Gamewell-FCI Intelligent VESDA-E VEU SLC With VESDAnet Detectors Product Guide



VEU-A00-GW-VN



VEU-A10-GW-VN

July 2024
Doc. No. 48971_A5
Part No. AD48971-004

Intellectual Property and Copyright

This document includes registered and unregistered trademarks. All trademarks displayed are the trademarks of their respective owners. Your use of this document does not constitute or create a licence or any other right to use the name and/or trademark and/or label.

This document is subject to copyright owned by Gamewell-FCI. You agree not to copy, communicate to the public, adapt, distribute, transfer, sell, modify or publish any contents of this document without the express prior written consent of Gamewell-FCI.

Disclaimer

The contents of this document is provided on an “as is” basis. No representation or warranty (either express or implied) is made as to the completeness, accuracy or reliability of the contents of this document. The manufacturer reserves the right to change designs or specifications without obligation and without further notice. Except as otherwise provided, all warranties, express or implied, including without limitation any implied warranties of merchantability and fitness for a particular purpose are expressly excluded.

General Warning

This product must only be installed, configured and used strictly in accordance with the General Terms and Conditions, User Manual and product documents available from Gamewell-FCI. All proper health and safety precautions must be taken during the installation, commissioning and maintenance of the product. The system should not be connected to a power source until all the components have been installed. Proper safety precautions must be taken during tests and maintenance of the products when these are still connected to the power source. Failure to do so or tampering with the electronics inside the products can result in an electric shock causing injury or death and may cause equipment damage. Gamewell-FCI is not responsible and cannot be held accountable for any liability that may arise due to improper use of the equipment and/or failure to take proper precautions. Only persons trained through Gamewell-FCI accredited training course can install, test and maintain the system.

Liability

You agree to install, configure and use the products strictly in accordance with the User Manual and product documents available from Gamewell-FCI.

Gamewell-FCI is not liable to you or any other person for incidental, indirect, or consequential loss, expense or damages of any kind including without limitation, loss of business, loss of profits or loss of data arising out of your use of the products. Without limiting this general disclaimer the following specific warnings and disclaimers also apply:

Fitness for Purpose

You agree that you have been provided with a reasonable opportunity to appraise the products and have made your own independent assessment of the fitness or suitability of the products for your purpose. You acknowledge that you have not relied on any oral or written information, representation or advice given by or on behalf of Gamewell-FCI or its representatives.

Total Liability

To the fullest extent permitted by law that any limitation or exclusion cannot apply, the total liability of Gamewell-FCI in relation to the products is limited to:

i. in the case of services, the cost of having the services supplied again; or
ii. in the case of goods, the lowest cost of replacing the goods, acquiring equivalent goods or having the goods repaired.

Indemnification

You agree to fully indemnify and hold Gamewell-FCI harmless for any claim, cost, demand or damage (including legal costs on a full indemnity basis) incurred or which may be incurred arising from your use of the products.

Miscellaneous

If any provision outlined above is found to be invalid or unenforceable by a court of law, such invalidity or unenforceability will not affect the remainder which will continue in full force and effect. All rights not expressly granted are reserved.

Document Conventions

The following typographic conventions are used in this document:

Convention	Description
Bold	**Used to denote:** emphasis. Used for names of menus, menu options, toolbar buttons
Italics	**Used to denote:** references to other parts of this document or other documents. Used for the result of an action.

The following icons are used in this document:

Convention	Description
	**Caution:** This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details.
	**Warning:** This icon is used to indicate that there is a danger of electric shock. This may lead to death or permanent injury.
	**Warning:** This icon is used to indicate that there is a danger of inhaling dangerous substances. This may lead to death or permanent injury.

Contact Us

Gamewell-FCI
12 Clintonville Road
Northford, CT 06472-1610
203-484-7161
Fax: 203-484-7118

www.gamewell-fci.com

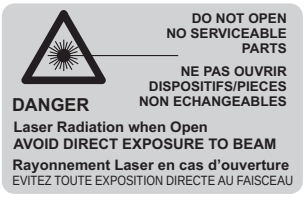
Codes and Standards Information for Air Sampling Smoke Detection

We strongly recommend that this document is read in conjunction with the appropriate local codes and standards for smoke detection and electrical connections. This document contains generic product information and some sections may not comply with all local codes and standards. In these cases, the local codes and standards must take precedence. The information below was correct at time of printing but may now be out of date, check with your local codes, standards and listings for the current restrictions.

FDA

This Gamewell-FCI product incorporates a laser device and is classified as a Class 1 laser product that complies with FDA regulations 21 CFR 1040.10. The laser is housed in a sealed detector chamber and contains no serviceable parts. The laser emits light which can be hazardous to the eye. Under no circumstances should the detector chamber be opened.

The laser chamber is identified by the labels shown below:





Regional Regulatory Requirements and Notices

UL Applications

- **Open Area Applications:** Covers the applications where the nuisance alarm sources such as cooking are expected. Under UL268 7th edition compliance under Open Area Applications, a detector is not permitted to signal an alarm under UL defined nuisance alarm fire conditions.
- **Special Applications:** Covers the applications where very early warning is paramount and nuisance alarm sources such as cooking are not expected. Under UL268 7th edition compliance under Special Applications, a detector is permitted to set to higher sensitivity and Open Area Applications limitations do not apply.

Note: For detectors configured for special applications, the extended label should be modified at this detector address to include the phrase ‘SPECIAL APPLICATIONS’ or ‘SPECIAL APPS’. Refer to the compatible FACPs configuration tool help files for more information on extended label programming.

ULC Installations

For open area, special applications, high velocity and DUCT protection, the fire alarm threshold (setting) that initiates an evacuation signal must be set such that the sensitivity of each sampling hole is more sensitive than the values shown below as determined by the ASPIRE software.

Use of Software Tools (ASPIRE, Xtralis VSC and Xtralis VSM4)

Gamewell-FCI uses ASPIRE pipe modelling software tool from Xtralis to analyse pipework designs to achieve UL compliance. For UL applications explained above, ASPIRE software is required to design sampling pipe networks that conform to the performance claims verified by UL and listed in the tables below. Each sample hole is reported with a transport time and a sensitivity in ASPIRE. Referring to the tables below, for UL 268 7th edition compliance the pipework design shall ensure that the:

- Transport time for each sampling hole is less than the applicable maximum transport time.
- Sensitivity of each sampling hole is within the applicable minimum and maximum hole sensitivity.

Gamewell-FCI uses Xtralis VSC, Xtralis VSM4 configuration / monitoring tools from Xtralis to configure / monitor detectors. For UL 268 7th edition compliance, all detectors are factory shipped in Open Area Applications configuration. For continuous compliance under UL 268 7th edition, ensure that under detector Smoke Thresholds configuration screen on Xtralis VSC, Xtralis VSM4:

- The correct UL7 Mode option is selected under the required application. Only Special Applications mode permits higher sensitivities and used where cooking will not occur.
- The detector fire alarm threshold settings generated with ASPIRE must be applied to the detector configuration under Alarm Levels. The fire threshold alarm level that initiates an evacuation signal must be set such that the Hole Sensitivity remains within the allowed range as shown in the tables below.

