

# F220 Heat Detectors

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Invented for life



- ▶ Two-wire or four-wire bases
- ▶ 50 ft (15.2 m) maximum spacing between detectors
- ▶ Visible identification of model: F220-135 = no ring, F220-135F = gray ring, F220-190F = black ring
- ▶ Tamper detection
- ▶ Dual color LED

The F220 Heat Detectors include:

- **F220-135:** An electronic rate-of-rise, fixed temperature heat detector that initiates an alarm when the ambient temperature exceeds +135°F (+57°C) or when the ambient temperature increases by +15°F (+8.3°C) or more in less than 1 minute
- **F220-135F:** An electronic fixed temperature heat detector that initiates an alarm when the ambient temperature reaches +135°F (+57°C).
- **F220-190F:** An electronic fixed temperature heat detector that initiates an alarm when the ambient temperature reaches +190°F (+88°C).

The detectors use low current electronic circuitry, so they can connect to 12 VDC nominal or 24 VDC nominal power source circuits. When mounted on the appropriate F220-B6 Series Mounting Base, the F220 Heat Detectors provide general property protection from fire.



#### Notice

Heat detectors are not life safety devices.

## Functions

### Compatible Bases

Configure the detectors as either two-wire or four-wire depending on the mounting base selected. These detectors are compatible with any of the F220-B6 bases:

- F220-B6 12/24 VDC Two-wire Mounting Base
- F220-B6R Standard 12/24 VDC Four-wire Mounting Base
- F220-B6RS 24 VDC Four-wire Mounting Base with Sounder
- F220-B6C 12/24 VDC Four-wire Mounting Base with Auxiliary Form C Relay
- F220-B6E 12/24 VDC Four-wire Power Supervision Mounting Base
- F220-B6PM 24 VDC Four-wire Addressable Master Base
- F220-B6PS 12/24 VDC Four-wire Addressable Base

### Dual-color LED

To verify the detector has power and the heat detection circuitry functions, a dual-color LED indicator flashes green every 8 sec when operating normally. It flashes once every 4 sec when a trouble condition exists. The LED latches on red if an alarm

occurs, allowing the user to easily verify individual detector alarms. Clear the alarm condition by interrupting power to the detector.

### Tamper Detection

When detector heads are correctly installed in any of the F220-B6 bases, the control panel initiates a trouble signal if a detector is removed from its base. A mechanical tamper lock comes with each base to inhibit unauthorized head removal.

### Supervision

The control panel supervises two-wire systems. Supervision of four-wire system power is provided by an end-of-line (EOL) power supervision device such as a D275 or PAM-4, or an F220-B6E Power Supervision Mounting Base and an EOL resistor as specified by the control panel manufacturer.

### Certifications and approvals

Region	Certification	
Europe	CE	89/336/EEC, EN50130-4/A Sept 1998, EN61000-6-3 Oct 2001
USA	UL	UQGS: Heat - Automatic Fire Detectors (UL521)
	FM	F220 Heats
	CSFM	see our website
	NYC-MEA	117-05-E
Hong Kong	MSFM	2200 Sep 2008
	HKFSD	J-002/C/067

### Installation/configuration notes

#### Compatible Control Panels

**Addressable Systems:** These detectors are compatible with addressable systems controlled by D9412GV2, D7412GV2, D9412G, or D7412G Control Panels or the D9124 Fire Alarm Control Panel when used with the F220-B6PM or F220-B6PS Addressable Detector Bases.

**Two-wire:** Bosch Security Systems, Inc. makes no claim written, oral, or implied that these detectors work with any two-wire control panels except those specified in the Control Panel Compatibility chart in the Technical Service Note (P/N: 4998148185).

**Four-wire:** These detectors are compatible with all UL Listed four-wire control panels. For proper end-of-line (EOL) resistor selection, see the control panel's installation instructions.

#### Mounting the Bases



#### Notice

Consult NFPA 72 for proper detector placement.

Depending on local regulations, the bases can be surface mounted directly on four-inch square or octagonal electrical boxes and single-gang switch boxes.



#### Notice

The volume of any electrical box used should be adequate to accommodate the number and size of conductors as specified by the National Electrical Code or any local authorities having jurisdiction (AHJ).

