FAPT-851
Acclimate Plus™ Multi-Sensor
Low-Profile Intelligent Detector

General
The Notifier FAPT-851 Acclimate Plus™ detector is an intelligent, addressable, multi-sensing, low-profile detector designed for use with the Notifier AFP-300, AFP-400, AFP1010, AM2020 (classic mode only); and with the ONYX® Series NFS-640, NF52-640, NFS-3030 and NFS2-3030 (classic or FlashScan® modes) Fire Alarm Control Panels.

The Acclimate Plus detector uses a combination of photothermal and thermal sensing technologies that are designed to increase immunity to false alarms. Unlike traditional intelligent detectors, the Acclimate Plus detector has a microprocessor in the detector head that processes alarm data. As a result, the Acclimate Plus detector adjusts its sensitivity automatically, without needing operator intervention or control panel programming.

Areas where the Acclimate Plus detector is especially useful include office complexes, schools, college campuses, manufacturing and industrial facilities, and anywhere else the use of a particular area may change. The Acclimate Plus detector automatically adjusts its sensitivity to the environment.

FlashScan (U.S. Patent 5,539,389) is a communication protocol developed to greatly enhance the speed of communication between analog intelligent devices and compatible systems. 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
- Automatically adjusts sensitivity levels without the need for operator intervention or programming. Sensitivity increases with heat.
- Microprocessor-based, combination photo and thermal technology.
- FlashScan (NFS-640, NFS2-640, NFS-3030 and NFS2-3030) and classic system (NFS-640, NFS2-640, NFS-3030, NFS2-3030AFP-300, AFP-400, AFP1010, and AM2020) compatible.
- Addressable-analog communication.
- Sleek, low-profile design.
- Two-wire SLC connection.
- Sleek, low-profile design.
- Rotary, decimal addressing (1 – 99 on current classic systems; 1 – 159 on ONYX Series FlashScan systems).
- Addresses can be viewed and changed without the need for electronic programmers.
- Dual bi-color LED design provides 360° viewing angle.
- LEDs lock red when in Alarm. In FlashScan, LEDs flash green in standby for normal condition.
- Built-in tamper-resistant feature.
- Sealed against back pressure.
- Constructed of off-white Bayblend®, designed to commercial standards, and offers an attractive appearance.
- 94-5V plastic flammability rating.
- SEMS screws for wiring of the separate base.

Specifications
- Several base options, including relay, isolator, and sounder.
- Remote test feature from the panel.
- Built-in functional test switch activated by external magnet.
- Listed to UL 268.
- Capable of heat-only alarm mode, enabled by a special command from the panel. Smoke alarms are ignored.
- Backwards-compatible on most panels.
- Low-temperature signal at 45°F +/- 10°F (7.22°C +/- 5.54°C).

Sensitivity: auto-adjusting levels: 1 to 2%/ft. and 2 to 4%/ft. with classic CLIP systems; 1 to 2, 2 to 3, and 3 to 4%/ft. with FlashScan systems; fixed-sensitivity levels: 1, 2, and 4%/ft. with classic CLIP systems; 0.5, 1, 2, 3, and 4%/ft. with FlashScan systems.

Size: 2.1” x 2.1” (5.3 cm) x 4.1” (10.4 cm) diameter installed in B501 base, 6.1” x 6.1” (15.5 cm) diameter installed in B710LP base.

Shipping weight: 5.2 oz. (147 g).

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

UL-Listed velocity range: 0 – 4000 ft./min. (1219.2 m/min.), suitable for installation in ducts.

Relative humidity: 10% – 93% noncondensing.

Thermal sensing rating: fixed-temperature setpoint 135°F (57°C).

ELECTRICAL SPECIFICATIONS:
- Voltage range: 15 – 32 volts DC peak.
- Standby current (max. avg.): 250 μA @ 24 VDC (without communication); 360 μA @ 24 VDC (one communication every 5 seconds with LED enabled).
- Loop resistance: 40 ohms maximum; varies according to control panel used. Refer to panel installation manuals.
- LED current (max.): 6.5 mA @ 24 VDC (“ON”).

BASES AVAILABLE:
- B710LP: 6.1” (15.5 cm) diameter.
- B501: 4.1” (10.4 cm) diameter.
- B501BH or B501BHT: Sounder base assembly. Includes B501 base.
B224RB Relay Base: Screw terminals: up to 14 AWG (2.0 mm²). Relay type: Form-C. Rating: 2.0 A @ 30 VDC resistive; 0.3 A @ 110 VDC inductive; 1.0 A @ 30 VDC inductive. Dimensions: 6.2" (15.748 cm) x 1.2" (3.048 cm).

