Installation instructions

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

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

Associated Documents
Operating instructions
Log book

Conventions

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

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

Abbreviations

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

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

Installation requirements

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

Second fix installation

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

Installation instructions

Cable type and routing

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

Fire sensor covers

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

Earth continuity

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

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

Some of the system products having metal enclosures have a zinc coating around the cable termination points, the coating provide a good electrical conductivity path for cable earth termination. The zinc coating on the metal enclosures should not be damaged. Any damage will expose bare metal, which can corrode and make a poor earth connection.

Mains supply

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

All mains powered equipment must be earthed.

As fitted drawings

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

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

Local Manual Call Point

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

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

**Optional functions with requirements of this European standard**

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

<table>
<thead>
<tr>
<th>Clause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.8</td>
<td>Output to fire alarm devices</td>
</tr>
<tr>
<td>7.11</td>
<td>Delays to action outputs</td>
</tr>
<tr>
<td>8.3</td>
<td>Fault signals from point</td>
</tr>
<tr>
<td>9.5</td>
<td>Disablement of each addressable point</td>
</tr>
<tr>
<td>10</td>
<td>Test condition</td>
</tr>
</tbody>
</table>

**System wiring**

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

**Cable separation**

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

**Lightning protection**

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

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

d) Standard fire-resisting cables should meet PH 30 classification when tested in accordance with EN50200 and maintain circuit integrity if exposed to the following test:
- a sample of the cable is simultaneously exposed to flame at a temperature of 830ºC - 0+40ºC and mechanical shock for 15min, followed by simultaneous exposure to water spray and mechanical shock for a further 15min.

e) Enhanced fire-resisting cables should meet the PH120 classification when tested in accordance with EN 50200 and maintain circuit integrity if exposed to the following test:
- a single sample of the cable is simultaneously exposed to flame at a temperature of 930ºC - 0+40ºC and mechanical shock for a period of 60min, followed by simultaneous exposure to water spray and mechanical shock for a further 60min."

Loop Cable usage

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

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

Loop cable

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

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

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

Mains Supply cable

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

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

#### Addressable System Devices
- **S-Quad**
  - Sensor Speech Sounder & Strobe
- **S-Cubed**
  - Voice enhanced Speech, Sounder, Strobe Unit
- **Manual Call Point**
- **T Breaker**
- **Beam sensor**
  - Transmitter and receiver
- **S4 - Input/Output**
  - loop powered interface
- **S4 1-Input**
  - loop powered interface
- **S4 1-Output + Confirmation**
  - input loop powered interface
- **S4 Mains switching output**
  - loop powered interface
- **S4 - Input/Output**
  - mains powered interface unit

#### Conventional Products off interface inputs
- **Magnetic door release**
- **Alarm sounder**
- **Conventional Fire Detector**
- **Manual Call Point**
- **End of Line Unit**

#### LED off S4 sensor
- **Remote LED**
It is important that redundancy is built into the system to accommodate future expansions.

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

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

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

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

<table>
<thead>
<tr>
<th>Device code number</th>
<th>Description</th>
<th>Load factor per device</th>
<th>Maximum devices per loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIG-RPT-72</td>
<td>Repeat panel (loop powered)</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>VIG-MIM-A3</td>
<td>A3 Zonal and Mimic Panel</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>S4-720</td>
<td>Heat Sensor</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4-780</td>
<td>Heat Sensor &amp; Sounder</td>
<td>7 - 13*</td>
<td>140 - 60*</td>
</tr>
<tr>
<td>S4-720-ST-VO</td>
<td>Heat Sensor, Speech &amp; Strobe</td>
<td>17 - 25*</td>
<td>60 - 40*</td>
</tr>
<tr>
<td>S4-710</td>
<td>Optical Heat Sensor</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4-770</td>
<td>Optical Heat Sensor &amp; Sounder</td>
<td>6 - 12*</td>
<td>150 - 60*</td>
</tr>
<tr>
<td>S4-711-VO</td>
<td>Dual Optical + Heat Sensor &amp; Speech</td>
<td>8 - 15*</td>
<td>120 - 65*</td>
</tr>
<tr>
<td>S4-711</td>
<td>Dual Optical Heat Sensor</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4-711-ST</td>
<td>Dual Optical Heat Sensor &amp; Strobe</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>S4-771</td>
<td>Dual Optical Heat Sensor &amp; Sounder</td>
<td>7-12*</td>
<td>150 - 15*</td>
</tr>
<tr>
<td>S4-711-ST-VO</td>
<td>Dual Optical Heat Sensor, Speech &amp; Strobe</td>
<td>16-24*</td>
<td>55 - 40*</td>
</tr>
<tr>
<td>S4-911</td>
<td>Dual Optical Heat Sensor &amp; CO</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4-911-ST-VO</td>
<td>Dual Optical Heat Sensor CO, Speech &amp; Strobe</td>
<td>16-24*</td>
<td>55 - 40*</td>
</tr>
<tr>
<td>34729</td>
<td>EP heat sensor</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4-34410</td>
<td>1 - LV Input interface (IZ - EZ)</td>
<td>1 - 24</td>
<td>24 - 32</td>
</tr>
<tr>
<td>S4-34450</td>
<td>4 - LV Input/Output interface (IZ - EZ)</td>
<td>5 - 28</td>
<td>28 - 32</td>
</tr>
<tr>
<td>S4-34420</td>
<td>1 - LV Output Interface IZ = Value Including Zone EZ = Value Excluding Zone</td>
<td>1</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td>Switch Input</td>
<td>1</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td>Relay Output</td>
<td>2</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td>Zone Input</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Every LED Output</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>S4-3441 or S4-34415</td>
<td>1 - MV Output Interface module</td>
<td>5</td>
<td>200</td>
</tr>
<tr>
<td>S4-34440</td>
<td>Mains powered interface</td>
<td>4</td>
<td>8~</td>
</tr>
<tr>
<td>S4-34418</td>
<td>Keyswitch interface</td>
<td>4</td>
<td>170</td>
</tr>
<tr>
<td>S4-34800</td>
<td>Manual call point</td>
<td>4</td>
<td>200</td>
</tr>
<tr>
<td>Device code number</td>
<td>Description</td>
<td>Load factor per device</td>
<td>Maximum devices per loop</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------</td>
<td>------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>S4-34760</td>
<td>Venturi-Air Duct Kit</td>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>S4-34740</td>
<td>Beam sensor pair</td>
<td>3 -per pair</td>
<td>16 (ie 8 pair)</td>
</tr>
<tr>
<td>34701</td>
<td>Tee breaker</td>
<td>0.4</td>
<td>127</td>
</tr>
<tr>
<td>S2IP-ST-XR</td>
<td>Strobe Red</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>S2IP-ST-XW</td>
<td>Strobe White</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td>S3-SN-X</td>
<td>Sounder (standard tone)</td>
<td>5</td>
<td>200</td>
</tr>
<tr>
<td>S3IP-SN-X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S2IP-SN-X/XX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3-VP-X</td>
<td>Sounder (standard tone) - with speech</td>
<td>5 - 17</td>
<td>200 - 55</td>
</tr>
<tr>
<td>S3IP-VP-X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3-VP-ST-XR</td>
<td>Sounder (standard tone) with red strobe</td>
<td>13 - 25</td>
<td>80 - 40</td>
</tr>
<tr>
<td>S3IP-VP-ST-XR</td>
<td>- Speech complex tone with red strobe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3-VP-ST-XW</td>
<td>Sounder/speech with white strobe</td>
<td>37</td>
<td>25</td>
</tr>
<tr>
<td>S3IP-VP-ST-XW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S3IP-SN-ST-XR</td>
<td>Sounder standard tone with red strobe</td>
<td>13</td>
<td>80</td>
</tr>
</tbody>
</table>

**Supported products**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>34415 or 34410</td>
<td>Single Channel Interface or Loop powered zone module</td>
<td>10</td>
</tr>
<tr>
<td>34450</td>
<td>Loop powered interface</td>
<td>4</td>
</tr>
</tbody>
</table>

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

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

* - These values are applicable when sounder is operating in turbo mode or with bell tone.
LV - Low voltage
MV - Medium voltage
Vigilon panels

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

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

Technical data

**Control panel**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Designed to EN54 Part 2:1997 + AMD 1:2006 (and include optional clauses 7.8, 7.10, 7.11, 8.3, 9.5 and 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval</td>
<td>LPCB approved</td>
</tr>
<tr>
<td>Panel dimensions in mm with outer door</td>
<td>height 543 x width 406 x depth 172</td>
</tr>
<tr>
<td>Panel weight</td>
<td>VIG1-24 10.2Kg approximately + 2 batteries 12V 21Ah battery - weight 6Kg each</td>
</tr>
<tr>
<td>Battery box#</td>
<td>VIG1-72 10.2Kg # with 4 batteries 7.2Kg # with 8 batteries 31.2Kg 55.2Kg</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-10 to 55°C</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-5 to 40°C</td>
</tr>
<tr>
<td>Relative Humidity (Non condensing) Temperature</td>
<td>up to 90%</td>
</tr>
<tr>
<td>Temperature</td>
<td>-5 to 40°C</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP30</td>
</tr>
<tr>
<td>Colour</td>
<td>Door: Grey (Pantone 422) Back box: Graphite Grey (RAL 7024)</td>
</tr>
</tbody>
</table>

**Network**

- Two types of network cards are available for secure network connection: Fibre Optics - 2Km maximum Copper (RS485) - 1.2Km maximum

**RS232 and RS485 connections**

- The panel will require an optional standard IO Card to facilitate RS232 for connections for domain bridging and remote printer. The maximum cable length allowed for RS232 is 15m.

