VESDA® Ex d™

The VESDA Ex d has been specifically designed to provide very early warning smoke detection capability within hazardous area locations that may contain flammable gases. The VESDA Ex d satisfies the need of those end users who implement risk based fire-engineering practices and recognise the value of their critical assets.

The VESDA Ex d detector is certified Ex d IIB T6. The Ex d certification confirms that the enclosure can withstand an internal explosion and prevent the transmission of the explosion to the surrounding explosive atmosphere.

Gas Group IIB includes but is not limited to ammonia, propane and methanol. The T6 classification allows use of the VESDA Ex d in hazardous areas classified T1 through to T6.

Description

The VESDA detector is housed in an Flameproof enclosure. The air inlet and exhaust ports provide Ex d protection through the use of Flame Arrestors.

The VESDA detector is supplied with the full compliment of VESDA features including multiple alarm levels, AutoLearn, Referencing and comprehensive event logging.

The detector is supplied with VESDAnet, the fault tolerant communications protocol, as standard. VESDAnet supports reporting and remote control/diagnostics of the detector from a non-hazardous area allowing easier periodic maintenance reviews without the need to open the Ex d enclosure cover.

With VESDAnet, the standard remote module options are available. Remote displays can be used for immediate status reviews displaying alarm levels, smoke levels, common faults and also the ability to remotely reset and isolate the detector. Remote relays provide extensive and flexible relay reporting.

With access via VESDAnet, standard VESDA PC Software permits remote access to detector settings and extensive event logs. VESDAnet access allows remote diagnostics and modifications including smoke trends, alarm thresholds, air-flow trends and detector configuration. The General Purpose Input function can be configured to automatically isolate the detector or put it in standby mode when particular conditions apply.

The VESDA Ex d has hinged internal access to ease the maintenance process and the enclosure has 4 x M25 holes for Ex d certified cable glands.

How It Works

The air samples collected in a protected area are transported by the pipe network to the VESDA detector. The air sample is passed through an inline deflagration flame arrestor as it enters the explosion proof enclosure.

The air sample is passed through the First Stage of a two stage filter, removing dust and dirt from the sampled air.
A small percentage of this air flows to the detector chamber for smoke detection.
The Second Stage Filter further filters the air sample to produce ultra clean air.
The ultra clean air is used to protect the optical integrity of the surfaces in the detection chamber.

The detection chamber is absolutely calibrated and uses a stable highly efficient laser light source and unique sensor configuration to achieve the optimum response to a wide range of smoke types. When smoke passes through the detection chamber it creates light scattering which is detected by the very sensitive sensor circuitry.

The exhaust air from the detector passes through a Flame Arrestor before being returned to the protected area maintaining the Ex d integrity of the unit.

Features

- Ex d IIB T6 certified
- Ex d certified Flame Arrestors to protect Inlet & exhaust Ports
- Absolute smoke detection
- Wide Alarm Threshold Sensitivity range
- VESDAnet connectivity
- AutoLearn™
- Referencing
- Three alarm levels
- Programmable Relays
- Arflow monitoring
- Remote display and relay capability
- Simple mounting design
- Hinged door

xtralis®

VESDA® Ex d™

Specifications

Supply Voltage: 18 to 30 V dc (nominally 24 V dc)

Power Consumption: 8.0 watts quiescent, 8.6 watts alarm

Current Consumption: 335 mA nominal, 360 mA in alarm @ 24 Vdc

Fuse Rating: 1.6A

Enclosure Rating: Ex d IIB T6

Enclosure Dimensions (WHD): 490 mm x 358 mm x 208 mm ($19^3/_8$ in x $14^1/_8$ in x $8^1/_8$ in)

Enclosure Weight: 44 Kg (approx. 97 lbs.)

Operating Conditions:

Detector Ambient: -10° C to 39° C (14° to 103° F)
Sampled Air: -20° to 60° C (-4° to 140° F)
Humidity: 10-95% RH, non-condensing

Sampling Network:

Single pipe length 50 m (164 ft) max.
Twin (branched) pipe length 30 m (98 ft) max per branch
Max. 10 Sampling Holes inc End Cap
Min. 2 Sampling Holes inc End Cap in all cases

Pipe ID:

Internal Diameter: 15-21 mm (9/16" – 7/8")
External Diameter: 25 mm (1")
Sampling pipe gland: - 2 x 25 mm (1in)

IP Rating: IP66

Mounting: 4 external lugs with holes centred at 318 x 452 mm accepting 10mm bolts

Cable Access:

4 x M25 holes for Ex d-approved cable glands (not supplied).
Unit shipped with Ex d blanking plugs only.

