Gallagher
T20 Alarms Terminal

Installation Note

T20 Alarms Terminal, Black: C300463
T20 Alarms Terminal, White: C300464



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1 Introduction

The Gallagher T20 Alarms Terminal (C300463 or C300464) is used for alarm and fence zone management. The terminal cannot be used for access, (i.e. it does not contain a smart card proximity reader or Bluetooth® low energy technology module).

The terminal can be mounted on a rectangular 50 mm x 75 mm (2 in x 3 in) flush box, a BS 4662 British Standard square flush box, a Gallagher Mounting Block (C300930 or C300931), or any solid flat surface.

Alarms management functionality is supported from vHT3.0 (Command Centre vEL7.30). Fence zone management functionality is supported from vHT4.0 (Command Centre vEL7.40).

Note: To view the vHT software version used by the terminal, press and hold the '#' key for 3 seconds.

For instructions on how to use the terminal, refer to the *"3E3685 User Guide T2x Terminal"* which can be downloaded from: https://security-support.gallagher.com

2 Before you begin

2.1 Shipment contents

Check the shipment contains the following items:

- 1 x terminal facia assembly
- 1 x terminal bezel
- 2 x 6-32 UNC (32 mm) Phillips drive fixing screws
- 2 x M3.5 (40 mm) Phillips drive fixing screws
- 5 x 25 mm No.6 self tapping, pan head, Phillips drive fixing screws
- 5 x 40 mm No.6 self tapping, pan head, Phillips drive fixing screws
- 1 x M3 Torx Post (T10) Security screw

2.2 Power supply

The Gallagher T20 Alarms Terminal is designed to operate over a supply voltage range of 9 - 16 Vdc measured at the terminal. The operating current draw is dependent on the supply voltage at the terminal. The power source should be linear or a good quality switched-mode power supply. The performance of the terminal may be affected by a low quality, noisy power supply.

2.3 Cabling

The Gallagher T20 Alarms Terminal 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. Although the terminal is specified to operate at 9 Vdc, for good engineering design it is recommended that the voltage at the terminal should be approximately 12 Vdc.

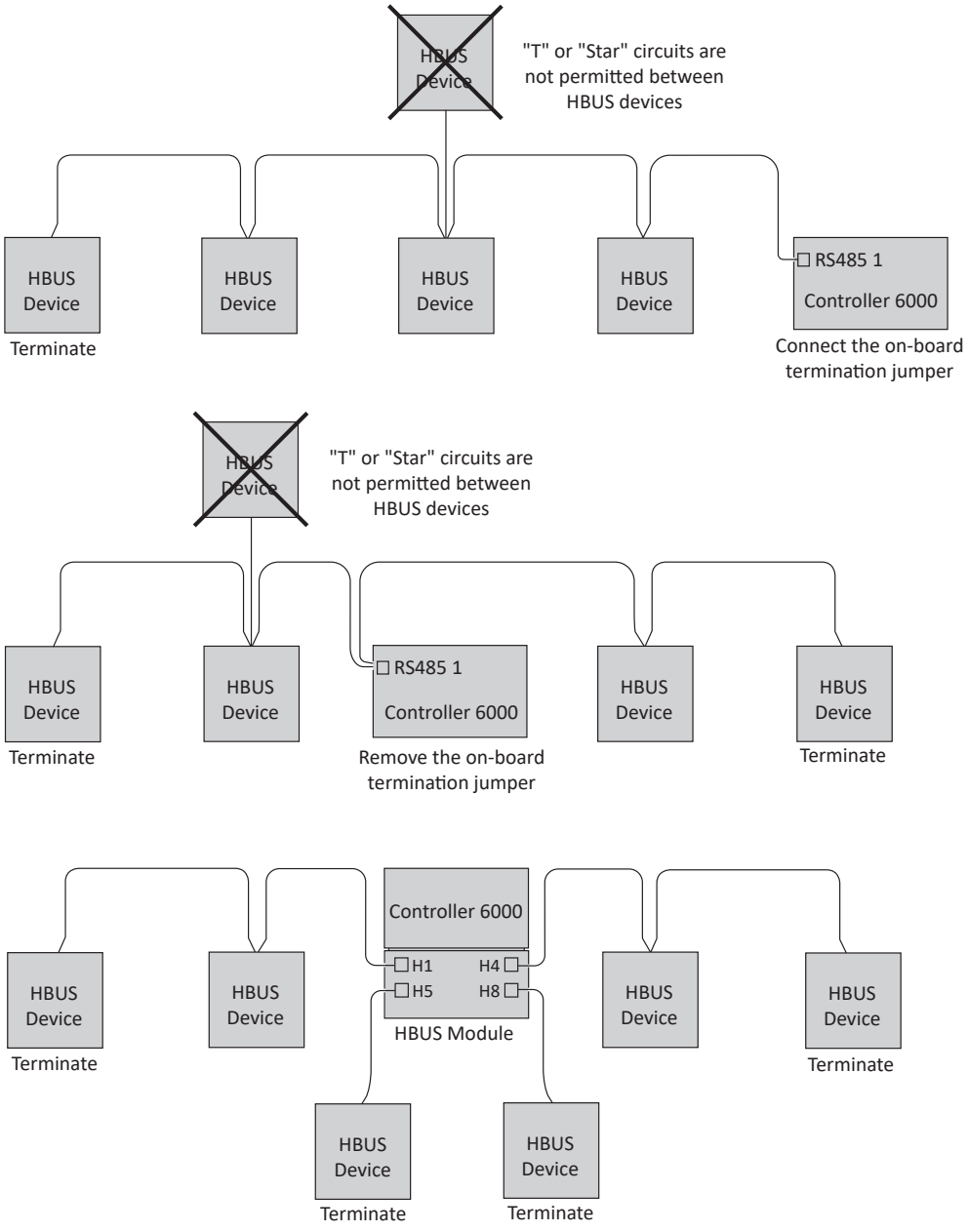
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HBUS cabling topology

