

**SENSE-WARE**  
THE FLAME DETECTOR  
COMPANY



**BEST-IN-CLASS**

Industrial Flame Detectors



**IR3**

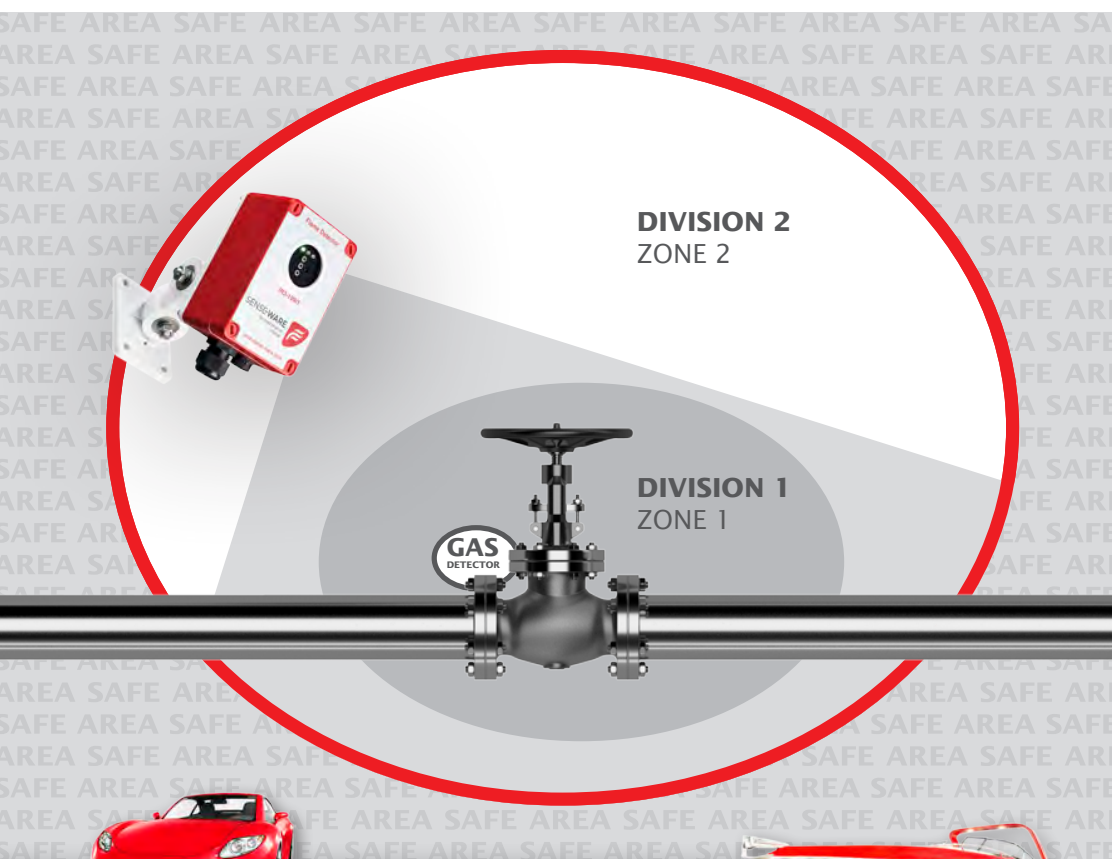
**UV/IR**

**UV**

Over **85%** of all industrial flame detectors are mounted in **DIVISION 2**

## Why Division 2

- Consider that detectors developed for Division 2 means full protection at improved life time cost
- Flame detectors are line of sight detectors and should be mounted outside the potential risk area
- This fact, is exactly why Division 2 flame detectors are also suitable to monitor Division 1 hazardous areas



## Why Fiberglass



- Suitable for Hazardous Areas
- Highly impact resistant housing (7 J) and Sapphire window (4 J)
- Non-corrosive and good solvent resistance
- Ingress Protected (IP65), designed to meet NEMA 4
- UV resistant (f1) and flammability V-0 according to UL94
- Pressure Compensating Element (Breather) prevents water trapping
- Easy to install, light weight, grounding of the Housing is not needed and two step cable gland enable wide range of cable diameters

