



December 7, 2001

DN-6875 • H-116

FSH-751

HARSH™ Hostile-Area Smoke Head

Analog Addressable Detector with FlashScan®

Section: 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 HARSH™ 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 new 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.

FlashScan® is a registered trademark and **HARSH™** is a trademark of NOTIFIER.

FEATURES

- Analog intelligent communications.
- High-performance filter removes particulates down to 32 microns (32-micron inner filter and 100-micron 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 (AFC-600 or NFS-640).
- Dual bi-color (red/green) LEDs flash green when Normal and are steady red in Alarm (systems with FlashScan® only).
- Compatible with the AM2020, AFP1010, NFS-640, AFC-600, 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" (73.025 mm) high, 3.375" (85.725 mm) high in base; diameter 4.0" (101.6 mm), 6.125" (155.575 mm) diameter in base.

Weight: 7.3 oz. (207 g).

Current draw, SLC: DETECTOR: 300 µA @ 24 VDC (one communication every 5 seconds with LED enabled).

California
State Fire
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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.

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: NOTIFIER recommends spacing detectors in compliance with NFPA 72. In low-air-flow applications with smooth ceilings, space detectors 30 feet (9.144 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* (P/N 156-407-XX), available from NOTIFIER.

This document is not intended to be used for installation purposes. We try to keep our product information up-to-date and accurate. We cannot cover all specific applications or anticipate all requirements. All specifications are subject to change without notice. For more information, contact NOTIFIER. Phone: (203) 484-7161 FAX: (203) 484-7118

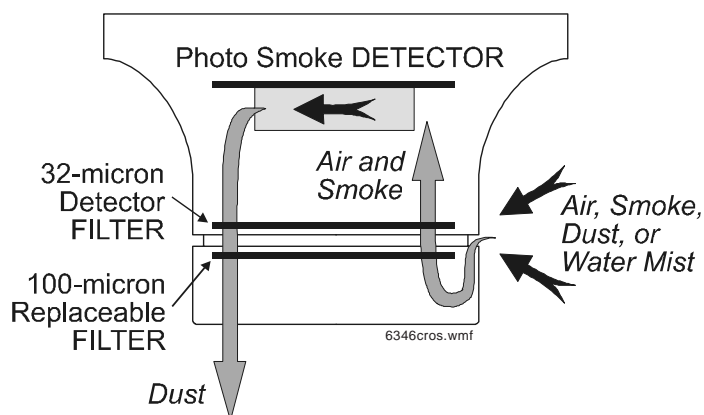
**NOTIFIER**®

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HARSH™ OPERATION OVERVIEW

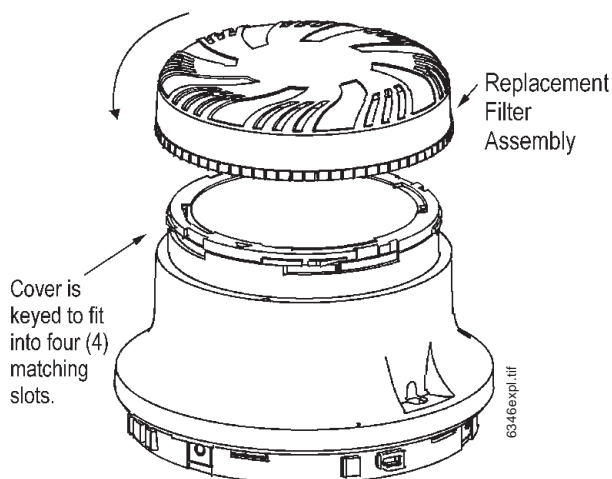
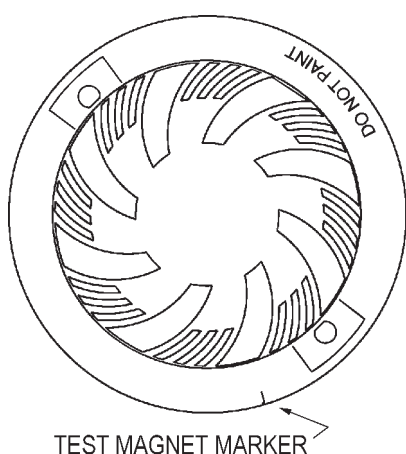
Operation overview diagram:



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.

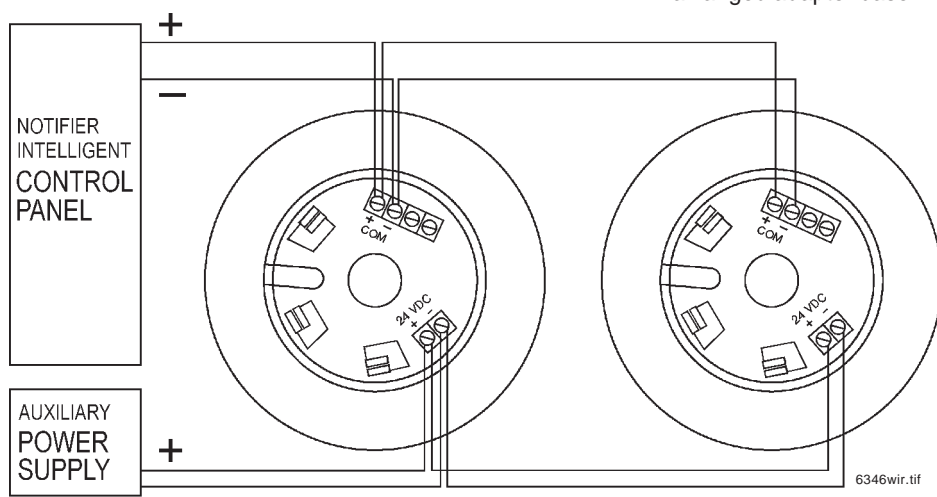
Filter Supervision — Periodically, the filter system is tested for blockage using a special thermal airflow sensor. In reasonably clean environments, the filter is expected to last at least as long as the smoke-entry test period required by NFPA 72. In very dirty environments, the filter may need replacement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



The HARSH™ detector contains both a permanent filter and a replaceable filter, a 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" (155.575 mm) 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.