

Installation instructions

EN54 Vigilon 4/6 loop control panel based Fire detection and alarm system



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Preface

This is the fifth issue of the Installation instructions for the **EN54 Vigilon system** based on the 4/6 loop panels. These instructions must be read in conjunction with the recommendations in *BS5839:Part 1 code of practice for Fire detection and alarm system for buildings*.

Associated Documents

Operating instructions

Log book

Conventions



This is a note to highlight important text that is normally hidden in the main text.



This is either a caution to prevent damage to the equipment or a warning to inform of dangerous conditions that may result in injury or death.

Abbreviations

ac - Alternating current
AS - Anti surge
C - Common
CH -Channel
dc - Direct current
DKC - Display keyboard card
EMC - Electromagnetic Compatibility
EOL - End of line
ESD - Electrostatic discharge
GND - Ground
I/F - Interface
IO or I/O - Input output
IOC - Input output card (Card15)
IP - Ingress protection
LCD - Liquid crystal display
LED - Light emitting diode
LPC - Loop processor card
LPCB - Loss prevention council certification board
LVD - Low voltage directive
MCC - Main controller card (CARD 0)
MCP - Manual call point
MICC - Mineral insulated copper cable
NC - Normally closed
N/O - Normally open
NVM - Non Volatile Memory (NVM on backplane CARD 14)
OC - Open circuit
OS - Outstation (Loop device)
PCB - Printed circuit board
PSU - Power supply unit
QB - Quick blow
Rx - Receiver
SC - Short circuit
S³ - Speech sounder strobe
S⁴ - Speech sounder strobe sensor
T - Anti-surge (fuse)
TBA - To be advised

Notes on system installation

The power-up of the control panel and commissioning of the system is done by the Servicing organisation.

Installation requirements

It is recommended that the installer follow the general requirements of *BS5839:Part 1*, which is the *code of practice relating to fire detection and alarm systems for buildings*. The installer must follow the relevant parts of *BS7671 : 1992 Requirements for Electrical installations, IEE wiring regulations 16th edition* if installation is in the United Kingdom, UK.

Second fix installation

To prevent the possibility of damage or dirt degrading the performance or appearance of the products, the installed products must be suitably protected until all major building work in the area is complete.



The installation of all outstanding parts is usually carried out during commissioning of the system.

Fixture and fittings

It is the installer's responsibility to provide adequate fixtures and fittings for the type of construction surface onto which a product is to be installed, whilst utilising the fixing points on the respective product. As an aid to this decision, the weight and overall size of each full assembly together with implications on cable entries and routing should be taken into consideration.



All these procedures assume that the cable, gland, steel box (BESA box) and other related accessories are provided by the installer.

As fitted drawings

The installer should acquire site specific information from the interested parties, for details on the location of products for installation. The acquired information together with this guide and the relevant standards should be used to assist the work.

Each product assembly can be identified from its package label. The contents of all packages should be checked for any discrepancies.

Cable type and routing

Appropriate attention must be given to ensure correct cable type is installed in accordance with as fitted drawings, site specific information and recommendations of *BS5839 Part 1 : 2002*. The cables must be installed using cable manufacturers recommended fixings and accessories.

Fire sensor covers

Each fire sensor may be supplied with a plastic dust cover and can be ordered separately. If supplied, the cover must be fitted to prevent dust and dirt from the building work contaminating the fire sensor.

Earth continuity

All earth connection points should be **clean to provide a good electrical conductivity path**. To maintain the earth continuity all **earth leads and fittings** provided should be installed. The **loop cable** screen must be continued through each system device on the loop circuit, whether the earth is connected to the device or not.



Do not rely on any part of building structure for earthing.

Some of the system products having metal enclosures have a **zinc coating** around the cable termination points, the coating provide a good electrical conductivity path for cable earth termination.

The zinc coating on the metal enclosures should not be damaged. Any damage will expose bare metal, which can corrode and make a poor earth connection.

Mains supply

Mains supply to any fire alarm control and indicating equipment must be via an unswitched 5A fused spur unit. A 'disconnect device' must be provided to disconnect both poles and must have a minimum gap of 3mm. The 'disconnect device' should be available as part of the building installation and must be easily accessible after installation is complete.



All mains powered equipment must be earthed.

Local Manual Call Point

To comply with the requirements of *EN54 : Part 2 : 1997* a conventional manual call point must be installed near the main control panel. The call point must be wired to an input line of an interface unit on the loop circuit. During commissioning call point input must be set up to evacuate all sectors without delay.



Failure to install and configure a local manual call point in the manner described above when delays are set up on the system will result in the panel not complying to EN54 : Part 2 : 1997.

EN54 information

Optional functions with requirements of this European standard

The Control panel complies with the requirements of EN54 : Part 2 : 1997. In addition to the basic requirements of the standard the panel conforms to the following optional clauses:

Clause	Description
7.8	Output to fire alarm devices
7.11	Delays to action outputs
8.3	Fault signals from point
9.5	Disabling of each addressable point
10	Test condition

System wiring



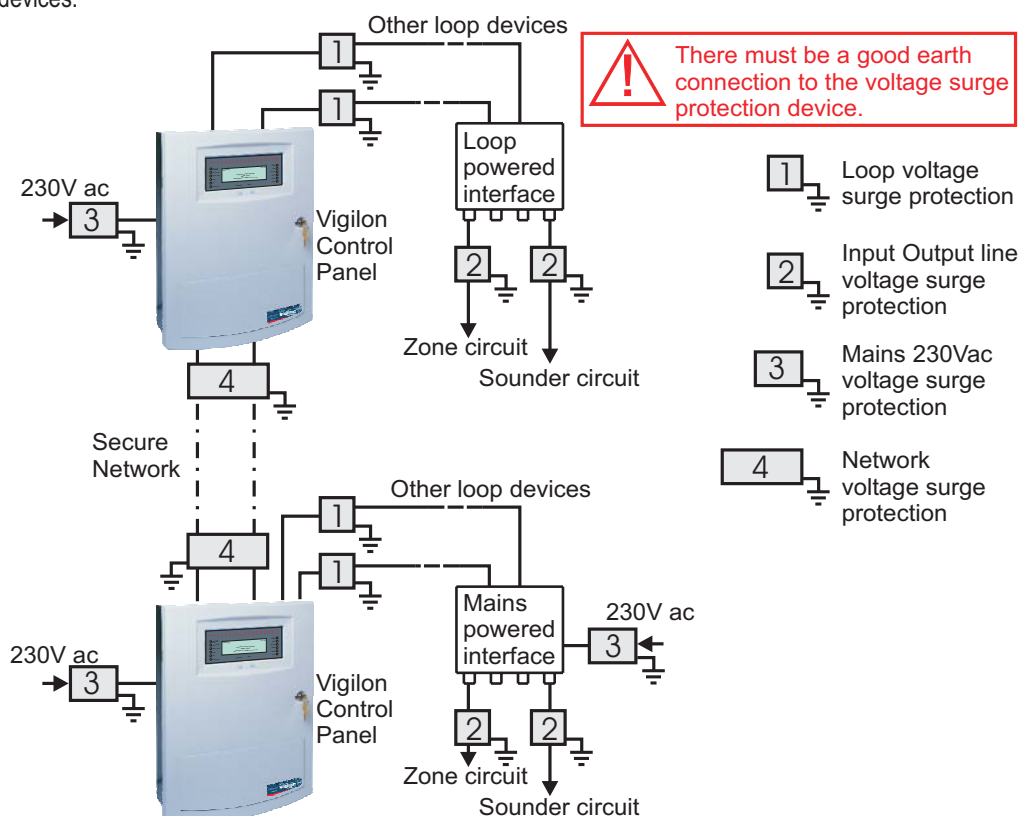
If instructed by the project, the installer may need to terminate as well as connect the cables to the appropriate terminal blocks.

Cable separation

Where the outgoing and return cables of a loop which covers more than the equivalent of one zone they must **not** run together, for example, either close to the **Control Panel** or in a **service duct**. There should be as much physical separation as possible between the cables and the mechanical protection of the cable should be to a particularly high standard. This is to minimise the risk of accidental damage to both cables. There should be separation from the mains supply cable.

Lightning protection

Where a loop cable or network cable is to be mounted to an external wall or between two buildings then consideration should be given to the use of lightning protection devices.



Requirements of cables

The *British Standard BS5839 Part 1 : 2002 Code of practice for system design, installation, commissioning and maintenance* states the requirements for standard and fire-resisting cables in Clause 26.2 section d and e.

d) **Standard fire-resisting cables** should meet PH 30 classification when tested in accordance with EN50200 and maintain circuit integrity if exposed to the following test:

- a sample of the cable is simultaneously exposed to flame at a temperature of 830°C - 0+40°C and mechanical shock for 15min, followed by simultaneous exposure to water spray and mechanical shock for a further 15min.

e) **Enhanced fire-resisting cables** should meet the PH120 classification when tested in accordance with EN 50200 and maintain circuit integrity if exposed to the following test:

- a single sample of the cable is simultaneously exposed to flame at a temperature of 930°C - 0+40°C and mechanical shock for a period of 60min, followed by simultaneous exposure to water spray and mechanical shock for a further 60min."



The cables listed in this manual are those that have been tested for EMC compliance with the system products.

Loop Cable usage



There is a maximum limit of 1Km loop cable usage allowed per loop circuit. This maximum limit is the sum of the cable used to wire the main loop circuit, the spurs off main loop circuit, plus cables that run to all input / output lines off the loop powered interface units installed on the same loop.

There is a further maximum limit of 100m cable run allowed per input / output line off loop powered interface unit.

Loop cable

Vigilon loop cable carries both data and power supply, therefore its selection is important. Note the following:

- ☐ In countries where the European EMC directive is in force, only **EMC Compliant** cables are to be used.
- ☐ The loop cable usage must not exceed **1Km**. This includes the cable usage on main loop, spur circuits and interface lines.
- ☐ Single pair cable must be used. It is **NOT** permissible to run mixed loops or outgoing and return pairs in a multi core cable, due to inadequate separation and possible electrical interference problems.
- ☐ Each core of the loop cable must be **1.5mm²** cross section area.
- ☐ the cable screens must be **capable** of being earthed at each system device (outstation).
- ☐ **Red** is the preferred cover sheath for fire applications.
- ☐ The specified loop circuit cables are **also suitable** for wiring master alarm, auxiliary relay, input/output lines and mains supply.

Enhanced cables

- ☐ Mineral insulated cable (MICC) to BS6207:Part 1
- ☐ Approved Enhanced cable:
Draka Firetuf Plus Enhanced **FTPLUS2EH1.5RD**
- ☐ Prysmian (formally Pirelli) **FP PLUS ***

Standard cables

Approved EMC cables for loop wiring

- ☐ Draka Firetuf EMC Standard 1.5mm²
FTEMC2EH1.5RDR
- ☐ Draka Firetuf **FTZ2E1.5 FIRETUF OHLS ***
fire resistant data cable
- ☐ Raydex CDT **FG950 ***
- ☐ Cavicel SpA **FIRECEL SR 114H ***
distributed by Cables Britain
- ☐ AEI Cables **FIRETEC ***
- ☐ BICC Pyrotenax **FLAMESIL FRC ***
- ☐ Datwyler **LIFELINE ***
- ☐ Alcatel cable **PYROLON E *** distributed by Winstonlead
- ☐ Huber & Suhner **RADOX FR ***
- ☐ Prysmian (formally Pirelli) **FP200 FLEX ***
- ☐ Prysmian (formally Pirelli) **FP200 GOLD ***



The cables marked * utilise laminated aluminium tape with a tinned drain wire for electrostatic screening. Under certain environmental conditions *galvanic action* may take place between the aluminium and the drain wire. This will severely *degrade EMC performance* as the foil to drain wire *impedance will increase*.

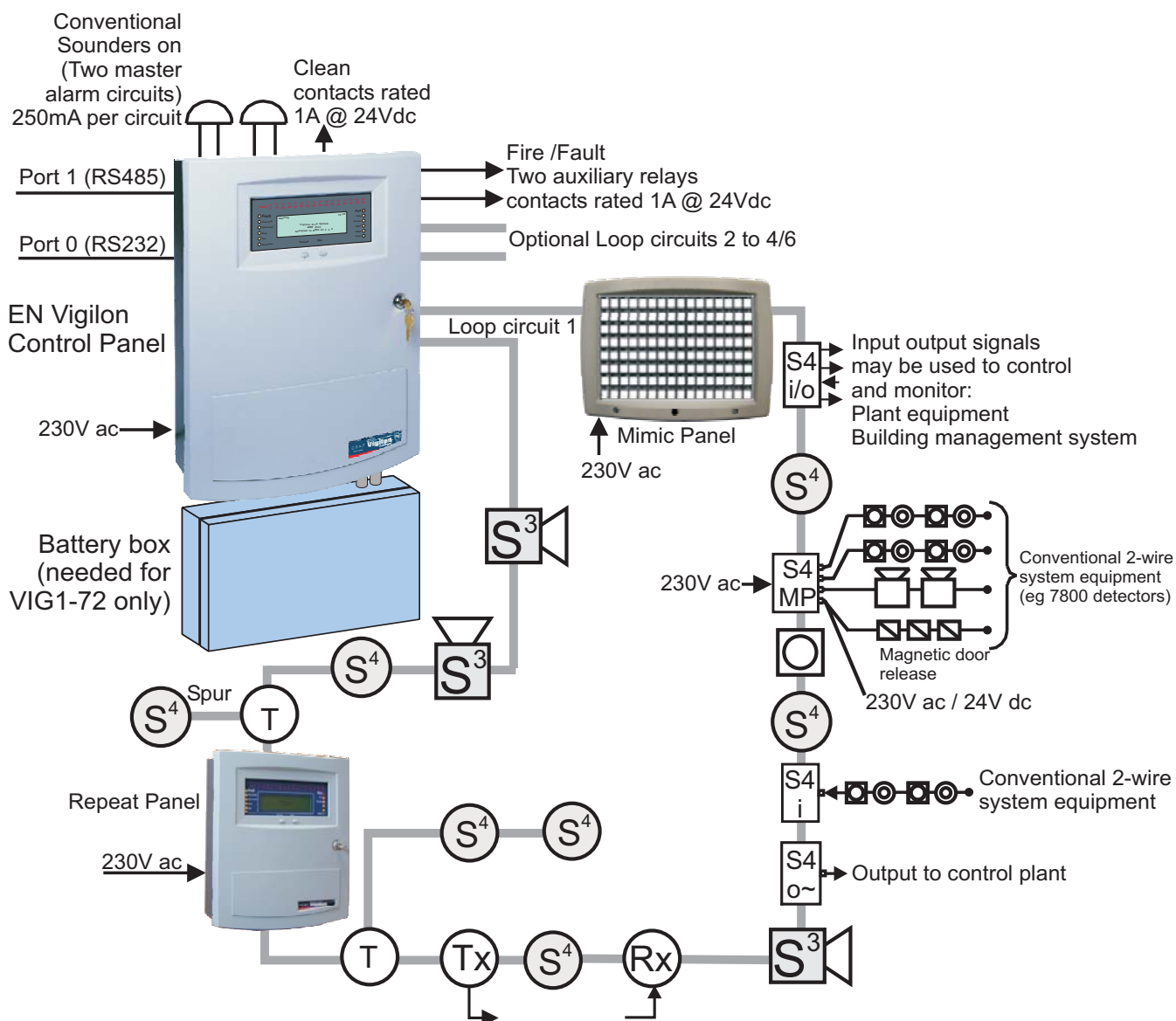
Armoured variants of the cables marked * can also be used on loop circuit.

Mains Supply cable






The mains supply cable must be a standard fire-resisting type and should meet PH30 classification, like the standard and enhanced cables listed above.






Typical Vigilon system

The loops allow wiring of addressable devices like **fire sensors, alarm sounders, call points, interface units, mimic and repeat panels**. A combined maximum of up to **200** devices is allowed per loop circuit, a further limit on a loop circuit is determined by the load factor.








Addressable System Devices


-  - S-Quad Sensor Speech Sounder & Strobe
-  - S-Cubed Voice enhanced Speech, Sounder, Strobe Unit
-  - Manual Call Point
-  - T Breaker
-  - Beam sensor Transmitter and receiver

-  - S4 4-Input/Output loop powered interface
-  - S4 1-Input loop powered interface
-  - S4 1-Output + Confirmation input loop powered interface
-  - S4 Mains switching output loop powered interface
-  - S4 - Input/Output mains powered interface unit

Conventional Products off interface inputs

-  - Magnetic door release
-  - Alarm sounder
-  - Conventional Fire Detector
-  - Manual Call Point
-  - End of Line Unit

LED off S⁴ sensor

-  - Remote LED

Devices per Device loop



It is important that redundancy is built into the system to accommodate future expansions.

The number of devices on one loop circuit can be limited by the total number of addresses available, the electrical load on the circuit, the maximum cable length and other geographical considerations.

- ☐ A loop circuit must not cover more than **10,000m²** of floor area of a protected site.
- ☐ In total a maximum of **200** devices are allowed per loop circuit..
- ☐ As a general rule allow **1000** load factor per loop circuit.
- ☐ A maximum of **512** loop devices is allowed per panel.

The following table can be used as a rough guide only to determine the loop load.



For a precise battery standby value use the Battery Standby Calculator. The Battery Standby Calculator tool should be used during system design stage to determine the loop loading. The tool can be downloaded from the Gent Expert forum (www.gentexpert.co.uk), which is accessible to registered users.

Device code number	Description	Load factor per device	Maximum devices per loop
VIG-RPT-72	Repeat panel (loop powered)	3	4
VIG-MIM-A3	A3 Zonal and Mimic Panel	3	4
S4-720	Heat Sensor	0.5	200
S4-780	Heat Sensor & Sounder	7 - 13*	140 - 60*
S4-720-ST-VO	Heat Sensor, Speech & Strobe	17 - 25*	60 - 40*
S4-710	Optical Heat Sensor	0.5	200
S4-770	Optical Heat Sensor & Sounder	6 - 12*	150 - 60*
S4-711-VO	Dual Optical + Heat Sensor & Speech	8 - 15*	120 - 65*
S4-711	Dual Optical Heat Sensor	0.5	200
S4-711-ST	Dual Optical Heat Sensor & Strobe	10	100
S4-771	Dual Optical Heat Sensor & Sounder	7-12*	150 - 15*
S4-711-ST-VO	Dual Optical Heat Sensor, Speech & Strobe	16-24*	55 - 40*
S4-911	Dual Optical Heat Sensor & CO	0.5	200
S4-911-ST-VO	Dual Optical Heat Sensor CO, Speech & Strobe	16-24*	55 - 40*
34729	EP heat sensor	0.5	200
S4-34410	1 - LV Input interface (IZ - EZ)	1 - 24	24 - 32
S4-34450	4 - LV Input/Output interface (IZ - EZ)	5 - 28	28 - 32
S4-34420	1 - LV Output Interface	1	170
	IZ = Value Including Zone		
	EZ = Value Excluding Zone		
	Switch Input	1	170
	Relay Output	2	170
	Zone Input	26	32
	Every LED Output	5	100
S4-3441 or S4-34415	1 - MV Output Interface module	5	200
S4-34440	Mains powered interface	4	8~
S4-34418	Keyswitch interface	4	170
S4-34800	Manual call point	4	200

Device code number	Description	Load factor per device	Maximum devices per loop
S4-34760	Venturi-Air Duct Kit	0.5	200
S4-34740	Beam sensor pair	3 -per pair	16 (ie 8 pair)
34701	Tee breaker	0.4	127
S2IP-ST-XR S2IP-ST-XW	Strobe Red Strobe White	9 22	100 40
S3-SN-X S3IP-SN-X S2IP-SN-X/XX	Sounder (standard tone)	5	200
S3-VP-X S3IP-VP-X	Sounder (standard tone) - with speech	5 - 17	200 - 55
S3-VP-ST-XR S3IP-VP-ST-XR	Sounder (standard tone) with red strobe - Speech complex tone with red strobe	13 - 25	80 - 40
S3-VP-ST-XW S3IP-VP-ST-XW	Sounder/speech with white strobe	37	25
S3IP-SN-ST-XR	Sounder standard tone with red strobe	13	80

Supported products

34415 or 34410	Single Channel Interface or Loop powered zone module	10	100 ~
34450	Loop powered interface	4	30~

The load factors and maximum devices stated in the table above are revised due to changes in product specification

~ - A maximum of up to 100 input channels are allowed per loop.

* - These values are applicable when sounder is operating in turbo mode or with bell tone.

LV - Low voltage

MV - Medium voltage

Vigilon panels

The Vigilon panels (VIG1-24 or VIG1-72) are analogue addressable fire alarm panel designed to the requirements of EN54 Parts 2 and 4. The panels can accommodate up to 4 or 6 loop circuits for the connection of Vigilon range of analogue and addressable devices. The panels have integral mains derived power supply. The VIG1-24 panel has integral batteries and the VIG1-72 panel have batteries fitted in a separate enclosure for extended standby supply. The batteries supply standby power in the event of mains power failure. A lockable front door prevents unauthorised access to fire alarm controls but allows all of the indicators to be seen. The panels have integral zonal indicators to provide zone fire or fault indications. Two push button controls are located on the front door below the display that enable Fire messages to be scrolled in the event of multiple fires. The panels are designed for surface or semi-flush mounting with rear and top cable entry points.



Features

- ☐ Analogue addressable fire alarm control panel
- ☐ Supports up to four or six loop circuits per panel
- ☐ Up to 200 addressable devices can be connected to a loop circuit. Devices like sensors, MCPs and interface units etc.
- ☐ Two master alarm circuits
- ☐ Optional RS485 to connect to a Repeat Indicator panel
- ☐ Optional RS232 to connect to another control panel (domain bridge) or external printer
- ☐ USB for commissioning tool connection
- ☐ Two sets of auxiliary relay change over contacts configurable to operate with fire, fault or disablement
- ☐ One set of clean voltage-free change over contacts that operates with fire events
- ☐ Standby supply to power the system during mains failure
- ☐ LCD alphanumeric display with back light to show event information
- ☐ Integral 32 zone LED indicators (with First fire steady / flashing or disable integral zone indication's options)
- ☐ LED lights for event indication
- ☐ Local buzzer gives audible sound to announce events
- ☐ Push button for essential controls and menu options
- ☐ Four programmable control buttons (U1 to U4)
- ☐ A remote battery box (for VIG1-72 panel only)

Technical data

Control panel

Standard	Designed to EN54 Part 2:1997 + AMD 1:2006 (and include optional clauses 7.8, 7.10, 7.11, 8.3, 9.5 and 10)
Approval	LPCB approved
Panel dimensions in mm with outer door	height 543 x width 406 x depth 172
Panel weight	
VIG1-24	10.2Kg approximately + 2 batteries 12V 21Ah battery - weight 6Kg each
VIG1-72	10.2Kg
Battery box#	7.2Kg
# with 4 batteries	31.2Kg
# with 8 batteries	55.2Kg
Storage temperature	-10 to 55°C
Operating temperature	-5 to 40°C
Relative Humidity (Non condensing) Temperature -5 to 40°C	up to 90%
Emission	BS EN61000-6-3:2001 Part 1 Residential, Commercial & Light Industry Class B limits.
Immunity	BS EN50130-4: 1996: Part 4 Alarm systems: <i>Electromagnetic compatibility</i> . Product family standard: <i>Immunity requirements for components of fire, intruder and social alarm systems.</i>
Ingress Protection	IP30
Colour	Door: Grey (Pantone 422) Back box: Graphite Grey (RAL 7024)
Loops	The panel is supplied with a loop card for 1 loop circuit. It can support up to 4/6 Loop circuits, using optional loop cards.
Network	Two types of network cards are available for secure network connection: Fibre Optics - 2Km maximum Copper (RS485) - 1.2Km maximum
RS232 and RS485 connections	The panel will require an optional standard IO Card to facilitate RS232 for connections for domain bridging and remote printer. The maximum cable length allowed for RS232 is 15m. The panel has an RS485 port to accept the Repeat Indicator panels. The Commissioning tool can be connected to the panel via the USB port on the Master Control Card.

Devices per loop	A maximum of 200 addressable devices per loop circuit.	Controls (with door open)	Sound Alarms, Silence Alarms, Reset, Cancel Buzzer, Verify, F1-F4 keys, Menu On/Off key, QWERTY key board, U1-U4 keys available if configured to perform site specific actions by triggering of command builds 251, 252, 253 and 254.
Device label	Each device can be given a 32 character label for identification. Each MCP is restricted to 28 character label.	Access level 2a	
Plug in Card slots		User having door key	
MCC / LCC -P1	Master Control card - supplied	Access level 2b	Access as level 2a plus access to complete level 2 menu commands.
IOC / N/W -P2	Input Output card / Network card	User having an outer door key and <i>customer</i> password	
Loop 1 - P3	Loop card - supplied	Access level 3	Access as level 2b plus access to all level-3 menu commands.
Loop 2 - P4	Loop card option	Engineer having an outer door key and <i>engineer</i> password	
Loop 3 - P5	Loop card option	Indicators	Fire (red) 32 - Zones (red) hidden until lit Power (green) Power Fault (amber) Delay (amber) Test (amber) Verify (amber) CB253 CB254 (amber) Fault (amber) Disablement (amber) System fault (amber) Sounder (amber)
Loop 4 - P6	Loop card option		
Loop 5#, IOC or N/W-P7	Loop card#, Input Output card or Network card		
Loop 6#, IOC or N/W -P8	Loop card#, Input Output card or Network card		
	# - for VIG1-72 only		
Clean contacts	1 set of voltage free change over contacts rated 1A @ 24Vdc, active with a fire event.	Logs	Active Logs: Fire, Fault and Disablement Historic log: All events Event logs: Fault, Disablement, Warning, Supervisory, Exceptions and Historic fires.
Master alarm circuits	2 - (24 volts nominal) 400 mA max per circuit MA1 - fuse 1A FS1 MA2 - fuse 1A FS2 (20 x 5mm) on Terminal card.	Printer	The integral printer if fitted operates when the outer door is open. The 'printer menu' include: ON, OFF, Line feed and Test print controls. An optional remote printer can be connected to the panel.
Auxiliary relays	Voltage-free contacts rated 1A @ 24Vdc		
Aux relay 1	2 sets of change over contacts configured to operate immediately with Fire event. The relay is normally de-energised .		
Aux relay 2	2 sets of change over contacts configured to operate immediately with Fault event. The relay is normally energised . The relays can be re-configured to operate with Fire, Fault or Disablement event, with a maximum delay of up to 10 minutes and can operate in a normally energised or de-energised state.		
Internal sounder	To announce Fire and Fault events, plus give a key press confirmation beep.		
Display	Alpha-numeric display - 8 lines by 40 characters per line, back-lit, (Black characters on green background, liquid crystal display)		
Menus	[Control], [Setup], [Information] and [Test Engineering] menus accessed via Menu On/Off, F1, F2, F3 and F4 buttons.	Battery box dimensions in mm	height 437 x width 421 x depth 174
Controls (with door closed)	Next and Previous buttons operable during Fire condition only.	Terminals	Accept cable size of up to 2.5mm ²
Access level 1		Battery box weight (including batteries)	31.2Kg with 4 batteries 55.2Kg with 8 batteries 1 x 12V 21Ah battery weight is 6Kg

Batteries and Battery Box

The batteries provide 24/72 hour standby supply plus power to alarm load for 30 minutes. The Battery Loop Loading calculator can be used to determine the load on the loop to achieve the standby power in the event of mains failure. The battery box is only used with the VIG1-72 panel and can be installed in a remote location up to 10m cable distance away from the control panel when using 1.5mm² MICC. When using 2.5mm² MICC then the cable then this distance can be increased to 15m.

Battery	VIG1-24	Batteries installed in the panel 2 x Powersonic 12V 21Ahr - (supplied) Model number PG12V21 B
	VIG1-72	Batteries installed in a battery box 4 x Powersonic 12V 21Ahr - (supplied). Model number PG12V21 B The battery box can optionally accommodate up to 8 x Powersonic 12V 21Ah
Temperature monitoring		Inside the VIG1-24 panel and in the battery box for VIG1-72 panel - for automatic adjustment of battery charge voltage with change in temperature.



Always use the recommended replacement battery, as there is a risk of an explosion if incorrect battery is used.

Power supply

Standard	Designed to EN54 Part 4:1997 + AMD 1:2002 and AMD 2:2006
Mains operating voltage	230V 50Hz +10% -6% is protected by a 3.15A (T) 250V Ceramic (20 x 5mm) on PSU. Input current - 1.4A
Nominal supply voltage for master alarm circuits	24V +1V, -4V
Battery circuit(s)	Terminals to connect to internally or externally housed batteries. Batteries reach fully charged state in 72Hr for VIG1-24 and VIG1-72.
Battery current with mains disconnected	VIG1-24 - 4.5A max. VIG1-72 - 6.2A max.
Light indications	To show the status of PSU
PSU Fuses	FS6 T3.15A Ceramic FS2 F3.15A Glass
Mains 44V supply	
Battery charge circuit 1	FS1 F10A Ceramic for VIG1-72 only
Battery charge circuit 2	FS7 F5A Ceramic for VIG1-24 only FS3 F10A Ceramic for VIG1-72 only All fuses 20mm x 5mm size
Storage temperature	-10 to +55°C
Operating temperature	-5 to 40°C
Relative Humidity (Non condensing)	up to 90% Temperature -5 to 40°C
Maximum current from battery without mains connected	5.8A

EN54 Part 4 data
VIG1-24

I min -> 780uA
I max a -> 108mA @ 43.5V
I max b -> 1.6A @ 43.5V and
2 x 0.5V @ 24V
Ri max -> 1.25R
UVLO -> 20.7V ± 0.4V

VIG1-72

I min -> 780uA
I max a -> 162mA @ 43.5V
I max b -> 2.4A @ 43.5V and
2 x 0.5V @ 24V
Ri max -> 1.25R
UVLO -> 20.7V ± 0.4V






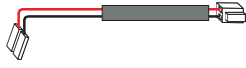


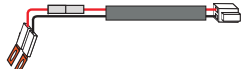

Hazardous voltages may still be present even if this indication is extinguished.




Installation checks

A VIG1-24 and VIG1-72 panels include the following parts:

- ☐ Back box assembly with PSU to power the Control panel
- ☐ Inner door for Control panel
- ☐ Moulded outer door
- ☐ Loop Card (1- loop card supplied), can accommodate up to 4 maximum in VIG1-24 and up to 6 in VIG-72 panel
- ☐ Main Controller Card for VIG-24 or VIG-72 panel
- ☐ VIG1-24 is supplied with 2x12V 21Ah batteries
VIG1-72 is supplied with 4x12V 21AH batteries for installation inside a battery box (the battery box can hold up to 8 x 12V 21Ah batteries)
- ☐ A Battery box is supplied with VIG1-72 panel only

Parts supplied in spares packs

Part	Qty VIG1-24	Qty VIG1-72	Battery box
 Cable tie	3	3	
 Ferrite core	1	1	
 22K 0.5W Resistor	2	2	
 Battery lead	1		
 Spade tag	2		
 Link lead	1		4
 Battery lead fused			4
 Instructions	1	1	1

 20 x 5mm Fuse 5A QB Ceramic	1		
 20 x 5mm Fuse 3.15A AS Ceramic	1	1	
 20x 5mm Fuse 3.15A QB glass	1	1	
 20x 5mm Fuse 10A QB Ceramic		2	4
 Terminal block			1
 Adhesive backed foam pad	1	1	

Each battery pair of 2 x 12V 21Ah is supplied with:



Back box installation

These instructions cover installation of the panel and battery box. The cards and batteries are installed during the commissioning of the system by the servicing organisation.



The control panel can be surface or flush mounted. The only time it should not be flush mounted is when the battery box is close fitted beneath the control panel.

- Identify the package VIG1-24 / Vlg1-72 and check that it contains all the parts.
- Remove the temporary cover from the *Back box*.
- Knock out/in the required cable entry points from the *Control panel back box* and from the *Battery box*.
- Use the fixing points provided to mount the Back box and Battery box to the wall using suitable fixings.