## Why Sense-Ware

- Independent, internationally orientated manufacturer of high quality safety products since 2001
- Focus on Best in Class Division 2 flame detectors
- Works with partners who share in our vision of developing products that help make this world a safer place
- Committed to provide customers with products that meet their demanding safety needs with zero problems. Ongoing focus on improving technical know-how and ability
- Professional employees with many years of experience in the flame detection industry, focused on providing you with the best, most effective solutions in line with Six Sigma quality control principles
- Cutting edge technical knowledge and expertise combined with ongoing product development
- International certification including FM class 3260 and 3611 approvals; EN54-10 and IECEx/ATEX certificates
- Detection range sufficient for over 95% of applications where flame detectors are required

# BEST-IN-CLASS

## Industrial Flame Detectors



### Features

- Equipped with a microprocessor for sophisticated electronic signal analysis
- Splendid false alarm immunity
- The UV sensor rules out virtually any false alarm (arc welding the notable exception)
- Capable of detecting all types of flaming hydrocarbon fires
- UV and UV/IR detect hydrogen flames
- Virtually immune to sunlight, artificial light sources, arcs and electric discharges and arc welding
- The IR3 flame detector is perfect for situations where there is a risk of smoky fires
- The Automatic Sensor Test (built-in self-testing) function monitors flame sensors and electronics
- DIL-switches are incorporated for setting latching/non-latching alarm functions

**5**  
YEARS  
WARRANTY  
FLAME DETECTOR

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## Model UV-185/5

### UV Flame Detector

- UV Sensor
- Corrosion proof  
GRP housing
- Non-Incendive for Zone 2
- Weather Resistant
- Relay & 4-20 mA Outputs
- Automatic & Manual  
Self Test
- 5 Year Warranty
- ATEX, IECEx &  
FM3611 Approved
- EN54-10 & FM3260  
Approved
- Suitable for Zone 2 &  
Safe Areas
- Low Power

The Sense-WARE UV Flame Detector is designed to give optimum performance for Zone 2 and Safe Area indoor flame detection. Designed to detect all types of hydrocarbon fires and Hydrogen fires and immune to false alarms, the Model UV-185/5 offers a cost effective solution for Zone 2 and Safe Area industrial and commercial applications.

The Retroreflective ring around the window allows for easy testing with a Sense-Ware Test Lamp. The Pressure Compensating Element (PCE), prevents water ingress damaging the electronics.

Sense-WARE Flame Detectors offer fast performance, with a 5 year warranty making them the Best in Class.

### Typical Applications

- Battery Storage Rooms • Clean Rooms • Cold Storages • Engine Test Cells • Fume Hoods • Gas Cabinets • Gasoline / Gas Engine Rooms • Heating Rooms for Chemicals • Indoor Chemical Storage • Indoor Chemical, Fuel & Solvent Storage • Indoor Hydrocarbon Storage and Processing • Indoor Hydrogen Storage and Processing • Radio Amplifier Rooms / Isolators for Antennas • Laboratories • Monitoring of Machinery



## Specifications

### Spectral Range

185 - 260 nm

### Maximum Range

23 Meters (75 ft)  
0.09 m<sup>2</sup> (1 Sq.Ft.) Heptane pan fire

### Typical Response

<10 Seconds

### Field of View

90° x 90°

### Input Power

10-28 VDC

### Current (Normal)

25 mA @ 24 VDC  
(75 mA peak during Self-Test)

### Current (Alarm)

± 35 mA @ 24 VDC

### Start Up Time

<10 Seconds

### Analogue Signal - Sink

0-20 mA

### Power Fault

0 mA

### Optical Fault

2 mA

### Normal Operation

4 mA

### Alarm

20 mA

### Relays

Alarm & Fault SPDT

### Relay Contact Rating

30 VDC / 2 A / 60 W

### Latching (default) / Non Latching

DIL Switch selectable

### Normal Operation

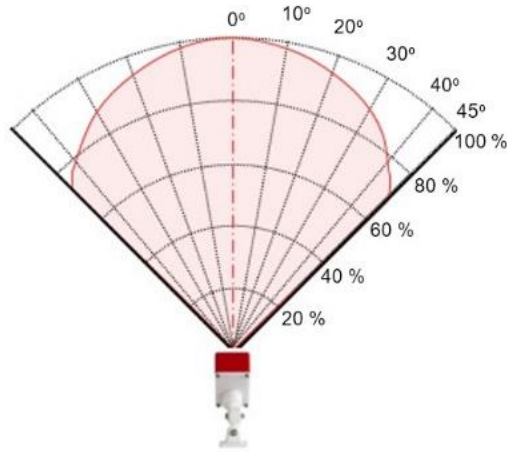
Green LED

### Alarm Indication

Red LED

### Fault Indication

Yellow LED



### Automatic Self-Test

Once per Hour

### Manual Self-Test

Available (see Manual)

