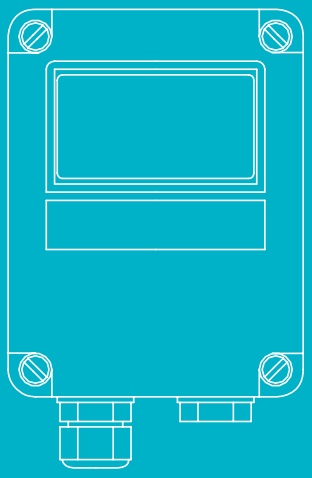
talentum®



Specialist flame detection

Protecting lives. Protecting assets. Protecting property.

ffeuk.com | ffeus.com

Contents

Welcome to FFE

FFE is a global innovator in the design and manufacture of **specialist fire detection solutions**. We exist to ensure that all lives and livelihoods are protected from fire, even in the most challenging environments.

Established in 1974, FFE has been a trusted provider of specialist fire detection solutions for over 50 years, protecting lives, assets and property around the world. Our products, designed and manufactured in the UK, and our solutions are synonymous with quality, reliability and innovation, reflecting decades of experience and a deep commitment to excellence.

Building on this foundation, our product range consists of Talentum, providing fast flame detection in industries where early intervention is critical; Fireray, offering quick, accurate, and dependable beam smoke detection for large indoor spaces, and Proreact, delivering reliable Linear Heat Detection, ensuring continuous fire protection in industrial and commercial environments. We are continually expanding our product portfolio to meet evolving fire safety needs.

We believe that fire safety is not just about products; it is about expertise, dedication and continuous innovation. With our entire team operating under one roof, we take pride in being experts in fire detection, giving you the highest level of support and technical expertise. Whether your application is common or highly specialised, we are committed to providing you with the most advanced and effective fire safety solutions and complete peace of mind.

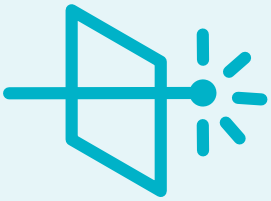
Protecting lives.
Protecting assets.
Protecting property.

Why use our flame detectors?

Immune to films of oil, water, ice and dust
Maintains detection capabilities in harsh environments

Ingression proof
Suited to extreme wet and dry conditions with protection against the ingress of dust and moisture

High resistance to false alarms
Talentum looks for the typical flickering movement of a flame before triggering an alarm



Detects through glass
Increased design capabilities with Talentum looking into secure or hazardous areas

Rapid flame detection to minimise the spread of fire and risk of fire damage.

Key features

- Detects a flicker in as little as 27 milliseconds (condition-dependant)
- Indoor or outdoor applications
- Internal self-test capability gives the high immunity to false-flame sources
- Detects flames through dust, steam, smoke and even glass
- Flameproof or explosionproof and intrinsically safe options
- Universal flame detection for all high risk, high value applications
- Detects invisible flames from fuels such as hydrogen and other inorganic fuels
- Immune to the effects of wind, draughts and sunlight

Why use Talentum?

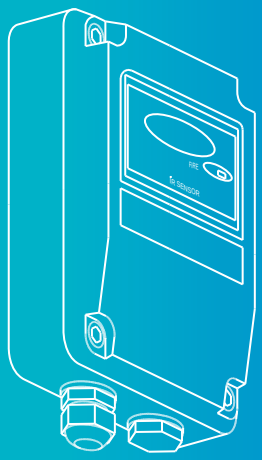
Talentum is a high speed infrared device for flame detection designed specifically to detect a characteristic flicker of a flame, faster and more accurately than a smoke or heat detector. Even where dust, steam or smoke are commonplace, Talentum enables early fire detection, minimising the risk and spread of fire damage.

How does Talentum work?

The Talentum infrared (IR) optical sensing technology can detect flames from almost all fuel types, from Hydrocarbon through to invisible fires such as hydrogen. By looking for characteristic flicker and energy, Talentum is able to detect a flame through dust, steam, smoke and even glass, or detect flickering, low frequency IR and UV radiation that is emitted by flames during combustion, while discounting false signals induced by wind, draughts and sunlight.

