

# FSA-5000(A), FSA-8000(A), FSA-20000(A)

## Intelligent FFAST® Series Detectors



Intelligent/Addressable Devices

### General

Intelligent FFAST® Series aspirating smoke detectors deliver highly accurate very early warning fire detection, early warning fire detection, and standard Fire Detection that meets the needs of a variety of environments, including mission-critical facilities like data centers where downtime from smoke or fires can be incredibly costly.

The ability to configure FFAST for standard fire detection allows FFAST to be used in harsh environments where standard spot detectors may be subject to nuisance alarm conditions. As FFAST can be easily tested via a test port within the pipe network it can simplify the testing associated with standard detectors.

The Intelligent FFAST® Series detectors combine dual-source optical smoke detection (blue LED and infrared laser) with advanced algorithms to detect a wide range of fires while maintaining enhanced immunity to nuisance particulates. The combination enables the detectors to accurately detect incipient fire conditions as early as 30 to 60 minutes before a fire actually starts.

Three models are available for use in different size applications: FFAST XS, FFAST XM, and FFAST XT. The specific model numbers are FSA-5000(A), FSA-8000(A), and FSA-20000(A). They provide standard detection coverage to protect the following areas:

- **FSA-5000(A) (Intelligent FFAST XS):** Up to 5,000 sq. ft (464 sq. m) through one pipe.
- **FSA-8000(A) (Intelligent FFAST XM):** Up to 8,000 sq. ft (743 sq. m) through one pipe.
- **FSA-20000(A) (Intelligent FFAST XT):** Up to 28,800 sq. ft (2601 sq. m) through one to four pipes.

These detectors are listed for use with the NFS-320, NFS-320SYS, NFS2-640, and NFS2-3030 and operate in FlashScan® mode only.

An Intelligent FFAST® series detector connects to the SLC loop of compatible intelligent panels using FlashScan® protocol to communicate up to five levels of events for display and use in control-by-event system programming. Using the SLC connection, the system operator can also review real-time information on percent of alarm, drift compensation percent, and temperature. The system operator can also put an Intelligent FFAST detector into service mode, or reset airflow base-lines.

Intelligent FFAST series detectors support two sensitivity modes. In Acclimate® mode, the detector automatically adjusts itself to current environmental conditions to reduce nuisance alarms. Day/Night/Weekend mode enables technicians to pre-set alarm thresholds based on routine changes in the environment.

Alternate or additional monitoring is supported in several different ways, including: Serial or TCP Modbus, Ethernet over a LAN or a direct connection, or via onboard USB. When connected to a LAN, FFAST series devices email server can provide email event notification to appropriate personnel.

PipelQ® is intuitive design, configuration, and monitoring software used for all FFAST series devices. The all-in-one program can be used to create a pipe network tailored to meet



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site specific requirements, configure a FFAST device, and monitor an installed device — including live trending and reading of historic reports.

### Features

- Detection as precise as 0.00029%/ft obscuration.
- Multiple alarm levels provide application flexibility: five on FFAST XM and FFAST XT, three on FFAST XS.
- In Acclimate® mode, the detector automatically adjusts itself to current environmental conditions to reduce nuisance alarms. Day/Night/Weekend mode enables technicians to pre-set alarm thresholds based on routine changes in the environment. An Intelligent FFAST series detector can self-adapt to its environment in 24 hours.
- All devices provide ultrasonic sensing for pipe and chamber air-flow measurements; FFAST XM offers additional electronic sensing.
- Advanced detection algorithms reject common nuisance conditions.
- Patented particle separator and field-replaceable filter remove contaminants from the system.
- Intuitive system layout, configuration, and monitoring provided by PipelQ software.
- Comprehensive, simple and intuitive display has real-time, quick-read information at the device including alarm levels, particulate levels, air flow, power and a wide range of faults to quickly identify the problem for prompt correction.
- The onboard Ethernet interface enables monitoring from any compatible Internet browser, smart phone or mobile device with VPN capability. Detector can be configured to e-mail status updates to appropriate personnel.
- TCP and serial Modbus for easy integration with Building Management Systems.
- Fault indicators exhibit a broad spectrum of events.
- Unique air flow pendulum graph verifies pipe network functionality.
- Particulate graph displays subtle environmental changes for early problem indications.
- Approved for use in Class I, Division 2, Groups A,B,C, and D Hazardous Locations (FAAST XM, FFAST XT only).

- User configurable 3-speed fan, allowing for maximum coverage area or minimizing current consumption [FSA-5000(A) and FSA-20000(A) only].

