

FLAMEWATCH II

Integrated Industrial Flame Detector
and Explosion-Proof Video Camera

NEXT
GENERATION



- Choose From Any Of Our Advanced Flame Detectors: UV, UV/IR, Phoenix Triple IR

- Fast Response Times At All Sensitivity Settings With Wide Field of View

- Field Adjustable Time Delay And Sensitivity Settings Significantly Reduces False Alarms, Simplifies Installation

- CSA, ATEX, and FM Certified for Any Hazardous Indoor or Outdoor Application

- Compatible With Industry Standard CCTV Components

- Video Jacks Included



Bringing two technologies together...for enhanced protection. The FlameWatch II system is designed specifically for applications where a high performance flame detection solution and visual analysis/record of an alarm event is required. These capabilities are ideally suited for remote locations in order to quickly evaluate the hazard from a controlled location and effectively mobilize response teams.

The FlameWatch II system is available with our entire line of advanced flame detection solutions - UV, UV/IR, Phoenix Triple IR flame sensors. The entire package includes Class 1, Division 1, Groups BCD classification; CSA/ATEX/FM approvals, NEMA 4X explosion proof rated housings; and is available in aluminum or stainless steel. With all the innovative design features from our entire flame line included, this package ensures a simplified installation, rock-solid performance, and lower maintenance costs.

The FlameWatch II full colour, composite video signal easily integrates into a wide array of industry standard CCTV hardware and software security systems with both NTSC and PAL formats. The wide field of view provides large area coverage by a single camera and the high resolution video sensor captures accurate detail of the area being monitored.

The FlameWatch II provides the unique integration of an industrial flame detector with an explosion proof video camera — delivering the complete safety and security package for your application.

FLAMEWATCH II TRIPLE IR

Triple Infrared Flame Detector and Explosion-proof Video Camera

BCR-0042-00-002 - Pg2/6

TRIPLE IR SPECIFICATIONS	ANALOG	RELAY	DIGITAL	HART
Operating Voltage Range	10 to 32 Vdc			
Power Consumption at 24 Vdc*	Nom 31 mA / 0.74 W Max 65 mA / 1.56 W	De-Energized - Nom 39 mA / 0.94 W Max 73 mA / 1.75 W Energized - Nom 53 mA / 1.22 W Max 86 mA / 2.06 W	Nom 31 mA / 0.74 W Max 65 mA / 1.56 W	Nom 57 mA / 1.34 W Max 123 mA / 2.96 W
Power Consumption at 12 Vdc (HART at 18Vdc)*	Nom 46 mA / 0.55 W Max 114 mA / 1.37 W	De-Energized - Nom 66 mA / 0.79 W Max 138 mA / 1.66 W Energized - Nom 93 mA / 1.12 W Max 165 mA / 1.98 W	Nom 46 mA / 0.55 W Max 114 mA / 1.37 W	Nom 79 mA / 1.15 W Max 181 mA / 2.57 W
Temperature Range	Certified -40°C to +75°C (-40°F to +167°F) — Operational -50°C to +85°C (-58°F to +185°F)			
Field of View	90 degrees vertical / 90 degrees horizontal			
Spectral Range	Wavelengths between 2.5 – 5.5 microns			
Time Delay	Dip switch selectable to 0, 3, 5, 7 seconds			
Sensitivity Settings	Two adjustable settings via DIP switch (High / Low)			
Typical Response Time	<5 seconds [depending on fuel source, fire size and distance]			
Enclosure Material	Red powdercoat with clear anodizing, copper-free aluminum (optional stainless steel), factory sealed housing			
Humidity Range	0 to 95% RH, non-condensing			
Weight (with swivel)	2.1 Kg/4.5 lb (Stainless Steel option 3.4 Kg/7.5 lb)			
Outputs	Digitally stepped analog output 0 to 20 mA - into a maximum loop impedance of 800 Ohms at 32 Vdc or 150 Ohms at 10.5 Vdc. Isolated/Non-isolated loop supply.	Normally open/normally closed Form C contacts rated 5 Amps at 30 Vdc 125 Vac. Selectable energized / de-energized Fire relay. Fault relay fixed as energized. Both Fire and Fault relays fixed as non-latching.	RS-485 RTU Modbus protocol	HART Communication Protocol
Certifications/Approvals	CSA - Class I, Division 1, Groups A (Canada only), B, C and D - Temperature code T5 - CANADA: Class 1, Zone 1, Ex d IIB + H2 T5 ANSI-UL/ISA - Class I, Division 1, Groups B, C and D - Temperature code T5 - UNITED STATES: Class 1, Zone 1, AEx d IIB + H2 T5 ATEX/IECEx - II 2 G Ex d II B+H2 T5 Gb GOST-R - 1Ex d II BT5/H2 INMETRO - BR-Ex d II B+H2 T5 Factory Mutual (FM) 3260 Performance Certification SIL2 by exida® ABS Marine NEMA Type 4X • IP66 - Enclosure ratings			
Warranty	7 Years*			