### Cable gland (pre-mounted)

1 x M20

### Cable diameter

5.5-13 mm / 20-60 AWG

### Housing

GRP

### Temperature Range

-25 °C to +70 °C Hazardous Area  
-40 °C to +70 °C Safe Area

### Humidity

0-95 % Non Condensing

### Ingress Protection

IP65

### Pressure Compensation

PCE

### Weight

465 g

### Dimensions

125 x 80 x 57 mm

### Warranty

5 Years

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# Model UV-185/5

## Approvals

### EN54-10

Performance, Class 2

### ATEX, IEC Hazardous Area

II 3G Ex nA IIC T4 Gc,  
II 3D EX tc IIIC T71°C Dc

### FM3260

Performance (see Manual)

### FM3611 Hazardous Area

Non-Incendive: Class I, II, III,  
Div 2, Groups A,B,C,D,F,G  
(see Manual)

## Accessories

### I.S. Test Lamp

TC-940/1Z

### Non EX Test Lamp

TC-169/1

### Swivel Mount

SM21

Specifications may be subject to change

[www.sense-ware.com](http://www.sense-ware.com)

## Europe, Middle East & Africa

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**5**  
YEARS  
WARRANTY  
FLAME DETECTOR

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## Model UV/IR-210/1

### UV/IR Flame Detector

- UV Sensor
- IR Sensor
- Corrosion proof  
GRP housing
- Non-Incendive for Zone 2
- Weather Resistant
- Relay & 4-20 mA Outputs
- Automatic & Manual  
Self Test
- 5 Year Warranty
- ATEX, IECEx &  
FM3611 Approved
- EN54-10 & FM3260  
Approved
- Suitable for Zone 2 &  
Safe Areas
- Low Power

The Sense-WARE UV/IR Flame Detector is designed to give optimum performance for Zone 2 and Safe Area flame detection. Designed to detect all types of hydrocarbon fires and hydrogen fires and immune to false alarms, the Model UV/IR-210/1 offers a cost effective solution for Zone 2 and Safe Area industrial and commercial applications.

The Retroreflective ring around the window allows for easy testing with a Sense-Ware Test Lamp. The Pressure Compensating Element (PCE), prevents water ingress damaging the electronics.

Sense-WARE Flame Detectors offer fast performance, with a 5 year warranty making them the Best in Class.

### Typical Applications

- Aircraft Hangars • Atriums • Battery Storage Rooms
- Biogas • Car, Train Bus, Tram and Train Parkings
- Clean Rooms • CNG Filling • Diesel Engine Rooms
- Electric Power Transformers • Engine Test Cells
- Fume Hoods • Gas Cabinets • Gasoline/Gas Engine Rooms
- Service & Charging Stations • Heating Rooms for Chemicals
- Hydraulics e.g. Extruders • Chemical, Fuel & Solvent Storage
- Hydrocarbon Storage and Processing
- Hydrogen Storage and Processing
- Laboratories • Loading / Unloading Terminals
- Monitoring of Machinery • Chemical Storage
- Hydrogen Storage • Oil and Gas Pipe Line and Pumping Stations
- Recycling and Waste Processing Plants • Wind Turbines

## Specifications

### Spectral Range

UV 185 - 260 nm  
IR 2.7  $\mu\text{m}$

### Maximum Range

23 Meters (75 ft)  
0.09 m<sup>2</sup> (1 Sq.Ft.) Heptane pan fire

### Typical Response

<10 Seconds

### Field of View

90° x 90°

### Input Power

10-28 VDC

### Current (Normal)

25 mA @ 24 VDC  
(75 mA peak during Self-Test)