#### FlashScan Capabilities

- FSA-5000(A), FSA-8000(A), and FSA-20000(A) connect to the Signaling Line Circuit (SLC) loop of NFS-320, NFS2-640, NFS-320SYS, and NFS2-3030 panels.
  - For FSA-8000(A), panel firmware version 20 or higher is required.
  - For FSA-5000(A) and FSA-20000(A), panel firmware version 23 or higher is required.
- Uses 5 detector SLC addresses, which support multiple event thresholds individually programmed for descriptive labels, and control by event logic. *Sensitivity for all event thresholds are programmed with the PipelQ utility.*
  - FAAST XM, FAAST XT: Up to 5 event thresholds
  - FAAST XS: Up to 3 event thresholds.
- Detector trouble reporting at panel.
- Individual CBE activation of the 5 event relays on the Intelligent FAAST (relays also turn on based on the associated event level threshold).
- Supports setting one device as an Aspiration Reference for other Intelligent FAAST sensors on the same SLC loop.

#### NFS2-3030/NCA-2 Capabilities

- Displays the real-time read status of percent of alarm, drift compensation percentage, and temperature by point.
- Put Intelligent FAAST detectors into Service Mode, shutting the device down for maintenance.
- Reset airflow baselines for an Intelligent FAAST detector.

## Specifications for All Intelligent FAAST® Series Detectors

### ELECTRICAL SPECIFICATIONS

**External Supply Voltage:** 18-30 VDC; provided by a UL 864 or UL 1481 listed power supply.

**Power Reset:** 1 sec.

**Relay Contact Ratings:** 3.0 A @ 30 VDC, 0.5 A @ 125 VAC.

### ENVIRONMENTAL RATINGS

**Operating Temperature:** 32°F (0°C) to 100°F (38°C).

**Sampled Air Temperature:** -4°F (-20°C) to 140°F (60°C).

**Humidity Range:** 10 to 95% (non-condensing).

**IP Rating:** IP30.

**Air Movement:** 0-4,000 ft./min (0-1,219 m/min).

**Sensitivity Range:** 0.00029%/ft. obs – 6.25%/ft. obs.

### PHYSICAL SPECIFICATIONS

**SLC Connection:** Standard SLC connections. Class B (formerly Style 4) or Class A (formerly Style 6/7).

**Communication Network:** Ethernet monitoring, 6 E-mail address alerts, Modbus/TCP.

**Wire Gauge:** 12 AWG (2.05 mm) max. to 24 AWG (0.5 mm) min.

**Network Outside Pipe Diameter:** 1.050 inches, IPS (25 mm).

**Internal Pipe Diameter:** 0.591 to 0.827 inches (15-21 mm).

**Event Log:** 18,000 events stored.

## Specifications for Specific Models

### FAAST XS FSA-5000(A)

- **Coverage:** Up to 5,000 sq.ft. (464 sq.m), through one pipe.
- **Cable Access:** Three cable-entry holes located on top, side, and back of unit [1 inch (2.54 cm)].
- **Avg. Operating Current:** Fan High - 200mA, 4.8W; Fan Med - 151mA, 3.7W; Fan Low - 120mA, 2.1W.
- **Alarm:** Fan High - 230mA, 5.6W; Fan Med - 172mA, 4.2W; Fan Low - 142mA, 3.5W.
- **Relays:** 5 Form C, 3 A, programmable latching or non-latching.
- **Maximum Single Pipe Length:** 180 ft (54.8 m). *All designs must be verified within PipelQ software.*
- **Total Pipe Length:** 225 ft. (68.6 m). *All designs must be verified within PipelQ software.*
- **Size:** 11.0 in (27.9 cm) tall x 9.0 inches (22.9 cm) wide x 6.25 inches (15.9 cm) deep.
- **Shipping Weight:** 8.8 lbs (3.99 kg), includes packaging material.

### FAAST XM FSA-8000(A)

- **Coverage:** 8,000 sq. ft. (743 sq. m), through one pipe.
- **Cable Access:** Four cable-entry holes located on top and bottom of unit [1 inch (2.54 cm)].
- **Avg. Operating Current:** 415 mA @ 24 VDC.
- **Alarm:** 465 mA – All relays active, all alarm levels displayed. Voltage @ 24 VDC.
- **Relays:** 8 Form C, 3 A, programmable latching or non-latching.
- **Maximum Single Pipe Length:** 262 ft. (80 m). *All designs must be verified within PipelQ software.*
- **Total Pipe Length:** 333 ft. (101.5 m). *All designs must be verified within PipelQ software.*
- **Size:** 13.25 inches (33.7 cm) tall x 9.13 inches (33 cm) wide x 5.0 inches (12.7 cm) deep.
- **Shipping Weight:** 11.6 lbs. (5.26 kg), includes packing material.

