

FSH-751

HARSH™ Hostile-Area Smoke Head Addressable Detector with FlashScan®



Intelligent/Addressable Devices

General

Notifier's HARSH™ (Hostile-Area Smoke Head) FSH-751 smoke detector provides early warning smoke detection in hostile environments where traditional smoke detectors are not practical. Using a small air intake fan and a high-performance replaceable filter, air and smoke are drawn into a photoelectric sensing chamber, while unwanted airborne particulate and water mist are removed. This feature allows the FSH-751 to operate in difficult applications, such as textile or paper mills, which due to environmental conditions tend to cause nuisance alarms with standard smoke detectors.

FlashScan® (U.S. Patent 5,539,389) is a communication protocol developed by Notifier Engineering that greatly enhances the speed of communication between analog intelligent devices. Intelligent devices communicate in a grouped fashion. If one of the devices within the group has new information, the panel's CPU stops the group poll and concentrates on single points. The net effect is response speed greater than five times that of earlier designs.

Features

- Analog intelligent communications.
- High-performance filter removes particulates down to 32 microns (32-micron inner filter and replaceable outer filter).
- Air delivery system is separately powered and fully supervised.
- Filter is easily field replaceable.
- Tolerant of external air velocity.
- Resistant to water vapor in applications where occasional non-direct water spray is performed.
- Optional remote LED annunciator.
- Rotary DECADE address switches. Set 01 – 99 on legacy systems and 01 – 159 on FlashScan® systems (NFS-640, or NFS-3030).
- Dual bi-color (red/green) LEDs flash green when Normal and are steady red in Alarm (systems with FlashScan® only).
- Compatible with the NFS-3030, AM2020, AFP1010, NFS-640, AFP-400, AFP-300, AFP-200, and AFP-100 (all software releases).
- Requires auxiliary 24 VDC from system or remote power supply.

Specifications

Size: 2.875" (7.303 cm) high, 3.375" (8.573 cm) high in base; diameter 4.0" (10.16 cm), 6.125" (15.558 cm) diameter in base.

Weight: 7.3 oz. (207 g).

Current draw, SLC: Detector; 300 μ A @ 24 VDC (one communication every 5 seconds with LED enabled).

Current draw, auxiliary 24 VDC: (15 to 30 VDC filtered; ripple voltage may not drop below 15 volts): 123 mA maximum, 27 mA average. For battery calculation purposes, average standby current is 27 mA.

Operating voltage range: 15 – 32 volts DC peak.



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Operating temperature range: 0°C to 49°C (32°F to 120°F).

Relative humidity: 10% – 93%, non-condensing.

Air velocity: 4,000 ft/1219.2 meters per minute maximum.

Maximum altitude: 4,000 feet (1219.2 meters).

Detector spacing: Space detectors in compliance with NFPA 72. In low-air-flow applications with smooth ceilings, space detectors 30 feet (9.114 m) apart. For specific information regarding sensor spacing, placement, and special applications, refer to NFPA 72 or the Guide to Proper Use of System Smoke Detectors, available from systemsensor.com.

Agency Listings and Approvals

Listing information not available. Consult panel manuals for lists of compatible UL-Listed devices. 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.

HARSH Operation Overview

Normal Operation

A miniature fan is pulsed on and off under microprocessor control to conserve power, yet provide good smoke response. The system uses two filters (one replaceable) that remove particulates while allowing smoke to pass.