The HBUS communications protocol is based on the RS485 standard and allows the terminal to communicate over a distance of up to 500 m (1640 ft).

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). Should "Star" or "Home-Run" wiring be required, the HBUS 4H/8H Modules and the HBUS Door Module allow multiple HBUS devices to be individually wired to the one physical location.

The end devices on the HBUS cable should be terminated using 120 ohms resistance. To terminate the Gallagher Controller 6000, connect the supplied on-board termination jumpers to the Controller. To terminate the Gallagher T20 Alarms Terminal, connect the orange (termination) wire to the green (HBUS A) wire. Termination is already included at the HBUS Module, (i.e. each HBUS port is permanently terminated at the module).



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Cable distance

Cable type	Cable format*	Single terminal connected using HBUS data only in a single cable	Single terminal connected using power and data in a single cable
CAT 5e or better**	4 twisted pair Each 2 x 0.2 mm^2 (24 AWG)	500 m (1640 ft)	50 m (165 ft)
BELDEN 9842** (shielded)	2 twisted pair Each 2 x 0.2 mm^2 (24 AWG)	500 m (1640 ft)	50 m (165 ft)
SEC472	4 x 0.2 mm^2 Not twisted pairs (24 AWG)	400 m (1310 ft)	50 m (165 ft)
SEC4142	4 x 0.4 mm^2 Not twisted pairs (21 AWG)	400 m (1310 ft)	100 m (330 ft)

* The matching of wire sizes to equivalent wire gauges are only approximate.
** Recommended cable types for optimal HBUS RS485 performance.

Notes:

- Shielded cable may reduce the obtainable cable length. Shielded cable should be grounded at the Controller end only.
- If other cable types are used, operating distances and performance may be reduced depending on the cable quality.
- The recommendation for optimal performance is up to 20 terminals can be connected to one Controller 6000. Of these 20 terminals, only 4 can be configured for alarm zone or fence zone management.

  A terminal is configured for alarm zone management when it has either Alarm Zones configured on the **Alarm Zones** properties page or items configured upon its mimic panel.

