Fire Alarm Annunciator

L@titude Vision

Installation & Operation Manual



HOCHIKI

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Safety

Suppliers of articles for use at work are required under section 6 of the Health and Safety at Work act 1974 to ensure as reasonably as is practical that the article will be safe and without risk to health when properly used.
An article is not regarded as properly used if it is used 'without regard to any relevant information or advice' relating to its use made available by the supplier.

This product should be installed, commissioned and maintained by trained service personnel in accordance with the following:

- EE regulations for electrical equipment in buildings
- Codes of practice
- Statutory requirements
- Any instructions specifically advised by The Manufacturer

According to the provisions of the Act you are therefore requested to take such steps as are necessary to ensure that you make any appropriate information about this product available to anyone concerned with its use.

The mains powered version of this equipment is designed to be operated from 230V 50Hz mains supplies and is of class 1 construction. As such it **must** be connected to a protective earthing conductor in the fixed wiring of the installation and a readily accessible double pole disconnect device shall be incorporated in the fixed wiring.

Failure to ensure that all conductive accessible parts of this equipment are adequately bonded to the protective earth will render the equipment unsafe.

Disclaimer

In no event shall The Manufacturer be liable for any damages or injury of any nature or kind, no matter how caused, that arise from the use of the equipment referred to in this manual.
Strict compliance with the safety procedures set out and referred to in this manual, and extreme care in the handling or use of the equipment, are essential to avoid or minimise the chance of personal injury or damage to the equipment.

The information, figures, illustrations, tables, specifications, and schematics contained in this manual are believed to be correct and accurate as at the date of publication or revision. However, no representation or warranty with respect to such correctness or accuracy is given or implied and The Manufacturer will not, under any circumstances, be liable to any person or corporation for any loss or damages incurred in connection with the use of this manual. The information, figures, illustrations, tables, specifications, and schematics contained in this manual are subject to change without notice.

Unauthorised modifications to the fire detection system or its installation are not permitted, as these may give rise to unacceptable health and safety hazards.

By installing this equipment on a computer network, the owner accepts full and unequivocal responsibility for ensuring that it is protected against all cyber threats and illegal tampering during the lifetime of the equipment.Any software forming part of this equipment should be used only for the purposes for which The Company supplied it. The user shall undertake no changes, modifications, conversions, translations into another computer language, or copies (except for a necessary backup copy).In no event shall The Manufacturer be liable for any equipment malfunction or damages whatsoever, including (without limitation) incidental, direct, indirect, special, and consequential damages, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss, resulting from any violation of the above prohibitions.

Section 1
Introduction 1
L@titude Vision Annunciator Features 1
Related Documentation 1

Section 2
Overview 2
Fascia Layout 2
Internal Features 3

Section 3
Installation 4
Before You Begin 4
General Installation Checklist 4
Mounting the Surface Enclosure 4
Trim Ring (Where specified) 6
Installing the Trim Ring 7
Fixing the Enclosure Back Box to Trim Ring 8
Mounting the Flush Enclosure 9
Cabling 10
Connecting to the Annunciator 11
Powering the Annunciator 11
Wiring Scheme 12
Cable Length 12
Cable Type 13
Cable Entry 13

Section 4
Configuration 14
To Set the address 14
To Auto-learn the Annunciator 14
Download a Configuration 15
To Upload a Configuration via USB Drive 15
Upload a Configuration via a PC 15
Test the Installation 15

Section A
Specifications 16
Electrical 16
Communication 16
Mechanical 16

Section 1

Introduction

TheL@titude Vision Annunciator is a display and control unit which duplicates the indications and primary controls of L@titude Fire Alarm Control Panels connected to the same network.

The Annunciator connects to the FACP (Fire Alarm Control Panel) via the network interface and requires that the main control panel have an network card fitted. For full details of L@titude networking refer to L@titude Installation Manual.

The Annunciator is connected to the network and any number of repeaters can be connected up to the maximum number of nodes allowed by the network specification, which is 128 (including control panels).

In addition to displaying the status of the fire alarm system, the Annunciator can provide limited local control functions via local control outputs.

L@titude Vision Annunciator Features

- Full colour 7” (800 x 480 pixel) GUI (Graphical User Interface).
- Replicates information displayed at the FACP.
- Automatic display brightness adjustment.
- Internal buzzer attenuate.
- Connects via control panel network terminals.
- Low current, 24V DC powered.
- Configurable functionality.
- Enable key-switch.
- Sheet steel enclosure.
- Surface, flush or semi flush enclosure options available.

Related Documentation

For information relating to the Taktis Fire Alarm Control Panel please refer to the following manuals::

Doc. Ref. Number	Description	Full File Name
2-3-0-2941	L@titude Installation Manual	www.hochikieurope.com/manuals/2-3-0-2491_Latitude_Installation_Manual–ISS1–SEPT17.pdf
2-3-0-2942	L@titude Operation Manual	www.hochikieurope.com/manuals/2-3-0-2492_Latitude_Operation_Manual–ISS1–SEPT17.pdf

Using your Smart-phone, tablet or device install a third party QR Code Reader and scan the code to view the documents.

