

SERIES 08-84 Heat Detectors

Detection and Release Devices

Temperature Options from 140°F to 500°F

FEATURES

- UL521 Listed Component Heat Actuated Devices for Special Applications
- Snap Action Switching
- Automatic Reset
- Economical Design
- Tamper-proof Preset Temperature
- 100% Factory Temperature Tested

APPLICATIONS

- Kitchen Hoods
- Vehicle Systems
- Specialty use applications

DESCRIPTION

The Series 08-84 is a probe style fixed temperature special applications heat detector used to activate fire suppression systems using clean agents, CO₂, inert gases, wet or dry chemicals, or water. The snap disc action allows the temperature to reach the set point, then the disc snaps to provide rapid, positive contact actuation.

To ensure hermeticity, the probes feature welded, stainless steel construction with glass to metal seals. Switch design and construction provides high vibration and shock resistance.

AGENCY CERTIFICATIONS



S4968: UL 521, Edition 7, Heat Detectors for Fire Protective Signaling Systems

CAN/ULC-S530-M91-REV 1, Standard for Heat Activated Fire Detectors For Fire Alarm Systems



RoHS Compliant

SPECIFICATIONS

Electrical Rating	3 Amp at 30 VDC (Resistive) 3 Amp at 120/240 VAC (Resistive)
Dielectric Strength	1500 VAC terminals to case
Insulation Resistance	100 Megohms minimum at 500 VDC
Switch Action	SPST (Normally open)
Temperature Range	140°F to 500°F
Tolerances	140°F to 280°F ±10°F 325°F to 360°F ±15°F 450°F to 500°F ±20°F
Housing Material	Stainless Steel (Probe and head)
Probe Length	9/16, 1, 2, or 3 inches
Termination	6 inch PTFE Lead Wires, Detectors set at 450°F and above use TGGT Wires
Mounting Hex Head	1/2-14 PTF SAE Short
Coupling Head	1/2-14 PTF SAE Short

Note: The Fenwal 08-84 is tested at the factory for temperature setting and conformance to specifications. The actual installed performance in the field may vary due to the nature of the installation. The customer is responsible for determining fitness for use in their specific equipment.

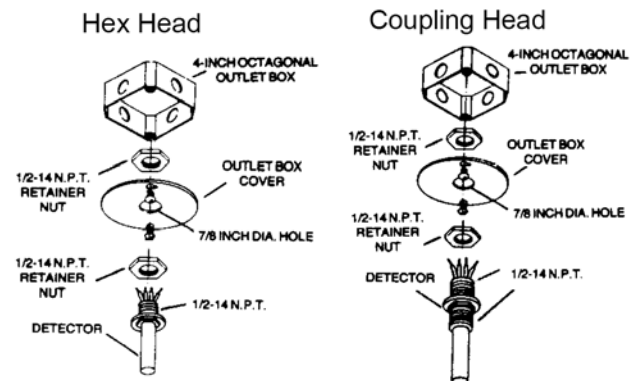


INSTALLATION

Note: Fenwal Controls recommends using standard 4-inch octagonal outlet boxes to mount detectors.

- Attach detector to outlet box cover through a 0.875 inch diameter hole and using two 1/2-14NPT retainer nuts as indicated for 1/2" mounting heads.
- Connect system wiring to detector per wiring diagrams and applicable electrical codes.
- **Ordinary Locations:** The detectors to be installed in grounded metallic junction boxes only. They are to be secured to the boxes using two lock nuts, one on either side of the mounting plate. detectors are not to be installed in non-metallic junction boxes.
- **Outdoor Locations:** Mount the detector in a Listed NEMA Type 3 outlet box, cover and conduit, with 1/2- 14 NPT threads and a minimum thread engagement of 5 full turns. Use pipe plugs with RTV silicone rubber sealant, a rubber gasket and self-sealing screws to attach the cover, and PTFE thread sealtape on the detector threads. For additional requirements consult the local fire department, the National Electric Code and/or the local authority having jurisdiction.

Note: Do not exceed a maximum torque without thread lubricant of 20 foot-pounds (27.1 Newton Meters).

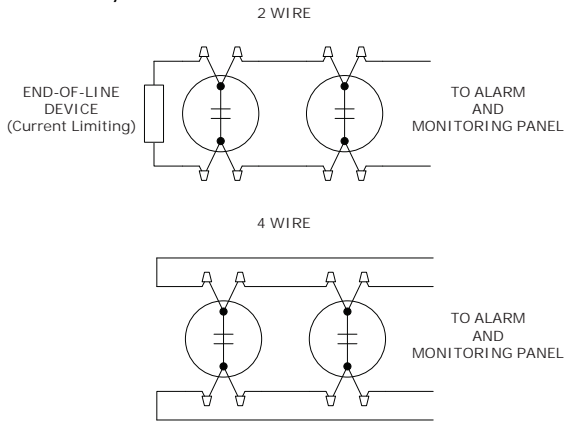


FIELD WIRING REQUIREMENT

Field wiring must be capable of withstanding the maximum anticipated ambient temperature in the application. For Type G and H Detectors, field wiring should be capable for continuous operation at the maximum rated ambient temperature of 250°C.