Table 1: Sensitivity Range - Special Applications

Listing	Application	Sensitivity	Air Velocity (fpm)	Hole Sensitivity				Transport Time (s)		Balance (%)	
				%/m		%/ft					
				Max	Min	Max	Min	Max	Min	Max	Min
UL	Special	High	0 - 300	0.01	1.50	0.003	0.460	85	-	Refer to ASPIRE and VESDA pipe network design guide for balance recommendations	
		High	300 - 4000	0.01	1.50	0.003	0.460	79	-		
		Medium	0 - 4000	0.01	3.244	0.003	1.00	60	-		
		Medium	0 - 4000	0.01	4.838	0.003	1.50	63	-		
		Low	0 - 300	0.01	10.00	0.003	3.160	50	-		
		Low	300 - 4000	0.01	10.00	0.003	3.160	50	-		
		Very Low	0 - 4000	0.01	12.535	0.003	4.00	34	-		
	Duct		0 - 4000	1.65	10.00	0.506	3.160	50	-		
ULC	Special		0 - 300	0.01	8.00	0.003	2.509	120	-		
			300 - 4000	0.01	4.00	0.003	1.237	120	-		
	Duct		0 - 4000	1.65	8.00	0.506	2.509	45	-		

Table 2: Sensitivity Range - Open Area Protection

Listing	Application	Air Velocity (fpm)	Hole Sensitivity				Transport Time (s)		Balance (%)	
			%/m		%/ft					
			Max	Min	Max	Min	Max	Min	Max	Min
UL	Open Area	0 - 300	5.00	10.00	1.551	3.160	50	6	100	55
		300 - 4000	5.00	10.00	1.551	3.160	50	6	100	55
ULC	Open Area	0 - 300	0.01	8.00	0.003	2.509	120	-	Refer to ASPIRE and VESDA pipe network design guide for balance recommendations	
		300 - 4000	0.01	4.00	0.003	1.237	120	-		

Product Listings

- UL
- ULC
- CSFM
- FM

Regional approvals listings and regulatory compliance vary between product models. Refer to www.gamewell-fci.com for the latest product approvals matrix.

Document: 48971_A5

Part Number: AD48971-004

Table of Contents

1 Introduction 2
- 1.1 Related Product Documents 2
- 1.2 Specific Features Related to the 2nd Gen. VESDA-E SLC Detectors 3
- 1.3 Different Modes of Operation on the 2nd Gen. VESDA-E SLC Detectors 3

2 Product Information 4
- 2.1 2nd Gen. Detector Components 4
- 2.2 VESDA-E SLC 1st Gen. and 2nd Gen. SLC Modules 5
- 2.3 How the 2nd Gen. VESDA-E SLC Detector Works in the SLC Mode 6
- 2.4 Compatible FACPs 6
- 2.5 Ordering Information 6
- 2.6 Specifications 7

3 Installation 8
- 3.1 2nd Gen. Detector SLC Loop Connections 9
- 3.2 Installation Checklist 10
- 3.3 Preliminary System Check 10
- 3.4 Specify Backup Battery 10

4 Configuration 12
- 4.1 FACP Configuration and Programming 12
- 4.2 2nd Gen. Detector Address Assignment 12
- 4.3 SLC Mode Enable / Disable 13
- 4.4 SET SLC Config 15
- 4.5 Configuration Commands 16
- 4.6 Smoke Thresholds Configuration 17
- 4.7 UL7 Mode Selection 17
- 4.8 Unmonitored GPI 18
- 4.9 Monitored GPI 18
- 4.10 Relays 18

5 Commissioning 19
- 5.1 Commissioning Smoke Test and Alarm Reporting 19
- 5.2 Troubleshooting 20

6 Appendix-1 Checklist Forms 21
- 6.1 Site Installation Checklist 21
- 6.2 Site Commissioning Form 22

1 Introduction

The Gamewell-FCI Intelligent VESDA-E VEU SLC with VESDAnet detectors, VEU-A00-GW-VN and VEU-A10-GW-VN (referred to as 2nd Gen. detectors) have an integrated Signaling Line Circuit (SLC) module to communicate with Gamewell-FCI Fire Alarm Control Panels (FACP) directly over the SLC loop. The 2nd Gen. detectors are variants of the conventional VESDA-E VEU detectors with built-in SLC interface module.

The SLC connectivity and SLC address occupancy on the 2nd Gen. detectors is backward compatible with the 1st Gen. detectors which are the VEU-A00-GW and VEU-A10-GW. The 2nd Gen. detectors have new features which are mainly VESDAnet communication and UL 268 7th Edition compliance, hence the addition of the "-VN" suffix to the model number, where the "VN" stands for VESDAnet communication.

The UL 268 7th Edition introduces a new level of performance for smoke detectors aiming to improve the life safety of the building occupants and reduce nuisance alarms.



1st Gen. Detector Model No.	Equivalent 2nd Gen. Detector Model No.
VEU-A00-GW	VEU-A00-GW-VN
VEU-A10-GW	VEU-A10-GW-VN

The 2nd Gen. detectors operationally behave the same as the equivalent conventional detectors except the way they communicate with the FACP. Refer to the respective conventional detector product guides for more information.

Note: For the 2nd Gen. detectors, this product guide only describes the specific features that are different from the respective conventional detectors.

It is essential that anyone using 2nd Gen. detectors is trained to work on the VESDA-E products and has the knowledge and appropriate certification from the local fire and electrical authorities.

1.1 Related Product Documents

- Xtralis:
  - 35712 – VESDA-E VEU-A00-UL Product Guide
  - 35713 – VESDA-E VEU-A10-UL Product Guide
  - 10195 – VESDA Commissioning Guide
  - VESDA System Design Manual
- Gamewell-FCI:
  - 48969 – VESDA-E VEU-GW-VN Installation Sheet
  - 49342 – VESDA-E VEU-FIK-VN Installation Sheet
  - For the panel-related documents and wiring supplements, please visit (www.gamewell-fci.com)

1.2 Specific Features Related to the 2nd Gen. VESDA-E SLC Detectors

All the features of respective conventional VESDA-E detector are retained on the 2nd Gen. detector except the way it communicates with the FACP. The following list highlights the specific features related to 2nd Gen. detectors:

- The 1st Gen. detectors are identified as "NFGW" in Xtralis VSC / VSM4. To distinguish the 2nd Gen. detectors, "-VN" suffix is added to indicate VESDAnet availability.
- The 2nd Gen. detectors are compliant with the UL 268 7th Edition. It is necessary to set the required UL7 Mode and the correct SLC address through Xtralis VSC / VSM4 and on the FACP. To comply with the regulatory requirements identified under section “Regional Regulatory Requirements and Notices”, ASPIRE pipe design tool is updated with required operational modes and design support.
- The RESET / DISABLE / ACKNOWLEDGE Button will only function as Acknowledge. Reset and Disable functions are deactivated.
- The relays may be used for local annunciation and control, in the 2nd Gen. VESDA-E SLC detectors, similar to conventional VESDA-E detectors.
- The Unmonitored and Monitored General Purpose Inputs (GPIs) are pre-configured to default settings and cannot be changed on the 2nd Gen. detectors. The Unmonitored GPI can be used to initiate a Remote Reset command whereas the Monitored GPI is for the Mains OK Signal.
- The Internal AutoConfig button on the 2nd Gen. detector can be used to normalize the detector, AutoLearn™ smoke function is available through this button. Use Xtralis VSC configuration tool for AutoLearn™ Smoke function.

1.3 Different Modes of Operation on the 2nd Gen. VESDA-E SLC Detectors

To accommodate the site-specific applications, 2nd Gen. detectors support different modes of operation as follows:

1. **VESDA-E SLC Mode:**
   The 2nd Gen. detectors are shipped out of the factory with the SLC mode as a default. When the 2nd Gen. VEU SLC detector is connected to Xtralis VSC, it is reported as VEU-NFGW-VN (NFGW = Notifier GW-FCI compatibility, VN = supports VESDAnet).
   Under this mode, the 2nd Gen. detector uses SLC communication for primary reporting. Furthermore, VESDAnet is available for centralized configuration and monitoring. The configuration and command parameters under FACP control are not available on Xtralis VSC.

