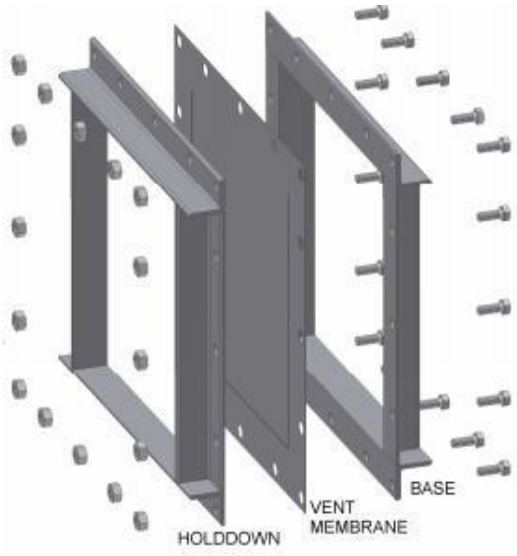
EXPLOSION VENT ACCESSORIES

EXPLOSION VENT FRAMES

Explosion vent frames are used to mount the explosion vent to the vessel being protected. Vent frames come in a variety of designs and are available using welded or bolted installation configurations. Once mounted to the process equipment, vent frames provide the necessary support features for installing the explosion vent for sealing, service and performance. The explosion vent frames are installed once and may be used multiple times. For CV-SF style explosion vents, the integral backup bars are provided in the base frame to accommodate deep vacuum. Consideration must be made for attaching to flat surfaces.



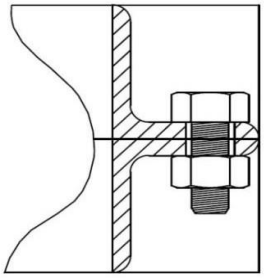
Features

- Variety of configurations and custom sizes
- Provides fast change-over
- Long product life cycle
- Welded installation standard
- Optional Bolted Frame Installation – no welding required to attach to equipment where welding is not available
- Optional transition frame – engineered for vessel specific application
- Optional flat bar base – reduced ledge to minimize product buildup. Studs are welded in place for ease of vent and hold down installation

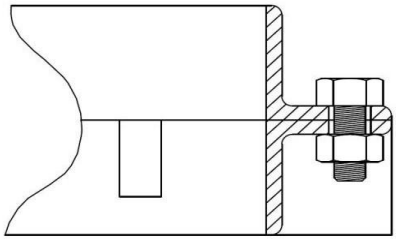
Specifications

Sizes	Round 6 to 44” (15.24 to 111.76 cm), A4674 series Rectangular 9 x 12” (22.86 x 30.48 cm) to 44 x 69” (111.76 x 175.26 cm), A4600 series
Materials of Construction	316SST, 304SST, Carbon Steel
Backup bars	Available for rectangular CV-SF explosion vent model only (A7598 series)
Base Frame	Available for FlamQuench bolting pattern

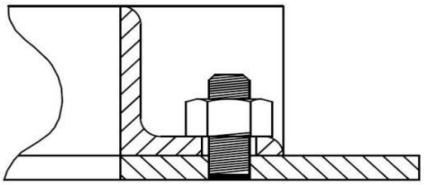
Configurations



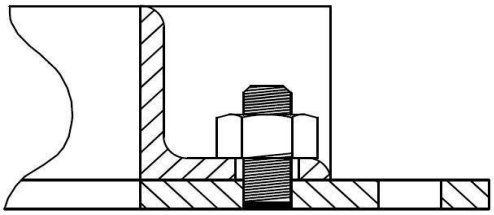
Angle Base / Angle Hold down
Welded Installation
(Includes Hex Bolt & Nut fasteners)



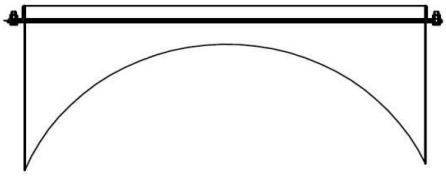
Angle Base with Backup Bars / Angle Hold down
Welded Installation
(Includes Hex bolt & Nut fastener)
Used exclusively with the CV-SF vent type



Flat Base / Angle Hold down
Welded Installation
(Includes welded Stud & Nut fastener)



Flat Base / Angle Hold down
Bolted Installation
(Includes welded Stud & Nut fastener)



