Vigilon

Advanced Fire Detection and Alarm System

Applications Manual

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Preface

The manual is a guide to be read in conjunction with the recommendations in BS5839:Part 1:1988, which is the code of practice for Fire detection and alarm system for buildings. Where appropriate the site specific project specification should also be read.

Associated Documents

VIG-MAN-COM	Commissioning Manual for Vigilon
VIG-MAN-INS	Installation Manual for Vigilon
VIG-MAN-OPS	Operating Manual for Vigilon
13563-011	GENT Supervisor Operator's Manual

Conventions

NOTE: *A note highlight important text that is normally hidden in the main text.*

CAUTION: *A caution is given to prevent damage to equipment.*

WARNING: *A warning is given to advise of dangerous conditions that may result in injury or death.*

Issue Record

Section	Issue	Date	Comments
Prelims	1	1/99	This first issue covers the design of Vigilon.
1 to 60	1	1/99	
Appendices	1	1/99	
Parts	1	1/99	
Phone	1	1/99	

Customer feedback

If you have any comments on this manual, then please provide them below. Post completed sheet to the address overleaf or pass on to your area sales representative.

Thanks

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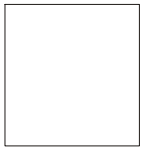

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Standards - System Design

BS5839 Part 1Conformance

Refer to British Standard BS5839 Part 1: Fire detection and alarm systems for buildings, Code of practice for system design, installation and servicing.

Protection of property

Siting Detectors

See also, part on Sensors - Siting.

- For a Type P1 system every part of the building should be suitably protected. For this purpose, each effectively enclosed space should be considered separately.
- Areas covered by a Type P2 system should be separated from unprotected areas by a fire-resisting construction.
- Voids not more than 800 mm deep need not be protected unless fire can spread through them from one to the other.
- Lavatories and water closets need not have independent coverage if cover is provided in a common lobby.
- Where rooms are divided by partitions or storage racks reaching to within 300 mm of the ceiling, each section should be protected separately.
- Shafts for elevators, lifts, hoists, escalators, enclosed chutes through floors and stairways should be protected by detectors at the top of the shaft and within 1.5m of openings on to each floor.
- Where an escalator or staircase has a sloping ceiling, a detector may need to be sited on that ceiling.
- Enclosed staircases should be protected by detectors on each main landing within the staircase.
- Lantern lights should be protected by a detector unless they are less than 800 mm in height above the ceiling and are not used as ventilation.
- Extra detectors may be needed to cope with structural features within a room. Consideration must be given to possible adverse air flows when air conditioning and ventilation systems are in use.
- If a detector is concealed, it may be desirable to provide a remote visible indication of its operation.
- Detectors should not be mounted less than 500 mm from any wall or partition.

- Detectors should not be mounted less than 500 mm from any obstruction to the flow of hot gases or smoke towards them. Other isolated obstructions such as light fittings do not normally obstruct the flow of smoke.

- Care should be taken in siting to ensure that adverse conditions such as high levels of shock or vibration are not encountered.

- Normally, smoke detectors should not be sited in kitchens, bathrooms, shower rooms or similar situations where conditions are liable to cause unwanted alarms.

Protection of life

In circumstances where a particular early warning of fire is necessary for the safety of life, automatic fire detectors should be installed in combination with a manually-operated fire alarm system.

Detectors may also be needed:

- To compensate for a reduction or low level of supervision.

- Where the occupants are specially vulnerable owing to age, illness or unfamiliarity with the building.

- Where it is impracticable to provide structural separation to stop the spread of fire products.

The level to which additional protection is provided will depend on the individual building requirements. A Type L3 system provides the first level of protection and should give warning to the occupants in time for them to use the escape routes before they are blocked by smoke. The coverage area should therefore include both escape routes and adjacent rooms.

To protect these circulation areas detectors must be installed:

- In corridors, passageways and circulation areas.

- In rooms (other than toilets) opening directly on to any staircase.

- At the top of any staircase.

- On landing ceilings, at vertical intervals not exceeding 10.5m below the top of any staircase.

- At the top of lift shafts, hoists, ducts etc.

- At each level external to lift shafts, hoists, ducts etc.

Note that:

- Only smoke detectors which are as far as possible sensitive to all types of fire should be used.

- Heat detectors should not be used in circulation areas.

- Spacing should be as for property protection, but the extension to the spacing for corridors under 5m wide may be used only if smoke detectors are sited in all adjoining rooms.
- Additional detectors may be needed to operate fire doors or extinguishing systems.
- Consideration should be given to the provision of smoke detectors in sleeping accommodation.

A Type L2 system is the second level of protection where all the most vulnerable life and fire risk areas are covered by automatic detectors in addition to those areas covered by a Type L3 system. These risks normally fall into two categories:

- Those in which the normal occupants are especially vulnerable to fire starting in their vicinity.
- Those having a particularly high probability of ignition and from which fire or fire products could spread to affect the building occupants.

Examples of areas where this extra protection should be considered include sleeping accommodation, day accommodation, store rooms, kitchens and service ducts.

Full protection is obtained by the third level, a Type L1 system in which all areas in the building are covered by automatic detectors.

Siting Manual Call Points

See also, part on MCPs - Positioning.

All MCPs should conform to BS5839 : Part 2 and sited in an:

- In conspicuous and well-lit positions against a contrasting background so that they can be seen easily.
- 1.4m above floor level so that nobody has to travel more than 30 metres to reach one
- on floor landings of staircases
- on all escape routes and exits to the open air.

Sounders

See also, part on Sounders - Positioning.

All fire alarm sounders within a building should have similar sound characteristics - except in areas of high background noise where specialised high-performance sounders may be needed.

Bells or electronic sounders are normally suitable with sirens or high-performance electronic sounders in high noise areas.

When selecting the type of alarm, consideration must be given to any possible confusion with other alarm signals, conflicting background noises, and restrictions on the total current consumption permissible on each alarm circuit.

> ***NOTE:*** *In general the fire alarm sounders* ***must not*** *be used for any other purpose, with the established exception of* ***class changes*** *in schools where coded signals of not more that five seconds duration can be used.*

Public address equipment

Public address equipment can be used to give warning of fire, subject to certain conditions. Visual alarm signals should be considered in special circumstances for use in conjunction with alarm sounders.

EN54 Parts 2 and 4 and BS5839 Part 4

What is EN54 (specifically parts 2 & 4)?

- EN54 is the name of a new range of Europe-wide standards for fire detection and alarm equipment. The intention is to create a unified set of standards for all of the countries in the EEC. Thus as parts of the standard are published, each country must replace any relevant existing standards with EN54.
- EN54 part 5 (Heat Detectors) and EN54 part 7 (Smoke Detectors) have been published for some time and all Gent detectors/sensors meet the requirements of these.
- EN54 part 2 relates to Control and Indicating Equipment and EN54 part 4 relates to Power Supplies. Thus most control panels (including Vigilon) must comply with both parts.
- EN54 parts 2 & 4 were published as a British Standard in April 1998. European law states that any old standards must be withdrawn within 12 months of a new standard being published. Thus BS5839 part 4 will be withdrawn as a British Standard in April 1999. LPCB certification to BS5839 part 4 will continue for 36 months after this so existing panels will keep their LPCB certification until April 2002.

Key Differences between EN54 parts 2 & 4 and BS5839 part 4

- Although in broad terms EN54: 2 & 4 and BS5839: 4 are similar there are many differences in detail that have required a slightly different approach to the way the control panel works. The key differences are as follows:
  - EN54 part 2 is very much a zone based standard. Thus the EN54 panel defaults to display fires by zone rather than by device. Also if all the devices in a zone are disabled then a zonal disablement is shown. (NB: Interestingly EN54 part 2 has no specific requirement for zonal lamps, a zonal display on the LCD is acceptable).
  - There are certain limits placed on the number of devices allowed in EN54 part 2. No more than 512 detectors and/or call points can be connected to a panel if a single processor failure will prevent these from operating. In the event of a cable fault (e.g. short circuit) no more than 32 detectors and/or call points may be lost.

- Terminology has been tightened up and standardised. For Gent this means that disabled zones/devices are shown as “Disablements” not “Warnings”.
- Different types of events may not be mixed up on the display. Also certain classes of Faults and Disablements may not be suppressed when the panel is in fire mode. For Gent this has meant the development of the “windows” based display. This shows each different type of event in its own window and should improve both clarity and functionality.
- If a delay is active then a disablement must be shown.
- There are subtle differences in the way that certain controls work. For example there is no disablement buzzer (by default) and all other buzzers (including the fire buzzer) must be cancellable.
- In order to be able to meet the wide variation in the way that fire detection & alarm systems are used around Europe, not all of EN54 parts 2 & 4 are mandatory. As well as the mandatory sections there are a number of sections which are called “Options with requirements”. This means that you do not have to provide this functionality, but if you do you have to meet the requirements in that section of the standard. The Options with Requirements that have been implemented in Vigilon are listed below.

The Vigilon product range and how it complies

In order to meet the conflicting needs of compliance with EN54 parts 2 & 4 and backwards compatibility with System 3400 it has been necessary to design two versions of the Vigilon panel.

Both panels have the same physical design and use the same loop devices. The difference is in the way that the display and keyboard work. The two versions are as follows:

- ❑ Vigilon panel – These are the panels coded VIG1, VIG2 etc. This panel is designed to be compliant with EN54 parts 2 & 4. It is intended that this should be the standard panel offering for new installations. It cannot be connected to the same network as System 3400 panels. This is because the network communication protocol has been changed to include new events and commands for disablements. All EN54 compliant software will be at Version 4.

> ***NOTE:*** *If the system is to comply with EN54 part 2 then the following restrictions must be adhered to:*
> *1. No more than 512 sensors and/or manual call points may be connected to a panel. This restriction does not affect interface units, sounders and repeat/mimic panels.*
> *2. No more than 32 sensors and/or manual call points may be connected onto a spur circuit. Also each spur may only cover 1 zone.*
> *3. A manual call point must be provided next to the panel that is configured to operate all sounders.*

- ❑ Vigilon V3+ panel – These are the panels coded VIG1-V3+, VIG2-V3+ etc. This panel is designed to be compliant with BS5839 part 4 and is LPCB certificated. It can be connected to the same network as System 3400 panels.

EN54 part 2 Options with Requirements implemented in the Vigilon panel

Option	Clause in EN54 pt 2	Explanation
Fault signals from points	8.3	This simply means that the Vigilon panel can display faults from individual loop devices as well as zone faults.
Output to fire alarm devices	7.8	A requirement of the standard is that the panel must have an output to at least one of a set of standard output types. This option means that Vigilon complies by providing an output to “fire alarm devices” (a category which includes bells, sounders and voice alarm loudspeakers).
Co-incidence detection	7.12	This means that it is possible to configure the system so that more than one detector has to detect a fire before the sounders will go off. The requirement of the standard is that this is configurable separately for each zone.
Delay of the actioning of outputs	7.11	The key points are that delays cannot be more than 10 minutes and that a call point must be provided next to the panel that is configured to operate all sounders
Disablement of each addressable point	9.5	This means that the Vigilon panel provides the facility to disable individual devices as well as zones. The requirement of the standard is that when all of the devices in a zone are disabled then a zonal disablement is also shown.

Year 2000 Compliance

The Vigilon system is designed in accordance with the requirements of LPS2000.

IP Rating

First number		Second number	
IP	Meaning	IP	Meaning
0	No protection	0	No protection
1	Protected against solid objects > 50mm eg accidental touch by hands	1	Protedted against vertically falling drops of water
2	Protected against solid objects > 12mm eg fingers	2	Protected against direct sprays up to 15^{o} from vertical
3	Protected against solid objects > 2.5mm eg tools and wires	3	Protected against sprays to 60^{o} from vertical
4	Protected against solid objects > 1mm eg tools, wires and small wires	4	Protected against sprays from all directions, limited ingress permitted
5	Protected against dust, limited ingress permitted, no harmful deposits	5	Protected against low pressure jets of water from all directions, limited ingress permitted
6	Totally protected against dust	6	Protected against strong jets of water, limited ingress permitted
		7	Protected against the effects of immersion of between 15cm and 1m
		8	Protection against long periods of immersion under pressure

EMC Compliance

These guidelines should be followed to meet the requirements of the EMC directive in force within the European Union, to prevent the reception and emission of electromagnetic interference into and out of the analogue addressable fire detection and alarm system.

Code of practice

The installer must follow BS7671: 1992 Requirements for Electrical installations, IEE wiring regulations 16th edition if installation is in the United Kingdom, UK.

Cables

The following cables have been tested against EMC directives for use with fire detection and alarm applications
(see also the Choosing Cable sections for further information):

- ❑ For loop circuit, battery connection and master alarm circuit wiring:
  - Mineral Insulated Copper Cable (MICC)
  - FIRETUF OHLS Cable type: FTZ2E1.5 and FTZ4E1.5
  - Raydex CDT FG950
  - Cavicel SpA Firecel SR114
  - AEI Cables FIRETEC
  - BICC Pyrotenax FLAMESIL FRC
  - Datwyler LIFELINE
  - Alcatel cable PYROLON E
  - Huber & Suhner RADOX FR
  - Pirelli FP200 FLEX
  - Pirelli FP200 GOLD - provided the date of manufacture is after 1998
- ❑ For network interface to network interface or control panel to network interface wiring:
  - Mineral Insulated Copper Cable (MICC). This cable should be used for fire resistant applications
  - Delta Crompton Firetuf FDZ1000
  - Belden Cable No 9729 (UL Style 2493)
  - Armoured Cable[1].
    By armouring the Belden Cable No 9729 (UL Style 2493)

> ***NOTE:*** *It is not permitted to mix cables of different types on the same leg of a network.*

In the UK, the guidance of BS5839: Part 1 should also be followed.

1. The cable manufacturer cannot guarantee the cable specification if it is armoured.

Cable Separations

The cables of the fire detection and alarm system and other systems should usually be separated by at least 160 mm, unless dedicated conduit or ducting is being used.

In the UK there is additional guidance provided in a document reference Recommended cable separations to achieve electromagnetic compatibility in buildings obtainable from the Electrical Contractors Association.

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 connected through each system device on the loop, whether the earth is connected or not.

See also Cable termination

> ***NOTE:*** *Do not use any part of building structure for earthing.*

A zinc coating is provided around the termination point, on the inside of an equipment metal enclosure. This provides a good electrical conductivity path for cable earth termination.

There are copper fingers fitted to the control and indicating equipment to fill the gap between enclosure and cover. The fingers provide a shield against electromagnetic and radio frequency interferences.

Mains Supply

The mains supply to mains operated equipment should enter the enclosure by a dedicated entry, which is the closest to the mains connection points.

Cable termination

Use only cable manufacturers recommendations for cable termination.

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

Where Mineral insulated cable (MICC) is being used:

- ❑ use only galvanised finish junction boxes for installation of alarm and detection devices
- ❑ use brass locknut with zinc plated lock washer to secure gland to the metal enclosure.

> ***NOTE:*** *The EMC tests were conducted using the items detailed above. Whilst other equipment may be used, there is* ***no guarantee*** *that the system will remain* ***EMC compliant****.*

There is no need to use earth tail seals when terminating mineral insulated cable, providing there is good earth continuity between gland and enclosure.

When using Firetuf cable, the earth drain wire should be fitted to the earth point nearest the cable entry, with a length not exceeding 50 mm.

Board fixings

During installation a check should be made to ensure all board fixing screws inside equipment enclosure are fully tightened, the screws maintain earth continuity path between the board and its metal enclosure.

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LVD Compliance

Guidelines for compliance with the requirements of the Low Voltage Directive (LVD)

Introduction These guidelines should be followed to meet the requirements for the safety of Information Technology equipment, including electrical business equipment - BS EN 60950: 1992.

Products All Vigilon Panels.

Guidelines

- ❑ Ensure the EMC Compliance Guidelines are followed.
- ❑ Each of the Fire Alarm equipments' fused spur units must be fed from a dedicated switch or protective device at the local mains supply distribution board. If a single pole disconnect device is used (on Live Side) then the Neutral (N) should be clearly labelled.
- ❑ Cable Glands should be used on the equipment for the mains supply cable.
- ❑ Unused knockouts that have been removed, should not be left open.
- ❑ Mains supply cable shall:
  - If rubber insulated, be of synthetic rubber and not lighter than ordinary tough rubber sheathed flexible cable according to designation H05 RR-F.
  - If polyvinyl chloride (PVC) insulated and for equipment having a mass exceeding 3kg, be not lighter than ordinary polyvinyl chloride sheathed flexible cable, to designation H05 VV-F or H05 VVH2-F2.
  - Include, in the case of Class 1 Equipment, a green/yellow protective earthing conductor electrically connected to the protective earthing terminal within the equipment and connected to the protective earthing contact of the plug, if any.
  - Have conductors with cross sectional areas of not less than 0.75mm.

NOTE: *For rated currents of up to 3A, a nominal cross sectional area of 0.5mm^2 is permitted provided the length of the cord does not exceed 2m.*

NOTE: *It is also recommended (not an LVD requirement) that the mains cable to any part of the fire alarm system equipment is fire resistant, eg MICC or Firetuff OHLS.*

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LPC Certification

An LPC certified system should only include components that have been LPC certified. If it is necessary to include non-certified equipment, such equipment should be clearly identified as not certified in any project specification.

An LPC certified system MUST include a zonal mimic panel (model no VIG-ZONE)

Control Equipment

The following control equipment is LPC certified to BS5839 Pt 4::

- V3+ Control panel (model no VIG1-V3+, VIG2-V3+, VIG3-V3+ and VIG4-V3+)
- Zonal mimic panel (model no VIG-ZONE)

Sensors

The Vigilon sensors may be configured via the control panel to operate in one of a number of states. The operating state defines the conditions under which the sensor will have identified a fire. Changing the states changes the sensitivity of a sensor. When using combination sensors, the states allow individual sensing elements to be ignored. Sensors may be configured to conform to LPC regulations by using the following states:

Sensor	LPC approved states	Meaning
Optical Heat sensor or Optical heat sensor sounder	Detection to meet BS445: Part 7 (for Smoke) BS5445:Part 5 (for Heat): **State 0** **State 8** **State 12** **State 13**	 Medium smoke sensitivity, grade 2 heat Smoke sensing with delay, grade 2 heat Grade 1 heat (only) Grade 2 heat (only)
Heat sensor	Detection to meet BS5445 : Part 5: **State 0** **State 1**	 Grade 2 Grade 1
Ionisation sensor	Detection to meet BS5445 : Part 7: **State 0**	 Default sensitivity

MCPs

Use only:

- ❑ Standard version

Sounders

Use either:

- ❑ Sounder (2 snd 3 way)
- ❑ Combined Optical heat sounder

Sensors - Selection

Sensor type

Optical Effective in monitoring visible smoke from slow smouldering fires

Heat Effective in monitoring high energy fires, even with little or no smoke

Ionisation Effective in monitoring smoke and the invisible products generated by fast burning, high energy fires

Beam Effective in monitoring visible smoke from slow smouldering fires over long distances (up to 100 metres)

Flame Effective in monitoring carbon-based, free burning fires (Non-addressable device requiring mains powered interface))

Dust cover Each Vigilon sensor, except beam sensor, is supplied with a dust cover. The cover is fitted during installation to prevent dust and dirt from building work reaching the fire sensor.

Optical Heat (Sounder)

variant

- ❑ Optical Heat sensor - VIG-SEN-OH
- ❑ Optical Heat Sounder - VIG-SEN-OHS
- ❑ Remote LED Optical Heat Sensor - VIG-SEN-OH-RL#
- ❑ Monitored line MCP Optical Heat sensor - VIG-SEN-OH-ML# (not for use in systems which comply with BS5839)

(also available in a duct mounting enclosure - VIG-SEN-DUCT and as a combined Heat sounder - VIG-SEN-HS)

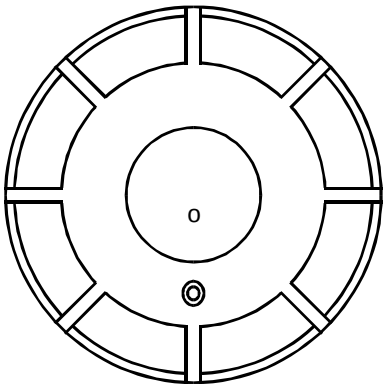

Figure 5-1 Optical heat sensor

cd12

#Require the four way terminal plate

This combination provides a truly general purpose sensor. As well as operating as two standalone sensors, it will also react to the presence of smoke and heat at the same time.

This sensor is particularly well suited to work with the time block and time slot facility. Individual heat and smoke sensing elements to be disabled or desensitised during working hours. This maximises fire detection but reduces the risk of false alarms. It allows the sensor to be used in environments where conventional smoke detection would not be considered suitable.

applications Potential applications include:

- ❑ Most furnished locations like offices, reception area and meeting rooms
- ❑ the optical heat sounder is particularly suitable for applications in hotel bedrooms when set up for sensor-sounder operation.

siting Avoid siting combined optical/heat sensors in:

- ❑ steamy, dusty or smoky environments (timed switching to reduce optical sensitivity may be used where these conditions only exist at particular times of day - however, such conditions will still require frequent sensor cleaning)
- ❑ direct line of sight of an infra-red source. e.g. tungsten or high intensity arc lights

Heat Sounder - VIG-SEN-HS

This combination provides a general purpose application in areas where smoke sensing is not required. It is a good alternative to smoke sensors where the environment is subject to constant levels of smoke or dirt. The Heat Sounder may be configured to respond at different sensitivity grades and rates. Potential applications include:

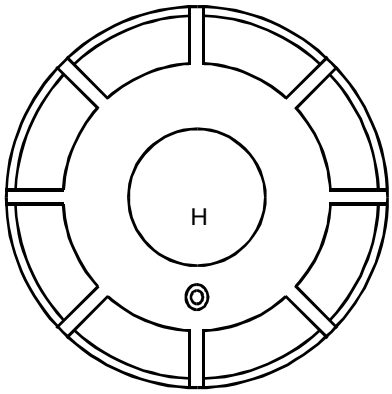

Figure 5-2 Heat sounder
cd13-1

applications

- ❑ Student accommodation where smoke detection may cause false alarm
- ❑ Bedrooms where there is no legal requirements to protect life

Heat - VIG-SEN-H

(also available environmentally protected - VIG-SEN-H-EP)

The heat sensor is a good alternative to smoke sensors where the environment is subject to constant levels of smoke or dirt. The VIG-SEN-H may be configured to respond at different sensitivity grades and rates. Potential applications include:

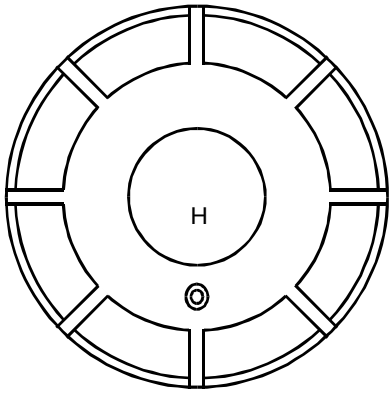

Figure 5-3 Heat sensor
cd13-2

applications

- ❑ boiler rooms
- ❑ busy kitchens

Ionisation - VIG-SEN-I

The ionisation sensor is a useful alternative where fires are likely to include invisible products of combustion. Potential applications include:

- ❑ solvent stores

A mixture of optical and ionisation sensors can be used to ensure comprehensive coverage in areas of high value. Potential applications include:

- ❑ computer rooms

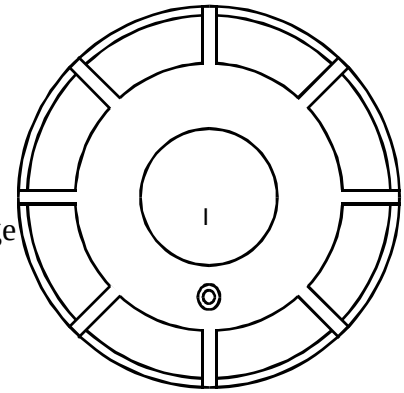

Figure 5-4 Ionisation sensor

cd13

Beam - VIG-BEAM

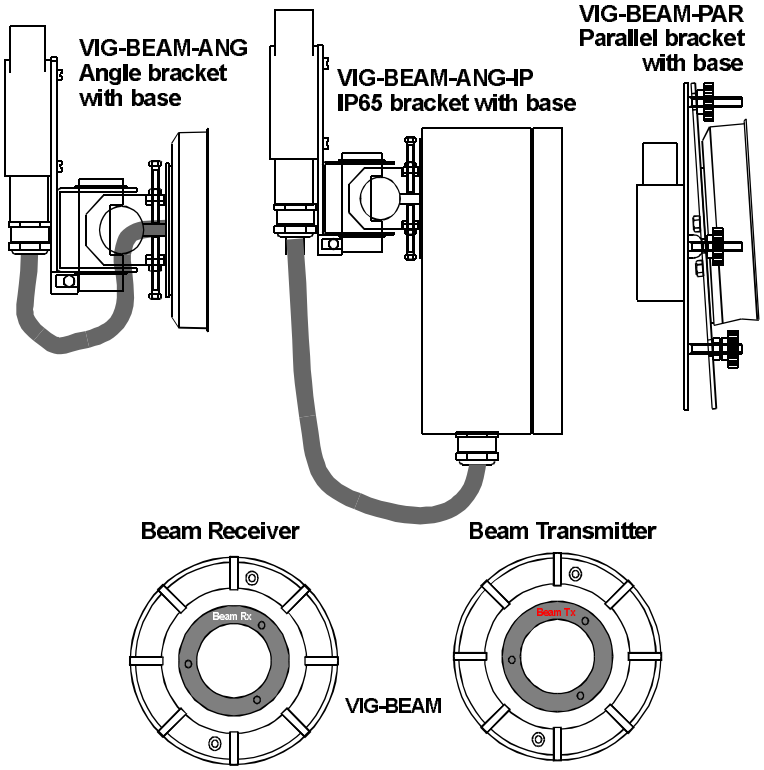

Figure 5-5 Beam sensor pair and brackets

cd8n_1

Beam sensors are suitable for monitoring paths of up to 100m (see product data sheet). A transmitter is mounted on a solid surface and aligned with a receiver, similarly mounted at the other end of the path. Applications include:

- ❑ corridors
- ❑ warehouses
- ❑ ceiling voids
- ❑ hangars
- ❑ large open shopping areas

siting Avoid siting beam sensors in:

- ❑ close to heaters or boilers. Heat shimmer and the effect of a thermal barrier will interfere with the detection capability of the sensors.
- ❑ areas where the beam passes through glass.
- ❑ area likely to be obscured by other fixings, e.g. light fittings, trunking and racking systems.
- ❑ in locations likely to be affected by sunlight shining directly into the receiver.

Problem areas to check:

- areas used by cranes, fork lift trucks or people. Any obscuration of the beam will prevent the sensor functioning normally.

Flame detector - 07012-31

> ***NOTE:*** *This is a conventional flame detector, to be connected to the fire system via a mains powered fire alarm interface unit.*

The conventional flame detector is suitable for mounting on high ceilings where a point-type sensor becomes insensitive and impracticable to mount. The flame detector can be mounted on a wall to monitor an area of floor.

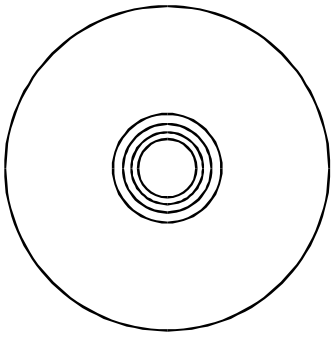

Figure 5-4 Flame detector
cd131

applications Potential applications include:

- ❑ churches
- ❑ shopping malls
- ❑ large department stores

> ***NOTE:*** *Flame detectors are unable to detect smouldering fires, they should therefore be used in specialist applications or to supplement smoke sensors.*

siting Avoid siting flame detectors in the following:

- ❑ where it might receive sunlight reflected from a slowly revolving fan.
- ❑ where it might receive sunlight reflected from water or through branches of a tree.
- ❑ where it might receive sunlight that passes through vertical or venetian blinds that could move in a breeze etc.

Duct sensors - VIG-SEN-DUCT

The duct sensor is designed to sense smoke in air conditioning ducts. The duct sensor is fixed to the outside of a duct and has two probes that protrude in the duct and are positioned across the air flow.

The sensor is fitted with a standard VIG-SEN-OH combined optical/heat smoke sensor.

A remote led is supplied for use with this product.

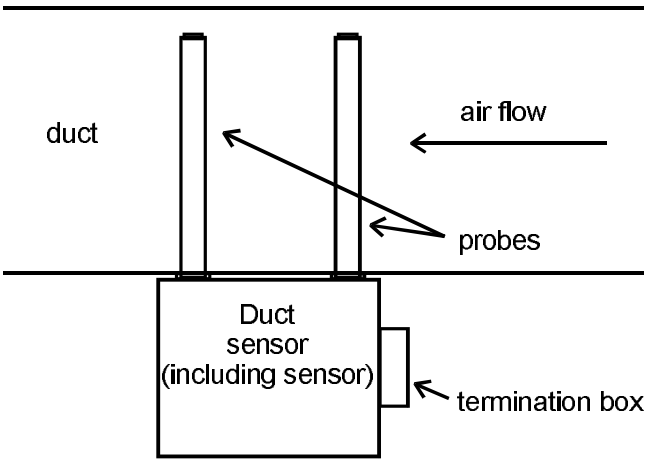

Figure 5-5 Duct sensor
cd17

siting Avoid siting duct sensors:

- ❑ where air will be diluted from multiple sources
- ❑ near fans
- ❑ near bends, inlets and outlets (within 3 x duct width from sensor)
- ❑ near obstructions causing turbulence.

Semi-Flush fixing - 19279-01

Ceiling-mounted sensors may be semi-flushed to improve their aesthetic appearance.

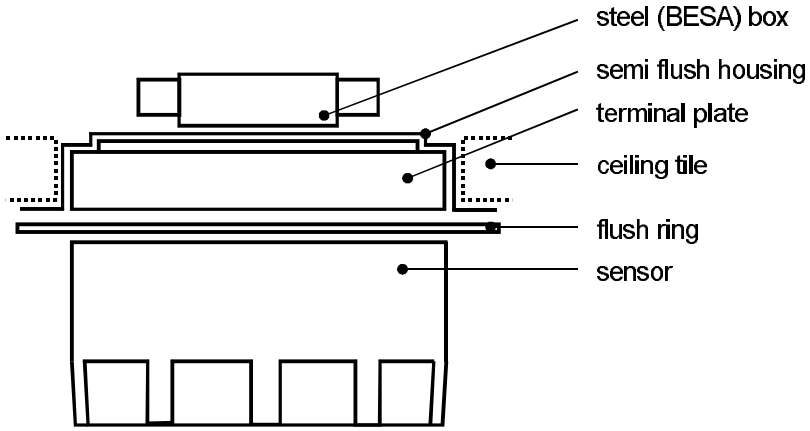

Figure 5-6 Flush fixing sensors
cd4

Sensor Trim Ring - 19279-10

Sensors may be mounted using the Sensor Trim Ring which enables the sensors to be mounted onto low grade ceilings quickly and without the need for cutting accurate holes. Also on refurbishments there is no need to repair or replace ceiling material when the sensors are replacing larger diameter sensors.

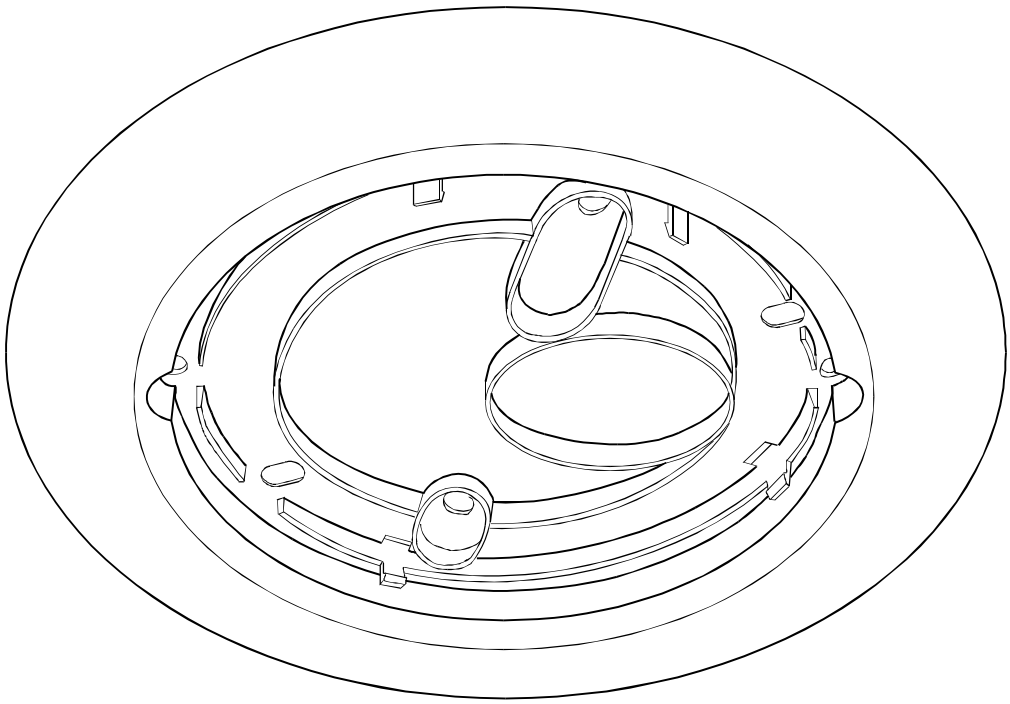

Figure 5-7 Sensor Trim Ring
cdn94

Terminal plates

There are two terminal plates available:

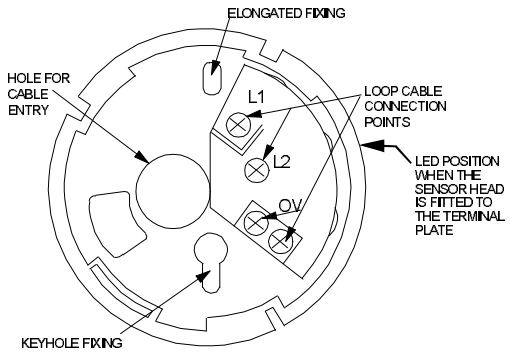

Figure 5-8 Terminal plate

fl112

- Standard three terminal plate VIG-SEN-TERM - connections L1, L2 and 0v.

- Four way terminal plate VIG-SEN-TERM-4 - as for the 3 WAY terminal plate but with a fourth terminal. This terminal plate is used with the Remote LED Optical heat sensor VIG-SEN-OH-RL and the Monitored line Optical Heat sensor VIG-SEN-OH-ML (Chinese market only).

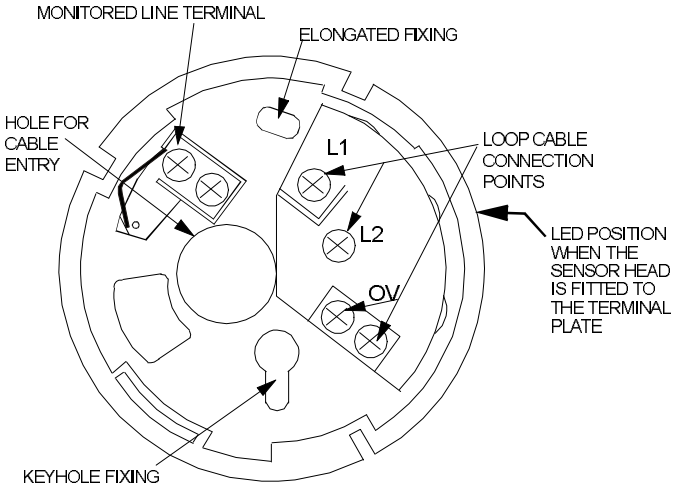

Figure 5-9 Four way terminal plate

cdn276

NOTE: *The VIG-SEN-OH-RL heat sensor must be used with the remote LED part number VIG-REM-LED (see terminal plate product data sheet.*

Slave devices

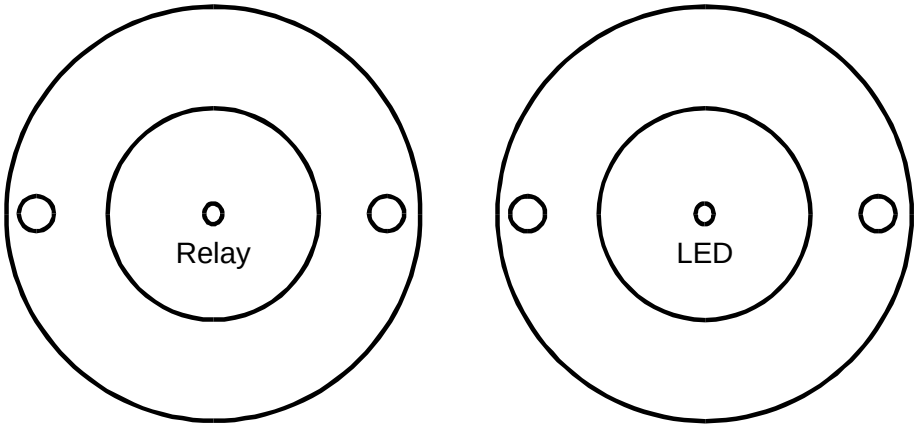

Figure 5-10 Slave devices

Cd123 and cd124

The slave devices provide either a remote repeat indicator (slave LED) or relay contact (slave relay) for a sensor. The slave is only applicable to sensors and cannot be used with MCPs etc.

The slave device is positioned on the loop circuit directly before the associated sensor. It does not use an address of its own.

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Sensors and MCPs - Siting

See Appendix A for information on Environmental considerations
See also Appendix B for information on equipment for installation in Hazardous areas.

Smoke sensors

The sensor siting design rules aim to satisfy the requirements of BS5839 Part 1:1988, if in doubt refer to the standard. This section refers to point sensors and does not include beam sensing which is covered in a separate section, Beam sensors.

Siting (horizontal)

Maximum dimensions

- Area covered by 1 sensor: 100 m^2.
- Distance between any part of the wall and the nearest sensor: 7.5 m.
- Distance between sensors: 10.6 m.

Minimum dimensions

- Distance between sensor and wall: 0.5 m.
- Distance between sensor and obstruction to the flow of smoke or hot gases: 0.6 m.

Layout

Flat horizontal ceilings

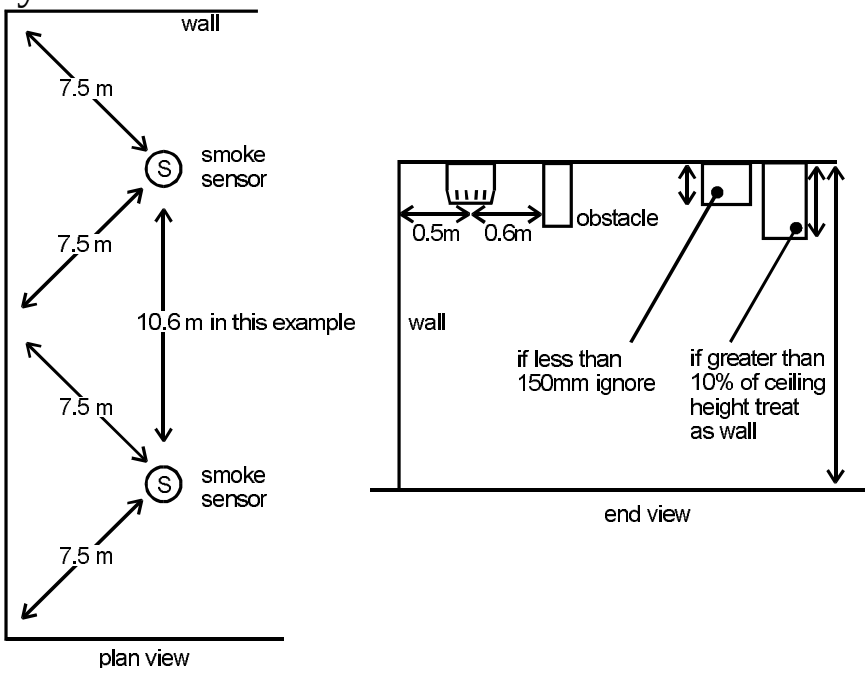

Figure 6-1 Smoke sensors under flat ceiling
cd30

Corridors

Sensors in corridors may generally be spaced more widely.

- this is NOT applicable to life safety applications unless all adjoining rooms have smoke detection
- this is NOT applicable to corridors greater than 5 metres wide

Sensors may be placed at horizontal distances extended up to 50% of the difference between the actual corridor width and 5 metres (see table).

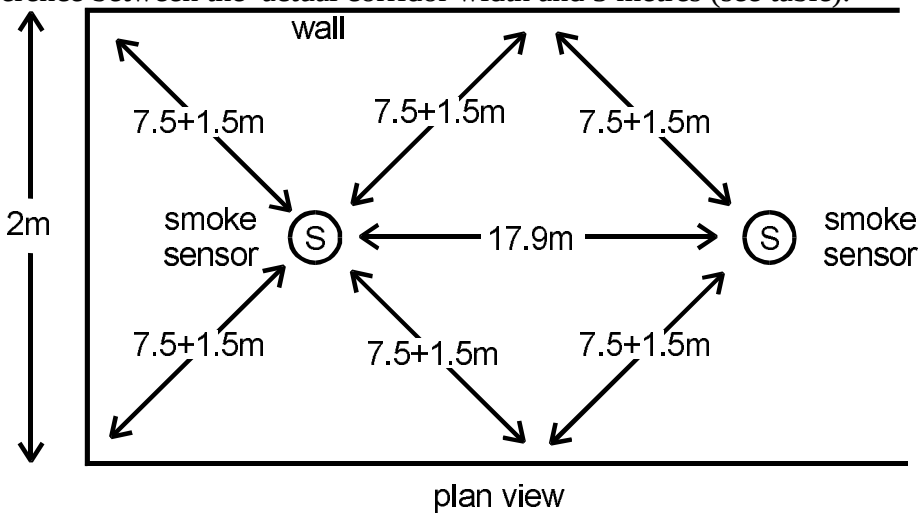

Figure 6-2 Smoke sensors in 2m corridor

cd31

Corridor width (metres)	Maximum spacing between smoke sensors (metres)
1.2m	18.8m
1.6m	18.3m
2.0m	17.9
2.4m	17.4
2.8m	17.0
3.2m	16.5
3.6m	16.0
4.0m	15.5
4.4m	15.0
4.8m	14.4

Pitched roofs

A row of sensors should be installed along the apex of any pitched roof or north-light roof.

Smoke sensors should be not more than 600 mm from the apex of the roof.

Horizontal spacing between sensors may be extended when used under pitched roofs. The horizontal distance may be extended by up to 1% for each degree of slope of the roof (relative to horizontal).

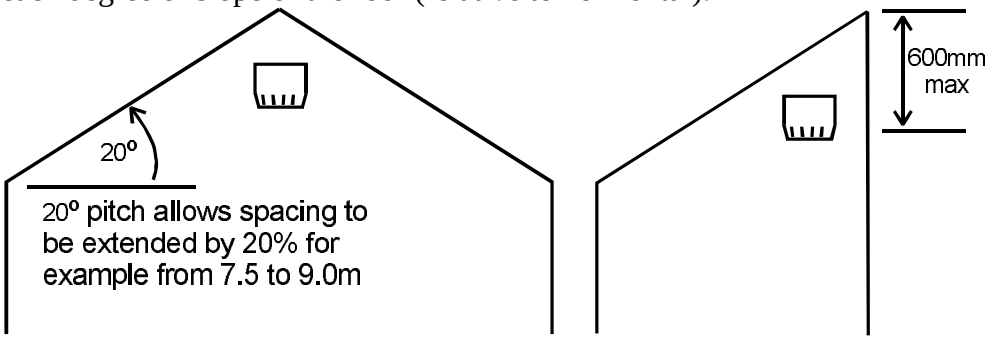

Figure 6-3 smoke sensors under pitched roof

cd32

Heights

Maximum heights of sensors are dependant on the response available in the event of fire:

- A - general applications
- B - automatic link to a manned centre and the fire brigade response is normally within 5 minutes

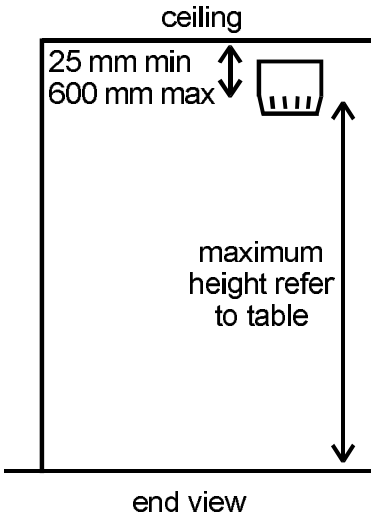

Figure 6-4 Smoke sensor height

cd33

Response A		Response B	
general	extended limits	general	extended limits
10.5m	12.5m	15.0m	18.0m

Table showing maximum heights of sensors above the floor.

Extended limits apply to ceilings that form less than 10% of the ceiling area of a room.

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Heat sensors

Siting (horizontal)

The sensor siting design rules aim to satisfy the requirements of BS5839:Part1:1988, if in doubt refer to the standard.

Maximum dimensions

Area covered by 1 sensor: 50 m^2.

Distance between any part of the wall and the nearest sensor: 5.3 m.

Distance between sensors: 7.5 m.

Minimum dimensions

Distance between sensor and wall: 0.5 m.

Distance between sensor and obstruction to the flow of smoke or hot gases: 0.6 m.

Layout

Flat horizontal ceilings

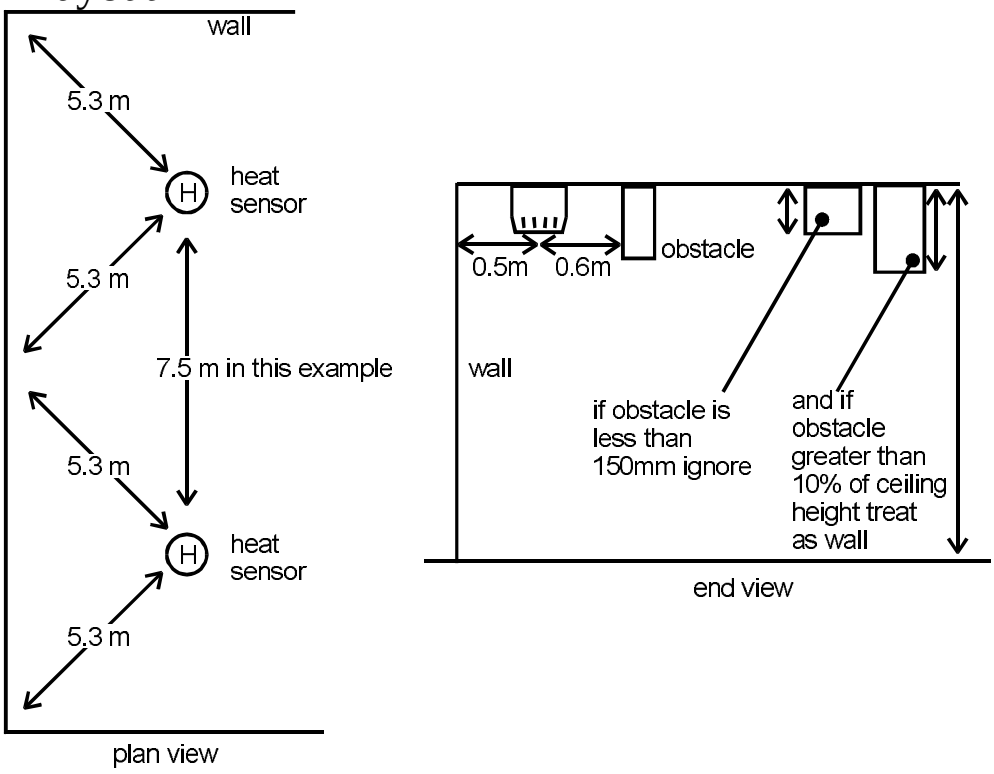


Figure 7-1 Heat sensors under ceiling
cd34

Corridors

Sensors in corridors may generally be spaced more widely.

- this is NOT applicable to life safety applications unless all adjoining rooms have detection.
- this is NOT applicable to corridors greater than 5 metres wide

Sensors may be placed at horizontal distances extended up to 50% of the difference between the actual corridor width and 5 metres (see table).

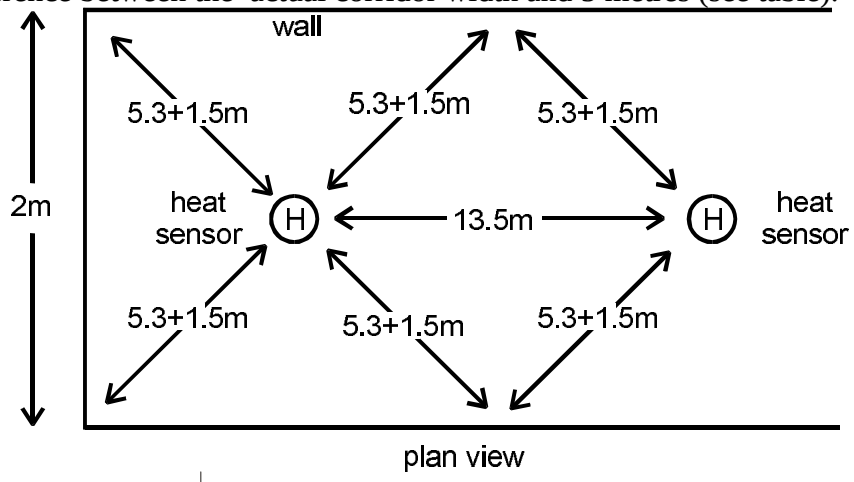


Figure 7-2 Heat sensors in 2m corridor

cd35

Corridor width	Maximum spacing between heat sensors (metres)
1.2	14.4
1.6	14.0
2.0	13.5
2.4	13.0
2.8	12.5
3.2	12.0
3.6	11.5
4.0	10.9
4.4	10.3
4.8	9.7

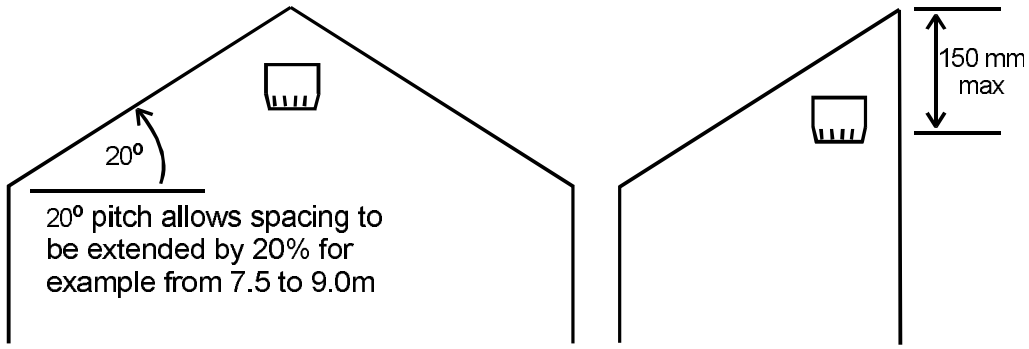
Pitched roofs

A row of sensors should be installed along the apex of any pitched roof or north-light roof.

Heat sensors should be not more than 150 mm from the apex of the roof.

Horizontal spacing between sensors may be extended when used under pitched roofs. The horizontal distance may be extended by up to 1% for each degree of slope of the roof (relative to horizontal).