The panel has an RS485 port to accept the Repeat Indicator panels. **The Commissioning tool can be connected to the panel via the USB port on the Master Control Card.**
<table>
<thead>
<tr>
<th>Devices per loop</th>
<th>A maximum of 200 addressable devices per loop circuit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device label</td>
<td>Each device can be given a 32 character label for identification. Each MCP is restricted to 28 character label.</td>
</tr>
</tbody>
</table>
| Plug in Card slots | MCC / LCC -P1  
Loop 1 - P3  
Loop 2 - P4  
Loop 3 - P5  
Loop 4 - P6  
Loop 5#, IOC or N/W-P7  
Loop 6#, IOC or N/W-P8 | Master Control card - supplied  
Input Output card / Network card | Loop card - supplied  
Loop card option  
Loop card option | Loop card#, Input Output card or Network card  
Loop card#, Input Output card or Network card | # - for VIG1-72 only |
| Clean contacts   | 1 set of voltage free change over contacts rated 1A @ 24Vdc, active with a fire event. |
| Master alarm circuits | 2 - (24 volts nominal)  
400 mA max per circuit  
MA1 - fuse 1A FS1  
MA2 - fuse 1A FS2  
(20 x 5mm) on Terminal card. |
| Auxiliary relays | Voltage-free contacts rated 1A @ 24Vdc  
2 sets of change over contacts configured to operate immediately with Fire event. The relay is normally de-energised.  
2 sets of change over contacts configured to operate immediately with Fault event. The relay is normally energised.  
The relays can be re-configured to operate with Fire, Fault or Disablement event, with a maximum delay of up to 10 minutes and can operate in a normally energised or de-energised state. |
| Internal sounder | To announce Fire and Fault events, plus give a key press confirmation beep. |
| Display          | Alpha-numeric display - 8 lines by 40 characters per line, back-lit, (Black characters on green background, liquid crystal display) |
| Menus            | [Control], [Setup], [Information] and [Test Engineering] menus accessed via Menu On/Off, F1, F2, F3 and F4 buttons. |
| Controls         | Next and Previous buttons operable during Fire condition only. (with door open)  
Access level 2a  
User having door key | Sound Alarms, Silence Alarms, Reset, Cancel Buzzer, Verify, F1-F4 keys, Menu On/Off key, QWERTY key board, U1-U4 keys available if configured to perform site specific actions by triggering of command builds 251, 252, 253 and 254. |
| Access level 2b  | User having an outer door key and customer password | Access as level 2a plus access to complete level 2 menu commands. |
| Access level 3   | Engineer having an outer door key and engineer password | Access as level 2b plus access to all level-3 menu commands. |
| Indicators       | Fire (red)  
32 - Zones (red) hidden until lit  
Power (green)  
Power Fault (amber)  
Delay (amber)  
Test (amber)  
Verify (amber)  
CB253 CB254 (amber)  
Fault (amber)  
Disablement (amber)  
System fault (amber)  
Sounder (amber) |
| Logs             | Active Logs: Fire, Fault and Disablement  
Historic log: All events  
Event logs: Fault, Disablement, Warning, Supervisory, Exceptions and Historic fires. |
| Printer          | The integral printer if fitted operates when the outer door is open. The ‘printer menu’ include: ON, OFF, Line feed and Test print controls.  
An optional remote printer can be connected to the panel. |
| Batteries and Battery Box | The batteries provide 24/72 hour standby supply plus power to alarm load for 30 minutes. The Battery Loop Loading calculator can be used to determine the load on the loop to achieve the standby power in the event of mains failure. The battery box is only used with the VIG1-72 panel and can be installed in a remote location up to 10m cable distance away from the control panel when using 1.5mm² MICC. When using 2.5mm² MICC then the cable then this distance can be increased to 15m. |
| Battery box dimensions in mm | height 437 x width 421 x depth 174 |
| Terminals        | Accept cable size of up to 2.5mm² |
| Battery box weight (including batteries) | 31.2Kg with 4 batteries  
55.2Kg with 8 batteries  
1 x 12V 21Ah battery weight is 6Kg |
Installation instructions

Battery VIG1-24
Batteries installed in the panel
2 x Powersonic 12V 21Ahr -
(supplied)
Model number PG12V21 B

VIG1-72
Batteries installed in a battery box
4 x Powersonic 12V 21Ahr -
(supplied).
Model number PG12V21 B
The battery box can optionally accommodate up to 8 x Powersonic 12V 21Ah

Temperature monitoring
Inside the VIG1-24 panel and in the battery box for VIG1-72 panel - for automatic adjustment of battery charge voltage with change in temperature.

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

Power supply
Standard
Designed to EN54 Part 4:1997 +
AMD 1:2002 and AMD 2:2006

Mains operating voltage
230V 50Hz +10% -6%
protected by a 3.15A (T) 250V
Ceramic (20 x 5mm) on PSU.
Input current - 1.4A

Nominal supply voltage
24V +1V, -4V

Battery circuit(s)
Terminals to connect to internally or externally housed batteries.
Batteries reach fully charged state in 72Hr for VIG1-24 and VIG1-72.

Battery current with mains disconnected
VIG1-24 - 4.5A max.
VIG1-72 - 6.2A max.

Light indications
To show the status of PSU

PSU Fuses
Mains 44V supply
FS6 T3.15A Ceramic
FS2 F3.15A Glass
Battery charge circuit 1
FS1 F10A Ceramic for VIG1-72 only
Battery charge circuit 2
FS7 F5A Ceramic for VIG1-24 only
FS3 F10A Ceramic for VIG1-72 only
All fuses 20mm x 5mm size

Storage temperature
-10 to +55°C

Operating temperature
-5 to 40°C

Relative Humidity
(Non condensing)
up to 90%
Temperature -5 to 40°C

Maximum current from battery without mains connected
5.8A

EN54 Part 4 data
VIG1-24
I min -> 780uA
I max a -> 108mA @ 43.5V
I max b -> 1.6A @ 43.5V and
2 x 0.5V @ 24V
Ri max -> 1.25R
UVLO -> 20.7V ± 0.4V

VIG1-72
I min -> 780uA
I max a -> 162mA @ 43.5V
I max b -> 2.4A @ 43.5V and
2 x 0.5V @ 24V
Ri max -> 1.25R
UVLO -> 20.7V ± 0.4V

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

Parts supplied in spares packs

<table>
<thead>
<tr>
<th>Part</th>
<th>Qty VIG1-24</th>
<th>Qty VIG1-72</th>
<th>Battery box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable tie</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ferrite core</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>22K 0.5W Resistor</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Battery lead</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spade tag</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link lead</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Battery lead fused</td>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Instructions

Hazardous voltages may still be present even if this indication is extinguished.
Each battery pair of 2 x 12V 21Ah is supplied with:

- 4 x bolts
- 4 x washers
- 4 x spring washers

### Back box installation

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

- **a.** Identify the package VIG1-24 / VIG1-72 and check that it contains all the parts.
- **b.** Remove the temporary cover from the Back box.
- **c.** Knock out/in the required cable entry points from the Control panel back box and from the Battery box.
- **d.** Use the fixing points provided to mount the Back box and Battery box to the wall using suitable fixings.
- **e.** Stick the adhesive backed foam pad supplied to cover gaps around the centre key-hole fixing point in the back box. This is done to seal any gaps to prevent ingress.
- **f.** Terminate each cable at the entry point leaving 400mm tail wire length and mark each core to identify its final connecting point.

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

**If the mains cable is not connected to the respective terminals then ensure the tail ends are insulated to guard against accidental switching ON of the mains supply.**
Semi-Flush fixing the control panel

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

a. Check the contents of the semi-flush surround package.

b. Cut out an aperture in the wall to allow the semi-flush surround to be fitted, see the diagram below for dimensions of the aperture in the wall.

c. Using the fixing holes on the semi-flush surround secure it into the aperture side walls.

d. Knock out the appropriate top or rear cable points on the control panel back box.

e. Route the cables through the cable entry points into the back box and at the same time insert the back box into the semi-flush surround.

f. Fit the back box to the semi-flush surround using the 5 - 5mm fixing-screws supplied in the spares pack.

Battery box for VIG1-72 panel

The connecting battery cables from the control panel to the battery box can be either 1.5mm² or 2.5mm². The battery box can be mounted beneath the control panel or in a remote location. The battery box can be up to 10m cable distance away using 1.5mm² cable or 15m cable distance using 2.5mm² cable.
19 inch Rack mounting frames

- 10 off holes for securing to 19" Rack
- 4 holes with threaded bushes for securing control panel
- 6 off holes for securing to 19" Rack
- 4 holes with threaded bushes for securing battery box

Wiring the battery box

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

Wiring options

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

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

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

Cable termination and markings

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

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

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

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

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

Wiring tests

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

Mains supply

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

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

All mains powered equipment must be earthed.

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

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

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

The mains cable PCB should be marked:

FIRE ALARM - DO NOT SWITCH OFF

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

Mains and battery supply connections

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

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

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

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

### Backplane

- NETWORK CARD IN SLOT P8
  - 0V1 /+VE1 /-VE1 /0V2 /N/C /+VE2 /-VE2 /N/C
  - LOOP CARD IN SLOT P8 (Loop 6)
    - L1 0V L2 0V
- IO CARD IN SLOT P8
  - A 5V B 0V CTS RX RTS TX
- PB1

- IO (RS232) CARD IN SLOT P7
  - N/C 0V CTS RX RTS TX
  - LOOP CARD IN SLOT P7 (Loop 5)
    - L1 0V L2 0V
- PB2

### Terminal Card

#### CARD 4
- LOOP 4
  - L1 0V L2 0V

#### CARD 3
- LOOP 3
  - L1 0V L2 0V

#### CARD 2
- LOOP 2
  - L1 0V L2 0V

#### CARD 1
- LOOP 1
  - L1 0V L2 0V

- MASTER ALARM
  - MA1+ MA1- MA2+ MA2-

- CLEAN C
  - NC C NO

- AUXILIARY RELAY 1
  - NC C NO NC C NO

- AUXILIARY RELAY 2
  - NC C NO NC C NO

- RS232 0V
  - 0V 0V 0V 0V

- PB1

#### Quick release terminals

- PB1

### PSU board (located behind the cardboard cover)

- L N

P2
Loop circuits

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

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

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

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

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

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

![Diagram of Master Alarms](image)

- Conventional alarm sounders
- MA1+ MA1- MA2+ MA2-
- Terminal card
- MA1 - FS2 1A
- MA2 - FS1 1A

**Clean contacts**

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

![Diagram of Clean Contacts](image)

- Change over contacts rated 1A @ 24Vdc, to control external equipment

**Auxiliary relay circuits**

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

![Diagram of Auxiliary Relays](image)

- Change over contacts rated 1A @ 24Vdc, to control external equipment
- Factory default:
  - Aux relay 1 is normally de-energised and operates with a fire event without delay.
  - Aux relay 2 is normally energised and de-energises with a fault event without delay.

Note: Aux relay 2 has been shown in the above diagram in its de-energised state, which is the state when there is no power to the panel.
RS232 / RS485 Communication

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

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

Connecting a Remote printer

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

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

IO, Network or Loop card option

If the IO card is installed in a spare slot on the backplane then use the corresponding terminals.

