

IR Optical Detector

The Fike IR Optical Detectors consist of a photodiode installed into a robust stainless steel housing intended to be installed on ductwork and detect the infrared radiation emitted by a flame or spark passing by.



SPECIFICATIONS

Type		Standard IR Optical Detector	Coated IR Optical Detector	Coated IR Optical Detector with Air Purge
Sensing Principle		Photodiode		
Materials of Construction	Wetted	1.4404 (316L SST)	1.4404 (316L SST) with titanium nitride coating	
	Housing	Sapphire lens		
	Sealing	1.4404 (316L SST), Aluminum		
Detection Range		Silicone and Viton FKM O-ring (both FDA)		
Response Time ⁽¹⁾		400 nm – 1100 nm (peak 850 nm)		
Viewing Angle		< 4 ms		
Maximum Explosion Pressure		100°		
Maximum Operating Pressure		174 psig	12 barg	
Vacuum Resistance		102 psig	7 barg	
Temperature Range		Full vacuum		
Temperature Range	Process	-4 to 176°F	-20 to +80°C	
	Ambient	-4 to 149°F	-20 to +65°C	
	Storage	-4 to 176°F	-20 to +80°C	
Enclosure Protection Indices		IP 67		
Power Supply		18 to 30 VDC		
Output Signal		4 – 20mA current loop 1x electronic switch (Alarm contact)		
Process Connections		2” NA-Connect		
Electrical Connection		Fixed shielded cable 5 x 0.25 mm² Blue or Black Ø 6.0mm (length 3m)		
Approvals				
ATEX Approvals	Marking	⚠ II 1 GD Ex ia IIC T* Ga T6 : -20°C < Ta < +54°C T5 : -20°C < Ta < +65°C ⚠ II 1D Ex ta IIIC T258°C Da -20°C < Ta < +65°C		
	Norms	EN (IEC) 60079-0: 2017 EN (IEC) 60079-11: 2011 EN (IEC) 60079-26: 2014 EN (IEC) 60079-31: 2014		
	Certification	APRAGAZ 18 ATEX 0166 X/2		
	European Conformity CE Approval	CE-0948		

1) Response time definition: From light source (flame) to EPC controller output change.

OPTIONS

- Air Purge Cleaning

With Air Purge Cleaning integrated into the process connector, the detector can be kept clean during operation to ensure the timely detection of an explosion in processes where product build up can be expected.

- Light Guides

The Light Guides are used when:

- The process temperature exceeds the temperature limitation of the IR Optical Detector.
- The installation area is difficult to reach.
- Multiple detection points are required (Triple or Quadruple light Guide⁽²⁾)







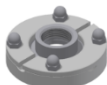
Light Transfer Principle	Optical fibers	
Viewing Angle	100°	
Deflagration Overpressure	174 psig	12 barg
Process Connection	Ø 7mm or Ø 12.5mm connector	
Wetted Parts	1.4404 (316L SST) Epoxy EPO-TEK® 353ND	
Temperature Range	-4 to 500°F	-20 to +260°C

- 2) The Quadruple Light Guide has a restricted use to Elevator protection around head or boot, explosion flames no sparks.







INSTALLATION REQUIREMENTS

- Installation on ductwork by a 2" NA-Connect process connection.
- A Junction Box is required for electrical installation.
- An Intrinsic Safe Barrier is necessary when the detector is installed in gas hazards areas.
- A mounting bracket for the detector housing is required when using light guides.

ORDERING

Type		Standard IR Optical Detector 	Coated IR Optical Detector 	Coated IR Optical Detector with Air Purge 
Dust (D – black cable)		Pn° 29985131	Pn° 29985141	Pn° 29985341
Hybrid (D/G – blue cable)		Pn° 29985031	Pn° 29985041	Pn° 29985241
Junction box ⁽³⁾		Pn° 29996900-S		
		Pn° 29996900EX-S		
Intrinsic safe barrier ⁽⁴⁾ 		Pn° 29970041-S		
Process connection	N/A Connect 	Pn° ⁽⁵⁾	Pn° ⁽⁵⁾	Pn° ⁽⁵⁾

- 3) The Junction box with black cable glands must be used when a detector with black cable is selected. The Junction box with blue cable glands must be used when a detector with blue cable is selected.
- 4) Only necessary in Gas hazard areas.
- 5) The part number depends on the diameter of the process duct. Mention the diameter of the process tube by ordering.

Type		Single Light Guide 	Triple Light Guide 	Quadruple Light Guide 
Length	0.5m	Pn° 2999433101-S	N/A	N/A
	1m	Pn° 2999433102-S	N/A	N/A
	1.5m	N/A	Pn° 29994100-S	Pn° 29952000-S
	2m	N/A	Pn° 29994101-S	N/A
Process connector 316L SST 		Pn° 23650531	Pn° 23615631-S ⁽⁶⁾	Pn° 23615631-S ⁽⁶⁾
Process connector with Air Purge 316L SST 		Pn° 23650331	Pn° 23628431-S ⁽⁶⁾	Pn° 23628431-S ⁽⁶⁾
Mounting device for Light Guide 		Pn° 27033300-S	Pn° 27033300-S	Pn° 27034800

- 6) Triple and Quadruple light guide process connectors are sold individually. A quantity of 3 is required for the triple light guide, and a quantity of 4 is required for the quadruple light guide.