485 DEVICE(s).

HBUS Cabling Topology Diagrams



3 Installation

The installation of the Gallagher HBUS 8 In 2 Out Door Module 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. Refer to the appropriate Gallagher Cabinet installation note below for details regarding the procedures involved when mounting the Gallagher Cabinet.
 - Gallagher Starter Kit Cabinet Installation Note (3E3723)
 - Gallagher Two Door Controller Cabinet Installation Note (3E3721)
 - Gallagher Cabinet Installation Note (3C4513)
 - Gallagher Dual Cabinet Installation Note (3E0694)
2. Install a Gallagher Mounting Plate (C200001, C200002 or C200003) directly into the cabinet.
3. Using the 4 self-tapping screws supplied, fit the module to the installed Gallagher Mounting Plate.
4. Connect the RS485 IN/OUT, RS485 DEVICE(s), inputs and outputs as detailed in the topic *"Connections"* later in this note.

Note: The cables should stow neatly and be held in place by the cable clamps fitted 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 and identifies the location and designation of cable connections, etc.

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 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 RS485 IN/OUT, RS485 DEVICE(s), inputs and outputs as detailed in the topic *"Connections"* later in this note.
2. Mount the module in the flush box using 2 of the self-tapping screws provided, through the screw tabs on the end of the module.

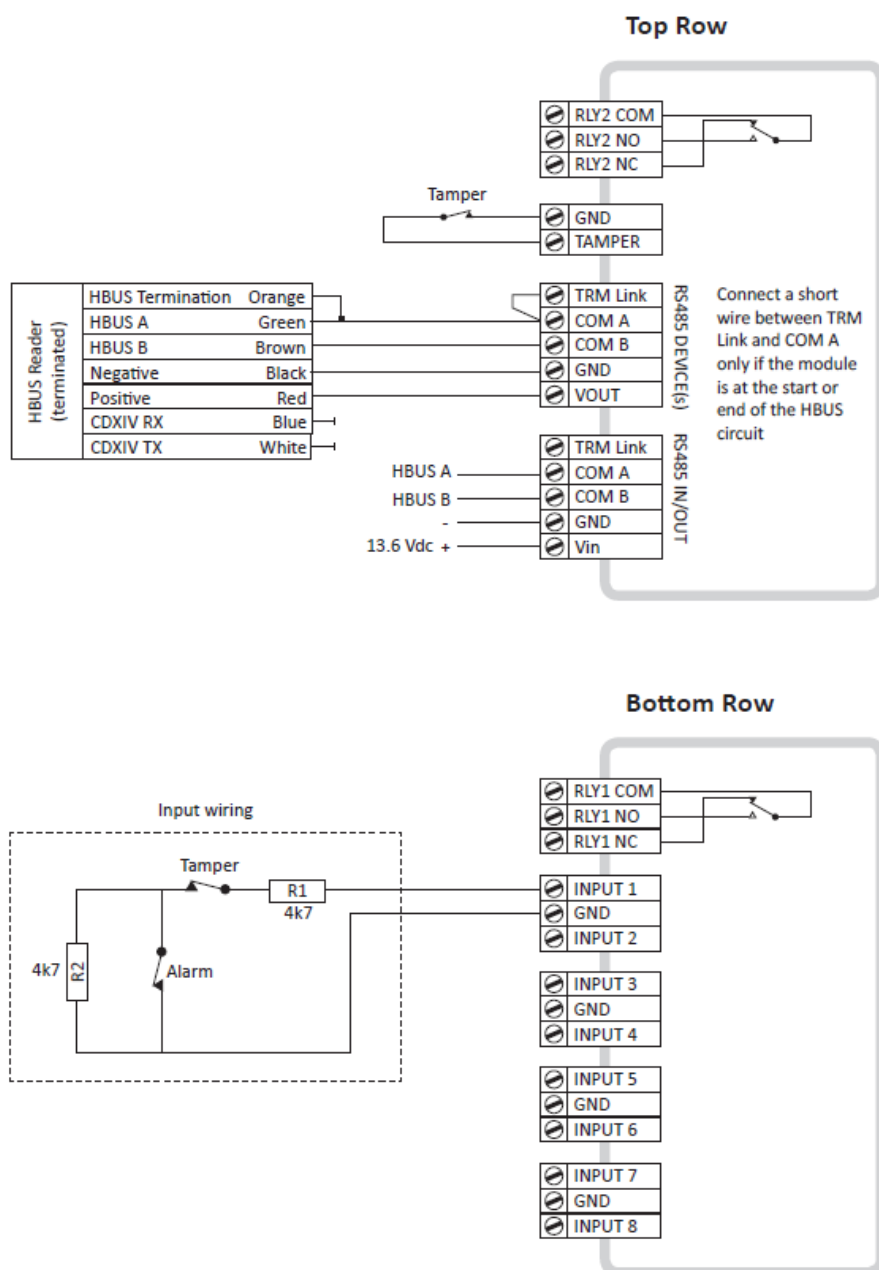
Note: If the screws tabs are not used, they may be snapped off should space requirements necessitate.