On completion of wiring installation

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

Customised Mimic

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

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

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

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

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

Zonal Mimic

Typical Mimic illuminations

Customised Mimic

<table>
<thead>
<tr>
<th>Typical Mimic illuminations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRE</strong></td>
</tr>
<tr>
<td><strong>0000</strong></td>
</tr>
<tr>
<td><strong>SMA</strong>L</td>
</tr>
</tbody>
</table>

**Flashing in phase or anti phase**

Technical Data

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

Vigilon EN54 System
Compatibility

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

<table>
<thead>
<tr>
<th>Control panel CARD</th>
<th>EN54 Control Panel software</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPC</td>
<td>≥ V4.19</td>
</tr>
<tr>
<td>Shorter Card ONLY</td>
<td></td>
</tr>
</tbody>
</table>

≥ means equal to or greater than

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

Installation

Fuses on Master Repeat Card

<table>
<thead>
<tr>
<th>Fuses</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS4</td>
<td>3.15A AB Ceramic 20mm x 5mm</td>
</tr>
<tr>
<td>FS2</td>
<td>3.15A AB Ceramic 20mm x 5mm</td>
</tr>
<tr>
<td>FS3</td>
<td>2AQB 20mm x 5mm</td>
</tr>
</tbody>
</table>

The Mimic Panel set consists of:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Backbox assembly</td>
<td>1</td>
</tr>
<tr>
<td>2 Inner door assembly</td>
<td>1</td>
</tr>
<tr>
<td>3 Outer cover assembly</td>
<td>1</td>
</tr>
<tr>
<td>4 Key for Outer cover</td>
<td>1</td>
</tr>
<tr>
<td>5 3.15A 20mm x 5mm AB Ceramic</td>
<td>2</td>
</tr>
<tr>
<td>6 2A 20mm x 5mm Quick Blow Fuse</td>
<td>1</td>
</tr>
<tr>
<td>7 Battery lead</td>
<td>1</td>
</tr>
<tr>
<td>8 Link lead</td>
<td>1</td>
</tr>
<tr>
<td>9 6V 7Ah Battery</td>
<td>2</td>
</tr>
</tbody>
</table>

Overlay pack for A3 Mimic panel
1 x pre-printed Zonal sheet
2 x blank A3 sheets for printing a Mimic or Zonal overlay
1 x LED spacing sheet
The overlays in the pack are high quality UV protected A3 paper.
A magnetic strip used to hold an overlay in place is fitted to the top side of the inner door.

Mounting the backbox

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

a. Locate the package Back box assembly 1.

Landscape orientation

b. Knock out the required cable entry points from the back box.

c. Mark out the 4-back box fixing positions on the wall to which the panel is to be mounted and secure it with suitable fixings.
d. Terminate the loop and mains cables at the entry points and if required connect the cables to the appropriate terminals.

e. All the other parts are installed during commissioning.

**External wiring**

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

- **How to fit the inner door assembly**

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

1. **Back box assembly**
2. **Hinge pin**
3. **Inner door assembly**
4. **Magnetic strip**
5. **Adjustable Hinge Plates**

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

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

How to fit the outer cover

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

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

For full information see leaflet supplied with the product.
Repeat Panel (loop connectable)

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

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

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

Compatibility

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

<table>
<thead>
<tr>
<th>Control panel CARD</th>
<th>Control Panel Software</th>
<th>Control Panel Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPC</td>
<td>EN54</td>
<td>BS5839</td>
</tr>
<tr>
<td>Shorter Card ONLY</td>
<td>≥ V4.19</td>
<td>≥ 3.90</td>
</tr>
</tbody>
</table>

≥ means equal to or greater than

Technical Data

Panel dimensions: height 403mm, width 338mm, depth 101mm

Weight: 9Kg with batteries (approximate)

Storage temperature: -10 to 55°C

Operating temperature: 0 to 45°C

Relative humidity (Non condensing): Up to 90% temperature 5 to 45°C

Battery: 12V 7Ah sealed lead acid

Mains operating voltage: 230V +10% -6% 50Hz

Emission: BS EN61000-6-3 : 2001

Immunity: BS EN50130-4 : 1996 : Part 4

LVD: BS EN 60950-2006

Ingress protection: IP31 (estimated)

Colour: Door - Pantone 422
Back box - Graphite Grey (RAL 7024)

Controls (with door closed): Next and Previous buttons operable during fire condition only.

Control buttons (with door open): Access level 1


EN panel only: Sounder, Sounder, Delay, Disablement Test and 32-Fire Zone LEDs.

BS panel only: Commission and Warning.

Display: 8 lines 40 characters per line, back-lit LCD.

Loop connection: 3-way connection to a loop circuit

EN54-17 data
Fire detection and fire alarm system short circuit isolators

Vmax: 42V
Vnom: 40V
Vmin: 24V
VsO max: 16V
VSO min: 8V
Ic max: 0.4A
Is max: 1A
L max: 20μA
Zc max: 0.1Ω
Installation

The Repeat Panel Set consists of:

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

Fuse on the Master Repeat Card

<table>
<thead>
<tr>
<th>Fuse</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>FS4</td>
<td>3.15A AS 20mm x 5mm</td>
</tr>
<tr>
<td>FS2</td>
<td>3.15A AS 20mm x 5mm</td>
</tr>
<tr>
<td>FS3</td>
<td>2A QB 20mm x 5mm</td>
</tr>
</tbody>
</table>

Back box mounting

- Find the Repeat panel Back box ① package and remove the temporary cover.
- Secure the back box to the wall with suitable fixings. If the backbox is to be semi-flushed then use the optional semi-flush surround.
- Terminate the cable at the entry point leaving 400mm tail wire length.
- Refit the temporary cover to protect the panel until all building work is complete.

Doors, Cables and Power up

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

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

- Wiring the panel:
  - connect the mains cable to terminal block P9 on the Master Repeat Card.
  - fit battery lead ⑥ supplied in the spares to connector P5 on Master Repeat Card.
  - connect the loop cables to terminal block P16 on the Master Repeat Card.
  - connect the 40 way ribbon cable ⑤ to the Master Repeat Card connector P2 and the other end to Display Key Card on the top right edge connector - P1.
  - connect the 20 way ribbon cable ④ to the Master Repeat Card connector P1 and the other end to Display Key Card on the top right edge connector - P6.

- Power-up is done during commissioning by the service organisation and it involves switching ON the mains supply and connection of battery leads. The Power up indications are:
  - all the LEDs on the panel are lit for a short duration and a power up message displayed.
  - the local buzzer sounds.
  - the display reads: Main panel is off Line
  - the Fault and System Fault LEDs are lit.
Vigilon EN54 system

27

Spur Connection mains electrical supply
Loop IN Loop OUT Repeat panel

2 3 Inner and outer doors not shown

4 0-way ribbon to DKC

40-way ribbon to DKC

20-way ribbon to DKC

Earth to Inner door

12V 7Ah battery

3.15A(T) mains fuse

P16 P9

3.15A(T) mains fuse

FS4 FS2

Loop COM Loop IN Loop OUT From Mains fused spur

DANGER

BT+ BT-

+RS485 0V 24V-

WRITE PROTECT

BUZZER

DISABLE

P8

DANGER DO NOT REMOVE

L N

P5 FS2

P4

P2 SW3

P1

RESET

WRITE PROTECT

P16 P9

P14 P17

P10 P15

P13 P12

P11 P18

P19 P20

USB

P7 P6

FS3 FS2

2A(QB)

RESET

DANGER

WARNING

DO NOT REMOVE

REMoval of the

cover exposes

live parts.

Spur Connection

mains electrical supply

Repeat panel

Master Repeat Card

Loop IN Loop OUT From Mains fused spur

3.15A(T) mains fuse

FS4 FS2

Battery Fuse

3.15A(T) Ceramic (Anti Surge)

Battery Fuse

3.15A(T) Ceramic (Anti Surge)

Spur Connection

mains electrical supply

Repeat panel

12V 7Ah battery
Repeat Indicator panel

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

Technical data

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

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

Cable

- Belden No. 9842 EIA RS485 Applications, O/A Beldfoil® Braid 1Km maximum cable distance from the control panel to the last repeat indicator panel must have following characteristics:
  - Two twisted pairs
  - 24AWG (7 strands x 32 AWG) conductors

Installation

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

If the number of repeat indicator panels connected exceeds one, the 24V supply at the panel can be used to power the repeat indicator panels. The last repeat indicator panel will need to have a power input from an external power supply.

e. Refit the front cover and flap.
S-Quad Sensors

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

General specification

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage</td>
<td>35V - 41V</td>
</tr>
<tr>
<td>Weight</td>
<td>110g</td>
</tr>
<tr>
<td></td>
<td>with base - 170g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>117mm diameter by 49.6mm height</td>
</tr>
<tr>
<td></td>
<td>With base the height increases to 63.8mm</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP30</td>
</tr>
<tr>
<td></td>
<td>IP20 when mounted on a metal back box</td>
</tr>
<tr>
<td>Enclosure</td>
<td>ABS</td>
</tr>
<tr>
<td>Colour</td>
<td>RAL 9010</td>
</tr>
<tr>
<td>Approval</td>
<td>LPCB approved</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20°C to 70°C (for S-Quad with CO -20°C to 50°C)</td>
</tr>
<tr>
<td>Ambient operating temperature</td>
<td>-10°C to 50°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>95% non condensing (5°C to 45°C)</td>
</tr>
<tr>
<td>Heat (H) Standard</td>
<td>EN54 : Part 5</td>
</tr>
<tr>
<td>Optical (O) Standard</td>
<td>EN54 : Part 7</td>
</tr>
<tr>
<td>Dual Optical (O²)</td>
<td>EN54 : Part 7</td>
</tr>
<tr>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Sounder (S) Standard</td>
<td>EN54 : Part 3</td>
</tr>
<tr>
<td>Gas (CO) Standard</td>
<td>LPS 1274</td>
</tr>
<tr>
<td>Multi sensor standard</td>
<td>CEA 4012</td>
</tr>
</tbody>
</table>

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

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

Base

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

Base Gasket

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

Base labels

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

Indicators

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

Dust Cover

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

Do's and Don't

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

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

DO NOT locate smoke or heat detectors:

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

DO NOT locate a CO detector:

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

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

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

### Metal back box

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

**STANDARD 60mm METAL BACK BOX**

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

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

### In - Out wiring to S-Quad bases

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

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

### Programmable input/output

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

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**WARNING:**

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

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

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

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

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

To remove a dust cover
A dust cover remover tool must be fitted to the main tool to extract the dust cover. Press the pad of the dust cover remover tool onto the dust cover, this creates an air tight grip, to allow the cover to be pulled off from the S-Quad.
S-Quad Semi-flush fixing kit (S4-FLUSH)

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

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

Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>164g with trim ring</td>
</tr>
<tr>
<td>Dimensions</td>
<td>174mm diameter by 50mm depth</td>
</tr>
<tr>
<td>Enclosure</td>
<td>ABS</td>
</tr>
<tr>
<td>Colour</td>
<td>RAL 9010</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20°C to 70°C</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10°C to 50°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>95% non condensing</td>
</tr>
<tr>
<td></td>
<td>(5 to 45°C)</td>
</tr>
</tbody>
</table>

Installation instructions

1. Cut a 140mm diameter hole in the ceiling tile. (If required use a Bi-Metal Holesaw 140mm or 146mm, from www.shop4tools.co.uk)
2. Insert the semi-flush shroud assembly into the hole in the ceiling tile.
3. Hold the semi-flush shroud to the ceiling tile and tighten the three screws to splay the clamps to secure the shroud to the tile.
4. Fit the metal box onto the back of the semi-flush shroud using the appropriate fixing screws to secure the box to the flush shroud.
5. Locate the S-Quad Base into the semi-flush shroud, such that the two locating pillars on the shroud feeds through the two elongated holes on the Base. Push the Base into the shroud until the Base click locks into the shroud.
6. Make the cable connections.
7. Offer the trim ring to the shroud and slowly rotate ring clockwise until it clicks and goes no further. This will lock the ring in position.
8. Offer the S-Quad to the Base and rotate the S-Quad clockwise until it moves upwards into Base, and then rotate the S-Quad again until it clicks and goes no further.

