FEATURES:

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- **Five Sensitivity Modes**
- **Alarm Flag for Fast alarm reporting**
- **360 ° visibility**
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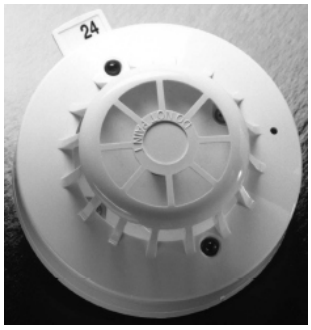
- **Internal Non-Volatile memory**
- **Remote test, Remote LED**
- **Digital Communications**
- **Multiple Base configurations**
- **Compatible with Evax Fire Panels**

EFD-TH
Addressable Heat Detector



Evax Fire Addressable Heat detector

MEA Pending

ISO 9001 Certified Management System

Heat Detector
The Evax Fire Discovery heat detector, distinguishable by the low airflow resistant case, uses a single thermistor to sense the air temperature around the detector. This type of detector is particularly useful where the environment is dirty or smoky under normal conditions.

Operating Principles
Evax Fire Discovery heat detectors have a common profile with ionization and optical smoke detectors but have a low air flow resistance case made of self-extinguishing white polycarbonate.
The Evax Fire Discovery heat detector uses a single thermistor to sense the air temperature at the detector position. The thermistor is connected in a resistor network, which produces a voltage output dependent on temperature.
The design of the resistor network, together with the processing algorithm in the microcontroller, gives an approximately linear characteristic from 10°C to 80°C. This linearized signal is further processed, depending on the response mode selected, and converted to an analogue output.
For the European standard version of the detector, the five modes correspond to five “classes” as defined in EN545:2000. The classes in this draft standard correspond with different response behavior, each of which is designed to be suitable for a range of application temperatures. All modes incorporate “fixed temperature” response, which is defined in the draft standard by the “static response temperature”. The application temperatures and static response temperatures for all response modes are shown separately.
In addition to the basic classification, a detector may be given an “R” or “S” suffix. The “R” suffix indicates that the detector has been shown to have a rate-of-rise characteristic.
Such a detector will still give a rapid response even when starting from an ambient temperature well below its typical application temperature. This type of detector is therefore suitable for areas such as unheated warehouses in which the ambient temperature may be very low for long periods.
The “S” suffix on the other hand indicates that the detector will not respond below its minimum static response temperature even when exposed to high rates of rise of air temperature.
This type is therefore suitable for areas such as kitchens and boiler rooms where large, rapid temperature changes are considered normal.

Sensitivity Selection
Each detector in the Evax Fire Discovery range can operate in one of five response modes, which can be selected from the control panel. Mode selection depends on application Mode 1 will give a higher sensitivity to fire than Mode 5. The selection of the most suitable mode depends on the application.

User bytes and other stored data
All Evax Fire Discovery devices contain non-volatile memory, in the form of Electrically Erasable Programmable Read Only Memory (EEPROM), which is included primarily to store data needed for the correct operation of the device. However, four bytes of this EEPROM are available to the user and can be accessed by the control panel through the protocol. This block of non-volatile memory can be used, for example, to store the installation date, the site code or date of last service.

Conventional alarm facility
Evax Fire Discovery devices should be polled at regular intervals to maintain communication with the control panel and therefore enable correct monitoring of the protected premises. However, if the polling mechanism fails, for example because of a processor failure in the panel, the internal operation of the Evax Fire Discovery device will be unaffected as long as a DC supply is maintained. After 108± 4 seconds without protocol, the device will automatically switch to its conventional alarm mode. In this mode it will operate as if it were a conventional detector and will impose an alarm signal on the loop if an alarm condition is detected by the internal processing. The alarm signal takes the form of periodic current pulses, which can be detected by simple hardware in the control panel.

	Application Temperature ° F		Static Response Temperature ° F		
MODE	Typica	Max	Minimum	Typical	Max
1	77°	122°	129°	134°	149°
2	77°	122°	129°	141°	158°
3	77°	122°	129°	141°	158°
4	131°	176°	183°	194°	212°
5	131°	176°	183°	1 94°	212°

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Flashing LED

All Evax Fire Discovery detectors have two integral LED indicators, which can be illuminated at any time by the control panel to indicate devices in alarm. When activated, the LEDs will draw an extra 3mA from the loop. In addition to this mode of operation LEDs will flash each time the device is polled. The device does not draw extra current in this mode since the LED current is part of the normal current pulse reply from the device. It is possible to disable the flashing LED mode by writing to one of the memory locations.

