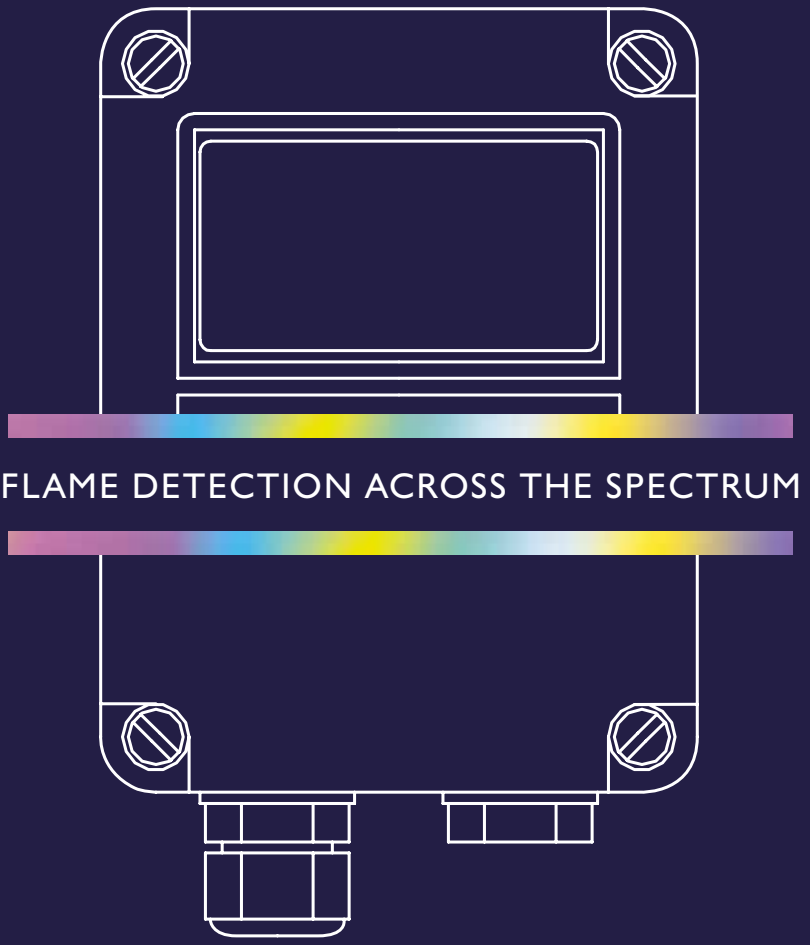
Rapid flame detection for high value industries

talentum®



FFE Ltd. A global innovator in the design and manufacture of world class fire detection solutions.

FFEUK.COM

TALENTUM® PROVIDES FLAME DETECTION WHERE YOU NEED IT MOST

TALENTUM® WE STRIVE FOR EXCELLENCE IN EVERYTHING WE DO

FFE is a global innovator in the design and manufacture of world class fire detection solutions. Trusted by installers, distributors and organisations for over 50 years, our Talentum®, Fireray®, Aviation Fire Extinguishers and Vibration Switches help to protect high value buildings and assets. Our commitment to fire detection and prevention led to the development of the world's most trusted smoke detection beam, Fireray® the favoured choice of many of the world's leading smoke detection distributors and installers. Our Talentum® range was developed to provide early detection for industries where fast flame detection is critical.

Our solutions are designed and manufactured in the UK and our customers are fully supported by our team of fire protection experts. We provide consultancy, training and full technical support, so that you always have peace of mind in knowing that your assets are given the best possible protection from fire.

CONTENTS

03 About FFE
04 Why use our flame detectors?
05 Talentum range of flame detectors
06 Flame detection
07 Spark detection
08 Talentum accessories
09 Talentum Test Torch
10 Technical specifications
14 Protecting lives worldwide

WHY USE OUR FLAME DETECTORS?

Specifying and installing fire protection technology carries significant levels of responsibility. With so many variable risks in so many different industries, it's critical that the chosen technology will offer the very best protection in any given circumstance.