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3 Installation

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

The Gallagher T20 Alarms Terminal can be mounted on:

- a vertical, rectangular 50 mm x 75 mm (2 in x 3 in) flush box
- a BS 4662 British Standard square flush box
- a Gallagher Mounting Block (C300930 or C300931)
- any solid flat surface

The recommended mounting height for the terminal is 1.1 m (3.6 ft) from the floor level to the centre of the terminal. However this may vary in some countries and you should check local regulations for variations to this height.

Notes:

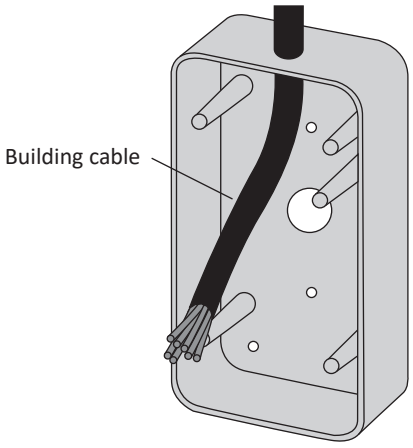
- A black dress plate (C300323) can be used to cover previously installed terminals ensuring a clean finish for sites handling an upgrade.
- When mounting on a flush box, the corner screws must be used as well as the flush box screws. Without corner screws the top of the product is vulnerable to separation from the wall.

1. Are you installing the T20 Alarms Terminal on a Gallagher T20 Mounting Block?
   If no, then go to Step 2.
   If yes, then complete the following:

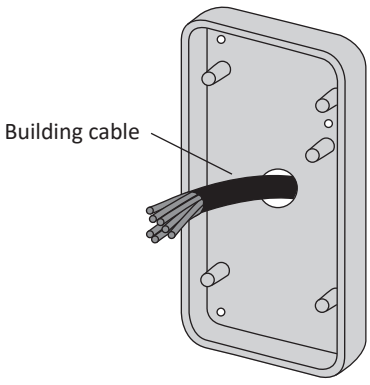
   A. Mark the holes for the mounting screws on the mounting surface.
   Note: If using the Duct Entry variant (C300931), take the cover off it.

   B. Drill the holes for the mounting screws.

   C. Make a cabling hole in the Mounting Block and run the building cable through the hole, as demonstrated next.



Duct Entry Mounting Block with cabling hole through the top



Thin Mounting Block with cabling hole through the back

   D. Fit the terminal bezel (pictured at Step 5) to the Mounting Block as appropriate for the Mounting Block variant you are installing, as follows:

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Duct Entry variant (C300931)

- Secure the T20 Mounting Block to the mounting surface using the screws provided.
- Position the terminal over the Mounting Block cover, and secure them both to the Mounting Block using the screws provided.

Thin variant (C300930)

- Position the terminal bezel over the T20 Mounting Block.
- Secure them both to the mounting surface using the screws provided.

E. Go to Step 6.

2. Ensure the building cable has been run out through the flush box.

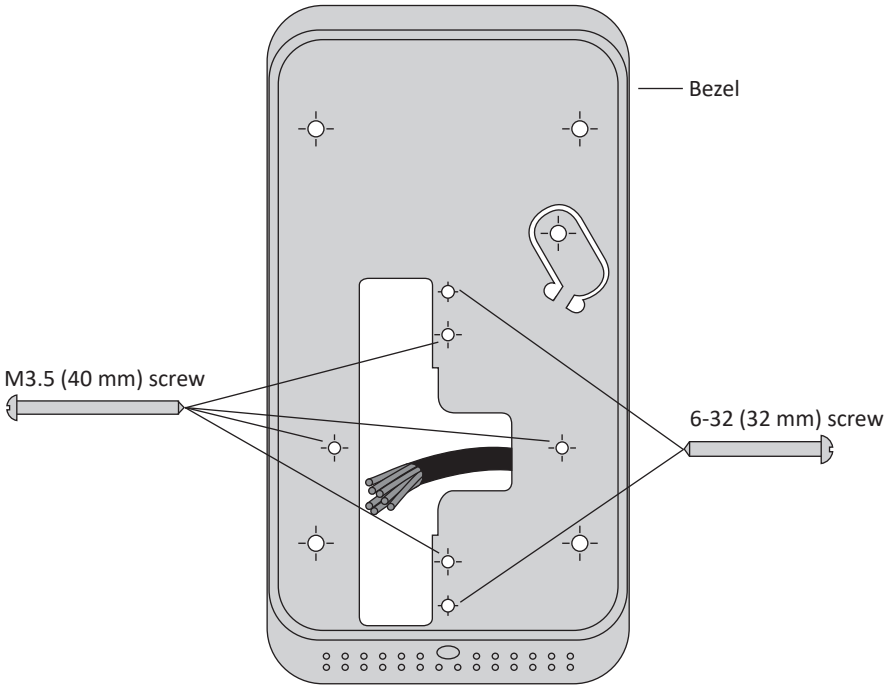
   If you are not mounting to a flush box, use the terminal bezel as a guide, to drill all five holes. Drill the 13 mm (1/2 inch) diameter centre hole (this is the centre hole for which the building cable will exit the mounting surface) and the four corner fixing holes. Ensure the centre hole allows the cable to run freely out through the mounting surface, so that the terminal facia can clip into the bezel.

