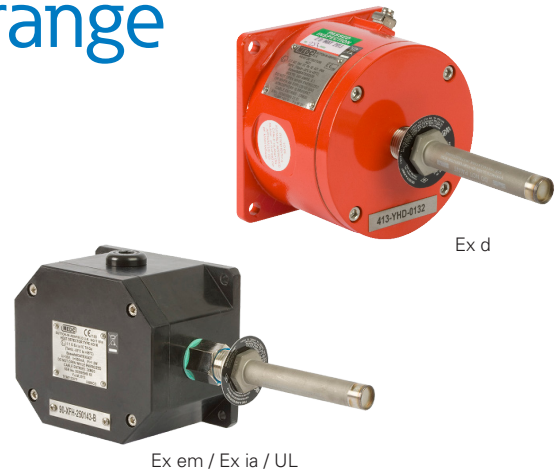


HDI heat detector range

Ex d, Ex em & Ex ia



Overview

The Eaton heat detector has been designed for use in hazardous environments. These units are suitable for fire alarm and/or suppression systems in offshore and onshore applications including paint spray booths, flammable material stores, turbine rooms, extract ductwork and other hazardous areas throughout the oil & gas, petrochemical and process industries.

Comprising a Fenwal rate-compensated detector with all-stainless steel external construction, mounted to either a marine grade alloy enclosure (Exd) or corrosion-free GRP enclosure (Ex ia, Ex em and UL). The contact in the detector CLOSES at alarm temperature.

To select appropriate temperature setting see specification on reverse.

Features

- Zone 0, Zone 1 and Zone 2 use
- ATEX / IECEx certified
 - Ex d IIB+H2 T3/T6
 - Ex d IIC T4/T6
 - Ex em IIC T4/T6
 - Ex ia IIC T4/T6 Ga
- UL listed for USA and Canada:
 - Class I, Div 2, Groups A, B, C D
- SIL 2 certified
- IP66 & IP67
- Certified temperature:
 - 20°C to +125°C (Ex d)*
 - 20°C to +55°C (Ex em / UL)
 - 55°C to +55°C (Ex ia)
- Stainless steel probe (Ex s)
- Detector temperature settings: 60°C to 385°C, (140°F to 725°F)
- Marine grade alloy or GRP enclosure
- Optional stainless steel guard

*Model dependent



Certifications

| | |
|-------------------------------|---|
| ATEX / IECEx EEx d IIB | ATEX cert. no. Baseefa03ATEX0447X IECEX cert. no. IECEX SGS 24.0013X Certified to EN/IEC60079-0, EN/IEC60079-1, EN/IEC60079-31, EN/IEC60079-33 Ex II 2 GD, Ex db sb IIB+H2 T6 (T3 @ +125°C) |
| ATEX / IECEx Ex d IIC | ATEX cert. no. Baseefa08ATEX0320X IECEX cert. no. IECEX SGS 24.0012X Certified to EN/IEC60079-0, EN/IEC60079-1, EN/IEC60079-31, EN/IEC60079-33 Ex II 2 GD, Ex db sb IIC T6 (T4 @ +90°C)* *+90°C not available with addressable module |
| ATEX / IECEx Ex em | ATEX cert. no. Baseefa03ATEX0428X IECEX cert. no. IECEX BAS 24.0035X Certified to EN/IEC60079-0, EN/IEC60079-7+A1, EN/IEC60079-33 Ex II 2 G, Ex eb sb IIC T6 Gb (-20°C to +55°C), Ex eb em sb IIC T4 Gb (-20°C to +55°C)* *With resistor fitted |
| ATEX / IECEx Ex ia | ATEX cert. no. Baseefa03ATEX0427 IECEX cert. no. IECEX BAS 13.0010 Certified to EN/IEC60079-0, EN/IEC60079-11 Ex II 1 G, Ex ia IIC T6 Ga (-55°C to +55°C)* *T4 with resistor fitted |
| UL | Listing no. E252920 – versions up to 450°F Listing no. E254077 – versions from 600°F to 725°F UL for USA and Canada, listed to Class 1, Div 2. Groups A, B, C, D |
| SIL | SIL2 certified. Cert no. CSA FSP 12007 |