History has taught us that early fire detection is by far the best way to minimise the spread of fire. Identifying a spark, before it produces smoke or becomes an actual fire, can help to minimise the risk of fire damage.

Talentum is a high speed infrared device for flame detection designed specifically to detect a spark, or 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 provides unmatched fire protection for high value industries.

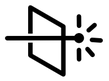
If fast, accurate fire detection is critical, choose Talentum, because when it comes to fire detection, only the best will do.

IMMUNE TO FILMS OF OIL, WATER, ICE, DUST

Maintains detection capabilities in harsh environments

INGRESSION PROOF

Protection against the ingress of dust, solid objects and moisture into an enclosure making Talentum suitable for the most extreme wet and dry conditions



DETECTS THROUGH GLASS

Increased capabilities with Talentum looking into secure or hazardous areas

HIGH RESISTANCE TO FALSE ALARMS

Talentum looks for the typical flickering movement of a flame before triggering an alarm

'Precision flame detection through the spectrum'

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.

BENEFITS

- Can detect a flicker in as little as 27 milliseconds (condition-dependant)
- Use in outdoor or indoor applications
- Internal self-test capability gives the high immunity to false-flame sources
- Detects flames through dust, steam, smoke and even glass.
- Flame-proof or explosion-proof 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

FLAME DETECTION

IR2

These highly sensitive flame detectors can accurately detect low frequency IR radiation (1 to 15Hz) 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

IDEAL APPLICATIONS
- Aircraft Hangars
- Coal Handling
- Fume Cupboards
- Printing
- Spray Booths
- Textile Manufacturing
- Waste Handling

DETECTS LOW FREQUENCY IR AND UV RADIATION FROM FLAMES DURING COMBUSTION

DETECTS LOW FREQUENCY RADIATION FROM FLAMES DURING COMBUSTION

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.

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

IDEAL APPLICATIONS
- Aircraft Hangers
- Engine Rooms
- Engine Test Facilities
- Generators
- High Voltage Equipment
- Nuclear Industry
- Power Plants
- Storage Tanks

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.

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

IDEAL APPLICATIONS
- Atria
- Coal Handling
- Pharmaceuticals
- Printing
- Spray Booths
- Nuclear Industry
- Waste reprocessing
- Storage Tanks
- Tunnels

DETECTS LOW FREQUENCY RADIATION FROM FLAMES DURING COMBUSTION

SPARK DETECTION

DESIGNED TO REJECT STATIC RADIATION FROM SUNLIGHT AND ARTIFICIAL LIGHTING

IR

The IR rear viewing specialist spark detector is designed for machine applications to protect enclosed, dark areas where no visible light is present.

Offering extremely high sensitivity to sparks and flames, the detector has a very fast response time. The infrared (IR) sensor, which is selective to low frequency modulated infrared (IR) radiation such as that emitted from flames and sparks, is designed to reject static radiation from sunlight and artificial lighting.

KEY FEATURES
- Operates at temperatures of up to 55°C (FM: +60°C/140°F)
- High sensitivity to embers or sparks
- Detects through layers of dust or dense material flow
- Ideal for use on conductor/extraction ducts, conveyor belts or machinery protection.
- Suitable for enclosed and dark areas
- Intrisically safe (I.S.) for hazardous areas.

IDEAL APPLICATIONS
- Conductor ducts
- Extraction ducts
- Conveyor belts
- Enclosed or protected machinery

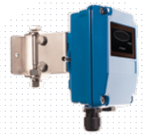
QUALITY All of our Talentum Flame Detectors are backed with a 3-year warranty. We also provide on-going technical support, from specification and throughout the lifetime of your chosen product. Our solutions undergo rigorous testing procedures and comply with all relevant safety and quality regulations.

talentum

TALENTUM ACCESSORIES

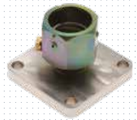
To complement your Talentum installation, we also offer a comprehensive range of accessories and tools for your specialist application.