TRIPLE IR PERFORMANCE

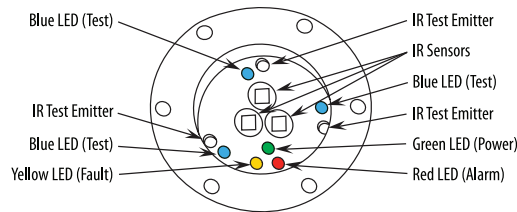
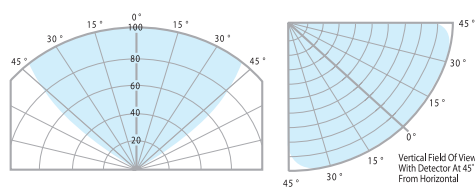
Summary of Distances

Fuel	Fire Size	Distance	Typical Response
n-heptane	1' x 1'	210 feet max	< 2sec @ 100 ft.
gasoline	1' x 1'	150 feet max	< 5sec @ 150 ft.
methane	32" plume	140 feet max	< 5sec @ 140 ft.

Immunity False Alarm Stimuli

Stimuli	Immunity Range
arc welding/sparking/arcing	10 ft +
direct and/or indirect sunlight	total
lightning	total
halogen, fluorescent, incandescent light	10 ft +
250W Sodium Vapor, 250W Metal Halide Light	10 ft +
electric heater (1500W)	10 ft +
propane heater - mod./unmod. (27000w)	12 ft +

Field of View - Methane (32" plume - distances indicated in feet)



ORDERING INFORMATION

- FW2-IR3S-A** 0 to 20 mA Analog Output
- FW2-IR3S-R** Fire and Fault Alarm Relays
- FW2-IR3S-D** RS-485 MODBUS RTU Protocol
- FW2-IR3S-AH** 0 to 20 mA Analog Output and HART Communication Protocol (through JB-MPHF-A/S)
- FW2-IR3S-AR** 0 to 20 mA Analog Output and Fire and Fault Alarm Relays (through JB-IR3SAR-A/S)
- FW2-IR3S-AD** 0-20 mA Analog Output and RS-485 MODBUS RTU Protocol
- FW2-IR3S-AHR** 0 to 20 mA Analog Output and Fire and Fault Alarm Relays and HART Communication Protocol (through JB-MPHF-A/S)

OPTIONS: -X (ATEX/IECEx), -SS (Stainless Steel)