The Talentum Range		Approvals
IR2		
16581-00	Talentum 16000 Flame Detector IR2	EN, LPCB
16581-04	Talentum 16000 Flame Detector IR2	NF
16511-00	Talentum 16000 Flame Detector IR2 (Ex d)	EN, LPCB, ATEX
16511-04	Talentum 16000 Flame Detector IR2 (Ex d)	NF
16571-00	Talentum 16000 Flame Detector IR2 (Intrinsically Safe)	EN, LPCB, ATEX
UV/IR2		
16591-00	Talentum 16000 Flame Detector UV/IR2	EN, VdS, LPCB
16591-20	Talentum 16000 Flame Detector UV/IR2	FM, CSFM
IR3		
16589-00	Talentum 16000 Flame Detector IR3	EN, VdS, LPCB
16589-20	Talentum 16000 Flame Detector IR3	FM, CSFM
16519-00	Talentum 16000 Flame Detector IR3 (Ex d)	EN, VdS, LPCB, ATEX
16519-20	Talentum 16000 Flame Detector IR3 (Ex d)	FM, CSFM
16579-00	Talentum 16000 Flame Detector IR3 (Intrinsically Safe)	EN, VdS, LPCB, ATEX

The Talentum range

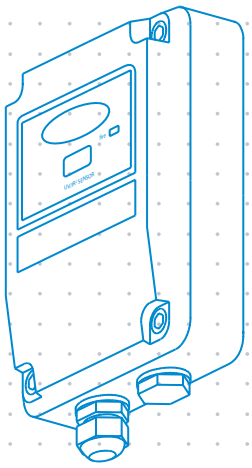


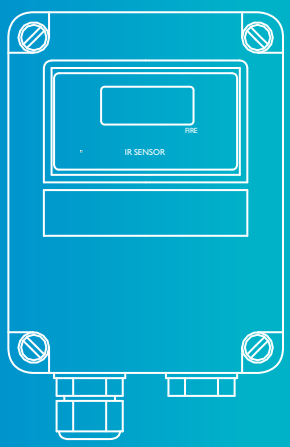
IR2

Ensures reliable and rapid fire detection with dual-sensor activation, minimising false alarms.

UV/IR2

Offers excellent immunity to false flame sources, both indoors and outdoors.





IR3

Detects almost all flames, including hydrocarbon fires with 4.3 µm emissions through to invisible fires such as hydrogen.

Specialist flame detection

Talentum IR2

These highly sensitive flame detectors can accurately detect low frequency IR radiation (1 to 15 Hz) that is emitted by flames during combustion. Using two IR sensors, the IR2 responds to different IR wavelengths, discriminating between flames and other radiation sources.

Offering a maximum ambient operating temperature of 55°C (FM:+60°C/140°F), IR2 offers users a choice of alarm currents, response times, latching or non-latching outputs and sensitivity. They also have internal self-test sources that check the detectors operation when used remotely.

Key features
High immunity to false sources
Ideal for applications with visible light present
Detects invisible flames from fuels such as Hydrogen and other inorganic fuels
Selectable operating responses
Remote self-testing
Low power consumption
Approved to EN54 - 10:2002

Applications
Aircraft hangars
Coal handling
Fume cupboards
Printing
Spray booths
Textile manufacturing
Waste handling

Talentum UV/IR2

Offering the highest immunity to false alarms, the UV/IR2 is designed to accurately detect flickering, low frequency IR and UV radiation (1 to 15Hz) that is emitted by flames during combustion.

Offering a maximum ambient operating temperature of 55°C (FM:+60°C/140°F), the UV/IR2 detector has a UV sensor and two IR sensors that respond to different IR wavelengths from both the UV and the IR spectrum. False alarms from flickering sunlight, arc welding and lighting are eliminated by a combination of UV and dual IR signal processing techniques.

UV/IR2 extra features
Highest immunity to false sources including arc welding, flickering sunlight and lighting

Applications
Aircraft hangars
Engine rooms & test facilities
Generators
High voltage equipment
Nuclear industry
Power plants
Storage tanks

Talentum IR2 (Ex d)

Designed to protect hazardous areas where open fires may be expected and detects almost all flames, including hydrocarbon fires with 4.3 µm emissions through to invisible fires such as hydrogen. The IR2 (Ex d) is sensitive to flickering, low frequency (1-15 Hz) infra-red radiation emitted by flames during combustion even if the lens is contaminated by a layer of oil, dust, water, vapour or ice.