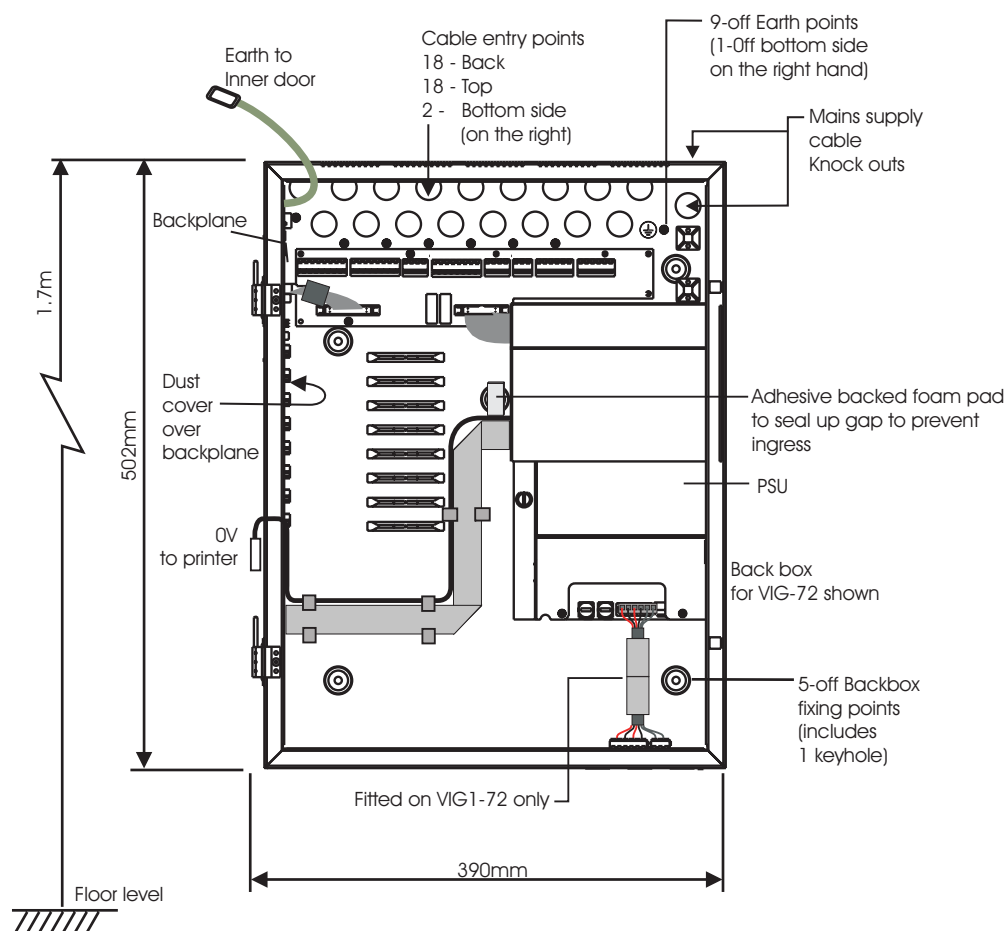


The fixings must support a fully assembled Control panel and Battery box. The VIG1-24 panel with batteries weigh 22.2Kg and the VIG1-72 panel weigh 10.2Kg. The batteries for a VIG1-72 panel are mounted in an external battery box weighing either 31.2Kg (4 batteries) or 55.2Kg (8 batteries).

- Stick the adhesive backed **foam pad** supplied to cover gaps around the centre key-hole fixing point in the back box. This is done to seal any gaps to prevent ingress.
- Terminate each cable at the entry point leaving 400mm tail wire length and mark each core to identify its final connecting point.



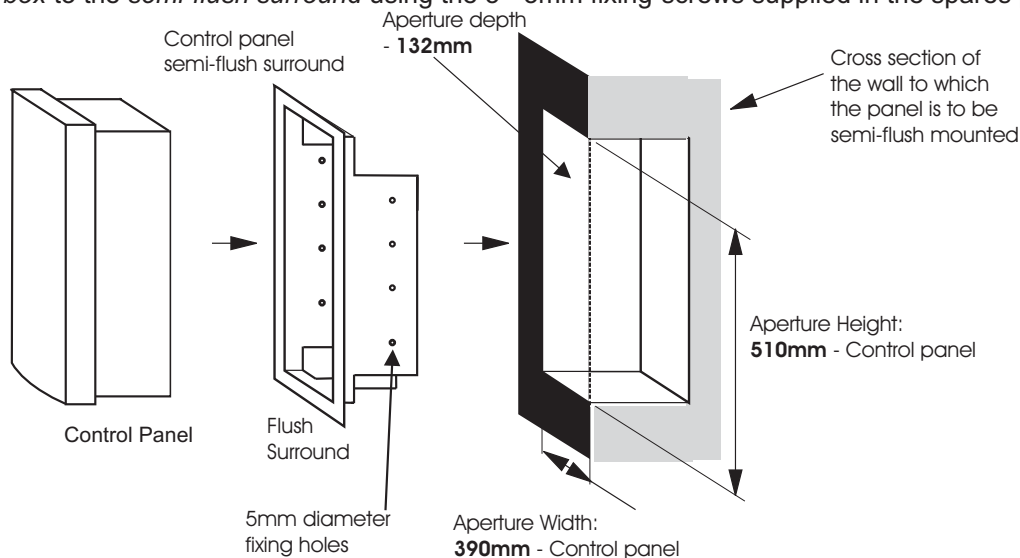
If the mains cable is not connected to the respective terminals then ensure the tail ends are insulated to guard against accidental switching ON of the mains supply.



Semi-Flush fixing the control panel

The control panel may be semi-flush mounted using a semi-flush surround VIG-24-FLUSH. A stainless steel variant of the semi-flush surround (VIG-FLUSH-SS) will require a stainless steel door VIG_DOOR_SS.

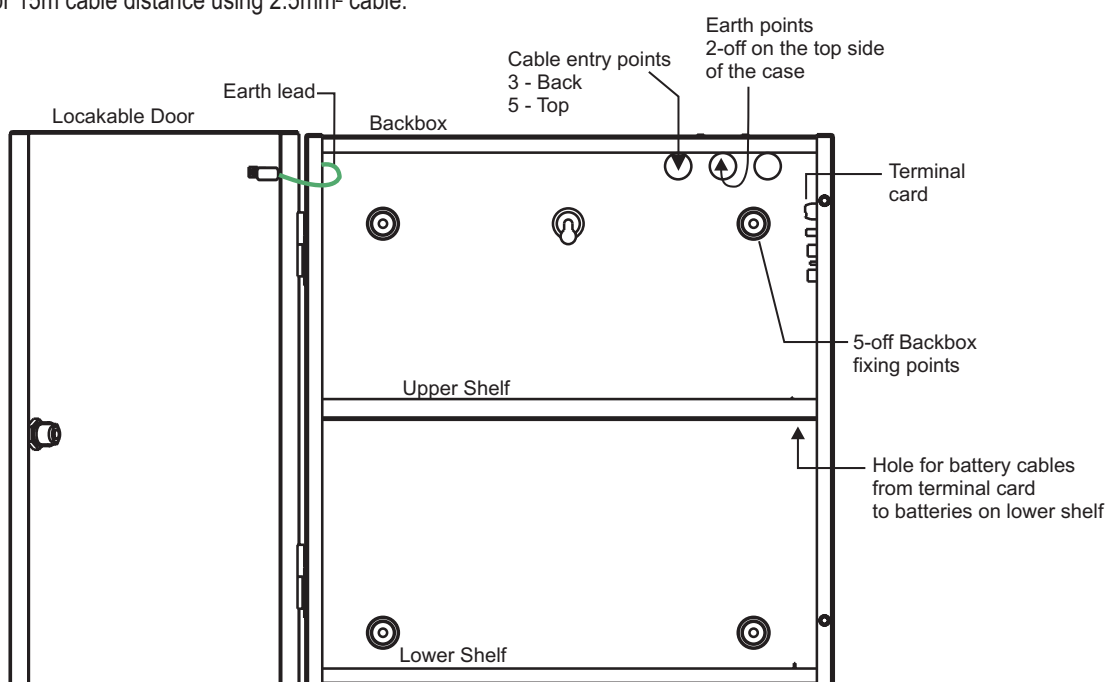
- Check the contents of the *semi-flush surround* package.
- Cut out an aperture in the wall to allow the *semi-flush surround* to be fitted, see the diagram below for dimensions of the aperture in the wall.
- Using the fixing holes on the *semi-flush surround* secure it into the aperture side walls.
- Knock out the appropriate top or rear cable points on the *control panel back box*.
- Route the cables through the cable entry points into the *back box* and at the same time insert the *back box* into the *semi-flush surround*.
- Fit the *back box* to the *semi-flush surround* using the 5 - 5mm fixing-screws supplied in the spares pack.



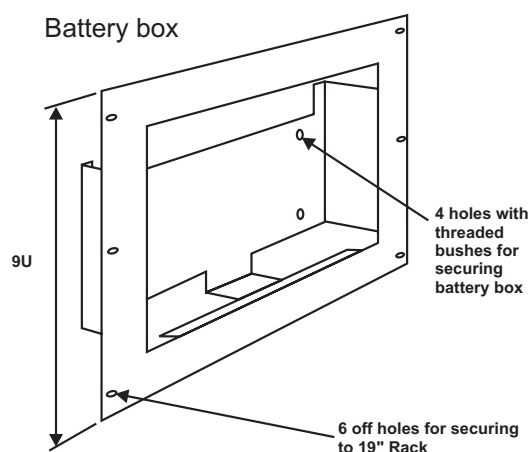
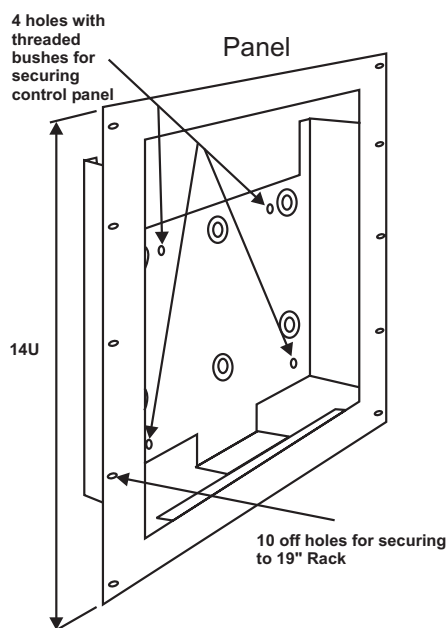
Battery box for VIG1-72 panel

The connecting battery cables from the control panel to the battery box can be either 1.5mm² or 2.5mm².

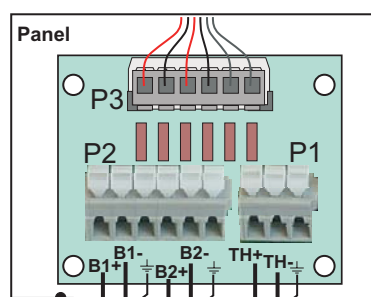
The battery box can be mounted beneath the control panel or in a remote location. The battery box can be up to 10m cable distance away using 1.5mm² cable or 15m cable distance using 2.5mm² cable.



19 inch Rack mounting frames



Wiring the battery box



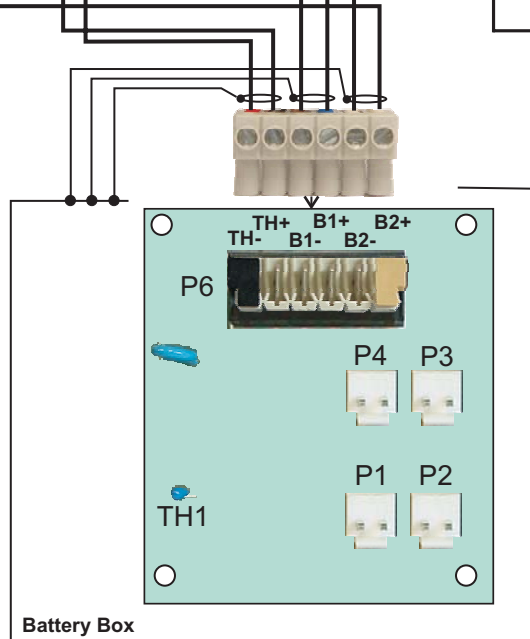
Where the wiring is terminated at the top of the panel ensure the cables run neatly down the side of the enclosure to the terminals

Wiring options

Cable distance
1.5mm sq - 10m maximum
2.5mm sq - 15m maximum

Control panel

Battery box
in a remote
location



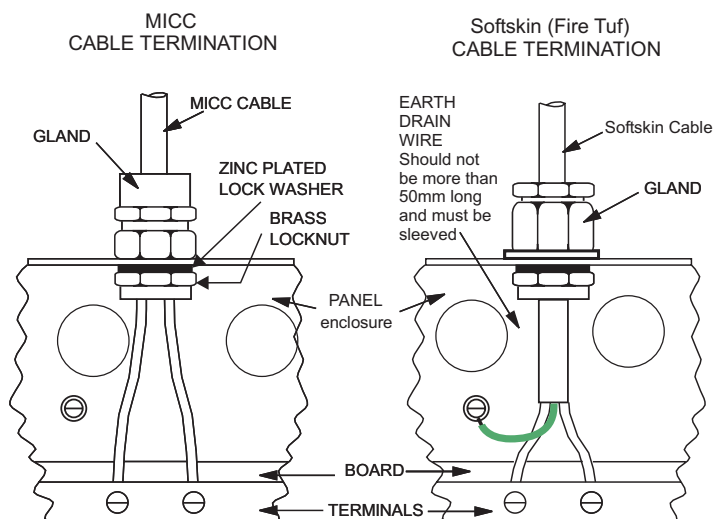
Here the battery box is shown mounted beneath the control panel

Control
panel

Battery
box



To maintain earth continuity, an earth lead (not supplied), is required to be fitted to an earth point in the control panel with the other end to an earth point in the battery box.



Unused knockouts that have been removed must NOT be left open.

Cable termination and markings

The wires between the termination point and terminals should be as short and straight as possible.

Where a cable has an earth drain wire, the wire must be fitted to the earth point nearest to the cable entry point. Ensure the drain wire length does not exceed 50mm.

Terminate each cable at the dedicated entry point on the enclosure, using the cable manufacturer recommended techniques.

Where the cable is not required to be connected, leave **400mm tail wire length** (unless otherwise instructed) and **mark each core** identifying its final point of connection.

Where the cable is required to be connected, ensure it is secured to the respective terminal.

Wiring tests



Don't undertake high voltage insulation tests **WITH THE CABLES CONNECTED** to the panel and system device terminals. Such a test may damage the electronics circuitry in loop devices and at the panel.

Mains and battery supply connections

The mains and battery supply cables must be installed to the stage to **facilitate the power up** for commissioning, which is carried out by the Servicing organisation.



Where mains cable is to remain disconnected, its tail ends must be insulated to prevent dangerous conditions arising in the event of accidental switching On of the mains supply.

Mains supply



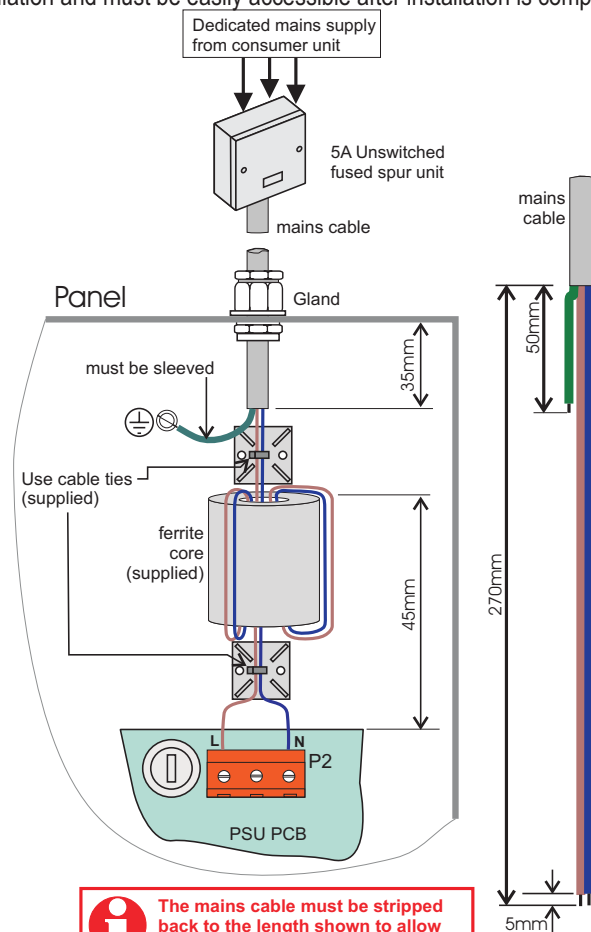
Ensure that the mains supply cable enters the panel through a dedicated cable entry point.



These fire alarm system products are **NOT** designed to be powered from IT Power systems.

All mains powered equipment must be earthed.

Mains supply to any fire alarm control and indicating equipment must be via an unswitched 5A fused spur unit. A disconnect device must be provided to disconnect both poles and must have a minimum gap of 3mm. The Disconnect device should be available as part of the building installation and must be easily accessible after installation is complete.



The mains cable must be stripped back to the length shown to allow live and neutral wires to be wound twice through the ferrite core.

The fused spur isolator cover should be marked:

FIRE ALARM - DO NOT SWITCH OFF

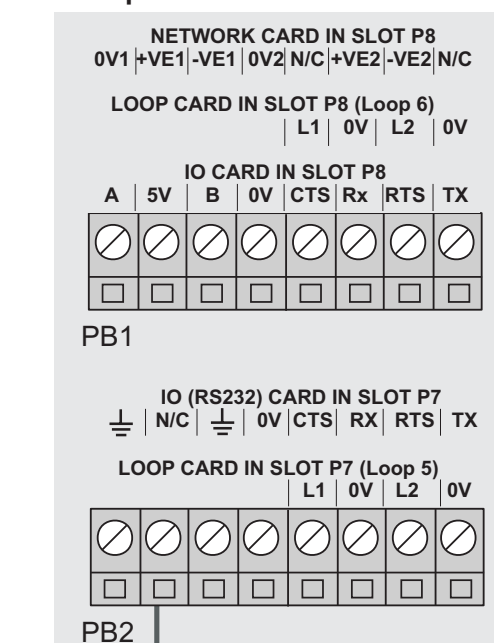
The fire alarm equipment's fused spur unit must be fed from a dedicated switch or protective device at the local mains supply distribution board.

Terminals for external circuits

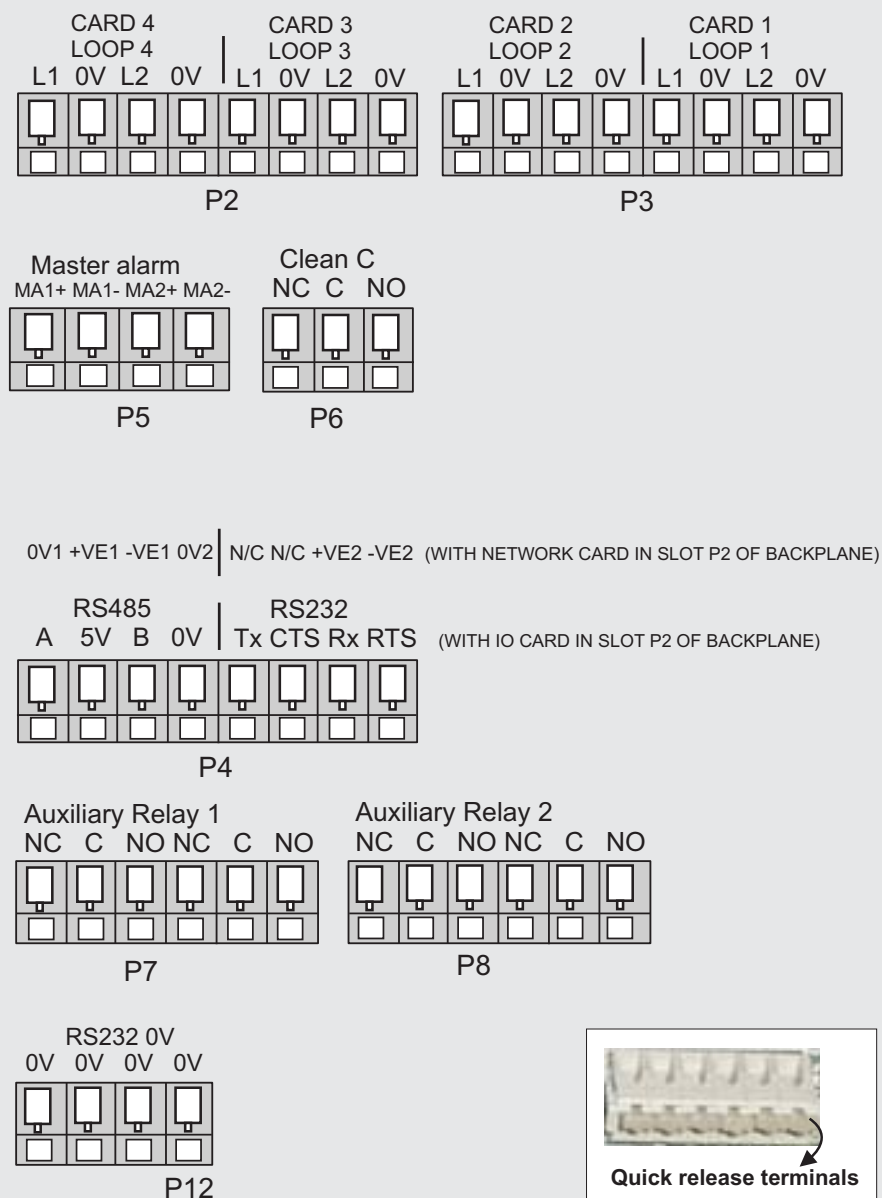
The Terminal card holds all the terminals for the connection of external circuits. The exceptions are:

- ☐ terminals for CARDS in slots P7 and P8, these are located on the Backplane
- ☐ terminals for mains supply, these are located on the mains terminal block
- ☐ terminals for batteries, these are also optionally located on the PSU.

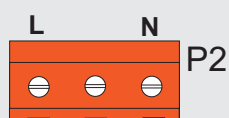
Backplane



Terminal card



PSU board (located behind the cardboard cover)



Loop circuits

The loop circuits can each accept connection of addressable devices a maximum of 200 devices is allowed per loop. To maintain earth continuity on a loop it is important for the **loop cable screen** to be continued through each system device, whether the earth is connected to a device or not.



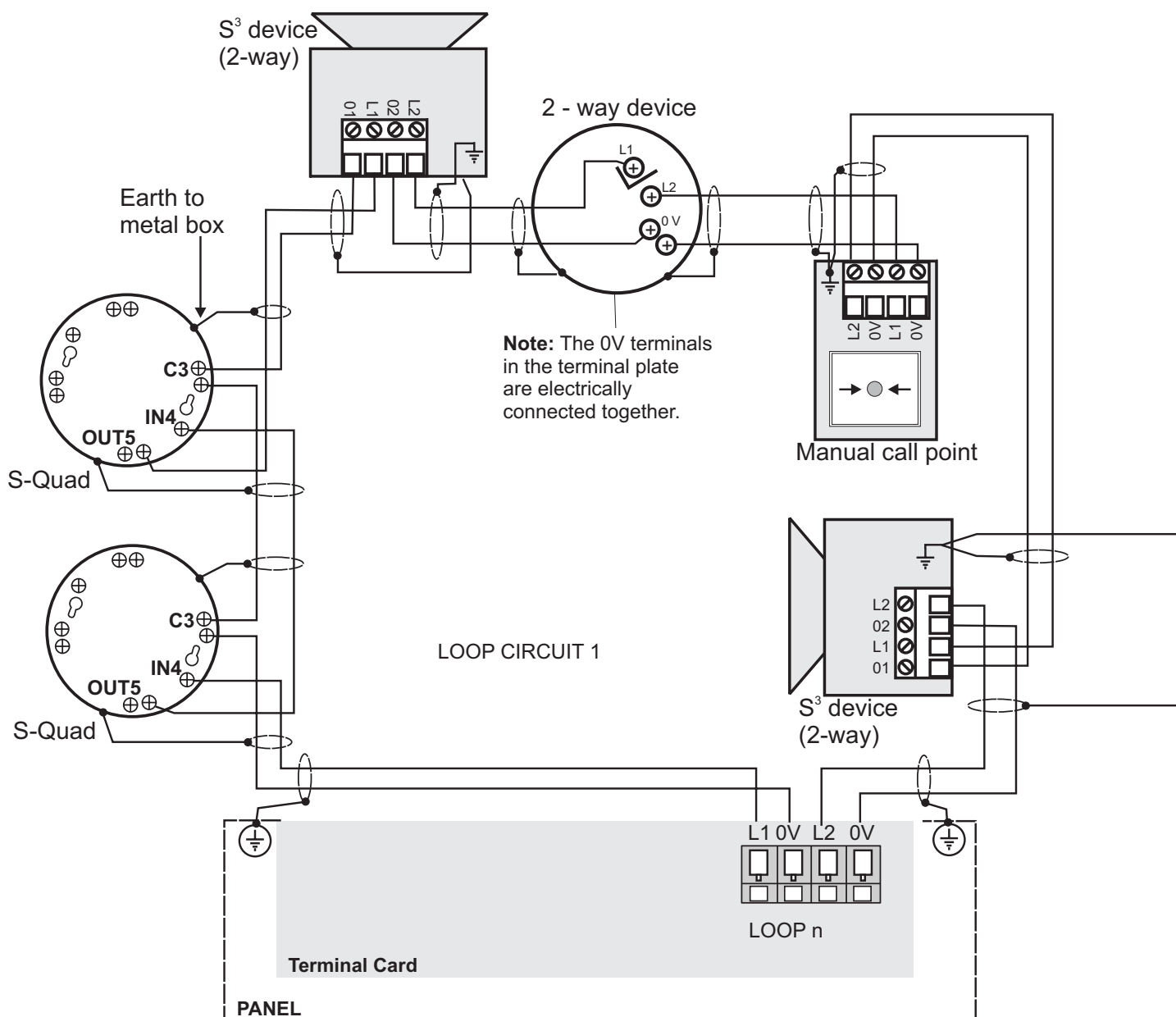
As every loop device has an isolator fitted, it is not necessary to apply special attention where there are more than 32 devices. However no more than a maximum of 512 devices shall be installed on one control panel.



A loop circuit must not cover more than 10,000m² of floor area of a protected site.

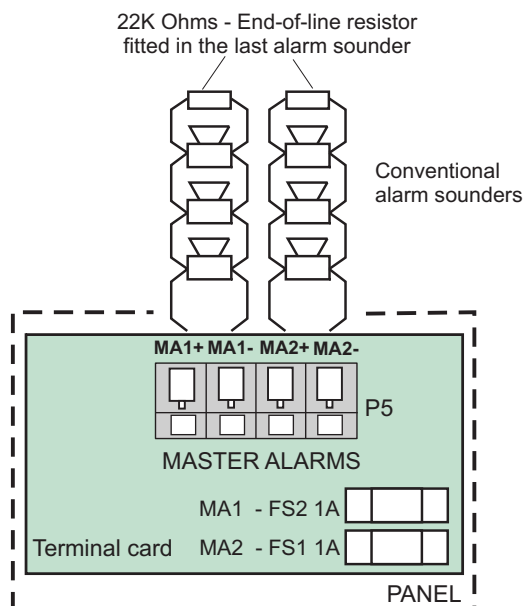
A spur circuit must always be taken from the line common terminals of a 3-way loop device.

A spur should not cover more than the equivalent of one zone as defined in BS5839 : Part 1.



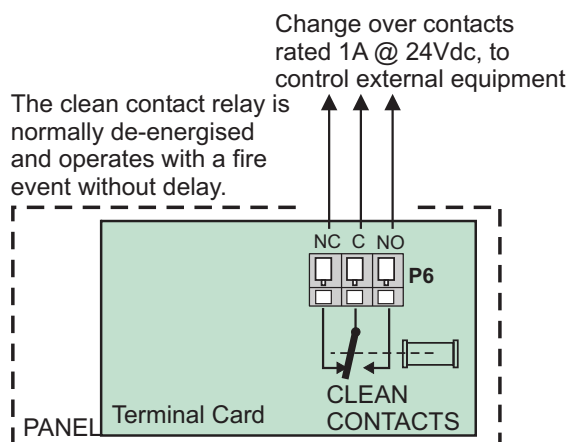
Master alarm circuits

The control panel operates the master alarm circuits in the event of a fire in the system. The two master alarm circuits accept the connection of conventional alarm sounders including the conventional Speech-Sounder-Strobe S³ products.



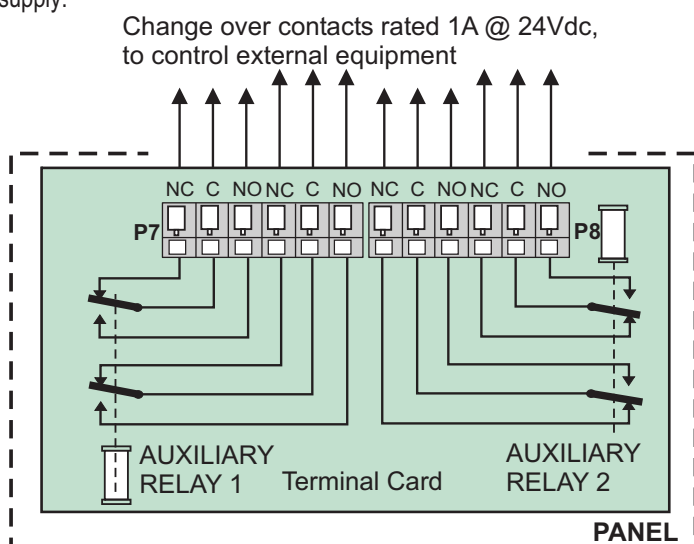
Clean contacts

The control panel will operate the clean contacts when a fire event is received from the system. The clean contacts can be used to switch plant equipment, such as lift control system. The relay operates in the event of a fire. The contacts should be powered from an independent power supply.



Auxiliary relay circuits

The control panel operates the auxiliary contacts when the configured event is received from the system. The auxiliary relay 1 and 2 contacts can be used to control external equipment, such as an automatic dialler that makes the call for fire fighting action. The relays can be individually re-configured to operate with either fire, fault or disablement event in the system. The relay operation can also be delayed by up to 10 minutes and can be set up to operate in a normally energised or de-energised state. The contacts should be powered from an independent power supply.



Factory default:

Aux relay 1 is normally de-energised and operates with a fire event without delay.

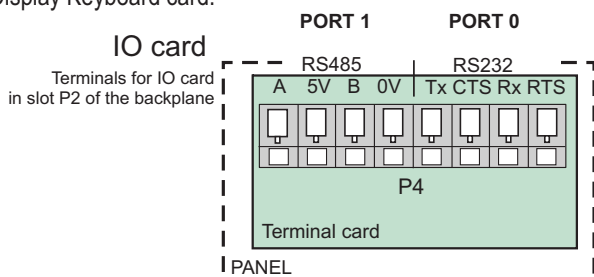
Aux relay 2 is normally energised and de-energises with a fault event without delay.

Note: Aux relay 2 has been shown in the above diagram in its de-energised state, which is the state when there is no power to the panel.

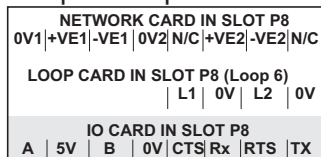
RS232 / RS485 Communication

The control panel offers RS232 and RS485 communication via the IO card.

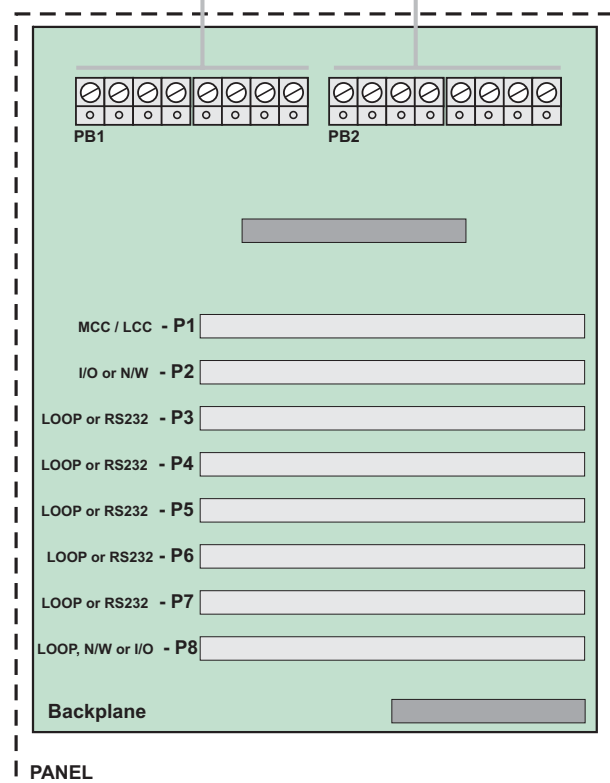
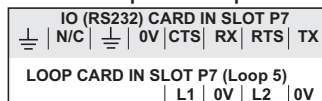
A standard IO card (**not supplied**) must be inserted in slot P2 of the backplane of the panel, which facilitate RS232 and RS485 communication via terminal block P4 on Terminal card. Note the RS232 is PORT 0 and RS485 is PORT 1. The domain address and communication baud rate are configured by setting the DIL switch located on the left edge of the Display Keyboard card.