Cable Termination:

Screw terminal blocks 0.2-2.5 mm^2 , (30-12 AWG)

Alarm Threshold Setting Range:

Alert: 0.005 - 1.990% obs/m (0.0015 - 0.6218% obs/ft)
Pre-Alarm: 0.010 - 1.995% obs/m (0.0031 - 0.6234% obs/ft)
Fire: 0.015 - 20.00% obs/m (0.0046 - 6.25% obs/ft)*
*Limited to 4% obs/ft for UL

Software Features:

Event Log: Up to 12,000 events stored on FIFO Smoke level, alarms and faults with time and date stamp
AutoLearn: Minimum 15 minutes, maximum 14 days
During AutoLearn thresholds are NOT changed from pre-set values.

Standards & Approvals:

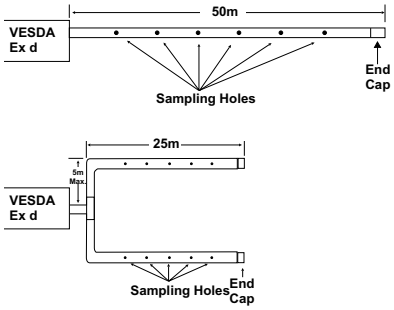
Australia
AUS Ex 03.3854X
Ex d IIB T6 IP66

Ordering Information:

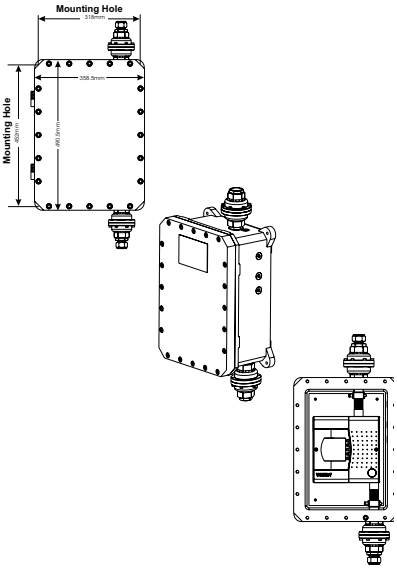
VLX-100 VESDA Ex d	
Optional Devices:	
Remote LaserCOMPACT Display and Relays	VRT-J00
Remote VESDAnet Socket	VRT-300
Remote LCD Programmer	VRT-100
VESDA System Management (VSM3)	VSW-007
VConfigPRO	VSW-005
Spare Parts:	
Flame Arrestor	VSP-400
VLC Ex d VN Detector	VSP-405

To confirm the suitability of the VESDA Ex d for your application please refer to the VESDA Regional Office closest to you

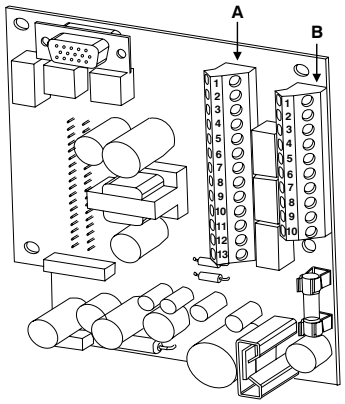
Recommended Example of Sampling Pipe Networks



VESDA Ex d External Dimensions



Detector Termination Card



Terminal A		Terminal B	
1	Bias (-) (GND)	1	Shield
2	Reset (-)	2	VESDAnet-A (-)
3	Reset (+)	3	VESDAnet-A (+)
4	Bias (+)	4	Shield
5	LED (-) (GND)	5	VESDAnet-B (-)
6	LED (+)	6	VESDAnet-B (+)
7	FIRE (NO)	7	Power (-)
8	FIRE (C)	8	Power (+)
9	PRE-ALARM	9	Power (-)
10	PRE-ALARM (C)	10	Power (+)
11	FAULT (NO)		
12	FAULT (C)		
13	FAULT (NC)		

*Depending upon local codes and standards †Operation outside these parameters will reduce detector life.

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