Do not over tighten the clamping screws as this will cause the clamps to cut into the ceiling tile.
Beam Sensor

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

Technical Data

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

**Do's and Dont's**

A general guidance on Do's and Don't's is illustrated here, however for full information on siting beam sensor pair refer to BS5839 Part 1.
**Test Keyswitch**

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

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

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

The wiring is monitored for open and short circuit failure.

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

**How to install an Angle bracket and fit a Beam sensor**

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

The Test Keyswitch connects to terminals EM2 and C3 in the base.

The numbers in brackets refer to alternative cable sleeve markings which may be used to denote wires.
How to pre-assemble the parallel bracket

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

Ensure the adjusters are set to provide an 8mm gap all around between the adjustable and fixed plates.

How to install a Parallel Bracket and fit a Beam sensor

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

Ensure the base is mounted to the bracket such that the Beam sensor LEDs can be seen from floor level.

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

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

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

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

Venturi tube

The Venturi tube are available in various lengths.

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>600</th>
<th>1500</th>
<th>2800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>0.2Kg</td>
<td>0.6Kg</td>
<td>1.2Kg</td>
</tr>
</tbody>
</table>

Technical data

**Sensor and base**

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

**Optical sensor (O)**

<table>
<thead>
<tr>
<th>Standard</th>
<th>EN54 : Part 7 : 2000</th>
</tr>
</thead>
</table>

**Technical data**

EN54-17 : 2005

<table>
<thead>
<tr>
<th>(section 4.8)</th>
<th>V_{max}</th>
<th>I_{C \ max}</th>
<th>0.4A</th>
</tr>
</thead>
<tbody>
<tr>
<td>V_{nom}</td>
<td>42V</td>
<td>I_{S \ max}</td>
<td>1A</td>
</tr>
<tr>
<td>V_{min}</td>
<td>24V</td>
<td>I_{L \ max}</td>
<td>20\muA</td>
</tr>
<tr>
<td>V_{SO \ max}</td>
<td>16V</td>
<td>Z_{C \ max}</td>
<td>0.1\Omega</td>
</tr>
<tr>
<td>V_{SO \ min}</td>
<td>8V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Housing**

Dimensions (W x H x D) in mm

<table>
<thead>
<tr>
<th>180 x 235 x 183</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 mm² max.</td>
</tr>
<tr>
<td>1 m/s to 20 m/s</td>
</tr>
<tr>
<td>Approx. 800g (without sensor and base)</td>
</tr>
<tr>
<td>-15 °C to +65 °C</td>
</tr>
<tr>
<td>-10 °C to +60 °C</td>
</tr>
<tr>
<td>ABS plastic</td>
</tr>
<tr>
<td>grey (with transparent cover)</td>
</tr>
<tr>
<td>BS EN50130-4: 1996: Part 4 Alarm systems</td>
</tr>
<tr>
<td>IP54</td>
</tr>
<tr>
<td>White</td>
</tr>
</tbody>
</table>

For full instructions see the leaflet supplied with the product.
S³ Speech, Sounder Strobe mark II

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

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

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

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

Speech messages

<table>
<thead>
<tr>
<th>Message No</th>
<th>Speech message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Message 2</td>
<td>Attention please this is an emergency please leave the building by the nearest available exit. (female voice).</td>
</tr>
<tr>
<td>Message 3</td>
<td>An incident has been reported in this building please await further instructions. (female voice).</td>
</tr>
<tr>
<td>Message 4</td>
<td>This is a test message no action is required. (female voice).</td>
</tr>
<tr>
<td>Message 5</td>
<td>This is a fire alarm! Please leave the building immediately by the nearest available exit. (male voice).</td>
</tr>
</tbody>
</table>

Tone No. | Description of tone |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Message 1</td>
<td>Alarm Bell (equivalent to 8” Solenoid Bell) 106dBA @ 1m.</td>
</tr>
</tbody>
</table>

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

Technical data

<table>
<thead>
<tr>
<th>Sound output for standard tone (levels given are typical values with measurement taken at 90° anechoic - fast response)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low profile S³ - 100dBA +/-3dBA</td>
</tr>
<tr>
<td>System S³ - 103dBA +/-3dBA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard (sounder only)</th>
<th>EN54 : Part 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Messages, Tones and Strobe flash rate</td>
<td>see instructions supplied with the product</td>
</tr>
<tr>
<td>Strobe light output with red lens</td>
<td>equivalent to 3W Xenon flasher</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>range 35V to 41V</td>
</tr>
<tr>
<td>Terminal size</td>
<td>2.5mm² maximum</td>
</tr>
<tr>
<td>IP rating with deep base</td>
<td>IP55C</td>
</tr>
<tr>
<td>with shallow base</td>
<td>IP31C</td>
</tr>
<tr>
<td>Enclosure colour</td>
<td>White and Red (with red translucent lens cover fitted to unit with Strobe).</td>
</tr>
<tr>
<td>Enclosure material</td>
<td>Flame retardant ABS (Strobe cover is polycarbonate) The plastic enclosures meet the flammability requirements of ISO 1210:1992 Class FH-2.</td>
</tr>
<tr>
<td>Weight</td>
<td>0.3Kg (approximate).</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10°C to 50°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20°C to 70°C</td>
</tr>
<tr>
<td>Relative humidity (non condensing)</td>
<td>up to 90%</td>
</tr>
<tr>
<td>IR operating distance (to select volume level)</td>
<td>3m</td>
</tr>
<tr>
<td>Message and attention Tone period</td>
<td>10 seconds default Configurable up to 60seconds</td>
</tr>
</tbody>
</table>
**Installation**

a. Drill or knockout the required cable entry points on the base.

b. If using the deep base option and IP55C protection is required, then stick the circular **wall gasket** on to the centre back of the base.

c. Secure the base to the wall whilst ensuring Top of the base is in correct orientation. Connector used to program the device (Programmable base required)

d. Terminate the cable at the entry point leaving no more than 10cm (4") tail wire length for connection.

e. Ensure the transparent cover is in place over the PCB. Connect the wires to the terminal block.

f. Close the main assembly to the base.

---

**Retrofitting a System S³ device**

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

---

**S³ device (3-way)**

- **Loop OUT**
- **Loop IN**
- **COMMON LINE**
- **Spur**

---

**Shallow base**

25mm depth

- **Cable entry 1 - Back**
- **50** Thinned section for IR receiver

**Deep base**

40mm depth

- **Wall Gasket**
- **35** Thinned section for IR receiver
- **Base Gasket**
- **Earth continuity Strap**

---

**Diagram**

- **Main assembly**
- **Adhesive spot used to secure the transparent cover**
- **PCB**
- **Label**
- **Infrared receiver**
- **# Locating pegs for the transparent cover**
- **Thinned section for IR receiver**

---

**Diagram**

- **Base**
- **Gasket**
- **Wall Gasket**
- **Cable entry 2 - Top**
- **1 - Bottom**
- **1 - Back**
Environmentally protected Heat Sensor

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

a. Remove the front cover of the unit disconnecting any flying leads attached to the terminal block.

b. Place the unit in the desired position and mark the four fixing holes. When the product is mounted ensure the pre-machined cable entries are at the bottom.

c. Drill the four fixing holes and mount the unit.

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

d. Feed the cables into the unit. Ensure that the sealing washer supplied is fitted between the cable gland and the unit (rubber part of the washer against the unit). Use the earth continuity straps provided to maintain loop cable earth continuity.

e. Connect the earth tails into the earth termination point.

f. Terminate the cable at the entry point and connect ends into the appropriate terminals on the sealed printed circuit board module, see connection diagram.

![Warning]
Failure to promptly replace the cover will result in environmental damage.

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

![Warning]
Forcing the cover to fit the wrong way round will damage the unit.

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

General data

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

![Diagram]
Manual Call Points

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

Glass or Resettable element options

Glass
- Normal: Green LED for status and find device application
- Active: Red LED and Yellow tab for active or Fire indication

Resettable element
- Normal: Green LED for status and find device application
- Active: Red LED and Yellow tab for active or Fire indication

Technical data

- Dimensions: height 88 mm x width 88 mm depth 21 mm or 57 mm when surface mounted
- Full assembly weight: 110g - approximate
- Storage temperature: -30 to 70°C
- Operating temperature: -25 to 70°C
- Relative Humidity: up to 95%
- Emission: BS EN61000-6-3:2001 Residential, Commercial & Light Industry Class B limits
- Ingress Protection: IP43 estimated standard type IP55 estimated with protective cover and back box
- Colour: Red (similar to RAL3020)
- Case: ABS engineering plastic
- Indicators
  - Normal: Green LED for status and find device application
  - Active: Red LED and Yellow tab for active or Fire indication
- Testing: The operation of the MCP is tested by using a test key
- Terminals: 2.5mm² maximum
- Approval: LPCB Approved: S4-34842 and S4-34800
- Operating voltage: 35V to 41V

Installation

a. Check the contents of the package:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call point assembly</td>
<td>1</td>
</tr>
<tr>
<td>Earth Strap</td>
<td>1</td>
</tr>
<tr>
<td>Test Key</td>
<td>1</td>
</tr>
<tr>
<td>Long Screw</td>
<td>2</td>
</tr>
</tbody>
</table>

b. The call point assembly may be mounted on a standard electrical box or on the optional red back box S4-34895.

c. Feed the fire rated cables through the entry holes and mount an electrical box or the red optional back box to an even wall surface using suitable fixing.