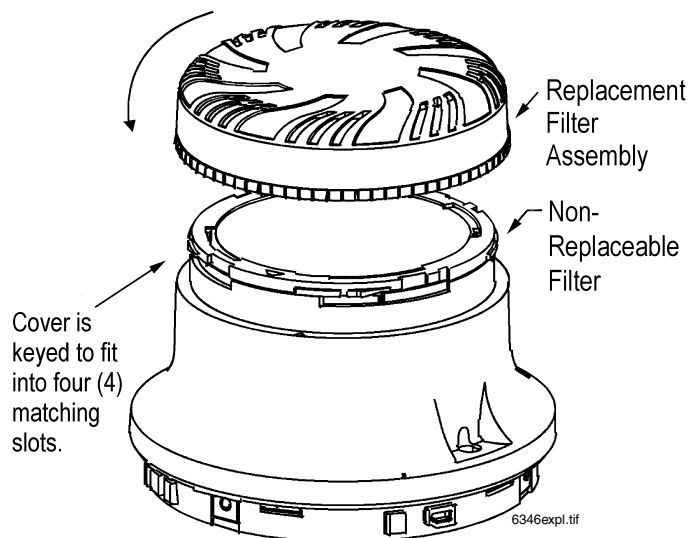
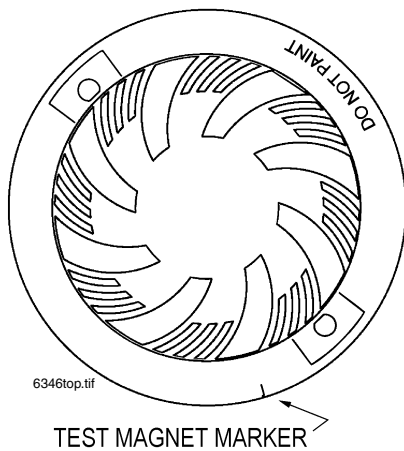
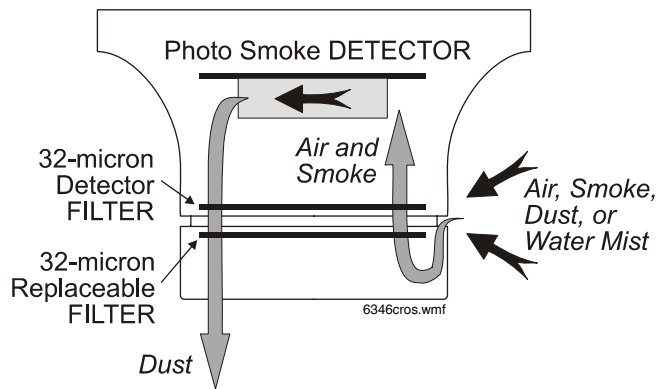
Filter Supervision

Periodically, the filter system is tested for blockage using a special thermal airflow sensor. In reasonably clean environments, the filter is expected to last at least as long as the smoke-entry test period required by NFPA 72. In very dirty environments, the filter may need replacement more frequently.

Filter Trouble Reporting

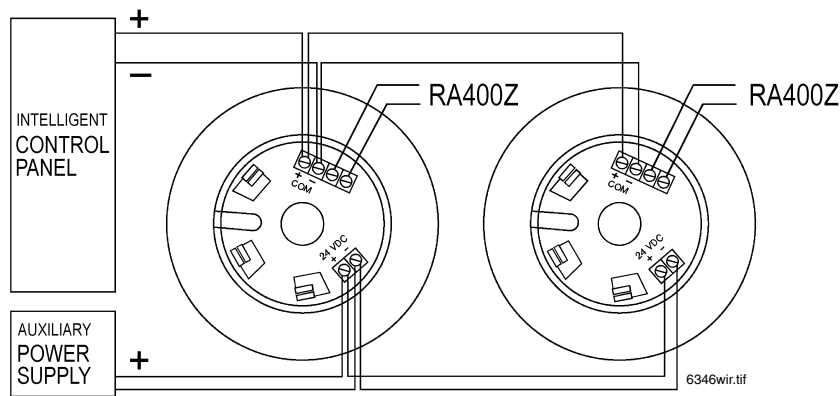
If HARSH determines that filter blockage is imminent, a warning trouble is indicated to the panel, followed by a return to normal. 72 hours after this warning, the detector will disconnect, giving a continuous trouble signal.

OPERATION OVERVIEW DIAGRAM:



The HARSH detector contains both a permanent and a replaceable filter, a supervised fan, and a photoelectric detector; to fit into a flanged adapter base.

Wiring Diagram



Product Line Information

FSH-751: Hostile-environment smoke detector head.

FSH-751A: Canadian model.

B710HD: Flanged adapter base, 6.125" (15.558 cm) diameter.

RF-FTX: Replacement outer filter cover assembly, box of 6.

RA400Z: Remote LED annunciator, 3 – 32 VDC, fits U.S. single-gang electrical box.

M02-04-01: Test magnet.

M02-09-00: Test magnet with telescope stick.

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