Installation Manual

Operation Manual

Section 2

Overview

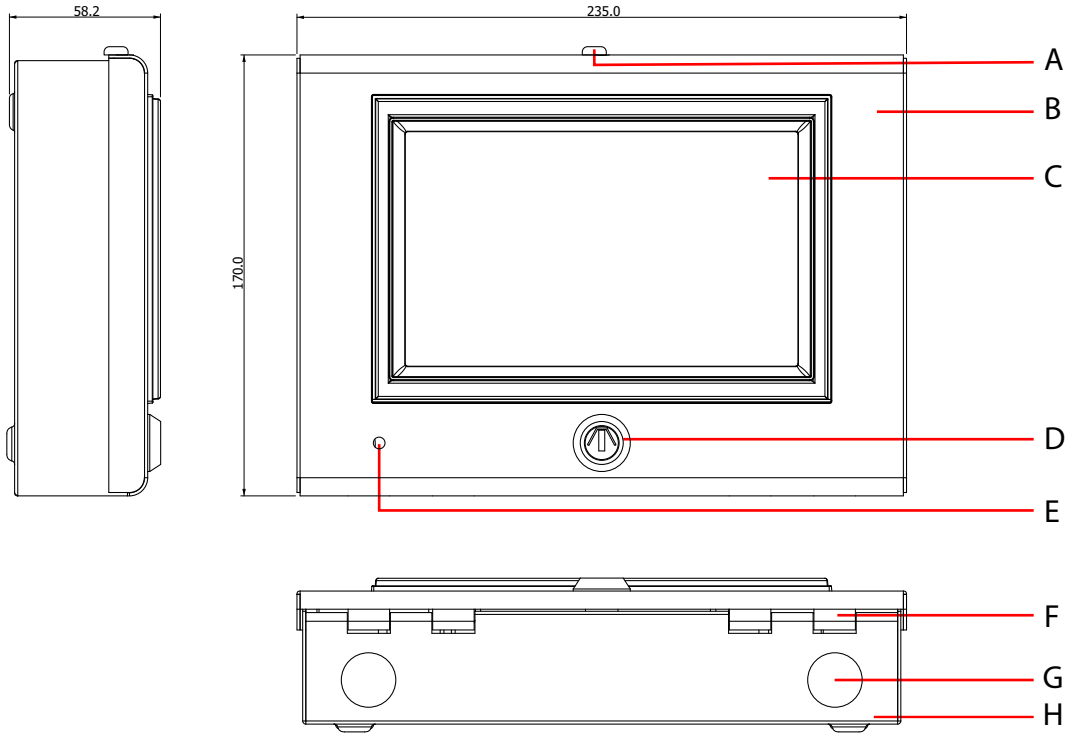
This section provides a general overview of the Annunciator features.

The diagrams in this section refer to the surface enclosure variant. A 'flush' enclosure variant is also available.

Fascia Layout

The diagram below shows the Annunciator fascia layout.

Figure 2-1
Fascia Layout

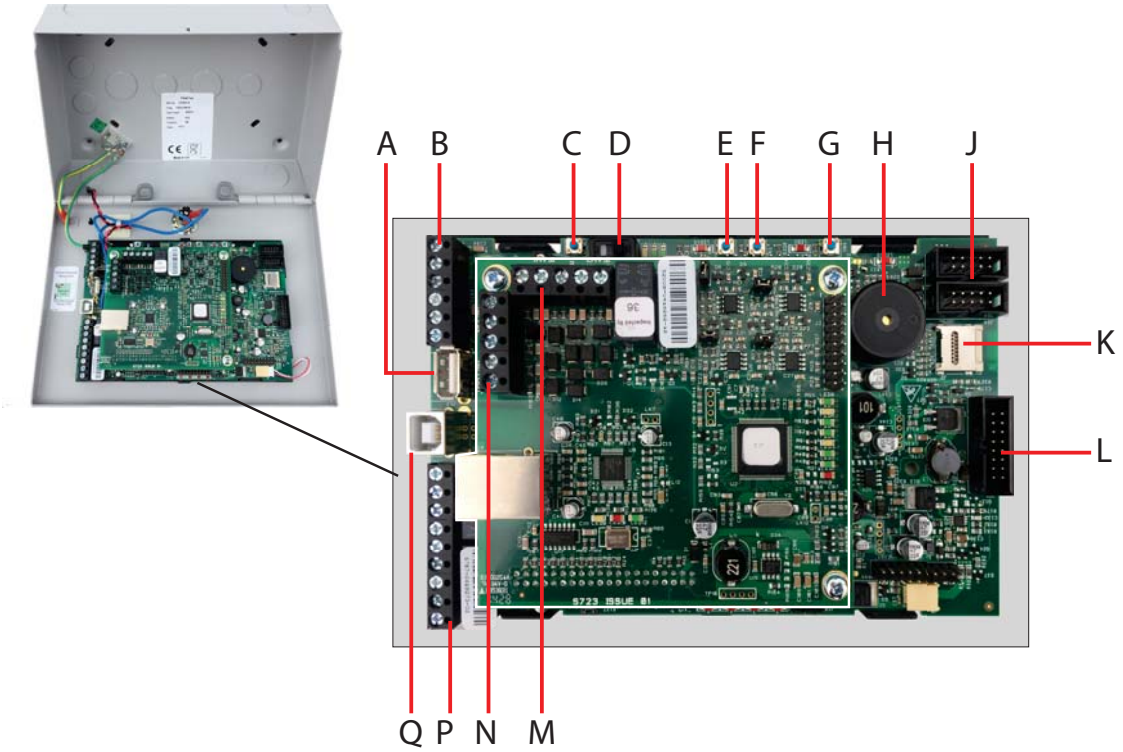


ID	Description	ID	Description
A	Enclosure lid fixing screw	**E**	Display ambient light sensor
B	Enclosure lid	**F**	Enclosure hinge
C	Touch panel display	**G**	Enclosure knock-out (for cable entry)
D	Enable keyswitch (Enables Access Level 2)	**H**	Enclosure back box

Internal Features

The diagram below shows the Annunciator internal features.

Figure 2-2
Internal Features



Key	Description	Key	Description
A	USB port	**J**	Proprietary connections for manufacturing purposes
B	24 V In/Out, Remote PSU monitor & Ground Terminals	**K**	SD card slot
C	Reboot button (panel firmware dependent)	**L**	No function
D	Write Enable switch	**M**	No function
E	No function	**N**	Network terminals (Net in, Net out)
F	No function	**P**	Not used
G	Processor reset button	**Q**	USB to PC communications port
H	Buzzer		

Section 3

Installation

Before You Begin

Before you begin the installation, take a few minutes to review the installation information, gather the required items, and complete the tasks listed below.

CAUTION!

The installation must be performed by qualified personnel familiar with electronic components. Electronic components within are vulnerable to damage from electrostatic discharge. Ground straps must be worn by installers before handling circuit boards to prevent damage from electrostatic discharge.

1. Create a plan and checklist before beginning the installation process. Planning can reduce the number of problems that can occur during installation.
2. Select an environment that is suitable for operating the Annunciator. The site for mounting should be clean and dry and not subject to excessive shock or vibration.