### Current (Alarm)

$\pm$  40 mA @ 24 VDC

### Start Up Time

<10 Seconds

### Analogue Signal - Sink

0-20 mA

### Power Fault

0 mA

### Optical Fault

2 mA

### Normal Operation

4 mA

### Alarm

20 mA

### Relays

Alarm & Fault SPDT

### Relay Contact Rating

30 VDC / 2 A / 60 W

### Latching (default) / Non Latching

DIL Switch selectable

### Normal Operation

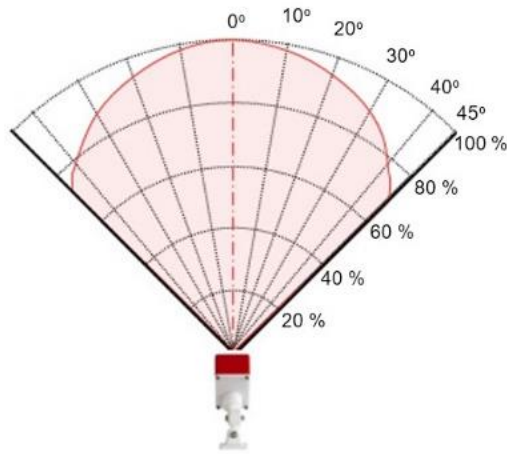
Green LED

### Alarm Indication

Red LED

### Fault Indication

Yellow LED



### Automatic Self-Test

Once per Hour

### Manual Self-Test

Available (see Manual)

### Cable gland (pre-mounted)

1 x M20

### Cable diameter

5.5-13 mm / 20-60 AWG

### Housing

GRP

### Temperature Range

-25 °C to +70 °C Hazardous Area  
-40 °C to +70 °C Safe Area

### Humidity

0-95 % Non Condensing

### Ingress Protection

IP65

### Pressure Compensation

PCE

### Weight

465 g

### Dimensions

125 x 80 x 57 mm

### Warranty

5 Years

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# Model UV/IR-210/1

## Approvals

### EN54-10

Performance, Class 2

### ATEX, IEC Hazardous Area

II 3G Ex nA IIC T4 Gc,  
II 3D EX tc IIIC T71°C Dc

### FM3260

Performance (see Manual)

### FM3611 Hazardous Area

Non-Incendive: Class I, II, III,  
Div 2, Groups A,B,C,D,F,G  
(see Manual)

## Accessories

### I.S. Test Lamp

TC-940/1Z

### Non EX Test Lamp

TC-169/1

### Swivel Mount

SM21

Specifications may be subject to change

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**5**  
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WARRANTY  
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## Model IR3-109/1

### Triple Infrared Flame Detector

- Three Infrared Sensors
- Corrosion proof  
GRP housing
- Non-Incendive for Zone 2
- Weather Resistant
- Relay & 4-20 mA Outputs
- Automatic & Manual  
Self Test
- 5 Year Warranty
- ATEX, IECEx &  
FM3611 Approved
- EN54-10 & FM3260  
Approved
- Suitable for Zone 2 &  
Safe Areas
- Low Power

The Sense-WARE Triple IR3 Flame Detector is designed to give optimum performance for Zone 2 and Safe Area flame detection. Designed to detect all types of hydrocarbon fires and immune to false alarms, the Model IR3-109/1 offers a cost effective solution for Zone 2 and Safe Area industrial and commercial applications.

The Retroreflective ring around the window allows for easy testing with a Sense-Ware Test Lamp. The Pressure Compensating Element (PCE), prevents water ingress damaging the electronics.

Sense-WARE Flame Detectors offer fast performance, with a 5 year warranty making them the Best in Class.

### Typical Applications

- Aircraft Hangars • Atriums • Biogas • Car, Train Bus, Tram and Train Parkings • CNG Filling • Conveyor Belts
- Diesel Engine Rooms • Electric Power Transformers Engine Test Cells • Gas Cabinets • Gasoline/Gas Engine Rooms • Service & Charging Stations
- Hydraulics e.g. Extruders • Chemical, Fuel & Solvent Storage • Hydrocarbon Storage and Processing
- Laboratories • Loading / Unloading Terminals
- Monitoring of Machinery • Chemical Storage • Oil and Gas Pipe Line and Pumping Stations • Powder Coating & Paint Booths • Recycling and Waste Processing Plants • Wind Turbines



## Specifications

### Spectral Range

2.7 - 5.0 Microns

### Maximum Range

35 Meters (115 ft)  
0.09 m<sup>2</sup> (1 Sq.Ft.) Heptane pan fire

### Typical Response

<10 Seconds

### Field of View

90° x 90°

### Input Power

10-28 VDC

### Current (Normal)

25 mA @ 24 VDC  
(40 mA peak during Self-Test)