   Note: There is no room for the building cable to be squeezed into the terminal bezel. The building cable must remain within the flush box or wall cavity.

3. Run the building cable through the terminal bezel.

   Note: If the terminal has already been connected to the building cable, you can pass the facia through the bezel. Care must be taken to avoid scratching the screen and keypad when passing the facia through the bezel.

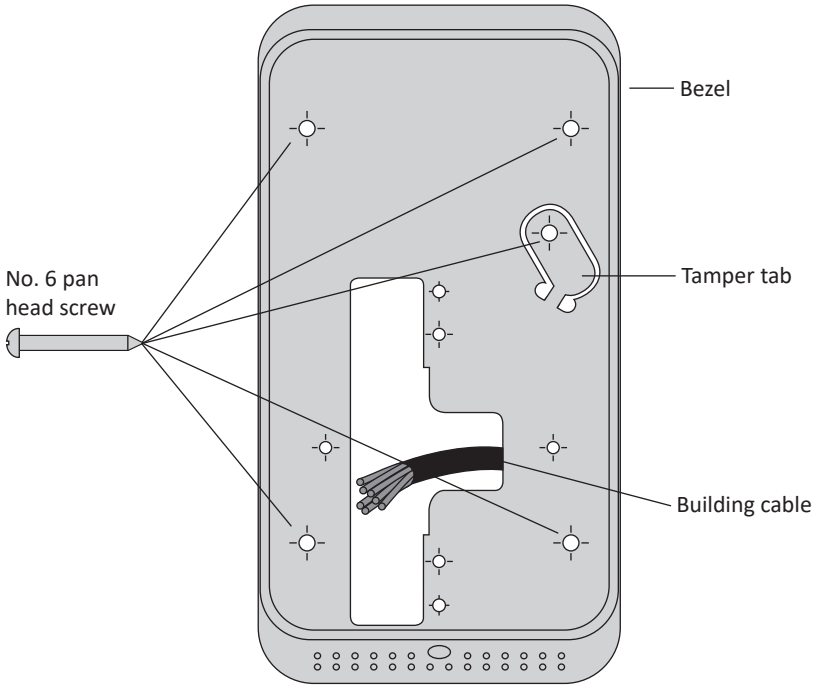
4. Secure the bezel to the flush box using the two screws provided.
   When securing the bezel to a vertical, rectangular flush box, use the 6-32 UNC screws provided.
   When securing the bezel to a BS 4662 British Standard square flush box, use the M3.5 screws provided.



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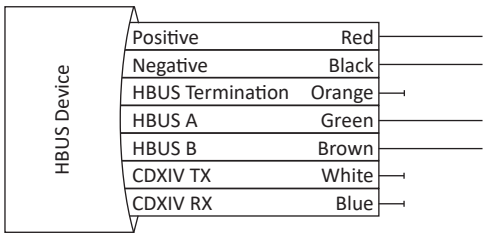
5. Drill pilot holes for the four corner fixing holes and the tamper tab. Secure the bezel to the mounting surface using the four corner fixing screws provided. Secure the tamper tab (located in the bezel) to the mounting surface using the remaining fixing screw provided. It is important the four corner fixing screws are used to ensure the terminal is flush with and tight against the mounting surface.