General Installation Checklist

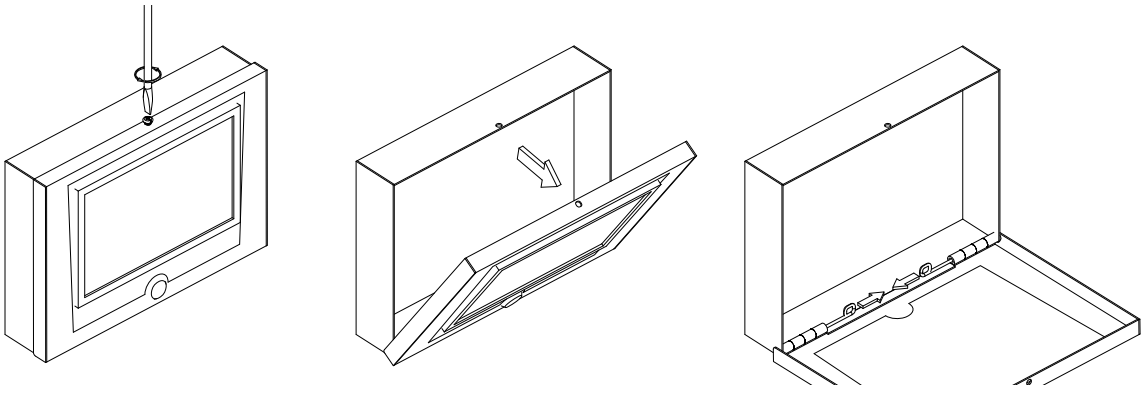
To complete the installation:

1. Create a plan of the fire alarm system and checklist for installing the Annunciator.
2. Remove the Annunciator from its packaging and check its contents.
3. Remove enclosure lid and temporarily store in a safe place.
4. Fix enclosure back box to wall.
5. Make network connection and dress the wires.
6. Ensure that the enclosure is free from wire ends, knockout discs and other debris.
7. Refit the enclosure lid.
8. Configure the Annunciator.
9. Test the installation.

Mounting the Surface Enclosure

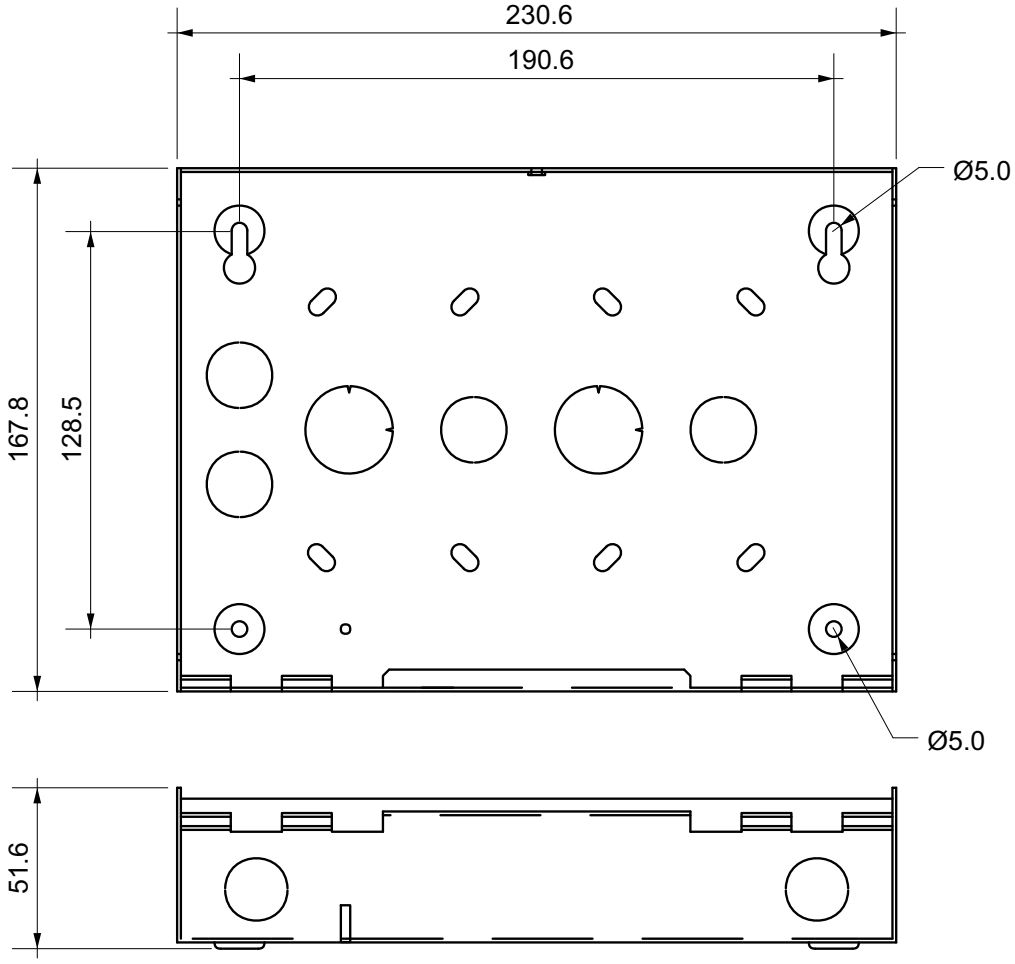
1/ Open the enclosure by removing the screw located at the top-centre. The enclosure lid hinges downwards. Remove hinge pins by pulling inwards. Disconnect earth wire and put enclosure lid safely to one side.

Figure 3-1
Opening the Enclosure



2/ Using the enclosure back box as a template, mark the position of the fixing holes, ensuring that the wall is flat at the chosen location. Fix the enclosure back box using suitable fixings, through all fixing points.