IO, Network or Loop card option



IO or Loop card option

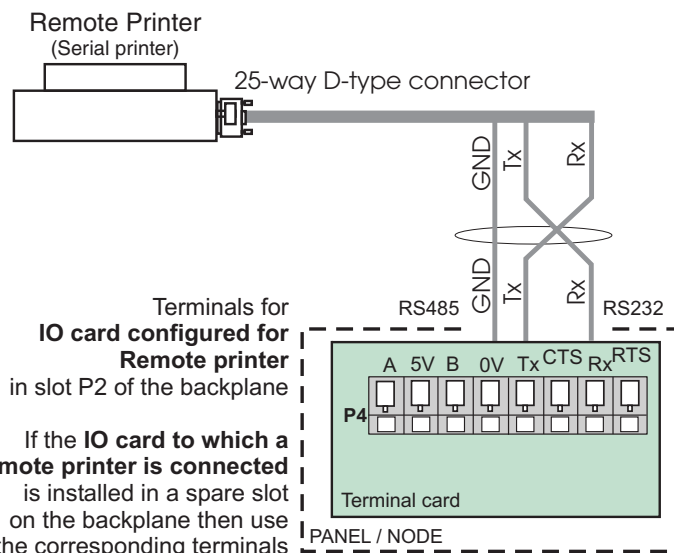


Connecting a Remote printer

When a remote printer is connected to a standalone Vigilon control panel, it will print local system events.



An IO card (not supplied) must be inserted in slot 2 of the backplane of the panel, which will facilitate remote printer functionality.

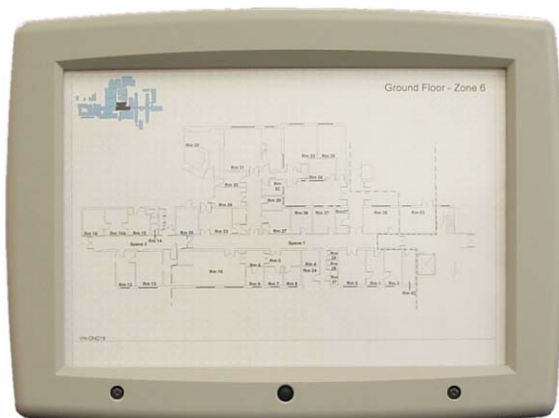


On completion of wiring installation

On completion of all wiring refit the temporary cover onto the back box. All outstanding work is done by the servicing organisation during commissioning.

Mimic panel

Customised Mimic



Zonal Mimic



An A3 Mimic or Zonal panel must be connected to a loop circuit of the fire detection and alarm system. It is used to provide indication of fire events in the system. However it can also be used to provide indication of fault and supervisory events in the system. The panel can be mounted in landscape or portrait orientation.

A Customised Mimic holds a pictorial overlay that represents the protected building or an area within. A fire event is indicated by the illumination of appropriate red LEDs behind the overlay to show the location of the fire.

A Zonal Mimic provides a traditional zone by zone indication of a fire. Each zone is given a location label to identify the area within a building.

The panel illumination defaults to a Zonal Mimic but can be reprogrammed during commissioning to be a Customised Mimic. An array of red lights illuminates individually or in groups. Illuminations may be applied to include custom shapes, text and digital clock in small or large size. A site specific 'welcome message' may be configured for display during quiescent conditions that can scroll if it is too long to fit the display area. First or last fire flashing option, with in phase or anti phase flash.

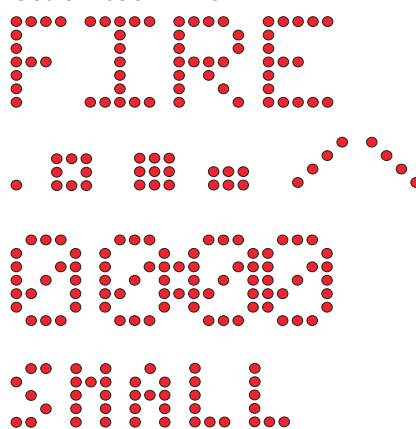
The panel has its own mains derived power supply with battery for standby power in the event of mains supply failure.

Technical Data

Panel dimensions	height 403mm, width 338mm, depth 101mm
Weight	7.9Kg without batteries 10.5Kg with batteries
Storage temperature	-10 to 55°C
Operating temperature	0 to 45°C
Relative humidity (Non condensing)	Up to 90% temperature 5 - 45°C
Battery	2 x 6V 7Ah sealed lead acid (weight 1.3Kg each) The integral battery provides power for 72 hours in standby condition and a further 30 minutes in alarm.
Mains operating voltage	230V 50Hz +10% -6%
Emission	BS EN61000-6-3 : 2001
Immunity	BS EN50130-4 : 1996 : Part 4
LVD	BS EN 60950-2006
Ingress protection	IP30 (estimated)
Colour	Door - Pantone 422 Back box - Graphite Grey (RAL 7024)
Control	Cancel fault buzzer / lamp test button
Indicators	1536 high intensity RED LEDs.
Loop connection	3-way connection to a loop circuit

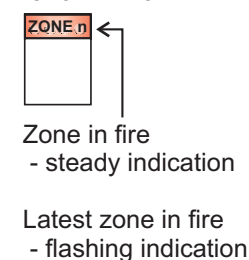
Typical Mimic illuminations

Customised Mimic



Flashing in phase
or anti phase

Zonal Mimic



Compatibility

As a **Zonal Mimic panel** the system control panel must have the following card software:

Control panel CARD	EN54 Control Panel software
LPC Shorter Card ONLY	≥ V4.19

≥ means equal to or greater than










As a **Customised Mimic panel** the system control panel must have the latest card software.

Installation

Fuses on Master Repeat Card

Fuses	Rating
FS4	3.15A AB Ceramic 20mm x 5mm
FS2	3.15A AB Ceramic 20mm x 5mm
FS3	2AQB 20mm x 5mm

The Mimic Panel set consists of:

Component	Quantity
 ① Backbox assembly	1
 ② Inner door assembly	1
 ③ Outer cover assembly	1
 ④ Key for Outer cover	1
 ⑤ 3.15A 20mm x 5mm AB Ceramic	2
 ⑥ 2A 20mm x 5mm Quick Blow Fuse	1
 ⑦ Battery lead	1
 ⑧ Link lead	1
 ⑨ 6V 7Ah Battery	2



⑩ Overlay pack for A3 Mimic panel

- 1 x pre-printed Zonal sheet
- 2 x blank A3 sheets for printing a Mimic or Zonal overlay
- 1 x LED spacing sheet

The overlays in the pack are high quality UV protected A3 paper.

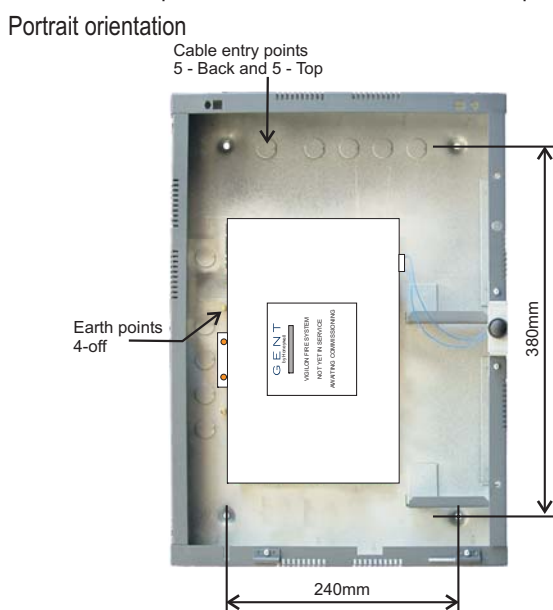
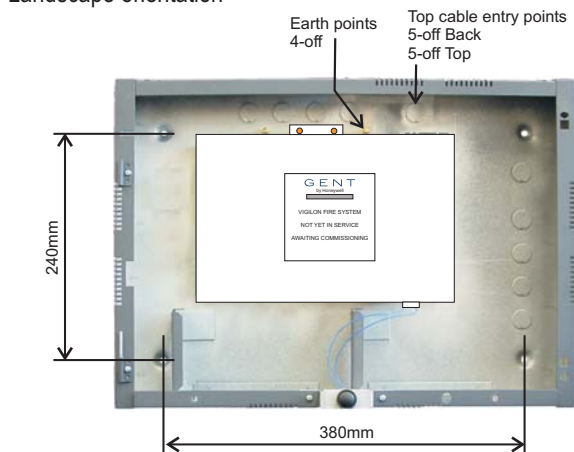
A **magnetic strip** used to hold an overlay in place is fitted to the top side of the inner door.

1 Set

Mounting the backbox

The A3 Customised Mimic panel can be mounted either landscape or portrait, while an A3 Zonal mimic panel must only be mounted landscape when using the overlay supplied.

- Locate the package Back box assembly ①.



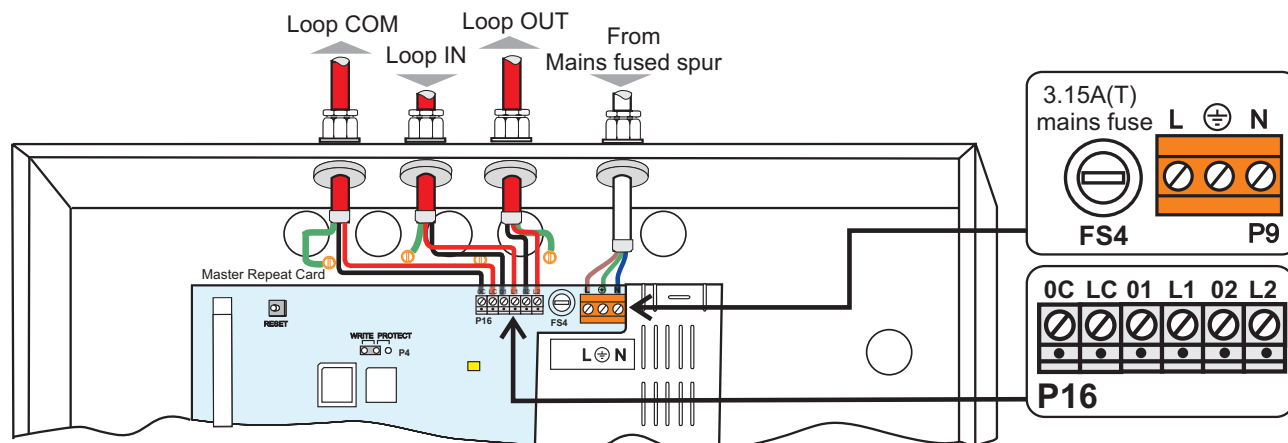
- Knock out the required cable entry points from the back box.
- Mark out the 4-back box fixing positions on the wall to which the panel is to be mounted and secure it with suitable fixings.



Ensure the mains power is isolated to from the panel.

- d. Terminate the loop and mains cables at the entry points and if required connect the cables to the appropriate terminals.
- e. All the other parts are installed during commissioning.

External wiring



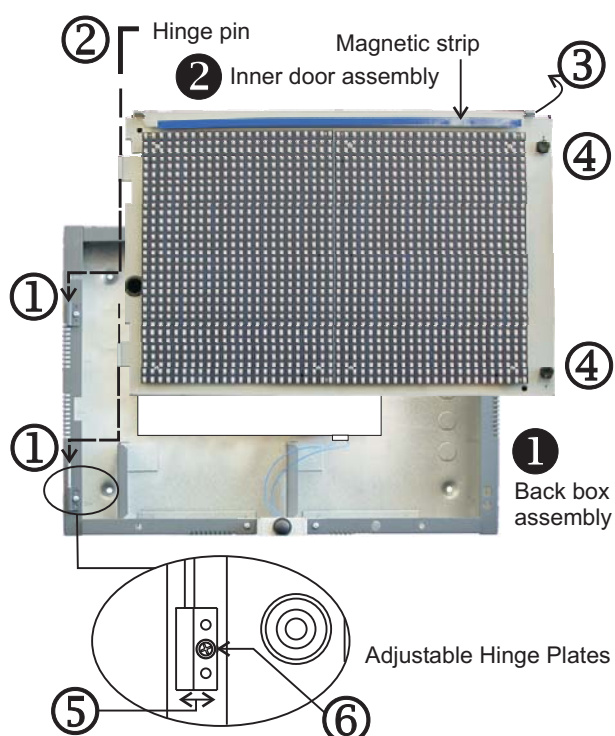
The external cables are routed into the back box using the cable entry points on the back box. The left 4 entry points are for the loop cables that connects to terminal block P16. The right cable entry point is for the mains cable which is connects to the terminal block P9.



All the other parts supplied with the A3 mimic panel are fitted during the commissioning stage, however the procedures are described here for completeness.

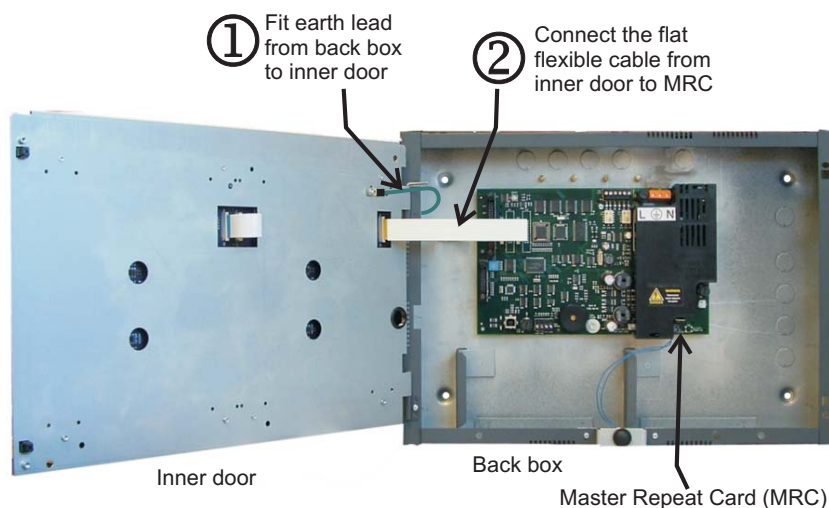
How to fit the inner door assembly

The following procedures describe how to fit the inner door assembly to the backbox.



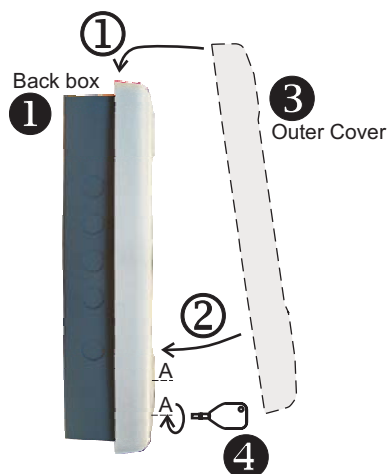
Align the inner door assembly ② to the two hinge pin positions ① on the back box ① and slide the door down until it is seated correctly. Insert the top (removable) hinge pin ② and secure it by rotating the pin into the back box. Close the inner door assembly ③ and lock it using the fasteners at position ④. For minor adjustment of the inner door, open the fixing screw ⑤ and adjust the hinge plate ⑤ to a required position and then secure the plate to the backbox by tightening the screw ⑥.

Where to connect the internal cables



Remove the protective cardboard cover from the Master Repeat Card. Connect the earth lead ① from the back box to the inner door assembly. Connect the flat flexible cable ② to socket P13 on the Master Repeat Card, see details on fitting and remove of flat flexible cable.

How to fit the outer cover



Hook ① the Outer Cover ③ over the top edge of the Back Box ①. Close ② the bottom of the Outer Cover onto the Back box and secure the Outer Cover by the two captive screws on the cover using the key ④ supplied.

Ensure the zonal mimic or customised mimic plan is located centrally within the anti glare window of the outer cover.

For full information see leaflet supplied with the product.

Repeat Panel (loop connectable)



The repeat panel duplicates all of the control panel indications and the essential controls.

The repeat panel has its own mains derived power supply with battery for standby power in the event of mains supply failure. A lockable front door prevents unauthorised access to fire alarm controls but allows all of the indicators to be seen. The panel is designed for semi-flush or surface mounting and facilitates both rear and top cable entry points.

This repeat panel can be installed on a loop circuit of the Gent Vigilon fire detection and alarm system. It can be sited near an entry or exit point of a building and fit in with the loop cable routing.

Compatibility

The repeat panel is compatible with system control panel having card and software listed below:

Control panel CARD	Control Panel Software	
	EN54	BS5839
LPC Shorter Card ONLY	≥ V4.19	≥ 3.90

≥ means equal to or greater than

Technical Data

Panel dimensions	height 403mm, width 338mm, depth 101mm			
Weight	9Kg with batteries (approximate)			
Storage temperature	-10 to 55°C			
Operating temperature	0 to 45°C			
Relative humidity (Non condensing)	Up to 90% temperature 5 to 45°C			
Battery	12V 7Ah sealed lead acid			
Mains operating voltage	230V +10% -6% 50Hz			
Emission	BS EN61000-6-3 : 2001			
Immunity	BS EN50130-4 : 1996 : Part 4			
LVD	BS EN 60950-2006			
Ingress protection	IP31 (estimated)			
Colour	Door - Pantone 422 Back box - Graphite Grey (RAL 7024)			
Controls (with door closed) Access level 1	Next and Previous buttons operable during fire condition only.			
Control buttons (with door open) Access level 2	Sound Alarms, Silence Alarms, Reset Fire, Cancel Fault Buzzer, Verify, F1-F4, Menu On/Off and U1-U4.			
Indicators	Fire, Verify, Power, Fault, Power Fault, System Fault, Delay and CB253/254. EN panel only: Sounder, Sounder, Delay, Disablement Test and 32-Fire Zone LEDs. BS panel only: Commission and Warning. Display: 8 lines 40 characters per line, back-lit LCD.			
Loop connection	3-way connection to a loop circuit			
EN54-17 data Fire detection and fire alarm system short circuit isolators	V _{max}	42V	V _{nom}	40V
	V _{min}	24V	V _{SO max}	16V
	V _{SO min}	8V	I _{C max}	0.4A
	I _{S max}	1A	I _{L max}	20μA
	Z _{C max}	0.1Ω		

Installation

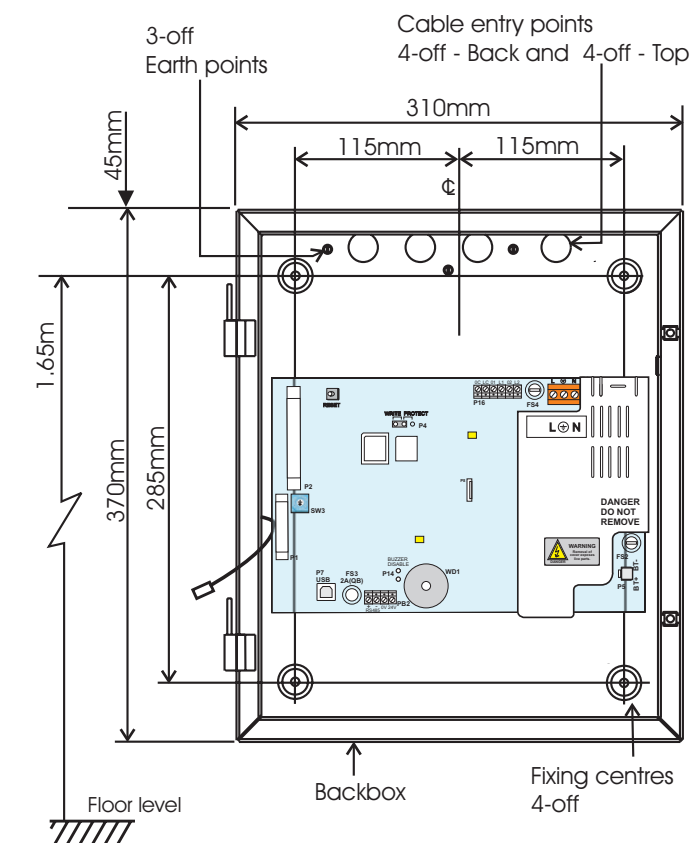
The Repeat Panel Set consists of:

	Parts	Quantity
①	Backbox assembly	1
②	Outer door assembly	1
③	Inner door assembly	1
④	20 Way ribbon cable	1
⑤	40 Way ribbon cable	1
⑥	Spares pack (includes battery leads and membrane labels for BS panel)	1
⑦	Battery 12V 7Ahr	1

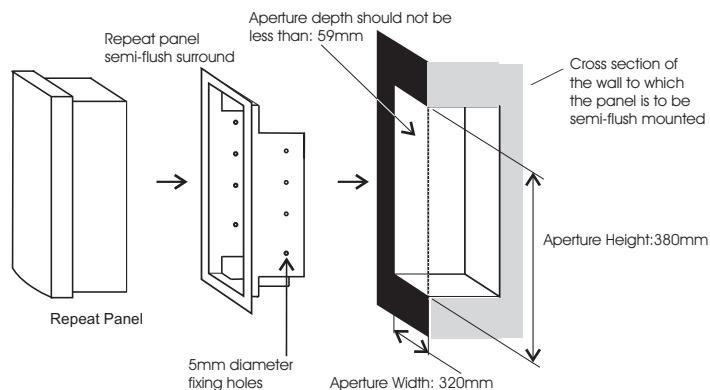
Fuses on the Master Repeat Card

Fuse	Rating
FS4	3.15A AS 20mm x 5mm
FS2	3.15A AS 20mm x 5mm
FS3	2A QB 20mm x 5mm

Back box mounting



- Find the Repeat panel Back box ① package and remove the temporary cover.



- Secure the back box to the wall with suitable fixings. If the backbox is to be semi-flushed then use the optional semi-flush surround.
- Terminate the cable at the entry point leaving **400mm** tail wire length.



If mains supply cable ends are not required to be connected then ensure the ends are insulated for safety.

- Refit the temporary cover to protect the panel until all building work is complete.

Doors, Cables and Power up

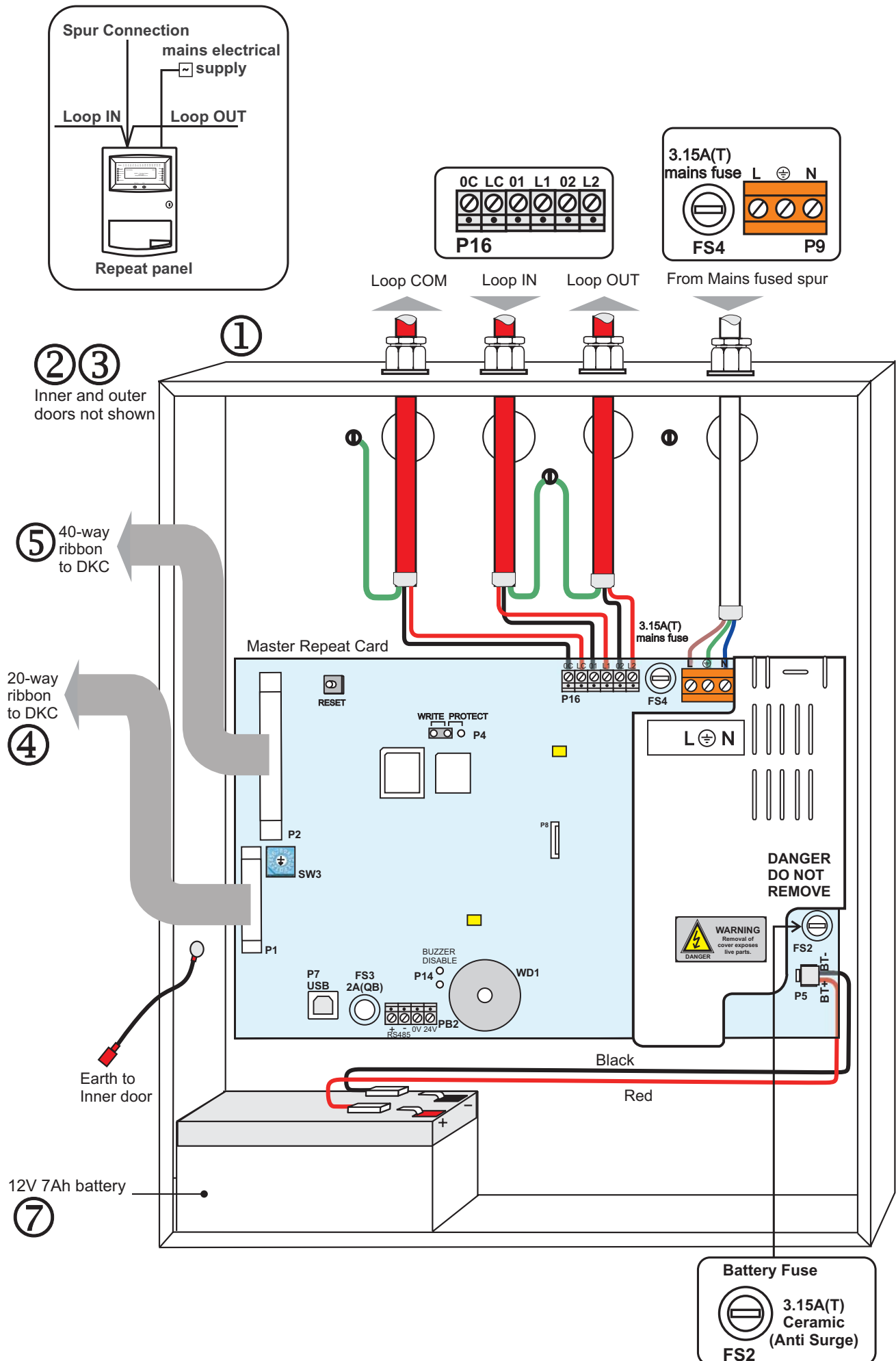
The doors and cables are installed after building work is finished.

- Remove the protective cover from the backbox.
- Fit the inner door ③ to the panel enclosure remembering to connect the earth lead from the backbox to the inner door. Fit the outer moulded door ② to the backbox.
- Wiring the panel:



Ensure the mains supply is completely powered down before wiring the mains cable ends.

- connect the mains cable to terminal block P9 on the Master Repeat Card.
 - fit battery lead ⑥ supplied in the spares to connector P5 on Master Repeat Card.
 - connect the loop cables to terminal block P16 on the Master Repeat Card.
 - connect the 40 way ribbon cable ⑤ to the Master Repeat Card connector P2 and the other end to Display Key Card on the top right edge connector - P1.
 - connect the 20 way ribbon cable ④ to the Master Repeat Card connector P1 and the other end to Display Key Card on the top right edge connector - P6.
- Power-up is done during commissioning by the service organisation and it involves switching ON the mains supply and connection of battery leads. The Power up indications are:
 - all the LEDs on the panel are lit for a short duration and a power up message displayed.
 - the local buzzer sounds
 - the display reads: **Main panel is off Line**
 - the **Fault** and **System Fault** LEDs are lit.



Repeat Indicator panel

The repeat indicator panel provides messages and indications of system events and it connects directly to the Vigilon fire panel.



Technical data

Dimensions in mm	height 177 x width 206 x depth 48.5
Full assembly weight	750g
Storage temperature	0 to 60°C
Operating temperature	0 to 45°C
Relative humidity (Non condensing)	up to 90% Temperature 5 to 45°C
Ingress protection	IP30 estimated
Colour	White
Indicators	Fire, Fault, Disablement, Power On, System fault, Sounder 2 line 20 character per line, back-lit, display.
Controls (with flap closed)	Test and Cancel buzzer
Controls (with flap open)	Fire, Fault, Disablement, Warning, Display Mode and Numeric keypad.



If only one repeat indicator panel is to be connected to the control panel then make use of the 24V supply at the panel, there is no need to use an external power supply

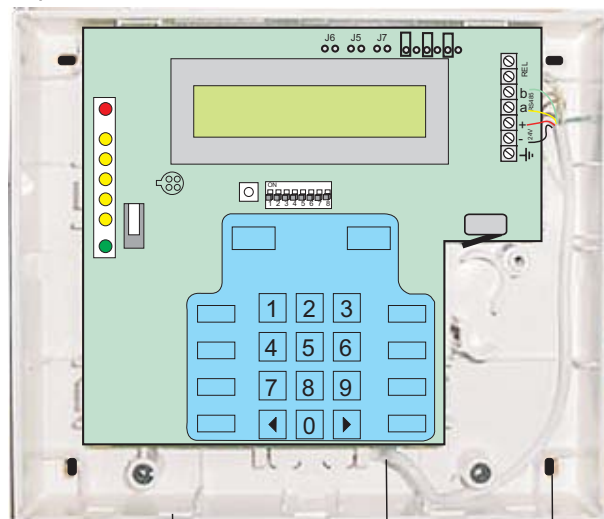
Cable

□ Belden No. 9842 EIA RS485 Applications, O/A Beldfoil® Braid **1Km** maximum cable distance **from the control panel to the last repeat indicator panel** must have following characteristics:

- Two twisted pairs
- 24AWG (7 strands x 32 AWG) conductors

Installation

- a. Open the outer cover.

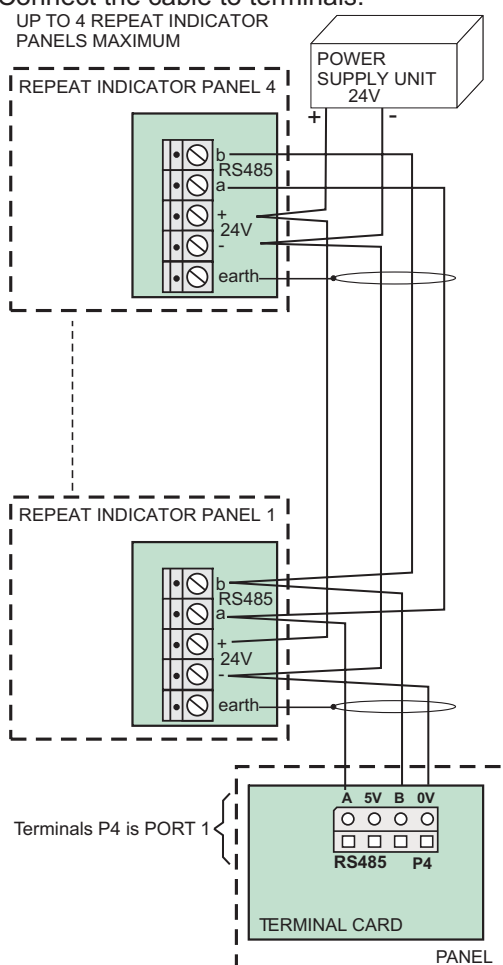


Thinned sections on sides of enclosure for cable entry

Back cable entry point

4 enclosure fixing points

- b. Insert the external cable into the backbox assembly at the required entry point.
- c. Mark the fixing points and secure the backbox to the wall.
- d. Connect the cable to terminals.



- e. Refit the front cover and flap.

S-Quad Sensors



This following is information on the S-Quad product range. The S-Quad product integrates dual angle smoke, heat and carbon monoxide gas detection with electronic sounder, speech and LED flasher (Strobe) in one assembly.

General specification

Operating voltage	35V - 41V
Weight	110g with base - 170g
Dimensions	117mm diameter by 49.6mm height With base the height increases to 63.8mm
IP rating	IP30 IP20 when mounted on a metal back box
Enclosure	ABS
Colour	RAL 9010
Approval	LPCB approved
Storage Temperature	-20°C to 70°C (for S-Quad with CO -20°C to 50°C)
Ambient operating temperature	-10°C to 50°C
Relative Humidity	95% non condensing (5°C to 45°C)
Heat (H) Standard	EN54 : Part 5
Optical (O) Standard	EN54 : Part 7
Dual Optical (O ²) Standard	EN54 : Part 7
Sounder (S) Standard	EN54 : Part 3
Gas (CO) Standard *	LPS 1274
Multi sensor standard	CEA 4012

* The 'Gas' sensing is designed to meet the requirements of LPS 1274

Information on minimum sound output levels to include polar dispersion is covered in a technical note TECH7018.033, available on request from manufacturer. Information on minimum sound output levels to include polar dispersion is covered in a technical note TECH7018.033, available on request from manufacturer.

Base

The base has terminals for external cables to allow it to be electrically connected to the panel loop circuit and to the monitored input or output circuit. Any S-Quad device can be plugged into an S-Quad base.

Base Gasket

The optional foam rubber base gasket S4-BASE-GASKET can be fitted to the base to prevent water damage from dripping water from the ceiling.

Base labels

An optional label S4-BASE-LABEL can be fitted to the base. The label can be marked up with device location information.

Indicators

The S-Quad has a red LED that gives an indication in the event of a fire. The LED can be configured to flash periodically, as an 'in operation' confirmation, this indication is given system-wide at all S-Quads. The S-Quad with a CO sensor also has a blue LED to indicate when a fire signal senses the presence of CO.