Our standard range of accessories include:



Adjustable Mounting Bracket – PN: 07127

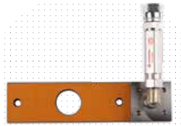
Mounting Flange [2 Hole] PN: 12564



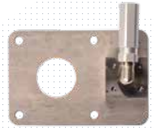
Mounting Flange [4 Hole] PN: 12561

Weather Shield [SS] PN: 12545

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



Air Purge Adapter [2 Hole] PN: 12543



Air Purge Adapter [4 Hole] PN: 12554

Air Purge Adapter PN: 12556

Air Purge Adapter (Ex d) PN: 12555

Bayonet Mount PN: 12290

'TO PROTECT, CLEAN AND SECURE'

Talentum Spark accessories are only compatible with Talentum Spark detectors. Other Talentum accessories are not compatible with Talentum Spark detectors.

Talentum Test Torch

The Talentum Test Torch generates a wide range of optical output signals. It is a test and calibration unit explicitly designed to work with the full range of Talentum flame detectors

Most optical flame sensors respond to Ultra Violet (UV) and or InfraRed (IR) radiation emitted from flames during combustion. Many sensors also use flame flicker techniques to distinguish between flames and other optical false sources.

The Talentum Test Torch simulates a pan fire test by modulating the output of a filament lamp. The thermal time constant of a filament lamp prevents the generation of a perfect flame flicker signal. The slow response of the filament lamp will mean that some flame sensors may require more time to activate under test than they would with a real flame.

The unit is intended for service engineers to use, when performing commissioning and routine maintenance in safe areas only. The Talentum Test Torch is provided in a protective carry case.

KEY FEATURES

- Wide Spectral Output - UV, Visible, Near IR, Mid-IR
- Suitable to test all Talentum flame detectors
- Portable with lithium ion battery pack
- Selectable Optical Output Type
- Irregular Flickering Sources (Resembling Flames)
- Range typically 1-6 metres
- 30 Second Timeout on each test
- Lightweight ergonomic design
- Supports fast charging, lasts 50 test cycles per charge
- Intuitive menu structure
- Graphical LCD user interface
- Recalibrate Talentum flame detectors in-situ (requires optional Calibration Kit)

Talentum Test Torch PN: 1800-101

TECHNICAL SPECIFICATIONS

IR2

	Flame Detector IR2	Flame Detector IR2 (I.S.)	Flame Detector IR2 (Ex d)
	16581	16571	16511
MECHANICAL SPECIFICATION			
Housing material	Die cast zinc alloy	Die cast zinc alloy	Copper free aluminium alloy
Dimensions	142(h) x 108(w) x 82(d) mm	142(h) x 108(w) x 82(d) mm	150(h) x 146(w) x 137(d) mm
Weight	2kg	2kg	2.5kg
Cable gland entries	2 x 20mm	2 x 20mm	3 x 20mm
Wiring	1.0 to 4.0mm²	1.0 to 4.0mm²	1.0 to 4.0mm²
ELECTRICAL SPECIFICATION			
Supply voltage	14 to 30Vdc	14 to 30Vdc	14 to 30Vdc
Quiescent current	3mA (min) to 8mA (max)	3mA (min) to 8mA (max)	3mA (min) to 8mA (max)
Alarm current	9mA (min) - 28mA (max)	9mA (min) - 28mA (max)	9mA (min) - 28mA (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	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION			
Operating temperature	-10°C to +55°C	-10°C to +55°C	-10°C to +55°C
Storage temperature	-20°C to +65°C	-20°C to +65°C	-20°C to +65°C
Relative humidity	95% non condensing	95% non condensing	95% non condensing
IP rating	IP66	IP66	IP66
PERFORMANCE			
Range - Class 1 / Class 3	12m/25m (approved)	12m/25m (approved)	12m/25m (approved)
Field of view	90° min. cone	90° min. cone	90° min. cone
Operating wavelength band	IR - 1.0 - 2.7µm	IR - 1.0 - 2.7µm	IR - 1.0 - 2.7µm
APPROVALS			
See colour key on p. 11			