2. **VESDA-E Conventional Mode:**
   The 2nd Gen. detectors can be configured to this mode through the Xtralis VSC software (Refer to section 4.3 SLC Mode Enable / Disable). In this mode, the 2nd Gen. VEU detector is reported as VEU-NFGW-VN (VEU).
   Under this mode, the 2nd Gen. detector behaves the same as the conventional VEU detector. The SLC communication is disabled which means that all the controls from the SLC interface are revoked.
3. **VESDA-E Mimic Mode:**
   The 2nd Gen.detectors can be configured to this mode through the Xtralis VSC software. The VEU detector is reported as VEU/-NFGW-VN (VLP), i.e., mimics a VLP detector.
   Under this mode, the 2nd Gen. detector behaves the same as a conventional VLP detector. The SLC communication is disabled which means that all the controls from the SLC interface are revoked.
   This mode is provided for legacy VESDA-L replacement (VLP / VLC / VLS).

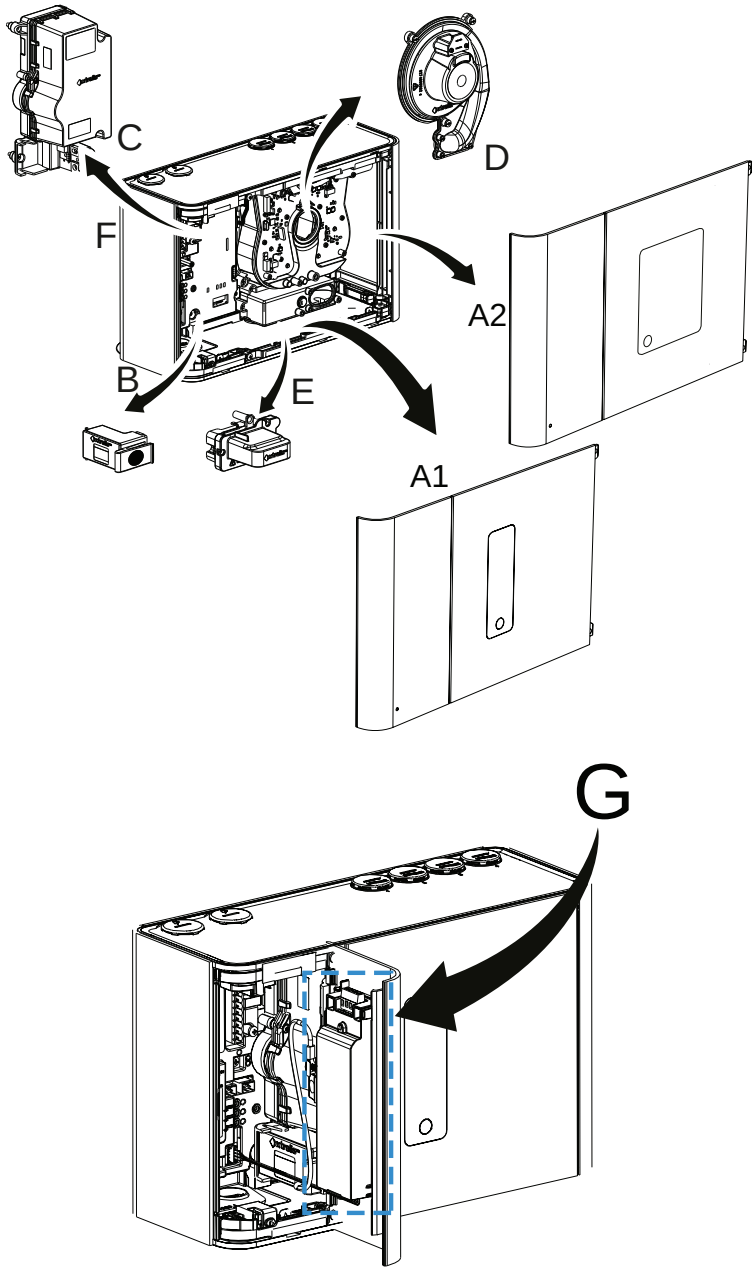
Note: This document specifies the functionality and characteristics in the SLC mode of operation. For information on the other modes, please refer to the conventional VESDA-E documents mentioned under section 1.1 Related Product Documents.

2 Product Information

2.1 2nd Gen. Detector Components

The 2nd Gen. detector is physically the same product as respective conventional detector with the same dimensions. It contains the same components as respective conventional detector with the addition of a built in SLC module. All components of the 2nd Gen. detector are shown in Figure 2-1 below.

Refer to the relevant conventional product guide for further information regarding maintenance scheduling and availability of spare parts.



Legend	
A1	Fascia for VEU-A00-GW-VN (LED's only)
A2	Fascia for VEU-A10-GW-VN (with 3.5" touchscreen display)
B	Filter
C	Chamber Assembly
D	Aspirator
E	Sampling Module
F	Base
G	SLC Interface Card

Note: Filter is hidden for better view.

Figure 2-1: 2nd Gen. Detector Components

2.2 VESDA-E SLC 1st Gen. and 2nd Gen. SLC Modules

The two series of detectors look the same from the outside and have similar components. The key to differentiate is the SLC module. These SLC modules are not interchangeable.

The SLC module on the 2nd Gen. detectors has 4 terminals and looks physically different from the 1st Gen. SLC module which has 8 terminals.

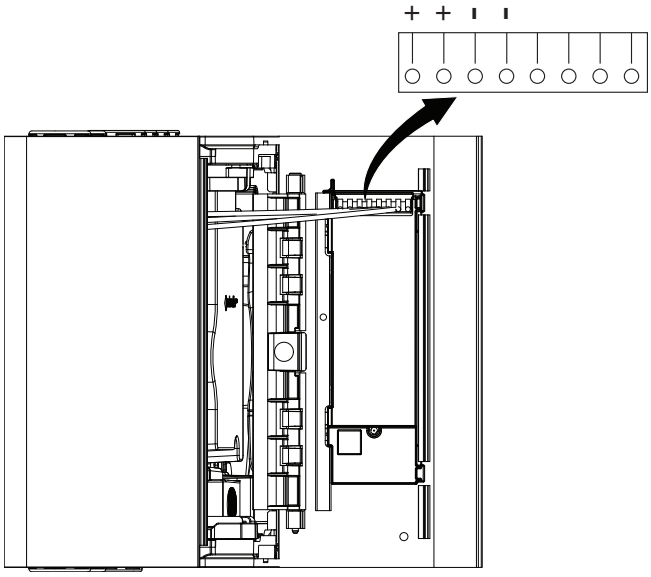


Figure 2-2: 1st Gen. Detector SLC Module

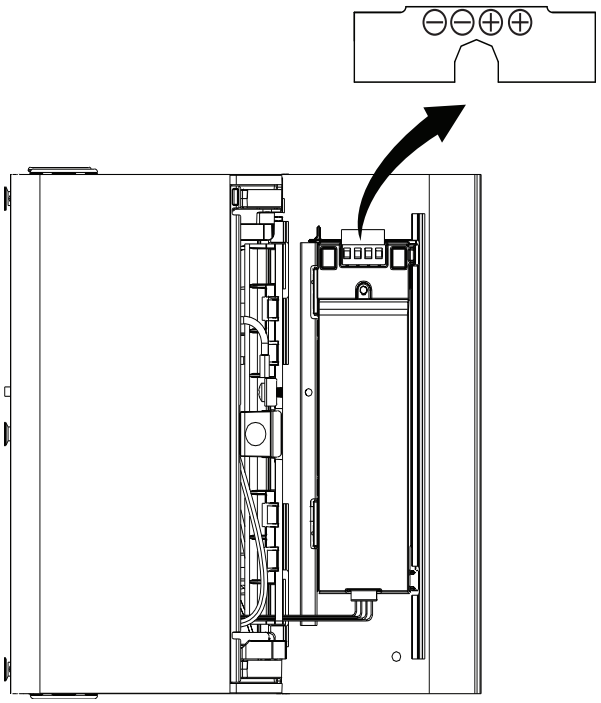


Figure 2-3: 2nd Gen. Detector SLC Module

2.3 How the 2nd Gen. VESDA-E SLC Detector Works in the SLC Mode

The 2nd Gen. detector operates identically to the respective conventional detector with specific differences in how it communicates with the FACP and uses the internal button. Refer to the respective conventional product guide for more details, the main deference is described below.