Dust Cover

A dust cover is supplied with the S-Quad, to prevent dust from building work contaminating the sensor. The cover is removed prior to the commissioning of the fire alarm system.

Do's and Don't



DO NOT locate smoke detectors where products of combustion may be present such as kitchens, garages, furnace rooms, welding shops etc.

DO NOT locate heat detectors above boilers or heaters or where the temperature is normally very high or liable to sudden fluctuations.

DO NOT locate smoke or heat detectors: -

- In dusty or dirty environment.
- Near heating or air-conditioning grilles.
- Outdoors in stables, sheds etc.
- In excessively damp areas.
- In dead air spaces at the junctions of ceilings and walls.
- At ceiling locations where a 'thermal barrier' may exist.

DO NOT locate a CO detector: -

- In buildings where farm animals are kept.
- In excessive damp areas.
- In battery room where non sealed battery are kept.
- In a Car park where exhaust fumes will be present.

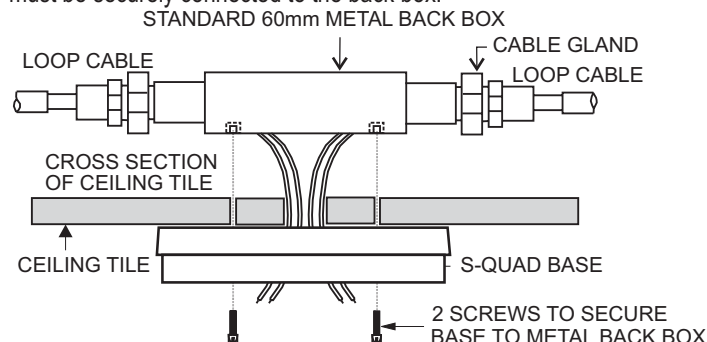
Follow recommendations detailed in section 22 of BS5839 : Part 1 : 2002

Siting

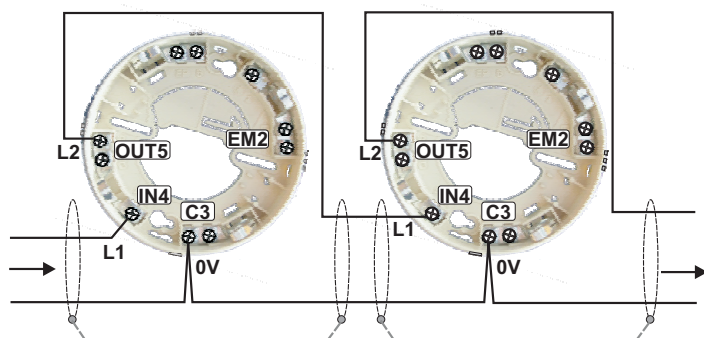
A S-Quad device plugs into a dedicated Base that is installed in the protected premises. The Bases should be sited in locations as defined by the project plans and by BS5839 : Part 1 : 2002.

Metal back box

A metal back box must be used for base or semi-flush mounting. The earth continuity must be maintained throughout the whole loop. The earth must be securely connected to the back box.



In - Out wiring to S-Quad bases



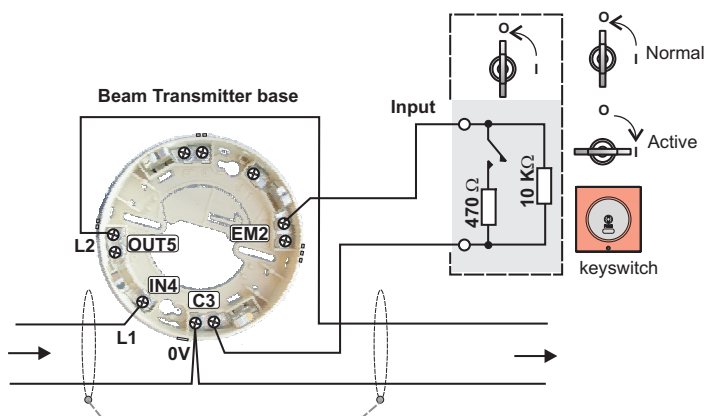
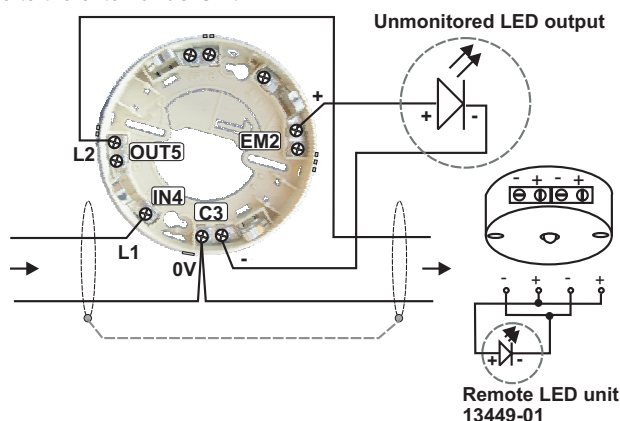
Programmable input/output



The 34703 Slave Relay unit and 34703 Slave LED indicator unit are NOT supported for use with S-Quad fire sensors. The Slave units are only compatible with 34xxx range of fire sensors.

All S-Quad devices can be configured as either monitored input or unmonitored output. The factory setting of the programmable input / output is unmonitored output, to drive an external repeat LED without a series resistor.

There is a maximum cable length limit of 15 metres from the S-Quad base to the external I/O Unit.



The input can accept signals such as fire, non fire or fault, these are configured during commissioning. As a fire input it is possible to connect a conventional Manual Call Point (non UK application only) with a series resistor of value 470 Ohms coupled with an end-of-line 10Kohms resistor. In this case the fire input is fully monitored for open or short circuit faults.

The input can be setup as a non-fire or fault input using a similar arrangement with series and parallel resistors as shown. It is possible for such an input to trigger a command that is configured to action an output elsewhere in the system to control plant equipment such as the ventilation system.

Tools for S-Quad

An extractor tool allows removal and fitting of the S-Quad device head into the base. By fitting a screw-on adaptor, the tool can be used to remove the sensor dust cover.

To remove an S-Quad

Fit the tool onto the S-Quad. Turn S-Quad anticlockwise until it stops and remove the S-Quad from the base.



To fit an S-Quad

Fit the S-Quad on to the tool. Offer S-Quad to base and rotate clockwise until it moves upwards on to the base and rotate it again until it clicks and goes no further, the lines on the base and S-Quad will align.



To fit a dust cover

Place the dust cover onto the tool inside the cradle. Offer the cover to the S-Quad, locate and push to fit it onto the assembly. Withdraw the tool when the dust cover is in place.



To remove a dust cover

A dust cover remover tool must be fitted to the main tool to extract the dust cover. Press the pad of the dust cover remover tool onto the dust cover, this creates an air tight grip, to allow the cover to be pulled off from the S-Quad.



S-Quad Semi-flush fixing kit (S4-FLUSH)

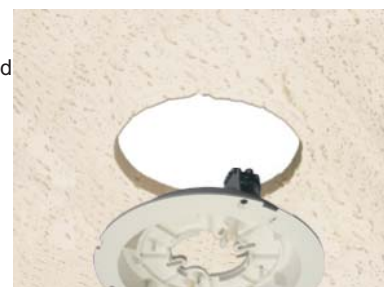
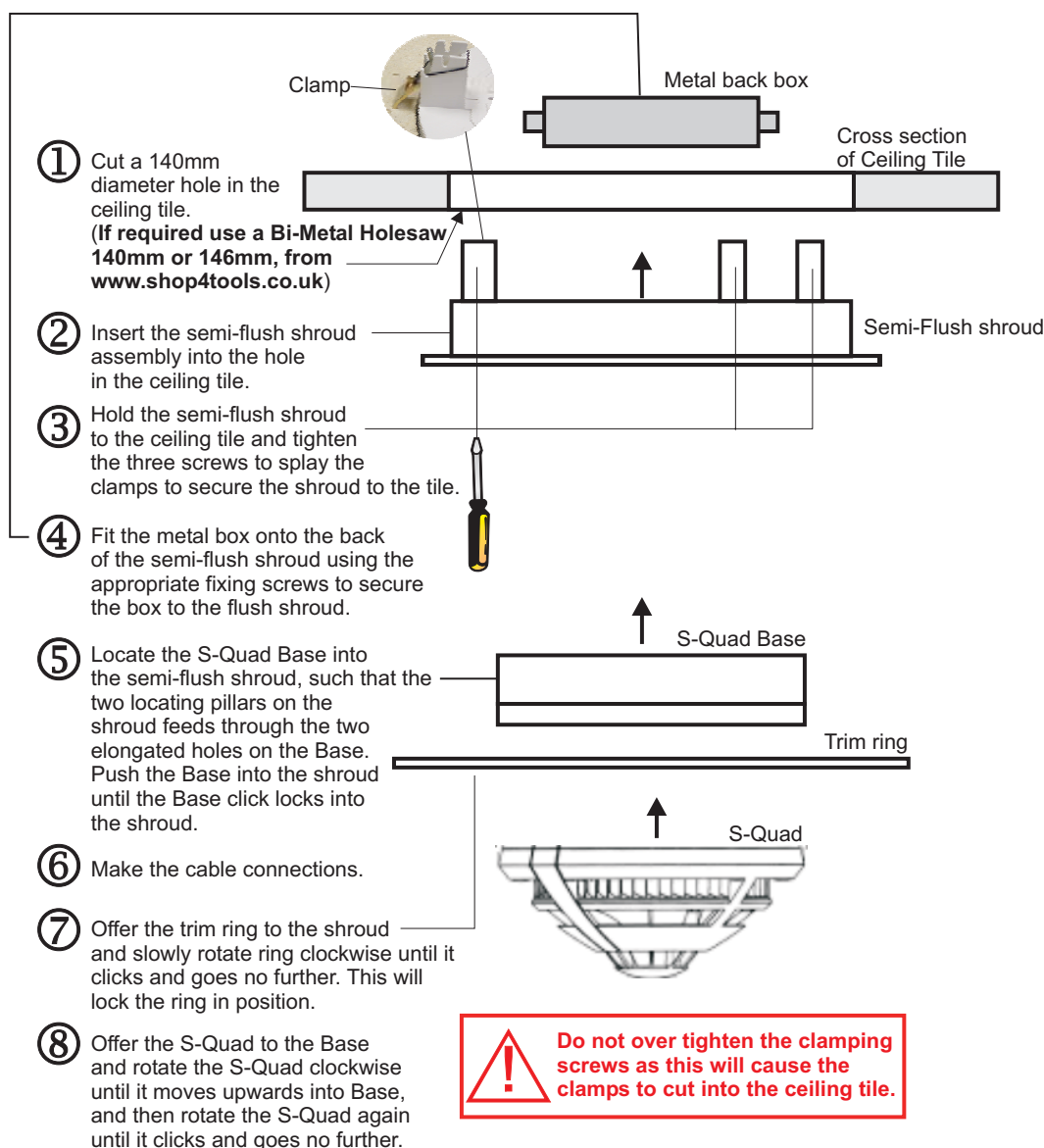
An S-Quad device can be semi-flush mounted to a ceiling tile to a depth of the approximate 20mm, which is slightly deeper than the base assembly. To semi-flush mount a special housing must be used, which consists of a main assembly and a trim ring.



There is an enhanced volume output of sound and speech from a semi flush mounted S-Quad.

Technical data

Weight	164g with trim ring
Dimensions	174mm diameter by 50mm depth
Enclosure	ABS
Colour	RAL 9010
Storage Temperature	-20°C to 70°C
Ambient temperature	-10°C to 50°C
Relative Humidity	95% non condensing (5 to 45°C)

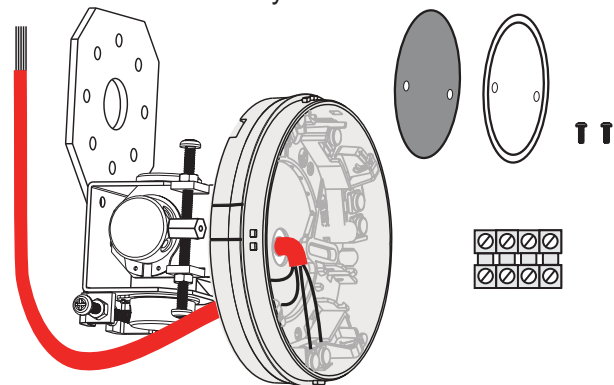


Beam Sensor

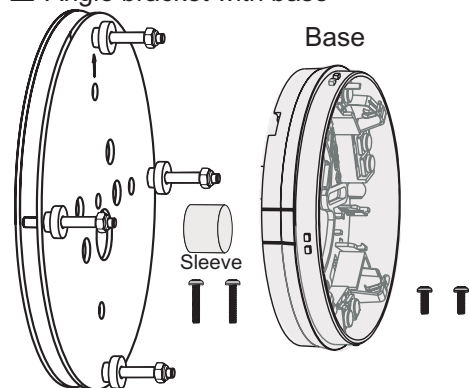


Transmitter (red retainer) Receiver (black retainer)

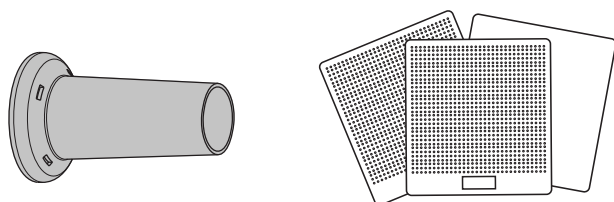
- ☐ Beam sensor pair (Transmitter & Receiver)
- ☐ Beam Transmitter only
- ☐ Beam Receiver only



- ☐ Angle bracket with base



- ☐ Parallel bracket with base



- ☐ Light Shield (5 per pack) Test Cards

The Beam Sensor pair allows the detection of smoke over distances from 2 m to 100 m, using a 'beam transmitter' and a 'beam receiver', each mounted on a base fixed to either bracket.

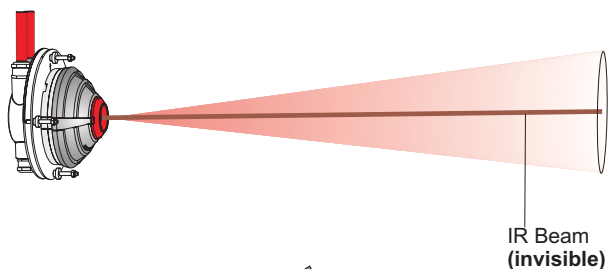
Technical Data

Standards - designed to meet	EN54 : Part 12 : 2002 EN54 : Part 17 : 2005			
Approval	LPCB Approval pending STATES 0, 1, 2 and 3			
Overall assembled dimensions in mm	Transmitter or receiver: Ø 117 x d 54 Angle bracket with base: h 145 x w 106 x d 130 Parallel bracket with base: Ø 152 x d 27 Light shield: Ø 50 x 75			
Assembled weight (approximate)	Transmitter or receiver:105g Angle bracket + base: 620g Parallel bracket + base: 600g Light shield: 14g			
Enclosure	ABS			
Colour (Sensor)	RAL9010			
Storage temperature	-20 to 70°C			
Ambient operating temperature	-10 to 50°C			
Relative Humidity (Non condensing)	up to 95% Temperature 5 - 45°C			
Emission	BS EN61000-6-3: 2007 EMC for residential, commercial & light Industry.			
Immunity	BS EN50130-4: 1996 + A1:1998 + A2 2003 for alarm systems			
Ingress Protection (estimated)	IP30 IP20 mounted on bracket			
Operating voltage	35-41V			
Indicators	Two Red and Seven Green LEDs visible at 500LUX ambient light levels 5m			
EN54-17 : 2005 (section 4.8) data:	V _{max}	42V	I _C max	0.4A
	V _{nom}	40V	I _S max	1A
	V _{min}	24V	I _L max	20µA
	V _{SO} max	16V	V _{SO} min	8V
	Z _C max	0.130Ω		
Compatible	Panel : MCC ≥ V4.41 / V3.96 LPC ≥ V4.39 / V3.96			

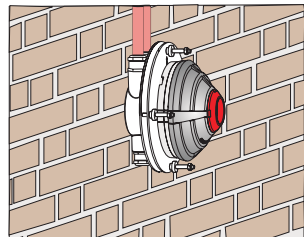
Do's and Dont's

A general guidance on Do's and Dont's is illustrated here, however for full information on siting beam sensor pair refer to BS5839 Part 1.

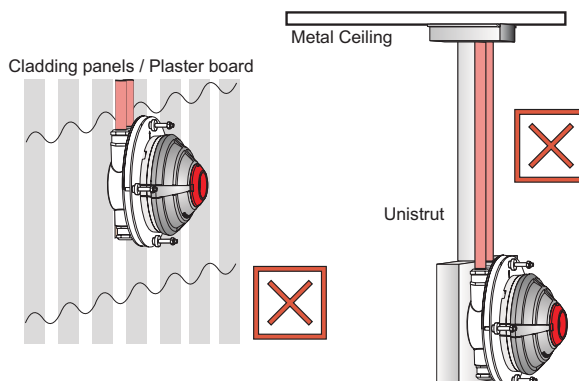
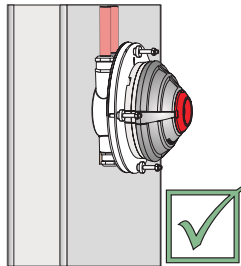
IR Beam projection



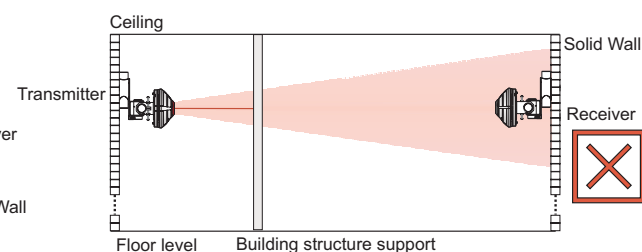
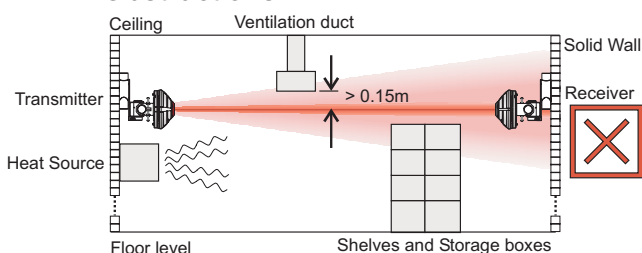
Solid Wall



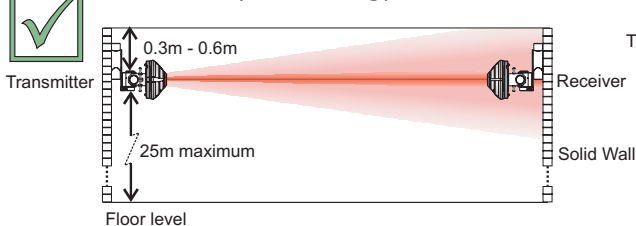
Metal beam



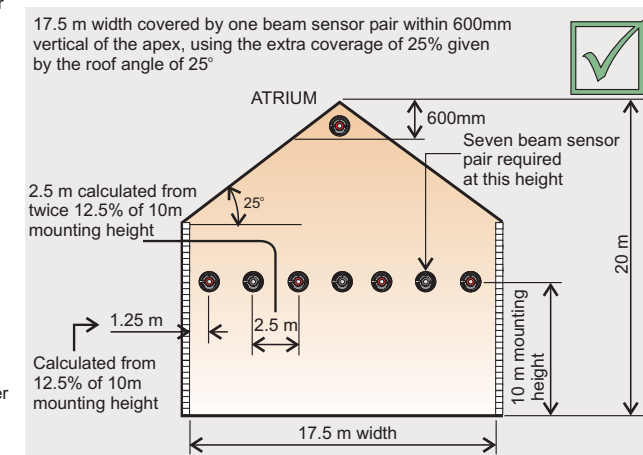
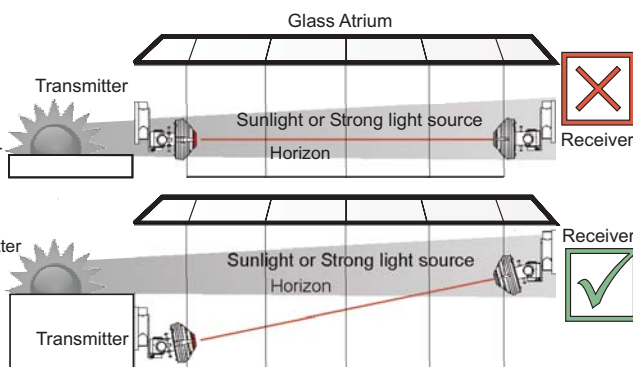
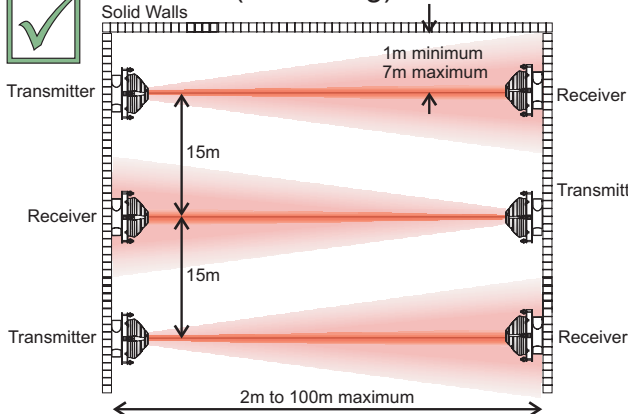
Obstructions



Side view (flat ceiling)

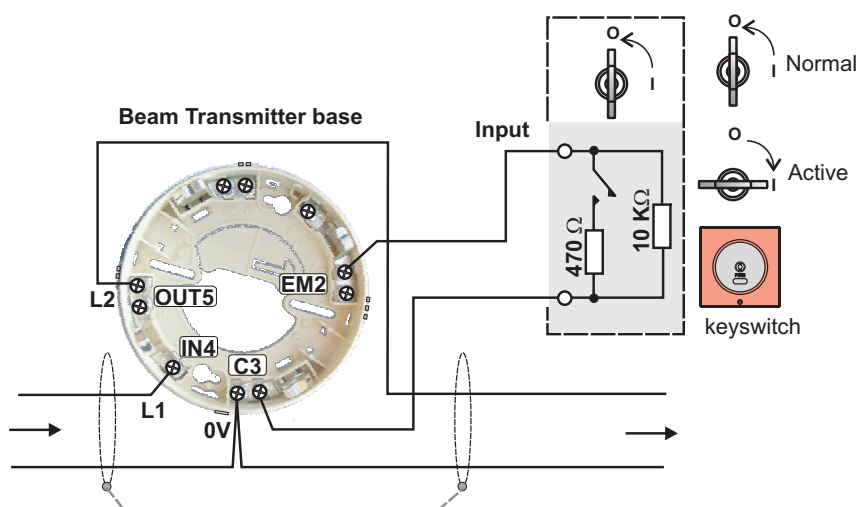


Plan view (flat ceiling)



Test Keyswitch

A test keyswitch unit can be connected to the 'beam transmitter' to facilitate simulation of a test fire condition. The keyswitch unit is required to have a series resistor of value 470Ω coupled with an end-of-line $10K\Omega$ resistor wired as illustrated below.



There is a maximum cable length limit of 15 metres from the 'beam transmitter' base to the external Keyswitch Unit.

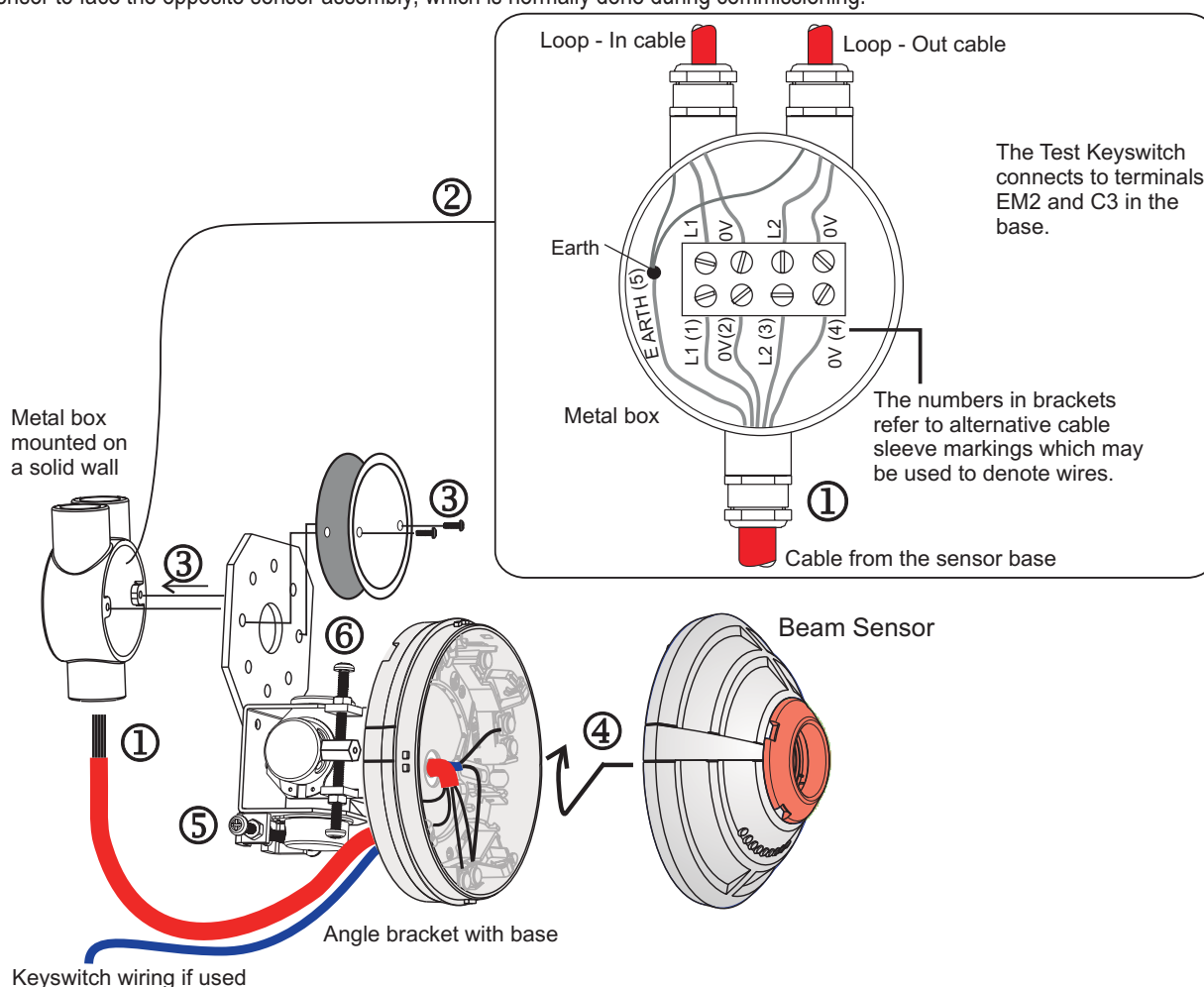
A keyswitch input at the 'beam transmitter' must be enabled during commissioning.

The wiring is monitored for open and short circuit failure.

On operating the keyswitch it will cause a ramp down signal to generate a test fire condition.

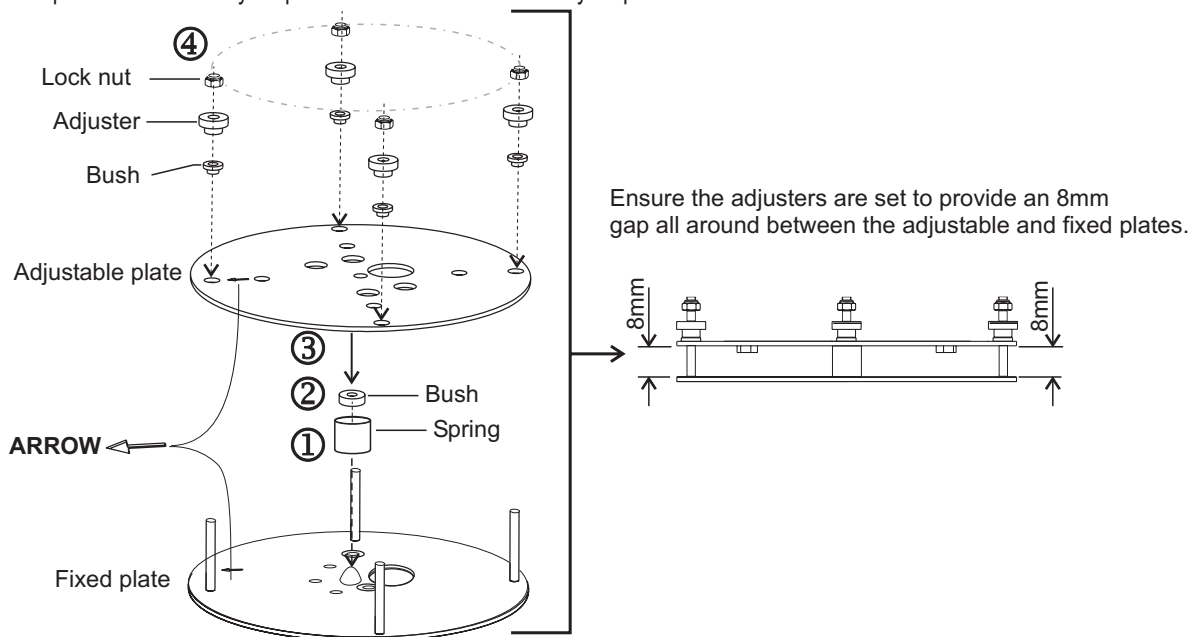
How to install an Angle bracket and fit a Beam sensor

The installation of the angle bracket and beam sensor are illustrated by steps ① to ⑥. Note steps ⑤ and ⑥ require setting of adjusters for sensor to face the opposite sensor assembly, which is normally done during commissioning.



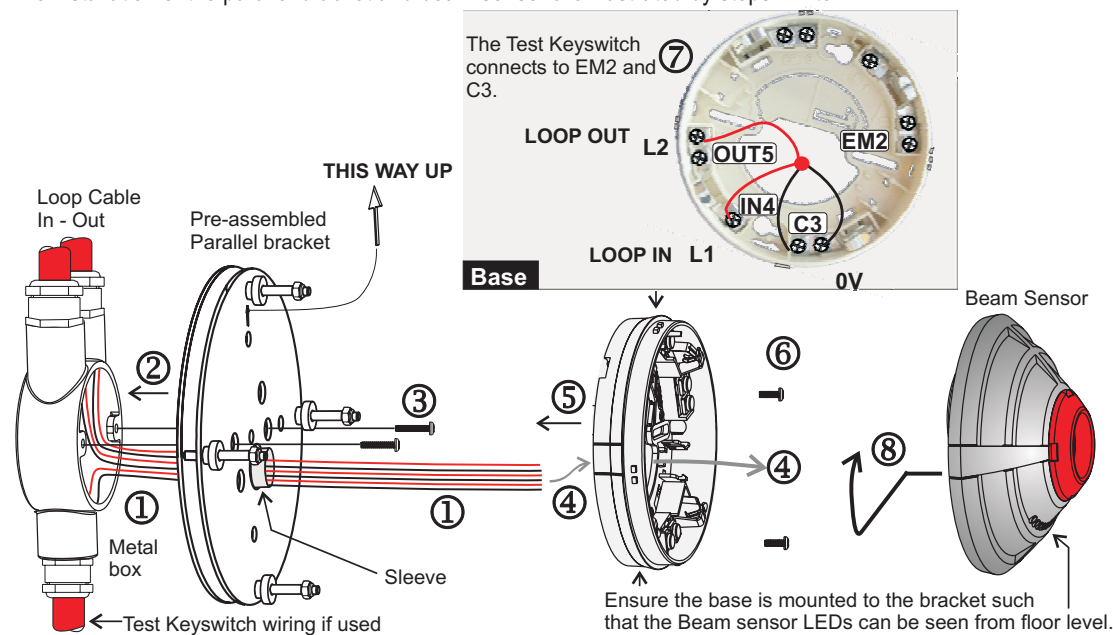
How to pre-assemble the parallel bracket

The parallel bracket may be pre-assembled as illustrated by steps ① to ④.



How to install a Parallel Bracket and fit a Beam sensor

The installation of the parallel bracket and beam sensor are illustrated by steps ① to ⑧.



Further information about this product can be found in Part 2 of this document available from your supplier.

Duct kit



The air duct kit is used in combination with different Venturi tubes and special S-Quad fire detector for the surveillance of air ducts in buildings.

The kit is fastened to the outside of the air duct. The Venturi tube is lead into the duct through a hole drilled for this purpose. The air streaming through the air duct is picked up by the Venturi tube and led via the deflecting unit inside the housing directly to the detector for subsequent evaluation.