Ex d features
Offers a high level of protection in installations with explosive dust and gas atmospheres

Applications
Chemical plants
Coal handling
Engine rooms
Engine test facilities
Military applications
Nuclear industry
Pharmaceutical production

Cambridge International Airport

Cambridge International Airport installed nine Talentum flame detectors to protect workers during aircraft spray-painting, addressing the explosive nature of the paint. The detectors provide reliable performance, detecting flames in hazardous environments.

Specialist flame detection

Talentum IR3

With high immunity to false flame sources, both indoors or out, these highly sensitive flame detectors can accurately detect low frequency IR radiation (1 to 15Hz) that is emitted by flames during combustion, even under the most difficult conditions. Ideal for indoor or outdoor applications, the IR3 has three sensors that respond to different IR wavelengths, discriminating between flames and other sources of radiation.

Offering a maximum ambient operating temperature of 55°C (FM:+60°C/140°F), IR3 offers users a choice of alarm currents, response times, latching or non-latching outputs and sensitivity. They also have internal self-test sources that check the detectors operation when used remotely.

Talentum IR3 (Ex d)

Designed to protect hazardous areas where open fires may be expected and detects almost all flames, including hydrocarbon fires with 4.3 µm emissions through to invisible fires such as hydrogen. The IR3 Flame Detector is sensitive to flickering, low frequency (1- 15 Hz) infra-red radiation emitted by flames during combustion even if the lens is contaminated by a layer of oil, dust, water, vapour or ice.

Key features
High immunity to false sources
Ideal for applications with visible light present
Detects invisible flames from fuels such as Hydrogen and other inorganic fuels
Selectable operating responses
Remote self-testing
Low power consumption
Approved to EN54 - 10:2002

Applications
Atria
Coal handling
Nuclear industry
Pharmaceuticals
Printing
Spray booths
Storage tanks
Tunnels
Waste reprocessing

Talentum accessories

To complement your Talentum installation, we also offer a comprehensive range of accessories and tools for your specialist application.

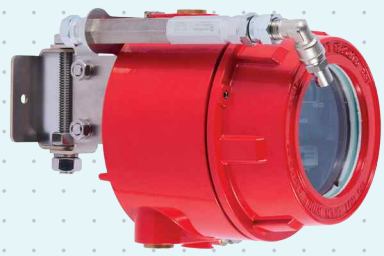
Talentum Test Torch
PN:1800-101

Weather Shield [SS]
PN: 12545-00

Weather Shield (Ex d) [SS]
PN: 07279-00

Air Purge Adapter
PN: 12556-00

Adjustable Mounting Bracket
PN: 07127-00



Air Purge Adapter (Ex d)
PN:12555-00

Technical specifications

IR2	Flame Detector IR2	Flame Detector IR2 (I.S.)	Flame Detector IR2 (Ex d)
MECHANICAL SPECIFICATION			
Housing material	Die cast zinc alloy	Die cast zinc alloy	Copper free aluminium alloy
Dimensions	142(h) x 108(w) x 79(d) mm (5½"(h) x 4¼"(w) x 3⅛"(d))	142(h) x 108(w) x 79(d) mm (5½"(h) x 4¼"(w) x 3⅛"(d))	158(h) x 149(w) x 134(d) mm (6"(h) x 5⅞"(w) x 5¼"(d))
Weight	2 kg (4½ lbs)	2 kg (4½ lbs)	2.5 kg (5½ lbs)
Cable gland entries	2 x 20 mm (2 x ¾")	2 x 20 mm (2 x ¾")	3 x 20 mm (3 x ¾")
Wiring	1.0 to 4.0 mm² (12-18 AWG)	1.0 to 4.0 mm² (12-18 AWG)	1.0 to 4.0 mm² (12-18 AWG)
ELECTRICAL SPECIFICATION			
Supply voltage	14 to 30 Vdc	14 to 30 Vdc	14 to 30 Vdc
Quiescent current	3 mA (min) to 8 mA (max)	3 mA (min) to 8 mA (max)	3 mA (min) to 8 mA (max)
Alarm current	9 mA (min) - 28 mA (max)	9 mA (min) - 28 mA (max)	9 mA (min) - 28 mA (max)
Relay outputs - programmable	Normally open or normally closed Latching or non-latching	Normally open or normally closed Latching or non-latching	Normally open or normally closed Latching or non-latching
Rating: Current Voltage Power	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION			
Operating temperature	-10°C to +55°C (+14°F to +131°F)	-10°C to +55°C (+14°F to +131°F)	-10°C to +55°C (+14°F to +131°F)
Storage temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)
Relative humidity	95% non condensing	95% non condensing	95% non condensing
IP rating	IP66	IP66	IP66
PERFORMANCE			
Range – Class 1 / Class 3	12 m/25 m (39 ft/82 ft) (approved)	12 m/25 m (39 ft/82 ft) (approved)	12 m/25 m (39 ft/82 ft) (approved)
Field of view	90° min. cone	90° min. cone	90° min. cone
Operating wavelength band	IR - 1.0 - 2.7 µm	IR - 1.0 - 2.7 µm	IR - 1.0 - 2.7 µm

