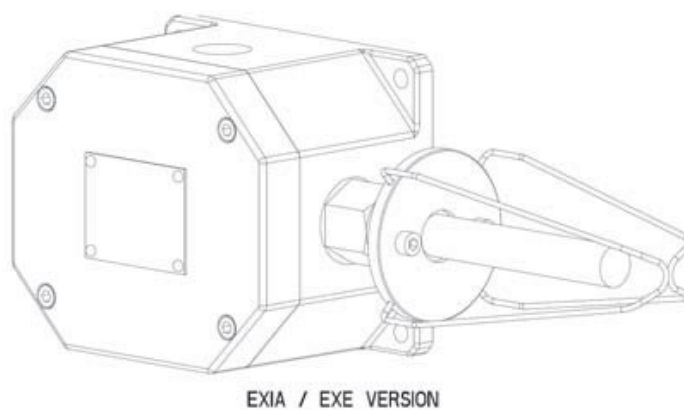
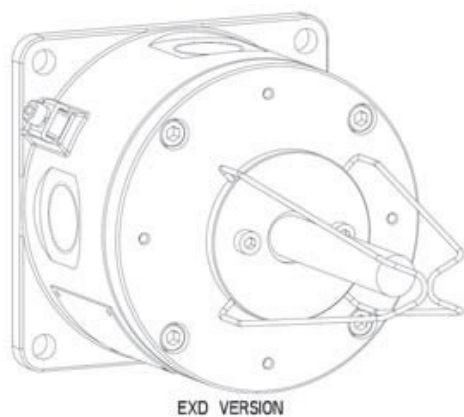


Heat detector HD1



EAT•N

Powering Business Worldwide

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1.0 INTRODUCTION

The HD1 heat detector has been designed for use in flammable atmospheres and harsh environmental conditions. The marine grade alloy (Exd) or Glass Reinforced Polyester (Exem and Exia versions) cover and enclosure are suitable for use offshore or onshore, where light weight combined with corrosion resistance and strength is required.

2.0 GENERAL SAFETY MESSAGES AND WARNINGS

All instructions and safety messages in this manual must be followed to allow safe installation of the device. The device must only be installed and maintained by correctly trained site personnel/installers.

- i. To reduce the risk of ignition of hazardous atmospheres and shock, do not apply power to the device until installation has been completed and the device is fully sealed and secured.
- ii. To reduce the risk of ignition of hazardous atmospheres and shock, keep device tightly closed when the circuit is energised.
- iii. Before removing the cover for installation or maintenance, ensure that the power to the device is isolated.
- iv. Following installation, test the device to ensure correct operation.
- v. Following installation ensure a copy of this manual is made available to all operating personnel.
- vi. When installing the device, requirements for selection, installation and operation should be referred to e.g. IEE Wiring Regulations and the National Electrical Code' in North America. Additional national and/or local requirements may also apply.
- vii. Cable termination should be in accordance with specification applying to the required application. MEDC recommends that all cables and cores should be correctly identified. Please refer to the wiring diagram in this manual (or separate diagram provided with the unit).
- viii. Ensure that only the correct listed or certified cable glands are used and that the assembly is shrouded and correctly earthed.
- ix. Ensure that only the correct listed or certified stopping plugs are used to blank off unused gland entry points and that the NEMA/IP rating of the unit is maintained.
- x. MEDC recommend the use of a sealing compound such as HYLOMAR PL32 on the threads of all glands and stopping plugs in order to maintain the IP rating of the unit.
- xi. For the Exem and Exia versions, a suitable sealing washer must be fitted to all glands and stopping plugs fitted into the enclosure.
- xii. The internal earth terminal, where fitted, must be used for the equipment grounding and the external terminal, if available, is for a supplementary bonding connection where local codes or authorities permit or require such a connection.
- xiii. When installing the device, MEDC recommends the use of stainless steel fasteners. Ensure that all nuts, bolts and fixings are secure.
- xiv. Note: The purchaser should make the manufacturer aware of any external effects or aggressive substances that the equipment may be exposed to.
- xv. Potential electrostatic charging hazard, protect from direct airflow from exhaust ducts and the like which may cause charge transfer. If the unit requires cleaning, only clean the exterior with a damp cloth to avoid electrostatic charge build up. Ensure the equipment is correctly earthed.
- xvi. Installation shall be in accordance with IEC60079-14.

3.0 INSTALLATION

General

The heat detector is mounted via 4 off Ø9mm (Exd version) or 4 off Ø7mm (Exem and Exia versions) fixing holes in feet on the base of the unit.

The fixing holes have been designed to accept M8

(Exd version) or M6 (Exe/Exi versions) screws or bolts.

