

WAITSIA GAS PROJECT STAGE 2

FIREPRO FIRE SUPPRESSION SYSTEM GAS GENERATOR Z-9011, Z-9021, Z-9031

DATA SHEETS

FIRE SUPPRESSION EQUIPMENT LAYOUT

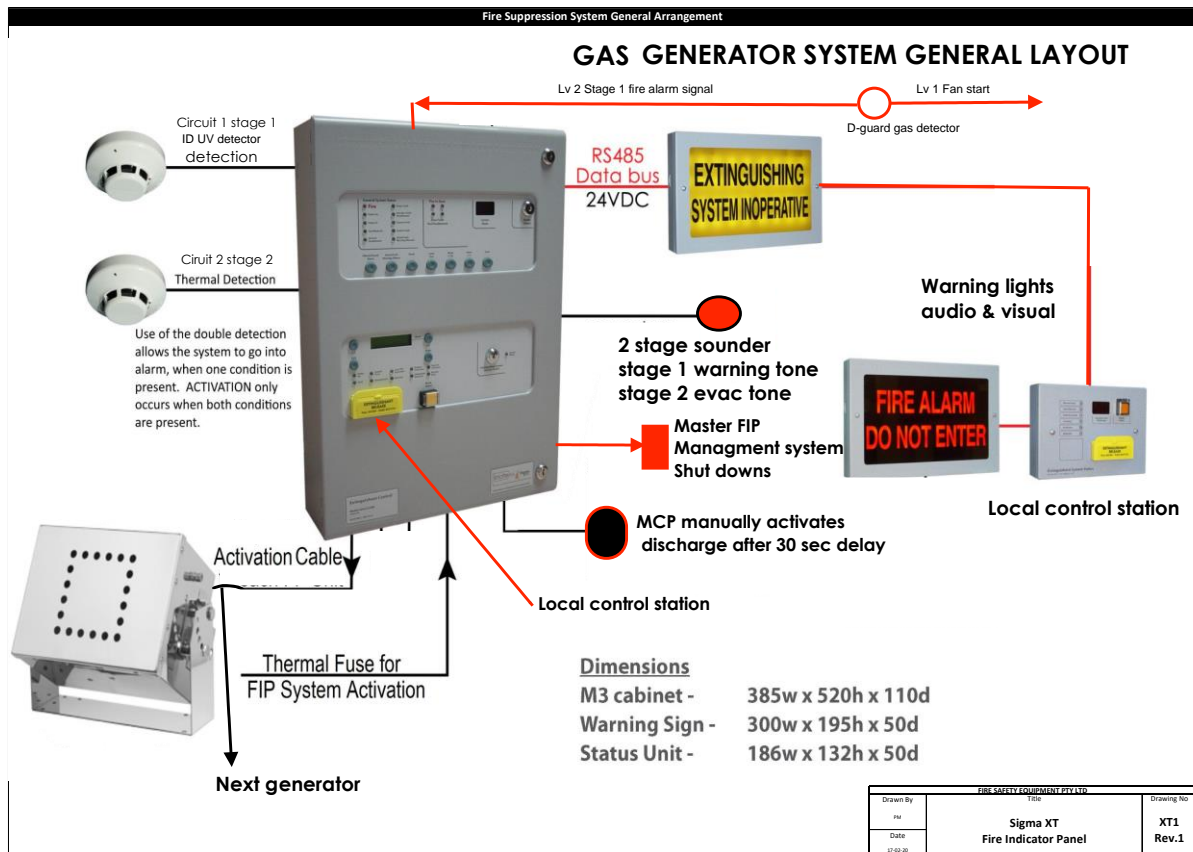


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1. BASELINE DATA

1.1. Equipment List

Item	Description	Quantity	Agent/Distributor	Model/Part No.	OEM1	Power Supply Rating (A)	Battery Charger Rating (A)	Quiescent Current (mA) per device	Alarm current (mA) per device	Fixed Service Life (years)	Nominated Service Life (years)	Installed to AS 1670.1	Installed to AS 4487	Maintenance Requirements to AS 1851
E-House														
1	Fire Indicator Panel (FIP) - 8 zone	1	Fire Safety Equipment	FP-90811	Hochiki	5	0.7	65	105	NS ⁽¹⁾	10 ⁽²⁾	Y		Section 7 IOM
2	Vizulinx Interface	1	Fire Safety Equipment	FP-K85000	Hoshiki									
3	FIP Zener Barriers	4	Fire Safety Equipment	FP-KFDO-CS-EX2.5IP	Hoshiki									
4	316SS External enclosure FIP	1	Fire Safety Equipment	FP-IP-SSSR60425	FSE									
5	IS Sensepoint Gas Detector sensor & transmitter	1	Fire Safety Equipment	GD67-7923-AL-MFX	Gastech Aust	4-20mA						Y		Section 7 IOM
6	Thermal detector IS Combined RoR & Fixed Temp.90°C	3	Fire Safety Equipment	FP-DCDIECS	Hochiki			8	28	NS ⁽¹⁾	5 ⁽²⁾	Y		Section 7 IOM
7	IS Spectrex Sharp-eye 40/40c-1	1	Fire Safety Equipment	FP-40/40C-1	Hoshiki	4-20mA								
8	Sign - System Inoperative	1	Fire Safety Equipment	FP-92400	Incite			20	140	NS ⁽¹⁾	10 ⁽²⁾		Y	Section 7 IOM
9	Sign - Fire Alarm Do Not Enter	2	Fire Safety Equipment	FP-92100	Incite			20	140	NS ⁽¹⁾	10 ⁽²⁾		Y	Section 7 IOM
10	Local Control Station/Remote Status Unit	1	Fire Safety Equipment	FP-90901	Incite			33	60	NS ⁽¹⁾	10 ⁽²⁾		Y	Section 7 IOM
11	MCP system actuation device	2	Fire Safety Equipment	FP-14053	FSE	4-20mA								
12	External cabinet for LCS	1	Fire Safety Equipment	FP-CHDX8-226C	FSE									
13	Internal audio visual sounder IS	1	Fire Safety Equipment	FP-IS-mB1	Hoshiki	80mA								
14	Banshee alert evac warning siren	2	Fire Safety Equipment	FP-lite1166	FSE	20mA			85	NS ⁽¹⁾	10 ⁽²⁾	Y		Section 7 IOM
15	Firepro generators IS	2	Fire Safety Equipment	FPX-5700EX	FSE					15	10 ⁽²⁾		Y	Section 7 IOM
16	Fireground IS armoured cable 2hr fire rated	1	Fire Safety Equipment	FP-FGAC 1.0	FIREPRO									
17	Battery – 12v 20Ah	2	Fire Safety Equipment	P12100	CENTURY					1	1	Y		Section 7 IOM

Notes

- (1) NS - not specified
- (2) Estimated as we have no experience in the harsh environment, components generally subjected to regular testing (at least annually)

2. Equipment Data Sheets

2.1. SIGMA XT CONVENTIONAL FIRE CONTROL PANEL external



Sigma XT Extinguishant Control Panel

Rev 1.1



Product Overview

The Sigma XT extinguishant control panel is designed to the requirements of AS7240.0 and ASISO 14520.1

Each extinguishing module has a comprehensive set of inputs and outputs and is configurable via the LCD display and simple menus.

The data bus cabling of the Sigma warning signs and Sigma local control stations, simplifies and minimises cable requirements and maximises monitoring of these devices.

Standard Features

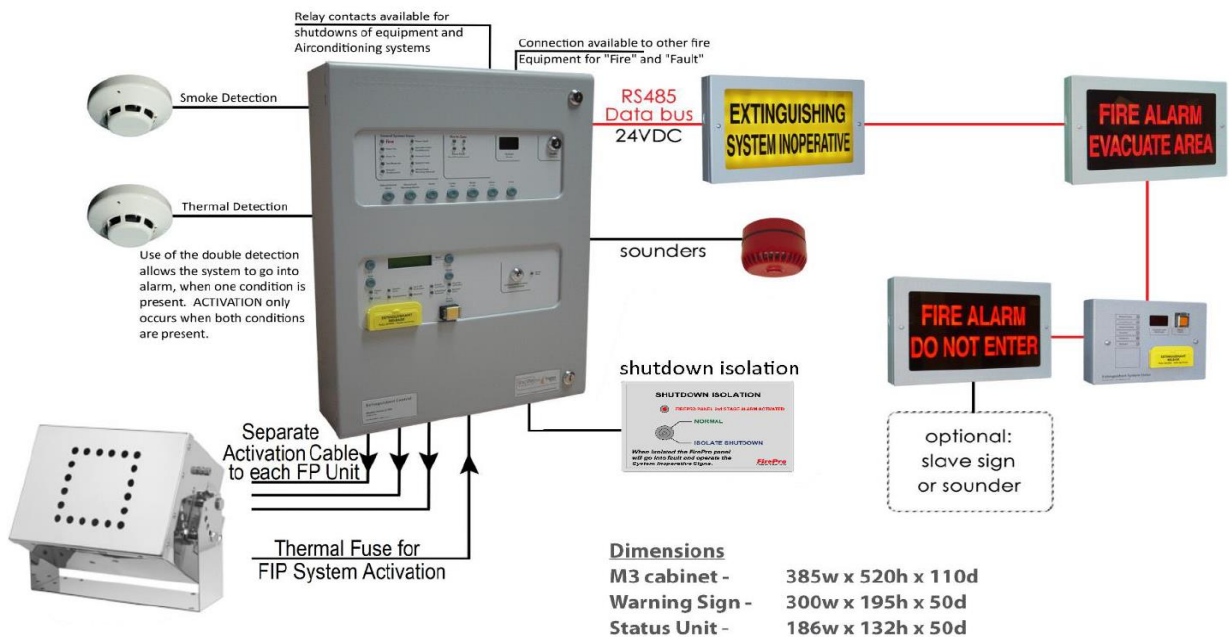
- Fully certified to AS 7420.2 and AS7240.4
- 2-wire and standard versions in 2 or 8 zones
- Fully programmable using simple menu

Options

- Sounder configuration options
- Coincidence input selection
- Compatible with wide range of detection devices
- Two monitored sounder outputs

Technical Data

Construction	1.2mm mild sheet steel
IP Rating (Standard unit)	IP30
Colour - lid & box	BS 00 A 05 grey - fine texture
Power supply	230V AC (+10%/-15%)
Fault contact rating	30V DC 1 Amp
Local fire contact	30V DC 1 Amp
Fire contact rating	30V DC 1 Amp
Cable capacity	2.5mm ² per terminal
Operating temperature	-5°C to +40°C
Operating humidity	<95% (non condensing)
data connection	RS485 connection (max 1200 m)



Fire suppression systems backed by **research**, committed to **people** and the **environment**

2.2. MODBUS INTERFACE FITTED IN THE FIP

incite fire

VIZULINX

Fire Alarm Management Solution

Features

- ▶ Monitor fire alarm activity on your workstation or device
- ▶ Receive alerts by email, SMS or pager
- ▶ Easy user subscription function - opt in opt out via text
- ▶ Defined message notification for managers, engineers or building occupiers
- ▶ Compatible with Modbus protocols
- ▶ Configuration through embedded web server
- ▶ Quick setup, user friendly operation
- ▶ Internal memory event log
- ▶ Isolated RS232 port
- ▶ A convenient and cost effective solution
- ▶ Housed or module only options
- ▶ DIN rail mountable (module only)



Module only: K85000

Description

Vizulinx is a fire alarm management solution which enables you to monitor your fire systems remotely.

Highly configurable using an embedded web server and simple configuration wizard, it can be used to pass fire system events via e-mail, SMS, Modbus and message format using an IP connection.

Event notifications are triggered and processed immediately. Email or mobile phone messages can be routed to any number of recipients based on the fire alarm event types. These include fire, pre-alarm, fault, disable, in test, technical alarm and security.

As events are sent immediately, this reduces false alarms as it allows alarms to be investigated before sounding to prevent unnecessary evacuation.

Modbus connectivity enables a simple, low-cost integration into building management systems.

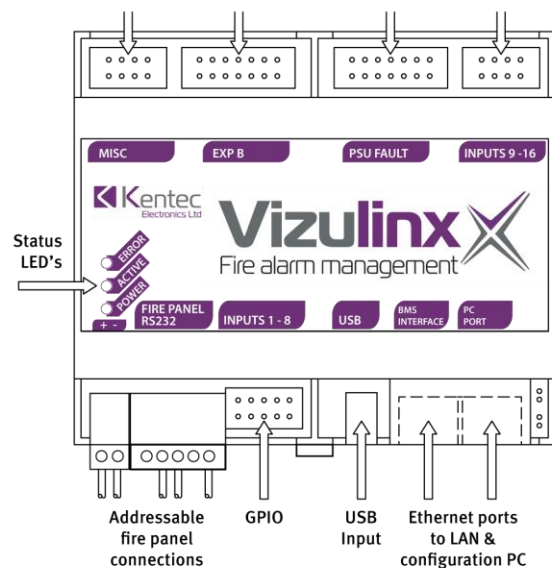
Through Mass Notification, Vizulinx keeps the occupants and key emergency responders aware of alarm conditions with location description or area messages and required event actions.

Connection to the fire panel can be either RS232 serial data from the Syncro family of panels or up to 16 switched GPIO inputs from other fire panels (including Taktis).

Provides building managers & service organizations instant updates on any faults & fire alarm activity, thus providing convenience and time-saving efficiencies.



Housed version: K85000 M2



NSW 02 9644 7144 QLD 07 3252 5366 VIC 03 9544 2211 WA 08 9349 2972

2.3. IS BARRIER MOUNTED Below FIP externally

Isolated Barrier KFDO-CS-EX2.51P



Features

- ▶ 2-channel isolated barrier
- ▶ 24 V DC supply (loop powered)
- ▶ Current input/output 0 mA ... 40 mA
- ▶ I/P or transmitter power supply
- ▶ Accuracy 1%
- ▶ Reverse polarity protection
- ▶ Up to SIL2 acc. to IEC 61508

Description

This isolated barrier is used for intrinsic safety applications. It transfers DC signals from fire alarms, smoke alarms, and temperature sensors in hazardous areas. It can also be used to control I/P converters, power solenoids, LEDs, and audible alarms.

Reverse polarity protection prevents damage to the isolator caused by faulty wiring.

Since this isolator is loop powered, use the technical data to verify that proper voltage is available to the field devices.

Specification	
Ordering Code	KFDO-CS-EX2.51P
Maximum short-circuit current (Intrinsically Safe)	At $U_{in} > 24$ V: ≤ 65 mA
Number of channels	2
Current Range (Not Intrinsically Safe)	0 to 40 mA, nominal
Rise Time	≤ 5 ms at bounce from 4 ... 20 mA and $U_{in} < 24$ V
Maximum Output Voltage in hazardous area	for 4 V $< U_{in} < 24$ V: $\geq U_{in} - (0.37 \times \text{current in mA}) - 1.0$ for $U_{in} > 24$ V: ≥ 21 V - $(0.36 \times \text{current in mA})$
Transfer Accuracy at 20°C	≤ 200 μ A
Loop Supply Voltage	4 to 35 V dc
Operating Temperature Range	-20 °C to + 60 °C (continuous working)
Storage Temperature Range	-40 °C to + 80 °C
Maximum Humidity	95%RH - Non Condensing (at 40 °C)
Weight (g) / Dimensions (mm)	100 / H115 x W107 x D20
Mounting Methods	DX070, SMB-2 or SMB-3 Enclosures
FURTHER INFORMATION: www.pepperl-fuchs.co.uk	



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Certificate of Conformity

Certificate num.	Registration date	Version	Valid until	
afp - 2516	9-Jun-2011	Number 13	Issue date 29-Apr-2021	30-Apr-2022

Page 1 of 5

Product designation

Sigma CP, K11/T11 Series, conventional fire alarm control panels

(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Incite Fire

Block Y, Unit 1, Regents Park Estate, 391 Park Road, REGENTS PARK, NSW, AUSTRALIA, 2143

Registrant

Kentec Electronics Limited

Units 25-27 Fawkes Avenue, Questor, DARTFORD, KENT, UNITED KINGDOM, DA1 1JQ

Producer

Kentec Electronics Limited

Units 25-27 Fawkes Avenue, Questor, DARTFORD, KENT, UNITED KINGDOM, DA1 1JQ

Conformance criteria and evaluation

The Sigma CP, K11/T11 Series, conventional fire alarm control panels have been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS 7240.2-2004, 'Fire detection and alarm systems - Part 2: Control and indicating equipment (ISO 7240-2:2003, MOD)'.
2. Australian Standard AS 7240.4-2004, 'Fire detection and alarm systems - Part 4: Power supply equipment (ISO 7240-4:2003, MOD)'.
3. Australian Standard AS 7240.13-2006, 'Fire detection and alarm systems - Part 13: Compatibility assessment of system components'.

Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. Compatibility of this equipment with new or existing actuating devices should be verified prior to installation.
- ii. All parts of the c.i.e. are mounted in a single enclosure.
- iii. The p.s.e. is mounted in the same enclosure as the c.i.e;

(Limitations/conditions of conformance continue)

Issued by

David Whittaker

Executive Officer – ActivFire Scheme



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- EXTERNAL CABINET & SUN SHIELD FOR FIP



**316 STAINLESS STEEL
ELECTRICAL ENCLOSURE 800H X
400W X 300D IP66**

Includes 2 x 003 key locks

00

[Details](#) [Downloads](#)

DETAILS

316 STAINLESS STEEL ELECTRICAL ENCLOSURE 800H X 400W X 300D IP66

IP Enclosures (<https://www.ipenclosures.com.au/>) S51 range of stainless steel electrical enclosures (<https://www.ipenclosures.com.au/stainless-steel-electrical-enclosures/>) are rated for protection up to IP66. This range is wall-mounted, grade 316 stainless steel, single door construction suitable for extreme duty applications.

FEATURES AND SPECIFICATIONS

Protection: IP66 IK10, NEMA 4x (Independent accredited test laboratory).

Standard: IEC 62208, IEC/EN/AS60529, (UL 508A Optional), RoHS

MATERIAL:

Body: 1.5mm Grade 316/316L Stainless Steel (Optional 304)

Door: 1.5mm Grade 316/316L Stainless Steel (Optional 304)

Device Mounting Plate: 1.5mm Galvanised Steel Sheet

Seal: Polyurethane

SURFACE FINISH:

0.4 micron Ra surface brushed finish

ENCLOSURE BODY:

The monoblock body is fabricated using 1.5mm Grade 316/316L Stainless Steel. Flat face sealing surfaces are provided to increase seal life. Pre-fitted blind nutserts are incorporated to accommodate mounts and accessory fasteners to eliminate drilling and retain IP rating. Integral device plate mounts and M6 earth studs are provided. Cutting, pressing and full continuous seam welding using precision automated manufacturing equipment ensures accuracy and consistent high quality.

ENCLOSURE DOOR:

The robust surface mounted door is fabricated using 1.5mm Grade 316/316L Stainless Steel and incorporates concealed removable hinges with captive pins. The door is designed for a 110° opening. Each door contains cable management rails, an M6 earth stud and a high quality machine-applied foamed in place (FIP) Polyurethane seal. Two internal cable management rails can be removed to provide additional space for equipment, duct and door mounted control components.

ENCLOSURE SEAL:

A high quality machine-applied full perimeter UL listed Polyurethane seal foamed in place (FIP) provides excellent sealing over a long life. Temperature resistance -40°C to 80°C (160°C short term loading).

ENCLOSURE LOCK:

Grade 316 Stainless Steel 8mm square drive quarter turn lock with key.

DEVICE MOUNTING PLATE:

The device mounting plate is 1.5mm galvanised steel sheet. It is pressed to provide strength. It is pre-fitted into the enclosure as standard.



316 STAINLESS STEEL SUN SHIELD TO SUIT 800H X 600W X 300D ELECTRICAL ENCLOSURE

[Details](#) [Downloads](#)

DETAILS

316 STAINLESS STEEL SUN SHIELD TO SUIT 800H X 600W X 300D ELECTRICAL ENCLOSURE

FEATURES AND BENEFITS

Sun shields (solar shields) are fitted to external surfaces to assist in controlling the internal temperature of the electrical enclosure or electrical cabinet. Generally, the temperature range of the electrical enclosure must maintain an internal temperature below the operating temperature range of internal components.