   Note: It is strongly recommended that you use the screws provided. If an alternative screw is used, the head must be no larger nor deeper than that of the screw provided.

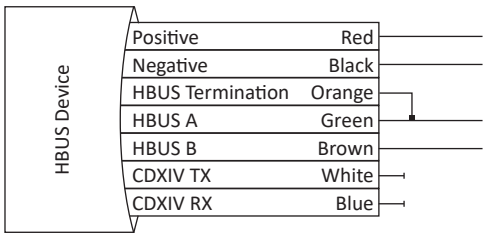


6. Connect the terminal tail extending from the facia assembly to the building cable. The terminal connects to a Gallagher Controller 6000, Gallagher 4H/8H Module, Gallagher HBUS Door Module, or Gallagher HBUS 8 Port Hub.

HBUS connections:



HBUS connections terminated:



   To terminate an HBUS device, connect the **Orange** wire to the **Green** wire.

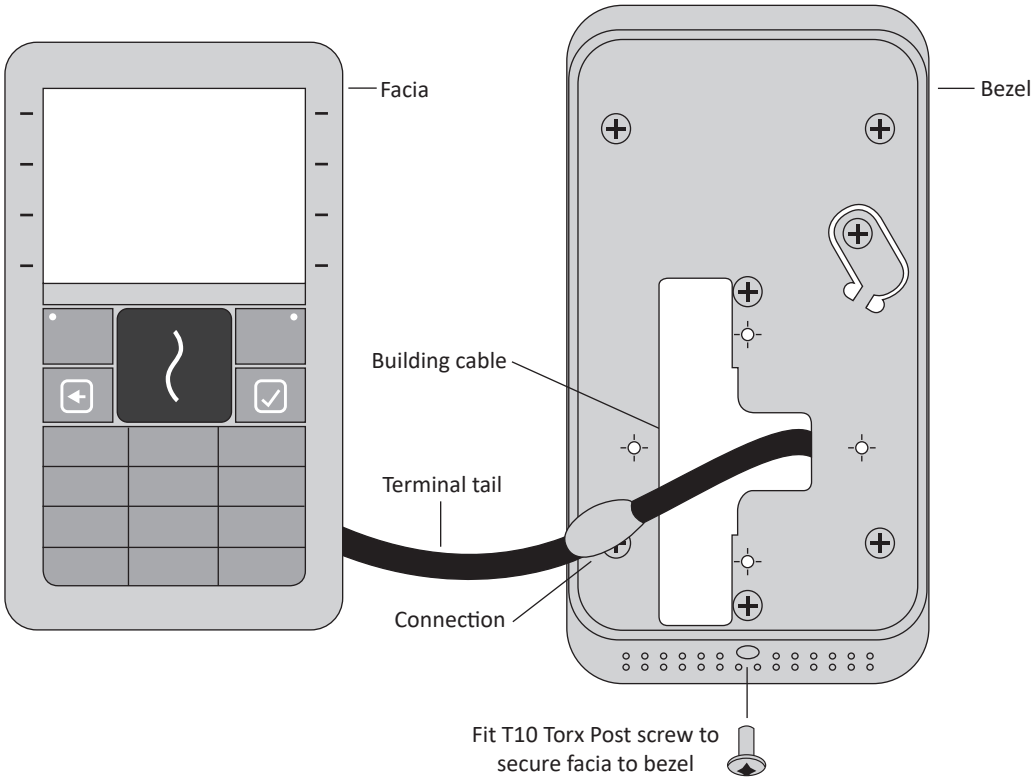
7. Fit the facia assembly into the bezel by clipping the small lip, into the top of the bezel and holding the top, press the bottom of the facia assembly down into the bezel.

   Note: Ensure that there is no pressure upon the wire set as it exits the terminal. Ensure the wire set does not exit the terminal at a sharp angle, as this may compromise the integrity of the wire set's water seal.

8. Insert the M3 Torx Post Security screw (using a T10 Torx Post Security screwdriver) through the hole at the bottom of the bezel to secure the facia assembly.

   Note: The Torx Post Security screw needs only to be lightly tightened.

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9. Removal of the facia assembly is a simple reversal of these steps.

10. Configure the terminal in Command Centre. Refer to the topic *"Configuring an HBUS Terminal"* in the Command Centre Configuration Client Online Help.

4 LED indications

LED (squiggle)	Indication
4 Rapid Flashes (Red)	The controller that the terminal is connected to is currently upgrading.
3 Flash (Amber)	No communications with the Controller. The terminal screen displays the text 'Connecting...'.
2 Flash (Amber)	Communications with the Controller, but terminal is not configured. The terminal screen displays the text 'Not configured'.
1 Flash (Amber)	Configured to a Controller but the terminal has no Alarm Zone(s) assigned to the Alarms Zones property page. The terminal screen displays the text 'Not configured'.
On (Green or Red)	Fully configured and functioning normally. Green when a user is logged on and red when logged off.

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5 Accessories

Accessory	Product Code
T20 Dress Plate, Black, Pk 5	C300323
T20 Bezel, Black, Pk 5	C300292
T20 Bezel, White, Pk 5	C300293
T20 Bezel, Silver, Pk 5	C300294
T20 Bezel, Gold, Pk 5	C300295
T20 Spacer, Black, Pk 5	C300306
T20 Spacer, White, Pk 5	C300307
T20 Protective Cover	C300272
T20 Protective Cover Spacer	C300312
T20 Mounting Block, Thin, Pk 8	C300930
T20 Mounting Block, Duct Entry, Pk 8	C300931

6 Screen brightness

When the terminal is in use the screen brightness will be set to full. If the terminal hasn't been used for 30 seconds, the screen brightness is dimmed. If the terminal hasn't been used for 30 minutes, the screen is turned off.

From Command Centre vEL7.30 the terminal screen can be set to on at all times ('Always on' setting enabled on the items property page in Command Centre). If this setting is enabled, the terminal's screen will not turn off after 30 minutes, but will dim after 30 seconds of inactivity.

7 Information screen

To display the software version numbers of the terminal, press and hold the '#' key for 3 seconds. The Information screen is displayed.

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8 Technical specifications

Routine maintenance:	Not applicable for this terminal.	
Cleaning:	This terminal should be cleaned with mild soapy water only. Do not use solvents or abrasives.	
Voltage:	9 Vdc - 16 Vdc	
Current[3]:	Inactive[1]	Active[2]
T20 Alarms Terminal (at 9 Vdc):	140 mA	250 mA
T20 Alarms Terminal (at 13.6 Vdc):	110 mA	190 mA
Temperature range:	-30 °C to +70 °C (-22 °F to +158 °F)[4] Note: Direct sunlight may increase the internal terminal temperature above the ambient temperature level.	
Humidity:	95% non condensing[5]	
Environmental protection:	IP66 (independently verified)[6]	
Impact rating:	IK08 (independently verified)[6]	
Unit dimensions:	Height 179.5 mm (7.1 in) Width 95.7 mm (3.8 in) Depth 23 mm (0.9 in)	
Maximum number of alarms management terminals[7] on one Controller 6000:	10	
Maximum number of alarms management terminals[7] on one Controller 7000:	20	

1 The terminal is idle. The screen is on (dimmed).
2 The screen is at maximum brightness.
3 Terminal currents verified by UL are provided in the document *"3E2793 Gallagher Command Centre UL Configuration Requirements"*.
4 Gallagher T Series terminals are UL temperature tested and certified for operation in 0°C - 49°C (indoor).
5 Gallagher T Series terminals are UL humidity tested and certified to 85% and have been independently verified to 95%.
6 Environmental protection and impact ratings are independently verified.
7 A terminal is configured for alarm zone or fence zone management when it has either Alarm Zones configured on the **Alarm Zones** properties page or items configured upon its mimic panel.

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9 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.

RoHS COMPLIANT

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.