3. Configure the 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 RS485 devices.

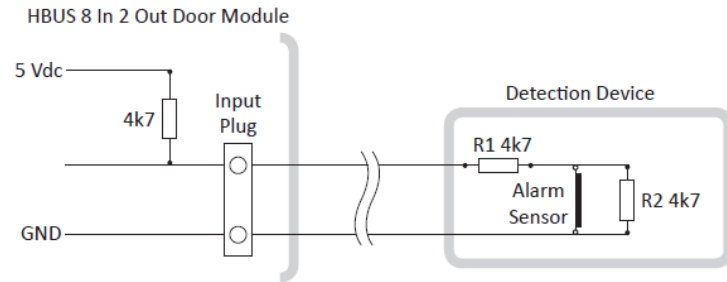


4.1 Balanced Inputs

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 a HBUS 8 In 2 Out 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

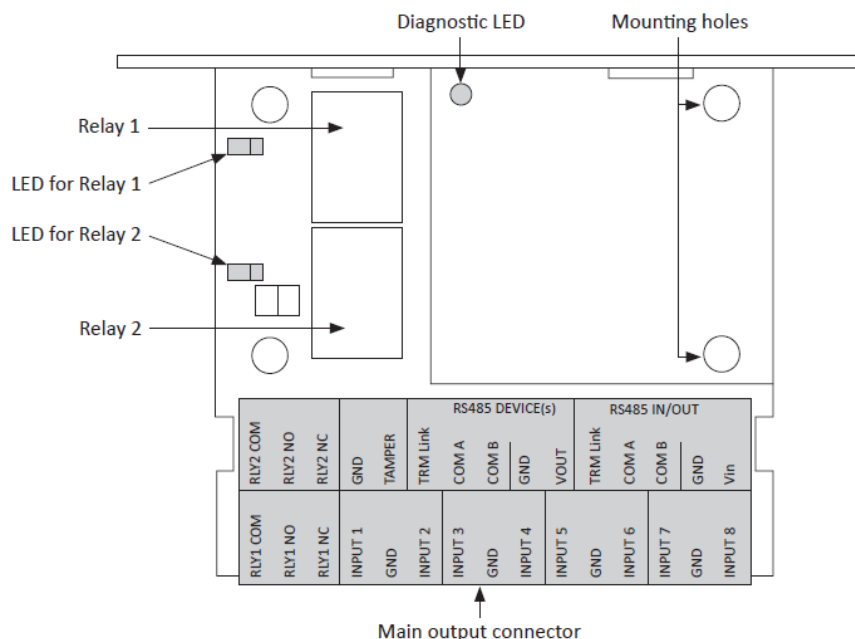
Ensure back EMF snubbing components (a diode or Metal Oxide Varistor) are fitted to inductive loads to prevent voltage spikes from causing equipment to malfunction.

4.3 Tamper

The HBUS 8 In 2 Out Door Module 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 ground. 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 check the **Disable Tamper** checkbox.

5 Component Layout



6 HBUS LED Diagnostic Indications

Diagnostic LED	Diagnostic Indication
3 Flash (Red)	No communications with the Controller.
2 Flash (Red)	Communications with the Controller, but 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% noncondensing *
Connections Inputs: Format: Outputs: Format: RS485 In/Out: RS285 Devices:	 8 4 state monitoring (configured in Command Centre) 2 24 Vdc/ac, 3 A resistive, 1 A inductive 1 standard connection (connects to Controller 6000) 1 isolated connection (supports 4 HBUS Readers or HBUS Terminals)
Shipping dimensions	Height 30 mm (1.2 in) Width 98 mm (3.9 in) Depth 75 mm (3 in)

* Gallagher modules are UL humidity tested and certified to 85% and have 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: 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.

