

# FAP-440 Analog Detectors

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Invented for life



- ▶ Smoke threshold is adjustable and automatically compensated
- ▶ Rotary switch addressing
- ▶ Flexible work modes determined by the control panel
- ▶ Selectable base locking mechanism prevents malicious removal of the detector
- ▶ Multi-criteria or multi-sensor technology reduces false alarms

The FAP-440 Analog Detectors are open-area smoke detectors of which some models are enhanced with heat or heat and CO sensors. The detectors work with the FPA-1000 Analog Addressable Fire Panels. Use the detectors with the FAA-440 bases to provide general life safety and property protection.

## Functions

### Address Range

The FAP-440 Analog Detectors have a valid address range from 1 to 254. Set the address using rotary switches on the back of each detector.

### Indicator LED

The detector head has a multi-color LED to indicate status. To verify detector power and analog addressable loop communication, the LED indicator flashes green when operating normally (polling). Through panel parameter setting, it is possible to turn on or off operation of the polling indicator. In the event of an alarm condition, the detector LED always shows a steady red light. Independent from the actual number of activated device LEDs and remote indicator LEDs, the number of activated LEDs is limited to five (called the rolling alarm function).

### Modular Construction

The detectors are part of a two-piece modular design for detector assemblies. An FAP-440 Analog Detector attaches to an FAA-440 Family base. The base's security locking tab hinders unauthorized detector removal from the base.

### Advanced technology for false alarm reduction

**Multi-sensor detector:** The multi-sensor detector contains a photoelectric smoke sensor and a heat sensor. Either sensor can detect a fire and activate an alarm signal. The smoke threshold is adjustable (see Sensitivity Calibration and Compensation below). The heat sensor's threshold is set at 135°F.

**Multi-criteria detector:** The multi-criteria detector contains smoke and heat sensors that work independently of each other, but in conjunction with the CO sensor. In this model, either one or both of the sensors activate an alarm signal only if the CO level is also exceeded.

**Notice****Carbon monoxide sensors:**

Detectors that contain carbon monoxide (CO) sensors must not be used as stand-alone CO detectors. The CO sensor is supplied to confirm the presence of CO as a by-product of combustion thereby reducing false alarms, but not to confirm the presence of CO as a hazardous gas.

**Programming**

Local programming is carried out at the panel keypad or by computer through a Web browser. Remote programming is carried out through a Web browser.

**Sensitivity Calibration and Compensation**

The sensitivity of the smoke sensor is programmable with 12 levels from which to choose. Throughout the normal life cycle, the smoke detector monitors itself against the factory calibrated level and periodically compensates itself to keep the sensitivity at the programmed level. When the detector is excessively contaminated, the condition is annunciated at the control panel.

**Certifications and approvals**

Region	Regulatory compliance/quality marks	
Europe	CE	FAH-/FAP-/FAA-440
USA	UL	UROX Smoke-automatic Fire Detectors (ANSI/UL 268)
	CSFM	see the Bosch website (www.bosch-security.com)

**Installation/configuration notes****Compatible Products**

The following products are compatible with the FAP-440 Series Analog Detectors:

Category	Product ID	Product Description
Fire Panels	FPA-1000 Series	Analog Addressable Fire Panels
Fire Panel Accessories	FPE-1000-SLC	Signaling Line Circuit Plug-in Module
Detector Bases	FAA-440-B4	4-inch Analog Standard Base
	FAA-440-B6	6-inch Analog Standard Base
	FAA-440-B4-ISO	4-inch Analog Isolator Base
	FAA-440-B6-ISO	6-inch Analog Isolator Base

**Mounting Considerations**

Detectors are typically mounted on the ceiling. However, if detectors are mounted on a wall, they must be at least 4 in. (10.2 cm), but no more than 12 in. (30.5 cm), below the ceiling. To prevent

unwanted activation of the test switch, the base must be at least 1 ft. (30 cm) from devices containing magnets or producing magnetic fields (for example, loudspeakers).

*For UL Listing requirements, the spacing between smoke detectors should be no more than 30 ft (9.14 m).*

**Wiring Considerations**

The control panel communicates to the detectors via the analog addressable loop (SLC), which allows the use of standard non-twisted, non-shielded wiring. The following wire gauges were tested and approved:

Wire Gauge	Maximum length
18 AWG (ISO 0.75 mm <sup>2</sup> )	4000 ft (1200 m)
16 AWG (ISO 1.5 mm <sup>2</sup> )	6225 ft (1900 m)
14 AWG (ISO 2.5 mm <sup>2</sup> )	7200 ft (2200 m)
12 AWG (ISO 4 mm <sup>2</sup> )	9850 ft (3000 m)

**Remote Indicator**

If a remote indicator is used in the circuit, it must be no more than 10 ft (3 m) from the base.

**Technical specifications****Electrical**

Power provided via the SLC loop.

<b>Current Draw</b>	
Alarm	0.17 mA (5 mA with LED on)
Standby	0.17 mA
When polled	22 mA ± 20%
Voltage (operating)	24 VDC to 41 VDC
Maximum allowable line resistance	50 Ω maximum

**Environmental**

Protection category	IP 42
Relative Humidity	< 95% (non-condensing)
Installation temperature	+32°F to +100°F (0°C to +38°C)
<b>Storage Temperatures</b>	
With CO sensor	+14°F to +122°F (-10°C to +50°C)
Without CO sensor	-13°F to +176°F (-25°C to +80°C)

**Mechanical**

Dimensions (Ø x D)	4.4 in. x 2.0 in. (11.2 cm x 5.1 cm)
Housing Material	CYCOLOY/ABS

**Sensor**

Airflow	4000 ft./min (20 m/s) maximum
<b>Sensitivities</b>	
Smoke sensor	1.25%/ft. to 3.5%/ft. (4.1%/m to 11.48%/m)
Heat sensor	+135°F (+57°C) + RoR

### Trademarks

All hardware/software product names used in this document are likely to be registered trademarks and must be treated accordingly.

### Ordering information

#### **FAP-440 Analog photoelectric detector head, 24V**

Analog photoelectric smoke detector used with FAA-440 bases and FAP-1000 fire panels  
Order number **FAP-440**

#### **FAP-440-T Analog photoelectric detector head, 24V**

Analog photo/heat detector used with FAA-440 bases and FAP-1000 fire panels  
Order number **FAP-440-T**

#### **FAP-440-TC Analog detector head, photo/heat/CO**

Analog photo/heat/CO detector used with FAA-440 bases and FAP-1000 fire panels  
Order number **FAP-440-TC**

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