Accessories

- SSK-4** - Sun Shade/Rain Guard
- TL-IR3-KIT** - Triple Infrared Test Lamp Kit

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FLAMEWATCH II UV/IR

UltraViolet Infrared Flame Detector and Explosion-proof Video Camera

UV/IR SPECIFICATIONS

ANALOG

RELAY

HART

Operating Voltage Range	10 to 32 Vdc		
Power Consumption (at 24 Vdc) *with Heater	Nom 45 mA / 1.1 W Max 115 mA / 2.76 W * Nom 90 mA / 2.16 W Max 165 mA / 3.96 W	Nom 45 mA / 1.1 W Max 115 mA / 2.76 W * Nom 90 mA / 2.16 W Max 165 mA / 3.96 W	Nom 71 mA / 1.7 W Max 173 mA / 3.36 W * Nom 106 mA / 2.22 W Max 223 mA / 5.36 W
Power Consumption (at 32 Vdc) *with Heater	Nom 35 mA / 1.12 W Max 105 mA / 3.36 W * Nom 70 mA / 2.24 W Max 145 mA / 4.64 W	Nom 35 mA / 1.12 W Max 105 mA / 3.36 W * Nom 70 mA / 2.24 W Max 145 mA / 4.64 W	Nom 57 mA / 1.72 W Max 158 mA / 5.06 W * Nom 92 mA / 2.84 W Max 198 mA / 6.34 W
Temperature Range	Certified -40°C to +75°C (-40°F to +167°F) / Operational -50°C to +75°C (-58°F to +167°F)		
Field of View	120 degrees horizontal / 95 degrees vertical		
Spectral Range	UV Radiation 185 to 260 nanometres (1850 to 2600 angstroms) IR Radiation in the 4.4 micron range		
Time Delay	DIP switch selectable to 0, 3, 5, 7 seconds		
Sensitivity Settings	DIP switch selectable to 8, 16, 24 or 32 counts per second		
Typical Response Time	<6 seconds [depending on fuel source, fire size and distance]		
Enclosure Material	Red powdercoat with clear anodizing, copper-free aluminum (optional stainless steel), factory sealed housing		
Humidity Range	0 to 95% RH, non-condensing		
Weight (with swivel)	2.1 Kg/4.5 lb (Stainless Steel option 3.4 Kg/7.5 lb) - does not include junction boxes		
Outputs	0 to 20 mA - Into a maximum loop impedance of 800 Ohms at 32 V dc or 150 Ohms at 11.0 V dc. Non-isolated loop supply	Form C contacts rated 1 Amp at 30 Vdc, 0.5 Amp at 125 Vac. Selectable energized/de-energized, latching/non-latching Fire relay Fault relay factory set as energized/non-latching, cannot be modified	HART Communication Protocol
Certifications/Approvals	CSA - Class I, Division 1, Groups B, C and D - Temperature code T5 - CANADA: Class 1, Zone 1, Ex d IIB + H2 T5 ANSI/UL - Class I, Division 1, Groups B, C and D - Temperature code T5 - UNITED STATES: Class 1, Zone 1, AEx d IIB + H2 T5 ATEX/IECEx - Ⓜ II 2 G Ex d II B+H2 T5 Gb GOST-R - 1Ex d II BT5/H2 INMETRO - BR-Ex d II B+H2 T5 Factory Mutual (FM) 3260 Performance Certification SIL2 by exida® ABS Marine NEMA Type 4X • IP66 - Enclosure ratings		
Warranty	3 Years Electronics / 2 Years Sensors		

UV/IR PERFORMANCE

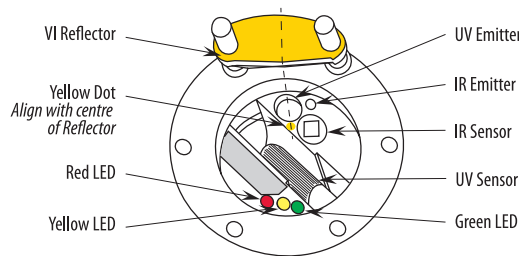
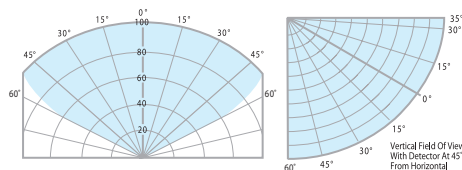
Summary of Distances

Fuel	Fire Size	Typical Response
n-heptane	1' x 1'	< 11sec @ 140 ft.
gasoline	1' x 1'	< 6sec @ 120 ft.
methane	30" plume	< 6sec @ 100 ft.