MATERIALS AND FABRICATION OF SUN SHIELDS

Sun shields are fabricated using precision automated manufacturing equipment to ensure accuracy and consistent high quality. Sun shields are fabricated using 1.2mm – 1.5mm Grade 316 Stainless Steel.



2.4. LOCAL CONTROL STATION MOUNTED EXTERNALLY WITHIN IP66 CABINET



FP-90901 Local Control Station

Rev 1.2



Extinguisher Status Local Control Station Product Overview

LED indication of Manual Only, Automatic and Manual, Hold operated, Disabled, Imminent and Released conditions.

Local control of the Automatic/ Manual mode.

Monitored inputs for the remote connection of Automatic/ Manual mode and Hold switches.

A large, LED display which shows a countdown of the time remaining until the extinguishant is released in seconds.

Part No. 90901

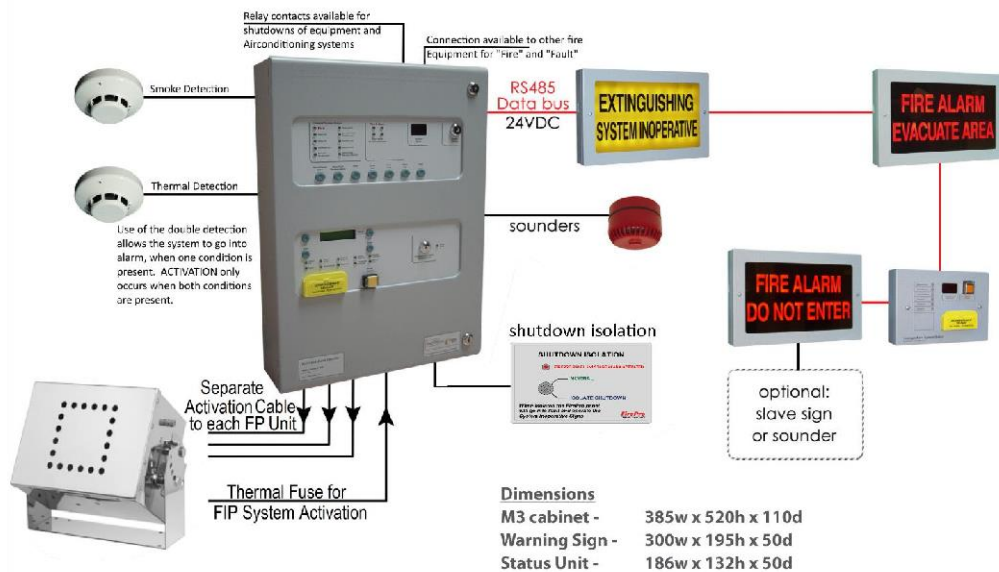
SIGMA XT AND ANCILLARIES

Standard Features

- * High brightness LEDs
- * Indication of the status of the control panel
- * Monitored data connection
- * Countdown timer for agent release
- * Manual only and Automatic mode select
- * Four wire connection (data and power)
- * Protected dual action manual release switch
- * Common fault indication with buzzer
- * Robust, high quality enclosure
- * Easy access to terminals
- * Remote Hold input (monitored)
- * Internal fault diagnosis indicators
- * Internal buzzer

Technical Data & Standard References

Construction	1.2mm mild sheet steel
IP Rating (Standard unit)	IP30
Colour - lid & box	BS 00 A 05 grey - fine texture
Weight	1kg (all units)
Power supply	21 to 30 V DC
Maximum current draw	70 mA
Max. number of status units	7
Quiescent current	60 mA
Cable capacity	2.5mm ² per terminal
Monitored inputs end of line resistor	6K8 0.5W Resistor
Monitored inputs normal threshold	8K ohm to 1K ohm
Monitored inputs trigger threshold	700 ohms to 100 ohms
Monitored inputs Short circuit threshold	99 ohms to 0 ohms
data connection	RS485 connection (max 1200 m)
Size	256 x 170 x 60 (mm)



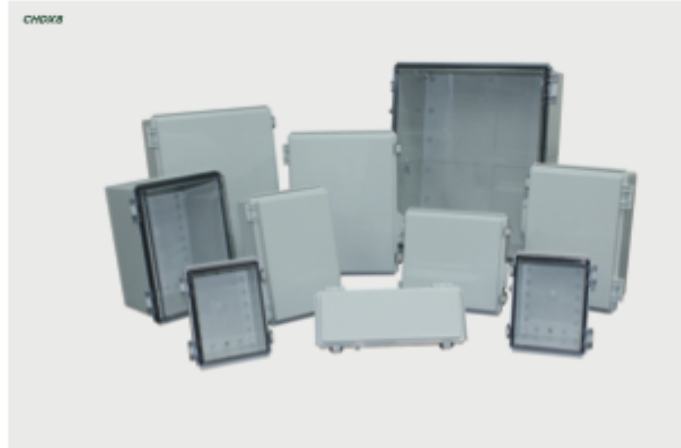
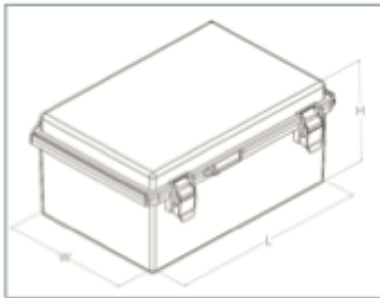
Fire suppression systems backed by **research**,
committed to **people** and the **environment**

• **EXTERNAL IP67 POLYCARBONATE CABINET FOR LCS**

X8 Series Waterproof Hinged Door Enclosure - Polycarbonate

Product overview

- Heavy duty hinge lid and latch enclosure
- Moulded in high quality polycarbonate
- Pillars in the base can be used for PCB mounting or DIN rail mounting, etc.
- Brass inserts in the base
- Gasket moulded into the enclosure lid
- Clear lid option available
- Wall mounting accessories available
- Key lock latch accessories available
- X8 series meets the requirements of IP67 (equivalent to NEMA 6)
- IK08 impact tested



SPECIFICATION	
Materials	Polycarbonate UL94-V0
Operating temperature	-40°C to +110°C
Protection class	X8 series has been tested and meets the requirements of IP67, IK08
Standard colours	Grey, transparent lid option
Standard unit includes	Box and lid
Available accessories	Dual door kit, mount plates, integral lock, vents, wall mounts

SOLID LID	CLEAR LID	LENGTH	WIDTH	HEIGHT
Q-DX8-221	Q-DX8-221C	200mm	110mm	75mm
Q-DX8-222	Q-DX8-222C	260mm	110mm	100mm
Q-DX8-223	Q-DX8-223C	185mm	155mm	85mm
Q-DX8-224	Q-DX8-224C	185mm	155mm	100mm
Q-DX8-225	Q-DX8-225C	220mm	170mm	110mm
Q-DX8-226	Q-DX8-226C	270mm	170mm	110mm
Q-DX8-227	Q-DX8-227C	300mm	200mm	150mm
Q-DX8-228	Q-DX8-228C	300mm	200mm	180mm
Q-DX8-229	Q-DX8-229C	210mm	210mm	100mm
Q-DX8-230	Q-DX8-230C	350mm	250mm	180mm
Q-DX8-231	Q-DX8-231C	300mm	300mm	180mm
Q-DX8-232	Q-DX8-232C	400mm	300mm	180mm
Q-DX8-233	Q-DX8-233C	500mm	400mm	200mm
Q-DX8-234	Q-DX8-234C	630mm	530mm	255mm
Q-DX8-235	Q-DX8-235C	630mm	630mm	185mm
Q-DX8-236	Q-DX8-236C	630mm	630mm	285mm

KEY FEATURES

Easy component maintenance | Heavy duty hinge | Brass inserts



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VER 5

268
HANDHELD CASES

292
UNIVERSAL
PLASTIC
ENCLOSURES

317
HEAVY DUTY
AND ELECTRICAL
ENCLOSURES

341
DEVELOPMENT
BOARD
ENCLOSURES

369
VERSATILE IOT
AND SENSORS
ENCLOSURES

PLASTIC ENCLOSURES

323

Product Data Sheet
00913-0200-4976, Rev AC
September 2021

Spectrex SharpEye™ 40/40C-I

Multispectrum Quad-Sense™ Flame Detector



The SharpEye 40/40C-I Multispectrum Quad-Sense flame detector is part of the leading, next generation SharpEye 40/40 series.

Featuring enhanced performance, advanced long distance detection of hydrocarbon fires at up to 215 ft (65 m), fast detection in under five seconds, and strengthened reliability, the SharpEye 40/40C-I is based on proven triple infrared (IR3) technology, ensuring high sensitivity with superior immunity to false alarms and surely keeping a SharpEye on your safety.



Features and benefits

Multi-Spectrum Quad-Sense flame detector - integrating four infrared (IR) sensors to further improve differentiation of flame sources from non-flame background radiation.

- Advanced long distance detection of hydrocarbon-based fuel and gas fires at up to 215 ft (65 m)
- Fast detection, under five sec
- Proven false alarm immunity
- Unparalleled reliability - 150,000 hours MTBF
- Wide temperature range:
-40 °F (-40 °C) to 167 °F (75 °C)
- Enhanced durability backed up by with three-year warranty
- Five sensitivity levels, adapting to any application
- Innovative IR Built-In-Test - continuously validating the optical integrity and the electronic circuitry
- Multiple output options for maximum compatibility with standard infrastructures
- Plug and play - factory calibrated for immediate use in any fire detection system
- Universal wiring option for fast ordering process
- Heated optic for impeccable performance in challenging environmental conditions
- Worldwide and regionally certified for hazardous areas
- Performance and reliability approved by recognizable certification bodies
- SIL3 compatible
- Internal log event recorder to analyze past events

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Applications

- Oil and gas onshore and offshore installations and pipelines
- Chemical and petrochemical plants
- Storage tank farms
- Aircraft hangars
- Power generation facilities
- Pharmaceutical industry
- Printing industry
- Warehouses
- Automotive industry
- Explosives and munitions
- Waste disposal facilities
- Light industrial

Ordering information

[VIEW PRODUCT >](#)

Model

Code	Description
-I	Quad-Sense™ triple infrared (IR3)

Wiring

Code	Description
-6	Universal

Operating temperature range

Code	Description
4	-40 °F (-40 °C) to 167 °F (75 °C)

Electrical cable entries

Code	Description
1	M25
2	¾-in NPT

Enclosure

Code	Description
A	Aluminum polyurethane painted

Hazardous area approval

Code	Description
B	Inmetro (pending)
F	FM, FMC, Canadian Standardization Association (CSA) for United States and Canada
C	ATEC, IECEx
R	EAC CU TR

Tilt mount

Code	Description
Y	Including tilt mount stainless steel 316
N	Without tilt mount

Protective cover

Code	Description
7	ABS plastic
8	Stainless steel 316

Accessories

Part number	Description
FS-1100	Flame simulator (ex proof)
877090	Tilt mount
877670	Duct mount
789260-2	U-bolt/pole mount 2-in
789260-1	U-bolt/pole mount 3-in
794079	USB RS-485 harness kit
877650	Air shield
877263 ⁽¹⁾	Protective cover (Plastic)
877163	Protective cover (Stainless steel)

(1) Supplied free of charge with the detector.

Specifications

Table 1: Detection Range

At highest sensitivity setting for 1 ft² (0.1 m²) pan fire.

Fuel	Range (ft/m)
Gasoline	215/65
n-Heptane	215/65
Diesel	150/45
JP5	150/45
Kerosene	150/45

Table 1: Detection Range (continued)

Fuel	Range (ft/m)
Ethanol 95%	135/40
Isopropyl alcohol (IPA)	135/40
Methanol	135/40
Methane ⁽¹⁾	150/45
Liquefied petroleum gas (LPG) ⁽¹⁾	150/45
Polypropylene pellets	115/35
Office paper	83/25
Gun powder (1.5 in ² (10 cm ²))	141/43
Fireworks (10 pieces per test)	23/7
Cooking oil	150/45
Mineral oil (20w50)	150/45
Wood	83/25
Ethylene glycol	118/36
Butyl acrylate	177/54
Vinyl acetate	177/54
Flammable adhesive (flash point 140 °F (60 °C))	150/45
Solvents	177/54
Oil paint	150/45
Jet fuel A1	150/45
Battery ⁽²⁾	200/61

(1) 30 in (0.75 m) high, 10 in (0.25 m) wide plume fire

(2) One battery cell

Table 2: General Specifications

Detection response time	Standard response: Typically < 5 sec
Sensitivity ranges	5 sensitivity ranges for 1 ft ² (0.1 m ²) n-heptane pan fire
Field of view	Horizontal: 100 ° Vertical: 95 °
Temperature range	Operating: -40 °F (-40 °C) to 167 °F (75 °C) Storage: -40 °F (-40 °C) to 167 °F (75 °C)
Humidity	Non-condensing relative humidity up to 100%

Table 3: Electrical Specifications

Operating voltage	24 Vdc nominal (18-32 Vdc)
Power consumption	Standby: Maximum 3 W (8 W with heated window) Alarm: Maximum 4.2 W (9 W with heated window)
Cable entries	2 x ¾ in - NPT conduits or 2 x M25 x 1.5 mm ISO
Electrical input protection	According to EN 50130

Table 3: Electrical Specifications (continued)

Electromagnetic compatibility	EMI/RFI protected to EN61000-6-3 and EN 50130
Electrical interface	The detector includes 17 terminals and one wiring option

Table 4: Outputs

Relays	Alarm, fault, and auxiliary SPST volt-free contacts rated 2 A at 30 Vdc
Analog output	Analog port malfunction: 0 V (< 0.5 V) Normal: 2 V \pm 0.3 V Alarm: 5 V \pm 0.3 V
0-20 mA (stepped)	Fault: 0 \pm 1 mA Built-in test (BIT) fault: 2 mA \pm 0.3 mA Normal: 4 mA \pm 0.3 mA Warning: 16 mA \pm 0.3 mA Alarm: 20 mA \pm 0.3 mA
HART [®] protocol	HART communications on the 0-20 mA analog current (FSK) used for maintenance, configuration changes, and asset management, available in mA source output wiring options
RS-485	RS-485 Modbus [®] compatible communication link that can be used in computer controlled installations

Table 5: Mechanical Specifications

Enclosure options	Heavy duty copper free aluminum (less than 1%), polyurethane painted
Mounting	Electropolished stainless steel 316
Dimensions	Detector: 4 x 4.6 x 6.18 in (100.6 x 117 x 155 mm)
Weight	Detector aluminum: 2.8 lb (1.3 kg) Tilt mount: 2.5 lb (1.1 kg)
Water and dust	IP66 and IP68 per EN 60529, NEMA [®] 250 6P

Approvals

Hazardous area

ATEX and IECEx

Ex II 2GD
Ex db eb IIC T4 Gb
Ex tb IIIC T100 °C Db
Ta = -40 °C to +75 °C
IP66/IP68

FM/FMC/CSA

Class I, Division 1, Groups B, C, and D, T4A
Class II, III, Division 1, Groups E, F, and G, T4A
Class I, Division 2, Groups A, B, C, and D, T4
Ta = -40 °C to +75 °C
Type 6P; IP 66/68 6.6 ft (2 m) for 45 minutes

TR CU (EAC)

1Ex d e IIC T4 Gb
Ex tb IIIC T100 °C Db
Ta = -40 °C to +75 °C
IP66/IP68

In Metro

Pending

Performance

EN54-10 | FM3260

Reliability

IEC61508 - SIL3 (TUV)



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 20.0042X Page 1 of 3 [Certificate history:](#)

Status: Current Issue No: 0

Date of Issue: 2020-11-18

Applicant: Rosemount, Inc.
6021 Innovation Blvd.
Shakopee MN 55379
United States of America

Equipment: Spectrex SharpEye 40/40C & 40/40D Flame Detector Series

Optional accessory:

Type of Protection: Flameproof db, Increased Safety eb and Dust Protection by Enclosure tb

Marking: 40/40C Series Flame Detector:
Ex db eb IIC T4 Gb
Ex tb IIIC T100°C Db
Ta = -40°C to +75°C
IP66/IP68
40/40D Series Flame Detector:
Ex db eb IIC T4 Gb
Ex tb IIIC T110°C Db
Ta = -50°C to +85°C
IP66/IP68

Approved for issue on behalf of the IECEx Certification Body:

Neil Jones

Position:

Certification Manager

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
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3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom





IECEX Certificate of Conformity

Certificate No.: IECEx SIR 20.0042X

Page 2 of 3

Date of issue: 2020-11-18

Issue No: 0

Manufacturer: Rosemount, Inc.
6021 Innovation Blvd.
Shakopee MN 55379
United States of America

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[GB/SIR/ExTR20.0213/00](#)

Quality Assessment Report:

[GB/BAS/QAR06.0072/10](#)



IECEx Certificate of Conformity

Certificate No.: IECEx SIR 20.0042X

Page 3 of 3

Date of issue: 2020-11-18

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The SharpEye 40/40 series Flame Detectors are manufactured from stainless steel or aluminum. They are cylindrical in shape and are of three-part construction. They comprise a central assembly that is divided into two compartments, an electronics compartment and a terminal compartment, each with their own cover. The electronics compartment cover contains a circular glass window that allows the equipment to provide its monitoring function. The terminal compartment, which contains Ex e component approved terminals and which communicates with the electronics compartment via a potted bushing. The central assembly has either two M25 x 1.5 or ¾" x 14 NPT threaded holes in its sidewall to allow the fitting of suitably certified cable entry devices.

The SharpEye 40/40 Series Flame Detectors can be fitted with an un moulded (non-encapsulated), End of Line (EOL) Resistor. Such a resistor can only be fitted into the flameproof 'Ex d' compartment as indicated in the instructions. The EOL Resistor shall be rated at 1.56 kΩ, 1 W minimum.

Refer to the Annexe for Models and coding

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Lid securing fasteners shall be property class A4 with a yield stress of 344N/mm².
2. Units may be painted or fitted with optional accessories; some of which are made of a non-metallic material or have a non-metallic coating which could potentially generate an ignition-capable level of electrostatic charge under certain extreme conditions. Therefore, these units shall not be installed in a location where they may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on the non-conducting surfaces. Additionally, cleaning of the equipment shall be done only with a damp cloth.
3. Under rated conditions, the cable entries reach a temperature exceeding 70°C and the branching point exceeds a temperature of 80°C; this shall be considered when installing cable glands and only cables that have temperature ratings suitable for the application shall be used.
4. Flameproof joints are not intended to be repaired.
5. The SharpEye 40/40 Series Flame Detectors can be fitted with an un moulded (non-encapsulated), End of Line (EOL) Resistor. Such a resistor can only be fitted into the flameproof 'Ex d' compartment as indicated in the instructions. The EOL Resistor shall be rated at 1.56 kΩ, 1 W minimum.

