

Features

The 2098- Fire Detector range is designed especially for fire detection and alarm systems. These are rate compensation type detectors, they respond quickly to a rapid rise in temperature, and avoid false alarms.

Detectors are available in either 135°F or 194°F ratings. Models are self-restoring, hermetically sealed, shock and corrosion resistant, and tamper proof.

For application requirements, testing and maintenance, refer to *NFPA Standard 72, Standard for Automatic Fire Detectors*.

Specifications

Table 1: Heat Detector SKUs

SKU	Description	
2098-9494	Heat detector adaptor AP-P	Decorative white plastic adapter plate for mounting. This is only available for mounting 302, 302-AW and 302-ET detectors.
2098-9491	Heat detector vert N/O 302-ET-194	Hermetically sealed for moisture proof or dust proof installations. Requires no special back box. Has plastic hexagonal grip bushing with 1/2 in. conduit threads for attachment to threaded hub cover, or any outlet box. You must hand tighten only. For indoor and outdoor use. Protect from direct sunlight and adverse weather conditions.
2098-9490	Heat detector vert N/O 302-ET-135	
2098-9489	Heat detector vert N/O 302-EPM-194	Explosion proof for installation in hazardous locations.
2098-9488	Heat detector vert N/O 302-EPM-135	Has hexagonal grip bushing with 1/2 in. conduit threads for attachment to threaded hub cover of series JL fixture fitting as manufactured by Killark Electric Co., or equal. You must hand tighten only. For interior use.
2098-9487	Heat detector vert N/O 302-AW-194	Hermetically sealed for moisture proof or dust proof installations. Requires no special back box. For indoor and outdoor use. Protect from direct sunlight and adverse weather conditions.
2098-9486	Heat detector vert N/O 302-AW-135	
2098-9484	Heat detector vert N/O 302-135	For interior mounting in any atmosphere that is compatible with terminal screw type connections.

Operation

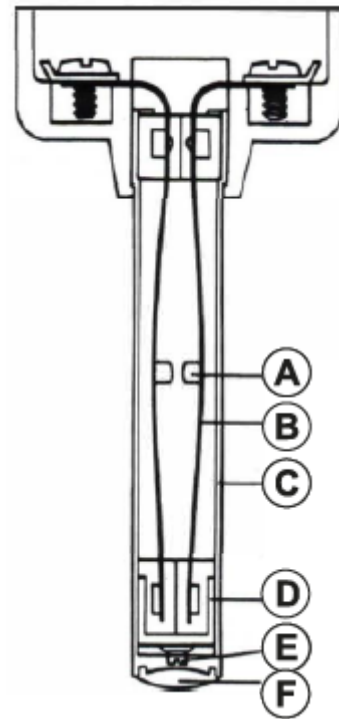
The detector is designed as a high expansion aluminum tube which encases two insulation struts with opposing open constant points, see [Figure 1](#).

The high expansion sensing shell and the expansion struts have a different coefficient of expansion. A slow rate of temperature rise allows the heat to penetrate the inner expansion struts. Therefore, the tubular shell and the struts expand slowly until the total device has been heated to its rated temperature level of 135° F or 194° F.

At this temperature, the silver contact points close, which initiates the alarm. When subjected to a rapid rate temperature rise there is not as much time for heat to penetrate the inner strut. The shell rapidly lengthens so that the struts join at a lower level. This compensates for the thermal lag inherent in conventional fixed temperature detectors.

When the surrounding air temperature falls below the rated temperature, the shell contracts, forcing the contacts to open and automatically reset the detector.

Figure 1: Detector cut-away view



Feature	Description
A	Fine silver contact points
B	Expansion struts
C	High expansion sensing shell .040 anodized
D	High control sleeve
E	Setting screw
F	Devcon hermetic seal

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7165-0026:314 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local product supplier for the latest status. Listings and approvals under Time Recorder Co. are the property of Tyco Fire Protection Products Westminster.

Installation Requirements

Detectors are non-directional and can be mounted in a horizontal or vertical orientation.

For smooth ceilings with heights of 8 to 10 ft, detectors are UL-listed for coverage up to 50 ft × 50 ft (2,500 ft²).

Do not install detectors, hub covers, and outlet boxes in direct sunlight.

Refer to *NFPA 72* for detector spacing requirements and additional installation considerations.

Table 2: Temperature ratings and maximum ceiling temperature

Temperature Rating	Maximum Ceiling Temperature (FM)	Maximum Ceiling Temperature (UL)
135°F	115°F	100°F
194°F	155°F	150°F

Table 3: Electrical rating

Voltage	Current (amperes)
6-125 VAC	5 A
6-25 VDC	1 A
125 VDC	0.5 A

Approvals and Listings

Table 4: Approvals and Listings

Underwriters' Laboratories (UL)
Factory Mutual (FM)
California State Fire Marshall. Listing No. 7270-0021:001
MEA Acceptance # 193-03-E