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

When semi flush fixing the call point assembly a standard electrical box must first be flushed into the wall before the call point assembly is fitted.
d. Terminate each cable entry at the back box. Use the earth strap or the earth point in the back box to maintain loop cable earth continuity. Connect the loop cable to the terminals.

e. Disengage front cover from the call point assembly using the end of the test key ‘E’ and lift out the cover from the bottom edge.

f. Secure the call point assembly to the back box using the 2 long screws supplied.

g. To re-assemble the glass or resettable element, using the test key turn the tab to position ‘F’ and insert the glass ‘A’ or optional resettable element ‘B’.

h. Hook the front cover onto the top edge of the call point assembly and then push the bottom edge down until it click shut. Check both hooks on the top of the front cover are locked onto the call point assembly.

i. Turn the test key anticlockwise to position ‘G’ (not visible) such that the glass or optional resettable element is held under the yellow arm.

j. Where applicable, ensure the protective cover ‘H’ is securely fitted to the call point assembly.
The keyswitch units covered in this leaflet are suitable for installation in GENT analogue addressable fire alarm system. The product range covered here include:

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

**Keyswitch assembly**

**Back box**

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

**Technical data**

- **Standard**
  - EN54: Part 17
  - EN54: Part 18

- **Dimensions**
  - height 88 mm x width 88 mm
  - depth 32mm or 66mm when surface mounted

- **Full assembly weight**
  - 128g - without backbox
  - 192g - with backbox

- **Storage temperature**
  - -30 to 70°C

- **Operating temperature**
  - -25 to 70°C

- **Relative Humidity**
  - (Non condensing)
  - Temperature 25 - 55°C

  - up to 95%

- **Emission**
  - BS EN61000-6-3:2001 Residential, Commercial & Light Industry
  - **Class B limits**

- **Immunity**
  - BS EN50130-4: Part 4 :1996

- **Ingress Protection**
  - IP43 estimated standard type

- **Colour**
  - Red (similar to RAL3020)
  - Blue (similar to RAL5015)

- **Case**
  - ABS engineering plastic

- **Indicators**
  - Normal
    - Green LED for status and find device application
  - Active
    - Red LED for active or Fire indication

- **Terminals**
  - 2.5mm² maximum

- **Operating voltage**
  - 35V to 41V

**EN54-17 data**

- \( V_{\text{max}} \) 42V
- \( V_{\text{nom}} \) 40V
- \( V_{\text{min}} \) 24V
- \( V_{\text{SO max}} \) 16V
- \( V_{\text{SO min}} \) 8V
- \( I_{C \text{ max}} \) 0.4A
- \( I_{S \text{ max}} \) 1A
- \( I_{L \text{ max}} \) 20μA
- \( Z_{C \text{ max}} \) 0.1Ω
Installation

a) Check the contents of the package:

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyswitch Interface assembly (red / blue)</td>
<td>1</td>
</tr>
<tr>
<td>Earth Strap</td>
<td>1</td>
</tr>
<tr>
<td>Operating Key</td>
<td>2</td>
</tr>
<tr>
<td>Opening Key</td>
<td>1</td>
</tr>
<tr>
<td>Long Screw</td>
<td>2</td>
</tr>
<tr>
<td>Instruction leaflet</td>
<td>1</td>
</tr>
<tr>
<td>Blue Back box supplied with Blue keyswitch interface assembly</td>
<td>1</td>
</tr>
</tbody>
</table>

b) The keyswitch assembly may be mounted on a standard electrical box or on the backbox.

c) Feed the fire rated cables through the entry holes and mount an electrical box or the red/blue back box to an even wall surface using suitable fixing.

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

d) Terminate each cable entry at the back box. Use the earth strap or the earth point in the back box to maintain loop cable earth continuity. Connect the loop cable to the terminals.

e) Disengage front cover from the keyswitch assembly using the end of the opening key 'E' and lift out the cover from the bottom edge.

f) Secure the keyswitch assembly to the back box using the 2 long screws supplied.

g) Hook the front cover onto the top edge of the keyswitch unit and then push the bottom edge down until it click shut. Check both hooks on the top of the front cover are locked onto the keyswitch assembly.

Operation

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

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

Label

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

It is suggested that an A4 sheet white paper label 32 x 12mm is used, such as the one from RS, part number RS495 385. The required text can be printed onto the label. The label is stuck centrally inside the aperture behind the transparent cover. Ensure LEDs remain visible and are not covered by the label.
These instructions cover the above interface modules and accessories. The S4 interface modules are designed for use with any Vigilon fire alarm control panel. Each module includes a loop isolator for device isolation. Each module uses one of 200 available device addresses on a loop and responds to regular polls from the control panel reporting the type of device and the status (open/normal/short) of its supervised input circuit(s).

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

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

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

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

S4 1-Input module connection details

- Zone Input Mode
- EOL
- Capacitor unit

S4 1-Output & 1-input module connection details

- Confirmation Input (Optional)
- Output - Relay contact rating 1A 30V ac/dc Resistive load
- EOL 10K

S4 4-Input/Output module connection details

- LED Output
- Relay Outputs
- Switch Input
- NC / NO

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

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

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

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

# Can be configured as LED output

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

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

<table>
<thead>
<tr>
<th>S4-34410</th>
<th>S4-34450</th>
<th>S4-34420</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4 1- Input</td>
<td>S4 4-Input /Output</td>
<td>S4 1-Output &amp; 1-Input</td>
</tr>
</tbody>
</table>

#### Approval

EN54-17:2005 and EN54-18:2005 (Approved)

#### Weight-dimen.

module in plastic box | 92g | 100g | 100g |
module in metal box   | 1047g | 1055g | 1055g |
|                      | 782g | 790g | 790g |

#### Storage temperature

-30°C to 70°C

#### Operating temperature

-10°C to 60°C

#### Relative Humidity

Up to 95% - Temperature 5°C to 45°C (Non condensing)

#### Emission

BS EN 61000-6-3:2001 Residential, Commercial & Light Industry **Class B limits**

#### Immunity

BS EN50130-4: 1996: Part 4

#### LVD

BS EN 60950-2002

#### Ingress Protection

IP31 for plastic box S4-34490 & IP40 estimated for metal box S4-34492

#### Colour

Module-white / Plastic box-dark grey (Lid-light grey) / Metal box-dark grey

#### Input mode

- Input channel-1 only can be configured as a zone input to accept conventional devices, with a load of 2mA quiescent and 9mA alarm maximum at 24V nominal (18V minimum). With configurable 2s to 5s reset period and 5s to 40s alarm validation delay.

#### Switch input can work with or without a delay.

- Input channel can be configured as a switch input of Fire*, Fault*, Supervisory* (non fire) or Confirmation# signal. * with input acceptance delay of up to 10 seconds for a Fire input and up to 300s for Fault or Supervisory input. # A fault is generated if confirmation input is not seen within predefined period of the output action (Confirmation function is not a feature of the single input module).

#### Output mode

- A relay output of either NO or NC set of contacts rated 1A - 30Vac/dc resistive load.
- A relay output of change over contacts NC, COM and NO rated 1A - 30Vac/dc resistive load.

#### LED output

1.5mA at 24Vdc (Normally On or Normally Off)

#### EN54-17 data

| V<sub>max</sub> | V<sub>nom</sub> | V<sub>min</sub> | V<sub>SO</sub> max | V<sub>SO</sub> min | I<sub>C</sub> max | I<sub>S</sub> max | I<sub>L</sub> max | ZC max |
| 42V | 40V | 24V | 16V | 8V | 0.4A | 1A | 20µA | 0.1Ω |

#### Panel compatibility

Fully compatible with LPC ≥ V4.35 & MCC ≥ V4.37.

For further information on upgrade requirements contact Gent by Honeywell
Interface Module for Vigilon Medium Voltage (MV) Output

These instructions cover the above interface options and accessories.

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

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

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

Features

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

Cables

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

Installation

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

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

Wiring

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

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

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

<table>
<thead>
<tr>
<th>Approval</th>
<th>EN54-17:2005 &amp; EN54-18:2005 (Approved)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions in mm</td>
<td>See illustrations</td>
</tr>
<tr>
<td>Weight</td>
<td>DIN mountable: 138g PCB with cover in metal box: 800g</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-30°C to 70°C</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10°C to 60°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>Up to 95% - Temperature 5°C to 45°C (Non condensing)</td>
</tr>
<tr>
<td>Emission</td>
<td>BS EN 61000-6-3:2001 Residential, Commercial &amp; Light Industry <strong>Class B limits</strong></td>
</tr>
<tr>
<td>Immunity</td>
<td>BS EN50130-4: 1996: Part 4</td>
</tr>
<tr>
<td>LVD</td>
<td>BS EN 60950-2002</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>Metal box - IP40 estimated</td>
</tr>
<tr>
<td>Colour - Metal Box</td>
<td>Dark Grey</td>
</tr>
<tr>
<td>Output</td>
<td>Single pole change over contacts rated at 13A 230V ac Resistive load.</td>
</tr>
<tr>
<td>Contact ratings</td>
<td>Type 1hp @ 240V ac, 1/2hp @ 120V ac (UL508) Cycle 6x10³</td>
</tr>
<tr>
<td>Terminals</td>
<td>2.5mm²</td>
</tr>
<tr>
<td>EN54-17 data</td>
<td>$V_{\text{max}}$ 42V $V_{\text{nom}}$ 40V $V_{\text{min}}$ 24V $V_{\text{SO max}}$ 16V $V_{\text{SO min}}$ 8V $I_{\text{C max}}$ 0.4A $I_{\text{S max}}$ 1A $I_{\text{L max}}$ 20μA $Z_{\text{C max}}$ 0.1Ω</td>
</tr>
<tr>
<td>Compatibility</td>
<td>Compatible with panel having: MCC ≥ V4.31 LPC ≥ V4.33</td>
</tr>
</tbody>
</table>

![Diagram of Vigilon EN54 System](image)

- PCB on DIN rail mountable module
- PCB in metal box

---

**Dimensions:**
- Depth 48mm
- Depth 50mm
- PCB on DIN rail mountable module
- PCB in metal box

**Weight:**
- DIN mountable: 138g
- PCB with cover in metal box: 800g

**Temperature Range:**
- Storage temperature: -30°C to 70°C
- Operating temperature: -10°C to 60°C

**Humidity:**
- Up to 95% relative humidity at 5°C to 45°C (Non condensing)

**Emission Class:**
- BS EN 61000-6-3:2001 Residential, Commercial & Light Industry **Class B limits**

**Immunity Class:**
- BS EN50130-4: 1996: Part 4

**LVD Class:**
- BS EN 60950-2002

**Ingress Protection:**
- Metal box - IP40 estimated

**Colour:**
- Dark Grey
Mains Powered Interface
(from Qtr 3 2010)

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

Technical Data

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall dimensions</td>
<td>478mm x 322mm x 128mm</td>
</tr>
<tr>
<td>Assembled weight (approximate)</td>
<td>7Kg (excluding batteries and optional components fitted)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Steel</td>
</tr>
<tr>
<td>Colour</td>
<td>RAL7024 Graphite Grey (fine textured)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20 to 70°C</td>
</tr>
<tr>
<td>Ambient operating temperature</td>
<td>-10 to 45°C</td>
</tr>
<tr>
<td>Relative Humidity (Non condensing)</td>
<td>up to 95% Temperature 5 - 45°C</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP31 (estimated)</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>230V 50Hz +10% -6%</td>
</tr>
<tr>
<td>Rated current</td>
<td>0.7A</td>
</tr>
</tbody>
</table>

Input modes

Input can be fault monitored, voltage free, contacts OR conventional detection zone circuit. Refer to the commissioning information for more details.