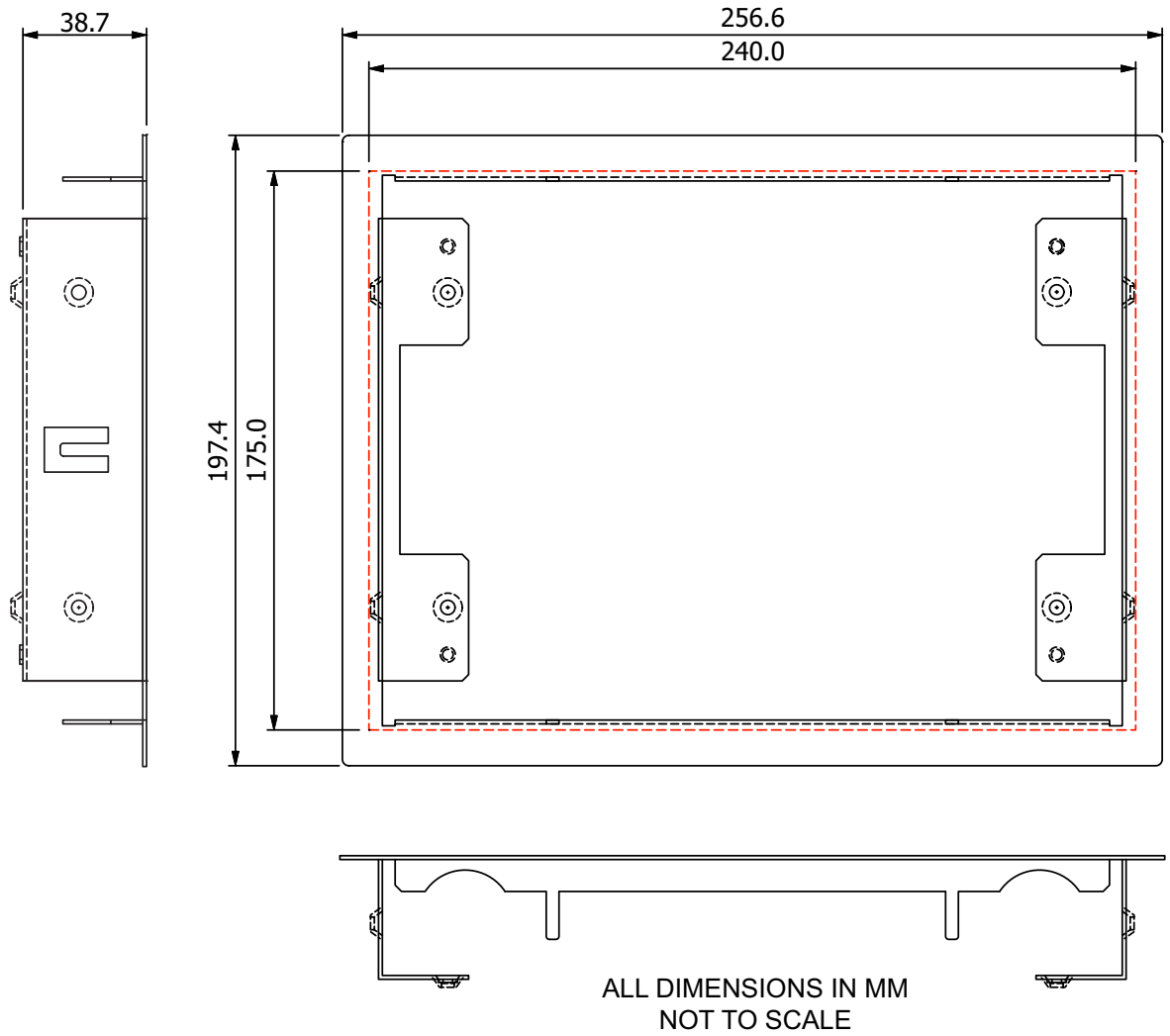
Figure 3-2
Surface Enclosure Back Box Dimensions



Trim Ring (Where specified)

The optional trim ring allows semi-flush fitting of the surface enclosure back box. The diagram below shows the trim ring external and advised wall cut-out dimensions.

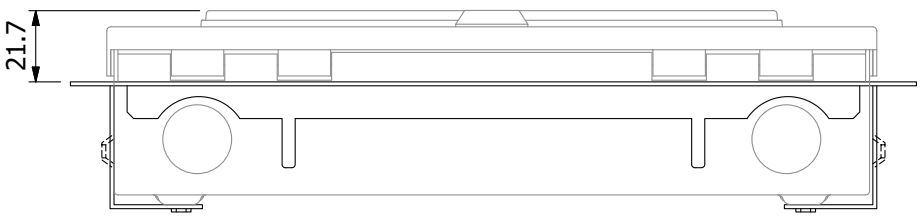
Figure 3-3
Optional Trim Ring Dimensions



Note: 175mm X 240mm are the advised wall cut-out dimensions.

The diagram below shows side view of the enclosure within the trim ring.

Figure 3-4
Trim Ring with Enclosure in Place



Installing the Trim Ring

The diagram below illustrates trim ring fitting options.