Figure 7-3 Heat sensor height

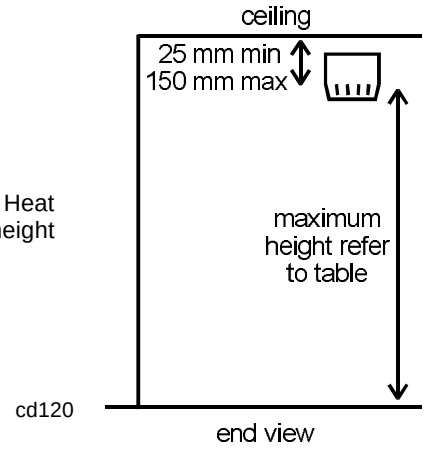


Heights

Maximum heights of sensors are dependant on the response available in the event of fire:

- A - general applications
- B - automatic link to a manned centre and the fire brigade response is normally within 5 minutes

Figure 7-4 Heat sensor height



	Response A		Response B	
Sensitivity	**general**	**extended limits**	general	**extended limits**
grade 2	7.5	10.5	12.0	17.0
grade 1	9.0		13.5	
high temp	6.0	10.5	10.5	15.0

Table showing maximum heights of sensors above the floor.

> ***NOTE:*** *Extended limits apply to ceilings that form less than 10% of the ceiling area of a room.*

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Beam sensors

Siting

Siting

The beam diameter is 3 centimetres. There should be no obstacles within the beam path.

sensor type	path length	configuration states
Set to short path	2m to 30m	2 or 3
Set to long path	>30m to 100m	0 or 1

NOTE: *Beam sensors must be mounted on a SOLID SURFACE. Do not fix sensors to cladded panelling.*

NOTE: *If beams are installed in a low position care should be taken to ensure that normal operation will not be affected by persons or objects passing through the beam.*

NOTE: *There is a Sun Snout 4334-035 available which will prevent sunlight from affecting the operation of the beam.*

Spacing

Beam pairs can be spaced at intervals of up to 14 metres. The maximum spacing away from an end wall is 7 metres (minimum 0.5 metres, for 3 metres of beam length).

(although British Standards allow spacings of 15 and 7.5 metres, the Gent beam sensor is specified as above)

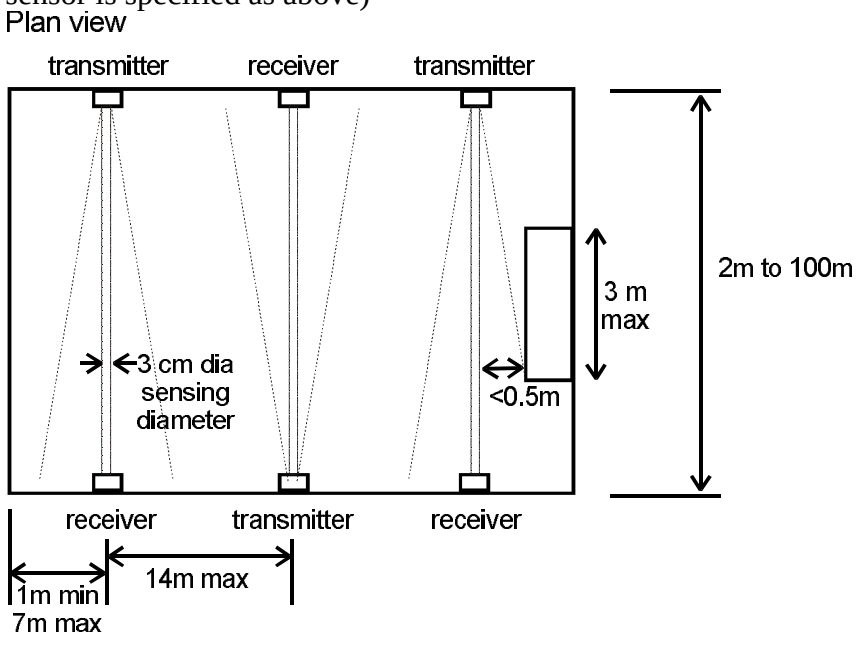


Figure 8-1 Beam sensor siting

Pitched roof

When using beam sensors below pitched ceilings the spacing of the sensor pair below the apex may be extended. The spacing may be extended to 14 metres plus 1% for each degree of slope.

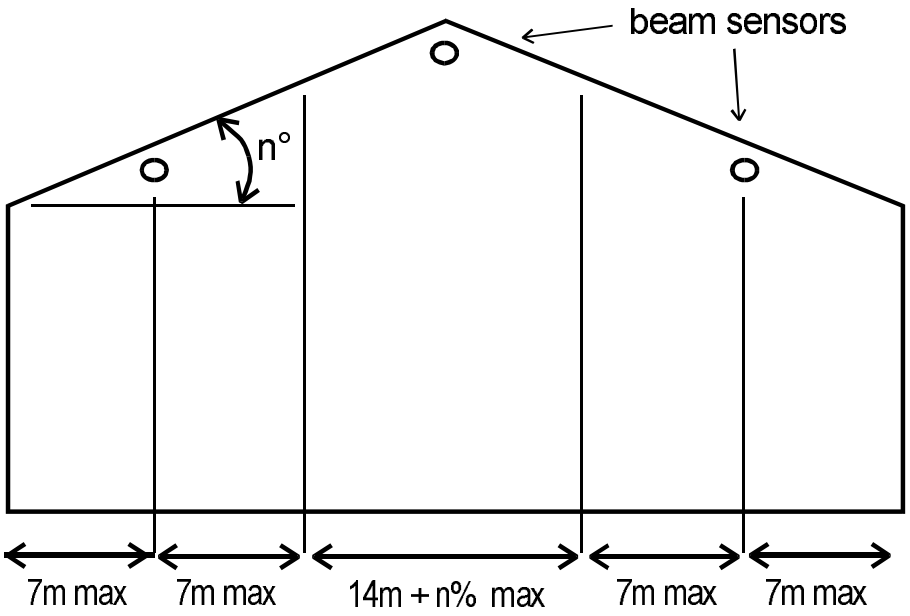
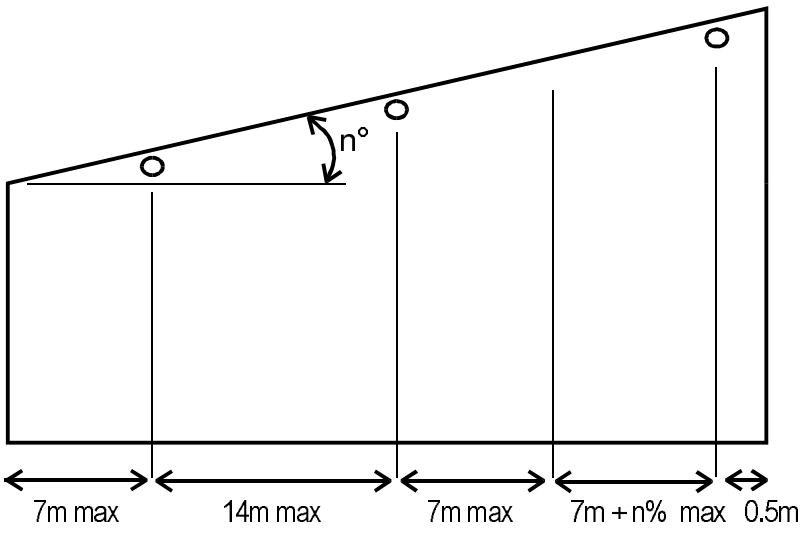


Figure 8-2 Beam sensor under pitched roof

cd36



cd20

Height

The maximum height for a pair of beam sensors above the floor is normally 25 metres. This can be extended to 40 metres if rapid fire brigade attendance is available.

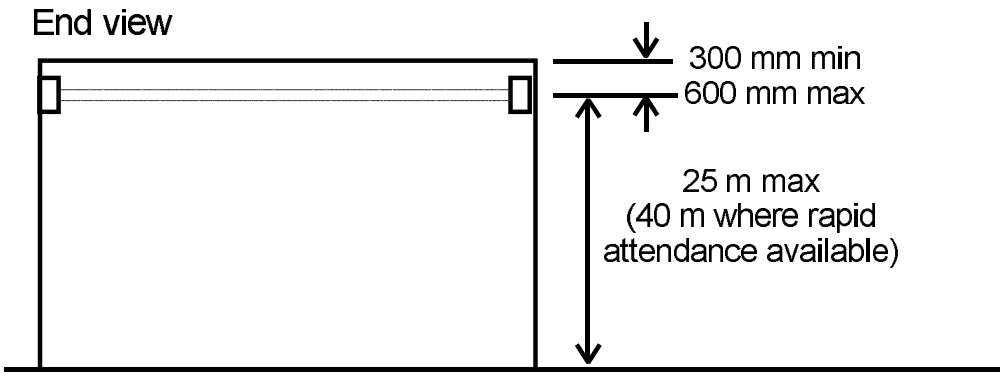


Figure 8-3 Beam sensor height

- The distance from the ceiling should be between 300 mm and 600 mm.
- The maximum range of a beam sensor is 100 metres.

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Duct sensors

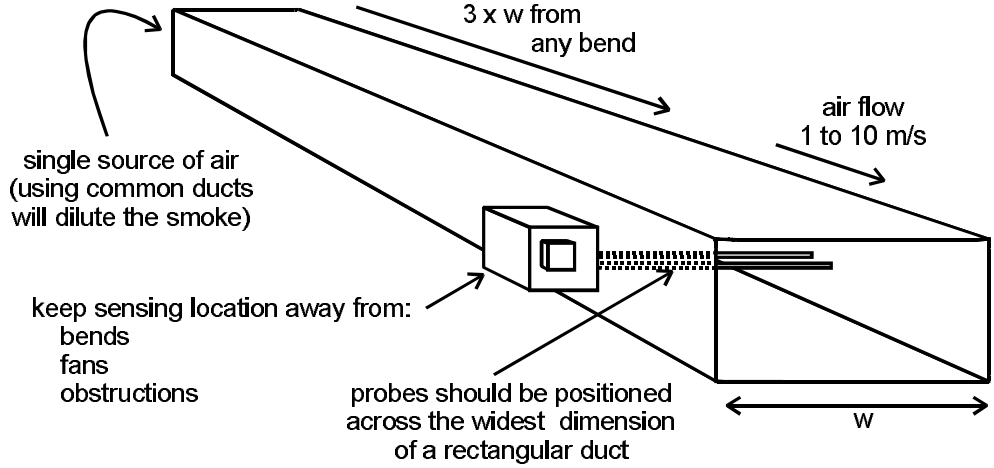

Figure 9-1 Duct sensor location

cd5

The duct sensor works because the air passing a pair of correctly aligned probes, creates a pressure differential. The pressure differential creates a flow of air through the external duct sensor which incorporates a standard optical /heat sensor.

Dilution

Dilution will cause the sensor to become less sensitive to smoke. Dilution will occur if the source of air is from more than one place. Avoid siting the duct sensor on a common duct.

Turbulence

Turbulence will effect the pressure differential between the probes and may prevent the sensor sampling the air. Turbulence is often caused by:

- fans
- inlets and outlets
- corners (keep a distance of 3 times the duct width from any bend)
- obstructions

Sampling

The sampling volume will be proportional to the length of the probes. Keep the probe length as long as possible. Position the probes to cross the greatest dimension of the duct. If the probe length is reduced, additional holes will need to be drilled in the probes.

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Manual Call Points (MCPs)

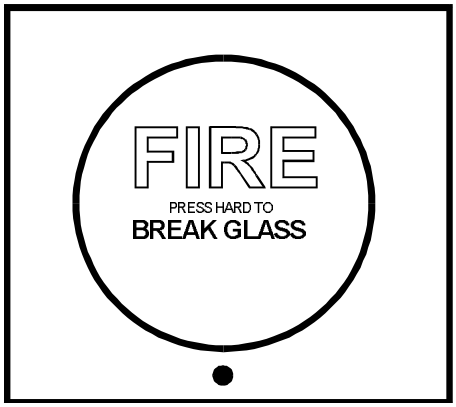

Figure 10-1 MCP

cd76

Choosing MCPs

There are 2 parameters that will effect the choice of MCP:

- Operating method (normally break glass)
- Operating environment

British Standard (Version V3+ only)

- Where a system is designed with a control panel that meets the requirements of BS5839:Part 4:1988, then a manual call point must be installed close to the panel. This will allow a facility to override fire alarm transmission delays.

Positioning

MCPs should be sited:

- In conspicuous and well-lit positions against a contrasting background so that they can be seen easily.
- 1.4m above floor level so that nobody has to travel more than 30 metres to reach one
- on floor landings of staircases
- on all escape routes and exits to the open air.

Operating method

Most MCPs operate on a simple break glass principle, but there are 3 methods available:

- Break glass
- Lift cover, then break glass
- Key operated

Environment

The standard MCPs are designed for use indoors and are rated to IP40.

The water resistant version is rated to IP54.

The environmentally protected versions are rated to IP55.

(IP ratings are estimated)

Fixing

All MCPs are designed for either flush or surface mounting. They include a surface mounting box but not a back box.

> ***NOTE:*** *When flush fixing the supplied red box must be used. It is not possible to use an industry standard metal flush box.*

Refer to Standards, BS5839 section

Sounders -siting

Choosing sounders

Where applicable the combined VIG-SEN-OHS and VIG-SEN-HS sensor/sounder will reduce the complexity and cost of wiring.

The stand-alone VIG-SND & VIG-SND-T sounder and the VIG-SEN-OHS & VIG-SEN-HS combined sensor/sounder use only a single address on the loop.

Sound output

The primary parameter of a sounder is its sound output. The Vigilon sounders include 2 types:

- Combined sensor/sounder rated at 85 dBA at 1 metre for use in bedrooms (VIG-SEN-OHS & VIG-SEN-HS)
- Stand-alone sounder rated at 100 dBA at 1 metre (VIG-SND / VIG-SND-T). The sound output may be reduced by adjustment.

dB ratings: Sound levels (sound pressure levels) are normally quoted in decibels (dBA). The sound level from a sounder is normally quoted at a distance of 1 metre from the sounder. The sound level will reduce by 6dB every time the distance from the sounder is doubled.

angle: Sound levels (sound pressure levels) are normally quoted on-axis, i.e. directly in-line with the middle of the sounder. This is normally the loudest position. In order to assess the sound level at any particular point it is necessary to allow for the distance from the sounder AND the angle off-axis.

Environment

The standard sounders are designed for use indoors and are rated to IP30. The stand-alone sounder is also available as an environmentally protected version with an IP55 rating.

All IP ratings are estimated

Flush fixing sensor sounder

The combined sensor/sounder may be semi-flush fitted. If semi-flush fitted the sound level rating will be adversely affected.

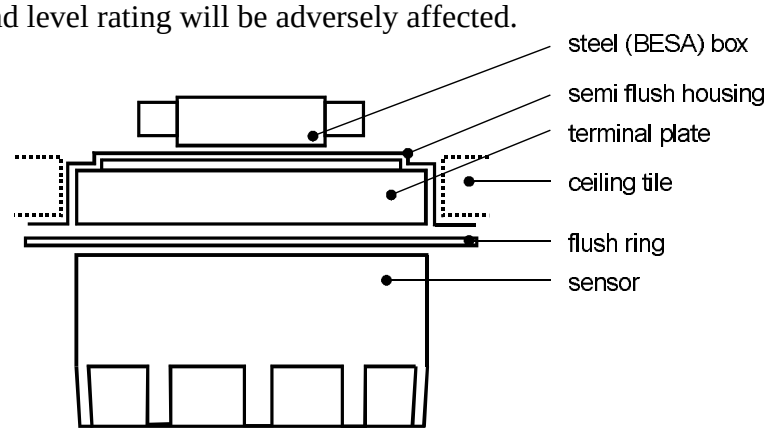

Figure 11-1 Flush fitting a sensor sounder

cd4

Positioning sounders

BS5839 has no specific recommendations for spacing alarm devices but there is a minimum sound level requirement of

- 65dB(A) or 5dB(A) above any noise likely to persist for a period longer than 30 seconds, whichever is greater.
- If the fire alarm system needs to wake sleeping people then the minimum sound level at the bedhead, with all doors shut is 75dB(A).

These requirements will affect the number and siting of alarm sounders within a particular building. Account must be taken of the effect on the sound of doors, walls, ceilings and floors. As a guide to design, most single doors will cause a 20dB(A) drop in sound levels and solid doors such as fire doors can reduce levels by 30dB(A) or greater.

Sound level for Type L and M systems

In Type L and Type M systems the minimum sound levels must be produced in all 'occupiable parts' of the building. Occupiable parts include restricted areas such as service ducts where people could be working on occasion. As audible alarms are essential for the protection of life, a minimum of two independent sounders must always be provided to guard against the failure of one. A minimum of one sounder should be provided in each fire compartment.

Sound level for Type P

In Type P systems the minimum sound levels shown above must be produced in the areas required to summon fire fighting assistance. A sounder should also be provided close to the control and indicating equipment and there should be one outside direct services to the correct entrance. In practice, most fire detection and alarm systems involve elements of both property and life protection. Most systems should therefore meet all the above requirements.

VIG-SEN-OHS & VIG-SEN-HS

The VIG-SEN-OHS combined sensor/sounder is normally used in rooms where people will be sleeping. In this application it is necessary to have a sound level at the bedhead of 75 dBA. To achieve this the sounder/sensor is normally positioned on the ceiling as shown in the diagram.

The application assumes the following:

- ceiling height of 2.6 metres
- bed height of 0.6 metres

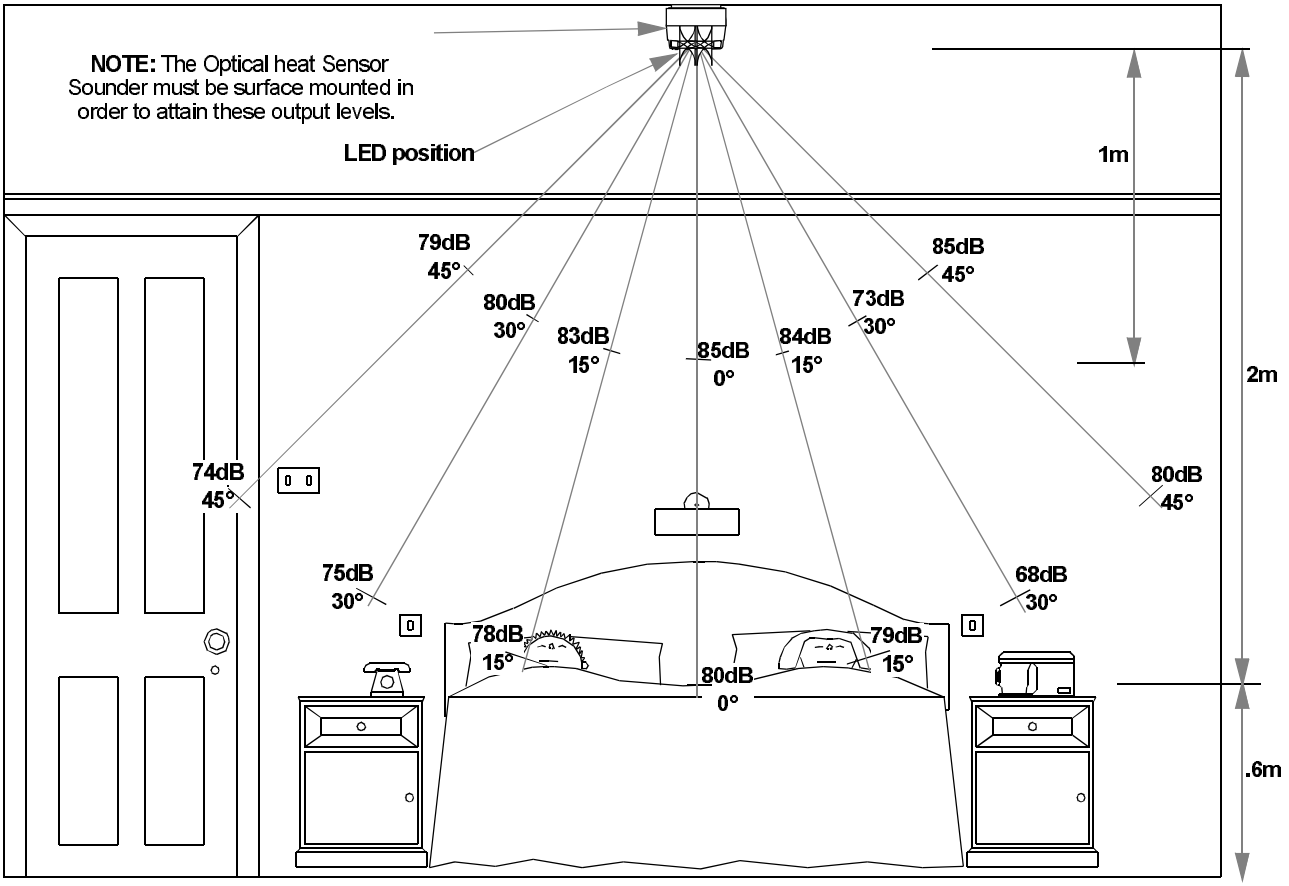

Figure 11-2 Sound output of a sensor sounder

cdn389

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Interfaces to other equipment

Conventional detector and sounder circuits

Mains-powered interface

The VIG-INT-MAINS interface operates from a mains power supply and incorporates its own battery-backed power supply.

It has 4 channels each may be configured as a conventional detector zone (input) or sounder (output) circuit.

The VIG-INT-MAINS interface is typically used to replace a conventional fire alarm control panel.

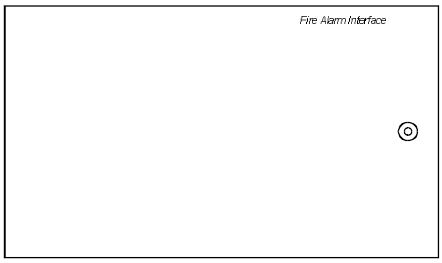

Figure 12-1 Mains powered interface
cdn197

The interface provides a 24 Vdc (nominal) output rated at 250 mA.

Detection zones

A zone will accept conventional detectors and MCPs. The maximum load per zone 'input' circuit is 2 mA. Each zone is monitored for:

- Fire (from manual call point)
- Fire (from conventional detector)
- Open circuit fault
- Short circuit fault

In order for the monitoring to conform to BS5839, diode bases must be used. Manual call point activations are detected if detectors are removed.

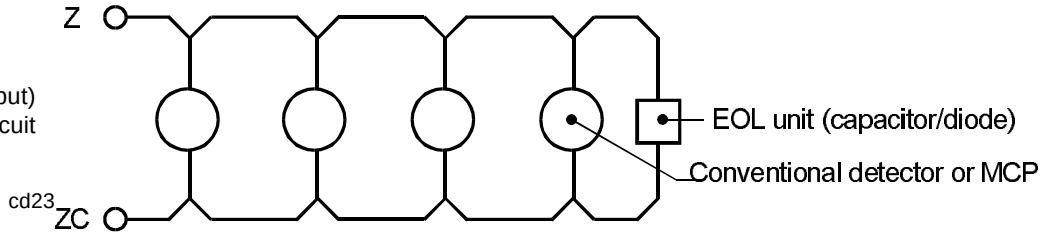

Figure 12-2 Zone (Input) circuit
cd23

When detector bases which incorporate monitoring diodes are used, a maximum of 20 such bases can be used on one zone circuit.

Each zone requires an end-of-line unit (capacitor/diode), supplied.

There is a single compatibility switch within the interface that sets the detector/MCP characteristics for any channels configured as inputs. The

characteristics have been set to provide compatibility with various manufacturers' detectors.

> ***NOTE:*** *The detector compatibility has been set for common detectors. The performance of the setting should be verified with the particular detectors being used.*

The following settings are available:

- ❑ Gent — 7400 range; 7600 range; XEN detector range
- ❑ Apollo / Hochiki — Series 20 tested; CD range tested
- ❑ Menvier — Series 700 tested
- ❑ Nittan — NH-G Series tested
- ❑ Notifier — EC range (without resistor fitted to base) tested
- ❑ Thorn — Series 300 tested

> ***NOTE:*** *On certain older sites, older type detectors and mcps place a short circuit across the zone when in fire. In order that these shorts are detected as fires and not short circuits, rotary switch position 'F' must be used.*

> ***NOTE:*** *Where* ***other manufacturers*** *manual call points are used on the interface input circuit, then a* ***3.9V zener diode or 470 ohm resistor*** *must be in* ***series*** *with the* ***call point contacts****.*

Sounder sectors

A sector will accept conventional sounders and door holders etc.

The maximum total load for all sectors on a single VIG-INT-MAINS interface is 500 mA (each sector is individually fused at 800 mA).

Sectors are monitored for:

- ❑ Open circuit fault
- ❑ Short circuit fault

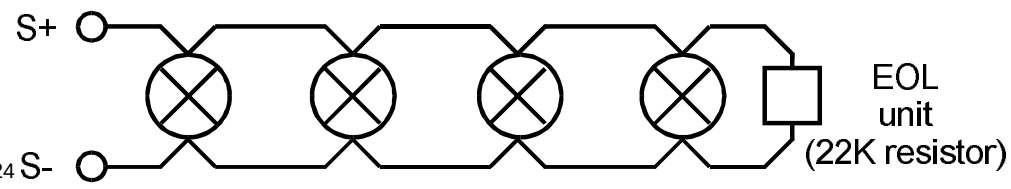

Figure 12-3 Sector (output) circuit

Each sector requires an end-of-line device (22K resistor), supplied.

Loop Powered Zone Module

The VIG-INT-ZONE Loop Powered Zone Module is a single channel device which can accept up to 20 conventional detectors.

There is no limit to the number of MCPs which may be connected to the module provided that a 3.9V zener or 470R resistor is connected in series with the MCP contacts.

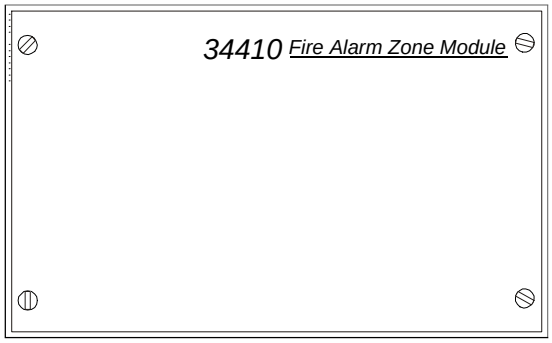

Figure 12-4 Loop Powered Zone Module
cdn103

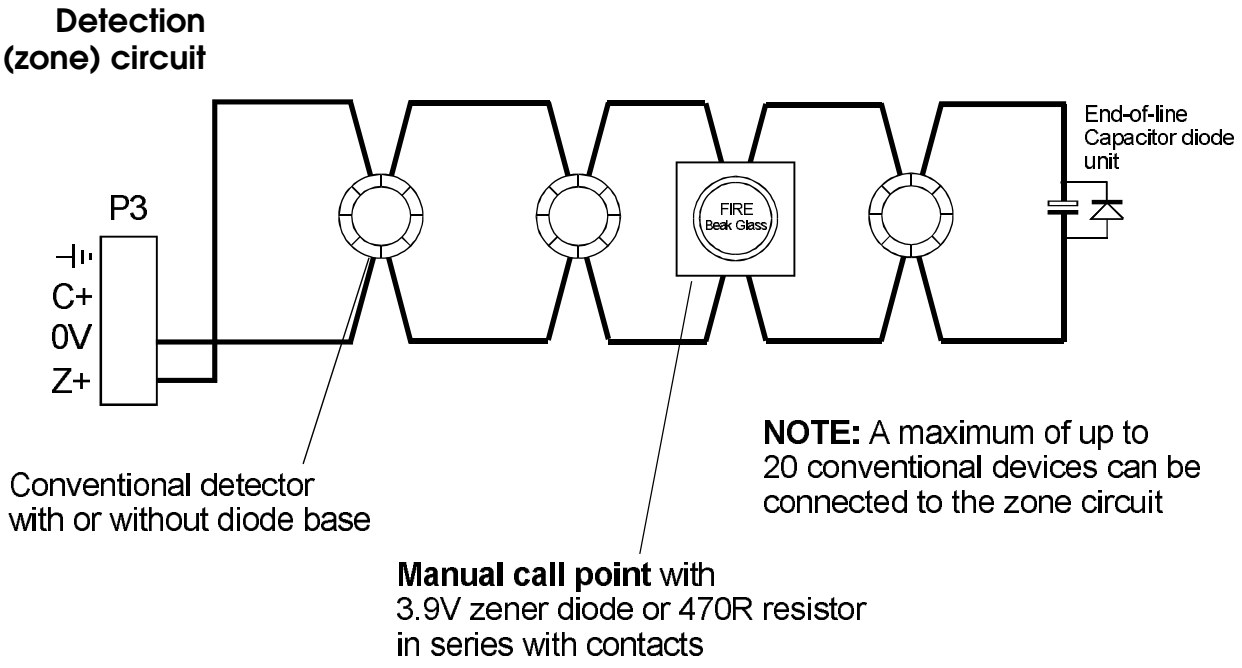

Figure 12-5 Detection Zone Circuit
cdm40

NOTE: *An end-of-line capacitor unit must be connected to the end of the detection (zone) circuit.*

NOTE: *The Vigilon system is unable to distinguish between a* ***fire input*** *from* ***manual call points and detectors*** *connected to the zone circuit of the loop powered zone module.*

NOTE: *Due to the voltage drop across the diodes, the number of diode bases that can be connected to the zone module* ***is limited to 5.***

The following detectors are compatible:

- ❑ Gent 7400 range
- ❑ Gent 7600 range including 07012-31 flame detector, provided
  1. The flame is the only device connected to the zone.
  2. The EOL is fitted directly to the flame detector and is housed in the base
- ❑ Gent XEN detector range
- ❑ Menvier 700 series (Ionisation and Optical)
- ❑ Apollo series 60 (Ionisation)
- ❑ Apollo series 30 (Ionisation and rate of rise)
- ❑ Hochiki SLK-E Optical
  SIH-E Ionisation
  Comb Heat
  DFE-90E Fixed Temp
- ❑ Nittan 2KC Optical smoke
- ❑ System Sensor 1151E
  4451E
- ❑ Notifier SD-651E
- ❑ Thorn MR601/AFA1706 Optical
  MR601T/AFA1705 High Performance Optical
  MD611/AFA1704
  MD601/AFA1702<R>

Conventional fire alarm systems

Existing conventional 24V dc fire alarm systems may be interfaced to Vigilon systems using a VIG-INT-MAINS mains-powered interface.

Anti-knit circuit

The circuit shown below includes an anti-knit circuit that prevents the 2 fire alarm systems locking each other in the alarm state.

Parts required:

- mains-powered interface (model no VIG-INT-MAINS)
- 24V dc relay (model no 19104-52)
- 24V dc timer (model no 19106-02)
- zener diode (model no 4104-042)
- 2 x diode units
- zone end-of-line and sector end-of-line devices for existing fire alarm system (if monitored).

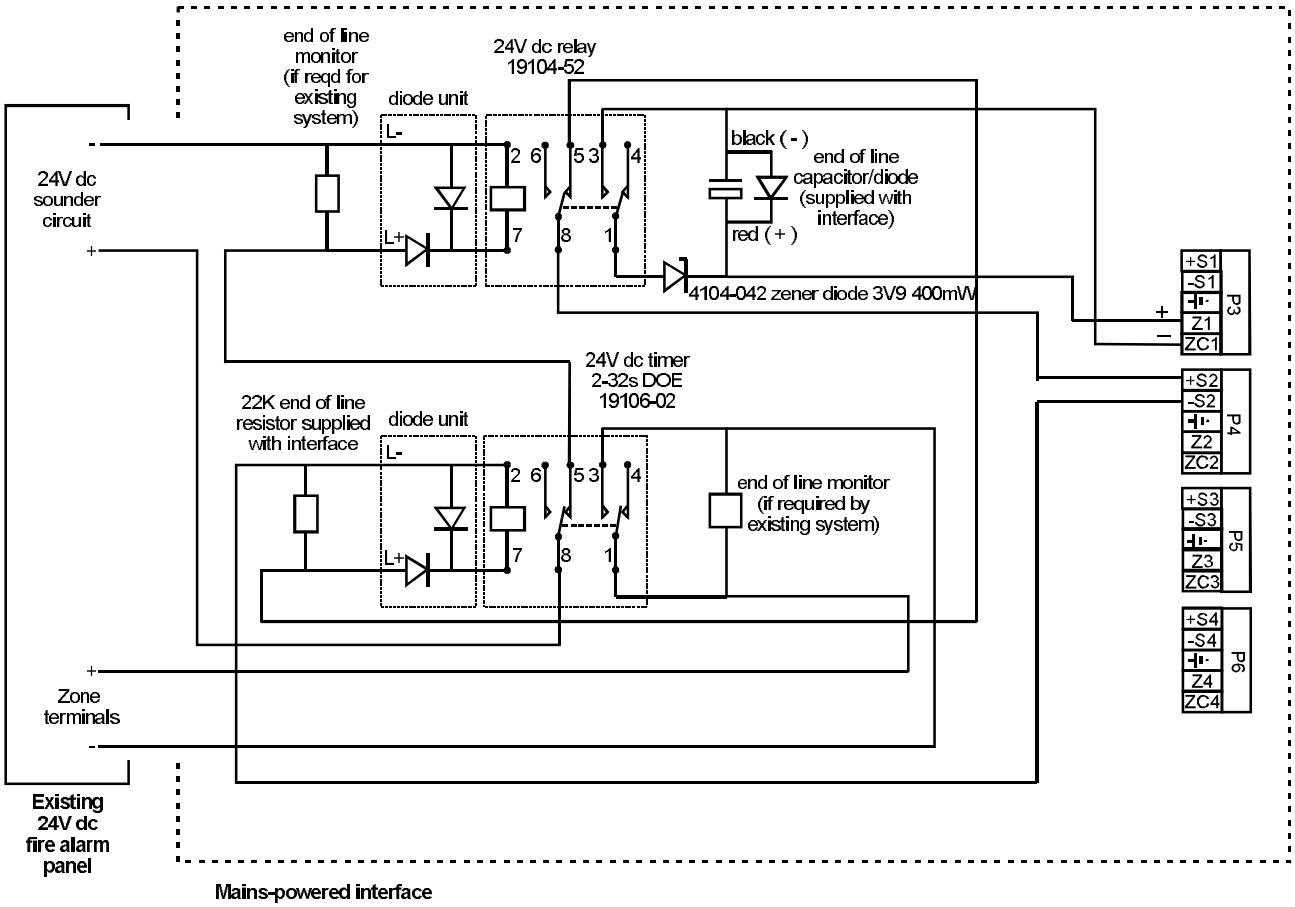

Figure 13-1 Interface to conventional fire alarm system
cdn201

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Fixed extinguishing

Fixed extinguishing interface

Fixed extinguishing is achieved by using a Fixed Extinguishing panel connected to a FE Loop-powered Interface (model no VIG-INT-FE) on the Vigilon system.

This configuration provides the following features:

- full compliance with BS7273
- monitoring of the manual release switch of the extinguishant system by the Vigilon system
- monitoring of faults on the fixed extinguishant system by the Vigilon system
- fully monitored interface connections

Wiring

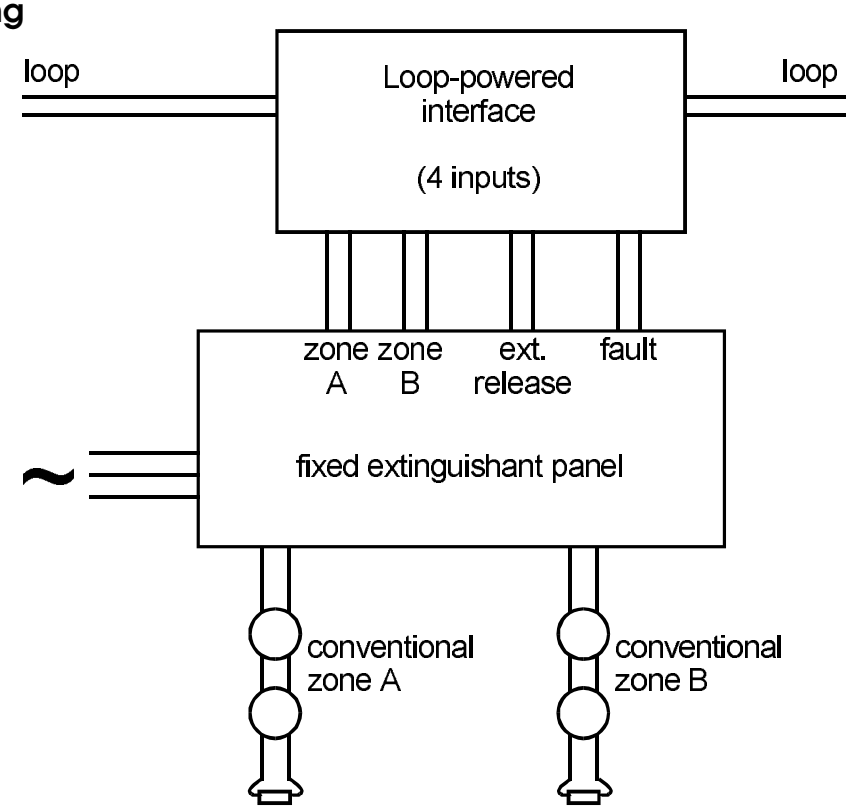

Figure 14-1 Fixed extinguishant system wiring

cdn469

NOTE: *The Fixed Extinguishant Panel installation instructions should be consulted for the full installation details.*

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Emergency Lighting Interface

The Vigilon System can be interfaced to a Prestige Teletest Unit (P/TT2008) to switch on the emergency lighting system in the event of a fire condition.

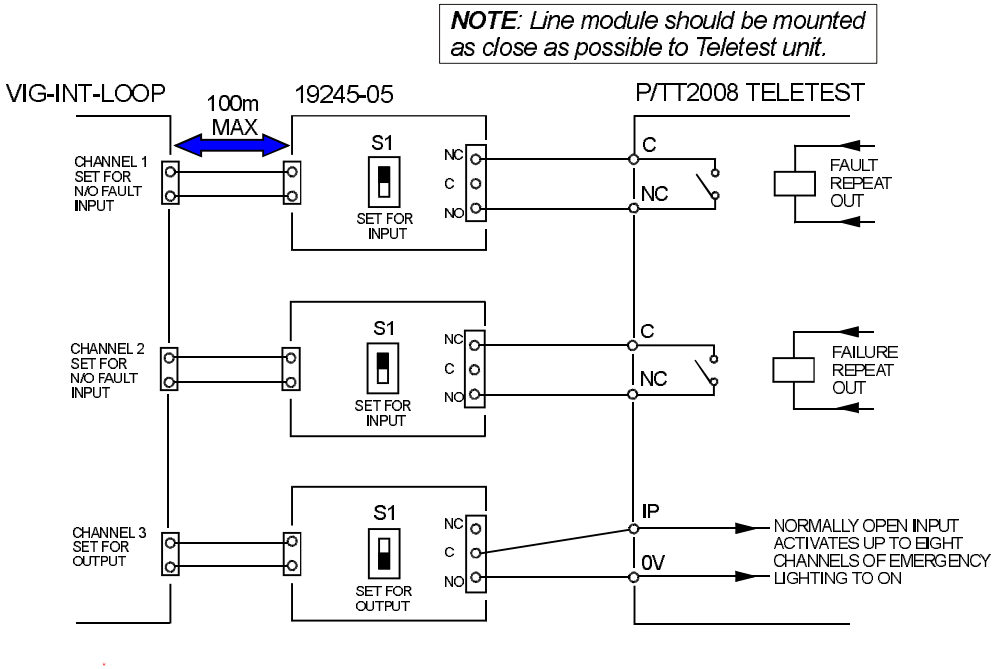

Figure 15-1 Vigilon to Prestige Teletest interface

cd8n_27

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Sprinkler systems

Sprinkler flow switches may be interfaced to the fire alarm system so that sprinkler operation will initiate a fire alarm.

Where stabilised water supplies are not available the sprinkler flow switches can momentarily operate due to surges of water pressure . To prevent this causing unwanted alarms a delay circuit must be included:

Sprinkler flow switch with stabilised water supply - This may be connected directly to either type of Vigilon interface.

Sprinkler flow switch without stabilised water supply & VIG-INT-MAINS mains-powered interface - requires a time delay circuit

Sprinkler flow switch without stabilised water supply & VIG-INT-LOOP loop-powered interface - use delay feature incorporated in VIG-INT-LOOP

VIG-INT-MAINS mains-powered interface

Sprinkler flow switches may be normally open or normally closed.

If the sprinkler flow switch is to be used without a stabilised water supply, use a delay circuit, see following diagram.

The input circuit to the VIG-INT-MAINS interface must include an end-of-line unit (shown dotted).

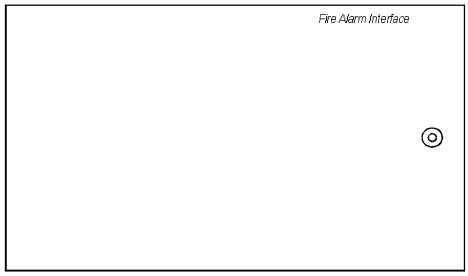


Figure 16-1 Mains powered interface

cdn197

Delay circuit

Equipment required:

Mains powered interface, one channel (model no VIG-INT-MAINS)
10 second delay module
2 x Zener diode, 3V9, 400 mW (model no 4101-042)
End-of-line (capacitor/diode) unit (supplied with interface)

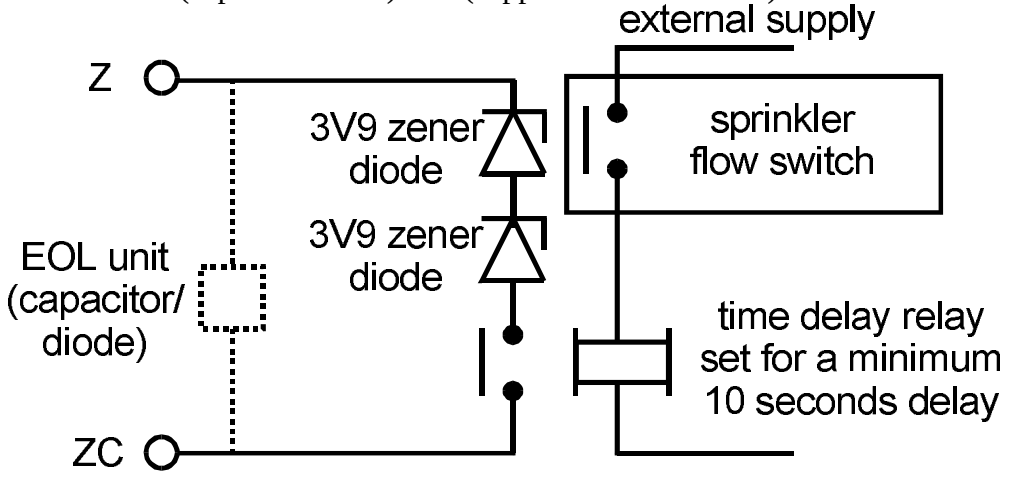


Figure 16-2 Connection for unstable water supply

cd8n_28

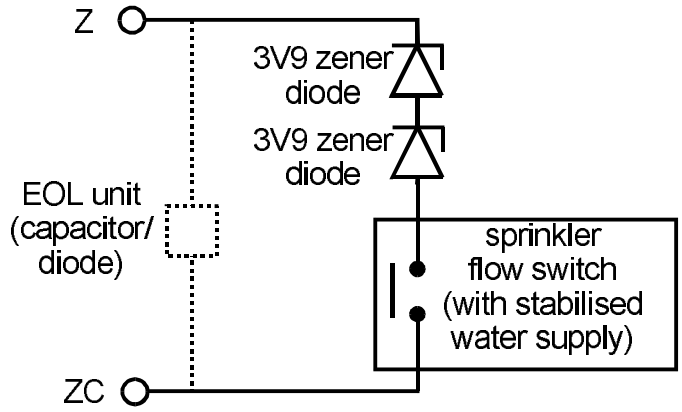


Figure 16-3 Connections for stable water supply

cd8n_29

VIG-INT-LOOP loop-powered interface

The VIG-INT-LOOP interface operates directly from the loop power supply and does not use mains power. It has 4 channels. Any of the channels may be configured as an input and used for the sprinkler system.

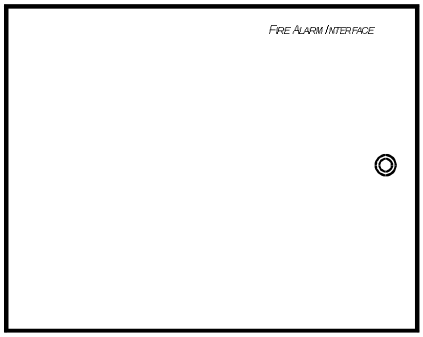


Figure 16-4 Loop powered interface

cd27

The sprinkler flow switch should be connected directly to a line module (19245-05) which can be mounted inside the interface enclosure or externally.

The VIG-INT-LOOP interface may be configured to include a 10 second delay, specifically designed for use with sprinkler flow switches. Each input may be configured for normally open or normally closed circuit operation.

Wiring

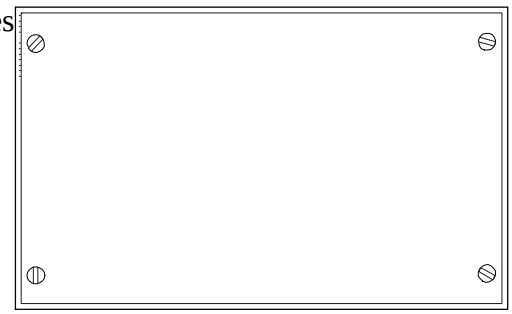
Equipment required:

Loop-powered interface, one channel (model no VIG-INT-LOOP)
Line module (model no 19245-05)

- ❑ Maximum cable length between VIG-INT-LOOP and line module is 100m. There is a maximum of 1km line module monitoring cable per loop.

VIG-INT-1CH Single Channel Interface

The VIG-INT-1CH interface operates directly from the loop power supply and does not use mains power.



The sprinkler flow switch should be connected to a line module (19245-05). The interface should then be configured using the switch inside the interface as a single input device with a 30 second delay.

Figure 16-5 Single Channel Interface

cdn102

Fireman's key switches

Loop-powered interface

A fireman's key switch is typically used by a fireman, in the event of a fire, to control plant such as air conditioning or to disable lifts.

The VIG-INT-LOOP interface operates directly from the loop power supply and does not use mains power. It has 4 channels. Any of the channels may be configured as an input and used for a fireman's key switch.

The simplest way of achieving this is to use a key-switch door.

Existing key switch

Equipment required:

Loop-powered interface, one channel (model no VIG-INT-LOOP)
Line module (model no 19245-05)

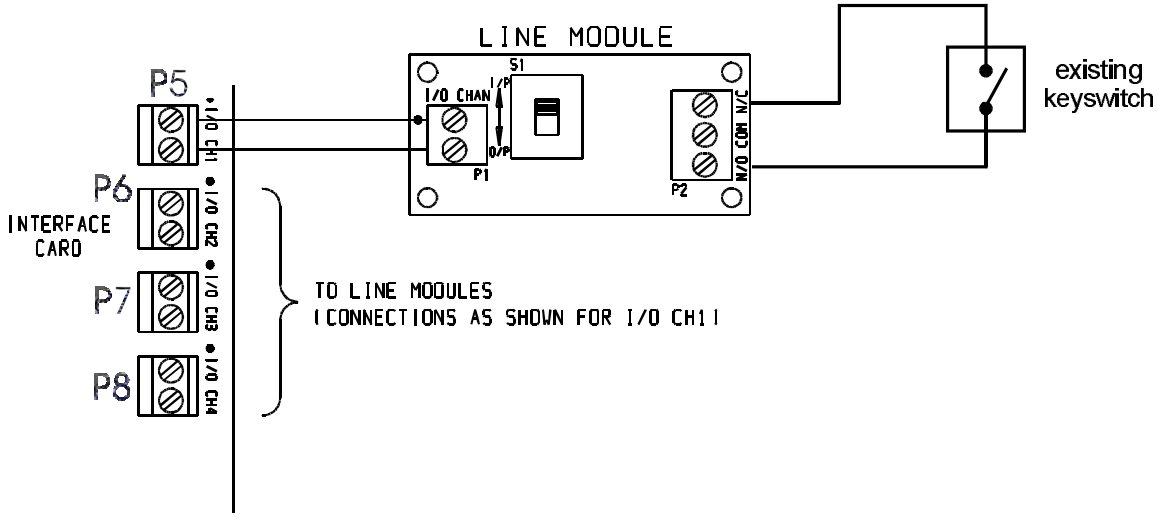


Figure 17-1 Fireman's keyswitch connection

cd28

Key switch door

A VIG-INT-KEY key switch door replaces the standard door of a VIG-INT-LOOP interface. It has positions for mounting up to 4 - 2way keyswitches. A maximum of up to 2-3way keyswitches can be fitted to the door.

A 2-way key switch is able to activate a single interface channel, on and off. A 3-way key switch is able to activate either one of two interface channels, ON (a), OFF and ON (b). The 3-way key switch therefore utilises two interface channels.

The 2-way key switch incorporates an LED to indicate the 'ON' position. The 3-way key switch incorporates 2 LEDs to indicate both 'ON' positions.

Equipment required:

Loop-powered interface, one channel (model no VIG-INT-LOOP)
4-way key switch door (model no VIG-INT-KEY)
2 or 3-way key switch (model no 19245-02 or -03)

The key switch is connected internally and does not require a line module.

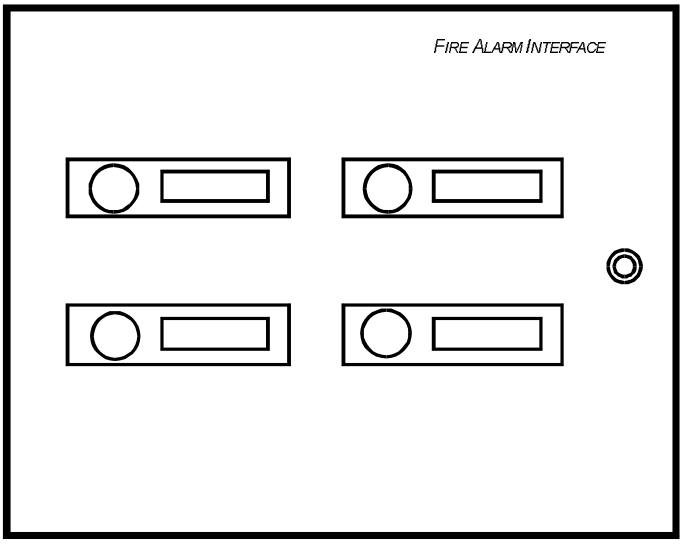


Figure 17-2 Loop powered interface with keyswitch door

cd3

Disable keyswitches

Loop-powered interface

The disable key is typically used on a day to day basis for disabling some part of the fire alarm system. This might be used to inhibit sounder circuits, for example during public performances in a concert hall, or may be used to inhibit or reduce the amount of smoke sensing in occupied areas during the day.

The VIG-INT-LOOP interface operates directly from the loop power supply and does not use mains power. It has 4 channels. Any of the channels may be configured as an input and used for a disable key switch.

The simplest way of achieving this is to use a key switch door although a separate or existing key switch may be used instead.

