

AL-DCA-135/190

# Combination RR/FT Heat Detector



**MODEL AL-DCA-135/190**

Hochiki America Heat Detectors are designed and built to rigid standards so that they offer sensitive detection and long-life dependability. Their combined rate-of-rise/fixed temperature sensing capabilities give the user the utmost in reliability for sensing heat related to fire. Short duration heat fluctuations do not cause unwanted alarms. Latching alarm LED is available when using the AL-HS-(X)L base option. UL Listed for 50 ft. spacings.

### Operation

**Rate-of-Rise Principle:** Basically, the rate-of-rise element consists of an air chamber, a flexible metal diaphragm and a moisture-proof, trouble-free vent which is calibrated to preset limits.

It is well known that air expands as it is heated, and contracts as it is cooled. For normal, day-to-day fluctuations of temperature, the expansion and contraction of the air within the chamber is automatically compensated by the "breathing" action of the vent. However, when a fire occurs and air temperatures rise very rapidly, the air in the chamber expands faster than it can be vented. This creates a pressure within the detector which distends the diaphragm and closes electrical contacts.

The rate-of-rise action is not related to any fixed temperature level, but responds with the utmost promptness when the rate of temperature rise exceeds 12°F per minute. If the heat is removed, the air within the chamber contracts, relieving the pressure and restoring the electrical contacts to their normally open circuit position.

**Fixed Temperature Principle:** This is entirely independent of the rate-of-rise element and is the self-restoring type. In a slow-developing fire, the temperature may not increase rapidly enough to operate the rate-of-rise element, this is less than 11°F per minute of temperature rise. However, when the fixed temperature element is heated to its rated temperature, 135°F or 190°F depending upon model used, it operates by the Klixon disc principle.

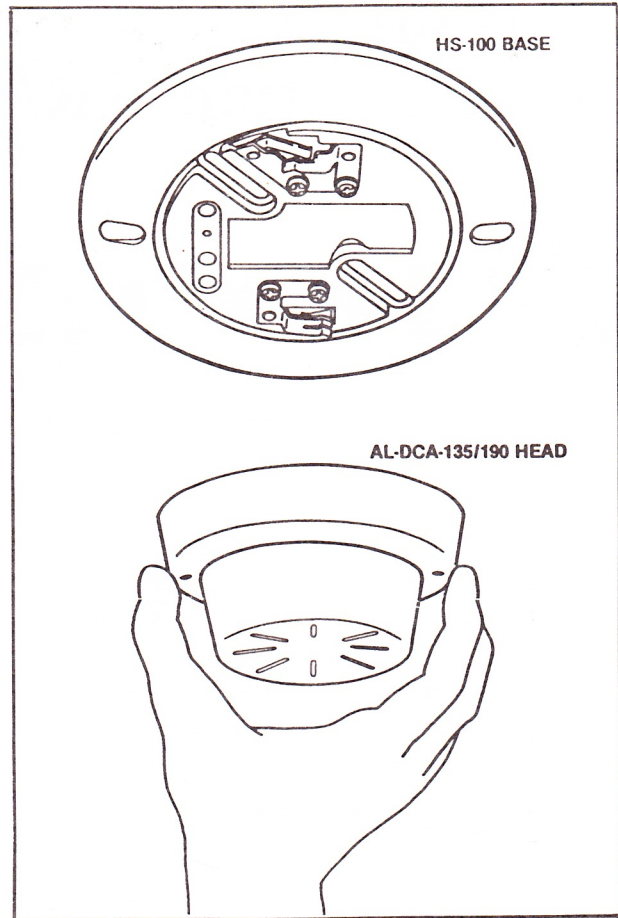
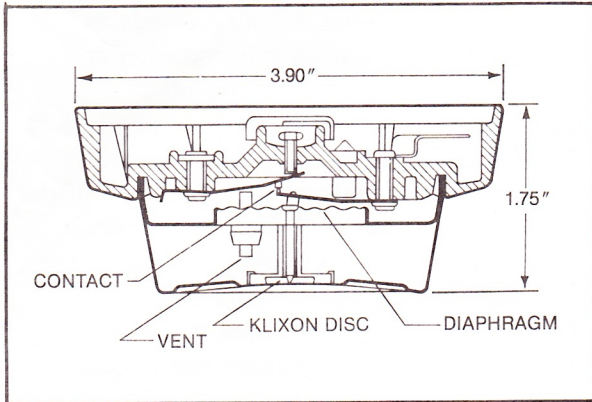
■ In cases where life safety is required, smoke detectors are recommended.