Immunity False Alarm Source (Modulated)

Stimuli	Immunity Range
Direct/indirect sunlight	total
1500W heater	10 ft
halogen, incandescent light	3 ft
florescent light	10 ft
arc welding	30 ft

Field of View - Methane (30" plume - distances indicated in feet)



ORDERING INFORMATION

FW2-UV/IRS-A 0 to 20 mA Analog output

FW2-UV/IRS-AR 0 to 20 mA Analog output with a Fire and Fault alarm relay (with JB-MPR-A/S)

FW2-UV/IRS-AH 0 to 20 mA Analog Output and HART Communication Protocol (with JB-MPHF-A/S)

FW2-UV/IRS-AHR 0 to 20 mA Analog Output and Fire and Fault Alarm Relays and HART Communication Protocol (with JB-MPHFR-A/S)

OPTIONS: -X (ATEX/IECEx), -SS (Stainless Steel)

NOTE: Specify flammable source when ordering

Accessories

TL-UV/IR-KIT - Test Lamp Kit

LAT-120 - Laser Alignment Tool.

AIR-SHIELD - Air Shield (device protects lens from dirt build-up)

SSK-4 - Sunshade Kit

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FLAMEWATCH II UV

UltraViolet Infrared Flame Detector and Explosion-proof Video Camera

Pg4/6

UV SPECIFICATIONS

ANALOG

RELAY

HART

Operating Voltage Range	10 to 32 Vdc		
Power Consumption (at 24 Vdc) *with Heater	Nom 45 mA / 1.1 W Max 115 mA / 2.76 W * Nom 90 mA / 2.16 W Max 165 mA / 3.96 W	Nom 45 mA / 1.1 W Max 95 mA / 2.28 W * Nom 90 mA / 2.16 W Max 145 mA / 3.48 W	Nom 71 mA / 1.7 W Max 173 mA / 3.36 W * Nom 106 mA / 2.22 W Max 223 mA / 5.36 W
Power Consumption (at 32 Vdc) *with Heater	Nom 35 mA / 1.12 W Max 105 mA / 3.36 W * Nom 70 mA / 2.24 W Max 140 mA / 4.48 W	Nom 35 mA / 1.12 W Max 80 mA / 2.56 W * Nom 70 mA / 2.24 W Max 115 mA / 3.68 W	Nom 57 mA / 1.72 W Max 158 mA / 5.06 W * Nom 92 mA / 2.84 W Max 193 mA / 6.18 W
Temperature Range	Certified -40°C to +75°C (-40°F to +167°F) / Operational -50°C to +75°C (-58°F to +167°F)		
Field of View	120 degrees horizontal / 95 degrees vertical		
Spectral Range	UV Radiation 185 to 260 nanometres (1850 to 2600 angstroms)		
Time Delay	DIP switch selectable to 0, 3, 5, 7 seconds		
Sensitivity Settings	DIP switch selectable to 8, 16, 24 or 32 counts per second		
Typical Response Time	<6 seconds [depending on fuel source, fire size and distance]		
Enclosure Material	Red powdercoat with clear anodizing, copper-free aluminum (optional stainless steel), factory sealed housing		
Humidity Range	0 to 95% RH, non-condensing		
Weight (with swivel)	2.1 Kg/4.5 lb (Stainless Steel option 3.4 Kg/7.5 lb) - does not include junction boxes		
Outputs	0 to 20 mA - Into a maximum loop impedance of 800 Ohms at 32 V dc or 150 Ohms at 11.0 V dc. Non-isolated loop supply	Form C contacts rated 1 Amp at 30 Vdc, 0.5 Amp at 125 Vac. Selectable energized/de-energized, latching/non-latching Fire relay Fault relay factory set as energized/non-latching, cannot be modified	HART Communication Protocol
Certifications/Approvals	CSA - Class I, Division 1, Groups B, C and D - Temperature code T5 - CANADA: Class 1, Zone 1, Ex d IIB + H2 T5 ANSI/UL - Class I, Division 1, Groups B, C and D - Temperature code T5 - UNITED STATES: Class 1, Zone 1, AEx d IIB + H2 T5 ATEX/IECEx - Ⓢ II 2 G Ex d II B+H2 T5 Gb GOST-R - 1Ex d II BT5/H2 INMETRO - BR-Ex d II B+H2 T5 Factory Mutual (FM) 3260 Performance Certification ABS Marine NEMA Type 4X • IP66 - Enclosure ratings		
Warranty	3 Years Electronics / 2 Years Sensors		