Annex:

[IECEx SIR 20.0042X Issue 0 Annexe.pdf](#)

Annexe to: IECEx SIR 20.0042X Issue 0
Applicant: Rosemount, Inc.
Apparatus: Spectrex SharpEye 40/40C & 40/40D Flame Detector Series



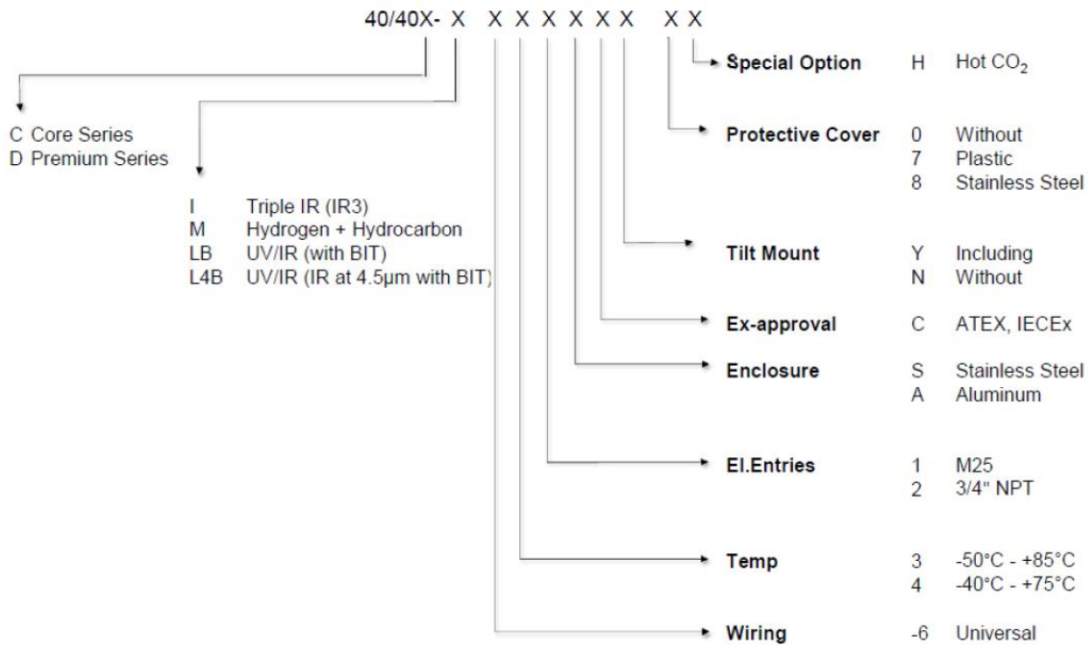
SharpEye 40/40D Series Flame Detector
 40/40D-I-XXXXCXXX – Triple IR (IR3)
 40/40D-M-XXXXCXXX – Hydrogen + Hydrocarbon
 40/40D-LB-XXXXCXXX – UV/IR (with BIT)
 40/40D-L4B-XXXXCXXX – UV/IR (IR at 4.5µm with BIT)

SharpEye 40/40C Series Flame Detector
 40/40C-I-XXXXCXXX - Triple IR (IR3)
 40/40C-M-XXXXCXXX - Hydrogen + Hydrocarbon
 40/40C-LB-XXXXCXXX - UV/IR (with BIT)
 40/40C-L4B-XXXXCXXX - UV/IR (IR at 4.5µm with BIT)

The following accessories are allowed as an option:

- Weather Shield (Stainless Steel) – 877163
- Weather Shield (Plastic – ABS) – 877263
- Air Shield – P.N. 877650
- Tilt Mount – P.N. 877090

These accessories do not form part of the enclosure and are fitted externally and are not relied upon for mechanical strength.



Date: 18 November 2020

Page 1 of 2

Form 9530 Issue 1

Sira Certification Service

Unit 6 Hawarden Industrial Park,
 Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900
 Email: ukinfo@csagroup.org
 Web: www.csagroupuk.org

Annexe to: IECEx SIR 20.0042X Issue 0
Applicant: Rosemount, Inc.
Apparatus: Spectrex SharpEye 40/40C & 40/40D
Flame Detector Series



Conditions of Manufacture

1. Each SharpEye 40/40 Series Flame Detector shall be subject to a routine dielectric strength test of 500 V rms applied between the terminal block and the enclosure for a period of 60 s as required by clause 6.1 of IEC 60079-7:2017 Ed 5.1. Alternatively, the test voltage may be 600 V for a period of 100 ms as specified by clause 7.1 of IEC 60079-7:2017 Ed 5.1.
2. Each Aluminium SharpEye 40/40 Series Flame Detector shall be subject to a routine pressure test of 19.3 bar for at least 10 seconds as required by IEC 60079-1. There shall be no permanent deformation or damage to the enclosure.

Date: 18 November 2020

Page 2 of 2

Form 9530 Issue 1

Sira Certification Service

Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom

Tel: +44 (0) 1244 670900
Email: ukinfo@csagroup.org
Web: www.csagroupuk.org



Intrinsically Safe Conventional Rate of Rise Heat Detector *DCD-1E-IS*



Features

- ▶ Twin fire LED's allow 360° viewing
- ▶ Electronics free mounting base
- ▶ Remote indicator output
- ▶ ATEX Classification to II 1G EEx ia IIC T5 Tamb=55°C
- ▶ Suitable for installation in areas at Category 1 (inc all lower categories)

Description

The DCD-1E-IS is an Intrinsically Safe Conventional Rate of Rise Heat Detector with a 60° fixed temperature element.

Specification	
Ordering Code	DCD-1E-IS
Operating Voltage	15 - 30Vd.c.
Quiescent Current (typ)	50µA
Maximum Current in Alarm	50mA
Operating Temperature Range	-10°C to + 55°C
Storage Temperature Range	-30°C to + 70°C
Maximum Humidity	95%RH - Non Condensing (at 40°C)
Ingress Protection Rating	IP63
Colour / Case Material	Ivory White / ABS
Weight (g) / Diameter (mm) / Height (mm)	97 / 100 / 40
Compatible Base / Height (mm)	YBN-R/4(IS) / 8
Fixing Centres (mm)	48 ~ 74
Approvals	ATEX BAS01ATEX1021 LPCB Germanischer Lloyd

Conventional Intrinsically Safe Mounting Base YBN-R/4 (IS)



Features

- ▶ Low Profile, only 8 mm
- ▶ Rugged design
- ▶ Dedicated cable screen terminal
- ▶ Accepts from 1 to 2.5 mm² cables
- ▶ Quick connection via square cable clamps
- ▶ Electronics free

Description

Model YBN-R/4(IS) is a Conventional Detector Mounting Base associated with the CDX Range of Intrinsically Safe Detectors and is fully compatible with the majority of existing conventional fire alarm control panels.

It is supplied with square cable clamps for secure and reliable cable termination but the base does not provide line continuity during detector removal, therefore if Call Points are being used then these should be wired onto the zone first.

Specification

Ordering Code	YBN-R/4(IS)
Maximum Humidity	95%RH - Non Condensing (at 40 °C)
Colour / Material	Ivory White / ABS
Weight (g) / Diameter (mm) / Height (mm)	51 / 100 / 8
Fixing Centres (mm)	48 ~ 74
Maximum Wire Thickness	2.5 mm ² Cables



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX BAS 12.0131X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2013-03-22** Page 1 of 3

Applicant: **Hochiki Europe
Grosvenor Road,
Gillingham Business Park,
Gillingham,
Kent,
ME8 0SA,
United Kingdom**

Electrical Apparatus: **Heat Detector Type DCD-1E-IS**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **Ex ia IIC T5 Ga (-20°C ≤ Ta ≤ +55°C)**

Approved for issue on behalf of the IECEx Certification Body: **R S Sinclair**

Position: **General Manager**

Signature: *(for printed version)*

As Alan Owen

23/3/2013

Date:

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3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
**SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom**





IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0131X

Date of Issue: 2013-03-22

Issue No.: 0

Page 3 of 3

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Heat Detectors Type DCD-1E-IS and Type DCD-1E-IS(WHT) are designed to detect temperature and the rate of rise of the temperature within a hazardous area and to provide an alarm indication on a locally mounted LED and also to provide an alarm indication to safe area mounted apparatus via a suitable interface.

The Heat Detector is mounted on Base Unit Types YBN-R/4IS or YBN-R/4IS(WHT) for installation within the hazardous area and comprises a printed circuit board encapsulated within a non-metallic housing, is populated with surface mounted components. When fitted to a Base Unit the enclosure provides a degree of protection of at least IP20 to the electronic circuit. The field wiring connections from the safe area apparatus, and to external simple apparatus such as switches and resistors, are made within the base unit.

The design is assessed against the requirements for Intrinsically Safe Apparatus as defined in IEC60079-0:2011 and IEC60079-11:2011 to Category Ia with respect to Group IIC gases and a Temperature Class of T5 for an equipment protection level of Ga in ambient temperatures from -20°C to +55°C.

Supply Input Terminals 2 and 6 or Loop Output Terminals 1 and 5 and Remote Indicator Alarm Terminals 1 and 4

U _i = 30V	I _i = 200mA	P _i = 1W	C _i = 0	L _i = 0
U _o = U _i	I _o = I _i	P _o = P _i	C _o = 0	L _o = 0

Note :- Terminals 1 & 2 are directly interconnected only when the smoke detector is fitted to the Base Unit and Terminals 6 & 5 are directly interconnected within the Base Unit. All inputs / outputs are derived from a common source.

Terminal 3 may be used for terminating cable screens and has no electrical connection to the circuit.

CONDITIONS OF CERTIFICATION: YES as shown below:

1) The Heat Detectors Type DCD-1E-IS and Type DCD-1E-IS(WHT) have a plastic enclosure which may present an electrostatic risk if rubbed or placed in a fast moving air flow.



IECEx Certificate of Conformity

Certificate No.: IECEx BAS 12.0131X
Date of Issue: 2013-03-22
Issue No.: 0
Page 2 of 3

Manufacturer: **Hochiki Europe**
Grosvenor Road,
Gillingham Business Park,
Gillingham,
Kent,
ME8 0SA,
United Kingdom

Additional Manufacturing location
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements
Edition: 6.0
IEC 60079-11 : 2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition: 6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
GB/BAS/ExTR12.0318/00

Quality Assessment Report:
GB/BAS/QAR13.0003/00



SEN SEPOINT XCD

Flammable, toxic and O2 gas detector for industrial applications



The Sensepoint XCD range provides comprehensive monitoring of flammable, toxic and oxygen gas hazards in potentially explosive atmospheres, both indoors and outdoors. Users can modify detector operation using the LCD and magnet switches without ever needing to open the unit. This enables one-man, non-intrusive operation and reduces routine maintenance time and costs.

A tri-color backlit LCD clearly indicates the unit's status at a glance, even from a distance. A steady green backlight indicates normal operation, flashing yellow indicates fault and flashing red indicates an alarm.

All detectors are supplied pre-configured and include 2 programmable alarm relays, 1 programmable fault relay as well as an industry standard 4-20mA output (sink or source selectable) and MODBUS.

The scale, range, relay operation, alarm set point and electronic tag number of the detector can be adjusted using the transmitter's LCD and non intrusive magnetic switches. Outputs are automatically inhibited during adjustment, thereby reducing the risk of false alarm at the control panel during maintenance.

Sensepoint XCD has an integral mounting plate for surface mounting or can be mounted to a horizontal or vertical pipe using the optional pipe mounting bracket. Electrical installation can be made using either conduit or cable with suitable mechanical protection. Two M20 or 3/4" NPT entries are provided (depending on certification). A weather-

proof cap is also included for use in the harshest outdoor conditions. Other optional accessories include a sunshade/deluge protection, duct mounting kit, collecting cone and remote mounting sensor socket.

Sensepoint XCD ensures easy installation and the fastest routine operation by removing the need for hot work permits in hazardous areas. Using easy to replace plug-in sensors, downtime is also reduced and on-going costs are minimised through the use of poison resistant flammable sensors, poison immune infrared Hydrocarbon sensors and patented Surecell toxic sensors.

READY, STEADY, GO!

Sensepoint XCD uses three instantly recognizable 'traffic light' colors to indicate its status. The large tri-color backlit LCD is steady green to indicate normal operation, flashes yellow to indicate a fault/warning and flashes red to indicate an alarm. This allows anyone in the area to clearly see at a glance the status of any detector. This can be particularly useful to identify detector status if the detector is located in a difficult to access area or if a number of detectors are located in the same area.

KEY FEATURES



gas detection | designed for support | gastech.com

DETECTABLE GASES AND XCD SENSOR PERFORMANCE

Gas	User Selectable Full Scale		Range Default Range	Steps	User Selectable Cal Gas Range		Default Cal Point	Response Time (T90)	Accuracy	Operating Temperature		Default Alarm Points	
	Min	Max			Min	Max				A1	A2		
Electrochemical Sensors													
Oxygen	25% Vol only	25% Vol	n/a		20.9% Vol	20.9%Vol	<30	<30	-20°C / -4°F	55°C / 131°F	19.5%Vol	23.5%Vol	↑
Hydrogen Sulfide*	10 to 100ppm	50ppm	0.1ppm			25ppm	<50	<±1ppm	-20°C / -4°F	55°C / 131°F	10ppm	20ppm	↑
Carbon Monoxide**	100 to 1,000ppm	300ppm	100ppm			100ppm	<30	<±6ppm	-20°C / -4°F	55°C / 131°F	30ppm	100ppm	↑
Hydrogen	1,000ppm only	1,000ppm	n/a			500ppm	<65	<±25ppm	-20°C / -4°F	55°C / 131°F	200ppm	400ppm	↑
Nitrogen Dioxide***	10 to 50ppm	10ppm	5ppm			5ppm	<40	<±3ppm	-20°C / -4°F	55°C / 131°F	5ppm	10ppm	↑
* Lowest Alarm Limit = 1ppm; Lowest Detection Limit = .5ppm ** Lowest Alarm Limit = 15 ppm; Lowest Detection Limit = 10ppm *** Lowest Alarm Limit = 0.6 ppm; Lowest Detection Limit = 0.3ppm													
Catalytic Bead Sensor													
Flammable 1 to 8 LEL	20 to 100%	100% LEL	10% LEL			50% LEL	<25	<±1.5%LEL	-20°C / -4°F	55°C / 131°F	20% LEL	40% LEL	↑
Infrared Sensors													
Methane	20 to 100% LEL	100% LEL	10%LEL			50% LEL	<30	<±1.5%LEL	-20°C / -4°F	50°C / 122°F	20% LEL	40% LEL	↑
Propane	20 to 100%LEL	100% LEL	10% LEL			50% LEL	<30	<±1%LEL	-20°C / -4°F	50°C / 122°F	20% LEL	40% LEL	↑
Carbon Dioxide	2% Vol only	2% Vol	n/a			1% Vol	<30	<±0.04% Vol	-20°C / -4°F	50°C / 122°F	0.4% Vol	0.8% Vol	↑

NOTE: For Cat Bead and Infrared sensors, Lowest Detectable Limit is 5% LEL and Lowest Alarm Level is 10% LEL.

↑ - Rising Alarm
↓ - Falling Alarm

| designed for support |

SENSEPOINT XCD



tech

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24 Baretta Road
Wangara WA 6065

Phone: +61 8 6108 0000

21/25 Narabang Way
Belrose NSW 2085

Phone: +61 2 9451 0054

PO Box 349
Cannon Hill Qld 4170

Phone: +61 7 3160 0901

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18.4 International IEC

IEC Ex for Transmitter

		<h1>IECEX Certificate of Conformity</h1>	
INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres <small>for rules and details of the IECEx Scheme visit www.iecex.com</small>			
Certificate No.:	IECEX BAS 08.0072	Issue No.:	0
Status:	Current	Certificate history:	
Date of issue:	2008-11-10	Page 1 of 3	
Applicant:	Honeywell Analytics 405 Barclay Boulevard Lincolnshire Illinois 60069 United States of America		
Electrical Apparatus: <i>Optional accessory:</i>	A Type XCD Transmitter		
Type of Protection:	Flameproof		
Marking:	Ex d IIC Gb T6 (Ta -40°C to +65°C) Ex tb IIIC T85°C Db IP66		
Approved for issue on behalf of the IECEx Certification Body:	R S Sinclair		
Position:	Managing Director		
Signature: <i>(for printed version)</i>			
Date:	10/11/08		
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Certificate issued by:			
	Baseefa Rockhead Business Park Staden Lane Buxton Derbyshire SK17 9RZ United Kingdom		



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX BAS 08.0104X** issue No.:0 Certificate history:

Status: **Current**

Date of issue: **2009-03-09** Page 1 of 3

Applicant: **Honeywell Analytics
405 Barclay Boulevard
Lincolnshire
Illinois
60069
United States of America**

Electrical Apparatus: **A Type XCD Gas Sensor Head**
Optional accessory:

Type of Protection: **Flameproof and Dust**

Marking: **Ex d IIC T6 (Ta -40°C to +65°C) Gb
Ex tb IIIC T85°C Db IP6X A21**

Approved for issue on behalf of the IECEx Certification Body: **R S Sinclair**

Position: **Managing Director**

Signature: *(for printed version)*

R S Sinclair
10-3-09

Date:

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Certificate issued by:

**Baseefa
Rockhead Business Park
Staden Lane
Buxton
Derbyshire
SK17 9RZ
United Kingdom**



2.8. EXTERNAL MANUAL ACTUATOR 316SS

FirePro. Reinventing Fire Suppression

FP-14053 Manual Actuator

Rev 2

For use with Fire Suppression Systems

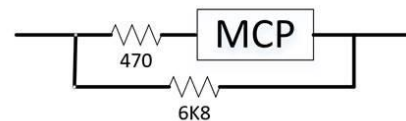
- Suitable for harsh vibration environments, such as vehicles and marine vessels
- Safety pin and anti-tamper tie to prevent accidental discharge
- Moulded aluminium assembly with water-proof switch mechanism
- Stainless Steel (316SS) switch guard for external applications
- Connections via Deutsch Plugs
- Made in the Australia

Specifications	
Contact Rating	50vDC
Contact Configuration	Normally Open
Switch Operation	Momentary Action
Dimensions	L100 x W80 x D64 mm



Instructions for use with Sigma XT Fire Panel

Sigma Panel requires special configuration with a 470 k Resistor in line and a 6K8 End of Line resistor as shown.



2.9. FIREPRO GENERATORS IS Internal



FirePro
ATEX Range
Rev 10

FirePro in potentially explosive atmospheres (ATEX)

FirePro ATEX Condensed Aerosol Generators are designed to operate in potentially explosive atmospheres. Local authorities have the responsibility for defining a Class, Zone, and Group classification for specific areas. The classification given to a particular zone, and its size and location, depends on the likelihood of an explosive atmosphere occurring and its persistence if it does. Areas classified into zones (0, 1, 2 for gas-vapor-mist and 20, 21, 22 for dust) must be protected from effective sources of ignition.

Approved to the ATEX directive 2014/34/EU (Ref Chapter III, art. 10)



Model	Weight		Dimensions	Approvals
	Net (g)	Gross (g)		
FPX-0100EX	100	1,830	170 x 84mm diam	
FPX-0200EX	200	2,315	200 x 84mm diam.	
FPX-0500EX	500	3,770	310 x 88mm diam.	
FPX-1200EX	1,200	17,050	365 x 450 x 310mm	
FPX-2000EX	2,000	21,650	365 x 450 x 310mm	
FPX-3000EX	3,000	22,450	365 x 450 x 310mm	
FPX-5700EX	5,700	33,710	365 x 450 x 420mm	





Fire Safety Equipment Pty Ltd

**Conformity Assessment:
Condensed Aerosol Generator:
AR 18 ATEX 132**

Ex s II C T3 Ga

5/05/2022

CONFORMITY ASSESSMENT DOCUMENT

WWW.HASPECIALISTS.COM.AU

Document Information

Project Name:	FSE - CAD for AR18ATEX132			
Report Number:	CAD-22-05-01FSE - AR18 ATEX 132			
Client:	Fire Safety Equipment Pty Ltd			
Report Author(s):	Paul Spresser			
Document History:				
Revision	Date	Description	Reviewed by	Approved by
0	5/5/2022	Issue for Client	KH	KH

DISCLAIMER:

This Report has been prepared by **Hazardous Area Specialists Pty Ltd (HAZ)** based on information provided to HAZ by **Fire Safety Equipment Pty Ltd** (the Client). It has been prepared for the Client and is issued pursuant to an agreement between HAZ and the Client. It has been produced according to the scope of work and is only suitable for use in connection with that scope.

HAZ takes no responsibility for the accuracy of the information provided to it by the Client (including errors of omission), certifying authorities, or the equipment manufacturer or their agents, and does not accept any liability for any loss whatsoever by any party as a result of actions taken either solely or in part on the basis of the Report, where the Report has relied upon that information provided by the Client, certifying authorities or equipment manufacturer or their agents. Any document used in the compilation of this report, including Standards and Codes, will be documented in the Referenced Documents section of the report.