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

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.



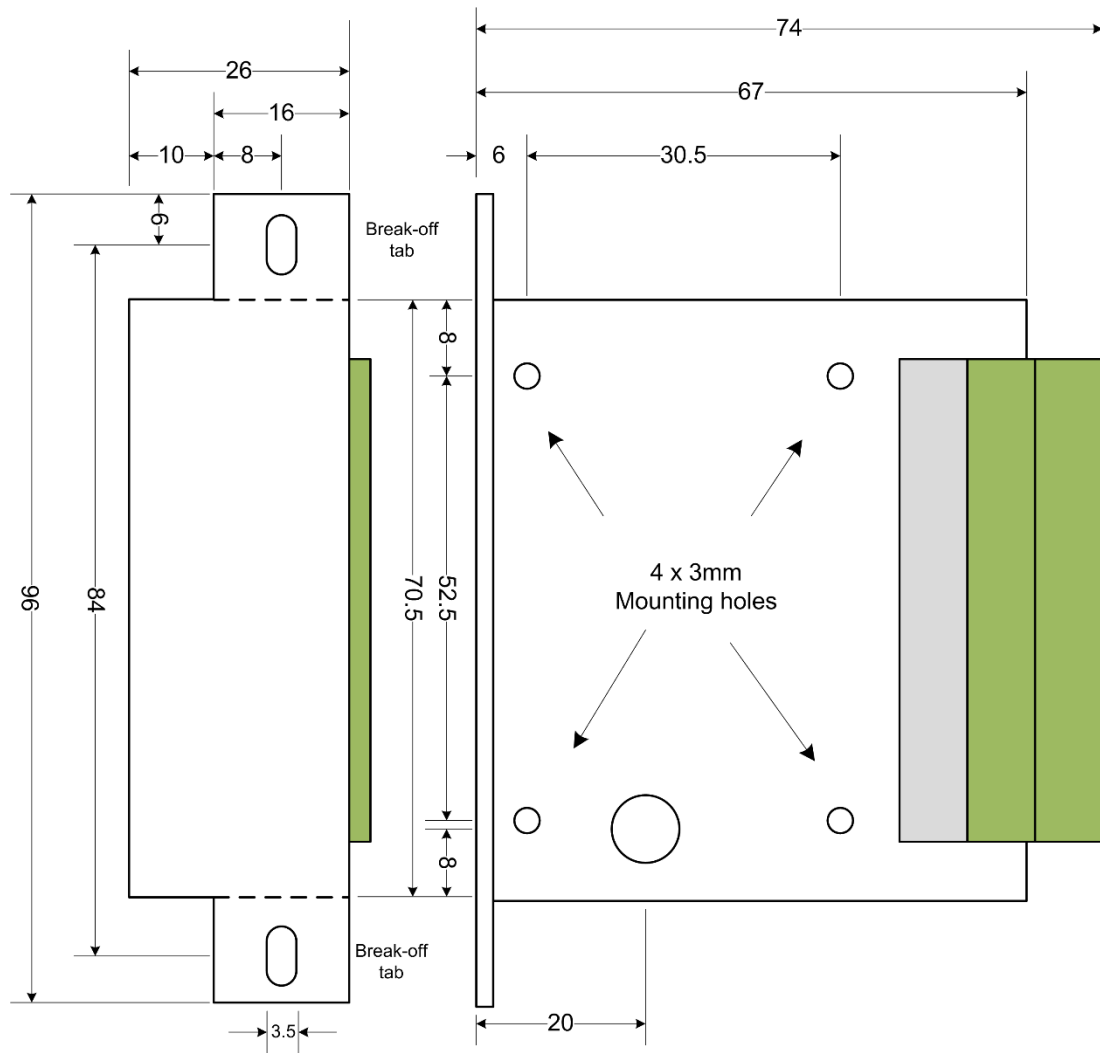
UL294 - Access Control
UL2610 - Commercial Burglary
CAN/ULC-S304- Commercial Burglary
CAN/ULC 60839-11-1- Access Control



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

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

9 Mounting Dimensions



IMPORTANT

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