Existing key switch

Equipment required:

Loop-powered interface, one channel (model no VIG-INT-LOOP)
Line module (model no 19245-05)

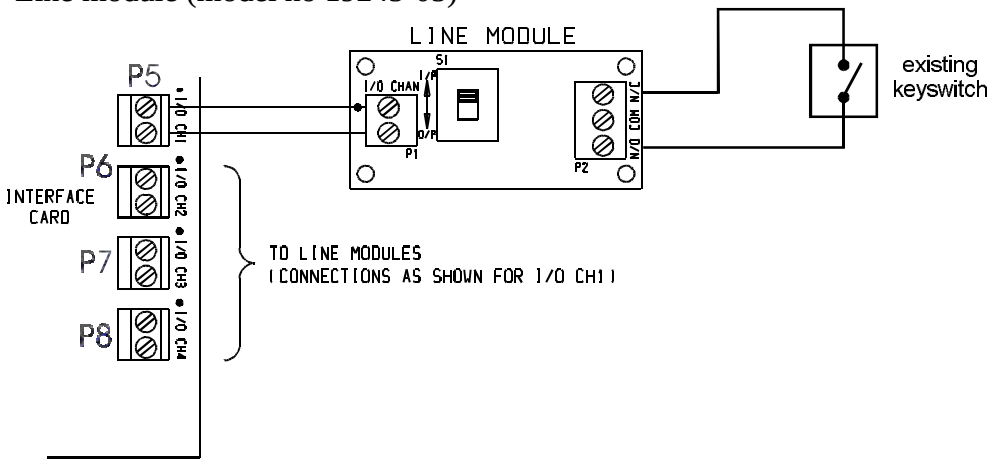


Figure 18-1 Disable keyswitch

Key switch door

A VIG-INT-KEY key switch door replaces the standard door of a VIG-INT-LOOP interface. It has positions for mounting up to 4 key switches.

A 2-way key switch is able to activate a single interface channel, on and off. A 3-way key switch is able to activate either one of two interface channels, on (a), off and on (b). The 3-way key switch therefore utilises two interface channels.

The 2-way key switch incorporates an LED to indicate the ‘on’ position. The 3-way key switch incorporates 2 LEDs to indicate both ‘on’ positions.

Equipment required:

Loop-powered interface, one channel (model no VIG-INT-LOOP)
4-way key switch door (model no VIG-INT-KEY)
2 or 3-way key switch (model no 19245-02 or -03)

The key switch is connected internally and does not require a line module.

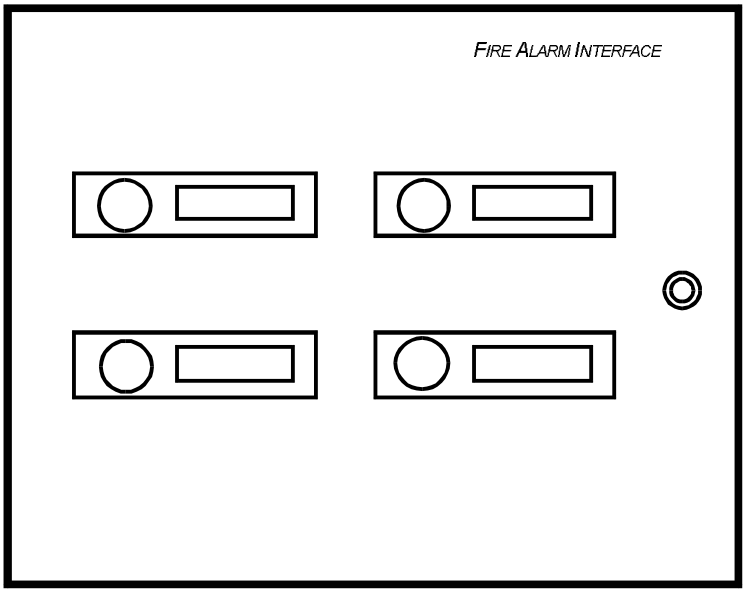


Figure 18-2 Loop powered interface with keyswitch door
cd3

Door release mechanisms

Door release mechanisms are powered directly from the mains supply or by a dedicated power supply. This supply is wired via an interface relay to release the doors in the event of fire.

Single channel interface

The output relay of the VIG-INT-1CH single channel interface is used to provide the switching required for the door release mechanism.)

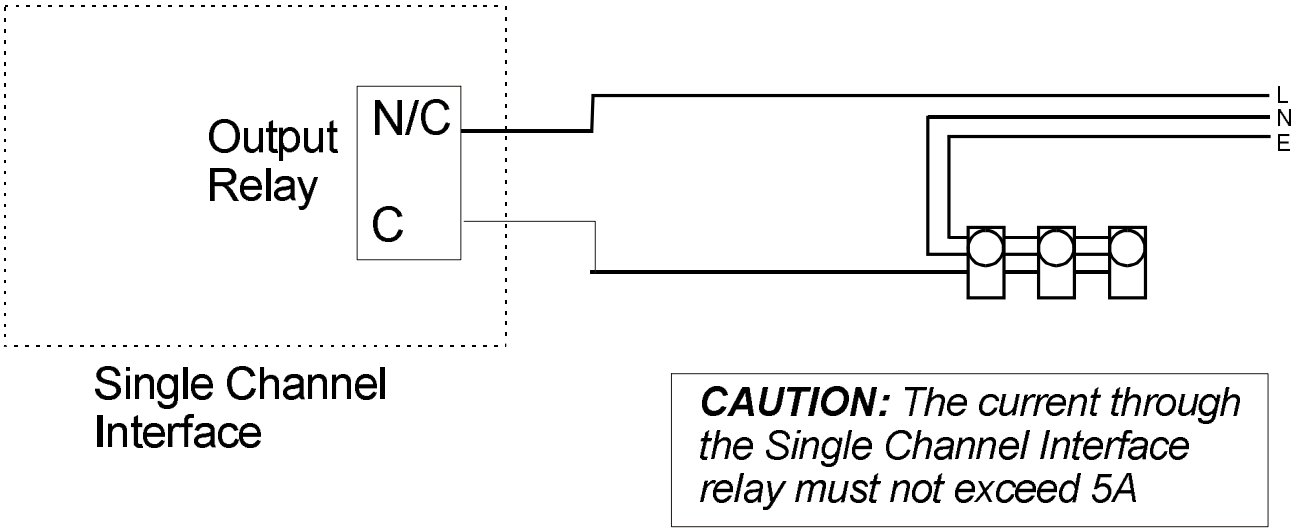


Figure 19-1 Door release interface circuit

cdn242

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Manned centre link

A manned centre link enables the fire alarm control panel to initiate an automatic telephone call to a fire station or other facility. The type of link used will depend on the requirements of the centre and locally available options.

NOTE: *The Clean Contact terminals are located adjacent to the Master Alarm terminals.*

NOTE: *The cable between the Manned Centre Link and the Control Panel should be fire resistant and mechanically protected*

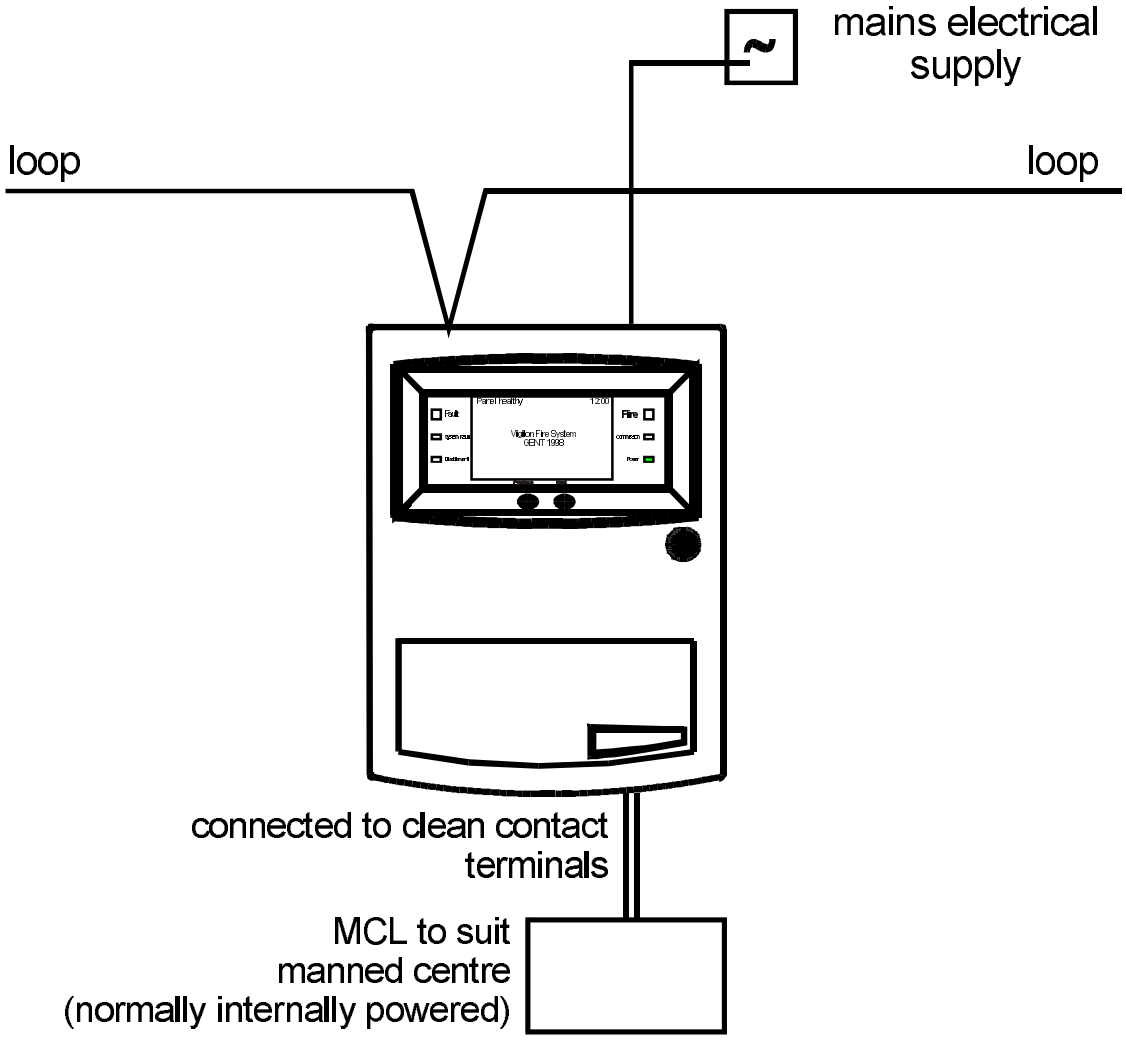

Figure 20-1 Manned centre link connections

cdn390

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Large alarm loads

Where a 24V- alarm circuit at a control panel or interface unit output circuit is required to drive a large alarm load then it may be necessary to use relay drivers.

> ***NOTE:*** *The 24Vdc battery and charger unit should be monitored for fault via a suitable interface input eg VIG-INT-1CH.*

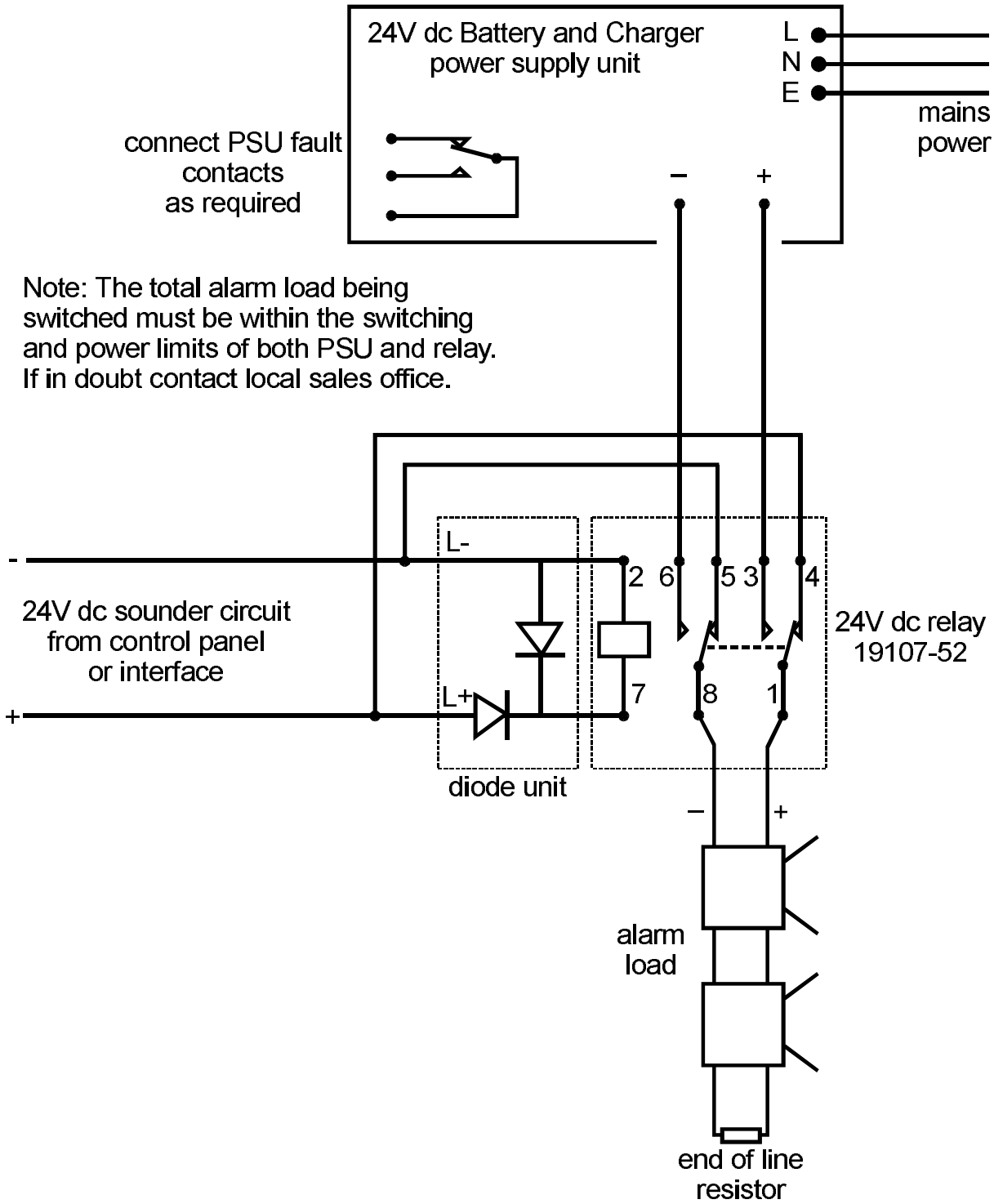

Figure 21-1 Connection of large sector load cd2

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Building management systems

The Vigilon fire alarm may be interfaced to a Trend building management system.

The Vigilon links to a special Trend network interface via a serial connection from a VIG-IOC-UNI (VIG-IOC-UNI-V3+ for V3+ system) universal communications IO card.

The Vigilon may comprise a single control panel or a network of control panels (and terminal nodes).

Fires, Faults and Warnings on the Vigilon are presented to the Trend network and directed to the appropriate supervisory computer (via the Public Switched Telephone Network if necessary). At the supervisory computer the fire alarm calls are handled in the same way as any other call.

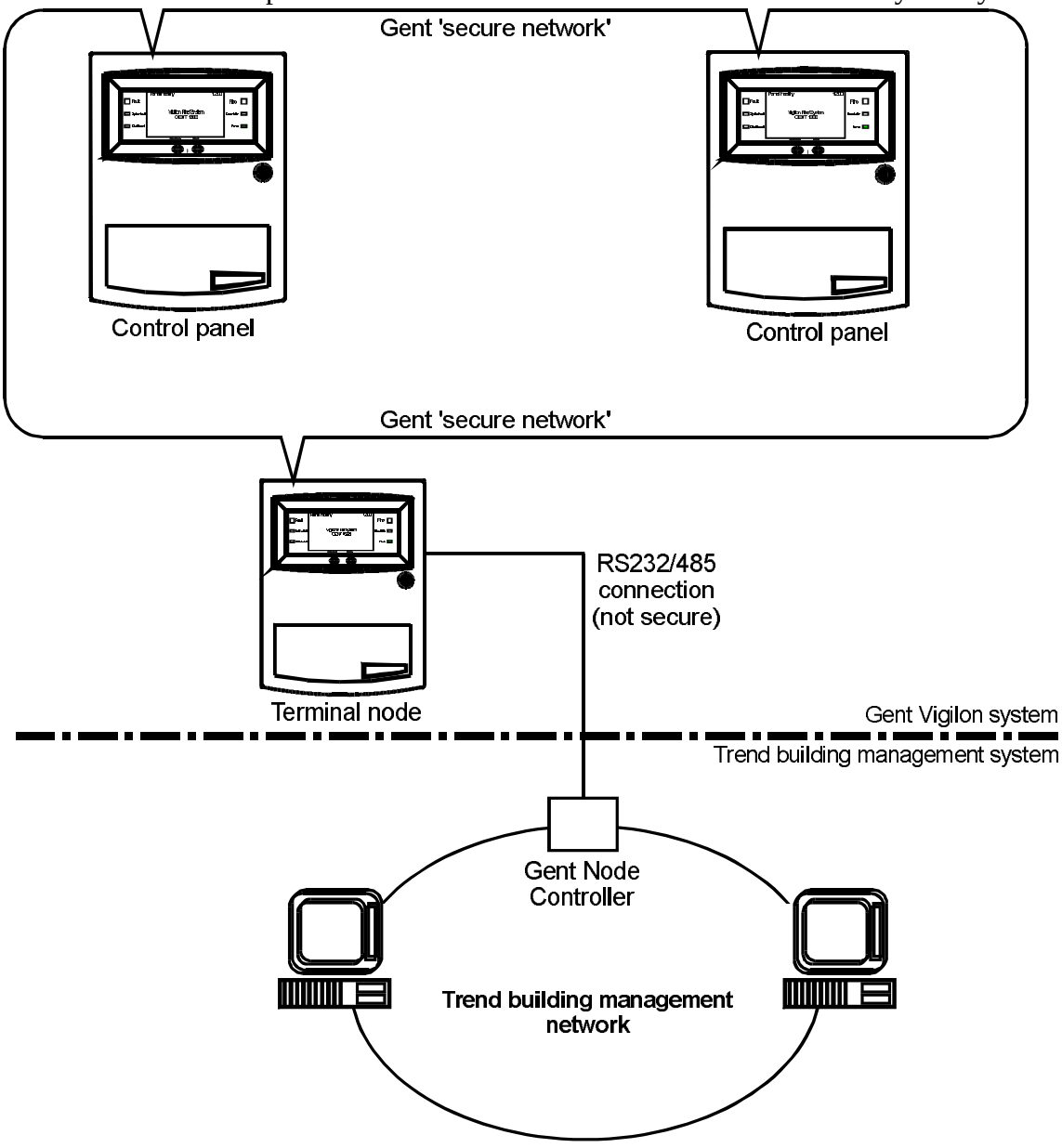

Figure 22-1 Connection to Trend system

cdn391

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Loops

Cable length

The maximum length of cable that may be included in a loop, including spurs is 1km. The cable should have a total intercore capacitance of less than 0.5 microfarads and a total series resistance (single core) of less than 13 ohms.

> ***NOTE:*** *The total length of cable attached to loop powered interfaces and Remote LEDs should not exceed 1km.*

Maximum number of outstations

Addresses The maximum number of outstation addresses available on each loop is 200

Loading Each loop has a limited amount of power to drive devices. The loading effect of devices is shown in the following table. Each loop is capable of supplying 1000 load units.

Logical constraints In addition there are further logical constraints, due to the control logic. These constraints are shown in the following table.

Device	Load (1000 max)	Logical constraint
VIG-SND/VIG-SND-T & VIG-SND-T-EP sounder	25	40
VIG-INT-MAINS mains-powered interface	3	8
VIG-INT-LOOP & VIG-INT-FE loop-powered interfaces	2	30
VIG-INT-ZONE Loop Powered Zone Module	10	100
VIG-INT-1CH Single Channel Interface	10	100
13425-31 ACU-Vigilon Loop I/O module	10	1
13426-02 DAU-Vigilon loop I/O module (up to 4 per DAU can be fitted)	10	40
VIG-T T-breaker	1	200
VIG-SLV-LED & VIG-SLV-RLY slave units	1	100
VIG-SEN-OH, VIG-SEN-H, VIG-SEN-H-EP, VIG-SEN-I sensors	1	200
VIG-SEN-DUCT Duct sensor (also needs a slave LED)	1	50
VIG-SEN-OHS & VIG-SEN-HS sensor/sounder	8	125
VIG-BEAM beam sensor pair	5	16
VIG-SND-RPT Repeat Sounder	8	125
VIG-MCP range manual call point	1	200
Repeat/mimic/ zonal mimic panels	3	32

Spurs

Spurs are commonly used to connect a small isolated group of sensors and manual call points to the main loop. They are also used to connect Repeat or Mimic panels to the loop for Primary Fire location information.

Limitations

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

Avoid connecting an interface unit driving sounders, repeat panels or mimic panels, to a spur circuit. The interface could potentially be driving 4 circuits of sounders or detection zones and it would not normally be acceptable to lose these due to a single wiring fault.

Connecting spur circuits

A spur circuit is connected to the loop using a 3-way device. This is provided by:

- ❑ VIG-T T-breaker
- ❑ VIG-SND-T 3-way sounder (VIG-SND-T-EP environmentally protected)
- ❑ VIG-INT-MAINS mains-powered fire alarm interface
- ❑ VIG-RPT-V3+/VIG-RPT-LB-V3+ repeat panel
- ❑ VIG-MIM/VIG-MIM-LB mimic panel
- ❑ VIG-ZONE/VIG-ZONE-LB zonal mimic panel
- ❑ VIG-MIM-A4/VIG-MIM-A4-LB A4mimic panel

Calculating the number of loops

Coverage

The maximum area that any loop should cover is 10 000 square metres of floor area of a protected site.

Future expansion

The number of devices that can be connected to a loop is limited. Where possible allow for system expansion, use extra loops rather than fully load a loop.

SAFE Addressing

> ***NOTE:*** *SAFE Addressing is available on all variants of the Vigilon Control Panel*

Definitions

Soft address This is the address given to an outstation during allocation. Soft addresses are allocated on a numerically lowest unused value basis. Soft addresses are totally dependent on the allocation algorithms and are lost when power is removed.

SAFE Address This is the address given to an outstation during commissioning, the value of which is stored in non-volatile memory within the electronics module of the outstation. During loop allocation, this value is read and providing it is valid, is used to set up the outstation's primary address. If the address is not valid, the outstation is given a soft address. SAFE addresses are not lost on power down.

Primary Address This is the address which is used for communicating with a particular loop device. It can be either a Soft or a SAFE address. The primary address is lost on power down.

Benefits

The benefits of SAFE addressing are:

- ❑ There is no need to modify or amend drawings or labels each time a system is modified, ie when devices are added or removed.
- ❑ Simple additions or modifications are possible to the system without the need to PC based commissioning tool.
- ❑ Improved system integrity, ie if a split loop is reallocated, outstation addresses will not change.

Concept

The concept of SAFE Addressing is given in Figure 1.

Loop Complete The complete loop example in figure 1 show identical loops, one soft addressed and one SAFE addressed. The SAFE addresses are denoted by a '+' after the address as shown.

> ***NOTE:*** *The SAFE addressed devices can have any address which does not have to relate to the device order on the loop.*

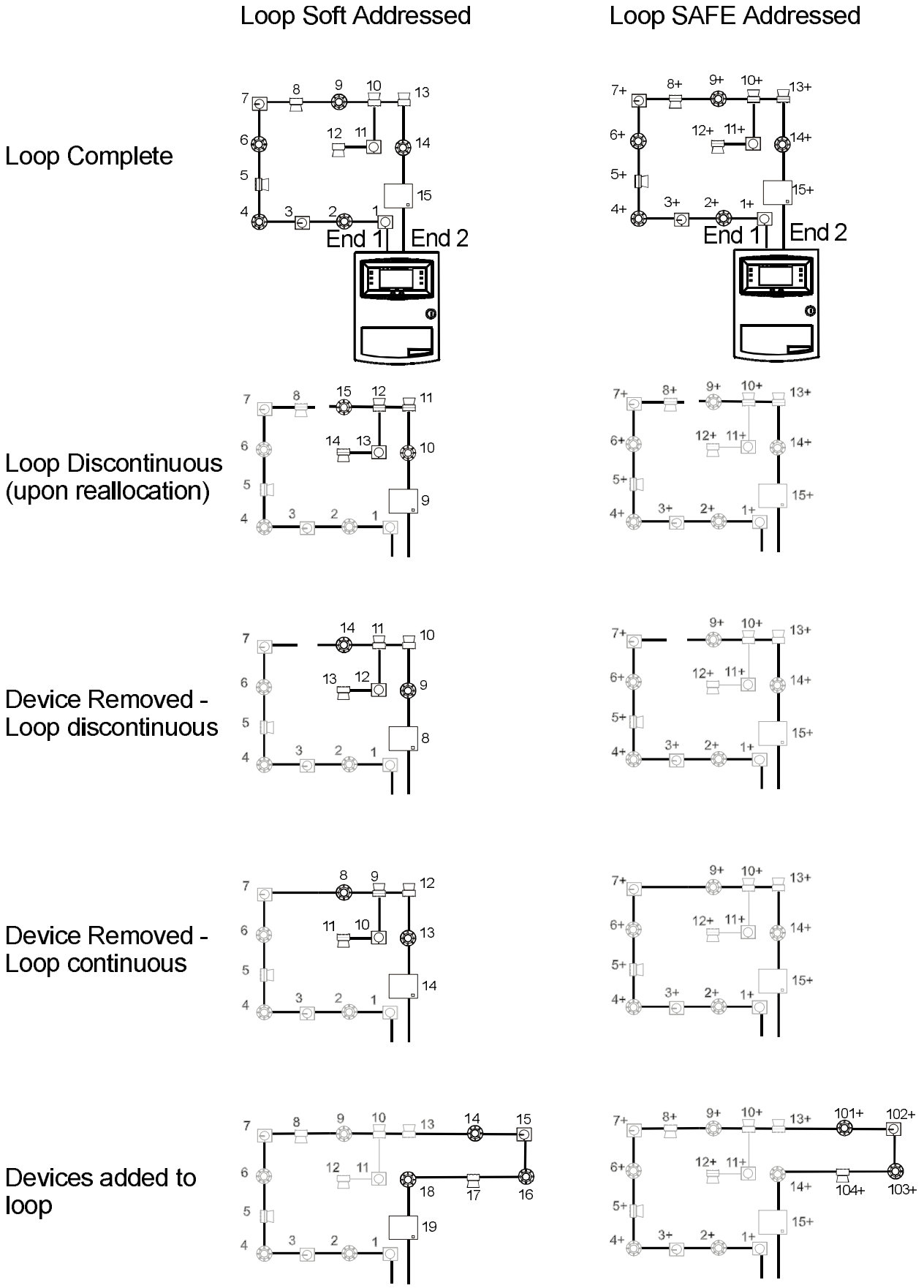

Figure 1 SAFE Addressing conceptual diagram
cdn118

Loop discontinuous

The loop discontinuous example in figure 1 shows the loop in both cases with a discontinuity at the same point. In the soft addressed loop, if the loop is reallocated at any time the devices after the break are re-addressed with different addresses. The new device addresses start from End 2 as shown. In the SAFE addressed loop, the device addresses are unchanged by a break in the loop.

Device removed

If a device(s) is removed, the loop can either be left with a discontinuity or the loop can be reconnected. If the soft addressed loop is left with a discontinuity the situation is as stated earlier, ie the devices after the discontinuity are re-addressed from End 2. If the soft addressed loop is reconnected the devices located after the position of the removed device(s) are re-addressed as shown in figure 1. The new address will be the original address - the number of devices removed. In both situations, the SAFE addressed loop addresses remain unchanged regardless of the number of devices removed.

> ***NOTE:*** *If devices are removed from two points in the SAFE addressed loop, the remaining devices in between the two points are lost but will still retain the SAFE address.*

Devices added to loop

If device(s) are added to a loop as shown in figure 1, then for the soft addressed loop, the addresses of the devices located after the inserted device(s) will change upon allocation of the loop. The inserted device(s) will be consecutively addressed, numbered incrementally from the address of the device prior to the inserted device(s). The addresses of the SAFE addressed devices are unchanged, the inserted devices are soft addressed using the following algorithm:

- Each of the inserted devices is in sequence given the next available soft address.
- There is a high probability that this soft address will already have been used as a SAFE address by devices further on in the loop.
- The address of each outstation falling into this category ripples through until the outstation gets an unused address, hence the apparent randomness of the soft addresses allocated to the added devices in figure 1.

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Choosing Loop circuit cable

see also choosing Network circuit cable

> ***CAUTION:*** *In countries where the European EMC directive is in force, only those cables detailed in the* ***EMC Compliance*** *part of this manual may be used.*

> ***NOTE:*** *The loop cable usage must not exceed* ***1Km.*** *This includes the cable usage on main loop and spur circuits.*

> ***NOTE:*** *Single pair cable must be used. It is* ***NOT*** *permissible to run mixed loops or outgoing and return pairs in a multi core cable.*

Vigilon loop cable carries both data and power supply and therefore its selection is important.

Specification

- ❑ Mineral insulated cable (MICC) to BS6207:Part 1 (EMC approved)
- ❑ Delta Crompton FTZ2E1.5 FIRETUF OHLS fire resistant data cable (EMC approved)*
- ❑ Raydex CDT FG950 (EMC approved)*
- ❑ Cavicel SpA FIRECEL SR 114 (EMC approved)*
- ❑ AEI Cables FIRETEC (EMC approved)*
- ❑ BICC Pyrotenax FLAMESIL FRC (EMC approved)*
- ❑ Datwyler LIFELINE (EMC approved)*
- ❑ Alcatel cable PYROLON E (EMC approved)*
- ❑ Huber & Suhner RADOX FR (EMC approved)*
- ❑ Pirelli FP200 FLEX (EMC approved)*
- ❑ Pirelli FP200 GOLD (EMC approved)*

> ***NOTE****: FP200 GOLD is only approved as being EMC compliant provided that the date of manufacture is 1998 or after. Cables manufactured before this date MUST NOT be used.*

- ❑ Other cables to the following specification:
  - BS6387
  - no more than 2-cores
  - a maximum of 0.5 µF total intercore capacitance
  - a maximum of 13 ohms total per core
  - each core having no less than 1.5 mm^2 cross section area
  - inherent or through metal conduit screen for earth continuity in order to produce electrical protection and screening
  - having protection from heat and mechanical damage
  - the cable screen must be capable of being earthed at each device

NOTE: *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****. Therefore these wires should be installed in line with* ***GENT installation instructions*** *and used* ***only*** *under environmental conditions as* ***specified by the manufacturer.***

A4 Mimic Display to Control Unit cable

- ❑ Mineral insulated copper cable (EMC Compliant)

  50m maximum Mimic Panel to Remote Box cable distance
  - The cable is to BS6207: Part 1
  - fire resistance tested to BS6387 categories CWZ
  - having continuous metal sheath encapsulation
  - no more than 4- cores
  - each core having 1.5mm^2 cross section area
  - a red cover sheath (preferred for alarm applications)
  - core to core capacitance 115pF/m
  - core to screen capacitance 205pF/m

- ❑ Delta Crompton FTZ4E1.5 FireTuf OHLS fire resistant cable (EMC Compliant)

  50m maximum Mimic Panel to Remote Box cable distance
  - four core plus earth wire
  - fire resistance tested to BS6387 categories CWZ
  - each wire having 1.5mm^2 cross section area
  - core to core capacitance 115pF/m
  - core to screen capacitance 205pF/m

Panels

1-4 Loop control panel

Each loop may accommodate up to 200 devices, although there are several restrictions that will in practice reduce the number.

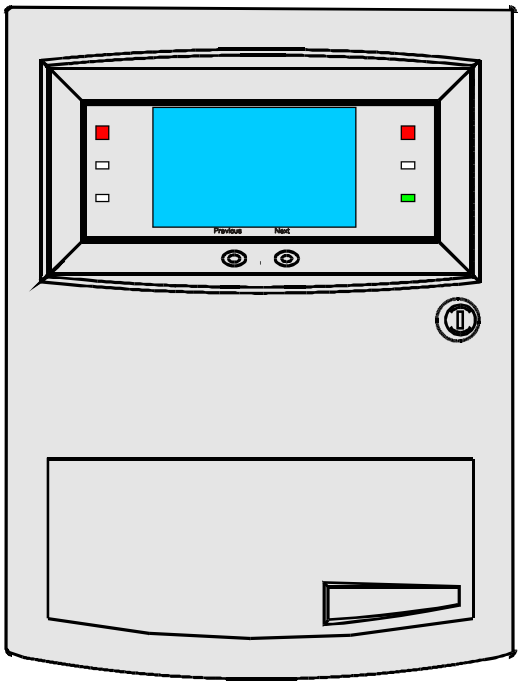


Figure 26-1 1-4 Loop Control panel

cdn352

An explanation of how to calculate the maximum number of devices is given in the Loops, Number of outstations part of this manual.

Panel variants

Vigilon

- ❑ Designed to comply with EN54 Parts 2 and 4
- ❑ Windowing display

Vigilon V3+

- ❑ Designed to comply with BS5839 Part 4
- ❑ Fully compatable with System 3400

Controls and Indicators for EN54 Parts 2 & 4(VIGn)

Controls (door closed)	Controls (door open)	Menu options	Indicators
Previous	Menu On/Off	Active and Historic fault and disablement logs	Fire
Next	F1 to F4	Analysis of analogue sensor information	Fault
	Cancel buzzer	Loop map connections	System fault
	Sound alarms	Enable/disable sensors, zones, sounders, interface unit channels	Sounder
	Silence alarms	Fire plan menus	Disablement
	Reset	Device labels including long labels	Power on
	Verify	Address Allocation including SAFE Addressing	
	QWERTY keypad		
	U1 to U4		

Controls and Indicators for BS5839 (VIGn-V3+)

Controls (door closed)	Controls (door open)	Menu options	Indicators
Previous	Menu On/Off	Current fault and warning logs	Fire
Next	F1 to F4	Analysis of analogue sensor information	Fault
	Cancel buzzer	Loop map connections	System fault
	Sound alarms	Enable/disable sensors, zones, sounders, interface unit channels	Commission
	Silence alarms	Fire plan menus	Warning
	Reset	Outstation labels	Power on
	QWERTY keypad	Address Allocation inc SAFE	

Control panel standby to 72 hours

Charger and battery cubicle

A standard control panel will provide a standby time of 24 hours with an additional full alarm load for 30 minutes. This may be extended to 72 hours of standby with an additional full alarm load for 30 minutes by adding extra batteries and a charger.

The charger and batteries should be mounted adjacent to each other. The maximum distance between them and the control panel is 20 metres.

Equipment required:

- 8 x 24 Ah batteries (model no 05795-02)
- 1 x battery cubicle (model no 05906-06)
- 1 x charger (model no 05216-24)
- 1 x loop-powered interface (model no VIG-INT-LOOP or VIG-INT-1CH)

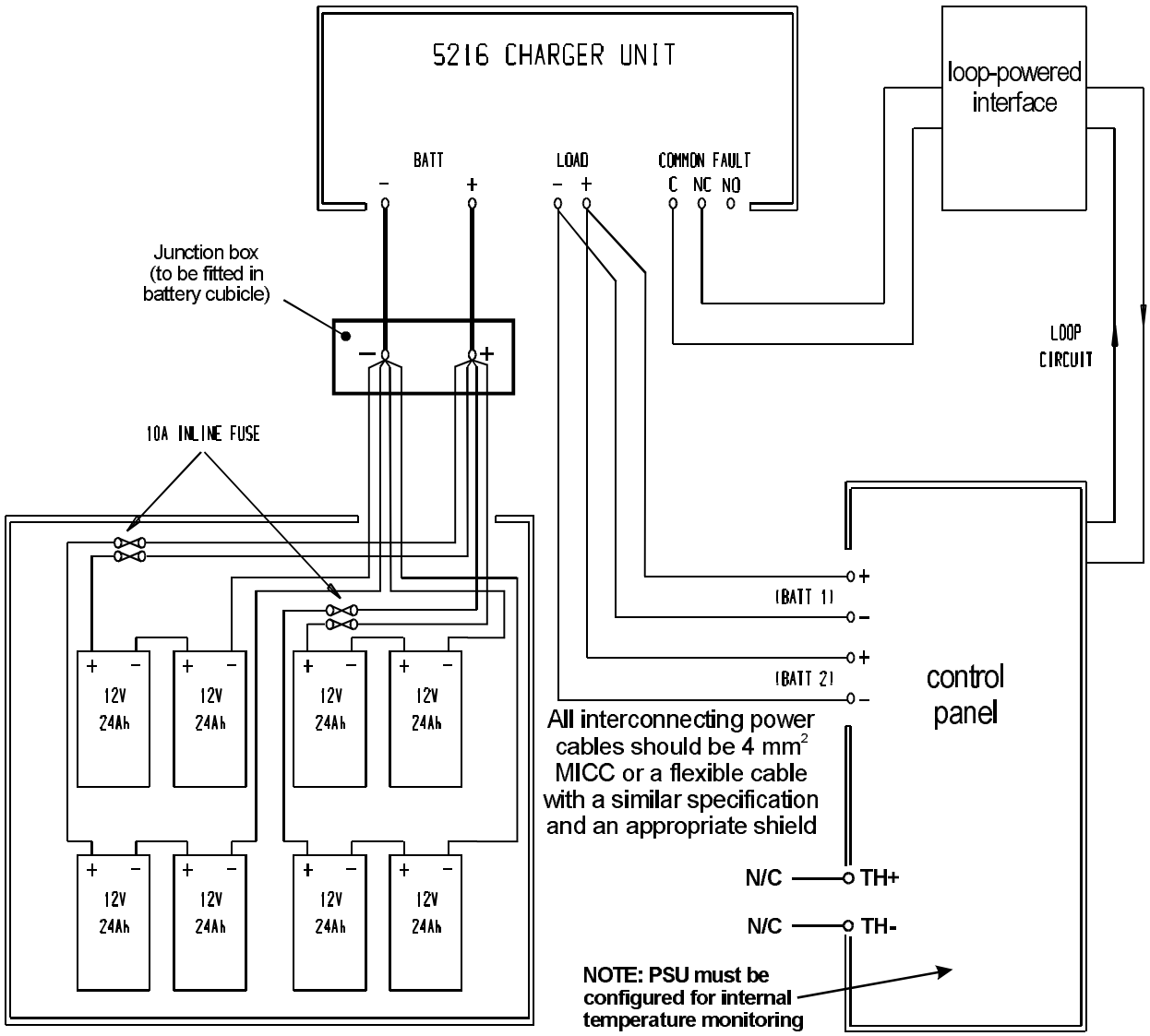


Figure 27-1 1-4 loop panel 72 hour standby

cdn470

NOTE: *In order to achieve the* ***72 hour*** *standby, the* ***control panel power supply*** *needs to be modified. The modified power supply needs to be available for the commissioning stage.*

NOTE: *The extra batteries are instead of* ***not*** *as well as the batteries in the control panel*

VIG-RPT/VIG-RPT-V3+ Repeat panel

A repeat panel is connected directly to any loop of the main control panel. In addition it requires a mains supply to run its battery-backed power supply.

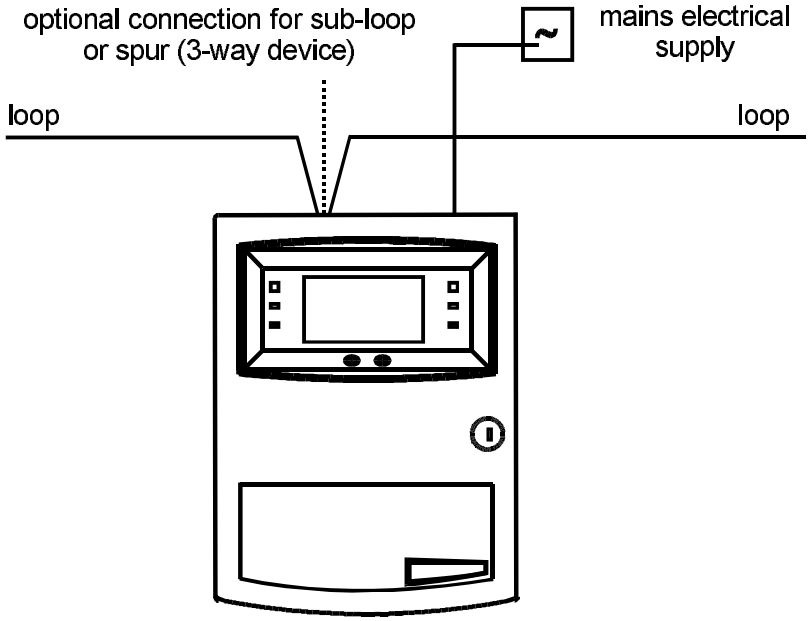


Figure 28-1 Repeat panel connections

cdn433

VIG-MIM Mimic repeat panel

A mimic repeat panel is connected directly to any loop of the main control panel. In addition it requires a mains supply to run its battery-backed power supply.

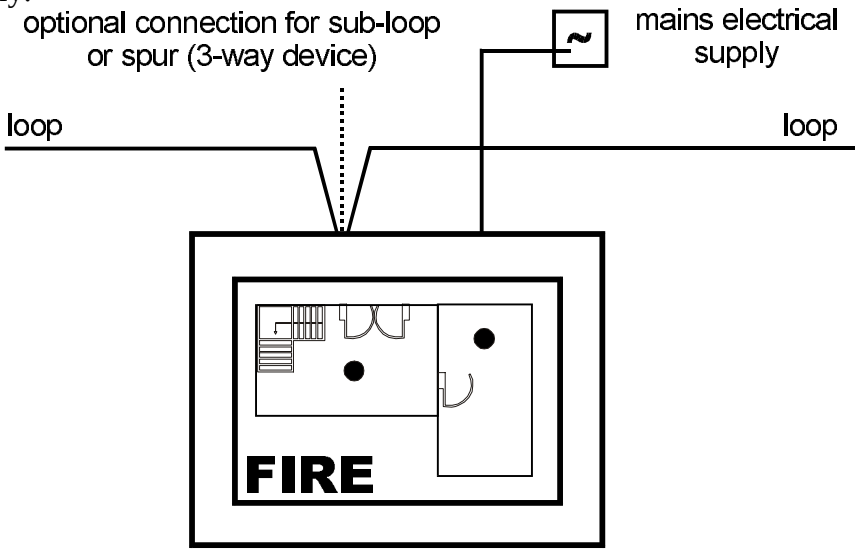


Figure 28-2 -Mimic panel connections

cd466

VIG-ZONE Zonal mimic panel

A zonal mimic panel is connected directly to any loop of the main control panel. In addition it requires a mains supply to run its battery-backed power supply.

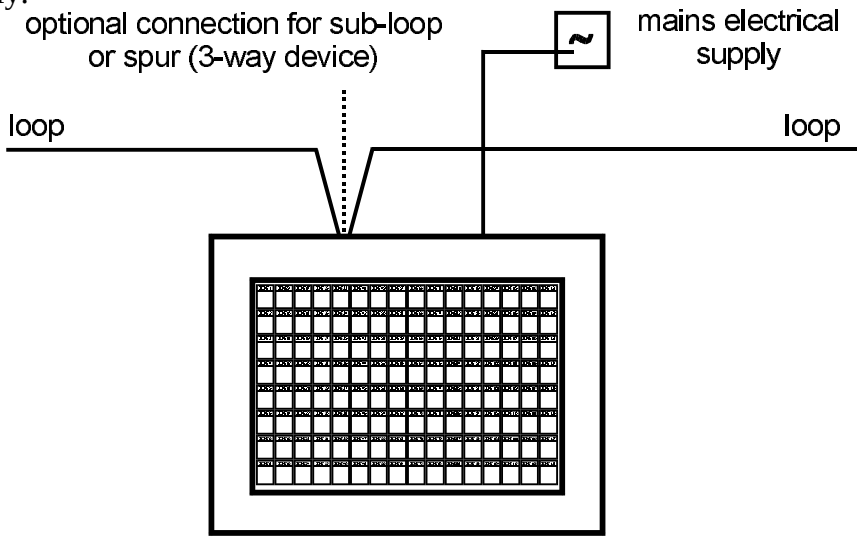


Figure 28-3 Zonal mimic panel connections

cdn467

VIG-MIM-A4-A4 mimic panel set

The A4 mimic and control unit are connected directly to any loop of the main control panel.. It requires a mains supply to run its battery backed supply.

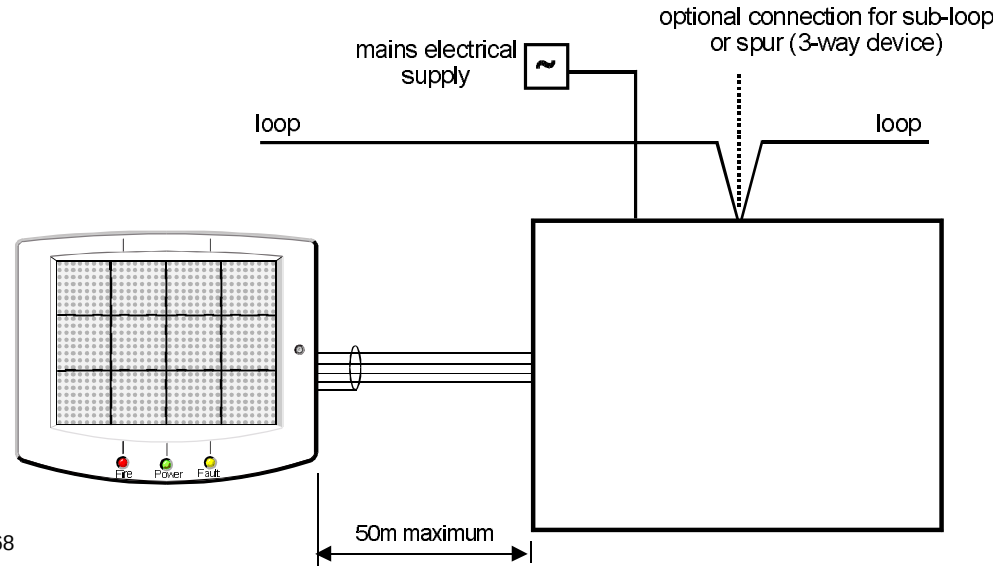


Figure 28-4 A4 mimic connections

cdn468

VIG-ZONE-A4 A4 zonal mimic panel set

The A4 zonal mimic and control unit are connected directly to any loop of the main control panel.. It requires a mains supply to run its battery backed supply.

Networks of control panels

Benefits of using networks

- Global controls. The network of panels can be configured so that single panels, groups of panels or all of the panels on the network reside within what is termed a Master Group. Operation of the Sound Alarms, Silence Alarms, Reset and Verify controls on a panel will also affect all panels within the same Master Group. There can be up to 8 Master Groups configured on the network.

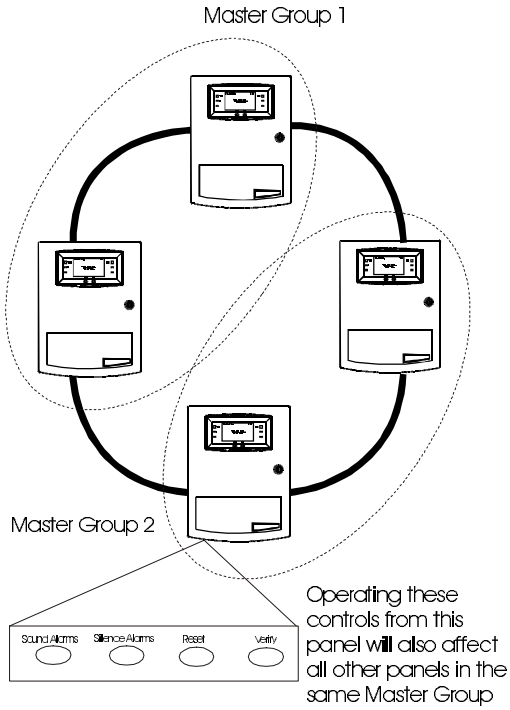


Figure 29-1 Global controls example

cd8n_7

- Global event display. By the use of Master Groups, panels can be configured to display events etc which occur at panels which are configured to sit within the same Master Group. Any panel on a network can be configured to be in Global Display Mode which means the panel will display all events on the network. A terminal node located on the network, will display all events that occur on the network.