UV/IR2

	Flame Detector UV/IR2	Flame Detector UV/IR2 (Ex d)
	16591	16521
MECHANICAL SPECIFICATION		
Housing material	Die cast zinc alloy	Copper free aluminium alloy
Dimensions	142(h) x 108(w) x 82(d) mm	150(h) x 146(w) x 137(d) mm
Weight	2kg	2.5kg
Cable gland entries	2 x 20mm	3 x 20mm
Wiring	1.0 to 4.0mm²	1.0 to 4.0mm²
ELECTRICAL SPECIFICATION		
Supply voltage	14 to 30Vdc	14 to 30Vdc
Quiescent current	3mA (min) to 8mA (max)	3mA (min) to 8mA (max)
Alarm current	9mA (min) - 28mA (max)	9mA (min) - 28mA (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	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION		
Operating temperature	-10°C to +55°C (FM: -20°C to 60°C / -4°F to +140°F)	-10°C to +55°C
Storage temperature	-20°C to +65°C	-20°C to +65°C
Relative humidity	95% non condensing	95% non condensing
IP rating	IP66	IP66
PERFORMANCE		
Range - Class 1/ Class 3	12m/25m (approved)	12m/25m (approved)
Field of view	90° min. cone	90° min. cone
Operating wavelength	UV - 185 - 260nm IR - 1.0 - 2.7µm	UV - 185 - 260nm IR - 1.0 - 2.7µm
APPROVALS		
See colour on this table		

APPROVALS KEY:

STANDARD	SPECIALIST
CPR	BASEEFA
LPCB	BASEEFA ATEX
NF	BASEEFA IECEx
VdS	BAS02ATEX1001/3X
FM	
CSFM	

TECHNICAL SPECIFICATIONS

IR3

	Flame Detector IR3	Flame Detector IR3 (I.S.)	Flame Detector IR3 (Ex d)
	16589	16579	16519
MECHANICAL SPECIFICATION			
Housing material	Die cast zinc alloy	Die cast zinc alloy	Copper free aluminium alloy
Dimensions	142(h) x 108(w) x 82(d) mm	142(h) x 108(w) x 82(d) mm	150(h) x 146(w) x 137(d) mm
Weight	2kg	2kg	2.5kg
Cable gland entries	2 x 20mm	2 x 20mm	3 x 20mm
Wiring	1.0 to 4.0mm²	1.0 to 4.0mm²	1.0 to 4.0mm²
ELECTRICAL SPECIFICATION			
Supply voltage	14 to 30Vdc	14 to 30Vdc	14 to 30Vdc
Quiescent current	3mA (min) to 8mA (max)	3mA (min) to 8mA (max)	3mA (min) to 8mA (max)
Alarm current	9mA (min) - 28mA (max)	9mA (min) - 28mA (max)	9mA (min) - 28mA (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	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)	1.0A max. 50Vdc max. 30W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION			
Operating temperature	-10°C to +55°C (FM: -20°C to 60°C / -4°F to +140°F)	-10°C to +55°C	-10°C to + 55°C (FM: -20°C to 60°C / -4°F to +140°F)
Storage temperature	-20°C to +65°C	-20°C to +65°C	-20°C to + 65°C
Relative humidity	95% Non condensing	95% Non condensing	95% Non condensing
IP rating	IP66	IP66	IP66
PERFORMANCE			
Range - Class 1 / Class 3	12m/25m (approved)	12m/25m (approved)	12m/25m (approved)
Field of view	90° min. cone	90° min. cone	90° min. cone
Operating wavelength	IR - 1.0 - 2.7µm	IR - 1.0 - 2.7µm	IR - 1.0 - 2.7µm
APPROVALS			
See colour key on p. 13			