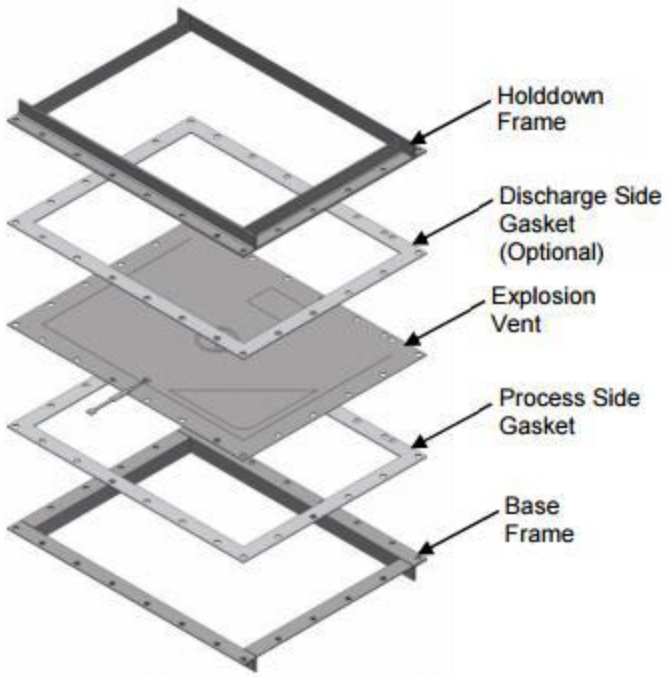
Transition Base / Angle Hold down
Welded Installation
(Includes Hex bolt & Nut fastener)
Custom Designed to fit specific vessel radius;
available with or without sloped bottom

Ordering Information

Vent frames are specified by considering the following parameters: Shape, Vent Size, Material, and Base/Hold down configuration.

EXPLOSION VENT GASKETS

Vent gaskets provide an air tight seal between the process and explosion vent to eliminate media egress and extend the life of the explosion vent. The vent gasket utilizes a dovetail joint for a uniform profile to further ensure a tight seal, while maintaining interchangeability due to the universal design. Peel and stick adhesion comes standard for ease of installation.



Features

- Creates seal to prevent process contamination
- Prevents media egress
- Dovetail design
- Peel and stick standard
- Two standard materials of construction
- Designed for use with or without FlamQuench

Specifications

Sizes	Round 6 to 44” (15.24 to 111.76 cm), D4910 series Rectangular 9 x 12” (22.86 x 30.48 cm) to 44 x 69” (111.76 x 175.26 cm), D4909 series
Materials of Construction	White FDA EPDM, -40 to 225°F (-40 to 107°C) Red Silicone 60 Duro, -103 to 500°F (-75 to 260°C)
Thickness	White FDA EPDM = 1/16” (1.59 mm) Red Silicone, 60 Duro = 1/8” (3.18 mm)
Application	Peel and Stick, Pressure sensitive adhesive on bottom side
-Custom sizes, material types, or custom bolt patterns available.	

HIGH TEMPERATURE PROCESS INSULATION KIT

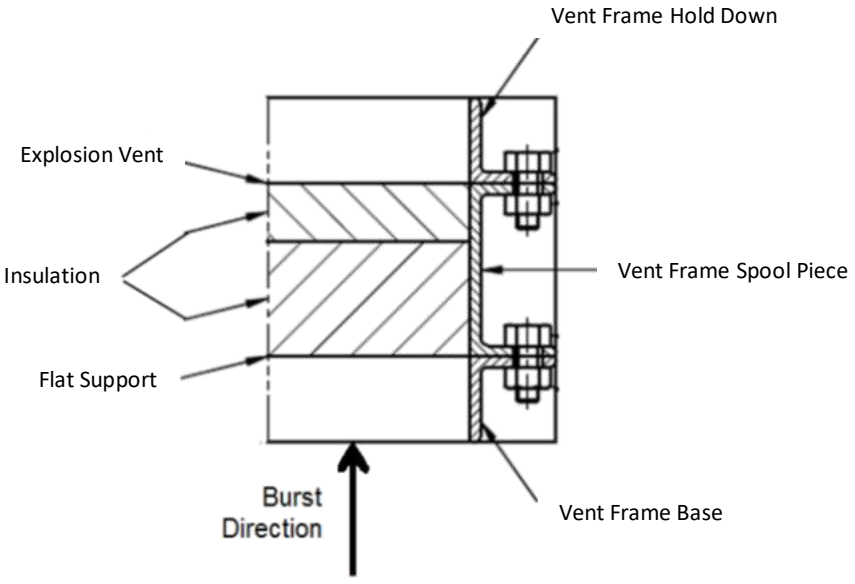
The process insulation kit provides insulation to protect the materials of the explosion vent from high temperature processes. The kit is bolted directly on to the existing explosion vent frame base and consists of a spool piece (sold separately), a perforated flat support to hold the insulation to provide protection to the explosion vent against extreme process temperatures. The explosion vent is installed downstream of the insulation kit and fastened in place with the vent frame hold down.

