



# FIRE DETECTION DEVICES LTD.

THERMOFLEX® AUTOMATIC THERMOSTATS  
FOR FIRE ALARM SYSTEMS

## Installation Instructions for Models:

CR 135, CF 135, CR 165, CF 165, CR 200, CF200, CF 285



## Description:

- The “CR” and “CF” series of heat detectors are described as alarm initiating devices, single circuit with Normally Open contacts.
- The Model Number prefix “CR” indicates that the detector is a combination Rate-of-Rise and Fixed Temperature, often referred to as “Dual-action”. The Rate-of-Rise function allows the detector to close its contacts when the temperature at the ceiling increases at a rate of 8.4 Celsius degrees (15 Fahrenheit degrees) per minute. The contact closure initiates the Fire Alarm sequence. 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 F degrees) as indicated by the Model Number i.e. 135,165,200 and 285 degrees.
- 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 temperature as indicated by the model number. This detector is referred to as “Fixed Temperature Only, non-restorable”.

## Location:

- The “CR” series detectors are installed in areas where rapid increases in ceiling temperature *are not* expected. Such locations include dwelling units, storage cupboards, electrical closets, material storage rooms, shafts (other than stairwells), transformer vaults, electrical rooms, and sprinkler rooms.
- The “CF” series detectors are installed in areas where rapid increases in ceiling temperature *are* expected. Such locations include boiler rooms, industrial kitchens, commercial laundry rooms, janitor closets, change rooms with shower facilities, and saunas.
- It is important to consider ambient temperature conditions when selecting the detector's fusing temperature. See Engineering Specification (below).

**Engineering Specification:** Models CR 135, CR 165 and CR 200 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 135, CF 165, CF 200 or CF 285. Detectors shall be installed in areas where environmental conditions including dust, vapours, insects, etc., would cause an ionization or photoelectric type detector to initiate a false alarm.

Model #	Function Type	Release Temp.	Temp. Rating Range	Max. Installation Temp	Color dot on fin	Spacing between detectors*
CR 135	Dual-action	135°F / 57°C	Ordinary	100°F / 37.8°C	None	70ft / 21m
CR 165	Dual-action	165°F / 71°C	Ordinary	100°F / 37.8°C	Grey	70ft / 21m
CR 200	Dual-action	200°F / 93°C	Intermediate	150°F / 65.6°C	White	70ft / 21m
CF 135	Fixed Temp. Only	135°F / 57°C	Ordinary	100°F / 37.8°C	Black	40ft / 12m
CF 165	Fixed Temp. Only	165°F / 71°C	Ordinary	100°F / 37.8°C	Black and Grey	25ft / 7.5m
CF 200	Fixed Temp. Only	200°F / 93°C	Intermediate	150°F / 65.6°C	Black and White	25ft / 7.5m
CF 285	Fixed Temp. Only	285°F / 140°C	High	225°F / 107.2°C	Black and Blue	25ft / 7.5m

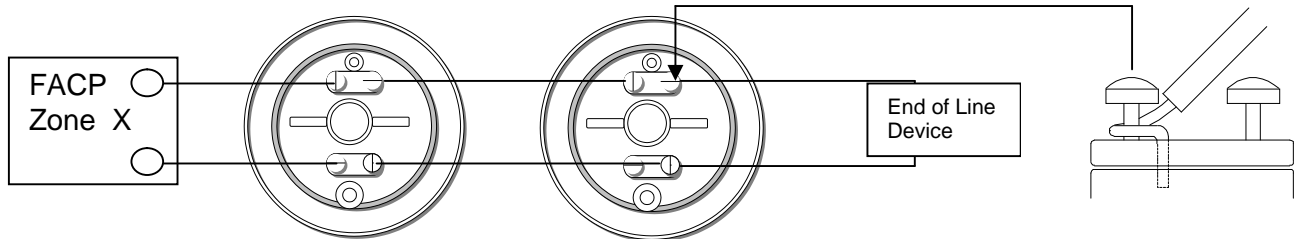
\* assumes a flat, uninterrupted ceiling at a height not exceeding 10ft / 3m.

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### Installation:

- On conventional, initiating circuits the detector is installed across the circuit such that operation of the detector will create a short circuit condition, required in order to activate the fire alarm control panel (FACP).



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. Circuit wiring must be broken at each terminal to ensure proper supervision.

- For use with Addressable/Analogue FACP's, the detector is connected to the appropriate Data Communication Link (DCL) by means of an addressing module, in accordance with the panel manufacturer's instructions.

### Contact Electrical Rating:

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

### Testing:

- Testing the "CR" series detector, i.e. 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.
- Portable test units designed specifically for this purpose are acceptable, and must bear a UL listing mark.
- 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.
- Testing the "CF" series detector, i.e. the Fixed Temperature Only, cannot be accomplished by warming the unit as permanent contact closure may result, requiring replacement of the detector. Shorting across the terminals will prove the circuit function and Zone identification.

### Detector Cut-away sketch:

