Product Data Sheet
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Rosemount™ FS-975 Flame Simulators

Flame Simulators



ROSEMOUNT™

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Introduction

To comply with local standards and jurisdictional authorities, perform an end-to-end loop testing of fire protection alarm systems, including detectors, periodically.

Many safety authorities and plant managers of high value/high risk assets and facilities insist on quarterly end-to-end testing of their entire fire protection systems using an external flame simulator.

Rosemount Flame Simulators emit electromagnetic radiation in a unique sequential pattern corresponding to and recognizable as fire by the specific Rosemount Flame Detector. This allows the detector to be tested under real fire conditions without the associated risk of an open flame.

Rosemount Flame Simulators are ATEX-certified EExd for use in Zone 1 and Zone 2 hazardous areas, and are powered by rechargeable lithium-ion batteries. When fully charged, the flame simulator will operate for at least 100 tests without recharging.

The Rosemount Flame Simulator is the only non-hazardous and safe method to test the flame detector's sensors, internal electronics, alarm activation software, cleanliness of the viewing window/lens, wiring integrity, actual relay activation, and proper functionality of any other output used (mA, RS-485, or HART®).

Features and benefits

- Used for maintenance and testing of flame detectors
- Includes rechargeable battery
- Operates at least 100 tests before the battery must be recharged
- Long-range flame detector activation – at a range up to 40 ft. (12 m)
- Reduced maintenance costs with easy access for testing detectors in hard-to-reach places from floor/deck level without the need for scaffolding or ladders
- Highly portable – for handheld operation by a single operator
- Easy aiming using a laser diode
- ATEX/IECEx approved for use in Zones 1 and 2, Zones 21 and 22 hazardous areas

Ordering information

The simulator is supplied as a standard kit, which includes:

- Protective suitcase
- Battery nut removal tool
- 1.5 mm Allen hex key
- Battery charger

Model

Code	Description
-FS	Triple infrared (IR3)
-IR-975	Multi-spectrum infrared (975MR, 965 units)
-UV/IR-975	Ultraviolet infrared (975UF and 975UR units)
-HR-975	Multi-spectrum infrared hydrogen (975HR units)

Product certifications

Code	Description
KZ	Technical Regulations Customs Union (EAC) Kazakhstan Flameproof
E2	INMETRO Flameproof

Accessories

Part number	Description
380004	Rosemount Flame Simulator Spare battery kit
380151	16.8 V Lithium-ion charger

Specifications

Detection ranges per detector/flame simulator

Model	Detector types	Detector sensitivity settings	Testing distance
FS-IR-975	975MR	50 ft. (15 m)	5 ft. (1.5 m)
		100 ft. (30 m)	13 ft. (4 m)
		150 ft. (45 m)	20 ft. (6 m)
		215 ft. (65 m)	30 ft. (9 m)
		300 ft. (90 m)	36 ft. (11 m)
	975MR (Legacy)	50 ft. (15 m)	6.6 ft. (2 m)
		100 ft. (30 m)	19.6 ft. (6 m)
		150 ft. (45 m)	29.5 ft. (9 m)
		215 ft. (65 m)	39.3 ft. (12 m)
	965	9.8 ft. (3 m)	N/A
		32.8 ft. (10 m)	6.6 ft. (2 m)
		65.6 ft. (20 m)	16.4 ft. (5 m)
		98.4 ft. (30 m)	24.6 ft. (7.5 m)
		147.6 ft. (45 m)	29.5 ft. (9 m)
FS-UVIR-975	975UR	93 ft. (28 m)	6 ft. (2 m)
	975UF	10 ft. (3 m)	3 ft. (1 m)
		50 ft. (15 m)	11 ft. (7 m)
		93 ft. (28 m)	46 ft. (14 m)
	975UR (Legacy)	50 ft. (15 m)	8 ft. (2.5 m)
	975UF (Legacy)	60 ft. (20 m)	23 ft. (7.01 m)
FS-HR-975	975HR (Legacy)	50 ft. (15 m)	6.6 ft. (2 m)
		100 ft. (30 m)	19.6 ft. (6 m)
		150 ft. (45 m)	29.5 ft. (9 m)
		215 ft. (65 m)	39.3 ft. (12 m)
	975HR	50 ft. (15 m)	2 ft. (0.6 m)
		100 ft. (30 m)	6 ft. (2 m)
		150 ft. (45 m)	8 ft. (2.5 m)
		215 ft. (65 m)	16 ft. (5 m)
		300 ft. (90 m)	26 ft. (8 m)

General specifications

- Temperature range: –4 °F to +122 °F (–20 °C to +50 °C)
- Vibration protection: 1 g (10 to 50 Hz)

Electrical specifications

- Rechargeable 4-cell lithium-ion battery:
  - Power: 14.8 V (4 x 3.7 V), maximum current: 0.2 A
  - Charging: 16.8 V (4 x 4.2 V), maximum current: 2 A
- Battery capacity: 2.6 Ah
- Charging time: Two hours at 2 A
- Samsung: INR18650-35E

Physical specifications

- Dimensions: 9 in. x 7.3 in. x 5.35 in. (230 mm x 185 mm x 136 mm)
- Weight: 5.5 lb. (2.5 kg)
- Enclosure: aluminum, heavy-duty copper-free, black zinc coating
- Explosion-proof enclosure:

FS-IR-975, FS-HR-975	**FS-UVIR-975**
ATEX, IECEx	ATEX, IECEx
Ex II 2 G D	Ex II 2 G D
Ex db ib op is IIB + H_2 T_4 Gb	Ex db ib IIB + H_2 T_4 Gb
Ex ib op is tb IIIC T135 °C Db	Ex ib tb IIIC T135 °C Db
–4 °F to +122 °F (–20 °C to +50 °C)	–4 °F to +122 °F (–20 °C to +50 °C)
Water and dust-tight: IP65	Water and dust-tight IP65

RoHS directive

This device is compliant with RoHS directive 2011/65/EU, 2015/863.

Electromagnetic interference (EMI) compatibility

Table 1: Immunity tests

Title	Basic standard	Level to be tested
Electrostatic discharge (ESD)	IEC 61000-4-2	6 kV/8 kV contact/air
Radiated electromagnetic field	IEC 61000-4-3	20 V/m (80 MHz to1 GHz) 10 V/m (1.4 GHz to 2 GHz) 3 V/m (2.0 GHz to 2.7 GHz)
Conducted disturbances	IEC 61000-4-6	10 Vrms (150 kHz to80 MHz)
Immunity to main supply voltage variations	MIL-STD-1275B	N/A

Table 2: Emission test

Title	Basic standard	Level to be tested	Class
Radiated emission	IEC 61000-6-3	40 dbuv/m (30 MHz to230 MHz) 47 dbuv/m (230 MHz to 1 GHz)	Like Class B of EN 55022

Approvals

For approvals information, see *Rosemount FS-975 Manual* on Rosemount Flame Simulator.

For more information: Emerson.com

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