Features

- Provides protection to the explosion vent from extreme process temperatures
- Increases life of explosion vent when process temperatures are near high temperature limit
- Passive temperature control via atmospheric cooling

Specifications

Insulation Material:	Durablanket S
Flat Support Material:	SST
Spool Piece Material:	SST, Carbon Steel
Compatible Vent Shapes:	Rectangular & Circular
Operating Temp Range:	72°F to 1500°F (22°C to 816°C)
Compatible Vent Types:	CV, CV-S, CV-S-HV, CV-I *Not suitable with CV-CF or CV-SF.*
Installation Orientation:	Horizontal or up to 45° incline. For vertical installation consult factory.



Selection Considerations:

Step 1: Given the process temperature, determine cold face temperature from the following table:

Process Insulation Kit - Temperature Drop			
Hot Face °F	**Cold Face °F**	**Hot Face °C**	**Cold Face °C**
72	72	22	22
100	74	38	24
150	79	66	26
200	83	93	28
250	87	121	31
300	92	149	33
350	96	177	36
400	100	204	38
450	105	232	40
500	109	260	43
550	113	288	45
600	118	316	48
650	122	343	50
700	126	371	52
750	131	399	55
800	135	427	57
850	139	454	60
900	144	482	62
950	148	510	64
1000	152	538	67
1050	157	566	69
1100	161	593	72
1150	165	621	74
1200	169	649	76
1250	174	677	79
1300	178	704	81
1350	182	732	84
1400	187	760	86
1450	191	788	88
1500	195	816	91

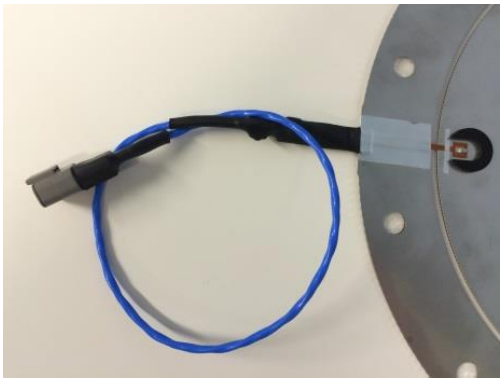
Step 2: Select and explosion vent suitable to the corresponding cold face temperature

Step 3: Install with explosion vent discharge exposed to atmosphere to allow heat to dissipate.

CAUTION: *Covering discharge side of the explosion vent will impede heat flow and may damage the vent. Ambient temperature on discharge assumed to be typical climate temperature.*

INTEGRAL BURST INDICATOR (BI)

The integral burst indicator is built directly into the explosion vent assembly on the downstream side and provides instantaneous notification of explosion vent activation. The break-wire type indicator consists of an insulated flex-circuit actuator strip mounted across the vent's burst pattern. Upon vent activation, the normally closed circuit (dry-contact) is physically broken. This open circuit condition can be used to activate alarms, bells, remote annunciators or interfaced with process control systems and provides process operators with immediate annunciation of an overpressure event so that appropriate measures can be taken.



Features

- Provides instantaneous notification of explosion vent activation
- Can be implemented to activate alarms, bells, or other process control systems
- Integral plug connector allows the BI to be disconnected from the lead cable without opening an electrical enclosure.
- CSA & IECEx certified intrinsically safe for Class I, Division 1, Groups A,B,C and D; Class II Groups E, F and G, Class III when connected through a listed (CSA, FM, UL) intrinsic safety barrier with the following entity parameters: Ui = 28.4 V, Pi = 0.615 W, Ii = 93 mA, Li = 5.6 µH, Ci=1.8 nF.

Specifications

Input Voltage:	24 volts AC/DC maximum
Input Current:	50mA maximum
Operating Temperature:	400°F (204°C) maximum
Approvals	CSA, IECEx

Lead Cable

The lead cable features the mating plug to connect the BI, a length of jacketed cable with the opposite end terminating in flying leads. These are available in three standard lengths (others upon request):

Part #	Description
D3513-115-10	10 ft. (3 m) Lead Cable for Burst Indicator (BI) (female quick-connect)
D3513-115-25	25 ft. (7.6 m) Lead Cable for Burst Indicator (BI) (female quick-connect)
D3513-115-50	50 ft. (15.2 m) Lead Cable for Burst Indicator (BI) (female quick-connect)
D3513-115-X	*Available in other length increments, contact Factory.*

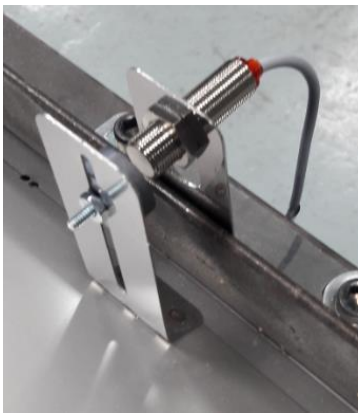
Note: For Rupture Indicator (RI or RI2) type burst indication with ATEX certification, consult Fike data sheet 8.3850.00.

