



F220 Heat Detectors



- ▶ **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.

Warning 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 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), UQGS7: Heat - Automatic Fire Detectors Certified for Canada (cULus)
	FM	
	CSFM	7270-1615:108
	NYC-MEA	117-05-E
	MSFM	2200 Sep 2008
Hong Kong	HKFSD	

Installation/Configuration Notes

Compatible Control Panels

Addressable Systems: 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 the F220 Heat 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: compatible with all UL Listed four-wire control panels. Refer to the control panel's installation instructions for proper end-of-line (EOL) resistor selection.

Mounting the Bases

Note 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.

Note 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 F220-B6E per loop when using F220-B6R/B6C bases and is accomplished by the control panel.

Wiring the Bases

Refer to the F220 Series Detectors with F220-B6/C/E/R Bases Installation Instructions (P/N: 4998138694), the F220 Series Detectors with F220-B6RS Bases Installation Instructions (P/N: F01U029847), or the F220-B6PS/M Installation Instructions (P/N: 4998149982) for detailed wiring instructions.

Technical Specifications

Environmental Considerations

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 Properties

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

Power Requirements

Current (alarm): (detector head only)	20 mA minimum at 8.5 VDC; 35 mA maximum at 32 VDC
Current (start-up):	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

Ordering Information

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

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

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

Fixed temperature heat detector head only; requires base.

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

Fixed temperature heat detector head only; requires base.

Accessories

D275 Power Supervision Module **D275**

Line supervision device for four-wire fire detection circuits

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

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

DT-2 Detector Removal Tool **DT-2**

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

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

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

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

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

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

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

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

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

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

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

F220-B6PM 24 VDC Four-wire Addressable Master Base **F220-B6PM**

Provides individual addresses on the FACP data expansion circuit and accepts the F220 Series Photoelectric Smoke Detector and Heat Detector Heads.

Ordering Information

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

Used in a slave circuit with the F220-B6PM as master base.

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