- The 2nd Gen. detector communicates with the FACP on the SLC loop using the SLC protocol. Essential alarms and faults are available on the FACP, and the panel can control the essential detector parameters and functional status. In comparison, the respective conventional detector uses external FACP monitor modules to connect to the SLC loop with relay-based basic alarms and fault annunciation. The 2nd Gen. detector does not require external modules.

2.4 Compatible FACPs

The following Gamewell-FCI FACPs are compatible with the 2nd Gen. detectors:

- E3 Series
- S3 Series

2.5 Ordering Information

2nd Gen. Detector Model No.	Model Description
VEU-A00-GW-VN	VESDA-E VEU w LEDs, GW, UL7, Vnet
VEU-A10-GW-VN	VESDA-E VEU w 3.5" Dis, GW, UL7, Vnet

2.6 Specifications

Note: The specifications section incorporates the values for the integrated unit.

Table 2-1: 2nd Gen. VESDA-E VEU SLC Detector Specifications

<table>
<tr><th>Specification</th><th>Value</th></tr>
<tr><td>Supply Voltage Range</td><td>18 to 30 V DC (24 V DC Nominal)</td></tr>
<tr><td>Maximum Power Consumption*</td><td>Quiescent: 0.84 A
In alarm: 0.88 A</td></tr>
<tr><td>Nominal Power Consumption @24 V DC</td><td>
<table>
<tr><td></td><td colspan="3">VEU-A00-GW-VN</td><td colspan="3">VEU-A10-GW-VN</td></tr>
<tr><td>Aspirator Setting</td><td>1</td><td>5</td><td>10</td><td>1</td><td>5</td><td>10</td></tr>
<tr><td>Power (Quiescent)</td><td>0.29 A</td><td>0.38 A</td><td>0.61 A</td><td>0.32 A</td><td>0.41 A</td><td>0.64 A</td></tr>
<tr><td>Power (In Alarm)</td><td>0.32 A</td><td>0.41 A</td><td>0.64 A</td><td>0.35 A</td><td>0.44 A</td><td>0.67 A</td></tr>
</table>
</td></tr>
<tr><td>SLC Current Consumption</td><td>0.005 A</td></tr>
<tr><td>Dimensions (WxHxD)</td><td>13.8 in x 8.9 in x 5.3 in (350 mm x 225 mm x 135 mm)</td></tr>
<tr><td>Weight</td><td>12.01 lbs (5.45kg)</td></tr>
<tr><td>Operating Conditions
Please consult your Gamewell-FCI representative for information on operation outside these parameters or where sampled air is continually above 0.015% obs/ft (0.05% obs/m) under normal operating conditions.</td><td>• Detector Ambient: 32°F to 100°F (0°C to 38°C)
• Sampled Air: -4°F to 140°F (-20°C to 60°C) *
• Humidity: 5-95% RH, non-condensing
* Sampled Air temperature shall reach Ambient Detector temperature upon entry into detector. Refer to Xtralis Design Guides and Application Notes for sampled air pre-conditioning.</td></tr>
<tr><td>Storage Conditions
(Non-operational)</td><td>• Humidity: Dry (<95%)
• Temperature: 0° to 85°C
• Must not be exposed to sunlight or other radiation sources</td></tr>
<tr><td>Relays</td><td>• 7 programmable relays
• Contacts rated 2 A @ 30 VDC (Resistive)</td></tr>
<tr><td>GPIs</td><td>• Unmonitored GPI: In the SLC mode of operation, the Unmonitored GPI is pre-configured to the Remote Reset function
• Monitored GPI: In the SLC mode of operation, the Monitored GPI is pre-configured for the Mains OK Signal
• In the other modes of operation, the GPIs are programmable</td></tr>
<tr><td>Connection to the Fire Alarm Control Panel</td><td>Direct connection to the SLC loop through recommended wiring</td></tr>
<tr><td>Cable Termination</td><td>Screw terminal blocks (0.2-2.5 sq mm, 24-14 AWG)
SLC connection from IFC card terminal block (0.2-2.5 sq mm, 24-14 AWG)</td></tr>
<tr><td>Measurement Range</td><td>0.0000 to 11.09% obs/ft (0.000 to 32% obs/m)</td></tr>
<tr><td>Sensitivity Range</td><td>0.0003 to 6.575% obs/ft (0.001% - 20.0% obs/m)</td></tr>
</table>

* Maximum current measured is from the supply voltage that generates the highest current.

3 Installation



Caution: Operating the detector when DC supply voltage is outside the specified voltage range may cause damage to internal components. For further information refer to the 2.6 Specifications.



Attention : Le détecteur de fonctionnement lorsque la tension d'alimentation DC est en dehors de la plage de tension spécifiée peut endommager les composants internes. Pour plus d'informations, se reporter au notice descriptive du produit à la page 2.6 Specifications.



Caution: Electrostatic discharge (ESD) precautions need to be taken prior to removing the fascia from the detector in order to prevent damage to sensitive electronic components within the 2nd Gen. detector.



Attention : Les precausions contre le decharge electrostatique dois etre respecter avant d'ouvrir le panneau du detecteur afin de prevenir au dommage des composants electroniques a l'interieur du 2nd Gen. detecteur .

The 2nd Gen. detector is installed identically to respective conventional detector with the addition of the SLC loop wiring. Refer to the respective installation instructions document mentioned under section 1.1 Related Product Documents of this guide for the installation process.

For more details refer to the following documents:

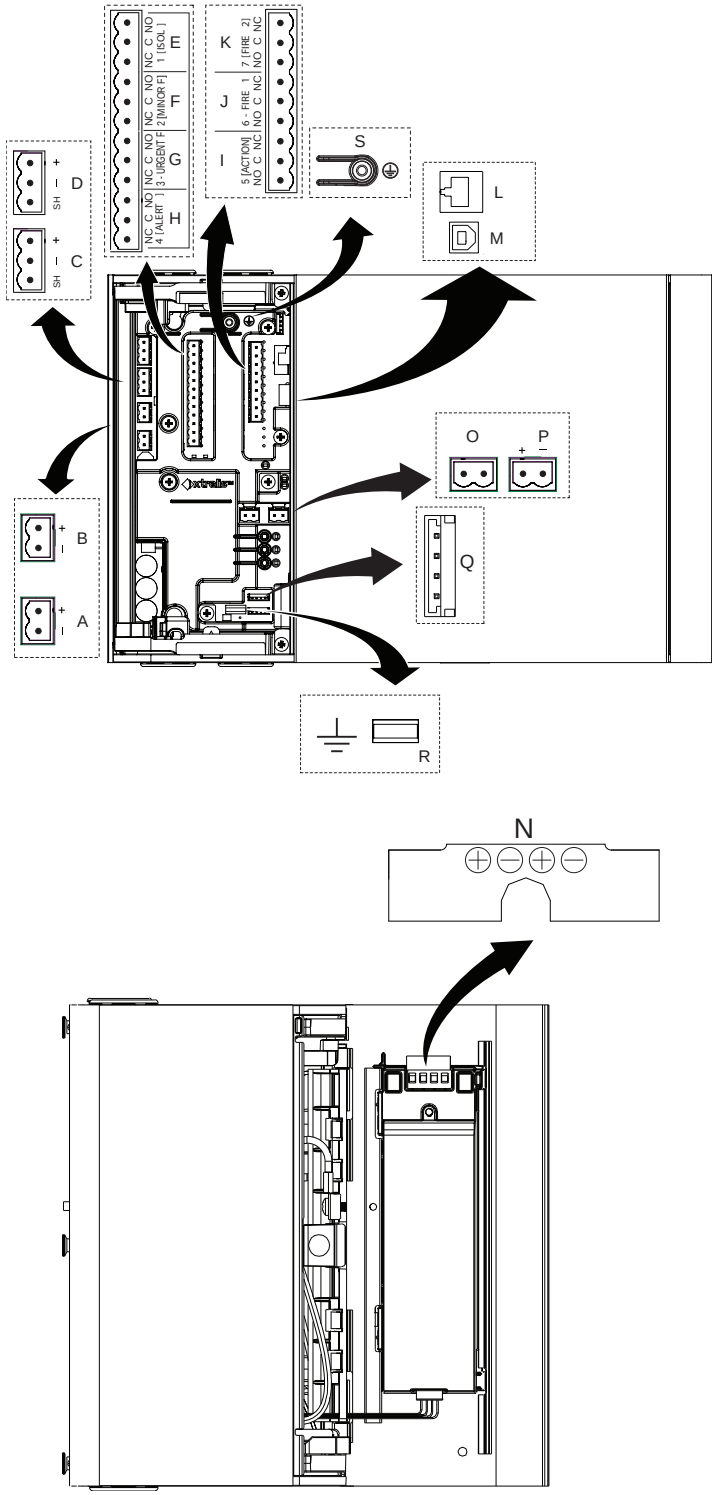
- The respective conventional detector product guides.
- The VESDA-E System Design Manual for cabling details