The inserted fire detector is directly connected to the analog loop of the Fire Alarm System. The operation and indication of alarm and fault messages is given at the connected fire alarm panel.

Venturi tube

The Venturi tube are available in various lengths.

Length (mm)	600	1500	2800
Weight	0.2Kg	0.6Kg	1.2Kg

Technical data

Sensor and base

Operating voltage	35V - 41V
Weight	S4-720 only:88g (with base - 148g)
Dimensions	117mm diameter by 49.6mm height (With base the height increases to 63.8mm)
IP rating	IP30 IP20 when mounted on a metal back box
Enclosure	ABS
Colour	RAL 9010
Approval	LPCB approved
Storage Temperature	-20°C to 70°C
Ambient operating temperature	-10°C to 50°C
Relative Humidity	95% non condensing (5°C to 45°C)

Optical sensor (O) Standard

EN54-18 : 2005

EN54-17 : 2005 (section 4.8) data:	V _{max} 42V V _{nom} 40V V _{min} 24V V _{SO max} 16V V _{SO min} 8V	I _{C max} 0.4A I _{S max} 1A I _{L max} 20µA Z _{C max} 0.1Ω
--	---	--

Housing

Dimensions (W x H x D) in mm	180 x 235 x 183
Terminals	1.5 mm ² max.
Air velocity	1 m/s to 20 m/s
Full Assembly weight	Approx. 800g (without sensor and base)
Storage temperature	-15 °C to +65 °C
Operating temperature	-10 °C to +60 °C
Housing	ABS plastic
Colour	grey (with transparent cover)
Immunity	BS EN50130-4: 1996: Part 4 Alarm systems
Ingress Protection	IP54
Colour	White

For full instructions see the leaflet supplied with the product.

S³ Speech, Sounder Strobe mark II

The low power addressable **Voice Enhanced Sounder** and **combined Strobe** products provide audible and visual alarm signals, and are designed for use in **Gent** analogue and addressable fire alarm systems.

The S³ devices are supplied with standard speech messages along with sounder and strobe option. The devices are configured during commissioning to operate to site specific requirements. The devices are supplied with either a deep base (40mm) or a shallow base (25mm), offering IP55C and IP31C ratings respectively, with the exception of the system range (see diagram below) which is available with deep base only.

The S³ product range incorporates innovative design features protected by Patents GB2388994, GB2388995 and GB2388916. The product design has also been registered.



Low profile S³
Available in deep or shallow base

System S³
Available in deep base only



If you have a speech/sounder only product then ignore the strobe information given.

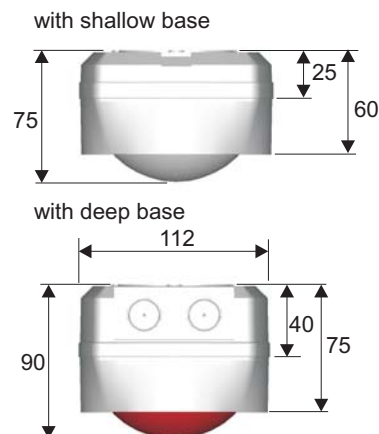
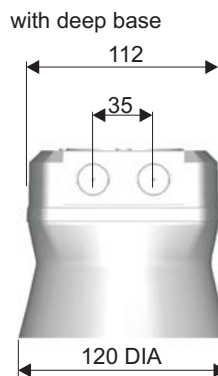
Speech messages

Message No	Speech message
Message 2	<i>Attention please this is an emergency please leave the building by the nearest available exit. (female voice).</i>
Message 3	<i>An incident has been reported in this building please await further instructions. (female voice).</i>
Message 4	<i>This is a test message no action is required. (female voice).</i>
Message 5	<i>This is a fire alarm! Please leave the building immediately by the nearest available exit. (male voice).</i>
Tone No.	Description of tone.
Message 1	Alarm Bell (equivalent to 8" Solenoid Bell) 106dBA @ 1m.



The addressable S³ products are fully synchronised on the same fire panel.

Technical data



Sound output for standard tone (levels given are **typical values** with measurement taken at 90° anechoic - fast response)

Low profile S³ - 100dBA +/-3dBA

System S³ - 103dBA +/-3dBA

Standard (sounder only)

EN54 : Part 3

Messages, Tones and Strobe flash rate

see instructions supplied with the product

Strobe light output with red lens

equivalent to 3W Xenon flasher

Operating voltage

range 35V to 41V

Terminal size

2.5mm² maximum

IP rating with deep base
with shallow base

IP55C
IP31C

Enclosure colour

White and Red (with red translucent lens cover fitted to unit with Strobe).

Enclosure material

Flame retardant ABS (Strobe cover is polycarbonate) The plastic enclosures meet the flammability requirements of ISO 1210:1992 Class FH-2.

Weight

0.3Kg (approximate).

Operating temperature

-10°C to 50°C

Storage temperature

-20°C to 70°C

Relative humidity (non condensing)

up to 90%

IR operating distance (to select volume level)

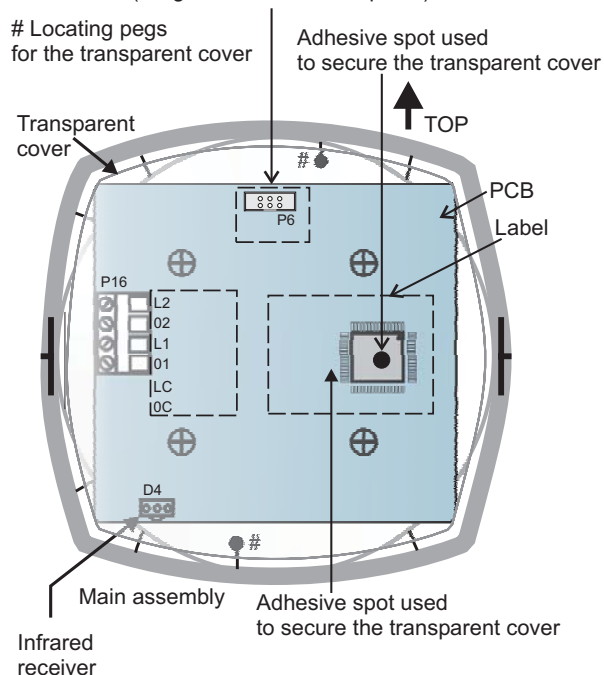
3m

Message and attention Tone period

10 seconds default
Configurable up to 60seconds

Installation

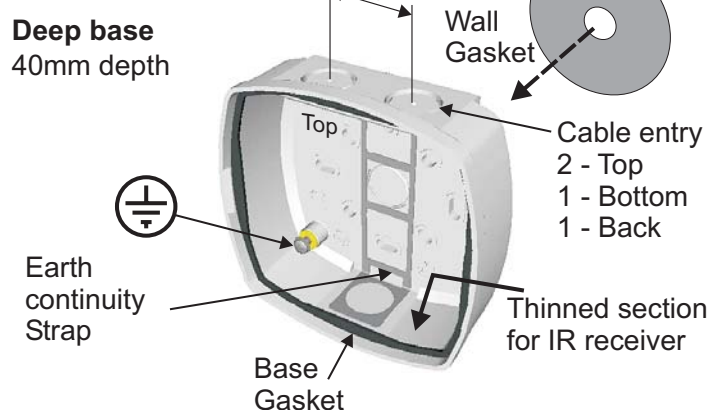
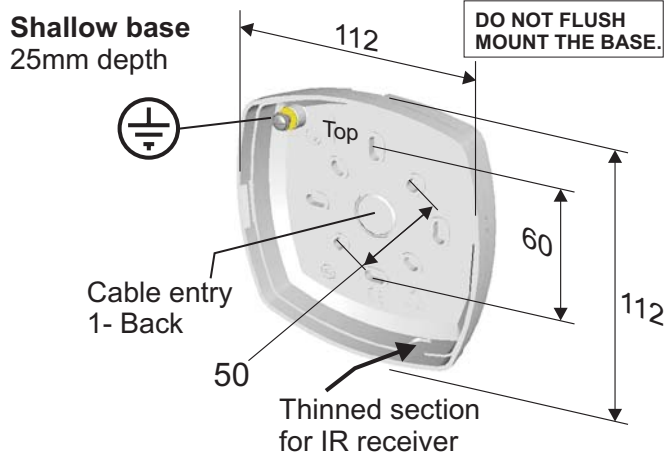
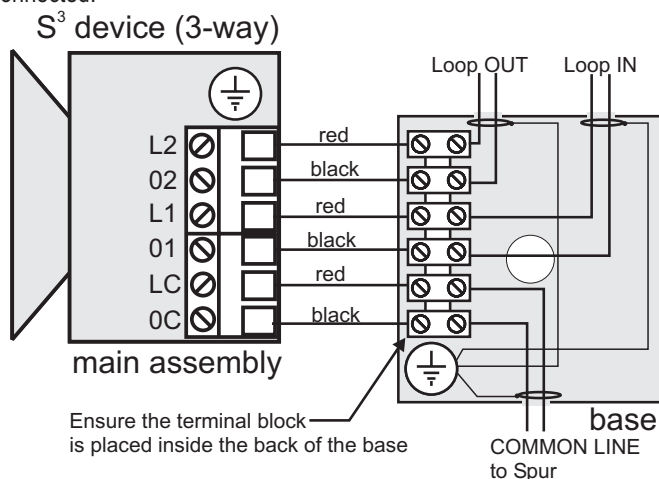
- Drill or knockout the required cable entry points on the **base**.
- If using the deep **base** option and IP55C protection is required, then stick the circular **wall gasket** on to the centre back of the **base**.
- Secure the **base** to the wall whilst ensuring Top of the base is in correct orientation.
Connector used to program the device
(Programmable base required)



- Terminate the cable at the entry point leaving no more than 10cm (4") tail wire length for connection.
- Ensure the **transparent cover** is in place over the **PCB**. Connect the wires to the terminal block.
- Close the **main assembly** to the base.

Retrofitting a System S³ device

A system S³ Mark I device can be retrofitted to an alarm sounder base. The existing base having a terminal block to which loop cables are connected.



Environmentally protected Heat Sensor

This unit has **IP55** rating as specified in the *British Standard BS 5490:1977* which is the *specification for classification of degree of protection provided by enclosures*.



- a. Remove the front cover of the unit disconnecting any flying leads attached to the terminal block.
- b. Place the unit in the desired position and mark the four fixing holes. When the product is mounted ensure the pre-machined cable entries are at the bottom.
- c. Drill the four fixing holes and mount the unit.



When using **PYROTENAX** cable, the cables **MUST** be terminated using **PYROTENAX** glands (Code No. RGM 2L1.5), screw-on seals (Code No. RPS 2L1.5) or equivalent and a standard M20 locknut.

- d. Feed the cables into the unit. Ensure that the sealing washer supplied is fitted between the cable gland and the unit (rubber part of the washer against the unit). Use the earth continuity straps provided to maintain loop cable earth continuity.
- e. Connect the earth tails into the earth termination point.
- f. Terminate the cable at the entry point and connect ends into the appropriate terminals on the sealed printed circuit board module, see connection diagram.



Failure to promptly replace the cover will result in environmental damage.

- g. Reconnect the flying leads from the cover into the appropriate terminals on the sealed printed circuit board module. Refit the cover to the unit. For maximum protection ensure that the cover screws are tight and secure.



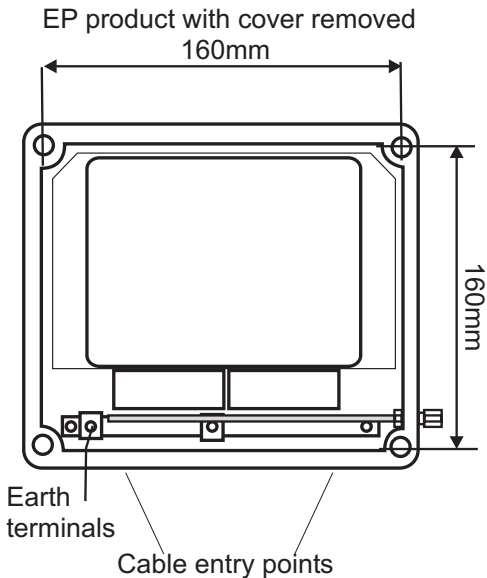
Forcing the cover to fit the wrong way round will damage the unit.

Heat Probe

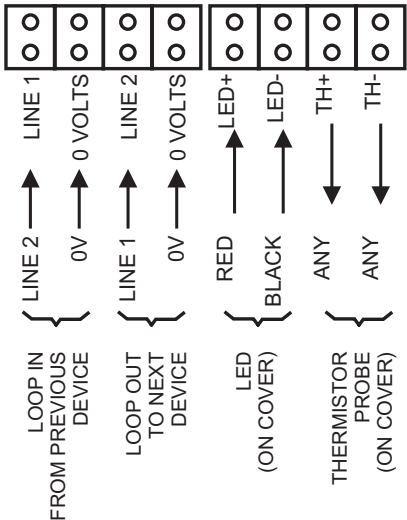
For carriage purposes the probe on the heat sensor is fully retracted. It is important that the heat probe is positioned correctly. There should be a minimum of 20mm of the probe protruding from the front face of the probe gland. The probe gland can only be tightened up once, as the gland uses an olive joint which should be replaced rather than re-tightened. Once the probe is in the correct position the gland has to be tightened finger tight plus 1 1/2 turns.

General data

Dimensions	height 180 mm x width 180 mm x depth 130 mm.
Storage temperature	-30 to 70°C
Operating temperature	0 to 50°C
Ingress Protection	IP55 estimated
Case	ABS engineering plastic.
Indication	Red LED that illuminates when the active.
Operating voltage	20 to 50V



Heat sensor

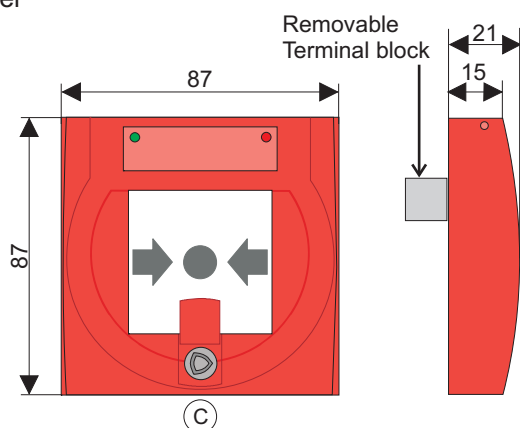


Manual Call Points

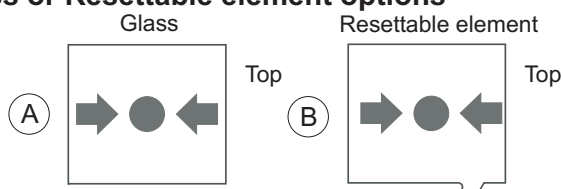


Options

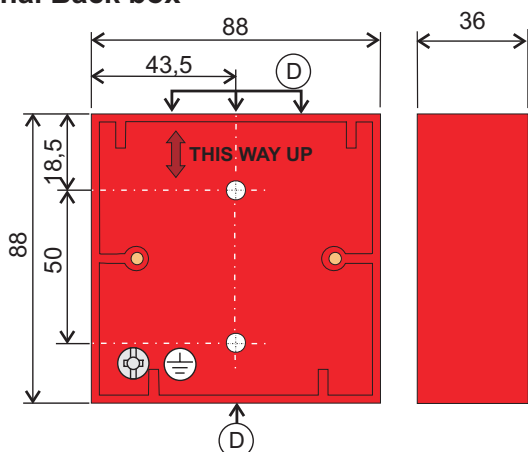
- ☐ Manual Call Point (Glass)
- ☐ Manual Call Point (Glass) with Protective cover
- ☐ Manual Call Point (Resettable element)
- ☐ Manual Call Point (Resettable element) with Protective cover



Glass or Resettable element options



Optional Back box



The optional back box has recessed centres 'D', 3 at the top and 1 at the bottom, a maximum of 2 are usable.

Technical data

Standard	EN54: Part 11: 2001
Dimensions	height 88 mm x width 88 mm depth 21 mm or 57 mm when surface mounted
Full assembly weight	110g - approximate
Storage temperature	-30 to 70°C
Operating temperature	-25 to 70°C
Relative Humidity (Non condensing)	up to 95% Temperature 25 to 55°C
Emission	BS EN61000-6-3:2001 Residential, Commercial & Light Industry Class B limits
Immunity	BS EN50130-4: Part 4 :1996
Ingress Protection	IP43 estimated standard type IP55 estimated with protective cover and back box
Colour	Red (similar to RAL3020)
Case	ABS engineering plastic
Indicators	Normal Green LED for status and find device application Active Red LED and Yellow tab for active or Fire indication
Testing	The operation of the MCP is tested by using a test key
Terminals	2.5mm ² maximum
Approval	LPCB Approved: S4-34842 and S4-34800
Operating voltage	35V to 41V

Installation

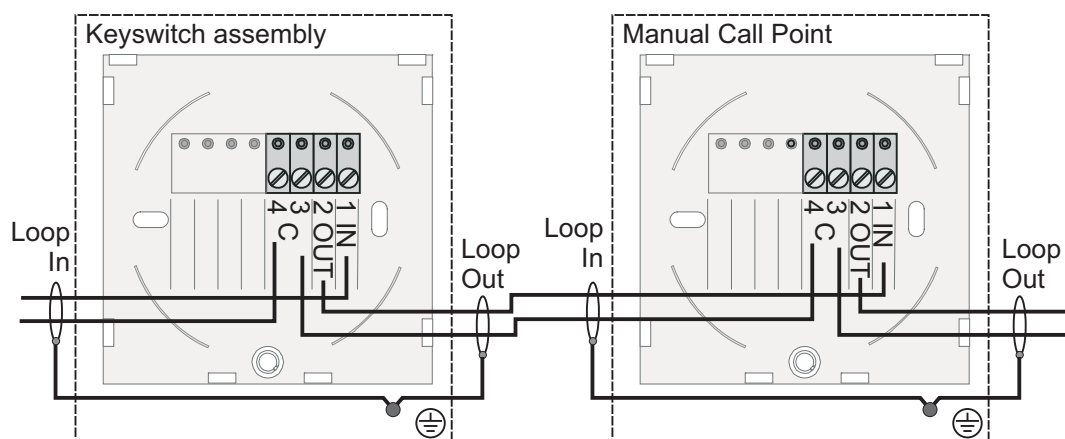
- a. Check the contents of the package:

	Component	Quantity
	Call point assembly	1
	Earth Strap	1
	Test Key	1
	Long Screw	2

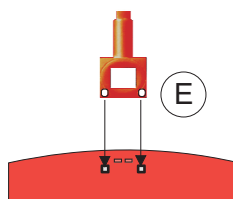
- b. The call point assembly may be mounted on a standard electrical box or on the optional red back box S4-34895.
- c. Feed the fire rated cables through the entry holes and mount an electrical box or the red optional back box to an even wall surface using suitable fixing.



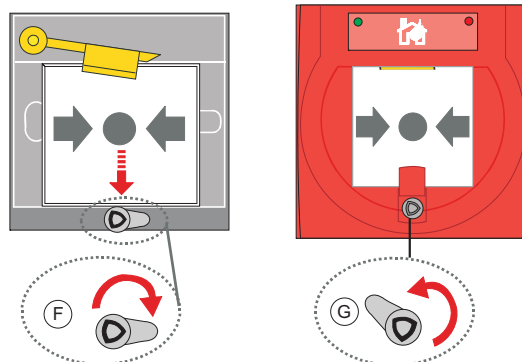
When semi flush fixing the call point assembly a standard electrical box must first be flushed into the wall before the call point assembly is fitted.



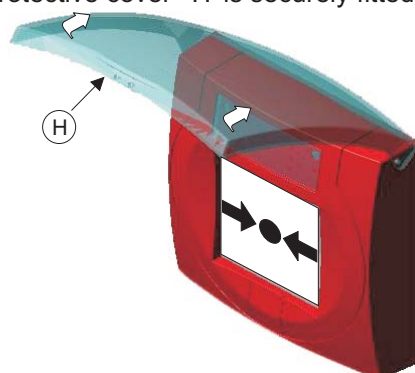
- d. Terminate each cable entry at the back box. Use the *earth strap* or the *earth point* in the back box to maintain loop cable earth continuity. Connect the loop cable to the terminals.
- e. Disengage front cover from the call point assembly using the end of the test key 'E' and lift out the cover from the bottom edge.



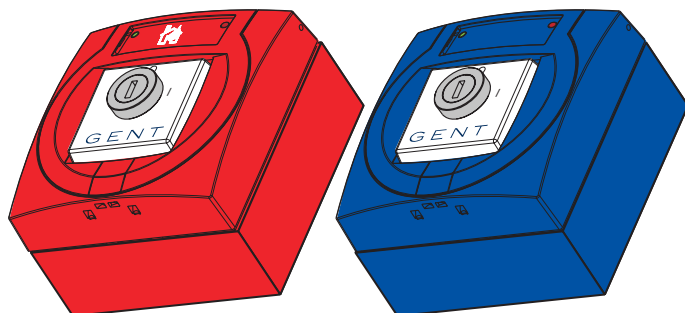
- f. Secure the call point assembly to the back box using the 2 long screws supplied.
- g. To re-assemble the glass or resettable element, using the test key turn the tab to position 'F' and insert the glass 'A' or optional resettable element 'B'.



- h. Hook the front cover onto the top edge of the call point assembly and then push the bottom edge down until it click shut. Check both hooks on the top of the front cover are locked onto the call point assembly.
- i. Turn the test key anticlockwise to position 'G' (not visible) such that the glass or optional resettable element is held under the yellow arm.
- j. Where applicable, ensure the protective cover 'H' is securely fitted to the call point assembly.



Keyswitch Interface / MCP



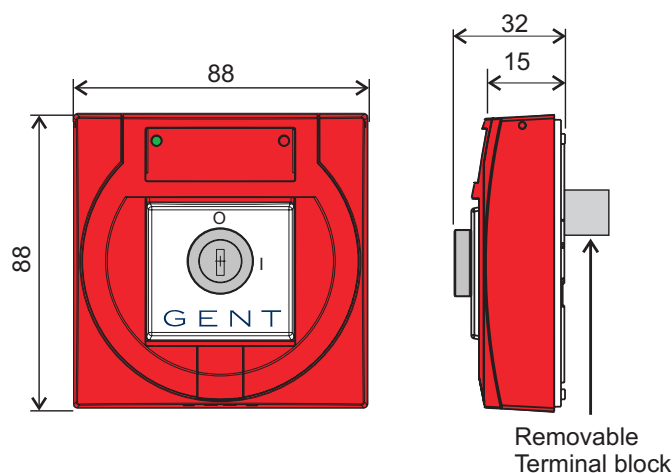
Red enclosure
for Fire applications
(supplied with backbox)

Blue enclosure
for Plant interface applications
(supplied with backbox)

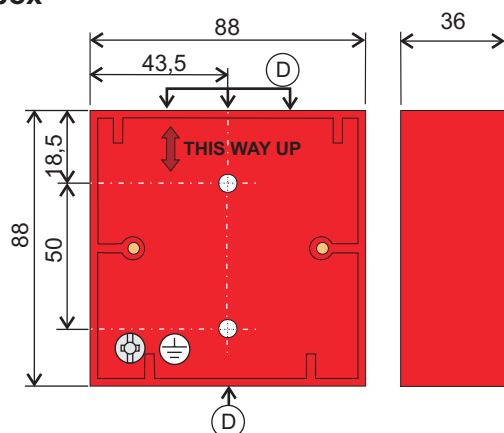
The keyswitch units covered in this leaflet are suitable for installation in GENT analogue addressable fire alarm system. The product range covered here include:

- ☐ Keyswitch MCP (Red)
- ☐ Keyswitch Interface (Blue)
- ☐ Spare Keys (Pack of 2)
- ☐ Surface Back Box for Interface
Red Plastic (Pack of 10)

Keyswitch assembly



Back box










The back box has recessed centres 'D', 3 at the top and 1- at the bottom, a maximum of 2 are usable.

Technical data

Standard	EN54: Part 17 EN54: Part 18
Dimensions	height 88 mm x width 88 mm depth 32mm or 66mm when surface mounted
Full assembly weight	128g - without backbox 192g - with backbox
Storage temperature	-30 to 70°C
Operating temperature	-25 to 70°C
Relative Humidity (Non condensing) Temperature 25 - 55°C	up to 95%
Emission	BS EN61000-6-3:2001 Residential, Commercial & Light Industry Class B limits
Immunity	BS EN50130-4: Part 4 :1996
Ingress Protection	IP43 estimated standard type
Colour	Red (similar to RAL3020) Blue (similar to RAL5015)
Case	ABS engineering plastic
Indicators	Normal Green LED for status and find device application Active Red LED for active or Fire indication
Terminals	2.5mm ² maximum
Operating voltage	35V to 41V
EN54-17 data	V _{max} 42V V _{nom} 40V V _{min} 24V V _{SO max} 16V V _{SO min} 8V I _{C max} 0.4A I _{S max} 1A I _{L max} 20μA Z _{C max} 0.1Ω

Installation

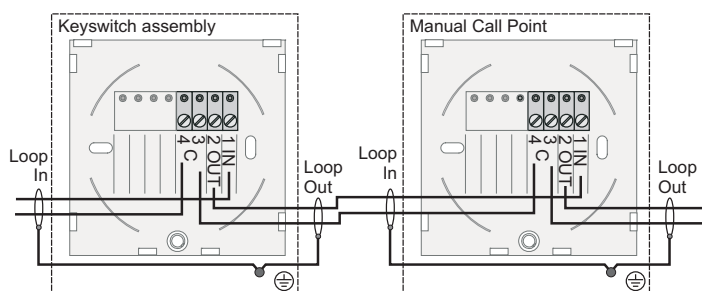
- a) Check the contents of the package:

	Component	Quantity
	Keyswitch Interface assembly (red / blue)	1
	Earth Strap	1
	Operating Key	2
	Opening Key	1
	Long Screw	2
	Instruction leaflet	1
	Blue Back box supplied with Blue keyswitch interface assembly	1

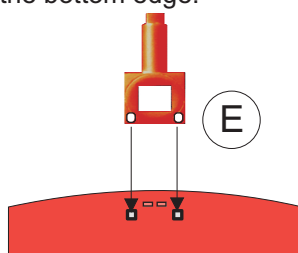
- b) The keyswitch assembly may be mounted on a standard electrical box or on the backbox.
- c) Feed the fire rated cables through the entry holes and mount an electrical box or the red/blue back box to an even wall surface using suitable fixing.



When semi flush fixing the keyswitch assembly a standard electrical box must first be flushed into the wall before the keyswitch assembly is fitted.



- d) Terminate each cable entry at the back box. Use the *earth strap* or the *earth point* in the back box to maintain loop cable earth continuity. Connect the loop cable to the terminals.
- e) Disengage front cover from the keyswitch assembly using the end of the opening key 'E' and lift out the cover from the bottom edge.

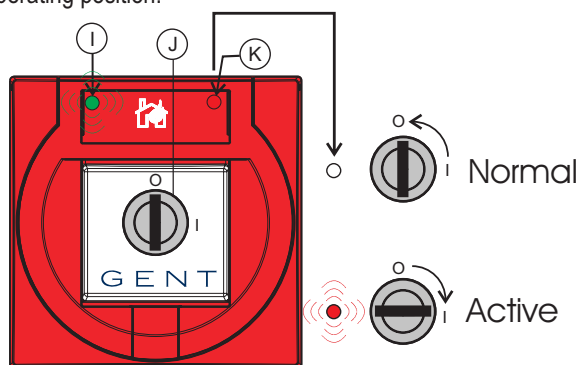


- f) Secure the keyswitch assembly to the back box using the 2 long screws supplied.
- g) Hook the front cover onto the top edge of the keyswitch unit and then push the bottom edge down until it click shut. Check both hooks on the top of the front cover are locked onto the keyswitch assembly.

Operation

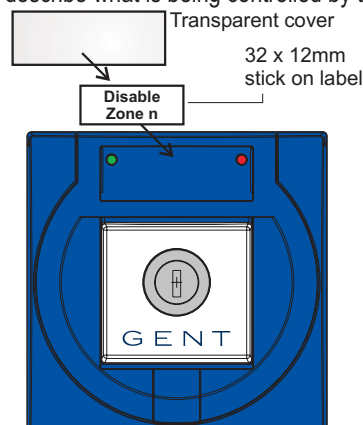
To operate the keyswitch insert the operating key into the keyhole 'J' and turn clockwise to the stop position, the red LED 'K' is flashing. The green LED 'I' gives an operating indication.

Apply the reverse procedure to return the keyswitch to a normal operating position.



Label

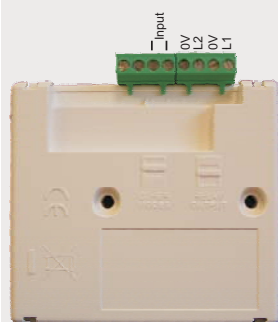
When using the blue keyswitch interface to control plant ensure the unit is labelled to describe what is being controlled by the keyswitch.



It is suggested that an A4 sheet white paper label 32 x 12mm is used, such as the one from RS, part number RS495 385. The required text can be printed onto the label. The label is stuck centrally inside the aperture behind the transparent cover. Ensure LEDs remain visible and are not covered by the label.

Interface Modules for Vigilon - Low voltage (LV) Input/Output

S4-34410
S4 1-Input Interface
Module
(low voltage)



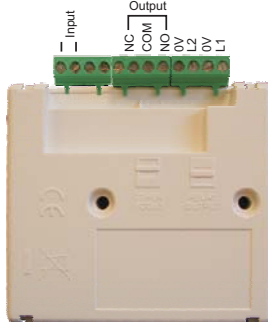
1- End-of-line
Capacitor unit



2- 10K Resistors



S4-34420
S4 1-Output &
1-Input Interface
Module (low voltage)



2- 10K Resistors



S4-34450
S4 4-Input / Output
Interface Module
(low voltage)



1- End-of-line
Capacitor unit



8- 10K Resistors



Now supplied fully assembled

S4-34490
Plastic box



- 1- Allen key 2 - M4 Screws
- 2 - M4 Posi Pan Screws
- 7 - Hole plugs

S4-34492
Metal box



S4-34491
DIN rail mount
bracket

These instructions cover the above interface modules and accessories. The S4 interface modules are designed for use with any Vigilon fire alarm control panel. Each module includes a loop isolator for device isolation. Each module use one of 200 available device addresses on a loop and responds to regular polls from the control panel reporting the type of device and the status (open/normal/short) of its supervised input circuit(s).

Features

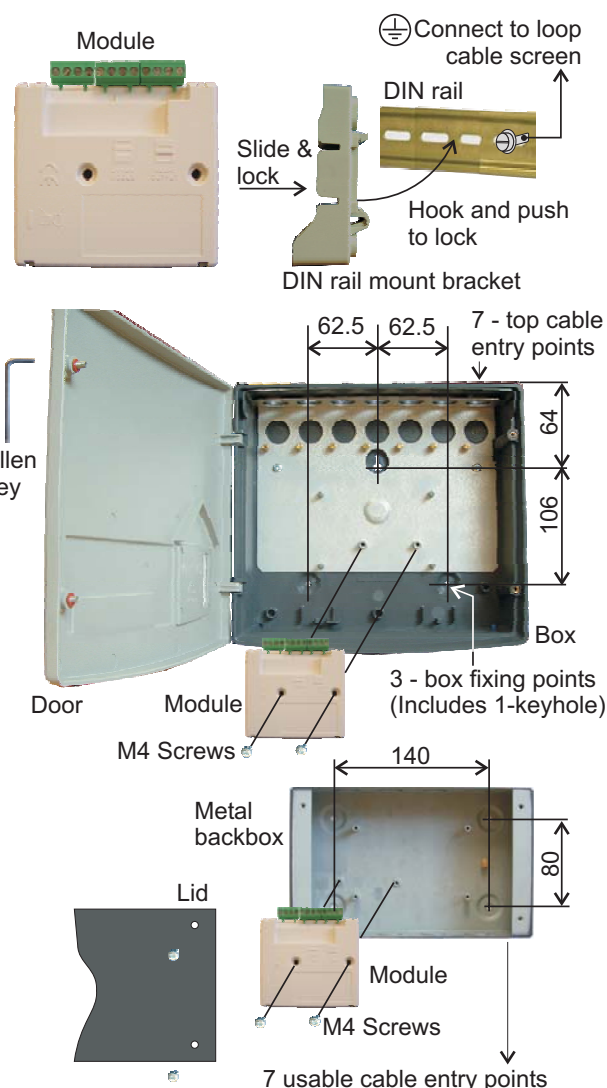
- ☐ Analogue addressable communications
- ☐ Built-in type identification automatically identifies these devices to the control panel
- ☐ Reliable communication technique with high noise immunity
- ☐ Soft or SAFE addressing
- ☐ Common mounting options including surface mount, panel mount and DIN rail mount
- ☐ Dual-colour LEDs
- ☐ Plug-in terminal connections for ease of wiring
- ☐ EN54-17:2005 and EN54-18:2005

Cables

The cables recommended for wiring the input / output lines are the same as those used for loop wiring, see instructions supplied with the fire control panel.

