Detector for Hazardous Locations

(Explosion-proof, Normally Open Contacts)

- Combination Rate-of-Rise & Fixed Temperature
  Model CR 135 EWT, CR 165 EWT, CR 200 EWT
- Fixed Temperature Only
  Model CF 135 EWT, CF 165 EWT, CF 200 EWT, CF 285 EWT

Description:

- The EWT Series of THERMOFLEX™ heat detectors for fire alarm systems are Explosion proof, Weather proof, Water-tight and Dust-tight.
- They are suitable for hazardous locations involving:
  Class I, Groups C and D
  Class II, Groups E, F and G
  Class III
  Weatherproof, water-tight and dust-tight applications
  Special purpose enclosures III, IV, and V (NEMA 4).

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 close* its contacts when the temperature at the ceiling increases at a rate of 8.4 Celsius degrees (15 Fahrenheit degrees) per minute. The closure of the contacts 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 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"*.

Application:

Class I, Group C - atmospheres containing ethyl ether vapours, ethylene, cyclopropane
Class I, Group D - atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, alcohol, acetone, lacquer solvent vapours, or natural gas.

Class II, Group E - atmospheres containing metal dust, including aluminum magnesium and their commercial alloys, and other metals of similarly hazardous characteristics.
Class II, Group F - atmospheres containing carbonaceous dusts including carbon black, coal or coke dust
Class III, Group G - atmospheres containing flour starch or grain dust

Class 3 – A location where there is a danger of explosion due to the presence of flammable fibers or flyings

The EWT series meets the requirements of **Division 1** "A location where an explosive mixture of gas, vapor, dust, fibers or flyings, and air *may exist under normal operating conditions*".
The EWT cast aluminum enclosure is acceptable for locations requiring Weatherproof, Water-tight and Dust-tight applications. Class II devices require Dust tight enclosures.
Our enclosure meets NEMA 4 and CSA IV requirements.

Hostile Environments:

With its non-metallic diaphragm, the detector can operate normally at low temperatures, making it suitable for non-heated, exposed or chilled spaces including garages, boat decks, engine rooms, tunnels, etc., or in corossive or high humity environments.

Engineering Specification:

- Specify Models CR 135 EWT, CR 165 EWT and CR 200 EWT detectors (*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.
- Specify *Fixed Temperature Only* units i.e. CF 135 EWT, CF 165 EWT, CF 200 EWT or CF 285EWT, in areas where sudden increases in ceiling temperature are normal.
- 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.