Specifications

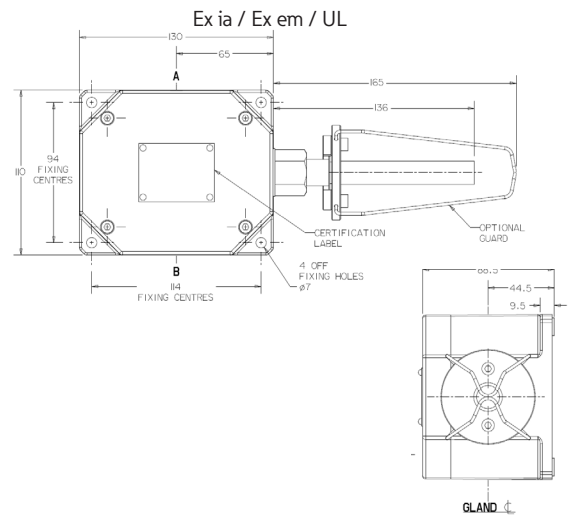
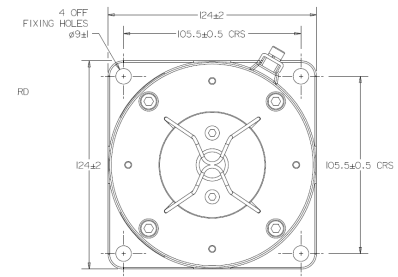
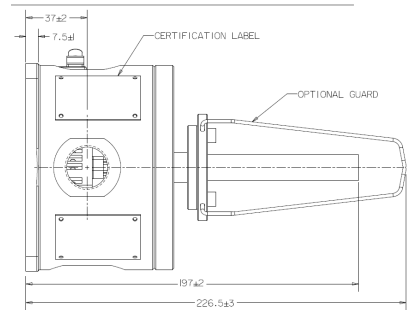
| | |
|---------------------------|---|
| Material | Detector: Stainless steel Enclosures: Ex d – LM25 marine grade alloy Ex ia / Ex em / UL – GRP (anti-static) Cover screws: Stainless steel Optional guard: 316 stainless steel |
| Finish | Detector: Sand blasted. Enclosures: Ex d painted to customers specification Ex ia / Ex em / UL - Natural black or painted to customer's specification |
| Certified temp | Ex em, UL, Ex d IIC, Ex d IIB: -20°C to +55°C (T6) -20°C to +90°C (T4) Ex d IIB: -20°C to +125°C (T3) -20°C to +55°C (T6) Ex ia: -20°C to +55°C (T4)* -55°C to +55°C (T6) -55°C to +55°C (T4)* *with resistor fitted |
| Weight | Ex d, 2kg Ex ia / Ex em / UL, 1.1kg |
| Ingress protection | IP66 & IP67 |
| Operation | The detector contact is normally open and CLOSSES at alarm temperature |
| Contact rating | Ex d IIB, Ex em, UL: 125Vac - 5A, 125Vdc - 0.5A, 48Vdc -1A, 24Vdc - 2A Ex d IIC: 24V - 0.1A Ex ia: 30V - 300mA |
| Entries | 2 x M20 (Ex d / Ex em / Ex ia) 2 x 1/2" NPT via adaptors (UL version) |
| Terminals | 6 x 4mm ² (BK6) |
| Resistor | Series & EOL resistor (maximum total 2) minimum value (each) 470Ω |
| Diodes | Up to 2 off available in Ex d IIB, Ex d IIC, Ex ia - contact sales office |
| Labels | Optional stainless steel tag and duty labels |

Ordering requirements

The following code is designed to help in selection of the correct unit. Build up the reference number by inserting the code for each component into the appropriate box