Installation

The S4 interface modules can be mounted in other equipment housings using the DIN rail mount brackets (S4-34491). A module can also be fitted into a plastic box (S4-34490) or metal box (S4-34492). The boxes have cable termination points on the enclosure.

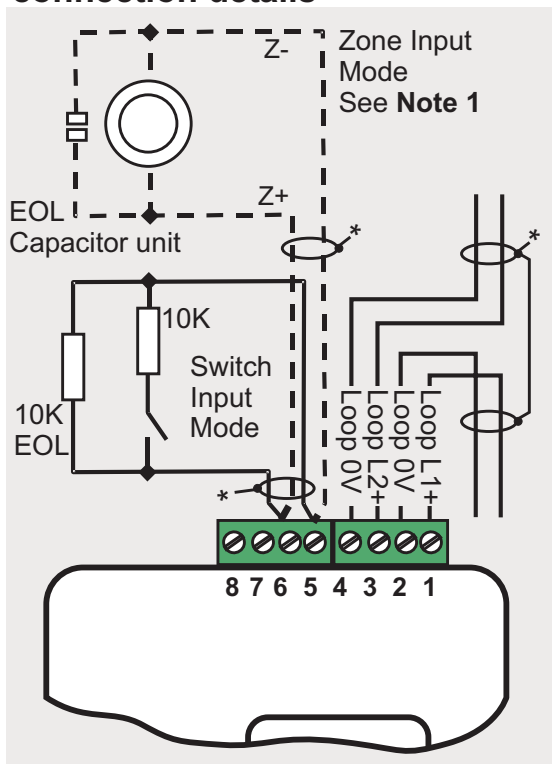


Wiring diagrams

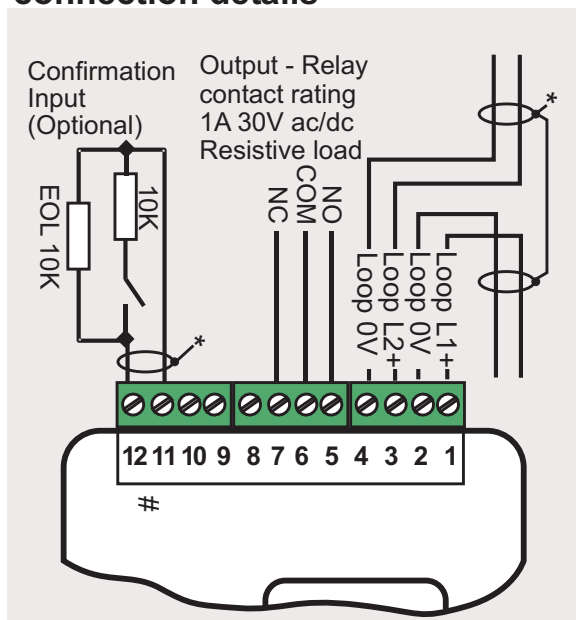


The loop cable screen must be continued through each interface module. The loop, switch input, zone input and LED output cable screens where used must connect to an earth terminal.

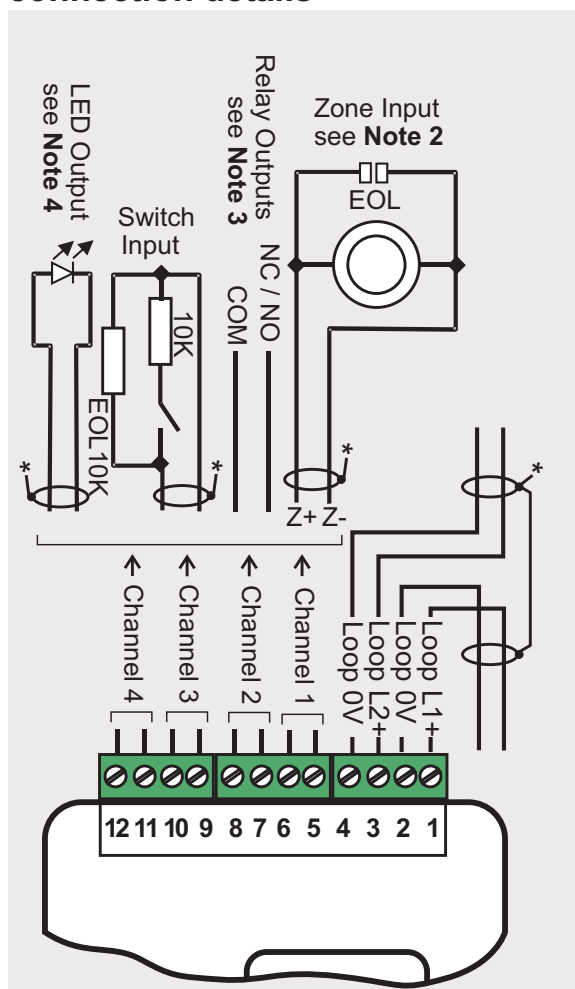
S4 1-Input module connection details



S4 1-Output & 1-input module connection details



S4 4-Input/Output module connection details



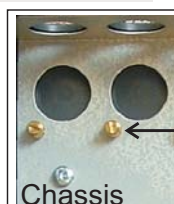
Note 1 - When the input is configured as a Zone input it is possible to attach conventional detectors and MCPs (with 470 Ohms or 3V9 zener diode in series with normally open contacts), maximum load is 2mA @ 24V nominal (18V minimum) with End-of-line capacitor.

Note 2 - Only channel 1 (terminals 5 & 6) can be configured as an zone input.

Note 3 - Contact rating 1A 30V ac/dc Resistive load.

Note 4 - Output is 1.5mA @ 24V dc.

Can be configured as LED output

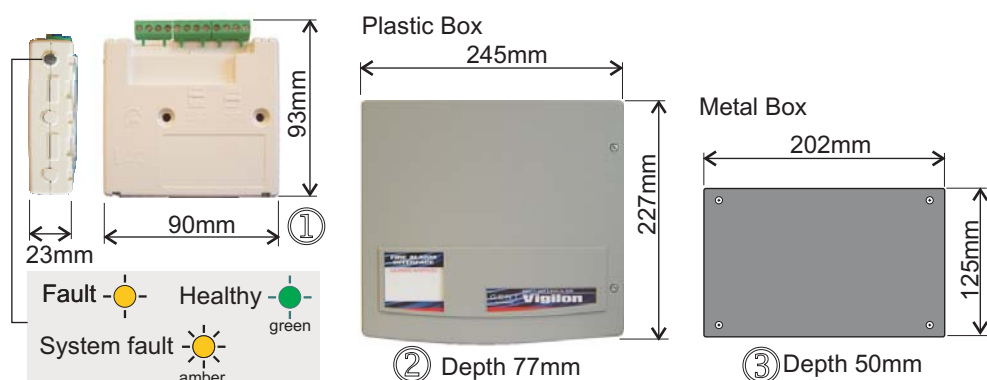


* The cable screens must be connected to an **earth terminal** on the chassis or in the metal box.

If a module is mounted on a **DIN rail** then the DIN rail must electrically connected to the **loop cable screen via the earth terminal**.

Technical data

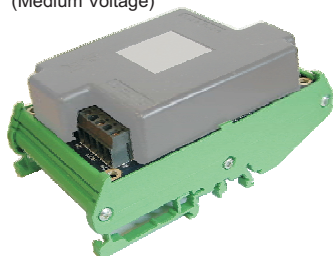
	S4-34410 S4 1- Input	S4-34450 S4 4-Input /Output	S4-34420 S4 1-Output & 1-Input
Approval	EN54-17:2005 and EN54-18:2005 (Approved)		
Weight-dimen. module module in plastic box module in metal box	92g ① 1047g ② 782g③	100g ① 1055g ② 790g ③	100g ① 1055g ② 790g ③
Storage temperature	-30°C to 70°C		
Operating temperature	-10°C to 60°C		
Relative Humidity	Up to 95% - Temperature 5°C to 45°C (Non condensing)		
Emission	BS EN 61000-6-3:2001 Residential, Commercial & Light Industry Class B limits		
Immunity	BS EN50130-4: 1996: Part 4		
LVD	BS EN 60950-2002		
Ingress Protection	IP31 for plastic box S4-34490 & IP40 estimated for metal box S4-34492		
Colour	Module-white / Plastic box-dark grey (Lid-light grey) / Metal box-dark grey		
Input mode	Input channel-1 only can be configured as a zone input to accept conventional devices, with a load of 2mA quiescent and 9mA alarm maximum at 24V nominal (18V minimum). With configurable 2s to 5s reset period and 5s to 40s alarm validation delay.		
Switch input can work with or without a delay.	Input channel can be configured as a switch input of Fire*, Fault*, Supervisory* (non fire) or Confirmation# signal. * with input acceptance delay of up to 10 seconds for a Fire input and up to 300s for Fault or Supervisory input. # A fault is generated if confirmation input is not seen within predefined period of the output action (Confirmation function is not a feature of the single input module).		
Output mode	-	A relay output of either NO or NC set of contacts rated 1A - 30Vac/dc resistive load.	A relay output of change over contacts NC, COM and NO rated 1A - 30Vac/dc resistive load.
LED output	1.5mA at 24Vdc (Normally On or Normally Off)		
EN54-17 data	Vmax 42V	Vnom 40V Vmin 24V VSO max 16V VSO min 8V I/C max 0.4A I/S max 1A I/L max 20µA ZC max 0.10Ω	
Panel compatibility	Fully compatible with LPC ≥ V4.35 & MCC ≥ V4.37. For further information on upgrade requirements contact Gent by Honeywell		



Interface Module for Vigilon Medium Voltage (MV) Output

These instructions cover the above interface options and accessories.

S4-34411
Single Output Interface Module
DIN rail mountable
(Medium Voltage)



S4-34415
Single Output Interface PCB with cover
(Medium Voltage) in a metal box

These S4 Single Output Interfaces are designed for use with any Vigilon fire alarm control panel. Each module includes loop isolators for device isolation.

The S4 Single Output Interfaces are suitable for mains switching, they provide normally closed and normally open contacts rated at 13A 250Vac (nominal 230Vac) resistive load.

The S4 interfaces use one of 200 available device addresses on a loop and respond to regular polls from the control panel reporting the type of device.

Features

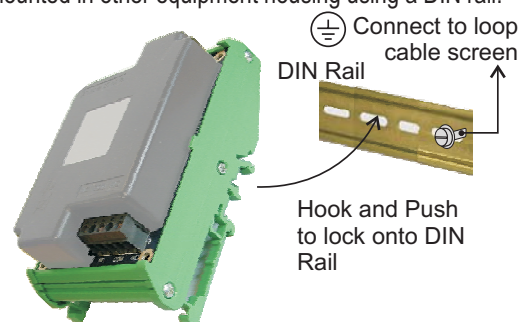
- ☐ Analogue addressable communications
- ☐ Built-in type identification automatically identifies these devices to the control panel
- ☐ Reliable communication technique with high noise immunity
- ☐ Soft or SAFE addressing
- ☐ Common mounting options including surface mount and DIN rail mount
- ☐ EN54-17:2005 and EN54-18:2005

Cables

Any suitably rated cable may be used for wiring the output lines to drive the required load. For information on cables recommended for wiring the loop circuits see instructions supplied with the fire control panel.

Installation

The S4 Single Output Interface module - DIN rail mountable (S4-34411) can be mounted in other equipment housing using a DIN rail.

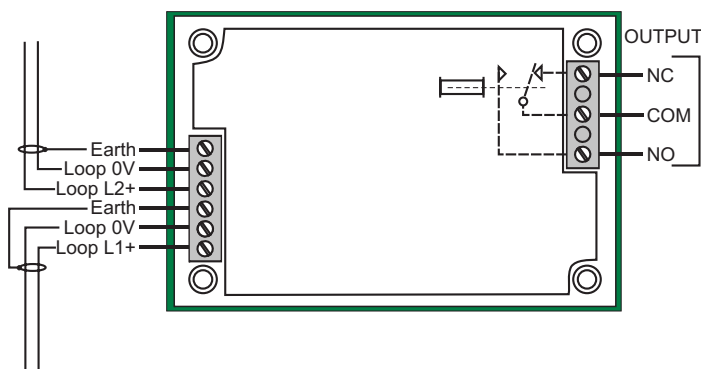


The S4 Single Output Interface is available in a metal box (S4-34415). The box provides cable termination points on the enclosure.

Wiring

The loop cable screen must be continued through each interface module.

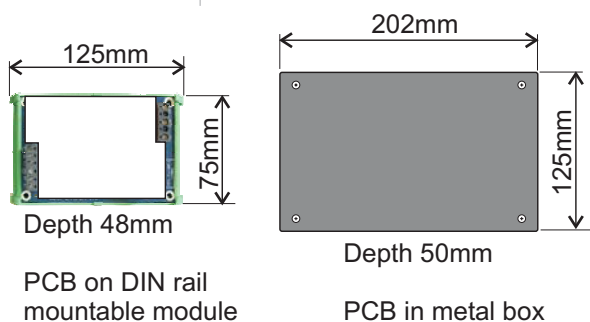
If a module is mounted on a DIN rail, then the DIN rail must be electrically connected to the loop cable screen.



The output contacts are rated at 13A 230V ac resistive load. In order to meet the requirements of European Safety Standards, ensure that all cables carrying voltages in excess of 48V (Live and Neutral) are suitably fused.

Technical data

Approval	EN54-17:2005 & EN54-18:2005 (Approved)
Dimensions in mm	See illustrations
Weight	DIN mountable:138g PCB with cover in metal box:800g
Storage temperature	-30°C to 70°C
Operating temperature	-10°C to 60°C
Relative Humidity	Up to 95% - Temperature 5°C to 45°C(Non condensing)
Emission	BS EN 61000-6-3:2001 Residential, Commercial & Light Industry Class B limits
Immunity	BS EN50130-4: 1996: Part 4
LVD	BS EN 60950-2002
Ingress Protection	Metal box - IP40 estimated
Colour - Metal Box	Dark Grey
Output	Single pole change over contacts rated at 13A 230V ac Resistive load.
Contact ratings	
Type	1hp @ 240V ac, 1/2hp @ 120V ac (UL508)
Cycle	6x10 ³
Terminals	2.5mm ²
EN54-17 data	V _{max} 42V V _{nom} 40V V _{min} 24V V _{SO max} 16V V _{SO min} 8V I _{C max} 0.4A I _{S max} 1A I _{L max} 20μA Z _{C max} 0.1Ω
Compatibility	Compatible with panel having: MCC ≥ V4.31 LPC ≥ V4.33



Mains Powered Interface (from Qtr 3 2010)



The S4 Mains powered interface units (S4-34440-02 and S4-34440-12) are EN54-4 compliant battery backed power supplies that can be directly connected to the loop and also have highly flexible interfacing capability. The 4 channels can be individually configured to provide Output and Input interface in various configuration modes, to control external equipment and receive input to allow the fire system to make decisions and take actions. It is now possible to have combined inputs and outputs giving a total of 8 external circuits connected (e.g. 4 sector outputs and 4 confirmation inputs). The units have room to accommodate optional modules on to DIN rails. It has a configurable auxiliary power output that is derived from its self contained mains power supply unit, which is battery backed to continue to deliver power in the event of mains supply failure.

Technical Data

Standards - designed to meet	EN54:part 4:1998 EN54:part 17:2005 EN54:part 18:2005
Overall dimensions	478mm x 322mm x 128mm
Assembled weight (approximate)	7Kg (excluding batteries and optional components fitted)
Enclosure	Steel
Colour	RAL7024 Graphite Grey (fine textured)
Storage temperature	-20 to 70°C
Ambient operating temperature	-10 to 45°C
Relative Humidity (Non condensing)	up to 95% Temperature 5 - 45°C
Ingress Protection	IP31 (estimated)
Operating voltage	230V 50Hz +10% -6%
Rated current	0.7A

Input modes	Input can be fault monitored, voltage free, contacts OR conventional detection zone circuit. Refer to the commissioning information for more details.
Zone Nominal voltage Quiescent current	16V or 22.5V (default) $\pm 15\%$ 20mA per zone (default) Zone short circuit current limited to < 30mA EN54 compliance limitation: 32 devices OR Maximum of 20 diode bases per zone
Output modes	Outputs are monitored 24V (nominal) 0.5A OR LED drive. Refer to the commissioning information for more details
Confirmation modes	It is possible to configure all Inputs and Outputs as confirmation channels
Sector and Auxiliary Outputs	Sector and Auxiliary Outputs 0.5A max each @ 24V $\pm 3V$, electronically current limited to approximately 1A at 25oC Maximum total output current: S4-34440-02 = 1.5A S4-34440-12 = 2.5A Auxiliary power output: 12V / 24V $\pm 0.5V$ (S4-34440-12) or 24V $\pm 3V$ (S4-34440-02)
Batteries	Two types: 2 x 12V 2.1Ahr (1Kg each) for S4-34440-02 2 x 12V 12Ahr (4.31Kg each) for S4-34440-12
Compatible	Panel having :MCC \geq V4.41 :LPC \geq V4.39
EN54-17 : 2005 (section 4.8) data:	V _{max} 42V I _C max 0.4A V _{nom} 40V I _S max 1A V _{min} 24V I _L max 20 μ A V _{SO} max 16V Z _C max 0.1 Ω V _{SO} min 8V
Emission	BS EN61000-6-3: 2007 EMC for residential, commercial & light Industry.
Immunity	BS EN50130-4: 1996 + A1:1998 +A2 2003 for alarm systems
Terminals	3-way device (terminals provided for spur or sub-loop)



Repetitive switching of capacitive loads greater than 1500uF is not possible and will result in the thermal protection circuit automatically reducing the output voltage.

Features

❑ Fail-safe operation

A fail-safe operation is available on all sectorised outputs, if loop communications are lost for a defined duration then the sector outputs will be turned ON. Sector outputs will turn OFF immediately when communication is restored.

❑ Synchronisation










Adjustable synchronisation pulses can be selected for all sector outputs to synchronise the operation of devices such as xenon strobes or speech sounders.

❑ Auxiliary Output

The Auxiliary output can be programmed to automatically turn OFF when a mains failure occurs to preserve battery capacity. The output can also be programmed to provide a reset pulse when a fire reset occurs.

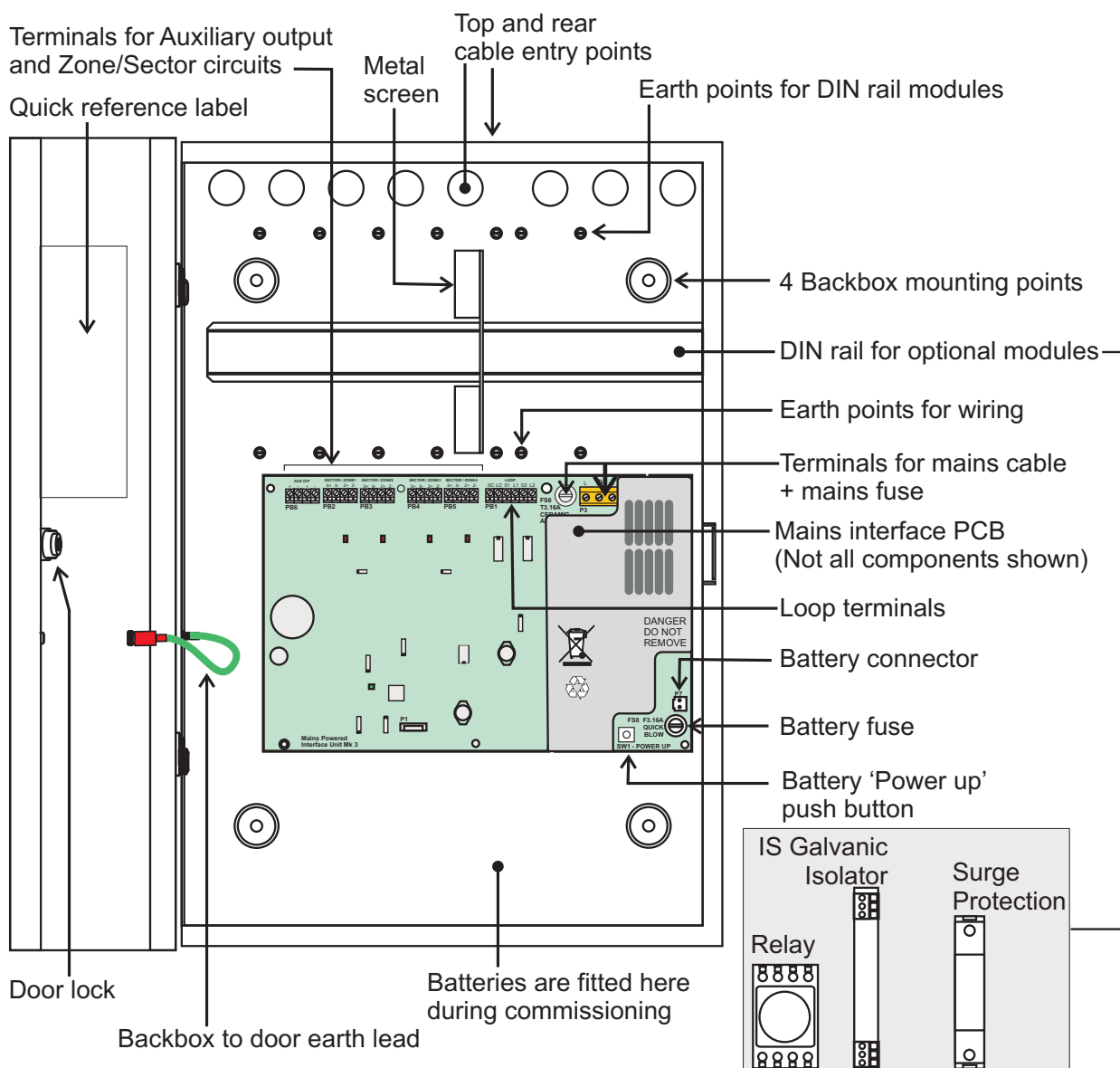
Installation

The batteries are supplied in a separate pack.

	Spare Parts packages	Qty
	Fuse 3.15A AS Ceramic (20mm x 5mm)	1
	Fuse 3.15A QB Glass (20mm x 5mm)	1
	Resistor 5.6K 0.6W	4
	Resistor 470R 0.6W	8
	Resistor 10K 0.5W	4
	Battery Link	1
	Battery Lead	1
	Capacitor 22uF 35V	4
	Instructions	1



keys are supplied in a plastic bag fitted to the enclosure.



Mains supply

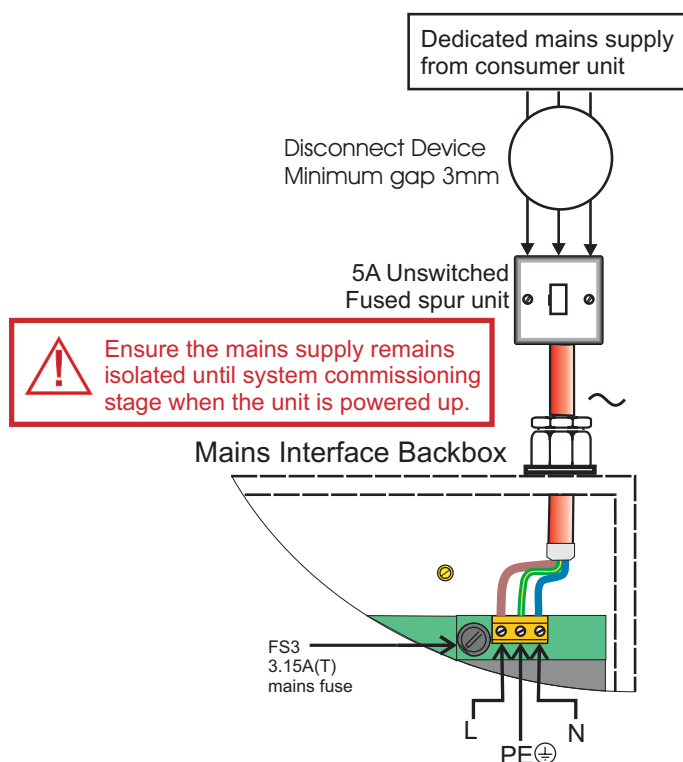
The mains supply cable must be a standard fire resisting type and should meet PH30 classification, such as any of the standard and enhanced loop cable. Requires a minimum conductor cross sectional area of 0.75mm².



Ensure that the mains supply cable enters the enclosure through a dedicated cable entry, located adjacent to the mains terminal block and that is also segregated from loop wiring.



These fire alarm system products are not designed to be powered from IT Power systems.



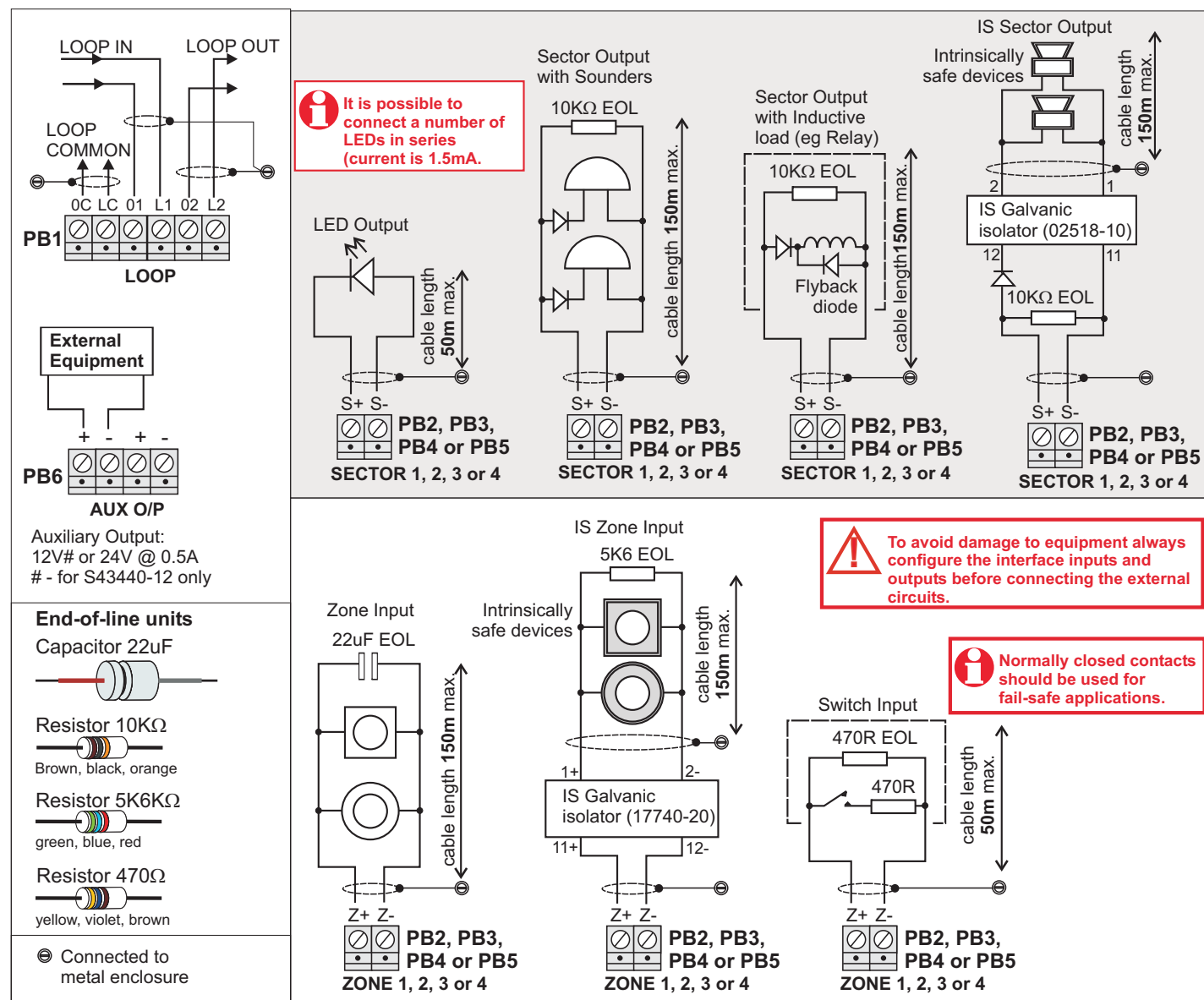
All mains powered equipment must be earthed. Mains supply to any fire alarm control and indicating equipment must be via an unswitched 5A fused spur unit. A disconnect device must be provided to disconnect both poles and must have a minimum gap of 3mm. The **disconnect device** should be available as part of the building installation and must be easily accessible after installation is complete.

Wiring test



DO NOT undertake high voltage insulation tests **WITH THE CABLES CONNECTED** to the Mains Interface unit and external equipment. Such a test may damage the electronics circuitry in external equipment and in the Mains Interface unit.

External wiring



Options

These optional products should be mounted on the DIN rail.



The relays and intrinsically safe products listed below should be mounted apart, a metal screen is provided inside the enclosure.

- ☐ Low voltage power relay
- ☐ Intrinsically safe galvanic isolator for IS detectors and call points
- ☐ Intrinsically safe galvanic isolator for IS sounders

For fully information see leaflet supplied with the product.

Vigilon Network Node

The Vigilon Network Node (also referred to as Terminal node) can accommodate additional cards in place of loop cards, such as network cards and IO cards. Network cards may be used to connect two networks together and the IO cards may be used to connect remote printer and Gent Supervisor system. The node houses its own power supply with batteries that provide standby power in the event of mains supply failure. A lockable front door prevents unauthorised access to fire alarm controls, but allows all of the indicators to be seen. Two push button controls are located on the front door below the display that enable Fire messages to be scrolled in the event of multiple fires. The node is designed for surface or semi flush mounting, with rear and top cable entry points.




Features

- ☐ Two master alarm circuits
- ☐ RS485 to connect to a Repeat Indicator panel
- ☐ RS232 to connect to another control panel (domain bridge) external printer or commissioning tool
- ☐ Two sets of auxiliary relay change over contacts configurable to operate with fire, fault or disablement
- ☐ One set of clean voltage-free change over contacts that operates with fire events
- ☐ Standby supply to power the system in the event of mains failure
- ☐ LCD alphanumeric type display with back light to show event information
- ☐ LED lights for event indication
- ☐ Local audible buzzer to announce events
- ☐ Push button for essential controls and menu driven commands
- ☐ Four programmable control buttons (U1 to U4)

Technical data

Dimensions in mm	height 543 x width 406 x depth 172
Panel weight	10.2Kg approximately + 2 batteries 12V 21Ah battery weighing 6Kg each
Storage temperature	-10 to 55°C
Operating temperature	0 to 40°C
Relative Humidity (Non condensing) Temperature 5 to 40°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry Class B limits.
Immunity	BS EN50130-4: 1996: Part 4 Alarm systems: <i>Electromagnetic compatibility</i> Product family standard: <i>Immunity requirements for components of fire, intruder and social alarm systems.</i>
Ingress Protection	IP30
Colour	Door: Grey (Pantone 422) Back box: Graphite Grey (RAL 7024).
Network	The node is supplied with a network card for secure network connections: Fibre Optics - 2Km Copper (RS485) - 1.2Km
RS232 and RS485 connections	The node is supplied with an IO card that facilitates RS232 for connecting to another panel (domain bridge) or Gent Supervisor. The maximum cable length allowed for RS232 is 10m. The maximum cable length allowed for RS485 is 1.2Km.
Plug in Card slots	MCC / LCC -P1 Master Control card (node)-# IOC / N/W -P2 Input Output# / Network card Loop 1 - P3 Input Output card option Loop 2 - P4 Input Output card option Loop 3 - P5 Input Output card option Loop 4 - P6 Input Output card option N/W or I/O - P7 Input Output or Network card N/W or I/O -P8 Input Output or Network card# (# - supplied)

Auxiliary relays	Voltage-free contacts rated 1A @ 24Vdc	Access level 2b User having door key and <i>customer</i> password	As access level 2a plus access to complete level 2 menu commands.
Aux relay 1	2 sets of change over contacts configured to operate immediately with any system Fire event. The relay is normally de-energised .	Access level 3 Engineer having door key and <i>engineer</i> password	As access level 2b plus access to all menu commands.
Aux relay 2	2 sets of change over contacts configured to operate immediately with any system Fault event. The relay is normally energised . The relays can be re-configured to operate with any Fire, Fault or Disablement event, with a delay of up to 10 minutes and can operate in a normally energised or de-energised state	Logs	Active system Logs: Fire, Fault and Disablement Historic system log: All events Event system logs: Fault, Disablement, Warning, Supervisory, Exceptions and Historic fires.
Clean contacts	1 set of voltage free change over contacts rated 1A @ 24Vdc, active with any fire event .	Printer	The integral printer operates when the outer door is open. The printer menu driven controls include: on, off, Line feed and Test print. An optional remote printer can be connected to the panel.
Master alarm circuits	Operates with any system fire event 2 - (24 volts nominal) 400 mA max. per circuit MA1 - fuse 1A FS1 MA2 - fuse 1A FS2 Both fuses are 20mm x 5mm in size and are located on the Terminal card.	<div style="border: 1px solid red; padding: 10px; text-align: center;">  Always use the recommended replacement battery, as there is a risk of an explosion if incorrect battery is used. </div>	
Indicators	Power (green) Power Fault (amber) Delay (amber) Test (amber) Verify (amber) CB253 CB254 (amber) Fault (amber) Disablement (amber) System fault (amber) Sounder (amber)	<div style="border: 1px solid black; padding: 5px;"> Power supply </div>	
Display	Alpha-numeric display - 8 lines by 40 character per line, back-lit, (Black characters on green background, liquid crystal display).	Mains operating voltage	230V 50Hz +10% -6% is protected by a 3.15A (T) 250V Ceramic 20mm x 5mm, located on PSU. Input current - 1.4A
Internal sounder	To announce Fire and Fault events, plus give a key press confirmation beep.	Nominal supply voltage for master alarm circuits	24V +1V, -4V
Menus	[Control], [Setup], [Information] and [Test Engineering] menus accessed via Menu On/Off, F1, F2, F3 and F4 buttons.	Battery circuit(s)	Terminals to connect to internally housed batteries, capable of reaching a charged state in 72Hr.
Controls (with door closed) Access level 1	Next and Previous buttons operable during Fire condition only.	Light indications	To show status of PSU
Controls (with door open) Access level 2a	Sound Alarms, Silence Alarms, Reset, Cancel Buzzer, Verify, F1-F4 keys, Menu On/Off key, QWERTY key board, U1-U4 keys available if configured to perform site specific actions by triggering CB251, CB252, CB253 and CB254.	PSU Fuses	FS6 T3.15A Ceramic FS2 F3.15A Glass FS7 F5A Ceramic for VIG1-24 only Above fuses are 20mm x 5mm size
User having door key		Storage temperature	-10 to 55°C
		Operating temperature	-5 to 40°C
		Relative Humidity (Non condensing) Temperature	up to 90% -5 to -40°C



Hazardous voltages may still be present even if this indications are extinguished.