Remote test feature

This feature, available on all Evax Fire Discovery detectors is enabled from the CIE by changing the state of a forward command bit. On receipt of the command the detector is forced by electrical means into an alarm condition. After a delay of approximately 10 seconds due to signal processing, an analogue value of between 54 and 120 nominally 85 is returned, provided that the detector is functioning correctly. This value is sustained until the forward command bit is changed back to its original state, after which a period of 40 seconds is required for the detector to return to its normal analogue value.

Rejection of transient signals

All Evax Fire Discovery detector algorithms are designed to give low sensitivity to very rapid changes in the sensor output, since these are unlikely to be caused by real fire conditions.
This is achieved by digital low-pass filtering of the sensor values which optimizes the rejection of false alarm sources while maintaining the response to fire.

Engineering Specification

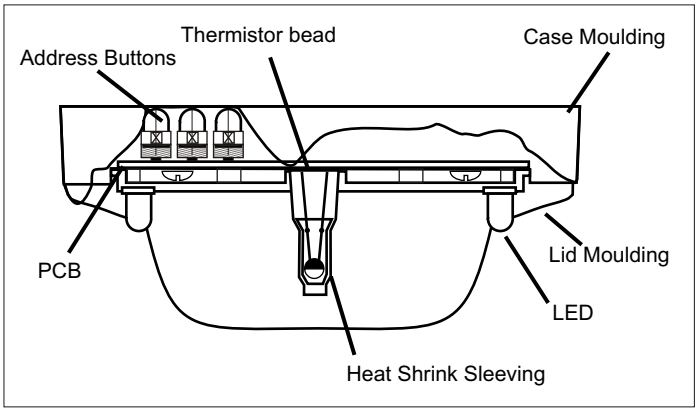
The heat detector shall be capable of several mounting base operation options and be capable of 5 different modes of operation; each mode shall adjust the alarm threshold as well as the temperature response. The base shall have a permanently addressable card with the address clearly visible. The detector shall contain integral LED that will latch in when the unit goes into alarm. RF suppression techniques shall be employed to minimize false alarms. Detector shall be capable of electronic storage of non-volatile memory. The detector shall have automatic conventional false alarm mode if the detectors polling mechanism should fail. The detector shall transmit using digital protocol and shall be Evax part number EFD-TH where indicated on plans.

How to Order:

EFD-TH	**58000-450** Addressable Heat Detector Head
EFX-B4	**45681-210** 4” mounting base w/Xpert card
EFX-B4I	**45681-211** 4” Isolator mounting base
EFX-B4ISO	**45681-321** 4” base w built in isolator & Xpert card
EFX-B6LP	**45681-234** 6” low profile base w/Xpert card
EFX-B6R	**MB-RLYT-AA** 6” low profile base w/relay, Xpert card
EFX-B6SND	**MB-SDRT-AA** 6” low profile base w/ sounder, Xpert card
EFX-B6EZ	**45681-250** 6” E-Z fit mounting base w/ Xpert card
EFX-ISOH	**55000-750** Isolator head only use w/EFX-B4I
EFX-XPERT	**45682-127** Pre-programmed Xpert address cards 1-126
EFX-BLNKX	**38531-771** Blank Xpert programming cards (per 12)

TECHNICAL DATA

Evax Fire Discovery Heat Detector
Specifications are typical at 24V, 23°C and 50% relative humidity unless otherwise stated.
Detection principle: Temperature sensitive resistance.
Type code:, 2 1 0 4 3 7 6 5**,** 1 1 0 0 0 0 0 0
Supply wiring: Two-wire supply, polarity insensitive
Terminal functions: L1 & L2 supply in and out connections
+R remote indicator positive connection (internal 2.2k resistance to positive)
R remote indicator negative connection (internal 2.2k resistance to negative)
Operating voltage: 1728V DC
Communication protocol: Evax Fire Discovery 59V peak to peak
Quiescent current: 500µA average 750µA peak
Power-up surge current: 1mA
Maximum power-up time: 10s
Alarm current, LED illuminated: 3.4mA
Remote output characteristics: Connects to positive line through 4.5k (5mA maximum)
Alarm level analogue value: 55
Alarm indicator: 2 red Light Emitting Diodes (LEDs), Optional remote LED
Temperature range:
Max. continuous operating See Chart
Min. continuous operating +32°F (0°C)
Min. operating -4°F (20°C) (no condensation/icing)
Storage -22° to +176°F (30°C to +80°C)
Humidity: 0 to 95% relative humidity (no condensation)
Vibration, Impact and Shock: To EN545:2000
IP rating: 53
Dimensions: 3.93” (100mm) diameter; 1.65” (42mm) height
Weight: Detector 3.68oz (105g), Detector in base 5.62oz (160g)
Materials: Housing: White polycarbonate V0 rated to UL94
Terminals: Nickel plated stainless steel



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FIRE SOLUTIONS