### End-of-Line Power Supervision

Loop supervision requires one D275 or PAM-4 or F220-B6E per loop when using F220-B6R/B6C bases and is accomplished by the control panel.

### Wiring the Bases

For detailed wiring instructions, see the F220 Series Detectors with F220-B6/C/E/R Bases Installation Instructions, the F220 Series Detectors with F220-B6RS Bases Installation Instructions, or the F220-B6PS/M Installation Instructions.

### Parts included

Quantity	Component
1	Detector head with dust cover

### Technical specifications

#### Electrical

Current (alarm): (detector head only)	20 mA minimum at 8.5 VDC; 35 mA maximum at 32 VDC
Current (start-up \standby):	0.12 mA maximum at 35 VDC
Maximum RMS Ripple:	25% of DC input
Power-up Time:	22 sec maximum

#### Voltage (standby)

F220-B6:	8.5 VDC to 32.0 VDC
F220-B6C/-B6R/-B6E:	10.0 VDC to 30.0 VDC
F220-B6RS:	16.0 VDC to 30.0 VDC
F220-B6PM:	18.9 VDC to 28.0 VDC
F220-B6PS:	With D299: 18.9 VDC to 28.0 VDC Without D299: 9.6 VDC to 28.0 VDC

#### Environmental

Relative Humidity:	0% to 95% non-condensing
Temperature (normal operating):	+32°F to +100°F (0°C to +38°C)

**Note:** The normal environment where these detectors are installed should be within the specified normal operating temperature limits.

**Mechanical**

Color:	White
Dimensions (diameter x H):	6.75 in. x 2.25 in. (17.1 cm x 6.4 cm)

**Trademarks**

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

**Ordering information****F220-135 Electronic Rate-of-Rise/Fixed Temperature (+135°F [+57°C]) Heat Detector**

Rate-of-rise/fixed temperature heat detector head only; requires base.

Order number **F220-135**

**F220-135F Electronic Fixed Temperature (+135°F [+57°C]) Heat Detector**

Fixed temperature heat detector head only; requires base.

Order number **F220-135F**

**F220-190F Electronic Fixed Temperature (+190°F [+88°C]) Heat Detector**

Fixed temperature heat detector head only; requires base.

Order number **F220-190F**

**Accessories****D275 Power Supervision Module**

Line supervision device for four-wire fire detection circuits

Order number **D275**

**DRA-5 Remote Annunciator (5 VDC)**

Designed to provide remote annunciation of alarms for a number of Bosch smoke and heat detectors

Order number **DRA-5**

**DT-2 Detector Removal Tool**

Use the DT-2 to remove, replace, or test the detector head

Order number **DT-2**

**F220-B6 12/24 VDC Two-wire Base**

Standard base for two-wire (12 VDC or 24 VDC system) applications.

Order number **F220-B6**

**F220-B6R Standard 12/24 VDC Four-wire Base**

Standard base for four-wire (12 VDC or 24 VDC) detector systems.

Order number **F220-B6R**

**F220-B6RS 24 VDC Four-wire Detector Base with Sounder**

Four-wire detector base with sounder for use with the F220 Photoelectric Smoke and Heat Detectors.

Order number **F220-B6RS**

**F220-B6C 12/24 VDC Four-wire Base with Auxiliary Form C Relay**

Four-wire base with a normally-open (NO) alarm loop relay and a set of auxiliary contacts (Form C).

Order number **F220-B6C**

**F220-B6E 12/24 VDC Four-wire Power Supervision Base with End-of-line Power Monitoring Relay**

Four-wire base with a normally-open (NO) alarm relay and an EOL power supervision relay.

Order number **F220-B6E**

**F220-B6PM 24 VDC Four-wire Addressable Multiple Detector Base**

The multiple detector base provides an address on the FACP data expansion circuit for its detector and up to an additional 19 detectors. It accepts the F220 Photoelectric Smoke Detector Heads and Heat Detector Heads.

Order number **F220-B6PM**

**F220-B6PS 12/24 VDC Four-wire Addressable Single Detector Base**

The single detector base provides an address on the FACP data expansion circuit for its detector. It accepts the F220 Photoelectric Smoke Detector Heads and Heat Detector Heads.

Order number **F220-B6PS**

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