### Current (Alarm)

35 mA @ 24 VDC

### Start Up Time

<10 Seconds

### Analogue Signal - Sink

0-20 mA

### Power Fault

0 mA

### Optical Fault

2 mA

### Normal Operation

4 mA

### Alarm

20 mA

### Relays

Alarm & Fault SPDT

### Relay Contact Rating

30 VDC / 2 A / 60 W

### Latching (default) / Non Latching

DIL Switch selectable

### Normal Operation

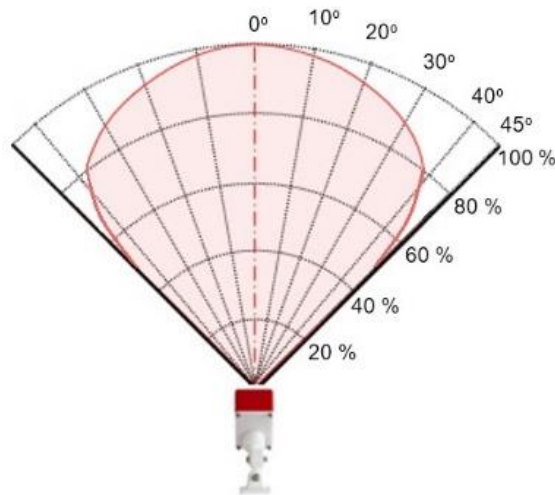
Green LED

### Alarm Indication

Red LED

### Fault Indication

Yellow LED



### Automatic Self-Test

Once per Hour

### Manual Self-Test

Available (see Manual)

### Cable gland (pre-mounted)

1 x M20

### Cable diameter

5.5-13 mm / 20-60 AWG

### Housing

GRP

### Temperature Range

-25 °C to +70 °C Hazardous Area  
-40 °C to +70 °C Safe Area

### Humidity

0-95 % Non Condensing

### Ingress Protection

IP65

### Pressure Compensation

PCE

### Weight

465 g

### Dimensions

125 x 80 x 57 mm

### Warranty

5 Years

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## Model IR3-109/1

### Approvals

#### EN54-10

Performance, Class 1

#### ATEX, IEC Hazardous Area

II 3G Ex nA IIC T4 Gc,  
II 3D EX tc IIIC T71°C Dc

#### FM3260

Performance (see Manual)

#### FM3611 Hazardous Area

Non-Incendive: Class I, II, III,  
Div 2, Groups A,B,C,D,F,G  
(see Manual)

### Accessories

#### I.S. Test Lamp

TC-940/1Z

#### Non EX Test Lamp

TC-169/1

#### Swivel Mount

SM21

Specifications may be subject to change

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## Accessoires

Swivel Mount



Safe-Area Test Lamp



Intrinsically Safe Test Lamp

## Benefits

- Rugged sensors make the detector suitable for virtually all types of fires
- Sophisticated software such as built-in self-test enhances detector reliability and Serviceability
- Housing and swivel mount designs help prevent grounding-related assembly and mounting mistakes
- The Pressure Compensating Element prevents costly maintenance as a result of moisture build-up
- Nonincendive/Non-sparking features enhance unit reliability and serviceability at a reasonable additional cost
- Warranty for 36 months after installation or 42 months after supply, whichever comes first

## Applications

Application*	UV	UV/IR	IR3
Aircraft hangars		•	••
Atriums		•	••
Battery storage/data communication rooms	•	••	
Biogas		•	••
Car, bus, streetcar, and train parking areas		•	••
Sterile rooms such as semi-conductor, medicinal drug manufacturing, and hospital operating rooms	•	••	
CNG refueling stations for buses (for public transport)		••	••
Cold storage	••		
Conveyer belts			••
Diesel engine rooms		•	••
Electric power transformers		••	•
Engine test cell rooms	•	••	••
Fume hoods	••	•	
Gas cabinets	•	••	•
Gasoline storage/gas engine rooms	•	••	••
Service stations and plug-in (hybrid) charging stations		••	••
Heating rooms for chemicals	••	•	
Hydraulics (such as extruders)		•	••
Indoor chemical, fuel, and solvent storage	•	••	•
Indoor hydrocarbon storage and processing	•	•	••
Indoor hydrogen storage and processing	••	••	
Radio amplifier rooms/isolators for antennas	••		
Laboratories	•	••	•
Loading and unloading bays: for semi, train, and marine		••	••
Machinery monitoring	•	••	••
Outdoor chemical, fuels, paint, and solvent storage		•	••
Outdoor hydrogen storage and processing		••	
Oil and gas pipe line and pumping stations		•	••
Paint spray booths			••
Recycling and waste processing plants		•	••
Wind turbines		•	••
Livestock barns, -stables or -stalls		•	••

- Suitable
- Recommended

\* Contact your sales representative to discuss the exact application you have in mind. Visit our website if your intended application was not included in this list.