IR

	Spark Detector IR	Spark Detector IR (I.S.)
	16580	16570
MECHANICAL SPECIFICATION		
Housing material	Die cast zinc alloy	Die cast zinc alloy
Dimensions	142(h) x 108(w) x 82(d) mm	142(h) x 108(w) x 82(d) mm
Weight	2.4kg	2.4kg
Cable gland entries	2 x 20mm	2 x 20mm
Wiring	1.0 to 4.0mm²	1.0 to 4.0mm²
ELECTRICAL SPECIFICATION		
Supply voltage	14 to 30Vdc	14 to 30Vdc
Quiescent current	3mA (min) to 8mA (max)	3mA (min) to 8mA (max)
Alarm current	9mA (min) - 28mA (max)	9mA (min) - 28mA (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	0.250A max. 30Vdc max. 3.0W max. (Note: resistive loads only)	0.250A max. 30Vdc max. 3.0W max. (Note: resistive loads only)
ENVIRONMENTAL SPECIFICATION		
Operating temperature	-10°C to +55°C	-10°C to +55°C
Storage temperature	-20°C to +65°C	-20°C to +65°C
Relative humidity	95% Non condensing	95% Non condensing
IP rating	IP66	IP66
PERFORMANCE		
Operating wavelength	IR - 1.0 to 3.0µm	IR - 1.0 to 3.0µm
APPROVALS		
See colour key on this page	n/a	

APPROVALS KEY:

STANDARD	SPECIALIST
CPR	BASEEFA
LPCB	BASEEFA ATEX
NF	BASEEFA IECEx
VdS	BAS02ATEX1001/3X
FM	
CSFM	

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

talentum

PROTECTING LIVES WORLDWIDE

TALENTUM CASE STUDIES

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 m^3 in 12 tanks.

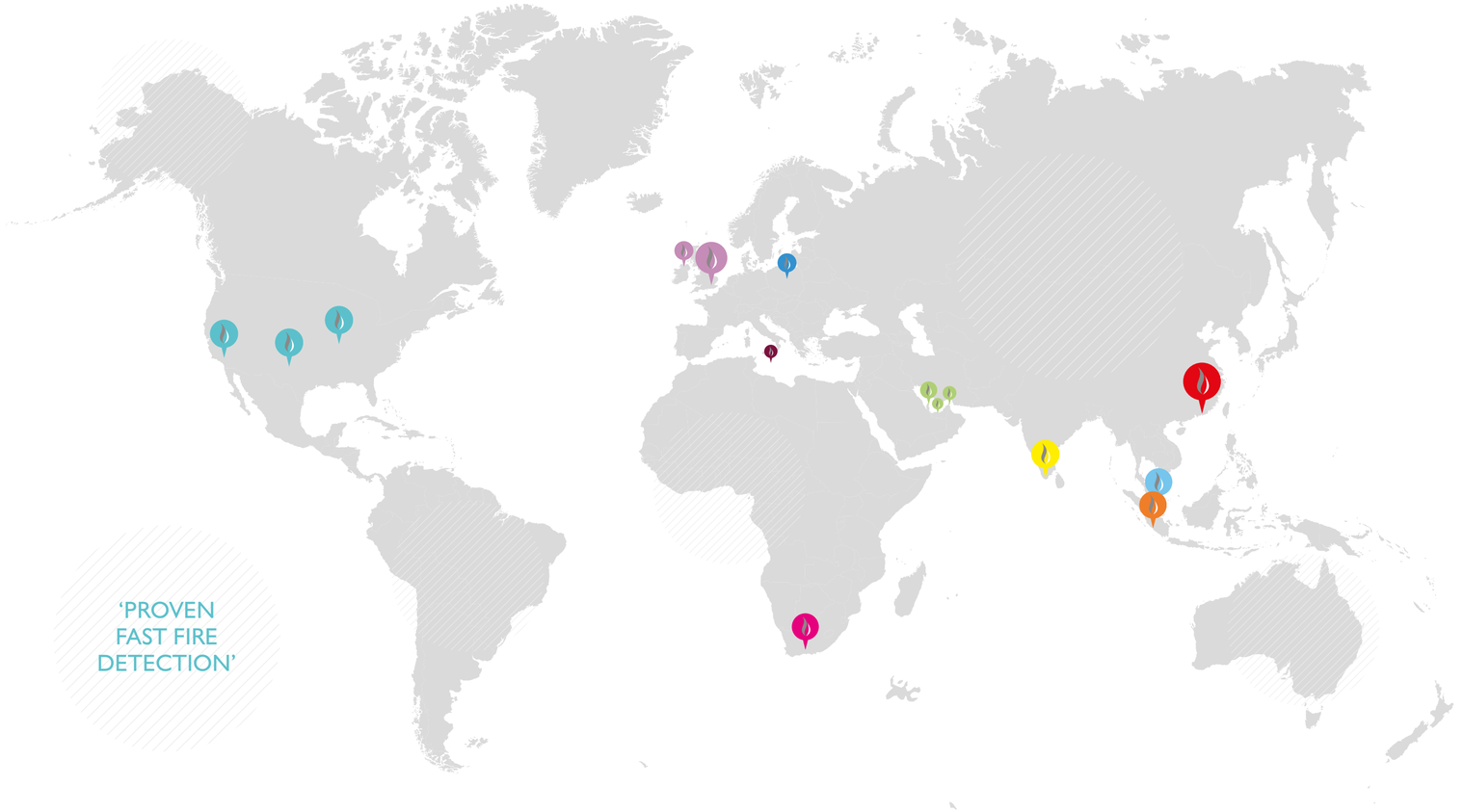
GLADSTONE DOCKS, LIVERPOOL, UK
With such a large presence of combustible material in one place the biomass conveyor required a fire detection system that could quickly and efficiently detect fires. The FFE Talentum IR3 was chosen as the ideal detector for this environment due to its false alarm immunity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