The heat detector has been designed to operate in any attitude.

Removing/replacing the Cover

Exd version: Unscrew and remove the 4 off M6 screws (5mm A/F hexagon key required) and lift the cover clear of the base. The screws are not captive and should be kept in a safe place during cable termination.

Exem/Exi versions: Unscrew the 4 off M5 screws (4mm A/F hexagon key required) and lift the cover clear of the base. The cover screws are captive and will be retained in the cover.

Once cable termination has been completed, the cover can be replaced and secured to the enclosure. Ensure that any cover seal is correctly seated.

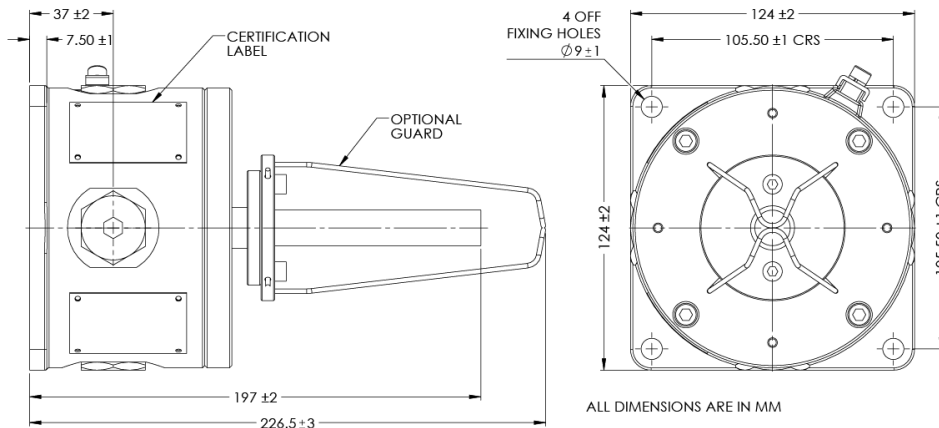
On Exd versions ensure that the gap between the cover and enclosure is 0.15mm max.

4.0 OPERATION

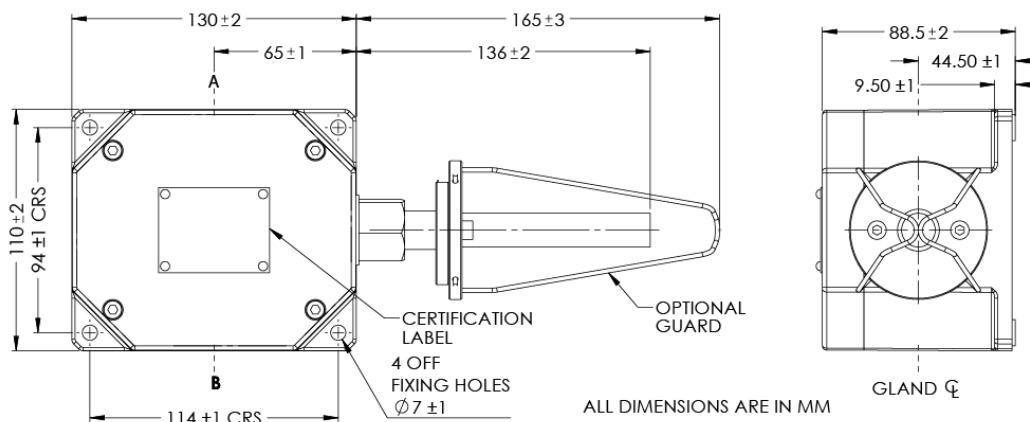
The heat detector consists of a sealed element containing a single normally open (N.O.) thermal switch which operates at a fixed temperature. The operating temperature is stated on the identification label on the outside of the unit.

The sensor element is fully sealed, and no attempt must be made to modify this in any way. Adjustment of the temperature setting is not possible.

General arrangement (exd version)



General arrangement (exe/exi versions)



5.0 MAINTENANCE

During the working life of the heat detector it should require little or no maintenance. However, if abnormal or unusual environmental conditions occur due to plant damage or accident etc., then visual inspection is recommended.

If a fault should occur, then the unit can be repaired by MEDC.

Under no circumstances should any attempt be made to either unscrew the heat detector element from the enclosure or gain access to the inside of the heat detector element.

Either of these actions will result in the assembly becoming unsafe for use in potentially explosive atmospheres.

If you have acquired a significant quantity of heat detectors, then it is recommended that spares are also made available. Please discuss your requirements with MEDC's technical sales engineers.

If the unit requires cleaning, only clean exterior with a damp cloth to avoid electro-static charge build up.