B224BI Isolator Base: Dimensions: 6.2" (15.748 cm) x 1.2" (3.048 cm). Maximum: 25 devices between isolator bases.

Installation
The FAPT-851 plug-in detector uses a separate base to simplify installation, service, and maintenance. A special tool allows maintenance personnel to plug-in and remove detectors without using a ladder. Mount base on an electrical backbox at least 1.5" (3.81 cm) deep. Suitable mounting base boxes include:

- 4.0" (10.16 cm) square box.
- 3.5" (8.89 cm) or 4.0" (10.16 cm) octagonal box.
- Single-gang box (except relay or isolator base).
- With B501BH or B501BHT base, use a 4.0" (10.16 cm) square box.
- With B224RB or B224BI base, use a 3.5" (8.89 cm) octagonal box, or a 4.0" (10.16 cm) octagonal or square box.

NOTE: 1) Because of the inherent supervision provided by the SLC loop, end-of-line resistors are not required. Wiring “T-taps” or branches are permitted for Style 4 (Class “B”) wiring. 2) When using relay or sounder bases, consult data sheet DN-2243 (ISO-X) for device limitations between isolator modules and isolator bases.

APPLICATION NOTE: The FAPT-851 detector has the unique ability to adjust sensitivity according to the environment, based on heat and smoke levels. Avoid installing these detectors in locations that are susceptible to rapid and high temperature changes. An example of an incorrect application would be near or in line with the output of a self-contained heater.


Agency Listings and Approvals
These listings and approvals apply to the modules specified in this document. 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: CS308 (ML154)(FAPT-851A)
- MEA Listed: 225-02-E
- FM Approved
- CSFM: 7272-0028:206
- U.S. Coast Guard: 161.002/42/1 (NFS-640)
- Lloyd’s Register: 02/60007 (NFS-640)
- Maryland State Fire Marshal: Permit # 2122
Ordering Information

NOTE: “A” suffix indicates ULC Listed model.

FAPT-851: Low-profile intelligent multi-sensor detector. Must be mounted to one of the bases listed below.
FAPT-851A: Same as FAPT-851 but with ULC Listing.

BASES:
B501A: Standard European flangeless base, ULC Listing.
B501BH(A): Sounder base, includes B501(A) base above.
B501BHT(A): Same as B501BH(A), but includes temporal sounder.
B224RB(A): Intelligent relay base.
B224BI(A): Intelligent isolator base. Isolates SLC from loop shorts.

ACCESSORIES:
F110: Retrofit replacement flange for older high profile bases. Converts bases for use with FlashScan® detectors.
RA400Z(A): Remote LED annunciator. 3 – 32 VDC. Fits U.S. single-gang electrical box. Supported by B710LPBP(A) and B501(A) bases only.
SMK400: Surface mounting kit provides for entry of surface wiring conduit. For use with B501(A) base only.
RMK400: Recessed mounting kit. For use with B501(A) base only.
SMB600: Surface mounting kit for use with B710LPBP(A).
BCK-200B: Black detector covers, box of 10.
M02-04-01: Test magnet.
M02-09-00: Test magnet with telescope stick.
XR2B: Detector removal tool. Allows installation and/or removal of FlashScan® Series detector heads from base in high ceiling installations.
T55-127-000: Detector removal tool without pole.
XP-4: Extension pole for XR2B. Comes in three 5-ft. sections.

DETECTOR GUARDS:
NOTE: Some guards listed below may not be applicable.

SDG-773: Smoke detector guard; cover is 7.0” (17.78 cm) square x 3.0” (7.62 cm) deep. This guard, although mechanically compatible, is NOT UL-compatibility Listed with the FAPT-851.
STI9601: Low-profile, flush-mount smoke detector guard, wire.*
STI9602: Low-profile, surface-mount, smoke detector guard, wire.*
STI9609: High-profile, flush-mount, smoke detector guard, wire.*
STI9605: High-profile, surface-mount, smoke detector guard, wire.*
STI9604: Flush-mount heat detector guard, wire.*
STI9610: Surface-mount heat detector guard, wire.*

* For dimensions and additional information on STI Steel Web Stoppers, see data sheet DN-4936.
STI8200-SS: Flush-mount stainless steel smoke detector guard (compatibility pending).
STI8230-SS: Surface-mount stainless steel smoke detector guard (compatibility pending).