### FAAST XT FSA-20000(A)

- **Coverage:** 28,800 sq. ft. (2,676 sq. m), through one to four pipes.
- **Cable Access:** Four cable-entry holes located on top and bottom of unit [1 inch (2.54 cm)].
- **Avg. Operating Current:** Fan High - 465mA, 11.2W; Fan Med - 340mA, 8.2W; Fan Low - 220mA, 5.3W.
- **Alarm:** Fan High - 493mA, 11.85W; Fan Med - 368mA, 8.85W; Fan Low - 248mA, 6W.
- **Relays:** 8 Form C, 3 A, programmable latching or non-latching.
- **Maximum Single Pipe Length:** 400 ft. (123 m). *All designs must be verified within PipelQ software.*
- **Total Pipe Length:** 1050 ft. (320 m). *All designs must be verified within PipelQ software.*
- **Size:** 13.3 inches (33.8 cm) tall x 13.1 inches (33.3 cm) wide x 7.5 inches (19.1 cm).
- **Shipping Weight:** 11.8 lbs. (5.4 kg), includes packing material.

## User Interface Display

- Up to five alarm levels.
  - FAAST XS: Three alarm levels (Alert, Fire 1, & Fire 2).
  - FAAST XM, FAAST XT: Five alarm levels (Alert, Action 1, Action 2, Fire 1, & Fire 2).
- Ten particulate levels.
  - FAAST XS: Three single-color flow with more info on the LCD.
  - FAAST XM: Ten bi-color flow.
  - FAAST XT: Ten single-color flow with more info on the LCD.

## Agency Listings and Approvals

The listings and approvals below apply to Intelligent FAAST® Series components. In some cases, certain modules or applications may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

- **UL Listed:** S1115.
- **ULC Listed:** S1115.
- **FM approved.**
- **Fire Dept. of New York.**
- **CSFM:** 7259-0028:0267 (FSA-8000), 7259-0028:0274 (FSA-20000)
- Approved for use in Class I, Division 2, Groups A,B,C, and D Hazardous Locations (FAAST XM, FAAST XT only)

## Product Line Information

**FSA-5000 (Intelligent FAAST XS):** Intelligent aspiration smoke detector, covers up to 5,000 square feet. FlashScan mode. For Canadian applications, order FSA-5000A.

**FSA-8000 (Intelligent FAAST XM):** Intelligent aspiration smoke detector, covers up to 8,000 square feet. FlashScan mode. For Canadian applications, order FSA-8000A.

**FSA-20000 (Intelligent FAAST XT):** Intelligent aspiration smoke detector, covers up to 28,800 square feet. FlashScan mode. For Canadian applications, order FSA-20000A.

**F-A3384-000:** Replacement Air Filter.

**F-LCARD-SP:** FAAST XM Language Card, Spanish.

**P-ENDCAP:** End Cap (25 each).

**P-TEE:** Tee (15 each).

**P-UNION:** Union (10 each).

**P-LABEL-P:** Pipe Label (100 each).

**P-LABEL-T:** Sampling Point Labels (100 each).

**P-SAMP-KT:** Sampling Point Kit (10 sets).

**P-COUPLING:** Coupling.

**P-ELB-45:** 45° CPVC Elbow.

**P-ELB-90:** 90° CPVC Elbow.

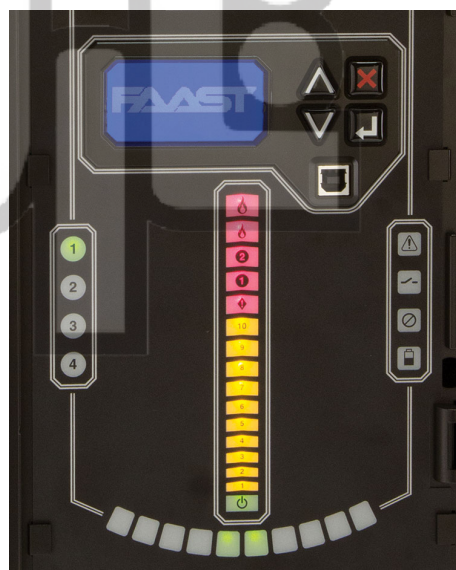
**P-PIPE-210:** CPVC Pipe.



User Interface Display:  
Intelligent FAAST® XS



User Interface Display:  
Intelligent FAAST® XM



User Interface Display:  
Intelligent FAAST® XT



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