UV/IR2

	Flame Detector UV/IR2	Flame Detector UV/IR2 (Ex d)
MECHANICAL SPECIFICATION		
Housing material	Die cast zinc alloy	Copper free aluminium alloy
Dimensions	142(h) x 108(w) x 79(d) mm (5½"(h) x 4¼"(w) x 3⅛"(d))	158(h) x 149(w) x 134(d) mm (6"(h) x 5⅞"(w) x 5¼"(d))
Weight	2 kg (4½ lbs)	2.5 kg (5½ lbs)
Cable gland entries	2 x 20 mm (2 x ¾")	3 x 20 mm (3 x ¾")
Wiring	1.0 to 4.0 mm² (12-18 AWG)	1.0 to 4.0 mm² (12-18 AWG)
ELECTRICAL SPECIFICATION		
Supply voltage	14 to 30 Vdc	14 to 30 Vdc
Quiescent current	3 mA (min) to 8 mA (max)	3 mA (min) to 8 mA (max)
Alarm current	9 mA (min) - 28 mA (max)	9mA (min) - 28 mA (max)
Relay outputs - Programmable	Normally open or normally closed Latching or non-latching	Normally open or normally closed Latching or non-latching
Rating: Current Voltage Power	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION		
Operating temperature	-10°C to +55°C (+14°F to +131°F) FM: -20°C to +60°C (-4°F to +140°F)	-10°C to +55°C (+14°F to +131°F)
Storage temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)
Relative humidity	95% non condensing	95% non condensing
IP rating	IP66	IP66
PERFORMANCE		
Range – Class 1/ Class 3	12 m/25 m (39 ft/82 ft) (approved)	12 m/25 m (39 ft/82 ft) (approved)
Field of view	90° min. cone	90° min. cone
Operating wavelength	UV - 185 - 260 nm IR - 1.0 - 2.7 µm	UV - 185 - 260 nm IR - 1.0 - 2.7 µm

Specialist applications

As manufacturers of high speed flame detection technology, our experts can provide you with fire protection technology for any type of application. In addition to our design consultation service, we can also provide you with a complete technical design service, along with drawings to assist you with your installation.

Help from FFE

As additional support, we provide comprehensive training programmes for the Talentum range, tailored to suit your own specific requirements. We are happy to train individuals or your entire installation team.

Contact us at:
e technical@ffeuk.com

Technical specifications

IR3	Flame Detector IR3	Flame Detector IR3 (I.S.)	Flame Detector IR3 (Ex d)
MECHANICAL SPECIFICATION			
Housing material	Die cast zinc alloy	Die cast zinc alloy	Copper free aluminium alloy
Dimensions	142(h) x 108(w) x 79(d) mm (5½"(h) x 4¼"(w) x 3⅛"(d))	142(h) x 108(w) x 79(d) mm (5½"(h) x 4¼"(w) x 3⅛"(d))	158(h) x 149(w) x 134(d) mm (6"(h) x 5⅞"(w) x 5⅛"(d))
Weight	2 kg (4½ lbs)	2 kg (4½ lbs)	2.5 kg (5½ lbs)
Cable gland entries	2 x 20 mm (¾")	2 x 20 mm (¾")	3 x 20 mm (¾")
Wiring	1.0 to 4.0 mm² (12-18 AWG)	1.0 to 4.0 mm² (12-18 AWG)	1.0 to 4.0 mm² (12-18 AWG)
ELECTRICAL SPECIFICATION			
Supply voltage	14 to 30 Vdc	14 to 30 Vdc	14 to 30 Vdc
Quiescent current	3 mA (min) to 8 mA (max)	3 mA (min) to 8 mA (max)	3 mA (min) to 8 mA (max)
Alarm current	9 mA (min) - 28 mA (max)	9 mA (min) - 28 mA (max)	9 mA (min) - 28 mA (max)
Relay outputs - programmable	Normally open or normally closed Latching or non-latching	Normally open or normally closed Latching or non-latching	Normally open or normally closed Latching or non-latching
Rating: Current Voltage Power	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)	1.0 A max. 50 Vdc max. 30 W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION			
Operating temperature	-10°C to +55°C (+14°F to +131°F) FM: -20°C to 60°C (-4°F to +140°F)	-10°C to +55°C (+14°F to +131°F)	-10°C to +55°C (+14°F to +131°F) FM: -20°C to 60°C (-4°F to +140°F)
Storage temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)	-20°C to +65°C (-4°F to +149°F)
Relative humidity	95% Non condensing	95% Non condensing	95% Non condensing
IP rating	IP66	IP66	IP66
PERFORMANCE			
Range – Class 1/ Class 3	12 m/25 m (39 ft/82 ft) (approved)	12 m/25 m (39 ft/82 ft) (approved)	12 m/25 m (39 ft/82 ft) (approved)
Field of view	90° min. cone	90° min. cone	90° min. cone
Operating wavelength	IR - 1.0 - 2.7 µm	IR - 1.0 - 2.7 µm	IR - 1.0 - 2.7 µm