UV PERFORMANCE

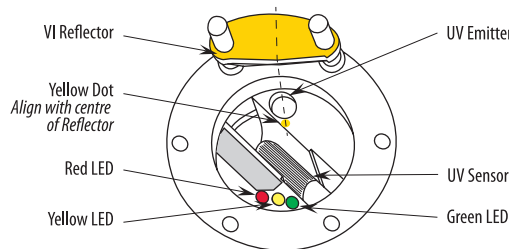
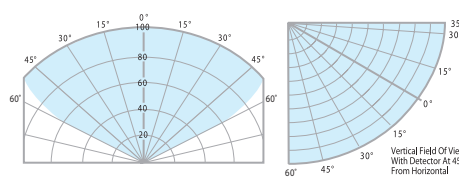
Summary of Distances

Fuel	Fire Size	Typical Response
n-heptane	1' x 1'	< 8.5sec @ 150 ft.
gasoline	1' x 1'	< 3sec @ 120 ft.
methane	36" plume	< 3sec @ 120 ft.

Immunity False Alarm Stimuli

Stimuli	Immunity Range
Direct/indirect sunlight	total
1500W heater	10 ft
halogen, incandescent light	3 ft
florescent light	10 ft

Field of View - Methane (36" plume - distances indicated in feet)



ORDERING INFORMATION

- FW2-UVS-A** 0 to 20 mA Analog output
- FW2-UVS-AR** 0 to 20 mA Analog output with a Fire and Fault alarm relay (with JB-MPR-A/S)
- FW2-UVS-AH** 0 to 20 mA Analog Output and HART Communication Protocol (with JB-MPHF-A/S)
- FW2-UVS-AHR** 0 to 20 mA Analog Output and Fire and Fault Alarm Relays and HART Communication Protocol (with JB-MPHFR-A/S)

OPTIONS: -X (ATEX/IECEx), -SS (Stainless Steel)

NOTE: Specify flammable source when ordering

Accessories

- TL-UV/IR-KIT** - Test Lamp Kit
- LAT-120** - Laser Alignment Tool.
- AIR-SHIELD** - Air Shield (device protects lens from dirt build-up)
- SSK-4** - Sunshade Kit

