Fike®
Protection Systems

VESDA LaserPLUS
Detector Unit

UL: S5198, FM: OB5A5.AY
SSL, LPCB

CATALOG NUMBER 1142

Detector Unit

The Detector is the central element of the VESDA LaserPLUS product range. Using unique detection principles, the Detector provides a sensitivity range of 0.0015 to 6% obscuration/ft (0.005 to 20% obscuration/m). It detects fire at the earliest possible stage and reliably measures very low to extremely high concentrations of smoke.

Features

■ Wide Sensitivity Range
■ Laser-Based Light Source
■ 4 Configurable Alarm Levels
■ Purpose-Built Aspirator
■ 4 In-Line Inlet Pipes
■ Flow Sensor for Each Pipe Inlet
■ Wide Range DC Power
■ Low-Cost Maintenance
■ Dual-Stage Filter
■ Easy Access to Filter Cartridge
■ 7 Software Configurable Relays
■ Recessed Mounting
■ Multiple Exhausts

Description

The Detector Unit consists of three main sections:

The *mounting box* includes:
■ Four-Pipe Inlet Manifold
■ Exhaust Manifold
■ Air Flow Sensor Card
■ Head Termination Card
   The Termination Card supports seven relays that produce Alert, Action, Fire 1 and Fire 2 signals. It also supports Service, Urgent Fault and Isolate signals. The card provides connections for power and the VESDA*net*™ cabling.

The *chassis* brings together:
■ Laser Detection Chamber
■ Head Processor Card
■ Dual-stage Filter Cartridge
■ Aspirator

The *cover* supports a flexible combination of insertable modules:
■ Display
■ Programmer
■ Blank Plates

Compatibility

The VESDA LaserPLUS is Listed for use with Fike's Intella-Scan, Intella-Scan II, Rhino, SHP and Cheetah control panel.

Additionally, the Cheetah control panel can be configured to communicate directly with one or more LaserPLUS detectors. This configuration provides an integrated approach to system operation by providing each LaserPLUS detector the same functionality as a Cheetah photo, ion or heat detector. LaserPLUS conditions such as alert, action, fire 1 and fire 2 are reported directly to Cheetah for processing. In addition, pre-programmed % obscuration levels and measured values are displayed on the Cheetah LCD display.

How It Works

Air is continually drawn through a network of sampling pipes by the high efficiency Aspirator. It enters the Detector through one of four pipes. Each pipe inlet has a flow sensor which supervises for changes in the flow rate. Air is exhausted from the Detector in one of three places and may be back-vented to the protected zone to avoid pressure differentials.

Inside the Detector, a sample is passed to the detector chamber via a dual-stage filter. The first stage removes dust and dirt from the sample before entering the chamber.

The second ultrafine stage provides an additional clean air supply. This is used inside the detector chamber to form a clean air barrier which protects the sensitive optical surfaces from contamination.

The detection chamber uses a stable 3mW laser light source and carefully positioned sensors to achieve the optimum response to a vast range of smoke types.

The status of the Detector, and all alarm, service and fault events, are transmitted to displays and external systems via VESDA*net.*
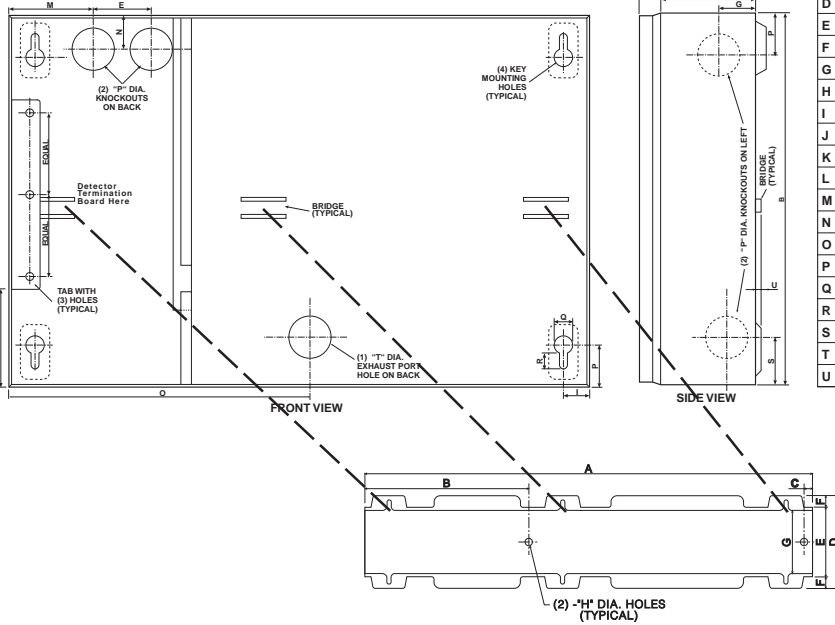
Detector Unit Specifications