- Configuration. The following can be configured to operate across the network:

  - Master Sectors
  - Global Coincidence
  - Non-Fire actions
  - Supervisories

Connection Options

Secure network

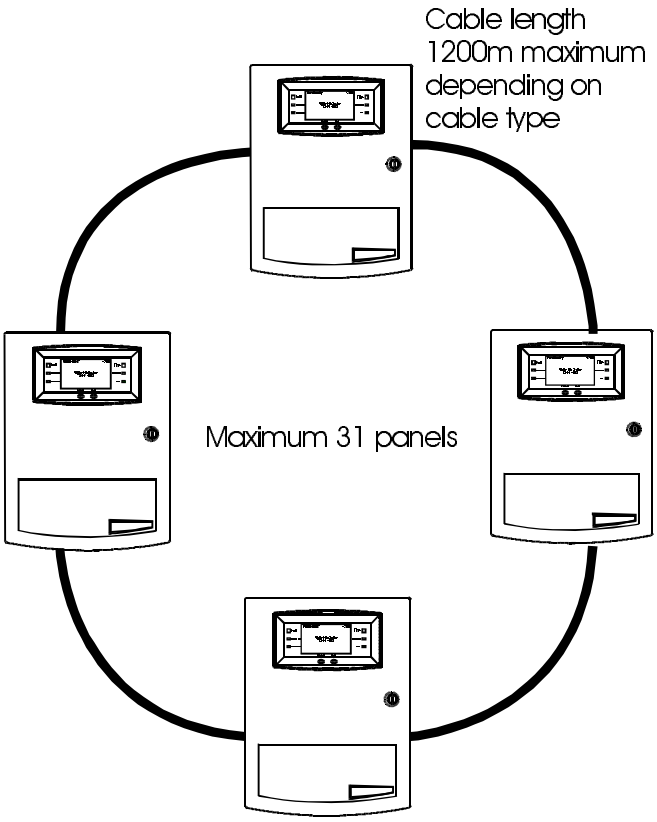


Figure 29-2 Secure network connection
cd8n_3

Linked secure networks

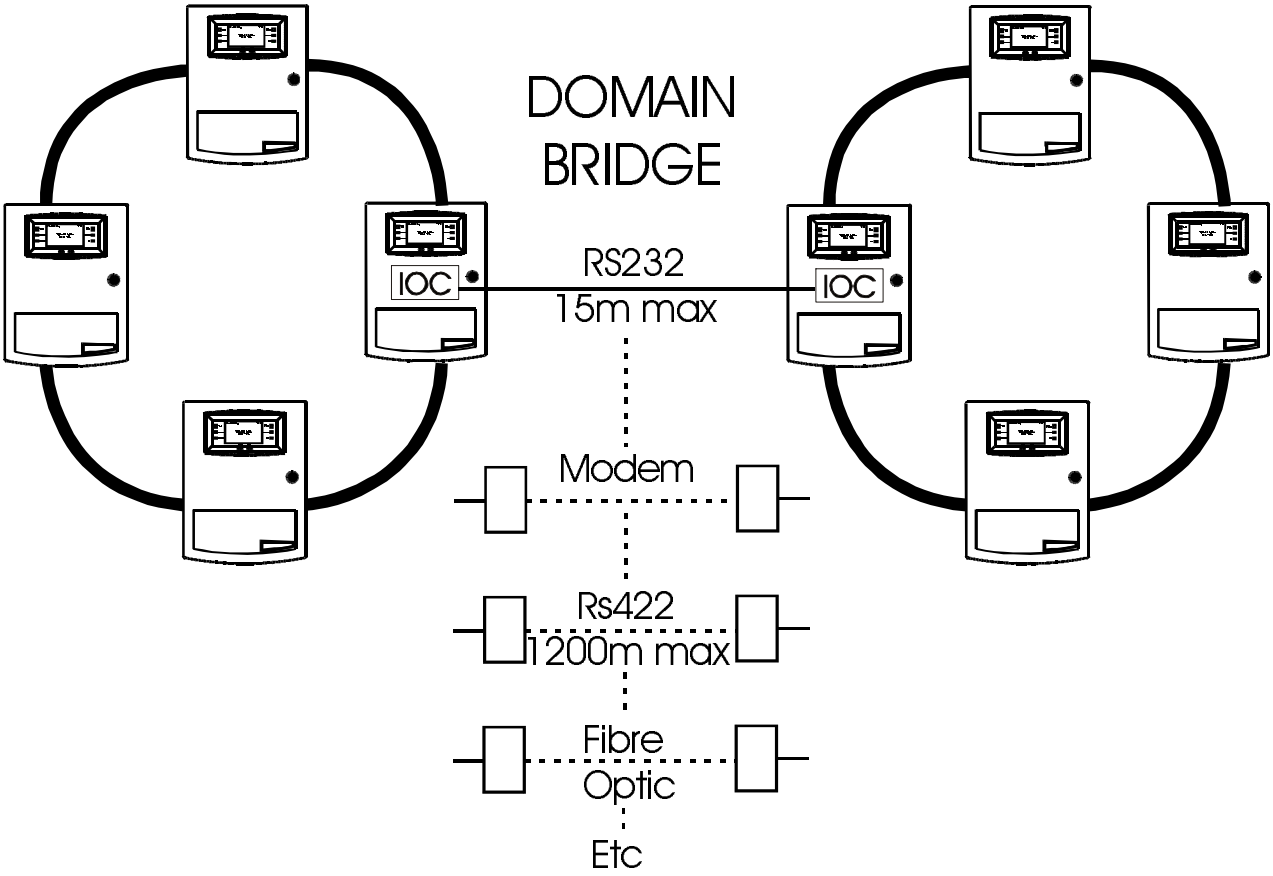
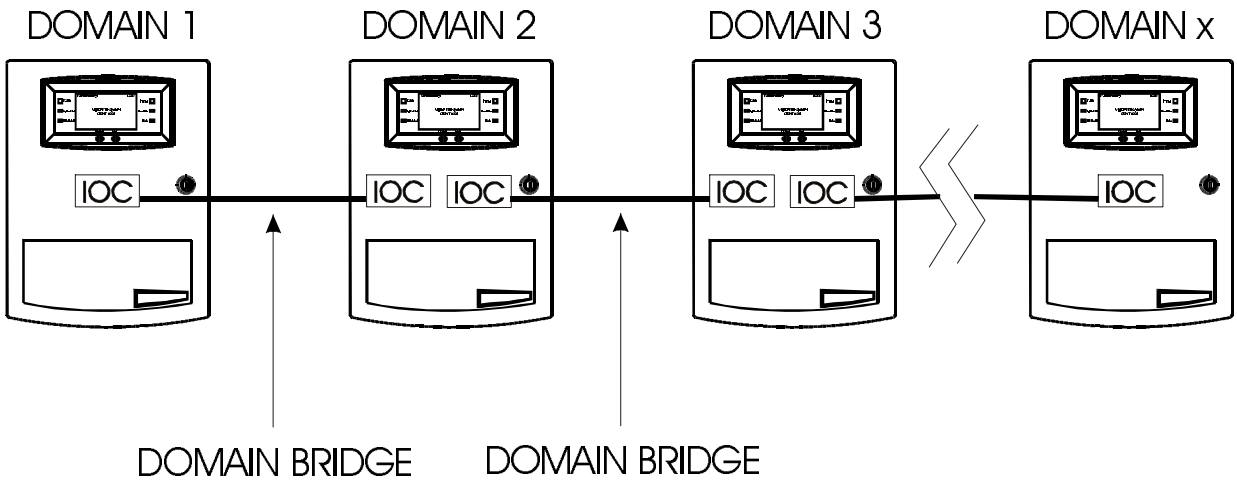


Figure 29-3 Linked secure networks
cd8n_4

Domain bridge rules:

- Maximum number of domains (panels) per system: 50
- Maximum number of panels per domain: 31

Unsecure daisy chain



NOTE: IF PANELS HAVE LINKED FIRE PLAN CONFIGURATIONS THEY MUST BE ON A SECURE NETWORK

Figure 29-4 Unsecure daisy chain
cd8n_5

Domain bridge rules:

- Maximum number of domains (panels) per system: 50

Star connection

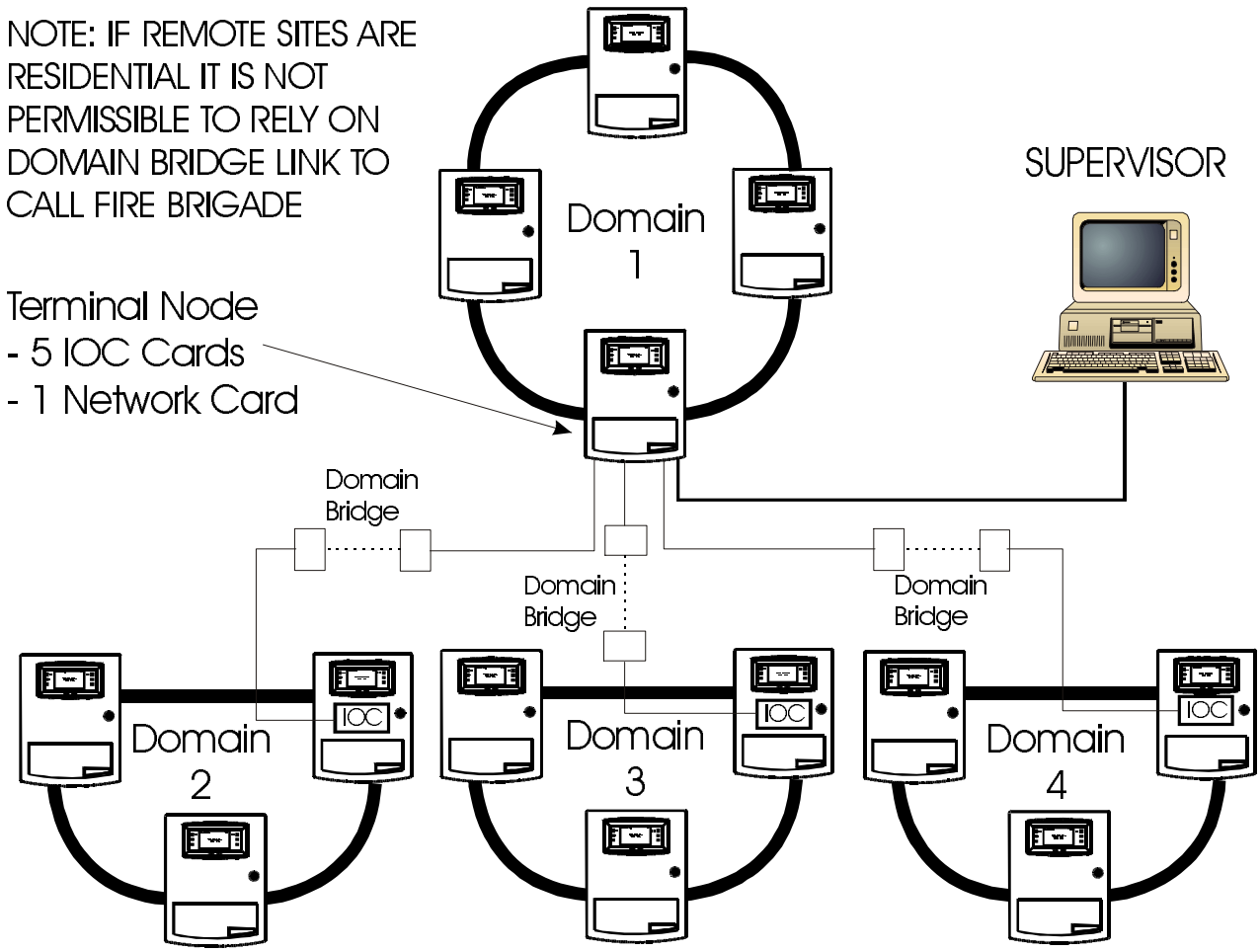


Figure 29-5 Star connection
cd8n_6

Domain bridge rules:

- Maximum number of domains (panels) per system: 50
- Maximum number of panels per domain: 31

This page has been left intentionally blank.

Choosing network cable

CAUTION: *In countries where the European EMC directive is in force, only those cables detailed in the EMC Compliance part of this manual may be used.*

NOTE: *It is not permitted to mix cables of different types on the same leg of a network.*

Cable screen continuity

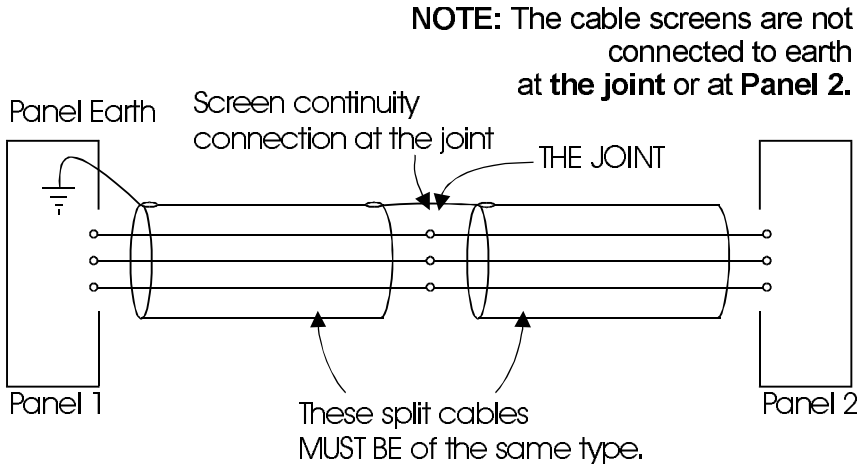


Figure 30-1 Maintaining screen cable continuity for joined cables

cdm295

The cable used to interconnect networks MUST be one of the following:

Data Cables

- ❑ Belden No 9729 (UL: Style 2493) EMC approved
  1200m maximum Panel to Panel or Panel to Node cable distance
- ❑ Delta Crompton Firetuf FDZ1000 (EMC approved)
  1200m maximum Panel to Panel or Panel to Node cable distance
- ❑ Huber & Schner Radox series FR communication cable
  1200m maximum Panel to Panel or Panel to Node cable distance
  - Three core twisted triad screened
  - 1.5mm^2 (7/0.42 stranded) conductors
  - Nominal impedance 200ohms (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

- ❑ Mineral insulated copper cable (EMC Compliant)
  600m maximum Panel to Panel or Panel to Panel cable distance.

  - BS6207: Part 1
  - 3 parallel cores
  - having continuous metal sheath encapsulating
  - each core having 1.5mm^2 cross section area
  - a red cover sheath (preferred for alarm applications)

- ❑ Teflon jacketed Belden TR No. 89729
  1200m maximum Panel to Panel or Panel to Node cable distance
  Both cables must have following characteristics:

  - 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^{o}C to +60^{o}C .
    (Teflon jacketed cable 89729 up to 200^{o}C)

- ❑ Belden Armoured equivalent (EMC Compliant)

  - This cable being a two pair cable to BS5308:Part 1 (type 2) 0.5mm^2 (16/0.2mm).
    600m maximum Panel to Panel or Panel to Node cable distance.

- ❑ Belden No. 9842 EIA RS485 Applications, O/A Beldfoil® Braid
  1200m maximum Panel to Panel or Panel to 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

GENT Supervisor 3

The Supervisor package provides the operator with a visual means of viewing and controlling the Fire Alarm system to which it is connected. The major features of the Supervisor package are:

- ❑ Event display/status bar giving a clear and concise view of the current events on the fire alarm system.
- ❑ Ability to control and change the following
  - Disable actions
  - Labels
  - Auxiliary text
- ❑ User action buttons
- ❑ Historic data of all the system events.
- ❑ Access levels/Passwords to target specific levels of access to specific users.
- ❑ Graphical representation (if required) of the site allowing the exact location of the fire alarm events, eg fires, faults etc.

Additional features

In addition to the above key points, Supervisor 3 provides the following additional features:

- ❑ Panel remote fault buzzer cancellation.
- ❑ Event Acknowledgement.
- ❑ Vigilon fire "Verify" feature support.
- ❑ Clock Synchronisation with panels with local adjustment facility.
- ❑ Configurable support for "high priority" Supervisory events ("Emergencies").
- ❑ Single machine for text and graphics.
- ❑ Compatibility with System 3400 and Vigilon V3+ systems.
- ❑ Touch screen support.
- ❑ Support for "domains" and the "full duplex" communications protocol.
- ❑ Auxiliary text and graphics tracking driven from databases.
- ❑ Commissioning "Simulate Event" facility.

- ❑ Text and graphics print outs of events real time
- ❑ "Tree-view" for device selection (enable/disable, auxiliary text and label editing etc.).
- ❑ Event sound (buzzer) support (using a standard PC sound card).
- ❑ Graphics configuration.
- ❑ "Shortcut" keyboard function keys for important operations.
- ❑ Special keyboard
- ❑ Software reboot watchdog

Packages

Supervisor is available as two packages:

- ❑ Information only package
- ❑ Full access package

User Access Rights

Each user may have an individual user name and password. They may be given one of three levels of access; Information, Operator, Engineer. The facilities available under each level of access are given in the following table:.

	Information	Operator	Engineer
Database Viewing	Y	Y	Y
Historic Backup (if set up during commissioning)	N	N	Y
User Actions (if set up during commissioning)	N	Y	Y
Alarm Controls	N	Y	Y
Set Clock	Y	Y	Y
Enable/Disable	N	Y	Y
Card Details	N	N	Y
Supervisor Set-up	N	N	Y
Supervisory Auxiliary Text	N	N	Y
Fault Auxiliary Text	N	N	Y
Fire Auxiliary Text	N	N	Y
Device Details	Read only	Read only	Y
System View	Y	Y	Y
User Administration	*	*	*

> ***NOTE:** Any user may have access to user setup provided the user is an administrator.*

Only the Information user level are permitted in the Information Only Supervisor package.

Number of Supervisors permitted on a network

It is permitted to connect up to three Main Supervisor computers to a network, two of these to the network controller and the other to another panel.

Fire events display

The Supervisor displays fire events in the following manner:

Event occuring

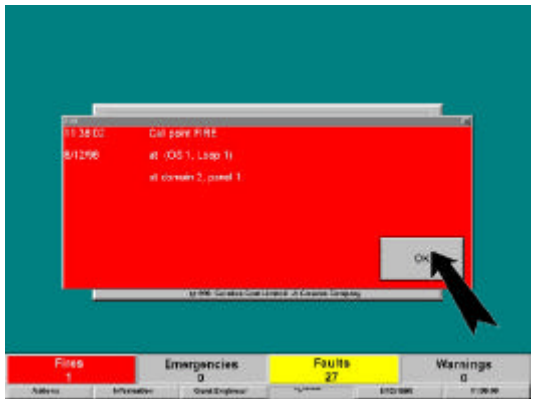


Figure 31-1 Display showing report of fire
jnpic3

The fire event is acknowledged by clicking on the OK button.

Event acknowledged

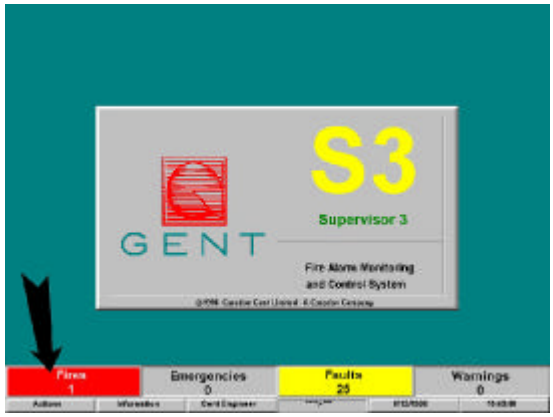


Figure 31-2 Display after fire is acknowledged
jnpic2

The current fire events are displayed by clicking on the Fire Button

Log of current fires

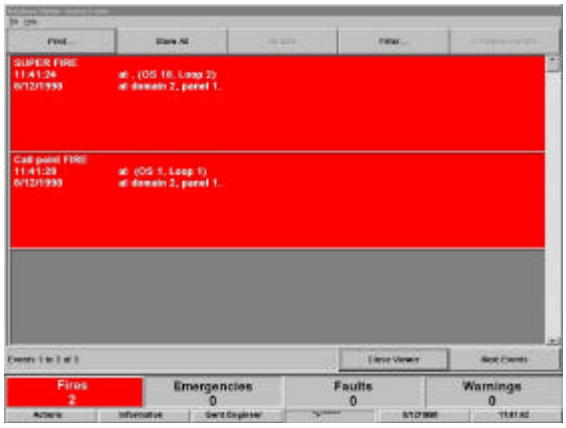


Figure 31-3 Fire event log showing current fire events
jnpic4

Emergency display

The Supervisor displays emergency events in the following manner:

Event occuring

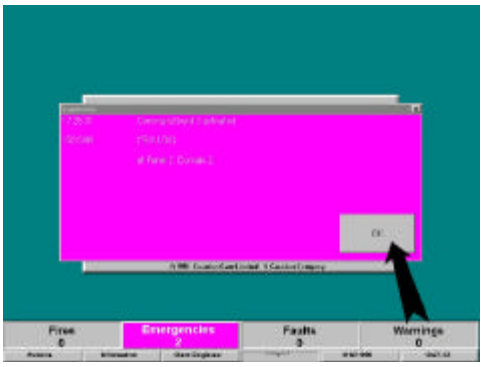


Figure 31-4 Display when emergency occurs
jnpic11

The emergency event is acknowledged by clicking on the OK button.

Event acknowledged

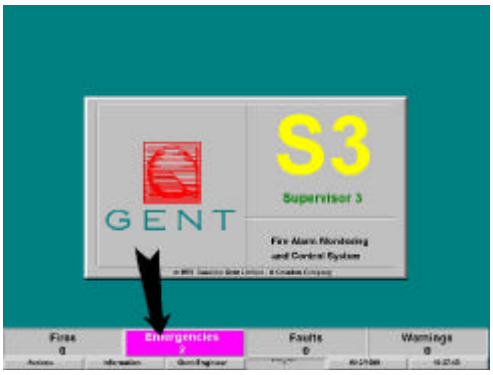


Figure 31-5 Display after emergency is acknowledged
jnpic13

The current emergency events are displayed by clicking on the Emergencies Button

Log of current emergencies

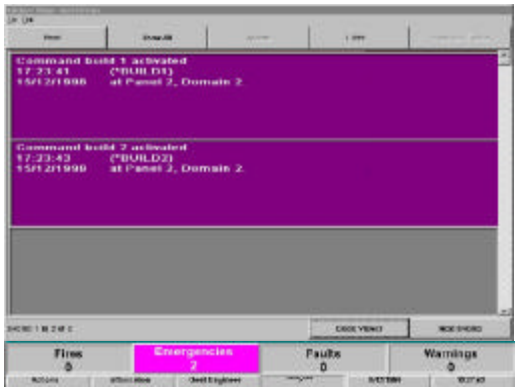


Figure 31-6 Emergeny event log showing current emergencies
jnpic12

Fault display

The Supervisor displays fault events in the following manner:

Event occuring

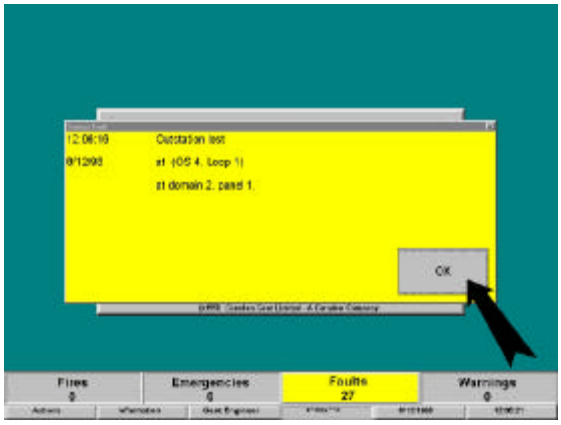


Figure 31-7 Display when fault occurs
jnpic6

The fault event is acknowledged by clicking on the OK button.

Event acknowledged

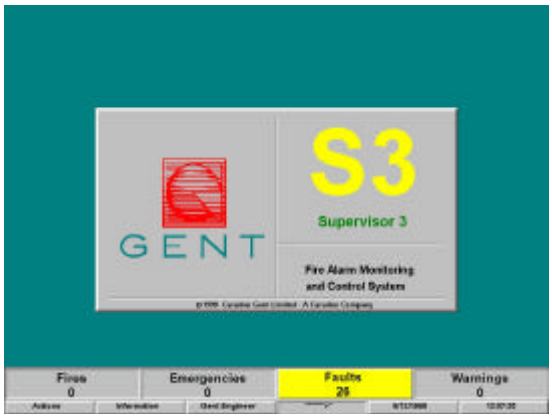


Figure 31-8 Display after fault is acknowledged
jnpic7

The current fault events are displayed by clicking on the Faults Button

Log of current faults

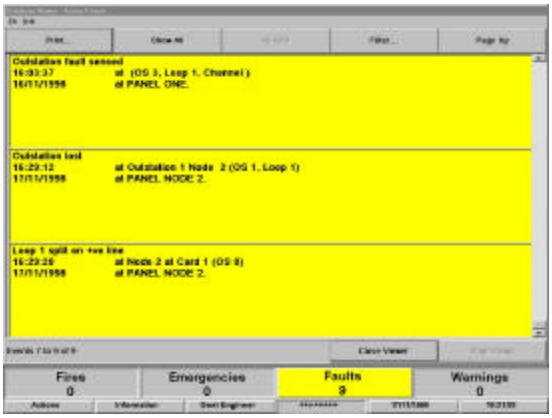


Figure 31-9 Fault event log showing current faults
jnpic5

Other event information display

Other events associated with the Fire Alarm System are displayed in similar fashion to Fires, Emergencies and Faults.

Historic events viewer

A log of the Fire Alarm System historic events is created by the Supervisor and this can be displayed. The display will be similar to the following:

> ***NOTE**: The different events are shown colour coded in the Historic events log viewer.*

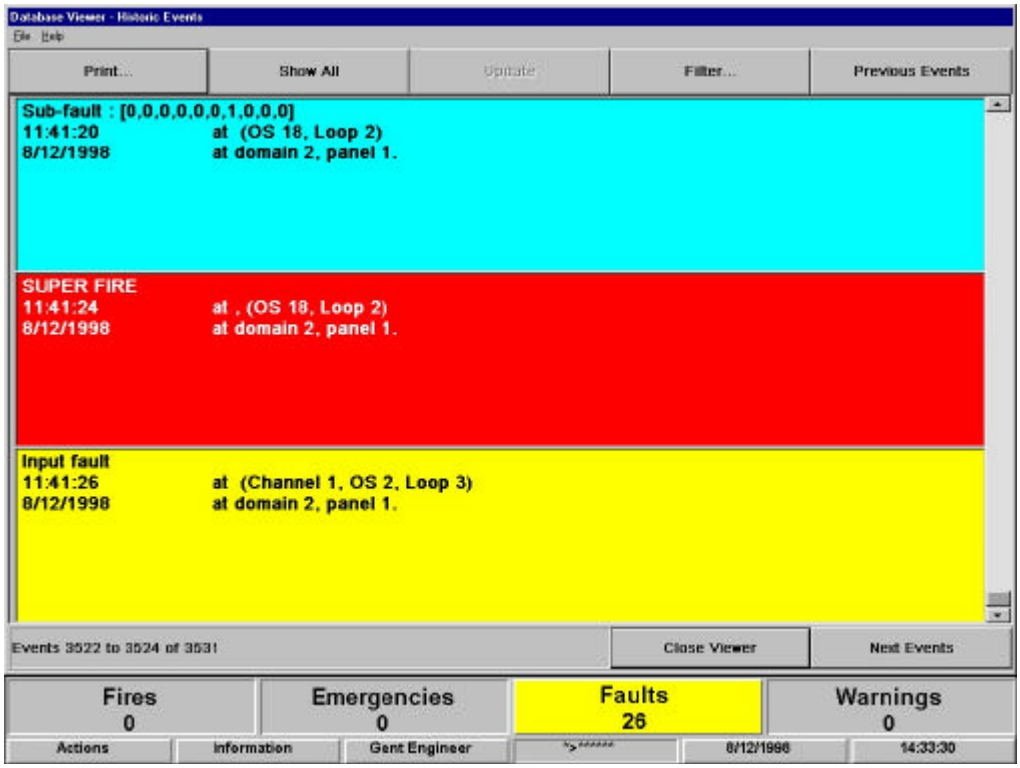


Figure 31-10 Display showing typical Historic log entries
jnpic8

User actions view

The User actions screen will resemble the screen below dependent on what actions ard defined.

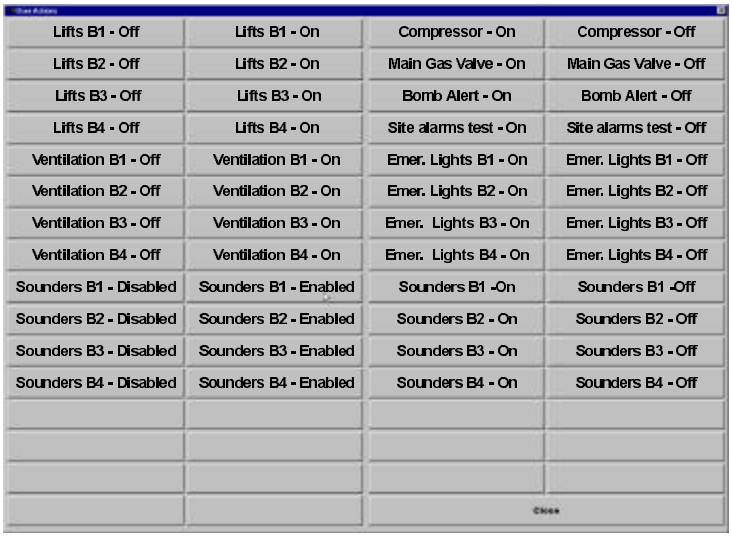


Figure 31-11 Typical User Actions Screen

cd8n_33

System view

The System View screen will resemble the following dependent upon what is connected andwhich of the tabs is selected:

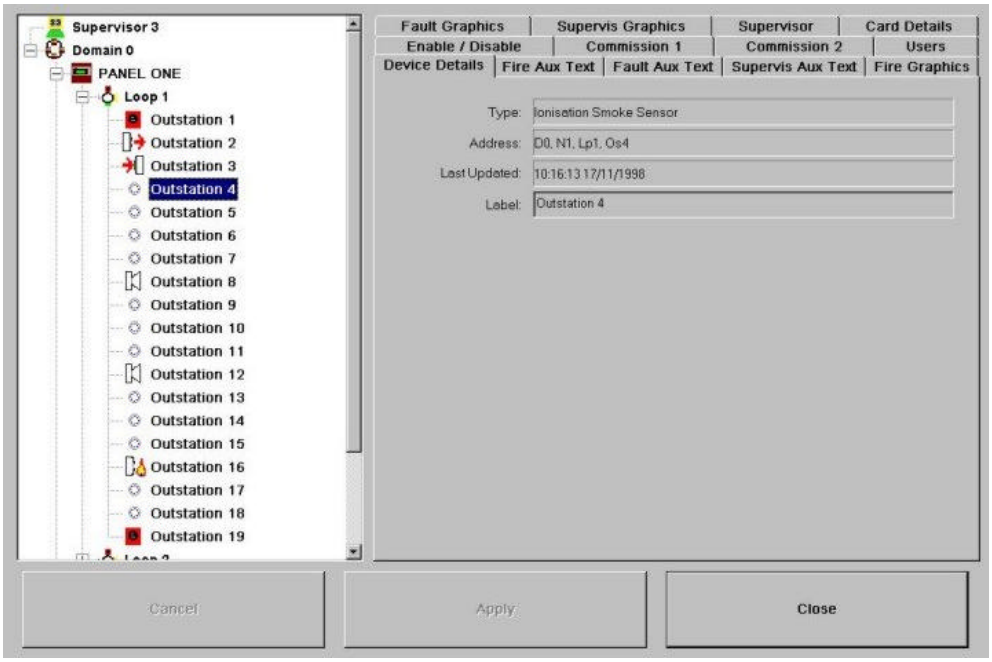


Figure 31-12 Typical system view screen

jnpic9

Display of events graphically

The graphical display pictorially presents Fire, Fault and Emergenciesevents on a visual display unit. (VDU). The purpose of the facility is to provide the operator with additional visual information over and above the text provided. All system events, ie fire, fault and warning may be automatically printed onto the graphics printer. Operation of the graphics terminal is normally by manual selection of the appropriate pages guided by a navigation system, however, it will automatically track to the relevant initiating device for the first occurrence of each type of event.

Graphics Pages

The Graphics Pages consist of a hierarchy of pages commencing with the 'Fire' page depicting either a site plan, building pictorial, logo, etc from which the other areas of the project can be accessed. Cascading levels are then used to break down the project to the final level which gives detailed drawings of each section for all the areas of the Building. Fire, Fault and Supervisory events are displayed on these pages using small colour coded icons to indicate their location.

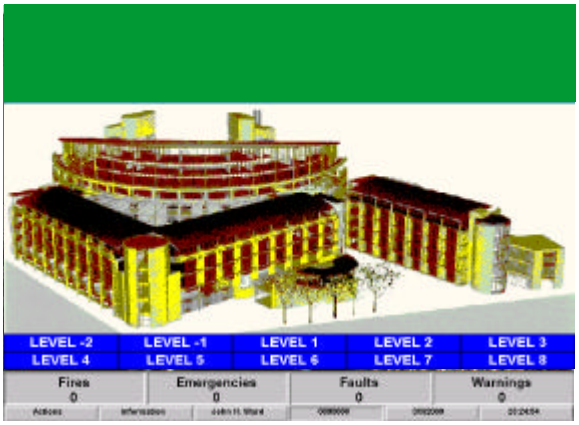
Manual navigation from page to page is achieved by clicking on 'active' areas of the screen or operating on-screen buttons.

When Fire, Fault and Emergency messages are required to be displayed at the same location on any of the pages, the following priority is used:

- Fire
- Emergency
- Fault

> ***NOTE:*** *All events are in some way shown on every page, therefore multiple fires and faults canbe manually tracked.*

Typical screen showing Graphics and status bar



Typical screen showing Graphics and status bar
cd8n_31

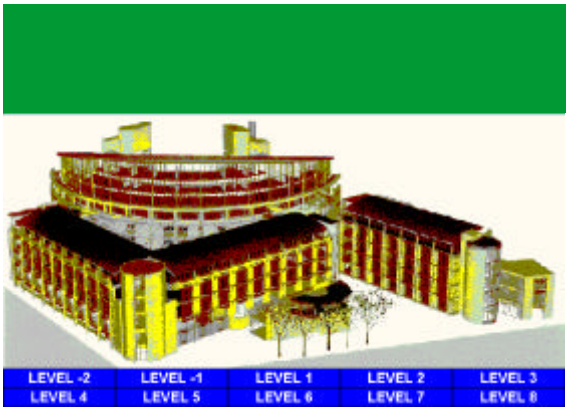
Typical Page Contents

> ***NOTE:*** *The following are typical pages. There is no limit to the number of levels which can be utilised to depict the project.. The status bar has been omitted for clarity on all the views.*

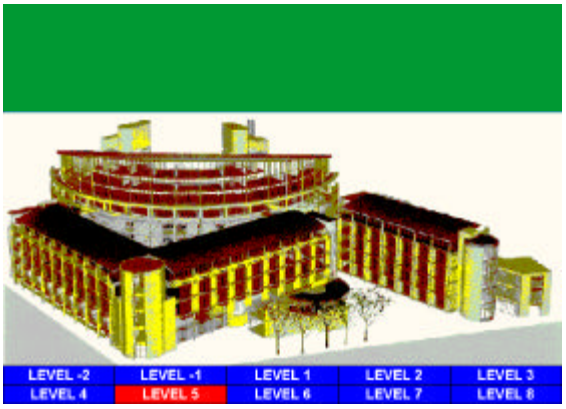
First level page

On receipt of a Fire or Fault input from a system sensor a red box with white letters or a yellow box with black letters, as appropriate, will appear on the appropriate floor level box.

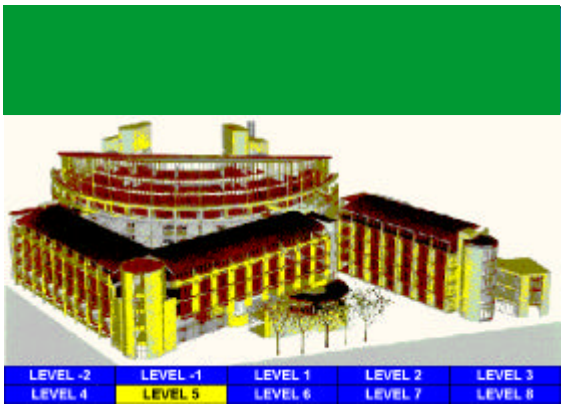
.



First level Graphics page



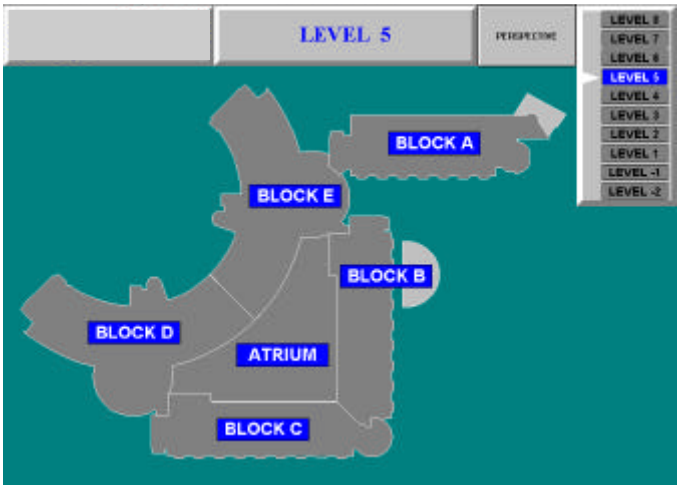
First level Graphics page showing fire



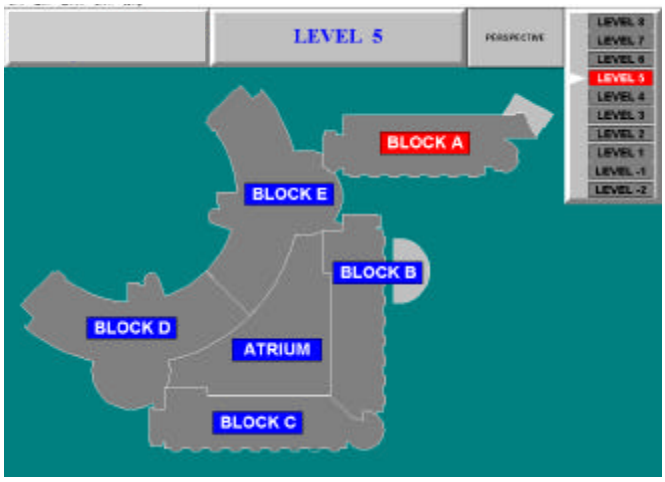
First level Graphics page showing fault

Floor Pages

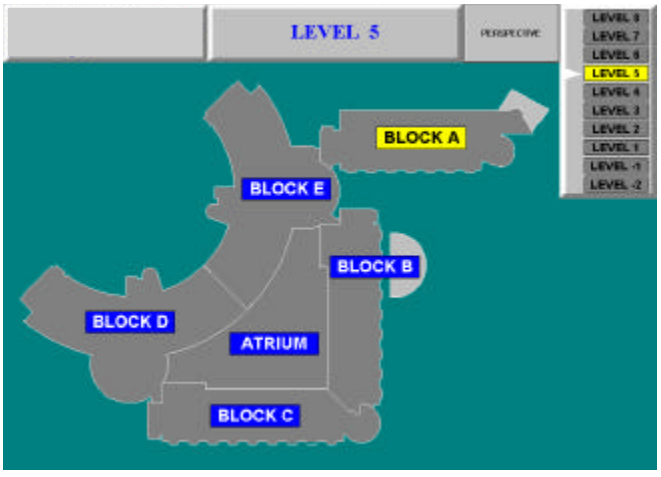
On receipt of a Fire or Fault input from system sensors contained within any other section covered by the page, a block box will illuminate red with white letters or yellow with black letters as appropriate.



Floor page with no events

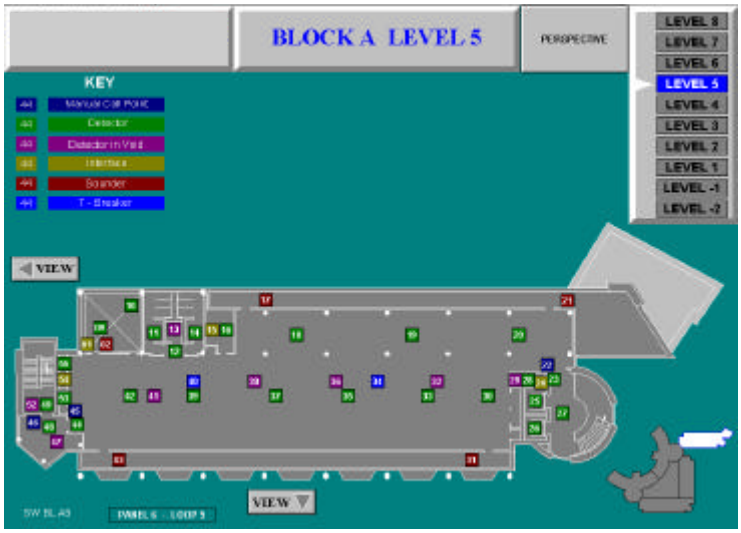


Floor page showing fire

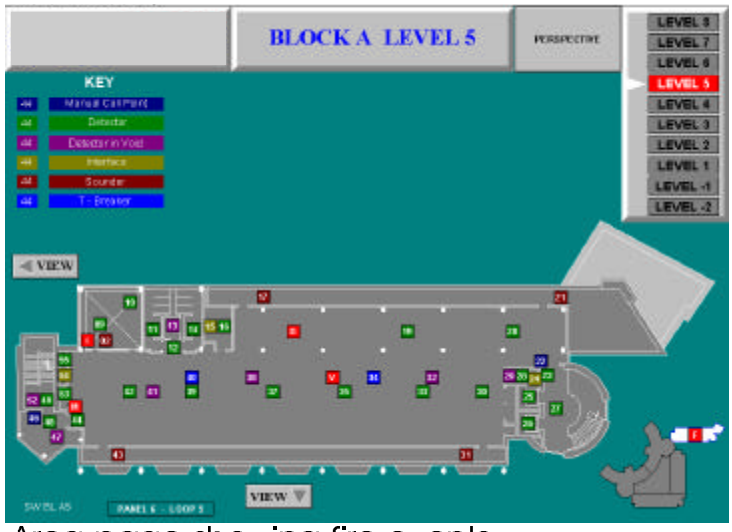


Floor page showing fault

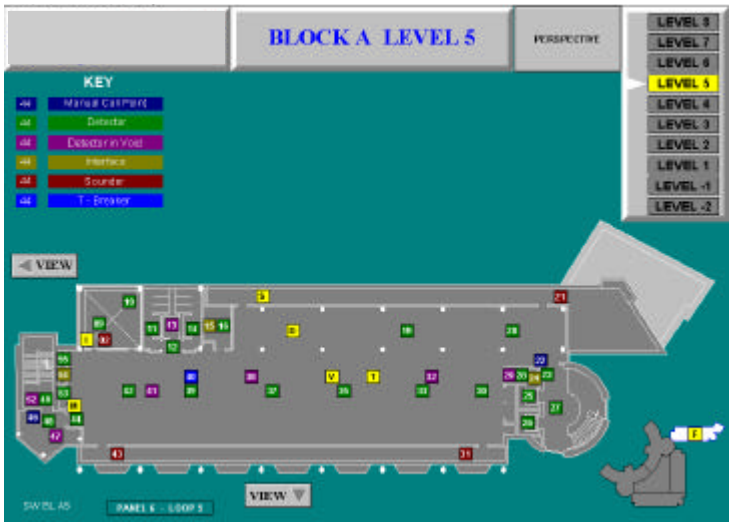
Area Pages



Area page showing no events



Area page showing fire events



Area page showing fault events

Numerical limits for graphics.

- Maximum number of pages: Unlimited
- Maximum number of levels: Unlimited
- Maximum number of active items per page: 128
- Maximum number of buttons per page: 128

Physical system connections

Connecting a GENT Supervisor computer

Number of Supervisors permitted on a network

It is permitted to connect up to three Main Supervisor computers to a network, two of these to the network controller and the other to another panel.

Single control panel

A GENT Supervisor computer can be connected to a control panel. It connects via a plug-in IO card . The data connection from the IO card is fed direct to the Supervisor computer.

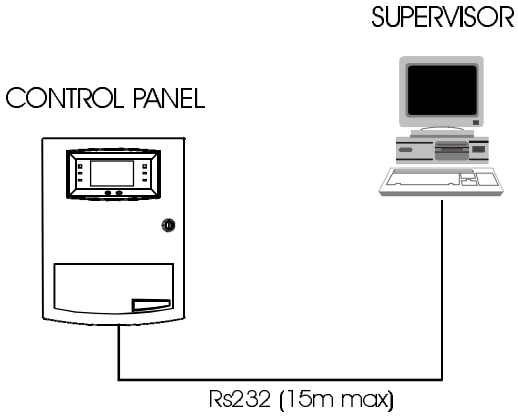


Figure 32-1 Gent Supervisor to control panel connection

cd8n_10

Two control panels

A GENT Supervisor computer can be connected to a network of two control panels as shown. It connects via a plug-in IO card located in one of the control panels. The data connection from the IO card is fed direct to the Supervisor computer.

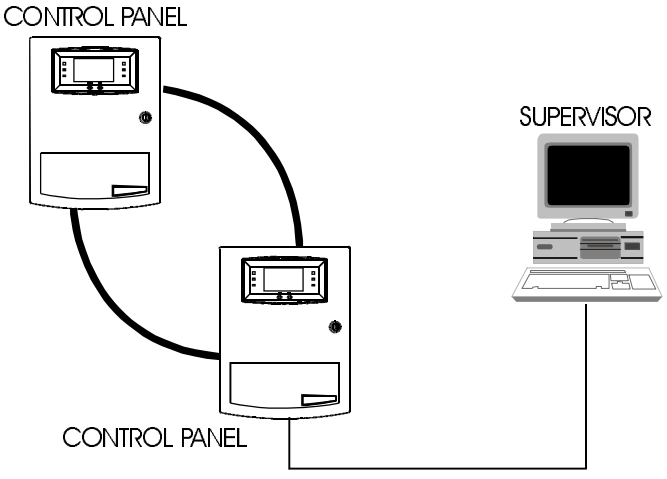


Figure 32-2 Gent Supervisor to two control panels

cd8n_9

Secure network

A Supervisor computer can be used in conjunction with a secure network. Where there are more than two panels, a terminal node is employed. The data cable is fed direct from the terminal node to the supervisor.

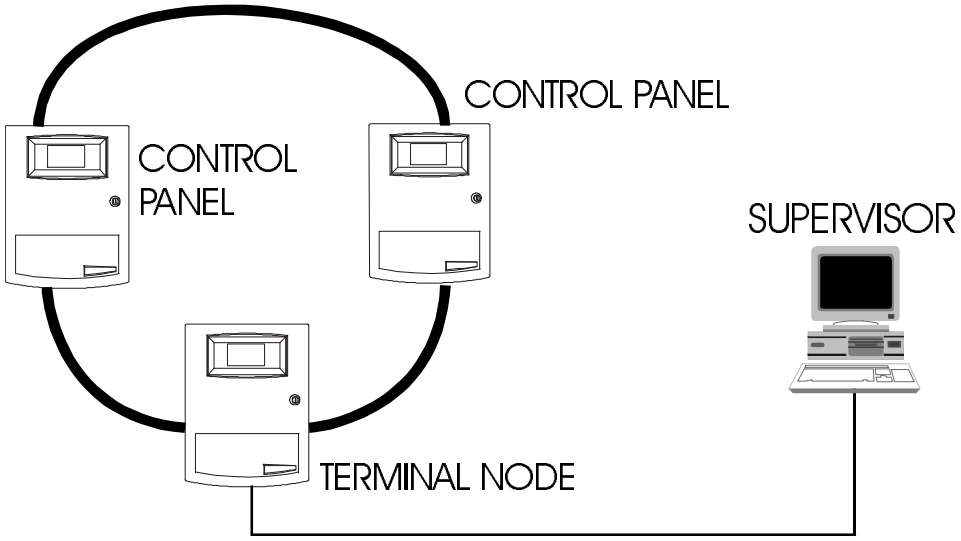


Figure 32-3 Gent Supervisor to a secure network

cd8n_8

Remote site connection

The remote site is connected to the terminal node as shown via a domain bridge. The supervisor connects to the terminal node directly.

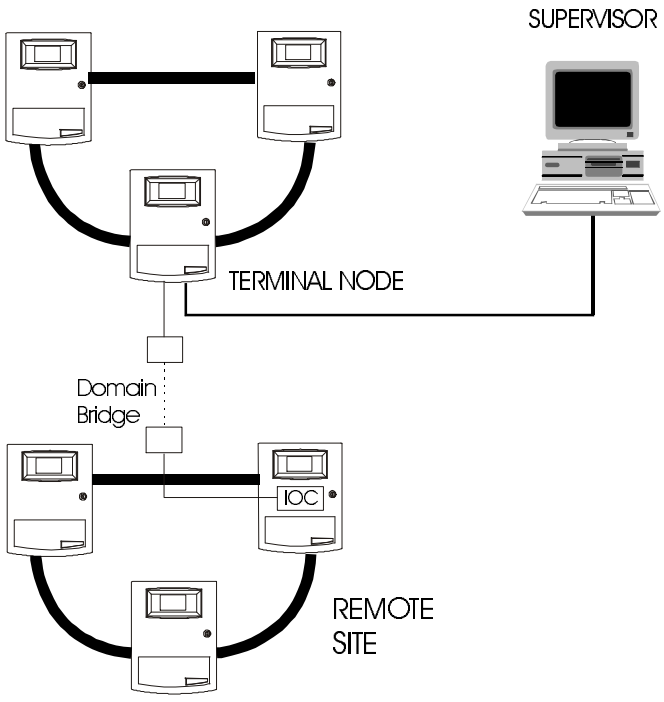


Figure 32-4 Remote site connection

cd8n_11

Extending computer connection from 15 metres to 1000 metres

The Supervisor computer is connected to a converter unit (Part Number 13563-02). The converter unit is then connected to the terminal node (or control panel) via a further data cable. This data cable is configured as a RS485 link which allows the terminal node or control panel to be 1000 metres from the supervisor.

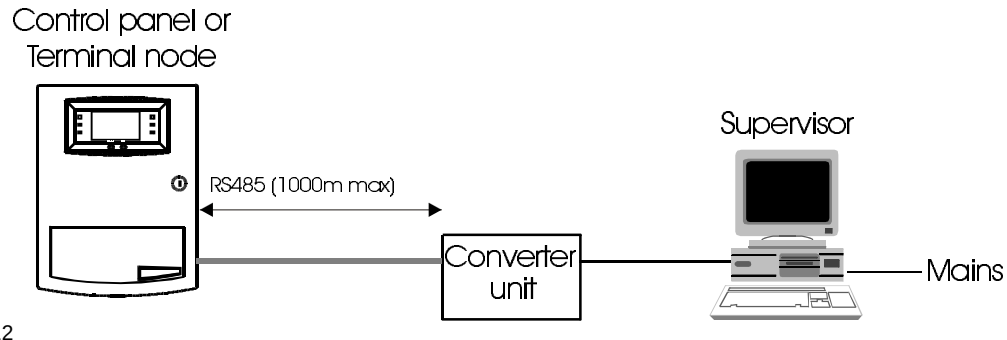


Figure 32-5 Extending distance between supervisor and panel

cd8n_12

Connection of Multiple Graphics Supervisors using Ethernet

Multiple Graphics Supervisor terminals can be connected to the main Text or Text + Graphics Supervisor terminal using an Ethernet link. The Graphics terminals whether pc based or wall mounted panels will mirror the information presented by the main terminal,but each allows independent manual page selection.

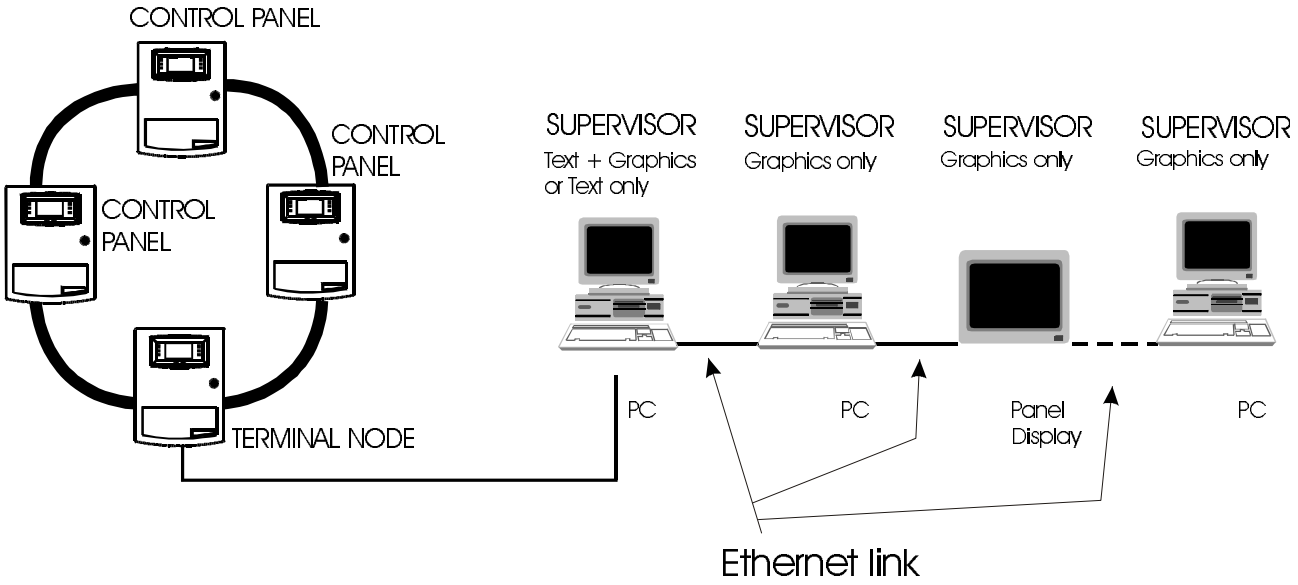


Figure 32-6 Connection of multiple graphics supervisors using Ethernet connections

cd8n_18

Supervisor connection using a modem

Modems allow the data link between the terminal node/control panel and the supervisor computer to be carried over a BT STD Keyline leased telephone line specifically for Alarm modem connection. If the distance between the modems is large, STD Keyline 3 should be used. For advice on what connection to use contact BT.