Zone

<table>
<thead>
<tr>
<th>Nominal voltage</th>
<th>Quiescent current</th>
</tr>
</thead>
<tbody>
<tr>
<td>16V or 22.5V</td>
<td>±15% 20mA per zone</td>
</tr>
</tbody>
</table>

Zone short circuit current limited to < 30mA

EN54 compliance limitation: 32 devices OR Maximum of 20 diode bases per zone

Output modes

Outputs are monitored 24V (nominal) 0.5A OR LED drive. Refer to the commissioning information for more details

Confirmation modes

It is possible to configure all Inputs and Outputs as confirmation channels

Sector and Auxiliary Outputs

Sector and Auxiliary Outputs 0.5A max each @ 24V +/-3V, electronically current limited to approximately 1A at 25oC

Maximum total output current:

S4-34440-02 = 1.5A
S4-34440-12 = 2.5A

Auxiliary power output:

12V / 24V ±0.5V (S4-34440-12) or 24V ±3V (S4-34440-02)

Batteries

Two types:

2 x 12V 2.1Ahr (1Kg each) for S4-34440-02
2 x 12V 12Ahr (4.31Kg each) for S4-34440-12

Compatible

Panel having :MCC ≥ V4.41 :LPC ≥ V4.39

EN54-17 : 2005 (section 4.8) data:

<table>
<thead>
<tr>
<th>Vmax</th>
<th>42V</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC max</td>
<td>0.4A</td>
</tr>
<tr>
<td>Vnom</td>
<td>40V</td>
</tr>
<tr>
<td>IS max</td>
<td>1A</td>
</tr>
<tr>
<td>Vmin</td>
<td>24V</td>
</tr>
<tr>
<td>IL max</td>
<td>20μA</td>
</tr>
<tr>
<td>VSO max</td>
<td>16V</td>
</tr>
<tr>
<td>ZC max</td>
<td>0.1Ω</td>
</tr>
<tr>
<td>VSO min</td>
<td>8V</td>
</tr>
</tbody>
</table>

Emission

BS EN61000-6-3: 2007 EMC for residential, commercial & light Industry.

Immunity


Terminals

3-way device (terminals provided for spur or sub-loop)

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

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

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

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

Installation

The batteries are supplied in a separate pack.

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

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

---

Vigilon EN54 System

PB2
S+ Z+ Z-S-
SECTOR / ZONE1

PB3
S+ Z+ Z-S-
SECTOR / ZONE2

PB4
S+ Z+ Z-S-
SECTOR / ZONE3

PB5
S+ Z+ Z-S-
SECTOR / ZONE4

PB1
0C LC 01
L1 02 L2
LOOP
LN

PB6
++ - -
AUX O/P

P3
FS6
T3.16A CERAMIC ANTI-SURGE

SW1 - POWER UP

P1
Mains Powered Interface Unit Mk 3

DANGER DO NOT REMOVE

4 Backbox mounting points

Top and rear cable entry points

Metal screen

Terminals for Auxiliary output and Zone/Sector circuits

Quick reference label

Earth points for DIN rail modules

4 Backbox mounting points

DIN rail for optional modules

Earth points for wiring

Terminals for mains cable + mains fuse

Mains interface PCB (Not all components shown)

Loop terminals

Battery connector

Battery fuse

Battery ‘Power up’ push button

IS Galvanic Isolator

Surge Protection

Relay

Battery Link

Battery Lead

Capacitor 22uF 35V

Instructions

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

---

Vigilon EN54 System

PB2
S+ Z+ Z-S-
SECTOR / ZONE1

PB3
S+ Z+ Z-S-
SECTOR / ZONE2

PB4
S+ Z+ Z-S-
SECTOR / ZONE3

PB5
S+ Z+ Z-S-
SECTOR / ZONE4

PB1
0C LC 01
L1 02 L2
LOOP
LN

PB6
++ - -
AUX O/P

P3
FS6
T3.16A CERAMIC ANTI-SURGE

SW1 - POWER UP

P1
Mains Powered Interface Unit Mk 3

DANGER DO NOT REMOVE

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Quick reference label

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DIN rail for optional modules

Earth points for wiring

Terminals for mains cable + mains fuse

Mains interface PCB (Not all components shown)

Loop terminals

Battery connector

Battery fuse

Battery ‘Power up’ push button

IS Galvanic Isolator

Surge Protection

Relay

Battery Link

Battery Lead

Capacitor 22uF 35V

Instructions

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

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

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

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

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

**Wiring test**

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

These optional products should be mounted on the DIN rail.

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

For fully information see leaflet supplied with the product.

Options

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

- LED Output
- Sector Output with Sounders
- IS Sector Output
- IS Galvanic isolator (02518-10)
- Sector Output with Inductive load (eg Relay)

End-of-line units

- Capacitor 22uF
- Resistor 10KΩ
- Resistor 5K6KΩ
- Resistor 470Ω

Auxiliary Output: 12V or 24V @ 0.5A

# - for S43440-12 only

It is possible to connect a number of LEDs in series (current is 1.5mA).

To avoid damage to equipment always configure the interface inputs and outputs before connecting the external circuits.

Normally closed contacts should be used for fail-safe applications.

Cable length max.

- 50m
- 150m
- 150m

Vigilon EN54 system
Vigilon Network Node

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

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

Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions in mm</td>
<td>Height 543 x width 406 x depth 172</td>
</tr>
<tr>
<td>Panel weight</td>
<td>10.2Kg approximately + 2 batteries 12V 21Ah battery weighing 6Kg each</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-10 to 55°C</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0 to 40°C</td>
</tr>
<tr>
<td>Relative Humidity (Non condensing) Temperature</td>
<td>up to 90%</td>
</tr>
<tr>
<td>Ingress Protection</td>
<td>IP30</td>
</tr>
<tr>
<td>Colour</td>
<td>Door: Grey (Pantone 422) Back box: Graphite Grey (RAL 7024).</td>
</tr>
<tr>
<td>Network</td>
<td>The node is supplied with a network card for secure network connections: Fibre Optics - 2Km Copper (RS485) - 1.2Km</td>
</tr>
<tr>
<td>RS232 and RS485 connections</td>
<td>The node is supplied with an IO card that facilitates RS232 for connecting to another panel (domain bridge) or Gent Supervisor. The maximum cable length allowed for RS232 is 10m. The maximum cable length allowed for RS485 is 1.2Km.</td>
</tr>
<tr>
<td>Plug in Card slots</td>
<td>MCC / LCC -P1 Input Output# / Network card Input Output card option Input Output card option Input Output card option Input Output card option Input Output or Network card (# - supplied)</td>
</tr>
<tr>
<td>IOC / N/W -P2</td>
<td>Loop 1 - P3 Input Output card option Input Output card option Input Output card option Input Output card option Input Output or Network card</td>
</tr>
<tr>
<td>Loop 2 - P4</td>
<td>Loop 3 - P5 Input Output card option Input Output card option Input Output card option Input Output or Network card</td>
</tr>
<tr>
<td>Loop 4 - P6</td>
<td>N/W or I/O -P7 Input Output card option Input Output card option Input Output or Network card</td>
</tr>
<tr>
<td>N/W or I/O -P8</td>
<td>N/W or I/O -P8 Input Output or Network card#</td>
</tr>
</tbody>
</table>

Installation instructions

Vigilon Fire System
GENT 2008
Designed to EN54 Pt 2 & 4
Panel Healthy
15:45
Fault
System Fault
Test
Fire
Power
Power Fault
CB254
Disablement
Sounder
Previous Next
Delay
Verify
CB253
### Auxiliary relays

<table>
<thead>
<tr>
<th>Relay</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aux relay 1</strong></td>
<td>Voltage-free contacts rated 1A @ 24Vdc. 2 sets of change over contacts configured to operate immediately with <strong>any system Fire</strong> event. The relay is normally <strong>de-energised</strong>.</td>
</tr>
<tr>
<td><strong>Aux relay 2</strong></td>
<td>Voltage-free contacts rated 1A @ 24Vdc. 2 sets of change over contacts configured to operate immediately with <strong>any system Fault</strong> event. The relay is normally <strong>energised</strong>.</td>
</tr>
</tbody>
</table>

The relays can be re-configured to operate with any Fire, Fault or Disablement event, with a delay of up to 10 minutes and can operate in a normally energised or de-energised state.

### Clean contacts

1 set of voltage free change over contacts rated 1A @ 24Vdc, active with **any fire event**.

### Master alarm circuits

Operates with any **system fire event**

- 2 - (24 volts nominal)
- 400 mA max. per circuit
- MA1 - fuse 1A FS1
- MA2 - fuse 1A FS2
- Both fuses are 20mm x 5mm in size and are located on the Terminal card.

### Indicators

- Power (green)
- Power Fault (amber)
- Delay (amber)
- Test (amber)
- Verify (amber)
- CB253 CB254 (amber)
- Fault (amber)
- Disablement (amber)
- System fault (amber)
- Sounder (amber)

### Display

- Alpha-numeric display - 8 lines by 40 character per line, back-lit, (Black characters on green background, liquid crystal display).

### Internal sounder

To announce Fire and Fault events, plus give a key press confirmation beep.

### Menus

- [Control], [Setup], [Information] and [Test Engineering] menus accessed via Menu On/Off, F1, F2, F3 and F4 buttons.

### Controls (with door closed)

- **Access level 1**
  - Next and Previous buttons operable during Fire condition only.
- **Access level 2a**
  - Sound Alarms, Silence Alarms, Reset, Cancel Buzzer, Verify, F1-F4 keys, Menu On/Off key, QWERTY key board, U1-U4 keys available if configured to perform site specific actions by triggering CB251, CB252, CB253 and CB254.
- **User having door key**

### Logs

- **Access level 2b**
  - User having door key and **customer password**
- **Access level 3**
  - Engineer having door key and **engineer password**

### Power supply

- **Mains operating voltage**
  - 230V 50Hz +10% -6% is protected by a 3.15A (T) 250V Ceramic 20mm x 5mm, located on PSU. Input current - 1.4A
- **Nominal supply voltage for master alarm circuits**
  - 24V +1V, -4V
- **Battery circuit(s)**
  - Terminals to connect to internally housed batteries, capable of reaching a charged state in 72Hr.
- **Light indications**
  - To show status of PSU

### PSU Fuses

- **Mains**
  - Fuses: FS6 T3.15A Ceramic
  - FS2 F3.15A Glass
  - FS7 F5A Ceramic for VIG1-24 only
- **Battery charge circuit**
  - Above fuses are 20mm x 5mm size

### Storage temperature

- -10 to 55°C

### Operating temperature

- -5 to 40°C

### Relative Humidity (Non condensing)

- up to 90%

---

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

---

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

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

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

- Identify the package NETWORK-NODE-24 and check that it contains all the parts.
- Remove the temporary cover from the Back box.
- Knock out/in the required cable entry points from the Network node back box.
- Use the fixing points provided mount the Back box to the wall using suitable fixings.