Note:

- Follow ASPIRE guidelines for pipe network designs and installation.

3.1 2nd Gen. Detector SLC Loop Connections

Refer to the diagram below for connecting the SLC Loop from one unit to the other.



Legend

Power

A	Power Out
B	Power In

VESDAnet

C	VESDAnet B
D	VESDAnet A

Relays

E	1 - Isolate (Disable)
F	2 - Minor Fault
G	3 - Urgent Fault
H	4 - Alert
I	5 - Action
J	6 - Fire 1
K	7 - Fire 2

Communications

L	Ethernet
M	USB
N	SLC Connection
Q	EBUS port
R	Reference Terminal For UL installations connect to local ground to enable ground fault detection on VESDAnet

GPI

O	Monitored GPI
P	Unmonitored GPI

Chassis Ground

S	Chassis Ground Terminal

Figure 3-1: 2nd Gen. Detector SLC Loop Connection

3.2 Installation Checklist

Refer to Appendix-1 Checklist Forms for the installation checklist.

3.3 Preliminary System Check

A preliminary system check is required after installing the 2nd Gen. detector, before it is commissioned for use.

To perform the preliminary system check:

- Power up the detector by connecting the power supply to the Power In terminal.
- Check that the display is functioning.
- Check that the aspirator is functioning by determining whether air is being expelled from the exhaust port.

3.4 Specify Backup Battery

In the event of a mains power supply disruption, the VESDA-E VEU detector runs on a backup battery located in the external power supply (the power supply must be compliant with local fire protection codes and standards). The size of the battery is determined by:

- local codes and standards
- the total power required by the system
- back up time required
- allowance for reduction in capacity with age
- expected temperature variations

Note: It is recommended that batteries be inspected and changed as per manufacturer's specifications or as per local codes and standards.

To facilitate the calculation of the backup battery size, a Battery Calculation Sheet is included below.

Table 3-1: Calculating the size of backup battery (VEU-A00-GW-VN)

Equipment	**Normal loads @ 24 V DC**			**Full alarm load @24 V DC**		
	Load (A)	**Qty**	**Total**	**Load (A)**	**Qty**	**Total**
Detector set to Fan Speed 1	0.29			0.32		
Detector set to Fan Speed 5	0.38			0.41		
Detector set to Fan Speed 10	0.61			0.64		
Other 24V Loads		Total (A)			Total (A)	
			X			X
	Normal Hours			Alarm Hours		
			=			
	Normal Capacity			Alarm Capacity		
				Total Capacity = Normal + Alarm		
				Multiply by battery factor X1.25		

Table 3-2: Calculating the size of backup battery (VEU-A10-GW-VN)

Equipment	**Normal loads @ 24 V DC (Backlight off)**			**Full alarm load @24 V DC (Backlight on)**		
	Load (A)	**Qty**	**Total**	**Load (A)**	**Qty**	**Total**
Detector set to Fan Speed 1	0.32			0.35		
Detector set to Fan Speed 5	0.41			0.44		
Detector set to Fan Speed 10	0.64			0.67		
Other 24V Loads		Total (A)			Total (A)	
			X			X
	Normal Hours			Alarm Hours		
			=			
	Normal Capacity			Alarm Capacity		
				Total Capacity = Normal + Alarm		
				Multiply by battery factor X1.25		

4 Configuration

Like a conventional detector, the configuration of the 2nd Gen. detector uses Xtralis VSC software. During the configuration phase, the FACP connection via the SLC module is required to set the SLC address, hence ensure that the SLC wiring has been completed on the detector.

A PC loaded with Xtralis VSC software is directly connected to the 2nd Gen. detector using the USB port for initial configuration of the 2nd Gen. detector.

Follow the relevant conventional detector product guide to connect to / via Xtralis VSC noting the differences between conventional and 2nd Gen. detector features described in section 1.2 Specific Features Related to the 2nd Gen. VESDA-E SLC Detectors.

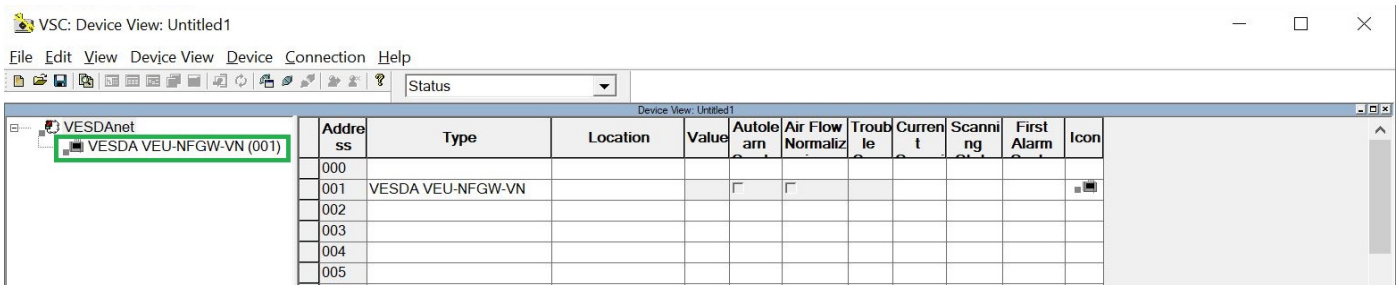
4.1 FACP Configuration and Programming

For FACP programing, use "Aspirating multi" as the Type Code. During the AutoLearn process, the FACP will identify the device type automatically.