6.0 CERTIFICATION / APPROVALS

Exd IIB version:

Certified to

ATEX: EN60079-0 , EN60079-1 , EN60079-31,
IEC60079-33

IECEX: IEC60079-0 , IEC60079-1 , IEC60079-31,
IEC60079-33

Ex d unit

(ATEX certification No. Baseefa 03ATEX0447)
(IEC certification No. IECEX SGS 24.0013X.)

Ex db sb IIB+H2 T6 (Tamb -20°C to +55°C)
Ex tb IIIC T85°C Db IP6x

Or

Ex db sb IIB+H2 T3 (Tamb -20°C to +125°C)*
Ex tb IIIC T200°C Db IP6x

*Please refer to certification label for temperature rating

Exd IIC version:

Certified to

ATEX: EN 60079-0, EN 60079-1, EN60079-31,
IEC60079-33

IECEX: IEC60079-0 , IEC60079-1 , IEC60079-31,
IEC60079-33

Ex d unit

(ATEX certification No. Baseefa08ATEX0320)
(IEC certification No. IECEX SGS 24.0012X.)

Ex db sb IIC T6 Gb (Tamb -20°C to +55°C)
Ex tb IIIC T85°C Db IP6X

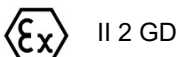
Or

Ex db sb IIC T4 Gb (Tamb -20°C to +90°C)
Ex tb IIIC T135°C Db IP6X

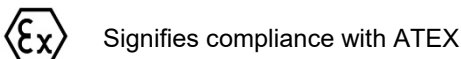
For Type HD1 Addressable Heat Detector Units which do
contain an addressable module the marking remains as:

Ex db sb IIC T6 Gb (Tamb -20°C to +55°C)
Ex tb IIIC T85°C Db IP6X

The Exd ATEX certificate and product label carry the
ATEX group and category marking:



Where:



- II Signifies suitability for use in surface industries
- 2 Signifies suitability for use in a zone 1 area
- G Signifies suitability for use in the presence of gases
- D Signifies suitability for use in the presence of dust

The IECEX certificate and product label carry the IECEX
equipment protection level marking
Gb and Db where Gb signifies suitability for use in a Zone
1 surface industries area in the presence of gas.
Db suitability for use in a Zone 21 surface industries area
in the presence of dust.

Exe version:

Certified to

ATEX: EN60079-0 , EN60079-7, IEC60079-33
IECEX: IEC60079-0, IEC60079-7, IEC60079-33

(ATEX certification No. Baseefa03ATEX0428)
(IEC certification No. IECEX SGS 24.0035X)

Ex eb sb IIC T6 Gb (-20°C to +55°C)

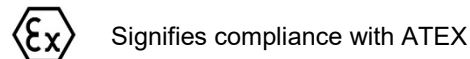
(With resistors fitted)

Ex eb mb sb IIC T4 Gb (-20°C to +55°C)

The ATEX certificate and product label carry the ATEX group
and category marking:



Where:



- II Signifies suitability for use in surface industries
- 2 Signifies suitability for use in a zone 1 area
- G Signifies suitability for use in the presence of gases

The IECEX certificate and product label carry the IECEX
equipment protection level marking

Gb

Where Gb signifies suitability for use in a Zone 1 surface
industries area in the presence of gas.

Ex ia version:

ATEX: Certified to EN60079-0 & EN60079-11

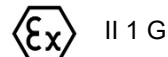
IECEX: Certified to IEC60079-0 & IEC60079-11

(ATEX certification No. Baseefa03ATEX0427)
(IEC certification No. IECEX BAS 13.0010)

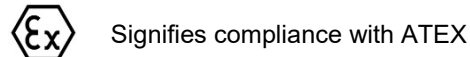
Ex ia IIC T6 Ga (-55°C to +55°C) - HD1I version

Ex ia IIC T4 Ga (-55°C to +55°C) - HD1IR version

The Ex ia ATEX certificate and product label carry the ATEX
group and category marking:



Where:



- II Signifies suitability for use in surface industries
- 1 Signifies suitability for use in a zone 0 area
- G Signifies suitability for use in the presence of gases

The IECEX certificate and product label carry the IECEX
equipment protection level marking Ga.
Where Ga signifies suitability for use in a Zone 0 surface
industries area in the presence of gas.

7.0 SPECIAL CONDITIONS OF USE

Exd IIB/IIC version:

1. Cover screws of minimum grade A4-80 stainless steel shall be used.
2. Warning – Potential electrostatic charging hazard – See instructions.

Exe version:

For HD1R units only:

1. The electrical supply to the encapsulated Resistor is limited to a maximum of 1.2W
2. Units fitted with the encapsulated resistor shall be protected by a fuse rated for a prospective short circuit current of at least 1500A.



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