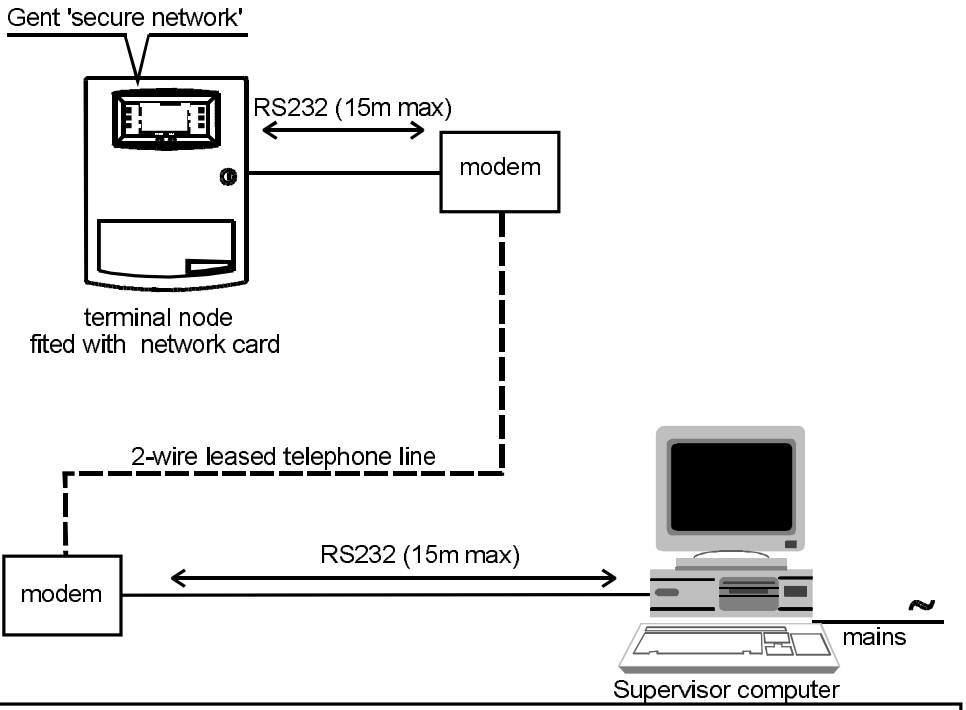


Figure 32-7 Supervisor to a secure network via modem

cdn399

NOTE: *This configuration should not be used to monitor remote sites for the purpose of alerting fire services. An auto dialler to a manned centre should be used.*

Application of configurations

Labels

This function allows exact location of a fire to be displayed at a control and indicating equipment. A label may be assigned to each:

- Sensor - which can have up to 32 characters label.
- Manual call points - which will automatically create a prefix ‘MCP;’ and therefore can have up to 28 characters label.
- Each Input/Output channel - can have up to 32 characters label (A mains powered interface with input channels that has MCPs attached should have a 28 characters label
- Alarm Sounder - which can have up to 32 characters label
- Control panel - which can have up to 32 characters label. Local panel name is used for displaying events on a Gent Supervisor.
- Zone (Group for V3+) - which can have up to 32 characters label (fires generated by MCPs will be automatically prefixed ‘MCP;’, which limits the label length to 28 characters)
- Command build - can be up to 40 characters label

Up to 270 labels may be assigned to each loop, which allows for extra labels needed by interface units input and output lines.

Long labelling

Vigilon SAFE Long labelling allows outstation, group and panel labels to be extended from 32 characters to 64 characters and command build labels to be expanded from 40 characters to 64 characters.

To achieve a 64 character label without increasing the internal storage required, the software automatically replaces commonly used words with a token value. Each token is then stored as part of the label, as 1 (or 2) ‘special’ characters. Labels are then expanded just prior to printing or display to give the full label, up to a maximum of 64 characters.

NOTE: All tokenised labels are displayed in upper case.

Entering labels

If a label is entered that is 32 characters (40 characters for command builds) or less, then no attempt at tokenisation is made. For labels greater than 32 characters (40 characters for command builds) then the software attempts to replace words in the label with 1 (or 2) special character tokens. If a label cannot be shrunk to 32 characters or less then the panel fault buzzer sounds for 1 second and the label remains visible.

> ***NOTE:*** *To enable tokenisation to take place, the words to be tokenised must finish with a space. Inserting a comma or other punctuation mark after the word will result in the software being unable to find the word in the token list.*

Required label is

"OPTICAL HEAT SOUNDER ON THE FIRST FLOOR LANDING AT THE WEST END OF THE JAMES BUILDING"

Short labels

O	P	_	H	T	_	S	D	R	_	1	_	F	L	R	_	L	D	_	W	_	E	N	D	_	J	M	S	_	B	L	D
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	

Is displayed as "OP HT SDR 1 FLR LD W END JMS BLD

Long labels (*using tokenisation*)

249	_	251	_	247	_	159	_	156	_	10	_	169	_	E	N	D
1	2	3	4	5	6	7	8	9	10	11+12	13	14	15	16	17	18

J	A	M	E	S	_	131
19	20	21	22	23	24	25

Is displayed as "OPTICAL HEAT SOUNDER FIRST FLOOR LANDING WEST END JAMES BUILDING

Figure 33 -1 Illustration of the benefits of using long labels
cd8n_16

Token lists

Tables 1 and 2 show the list of tokens used by the software to reduce the character label to 32 characters or less for storage of the label. There are two lists, Bank 0 and Bank 1. The tokens in Bank 0 only use 1 'special' character per token, whilst the tokens in Bank 1 use 2 'special' characters.

When tokens are decoded, a trailing space is automatically added to the decoded word. Likewise when a label is being tokenised, the word must have a space following it, or be at the end of a line. Therefore a token word cannot be followed with a comma, dash or other such character.

Bank 0

General Building Features

128	AREA	129	ANNEXE	130	BLOCK	131	BUILDING
132	CORE	131	CORRIDOR	134	DOOR	135	DUCT
136	ENTRANCE	137	ESCALATOR	138	EXIT	139	EXTENSION
140	FLAT	141	HALL	142	HOUSE	143	LIFT
144	LOBBY	145	RISER	146	ROOM	147	ROUTE
148	STAIRS	149	TOWER	150	UNIT	151	VENTILATION
152	VOID	153	ZONE				
Vertical Location							
154	LEVEL	155	MEZZANINE	156	FLOOR	157	BASEMENT
158	GROUND	159	FIRST	160	SECOND	161	THIRD
162	FOURTH	163	CEILING	164	ROOF	165	ATRIUM
Geographic Location							
166	NORTH	167	SOUTH	168	EAST	169	WEST
Positions							
170	NEAR	171	OUTSIDE	172	ABOVE	173	UPPER
174	CENTRE	175	LOWER	176	LEFT	177	RIGHT
178	FRONT	179	REAR				
Building Usage							
180	ACCOMODATION	182	ADMIN	182	BEDROOM	183	BOILER
184	CENTRAL	185	CHANGING	186	COMPUTER	187	CONTROL
188	CUPBOARD	189	ELECTRICAL	190	ENGINEERING	191	EXTERNAL
192	GALLERY	193	GARAGE	194	GENERAL	195	HOUSING
196	KITCHEN	197	LAUNDRY	198	LOUNGE	199	OFFICE
200	PLANT	201	RECEPTION	202	RESTAURANT	203	SERVICE
204	SERVICES	205	SHOP	206	STAFF	207	STORE
208	STORES	209	SWITCH	210	SYSTEM	211	TOILET
212	WORKSHOP	213	WARD	214	WAREHOUSE		
Airport Tokens							
215	AIRSIDE	216	ARRIVALS	217	BAGGAGE	218	BRIDGE
219	BUREAU DE CHANGE	220	CUSTOMS	221	CONCOURSE	222	DEPARTURES
223	DUTY FREE	224	EXCHANGE	225	GATE	226	HANDLING
227	IMMIGRATION	228	LANDSIDE	229	LUGGAGE	230	MALL
231	PASSENGER	232	RETAIL	233	SECURITY	234	STATION
235	TERMINAL	236	TRANSFER				
Medical Tokens							
237	MEDICAL	238	THEATRE	239	X-RAY	240	CLINIC
241	PATIENT	242	PHYSIOTHERAPY	243	GERIATRICS	244	PEDIATRICS
245	RECORDS	246	HEALTH				
Components of the Fire System							
247	SOUNDER	248	DETECTOR	249	OPTICAL	250	IONISATION
251	HEAT	252	INTERFACE	253	BEAM	254	REPEAT
255	SPRINKLER						

Bank 1

General Building Features

1	CHAMBER	2	FOYER	3	SHAFT	4	STAIRCASE
5	STAIRWELL						

Vertical Location

6	FIFTH	7	SIXTH	8	ATTIC	9	BALCONY
10	LANDING	11	PASSAGE	12	SUBWAY	13	TUNNEL

Positions

14	ADJACENT	15	BOTTOM				

Building Usage

16	CATERING	17	COLLEGE	18	CONFERENCE	19	DEPARTMENT
20	DISPATCH	21	EMERGENCY	22	EQUIPMENT	23	ESCAPE
24	MANAGER	25	MEETING	26	PACKING	27	PHYSICS
28	POINT	29	PREPARATION	30	SHOPPING	31	SITING
32	STATIONARY	33	SUITE	34	SUPPLY	35	TELEPHONE
36	TRANSFORMER						

Airport Tokens

37	AIRLINES	38	BONDED	39	CHECK-IN	40	CLORIFIER
41	CONVEYOR	42	CUL-DE-SAC	43	DOMESTIC	44	FORECOURT
45	INFORMATION	46	INTERCONNECTOR	47	INTERNATIONAL	48	RECLAIMS
49	SCREENING	50	SECRET SIGN	51	TRAVOLATOR	52	TRUCKING

Medical Tokens

53	DISPENSARY						

Components of the Fire System

54	ASPIRATING	55	INPUT	56	OUTPUT	57	PRESSURE
58	SHUTTER						

Sectors

- Maximum of 32 sector per panel.

The sector facility provides the basic configuration tool for associating sensors and sounders. It allows a selection of devices to be associated, so that, for example a sensor or MCP will cause local sounders to be activated in the case of a fire.

Assigning to Sectors

- Input devices (sensors, MCPs and input channels) may be assigned to more than 1 sector.
- An output device (alarm sounder or output channel) may only be assigned to one sector only.
- Loop powered interfaces are assigned to sectors as an outstation only ie. individual inputs and outputs cannot be separately assigned to different sectors.

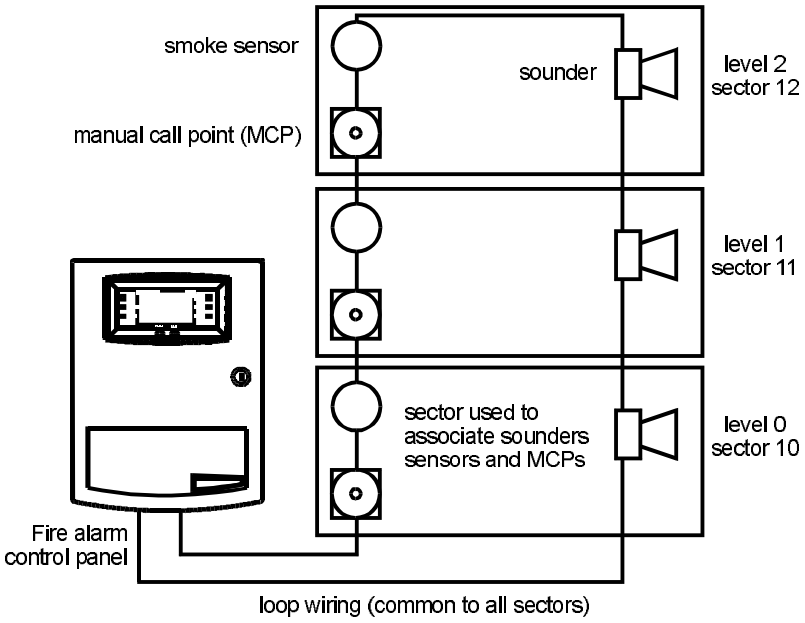


Figure 34-1 Sectoring

Sectors are used to associate sounders, sensors and MCPs for FIRE

cdn402

Actioning Sectors

- A sector that is actioned ON will activate its alarm devices, such as interface outputs and alarm sounders.
- A sector can be configured to give one of 3 signals:
  - Signal 1 Alert (priority 3).
  - Signal 2 Evacuate (priority 2).
  - Signal 3 Continuous (priority 1).
- Sectors of the same number, but on different loops, operate independently of each other ie. Sector 1 Loop 1 has nothing to do with Sector 1 Loop 2.
- Sector linking cannot be ‘daisy chained’.

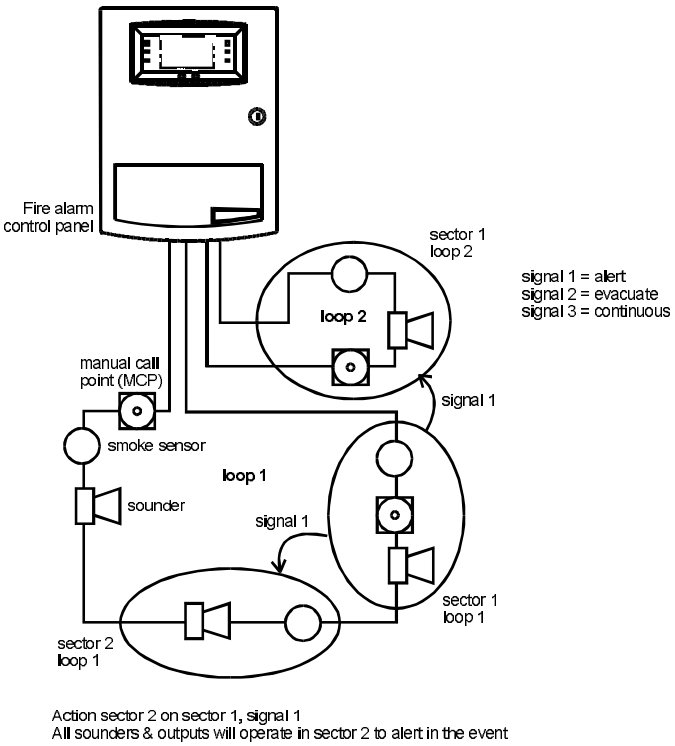
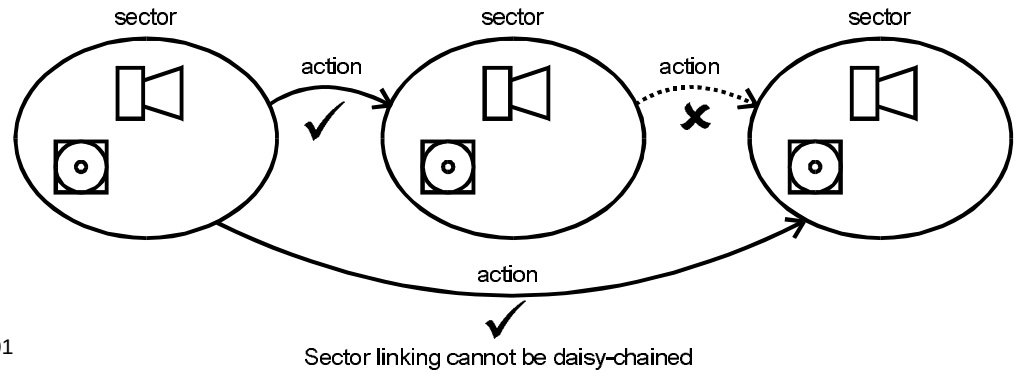


Figure 34-2 Actioning sectors

cdn403



cd101

Operation with Sound, Silence and Reset

- Sectors 1-28 operate automatically with the ‘Sound Alarms’ and ‘Silence Alarms’ buttons.
- Sectors 29-32 are independent of the ‘Sound Alarms’ button, and are primarily used with the Fixed Extinguishing Interface.
- Sectors 1-32 may be configured for ACTION or NO ACTION on the ‘Sound Alarms’ button. If a sector is configured for NO ACTION it will be silenced on operation of the ‘Reset’ button.

Default Fireplan

- The fire plan on power-up is known as ‘one out all out’. This is when all devices are assigned to sector 1. Any fire will operate all the interface outputs and alarm sounders.
- Fixed Extinguishing interfaces are assigned to sector 29 on initial power up. These WILL NOT operate at all unless configured.

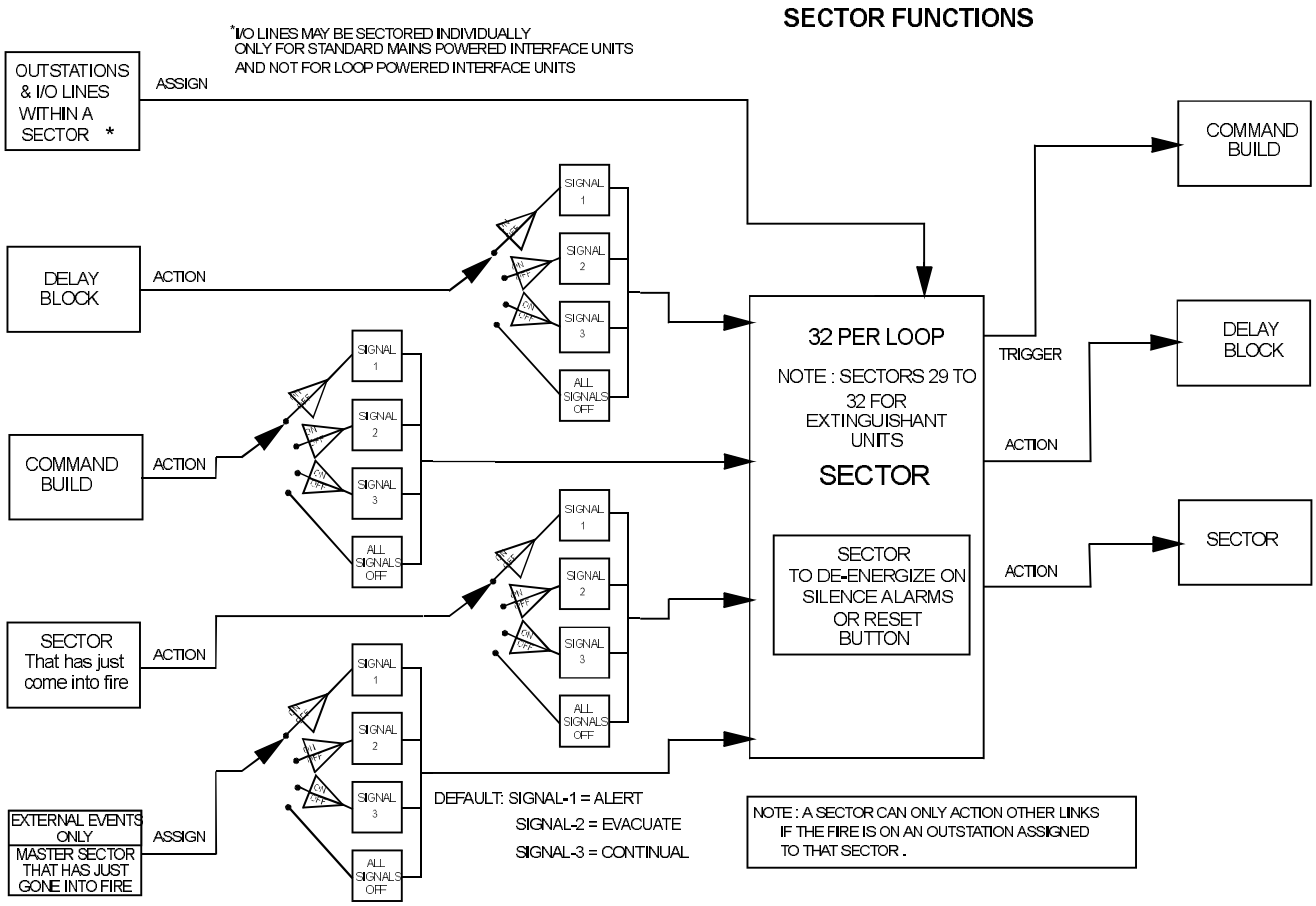


Figure 34-3 Sector functions
cdn404

Flag set sector

- When a sector is configured for flag set operation, a fire event from an optical heat sounder (OHS) in the sector will cause the local sounder to operate.

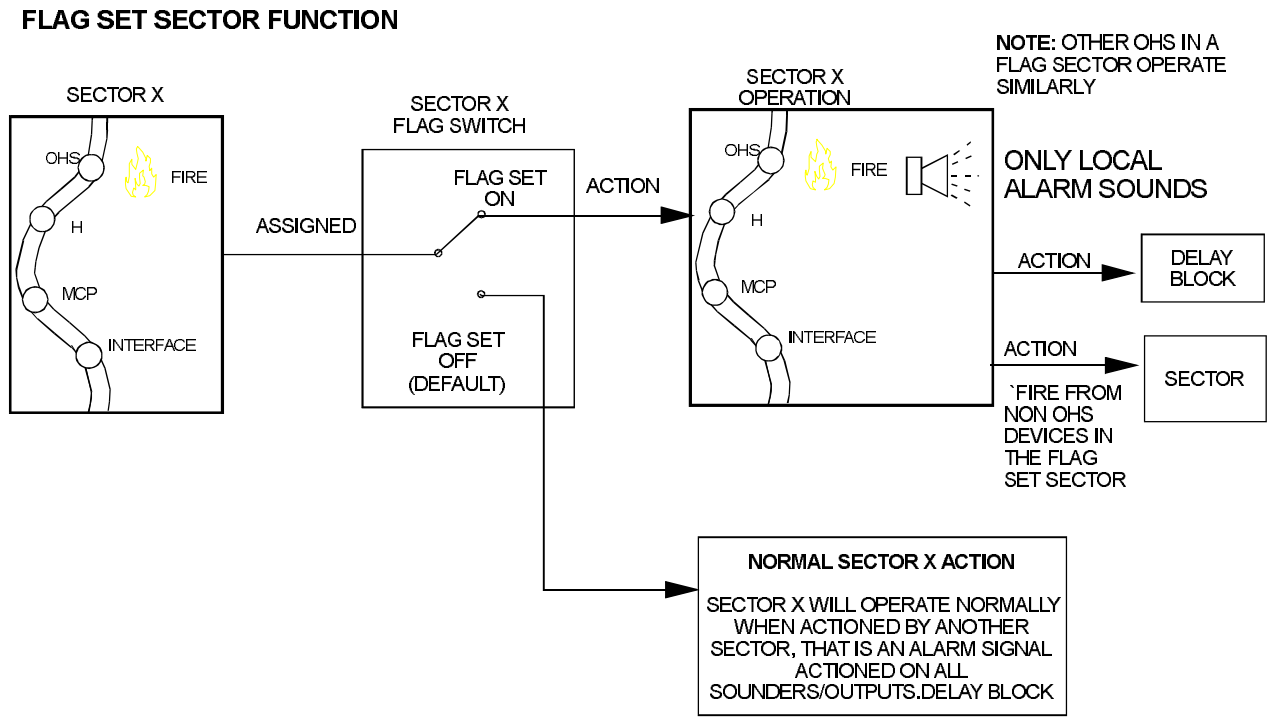


Figure 34-4 Flag set sector

fl262

Delay blocks

The delay function may be used in conjunction with sectors. Sectors may be configured so that the activation of one sector will cause the activation of another. A delay may be introduced between the activation of the two sectors.

- Maximum of 16 per panel.
- Delay time can be set between 4 seconds-10minutes, (in 4 second intervals).

Triggering delay blocks

A delay block may be triggered by :

- 1 or more sector on the local control panel.
- 1 or more master sectors (triggered by other control panels))
- Another delay block.
- Command build

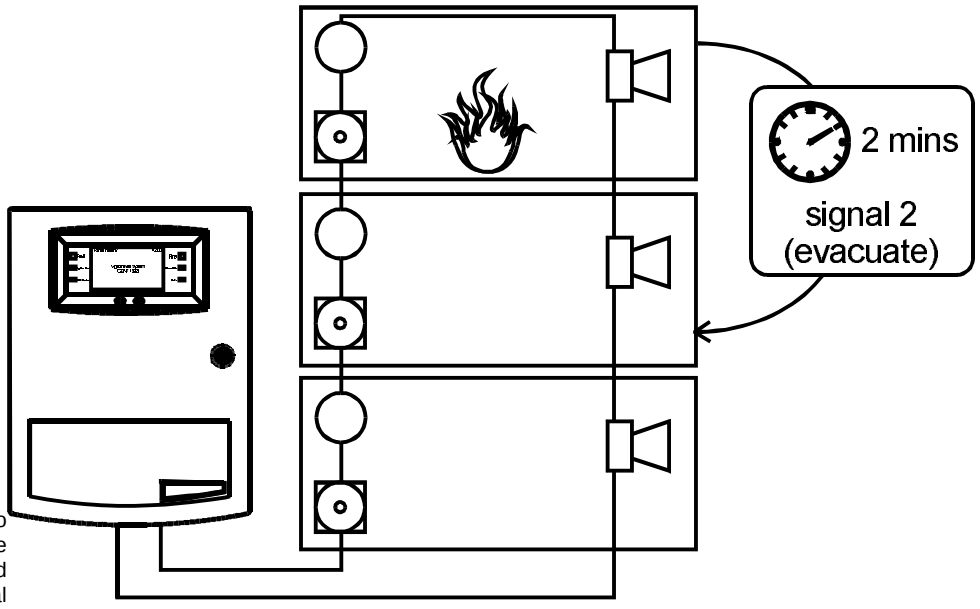


Figure 35-1 Delay block function

A Delay block allow sectors to action other sectors with a time delay and a specific sound signal

cdn405

Actioning from delay blocks

- A delay block can action 1 or more sectors on the local control panel. Once the delay block is triggered and timed-out, all the sectors that are configured to it will activate.
- Each delay block must have a signal associated with it. When the delay block times-out, ALL the sectors will be activated with this signal. The 3 possible signals are:
  - Signal 1 Alert (priority 3).
  - Signal 2 Evacuate (priority 2).
  - Signal 3 Continuous (priority 1).

  If a sector is already activated when the delay block times-out, the higher priority signal takes effect.
- A delay block can also action another delayblock to create a ‘daisy chain’ effect.

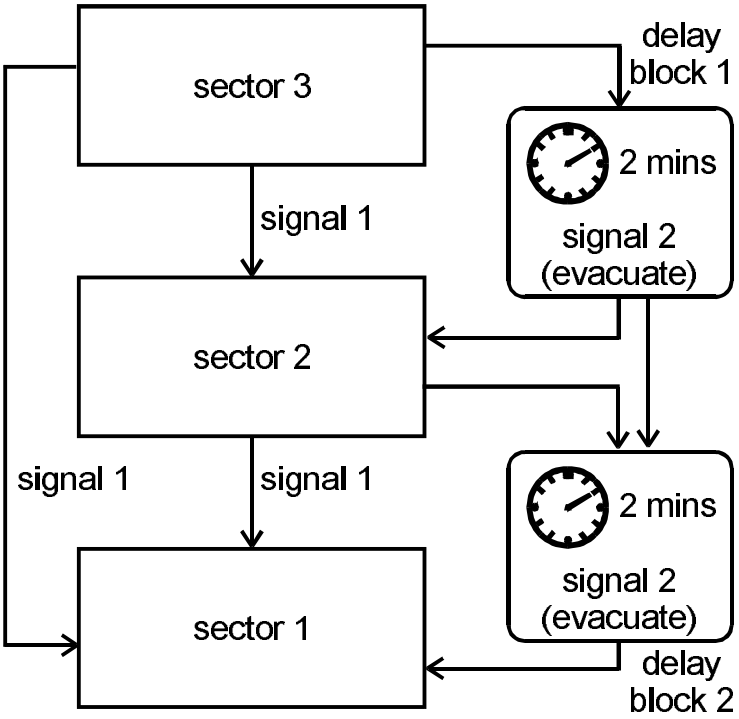


Figure 35-2 Using delay blocks

Using delay blocks and sectors

cd103

Operation with Silence Alarms

The ‘Silence alarms’ function will stop dead any triggered delay blocks.

Operation with Verify (EN54 only)

- If there are any delay blocks running when the Verify key is pressed, then the delay blocks time period will be extended (if applicable) to that set for the Verify function, maximum 10 minutes.
- If there are no delay blocks running when the Verify key is pressed, then the Verify function will have no effect other than to generate the ‘Alarms Verified’ message

Default configuration By default NO delay blocks are set up at all.

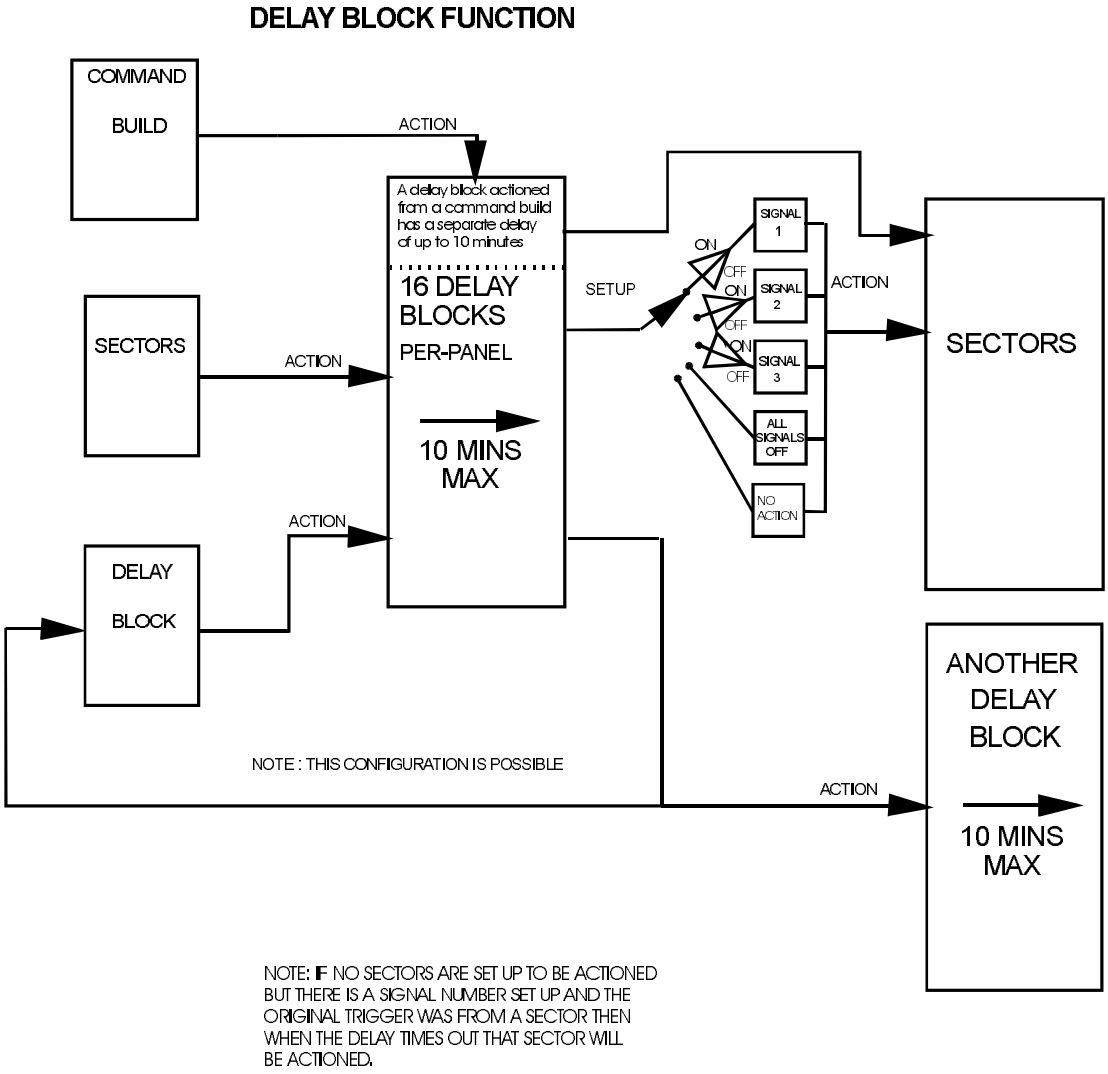


Figure 35-3 Delay block functions
Cd8n_19

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Time slots & Time blocks

What does it do?

- ❑ Changing of fire sensor states (e.g. Opt/Heat to Heat only)
  - See product data sheets for details of sensitivity states.
- ❑ Disabling Zone (Group on V3+) tasks
- ❑ Triggering of command builds

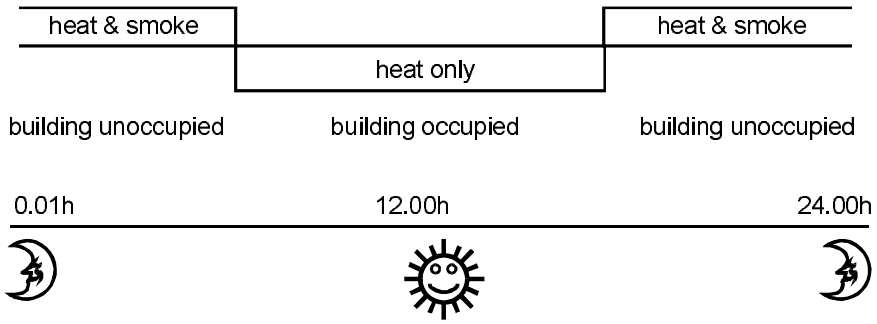


Figure 36-1 Time blocks and time slots
Using time blocks and time slots to change sensor states

cd104

Default By default all loop devices are assigned to function in their normal state continuously (24 hours a day, 7 days a week).

Time slots

- ❑ Comprise a start and finish time and a set of days. The times and days may be logically related using AND or OR operators.
- ❑ When TRUE it is in the ON state
- ❑ May be manually switched ON and OFF or by command builds, immediately or after a delay of up to 24 hours.
- ❑ Maximum 16 time slot per control panel (may be shared by any number of time blocks).

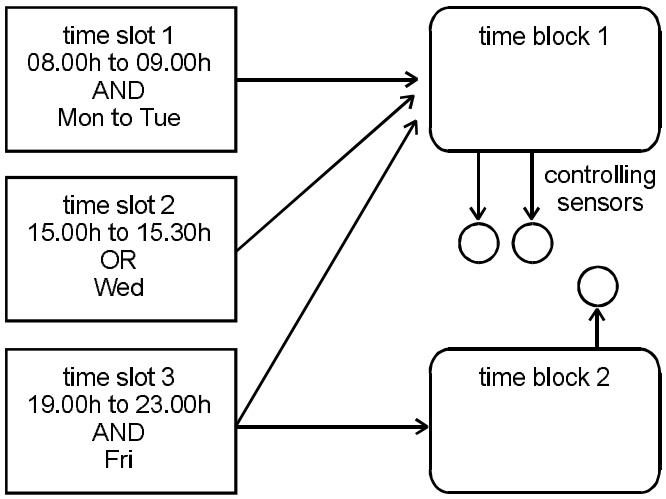


Figure 36-2 Time blocks and time slots
Using time blocks and time slots to control sensor states

cd105

NOTE: *If the control panel is in FIRE condition when a timeslot is switched ON, the Timeslots and Timeblocks DO NOT operate. They will operate once the fire has been RESET.*

Time blocks

- Each time block is made from a combination of up to 16 time slots.
- A time block is enabled if any of its time slots are ON.
- Each time block may control any number of sensors. Each sensor may only be controlled by one time block.
- When ENABLED
  - Any assigned sensors will be in their ENABLE STATE (which could be any one of the 15 possible states for that sensor).
  - Any linked Command Builds will be TRIGGERED.
- When DISABLED
  - Any linked Zone (Group on V3+) tasks will be DISABLED.
  - Any assigned sensors will be in their DISABLE STATE (which could be any one of the 15 possible states for that sensor).
- Maximum of 15 time blocks per control panel (the 16th, TIME BLOCK 0, that is continuously ENABLED).
- Time block 0 is the default setting

TIMESLOTS & TIMEBLOCKS FUNCTIONS

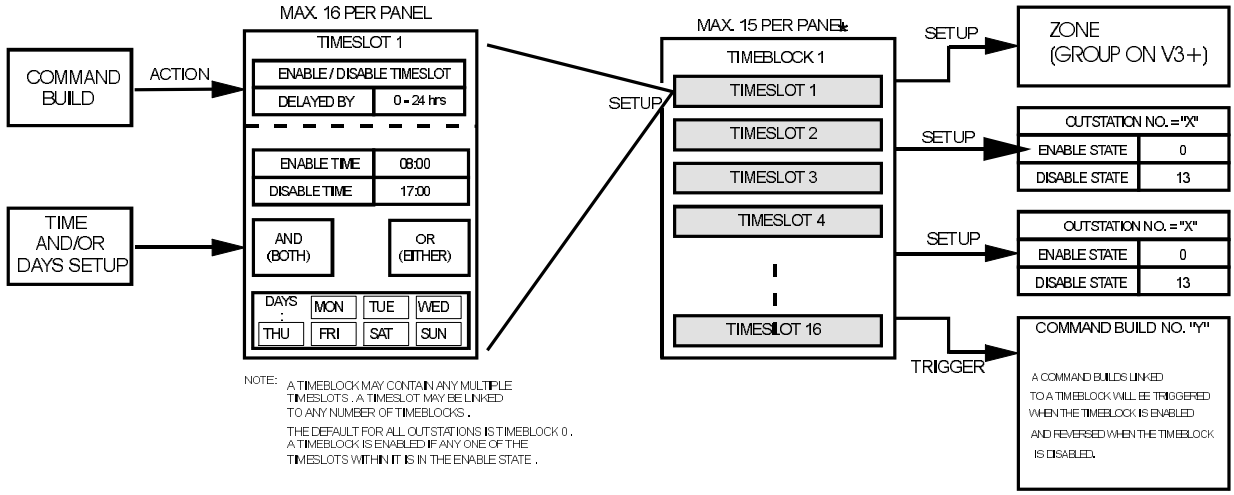


Figure 36-3 Time block and Time slot functions

cd8n_20

Zones (Common functions to EN54 and V3+)

- Maximum of 128 per panel.

Zones allow collections of input devices to be combined, for the following purposes:

- Sending FIRE information to mimic repeat and zonal mimic panels
- Sending FIRE and FAULT information to Supervisor graphics
- Allowing disabling of all sensors in a zone using a single line entry

Assigning to zones

- Zones may include the following devices:
  - Sensors
  - Manual call points
  - Interface unit inputs

> *NOTE: Individual interface channels MAY NOT be assigned separately to different zones.*

- Any device may only be associated with a single zone.
- A zone is limited to the local control panel but may include devices from any loop of that panel.

Default configuration

- All devices are assigned to zone 1 (EN54 Panel)
- Nothing is assigned to a zone by default. (V3+ Panel)

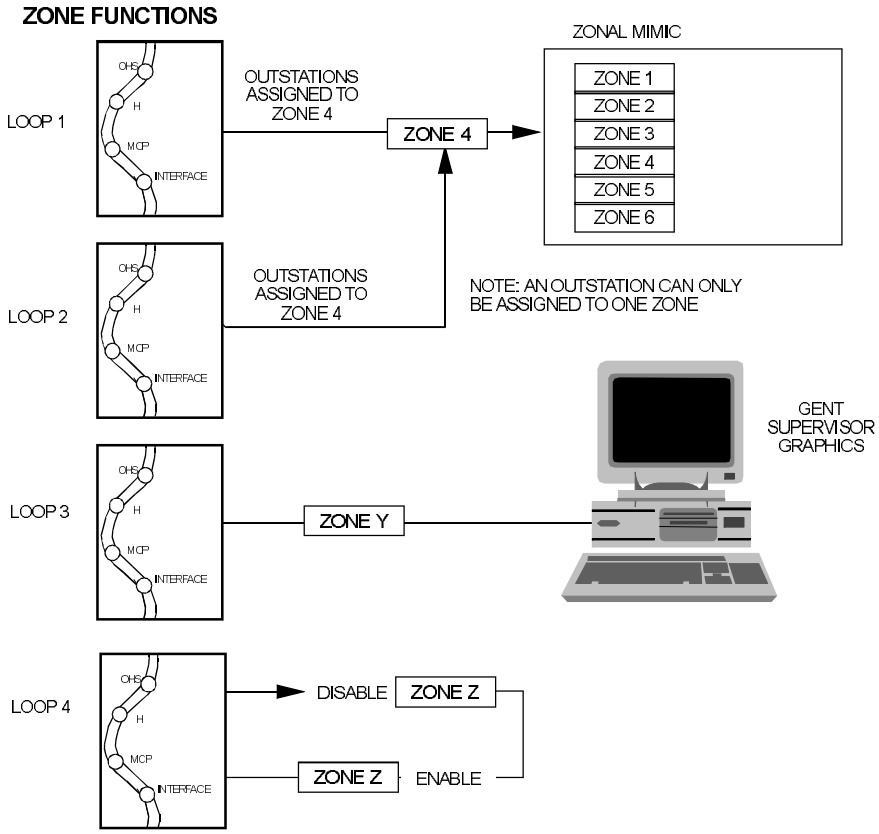


Figure 37-1 Zone functions

fl265

Zones(EN54)/Groups(V3+)

- Maximum of 128 Zones/Groups per panel.

The Zones/Groups function has 2 distinct uses:

- To collect a combination of input devices together to display a common label (see Zone/Group Labels).
- To perform ‘Co-incidence detection’ i.e.. responding to different combinations of ‘fires’, ‘pre-fires’ and ‘super-fires’ (see Co-incidence and Multi-level fire detection).

Assigning to Zones/Groups

The following types of devices can be assigned to a zone/group:

- Sensors.
- Manual call points.
- Interface units.

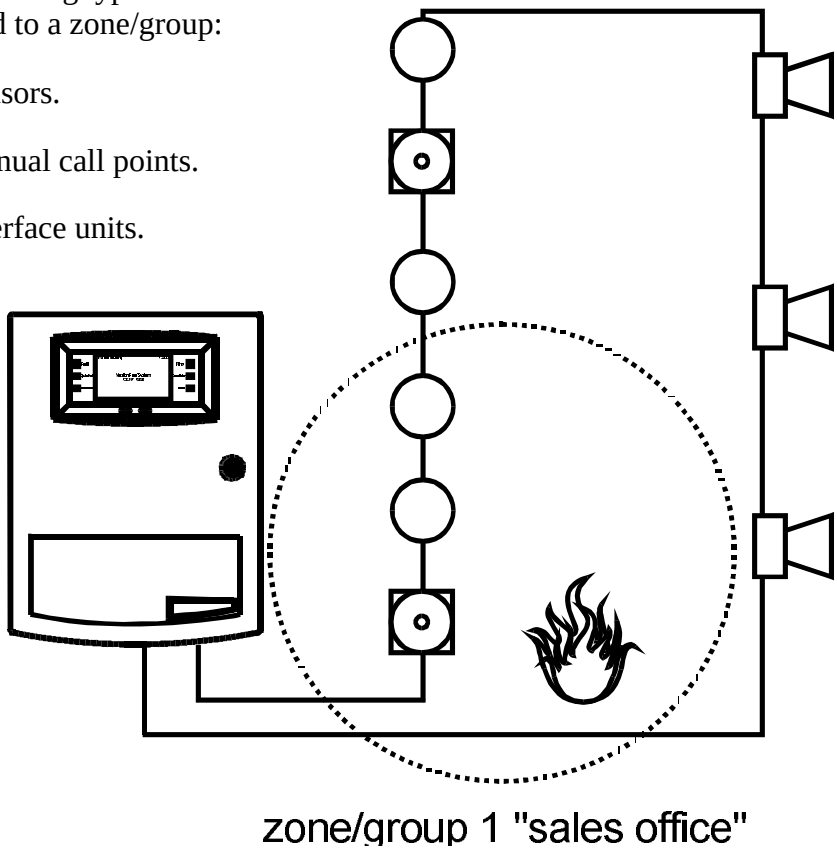


Figure 38-1 Zone/Group application
cdn406

A zone/group may include any combination of these devices, irrespective of which loop they are attached to, as long as they are all connected to the same control panel.

> ***NOTE:*** *Individual interface channels MAY NOT be assigned separately to different zones.*

Zone/Group labels

Allows a single label to be assigned to a zone/group of sensors, MCPs and input channels.

A zone/group label may be up to 32 (64 if long labels selected) characters (however an MCP initiates a fire in a zone/group the label will be prefixed by ‘MCP;’, which will reduce the label to 28 characters).

Displaying zone/group labels

Zone/Group labels are used to control the way in which FIRE messages are displayed. Zone/Groups have the following modes:

- ❑ Display only the zone/group label
- ❑ Display the individual label of the first device to trigger a fire event
- ❑ Display all individual device labels

Co-incidence & Multi-level fire detection

Normally a sensor will trigger an alarm if it detects a ‘fire’. The zone/group facility recognises three sensor sensitivities: ‘pre-fire’, ‘fire’ and ‘super-fire’. The sensors within a zone/group may be configured to trigger an alarm condition on a combination of different numbers of sensors responding to different combinations of sensitivity.

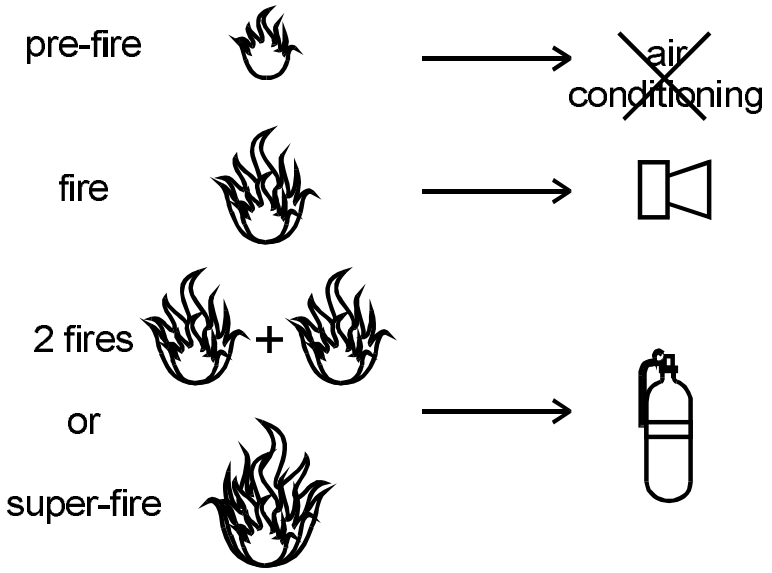
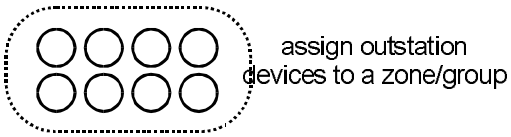


Figure 38-3 Applications of fire - prefire - superfire

cd106

Tasks Tasks are used as inputs to command builds. Each task may trigger one command build. Each individual zone/group may be configured to initiate up to to 8 individual tasks. Each task can be configured to be triggered depending on the number of each type of fire (pre-fire, fire or super-fire) that is detected, the number may be 1, 2, 3 or ignore.

Each zone/group may include a time block that disables all of the tasks within it while the time block is active.



	W sensors	X pre-fires	Y fires	Z super-fires	
zone/group task 1	1	1	0	0	=> CB1 => A/C off
zone/group task 2	1	0	1	0	=> CB2 =>
zone/group task 3	2	0	2	0	=> CB3 =>

maximum 8 tasks per zone/group
maximum value of W (sensors) = 3

Figure 38-2 Application of zone/group tasks

cd108

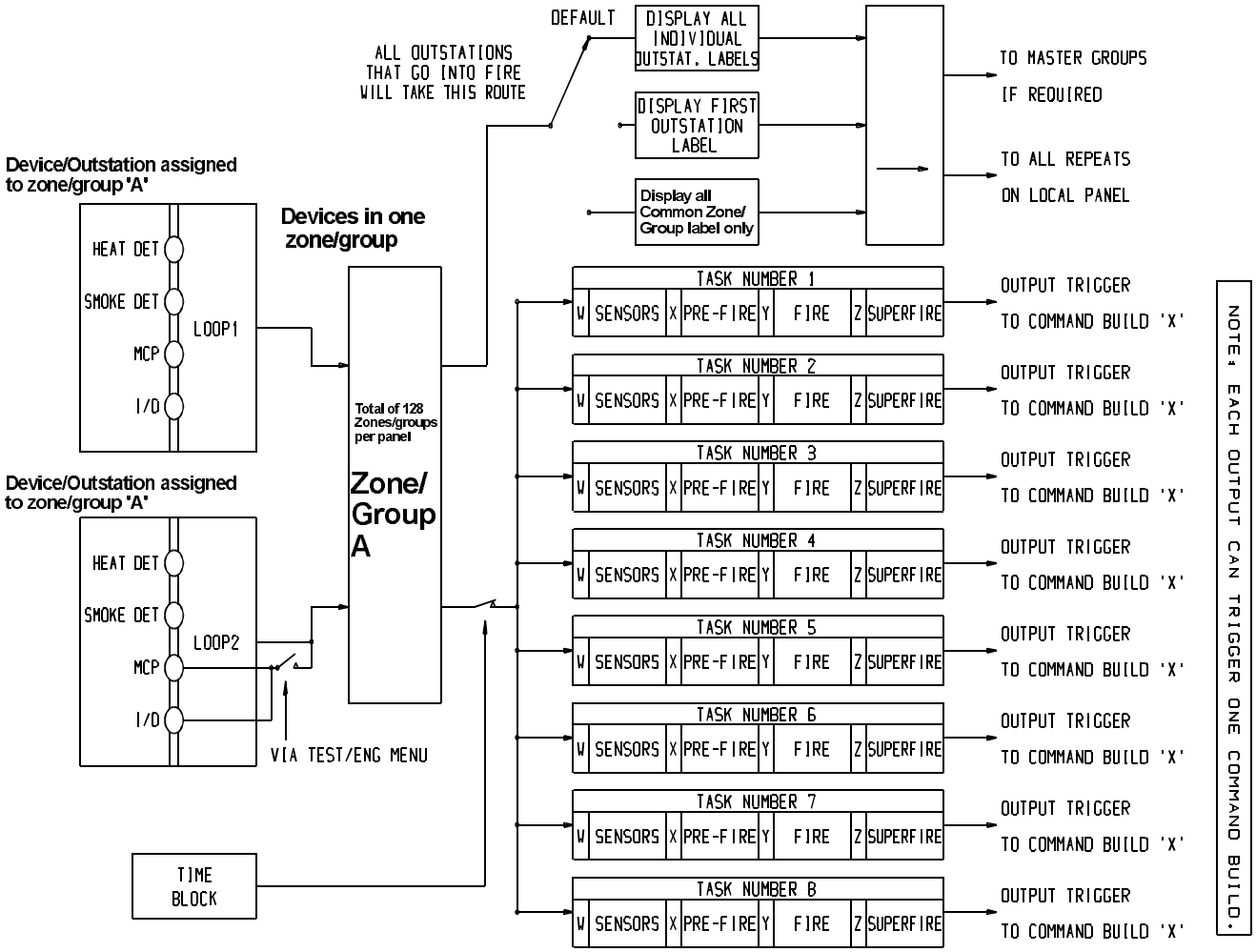


Figure 38-4 Zone/Group function

cdn472

Sound Patterns

Default

The audible output of alarm sounders in a system are preconfigured with three different signals and these are applicable to all loops of a control panel.