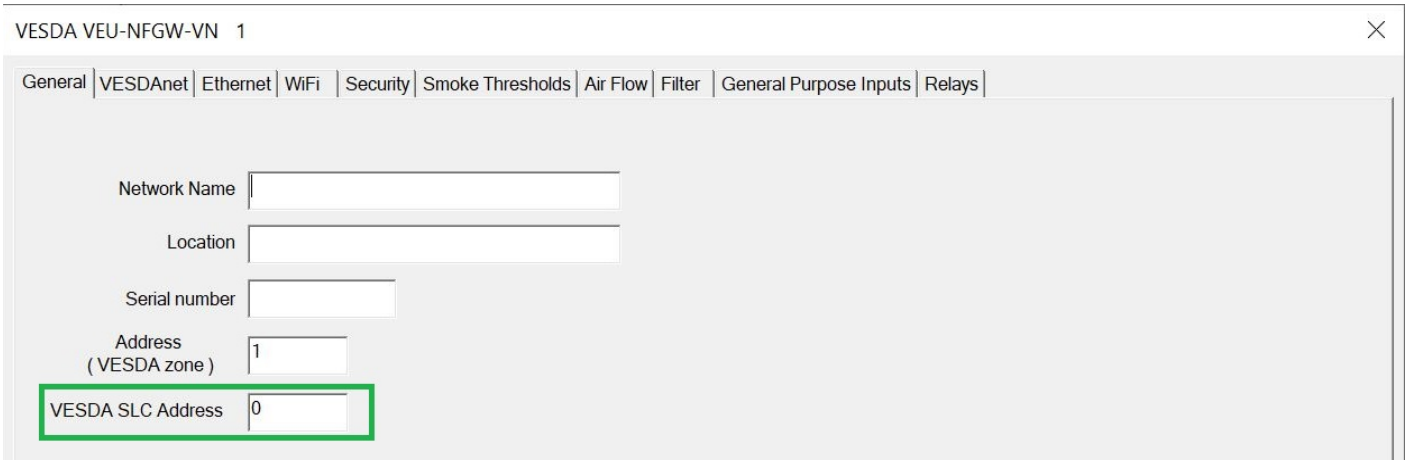
4.2 2nd Gen. Detector Address Assignment

The SLC loop addressing for the 2nd Gen. detector is set using the VSC software, refer to the screenshot below. If VESDAnet is not in use, the VESDAnet zone configuration (also appearing in this configuration screen) may be ignored.

The following screenshot is the main screen of the Xtralis VSC software showing a connected 2nd Gen. detector.



Double click on the detector highlighted in the green rectangle above to get the following screen where the VESDA-E SLC loop address can be set as shown below then click Ok to save the address.

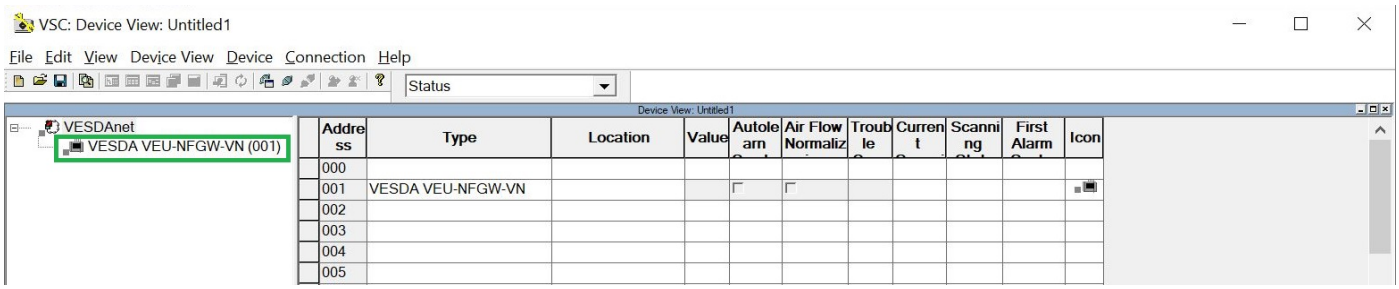


Notes:

- Each SLC loop can support a maximum of 159 2nd Gen. detectors.
- Each 2nd Gen. detector occupies one (1) address on the SLC loop.

4.3 SLC Mode Enable / Disable

The following screenshot is the main screen of the Xtralis VSC software showing a connected 2nd Gen. detector.



Right click on the detector highlighted in the green rectangle above to get the following screen where the VESDA-E SLC can be Enabled / Disabled.

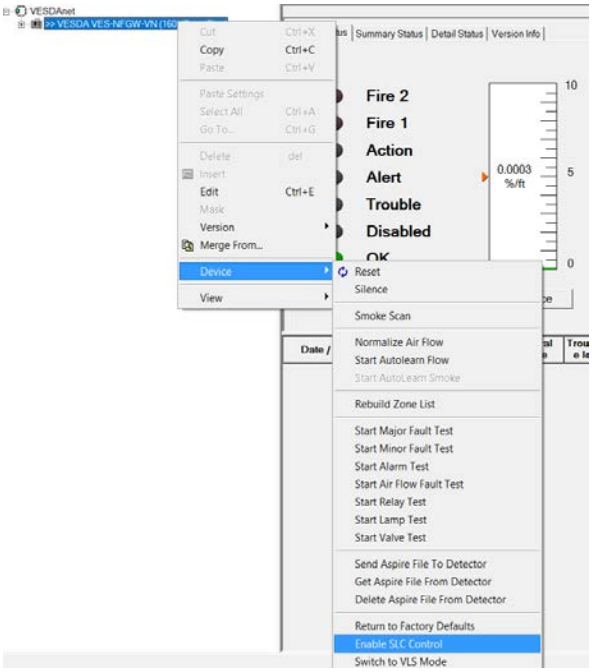


Figure 4-1: Enable SLC Mode

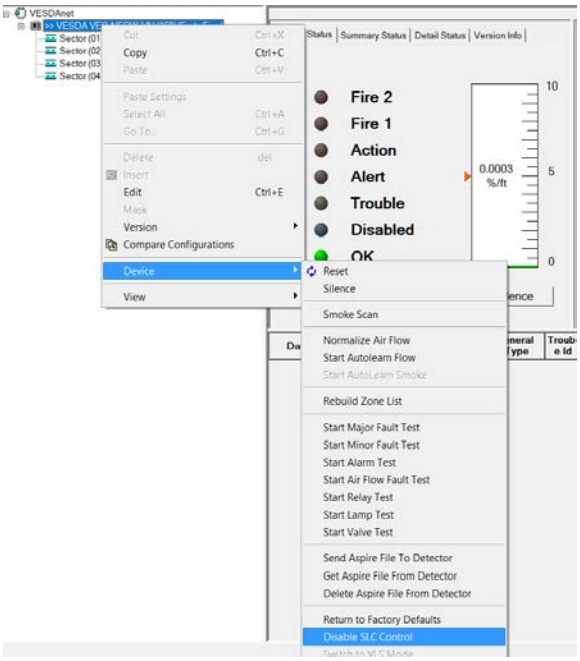
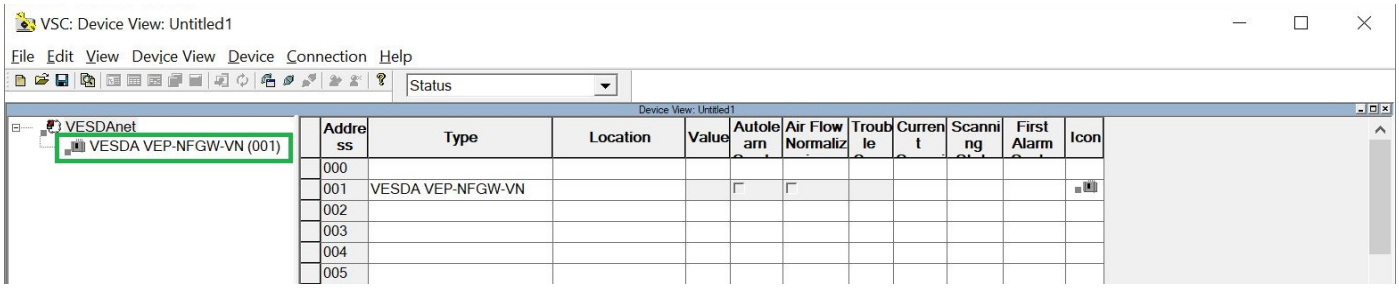