Installation

The Vigilon Network node is supplied with:

- ☐ Back box assembly having a PSU
- ☐ Inner door
- ☐ Moulded outer door
- ☐ Main Controller Card (node)
- ☐ Network Card
- ☐ Domain bridge IO card
- ☐ Spares pack
- ☐ 2x12V 21Ah batteries)

These instructions cover information on the backbox assembly only, all remaining packages are installed during the commissioning by the servicing organisation.



The network node can be surface or flush mounted.

- a. Identify the package NETWORK-NODE-24 and check that it contains all the parts.

- b. Remove the temporary cover from the *Back box*.
- c. Knock out/in the required cable entry points from the *Network node back box*.
- d. Use the fixing points provided mount the Back box to the wall using suitable fixings.

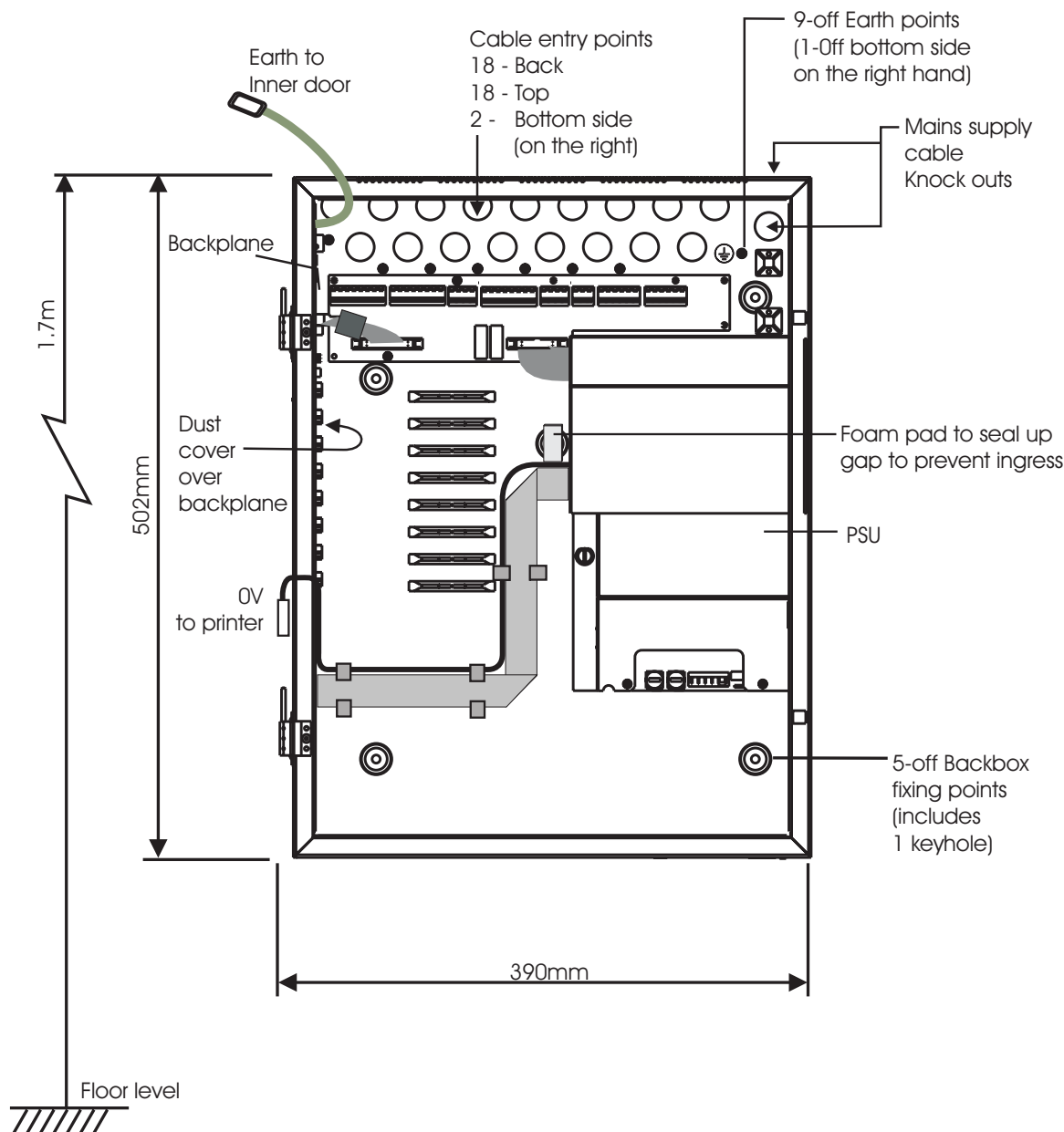


The fixings must support a fully assembled network node with batteries weighing 22.2Kg.

- e. Terminate each cable at the entry point leaving 400mm tail wire length and mark each core to identify its final connecting point.



If the mains cable is not connected to the respective terminals then ensure the tail ends are insulated to guard against accidental switching On of the mains supply.



Semi-Flush fixing the Network node

The procedures for flush fixing the network node are the same as those for the control panel, see page 14.

Terminate and mark cable

Terminate the cables at the entry points and mark them to identify the point of connection.

Mains supply

For procedures on connecting the mains supply, see page 16.

Mains and battery supply connections

The mains and battery supply cables must be installed to the stage to **facilitate the power up** for commissioning, which is carried out by the Servicing organisation.



Where mains cable is to remain disconnected, its tail ends must be insulated to prevent dangerous conditions arising in the event of accidental switching On of the mains supply.

Terminals for external circuits

The Network node has a Terminal card that holds all the terminals for the connection of external circuits. The exceptions are:

- ☐ Terminals for CARDS in slots P7 and P8, these are located on the Backplane
- ☐ Mains supply terminals which are located on the mains terminal block on PSU
- ☐ Battery connections are located on the PSU.

Backplane

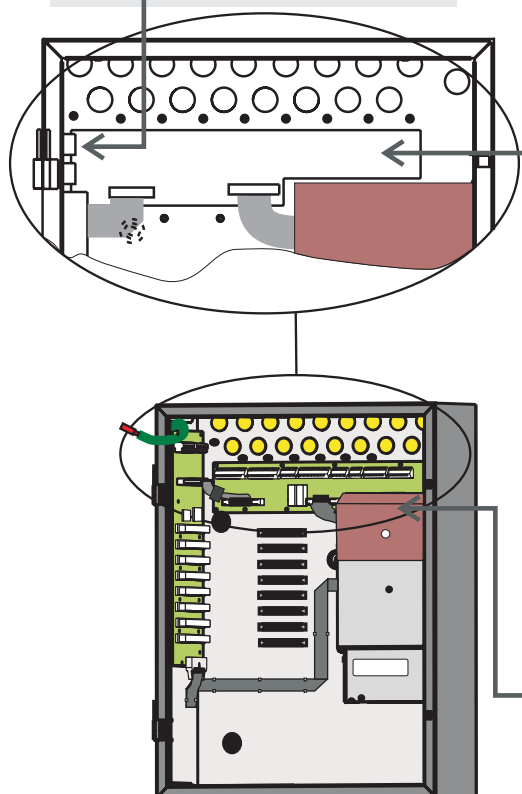
NETWORK CARD IN SLOT P8
0V1 +VE1 -VE1 0V2 N/C +VE2 -VE2 N/C

IO CARD IN SLOT P8
A 5V B 0V CTS Rx RTS TX

PB1

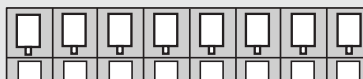
IO (RS232) CARD IN SLOT P7
N/C 0V CTS Rx RTS TX

PB2



Terminal card

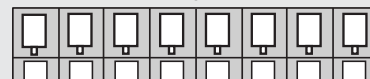
CARD 4 - RS232
CTS RX RTS TX



P2

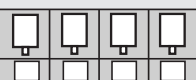
CARD 3 - RS232
CTS RX RTS TX

CARD 2 - RS232
CTS RX RTS TX



P3

Master alarm
MA1+ MA1- MA2+ MA2-



P5

Clean C
NC C NO

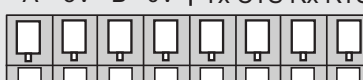


P6

0V1 +VE1 -VE1 0V2 N/C N/C +VE2 -VE2 (WITH NETWORK CARD IN SLOT P2 OF BACKPLANE)

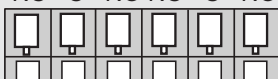
RS485
A 5V B 0V

RS232
Tx CTS Rx RTS



P4

Auxiliary Relay 1
NC C NO NC C NO



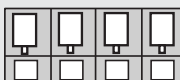
P7

Auxiliary Relay 2
NC C NO NC C NO



P8

RS232 0V
0V 0V 0V 0V



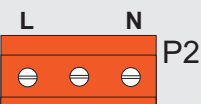
P12

These RS232 0V terminals are for use with the RS232 wiring associated with IOC fitted in Card slots 1 to 4.



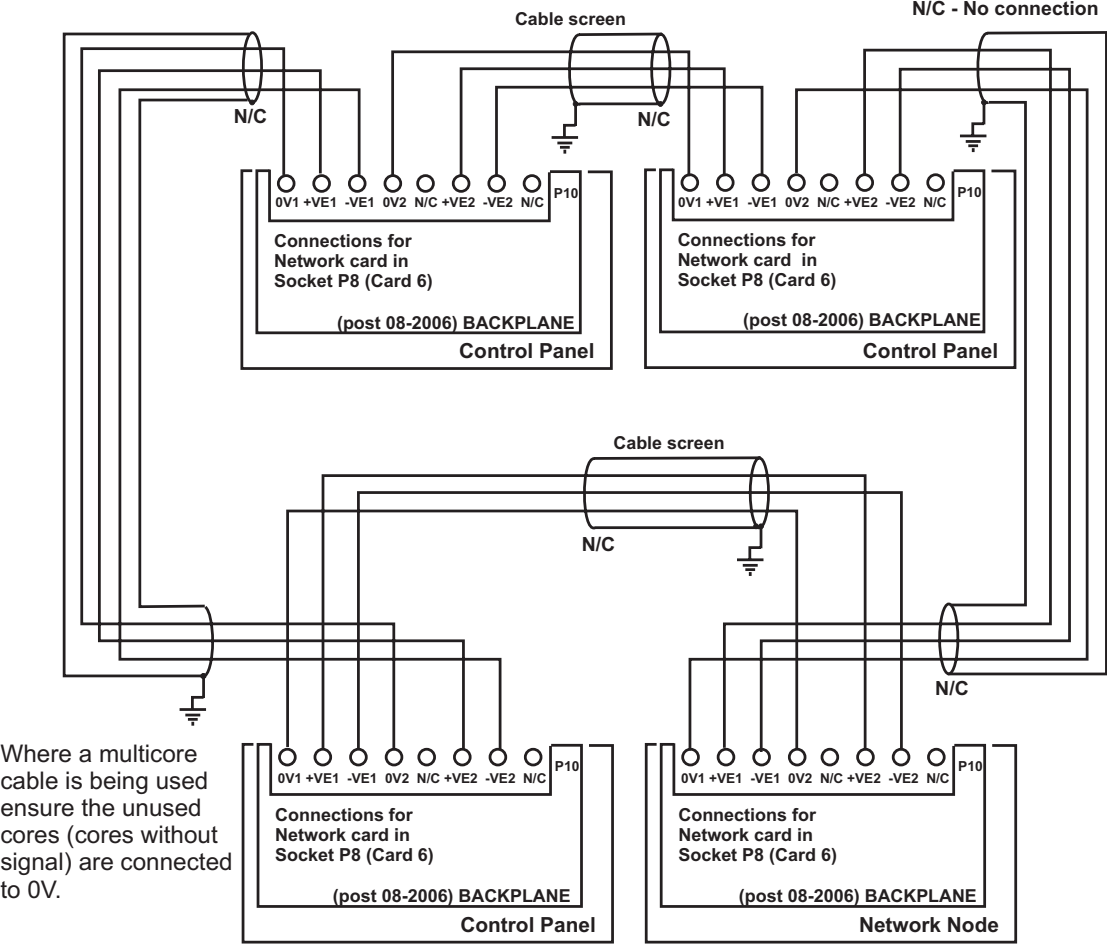
Quick release terminals

PSU board (located behind the cardboard cover)



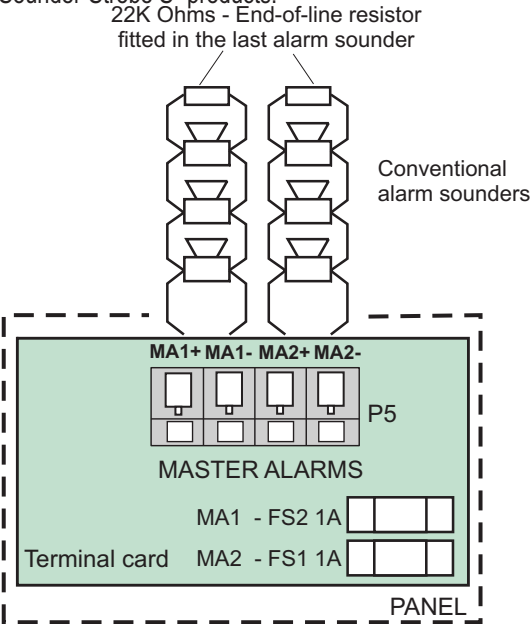
P2

Network connections



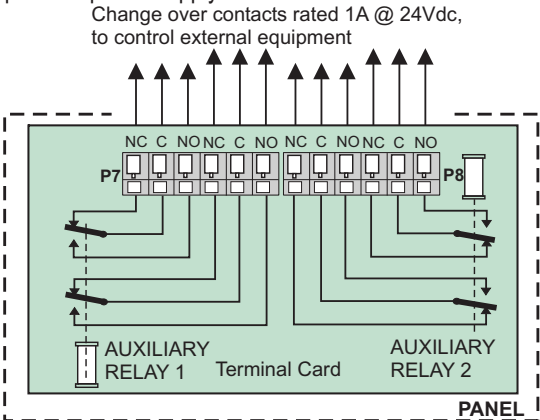
Master alarm circuits

The Network node operates the master alarm circuits in the event of any fire in the network. The two master alarm circuits accept the connection of conventional alarm sounders including the conventional Speech-Sounder-Strobe S³ products.



Auxiliary relay circuits

The Network node operates the auxiliary contacts when the configured event is received from anywhere in the network. The auxiliary relays 1 and 2 contacts are for use to control external equipment, such as automatic dialler that makes the call for fire fighting action. The relays can be individually re-configured to operate with either fire, fault or disablement event in the system. The relay operation can also be delayed by up to 10 minutes and can be set up to operate in a normally energised or de-energised state. The contacts should be powered from an independent power supply.

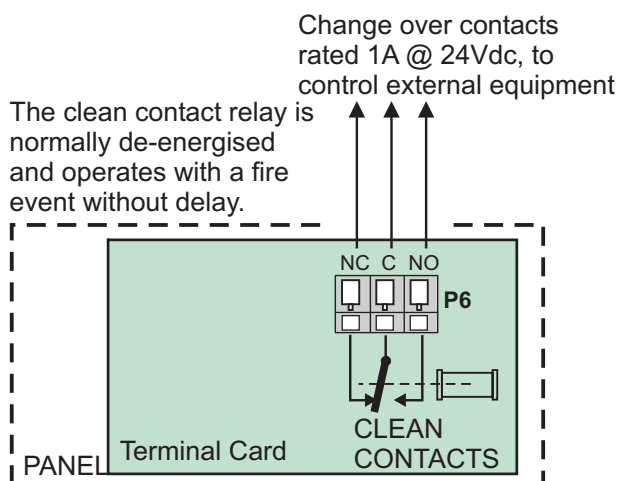


Factory default:
Aux relay 1 is normally de-energised and operates with a fire event without delay.
Aux relay 2 is normally energised and de-energises with a fault event without delay.

Note: Aux relay 2 has been shown in the above diagram in its de-energised state, which is the state when there is no power to the panel.

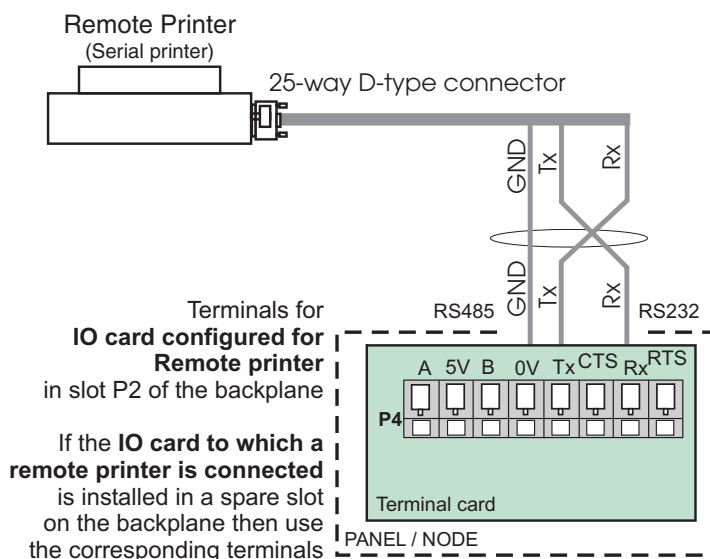
Clean contacts

The Network node operates the clean contacts when a fire event is received from anywhere in the network. The clean contacts can be used to signal plant equipment, such as lift control system. The relay operates in the event of a fire. The contacts should be powered from an independent power supply.



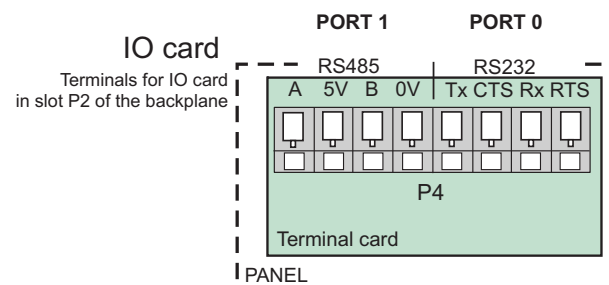
Remote printer

The remote printer connected to a Vigilon Network Node will print network system events.

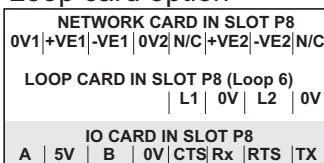


RS232 / RS485 Communication

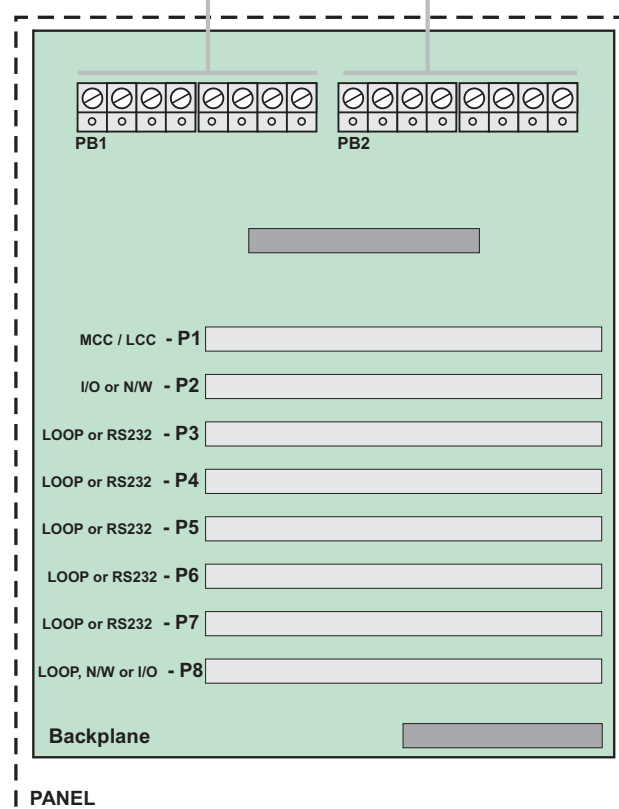
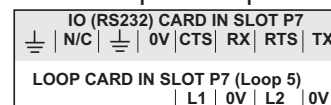
The network node offer RS232 and RS485 communication via the IO card. With a domain IO card in slot P2 of the backplane, it offers RS232 and RS485 communication via terminal block P4 on Terminal card. The communication baud and panel address are configured by setting the DIL switch located on the left edge of the Display Keyboard card.



IO, Network or Loop card option



IO or Loop card option

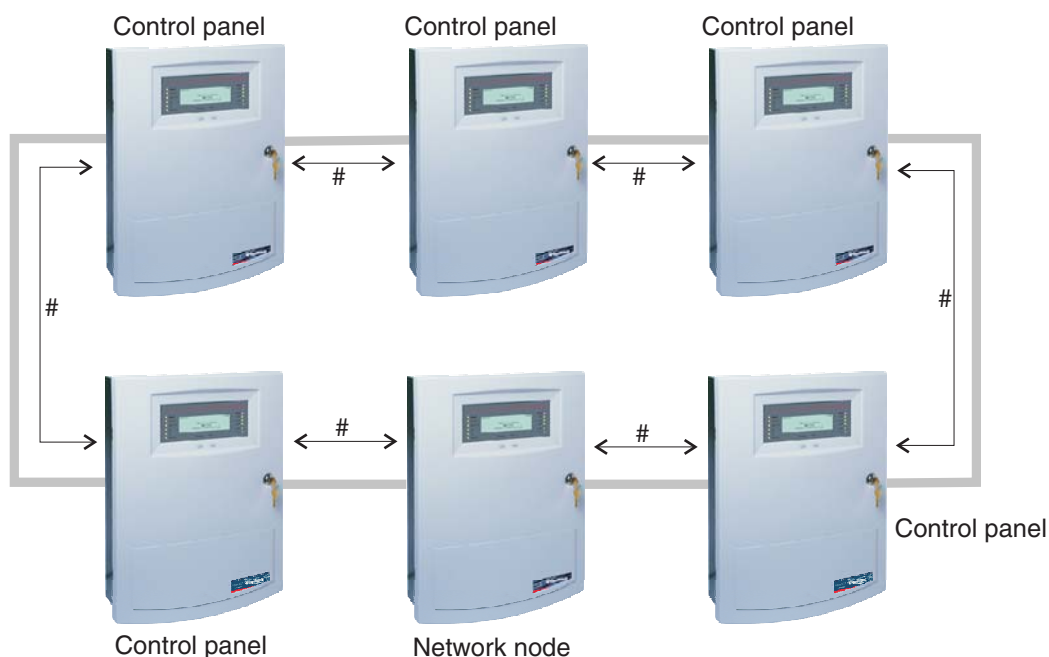


On completion of wiring installation

On completion of wiring, close the temporary door using the allen key. All outstanding work is done by the servicing organisation.

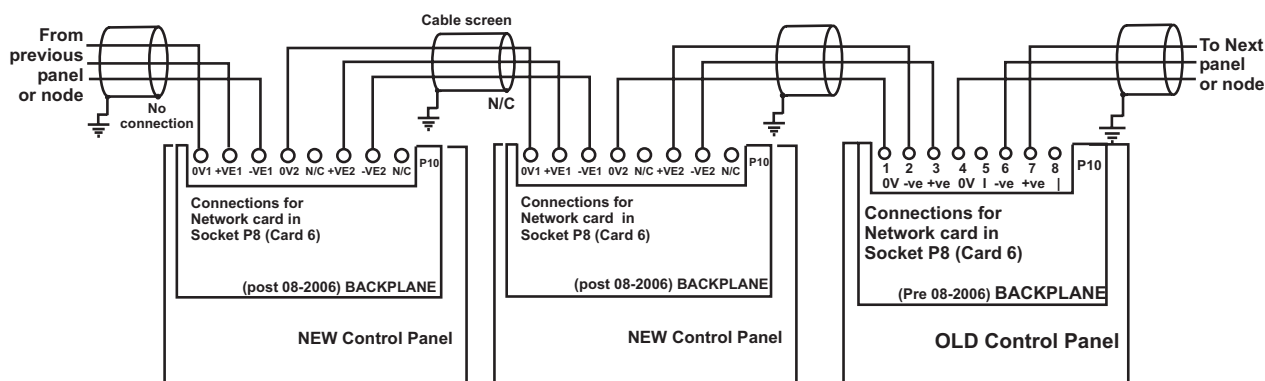
Network of systems

It is possible to network together up to 31 standalone Vigilon EN54 fire alarm systems or Network Node. Each standalone system has an EN54 Vigilon control panel fitted with a network card, which permits RS485 communication between other control panels / network nodes. The cable distance between panels and nodes can be up to 1.2Km maximum. The network node is a central point of information and has no loop supporting capabilities.

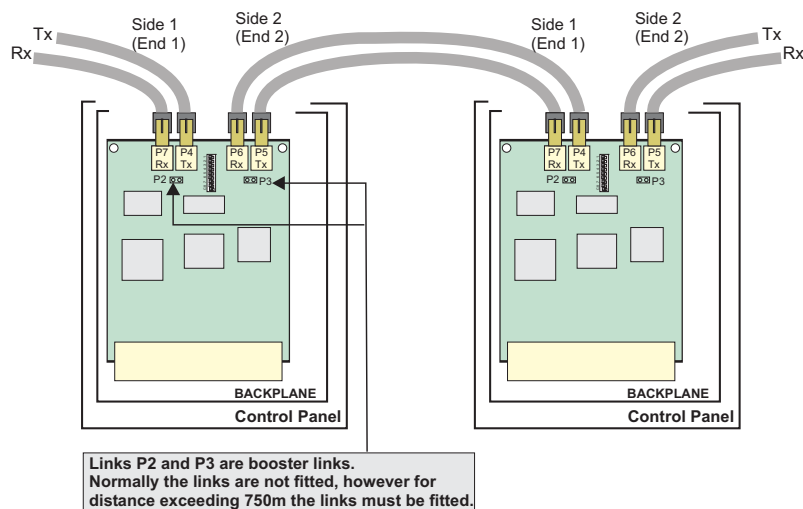


- 1.2Km Copper network cable distance
2Km Fibre network cable distance

Copper network connections



Fibre network connections



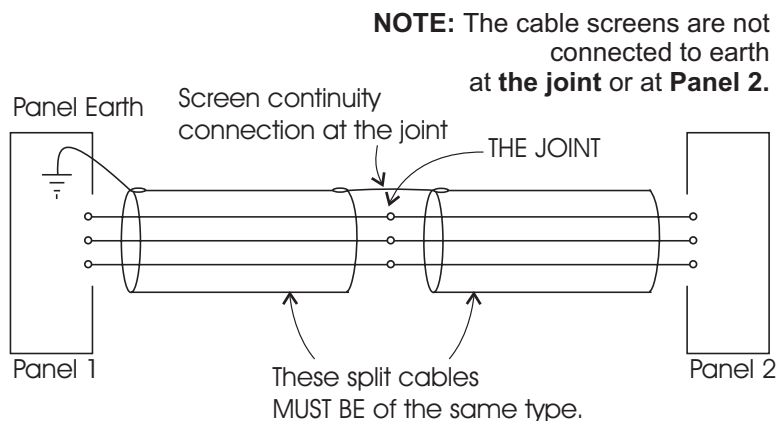
Network wiring



In countries where the European EMC directive is in force use only those cables that are EMC Compliant, see list under the heading **Network cables**.

The recommended cables used to interconnect control panels and network nodes are listed in this section. The cables may also be used to connect to a control panel and Network node.

Network cable screen continuity



Ensure a good screen continuity joint exists where there is a split cable.



DO NOT mix cables of different types on the same leg of a network, as this will create impedance imbalance and disruption to data communication.

How to minimise cross talk



When using standard MICC cable in a network the different legs of the cable must not be closely placed together, as this will cause signal crosstalk which results in communication failure.

There are three practical ways of overcoming the crosstalk problem:

- ☐ used a twisted-core MICC cable
- ☐ put a ferrous screen between the cables (ie in the two runs of steel conduit)
- ☐ maintain a distance between the network cables of at least 50mm

Network cables

For an overview definition of what is a standard and enhanced fire alarm cable see page 6. For information on cable separation see page 5.

Enhanced Network cables

☐ Mineral insulated copper cable (EMC Compliant)

800m maximum Panel to Panel or Panel to network node cable distance.

- BS6207: Part 1
- 3 parallel cores
- having continuous metal sheath encapsulating
- each core having 1.5mm² cross section area
- a red cover sheath (preferred for alarm applications)

☐ Fireshield Enhanced FSN G2000

1.2Km maximum Panel to Panel or Panel to Network node cable distance

- 3 Core (1 pair + 1 and earth)
- each core having 1mm² cross section area

Standard Network cables

☐ Delta Crompton Firetuf FDZ1000*

1200m maximum Panel to Panel or Panel to Network node cable distance

- Three core

☐ Huber & Schner Radox series FR communication cable*

1200m maximum Panel to Panel or Panel to Network node cable distance

- Three core twisted triad screened
- 1.5mm² (7/0.42 stranded) conductors
- Nominal impedance 200 ohms (1KHz)
- Capacitance between conductors 110pF/m (1KHz)
- Capacitance between screen to core 210pF/m (1KHz)
- Fire resistance tested to BS6387 category CWZ and IEC 331.

☐ Belden No 9729 (UL Style 2493) (EMC Compliant)

1200m maximum Panel to Panel or Panel to Network node cable distance

- Two twisted pairs
- Each pair individually screened
- 24AWG (7 strands x 32 AWG)
- Low capacitance between conductors - 39.4pF/m at 1kHz
- Low capacitance conductor to screen - 72.2pF/m at 1kHz
- Temperature range -30°C to +60°C .

☐ Teflon jacketed Belden TR No. 89729

1200m maximum Panel to Panel or Panel to Network node cable distance

- Two twisted pairs
- Each pair individually screened
- 24AWG (7 strands x 32 AWG)
- Low capacitance between conductors - 39.4pF/m at 1kHz
- Low capacitance conductor to screen - 72.2pF/m at 1kHz
- Temperature range up to 200°C

☐ Belden Armoured equivalent (EMC Compliant)

This cable being a two-pair cable to BS5308:Part 1 (type 2) 0.5mm² (16/0.2mm).

600m maximum Panel to Panel or Panel to Network node cable distance.

