



**FIRE DETECTION DEVICES LTD.**

Durable . Reliable . Trusted . Canadian



## Single Circuit Normally Closed Contacts CR/CF Aluminum Series

### Features

- Low profile
- Cast aluminum housing
- Mounting flexibility with screw terminals
- Single circuit with normally closed contact configuration

### Dimensions:

Diameter 4.25 in (133 mm)

Height 2 in (51 mm)

### Weight:

0.41 lbs (0.19 kg)

### Shipping Weight:

0.6 lb (0.3 kg)

### Application

This heat detector, being Normally Closed, is often used in conjunction with household intrusion alarm panels, connected to a 24-hour input as an initiating device. The internal contacts will open when the detector operates either on a rate of temperature increase, or if the releasing temperature is reached. With its non-metallic diaphragm, the detector can operate normally at low temperatures, making it suitable for non-heated or chilled environments including garages and carports. Because it responds to a rate of temperature increase, it is recommended that it be used in conjunction with sprinkler devices as the detector will initiate and alarm before the waterflow switch.

### Combination Rate-of-Rise & Fixed Temperature

The Model Number prefix "CR" indicates that the detector is a combination Rate-of-Rise and Fixed Temperature (often referred to as "Dual-action") unit. The Rate-of-Rise function allows the detector *to open* its contacts when the temperature at the ceiling increases at a rate of 8.4 Celsius degrees (15 Fahrenheit degrees) per minute. The opening of the contacts can initiate a fire alarm condition. The Fixed Temperature portion consists of a spring-loaded plunger held in place by a eutectic solder that will fuse at the specific temperature (in Fahrenheit degrees) as indicated by the Model Number i.e. 135, 165, 200 and 285 degrees.

### Fixed Temperature Only

The Model Number prefix "CF" indicates that the detector is Fixed Temperature Only, and will therefore *not* respond to a rate of temperature increase but will operate when the detector fuses at the prescribed (Fahrenheit) temperature as indicated by the model number, i.e. 135, 165, 200 and 285 degrees. This detector is referred to as "Fixed Temperature Only, non-restorable".



## FIRE DETECTION DEVICES LTD.

Durable . Reliable . Trusted . Canadian

### Engineering Specifications:

- Models CR 135C, CR 165C and CR 200C detectors are *dual-action* type, that will respond to a rate of temperature increase at the ceiling of 15 Fahrenheit degrees per minute (8.4 Celsius degrees per minute). These detectors will also respond when the fixed temperature (non-restorable) threshold is exceeded. Dual-action detectors are installed in areas where rapid fluctuations in ceiling temperature are *not* expected.
- In areas where sudden increases in ceiling temperature are normal, specify Fixed Temperature Only units i.e. CF 135C, CF 165C, CF 200C or CF 285C.
- Detectors shall be installed in areas where environmental conditions including dust, vapours, insects, low temperatures, etc., would cause an ionization or photoelectric type detector to initiate a false alarm.
- Detectors shall have a proven operating temperature range of; -20°F/+250°F (-30°C/-120°C) exclusive of releasing temperature.
- The fusible link mechanism, when operated, shall be held firmly in place such that the contacts are prohibited from changing state, i.e. reverting back to the normal position.
- Detector shall provide two (2) terminal screws for each circuit wire connection. (See installation sketch on Page 3).

### Temperature and Spacing Chart

Model #	Function Type	Release Temp.	Temp. Rating	Max. Installation Temp	Color dot on fin	Inter-detector Spacing*
CR 135C	Dual-action	135°F / 57°C	Ordinary	100°F / 37.8°C	None	70ft / 21m
CR 165C	Dual-action	165°F / 71°C	Ordinary	140°F / 60°C	Grey	70ft / 21m
CR 200C	Dual-action	200°F / 93°C	Intermediate	160°F / 71°C	White	70ft / 21m
CF 135C	Fixed Temp. Only	135°F / 57°C	Ordinary	100°F / 37.8°C	Black	40ft / 12m
CF 165C	Fixed Temp. Only	165°F / 71°C	Ordinary	140°F / 60°C	Black and Grey	25ft / 7.5m
CF 200C	Fixed Temp. Only	200°F / 93°C	Intermediate	160°F / 71°C	Black and White	25ft / 7.5m
CF 285C	Fixed Temp. Only	285°F / 140°C	High	225°F / 107.2°C	Black and Blue	25ft / 7.5m

\* assumes a flat, uninterrupted ceiling at a height not exceeding 10ft / 3m.

Fire Detection Devices Ltd. heat detectors for fire alarm systems comply with UL 521 *Heat Detectors for Fire Protective Signaling Systems*, and ULC S531 *Standard for Heat Actuated Fire Detectors for Fire Alarm Systems*. The UL/ULC control number is 41H9, file number S2406. CSFM listing # 7270-1110:0100. Detectors featuring wire (pigtail) leads are included in these documents.

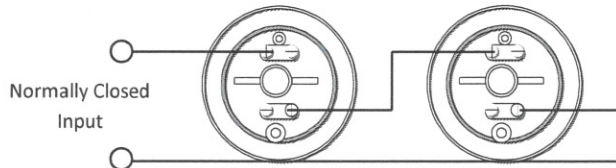


## FIRE DETECTION DEVICES LTD.

Durable . Reliable . Trusted . Canadian

### Installation:

On conventional, normally closed initiating circuits or when using an addressing module, contacts are installed in series with the circuit such that operation of the detector will create an open circuit condition to activate the fire alarm (24 hour) input. In some cases, resistor supervision may be added to the normally closed circuit in accordance with the panel manufacturer's requirements.



All wiring must be installed in compliance with the local Electrical Code using approved cable, AWG 18 minimum. Begin electrical connections by stripping approximately 1" (2.5 cm.) from the end of each wire. Insert the stripped end into the wire-retaining hole in the terminal bar, wrap clockwise around the terminal screw, and tighten.

### Testing:

- **Testing the "CR" series detector**  
Testing the Rate-of-Rise portion, is accomplished by applying heat from a controlled heat source, such as a hair blow dryer, held 8-12 inches away and aimed at the detector. The detector will respond within 6-10 seconds. Providing that the fusible link has not released, the detector will restore as it cools.  
NOTE: A heat gun should not be used as the heat output can easily fuse the detector.
- Portable test units designed specifically for this purpose are acceptable, and must be UL listed.
- Care must be taken to not allow the heat source to reach the device's fusing temperature. If the detector's fusing temperature is reached and the plunger is released, the detector will be in permanent alarm and must be replaced.
- Devices using open flame are prohibited from testing heat detectors. (ULC S536, ULC S537).
- **Testing the "CF" series detector**  
The Fixed Temperature Only detector, *cannot be tested by warming the unit* as permanent contact closure may result, requiring replacement of the detector. Removing a conductor (open) from a terminal connected to the input circuit will prove the circuit function and Zone identification.

### Contact Electrical Rating:

3A @ 125 VAC, 1A @ 28 VDC,  
0.3A @ 125 VDC, 0.1 A @ 250 VDC

### Mounting Hardware



Mounting Plate fits std. Octagon box.  
Mounting holes on 3.5" centers.

**CAUTION:** All wiring must be installed in compliance with the local electrical code using approved cable, AWG 18 minimum. Begin electrical connections by stripping approximately 1 in (2.5 cm) from the end of each wire. Insert the stripped end into the wire retaining hole in the terminal bar, wrap clockwise around the terminal screw, and tighten. Circuit wiring must be broken at each terminal to ensure proper supervision.