Figure 3-5
Trim Ring Fixing Centres

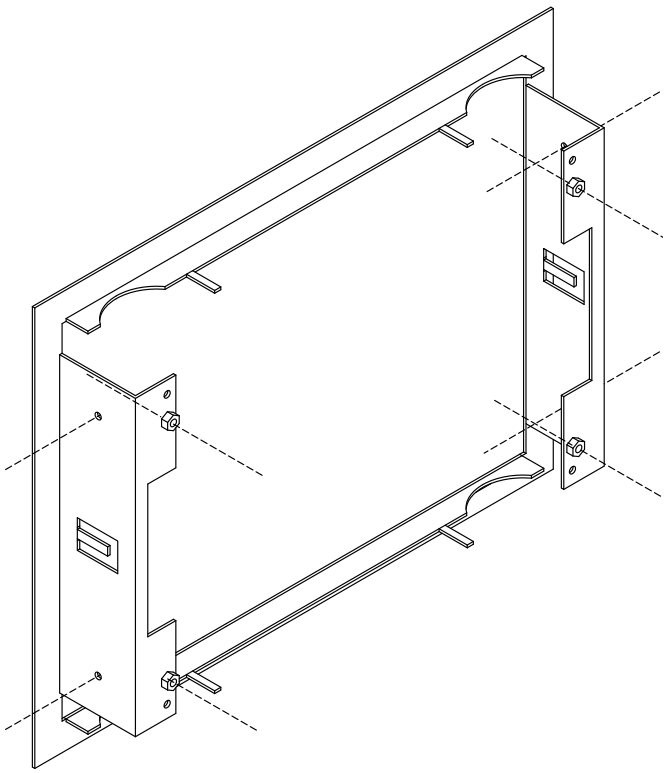
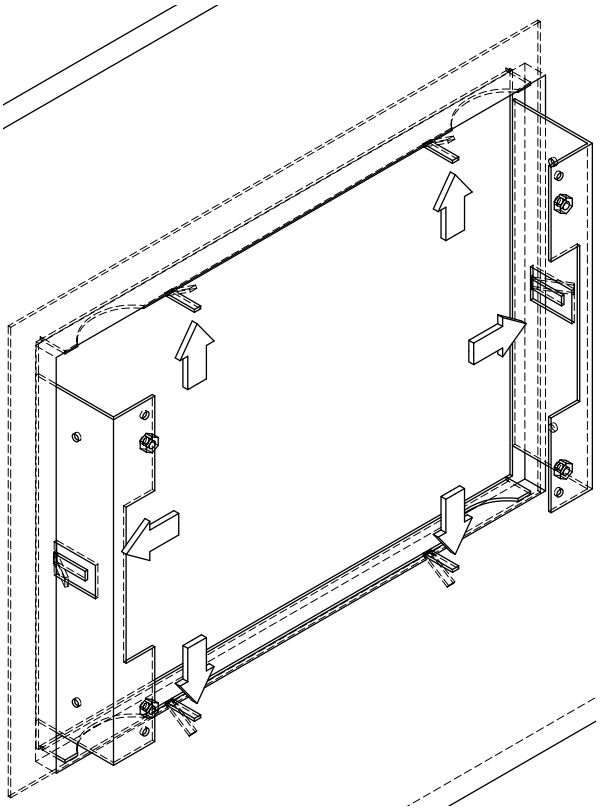


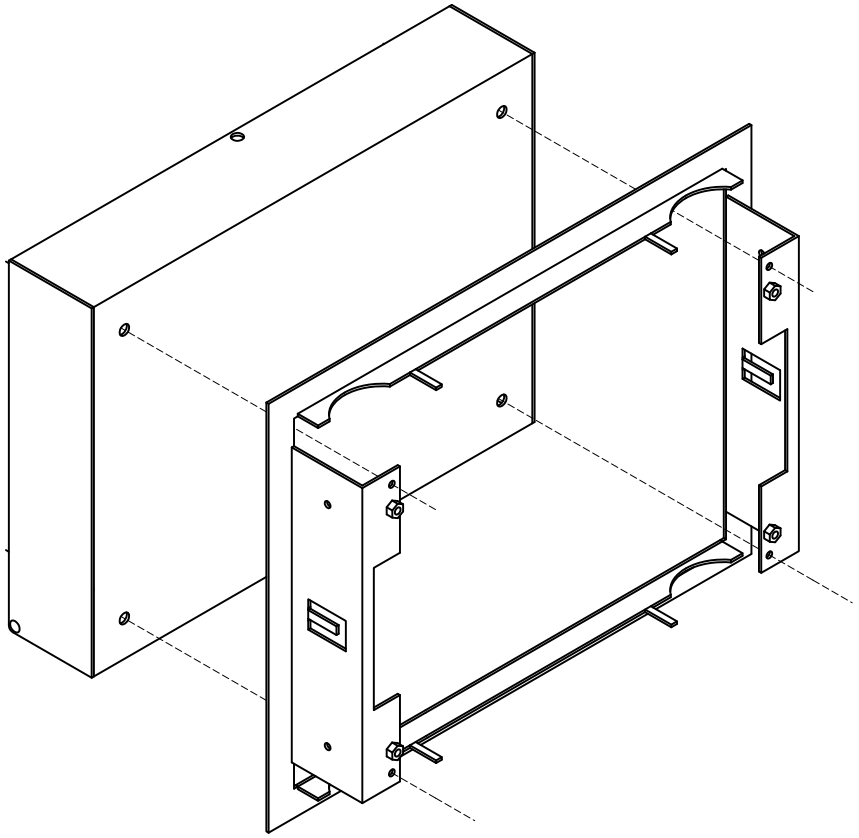
Figure 3-6
Trim Ring Fold Tabs



Fixing the Enclosure Back Box to Trim Ring

Use four, M4 x 8mm machine screws in conjunction with M4 plain washers to fix enclosure back box to the trim ring.

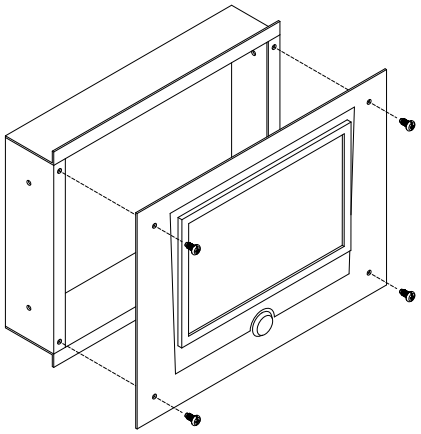
Figure 3-7
Fixing the Enclosure Back Box to the Trim Ring