This Report has been prepared solely for the Client and can only be relied upon by the Client. If the Client deems it necessary to send a copy of the Report to a third party, the report shall be sent in its entirety.

Further, any installation practices which vary from those allowed for in Australian or Australian/New Zealand standards, government acts and regulations, the original certification or the manufacturer's original documents, may void the validity of this assessment.



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PREFACE

Compliance with AS/NZS 3000 is called up in all States and Territories legislation in Australia therefore making it a mandatory requirement. In Section 7.7 “Hazardous Areas” of AS/NZS 3000. Subsection 7.7.2.4 Electrical Equipment (sub-sub section 7.7.2.4.1 Selection) requires that “*Electrical equipment shall be installed in accordance with the installation requirements of AS/NZS 60079.14*”. This standard provides guidance on the compilation of Conformity Assessment Documents in Appendix ZD.



1. EXECUTIVE SUMMARY

1.1 Equipment and Site Particulars

Manufacturer:	FirePro
Description / Model:	Condensed Aerosol Generator Model: FP-5700EX
Site Owner:	Waitsia Gas Project Stage 2 WA
Site Location:	Wongarra, Western Australia
Installed Equipment Certification Label Details:	
Marked Type:	Model No.: FP-5700EX
Marked Certification Details:	II 1G Ex s II C T3 Ga II 1D III C T200 °C Da I M1 Ex s I T450 °C Ma T _{amb} : -54°C +54 °C
Equipment Details on Certificate:	
Certified Models/Types:	Condensed Aerosol Generators FirePro: FP-100 EX, FP-200 EX, FP-500 EX, FP-1200 EX, FP-2000 EX, FP-3000 EX, FP-4200 EX, FP-5700 EX FireBan: FBN-100 EX, FBN -200 EX, FBN -500 EX, FBN -1200 EX, FBN -2000 EX, FBN -3000 EX, FBN -4200 EX, FBN -5700 EX
Relevant Certified Marking	II 1G Ex s II C T3 Ga II 1D III C T200 °C Da I M1 Ex s I T450 °C Ma T _{amb} : -54°C +54 °C

1.2 Assessed Equivalent Australian Ratings

Equivalent Australian Ratings:	Ex s II C T3 Ga
Ambient Temperature Range:	Specific conditions of use: When the temperature under rated conditions exceeds 70°C at the cable or conduit entry point, or 80°C at the branching point of the conductors, the temperature specification of the selected cable shall be in compliance with the actual measured temperature.
Suitable for use in Hazardous Areas described by:	
Site Permitted Groups:	IIC
Site Temperature Classes:	T3
Site Permitted Zones:	1 and 2



Figure 1 – Typical Equipment



2. SCOPE

2.1 Equipment Details

This **Conformity Assessment Document (CAD)** review the compliance of the **Condensed Aerosol Generator – Model FP-5700EX**, manufactured by **FirePro Systems Ltd**, and which are certified under **ATEX Directive 2014/34/EU** as **AR 18 ATEX 132 - Rev.1**. This certificate is dated 20 May 2019. The certification for Notified Body expired on **09/02/2020**. As the certificate was issued before this date, the certificate is valid.

Albarubens Srl ('AR'), **Notified Body No. 2632**, (in accordance with Article 17 of the Directive 2014/34/EU-ATEX of the European Parliament and of the Council, dated 26 February 2014) certifies that this **Electrical Equipment** has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

- [EN 60079-0:2012 + A11:2013 – Explosive Atmospheres – Part 0: General Requirements](#)
(identical to IEC 60079-0:2011)
- [IEC 60079-33:2012 – Explosive atmospheres - Part 33: Equipment protection by special protection 's'](#)

The examination and test results are recorded in **Confidential Report No. MOD 7.4.1 - ID: 3748**.

2.2 Methodology and Conformance

The methodology to be employed is to compare the above, relevant CENELEC (EN) and IEC standards at the years published to the current IEC editions that these were sourced from, and then match these to the editions of AS/NZS standards which are identical to the established IEC standards. In this manner, traceability from these certified standards to the relevant editions of the AS/NZS standards can be achieved.

3. EQUIPMENT DISPOSITION

The equipment is installed at the **Waitsia Gas Project Stage 2 at Wongarra, in Western Australia**.

4. SITE CONDITIONS

4.1 Site Hazardous Area

The client has advised that the worst case Hazardous Area Classification for the site where the equipment is to be installed is as follows:

Zone 1
Group IIB
Temperature Class T3

4.2 Environmental Considerations

The equipment is certified for **ambient temperatures of -54°C to +54°C**. Also, the instrument must be installed in accordance with the installation requirements as stated in the equipment certificate under **Section (17) Specific Conditions of Use** which states that “modifications are not allowed”.



5. BASIS OF THE CONFORMITY ASSESSMENT

5.1 Objective

The objective of this Conformity Assessment is to establish as follows:

That the equipment as described in **EU Type Examination Certificate AR 18 ATEX 132 - rev1** and as described in the **Conformity Assessment Application** (as completed by the client), demonstrates an equivalent level of safety to an identical apparatus certified to equivalent Australian, Australian/New Zealand or IEC standards, in the configurations and locations in which the equipment is to be installed on site.

It will be assessed that no further risk has been introduced by using the equipment as described in **AR 18 ATEX 132 - rev1** at this site than would be the case when employing an identical equipment, certified to one of the following schemes:

- The current ANZEx scheme (as described in MP87-1),
- The IECEx scheme, to which Australia is a signatory (note – the IECEx scheme, not to other schemes using IEC based standards).

Note the requirements of AS/NZS 60079.14:2017 clause 4.4.1:

“Electrical equipment, other than simple apparatus installed within an intrinsically safe circuit, to be installed in a hazardous area, and any associated apparatus, shall conform to the requirements of AS/NZS 60079.14:2017, clause 4.4.2.”

In particular, note the requirements of AS/NZS 60079.14:2017 clause 4.4.2.3.1:

“The selection of equipment which has a certificate issued by a third party that is not in accordance with 4.4.2.1 or 4.4.2.2, shall be restricted to circumstances where suitable equipment with a certificate in accordance with 4.4.2.1 or 4.4.2.2 is not practical. The justification for the use of such equipment shall be made by person(s) in control of the installation, or their nominee, and include the selection, installation, and operational requirements. Any assessment of the equipment to support this justification shall be carried out by a competent person. The justification shall be included as part of the verification dossier. Justification may be demonstrated in the form of a Conformity Assessment Document. Requirements for the preparation of a Conformity Assessment Document can be found in Appendix ZD.”

5.2 Justification

Justification for the compilation of this **Conformity Assessment Document** : This apparatus is an existing part of a **Process Control System** at an active site. Production, safety, or the usability of the equipment may be compromised by replacing the Original Apparatus with a similar but non-identical AS/NZS or IECEx certified type.

The equipment complies with the certified standards, as certified by **Apparecchio Elettrico**, which are identical to the base IEC standards determined from the EN standards. These IEC standards are identical to the quoted Australian/New Zealand standards.



6. AUDIT OF EQUIPMENT CERTIFICATION VS MARKING

Datum	Certificate Data	Marking Label
Manufacturer:	Firepro Systems Ltd	Firepro Systems Ltd
Certificate Holder:	Firepro Systems Ltd	Not applicable
Equipment:	Condensed Aerosol Generator	Condensed Aerosol Generator
Model/Order Number:	FBN -5700 EX	Not Marked
Relevant Marking:	II 1G Ex s IIC T3 Ga	II 1G Ex s IIC T3 Ga
Ambient Temperature Range:	T _{amb} : -54 to +54 °C	T _{amb} : -54 to +54 °C
IP Rating:	Not allocated	Not allocated
Certificate Number:	AR 18 ATEX 132 - Rev1	AR 18 ATEX 132 - Rev1
Certification Marking Example:		

Table 1 – Audit: Marking Label Details Vs Certification Details



7. ANALYSIS OF CERTIFICATION MARKING

7.1 Relevant Marking

This ATEX certified equipment is intended to be marked as follows:

II 2 G Ex s IIC T3 Ga

This marking should be interpreted as follows:

- **II:** Suitable for use in non-coal mining, surface hazardous area applications (surface industries)
- **2:** Category 2 – Suitable for installation in Zone 1 and 2 hazardous areas only.
- **G:** Suitable for use in environments where flammable gases and vapours exist.
- **Ga:** EPL level “a”
- **Ex s:** Protection by the “special protection”.
- **IIC:** This indicates that the equipment may be used in Groups IIA, IIB and IIC hazardous areas only.
- **T3:** Temperature classification which indicates that the surface temperature of the equipment is no hotter than 200°C (the T3 limit) with the maximum certified ambient temperature.

7.2 ATEX Categories and Zones

Categories	Zone Types	EPL	Zone Type Criteria – Flammable Gases and Vapours
Category 1 – Very high protection	0	Ga	Explosive atmosphere is continuously present for a long periods (>1000 hours per annum).
Category 2 – High protection	1	Gb	Explosive atmosphere is likely to occur in normal operations (>10, >1000 hours per annum).
Category 3 – Normal protection	2	Gc	Explosive atmosphere is unlikely to occur in normal operations if it does it will only occur for short periods (>10 hours per annum).



8. TRACEABILITY OF STANDARDS

8.1 Relevant Certified Standards

The equipment was originally certified to the following EN standards:

- EN 60079-0:2012 + A11:2013 – Explosive Atmospheres – Part 0: General Requirements
(identical to IEC 60079-0:2011)
- IEC 60079-33:2012 – Explosive atmospheres - Part 33: Equipment protection by special protection 's'

8.2 Root IEC Standards

It should be noted that the following EN standards are derived from the same year/version of the equivalent IEC standards (that is, they are harmonised). AS/NZS standards that equate to the same year/revision of IEC standards (as the EN standards) should be selected.

Table 2 - Corresponding Harmonised Standards

Originally Certified Standard	Root IEC Standard	AS/NZS Standard based on the Root IEC Standard
EN 60079-0:2012 + A11:2013	IEC 60079-0:2011	AS/NZS 60079.0:2012
	IEC 60079-33:2012	AS/NZS 60079.33:2012

8.3 Equivalent AS/NZS Standards to Root IEC Standards

The EN standards quoted in Table 2 above are identical to the IEC standards, also quoted in Table 2. Furthermore, the IEC standards quoted in Table 2 above, are identical to the quoted AS/NZS standards. Therefore, the certified EN standards are, in this instance, identical to the following AS/NZS standards:

- AS/NZS 60079.0:2012 - Explosive Atmospheres – Part 0: General Requirements
(identical to IEC 60079-0:2011)
- AS/NZS 60079.33:2012 – Explosive Atmospheres – Part 33: Equipment protection by special protection 'S' (IEC 60079-33, Ed.1.0 (2012))



9. ASSESSMENT SUMMARY

9.1 Original Data

As stated above the ATEX certified equipment is marked as follows:

II 2 G Ex s IIC T3 Ga

As certified by Albarubens Srl ('AR'), Notified Body No. 2632 as complying with:

- EN 60079-0:2012 + A11:2013, and
- IEC 60079-33:2012.
- And, as described in: EC-Type Examination Certificate AR 18 ATEX 132 - Rev1, and
- Confidential Report No. MOD 7.4.1 - ID: 3748.

9.2 Assessment Conclusions

The equipment is considered to conform in all relevant respects, to the requirements of:

- AS/NZS 60079.0:2012 - Explosive Atmospheres – Part 0: General Requirements
(identical to IEC 60079-0:2011)
- AS/NZS 60079.33:2012 - Explosive Atmospheres – Part 33: Equipment protection by special protection
'S' (Identical to IEC 60079-33, Ed.1.0 (2012))

The equipment may be installed in flammable gas/vapour hazardous areas which are classified as follows:

- Zones 1 and 2 only
- Groups IIA, IIB, IIC
- Assessed Temperature Classification of T4 In ambient temperatures ranging from $-54^{\circ}\text{C} \leq T_{\text{amb}} \leq +54^{\circ}\text{C}$.

9.3 Assessed Equivalent Marking

Therefore, the equipment may be treated as if it was certified and marked as follows:

Ex s IIC T3 Ga



10. CONDITIONS OF INSTALLATION AND USE

10.1 Manufacturer's Installation Instructions

The installation of the equipment shall be conducted in accordance with the manufacturer's installation instructions.

10.2 Installation and Inspection Standards

The installation or replacement of the equipment shall be conducted in accordance with:

- [AS/NZS 60079.14:2017 - Explosive atmospheres – Part 14: Design, selection, erection, and initial inspection](#) (IEC 60079-14:2014 (Ed. 5.0))

The inspection of the installed equipment shall be conducted in accordance with:

- [AS/NZS 60079.17:2017 – Part 17: Electrical installations inspection and maintenance](#) (IEC 60079-17:2013 (Ed.5.0))

10.3 Original Certificate Conditions

With regard to the original **EU-Type Examination Certificate AR 18 ATEX 132 – Rev 1**, all safety and installation requirements in all parts and supplements of this certificate shall be observed, with particular reference to Section (17) of the above certificate and its supplements, "Special Conditions of Use".

10.4 Required Competencies

Installation and maintenance staff are to possess the following competencies in accordance with AS/NZS 4761.1:2018 (formerly AS/NZS 4761.1:2008):

- UEENEEM024A - Install explosion-protected equipment and wiring systems (formerly UTE NES 107A)
- UEENEEM028A - Maintain equipment in hazardous areas – gas (formerly UTE NES 214A)

or the equivalent competencies as described in the most recent version of AS/NZS 4761.1:2018.



11. REFERENCED STANDARDS

The following standards have been referred to or referenced within this assessment:

Table 3 - Referenced Standards

Standard	Title
AS/NZS 4761.1:2018	Competencies for working with electrical equipment for hazardous areas (EEHA) - Part 1: Competency Standards
AS/NZS 60079.14:2017	Explosive atmospheres – Part 14: Design, selection, erection, and initial inspection (IEC 60079-14:2014 (Ed. 5.0) MOD)
AS/NZS 60079.17:2017	Explosive Atmospheres - Part 17: Electrical installations inspection and maintenance (IEC 60079-17:2013 (Ed.5.0) MOD)
AS/NZS 60079.10.1:2009 (+A1)	Explosive atmospheres - Classification of areas - Explosive gas atmospheres (IEC 60079-10-1, Ed.1.0 (2008) MOD)
AS/NZS 60079.20.1:2012	Electrical apparatus for explosive gas atmospheres - Part 20.1: Material characteristics for gas and vapour classification—Test methods and data (IEC 60079-20-1, Ed. 1.0 (2010))
AS/NZS 60079.0:2012	Explosive atmospheres - Part 0: Equipment - General requirements (IEC 60079-0 ED. 6.0 - 2011)
AS/NZS 60079.33:2012	Explosive Atmospheres – Part 33: Equipment protection by type of protection "s" (identical to IEC 60079-33:2012)
IEC 60079-0:2011	Explosive Atmospheres – Part 0: General Requirements
IEC 60079-33:2012	Explosive Atmospheres – Part 33: Equipment protection by type of protection "s"



12. REFERENCED DOCUMENTS

Annex	Document Type	Document Number	Description
Annex B	EU-Type Examination Certificate	AR 18 ATEX 132	Rev 1
	Declaration of conformity	FirePro in potentially explosive atmospheres	Rev. 2.1
	PQAN	TÜV CY 19 ATEX 0206135 Q	Condensed Aerosol Generators
	ISO 9001:2015 Certification	Certificate No.: 276371-2018-AQ-NLD-RvA	Valid: 16 December 2021 – 15 December 2024
	Notified Body Status	Notified Body: 2632	Last approval date : 09/03/2016 Expired: 09/02/2020
Annex C	Data Sheet	FirePro in potentially explosive atmospheres	Rev. 2.1
Annex D	Assessment Competency (AS/NZS 4761.1)	UTE NES 407 TA, WA, XA, YA, ZA	Date of Issue: 12 June 2006

Table 4 - Annexures

13. AUTHORISATION

Authorised for use (end user/client):

(signature)

Compiled by:
Paul Spresser
Principal Engineer – Hazardous Areas
Hazardous Area Specialists

(signature)



ANNEX A – DEFINITIONS

These terms relate to AS/NZS 60079.14:2017 unless otherwise stated.

Term	Title./ Reference	Definition
Ambient Temperature	Electrical equipment designed for use in a normal ambient temperature range of –20°C to +40°C does not require marking of the ambient temperature range. However, electrical equipment designed for use in other than this normal ambient temperature range is considered to be special. The marking shall then include either the symbol Ta or Tamb together with both the upper and lower ambient temperatures or, if this is impracticable, the symbol “X” shall be used to indicate specific conditions of use that include the upper and lower ambient temperatures.	AS/NZS 60079.0 – 2012 cl 5.1.1
Assurance of Conformity of Equipment	To IEC Standards: Equipment with certificate according to the IEC 60079 series or the IEC 61241 series, meets the requirements for hazardous areas, when selected and installed in accordance with this standard. To Other Standards: Apart from simple apparatus used within an intrinsically safe circuit, the selection of equipment for use in a hazardous area, which either has no certificate at all or it has a certificate but not in accordance with one of the standards listed in 4.4.1, shall be restricted to circumstances where equipment with suitable certification is not obtainable. The justification for the use of such equipment, along with the installation and marking requirements, shall be made by the user, manufacturer or third party, and be recorded in the verification dossier. The following requirements of this standard, under these conditions, may not be applicable.	AS/NZS 60079.14:2017 cl 4.4
Conformity Assessment Documents	The following items should be provided in all Conformity Assessment Documents before they can be accepted by the Owner/Occupier: The assessment statement should nominate the extent of the work undertaken including a list of considerations that are including in the report and any considerations, which may reasonably have been expected, that have been excluded. All details of the equipment and application that fully define the actual equipment, its function and application, should be included. The description should define the equipment by type and model, including any special variations or additions that establish a unique identity for the item being assessed. It may include characteristics relating to appearance, materials, etc., such as by description and / or photographs.	AS/NZS 60079.14:2017 Appendix ZD
Equipment Certified to IEC Standards	General Electrical equipment, other than simple apparatus installed within an intrinsically safe circuit, to be installed in a hazardous area, and any associated apparatus, shall conform to the requirements of AS/NZS 60079.14:2017, clause 4.4.2. This also includes AS/NZS certified product. Older AUS Ex product installed, should be checked to determine if the certificate was current at the time of installation. If this is the case, the equipment may remain, but if later found to be defective, it must be replaced with an IECEx or ANZEx certified unit of the correct specification.	AS/NZS 60079.14:2017 cl. 4.4.1 (Appendix ZZ version)
Equipment without IEC Certification.	Equipment with Certificates issued under the IECEx, ANZEx and AUSEx schemes: Equipment conforming to a Standard listed in Table 2 (of AS/NZS 60079.14) is acceptable when selected and installed in accordance with this standard and meets any of the following certification criteria: [i] The equipment as a current certificate under the IECEx or the ANZEx schemes [ii] The equipment has a cancelled or suspended IECEx or ANZEx certificate and it can be demonstrated that the equipment was manufactured whilst the certificate was current. [iii] The equipment was issued with a certificate issued under the AUSEx Scheme and the equipment was manufactured within the certificate validity period.	AS/NZS 60079.14:2017 cl. 4.4.2 (Appendix ZZ version)
Ex d (Flameproof enclosure “d”)	An enclosure in which the parts which can ignite an explosive gas atmosphere are placed and which can withstand the pressure developed during an internal explosion of an explosive mixture, and which prevents the transmission of the explosion to the explosive gas atmosphere surrounding the enclosure.	AS/NZS 60079.1:2015 cl 3.1



Term	Title./ Reference	Definition														
Ex s (special protection “s”)	A concept to allow design, assessment and testing of equipment that cannot be fully assessed within a recognized type of protection or combination of recognized types of protection because of functional or operational limitations, but which can be demonstrated to provide the necessary equipment protection level (EPL).	AS/NZS 60079.11:2011 cl. 3.1.1														
EPL	<table border="1"> <thead> <tr> <th>Zone</th> <th>Equipment Protection Level</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>“Ga”</td> </tr> <tr> <td>1</td> <td>“Ga” or “Gb”</td> </tr> <tr> <td>2</td> <td>“Ga” or “Gb” or “Gc”</td> </tr> <tr> <td>20</td> <td>“Da”</td> </tr> <tr> <td>21</td> <td>“Da” or “Db”</td> </tr> <tr> <td>22</td> <td>“Da” or “Db” or “Dc”</td> </tr> </tbody> </table>	Zone	Equipment Protection Level	0	“Ga”	1	“Ga” or “Gb”	2	“Ga” or “Gb” or “Gc”	20	“Da”	21	“Da” or “Db”	22	“Da” or “Db” or “Dc”	AS/NZS 60079.14:2017 Table 1
Zone	Equipment Protection Level															
0	“Ga”															
1	“Ga” or “Gb”															
2	“Ga” or “Gb” or “Gc”															
20	“Da”															
21	“Da” or “Db”															
22	“Da” or “Db” or “Dc”															
Group	Classification of electrical equipment related to explosive atmospheres for which it is to be used. Surface gas/vapour hazardous areas are designated Group II hazardous areas. The following subgroups exist: IIA; IIB; IIC.	AS/NZS 60079.0:2012 cl. 4.2														
Temperature Class	<table border="1"> <thead> <tr> <th>Temperature class</th> <th>Maximum surface temperature</th> </tr> </thead> <tbody> <tr> <td>T1</td> <td>450</td> </tr> <tr> <td>T2</td> <td>300</td> </tr> <tr> <td>T3</td> <td>200</td> </tr> <tr> <td>T4</td> <td>135</td> </tr> <tr> <td>T5</td> <td>100</td> </tr> <tr> <td>T6</td> <td>85</td> </tr> </tbody> </table>	Temperature class	Maximum surface temperature	T1	450	T2	300	T3	200	T4	135	T5	100	T6	85	AS/NZS 60079.0:2012 Table 2
Temperature class	Maximum surface temperature															
T1	450															
T2	300															
T3	200															
T4	135															
T5	100															
T6	85															
Zone 0	An area in which an explosive gas atmosphere is present continuously or for long periods or frequently.	AS/NZS 60079.10.1:2009 (+A1) cl. 3.6														
Zone 1	An area in which an explosive gas atmosphere is likely to occur in normal operation occasionally.	AS/NZS 60079.10.1:2009 (+A1) cl. 3.7														
Zone 2	An area in which an explosive gas atmosphere is not likely to occur in normal operation but, if it does occur, it will exist for a short period only.	AS/NZS 60079.10.1:2009 (+A1) cl. 3.8														



ANNEX B – CERTIFICATION DOCUMENTS

- EU Type Examination Certificate



- [1] **EU-TYPE EXAMINATION CERTIFICATE**
CERTIFICATO DI ESAME UE DEL TIPO
- [2] **ELECTRICAL EQUIPMENT Intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU-ATEX Annex III/Module B**
APPARECCHIO ELETTRICO Inteso per l'uso in Atmosfera Potenzialmente Esplosiva - Direttiva 2014/34/EU-ATEX Annex III/Module B
- [3] **EU-TYPE EXAMINATION CERTIFICATE n.:** **AR18ATEX132rev1**
CERTIFICATO DI ESAME UE DEL TIPO n.:
- [4] **ELECTRICAL EQUIPMENT:** **Condensed Aerosol Generators**
APPARECCHIO ELETTRICO: **FirePro: FP-100 EX, FP-200 EX, FP-500 EX, FP-1200 EX, FP-2000 EX, FP-3000 EX, FP-4200 EX, FP-5700 EX**
FireBan: FBN-100 EX, FBN -200 EX, FBN -500 EX, FBN -1200 EX, FBN -2000 EX, FBN -3000 EX , FBN -4200 EX, FBN -5700 EX
- [5] **MANUFACTURER:** **Firepro Systems Ltd**
COSTRUTTORE:
- [6] **ADDRESS:** **8 FALEAS STR., AGIOS ATHANASIOS INDUSTRIAL AREA**
INDIRIZZO: **CY-4101 Limassol - CYPRUS**
- [7] **This ELECTRICAL EQUIPMENT and any variation is specified in the schedule to this certificate and the documents therein referred to.**
Questo APPARECCHIO ELETTRICO e le varianti sono descritte nell'allegato al presente certificato e nei documenti ivi richiamati.
- [8] **Albarubens srl, Notified Body No. 2632, in accordance with Article 17 of the Directive 2014/34/EU-ATEX of the European Parliament and of the Council, dated 26 February 2014, certifies that this ELECTRICAL EQUIPMENT has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.**
The examination and test results are recorded in confidential report MOD 7.4.1 - ID: 3748
Albarubens srl, Organismo Notificato n. 2632, in conformità all'art. 17 della Direttiva 2014/34/EU-ATEX del Parlamento Europeo e del Consiglio, datata 26 Febbraio 2014, certifica che questo APPARECCHIO ELETTRICO è conforme ai Requisiti Essenziali di Sicurezza e Salute per il progetto e la fabbricazione di prodotti destinati ad essere utilizzati in atmosfere potenzialmente esplosive, definiti nell'Allegato II della Direttiva. I risultati dell'esame e dei test sono descritti nel rapporto confidenziale MOD 7.4.1 - ID: 3748
- [9] **Compliance with the Essential Health and Safety Requirements has been assured by compliance with the technical standards:**
La conformità ai Requisiti Essenziali di Sicurezza e Salute è assicurata dalla conformità alle norme tecniche:
EN 1127-1:2011 - EN 60079-0:2012+A11:2013 - IEC 60079-33:2012 (partially)
except in respect of those requirements listed at item 18 of the Schedule.
tranne nel caso dei requisiti elencati al punto 18 dell'Allegato.
- [10] **If the symbol 'X' is placed after the certificate number, it indicates that the ELECTRICAL EQUIPMENT is subject to the Specific Conditions of Use specified in the next chapter 17.**
Il simbolo 'X', se presente dopo il numero di certificato, indica che questo APPARECCHIO ELETTRICO è soggetto a Condizioni Speciali per l'Uso, specificate nel seguente punto 17.
- [11] **This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified ELECTRICAL EQUIPMENT. Further requirements of the Directive apply to the manufacturing process and supply of product.**
These are not covered by this certificate.
Questo CERTIFICATO DI ESAME UE DEL TIPO è relativo soltanto al progetto ed alla costruzione di questo APPARECCHIO ELETTRICO. Ulteriori requisiti di questa Direttiva si applicano al processo di fabbricazione e fornitura di questo prodotto. Questi requisiti non sono oggetto del presente certificato.
- [12] **The marking of the ELECTRICAL EQUIPMENT shall include the following:**
Questo APPARECCHIO ELETTRICO deve riportare i seguenti contrassegni:
⊕ II 1G Ex s IIC T3 Ga
⊕ II 1D Ex s IIIC T200°C Da
⊕ I M1 Ex s T450°C Ma
Tamb : -54 +54 °C

Saronno (Italy), 20 May 2019



Digital signature

Giuseppe Terzaghi
Firmato digitalmente da Giuseppe Terzaghi
Data: 2019.05.20 16:42:04 +02'00'

ALBARUBENS srl
The legal representative: ing. Giuseppe Terzaghi

Verify validity and authenticity of this certificate on the website: <https://www.albarubens.it/authentication.php> (Password: JVBXKS)

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Albarubens srl - Via G. Ferrari 21/N - 21047 Saronno (VA) - Italy - Reg. VA-286283 - Tax code IT 02767050129 - Paid-up capital €100.000,00
www.albarubens.it - info@albarubens.it - tel. +39 02 96248530 - fax: +39 02 700523656 - Document automatically generated by the Albarubens WebApp 1.86

JOB: 19/0159 - ID: 3748



[13]

SCHEDULE

5

ALLEGATO

[14] **EU-TYPE EXAMINATION CERTIFICATE n.:**
CERTIFICATO DI ESAME UE DEL TIPO n.:

AR18ATEX132rev1

[15] **DESCRIPTION:**
DESCRIZIONE:

[EN] Fire extinguishers that are activated by an electric impulse.

The FPC (patented solid compound contained in the FirePro condensed aerosol generators), immediately starts a chemical reaction that in few seconds produces condensed dry aerosol in the discharge density defined by the system designer (i.e. potassium compounds (K₂CO₃), H₂O, N₂, CO₂ and other gas particles in small quantities). The family of fire extinguishers consists of the following models:

FirePro types

- FP-100 EX
- FP-200 EX
- FP-500 EX
- FP-1200 EX
- FP-2000 EX
- FP-3000 EX
- FP-4200 EX
- FP-5700 EX

FireBan types

- FBN-100 EX
- FBN-200 EX
- FBN-500 EX
- FBN-1200 EX
- FBN-2000 EX
- FBN-3000 EX
- FBN-4200 EX
- FBN-5700 EX

This equipment is marketed under two trademarks: FirePro and FireBan.
The two series are identical, both produced by the company Fire Pro Systems Ltd, holder of the certificate.

[IT] Estintori che vengono attivati tramite un impulso elettrico

L'FPC (composto solido brevettato nei generatori di aerosol condensati FirePro), avvia immediatamente una reazione chimica che in pochi secondi produce aerosol secco condensato nella densità di scarico definita dal progettista del sistema (cioè composti di potassio (K₂CO₃), H₂O, N₂, CO₂ e altre particelle di gas in piccole quantità). La famiglia di estintori è composta dai seguenti modelli:

Modelli FirePro

- FP-100 EX
- FP-200 EX
- FP-500 EX
- FP-1200 EX
- FP-2000 EX
- FP-3000 EX
- FP-4200 EX
- FP-5700 EX

Modelli FireBan

- FBN-100 EX
- FBN-200 EX
- FBN-500 EX
- FBN-1200 EX
- FBN-2000 EX

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JOB: 19/0159 - ID: 3748

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- FBN-3000 EX
- FBN-4200 EX
- FBN-5700 EX

Questo apparecchio viene commercializzato con due marchi commerciali: FirePro e FireBan.
Le due serie sono identiche, entrambe prodotte dalla società Fire Pro Systems Ltd, intestataria del certificato.

CHARACTERISTICS: Minimum pulse voltage 1.5 V
CARATTERISTICHE: Minimum pulse current 0.6 A
Monitoring current 5 mA

6

Tensione minima di impulso 1.5 V
Corrente minima di impulso 0.6 A
Corrente di monitoraggio 5 mA

ROUTINE TESTS: VISUAL INSPECTION OF CONFORMITY TO TECHNICAL FILE
PROVE DI ROUTINE: ROUTINE TEST PROVIDED BY THE MENTIONED STANDARDS
Ispezione visiva della conformità al fascicolo tecnico
Prove di routine richieste dalla norme citate

WARNING LABEL: Nothing special / Niente di particolare
AVVERTENZE DI TARGA:

REVISION HISTORY: **CERTIFICATE** **DATE** **REVISION REASON**
STORIA DELLE REVISIONI: AR18ATEX132 23-Nov-2018 First issue / Prima emissione
AR18ATEX132rev1 20-May-2019 New company address, new brand "FireBan", revised marking

[16] This document is based on confidential Atex Assessment Report ref. MOD 7.4.1 - ID: 3748

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[17] Special conditions for safe use depends on correct following of manufacturer's manual. Further modification are not allowed.
L'efficacia e l'affidabilità di questi apparecchi sono garantite seguendo le istruzioni del manuale d'uso. Non sono ammesse modifiche non autorizzate rispetto al fascicolo tecnico agli atti.

[18] **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS - Compliance with the Essential Health and Safety Requirements (EHSRs) has been evaluated against the standards listed in point 9, with the additional following considerations:**

REQUISITI ESSENZIALI DI SICUREZZA E SALUTE - La conformità ai Requisiti Essenziali di Sicurezza e Salute (EHSR) è stata valutata rispetto alle norme elencate al punto 9, alle quali si aggiungono le seguenti considerazioni:

The aerosol generators were demonstrated by laboratory tests to be not capable to ignite the explosive atmosphere, also in case of accidental activation, but they are not described by any standardized protection method.

The "Ex s" protection mode highlights the not-standardized satisfaction of the EHSRs; the "partial" is due to the non-involvement of a secondary NoBo.

Prove di laboratorio hanno dimostrato l'incapacità dei generatori di aerosol di innescare l'atmosfera esplosiva, anche in caso di attivazione accidentale, ma essi non sono descritti da alcun metodo di protezione standardizzato.

La modalità di protezione "Ex s" evidenzia la soddisfazione non standardizzata degli EHSR; il "parziale" è dovuto al mancato coinvolgimento di un NoBo secondario.

[19] The descriptive documents quoted hereafter constitute the technical documentation of the product covered by this certificate. These documents are confidential and they are available only to the authorities. All the documents are stored in Albarubens archive.

8

I documenti descrittivi elencati di seguito costituiscono la documentazione tecnica del prodotto oggetto di questo certificato. Questi documenti sono confidenziali e sono a disposizione delle sole autorità competenti. Copia degli stessi è conservata presso l'archivio di Albarubens.

FILES ANNEXED TO AR18ATEX132	BYTES	HASH (MD5)	
AR18TEST011.pdf	2 712 092	567724ADCEA5823A1BAE896B207E156A	A
AR18TEST134Rev.1.pdf	3 972 954	9695E1289E6B8369083EACA878F300D	D
AR18TEST183.pdf	1 126 343	47DFE05CFC8282B1BF90ECD6F1F3786B	D
ATEXassessment-3275.pdf	262 112	FE4872EE66141A8C91A06B01A2671E95	S
ATEXdecision-3275.pdf	256 228	2E843DAB05F127CE4C95FE88E85FD659	S
Atex label.pdf	274 944	55835E0CB9F44CA11D6374D25C925A3E	A
FIREPRO ATEX MANUAL.pdf	1 042 719	0ED7E2A3A6C502B2CD4805C30CAB624	A
FP100EX Assembly.pdf	481 000	7AA0FB3E3E216B2A19C9C4A168E9AE8A	A
FP122030 ATEX CASING ASSEMBLY.pdf	195 659	4C1ED4647D7D97F67CD591DA17B338A8	D
FP200EX Assembly.pdf	462 063	24D27BF9544BA4C287CC750717440FED	D
FP4257 ATEX CASING ASSEMBLY.pdf	198 518	11BAE898B79E47F4BF55344499B74651	D
FP500EX Assembly.pdf	496 862	FE53FC7570E275CAE0AE660A719A00F	D
GEPMI Fire Protection Conformity Certification T.10302-2014.pdf	177 417	EEF8D16D1C2F16871E5F1ECBAA1A89E9	A
GEPMI Fire Protection Conformity Testing Report.pdf	192 799	7E3FFE9F321BF9B0DEC7D6718BF949	D
Ignitio Hazard Risk Assessment Table A for FirePro ATEX Condensed Aerosol Generators.pdf	82 435	A02CF5E3CA13792884EBE20CCAC6FC1C	A

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JOB: 19/0159 - ID: 3748

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FILES ANNEXED TO AR18ATEX132 (continue)	BYTES	HASH (MD5)	
Ignition Hazard Risk Assessment Table B for FirePro ATEX Condensed Aerosol Generators.pdf	95 307	097A0DBDE059E7CA2A048717C3961C1E	D
ULC Explosive Atmosphere Discharge Test (UL 2127).pdf	285 735	230711C14F48EAFAAF1D352903AEB41	A
FILES ANNEXED TO AR18ATEX132rev1	BYTES	HASH (MD5)	
ATEXassessment-3748.pdf	263 014	1BDF3AF7FF6DD55140E49C6FBBDB4FFC	S
ATEXdecision-3748.pdf	194 348	660E1D2158EBB3F7934E5D0A122C8219	S
Change of Address.pdf	135 127	B1639FE24BCB8E0D68AF239D8588754B	A
Confirmation FP100S to FP100T.pdf	127 470	DCAED6708AB73E7BAC7EB4EC823BD1E	A
Declaration FirePro - FireBan.pdf	116 803	5C5349DC00EC388D40419F503C5F1071	A
FIREBAN ATEX MANUAL - 7.5.19.pdf	925 516	FB049E8EE3E649AD3296656B0A586D29	A
FIREPRO ATEX MANUAL - 7.5.19.pdf	877 502	F476B4BAF3858A1B7FB59C2368A84D8A	A
Formal request for FireBan trade name.pdf	159 596	08DF7DBB050B242D42041511C339CFC4	A

A: Documents obtained by the manufacturer and used for the assessment / Documenti ricevuti dal fabbricante ed utilizzati per la valutazione
D: Additional examined documents / Documenti aggiuntivi esaminati
S: Reserved documents generated by Albarubens during the assessment / Documenti riservati generati da Albarubens durante la valutazione

[20] **INSPECTOR IN CHARGE OF THE ASSESSMENT:** Ing. Giuseppe Terzaghi
ISPETTORE INCARICATO DELLE VERIFICHE:

FINAL REVIEWER/CERTIFICATE DECISOR: Dott.ssa Nicoletta De Luca
REVISORE FINALE/DELIBERANTE CERTIFICAZIONE:

End of document, signature on the cover

Explanations / Spiegazioni

- 1** Albarubens issued this certificate as Notified Body for 2014/34/EU-ATEX Directive, recognized by European Commission on NANDO system with n. 2632. Albarubens ha emesso questo certificato in quanto Organismo Notificato per la Direttiva 2014/34/UE-ATEX, riconosciuto dalla Commissione Europea sul sistema NANDO con numero 2632.
- 2** This certificate is mandatory for placing these devices on the European Union market; it takes separated surveillance certificate. Questo certificato è obbligatorio per l'immissione di questi apparecchi sul mercato dell'Unione Europea; richiede un certificato di sorveglianza.
- 3** The verification activity at the basis of this certificate was carried out under ISO/IEC 17065 accreditation. L'attività di verifica alla base di questo certificato è stata svolta in regime di accreditamento ISO/IEC 17065.
- 4** The authenticity of this certificate is verifiable online, by comparison between the copy in your possession and that downloaded from our secure website. L'autenticità di questo certificato è verificabile on-line, per confronto tra la copia in vostro possesso e quella scaricata dal nostro sito web protetto.
- 5** The schedule is an integral part of the certificate, which can only be transmitted or reproduced in its entirety. L'allegato è parte integrante del certificato, che può essere trasmesso o riprodotto solo nella sua interezza.
- 6** Any performance parameter, other than the ones provided by the standards listed in point [9], is descriptive only and not covered by this certificate. I parametri prestazionali eventualmente riportati, diversi da quelli previsti dalle norme elencate al punto [9], hanno funzione solo descrittiva e non sono coperti da questo certificato.
- 7** The assessment report is confidential and doesn't supplement the certificate; it can only be sent to the accreditation or market surveillance authorities. Il rapporto di ispezione è confidenziale e non integra questo certificato; può essere consegnato solo alle autorità di accreditamento o di sorveglianza del mercato.
- 8** The 'hash' code distinguishes original documents from the fake ones. Digital stamped documents available for those eligible. Il codice 'hash' distingue i documenti originali da quelli contraffatti. Copie timbrate in digitale disponibili per gli aventi diritto.



- Declaration of Conformity

Declaration of Conformity

Advancing
Fire Suppression

ATEX Explosive Environments

Rev 2.1

FirePro in potentially explosive atmospheres (ATEX)

FirePro has also been specifically certified under ATEX guidelines for hazardous environments. FirePro aerosol generators can be used in:

I M1 Ex s T450°C Ma	 I M1 Ex s T450°C Ma	ATEX Logo Mining Equipment Category 1, can be used in Zones 0 and 20 Explosion Protection Special Protection – IEC 60079-33 Maximum Permitted housing Temp of 450°C Equipment Protection Level
II 1G Ex s IIC T3 Ga	 II 1 G IIC T3 Ga	ATEX Logo Non Mining Equipment Category 1, approved in Zones 0, 1, and 2 Gas Atmosphere Explosion Group (most dangerous Group) Max permitted housing Temp of 200°C Equipment Protection Level
II 1D Ex IIIC T200°C Da	 II 1 D IIIC T200°C Da	ATEX Logo Non Mining Equipment Category 1, approved in Zones 20, 21, and 22 Dust Atmosphere Conductive Dust Max permitted housing Temp of 200°C Equipment Protection Level

The local authority has the responsibility for defining a Class, Zone, and Group classification for specific areas. The classification given to a particular zone, and its size and location, depends on the likelihood of an explosive atmosphere occurring and its persistence if it does. Areas classified into zones (0, 1, 2 for gas-vapor-mist and 20, 21, 22 for dust) must be protected from effective sources of ignition.

Other than Category 3 equipment, the complete system, including panel, cabling and detection will probably require third party accreditation.

Equipment Group	Equipment Category	Protection Level	Presence or Duration of Explosive Atmosphere	Hazardous Area Zones
I Underground Mines and Associated surface installations	M1	Very High	Constant Risk or Presence	
	M2	High	Constant Risk or Presence	
II All Other Surface Installations	1	Very High	Continuous Presence	Zone 0 / Zone 20
	2	High	Likely to Occur	Zone 1 / Zone 21
	3	Normal	Unlikely to Occur	Zone 2 / Zone 22

Dusts	Category M1, M2 & 1 Equipment	Gases, Vapours and Mists
Place in which an explosive atmosphere in the form of a cloud of combustible dust in air is present continuously, or for long periods or frequently.	Zone 20:	Zone 0: The part of a hazardous area in which a flammable atmosphere is continuously present or for long periods.
Category 2 Equipment		
Place in which an explosive atmosphere in the form of a cloud of combustible dust in air occurs occasionally. Group III IIIA Combustible flyings Group III IIIB Non-conductive dust Group III IIIC Electrically conductive dusts	Zone 21	Zone 1: That part of a hazardous area in which a flammable atmosphere is likely to occur in normal operation Group II IIA (Propane, Methane) Group II IIB (Ethylene) Group II IIC (Hydrogen)
Category 3 Equipment		
A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation or will persist for a short period only. Group III IIIA Combustible flyings Group III IIIB Non-conductive dust Group III IIIC Electrically conductive dusts	Zone 22	Zone 2: That part of a hazardous area in which a flammable atmosphere is not likely to occur in normal operation, and if it occurs, it will only exist for a short period Group II IIA (Propane, Methane) Group II IIB (Ethylene) Group II IIC (Hydrogen)

Mining and Surface Certification (MASC)

FPX-0100EX / 0200EX / 0500EX aerosol units have additional certification

Location	Hazard Frequency	Environment	Limiting Temperature	Limiting Temperature
Zone 1 & 2 Zone 21 & 22	Intermittent could under normal operating conditions in hazardous area	Group I Group IIC Group IIIC	Methane / Coal Dust Hydrogen / Acetylene Conductive Dusts	T50°C T3 T200 °C Enclosure surface limitation Enclosure surface limitation Enclosure surface limitation



- PQAN



(1) **Production Quality Assurance Notification**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, Directive 2014/34/EU



(3) Notification Number: TÜV CY 19 ATEX 0206135 Q

(4) Product category: Electrical Equipment for use in ATEX

Protective principle:
Condensed Aerosol Generators
FP-100 EX, FP-200 EX, FP-500 EX,
FP-1200 EX, FP-2000 EX, FP-3000 EX,
FP-4200 EX, FP-5700 EX,
FP-100T, FP-200T, FP-500T

(5) Applicant: FIREPRO SYSTEMS
8 Faleas Street
Ayios Athanasios Industrial Area
4101 Limassol - Cyprus

(6) Manufacturer: Same as applicant Manufacturing location: Same as applicant

Order number: 0206135
Date of issue: 2019-06-19
First certification: 2019-04-15
Valid to: 2022-04-14

(7) TÜV CYPRUS Ltd, notified body No. 2261 in accordance with Article 17 of the Council Directive 2014/34/EU of February 26, 2014, notifies the applicant that the manufacturer has a production quality system which complies with Annex IV of the Directive.

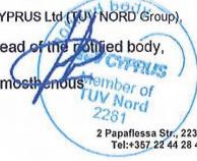
(8) This notification is based on audit report No. 19 0206135 issued on 2019-04-05. This notification can be withdrawn if the manufacturer no longer satisfies the requirements of Annex IV. Results of periodical production quality reassessments are a part of this notification.

(9) In accordance with Article 16 (3) of the Directive 2014/34/EU the CE marking shall be followed by the identification number 2261 of the notified body TÜV CYPRUS Ltd.
The EU-Type Examination Certificates based on this notification are listed by the notified body.

TÜV CYPRUS Ltd (TÜV NORD Group)

The head of the notified body,

D. Demetriou



TÜV CYPRUS (TÜV NORD) Ltd,
2 Papaflessa Str., 2235 Latsia, Nicosia - P.O.Box: 20732, 1663 Nicosia, Cyprus
Tel:+357 22 44 28 40 Fax:+357 22 44 28 50 email: info@tuvcyprus.com.cy
www.tuv-nord.com/cy

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CY-QF-(IND-ATEX-01)-12-ND_Rev01_24.05.2016

Page 1/1



- ISO 9001:2015 Certificate



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
276371-2018-AQ-NLD-RvA

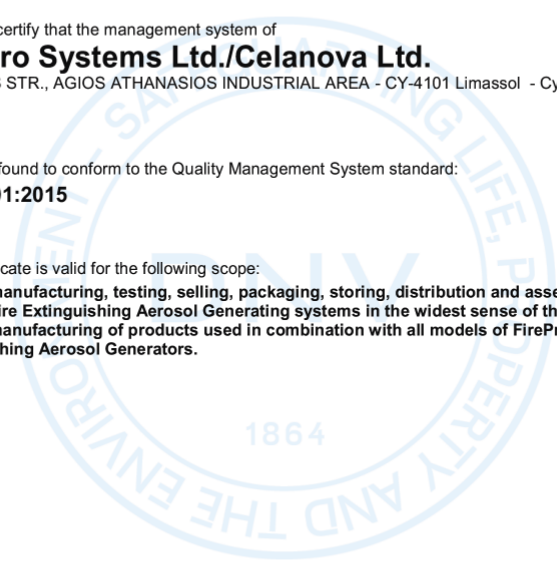
Initial certification date:
15 December 2003

Valid:
16 December 2021 – 15 December 2024

This is to certify that the management system of
FirePro Systems Ltd./Celanova Ltd.
8 FALEAS STR., AGIOS ATHANASIOS INDUSTRIAL AREA - CY-4101 Limassol - Cyprus

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Design, manufacturing, testing, selling, packaging, storing, distribution and assembly of FirePro Fire Extinguishing Aerosol Generating systems in the widest sense of the word and the manufacturing of products used in combination with all models of FirePro Fire Extinguishing Aerosol Generators.



Place and date:
Barendrecht, 02 November 2021

For the issuing office:
DNV - Business Assurance
Zwolseweg 1, 2994 LB Barendrecht,
Netherlands



J.H.C.N. van Gijlswijk
Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV Business Assurance B.V., Zwolseweg 1, 2994 LB, Barendrecht, Netherlands - TEL: +31(0)102922686. www.dnv.com/assurance



- **Notified Body Status**

Notification of a Body in the framework of a technical harmonization directive

From : Ministero dello Sviluppo Economico - Direzione Generale per il Mercato, la Concorrenza, il Consumatore, la Vigilanza e la Normativa Tecnica
Via Sallustiana, 53
00187 ROMA
Italy

To : **European Commission**
GROWTH Directorate-General
200 Rue de la Loi,
B-1049 Brussels.

Other Member States

Reference : Legislation : 2014/34/EU Equipment and protective systems intended for use in potentially explosive atmospheres (recast)

Body name, address, telephone, fax, email, website :

Albarubens srl
Via G. Ferrari 21/N
21047 - Saronno (VA)
Italy
Phone : +39 02 96248530
Fax : +39 02 700523656
Email : info@albarubens.it
Website : www.albarubens.it

Body : NB 2632

The body is formally accredited against :
Accreditation standard used: EN ISO/IEC 17065 - Product certification. But also the relevant requirements of UNI CEI EN ISO/IEC 17021 - UNI CEI EN ISO/IEC 17025 have been assessed.

Name of National Accreditation Body (NAB) : ACCREDIA

The accreditation covers the product categories and conformity assessment procedures concerned by this notification : Yes

Tasks performed by the Body :
Last approval date : 14/03/2018 | Valid until : 09/02/2020(Expired)

Product family, product /Intended use/Product range	Procedure/Modules	Annexes or articles of the directives
Group I electrical: Group I non-electrical: Group II gas electrical: Group II dust electrical: Group II gas non-electrical: Group II dust non-electrical:	EU-type examination (Module B) Conformity to type based on quality assurance of the production process (Module D) Conformity to type based on internal production control plus supervised product testing (Module C1) Conformity to type based on product quality assurance (Module E) Internal Production Control (Module A) and the communication of the technical documentation as Art. 13.1(b)(ii) Conformity based on unit verification (Module G)	Annex III Annex IV Annex VI Annex VII Annex VIII Annex IX



ANNEX C – REFERENCE DOCUMENTS

- Data Sheet



Reinventing
Fire Suppression

Explosive Environments

STANDARD FIREPRO RANGE

Rev 2.1

FirePro in potentially explosive atmospheres

During the UL listing procedure, FirePro has been tested, as per UL 2775, for use in explosive atmospheres UL2775, Section 26 "Pyrotechnic Reaction Containment Test". FirePro has also been specifically certified under ATEX guide lines for hazardous environments.

The FirePro **standard** aerosol generators can be used in:

- Zone 1 and 2 with presence of gases of IIA, IIB and IIC hazard groups
- Zone 21 and 22 with presence of dusts of IIIA, IIIB and IIIC hazard groups

The UL test demonstrated and proved that the FirePro Aerosol Generators actuated inside an explosive atmosphere did not initiate any explosion, the aerosol actually provided an inert atmosphere.

The local authority has the responsibility for defining a Class, Zone, and Group classification for specific areas. The classification given to a particular zone, and its size and location, depends on the likelihood of an explosive atmosphere occurring and its persistence if it does. Areas classified into zones (0, 1, 2 for gas-vapor-mist and 20, 21, 22 for dust) must be protected from effective sources of ignition.

Other than Category 3 equipment, the complete system, including panel, cabling and detection will probably require third party accreditation.

The standard product range of FirePro Aerosol generators is supplemented by the ATEX approved FirePro units which are specifically certified for Explosive Environments.

Equipment Group	Equipment Category	Protection Level	Presence or Duration of Explosive Atmosphere	Hazardous Area Zones	
I	Underground Mines and Associated surface installations	M1	Very High	Constant Risk or Presence	
		M2	High	Constant Risk or Presence	
II	All Other Surface Installations	1	Very High	Continuous Presence	Zone 0 / Zone 20
		2	High	Likely to Occur	Zone 1 / Zone 21
		3	Normal	Unlikely to Occur	Zone 2 / Zone 22

Dusts	Category M1, M2 & 1 Equipment	Gases, Vapours and Mists
An area where an explosive atmosphere in the form of a cloud of combustible dust in air is present continuously, or frequently.	Zone 20	Zone 0
	ATEX FirePro Units Required	
Category 2 Equipment		
A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is likely to occur in normal operation occasionally. Group III IIIA Combustible flyings Group III IIIB Non-conductive dust Group III IIIC Electrically conductive dusts	Zone 21	Zone 1
	Standard FirePro Units may be used	
Category 3 Equipment		
A place in which an explosive atmosphere in the form of a cloud of combustible dust is not normally present or will persist for a short period only. Group III IIIA Combustible flyings Group III IIIB Non-conductive dust Group III IIIC Electrically conductive dusts	Zone 22	Zone 2
	Standard FirePro Units may be used	
A hazardous area in which a flammable atmosphere is continuously present or present for long periods.		
	A hazardous area in which a flammable atmosphere is likely to occur in normal operation Group II IIA (Propane, Methane) Group II IIB (Ethylene) Group II IIC (Hydrogen)	
A hazardous area in which a flammable atmosphere is not likely in normal operation, or will only exist for a short period		
	Group II IIA (Propane, Methane) Group II IIB (Ethylene) Group II IIC (Hydrogen)	





 Reinventing
 Fire Suppression



ANNEX D – AS/NZS 4761.1 ASSESSMENT COMPETENCY


moxi / SKILL+ LEARNING

This is a Statement that

Paul Spresser

has been assessed as having fulfilled the following requirements

UTE NES 407 TA	Assess explosion-protected equipment for conformance with standards (Ex mixed)
UTE NES 407 WA	Assess explosion-protected equipment for conformance with standards (Ex n)
UTE NES 407 XA	Assess explosion-protected equipment for conformance with standards (Ex i)
UTE NES 407 YA	Assess explosion-protected equipment for conformance with standards (Ex e)
UTE NES 407 ZA	Assess explosion-protected equipment for conformance with standards (Ex d)

in partial completion of the following qualification
Certificate V in Electrotechnology (UTE 5 02 99)


Prepared by
Angie Askew
Administration Officer


Approved by
Michael Williams
Certified Trainer and Assessor

National Provider Code 51160Date of Issue: 12 June 2006



This statement of attainment is recognised within the Australian Qualifications Framework

Certificate No.: 0110-1-06Page 1 of 1



FirePro Certified for potentially explosive atmospheres (ATEX)

FirePro has also been specifically certified under ATEX guidelines for hazardous environments. FirePro aerosol generators can be used in:

Ex I M1 Ex s T450°C Ma

Ex II 1G Ex s IIC T3 Ga

Ex II 1D Ex IIIC T200°C Da

The local authority has the responsibility for defining a Class, Zone, and Group classification for specific areas.

Equipment Group	Equipment Category	Protection Level	Presence or Duration of Explosive Atmosphere	Hazardous Area Zones	
I	Underground Mines and Associated surface installations	M1	Very High	Constant Risk or Presence	
		M2	High	Constant Risk or Presence	
II	All Other Surface Installations	1	Very High	Continuous Presence	Zone 0 / Zone 20
		2	High	Likely to Occur	Zone 1 / Zone 21
		3	Normal	Unlikely to Occur	Zone 2 / Zone 22
Dusts		Category M1, M2 & 1 Equipment		Gases, Vapours and Mists	
Place in which an explosive atmosphere in the form of a cloud of combustible dust in air is present continuously, or for long periods or frequently.		Zone 20:	Zone 0:	The part of a hazardous area in which a flammable atmosphere is continuously present or for long periods.	
		Category 2 Equipment			
Place in which an explosive atmosphere in the form of a cloud of combustible dust in air occurs occasionally. Group III IIA Combustible flyings Group III IIB Non-conductive dust Group III IIC Electrically conductive dusts		Zone 21	Zone 1	That part of a hazardous area in which a flammable atmosphere is likely to occur in normal operation Group II IIA (Propane, Methane) Group II IIB (Ethylene) Group II IIC (Hydrogen)	
		Category 3 Equipment			
A place in which an explosive atmosphere in the form of a cloud of combustible dust in air is not likely to occur in normal operation or will persist for a short period only. Group III IIA Combustible flyings Group III IIB Non-conductive dust Group III IIC Electrically conductive dusts		Zone 22	Zone 2	That part of a hazardous area in which a flammable atmosphere is not likely to occur in normal operation, and if it occurs, it will only exist for a short period Group II IIA (Propane, Methane) Group II IIB (Ethylene) Group II IIC (Hydrogen)	

Mining and Surface Certification (MASC)

FPX-0 100EX / 0200EX / 0500EX aerosol units have additional certification



Location	Hazard Frequency	Environment	Limiting Temperature
Zone 1 & 2 Zone 21 & 22	Intermittent could under normal operating conditions in hazardous area	Group I Group IIC Group IIIC	150°C T3 T200 °C
Mining: Underground & Surface (Gas) Surface (Dust)		Methane / Coal Dust Hydrogen / Acetylene Conductive Dusts	Enclosure surface limitation Enclosure surface limitation Enclosure surface limitation

The Technology

FirePro systems use the latest generation of our patented FPC solid compound. When activated the FPC undergoes a transformation into a rapidly expanding extremely effective and efficient fire extinguishing condensed aerosol. The generated

aerosol is propagated and evenly distributed in the enclosure under protection using its own momentum. Fire extinguishing is accomplished by the interruption of the chemical chain reactions occurring in the flame, without oxygen depletion.





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Notified Body n. 2632
Organismo Notificato n. 2632

1

[1]

EU-TYPE EXAMINATION CERTIFICATE

2

CERTIFICATO DI ESAME UE DEL TIPO

[2] **ELECTRICAL EQUIPMENT Intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU-ATEX Annex III/Module B**
APPARECCHIO ELETTRICO Inteso per l'uso in Atmosfera Potenzialmente Esplosiva - Direttiva 2014/34/EU-ATEX Annex III/Module B

[3] **EU-TYPE EXAMINATION CERTIFICATE n.:** **AR18ATEX132rev1**
CERTIFICATO DI ESAME UE DEL TIPO n.:

[4] **ELECTRICAL EQUIPMENT:** **Condensed Aerosol Generators**
APPARECCHIO ELETTRICO: **FirePro: FP-100 EX, FP-200 EX, FP-500 EX, FP-1200 EX, FP-2000 EX, FP-3000 EX, FP-4200 EX, FP-5700 EX**
FireBan: FBN-100 EX, FBN -200 EX, FBN -500 EX, FBN -1200 EX, FBN -2000 EX, FBN -3000 EX , FBN -4200 EX, FBN -5700 EX

[5] **MANUFACTURER:** **Firepro Systems Ltd**
COSTRUTTORE:

[6] **ADDRESS:** **8 FALEAS STR., AGIOS ATHANASIOS INDUSTRIAL AREA**
INDIRIZZO: **CY-4101 Limassol - CYPRUS**

[7] **This ELECTRICAL EQUIPMENT and any variation is specified in the schedule to this certificate and the documents therein referred to.**
Questo APPARECCHIO ELETTRICO e le varianti sono descritte nell'allegato al presente certificato e nei documenti ivi richiamati.

[8] **Albarubens srl, Notified Body No. 2632, in accordance with Article 17 of the Directive 2014/34/EU-ATEX of the European Parliament and of the Council, dated 26 February 2014, certifies that this ELECTRICAL EQUIPMENT has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.**

The examination and test results are recorded in confidential report MOD 7.4.1 - ID: 3748

Albarubens srl, Organismo Notificato n. 2632, in conformità all'art. 17 della Direttiva 2014/34/UE-ATEX del Parlamento Europeo e del Consiglio, datata 26 Febbraio 2014, certifica che questo APPARECCHIO ELETTRICO è conforme ai Requisiti Essenziali di Sicurezza e Salute per il progetto e la fabbricazione di prodotti destinati ad essere utilizzati in atmosfere potenzialmente esplosive, definiti nell'Allegato II della Direttiva. I risultati dell'esame e dei test sono descritti nel rapporto confidenziale MOD 7.4.1 - ID: 3748

[9] **Compliance with the Essential Health and Safety Requirements has been assured by compliance with the technical standards:**
La conformità ai Requisiti Essenziali di Sicurezza e Salute è assicurata dalla conformità alle norme tecniche:

EN 1127-1:2011 - EN 60079-0:2012+A11:2013 - IEC 60079-33:2012 (partially)

except in respect of those requirements listed at item 18 of the Schedule.

tranne nel caso dei requisiti elencati al punto 18 dell'Allegato.

[10] **If the symbol 'X' is placed after the certificate number, it indicates that the ELECTRICAL EQUIPMENT is subject to the Specific Conditions of Use specified in the next chapter 17.**

Il simbolo 'X', se presente dopo il numero di certificato, indica che questo APPARECCHIO ELETTRICO è soggetto a Condizioni Speciali per l'Uso, specificate nel seguente punto 17.

[11] **This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified ELECTRICAL EQUIPMENT. Further requirements of the Directive apply to the manufacturing process and supply of product. These are not covered by this certificate.**

Questo CERTIFICATO DI ESAME UE DEL TIPO è relativo soltanto al progetto ed alla costruzione di questo APPARECCHIO ELETTRICO. Ulteriori requisiti di questa Direttiva si applicano al processo di fabbricazione e fornitura di questo prodotto. Questi requisiti non sono oggetto del presente certificato.

[12] **The marking of the ELECTRICAL EQUIPMENT shall include the following:**

Questo APPARECCHIO ELETTRICO deve riportare i seguenti contrassegni:

II 1G Ex s IIC T3 Ga

II 1D Ex s IIIC T200°C Da

I M1 Ex s T450°C Ma

Tamb: -54 +54 °C

Saronno (Italy), 20 May 2019

3



PRD N° 257 B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements



Digital signature

Giuseppe Terzaghi
Firmato digitalmente da Giuseppe Terzaghi
Data: 2019.05.20 16:42:04 +02'00'

ALBARUBENS srl
The legal representative: ing. Giuseppe Terzaghi

Verify validity and authenticity of this certificate on the website: <https://www.albarubens.it/authentication.php> (Password: JV8XKS)

4

page 1/4

JOB: 19/0159 - ID: 3748

Albarubens srl - Via G. Ferrari 21/N - 21047 Saronno (VA) - Italy - Reg. VA-286283 - Tax code IT 02767050129 - Paid-up capital €100,000,00
www.albarubens.it - info@albarubens.it - tel: +39 02 96248530 - fax: +39 02 700523656 - Document automatically generated by the Albarubens WebApp 1.86



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Notified Body n. 2632
Organismo Notificato n. 2632

1

[13]

SCHEDULE

ALLEGATO

5

[14] **EU-TYPE EXAMINATION CERTIFICATE n.:**

CERTIFICATO DI ESAME UE DEL TIPO n.:

AR18ATEX132rev1

[15] **DESCRIPTION:**

DESCRIZIONE:

[EN] Fire extinguishers that are activated by an electric impulse.

The FPC (patented solid compound contained in the FirePro condensed aerosol generators), immediately starts a chemical reaction that in few seconds produces condensed dry aerosol in the discharge density defined by the system designer (i.e. potassium compounds (K₂CO₃), H₂O, N₂, CO₂ and other gas particles in small quantities. The family of fire extinguishers consists of the following models:

FirePro types

- FP-100 EX
- FP-200 EX
- FP-500 EX
- FP-1200 EX
- FP-2000 EX
- FP-3000 EX
- FP-4200 EX
- FP-5700 EX

FireBan types

- FBN-100 EX
- FBN-200 EX
- FBN-500 EX
- FBN-1200 EX
- FBN-2000 EX
- FBN-3000 EX
- FBN-4200 EX
- FBN-5700 EX

This equipment is marketed under two trademarks: FirePro and FireBan.

The two series are identical, both produced by the company Fire Pro Systems Ltd, holder of the certificate.

[IT] Estintori che vengono attivati tramite un impulso elettrico

L'FPC (composto solido brevettato nei generatori di aerosol condensati FirePro), avvia immediatamente una reazione chimica che in pochi secondi produce aerosol secco condensato nella densità di scarico definita dal progettista del sistema (cioè composti di potassio (K₂CO₃), H₂O, N₂, CO₂ e altre particelle di gas in piccole quantità. La famiglia di estintori è composta dai seguenti modelli:

Modelli FirePro

- FP-100 EX
- FP-200 EX
- FP-500 EX
- FP-1200 EX
- FP-2000 EX
- FP-3000 EX
- FP-4200 EX
- FP-5700 EX

Modelli FireBan

- FBN-100 EX
- FBN-200 EX
- FBN-500 EX
- FBN-1200 EX
- FBN-2000 EX



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- FBN-3000 EX
- FBN-4200 EX
- FBN-5700 EX

Questo apparecchio viene commercializzato con due marchi commerciali: FirePro e FireBan.
Le due serie sono identiche, entrambe prodotte dalla società Fire Pro Systems Ltd, intestataria del certificato.

CHARACTERISTICS: Minimum pulse voltage 1.5 V
CARATTERISTICHE: Minimum pulse current 0.6 A
Monitoring current 5 mA

6

Tensione minima di impulso 1.5 V
Corrente minima di impulso 0.6 A
Corrente di monitoraggio 5 mA

ROUTINE TESTS: VISUAL INSPECTION OF CONFORMITY TO TECHNICAL FILE
PROVE DI ROUTINE: ROUTINE TEST PROVIDED BY THE MENTIONED STANDARDS
Ispezione visiva della conformità al fascicolo tecnico
Prove di routine richieste dalla norme citate

WARNING LABEL: Nothing special / Niente di particolare
AVVERTENZE DI TARGA:

REVISION HISTORY: **CERTIFICATE** **DATE** **REVISION REASON**
STORIA DELLE REVISIONI: AR18ATEX132 23-Nov-2018 First issue / Prima emissione
AR18ATEX132rev1 20-May-2019 New company address, new brand "FireBan", revised marking

[16] **This document is based on confidential Atex Assessment Report ref. MOD 7.4.1 - ID: 3748**

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Questo documento è basato sul Rapporto di Ispezione confidenziale ref. MOD 7.4.1 - ID: 3748

[17] **Special conditions for safe use depends on correct following of manufacturer's manual. Further modification are not allowed.**

L'efficacia e l'affidabilità di questi apparecchi sono garantite seguendo le istruzioni del manuale d'uso. Non sono ammesse modifiche non autorizzate rispetto al fascicolo tecnico agli atti.

[18] **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS - Compliance with the Essential Health and Safety Requirements (EHSRs) has been evaluated against the standards listed in point 9, with the additional following considerations:**

REQUISITI ESSENZIALI DI SICUREZZA E SALUTE - La conformità ai Requisiti Essenziali di Sicurezza e Salute (EHSR) è stata valutata rispetto alle norme elencate al punto 9, alle quali si aggiungono le seguenti considerazioni:

The aerosol generators were demonstrated by laboratory tests to be not capable to ignite the explosive atmosphere, also in case of accidental activation, but they are not described by any standardized protection method.

The 'Ex s' protection mode highlights the not-standardized satisfaction of the EHSRs; the "partial" is due to the non-involvement of a secondary NoBo.

Prove di laboratorio hanno dimostrato l'incapacità dei generatori di aerosol di innescare l'atmosfera esplosiva, anche in caso di attivazione accidentale, ma essi non sono descritti da alcun metodo di protezione standardizzato.

La modalità di protezione "Ex s" evidenzia la soddisfazione non standardizzata degli EHSR; il "parziale" è dovuto al mancato coinvolgimento di un NoBo secondario.

[19] **The descriptive documents quoted hereafter constitute the technical documentation of the product covered by this certificate. These documents are confidential and they are available only to the authorities. All the documents are stored in Albarubens archive.**

8

I documenti descrittivi elencati di seguito costituiscono la documentazione tecnica del prodotto oggetto di questo certificato. Questi documenti sono confidenziali e sono a disposizione delle sole autorità competenti. Copia degli stessi è conservata presso l'archivio di Albarubens.

FILES ANNEXED TO AR18ATEX132	BYTES	HASH (MD5)	
AR18TEST011.pdf	2 712 092	567724ADCEA5823A1BAE886B207E156A	A
AR18TEST134Rev.1.pdf	3 972 954	9695E1289E6B8369083EACA878F7300D	D
AR18TEST183.pdf	1 126 343	47DFE05CFC8282B1BF90ECD6F1F3786B	D
ATEXassessment-3275.pdf	262 112	FE4872EE66141A8C91A06B01A2671E95	S
ATEXdecision-3275.pdf	256 228	2E843DAB05F127CE4C95FE88E85FD659	S
Atex label.pdf	274 944	55835E0CB9F44CA11D6374D25C925A3E	A
FIREPRO ATEX MANUAL.pdf	1 042 719	0ED7E2A33A6C502B2CD4805C30CAB624	A
FP100EX Assembly.pdf	481 000	7AA0FB3E3E216B2A19C9C4A168E9AEA8	A
FP122030 ATEX CASING ASSEMBLY.pdf	195 659	4C1ED4647D7D97F67CD591DA17B338A8	D
FP200EX Assembly.pdf	462 063	24D27BF9544BA4C287CC750717440FED	D
FP4257 ATEX CASING ASSEMBLY.pdf	198 518	11BAE89BB79E47F4BF55344499B74651	D
FP500EX Assembly.pdf	496 862	FE53FC7570E275CAEE0AE660A719A00F	D
GEPMI Fire Protection Conformity Certification T.10302-2014.pdf	177 417	EEF8D16D1C2F16871E5F1ECBAA1A89E9	A
GEPMI Fire Protection Conformity Testing Report.pdf	192 799	7E3FFE9F321BF9B0DECF7D67188EF849	D
Ignitio Hazard Risk Assessment Table A for FirePro ATEX Condensed Aerosol Generators.pdf	82 435	A02CF5E3CA13792884EBE20CCAC6FC1C	A

page 3/4

JOB: 19/0159 - ID: 3748

Albarubens srl - Via G. Ferrari 21/N - 21047 Saronno (VA) - Italy - Reg. VA-286283 - Tax code IT 02767050129 - Paid-up capital €100,000,00
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FILES ANNEXED TO AR18ATEX132 (continue)	BYTES	HASH (MD5)	
Ignition Hazard Risk Assessment Table B for FirePro ATEX Condensed Aerosol Generators.pdf	95 307	097A0DBDE059E7CA2A048717C3961C1E	D
ULC Explosive Atmosphere Discharge Test (UL 2127).pdf	285 735	230711C14F4BEAAFEAF1D352903AEB41	A
FILES ANNEXED TO AR18ATEX132rev1	BYTES	HASH (MD5)	
ATEXassessment-3748.pdf	263 014	1BDF3AF7FF6DD55140E49C6FBDBD4FFC	S
ATEXdecision-3748.pdf	194 348	660E1D2158EBB3F7934E5D0A122C8219	S
Change of Address.pdf	135 127	B1639FE24BCB8E0D68AF239D8588754B	A
Confirmation FP100S to FP100T.pdf	127 470	DCAED6708AB73E7BAC7EB4ECB823BD1E	A
Declaration FirePro - FireBan.pdf	116 803	5C5349DC00EC388D40419F503C5F1071	A
FIREBAN ATEX MANUAL - 7.5.19.pdf	925 516	FB049E8EE3E649AD3296656B0A586D29	A
FIREPRO ATEX MANUAL - 7.5.19.pdf	877 502	F476B4BAF3858A1B7FB59C2368A84D8A	A
Formal request for FireBan trade name.pdf	159 596	08DF7DBB050B242D42041511C339CFC4	A

A: Documents obtained by the manufacturer and used for the assessment / Documenti ricevuti dal fabbricante ed utilizzati per la valutazione
D: Additional examined documents / Documenti aggiuntivi esaminati
S: Reserved documents generated by Albarubens during the assessment / Documenti riservati generati da Albarubens durante la valutazione

[20] **INSPECTOR IN CHARGE OF THE ASSESSMENT:** Ing. Giuseppe Terzaghi

ISPETTORE INCARICATO DELLE VERIFICHE:

FINAL REVIEWER/CERTIFICATE DECISOR: Dott.ssa Nicoletta De Luca

REVISORE FINALE/DELIBERANTE CERTIFICAZIONE:

End of document, signature on the cover

Explanations / Spiegazioni

- 1 **Albarubens issued this certificate as Notified Body for 2014/34/EU-ATEX Directive, recognized by European Commission on NANDO system with n. 2632.**
Albarubens ha emesso questo certificato in quanto Organismo Notificato per la Direttiva 2014/34/UE-ATEX, riconosciuto dalla Commissione Europea sul sistema NANDO con numero 2632.
- 2 **This certificate is mandatory for placing these devices on the European Union market; it takes separated surveillance certificate.**
Questo certificato è obbligatorio per l'immissione di questi apparecchi sul mercato dell'Unione Europea; richiede un certificato di sorveglianza.
- 3 **The verification activity at the basis of this certificate was carried out under ISO/IEC 17065 accreditation.**
L'attività di verifica alla base di questo certificato è stata svolta in regime di accreditamento ISO/IEC 17065.
- 4 **The authenticity of this certificate is verifiable online, by comparison between the copy in your possession and that downloaded from our secure website.**
L'autenticità di questo certificato è verificabile on-line, per confronto tra la copia in vostro possesso e quella scaricata dal nostro sito web protetto.
- 5 **The schedule is an integral part of the certificate, which can only be transmitted or reproduced in its entirety.**
L'allegato è parte integrante del certificato, che può essere trasmesso o riprodotto solo nella sua interezza.
- 6 **Any performance parameter, other than the ones provided by the standards listed in point [9], is descriptive only and not covered by this certificate.**
I parametri prestazionali eventualmente riportati, diversi da quelli previsti dalle norme elencate al punto [9], hanno funzione solo descrittiva e non sono coperti da questo certificato.
- 7 **The assessment report is confidential and doesn't supplement the certificate; it can only be sent to the accreditation or market surveillance authorities.**
Il rapporto di ispezione è confidenziale e non integra questo certificato; può essere consegnato solo alle autorità di accreditamento o di sorveglianza del mercato.
- 8 **The 'hash' code distinguishes original documents from the fake ones. Digital stamped documents available for those eligible.**
Il codice 'hash' distingue i documenti originali da quelli contraffatti. Copie timbrate in digitale disponibili per gli aventi diritto.

(1) **Production Quality Assurance Notification**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, Directive 2014/34/EU



(3) Notification Number: TÜV CY 19 ATEX 0206135 Q

(4) Product category:
Electrical Equipment for use in ATEX

Protective principle:
Condensed Aerosol Generators
FP-100 EX, FP-200 EX, FP-500 EX,
FP-1200 EX, FP-2000 EX, FP-3000 EX,
FP-4200 EX, FP-5700 EX,
FP-100T, FP-200T, FP-500T

(5) Applicant: FIREPRO SYSTEMS
8 Faleas Street
Ayios Athanasios Industrial Area
4101 Limassol - Cyprus

(6) Manufacturer: Same as applicant Manufacturing location: Same as applicant

Order number: 0206135
Date of issue: 2019-06-19
First certification: 2019-04-15
Valid to: 2022-04-14

(7) TÜV CYPRUS Ltd, notified body No. 2261 in accordance with Article 17 of the Council Directive 2014/34/EU of February 26, 2014, notifies the applicant that the manufacturer has a production quality system which complies with Annex IV of the Directive.

(8) This notification is based on audit report No. 19 0206135 issued on 2019-04-05. This notification can be withdrawn if the manufacturer no longer satisfies the requirements of Annex IV. Results of periodical production quality reassessments are a part of this notification.

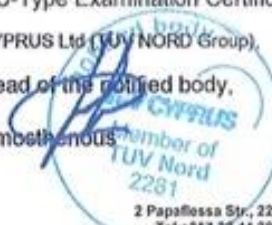
(9) In accordance with Article 16 (3) of the Directive 2014/34/EU the CE marking shall be followed by the identification number 2261 of the notified body TÜV CYPRUS Ltd.

The EU-Type Examination Certificates based on this notification are listed by the notified body.

TÜV CYPRUS Ltd (TUV NORD Group),

The head of the notified body,

D. Democritous



TÜV CYPRUS (TUV NORD) Ltd,
2 Papaflessa Str., 2235 Latsia, Nicosia - P.O.Box: 20732, 1663 Nicosia, Cyprus
Tel: +357 22 44 28 40 Fax: +357 22 44 28 60 email: info@tuvcyprus.com.cy
www.tuv-nord.com/cy

This notification may only be reproduced without any change.
Excerpts or changes shall be allowed by the TÜV CYPRUS Ltd.

2.10. SOUNDER INTERNAL IECEX

1-11-010 / Intrinsically safe signals

IS-mB1 IS-minialite



The IS-mB1 is a compact beacon with an array of six high output L.E.D's. Approvals include ATEX, IECEX and EAC Ex for Zone 0 applications and FM approval for Class I Division 1 and Class I Zone 0 applications.

The IS-mB1 is suitable for all intrinsically safe signalling applications including fire, security and process control.

Features

- Input overload and reverse current protection
- End of line resistor certified
- Prismatic lens optimises L.E.D effectiveness

Approvals

- ATEX certificate: SIRA 05ATEX2084X
- IECEX certificate: IECEX SIR 06.0045X
- FM approved
- GOST-R certificate: POCC GB.JB05.B03365





IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 06.0045X

Page 1 of 4

Certificate history:

Status: Current

Issue No: 4

Issue 3 (2019-12-10)

Issue 2 (2015-02-23)

Issue 1 (2009-11-26)

Issue 0 (2006-11-08)

Date of Issue: 2021-03-18

Applicant: European Safety Systems Ltd
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

Equipment: IS-mA1 Sounder, IS-mA2 Sounder, IS-mA3 Sounder, IS-mB1 Beacon, IS-mC1 Combined Sounder/Beacon and IS-mA1M Sounder.

Optional accessory:

Type of Protection: Intrinsically Safe

Marking: Ex ia IIC T4 Ga (-40°C ≤ Ta ≤ +60°C)

Ex ia I Ma (-40°C to +60°C) (for IS-mA1M Sounder only)

Approved for issue on behalf of the IECEx
Certification Body:

Neil Jones

Position:

Certification Manager

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





IECEX Certificate of Conformity

Certificate No.: IECEX SIR 06.0045X

Page 2 of 4

Date of issue: 2021-03-18

Issue No: 4

Manufacturer: European Safety Systems Ltd
Impress House
Mansell Road
Acton
London W3 7QH
United Kingdom

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-26:2014-10 Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

This Certificate does not indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[GB/SIR/ExTR06.0103/00](#)
[GB/SIR/ExTR19.0311/00](#)

[GB/SIR/ExTR09.0189/00](#)
[GB/SIR/ExTR21.0052/00](#)

[GB/SIR/ExTR15.0024/00](#)

Quality Assessment Report:

[GB/SIR/QAR06.0020/09](#)



IECEX Certificate of Conformity

Certificate No.: IECEx SIR 06.0045X

Page 3 of 4

Date of issue: 2021-03-18

Issue No: 4

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The IS-mA1 Sounder is designed to provide an audible warning when activated.

The IS-mA2 Sounder is similar to the IS-mA1 Sounder, the differences being a different printed circuit board layout and a 'low profile' enclosure base.

The IS-mA3 Sounder is similar to the IS-mA1 Sounder, the differences being the addition of several components to the circuit, a different connection arrangement, a different printed circuit board layout and a 'low profile' enclosure base.

The IS-mB1 Beacon is designed to provide a flashing warning when activated.

The IS-mC1 Combined Sounder/Beacon is designed to provide an audible and a flashing warning when activated.

The IS-mA1M Sounder is EPL Ma version of the IS-mA1 Sounder

For a fuller description and associated safety parameters, see the Annexe of this certificate.

SPECIFIC CONDITIONS OF USE: YES as shown below:

For Conditions of Certification, see the Annexe of this certificate.

Conventional Weatherproof Sounder Strobe

BANSHEE EXCEL LITE IP66



Features

- ▶ Robust design
- ▶ Low current consumption
- ▶ Easy to install
- ▶ Xenon beacon technology
- ▶ Maximum 110 dB(A) at 1 m (dependent on tone selected)
- ▶ 32 user-selectable tones
- ▶ Weatherproof – IP66

Description

The BANSHEE EXCEL LITE IP66 combines the modern aesthetics of the multi-tone sounder and the very latest strobe technology to create an extremely efficient strobe/sounder combination for external applications. It is easily installed with robust terminations that can accept 2.5 mm² cables and a push and twist bayonet-fitting weatherproof base.

Available in a wide choice of lens colours*, the BANSHEE EXCEL LITE IP66 will suit the majority of fire and security needs where a weatherproof conventional sound requires the backup of a visual alarm.

