ULTRAVIOLET-INFRARED FLAME DETECTOR

Omniguard® model 860

The Omniguard® model 860 UV/IR flame detector is designed to detect unwanted fires, and output appropriate alarm information. The model 860 senses ultraviolet radiation and infrared radiation in the appropriate wavelengths for very early fire detection. And, using the patented Fire Event Analysis algorithm, is also able to distinguish between real fire and non-fire events providing superior false alarm immunity. The technology has proven itself over decades of reliable service.

Typical applications: aircraft hangars, fuel transfer stations, compressor stations, silane storage bunkers, paint spray booths and gas cabinets.

The model 860 is available in two versions, one for hydrocarbon fires only, and one for hydrocarbon and certain non-hydrocarbon fires. This dual capability provides the unique capability of providing fire detection for a broad range of fuels with a single unit. Both versions are available with an automatic self-test function to monitor the detector's ability to sense fires, and report a fault condition when impaired.

Specifications

Performance ratings
Responsive to hydrocarbon (gasoline, propane, methane, alcohol, JP-4, JP-3, etc). Also responsive to non-hydrocarbon (hydrogen, silane, hydrazine, etc) flames when special dual-pass IR sensor is used.

Third-party performance certified to detect:
• Saturating signal source in 50 milliseconds
• 1 square foot gasoline fire at 50 feet in 1 second
• 4 square foot aviation fuel fire at 100 feet in 5 seconds or less
• 100 square foot aviation fuel fire at 150 feet in 5 seconds or less
• Methane plume flame at 35 feet in 1 second

Additional performance with dual-pass infrared sensor:
• Silane plume flame 24 inches at 35 feet in 60 milliseconds
• Hydrogen plume flame 20 inches at 35 feet in 3 seconds
• Hydrazine 8 inch pool fire at 80 feet in 9.4 seconds

Environmental ratings
Rated:
    Class I, Division 1, Groups B, C & D (explosion proof)
    Class II, Division 1, Groups E, F & G (dust ignition proof)
    TYPE 4X weatherproof, dust-tight, watertight
    CE008 ⟨Ex⟩ II 2 G/D
    Ex d IIB + H_2 T5 Gb for gas
    Ex tb IIIC T100°C Db IP6X for dust

Standard housing is copper-free aluminium conversion coated to MIL-C-5541C, Class 3 (white). Optional stainless steel housing available with passive finish per MIL-5-5002C, Type 1.

Key features

� Patented Fire Event Analysis (FEA) algorithm for superior false-alarm immunity

� All inclusive three-year warranty on parts and labor

� Widest field of view in the industry (120°)

� Robust weatherproof enclosure for indoor or outdoor applications

� FM, SIL2, CSA, IECEx and ATEX approved

� User selectable sensitivies

� Improved, advanced through-the-lens diagnostic self-test

� Long range detection

� Self-contained, explosion-proof enclosure

� Economical no-test version available

� Field configurable relays and sensitivity

� State-of-the-art microprocessor control with proprietary fire library

� High intensity, localized indication of fire or fault

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Specifications (continued)

Standard operating temperature range:
-40° to +85°C (-40° to +185°F)

Spectral response
Ultraviolet
• Peak sensitivities of 0,22 μm

Infrared
• Standard: peak sensitivities of 4.4 μm
• Dual pass: peak sensitivities of 2.9 μm and 4.4 μm

Detector inputs
Inputs
• nominal voltage	24 VDC (ripple voltage <240mV)
• range	20 to 30 VDC

Power consumption
• standby	90 mA
• alarm	110 mA
• auto and manual test	250 mA

Detector outputs
Relay
• relays (2)	fire, trouble, dry contacts, hermetically sealed
• rated	2 A at 28 VDC. User selects NO or NC
• fire relay	user selects latching or non-latching

Current loop (standard version): 0 to 20 mA output
• 20 mA = fire
• 16 mA = UV or IR presence
• 4 mA = ready
• 0 mA = 20

Programmable RS-485 serial output.

Mechanical considerations
Weight	2.4 kg (5 lbs) (aluminum)
	6.3 kg (13 lbs) (stainless steel)
Height x width x depth	114 x 140 x 153 mm
	(4.5 x 5.5 x 6.0 in)
Conduit entry	3/4-14 NPTF or M20-1.5

Optional accessories
Swivel mount	No 20856 (used with aluminum)
	No 70991 (used with stainless steel)
Portable test unit	Model 540 / 545
Air shield kit	No 8001023
Rain shield	No 23546

Ordering information

To order, please specify
Type	Omniguard® model 860
Designation	Ultraviolet-infrared flame detector
Ordering number	860 - X X X X X

Fire type
0 Hydrocarbon
1 Hydrocarbon/non-hydrocarbon

Housing material/conduit entry
0 Aluminium, 3/4-14 NPT (white)
2 Stainless Steel, 3/4-14 NPT
3 Aluminium, M20-1.5 (white)
5 Stainless Steel, M20-1.5

Test feature
0 No self-test
1 Auto self-test

Fire relay configuration
0 Latching
1 Non-Latching

Agency approvals
0 - FM, SIL2, CSA, Russian Fire Certificate,
IECEx, ATEX, EMC, LVD, CSFM

CE | FM APPROVED | CSA | Ex | IECEx

Omniguard®
by Firefly