

ROBOTIC FIRE WATCH



The Robotic Fire Watch System is a rapidly deployable, portable, independent fire detection system that monitors flammable, explosive, and high-value hazards in fire-susceptible and post “hot work” areas. “Hot work” includes drilling, cutting, grinding, welding, soldering, burning, melting of flammable substances, and other spark-producing activities. The unit provides essential job-site monitoring with significant cost savings by reducing manpower requirements post “hot-work,” monitoring areas with disabled fire systems and high-value or highly combustible fire hazards.

The system utilizes state-of-the-art Fike IR3-HD flame detectors with HD video output to provide reliable detection of all types of hydrocarbon fires. The detectors address both slow-growing and fast-eruption fires and can operate in all weather and light conditions with the highest immunity to false alarms. Sunlight, hot objects, welding, and “hot work” will not cause false alarms.

The video server housed in the system’s Main Control Unit (MCU) continuously records the IR3-HD detector’s video output. The video can be replayed for fire investigation or transmitted to a central location for monitoring to provide live situational awareness before allowing personnel to enter the hazard area. The Fike Video Analytics software installed on the video server employs artificial intelligence-created algorithms to analyze the detector video feed for smoke, visible vapor, steam, oil mist, reflected flame, and motion. Events detected by the software are automatically recorded and saved to enable post-event replay and download.

When the Robotic Fire Watch System detects an event, an onboard horn-strobe activates to provide a local area warning. The integral NFPA 72-compliant alarm panel provides dry contact relays for faults and alarms that a fire alarm system can monitor to notify remote personnel and first responders immediately.

The system runs on AC power with a traditional battery backup for an indefinite period or in DC mode utilizing the battery only for use during a typical work shift. System runtime in DC mode can be extended with a higher capacity battery or by swapping to a fully charged battery, as required.

SYSTEM COMPONENTS

The Main Control Unit (MCU) is the heart of the Robotic Fire Watch System. It houses the NFPA 72-compliant alarm panel and video server in a rugged, water and fire-resistant enclosure. The server stores the Fike Video Analytics software for analyzing the IR3-HD detector's video output.



The system includes a keyboard and display for initial system setup and provides a user interface to the video server for video playback and download. The display is installed in a rugged, water and fire-resistant case.



The Battery Pack houses Lithium Iron Phosphate (LiFePO₄) batteries to operate the MCU in either the UPS (uninterruptible power supply) mode or stand-alone battery mode. When AC power is connected in UPS mode, the MCU supplies all electrical loads and simultaneously charges the battery. When AC power is removed, the battery pack will supply the load without interruption for 18.7 hours with one camera or 17.2 hours with two cameras.



The IR3-HD Flame Detectors have a pre-installed magnetic mounting bracket and c-clamps for detector mounting. Cable leads are provided for quick connection of the 25 ft (7.62m) detection cable. The Portable Fire Watch unit can be ordered with one or two IR3-HD flame detectors.



The integrated Fike Video Analytics software can detect an event up to 100 ft (30 m). Detected events are automatically recorded 24/7 and saved to the video server for post-event replay and download. **Smoke detection is used only for well-lit, indoor areas and shall not be used in outdoor environments.** By default, the smoke detection algorithm is disabled and must be enabled for use. Refer to the Robotic Fire Watch System manual for instructions.



