FIRE DETECTION DEVICES LTD.

THERMOFLEX® AUTOMATIC THERMOSTATS
FOR FIRE ALARM SYSTEMS

Installation Instructions for Models:
CR 135-2CO, CF 135-2CO, CR 165-2CO, CF 165-2CO, CR 200-2CO, CF200-2CO, CF 285-2CO

Description:

- The "-2CO" series of heat detectors are described as alarm initiating devices, double circuit, with ***one set of Normally Closed (N/C)*** contacts and ***one set of Normally Open (N/O)*** 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 *open* one set of contacts*, while closing* the other set of contacts when the temperature at the ceiling increases at a rate of 8.4 Celsius degrees (15 Fahrenheit degrees) per minute. The N/O contacts are commonly used to initiate an alarm condition, while the N/C contacts provide an ancillary function that requires the opening of a circuit to operate a device.
- 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 135-2CO, CR 165-2CO and CR 200-2CO 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 135-2CO, CF 165-2CO, CF 200-2CO or CF 285-2CO. 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.

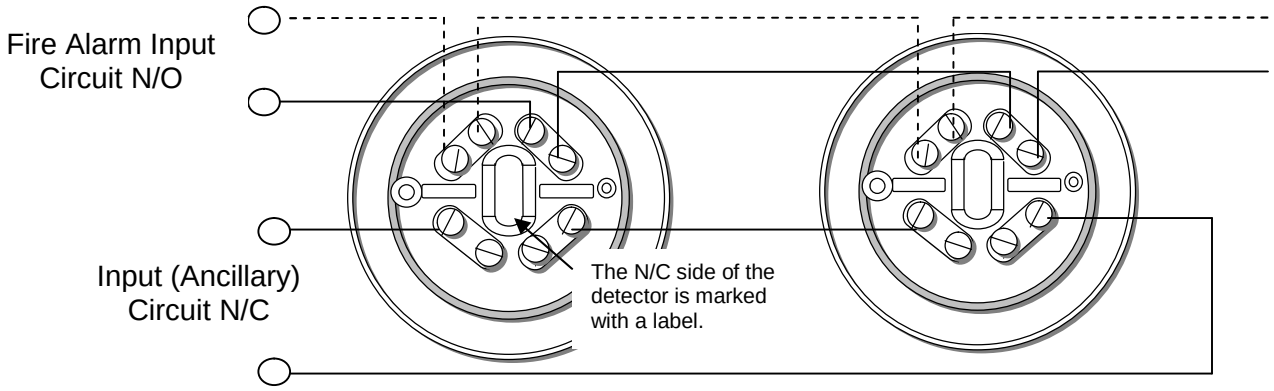
Model #	Function Type	Release Temp.	Temp. Rating Range	Max. Installation Temp	Color dot on fin	Spacing between detectors*
CR 135-2CO	Dual-action	135ºF / 57ºC	Ordinary	100˚F / 37.8˚C	None	70ft / 21m
CR 165-2CO	Dual-action	165ºF / 71ºC	Ordinary	100˚F / 37.8˚C	Grey	70ft / 21m
CR 200-2CO	Dual-action	200ºF / 93ºC	Intermediate	150˚F / 65.6˚C	White	70ft / 21m
CF 135-2CO	Fixed Temp. Only	135ºF / 57ºC	Ordinary	100˚F / 37.8˚C	Black	40ft / 12m
CF 165-2CO	Fixed Temp. Only	165ºF / 71ºC	Ordinary	100˚F / 37.8˚C	Black and Grey	25ft / 7.5m
CF 200-2CO	Fixed Temp, Only	200ºF / 93ºC	Intermediate	150˚F / 65.6˚C	Black and White	25ft / 7.5m
CF 285-2CO	Fixed Temp. Only	285ºF / 140ºC	High	225˚F / 107.2˚C	Black and Blue	25ft / 7.5m

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

90 Nolan Court, Unit 34, Markham, Ontario, Canada L3R-4L9 Fax(905) 477-2826, Tel(905) 479-7116
Electronic products dedicated to the safety of life and property
Web Site - http://www.firedetectiondevices.com Email – orders@firedetectiondevices.com

Installation:

- For conventional initiating circuits or when using an addressing module, the Normally Open set of contacts is used to initiate the alarm sequence. The Normally Closed set of contacts will be used to operate a local ancillary device that requires the opening of the circuit in order to be activated.
- The contact configuration relative to the corresponding terminals is indicated in the following sketch.



- 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.
- 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.
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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 the Fixed Temperature fusible link could be operated causing permanent operation of the contacts, requiring replacement of the detector.