Mounting the Flush Enclosure

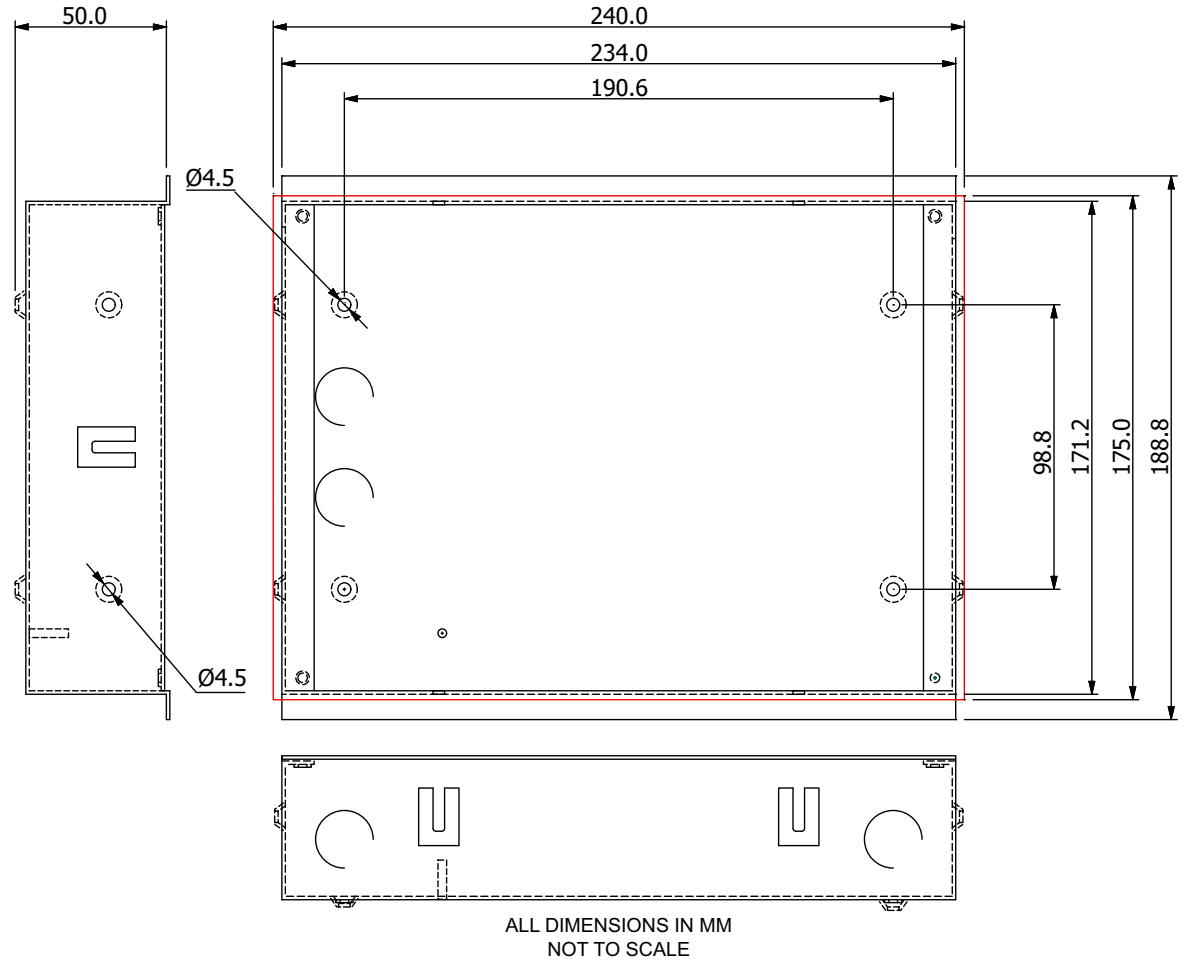
1/ Open the enclosure by removing the four screws located at each corner of the front fascia. Disconnect earth wire and put enclosure lid safely to one side.

Figure 3-8
Opening the Flush Enclosure



2/ Referring to the diagram below, make a hole and using suitable fixings, secure the flush enclosure back box through the fixing holes provided.

Figure 3-9
Flush Enclosure Back Box Dimensions



Note: 175mm X 240mm are the advised wall cut-out dimensions.

Cabling

Cables should be brought into the cabinet using the knock-outs provided and where necessary.

Inlet bushings or cable glands should be used to maintain insulation of signal cores from earth. The screen or drain wires should be bonded to the earth terminals provided.

The maximum size of cable, which can be terminated, is 2.5 mm.

The communications protocols are highly immune to noise but sensible segregation from known noise generating sources such as mains cables is recommended.

For mains powering the Annunciator, a local power supply with a 24V DC output is required. The mains powers supply should be derived from a separate fused spur, labelled “fire alarm - do not switch off”.

The mains supply must include an earth conductor connected to the fixed installation earthing system of the building.

Connecting to the Annunciator

All connections to the repeater are via 5mm pitch, 2.5mm capacity, spring leaf terminal blocks.

Care should be taken to use the correct sized terminal screwdriver and not to over tighten the terminals.

Polarity must be observed carefully on any terminals with + or – markings. The “NET IN” terminals must connect to the “NET OUT” terminals of the previous panel on the network.

The “NET OUT” terminals must connect to the “NET IN” terminals of the next panel on the network. Do not connect or disconnect circuits with the power on.

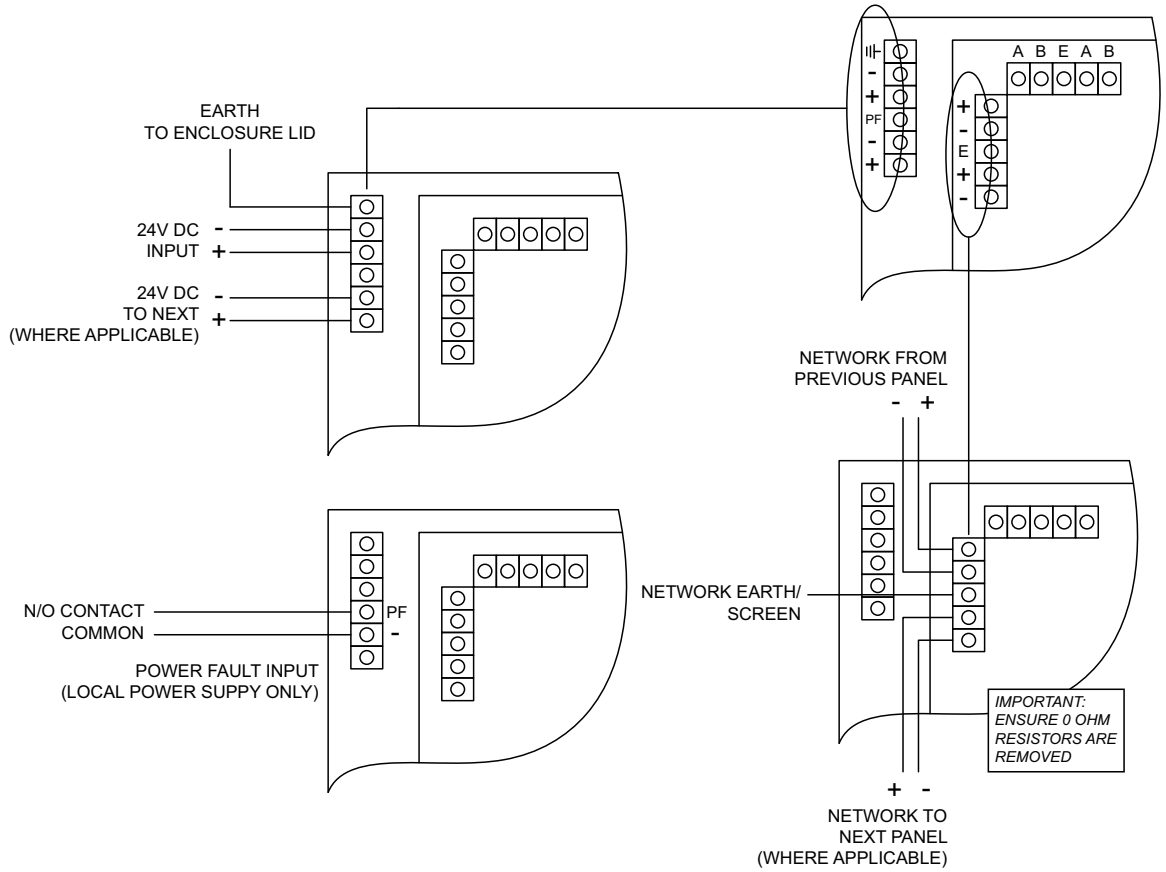
Do not connect or disconnect circuits with the power on.

The diagrams below show power and network connections.

CAUTION!

All network connections are made on the network card *not* the main board PCB.

Figure 3-10
Network and Power Connections



Powering the Annunciator

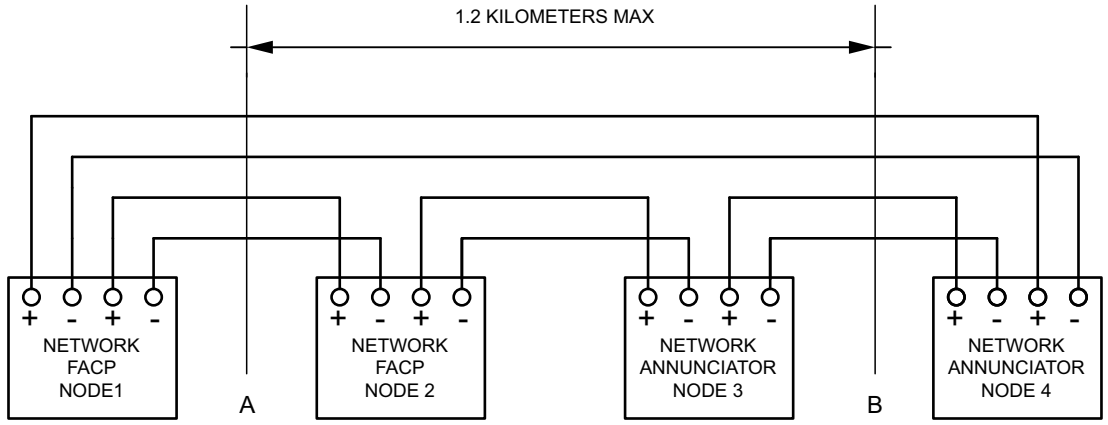
Connect the incoming 24V DC whilst carefully observing the polarity. If a local power source is being used, then a volt free **normally open** contact from the power supply should be connected to the power supply fault terminals so that power faults are reported.

The current consumption of the Annunciator with the PF input activated is 232mA (buzzer silenced, touch panel back-light on). The effect on the battery capacity of the power supply which is powering the Annunciator should be considered when connecting Annunciators to a system.

Wiring Scheme

The diagram below shows an example network wiring scheme featuring two FACP's and two Annunciators.

Figure 3-11
Example Network Wiring



1. Cabling wired as a ring which visits all panels.
2. Short circuit detection at each network connection and automatic isolation of the shorted section of cable.
3. 1200 metres maximum cable length between two adjacent segments.
4. A short circuit at point A will automatically disconnect the shorted section and announce a fault condition at all panels but the entire network will continue communicating.
5. A short circuit at points A and B will automatically disconnect both sections and announce faults at all panels Communication will continue between panels1 and 4 and between panels 2 and 3.
6. All panels will compute whether the faults will prevent operation of any cause and effects configurations and either assume inputs to be true (if configured to default to "true upon network fault") or display, print (FACP fitted with optional prand log the cause and effects which are affected.
7. Open circuit faults will allow the network to continue operating in the same way as short circuit faults.
8. Open circuit faults will allow the network to continue operating in the same way as short circuit faults.
9. Up to 128 nodes (in total).

Cable Length

The network communications protocol has been designed to be extremely tolerant to interference and data corruption, however as with any system, there have to be limitations set to guarantee correct operation.

The specified transmission distance limit for the communications method used is 1200 metres and because the data is re-transmitted at each network card and repeater, in theory, there can be 1200 metres between each point if required.

Using the above cable distances however, does not take into account the failure of a network point to communicate with the system through total power failure or other fault.

In this situation, the network pointy would disconnect itself from the network and connect the network cable such that it bypasses the point in question. This means that the total cable length between the points either side of the disconnected one could be 2400 metres, which is outside of the specification for the communications method used. This fault scenario could clearly be extended to more network points and this would add 1200 metres of cable length in each case.

A sensible fault tolerance limit has therefore to be suggested to enable the performance of the system to be predicted.

Due to the nature of the fire protection system, its design is biased towards inherent reliability and failure of a network point, although possible, is very unlikely. Fire control panels also have substantial back up power systems, therefore, the likelihood of a total power failure under operational conditions, is also extremely rare. A suggested tolerance level of one point failure is therefore recommended.

To guarantee operation of the system with one point failure it is necessary to arrange the cabling such that the failure will not introduce more than 1200 metres of cable between the two points which would be connected together by the failure.

This means that the total cable length between adjacent cable segments should not be more than 1200 metres. It is not important how the 1200 metres is made up i.e. it could be 100 metres and 1100 metres or 600 metres and 600 metres.

Using these general rules and the specified or equivalent cable types will provide a guaranteed performance of networks with plenty of tolerance.

In reality, the networked system will operate quite satisfactorily with longer cable runs and if a system is required which is outside of the parameters specified, the manufacturer should be consulted for guidance on specific designs.