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

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

! If the mains cable is not connected to the respective terminals then ensure the tail ends are insulated to guard against accidental switching On of the mains supply.
Semi-Flush fixing the Network node

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

Terminate and mark cable

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

Mains supply

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

Mains and battery supply connections

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

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

Terminals for external circuits

The Network node has a Terminal card that holds all the terminals for the connection of external circuits. The exceptions are:
- Terminals for CARDS in slots P7 and P8, these are located on the Backplane
- Mains supply terminals which are located on the mains terminal block on PSU
- Battery connections are located on the PSU.

Backplane

Terminal card

PSU board (located behind the cardboard cover)
Network connections

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

Master alarm circuits

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

Auxiliary relay circuits

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

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

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

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

**Remote printer**

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

**RS232 / RS485 Communication**

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

**On completion of wiring installation**

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

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

Copper network connections

From previous panel or node

No connection

Cable screen

Connections for Network card in Socket P8 (Card 6)

(post 08-2006) BACKPLANE

NEW Control Panel

To Next panel or node

Connections for Network card in Socket P8 (Card 6)

(post 08-2006) BACKPLANE

NEW Control Panel

Connections for Network card in Socket P8 (Card 6)

(Pre 08-2006) BACKPLANE

OLD Control Panel

Fibre network connections

Side 1 (End 1)

Side 2 (End 2)

Side 1 (End 1)

Side 2 (End 2)

Links P2 and P3 are booster links.

Normally the links are not fitted, however for distance exceeding 750m the links must be fitted.
Network wiring

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

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

Network cable screen continuity

NOTE: The cable screens are not connected to earth at the joint or at Panel 2.

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

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

How to minimise cross talk

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

There are three practical ways of overcoming the crosstalk problem:

- Use a twisted-core MICC cable
- Put a ferrous screen between the cables (i.e., in the two runs of steel conduit)
- Maintain a distance between the network cables of at least 50mm
Network cables

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

Enhanced Network cables

☐ Mineral insulated copper cable (EMC Compliant)
  800m maximum Panel to Panel or Panel to network node cable distance.
  • BS6207: Part 1
  • 3 parallel cores
  • having continuous metal sheath encapsulating each core having 1.5mm² cross section area
  • a red cover sheath (preferred for alarm applications)

☐ Fireshield Enhanced FSN G2000
  1.2Km maximum Panel to Panel or Panel to Network node cable distance
  • 3 Core (1 pair + 1 and earth
  • each core having 1mm² cross section area

Standard Network cables

☐ Delta Crompton Firetuf FDZ1000*
  1200m maximum Panel to Panel or Panel to Network node cable distance
  • Three core

☐ Huber & Schner Radox series FR communication cable*
  1200m maximum Panel to Panel or Panel to Network node cable distance
  • Three core twisted triad screened
  • 1.5mm² (7/0.42 stranded) conductors
  • Nominal impedance 200 ohms (1KHz)
  • Capacitance between conductors 110pF/m (1KHz)
  • Capacitance between screen to core 210pF/m (1KHz)
  • Fire resistance tested to BS6387 category CWZ and IEC 331.

☐ Belden No 9729 (UL Style 2493) (EMC Compliant)
  800m maximum Panel to Panel or Panel to Network node cable distance
  • Two twisted pairs
  • Each pair individually screened
  • 24AWG (7 strands x 32 AWG) conductors
  • Low capacitance between conductors - 39.4pF/m at 1kHz
  • Low capacitance conductor to screen - 72.2pF/m at 1kHz
  • Temperature range -30°C to +60°C.

☐ Teflon jacketed Belden TR No. 89729
  1200m maximum Panel to Panel or Panel to Network node cable distance
  • Two twisted pairs
  • Each pair individually screened
  • 24AWG (7 strands x 32 AWG)
  • Low capacitance between conductors - 39.4pF/m at 1kHz
  • Low capacitance conductor to screen - 72.2pF/m at 1kHz
  • Temperature range up to 200°C

☐ Belden Armoured equivalent (EMC Compliant)
  This cable being a two-pair cable to BS5308:Part 1 (type 2) 0.5mm² (16/0.2mm).
  600m maximum Panel to Panel or Panel to Network node cable distance.

Belden No. 9842 EIA RS485 Applications, O/A
Beldfoil® Braid
  1200m maximum Panel to Panel or Panel to Network node cable distance
  • Must have following characteristics:
    • Two twisted pairs
    • 24AWG (7 strands x 32 AWG) conductors
    • Low characteristic impedance - 120 ohms
    • Low capacitance between conductors - 42pF/m at 1kHz
    • Low capacitance conductor to screen - 75.5pF/m at 1kHz

☐ Prysmian (formerly Pirelli) FP200 Flex* (EMC Compliant)
  800m maximum Panel to Panel or Panel to Network node cable distance
  • 3 Core
  • each core having 1.5mm² cross section area

☐ Prysmian (formerly Pirelli) FP200 Gold* (EMC Compliant)
  1.2Km maximum Panel to Panel or Panel to Network node cable distance
  • 3 Core
  • each core having 1.5mm² cross section area

☐ Prysmian (formerly Pirelli) FP Plus* (EMC Compliant)
  1.2Km maximum Panel to Panel or Panel to Network node cable distance
  • 3 Core
  • each core having 1.5mm² cross section area

☐ Draka FT Plus (EMC Compliant)
  1.2Km maximum Panel to Panel or Panel to Network node cable distance
  • 3 Core
  • each core having 1.5mm² cross section area

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

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

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

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

Methods of domain bridging

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

Star connection

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

Fibre Optic Domain bridge using FO Network DOM card

Domain 1

- Network node
- Domain BRIDGE
- Fibre Optics

Domain 2

MINIMUM OF 4 CORE FIBRE CABLE TO ALLOW 100% REDUNDANCY

Panel/Node

Tx
Rx

FO Net DOM

Panel/Node

Tx
Rx

FO Net DOM

Fibre optic patch panel

Fibre optic patch panel

Fibre patch cable
RS232 Domain bridge using Domain IO card

Domain 1

Domain 2

Modem Domain bridge

Domain 1

Domain 2

Vigilon EN54 system
NPORT Domain bridge using NPORT module

The customer is to supply the IP addresses.

Installation instructions

Domain 1

<table>
<thead>
<tr>
<th>Network node</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOC</td>
</tr>
<tr>
<td>NPORT CONV. UNIT</td>
</tr>
<tr>
<td>NPORT DEVICE RJ45</td>
</tr>
<tr>
<td>GND</td>
</tr>
<tr>
<td>TxD</td>
</tr>
<tr>
<td>RxD</td>
</tr>
<tr>
<td>PSU</td>
</tr>
<tr>
<td>MAINS SUPPLY</td>
</tr>
</tbody>
</table>

RxD GND TxD

0V Tx Rx
DOMAIN IOC
SET TO 19200

PANEL

Dedicated Computer network

Domain 2

<table>
<thead>
<tr>
<th>Network node</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOC</td>
</tr>
<tr>
<td>NPORT CONV. UNIT</td>
</tr>
<tr>
<td>NPORT DEVICE RJ45</td>
</tr>
<tr>
<td>TxD</td>
</tr>
<tr>
<td>RxD</td>
</tr>
<tr>
<td>PSU</td>
</tr>
<tr>
<td>MAINS SUPPLY</td>
</tr>
</tbody>
</table>

0V Rx Tx
DOMAIN IOC
SET TO 19200

PANEL

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

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

RS232 15m maximum
Vigilon system parts

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

Control Panel

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

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

**Spares**

**VS-BATT-24**  
Spare battery 2 x 12V 21Ah for Control panel

**VS-PROLL**  
Spare thermal paper for the integral printer

**VS-KEY**  
Outer door key

**Cards**

**VIG-LPC**  
Loop Card (EN54)

**VIG-MCC-24**  
Main Controller Card (EN54)  
(spares for VIG1-24 and VIG1-72)

**VIG-NC**  
Copper Network Card (EN54)

**VIG-NC-FO**  
Fibre Optics Network Card (EN54)

**VIG-IOC-DOM**  
Domain Bridge Input/Output Card (EN54)

**Accessories**

**VIG-24-FLUSH**  
Flush mounting kit  
(Control panels and Network node)

**VIG-FLUSH-SS**  
Stainless steel flush surround  
(Control panels and Network node)

**VIG-DOOR-SS**  
Stainless steel door

**VIG-WR-CASE**  
Control panel weather resistant case

**VIG-19-RACK**  
19" Rack mounting frames for panel and battery box

**Network Node**

**VIG-NODE-24**  
Network node

Repeat panels

**VIG-RPT -72**  
Vigilon Repeat panel for EN/BS (loop connectable)

**VSRPT-BATT**  
Battery pack from Repeat panel

**COMPACT-RPT**  
Repeat indicator panel RS485  
(connects directly to the panel)

**Mimic panels**

**VIG-MIM-A3**  
Zonal and Mimic panel (EN54)

**VSRPT-BATT-A3**  
Battery back from A3 Mimic (2 x 6V 7Ah)

**Manual call points**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34800</td>
<td>Manual Call Point (Glass)</td>
</tr>
<tr>
<td>S4-34842</td>
<td>Manual Call Point (Glass) with Protective cover</td>
</tr>
<tr>
<td>S4-34845</td>
<td>Manual Call Point with resettable element</td>
</tr>
<tr>
<td>S4-34805</td>
<td>Manual Call Point with resettable element and protective cover</td>
</tr>
<tr>
<td>S4-34890</td>
<td>Resettable Element for MCP (Pack of 10)</td>
</tr>
<tr>
<td>S4-34891</td>
<td>Glass for MCP (Pack of 10)</td>
</tr>
<tr>
<td>S4-34892</td>
<td>Protective cover for MCP (Pack of 10)</td>
</tr>
<tr>
<td>S4-34895</td>
<td>Surface Back Box for MCP red plastic - (Pack of 10)</td>
</tr>
<tr>
<td>S4-34898</td>
<td>Manual Call Point weather resistant kit</td>
</tr>
<tr>
<td>S4-34899</td>
<td>Test Key (Pack of 10)</td>
</tr>
<tr>
<td>S4-34895</td>
<td>Keyswitch call point (Red)</td>
</tr>
<tr>
<td>S4-34807</td>
<td>Keyswitch MCP (Red) with back box</td>
</tr>
<tr>
<td>S4-34499</td>
<td>Spare Keys (Pack of 2)</td>
</tr>
<tr>
<td>S4-34895</td>
<td>Surface Back Box for Interface Red Plastic (Pk of 10)</td>
</tr>
</tbody>
</table>

**Environmentally protected enclosure for MCP**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34896</td>
<td>MCP Weatherproof box - S4-34805 &amp; S4-34800</td>
</tr>
</tbody>
</table>