SYSTEM WIRING

Typical Fire Alarm System Method



- When installed with mounting brackets, the electrical spacing from bare live parts of the control to the mounting bracket SHALL not be less than:
 - 1/4 in. through air and over insulating surfaces between the wiring terminals and other metal parts
 - 1/4 in. through air between the wiring terminals and the plane of the mounting surface
 - 1/8 in. through air or over insulating surfaces between uninsulated live-metal parts and dead-metal parts and between live-metal parts of opposite polarity
 - 1/16 in. through air or over insulating surfaces between fixed uninsulated live-metal parts and dead-metal parts of rigidly clamped special assemblies.
- Determine strain relief based on the end use application.

FUNCTIONAL TEST

The functional test of a detector is a Go/No Go test. Controlled heat is applied to the device until it activates and then let to cool to see if it returns to its normal state.

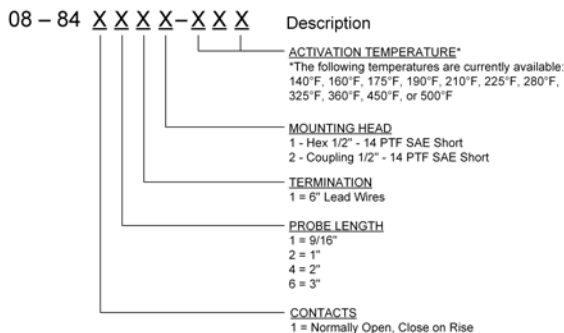
STANDALONE TESTING

To functionally test a detector that is not connected to a circuit, connect a 24 Volt lamp and power source in series with the detector. Gently heat the detectors with a heat lamp or other convenient source (see WARNING below). When the lamp activates, remove heat immediately to prevent damage to the detector. Allow the detector to cool and return to the state prior to being heated. If the detector fails to activate or after cooling fails to return to its original state, the detector has failed the functional test and requires replacement.

CIRCUIT TESTING

A functional test of an in-circuit detector should only be performed if the appropriate steps have been taken to prevent an unwarranted system activation/deactivation, or unwarranted discharge of an automatic fire extinguishing system.

PART NUMBER CONFIGURATION



CONDITIONS OF ACCEPTABILITY

When installed in the end use equipment, consider the following:

- Mount the equipment within a suitable enclosure, complying with the requirements for the end use application.
- Determine the acceptability of the terminal or leads, including temperature and securedness, based on the end use application.
- The terminals are not acceptable for field connections, only factory connections. Determine the acceptability of the connections to these terminals, including temperature and securedness, based on the end use application.

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For an automatic fire extinguishing system, all releasing devices need to be physically disconnected from the releasing circuits of the control unit prior to any test. Refer to the automatic fire extinguishing system's maintenance manual for the appropriate steps to be taken to physically disconnect the releasing devices prior to testing the detector. Failure to take the necessary steps could result in an accidental discharge that could cause injury and/or property damage.

To functionally test a detector that is connected to a circuit requires the ability to identify the activation and deactivation of the unit. Gently heat the units with a heat lamp or other convenient source (see WARNING below). When the circuit activates indicating that the detector has changed activated, remove heat immediately to prevent damage to the detector. Allow the detector to cool and return to the state prior to being heated. If the detector fails to activate or after cooling fails to return to its original state, the detector has failed the functional test and requires replacement.

- DO NOT overshoot the setpoint of the unit by more than 100°F (55°C). DO NOT contact the sensing shell with a heating device. Either action could result in a shift of the set point temperature or damage the unit.**
- Keep the sensing shell of the unit free from paint, grease, oil, etc. If a buildup occurs, do not attempt to remove the buildup. Replace the unit.**
- Detectors mounted in an area subject to physical abuse or damage must be suitably protected without obstructing the thermal airpath to the unit.**
- Do not install the unit where the shell would be physically damaged by sand, grain, rocks, etc.**
- Any detector that has been involved in a fire or damaged must be replaced.**
- Do not over torque the unit when installing. Recommended practice is to hand tighten the unit. Then using a suitable sized wrench, turn 1 1/2 additional turns without damaging the hex surfaces.**
- Consult the factory for special precautions necessary for outdoor use or moist environments.**

ANY OF THE ABOVE COULD CHANGE THE FACTORY TEMPERATURE SETTING, WHICH MAY RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY OR DEATH. IT IS POSSIBLE FOR A UNIT TO HAVE BEEN ABUSED OR DAMAGED AND NOT DISPLAY ANY OUTWARD INDICATION OF THE DAMAGE. ALL UNITS SHOULD BE TESTED PERIODICALLY IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION REQUIREMENTS (72e) OR THE AUTHORITY HAVING LOCAL JURISDICTION.