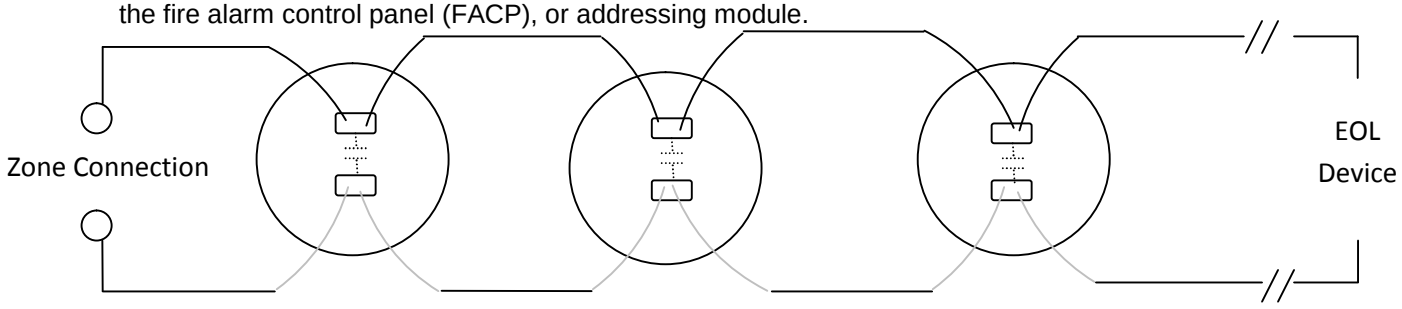
Temperature and Spacing Chart

Model #	Function Type	Release Temp.	Temp. Rating	Max. Installation Temp	Color dot on fin	Inter-detector Spacing*
CR 135 EWT	Dual-action	135^{0}F / 57^{0}C	Ordinary	100˚F / 37.8˚C	None	50ft/15m
CR 165 EWT	Dual-action	165^{0}F / 71^{0}C	Ordinary	100˚F / 37.8˚C	Grey	50ft/15m
CR 200 EWT	Dual-action	200^{0}F / 93^{0}C	Intermediate	150˚F / 65.6˚C	White	50ft/15m
CF135 EWT	Fixed Temp. Only	135^{0}F / 57^{0}C	Ordinary	100˚F / 37.8˚C	Black	30ft/9m
CF 165 EWT	Fixed Temp. Only	165^{0}F / 71^{0}C	Ordinary	100˚F / 37.8˚C	Black and Grey	30ft/9m
CF 200 EWT	Fixed Temp, Only	200^{0}F / 93^{0}C	Intermediate	150˚F / 65.6˚C	Black and White	30ft/9m
CF 285 EWT	Fixed Temp. Only	285^{0}F / 140^{0}C	High	225˚F / 107.2˚C	Black and Blue	30ft/9m

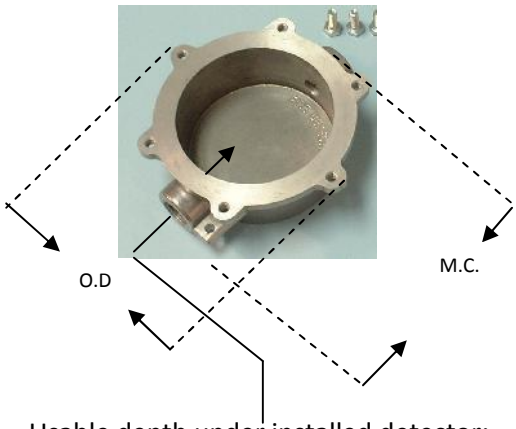
***** assumes a flat, uninterrupted ceiling at a height not exceeding 10ft / 3m.

Installation:

On conventional, initiating circuits or when using an addressing module, contacts are 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), or addressing module.



All wiring must be installed in compliance with the local Electrical Code using approved cable, AWG 18 minimum. Each detector has 2 white, and 2 black pigtail leads. One pair is connected to one side of the N/O contact and the other pair is connected to the other side of the contact. The detector, being a shorting device, is not polarity sensitive.



Usable depth under installed detector:
0.75”/19 mm

O.D. – Outside (overall) Diameter: 5.5”/140mm
M.C. – Mounting Center: 5.25”/133.35mm
Mounting Holes Diameter: 0.25”/6.35mm
The EWT series detector is installed using ½ “ threaded conduit in accordance with local electrical code requirements.

Contact Electrical Rating:
3A @ 125 VAC, 1A @ 28 VDC,
0.3A @ 125 VDC, 0.1 A @ 250 VDC

Unit Weight: 2.0lb/.90Kg

Testing the Rate-of-Rise and Fixed Temperature (Dual-action) detector:

The rate-of-rise function is tested with a controlled heat source. In many instances, electrical testing devices are *not* permitted in hazardous areas if the particular hazard is known to be present. Under these circumstances, the detector can be tested using very warm water, up to 100°F/40°C. An ordinary paper coffee cup filled with water and held up against the casting such that the detector head is immersed, will provide the level of warmth required to activate the rate-of-rise function when eight to ten seconds have elapsed. The same result will be achieved using a spray bottle, with the spray directed onto the detector head.
If no hazard is present, a hair blow dryer (not a heat gun) may be used. With the hair dryer held ten to twelve inches from the detector head, allow for 15 to 20 seconds for the detector to operate. Caution must be taken to ensure that the heat applied does not reach the fusing temperature of the Fixed Temperature portion.
The detector will restore to normal as it cools.

Testing the Fixed Temperature Only detector:

This detector cannot be tested with a heat source. There is no rate-of-rise function. Applying heat will eventually activate the fusible link. If this happens, the detector head assembly must be replaced. The detector leads can be shorted (white wire to black wire) while connected to the fire alarm circuit. This will simulate the operation of the detector and will confirm zone liocation.

This product is listed by Underwriters’ Laboratories File E210635 revised 2003-08-11. The CSA File # is LR-17996.