Liverpool Docks

Talentum IR3 Flame Detectors were installed on a biomass conveyor at Liverpool Docks, providing rapid flame detection in a dusty environment. Their false alarm immunity and fast activation ensured efficient fire suppression within 15 seconds, protecting critical renewable energy infrastructure.

Protecting lives around the world

1
GUARDIAN JET CENTER, ONTARIO, USA
A fixed base operation located at the Ontario Intl Airport, FFE's Talentum units protects the 43,200 sq.ft. hangar.

2
GLADSTONE DOCKS, LIVERPOOL, UK
With such a large presence of combustible material in one place, the biomass conveyor required a fire detection system that could quickly and efficiently detect fires. The FFE Talentum IR3 was chosen as the ideal detector for this environment due to its false alarm immunity and speed of flame detection.

3
MALTA INTERNATIONAL AIRPORT, MALTA
With the increase in the number of aircraft landing in Malta, the demand for Jet A1 (kerosene) for jet engines use increased and three new tanks were built in order to supply and store fuel. FFE's IR3 Intrinsically Safe Talentum units have been installed to protect these assets.

Installations

- Trouw Nutrition
  Ireland
- E.ON Energy Biomass Facility
  Shropshire, UK
- Rolls Royce Motor Cars
  Chichester, UK
- DP World
  Southampton Docks, UK
- Robinson Healthcare Limited
  Worksop, UK
- Cambridge International Airport
  UK
- Ruwais Refinery,
  Al Ruwais, Abu Dhabi
- DEWA
  Dubai
- Qatar Petroleum Oil Refinery
  Qatar
- The Department of Space
  Bangalore
- Yen So Pumping station Hanoi
  Vietnam
- Goodman Logistics
  Hong Kong
- Wood River Power Station
  Illunois, USA
- Pyco Cotton Seed Processing Plant
  Lubbock, TX
- Sasolburg Refinery
  South Africa

4
BURGAN CAPE TERMINALS, SOUTH AFRICA

Our IR3 Intrinsically safe Talentum units were chosen to protect Cape Town's first independent oil storage and distribution terminal which offers a storage capacity of 122,000 m³ in 12 tanks.

5
HELICOPTER REPAIR FACILITY, RZESZOW, POLAND

Helicopter support company, Heli-One, has installed FFE's Talentum flame detectors as part of a foam extinguishing system at its helicopter repair and overhaul facility in Rzeszow.

6
SENOKO POWER STATION, SINGAPORE

Being the largest and most technically advanced power station in Singapore, finding the right flame detector was crucial to protect the electrical capacitor units. FFE's Talentum IR3 Ex d Units were installed protecting a total of eight capacitor units.

Head Office HQ
FFE Limited
9 Hunting Gate
Hitchin, Hertfordshire
SG4 0TJ
England

t: +44 (0) 1462 444 740
e: sales@ffeuk.com
w: www.ffeuk.com

US Sales and Distribution
FFE Limited
1455 Jamike Ave Ste 200
Erlanger
KY 41018-3147
USA

t: +1 859 957 1570
e: america@ffeus.com
w: www.ffeus.com

India Sales Office
Bangalore
India
e: india@ffeuk.com
w: www.ffeuk.com

FFE

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