- alert
- evacuate
- continuous
- (and OFF)

Any of these 3 sound outputs may be redefined. Each sound output pattern is defined in terms of frequency and timing.

> ***NOTE:*** *Most applications will use standard alarm outputs that are preset in the panel. Under exceptional circumstances the output will require re configuration.*

Frequency

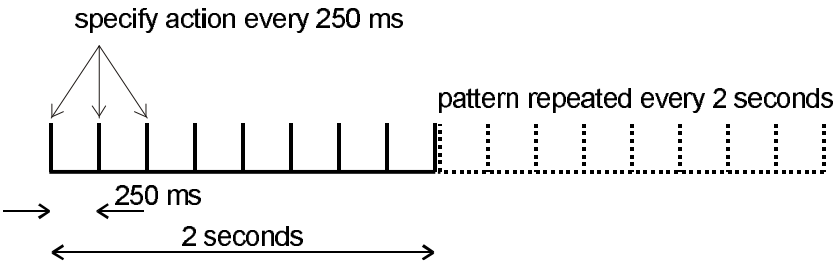
The sounder may be driven with either of two frequencies:

- high - 910 Hz
- low -970 Hz
- (and OFF)

Timing

The sound pattern is repeated every 2 seconds. The pattern is defined by specifying an action every 250 ms through the pattern.

Figure 39-1 Sound pattern timing



The action may specify:

- Switch ON high
- Switch ON low
- Switch to high
- (No change)

The action may be specified to last for:

- 10 ms, 40 ms, 90 ms, 160 ms, 250 ms, 350 ms, 480 ms, 630 ms, 800 ms, 980 ms, 1.2 s, 1.4 s, 1.6 s, or 1.9 s

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Auxiliary Relays

The 2 auxiliary relays within each control panel may be individually configured.

Each may be configured to operate by any of the following:

- ❑ Sector Fire
- ❑ Fault
- ❑ Disablement
- ❑ Any combination of the above

The relays may be configured to be either normally energised or normally de-energised. The normally energised option is normally used to provide a fail-safe configuration.

Delay The auxiliary relay operation may be delayed by up to 10 minutes in the event of a sector fire.

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Master Groups

- Maximum of 8 Master Groups per secure network

Master Groups allow messages to be passed around a secure network between control panels, terminal nodes, repeat panels and mimic panels. Specifically messages may be routed to the following:

- individual loops (loop cards)
- displays (LCD cards)
- printers (printer cards)

The 8 Master Groups may be used individually to establish sub-groups of control panels within the network.

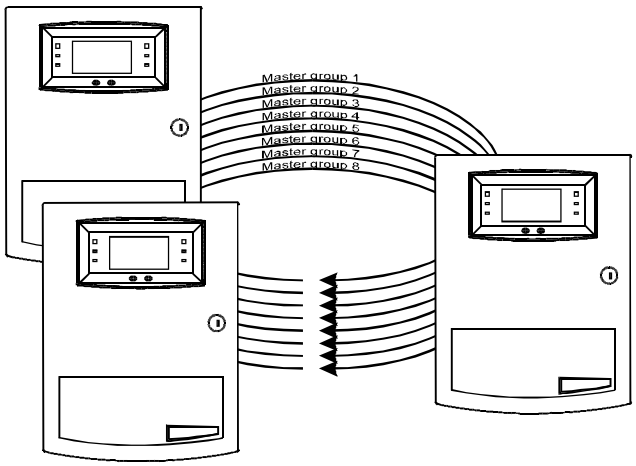

Figure 41-1 Master groups

cdn407

Fire messages Each card may be individually set to display or print Fire information from each Master Group individually.

System messages Each card may be individually set to display or print all system event information (including fires) from each Master Group individually.

Global controls (sound alarms, silence,reset, verify) Each control panel and terminal node may be individually set to operate and/or respond to global controls on each Master Group individually.

Repeat Panels - All repeat panels wired to the same loop will display and print the same information.

Mimic Panels - All mimic panels may be configured to display different information irrespective of whether or not they are wired to the same loop.

Control Panels and Terminal Nodes - All panels can access fault and disablement information from any other panel

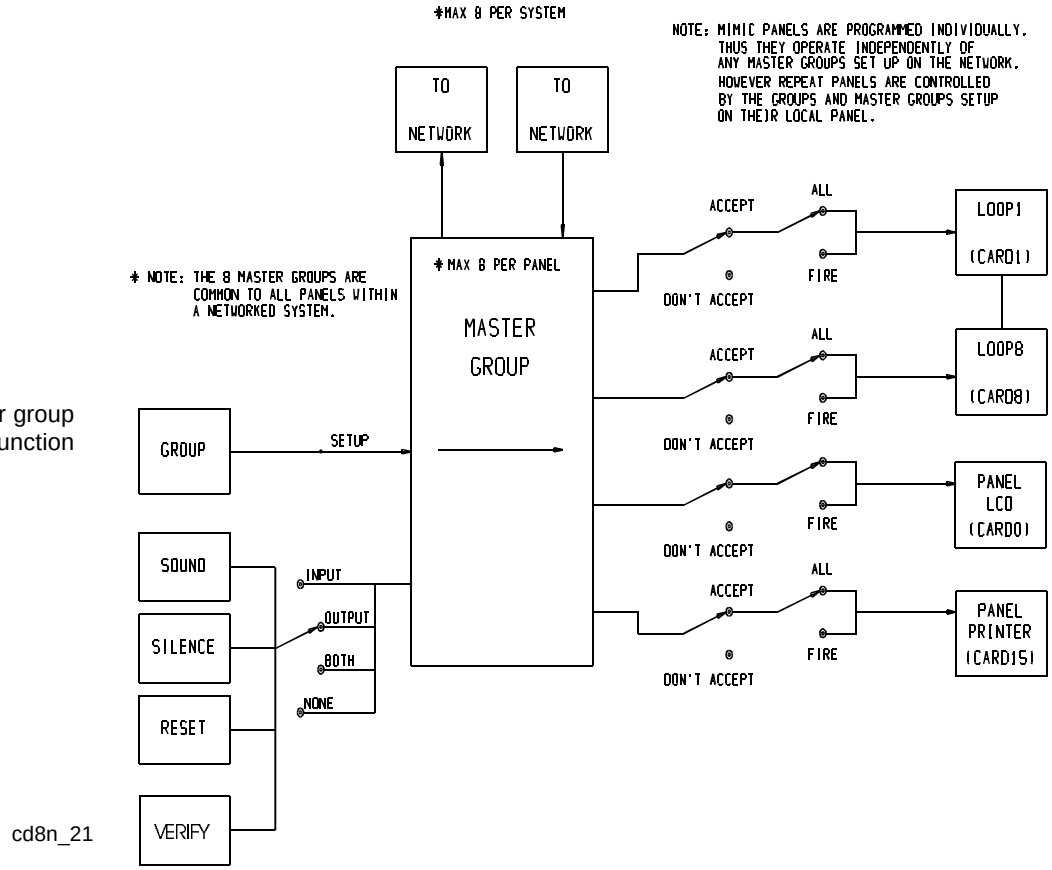

Figure 41-2 Master group function

cd8n_21

Master Sectors

Master Sectors are used to provide global alarm actions across a network of Vigilon Control Panels. Master Sectors are therefore a collection of one or more Sectors, Delay Blocks, Master Alarms and Auxiliary Relays from one or more Vigilon Panel.

There are 64 Master Sectors available per Control Panel with a total of 255 Master Sectors available on a networked system.

Master Sectors can only be triggered by a sectored fire event. Once triggered, a Master Sector can then action a Sector, another Master Sector, Command Build (not locally), Delay Block, Master Alarm or Auxiliary Relay.

Typical Applications

- Automatic alarm sounding across Vigilon panels in the event of a fire event, to provide a phased evacuation for a single building application, or a timed warning signal for other buildings on a distributed site.
- Manually initiated alarm activation via I/O outstation inputs, to provide a ‘sectored’ bomb alert, or manual evacuation, as a result of the growth of a fire to other areas of a site.

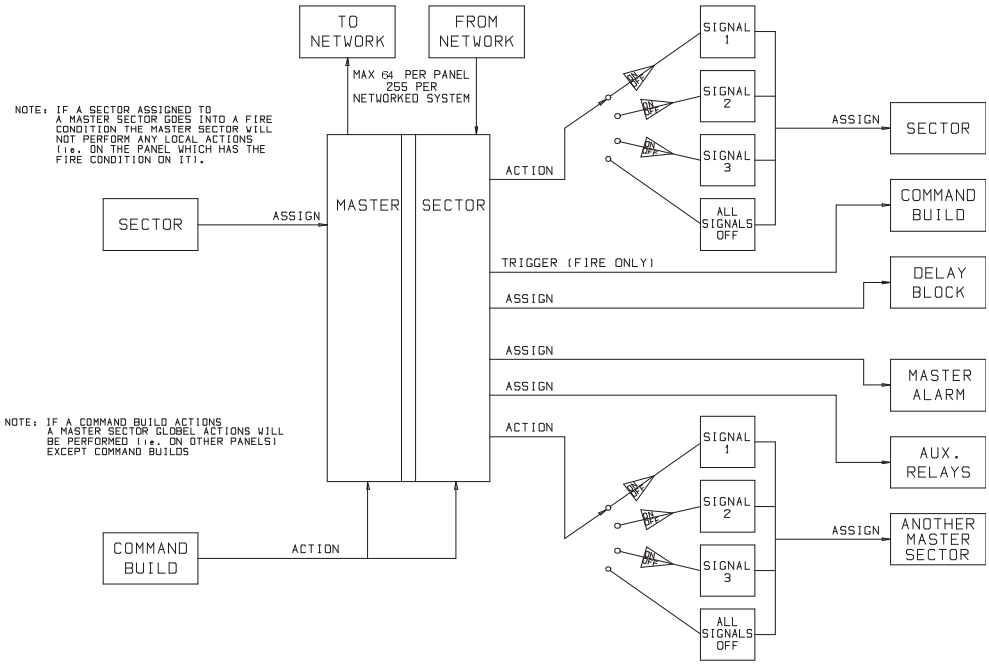

Figure 42-1 Master sector operation

cdn471

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Command Builds

- Maximum of 255 per panel.

Command Builds provide a general purpose link for use in configuring the control panel. They are primarily used for NON-FIRE actions, but may also be used during a fire.

Each command build has a Trigger, and an Action. The action is usually performed immediately upon receipt of the Trigger.

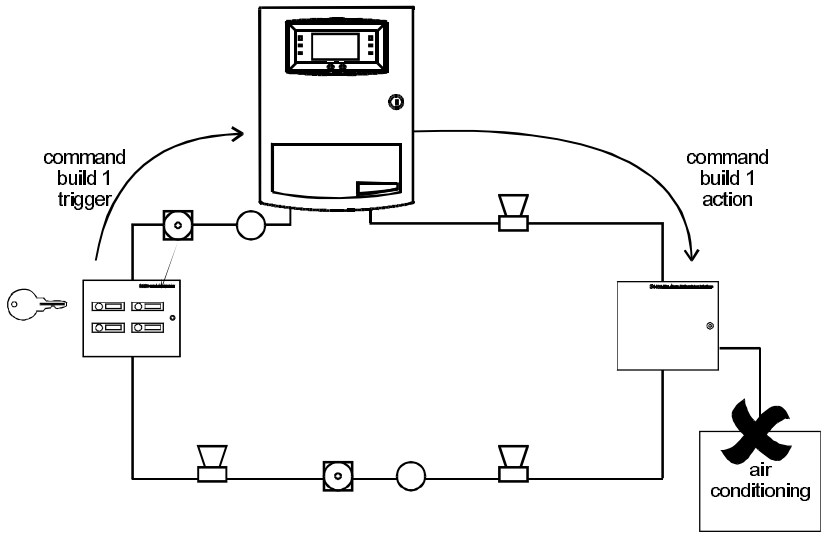

Figure 43-1 Applicaiton of command build

Triggering and Actioning with command builds

cdn408

Command Build Labels

- Each command build can be given a label of up to 40 (64 if long labels are enabled)characters. This label can be used in one of 3 ways:
  - Display only when command build is triggered.
  - Display and print when command build is triggered (and printer is on).
  - Do not display or print.
- If the label is displayed, the control panel's buzzer is also activated at the same time.
- Command builds are logged with an On/Off time, but only if they have been given a label.

User defined buttons U1 - U4

- Pressing the keyboard buttons U1, U2, U3 or U4 will action command builds 250 -254 respectively.

Triggering Command Builds

- ❑ A command build can be triggered by:
  - One (or a range of) Timeblocks - triggered when the timeblock is ENABLED.

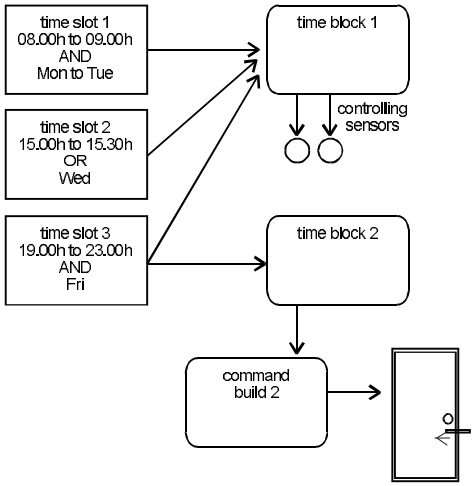

Figure 43-2 Command build trigger

Using command builds with time blocks and time slots

cd110

  - One (or a range of) Input lines on one (or a range of) Interfaces - Note: this can be used to provide non-fire actions if a Loop Powered Interface is used, with the input set as 'supervisory'.
  - One (or a range of) Sectors - triggered when a fire is detected in that sector.
  - One (or a range of) Master Sectors (from other panels on a network) - triggered when a fire is detected in that master sector.
  - A command build can ALSO be actioned by any number of other command builds.
  - A command build can ALSO be triggered by any number of Zone (Group on V3+) Tasks - triggered when all of the conditions for that task are true (see the part of this manual on Zones (Groups)).

Command Build Actions

- ❑ Each command build has ONE action only.
- ❑ A command build can perform, automatically, any of the actions that can be performed, mannually, in the 'Control' menu of the panel (see the functional diagram for a detailed list of these actions).
- ❑ Most ACTIONS may be Reversible or Non-Reversible .
  - REVERSIBLE means that the action reverses when the trigger condition is removed (e.g.. the sector is re-enabled, when the keyswitch is turned back).
  - NOT REVERSIBLE means that the action continues even when the trigger condition is removed (e.g.. the sector stays disabled until it is manually re-enabled).
- ❑ FIRES take priority over command builds

> ***NOTE:*** *Command builds are processed sequentially, ie number 1 is first and 255 is last.*

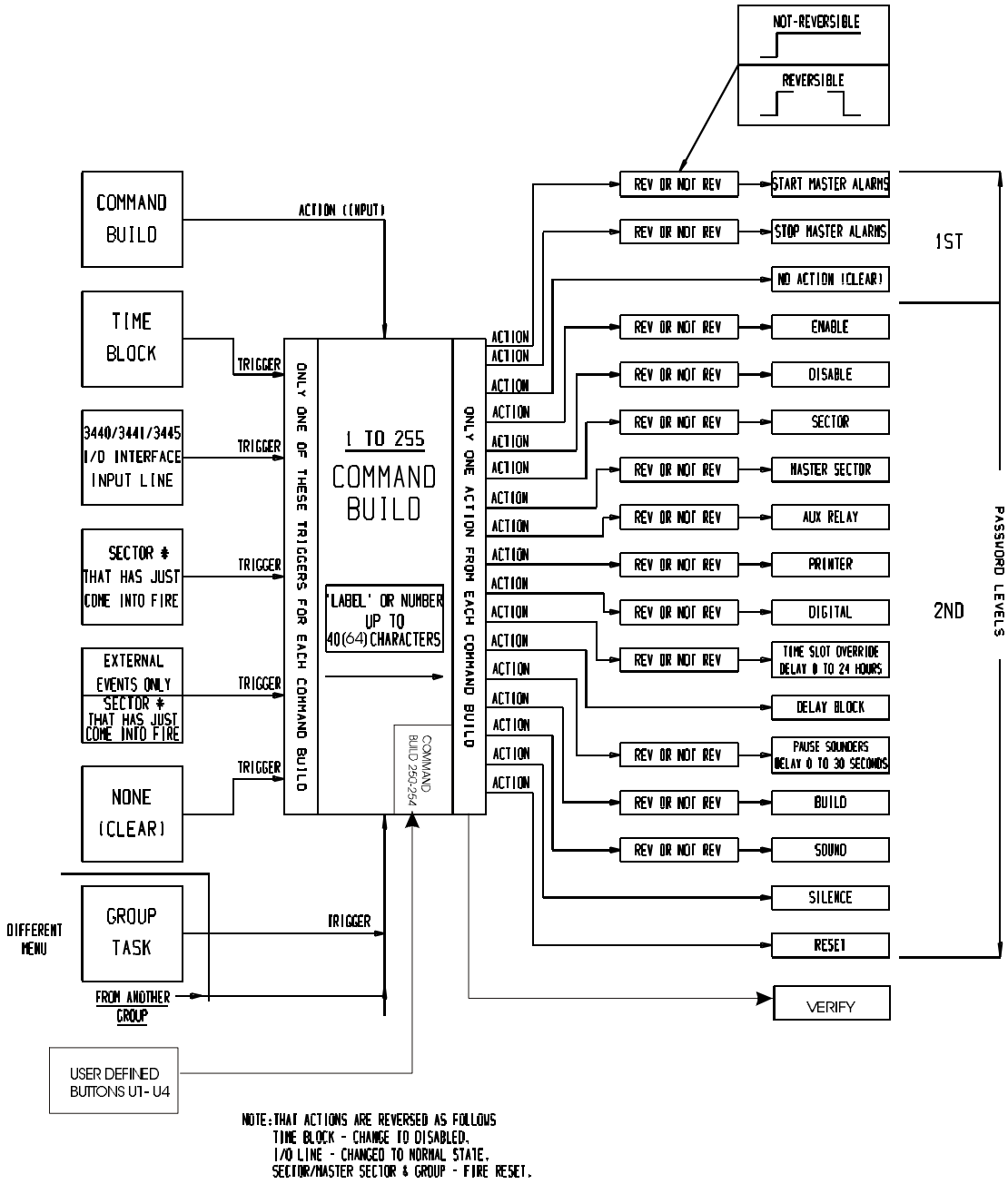

Figure 43-3 Command build function

cd8n_22

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Vigilon - Control Panel (EN54)

Figure 44-2 1-4 Loop control panel

cdn409

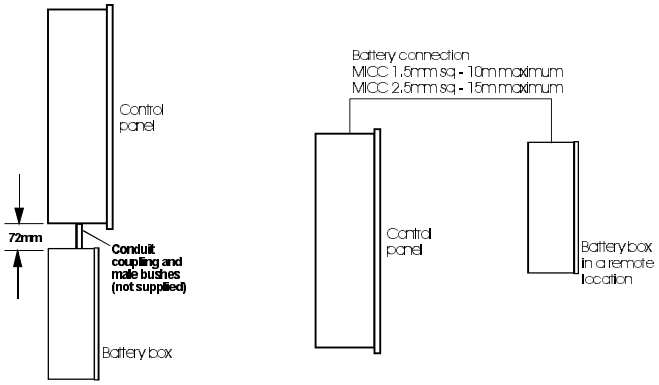

Figure 44-1 Control panel and battery box

cdm250

The Vigilon is a fire alarm panel conforming to the requirements of EN54. It houses its own power supply, whilst the panels batteries are housed in a seperate enclosure.

The control panel is designed to be used with the Vigilon range of addressable analogue sensor and sounders.

A lockable front door prevents unauthorised access to fire alarm controls but allows all of the indicators to be seen. Two push buttons are located on the front door below the display, which enable Fire messages to be scrolled in the event of multiple fires. All fire, fault and disablement events are indicated by coloured lights with message display. Each sensor and zone can be given a name thus making the message easy to understand.

Options

VIG1	Control panel c/w 1 loop card
VIG2	Control panel c/w 2 loop cards
VIG3	Control panel c/w 3 loop cards
VIG4	Control panel c/w 4 loop cards
VIG1-NET	Control panel c/w 1 loop card and Network Card
VIG2-NET	Control panel c/w 2 loop cards and Network Card
VIG3-NET	Control panel c/w 3 loop cards and Network Card
VIG4-NET	Control panel c/w 4 loop cards and Network Card

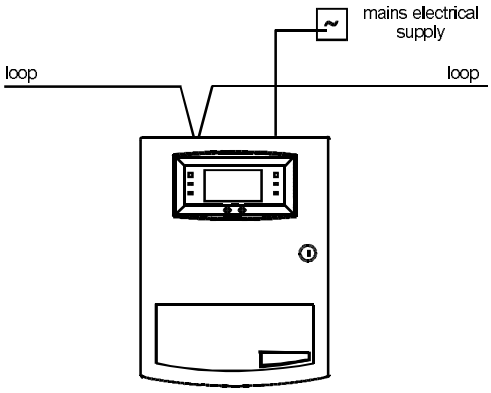

Figure 44-3 Panel external wiring

cdn410

Specification

Standard	EN54 Pts 2 and 4
Panel Dimensions	Width 408mm height 539mm depth 151mm
Battery box dimensions	Width 382mm Height 309mm Depth 110mm
Panel weight	16.5Kg
Battery box weight (including batteries)	21Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz

Colour	Door: Grey (Pantone 422) Backbox: Graphite Grey (RAL 7024)
Loops	Up to 4 Loops (loops 2-4 require optional cards) automatic allocation of addresses (up to 200 per loop) Labels - up to 270 per loop for: outstations, interfaces. Each label may have up to 32 characters (28 for manual call points)
Master alarm circuits	2 - (24 volt) 400 mA max per circuit
Auxiliary relays	2 - double pole change-over, voltage-free contacts Configurable to operate with Fire, Fault or Disablement event
Manned centre link connector	1 - single pole change-over relay, voltage-free contacts
Serial I/O connector	1 - RS232/485 for connecting to a Supervisor system or a commissioning computer
Panel networking connector	1 - RS485 for connecting to the secure network (optional card)
Indicators	Fire (red) Fault (amber) Disablement (amber) Power On (green) System fault (amber) Sounder (amber) Alpha-numeric display - 16 line 40 character, back-lit, (white on blue, liquid crystal display)
Internal sounders	Fire buzzer Fault buzzer Keypad ‘beep’
controls (door closed)	Next And Previous buttons (Fire conditions only)
Controls (door open)	Sound Alarms Silence Alarms Reset Cancel Buzzer Verify F1-F4 Menu On/Offkeys U1-U4 Qwerty keyboard
Menu options	Active and Historic fault and disablement logs Analysis of analogue sensor information Loop map connections Enable/disable sensors, zones, sounders, interface unit channels Fire plan menus Device labels including long labels Address allocation including SAFE Addressing
Logs	255 Fault, Disablement & Status events 100 Fire (only) event Current fault events Current disablement events Command build (active) Command build (255 previous events)
Printer	The printer operates when the access door is open. There is an option to enable the printer with the door closed. The printer can be used to provide a printed copy of most of the messages presented on the display. Printer controls include: ON, OFF, line feed and test.
Standby power supply	The integral battery-backed power supply will provide power for 24 hours in standby and a further 30 minutes in alarm.

Vigilon V3+ Control panel (BS5839)

Options

VIG1-V3+	Control panel (V3+) c/w 1 loop card
VIG2-V3+	Control panel (V3+) c/w 2 loop card
VIG3-V3+	Control panel (V3+) c/w 3 loop card
VIG4-V3+	Control panel (V3+) c/w 4 loop card
VIG1-NET-V3+	Control panel (V3+) c/w 1 loop card and Network Card
VIG2-NET-V3+	Control panel (V3+) c/w 2 loop cards and Network Card
VIG3-NET-V3+	Control panel (V3+) c/w 3 loop cards and Network Card
VIG4-NET-V3+	Control panel (V3+) c/w 4 loop cards and Network Card

Specification as for Vigilon except for the following:

Standard	BS5839 Part 4
Indicators	Fire (red) Fault (amber) Warning (amber) Power On (green) System fault (amber) Commission (amber) Alpha-numeric display - 16 line 40 character, back-lit, (white on blue, liquid crystal display)
Controls (door open)	Sound Alarms Silence Alarms Reset Cancel Buzzer F1-F4 Menu On/Offkeys Qwerty keyboard
Menu options	Current fault and warning logs Analysis of analogue sensor information Loop map connections Enable/disable sensors, zones, sounders, interface unit channels Fire plan menus Device labels Address allocation
End datre	The End Date of all calendar and date function is 31st of December 2099. There is no action required to be taken by user on reaching the End Date. The control panel makes use of the time and date information for Events, Timeslots and User password.

NOTE: *The British Standard BS5839:Part 4:1988 requires notification to be given for which a warning for circuit failure is not provided. The circuits connected to the control panels - auxiliary contacts (Auxiliary relays) and clean contacts (manned centre link connector) are not monitored for failure.*

Flush Mounting Kit (Vigilon and Vigilon V3+)

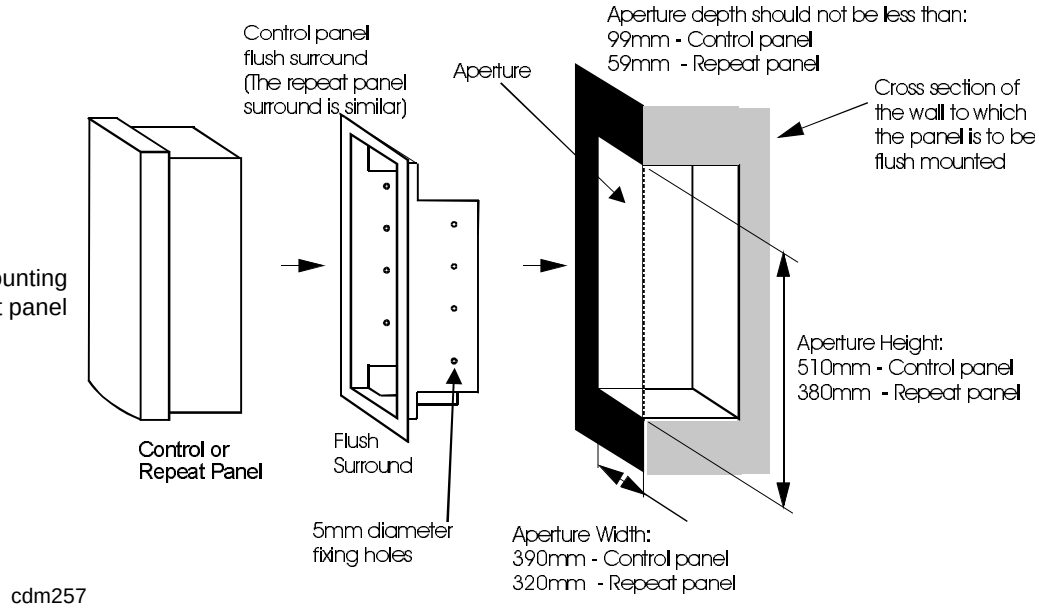

Figure 44-4 Flush Mounting Control/Repeat panel

Part No. - VIG-FLUSH Flush mounting kit for main control panel

VIG-RPT-FLUSH Flush mounting kit for Repeat panel

19” Rack Mounting Frames (Vigilon and Vigilon V3+)

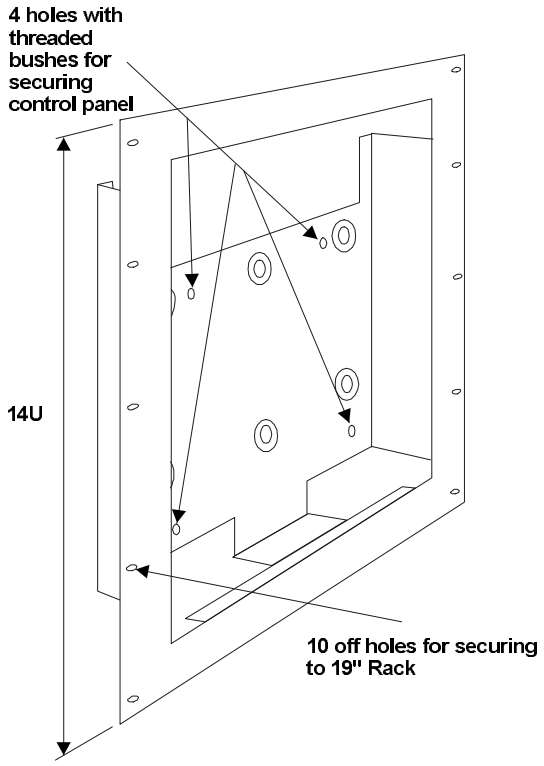

Figure 44-6 19” Rack mounting frame for control panel

cdn449

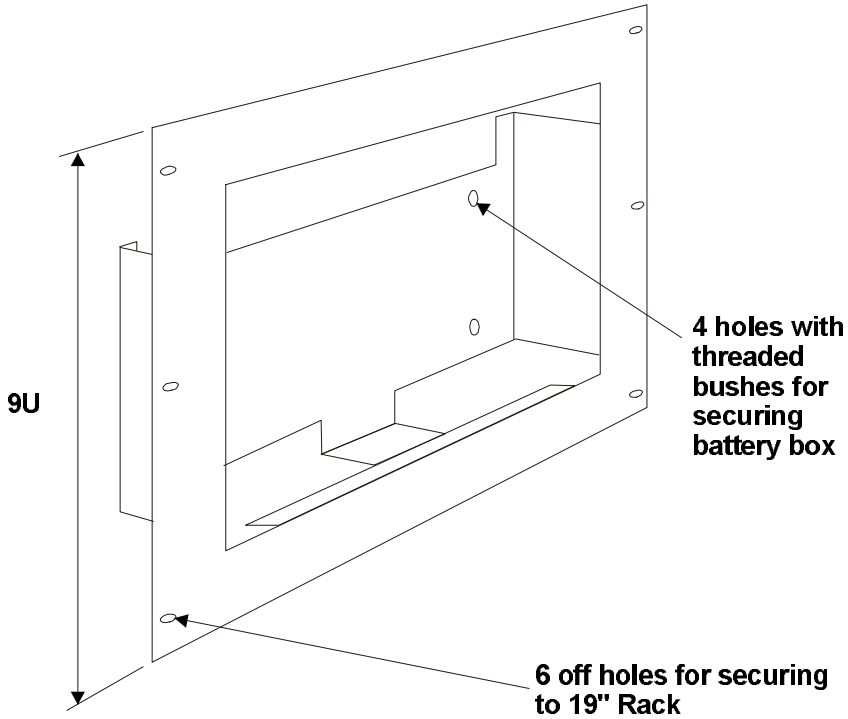

Figure 44-5 19” Rack Mounting frame for battery box

cdn448

VIG-RPT - Repeat Panel (EN54)

Figure 45-1 Repeat panel

The VIG-RPT Repeat Panel repeats all of the front panel indications that are provided on the main panel. In addition, all of the essential controls are also available.

The repeat panel can therefore take the place of a main panel for all standby and emergency needs. This allows the main panel to be sited elsewhere, close to security staff or to fit-in with cable routes.

The repeat panel is connected directly to a loop and has a built-in ‘T’ connection. The panel has an integral battery backed mains power supply.

Options

The Repeat Panel is available in the following version:

- ❑ EN54 version (model no VIG-RPT)

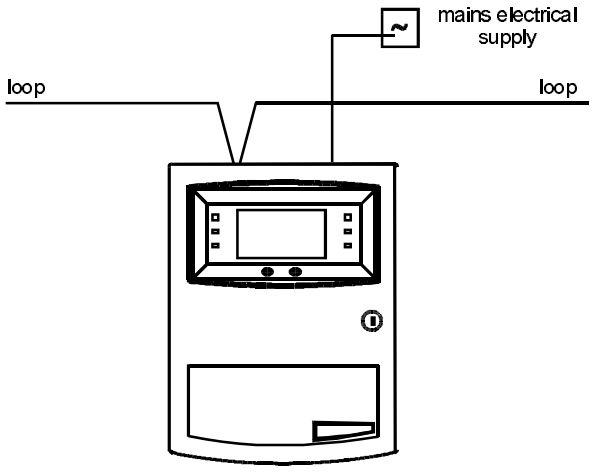

Figure 45-2 Wiring a repeat panel

Specification

Standard	EN54 Part 2 & 4
Panel Dimensions	width 338 mm height 403 mm depth 101 mm
Full Assembly weight	9Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Door - Pantone 422 Backbox - Graphite Grey (RAL 7024)
indicators	Fire, Fault, Disablement, Power On, System fault, sounder lamps 16 line 40 character per line, back-lit, display (white on blue, liquid crystal display)
controls (door closed)	Next And Previous buttons (Fire conditions only)
controls (door open)	Sound Alarms, Silence Alarms, Reset Fire Cancel Fault Buzzer, Verify, F1-F4, Menu On/Off, U1-U4, Qwerty Keyboard
maximum number per loop	maximum number of repeat and mimic panels per loop = 32 load factor (1000 max) = 3

VIG-RPT-V3+ Repeat panel (BS5839)

Options The Repeat Panel is available in the following version:

- ❑ BS5839 version (model no VIG-RPT-V3+)

Specification

The specification for the Version 3+ option is identical to the Vigilon Repeat panel except for the following:

Standard	BS5839:Part 4
indicators	Fire, Fault, Warning, Power On, System fault, Commission lamps 16 line 40 character per line, back-lit, display (white on blue, liquid crystal display)
controls (door open)	Sound Alarms, Silence Alarms, Reset Fire Cancel Fault Buzzer, F1-F4, Menu On/Off, Qwerty Keyboard

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VIG-MIM Mimic Repeat Panel

Figure 46-1 Mimic panel

jnpic20

- The VIG-MIM Mimic Panel provides a pictorial representation of the building layout and the location of a fire.
- An array of LEDs, covering an A2 area, may be programmed to illuminate in fire conditions. They may be illuminated individually or in groups.
- Options facilitate the display of other text information. In its standby state it may display a digital clock.
- The mimic repeat panel is connected directly to a loop and has a built-in ‘T’ connection. The panel has an integral battery-backed mains power supply.
- The mimic repeat panel does NOT include any fire alarm control functions.
- Model nos (requires a custom drawing): VIG-MIM

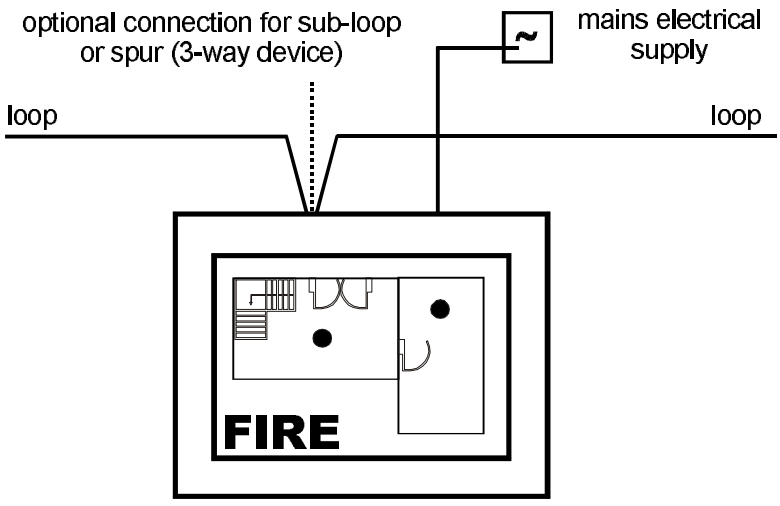

Figure 46-2 Wiring a mimic panel

cdn414

Specification

Standard	BS5839:Part 4
Panel Dimensions	width 830 mm height 650 mm depth 90 mm
Full Assembly weight	18Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Graphite grey (RAL 7024)
Display	area - A2 landscape
LEDs	1536, high intensity RED, a maximum of 256 may be illuminated at a time
Standby power supply	The integral battery-backed power supply will provide power for 24 hours in standby and a further 30 minutes in alarm.
Maximum number per loop	maximum number of repeat and mimic panels per loop = 32 load factor (1000 max) = 3

VIG-ZONE Zonal Repeat Panel

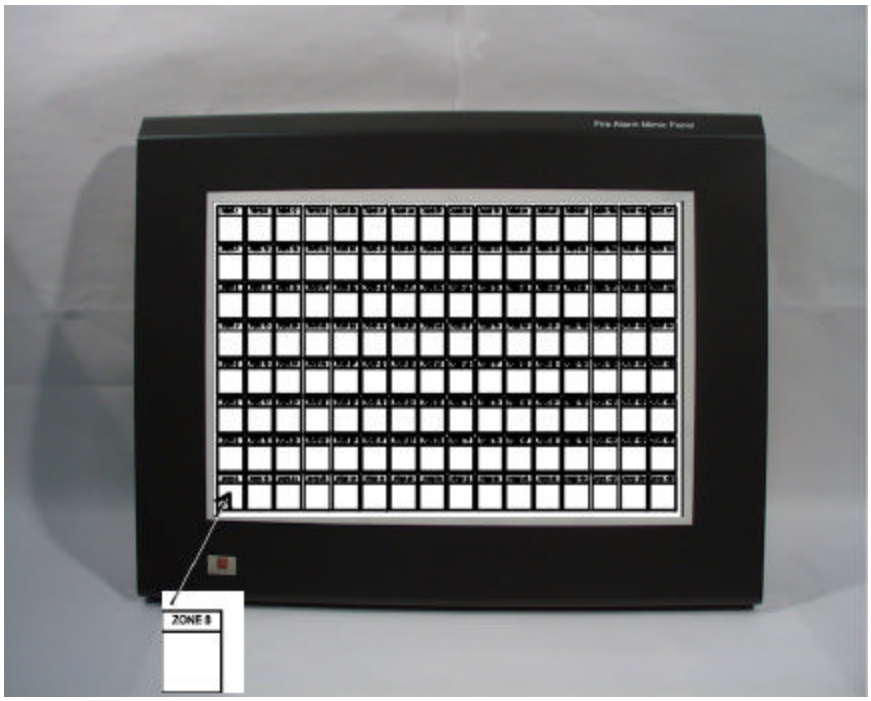

Figure 47-1 Mimic panel

jnpic21

- The VIG-ZONE Zonal Repeat Panel provides a traditional zone by zone indication of a fire. This is achieved using an array of LEDs behind a translucent film. The translucent film is supplied ready to identify zones 1 to 128.
- The zonal repeat panel is connected directly to a loop and has a built-in 'T' connection. The panel has an integral battery-backed mains power supply.
- The panel does NOT include any fire alarm control functions.
- Model nos: VIG-ZONE

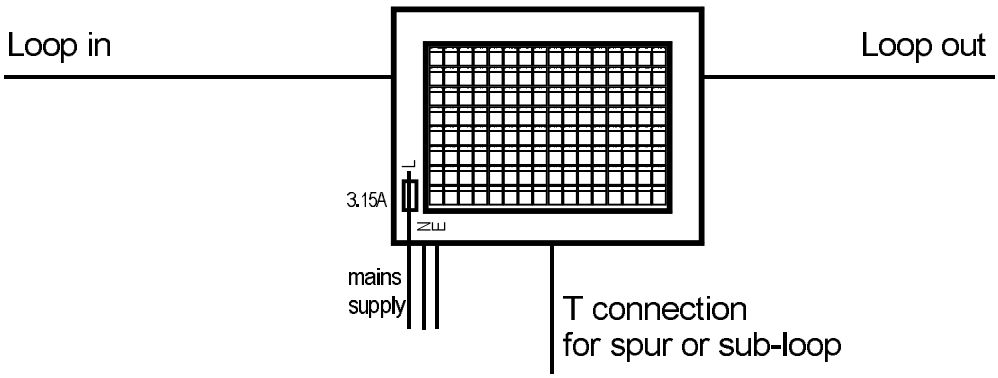

Figure 47-2 Wiring Zonal mimic panel

cdn416

Specification

Standard	BS5839:Part 4
Panel Dimensions	width 830 mm height 650 mm depth 90 mm
Full Assembly weight	20Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Graphite grey (RAL 7024)
Display	area - A2 landscape
LEDs	1536, high intensity RED, a maximum of 256 may be illuminated at a time
standby power supply	The integral battery-backed power supply will provide power for 24 hours in standby and a further 30 minutes in alarm.
maximum number per loop	maximum number of repeat and mimic panels per loop = 32 load factor (1000 max) = 3

VIG-MIM-A4 A4 Mimic panel set

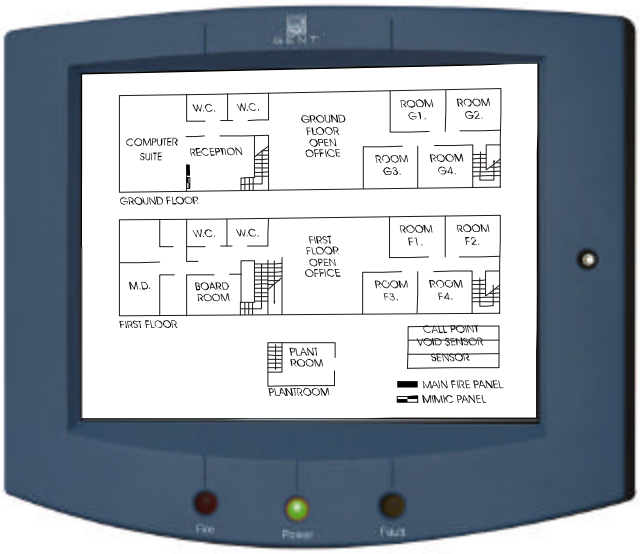

Figure 48-1 A4 Mimic panel set
A4mimic

- The VIG-MIM-A4 A4 Mimic panel set consist of an A4 Display unit and an A4 Control unit.
- The A4 Display unit is used to show the location of fire event. The lights behind a pictorial representation of the protected building/area are illuminated in the event of fire.
- The A4 Control unit communicates with the Vigilon system. It passes on the system fire event information to the A4 Display unit, along with power to illuminate the lights (Light Emitting Diode-LED).
- The array of LEDs are programmed during the commissioning stage to give fire indications. They may be illuminated individually or in groups.
- The Mimic panel illumination can include a display of simple text messages and a digital clock.
- The A4 Mimic control unit connects directly to a loop circuit and includes ‘T’ connection for sub loop and spur. The unit has an integral battery-backed mains power supply.

> ***NOTE:*** *It is recommended that the A4 Display unit is mounted on a flat surface.*

- A computer generated site specific plan must be produced for fixing onto the LEDs of the A4 Display unit. In addition a custom EPROM is produced during commissioning that holds illumination information.
- Model Nos: VIG-MIM-A4

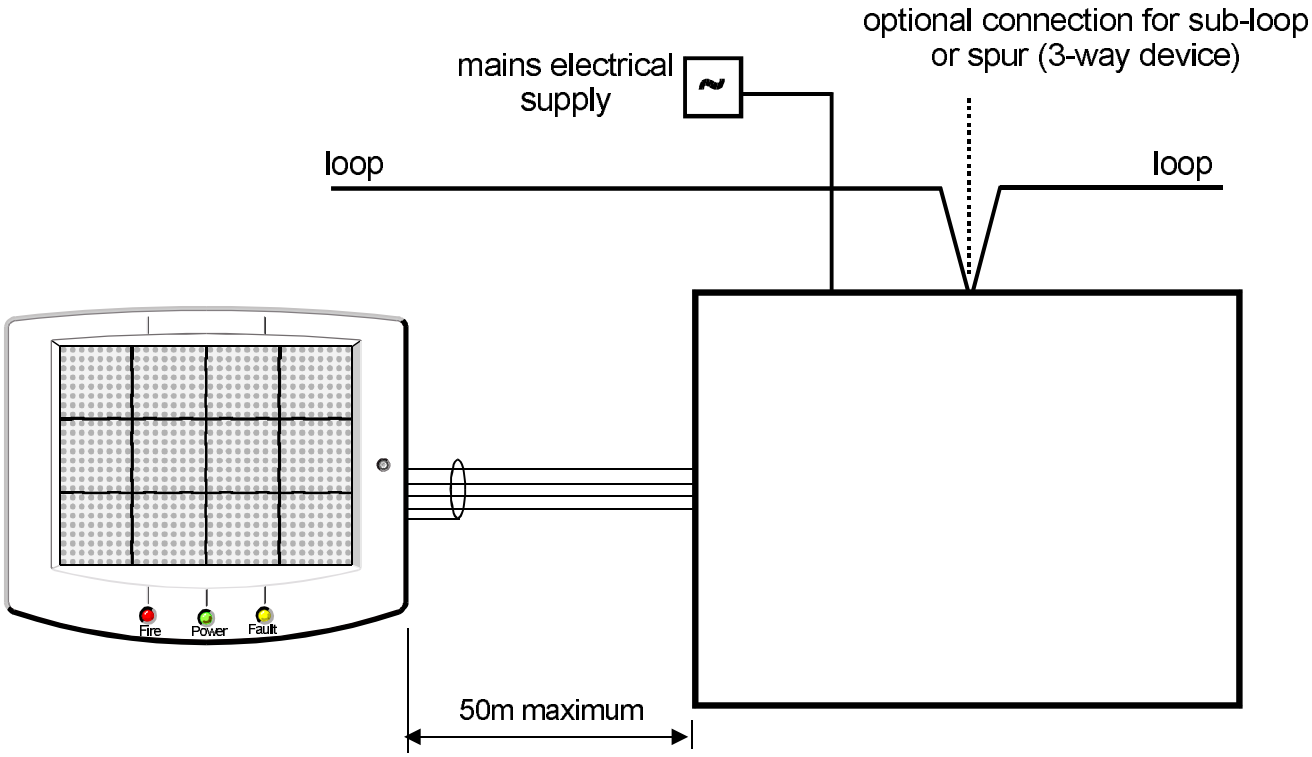

Figure 48-2 Wiring an A4 mimic panel set
cdn419

Specification

Standard	BS5839:Part 4
Fully assembly dimensions A4 Mimic display unit A4 Mimic control unit	 width 330 mm height 276 mm depth 73 mm width 483 mm height 385 mm depth 78 mm
Full Assembly weight A4 Mimic display unit A4 Mimic control unit	 2.3Kg 10.4Kg (with 2 batteries installed)
Maximum cable distance between A4 Display unit and A4 Control unit	50m, for cable type see 'A4 Mimic display to Control unit cable'
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Standby power supply 24 hour standby plus 0.5 hour alarm load: 72 hour standby plus 0.5 hour alarm load:	 1 off - 12V 6Ah sealed battery 2 off - 12V 6Ah sealed battery (Optional)

Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection for both A4 display unit and A4 control unit	IP30 estimated
Colour A4 Mimic display unit A4 Mimic control unit	 Pantone 422 Graphite grey (RAL 7024)
Controls at A4 Display unit	 lamp test facility by a hidden switch
Internal buzzer (non cancelable) A4 Mimic display unit A4 Mimic control unit	Operates on **system fire** and **local fault** events Permanent buzzer disable by link P3 Permanent buzzer disable by link P1
User LED indication at A4 Display unit Display area Common LEDs	 768 high intensity Red LEDs 32 (vertical axis) by 24 (horizontal axis) LEDs aperture size 244mm (wide) by 184mm (height) Fire - Red LED Power On (local) - Green LED Fault (local) - Amber LED
Maximum number per loop	maximum number of repeat and mimic panels per loop = 32 load factor (1000 max) = 3

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VIG-ZONE-A4 A4 Zonal Mimic panel set

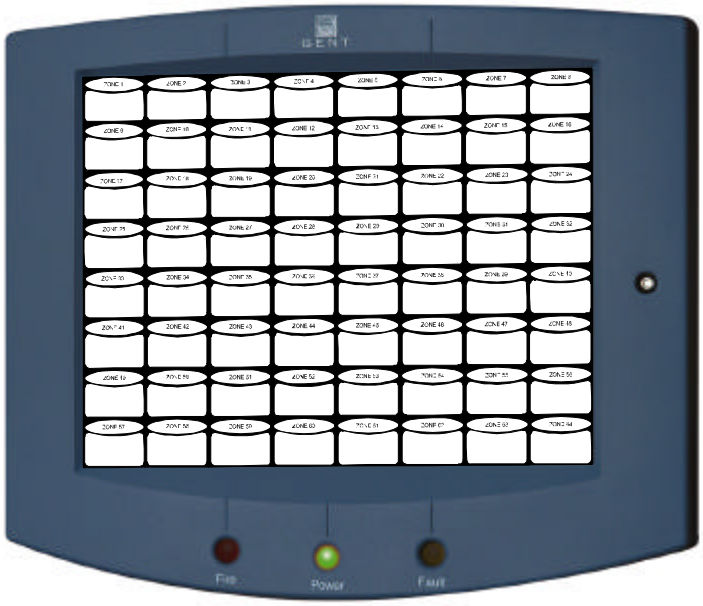

Figure 49-3 A4 Zonal Mimic panel set
A4zonal

- The VIG-ZONE-A4 A4 Zonal Mimic panel set consist of an A4 Display unit and an A4 Control unit.
- The A4 Display unit is used to show the zone location of fire event. The lights behind a zonal grid are illuminated in the event of fire.
- The A4 Control unit communicates with the Vigilon system. It passes on the system fire event information to the A4 Display unit, along with power to illuminate the lights (Light Emitting Diode-LED).
- The array of LEDs are programmed during the commissioning stage to illuminate in groups.
- The A4 Mimic control unit connects directly to a loop circuit and includes 'T' connection for sub loop and spur. The unit has an integral battery-backed mains power supply.