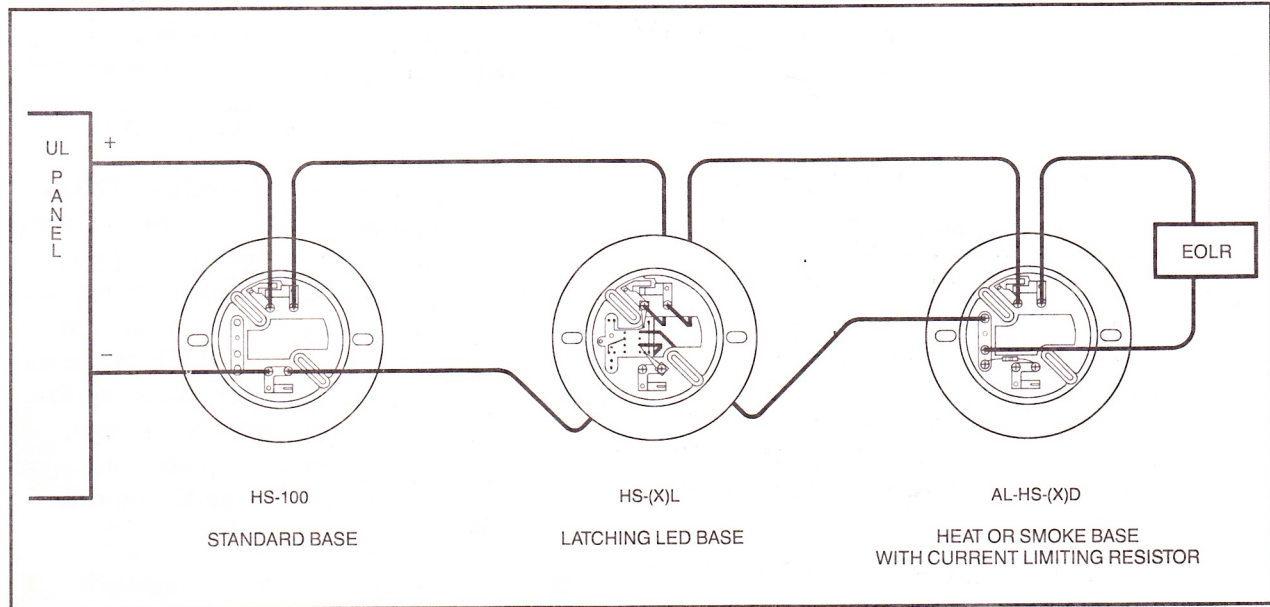
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## General Data

RATE OF RISE RESPONSE TIME:	FASTER THAN 12°/MIN. SIGNALS IN LESS THAN 2 MINUTES.
FIXED TEMPERATURE RESPONSE:	135°F ± 7.5°F TEMPERATURE 190°F ± 7.5°F TEMPERATURE
CONTACT RATING:	N/O CONTACTS 300mA @ 60V
COLOR:	OFF-WHITE
MOUNTING:	BAYONET TWIST/LOCK BASE NO. HS-100, HS-(X)L or HS-(X)D



## Wiring



## Engineering Specifications

Automatic heat detectors shall be combination rate-of-rise and fixed temperature — rated at 135°F for areas where ambient temperatures do not exceed 120°F and 190°F for areas where ambient temperatures exceed 120°F but not 160°F. The rate-of-rise element shall consist of an air chamber, a flexible metal diaphragm, and a factory calibrated moisture-proof, trouble-free vent and shall operate when the rate of temperature rise exceeds 12°F per minute. The fixed temperature element shall consist of a bimetallic disc and actuator shaft. Detectors shall have a smooth ceiling rating of 2500 square feet. Electrical contacts shall be normally open, rated at 100mA @ 60 VDC. Detectors shall be installed in accordance with the National Fire Protection Agency Standard #72E and the spacing rating assigned by Underwriters' Laboratories. Detectors shall be located as shown on the drawings. Automatic heat detectors shall be listed by Underwriters' Laboratories.