Specification		
Ordering code		BANSHEE EXCEL LITE IP66
Operating voltage		9 – 30 V dc
Sounder current consumption (dependant on tone selected)	min	6 mA
	max	39 mA
Strobe	Current consumption	40 mA (@ 24 V dc)
	Nominal flash energy	1 W
	Flash rate	60/minute
	Lens colours available	Red/Clear*/Green*/Blue*/Amber*)
Operating Temperature Range		-20 °C to +55 °C
Maximum Sound Output (at 24 V dc) (dependant on tone selected)		110 dB(A) at 1 metre
Maximum Humidity		75%RH - Non Condensing (at 40 °C)
IP Rating		IP66

*Available upon request – please call for details

Hochiki Europe (UK) Ltd. reserves the right to alter the specification of its products from time to time without notice. Although every effort has been made to ensure the accuracy of the information contained in this document it is not warranted or represented by Hochiki Europe (UK) Ltd. to be a complete and up-to-date description.

2.12. EXTERNAL WARNING SIGNS



WARNING SIGNS

Illuminated signs using high intensity LED indicators

Features

- ▶ High brightness white LED indicators for reliability and low power consumption
- ▶ Standard or easily customisable wording and language variants
- ▶ Split level function - allows top half and bottom half of sign to be illuminated independently with no light spillage between halves
- ▶ Internal buzzer with disable and external silence facility
- ▶ Available in red illuminated or yellow illuminated as standard, other colours available on request
- ▶ Connects to standard fire alarm sounder circuits
- ▶ Two wire 2 - stage (top half/ bottom half) voltage reversing input provided
- ▶ Voltage reversing, silenceable sounder output provided
- ▶ Weatherproof version available



Description

The new range of illuminated warning signs employ the very latest in LED technology to provide a high reliability, high brightness, audio/ visual warning indication unit.

The brightness of the sign remains constant over its entire operating range of 15 to 30 volts DC due to the unique "power boost" circuitry employed. This ensures that even with a system running on depleted batteries, all signs remain at full intensity.

A range of standard text signs are available and customised text and languages are easily accommodated due to the unique method employed to apply the lettering.

The split level design allows one message to be displayed in the top half of the sign and an additional message to be displayed in the bottom half of

the sign allowing for two stage warnings for systems such as extinguishing protection systems.

The signs are now also available in split colours. Red, green or yellow acrylic can be mounted in the top section and the bottom section in any configuration.

Text can be printed in black or alternatively can be reversed so the letters appear in the colour of the acrylic.



Split level function

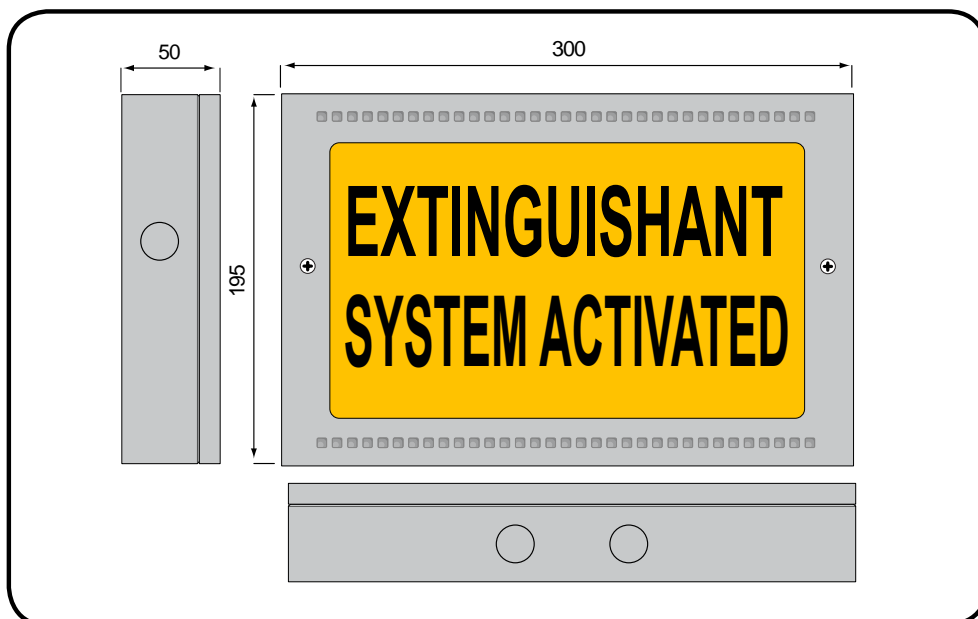
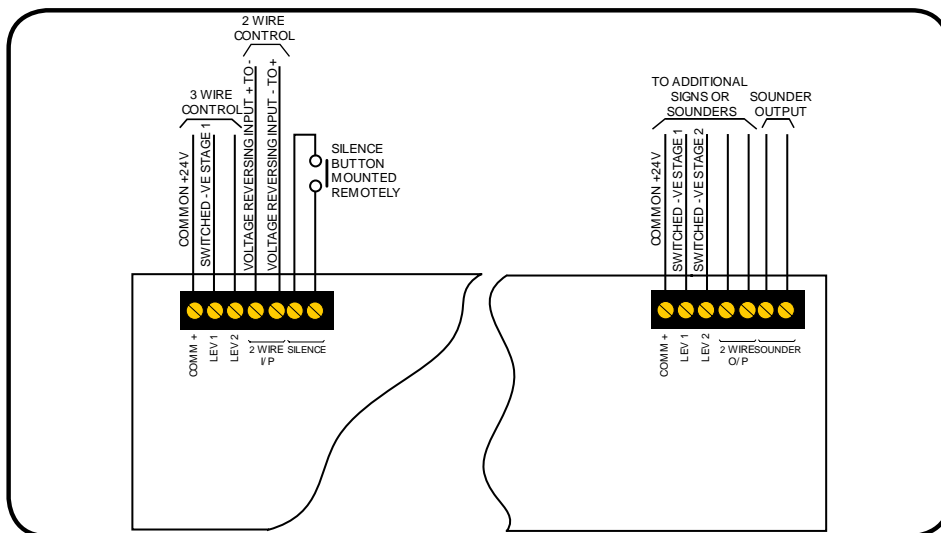


Special Designation
Weatherproof Version

NSW 02 9644 7144 QLD 07 3252 5366 VIC 03 9544 2211 WA 08 9349 2972

Specification

Construction	1.2mm mild sheet steel (Standard) Polycarbonate enclosure with metal chassis (Weatherproof)
IP Rating	IP30 (Standard) IP66 (Weatherproof)
Finish	Epoxy powder coated
Colour	BS 00 A 05 grey - fine texture
Weight	2kg
Power Consumption	140 milliamps max at 24V DC
Operating temperature	-15°C to +40°C
Operating humidity	To 95% non-condensing
Operating Voltage	-15 to 30V DC



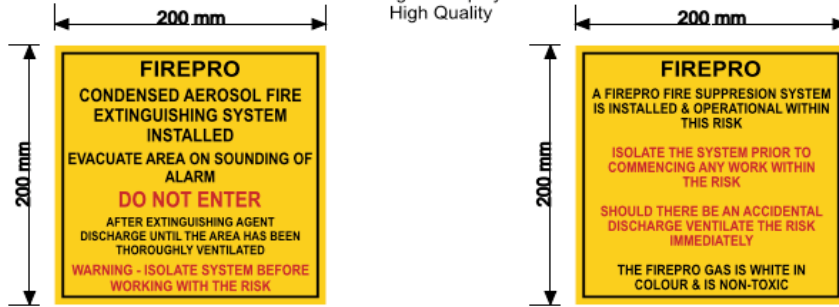
NSW 02 9644 7144 QLD 07 3252 5366 VIC 03 9544 2211 WA 08 9349 2972

2.13. EXTERNAL WARNING SIGNS TRAFOLYTE

Date: 24.06.21
 Ref: 66805
 Rev: A
 PO: IM220621



CMYK - 0 16 100 0
 Sign & Display
 High Quality



2.14. 2HR FIRE RATED ARMoured CABLE

FIRE GROUND

LPCB 568e/01

BS 6387:2013 Cat. C-W-Z

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Steel Wire Armour, LSZH-Sheath

RAMFIRECRO-F3 - FIRE GROUND - BS 6387:2013



CONSTRUCTION

Formation:

Plain annealed copper wire, Multistrand

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Inner Sheath:

Thermoplastic Low Smoke, Halogen Free

Armour:

Galvanized steel wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Colour Outer Sheath:

Red

STANDARD REFERENCES

- BS 6387:2013 Cat. C-W-Z
- EN 60754-1:2014
- EN 61034-2:2005+A1:2013
- EN 60754-2:2014
- EN 60332-3-24:2009
- EN 60332-1-2:2004

IDENTIFICATION OF CORES

- 2 cores: ∞ ∞
- 3 cores: ∞ ∞ ∞
- 4 cores: ∞ ∞ ∞ ∞
- 5 cores: ∞ ∞ ∞ ∞ ∞

TEMPERATURE RANGE

During Operation:

-30° C up to +180°C

During Installation:

-5° C up to +50°C



CABLE PRINTING

RAMFIRECRO -F3 - FIRE RESISTANT - LSZH - LPCB 568e/01 - BS 6387 CWZ - IEC 60332-3-24 - IEC 60332-1-2 - IEC 60502 - BS 7846 - 0,6/1 kV - 5x1,5 mmq - CU/Sil/LSZH/SWA/LSZH - ARMoured - MADE IN ITALY + BATCH N.

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

5000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

600/1000 V

CHARACTERISTICS

Fire Resistant



Min. Bending Radius

8 x cable diameter



Power Cable



26



Via Marzorati, 15 - 20014 Nerviano - Milan - Italy / www.ramcro.it

BS 6387:2013 Cat. C-W-Z

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Steel Wire Armour, LSZH-Sheath

RAMCRO CODE	FORMATION [n° x mm ²]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SSS0215AFESH-F3(FG)	2x1.50	14.2*	373	13.8
SSS0315AFESP-F3(FG)	3x1.50	14.3*	395	13.8
SSS0415AFESQ-F3(FG)	4x1.50	15.1*	440	13.8
SSS0515AFESD-F3(FG)	5x1.50	16.6*	563	13.8
SSS0225AFESH-F3(FG)	2x2.50	16.2*	530	8.3
SSS0375AFESP-F3(FG)	3x2.50	16.4*	566	8.3
SSS0475AFESQ-F3(FG)	4x2.50	17.3*	635	8.3
SSS0575AFESD-F3(FG)	5x2.50	18.3*	709	8.3
SSS0240AFESL-F3(FG)	2x4.00	17.1*	592	5.1
SSS0340AFESP-F3(FG)	3x4.00	17.3*	640	5.1
SSS0440AFESQ-F3(FG)	4x4.00	18.3*	725	5.1
SSS0540AFESD-F3(FG)	5x4.00	19.4*	815	5.1
SSS0260AFESL-F3(FG)	2x6.00	18.6*	716	3.4
SSS0360AFESP-F3(FG)	3x6.00	18.8*	786	3.4
SSS0460AFESQ-F3(FG)	4x6.00	20.0**	902	3.4
SSS0560AFESD-F3(FG)	5x6.00	22.0**	1132	3.4
SSS0211AFESL-F3(FG)	2x10.00	20.6**	910	2.0
SSS0311AFESP-F3(FG)	3x10.00	20.9**	1021	2.0
SSS0411AFESQ-F3(FG)	4x10.00	23.1**	1303	2.0
SSS0511AFESD-F3(FG)	5x10.00	24.6**	1492	2.0
SSS0216AFESL-F3(FG)	2x16.00	24.1**	1306	1.3
SSS0316AFESP-F3(FG)	3x16.00	24.4**	1479	1.3
SSS0416AFESQ-F3(FG)	4x16.00	26.2**	1737	1.3
SSS0516AFESD-F3(FG)	5x16.00	28.3**	2022	1.3
SSS0227AFESL-F3(FG)	2x25.00	26.1**	1627	0.8
SSS0327AFESP-F3(FG)	3x25.00	26.5**	1888	0.8
SSS0427AFESQ-F3(FG)	4x25.00	28.8**	2266	0.8
SSS0527AFESD-F3(FG)	5x25.00	31.2**	2663	0.8

* Cables certified by LPCB BRE GLOBAL

** The Ramfirecro-F3 FIRE GROUND range with diameters greater than 20mm were tested in accordance with clause 17.4.2 annex L BS 7946:2015

*** If the cable SSS____ACESL-F3(FG)



Via Marzorati, 15 - 20014 Nerviano - Milan - Italy / www.ramcro.it

Certificate of Product Approval

Certificate Number: 568e

Issue: 06

RAMCRO S.p.A.

Via Marzorati
15 - 20014 Nerviano
Nerviano
Milan
20014
Italy

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s)

Cable Types as listed below:
Ramfirecro-F3 FIRE GROUND

Standard(s) (see Appendix for details)

BS 6387:2013 (CWZ)
EN 60754-1:2014
EN 61034-2:2005+A1:2013
EN 60754-2:2014
EN 60332-3-24:2009
EN 60332-1-2:2004

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.



Signed for BRE Global Ltd.

Karen Coull
Certification Scheme Manager

11 September 2018
Date of Issue

27 May 2016
Date of First Issue



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BRE Global Ltd, Garston, Watford, WD25 9XX
T: +44 (0)333 321 8811 E: enquiries@breglobal.com

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bre

Appendix to Certificate No: 568e RAMCRO S.p.A.

Issue: 06

Product name							LPCB Ref. No.
Ramfirecro-F3 FIRE GROUND							568e/01
Nominal csa of conductor (mm ²)	Core Construction (excluding drain wire and earth)	BS 6387 (see note 2)	EN 60754-1	EN 61034-2	EN 60754-2	EN 60332-3-24	EN 60332-1-2
1.5 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies
2.5 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies
4 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies
6 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies
10 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies
16 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies
25 ⁽¹⁾	2,3,4 & 5	CWZ	<0.5% HCl	>60%	Complies ⁽²⁾	Complies	Complies

Uo/U 600/1000 V

Notes:

1. Class 5 stranded conductor only.
2. The Ramfirecro-F3 FIRE GROUND range with diameters greater than 20mm were tested in accordance with clause 17.6.2 and annex I of BS 7846:2015.
3. Tested to general method given in EN 60754-2:2014.

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.



Signed for BRE Global Ltd.

Karen Coull
Certification Scheme Manager

11 September 2018
Date of Issue

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Date of First issue



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2.15. EXTERNAL 2HR FIRE RATED SCREENED CABLE



FP-09500 Fire Rated Screened Cable

Rev 1



RAMFireCRO-F3 - Fire Resistant Cable, low smoke, Halogen Free

Application

Suitable for the connection between the sensors and the control of fire detection systems are required when special features such as: fire resistance, reduced emission of opaque smoke, the reduced emission of toxic and corrosive gases and halogen-free.

Technical Data & Standard References

Fire Performance	EN 50200 PH120 IEC 60331-21
Test on Single Cable	IEC 60332-1
Test on Bunched Cables	IEC 60332-3
Limiting Oxygen Prefix	Min 37%
Smoke Density	IEC 61034
Amount of halogen acid gas	IEC 60754-1 Max 0.5%
Acidity (PH value) and conductivity	IEC 60754-2

Construction

Formation	2 Core
Conductor Cross Section	0.75mm ²
Conductor	Plain Annealed copper wire, multistrand
Insulation	Special mix Silicon Rubber
Colour Code	Black, Red
Wrapping	I layer plastic tape 0.023mm
Collective screen	0.026mm Aluminium / PETP tape over tinned copper drain wire
Outer Sheath	THERMOPLASTIC Low Smoke, Halogen Free – LSZH - Red
Outer Diameter (nominal)	6.3mm

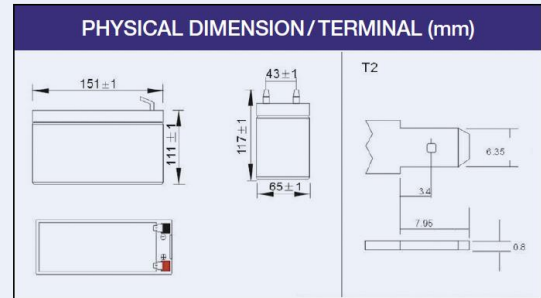
Electrical & Mechanical Data

DC Resistance per Core at 20°C	Max 27.1 Ω/km
Insulation Resistance at 20°C	Min 200 MΩ*km
Mutual Capacitance	Max 115 nF/km
Inductance	Max MH/km 1
Test Voltage Core / Core /Screen	2000 V
L/R Ratio	Max 25 μH/Ω
Operating Voltage	300 V
Temperature Range	-40°C to +75°C
Minimum Bend Radius	50mm
Weight Approx	61kg / km

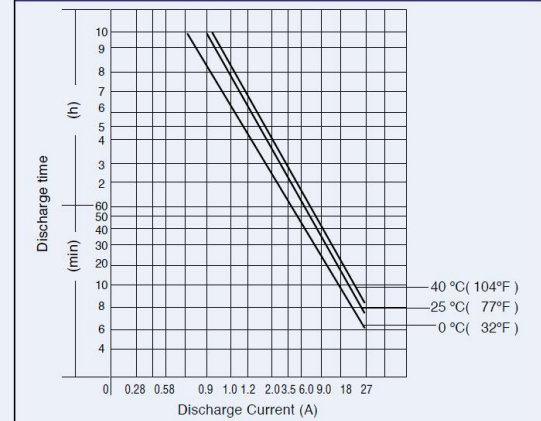


2.16. BATTERY 20AHR external in FIP

PS12100 Specifications



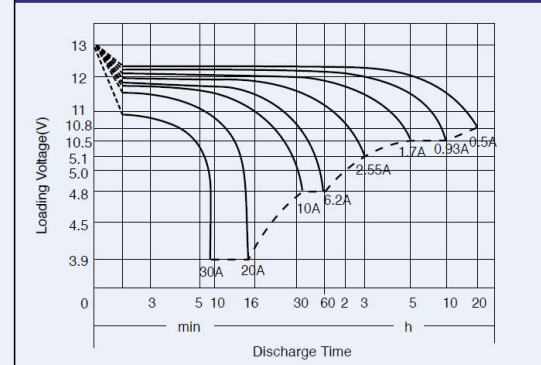
DISCHARGING CURRENT & DISCHARGE DURATION TIME



PHYSICAL SPECIFICATION		
Nominal Voltage	12V	
Nominal Capacity (20HR)	10AH	
Dimension	Length	151 ± 1mm (5.95 inches)
	Width	65 ± 1mm (2.56 inches)
	Container Height	111 ± 1mm (4.37 inches)
	Total Height (with Terminal)	117 ± 1mm (4.61 inches)
Weight	Approx 3.30kg (7.28lbs)	
Terminal Type	T2	

ELECTRICAL SPECIFICATION					
Rated Capacity	20 hour rate (500mA)	10.00AH	Constant-Voltage Charge	Cycle	Initial Charging Current less than 3.6A. Voltage 14.4V-15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C
	10 hour rate (930mA)	9.3AH			
	5 hour rate (1.70A)	8.5AH			
	1 hour rate (6.20A)	6.2AH			
Capacity affected by Temperature	40°C (104°F)	103%	Standby	No limit on Initial Charging Current Voltage 13.5V-13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C	
	25°C (77°F)	100%			
	0°C (32°F)	86%			

DISCHARGE CHARACTERISTICS (25°C, 77°F)



CONSTANT CURRENT (AMP) AND CONSTANT POWER (WATT) DISCHARGE TABLE 7°F

Amp/Watt	Time (minute)	5	10	15	20	30	45	60	120	180	300	600	1200
	Final voltage/Cell	1.3	1.3	1.3	1.3	1.6	1.6	1.67	1.7	1.75	1.75	1.75	1.8
A		40.00	28.50	19.60	16.00	11.50	8.00	6.20	3.50	2.55	1.70	0.93	0.50
W		71.60	53.60	37.30	31.30	22.60	15.90	12.30	6.96	5.07	3.40	1.86	1.01

Trade Enquiries 1300 362 287
www.centurybatteries.com.au



CB109-548