| Model | Certification | Type | Temp settings | Options | Finish | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|---|---------------|---------------|--------------|--------|-----------|----|---------------------------------|----|---|------|------|----------|-----|----------|-----|-------|----|-------|---|----|---|--|--------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|--------|------|------|---|------------|----|-----------|----|-------|---|--------------|----|-----------------|----|----------|----|---------------|---|---|--------|------|---------------|----|------|---|-----|---|------|---|--------|---|---------|----|
| HD1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>Certification</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>ATEX / IECEx</td> <td>B</td> </tr> <tr> <td>UL listed</td> <td>UL</td> </tr> <tr> <td>ATEX / IECEx / UL triple listed</td> <td>AU</td> </tr> </tbody> </table> | Certification | Code | ATEX / IECEx | B | UL listed | UL | ATEX / IECEx / UL triple listed | AU | <table border="1"> <thead> <tr> <th>Type</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Ex d IIB</td> <td>BD*</td> </tr> <tr> <td>Ex d IIC</td> <td>CD*</td> </tr> <tr> <td>Ex em</td> <td>E†</td> </tr> <tr> <td>Ex ia</td> <td>I</td> </tr> <tr> <td>UL</td> <td>U</td> </tr> </tbody> </table> <p>* Ex d only available in ATEX / IECEx † ATEX / IECEx / UL triple listed Ex em version only</p> | Type | Code | Ex d IIB | BD* | Ex d IIC | CD* | Ex em | E† | Ex ia | I | UL | U | <table border="1"> <thead> <tr> <th>Temp°F</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>140</td> <td>140</td> </tr> <tr> <td>160</td> <td>160</td> </tr> <tr> <td>190</td> <td>190</td> </tr> <tr> <td>210</td> <td>210</td> </tr> <tr> <td>225</td> <td>225</td> </tr> <tr> <td>275</td> <td>275</td> </tr> <tr> <td>325</td> <td>325</td> </tr> <tr> <td>360</td> <td>360</td> </tr> <tr> <td>450</td> <td>450</td> </tr> <tr> <td>500</td> <td>500</td> </tr> <tr> <td>600</td> <td>600</td> </tr> <tr> <td>725</td> <td>725</td> </tr> </tbody> </table> | Temp°F | Code | 140 | 140 | 160 | 160 | 190 | 190 | 210 | 210 | 225 | 225 | 275 | 275 | 325 | 325 | 360 | 360 | 450 | 450 | 500 | 500 | 600 | 600 | 725 | 725 | <table border="1"> <thead> <tr> <th>Option</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>N</td> </tr> <tr> <td>Duty label</td> <td>D*</td> </tr> <tr> <td>Tag label</td> <td>T*</td> </tr> <tr> <td>Guard</td> <td>G</td> </tr> <tr> <td>Resistor EOL</td> <td>E*</td> </tr> <tr> <td>Resistor series</td> <td>S*</td> </tr> <tr> <td>Diode(s)</td> <td>I*</td> </tr> <tr> <td>Blanking plug</td> <td>P</td> </tr> </tbody> </table> <p>* Please specify</p> | Option | Code | None | N | Duty label | D* | Tag label | T* | Guard | G | Resistor EOL | E* | Resistor series | S* | Diode(s) | I* | Blanking plug | P | <table border="1"> <thead> <tr> <th>Finish</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>Natural black</td> <td>N†</td> </tr> <tr> <td>Grey</td> <td>G</td> </tr> <tr> <td>Red</td> <td>R</td> </tr> <tr> <td>Blue</td> <td>B</td> </tr> <tr> <td>Yellow</td> <td>Y</td> </tr> <tr> <td>Special</td> <td>S*</td> </tr> </tbody> </table> <p>* Please specify † Ex em / Ex ia / UL only Ex d is painted</p> | Finish | Code | Natural black | N† | Grey | G | Red | R | Blue | B | Yellow | Y | Special | S* |
| Certification | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ATEX / IECEx | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UL listed | UL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ATEX / IECEx / UL triple listed | AU | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex d IIB | BD* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex d IIC | CD* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex em | E† | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ex ia | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UL | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temp°F | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 140 | 140 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160 | 160 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 190 | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 210 | 210 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 225 | 225 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 275 | 275 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 325 | 325 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 360 | 360 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 450 | 450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 500 | 500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 600 | 600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 725 | 725 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Option | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| None | N | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Duty label | D* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tag label | T* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Guard | G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resistor EOL | E* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resistor series | S* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Diode(s) | I* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blanking plug | P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finish | Code | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Natural black | N† | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Grey | G | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Red | R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blue | B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yellow | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Special | S* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

General arrangement drawing (all dimensions in mm)



Listed temperature settings: To select appropriate temperature settings, choose detector at 100°F (38°C) above maximum ambient temperature

| Temperature setting | | Tolerance | | Colour code of text on probe |
|---------------------|------|-----------|------|------------------------------|
| (°F) | (°C) | (°F) | (°C) | |
| 140 | 60 | +7/-8 | ±4 | Black |
| 160 | 71 | +7/-8 | ±4 | Black |
| 190 | 88 | +7/-8 | ±4 | White |
| 210 | 99 | +7/-8 | ±4 | White |
| 225 | 107 | +7/-8 | ±4 | White |
| 275 | 135 | ±10 | ±6 | Blue |
| 325 | 163 | ±10 | ±6 | Red |
| 360 | 182 | ±10 | ±6 | Red |
| 450 | 323 | ±15 | ±8 | Green |
| 500 | 260 | ±15 | ±8 | Orange |
| 600 | 316 | ±20 | ±11 | Orange |
| 725 | 385 | ±25 | ±14 | Orange |