Figure 4-2: Disable SLC Mode

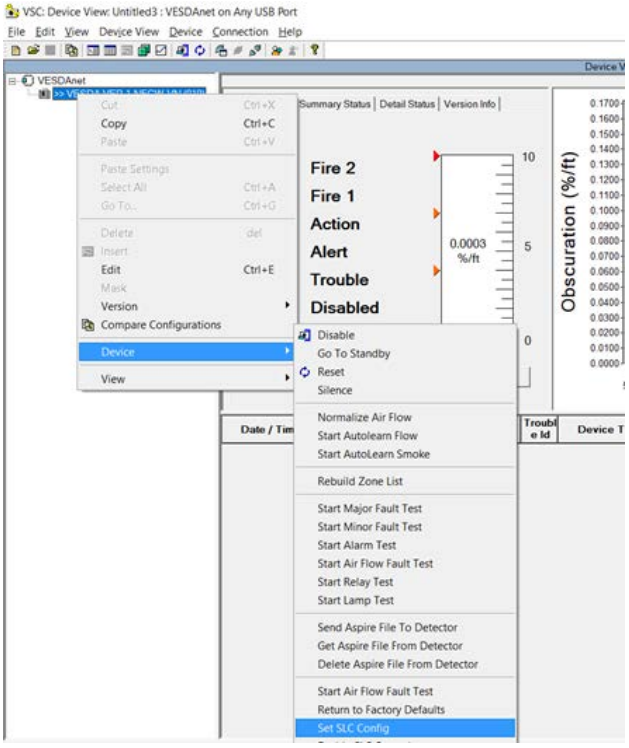
4.4 SET SLC Config

The SET SLC Config for the 2nd Gen. detector is to set the SLC mode to their default configurations.

The following screenshot is the main screen of the Xtralis VSC software showing a connected 2nd Gen. detector.



Right click on the detector highlighted in the green rectangle above to get the following screen where the SET SLC Config mode can be selected.



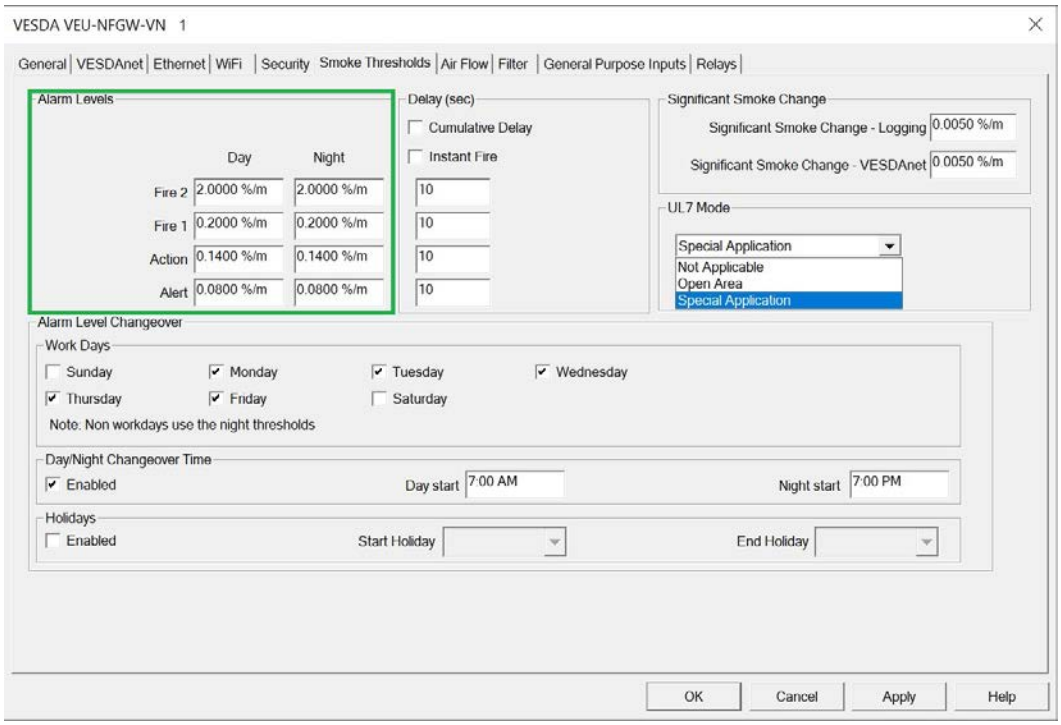
4.5 Configuration Commands

Refer to the respective conventional VESDA-E product guide for detector configuration steps. (See Related Product Documents on page 2). Not all configuration commands defined in conventional VESDA-E product guide can be issued using VSC in an SLC interfaced detectors. The following are the commands available using VSC:

Command	Command Description
Reset	Resets the alarm generation logic. A Reset command does not affect relays or LEDs, will not enable a disabled detector, and will not reactivate a detector that is in standby mode.
Start AutoLearn™ Smoke	Prompts the user to set the period of time that the environment is monitored to allow the system to decide which smoke thresholds are most appropriate. When the AutoLearn™ function is completed, the smoke thresholds are overwritten. Once complete, review to confirm that the thresholds are within ranges allowed by local codes and standards. Refer to the Commissioning Section in the relevant VEU Product guide for more information.
Cancel AutoLearn™ Smoke	Cancels the AutoLearn™ Smoke process. Smoke thresholds will remain at levels set prior to initiating the AutoLearn™ Smoke function.
Start Alarm Test	Simulates full scale smoke levels, initiating the Alert, Action, Fire 1 and Fire 2 alarm conditions to occur.
Start Air Flow Fault Test	Tests the air flow sensing system by shutting down the aspirator.
Return to Factory Defaults	Restores the configuration of the detector to the initial factory default values. This setting will overwrite the SLC defaults. For SLC operation, the “Set SLC defaults” command needs to be performed following this command.
Set SLC defaults	Sets the SLC Mode to their defaults settings.
Set System Date and Time	Sets the detector date and time.
SLC Address	Sets the SLC loop address for the detector. Range is 1 to 159. Default is 0. Refer to section 4.2 2nd Gen. Detector Address Assignment above.

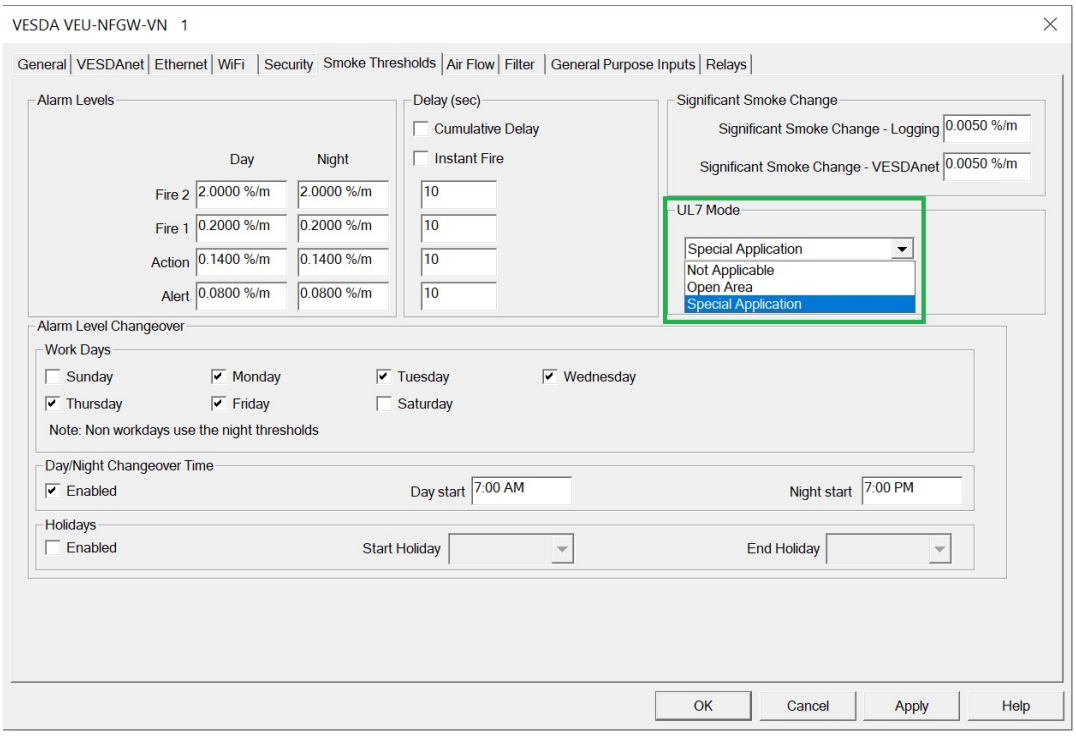
4.6 Smoke Thresholds Configuration

The smoke thresholds of the four alarm levels are configurable as shown below.