> ***NOTE:*** *It is recommended that the A4 Display unit is mounted on a flat surface..*

- Model Nos: VIG-ZONE-A4

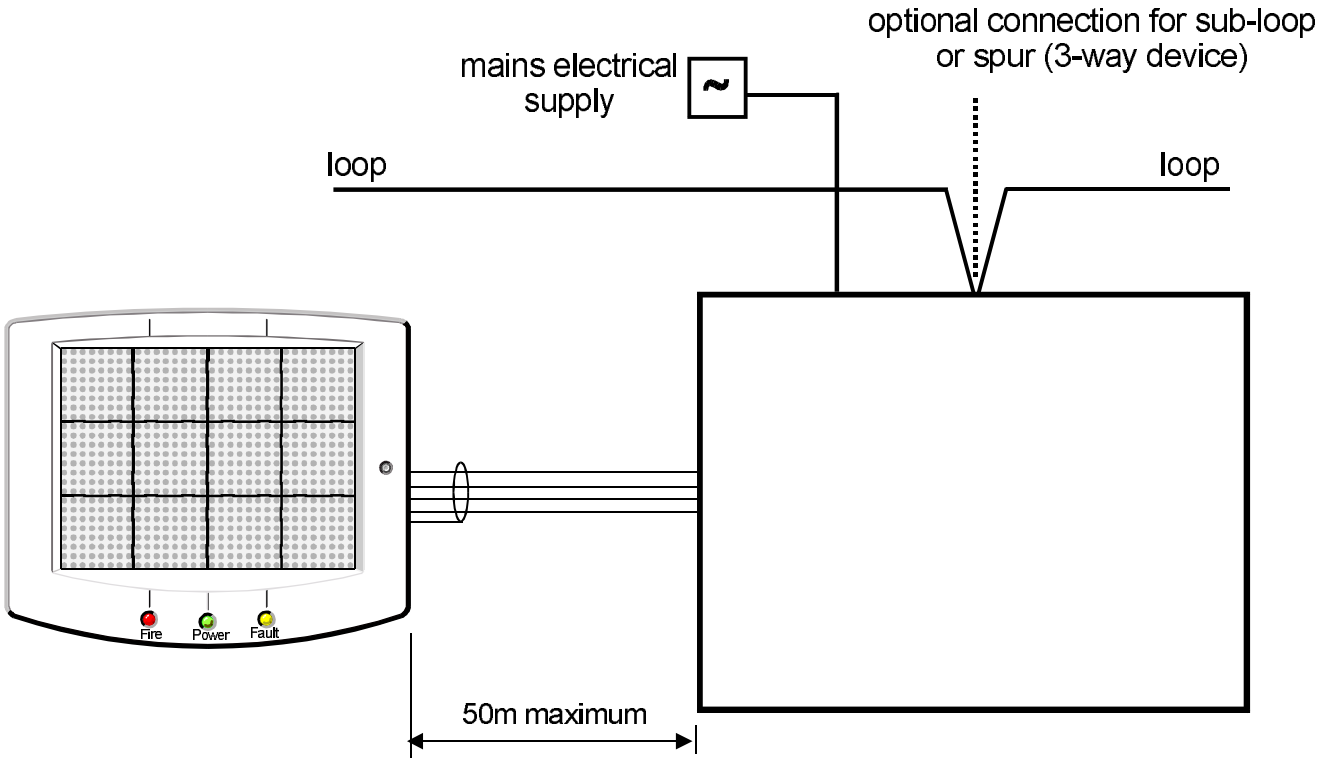

Figure 49-4 Wiring an A4 Zonal Mimic panel set
cdn419

Specification

Standard	BS5839:Part 4
Fully assembly dimensions A4 Mimic display unit A4 Mimic control unit	 width 330 mm height 276 mm depth 73 mm width 483 mm height 385 mm depth 78 mm
Full Assembly weight A4 Mimic display unit A4 Mimic control unit	 2.3Kg 10.4Kg (with 2 batteries installed)
Maximum cable distance between A4 Display unit and A4 Control unit	50m, for cable type see ‘A4 Mimic display to Control unit cable’
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Standby power supply 24 hour standby plus 0.5 hour alarm load: 72 hour standby plus 0.5 hour alarm load:	 1 off - 12V 6Ah sealed battery 2 off - 12V 6Ah sealed battery (Optional)

Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection for both A4 display unit and A4 control unit	IP30 estimated
Colour A4 Zonal Mimic display unit	Pantone 422
A4 Zonal Mimic control unit	Graphite grey (RAL 7024)
Controls at A4 Display unit	lamp test facility by a hidden switch
Internal buzzer (non cancelable) A4 Zonal Mimic display unit	Operates on **system fire** and **local fault** events Permanent buzzer disable by link P3
A4 Zonal Mimic control unit	Permanent buzzer disable by link P1
User LED indication at A4 Display unit	
Display area	768 high intensity Red LEDs 32 (vertical axis) by 24 (horizontal axis) LEDs aperture size 244mm (wide) by 184mm (height)
Common LEDs	Fire - Red LED Power On (local) - Green LED Fault (local) - Amber LED
Maximum number per loop	maximum number of repeat and mimic panels per loop = 32 load factor (1000 max) = 3

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VIG-NODE Terminal node (EN54)

Figure 50-1 Terminal node

cdn411

The terminal node is used as part of a network. It provides essential control functionality of a control panel without the ability to connect loops.

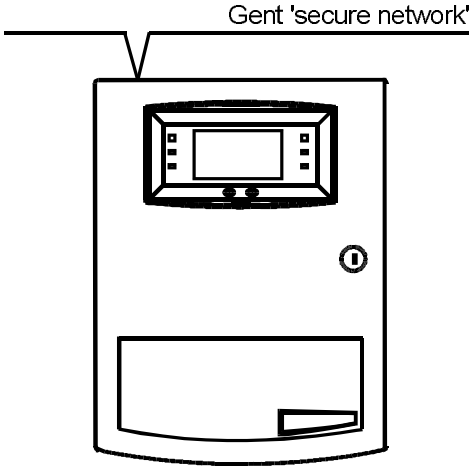

Figure 50-2 Wiring a terminal node

cdn421

Options

The Terminal Node is available as the following version:

- ❑ EN54 version (model no VIG-NODE)

Specification

Standard	EN54 Parts 2 & 4
Panel Dimensions	Width 408mm height 539mm depth 151mm
Battery box dimensions	Width 382mm Height 309mm Depth 110mm

Panel weight	16.5Kg
Battery box weight (including batteries)	21Kg
Full Assembly weight	20Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Door: Grey (Pantone 422) Backbox: Graphite Grey (RAL 7024)
Indicators	Fire (red) Fault (amber) Disablement (amber) Power On (green) System fault (amber) Sounder (amber) Alpha-numeric display - 16 line 40 character, back-lit, (white on blue, liquid crystal display)
controls (door closed)	Next And Previous buttons (Fire conditions only)
Controls (door open)	Sound Alarms Silence Alarms Reset Fire Cancel Buzzer Verify F1-F4 Menu On/Offkeys U1-U4 Qwerty keyboard
Power supply	The integral (battery-backed from external batteries) power supply will provide power for 24 hours in standby and a further 30 minutes in alarm.
Printer	Same as control panel

VIG-NODE-V3+ Terminal node (BS5839)

Options The Terminal Node is available in the following version:

- ❑ BS5839 version (model no VIG-NODE-V3+)

Specification

The specification for the Version 3+ option is identical to the Vigilon Terminal Node except for the following:

Standard	BS5839:Part 4
indicators	Fire, Fault, Warning, Power On, System fault, Commission lamps 16 line 40 character per line, back-lit, display (white on blue, liquid crystal display)
controls (door open)	Sound Alarms, Silence Alarms, Reset Fire Cancel Fault Buzzer, F1-F4, Menu On/Off, Qwerty Keyboard

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VIG-SEN-OH Optical Heat Sensor

Figure 51-1 Optical Heat Sensor

cd49

Variants

- VIG-SEN-OH Standard optical heat sensor
- VIG-SEN-OH-RL Optical heat sensor with fourth terminal for connection of remote LED - Requires the VIG-SEN-TERM-4 four way terminal plate to be used.

VIG-SEN-OH

This combination sensor provides a truly general purpose sensor. As well as operating as 2 stand-alone sensors, it will also react to the presence of smoke and heat at the same time.

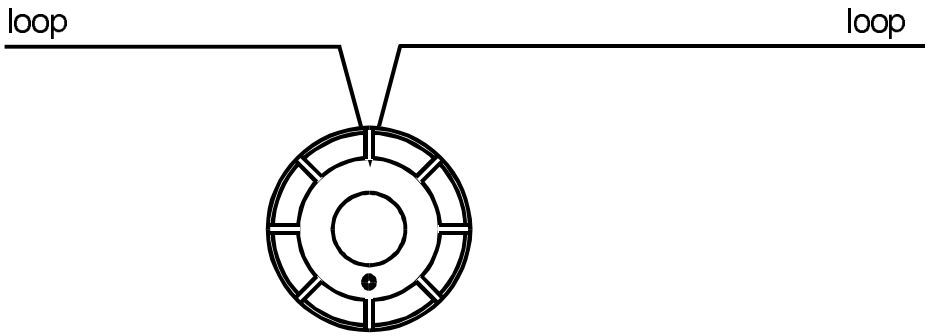

Figure 51-2 Wiring the Optical heat sensor

cd80

Specification

Standard Heat Smoke	 BS5445:Part 5 (EN54 : Part 5) BS5445:Part 7 (EN54 : Part 7
Dimensions	diameter 86 mm height 60 mm (with terminal plate)
Full Assembly weight	580g with terminal plate

Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C (If heat is used then 0 to 45°C)
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP30 estimated (mounted on a flat ceiling) IP20 estimated (mounted on a BESA box)
Air flow in installed environment	10m/s gusting for up to 30 minutes 5m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush, using mounting kit *(model no 19279-01)*
Chamber format	Sensing chamber is removable
Loop	Maximum number per loop = 200 Load (1000 max) = 1

Sensitivity

State 0 LPC approved	Medium sensitivity (Default) Suitable for most applications. Heat - grade 2 heat, Smoke - normal sensitivity.
State 1	High sensitivity optical or grade 2 heat Used in areas or situations where airborne smoke or dust is unlikely to occur and therefore a more sensitive detection is available
State 5	Medium sensitivity optical only Where high ambient temperatures of greater than 40°C are expected in the detection area. Smoke Detection only.
State 8 LPC approved	Medium sensitivity optical with time delay (20s time constant) or grade 2 heat. This state is useful in hotel bedrooms where low levels of signal could occur for short durations. If smoke and heat occur simultaneously the time delay is effectively overridden to provide fast detection.
State 10	Medium sensitivity optical with time delay (20s time constant) or grade 2 heat. Similar performance to state 8 without the time delay overridden. Useful in hotel bedrooms, and loading bays where low levels of signal may occur.
State 11	Low sensitivity optical or grade 3 heat If smoke detection is desirable in areas where airborne particles or smoke are normally present, or high temperatures (up to 40°C) can be normally attained.
State 12 **State 13** **State 14**	Grade 1 heat only - LPC approved Grade 2 heat only - **LPC approved** Grade 3 heat only No optical smoke detection. Can be used where airborne particles or smoke could occur briefly or at specific times. Optical detection can be used in conjunction with time blocks/slots to enable/disable depending on application
State 15	No detection, total disablement of sensor

VIG-SEN-OH-RL

The VIG-SEN-TERM-4-RL is identical to the standard version sensor except that it has a fourth terminal which connects to the fourth terminal in the VIG-SEN-TERM-4 four way terminal plate, see terminal plate data sheet.

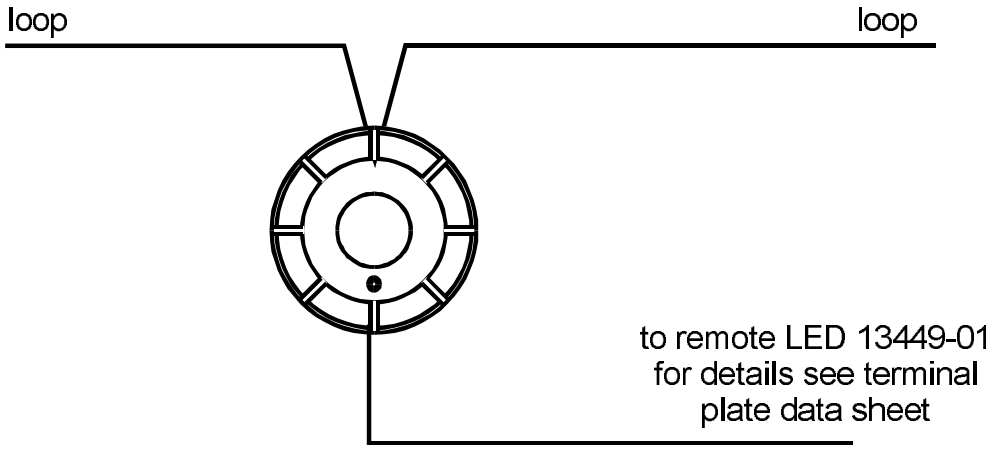

Figure 51-3 Wiring the Optical heat sensor - remote LED

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VIG-SEN-OHS Optical Heat Sounder

Figure 52-1 Optical heat sounder

cd83

In addition to the features of the combined optical heat sensor, the VIG-SEN-OHS incorporates a high output sounder that achieves 75 dBA when correctly installed above a bedhead.

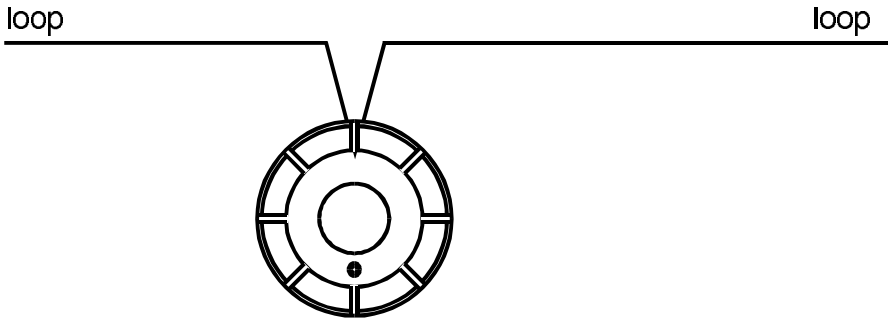


Figure 52-2 Wiring an Optical heat sounder

cd80

Specification

Standard Heat detection Smoke detection Sounder	 BS5445: Parts 5 (EN54 : Part 5) BS5445 : Part 7 (EN54 : Part 7) BS5839 : Part 1 Sound output 85dBA at 1m
Dimensions	diameter 86 mm height 60 mm (with terminal plate)
Full Assembly weight	600g with terminal plate
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C (If heat is used then 0 to 45°C)
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP30 estimated (mounted on a flat ceiling) IP20 estimated (mounted on a BESA box)
Air flow in installed environment	10m/s gusting for up to 30 minutes 5m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush using mounting kit *(model no 19279-01)*
Chamber format	Sensing chamber is removable
Loop	Maximum number per loop = 125 Load (1000 max) = 8

Sensitivity

State 0 LPC approved	Medium Sensitivity (Default) Suitable for most applications. Heat - grade 2 heat, Smoke - normal sensitivity.
State 1	High Sensitivity optical or grade 2 heat Used in areas or situations where airborne smoke or dust is unlikely to occur and therefore a more sensitive detection is available
State 5	Medium Sensitivity optical only Where high ambient temperatures of greater than 40°c are expected in the detection area. Smoke Detection only.
State 8 LPC approved	Medium Sensitivity optical with time delay (20s time constant) or grade 2 heat. This state is useful in hotel bedrooms where low levels of signal could occur for short durations. If smoke and heat occur simultaneously the time delay is effectively overridden to provide fast detection.
State 10	Medium sensitivity optical with time delay (20s time constant) or grade 2 heat. Similar performance to state 8 without the time delay overridden. Useful in hotel bedrooms, and loading bays where low levels signal may occur.
State 11	Low Sensitivity optical or grade 3 heat If smoke detection is desirable in areas where airborne particles or smoke are normally present, or high temperatures (up to 40°C) can be normally attained.
State 12 **State 13** **State 14**	Grade 1 heat only - LPC approved Grade 2 heat only - **LPC approved** Grade 3 heat only No smoke detection. Can be used where airborne particles or smoke could occur briefly or at specific times. Optical detection can be used in conjunction with time blocks/slots to enable/disable depending on application
State 15	No detection, total disablement of sensor

VIG-SEN-H Heat Sensor

Figure 53-1 Heat sensor

heat

The heat sensor is a good alternative to smoke sensors where the environment is subject to constant levels of smoke or dirt.

Options

Two options available:

- ❑ Standard sensor (model no VIG-SEN-H)
- ❑ Environmentally protected, IP55 (model no VIG-SEN-H-EP)

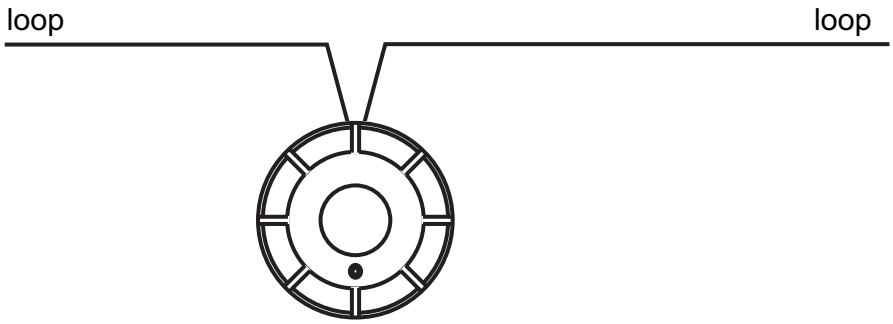


Figure 53-2 Wiring a heat sensor

cd80

Specification

Standard Heat	 BS5445:Part 5 (EN54 : Part 5) BS5445:Part 8 (EN54 : Part 8)
Dimensions standard	 diameter 86 mm height 60 mm (with terminal plate)
environmentally protected	180 mm height (the probe protrudes 100mm) 180 mm width 90 mm depth
Full Assembly weight	505g with terminal plate
Storage temperature	-30 to 70ºC
Operating temperature	-10 to 50°C

Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP20 estimated IP55 environmentally protected version
Air flow in installed environment	10m/s gusting for up to 30 minutes 5m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush using mounting kit *(model no 19279-01)*
Chamber format	Sensing chamber is removable
Loop	Maximum number per loop = 200 Load (1000 max) = 1

Sensitivity

State 0 **LPC Approved**	(Default) Grade 2, rate of rise and fixed temperature. Suitable for general use in ambient temperatures up to 40°C. Provides detection to Grade 2 performance as defined in BS5445 Part 5.
State 1 **LPC Approved**	Grade 1, strong rate of temperature rise as well as fixed temperature. Applicable for areas with normally very steady low ambient temperatures e.g. cold stores. A strong rate of rise can signal a fire below the normal set temperature at 58°C.
State 2	Grade 1, limited rate of rise. Applicable for normal ambient temperatures where temperature variations are expected up to 40°C, but faster response than grade 2 is required e.g. hotel bedroom.
State 5	High temperature with rate of rise. Provides detection as specified by Range 1 (BS5445:Part 8) for ambient temperatures up to 70°C with a rate of rise feature. Fixed temperature will operate at 84°C.
State 6	High temperatures with no rate of rise Provides detection as specified by Range 1 (BS5445:Part 8) for ambient temperatures up to 70°C with no rate of rise feature. Will operate at 84°C.
State 15	No detection. This is a total disablement of the sensor.

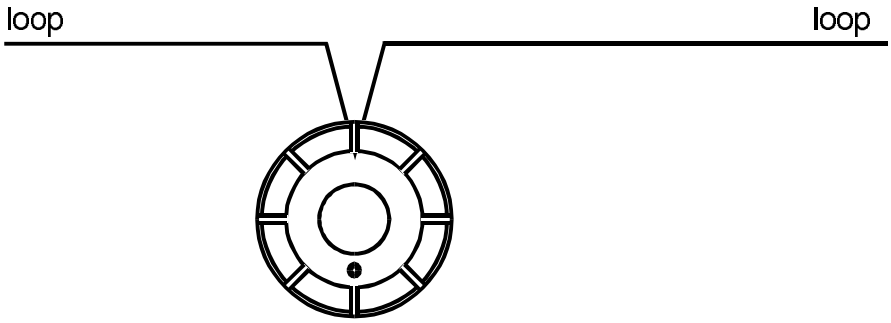
VIG-SEN-HS Heat Sounder

Figure 54-1 Heat sounder

cd13

In addition to heat detection, the VIG-SEN-HS incorporates a high output sounder that achieves 75 dBA when correctly installed above a bedhead.

Figure 54-2 Wiring an Heat sounder



cd80

Specification

Standard Heat detection Sounder	 BS5445: Parts 5 (EN54 : Part 5) BS5839 : Part 1 Sound output 85dBA at 1m
Dimensions	diameter 86 mm height 60 mm (with terminal plate)
Full Assembly weight	600g with terminal plate
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*

Ingress Protection	IP30 estimated (mounted on a flat ceiling) IP20 estimated (mounted on a BESA box)
Air flow in installed environment	10m/s gusting for up to 30 minutes 5m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush using mounting kit *(model no 19279-01)*
Chamber format	Sensing chamber is removable
Loop	Maximum number per loop = 125 Load (1000 max) = 8

Sensitivity

State 0 LPC approved	Medium Sensitivity (Default) Heat - grade 2 heat
State 12 LPC approved	Grade 1 heat only
State 13	Grade 2 heat only -
State 14	Grade 3 heat only
State 15	No detection, total disablement of sensor

VIG-SEN-I Ionisation Sensor

Figure 55-1 Ionisation smoke sensor

cd14

The ionisation sensor is a useful alternative to optical sensors where fires are likely to include invisible products of combustion.

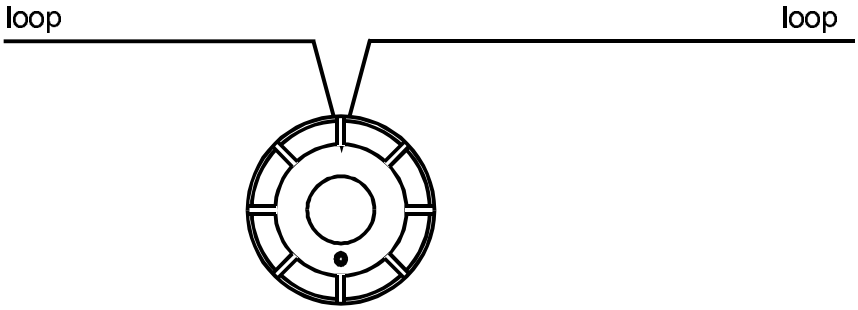


Figure 55-2 Wiring an ionisation sensor

cd80

Specification

Standard Smoke detection	BS5445 : Part 7 (EN54 : Part 7)
Dimensions	diameter 86 mm height 60 mm (with terminal plate)
Full Assembly weight	610g with terminal plate
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP30 estimated (mounted on a flat ceiling) IP20 estimated (mounted on a BESA box)
Air flow in installed environment	5m/s gusting for up to 30 minutes 2m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush using mounting kit *(model no 19279-01)*
Chamber format	Sensing chamber is removable
Loop	Maximum number per loop = 200 Load (1000 max) = 1

Sensitivity

State 0 **LPC Approved**	(Default) Medium sensitivity. Same sensitivity as a standard conventional detector.
State 3	Medium sensitivity with 20 second time constant Medium sensitivity, but ignores faster transients. Fire signal must be present for a minimum of 20 seconds to create an alarm.
S**tate 5**	Medium sensitivity with no background Same as state 0 but ignores smouldering fires taking greater than 20 minutes to reach alarm levels. Used when mixed with 3471 Optical Smoke/Heat Sensors or in normally smoky environments.
State 10	Low sensitivity with 5 second time constant Lower sensitivity detection than state 0. Can be used where low levels of airborne smoke or dust are likely to occur.
State 12	Slow or Low sensitivity Lower sensitivity detection as for state 10, but ignores faster transients. Fire signal must be present for a minimum of 20 second to create an alarm.
State 15	No detection, total sensor disablement This is a total disablement of the sensor.

VIG-BEAM Beam Sensor

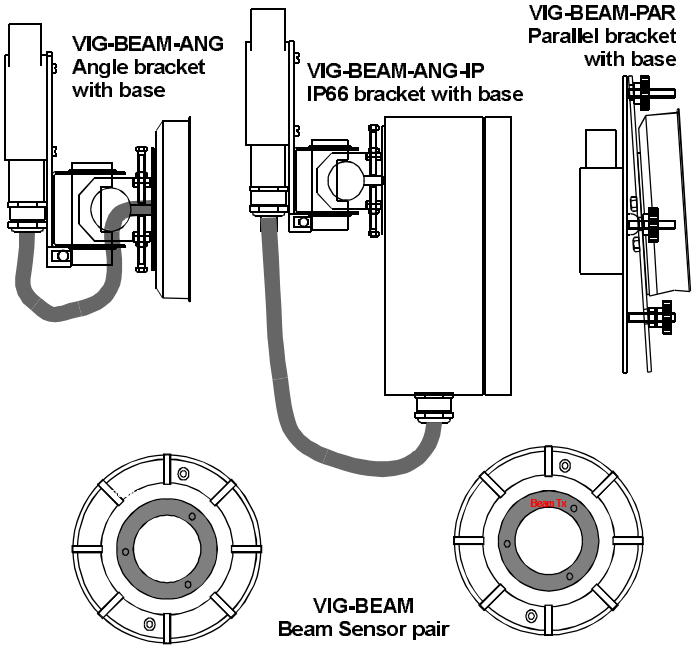


Figure 56-1 Beam sensor
cdn473

The beam sensor allows detection of smoke over distances up to 100 metres. The sensor comprises 2 parts a transmitter and a receiver. Both include the base and bracket.

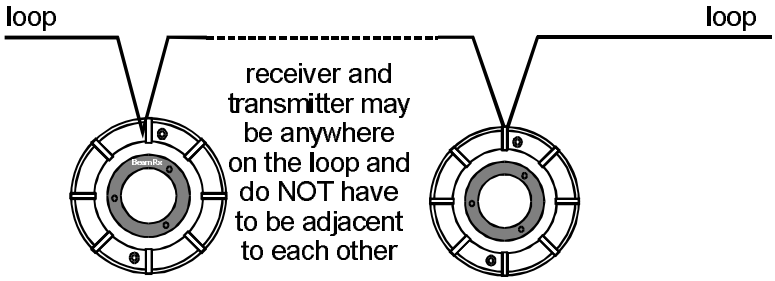


Figure 56-2 Wiring a beam sensor

cd129

Options

- Beam sensor pair, 2 to 100 metres (model no VIG-BEAM).
- Angle bracket with base (model no VIG-BEAM-ANG).
- IP66 Angle bracket with base, 85m maximum (model no VIG-BEAM-ANG-IP).
- Parallel bracket with base (model no VIG-BEAM-PAR) This version is intended for use with short paths of up to 10m.

Specification

Standard Smoke detection	BS5839 : Part 5
Dimensions	Angle bracket and sensor: 106mm(W) x 145mm(H) x 130mm(D) IP66 bracket and sensor: 136mm(W) x 218mm(H) x 175mm(D) Parallel bracket and sensor: TBA
Full Assembly weight	Angle bracket and sensor: TBA IP66 bracket and sensor: TBA Parallel bracket and sensor: TBA
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 95%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP66 estimated (IP66 version only)
Vibration	5 to 60Hz
Colour	Grey
Operating voltage	20-50V
Indicators	Two Red LED visible at 500LUX ambient light levels 3m
Loop	Maximum number per loop = 16 pair Load (1000 max) = 2

Sensitivity

State 0	(Default) A fire is detected when there is a 50% (3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds, then it is a Fault. This allows the Control Panel to differentiate between a fire and a fault signal caused by accidental obscuration.
State 1	A fire is detected when there is a 50% (3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then it also is a fire.
State 2	Medium sensitivity. A fire is detected when there is a 25% (1.3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a fault is registered.
State 3	Medium sensitivity. A fire is detected when there is a 25% (1.3dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a fire is registered.
State 4	Hi-Sensitivity. A fire is detected when there is a 10% (0.5dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a fault is registered.
State 5	Hi-Sensitivity. A fire is detected when there is a 10% (0.5dB) fall in signal level, however if the fall is by 90% (10dB) in less than 1 second and is maintained for 40 seconds then a fire is also registered.
State 15	This is a total disablement of the sensor.

VIG-SEN-DUCT Duct Mounting Sensor

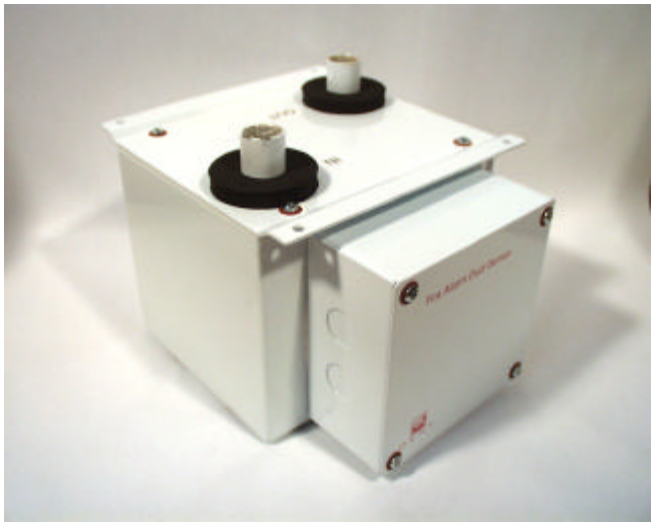


Figure 57-1 Duct sensor

jnpic18

The duct sensor acts as an additional detection device by using probes to sample the air in ducts. It can be used to trigger the shut-down of air-conditioning or ventilation plant to prevent the spread of smoke.

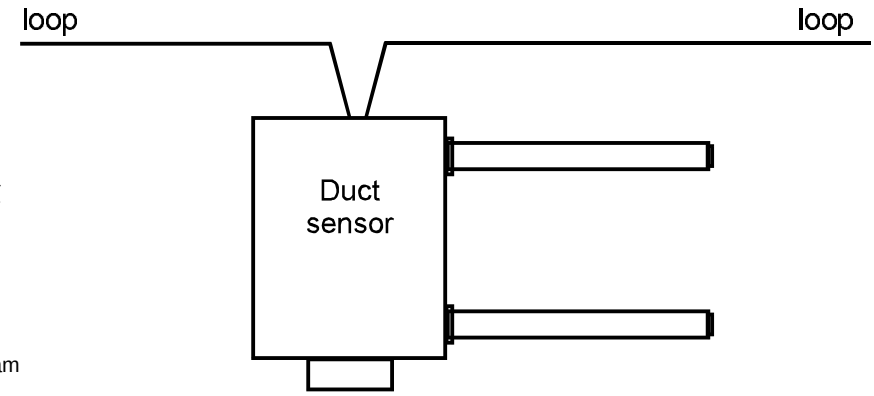


Figure 57-2 Wiring a duct sensor

Block diagram

Specification

Standard	Not applicable
Dimensions Housing Probes	 height 60 mm width 180mm depth 170mm length 0.92m supplied
Probes	The probes are 0.92 metres long, but may be cut down to suit. An extension kit allowing probes to be extended by a further 0.92 metres is available *(model no 17908-06)*
Full Assembly weight	3.3Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP55 estimated
Air flow in installed environment	10m/s gusting for up to 30 minutes 5m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	none, use the supplied slave LED *(model no VIG-SLV-LED)*
Loop	Maximum number per loop = 200 Load (1000 max) = 1

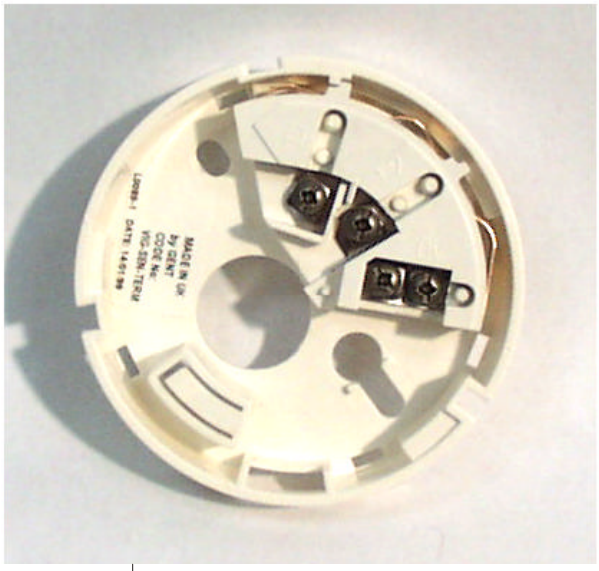
Sensitivity

State 0	Medium Sensitivity (Default) Suitable for most applications.
State 1	High Sensitivity Used in areas or situations where airborne smoke or dust is unlikely to occur and therefore a more sensitive detection is available
State 8	Medium Sensitivity optical with time delay (20s time constant).
State 11	Low Sensitivity If smoke detection is desirable in areas where airborne particles or smoke are normally present.
State 15	No detection, total disablement of sensor

Terminal Plates

VIG-SEN-TERM Terminal plate

Figure 58-1 Terminal Plate



Specification

Diameter	75mm
Weight	Included in weight of sensor
Colour	White

VIG-SEN-TERM-4 Four way terminal plate

Figure 58-2 Four way terminal plate

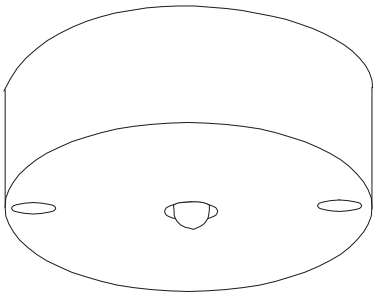
jnpic23

Specification

Diameter	75mm
Weight	Included in weight of sensor
Colour	White

Remote LED VIG-REM-LED

Figure 58-3 Remote LED



Specification

Diameter	62mm
Colour	White
Terminals	Two

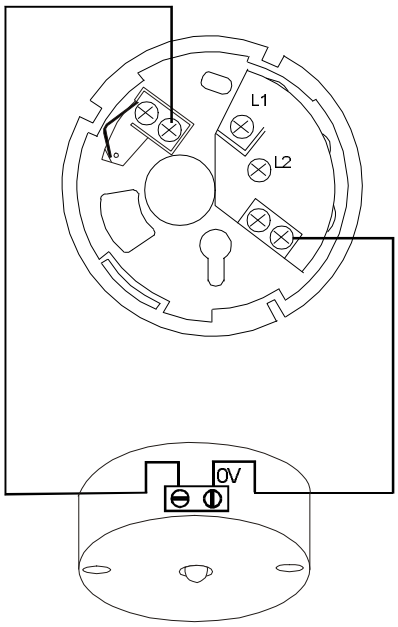
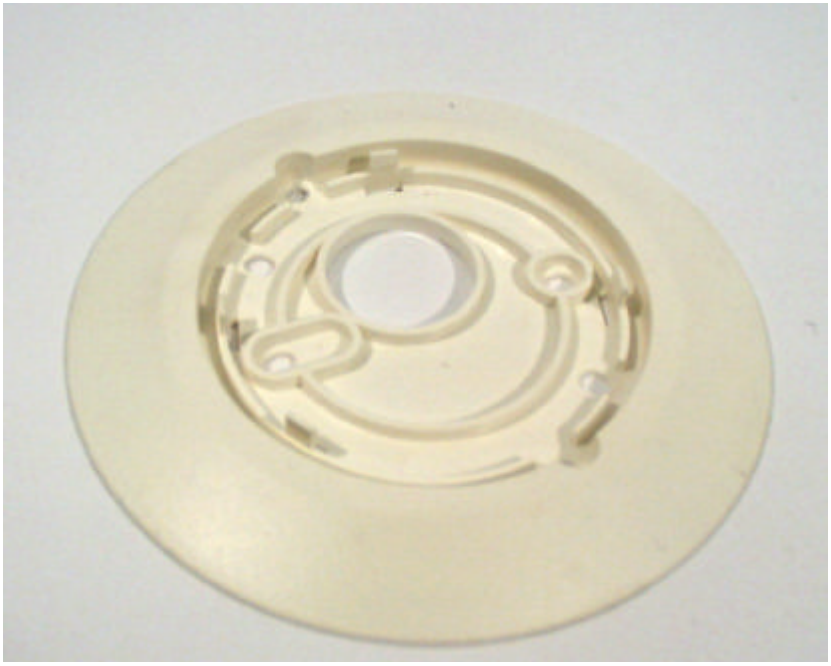


Figure 58-4 Wiring remote LED to 4 way terminal plate

NOTE: *The maximum length of cable per loop connected to the Remote LED should not exceed 1km. This cable length is to take into account any cable connected to any loop powered interfaces on the same loop and be reduced accordingly.*

19279-10 Sensor Trim Ring

Figure 59-1 Sensor trim ring



jnpic22

The sensor trim ring provides the following benefits:

- Installation time required on ceilings of low quality material is reduced as there is no need to cut such accurate holes.
- Installation in refurbished installations where the sensors are of an larger diameter is easier as there is no need to repair or replace the ceiling

Specification

Diameter	120mm
Weight	TBA
Backbox Compatibility	1. BESA type 2. 'MK switch' type 3. 'American style' type
Colour	White

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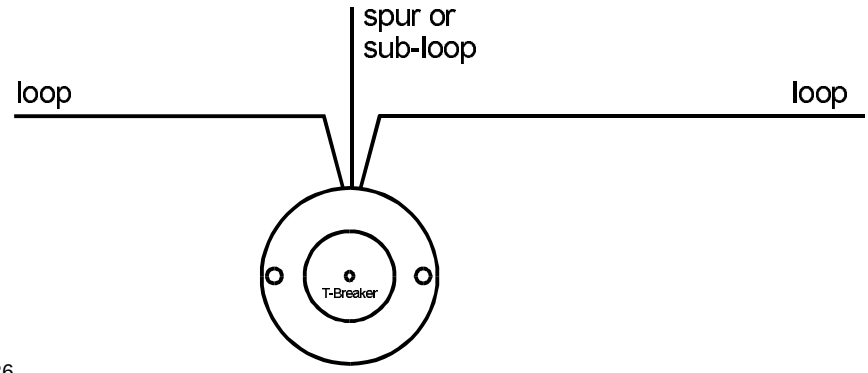
VIG-T T-Breaker Unit

Figure 60-1 T-breaker

jnpic27

The T-breaker may be placed anywhere in a loop to provide connection for a spur or sub-loop. The T-breaker uses a single address of its own.

Figure 60-2 Wiring a T-breaker



cd126

Specification

Dimensions	diameter 86 mm height 48 mm
Full Assembly weight	350g with fixing base
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*

Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicator	Green LED, may be switched ON for identification purposes, also illuminates to indicate hardware fault
Loop	Maximum number per loop = 200 Load (1000 max) = 1

VIG-SLV-LED Slave LED

Figure 61-1 Slave LED

jnpic26

The slave LED provides a remote repeat indicator for a sensor. This is particularly useful where the sensor is mounted in a ceiling void or some other hidden location.

> ***NOTE:*** *The slave LED is positioned directly before the associated sensor. It does not use an address of its own.*

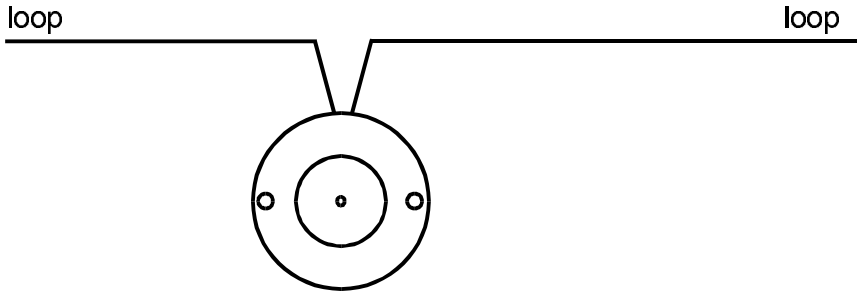


Figure 61-2 Wiring a Slave LED

cd125

Specification

Dimensions	diameter 86 mm height 48 mm
Full Assembly weight	340 with fixing base
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED
Loop	Maximum number per loop =100 Load (1000 max) = 1

VIG-SLV-RLY Slave Relay

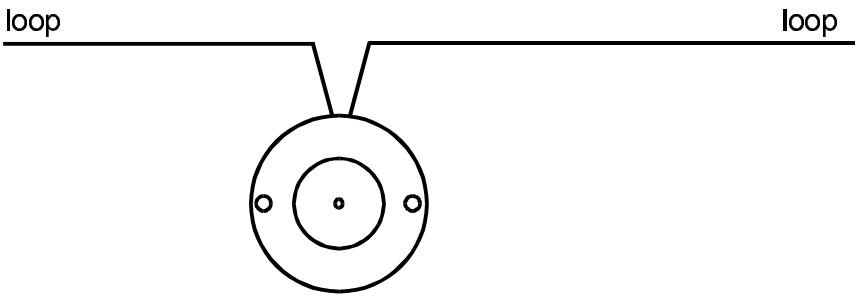
Figure 62-1 Slave relay

jnpic28

The slave relay provides a relay contact that operates when a particular sensor senses fire.

> ***NOTE:*** *The slave relay is positioned directly before the associated sensor. It does not use an address of its own.*

Figure 62-2 Wiring a slave relay



cd125

Specification

Dimensions	diameter 86 mm height 48 mm
Full Assembly weight	360g with fixing base
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED
Loop	Maximum number per loop = 100 Load (1000 max) = 1
Contacts	SPCO 2 amp, 24 Vdc

VIG-SND Sounder

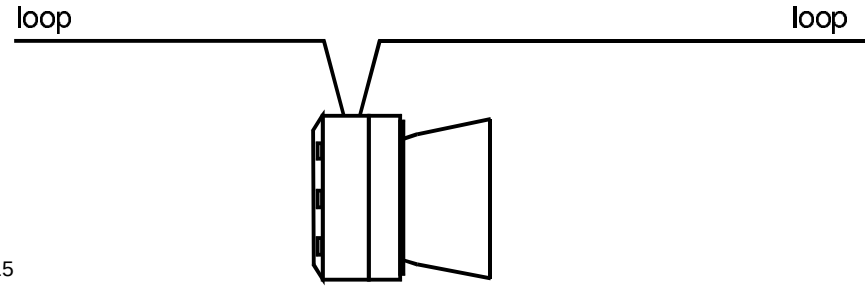
Figure 63-1 Alarm sounder

jnpic17

Options

- Standard 2-way sounder (model no VIG-SND)
- 3-way version (model no VIG-SND-T)
- Environmentally protected version of 3-way (model no VIG-SND-T-EP) IP55

Figure 63-2 Wiring an alarm sounder



cd115

Specification

Sound output	BS5839: Part 1 Sound output typically 100* dBA at 1 metre
Dimensions Standard variant	 width 108 mm depth 112 mm height 108 mm
environmentally protected	width 180 mm depth 155 mm height 180 mm
Full Assembly weight	1.1Kg -approximate for standard variant 4Kg - environmentally protected

Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP30 estimated standard type IP55 - Environmentally protected type
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V

VIG-SND-RPT Repeat Sounder

Figure 64-3 Repeat Sounder

jnpic25

The Repeat Sounder is aimed at providing alarm sounder coverage in areas that do not require smoke/heat coverage or already have sufficient smoke/heat coverage but inadequate sounder output levels. Typical applications are en-suite bathroom/shower in a hotel, toilets/washrooms and in complicated building layouts where a more even sounder coverage is required than could be obtained by system sounders.

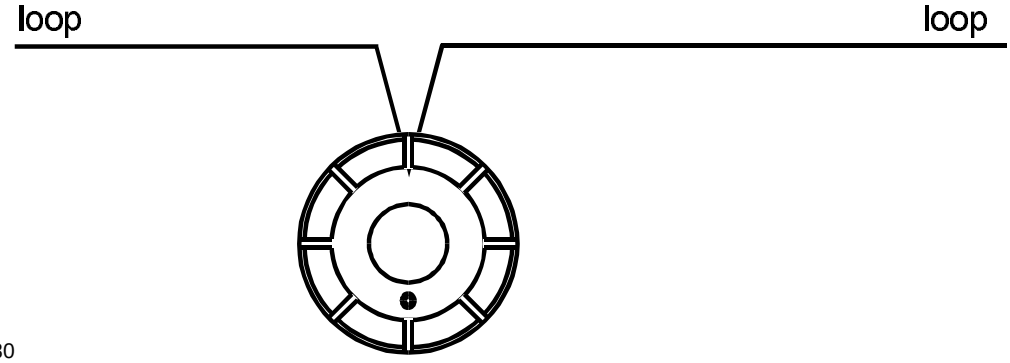


Figure 64-4 Wiring a repeat sounder

cd80

Specification

Sounder	BS5839 : Part 1 Sound output 85dBA at 1m
Dimensions	diameter 86 mm height 60 mm (with terminal plate)
Full Assembly weight	600g with terminal plate
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP30 estimated (mounted on a flat ceiling) IP20 estimated (mounted on a BESA box)
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush using mounting kit *(model no 19279-01)*
Loop	Maximum number per loop = 125 Load (1000 max) = 8

VIG-MCP range MCPs

Figure 65-1 Manual call point

Options

The VIG-MCP range includes:

- ❑ Surface mounted MCP - LPC certified (model no VIG-MCP)
- ❑ Surface mounted MCP, water resistant IP44 (model no VIG-MCP-WR)
- ❑ Surface mounted MCP, environmentally protected IP55 (model no VIG-MCP-EP)
- ❑ Surface mounted MCP with lift-up cover (model no VIG-MCP-CVR)
- ❑ Surface mounted MCP with lift-up cover, water resistant IP54 (model no VIG-MCP-WR-CVR)
- ❑ Surface mounted MCP with key switch (model no VIG-MCP-KEY)

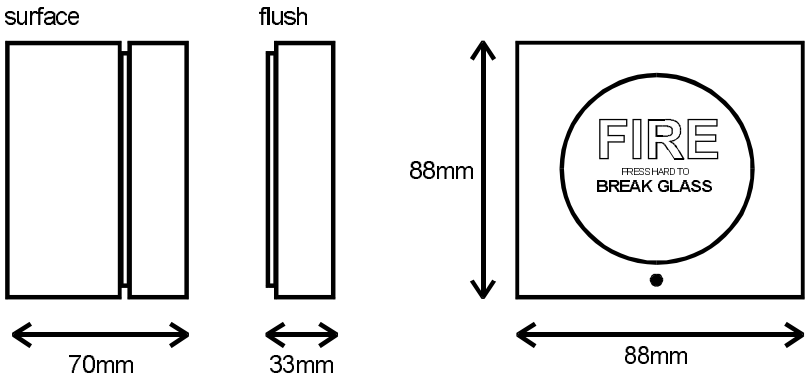
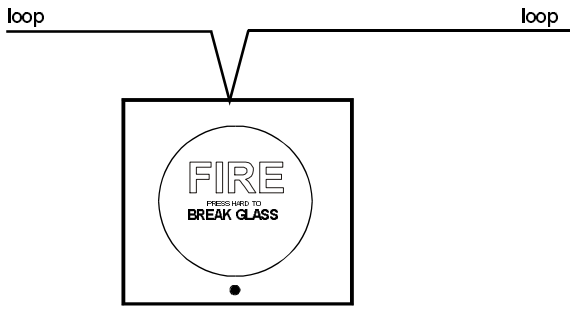


Figure 65-2 MCP dimensions

NOTE: *If the MCP is flush mounted the plastic backbox supplied* ***must be*** *used. A* ***flush fixing bezel*** *Part number 19289-01 is available.*

Figure 65-3 Wiring a MCP

Block diagram



Specification

Standard	BS5839: Part 2 (break glass type only)
Dimensions Standard variant environmentally protected	 width 88 mm depth 75 mm height 88 mm width 180 mm depth 130 mm height 180 mm
Full Assembly weight	770g - approximate for standard variant 3.5Kg - environmentally protected
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated standard type IP55 - Environmentally protected type
Vibration	5 to 60Hz
Colour	Red
Case	ABS engineering plastic
Indication	Red LED that illuminates when the MCP is operated
Testing	The mechanism and operation of the MCP is tested by using a test key
Operating voltage	20-50V

Accessories

Spare glasses, pack of 10 (model no 14112-09GR)

Spare glasses (for LPC version), pack of 10 (model no 34809)

VIG-INT-ZONE Loop Powered Zone Module

Figure 66-1 Loop powered zone module

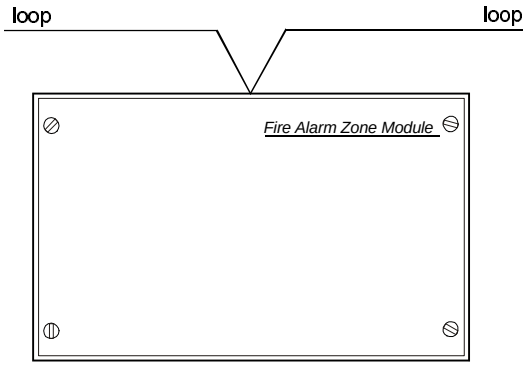
jnpic14

The VIG-INT-ZONE loop powered zone module is a single channel device, which can accomodate up to 20 conventional detectors. The loop powered zone module can also accomodate conventional manual call points fitted with either a 3.9V Zener or 470 ohm resistor in series with its contacts.

***NOTE**: If using diode bases, the removal of more than five detectors may prevent some MCPs from working.*

***NOTE:** The maximum length of cable per loop connected to the Remote LED should not exceed 1km. This cable length is to take into account any cable connected to any loop powered interfaces on the same loop and be reduced accordingly.*

Figure 66-2 Wiring a loop powered zone module



cd8n_24

Specification

Panel Dimensions	Width 204mm height 125mm depth 50mm
Full Assembly weight	0.676Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC

Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Grey/Brown and Black
Number of channels	1 channel
Input channels	2-wire input for conventional zone circuits. Circuits are monitored for: Fire MCP fire Wiring open circuit fault Wiring short circuit fault Monitoring conforms to BS5839 by detecting a MCP activation if a detector is removed. Maximum detector load: *TBA* End-of-line capacitor/diode (supplied) must be used. The input circuits may be configured to operate with various manufacturers conventional detectors: Menvier 700 series: Ionisation Menvier 700 series: Optical Apollo series 60: Ionisation Apollo series 30: Ionisation Apollo series 30: Rate of rise Hochiki SLK-E Optical Hochiki SIH-E Ionisation Hochiki Comb Heat Hochiki DFE-90E Fixed Temp Nittan 2KC Optical Smoke System Sensor 1151E System Sensor 4451E Notifier SD-651E Thorn MR601/AFA1706 Optical Thorn MR601T/AFA1705 High Performance Optical Thorn MD611/AFA 1704 Thorn MF601/AFA 1702 Thorn MS302 Ex Flame, provided; 1. The flame detector is the only device connected to the zone. 2. The EOL is fitted directly to the flame detector and is housed in the base.
Loop	Maximum number per loop = 100 Load factor (1000 max) = 10 2-way device

VIG-INT-1CH Single Channel Interface

Figure 67-1 Single Channel Interface

jnpic15

The VIG-INT-1CH single channel interface operates directly from the loop power supply. It has 1 channel, which may be configured as an input or output and can be configured to work as a single input, multiple input or output (via relay change over contacts) device.

When set up as an output, the input channel on the output line interface still works.This allows the interface to switch some other piece of equipment then receive a verification that this has took place.

When configured as a single input device, a line module must be used. The line module may be installed up to 100m cable distance away. Its two position switch must be set to input.

When configured as a multiple input device, an end of line capacitor unit must be used. If the multiple inputs are from manual call points, there must be a 470 ohm resistor in series with the contacts.

When configured as an output device, the output relay contacts are voltage free and rated at 5A at 30Vdc/5A at 250Vac. The relay output of the interface operates with a Vigilon sector. Therefore the single channel outstation will need to be configured to a sector.