[www.sense-ware.com](http://www.sense-ware.com)

# Specifications

Power	12-24 Vdc (10-28 Vdc)
Current normal	± 25 mA at 24 Vdc
Current in alarm	± 35 mA at 24 Vdc
Current peak (during self-test, max 5 sec. per hour)	UV and UV/IR: ± 75 mA at 24 Vdc IR3: ± 40 mA at 24 Vdc
Start-up time	< 10 sec
Alarm output setting	Selectable LEDs and latching/non latching relays Factory default: latching
Connections	<ul style="list-style-type: none"> <li>• Fire alarm control panels using the end of line (EOL) and alarm resistor (current increase)</li> <li>• Devices that can take relay outputs</li> <li>• PLCs with a 0-20 mA input</li> </ul>
End of line and alarm resistors	Adjustable from the fire control panel, free terminals dedicated to resistors are available. <b>Note:</b> the EOL and alarm resistors must have a minimum 2 W rating each, with total power dissipation for both EOL and alarm resistors not exceeding 2 W
Relay outputs: • alarm relay • fault relay	De-energized during normal operation, no alarm, SPDT, 30 Vdc - 2 A, 60 W max. Energized during normal operation, no fault, SPDT, 30 Vdc - 2 A, 60 W max
Current output	Standard available 0-20 mA (stepped, sinking, non-isolated)
Alarm response time	< 10 sec, see appendices
Cone of vision	Minimum 90°
Housing	Glass reinforced polyester (GRP), min 2 nm lid screw tightening torque
Ingress protection	IP65
Operating temperature	-40° F to +158° F (-40° C to +70° C)
Room temperature	ATEX, IECEx and FM class 3611: -13° F to +158° F (-25° C to +70° C)
Automatic and manual self-tests	Automatic Sensor Test (built-in self-test) and manual self-test
Dimensions	4.9 x 3.15 x 2.25 inches (125 x 80 x 57 mm)
Weight	1.05 lbs. (465 g)
Cable connector (gland)	M20 (cable conduit diameter 5.5-13 mm, two steps: 5.5-8 mm and 8-13 mm)
Pressure Compensating Element	Prevents moisture build-up in the detector housing as a result of temperature fluctuations caused by pressure differences
Terminals	Suitable for solid cores 0.5 to 1.5 mm <sup>2</sup> (20 to 16 AWG), min 0.4 nm tightening torque
EN54-10 certificate, performance	UV-185/5CZ and UV/IR-210/1CZ: Class 2. IR3-109/1CZ: Class 1
ATEX cert. for hazardous areas	II 3G Ex nA IIC T4 Gc, II 3D Ex tc IIIC T 710C Dc, IP65
IECEx cert. for hazardous areas	Ex nA IIC T4 Gc, Ex tc IIIC T 710C Dc, IP65
FM3260 approval for performance	Awarded
FM3611 approval for hazardous areas	Awarded
Optional SM21 Swivel Mount materials	PA66, UV resistant; 316 stainless steel fixings
Optional SM21 Swivel Mount weight	0.62 lbs. (280 g)



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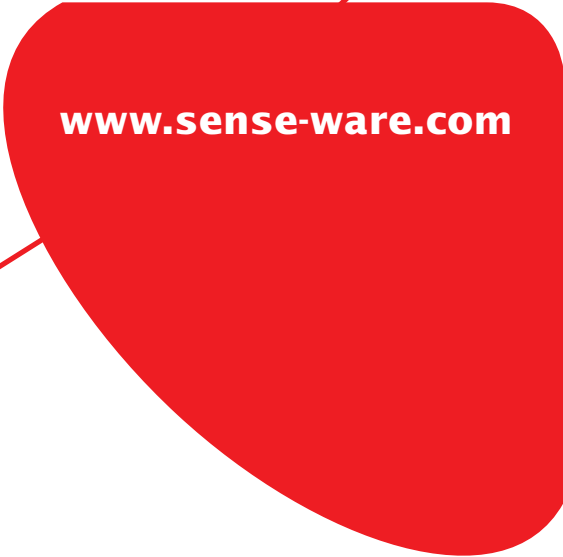
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