PROXIMITY BURST INDICATORS

Magnetic proximity burst indicators are a more robust and reliable option for burst indicators than the traditional "break-wire" option. Proximity burst indicators must be installed during the manufacture of the vent, and are not available for Field Installations. If a proximity burst indicator is required, it must be added to the vent through the LOLA configurator models. They can be added to both round and rectangular vents, but cannot be used under a FlamQuench or Ex-Cover.

Specifications

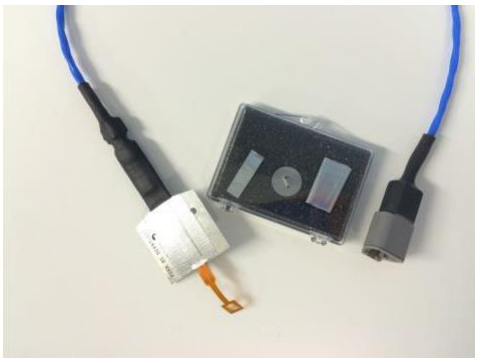
Part Number	E70-0244 (Round), E70-0247 (Rectangular)
Switching Frequency	NO output = 230 Hz max NO+NC output = 250 Hz max
Output Current	1 Amp / 150 Volts
Operating Temperature	-25°C to +100°C (-13°F to +212°F)
Protection Degree	IP 67
Approvals	RoHS & CE Compliant to the EMC Directive



Proximity Burst Indicator for Rectangular Explosion Vent

BURST INDICATOR (BI) FIELD INSTALLATION KITS

An optional field-installation BI kit is available, and may be added to an existing Fike explosion vent or used to repair a damaged Integral Burst Indicator (BI). These field-installation kits are the same construction as the Integral Burst Indicator applied at the factory. Consideration should be made that the Field-installation of the BI is not CSA certified.



Part #	Description
D2497-1	BI Field Installation Kit for CV series and Vmax vents with 1.5" (3.81 cm) frame width
D2497-4	BI Field Installation Kit for round CV series with 2" (5 cm) frame widths, sizes 26" - 42" (66 – 106.7 cm)

ISOLATING SWITCHING AMPLIFIER

Fike provides a CSA approved isolating switching amplifier suitable for use with the explosion vent burst indicator (BI). It allows a wide range of voltage and current from PLC's, factory automation to connect to monitor the BI.

Features

- Galvanically isolated transmission of binary switching signals
- 2-channel, with alarm output
- Intrinsically safe input circuits Ex ia
- Area of application acc. To ATEX: II (1) GD, II 3 G
- Approved for installation in zone 2
- Selectable output mode for each channel
- Selectable input circuit monitoring for wire-break and short-circuit for each channel
- Removable terminal blocks
- Output circuits: one relay per channel, change-over, Alarm output: NO contact
- Universal operating voltage

Specifications

Part Number	02-13775
Type Designation	IM1-231EX-R
Approvals	ATEX, IECEx, TR CU, INMETRO
Electrical Data	
Operating Voltage	20 to 250 VAC
Frequency	40 to 70 Hz
Operating Voltage Range	20 to 125 VDC
Power Consumption	≤ 3 W
Mechanical Data	
Protection Class	IP20
Ambient Temperature	-13 to 158°F (-25 to 70°C)
Storage Temperature	-40 to 176°F (-40 to 80°C)
Relative Humidity	≤ 95%
Dimensions	40.95 x 14.6 x 43 in (104 x 37 x 110 cm)
Weight	7.48 oz (212 grams)
Mounting	Din rail
Housing Material	Polycarbonate/ABS
Electrical Connection	4 x 5-pin removable terminal blocks
Input Circuits	
No-load Voltage	8.2 VDC
Short-circuit current	8.2 mA
Output Circuits	
Circuits	2 x relay (change-over)
Output switching voltage relay	≤ 30 VDC / ≤ 250 VAC
Switching current per output	≤ 2 A
Switching capacity per output	≤ 500 VA / 60 W
Switching frequency	≤ 10 Hz