NOTE: *The maximum length of cable per loop connected to the Remote LED should not exceed 1km. This cable length is to take into account any cable connected to any loop powered interfaces on the same loop and be reduced accordingly.*

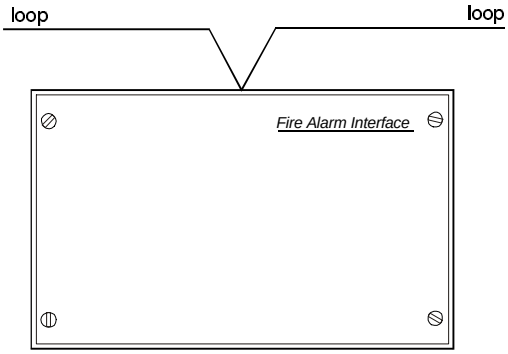


Figure 67-2 Wiring a single channel interface

cd8n_26

Specification

Panel Dimensions	Width 204mm height 125mm depth 50mm
Full Assembly weight	0.702Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Grey/Brown and Black
Number of channels	1 channel, (configurable as input or output)
Input channels	Single input (using line module): monitors voltage free contacts, normally open or normally closed, inputs may be configured as: fire, fault, supervisory (with 0s or 30s delay before signal accepted) Multiple input (with capacitor end of line unit): monitors voltage free contacts (in series with 470 ohm resistor for mcps) normally open or normally closed, inputs may be configured as: fire only (with 0s or 30s delay before signal accepted)
Output channels	Voltage free SPCO contacts rated at: 5 amps at 24 Vdc 5 amps at 250 Vac
Loop	Maximum number per loop = 100 Load factor (1000 max) = 10 2-way device

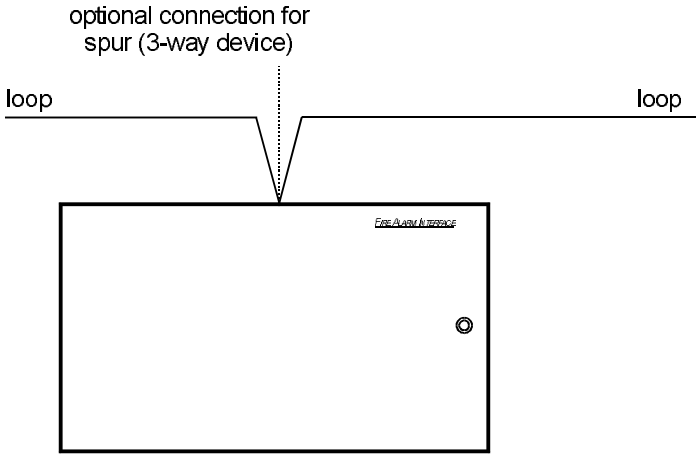
VIG-INT-MAINS Mains-powered Interface

Figure 68-1 Mains powered interface unit

jnpic16

The VIG-INT-MAINS interface operates from mains power and incorporates its own battery-backed power supply. It has 4 channels, each may be configured as as input or output and are configured as conventional zone and sector circuits respectively.

Figure 68-2 Wiring a mains powered interface



cdn206

Specification

Panel Dimensions	Width 504mm height 305mm depth 98mm
Full Assembly weight	8.6Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Mains Operating voltage	230V 50Hz +10% -6%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**

Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Grey/Brown and Black
Number of channels	4 channels, (each configurable as input or output)
Input channels	2-wire inputs for conventional zone circuits. Circuits are monitored for: Fire MCP fire Wiring open circuit fault Wiring short circuit fault Monitoring conforms to BS5839 by detecting a MCP activation if a detector is removed. Maximum detector load: 2 mA. End-of-line capacitor/diode (supplied) must be used. The input circuits may be configured to operate with various manufacturers detectors and MCPs: Gent — Apollo / Hochiki Menvier — Nittan Notifier — Thorn On certain sites, older type detectors and MCPs place a short across the zone when in fire. In order that these shorts are detected as fires and not shorts, position ‘F’ on the rotary switch should be selected.
Output channels	Output channels will operate conventional sector equipment such as sounders and door holders. Maximum current 500 mA per circuit (fused at 800 mA), Maximum per interface 500mA Sectors are monitored for: wiring open circuit fault wiring closed circuit fault End-of-line 2k2 resistor (supplied) must be used. Up to 4 Octal relays with diode packs may be fitted within the enclosure. These provide DPCO voltage-free contacts rated at 10 amps, 240 Vac, resistive load.
Loop	Maximum number per loop = 8 Load factor (1000 max) = 3 3-way device (terminals provided for spur or sub-loop)

19104-52 Power Relay

For use in the VIG-INT-MAINS mains powered interface unit. A maximum of 4 relays with diode units can be fitted on the DIN rail inside the interface unit.

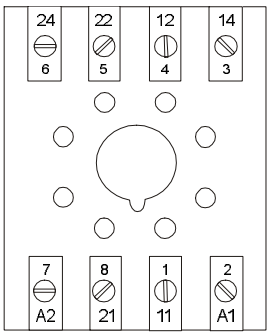


Figure 68-3 Power Relay base

cdn36

HOLDER
TOP VIEW
(TS35 DIN RAIL MOUNTABLE)

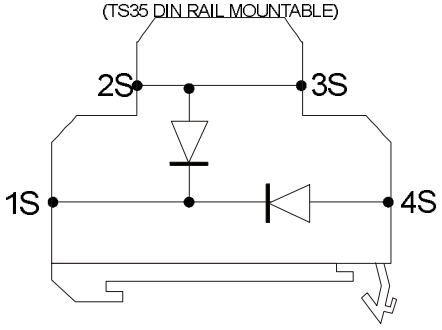


Figure 68-4 Diode unit

cdn28

DIODE UNIT
(TS35 DIN RAIL MOUNTABLE)

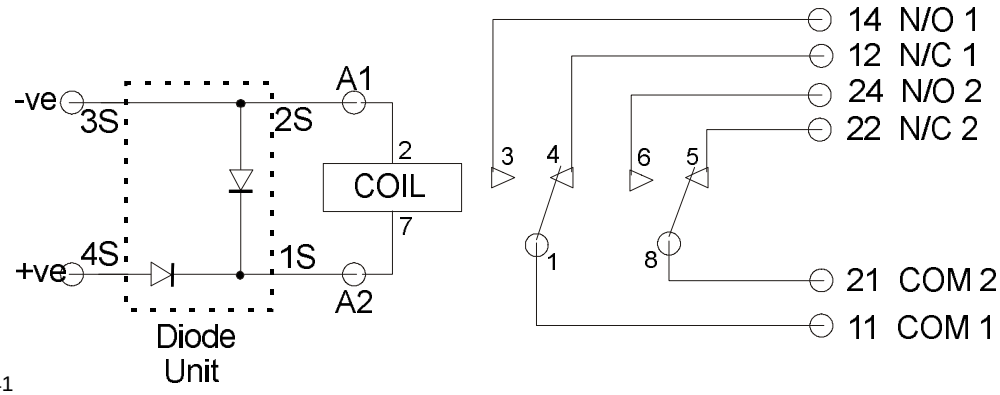


Figure 68-5 Relay connections

cdn241

Specification

Octal base	DIN Rail Mountable
Relay voltage	24V
Relay coil resistance	470R
Relay contact rating	10A
Relay current consumption	50mA

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VIG-INT-LOOP Loop-powered Interface

Figure 69-1 Loop powered interface unit

jnpic19

The VIG-INT-LOOP interface operates directly from the loop power supply and does not use mains power. It has 4 channels. The interface must be used in conjunction with one or more of the following interface options:

- Line modules (model no 19245-05).
  Provides a single channel input or output, the output contacts of which are rated at 24Vdc 2A. Up to 4 may be used in conjunction with the interface. Line modules connect to the interface with 2 wires. All four line modules may be housed within the interface enclosure. Alternatively, any line module may be housed in the host equipment; the limit of the 2-wire interconnection is 100 metres with a maximum of 1km for each loop.

- Power supply unit (model no 19245-06).
  The supply unit provides up to four 240 Vac, 5 amp rated single pole changeover relay contacts in a separate enclosure. Each relay is controlled by one channel of the interface. They are interconnected by a 2-wire cable. The maximum length of this cable is 100 metres. One relay is supplied with the supply unit, additional relays, up to 3 maximum, are ordered separately (model no 19245-07).

- Key switches 4-position door (model no VIG-INT-KEY)
  2-way key switch (model no 19245-02)- max 4 per interface
  3-way key switch (model no 19245-03)- max 2 per interface
  The 4-position door replaces the standard door of the interface. The door may be assembled with up to 4 key switches. Key switches are available in 2-way and 3-way configurations and include LEDs to indicate status. Key switches connect to the interface via push-on connectors. Label plates are built-in to each key switch position. Unused positions may be covered using a blanking plate (supplied).

NOTE: *The maximum length of cable per loop connected to the Remote LED should not exceed 1km. This cable length is to take into account any cable connected to any loop powered interfaces on the same loop and be reduced accordingly.*

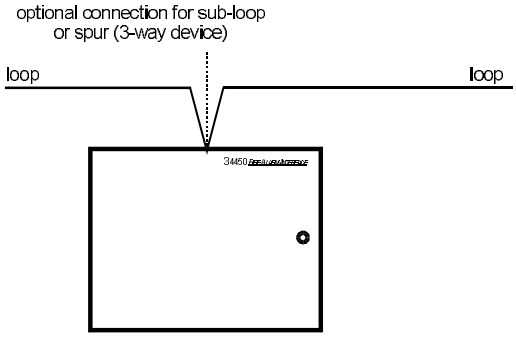


Figure 69-2 Wiring a loop powered interface

cd3

Specification

Panel Dimensions	Width 261mm height 270mm depth 60mm
Full Assembly weight	2.4Kg
Storage temperature	-30 to 70ºC
Operating temperature	0 to 45ºC
Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP40 estimated
Vibration	5 to 60Hz
Colour	Grey - Brown and Black
Number of channels	4 channels, (each configurable as input, output or off)
Input channels	(using line modules) monitors voltage-free contacts, normally open or normally closed. inputs may be configured as: fire fault non-fire event (with 10 second sprinkler switch delay option)
Output channels	(using line modules) voltage-free SPCO contacts rated at: 2 amps at 24 Vdc (using supply unit and relays) voltage-free SPCO contacts rated at: 5 amps at 240 Vac All ratings - resistive load
Loop	Maximum number per loop = 30 Load factor (1000 max) = 2 3-way device (terminals provided for spur or sub-loop)

Notes on using 19245-05 line module

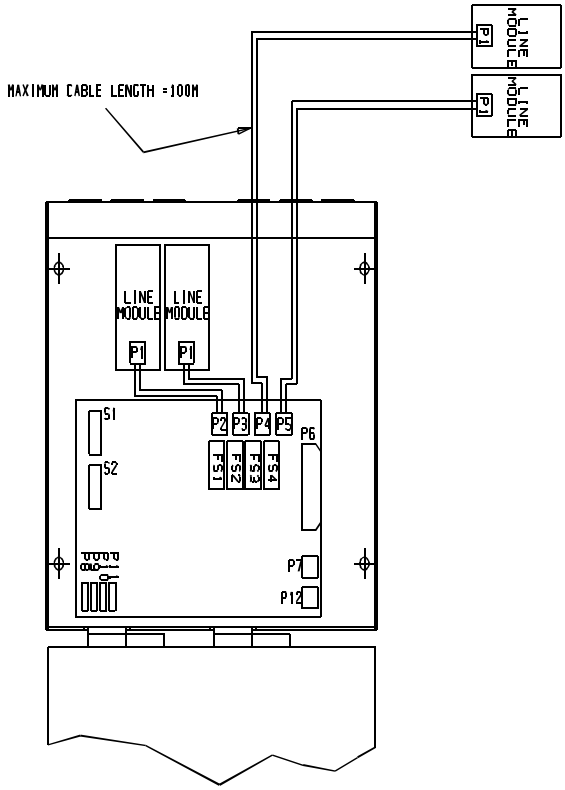


Figure 69-3 Connecting a line module to an interface

cd85

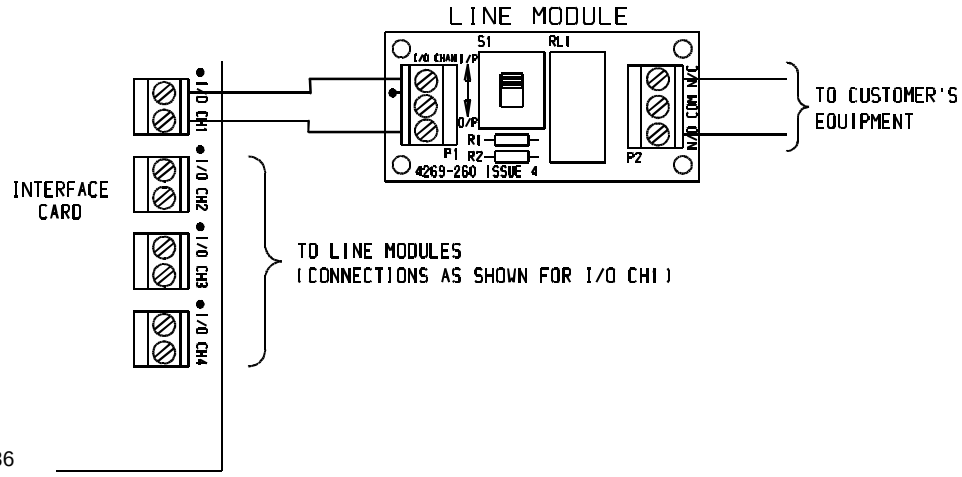


Figure 69-4 Line module input configuration

cd86

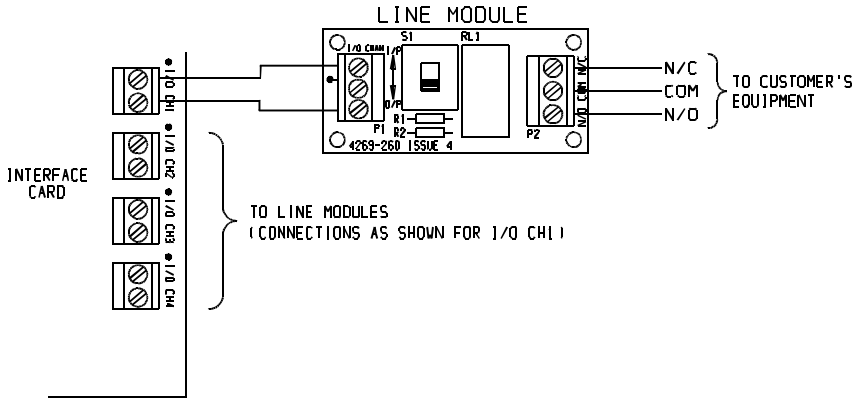


Figure 69-5 Line module output configuration

cd87

Notes on using 19245-06 supply unit

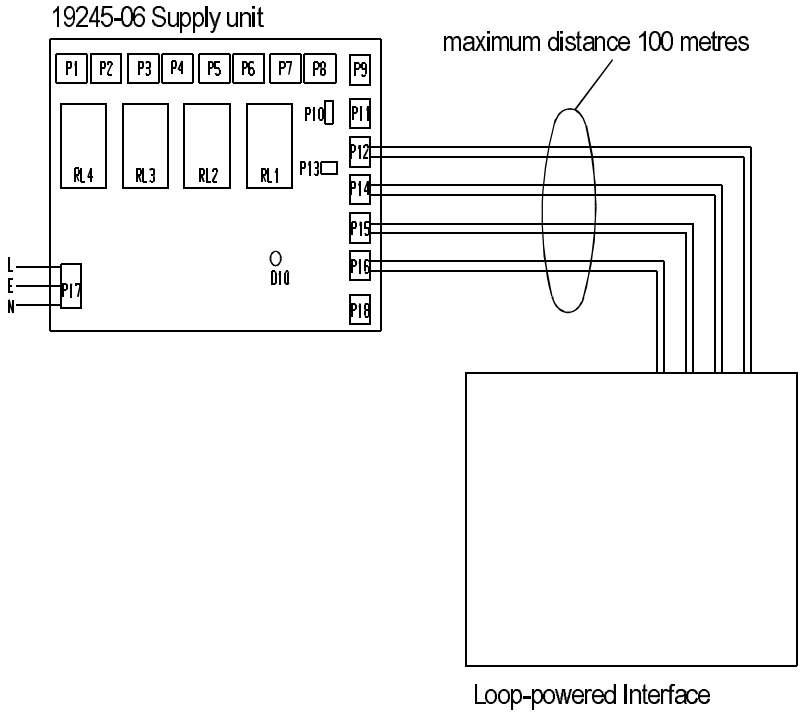


Figure 69-6 Connecting a supply unit to an interface

cd88

Notes on using keyswitches

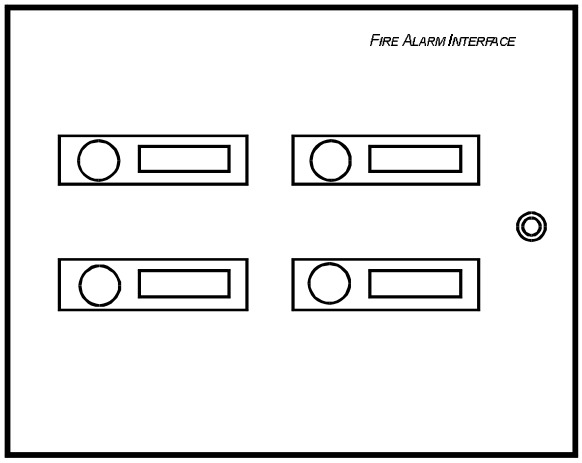


Figure 69-7 Keyswitch door

A 2-way switch is able to activate a single interface channel, ON and OFF.
A 3-way switch is able to activate either of 2 interface channels, either ON (one at a time), or both OFF.
cd3

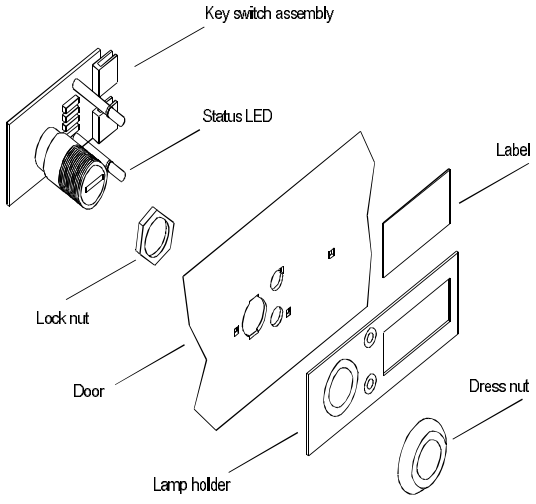


Figure 69-8 Keyswitch assembly

cd89

GENT Supervisor package

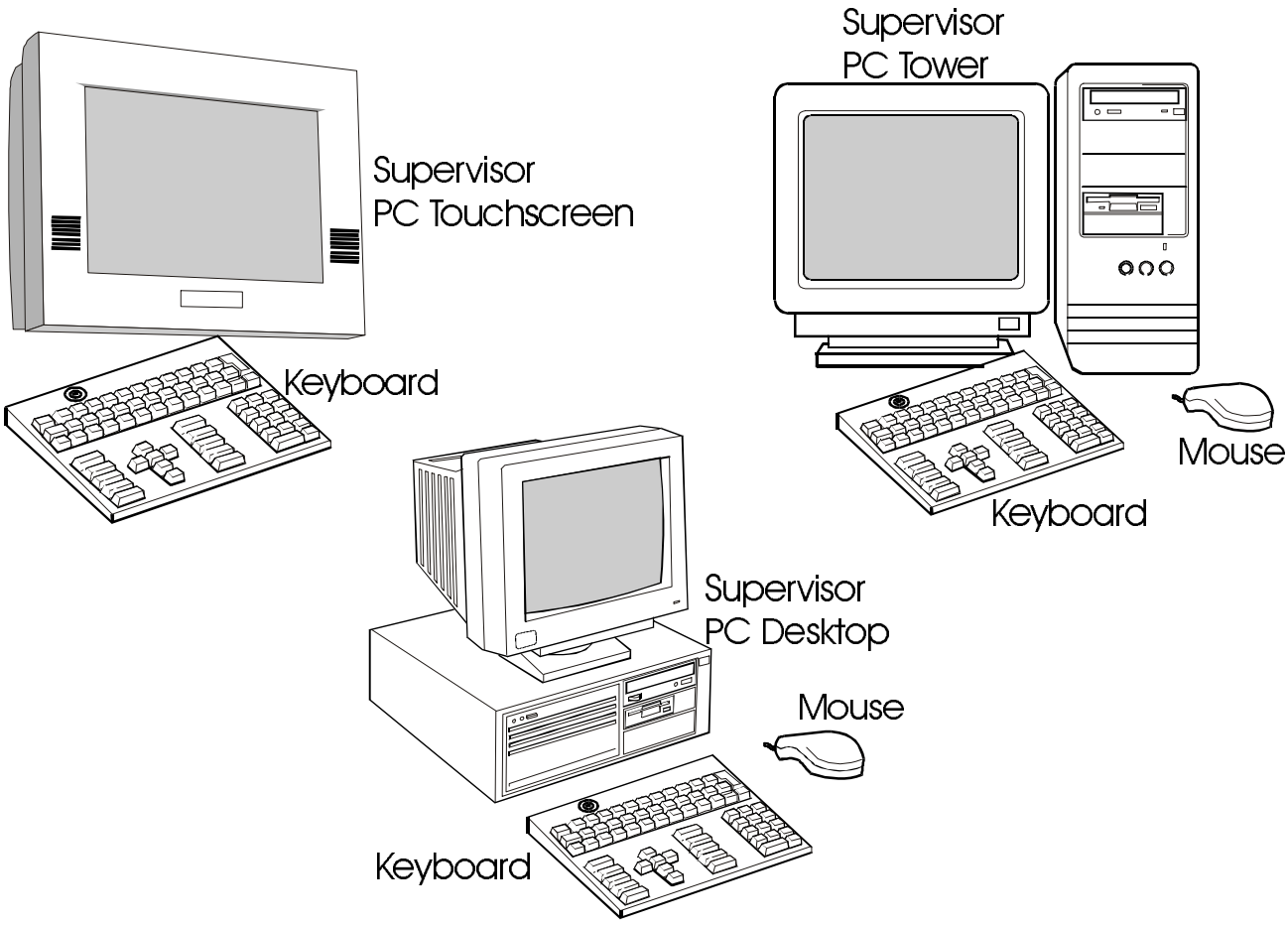


Figure 70-1 Gent Supervisor
cd8m_1

Specification

- Intel Pentium II Processor or better
- at least 200MHz speed
- at least 1GB Hard Disk Drive
- at least 64MB RAM
- 2 x serial ports
- 2 x parallel ports
- Separate PS/2 or Bus mouse (NOT a serial mouse)
- Real time clock

- ❑ 3.5" floppy disk drive
- ❑ CD ROM drive (min. 4 x Speed)
- ❑ SVGA 1280 x 1024 graphics
- ❑ 17" monitor with max. 0.28mm dot pitch capable of 1280 x 1024
- ❑ Windows NT 4 Workstation Software with service pack 4
- ❑ Soundblaster 16 compatible sound card with speakers
- ❑ On the NT Approved Platform list
- ❑ Optional internal Iomega Zip drive

> ***NOTE:*** *Machines such as those manufactured by Compaq are NOT to be used since the manufacturer-specific operating systems and BIOS programs cause severe installation, setup and maintenance problems.*

Wall mounted panel specification *(Touch screen)*

Display type TFT colour LCD

Diagonal size 13.8”

Resolution 1024 x 768

Ports 3 Serial, 1 Parallel

Dimensions 375mm (wide) x 285mm (high) x 93.3mm (deep)

Weight 5.2kg.

Special keyboard

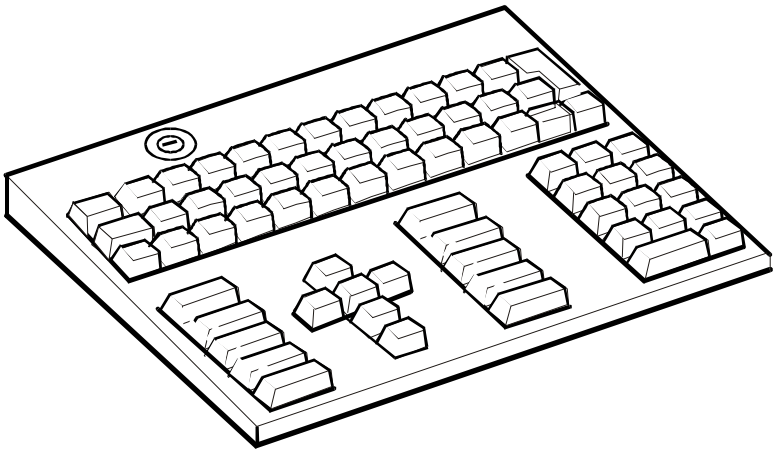


Figure 70-2 Special keyboard

Cd8n_30

Appendix A- Environmental considerations

Radio frequency interference

Vigilon range sensors have been built to withstand normal levels of radio frequency interference.

Sensors have been tested to with stand up to 10 volts per metre field strengths in the frequency range:

- 10 MHz to 1 GHz

Flame sensors Flame sensors are the most sensitive type of sensor because of the technique used to sense fire.

Cellular telephones Most cell phones operate at about 900 MHz and should not normally cause a problem with fire alarm sensors. Do not use a cell phone within 2 metres of a sensor, especially a flame detector.

Interference The Vigilon system utilises a digital data bus and therefore inherently creates a small amount of radio frequency interference. Sensitive electronic equipment, such as measuring equipment and radio receivers, should not be placed close to any part of the Vigilon system or its wiring.

EMC Systems should be designed within the guidance provided for EMC compliant systems. Refer to EMC Compliance section.

Infra-red radiation

Infra-red radiation can be generated by strong sunlight and high intensity lamps, such as tungsten or arc lights.

Infra-red radiation may adversely effect :

- flame detectors
- optical sensors
- beam sensors

Avoid positioning these sensors in strong infra-red light.

X-rays and Gamma rays

Generally, an environment accessible to humans under normal operating conditions will be suitable for Vigilon fire alarm equipment.

Areas that have higher levels of X-ray or gamma radiation may increase the failure rate of the subjected equipment. Very high levels of this radiation may cause a total malfunction.

Electro-magnetic interference

Refer to EMC Compliance section.

Electro-magnetic interference is generated by large current pulses and electrical sparks. Current pulses are often caused by plant control equipment such as thyristor controllers. Sparks are often generated by motors, generators and switch gear.

Normally Vigilon fire alarm equipment should be placed at least 2 metres from such sources of interference. High power circuits may present a greater problem.

Static discharge

Static discharges are commonly caused by lightning and man-made fibres.

Vigilon components are designed to withstand static discharges up to 8 kilovolts, see data sheets.

The best defence is a system with good earth bonding as described in the EMC Compliance section.

Temperature

Consider using environmentally protected products in this environment.

Do NOT use optical smoke or beam sensors in cold stores. Condensing air, created when external doors are opened, may cause false alarms.

Vigilon sensors are designed to operate in the temperature range 0ºC to 50ºC (if heat sensing is used on a sensor, it can only operate up to 45ºC). Standard products are not designed to operate in a condensing atmosphere.

Cold stores

A cold store may be specified to operate at temperatures just above 0ºC but this will normally utilise a chiller discharging air at colder temperatures. Any sensor installed in such an environment may experience temperatures well below 0ºC.

Beware of ceiling and other areas around cold stores, temperatures may fall below 0ºC.

Humidity

Vigilon sensors have been designed to operate in the following humidity ranges:

- ❑ 0 - 90% relative humidity, non-condensing, 0 to 45ºC

Exception:

- Environmentally protected (EP) devices
  0 - 95% relative humidity, non-condensing, 0 to 50ºC

source The most common source of high humidity in uncontrolled environments are:

- ❑ bathrooms, showers and saunas
- ❑ sports changing rooms

Ingress of water (and dust)

Environmentally protected Environmentally protected versions of Vigilon sensors provide the following degree of protection:

Sensor	**IP rating** (estimated)
Environmentally protected (EP) sensors	IP55

Non-protected Non-environmentally protected Vigilon sensors provide the following degree of protection:

Sensors	**IP rating (estimated)**
Optical-Heat (sounder) and ionisation sensors mounted on a flat ceiling mounted off the ceiling, ie on a BESA box	 IP30 IP20
Heat sensor and Heat Sounder	IP20
Duct sensor (only if correctly fitted to duct)	IP55
Beam sensor#	IP55
Manual call point with water resistant gasket	IP40 IP44

NOTE: *Some applications have processes that can create problems with respect to water ingress. Examples include laboratories and abattoirs which are hosed-down with water. In these instances water resistant gaskets are unlikely to provide adequate protection.*

Beam sensors should not be used in areas which are likely to be hosed down as it is likely that they would go into fire or fault and also be knocked out of alignment.

Fast moving air

Vigilon sensors are designed to operate in air speeds up to:

- ❑ 5 metres/second continuous
- ❑ 10 metres/second gusting

exception

- ❑ Ionisation sensor
  - 2 metres/second continuous
  - 5 metres/second gusting for periods up to 30 minutes)

Where wind is present, the positioning of sensors should be such that smoke is not blown away from the sensor or sensing beam. The diluting effects of high airflows should also be considered.

Vibration

The Vigilon sensors are designed to tolerate vibration at frequencies of between 5 and 60 Hz.

Very strong vibration may cause sensors to become detached from the terminal plate or otherwise come apart. Avoid subjecting sensors to vibration caused by process equipment.

Corrosion

Strong acid or alkaline environments will cause sensors to corrode. This will reduce the time between failures.

Appendix B - Hazardous areas

Classification & Equipment

Hazardous areas arise from a combination of gas, vapour or dust and the presence of a potential source of ignition, typically electrical equipment.

Many industrial sites are now designated as hazardous areas. Areas are classified by 'zones 0, 1, 2 or safe'. The classification is determined by the user (normally in conjunction with specialists and the factory inspectorate), and refers to the length of time for which the risk is present.

There are two types of fire alarm equipment that can be used in hazardous areas:

Area 'zone' classification	type of equipment
zone 0 (risk permanently present)	Certified intrinsically safe
zone 1 (risk present between 10 and 1000 hours per year)	Certified intrinsically safe or Certified Flameproof (dependant on enclosure classification)
zone 2 (risk present less than 10 hours per year)	Certified intrinsically safe or Certified Flameproof (dependant on enclosure classification)

Zone classifications Y and Z refer to risks from dust.

Vigilon systems

> ***WARNING**: Vigilon devices **must not** be installed in hazardous areas*

Hazardous areas are protected using conventional certified detectors and sounders. These should be interfaced via the correct isolating equipment to the Vigilon system using a VIG-INT-MAINS mains-powered interface.

> ***NOTE**: Design information for intrinsically safe and flameproof systems is provided separately.*

The mains-powered interface will connect to detector and sounder circuits via galvanic isolators and IS alarm drivers as required (flameproof sounders can be connected directly to the interface without an alarm driver: check approvals for positioning of end-of-line device).

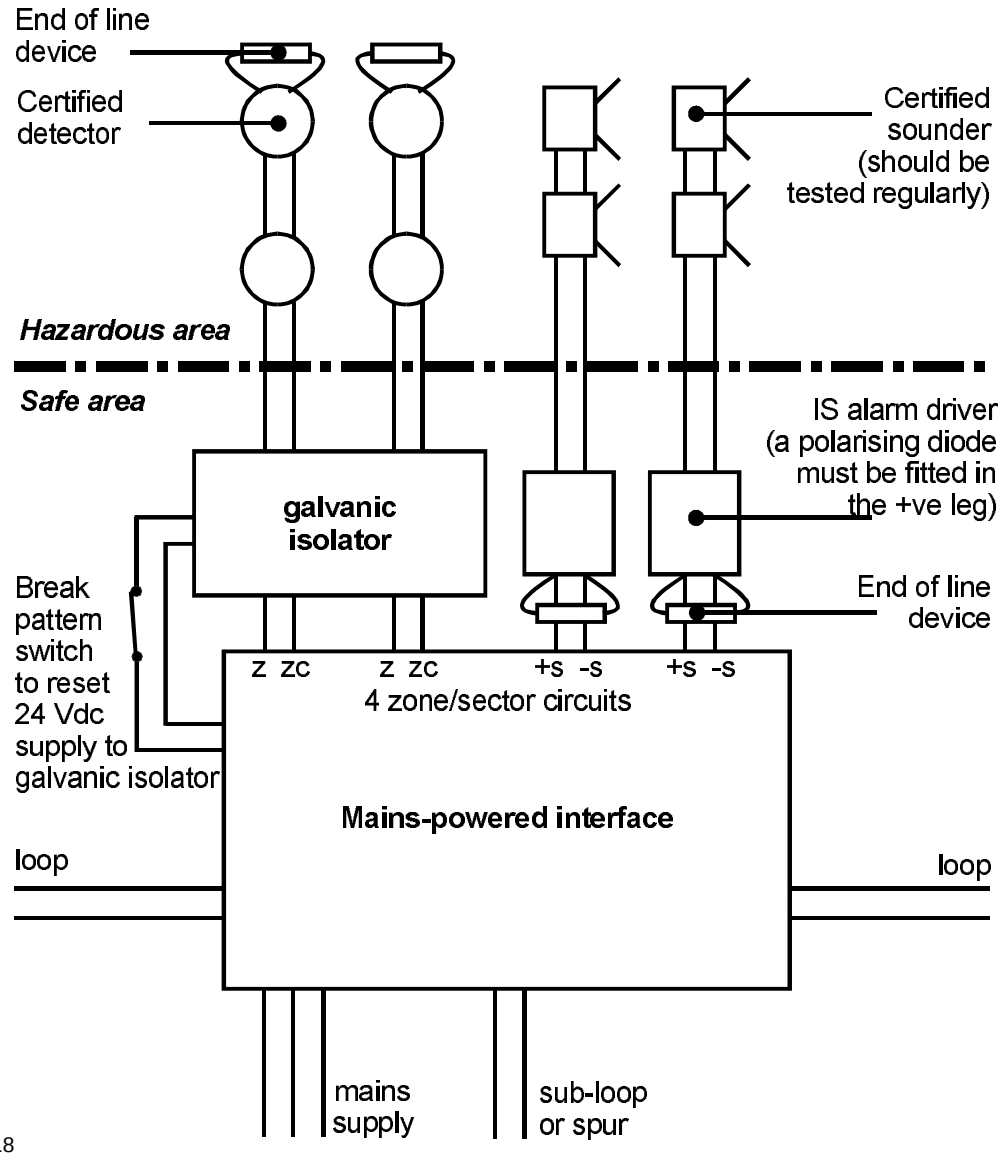


Figure B-1 Interface of hazardous area equipment

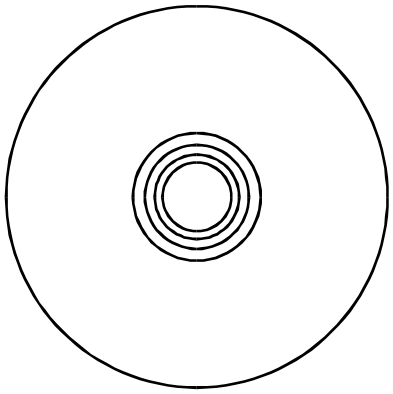
***NOTE**: Sounder circuits cannot be monitored through the alarm driver and should therefore be tested regularly*

***NOTE:** All devices on one circuit must originate from the same manufacturer and carry the same BASEEFA certification number.*

Appendix C -07012-31 Flame Detector

CAUTION: *This is not a loop wired device.*

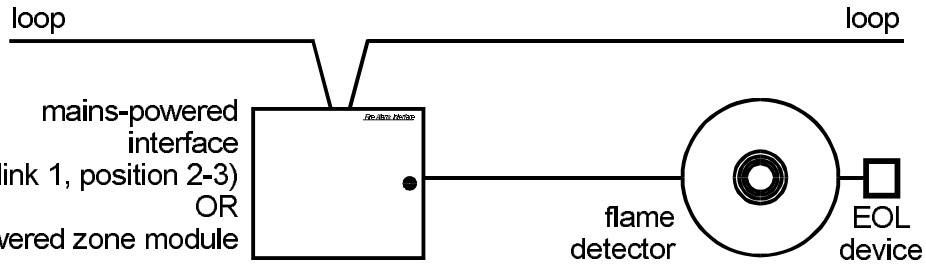
Figure C-1 Flame detector



cd131

The flame detector senses infra-red radiation emitted from flames and ensures rapid response to carbon-based, free burning fires. It is ideally suited to buildings with high ceilings such as churches, shopping malls and sports halls.

Figure C-2 Wiring a flame detector



cd132

NOTE: *The detector is mounted on a special base intended for use in hazardous areas (model no 07700-21). The base is not included with detector.*

Specification

Standard	EN54: Part 10 (draft)
Dimensions	diameter 108mm height 75mm
Weight	275g with base
Operating temperature	0 to 60°C
Relative humidity (non condensing)	95% RH (non-condensing)
Colour	White
Indicators	Red LED

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Appendix D

VIG-SEN-OH-ML Optical Heat Sensor (Chinese market only)

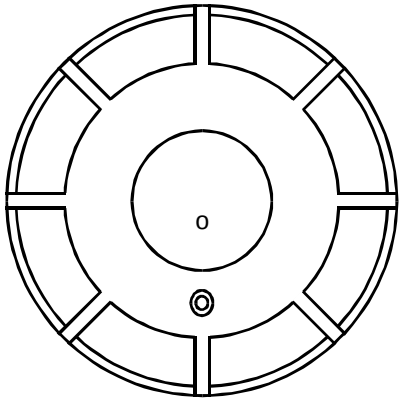

Figure D-1
VIG-SEN-OH-ML
Optical heat sensor

cd12

This combination sensor provides a truly general purpose sensor. As well as operating as 2 stand-alone sensors, it will also react to the presence of smoke and heat at the same time.

> ***NOTE:*** *This device must NOT be used on systems which are designed to BS5839*

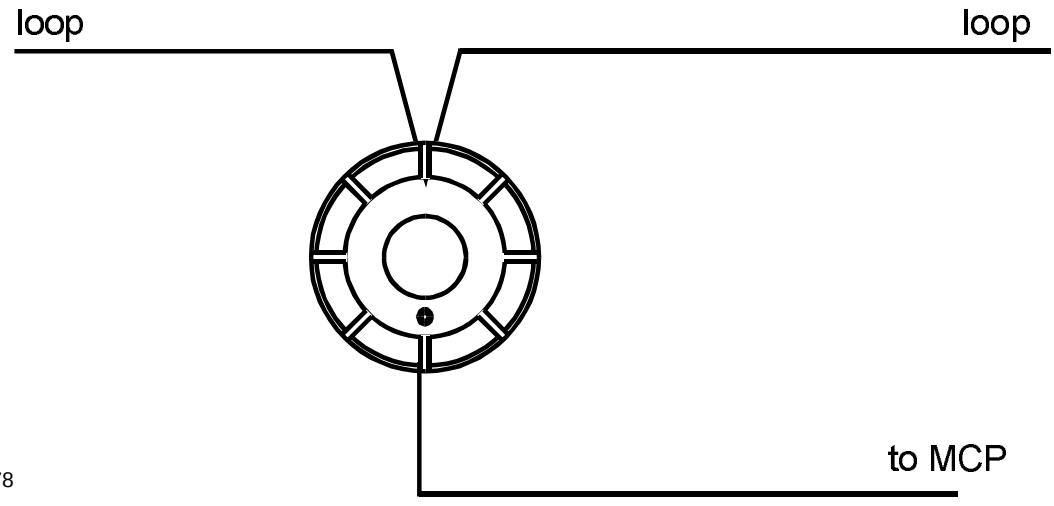

Figure D-2 Wiring
the VIG-SEN-OH-ML
Optical heat sensor

cdn278

Specification

Standard Heat Smoke	 BS5445:Part 5 (EN54 : Part 5) BS5445:Part 7 (EN54 : Part 7
Dimensions	diameter 86 mm height 60 mm (with terminal plate)
Full Assembly weight	580g with terminal plate
Storage temperature	-30 to 70ºC
Operating temperature	0 to 50°C (If heat is used then 0 to 45°C)

Relative Humidity (Non condensing) Temperature 5 - 45°C	up to 90%
Emission	BS EN50081-1:1992 Part 1 Residential, Commercial & Light Industry **Class B limits**
Immunity	BS EN50130-4: 1995: Part 4 Alarm systems: *Electromagnetic compatibility* Product family standard: *Immunity requirements for components of fire, intruder and social alarm systems*
Ingress Protection	IP30 estimated (mounted on a flat ceiling) IP20 estimated (mounted on a BESA box)
Air flow in installed environment	10m/s gusting for up to 30 minutes 5m/s continuous
Vibration	5 to 60Hz
Colour	White
Operating voltage	20-50V
Indicators	Red LED visible at 500LUX ambient light levels 3m
Mounting	Surface or Semi-flush, using mounting kit *(model no 19279-01)*
Chamber format	Sensing chamber is removable
Loop	Maximum number per loop = 200 Load (1000 max) = 1

Sensitivity

State 0 LPC approved	Medium sensitivity (Default) Suitable for most applications. Heat - grade 2 heat, Smoke - normal sensitivity.
State 1	High sensitivity optical or grade 2 heat Used in areas or situations where airborne smoke or dust is unlikely to occur and therefore a more sensitive detection is available
State 5	Medium sensitivity optical only Where high ambient temperatures of greater than 40°C are expected in the detection area. Smoke Detection only.
State 8 LPC approved	Medium sensitivity optical with time delay (20s time constant) or grade 2 heat. This state is useful in hotel bedrooms where low levels of signal could occur for short durations. If smoke and heat occur simultaneously the time delay is effectively overridden to provide fast detection.
State 10	Medium sensitivity optical with time delay (20s time constant) or grade 2 heat. Similar performance to state 8 without the time delay overridden. Useful in hotel bedrooms, and loading bays where low levels of signal may occur.
State 11	Low sensitivity optical or grade 3 heat If smoke detection is desirable in areas where airborne particles or smoke are normally present, or high temperatures (up to 40°C) can be normally attained.
State 12 **State 13** **State 14**	Grade 1 heat only - LPC approved Grade 2 heat only - **LPC approved** Grade 3 heat only No optical smoke detection. Can be used where airborne particles or smoke could occur briefly or at specific times. Optical detection can be used in conjunction with time blocks/slots to enable/disable depending on application
State 15	No detection, total disablement of sensor

Vigilon system parts

Introduction

This section lists parts used in the Vigilon system. For further details on the availability of the parts, contact GENT.

Control and indicating equipment

* - First fix products

Control Panels	VIG -1ST-FIX*	Control panel backbox + Battery box
	VIG1 -V3+	Control panel (V3+) c/w 1 loop card
	VIG1	Control panel c/w 1 loop card (EN54)
	VIG2 -V3+	Control panel (V3+) c/w 2 loop cards
	VIG2	Control panel c/w 2 loop cards (EN54)
	VIG3 -V3+	Control panel (V3+) c/w 3 loop cards
	VIG3	Control panel c/w 3 loop cards (EN54)
	VIG4 -V3+	Control panel (V3+) c/w 4 loop cards
	VIG4	Control panel c/w 4 loop cards (EN54)
	VIG1-NET -V3+	Control panel (V3+) c/w 1 loop card and Network card
	VIG1-NET	Control panel c/w 1 loop card and Network card (EN54)
	VIG2 -NET-V3+	Control panel (V3+) c/w 2 loop cards and Network card
	VIG2 -NET	Control panel c/w 2 loop cards and Network card (EN54)
	VIG3 -NET-V3+	Control panel (V3+) c/w 3 loop cards and Network card
	VIG3 -NET	Control panel c/w 3 loop cards and Network card (EN54)
	VIG4 -NET-V3+	Control panel (V3+) c/w 4 loop cards and Network card

	VIG4 -NET	Control panel c/w 4 loop cards and Network card (EN54)

> ***NOTE:*** *The Control Panel is supplied as two parts, ie VIG-1ST-FIX and VIGx-V3+ OR VIGx-NET_V3+ where x =1,2,3 or 4.*

Control panel software	VIG-SOFT-COIN	Coincidence detection
	VIG-SOFT-INFO	Site wide fire information
Control panel accessories	VIG-FLUSH	Control panel flush surround
	VIG-RACK	Control panel 19" Rack mounting bracket
	VIG-WR-CASE	Control panel weather resistant case
Network Node	VIG-NODE-V3+	Network node
	VIG-NODE	Network node (EN54)
Repeat panel	VIG-RPT-1ST-FIX	Repeat Panel Backbox
	VIG-RPT-V3+	Repeat panel (V3+)
	VIG-RPT	Repeat panel (EN54)

> ***NOTE:*** *The Repeat Panel is supplied as two parts, ie VIG-RPT-1ST-FIX and VIG-RPT.*

Mimic panels	VIG-MIM	Mimic panel c/w drawing
	VIG-ZONE	Zonal mimic panel
	VIG-MIM-A4	A4 Mimic Panel
	VIG-ZONE-A4	A4 Zonal Mimic Panel
Spares	VIG-BATT	Spare control panel battery box
	VIG-BATT-RPT	Spare repeat/mimic panel battery pack
	VIG-PAPER	Spare printer roll Mtp 401
Extra cards	VIG-LCC-V3+	Local controller card
	VIG-LCC	Local controller card (EN54)
	VIG-LCC-NODE	Local controller card for network node (EN54)
	VIG-LPC-V3+	Loop Card

	VIG-LPC	Loop Card (EN54)
	VIG-RAM	RAM Card
	VIG-NC-V3+	Network card
	VIG-NC	Network card (EN54)
	VIG-IOC-V3+	Input/Output card
	VIG-IOC	Input/Output card (EN54)
	VIG-IOC-UNI-V3+	Universal Communications Input/Output card
	VIG-IOC-UNI	Universal Communications Input/Output card (EN54)
	VIG-IOC-PRT-V3+	Remote printer input/output card
	VIG-IOC-PRT	Remote printer input/output card (EN54)

Sensors and Accessories

Sensors	VIG-SEN-OH	Optical heat sensor
	19271-01	Optical chamber
	VIG-SEN-OH-RL	Optical heat sensor with Remote LED connection
	VIG-REM-LED	Remote LED
	VIG-SEN-OH-ML	Optical heat sensor with MCP connection (Chinese market only)
	VIG-SEN-OHS	Optical heat sensor sounder
	19271-01	Optical chamber
	VIG-SEN-HS	Heat sounder
	19274-01	Heat sounder chamber
	VIG-SEN-H	Heat sensor
	19272-01	Heat chamber
	VIG-SEN-I	Ionisation sensor
	19273-01	Ionisation chamber
	VIG-SEN-H-EP	Environmentally protected Heat sensor

	VIG-BEAM	Beam sensor pair
	VIG-BEAM-ANG	Angle bracket with base
	VIG-BEAM-ANG-IP	IP65 Angle bracket with base
	VIG-BEAM-PAR	Parallel bracket with base
	07012-31	Conventional Flame detector
	VIG-SEN-DUCT	Duct sensor (inc 17908-05 Probes & VIG-SLV-LED Slave LED unit)
Tools	17918-22	Sensor chamber Extractor cup
	17918-23	Optical chamber electronics module removal tool
	17918-24 removal tool	Ionisation chamber electronics module
	17918-25	Heat sensor electronics module removal tool
	17918-26	Sensor removal tool kit
Terminal Plate	VIG-SEN-TERM	3-way terminal plate
	VIG-SEN-TERM-4	4-way terminal plate
	19279-01	Semi-flush sensor mounting kit
	07700-21	Base for Conventional flame detector
T Breaker and Slaves	VIG-T	T breaker Unit
	VIG-SLV-LED	Slave LED unit
	VIG-SLV-RLY	Slave Relay unit

Alarm sounders

	VIG-SND	Sounder
	VIG-SND-T	Sounder T-Breaker
	VIG-SND-T-EP	Environmentally protected Sounder T-Breaker
	VIG-SND-RPT	Repeat sounder (VIG-SEN-TERM required)

Manual call points (MCP) 2-way

	VIG-MCP	Surface mounted MCP
	VIG-MCP-KEY	Surface mounted keyswitch MCP
	VIG-MCP-CVR	Surface mounted MCP with cover
	VIG-MCP-WR	Surface mounted water resistant MCP
	19289-01	MCP flush fixing plate
	VIG-MCP-WR-CVR	Surface mounted water resistant MCP with cover
	VIG-MCP-EP	Environmentally protected surface mounted MCP
Spares	13480-09	Spare MCP glasses 10 pack for LPCB approved
	14112-09GR	Spare MCP glasses 10 pack non LPCB approved

Interfaces

Mains powered	VIG-INT-MAINS	Mains powered fire alarm interface
	19104-52	Power relay (for mains powered interface) (up to 4 maximum can be used - supplied with base and diode)
4- Channel Loop powered	VIG-INT-LOOP	Loop powered fire alarm interface
	19245-05	Interface line module -up to 4 can be fitted in a loop powered fire alarm interface
	VIG-INT-KEY	4 way keyswitch door for loop powered interface
1- Channel Loop powered	VIG-INT-ZONE	Loop powered zone module
	VIG-INT-1CH	Single Channel Interface (Loop Powered)
	19245-05	Interface line module
Rack	VIG-RACK-BOX	Rack interface back box
	VIG-RACK	Rack interface

	VIG-RACK-DOOR	Interface rack door
	VIG-RACK-TERM	4 way interface line module assembly
	VIG-RACK-PCB	Interface rack PCB 4-way
Keyswitches	19245-02	2 position keyswitch assembly (for use with optional interface doors)
	19245-03	3-position keyswitch assembly (for use with optional interface doors)
	13445-40	Interface card (loop powered) (up to 10 used in 13445-05 rack interface)
Power supply Unit	19245-06	Power supply unit with 1 relay (for use with loop powered interface unit)
	19245-07	Mains relay (up to 4 for use with 19245-06 unit)
Fix Extinguishant	VIG-INT-FE	Loop powered fixed extinguishant interface

Manuals & Accessories

VIG-MAN-INS	Vigilon Installation manual
VIG-MAN-OPS	Vigilon Operator Manual
VIG-MAN-OPS-V3+	Vigilon V3+ Operator Manual
13563-011	GENT Supervisor Operator Manual

GENT Supervisor

Hardware and Software packages	SUP-TEXT-INFO-DT	Supervisor Text Information only, Desktop
	SUP-TEXT-INFO-TW	Supervisor Text Information only, Tower
	SUP-TEXT-INFO-TS	Supervisor Text Information only, Touchscreen
	SUP-TEXT-FULL-DT	Supervisor Text Full access, Desktop
	SUP-TEXT-FULL-TW	Supervisor Text Full access, Tower
	SUP-TEXT-FULL-TS	Supervisor Text Full access, Touchscreen
	SUP-GRAPH-INFO-DT	Supervisor Graphics Information only, Desktop
	SUP-GRAPH-INFO-TW	Supervisor Graphics Information only, Tower
	SUP-GRAPH-INFO-TS	Supervisor Graphics Information only, Touchscreen

	SUP-GRAPH-FULL-DT	Supervisor Graphics Full access, Desktop
	SUP-GRAPH-FULL-TW	Supervisor Graphics Full access, Tower
	SUP-GRAPH-FULL-TS	Supervisor Graphics Full access, Touchscreen
Software only packages	SUP-TEXT-INFO	Supervisor Text Information only (Software only)
	SUP-TEXT-FULL	Supervisor Text Full access (Software only)
	SUP-GRAPH-INFO	Supervisor Graphics Information only (Software only)
	SUP-GRAPH-FULL	Supervisor Graphics Full access (Software only)
Supervisor Graphics pages	13563-G001	Supervisor graphics page
Supervisor ancillary items	13563-03	Supervisor text printer
	13563-04	Supervisor graphics printer
	13547-14	UPS Netpro 1500VA (70 min standby)
	13563-01	Supervisor modem pair
	13563-02	Supervisor convertor RS232/485

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