SPECIFICATIONS

ROBOTIC FIRE WATCH SYSTEM	
DIMENSIONS	16.5" x 9" x 12" (41.9 cm x 22.86 cm x 30.48 cm)
WEIGHT	15 lbs. (6.8 kg.)
OPERATING TEMPERATURE	32 - 120°F (0 - 49°C)
HUMIDITY	5 – 95% non-condensing
OPERATIONAL ENVIRONMENT	MCU is designed for indoor use or a dry climate-controlled environment only. The IR3 detectors can be located and set up for outdoor use.
Enclosure Case	
NEMA RATING	4
INGRESS PROTECTION RATING	IP 41
UNIT FIRE PROTECTION	UL 94-V0 self-extinguishing resin
PRESSURE EQUALIZE	2 L/min equalization vent
Electrical Ratings	
AC INPUT	90V – 264 VAC (120W)
DC INPUT ^[1]	DC1: 9 – 36 VDC (120W) and DC2: 22 – 30 VDC (120W)
Battery	
VOLTAGE	12.8 VDC
CAPACITY	38aH
BATTERY TYPE	12.8 VDC LiFePO ₄ (or equal)
BATTERY RUN TIME	18.7 hrs (1 detector); 17.2 hrs (2 detectors)
CELL CERTIFICATIONS	CE / RoHS / UN38.3 / UL 1642 / IEC 62133 / CB
Server	
CPU	1 x Neosys POC-515 AMD Ryzen V1605B (or equal)
MEMORY	1 x 16GD SO-DIMM DDR4 3200 1 x 256 GM M.2 NVMe SSD-Wide Temp (or equal)
OPERATING SYSTEM	Windows 10 Pro-64 Bit
Accessories	
DISPLAY	10-inch, color, back-lit display
KEYBOARD	Wireless keyboard with touchpad mouse
DETECTOR CABLE	25 ft (7.62 m) detector cable 1: Ethernet (video) and 2: 24VDC Power and SLC
FIK-IR3 HD FLAME DETECTOR	
NUMBER OF CAMERAS	1 (RFW-001); 2 (RFW-002)
CAMERA / VIDEO QUALITY	HD video 100 ft. (30m) distance
VIDEO RECORDING ALARM EVENT	1-minute pre-event and up to 1 - 3 minute post-flame detection
SYSTEM INTEGRATION PROTOCOL	ONVIF (Open Network Video Interface Forum) Profile S
Fire Detection	
DETECTION TIME AND DISTANCE	40ms for fast fire burst or explosion Medium: 1.5s for 1 ft² (0.1 m²) n-heptane pan fire at 100 ft (30 m) Extreme: 4s for 1 ft ² (0.1 m ²) n-heptane pan fire at 260 ft (80 m)
FIELD OF VIEW (IR DETECTION)	90° Horizontal, 75° Vertical
TIME DELAY	0 – 30 seconds (adjustable)
BUILT-IN TEST	Disabled (Fault) or Enabled (Alarm)

Bold = default setting. A Fike-certified technician can adjust settings.

^[1] DC input ratings vary by operating mode (DC1 = battery along, DC2 = AC + battery backup).

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IR3-HD FLAME DETECTOR (continued)	
Electrical	
OPERATING VOLTAGE	24 VDC nominal (18 – 32 VDC)
CURRENT CONSUMPTION	Standby: 180mA Maximum: 300mA (all systems in operation)
OPERATIONAL TEMPERATURE	0 - 140°F (18 - 60°C)
WIRING	12 – 20 AWG (4 – 0.50 mm ²)
Mechanical	
SIZE	7.87" x 5.12" x 5.12" (200 mm x 130 mm x 130 mm)
MOUNTING ORIENTATION	Upright only ^[2]
MOUNTING	Magnetic detector base
WEIGHT	Detector (stainless steel): 9.8 lbs. (4.4 kg) Tilt mount (stainless steel): 5.4 lbs. (2.4 kg)
Environmental	
MOUNTING	Indoor or Outdoor
TEMPERATURE RANGE	Operating: -67°F to +185°F (-55°C - +85°C) Option: -67°F to +185°F (-55°C - +85°C) Storage: -67°F to +185°F (-55°C - +85°C)
HUMIDITY	Up to 99% (RH), non-condensing
INGRESS PROTECTION	IP66 & 68; NEMA 4X & 6P
Miscellaneous	
CONNECTIVITY	Optional WiFi and LTE Connectivity Compatible
WARRANTY	The manufacturer warrants all equipment free from defects in material and workmanship under normal use and service for twelve (12) months from the date of shipment.
CODE AND REGULATORY REQUIREMENTS	National Fire Protection Association (NFPA) 72, 51B, and 25

^[2] Detectors have internal tilt and jarring sensors.

ORDERING

PART NUMBER	DESCRIPTION
RFW-001	Robotic Fire Watch System, one IR3-HD flame detector, Video Analytics
RFW-002	Robotic Fire Watch System, two IR3-HD flame detectors, Video Analytics