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

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.

MALTA INTERNATIONAL AIRPORT
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.

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 8 capacitor units.



'PROVEN FAST FIRE DETECTION'

INSTALLATIONS

- **Trouw Nutrition** Ireland
- **E.ON Energy Biomass Facility** Shropshire
- **Rolls Royce Motor Cars** Chichester
- **DP World** Southampton Docks
- **Robinson Healthcare Limited** Worksop, UK
- **Cambridge International Airport**
- **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

talentum

TECHNICAL SUPPORT

FFE Ltd is proud to be able to offer a high level of technical support to all our customers, from distributors to end-users. We can advise with any aspect of our Talentum Flame Detectors and Fireray Optical Beam Smoke Detectors.

Our technical support includes:

- Reviewing and advising on correct installation and alignment of FFE flame detectors and beam detectors
- Troubleshooting problems during the operation of flame and beam detectors after correct installation and alignment
- Advising the attributes of various types of flame and beam detectors to suit different applications
- Explaining good installation and operation practice for flame and beam detectors.

On a proactive level, Talentum or Fireray product training is available to any FFE customer including installers, distributors and end users and can be arranged with your FFE Sales Manager or by contacting FFE directly. Each training course is modular and the duration can be agreed according to the customer's requirements.

These personalised training courses can be targeted to all levels; Directors, Sales & Marketing or Technical, and are tailored for mixed audiences too. They include information on technical support as well as troubleshooting for advanced users.

In the UK, courses are typically delivered at the FFE Headquarters in Hitchin, Herts. For other venues, including overseas, please discuss with your Sales Manager.

Certificates

bsi. ISO 9001:2015 Quality Management

bsi. ISO 14001:2015 Environmental Management

OHSAS 18001:2017 OHS 58002I
RMA Request
Should you need to return a product to us, please email warranty@ffeuk.com

A **Halma** company

Worldwide Technical Support
e technical@ffeuk.com

WORLDWIDE OFFICES

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
www.ffeus.com

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

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

India Sales Office
Bangalore
India

e india@ffeuk.com
www.ffeuk.com