Cable Type

The cable type used for the network connection should be suitable for RS-485 applications and equivalent to the ones listed below.

Up to 600 metre distance between panels:

BELDEN NUMBER	NOMINAL OUTSIDE DIAMETER	NOMINAL CAPACITANCE	NOMINAL IMPEDANCE	VELOCITY OF PROPOGATION
9271	6.1MM	40pF/m	124 Ohm	66%

Up to 1200 metre distance between panels:

BELDEN NUMBER	NOMINAL OUTSIDE DIAMETER	NOMINAL CAPACITANCE	NOMINAL IMPEDANCE	VELOCITY OF PROPOGATION
9860	11.2MM	35pF/m	124 Ohm	78%

Cable Entry

Contrary to earlier preferred methods of terminating the shield on shielded cables, today’s EMC noisy environments require that the shields of these cables be bonded to earth at all points on the system.

The most effective method of achieving this is to use EMC cable glands, which connect the shield to the gland and earth in a 360-degree ring. Simply stripping back the insulation of the cable and connecting “pigtails” to earth is not recommended. Shield cable is connected at one end only.

When using this method it is also important to ensure that the gland body is electrically bonded to the panel enclosure.

Section 4

Configuration

Configuration is achieved by adding the Annunciator panel to the network, setting the address, auto-learning and uploading the configuration via a USB memory drive or PC.

1 Add Annunciator to the network and power up as described in the Installation Section.

2 To Set the address

2-1 Switch the ‘Write Enable’ switch to position ‘2’.
The ‘Write Enable’ switch is located on the rear of the touch panel display and shown in the Overview Section.

2-1 ‘Press Screen to Start’.

2-2 Press ‘Activate Controls”

2-3 Using the number buttons key in your login code and press ‘Submit’ button to accept.
Access Level 3 is required to set the Annunciator address. The default code for Access Level 3 is ‘333333’.

2-4 Press ‘User Controls’.

2-4 Press ‘Engineer Options’.

2-5 Press ‘Configuration’.

2-6 Press ‘Edit Configuration’.

2-7 Press ‘Panel Settings’.

2-8 Using the up/down arrow buttons set the Annunciator address.
If the address number is numerically high, press the ‘number’ button and enter the address number followed by submit.

2-10 Exit out of menu.

2-11 Switch the ‘Write Enable’ switch to position 1.

3 To Auto-learn the Annunciator

3-1 Switch the ‘Write Enable’ switch to position ‘2’.
The ‘Write Enable’ switch is located on the rear of the touch panel display and shown in the Overview Section.

3-2 ‘Press Screen to Start’.

3-3 Press ‘Activate Controls’’

3-4 Using the number buttons key in your login code and press ‘Submit’ button to accept.
Access Level 3 is required to set the Annunciator address. The default code for Access Level 3 is ‘333333’.

3-5 Press ‘User Controls’.

3-6 Press ‘Engineer Options’.

3-7 Press ‘Configuration’.

3-8 Press ‘Learn Panel’.

3-9 Exit out of menu.

3-10 Switch the ‘Write Enable’ switch to position 1.

4 To Upload a Configuration via USB Drive

4-1 Open Annunciator enclosure as described in the Installation Section.

4-2 Switch the ‘Write Enable’ switch to position ‘2’.
The ‘Write Enable’ switch is located on the rear of the touch panel display and shown in the Overview Section.

4-3 Insert your USB drive (containing your configuration) to the USB to PC communications port.

4-4 Using the touch panel display, ‘Press Screen to Start’.

4-5 Press ‘Activate Controls’’

4-6 Using the number buttons key in your login code and press ‘Submit’ button to accept.
Access Level 3 is required to set the Annunciator address. The default code for Access Level 3 is ‘333333’.

4-7 Press ‘Engineer Options’.

4-8 Press ‘Configuration’.

4-9 Press ‘Import Configuration’.

4-10 Using the touch panel display select the configuration and press ‘Import’

4-11 Switch the ‘Write Enable’ switch to position 1.

5 Upload a Configuration via a PC

5-1 Switch the ‘Write Enable’ switch to position ‘2’.
The ‘Write Enable’ switch is located on the rear of the touch panel display and shown in the Overview Section.

5-2 From your PC, using a USB link lead, plug into the Annunciator USB to PC communications port.

5-3 Using Loop Explorer 2 (LE2) software upload configuration to the Annunciator.

5-4 Switch the ‘Write Enable’ switch to position 1.

6 Test the Installation

Download a Configuration

It is possible to download a configuration through the annunciator to a USB drive or PC.

1 Open the fascia

2 Ensure the ‘Write Enable’ switch is in position 1.

3 Plug USB drive or PC into the relevant communication port.

4 Using the panel display press the screen to start.

5 Press ‘Activate Controls’

6 Using the number buttons key in your login code and press ‘Submit’ button to accept.
Access Level 3 is required to set the Annunciator address. The default code for Access Level 3 is ‘333333’.

7 Press ‘Engineer Options’.

8 Press ‘Configuration’.

9 Press ‘Export Configuration’.

Section A

Specifications

Electrical

Parameter	Description
24V supply (24V DC models only)	21 to 30 VDC
Quiescent current of panel in mains fail	232mA - Buzzer off, touch panel back-light on 164mA - Buzzer off, touch panel back-light off 268mA - Buzzer on, touch panel back-light on 195ma - Buzzer on, touch panel back-light off
Maximum number of units to be powered from the Aux 24V output	Maximum limited by Aux 24V capacity

Communication

Parameter	Description
Max number of units on a network	127 annunciators

Mechanical

Parameter	Description
Size (Surface Enclosure)	235 mm x 170 mm x 55 mm
Display	Full colour 800 x 480 LCD with resistive touch screen and automatic back-light dimming
Construction	18 SWG, 1.2 mm mild sheet steel, IP30 rated
Cable Entry (Surface Enclosure)	2 x 20 mm knockouts on top & bottom 3 x 20 mm and 2 x 28 mm knockouts in back
Finish	Epoxy powder coated
Colour	Lid & Box, BS 00 A 05 fine texture
Weight	2 Kg maximum
IP Rating	IP30