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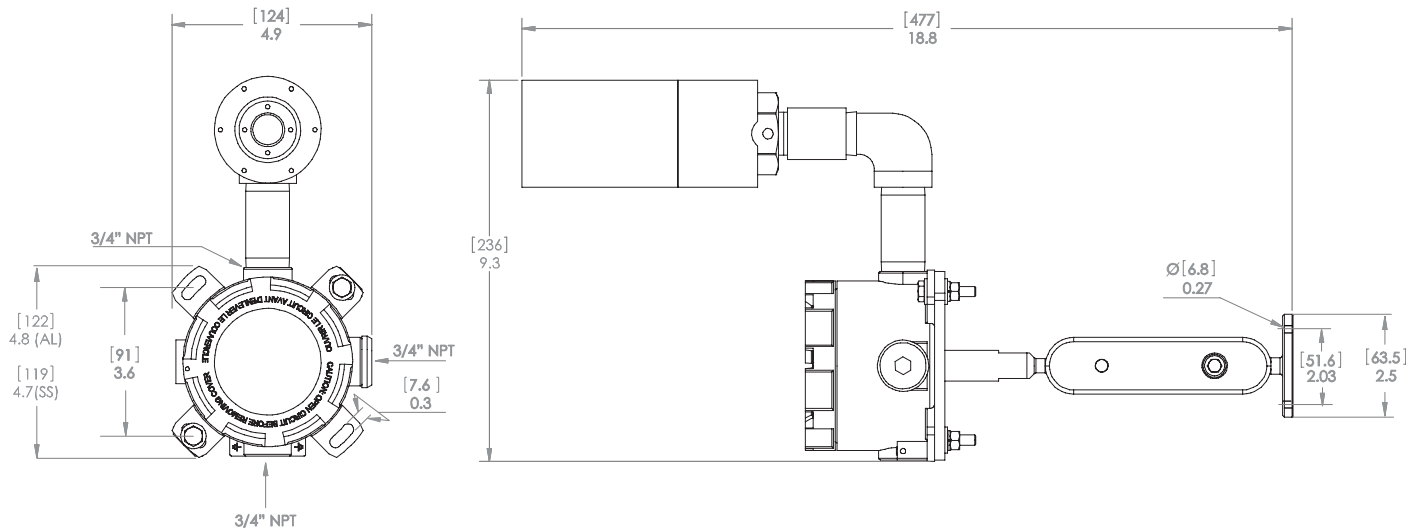
FLAMEWATCH II VIDEO CAMERA

Flame Detector and Explosion-proof Video Camera

VIDEO CAMERA SPECIFICATIONS

Power Consumption	150 mA
Temperature Range	-20°C to +70°C (-4°F to +158°F)
Field of View	100 degrees horizontal / 100 degrees vertical
Image Sensor	Colour 1/3" (NTSC) 768 (H) x 494 (V) IT CCD (ICX408AK), (PAL) 752 (H) x 582 (V) IT CCD (ICX409AK)
Formats/ Frequency	Horizontal - NTSC: 15.734 KHz, PAL: 15.652 KHz Vertical - NTSC: 59.94 Hz, PAL: 50.00 Hz
Horizontal Resolution	480 TV Lines
Video Out Signal	Composite Video
Digital Signal Processing	10 bit DSP
Electronic Shutter	1/60 (NTSC) 1/50 (PAL) to 1/100000 second
Fixed Shutter	1/60 Fixed
Scanning System	2:1 Interface
Enclosure Material	Aluminum or Optional 316 Stainless Steel
Weight (with swivel)	0.8 Kg/2.0 lb (316 Stainless Steel option 1.6 Kg/3.5 lb)
Certifications/Approvals	CSA - Class I, Division 1, Groups B, C and D - Temperature code T5 - CANADA : Class 1, Zone 1, Ex d IIB + H2 T5 ANSI/UL - Class I, Division 1, Groups B, C and D - Temperature code T5 - UNITED STATES : Class 1, Zone 1, AEx d IIB + H2 T5 ATEX - EEx d II B+H2 T5 NEMA Type 4X • IP67 - Enclosure ratings
Warranty	3 Years Electronics / 2 Years Sensors

FLAMEWATCH II DIMENSIONS



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Millennium II
Multi-Channel
Gas Detector



Phoenix Triple IR
Multi-spectrum
Flame Detector



FlameWatch
Combination Video
Flame Detector



Millennium II
BASIC Low Power
Gas Detector



Millennium APM
Industrial Air Particle
Smoke Detector



Gas Shield II
Light Industrial
Toxic Gas Detection



PlantSafe 8000
SIL3 PLC Fire & Gas
Safety Systems



Sales Gas Monitor
Continuous Monitoring
for H₂S Content

FLAME DETECTION • COMBUSTIBLE & TOXIC GAS DETECTION • SAFETY SYSTEMS • SURVEILLANCE • SMOKE DETECTION



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