Detector Termination Card

Detector Mounting Box

TOP VIEW

FRONT VIEW

SIDE VIEW

Detector Termination Board Here
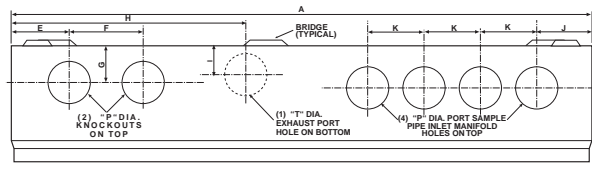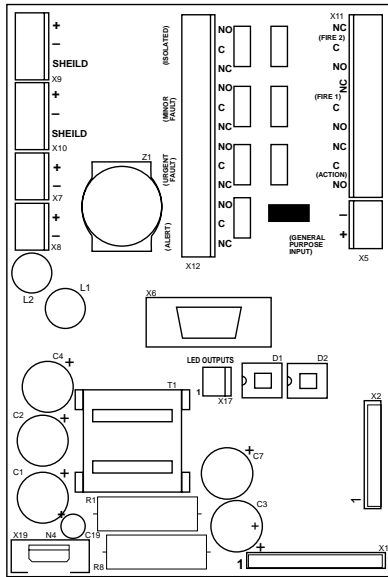
Dimensions		
	in	mm
A	13.8	350
B	8.9	225
C	2.75	70
D	2.25	57
E	1.37	35
F	1.75	44.5
G	.87	22.2
H	5.56	141
I	.62	15.9
J	1.31	33.3
K	1.33	34
L	.94	23.8
M	2	51
N	.83	21
O	5.56	141
P	1	25.4
Q	.44	11.1
R	.37	9.5
S	1.12	28.5
T	1.19	30.2
U	.125	3.2

Detector Surface Mounting Bracket

Dimensions		
	in	mm
A	13.25	337.3
B	4.87	130.8
C	.28	14.5
D	2.81	70.6
E	2.06	50.6
F	.37	10.0
G	1.87	47.62
H	.25	6.35

Supply Voltage:
18 to 30VDC

Power Consumption:
No Display or Programmer:
5.8 - 10.6 watts quiescent
(@ 3000-4200 rpm) plus 1.3 watts alarm

Current Consumption:
No Display or Programmer:
240mA quiescent plus 50mA alarm
(24VDC & 3000rpm)

Dimensions (WHD):
13.8 in. x 8.9 in. x 4.9 in.
(350mm x 225mm x 125mm)

Weight:
8.8 lbs. (4.0 Kg) including Display and
Programmer modules

Operating Temperature:
Detector Ambient: 32° to 102°F
(0° to 39°C)
Sampled Air: -4° to 140°F (-20° to 60°C)
Humidity: 10-95%RH, noncondensing

Pipe ID:
3/4" to 1 in. (preferred ID 3/4")
19 to 25 mm (preferred ID 21mm)

Relays:
7 Relays rated 2A @ 30VDC
(Form C: NO/NC)
Default configuration:
Alert, Action, Fire 1, Fire 2,
Maintenance, Fault and Isolate

IP Rating: IP30

Cable Access:
1in. (25mm) knock outs in various positions

Cable Termination:
Screw terminal blocks
(30-12 AWG, 0.2-2.5mm²)

Sensitivity Range:
0.0015 to 6% obscuration/ft*
(0.005 to 20% obscuration/m)

Key Software Features:
Event log: up to 18,000 events stored on
FIFO basis
AutoLearn: Minimum 15 minutes,
maximum 14 days. Recommended minimum
period 1 day.
During AutoLearn thresholds are NOT
changed from pre-set values.
Referencing: Compensation for external
ambient conditions
Four Levels of Alarm:
Alert, Action, Fire 1 & Fire 2
Day/night/weekend & holiday
Two levels of fault warning:
Maintenance and Major fault
Software Configurable relays: 7
Maintenance Aids: Filter & Flow super-
vision, informative event reporting via
VESDA*net*

Ordering Information:

68-003   Detector only
68-004   Detector with power/alarm LED's
68-001   Detector with display
68-006   Detector with programmer
68-005   Detector with display and programmer

* For UL, minimum sensitivity is 4%/ft.

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