Belden No. 9842 EIA RS485 Applications, O/A

Beldfoil® Braid

1200m maximum Panel to Panel or Panel to Network node cable distance

- Must have following characteristics:
- Two twisted pairs
- 24AWG (7 strands x 32 AWG) conductors
- Low characteristic impedance - 120 ohms
- Low capacitance between conductors - 42pF/m at 1kHz
- Low capacitance conductor to screen - 75.5pF/m at 1kHz

☐ Prysmian (formally Pirelli) FP200 Flex* (EMC Compliant)

800m maximum Panel to Panel or Panel to Network node cable distance

- 3 Core
- each core having 1.5mm² cross section area

☐ Prysmian (formally Pirelli) FP200 Gold* (EMC Compliant)

1.2Km maximum Panel to Panel or Panel to Network node cable distance

- 3 Core
- each core having 1.5mm² cross section area

☐ Prysmian (formally Pirelli) FP Plus* (EMC Compliant)

1.2Km maximum Panel to Panel or Panel to Network node cable distance

- 3 Core
- each core having 1.5mm² cross section area

☐ Draka FT Plus (EMC Compliant)

1.2Km maximum Panel to Panel or Panel to Network node cable distance

- 3 Core
- each core having 1.5mm² cross section area

☐ Doncaster Cables Firesure Plus

- 1.2Km maximum Panel to Panel or Panel to Network node cable distance
- 4 Core (2- pair plus earth)
- each core having 1.5mm² cross section area



The cables marked * utilise laminated aluminium tape with a tinned drain wire for electrostatic screening. Under certain environmental conditions *galvanic action* may take place between the aluminium and the drain wire. This will severely *degrade EMC performance* as the foil to drain wire *impedance will increase*.

Domain Bridge across Networks

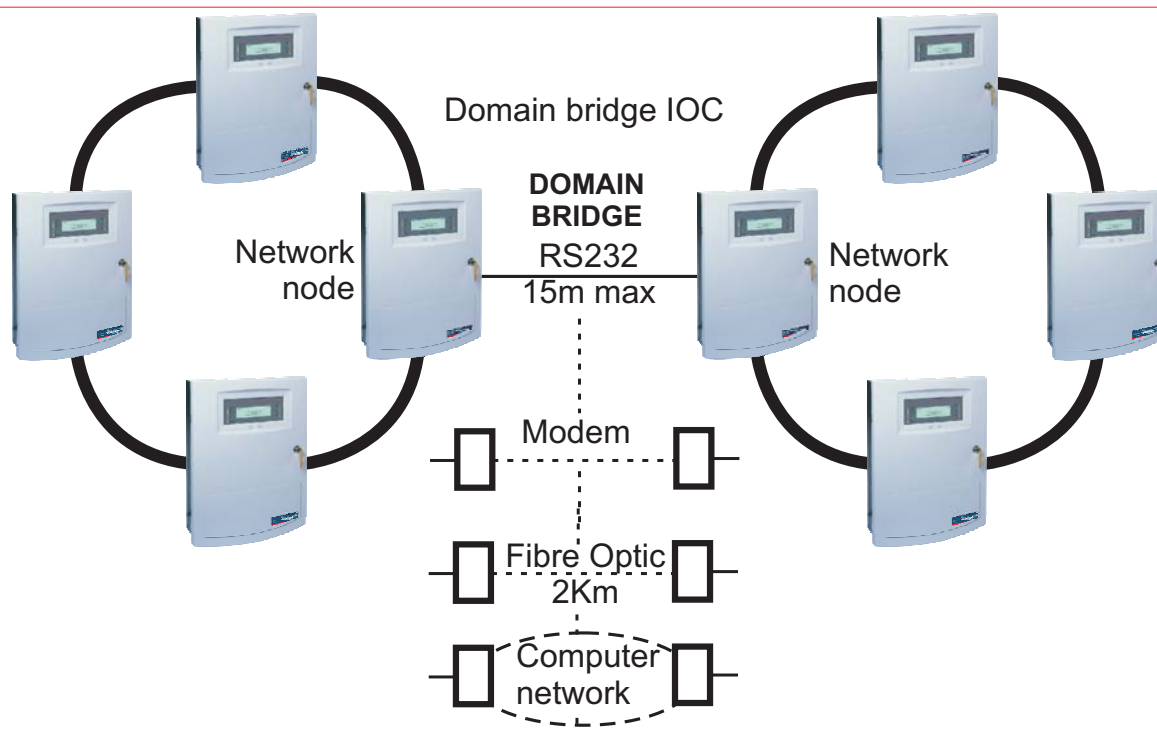
It is possible to connect two or more Vigilon networks together by means of domain bridge. To domain bridge two or more networks a Domain bridge IO card must be installed in the bridging node / panel.

There are various methods of domain bridging depending on the distances between node / panel. Domain bridge can be made directly using RS232 ports of the IO card, via modem, Fibre optics or via dedicated network using NPORT units.

Methods of domain bridging



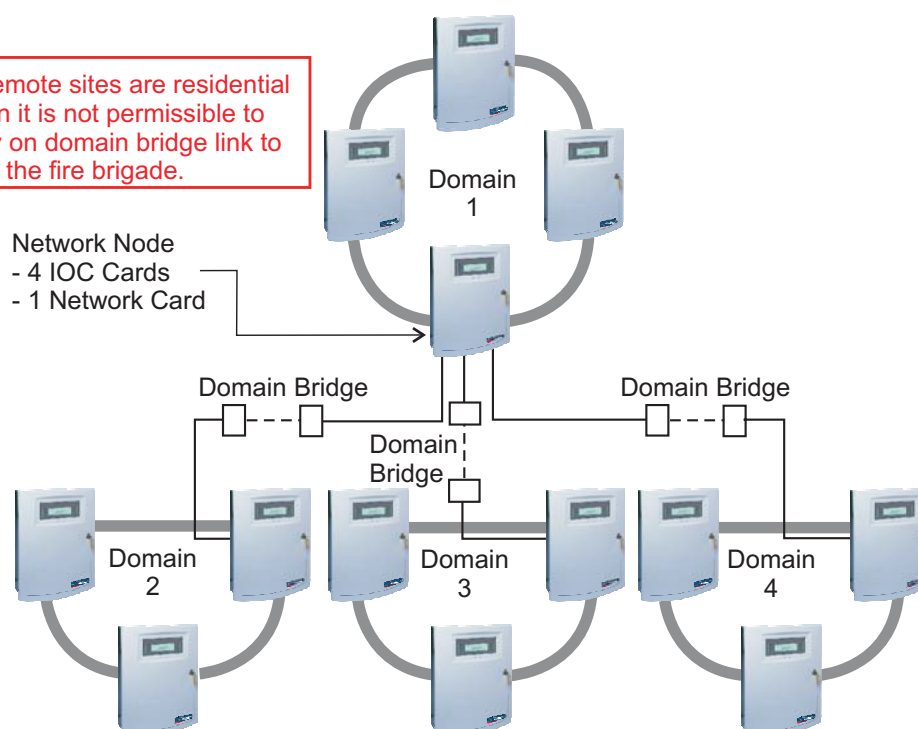
A domain bridge IO card is required to be installed in the bridging panel/node.



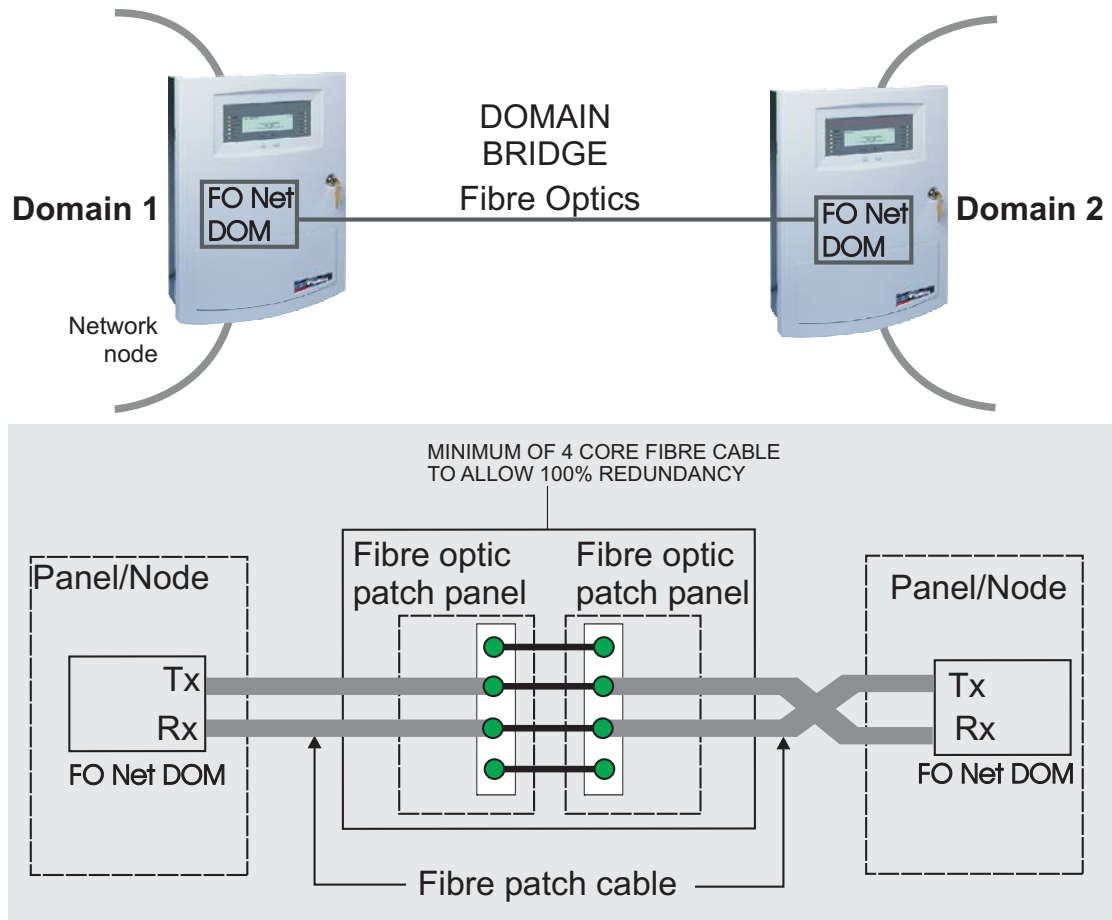
Star connection



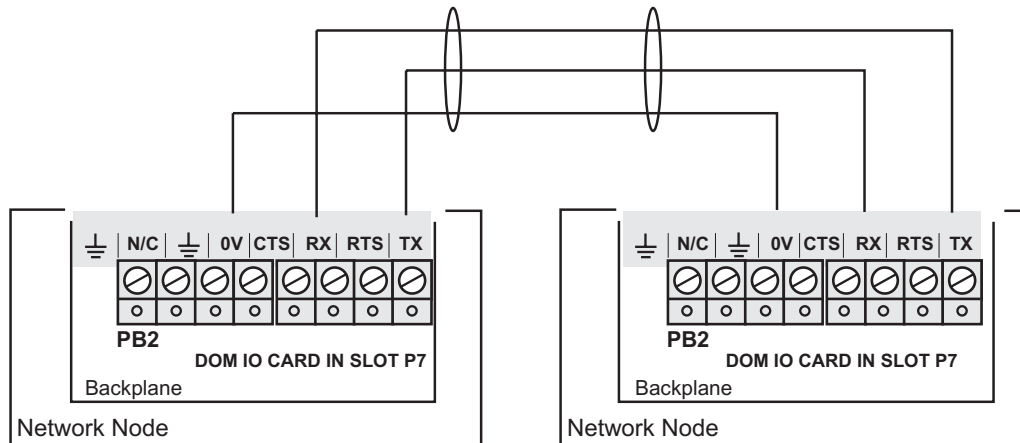
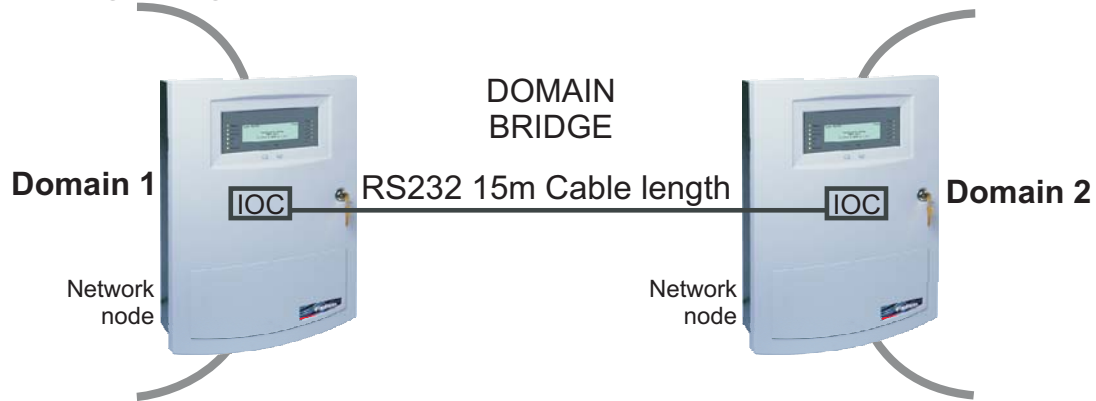
If remote sites are residential then it is not permissible to rely on domain bridge link to call the fire brigade.



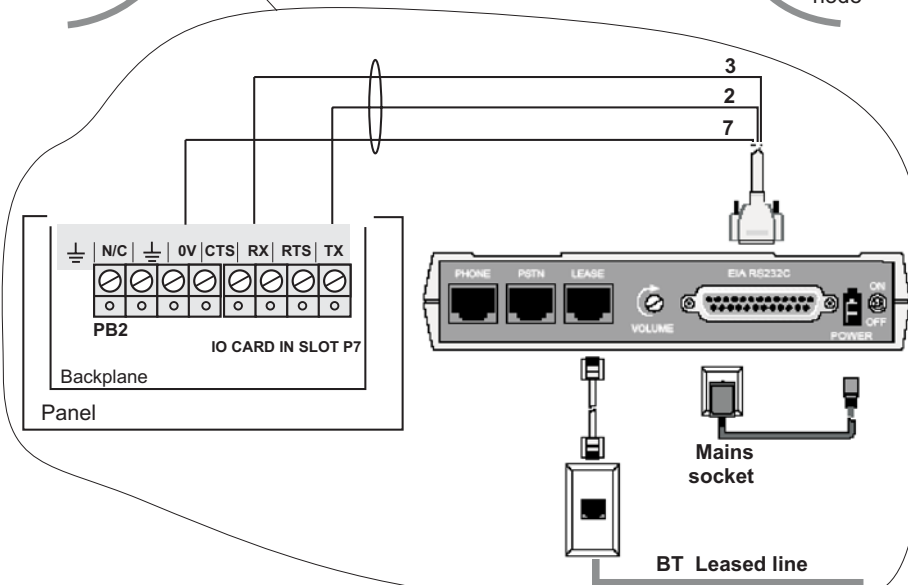
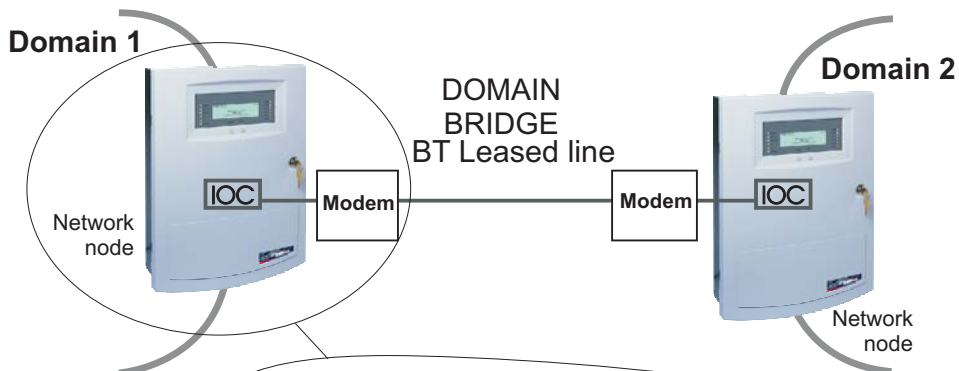
Fibre Optic Domain bridge using FO Network DOM card



RS232 Domain bridge using Domain IO card



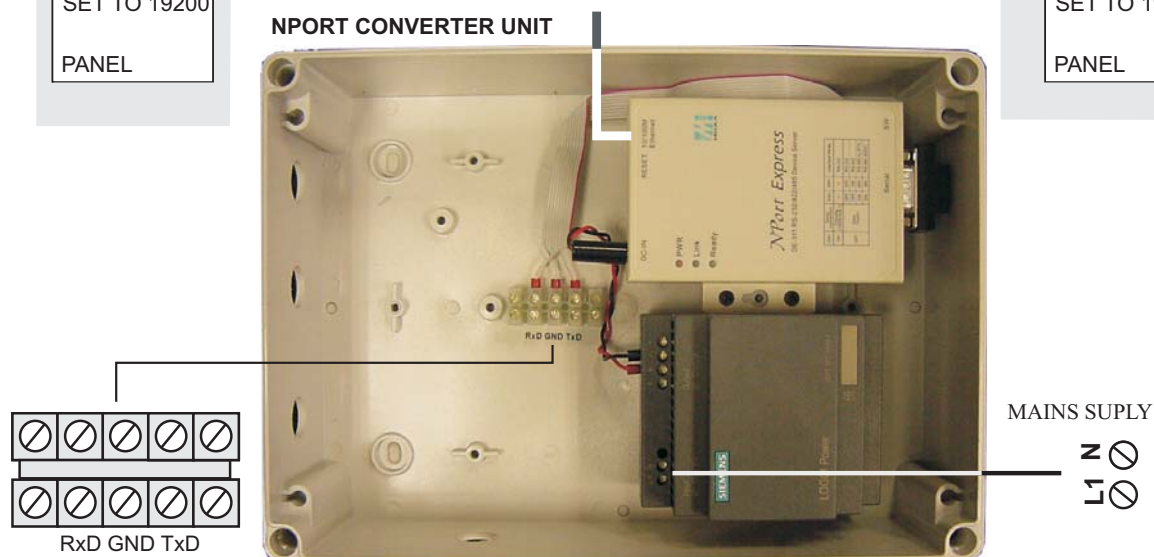
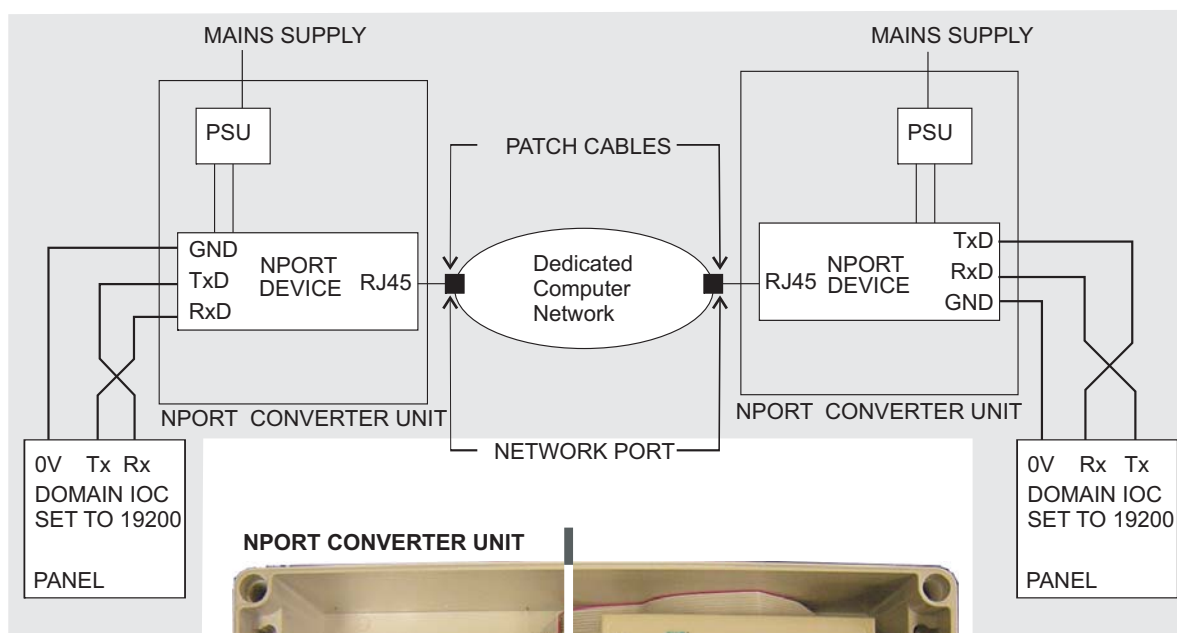
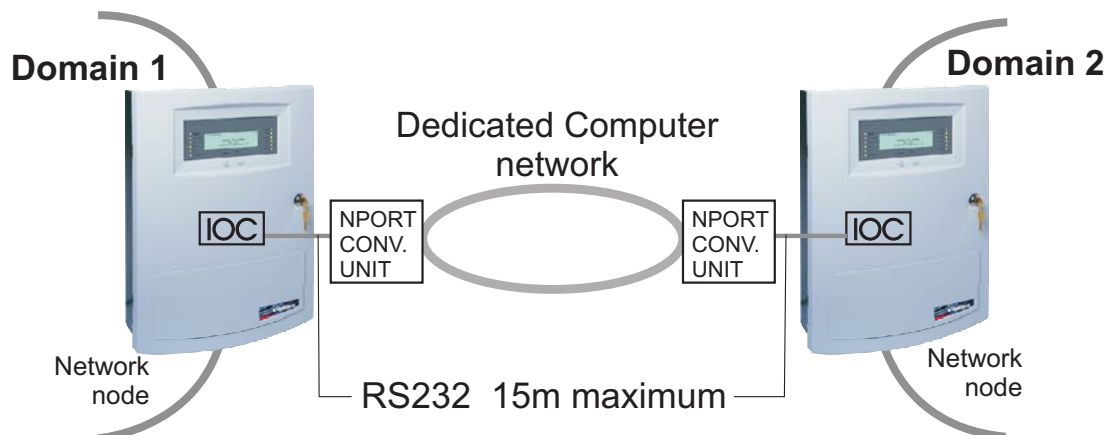
Modem Domain bridge



NPORT Domain bridge using NPORT module



The customer is to supply the IP addresses.



PARTS REQUIRED EN54 SETUP
2 x VIG-IO-DOM
2 x VIG-DOM-NPORT

INFORMATION REQUIRED FROM CUSTOMER
2 X IP NETWORK INFORMATION
2 X NETWORK PORTS
2 X PATCH CABLE

Vigilon system parts

This section lists all the parts that can be used in a Vigilon EN54 system. For further details on the availability of the parts, contact your supplier.

Control Panel

VIG1-24	EN54 Control panel (24 hour standby) c/w 1 loop card and 2 x 12V 21Ah batteries
VIG1-72	EN54 Control panel (72hour standby) c/w 1-loop card, battery box and 4 x 12V 21Ah batteries

Spares

VS-BATT-24	Spare battery 2 x 12V 21Ahr for Control panel
VS-PROLL	Spare thermal paper for the integral printer
VS-KEY	Outer door key

Cards

VIG-LPC	Loop Card (EN54)
VIG-MCC-24	Main Controller Card (EN54) (spare for VIG1-24 and VIG1-72)
VIG-NC	Copper Network Card (EN54)
VIG-NC-FO	Fibre Optics Network Card (EN54)
VIG-IOC-DOM	Domain Bridge Input/Output Card (EN54)

Accessories

VIG-24-FLUSH	Flush mounting kit (Control panels and Network node)
VIG-FLUSH-SS	Stainless steel flush surround (Control panels and Network node)
VIG-DOOR-SS	Stainless steel door
VIG-WR-CASE	Control panel weather resistant case
VIG-19-RACK	19" Rack mounting frames for panel and battery box

Network Node

VIG-NODE-24	Network node
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Repeat panels

VIG-RPT -72	Vigilon Repeat panel for EN/BS (loop connectable)
VS-RPT-BATT	Battery pack from Repeat panel
COMPACT-RPT	Repeat indicator panel RS485 (connects directly to the panel)

Mimic panels

VIG-MIM-A3	Zonal and Mimic panel (EN54)
VS-RPT-BATT-A3	Battery back from A3 Mimic (2 x 6V 7Ah)

Manual call points

S4-34800	Manual Call Point (Glass)
S4-34842	Manual Call Point (Glass) with Protective cover
S4-34845	Manual Call Point with resettable element
S4-34805	Manual Call Point with resettable element and protective cover
S4-34890	Resettable Element for MCP (Pack of 10)
S4-34891	Glass for MCP (Pack of 10)
S4-34892	Protective cover for MCP (Pack of 10)
S4-34895	Surface Back Box for MCP red plastic - (Pack of 10)
S4-34898	Manual Call Point weather resistant kit
S4-34899	Test Key (Pack of 10)
S4-34895	Keyswitch call point (Red)

Keyswitch MCP

S4-34807	Keyswitch MCP (Red) with back box
S4-34499	Spare Keys (Pack of 2)
S4-34895	Surface Back Box for Interface Red Plastic (Pk of 10)

Environmentally protected enclosure for MCP

S4-34896	MCP Weatherproof box - S4-34805& S4-34800
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S-Quad Sensors / Sounder / Strobe / Speech

S4-710	Optical Heat Sensor (OH)
S4-715	Optical Sensor (O)
S4-720	Heat Sensor (H)
S4-720-ST-VO	Heat Sensor Strobe Speech (HStSp)
S4-780	Heat Sensor Sounder (HS)
S4-770	Optical Heat Sounder (OHS)
S4-711	Dual Optical Heat Sensor (O ² H)
S4-711-ST	Dual Optical Heat Sensor Strobe (O ² HSt)
S4-771	Dual Optical Heat Sensor Sounder(O ² HS)
S4-711-ST-VO	Dual Optical Heat Sensor Speech Strobe (O ² HSpSt)
S4-711-VO	Dual Optical Heat Sensor Speech (O ² HSp)
S4-911	Dual Optical Heat CO Sensor (O ² HCO)
S4-911-ST-VO	Dual Optical Heat CO Sensor Speech Strobe (O ² HCOsSpSt)

Associated products

S4-700	S-Quad Base
13449-01	Remote LED for use with S4-700
S4-FLUSH	Semi-Flush fixing kit
S4-COVER-DUST	Sensor dust cover (50 pack)
S4-COVER-BASE	Base dust cover (50 Pack)
S4-EXTRACTOR	Removal tool
S4-BASE-LABEL	Label plate (50 pack)
S4-BASE-GASKET	Base IP Gasket (50 pack)
S4-COVER-REMOVER	Dust cover remover tool (spare adaptor)

Environmentally protected sensor

34729	Environmentally protected Heat sensor
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Duct Sensor

S4-34760	Venturi-Air Duct Kit
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Beam Sensors

S4-34740	Beam sensor pair
S4-34741-01	Angle bracket with base
S4-34741-03	Parallel bracket with base
S4-34741-99	Light shield for beams (5 per pack)
S4-34741-50	Test Cards

T Breaker

34701	T breaker Unit
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LV & MV Interfaces

Keyswitch Interface

S4-34418	Keyswitch Interface (Blue) with back box
S4-34499	Spare Keys (Pack of 2)

Low voltage interface range

S4-34410	1-Input Interface module (low voltage)
S4-34420	1-Output & 1-Input Interface module (low voltage)
S4-34450	4-Input / Output Interface module (low voltage)

Options

The above interface modules can be mounted in any of the following optional enclosure or DIN rail mount bracket.

S4-34490	Interface enclosure Large Plastic box
S4-34492	Interface enclosure Metal box
S4-34491	DIN rail mount bracket
S4-34493	Interface enclosure Small Plastic box
S4-34496	Interface enclosure houses 6 Interfaces

Medium voltage interface range

S4-34411	Single Output Interface Module DIN rail mountable (Medium Voltage)
S4-34415	Single Output Interface PCB with cover (Medium Voltage) in a metal box

12 input interface

S4-34412	12 input interface module (Supervisory inputs only)
S4-34494	Connection Converter for S4-34412

Mains powered interfaces (from Qtr 3 2010)

S4-34440-02	Mains powered fire alarm interface 24V only
S4-34440-12	Mains powered fire alarm interface 12V / 24V
19104-52	Low voltage power relay
17740-20	Intrinsically safe galvanic isolator for IS detectors and call points
02518-10	Intrinsically safe galvanic isolator for IS sounders

S³ Addressable Speech, Sounder Strobe

Strobe

Low profile range

Body	Strobe - Deep base	
White	S2IP-ST-WR (red lens)	S2IP-ST-WA (amber lens)
Red	S2IP-ST-RR (red lens)	S2IP-ST-RW (white lens)

Sounder Strobe

Low profile range

	Sounder		Sounder Strobe (red lens)	
Body	Deep base	Shallow base	Deep base	Shallow base
White	S3IP-SN-W	S3-SN-W	S3IP-SN-ST-WR	S3-SN-ST-WR
Red	S3IP-SN-R	S3-SN-R	S3IP-SN-ST-RR	S3-SN-ST-RR

Low profile variants

	Sounder Strobe
Red	S3IP-SN-ST-RW (white lens)
White	S3IP-SN-ST-WA (amber lens)

System range

	Sounder		The S2IP-SN-R3 and S2IP-SN-W3 products are suitable for retrofitting and are supplied with a 6-way terminal block to ease cable connection.
Red	S2IP-SN-R (2-way)	S2IP-SN-R3 (3-way)	
White	S2IP-SN-W (2-way)	S2IP-SN-W3 (3-way)	

Note: The system range of products do not support strobe options.

Speech Sounder Strobe

Low profile range

	Speech Sounder		Speech Sounder Strobe (red lens)	
	Deep base	Shallow base	Deep base	Shallow base
White	S3IP-VP-W	S3-VP-W	S3IP-VP-ST-WR	S3-VP-ST-WR
Red	S3IP-VP-R	S3-VP-R	S3IP-VP-ST-RR	S3-VP-ST-RR

Remote Control

S3-CONTROL Remote control for the S³

Domain Bridge products

VIG-NPORT-100 NPORT IP Domain module 100M (single unit)

VIG-DOM-MODEM Modem pair

Surge protection

5530440 1 x Mains, 1 x Loop & 1 x Zone/Sector suppression (enclosure has space for 1 extra loop (2 x 2817958))

5530452 1 x Mains, 1 x Network, 1 x Loop & Zone / Sector suppression (enclosure has space for 1 extra loop (2 x 2817958))

5530465 1 x Mains, 1 x Network suppression

5530478 1 x Mains suppressor

2817958 1 x Additional Loop suppressor (module only)

Replacement Plug ins

2798844 Mains suppressor

2838762 Network suppressor

2839648 Loop suppressor

2838351 Zone / Sector suppressor

Manuals

4188-774 EN54 Vigilon 4/6 loop panel based system Operating instructions

4188-749 Log book

Supported products

Sensors (Supported)

34710 Optical heat sensor

34710-RL Optical heat sensor for remote LED connection

13449-01 Remote LED

34770 Optical heat sensor sounder

34780 Heat sounder

34720 Heat sensor

34760 Duct sensor (inc 17908-05 Probes & 34702 Slave LED unit)

Spares

19271-01 Replacement Optical chamber

Terminal Plate

34700 3-way terminal plate

34704 4-way terminal plate

19279-01 Semi-flush sensor mounting kit

19270-50 Sensor dust cover (50 pack)

Tools

17918-26 Sensor removal tool kit

Manual call points (Supported)

34800-EN Surface mounted MCP

34807 Surface mounted keyswitch MCP

19289-01 MCP flush fixing plate

34829-EN Environmentally protected surface mounted MCP

14112-09EN Spare MCP glasses 10 pack non LPCB approved

14112-49EN Hinged cover with drilled from moulding


14112-EN-KIT BS to EN Front conversion kit with glass

Interfaces (Supported)


34415 Single Channel loop powered interface

19245-05 Interface line module


Notes



At the end of their useful life, the packaging, product and batteries should be disposed of via a suitable recycling centre and in accordance with national or local legislation.



WEEE Directive:
At the end of their useful life, the packaging, product and batteries should be disposed of via a suitable recycling centre.
Do not dispose of with your normal household waste.
Do not burn.



0832

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0832-CPD-1261 1-4 LOOP (VIG1-24 -PO/NP/SP)
0832-CPD-1262 1-6 LOOP (VIG1-72 -PO/SP)

Vigilon

EN54-2: 1997, A1:2006
Control and Indicating equipment for fire detection and fire alarm systems in buildings.

7.8 Output to fire alarm devices
7.11 Delays to action outputs
8.3 Fault signals from point
9.5 Disablement of each addressable point
10 Test condition

EN54-4: 1997, A1:2002, A2:2006
Power supply equipment for fire detection and fire alarm systems in buildings.

Other technical data: see documents in project file 7023, held by the manufacturer.

Gent by Honeywell reserves the right to revise this publication from time to time and make changes to the content hereof without obligation to notify any person of such revisions of changes.

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