**S-Quad Sensors / Sounder / Strobe / Speech**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-710</td>
<td>Optical Heat Sensor (OH)</td>
</tr>
<tr>
<td>S4-715</td>
<td>Optical Sensor (O)</td>
</tr>
<tr>
<td>S4-720</td>
<td>Heat Sensor (H)</td>
</tr>
<tr>
<td>S4-720-ST-VO</td>
<td>Heat Sensor Strobe Speech (HSIsp)</td>
</tr>
<tr>
<td>S4-780</td>
<td>Heat Sensor Sounder (HS)</td>
</tr>
<tr>
<td>S4-770</td>
<td>Optical Heat Sounder (OHS)</td>
</tr>
<tr>
<td>S4-711</td>
<td>Dual Optical Heat Sensor (O&gt;H)</td>
</tr>
<tr>
<td>S4-711-ST</td>
<td>Dual Optical Heat Sensor Strobe (O&gt;HSt)</td>
</tr>
<tr>
<td>S4-771</td>
<td>Dual Optical Heat Sensor Sounder(O&gt;HS)</td>
</tr>
<tr>
<td>S4-711-ST-VO</td>
<td>Dual Optical Heat Sensor Speech Strobe (O&gt;HSSpSt)</td>
</tr>
<tr>
<td>S4-711-VO</td>
<td>Dual Optical Heat Sensor Speech (O&gt;HSp)</td>
</tr>
<tr>
<td>S4-911</td>
<td>Dual Optical Heat CO Sensor (O&gt;HCO)</td>
</tr>
<tr>
<td>S4-911-ST-VO</td>
<td>Dual Optical Heat CO Sensor Speech Strobe (O&gt;HCOspSt)</td>
</tr>
</tbody>
</table>
### Associated products

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-700</td>
<td>S-Quad Base</td>
</tr>
<tr>
<td>13449-01</td>
<td>Remote LED for use with S4-700</td>
</tr>
<tr>
<td>S4-FLUSH</td>
<td>Semi-Flush fixing kit</td>
</tr>
<tr>
<td>S4-COVER-DUST</td>
<td>Sensor dust cover (50 pack)</td>
</tr>
<tr>
<td>S4-COVER-BASE</td>
<td>Base dust cover (50 Pack)</td>
</tr>
<tr>
<td>S4-EXTRACTOR</td>
<td>Removal tool</td>
</tr>
<tr>
<td>S4-BASE-LABEL</td>
<td>Label plate (50 pack)</td>
</tr>
<tr>
<td>S4-BASE-GASKET</td>
<td>Base IP Gasket (50 pack)</td>
</tr>
<tr>
<td>S4-COVER-REMOVER</td>
<td>Dust cover remover tool (spare adaptor)</td>
</tr>
</tbody>
</table>

### Environmentally protected sensor

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34729</td>
<td>Environmentally protected Heat sensor</td>
</tr>
</tbody>
</table>

### Duct Sensor

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34760</td>
<td>Venturi-Air Duct Kit</td>
</tr>
</tbody>
</table>

### Beam Sensors

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34740</td>
<td>Beam sensor pair</td>
</tr>
<tr>
<td>S4-34741-01</td>
<td>Angle bracket with base</td>
</tr>
<tr>
<td>S4-34741-03</td>
<td>Parallel bracket with base</td>
</tr>
<tr>
<td>S4-34741-99</td>
<td>Light shield for beams (5 per pack)</td>
</tr>
<tr>
<td>S4-34741-50</td>
<td>Test Cards</td>
</tr>
</tbody>
</table>

### T Breaker

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34701</td>
<td>T breaker Unit</td>
</tr>
</tbody>
</table>

### LV & MV Interfaces

#### Keyswitch Interface

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34418</td>
<td>Keyswitch Interface (Blue) with back box</td>
</tr>
<tr>
<td>S4-34499</td>
<td>Spare Keys (Pack of 2)</td>
</tr>
</tbody>
</table>

#### Low voltage interface range

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34410</td>
<td>1-Input Interface module (low voltage)</td>
</tr>
<tr>
<td>S4-34420</td>
<td>1-Output &amp; 1-Input Interface module (low voltage)</td>
</tr>
<tr>
<td>S4-34450</td>
<td>4-Input / Output Interface module (low voltage)</td>
</tr>
</tbody>
</table>

#### Options

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34490</td>
<td>Interface enclosure Large Plastic box</td>
</tr>
<tr>
<td>S4-34492</td>
<td>Interface enclosure Metal box</td>
</tr>
<tr>
<td>S4-34491</td>
<td>DIN rail mount bracket</td>
</tr>
<tr>
<td>S4-34493</td>
<td>Interface enclosure Small Plastic box</td>
</tr>
<tr>
<td>S4-34496</td>
<td>Interface enclosure houses 6 Interfaces</td>
</tr>
</tbody>
</table>

#### Medium voltage interface range

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34411</td>
<td>Single Output Interface Module DIN rail mountable (Medium Voltage)</td>
</tr>
<tr>
<td>S4-34415</td>
<td>Single Output Interface PCB with cover (Medium Voltage) in a metal box</td>
</tr>
</tbody>
</table>

#### 12 input interface

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34412</td>
<td>12 input interface module (Supervisory inputs only)</td>
</tr>
<tr>
<td>S4-34494</td>
<td>Connection Converter for S4-34412</td>
</tr>
</tbody>
</table>

#### Mains powered interfaces (from Qtr 3 2010)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S4-34440-02</td>
<td>Mains powered fire alarm interface 24V only</td>
</tr>
<tr>
<td>S4-34440-12</td>
<td>Mains powered fire alarm interface 12V / 24V</td>
</tr>
<tr>
<td>19104-52</td>
<td>Low voltage power relay</td>
</tr>
<tr>
<td>17740-20</td>
<td>Intrinsically safe galvanic isolator for IS detectors and call points</td>
</tr>
<tr>
<td>02518-10</td>
<td>Intrinsically safe galvanic isolator for IS sounders</td>
</tr>
</tbody>
</table>
### S³ Addressable Speech, Sounder Strobe

#### Strobe

**Low profile range**

<table>
<thead>
<tr>
<th>Body</th>
<th>Strobe - Deep base</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>S2IP-ST-WR (red lens)</td>
</tr>
<tr>
<td>Red</td>
<td>S2IP-ST-RR (red lens)</td>
</tr>
</tbody>
</table>

#### Sounder Strobe

**Low profile range**

<table>
<thead>
<tr>
<th>Sounder</th>
<th>Sounder Strobe (red lens)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Deep base</td>
</tr>
<tr>
<td>White</td>
<td>S3IP-SN-W</td>
</tr>
<tr>
<td>Red</td>
<td>S3IP-SN-R</td>
</tr>
</tbody>
</table>

**Low profile variants**

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

#### System range

<table>
<thead>
<tr>
<th>Sounder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
</tr>
<tr>
<td>White</td>
</tr>
</tbody>
</table>

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

#### Speech Sounder Strobe

**Low profile range**

<table>
<thead>
<tr>
<th>Speech Sounder</th>
<th>Speech Sounder Strobe (red lens)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep base</td>
<td>Shallow base</td>
</tr>
<tr>
<td>White</td>
<td>S3IP-VP-W</td>
</tr>
<tr>
<td>Red</td>
<td>S3IP-VP-R</td>
</tr>
</tbody>
</table>

**Remote Control**

S3-CONTROL: Remote control for the S³
Installation instructions

Domain Bridge products

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIG-NPORT-100</td>
<td>NPORT IP Domain module 100M (single unit)</td>
</tr>
<tr>
<td>VIG-DOM-MODEM</td>
<td>Modern pair</td>
</tr>
</tbody>
</table>

Surge protection

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5530440</td>
<td>1 x Mains, 1 x Loop &amp; 1 x Zone/Sector suppression (enclosure has space for 1 extra loop (2 x 2817958)</td>
</tr>
<tr>
<td>5530452</td>
<td>1 x Mains, 1 x Network, 1 x Loop &amp; Zone / Sector suppression (enclosure has space for 1 extra loop (2 x 2817958)</td>
</tr>
<tr>
<td>5530465</td>
<td>1 x Mains, 1 x Network suppression</td>
</tr>
<tr>
<td>5530478</td>
<td>1 x Mains suppressor</td>
</tr>
<tr>
<td>2817958</td>
<td>1 x Additional Loop suppressor (module only)</td>
</tr>
</tbody>
</table>

Replacement Plug ins

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2798844</td>
<td>Mains suppressor</td>
</tr>
<tr>
<td>2838762</td>
<td>Network suppressor</td>
</tr>
<tr>
<td>2839648</td>
<td>Loop suppressor</td>
</tr>
<tr>
<td>2838351</td>
<td>Zone / Sector suppressor</td>
</tr>
</tbody>
</table>

Manuals

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4188-774</td>
<td>EN54 Vigilon 4/6 loop panel based system Operating instructions</td>
</tr>
<tr>
<td>4188-749</td>
<td>Log book</td>
</tr>
</tbody>
</table>

Supported products

Sensors (Supported)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34710</td>
<td>Optical heat sensor</td>
</tr>
<tr>
<td>34710-RL</td>
<td>Optical heat sensor for remote LED connection</td>
</tr>
<tr>
<td>13449-01</td>
<td>Remote LED</td>
</tr>
<tr>
<td>34770</td>
<td>Optical heat sensor sounder</td>
</tr>
<tr>
<td>34780</td>
<td>Heat sounder</td>
</tr>
<tr>
<td>34720</td>
<td>Heat sensor</td>
</tr>
<tr>
<td>34760</td>
<td>Duct sensor (inc 17908-05 Probes &amp; 34702 Slave LED unit)</td>
</tr>
</tbody>
</table>

Spares

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>19271-01</td>
<td>Replacement Optical chamber</td>
</tr>
</tbody>
</table>

Terminal Plate

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34700</td>
<td>3-way terminal plate</td>
</tr>
<tr>
<td>34704</td>
<td>4-way terminal plate</td>
</tr>
<tr>
<td>19279-01</td>
<td>Semi-flush sensor mounting kit</td>
</tr>
<tr>
<td>19270-50</td>
<td>Sensor dust cover (50 pack)</td>
</tr>
</tbody>
</table>

Tools

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17918-26</td>
<td>Sensor removal tool kit</td>
</tr>
</tbody>
</table>

Manual call points (Supported)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34800-EN</td>
<td>Surface mounted MCP</td>
</tr>
<tr>
<td>34807</td>
<td>Surface mounted keyswitch MCP</td>
</tr>
<tr>
<td>19289-01</td>
<td>MCP flush fixing plate</td>
</tr>
<tr>
<td>34829-EN</td>
<td>Environmentally protected surface mounted MCP</td>
</tr>
<tr>
<td>14112-09EN</td>
<td>Spare MCP glasses 10 pack non LPCB approved</td>
</tr>
<tr>
<td>14112-49EN</td>
<td>Hinged cover with drilled from moulding</td>
</tr>
<tr>
<td>14112-EN-KIT</td>
<td>BS to EN Front conversion kit with glass</td>
</tr>
</tbody>
</table>

Interfaces (Supported)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>34415</td>
<td>Single Channel loop powered interface</td>
</tr>
<tr>
<td>19245-05</td>
<td>Interface line module</td>
</tr>
</tbody>
</table>
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