UL CERTIFIED SAFETY SECURITY US-CA BP8861

UL294 - Access Control
UL 2610 - Commercial Burglary
CAN/ULC-S304- Commercial Burglary
CAN/ULC 60839-11-1- Access Control

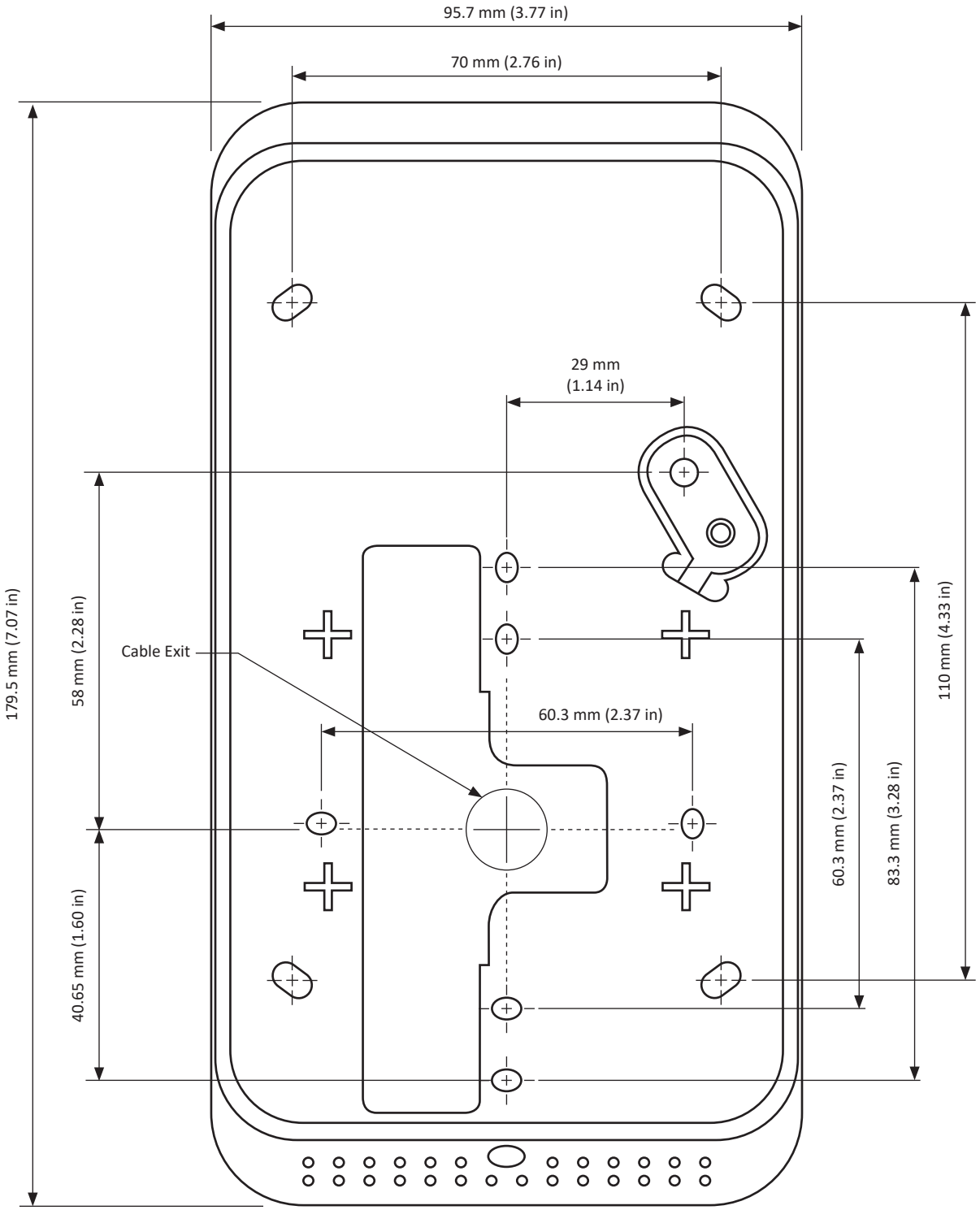
UK CA CE

EN50131-3 Grade 4, Class II (ACE, Type A)

AS/NZS IEC 60839-11-1 Grade 4, Environmental Class 2

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10 Mounting dimensions



IMPORTANT

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

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Version 2, June 1991

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The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

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