4.7 UL7 Mode Selection

Select the required UL7 Mode depending on the installed application using the VSC software as shown below. Please refer to the difference between the two UL7 modes as explained under section “Regional Regulatory Requirements and Notices”.



4.8 Unmonitored GPI

In the SLC mode of operation. The Unmonitored GPI is an input which can be used to initiate a Remote Reset function.

4.9 Monitored GPI

In the SLC mode of operation, the monitored GPI is pre-configured to default settings and cannot be changed on the 2nd Gen. detectors.

A 10K end of line resistor is used to allow the detector to monitor for open circuit faults in the wiring from the detector to the contact.

4.10 Relays

The relays are configurable in the SLC mode of operation but used only for local annunciation and control.

5 Commissioning

Once configured appropriately, ensure that the 2nd Gen. detector can communicate with the FACP without any faults. Disconnect the SLC loop connection on the 2nd Gen. detector and verify that a communication fault is triggered at the FACP if required. Once the above is verified, follow the commissioning process described in the relevant conventional detector product guide. Refer to Appendix-1 Checklist Forms for the 2nd Gen. detector commissioning forms.

Once the 2nd Gen. detector is commissioned, it will report alarms and faults according to the parameters defined during installation.

5.1 Commissioning Smoke Test and Alarm Reporting

It is essential that a commissioning smoke test be carried out to verify the integrity of the pipe network, in addition to demonstrate that the system is working end to end and to measure the transport time to the detector.

This test involves introducing a smoke sample at the furthest sampling hole and then measuring the time taken for the smoke to travel to the detector. Results are logged and compared to subsequent tests to note variations of the system.

Base address 1 - VESDA-E device reports "Alert" - FACP reports "Alert".

Base address 1 - VESDA-E device reports "Action" - FACP reports "Action".

Base address 1 - VESDA-E device reports "Fire 1" - FACP reports "Fire Level 1".

Base address 1 - VESDA-E device reports "Fire 2" - FACP reports "Fire Level 2".

If the address set from Xtralis VSC is any number between 1 and 159, the 2nd Gen. detector occupies that one address on the loop. The address will represent the alarm levels as explained above and per the table below. If the smoke threshold reaches the programmed threshold on the 2nd Gen. detector then the respective alarm level is reported on the FACP.

2nd Gen. Detector Address	FACP Alarm Levels
1	Alert as Trouble
	Action
	Fire Level 1
	Fire Level 2

Refer to the relevant commissioning guide and FACP documents for the details of how alarms are reported on the FACP.

5.2 Troubleshooting

Faults are reported to FACP via the SLC interface in SLC enabled detectors. All the detector faults are mapped to the following categories at the FACP. Use the Xtralis VSC software to further investigate the fault.

- Sensor fault
- Aspirator fault
- Communication fault
- Configuration fault
- Low flow fault
- High flow fault
- Filter fault – door is open
- Filter fault – clogged
- Low voltage fault

Refer to the troubleshooting section of the VEU-A10-UL (Doc. No. 35713) and VEU-A00-UL (Doc. No. 35712) product guides for additional fault information.

Note: Ensure that the FACP is in Service Mode before replacing the 2nd Gen. detector's filter during maintenance. Service Mode to be disabled in the FACP upon the completing the required maintenance.

6 Appendix-1 Checklist Forms

6.1 Site Installation Checklist

Ensure that the SLC loop connection has been completed as part of the installation checklist.

Site Name	
Address	
Detector Serial Number(s) and Date of Manufacture	
Name of Installer	
Signature	
Date	

Perform the following checks listed below to ensure that all the necessary items are completed before handing over to a commissioning engineer.

Installation Checks	**Done (Y/N)**
The detector is securely locked onto the mounting bracket (if in use).	
The sampling air pipes are firmly connected to the air inlet ports. Ensure that the pipes are NOT glued.	
The power supply wiring has been connected to the detector.	
The SLC loop wiring to the FACP has been completed.	
The adhesive tape has been removed from the exhaust port. Ensure that the exhaust pipe (if fitted) is NOT glued.	
The protective film has been removed from the display.	
The air sampling pipework has been installed and checked as per the site plans.	

6.2 Site Commissioning Form

Table 6-1: 2nd Gen. detector commissioning form

Customer Name	
Site Address	
Installer (Name & Contact)	
Commissioner (Name & Contact)	

Commissioning Checks	**Done (Y/N)**	**Notes**
Aspirator speed setting and pipes in use configured as per ASPIRE.		
Detector alarm thresholds configured.		
Detector Normalised.		
SLC loop wiring checks		
SLC loop address setting		
Integrated detector setup on the SLC loop with no errors at the FACP.		
Communication fault reported to the FACP when the detector power was removed.		
Reset detector – Check that detector is running with no faults.		
Smoke Test done. Transport time tested.		

Commissioning checklist for the Remote Display/Relay – If used.

Commissioning Checks	**Done (Y/N)**	**Notes**
Zone number configured.		
Have checked that no faults are reported.		

Client Representative Name	
Test witnessed by:	Date:

Hand Over Documents	
Copy of this form ASPIRE Bill of Materials Configuration printout from Xtralis VSC for each detector Configuration printout from Xtralis VSC for each display module Smoke test results Forms required for compliance with local codes and standards	

Customer's Signature	Date:
Commissioner's Signature	Date:

6.2.1 Record Commissioning Configuration

To record the detector's configuration, you can print it using Xtralis VSC. To print the configuration select the detector on the Xtralis VSC tree view at left and choose the Print command on the File menu.

6.2.2 Record ASPIRE Data

Print the ASPIRE Installation Data Pack (IDP) in order to record the ASPIRE modelling results for the system.

6.2.3 Smoke Test Commissioning Form

Table 6-2: Smoke Test commissioning form

Test Results	
Test Method	
Type of Smoke	
Test Date	

6.2.4 Air Sampling Test Results

Table 6-3: Air Sampling Test results commissioning form

		Pipe 1	Pipe 2	Pipe 3	Pipe 4
	Transport Time from End Cap Hole				
Test 1	Initial Response				
	Fire1 (Alarm)				
	Peak Smoke				
Test 2	Initial Response				
	Fire1 (Alarm)				
	Peak Smoke				

Honeywell

Gamewell FCI FIRE CONTROL INSTRUMENTS

www.gamewell-fci.com
Doc. No. 48971_A5
Part No. AD48971-004
July 2024

All technical data is correct at the time of publication and is subject to changes without notice. All Intellectual Property including but not limited to trademarks, copyrights, patent are hereby acknowledged. You agree not to copy, communicate to the public, adapt, distribute, transfer, sell, modify or publish any contents of this document without the express prior written consent of Gamewell-FCI. Installation information: In order to ensure full functionality, refer to the installation instructions as supplied. © Gamewell-FCI