



F220 Heat Detectors



- ▶ **Two-wire or four-wire bases**
- ▶ **50 ft (15.2 m) 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

All F220 Heat Heads and Detector Bases

Listings and Approvals:	UL UQGS: Heat - Automatic Fire Detectors (UL521)
	CSFM 7270-1615: 108
	Factory Mutual Research
	Hong Kong Fire Services Department (HKFSD)
	NYC/MEA (117-05-E)

F220-135, F220-135F, and F220-190F Heat Heads

Listings and Approvals:	CE
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F220-B6/B6C/B6E/B6R/B6RS Detector Bases

Listings and Approvals:	CSFM 7300-1615: 105
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F220-B6PM/PS Detector Bases

Listings and Approvals:	CSFM 7300-1615: 215
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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
F220-135F Electronic Fixed Temperature (+135°F [+57°C]) Heat Detector	F220-135F
F220-190F Electronic Fixed Temperature (+190°F [+88°C]) Heat Detector	F220-190F

Accessories

D275 Power Supervision Module	D275
DRA-5 Remote Annunciator (5 VDC)	DRA-5
DT-2 Detector Removal Tool	DT-2
F220-B6 12/24 VDC Two-wire Base	F220-B6

Ordering Information

F220-B6R Standard 12/24 VDC Four-wire Base	F220-B6R
F220-B6RS 24 VDC Four-wire Detector Base with Sounder	F220-B6RS
F220-B6C 12/24 VDC Four-wire Base with Auxiliary Form C Relay	F220-B6C
F220-B6E 12/24 VDC Four-wire Power Supervision Base with End-of-line Power Monitoring Relay	F220-B6E
F220-B6PM 24 VDC Four-wire Addressable Master Base	F220-B6PM
F220-B6PS 12/24 VDC Four-wire Addressable Base	F220-B6PS

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