

# D1xH1 Heat Detector

The E2S D1xH1 globally certified heat detector provides a comprehensive solution suitable for the harshest of environments. Featuring the D-A-F rate compensated heat detector elements with stainless steel casing and hermetically sealed contacts. The D1xH1 is available in explosion proof and increased safety versions certified for Zone 1 & 21, Class I Zone 1 & 21, Class I/II Div 1 & 2 with a high temperature version rated to 125°C. Global approvals include IECEx, ATEX, UL, ULC and cUL.

The robust IP66/67, Type 4/4X corrosion proof junction box enclosure is manufactured from marine grade, copper free LM6 aluminium. The E2S D1xH1 heat detector offers a robust and reliable source for alarm initiation in the most hazardous and demanding of applications.

## Features

- Robust corrosion proof LM6 marine grade aluminium enclosure
- Ingress protection IP66/67 Type: 4/4X
- Threaded flame path simplifies installation and inspection
- Multiple cable entries
- Stopping plugs supplied
- UL521 and CAN/ULC-S530 approved
- EN54-5 compliant
- D-A-F rate compensated heat detector elements
- Versatile: various temperature settings available
- Durable: long lasting stainless steel element shell
- Reliable: hermetically sealed internal contact area
- Economical: wide installation spacing reduces installation costs
- Factory set temperature
- Available with a wide range of addressable modules
- Globally approved to IECEx, ATEX, UL, cUL and ULC standards
- Version A: Ex db Zone 1/21, Class I/II Div 1
- Version H: Ex db High temp Zone 1/21, Class I/II Div 1
- Version E: Ex db eb Zone 1/21, Class I/II Div 2
- Available with mutli-angle wall and ceiling bracket

## Approvals

- UL/cUL/ULC - File ref: E245313
- IECEx Certificate: IECEx ULD 19.0006X
- ATEX Certificate: DEMKO 19 ATEX 2009X
- UKCA certificate: UL21UKEX2130X
- SIL2 compliant to IEC61508 (2010)



### Specification

|                     |                                                                            |
|---------------------|----------------------------------------------------------------------------|
| Enclosure:          | Marine grade LM6 aluminium alloy                                           |
| Enclosure colour:   | Red or Grey                                                                |
| Enclosure finish:   | Chromate & powder coated finish<br>ISO 12944-6 CX, C5VH & C5H              |
| Ingress protection: | IP66/67 EN50029, Type 4/4X UL50E                                           |
| Cable entries:      | 3/4"NPT and/or M20x1.5 – Stopping plug(s) included                         |
| Cable spec:         | Solid core: 0.5-2.5mm2 AWG20-12<br>Stranded core: 0.5-2.5mm2 AWG24-14      |
| Terminals:          | DIN Rail AKZ 2.5 × 6                                                       |
| Max Input           | 24Vdc: 2A, 48Vdc: 1A, 125Vdc: 0.5A, 125Vac @ 50/60Hz: 5.0A – version A & H |
| Max Power           | 10W – version A, 1.25W – version H                                         |
| Max Input           | 32Vdc: 1A, 24Vdc: 2A, 32Vac 50/60Hz: 5A – version E                        |
| Stopping plugs:     | Brass, Nickel Plated or Stainless Steel                                    |
| Grounding stud:     | M5                                                                         |
| Installation temp:  | -55 to +80/125°C (-67° to +176/257°F)                                      |
| Storage temp:       | -55 to +80/125°C (-67° to +176/257°F)                                      |
| Weight:             | 2.5kg/5.5lbs                                                               |

### Temperature and spacing data

| °F<br>Setting | °F<br>Tolerance | °C<br>Setting | °C<br>Tolerance | Spacing<br>UL (ft) | Spacing<br>ULC (ft) |
|---------------|-----------------|---------------|-----------------|--------------------|---------------------|
| 140           | +7/-8           | 60            | +4/-5           | 50                 | 50                  |
| 160           | +7/-8           | 71            | +4/-5           | 25                 | 25                  |
| 190           | +7/-8           | 88            | +4/-5           | 50                 | 50                  |
| 210           | +7/-8           | 99            | +4/-5           | 25                 | 50                  |
| 225           | +7/-8           | 107           | +4/-5           | 25                 | 50                  |
| 275           | ±10             | 135           | ±6              | 25                 | 50                  |
| 325           | ±10             | 163           | ±6              | 50                 | 50                  |
| 360           | ±10             | 182           | ±8              | 25                 | 50                  |
| 450           | ±15             | 232           | ±10             | 25                 | 50                  |
| 500           | ±15             | 260           | ±10             | 50                 | 50                  |
| 600           | ±20             | 316           | ±12             | N/A                | 50                  |
| 725           | ±20             | 385           | ±12             | N/A                | 50                  |

### Derating Factor for Ceiling Height – based on NFPA guidelines

| Ceiling Height Above |    | Up to and Including |    | Derating Factor |
|----------------------|----|---------------------|----|-----------------|
| m                    | ft | m                   | ft | -               |
| 0                    | 0  | 3.05                | 10 | 1.00            |
| 3.05                 | 10 | 3.66                | 12 | 0.91            |
| 3.66                 | 12 | 4.27                | 14 | 0.84            |
| 4.27                 | 14 | 4.88                | 16 | 0.77            |
| 4.88                 | 16 | 5.49                | 18 | 0.71            |
| 5.49                 | 18 | 6.10                | 20 | 0.64            |
| 6.10                 | 20 | 6.71                | 22 | 0.58            |
| 6.71                 | 22 | 7.32                | 24 | 0.52            |
| 7.32                 | 24 | 7.93                | 26 | 0.46            |
| 7.93                 | 26 | 8.54                | 28 | 0.40            |
| 8.54                 | 28 | 9.14                | 30 | 0.34            |

### Part Codes

| Part Code:                                                                                                                                                           | Identifier:  | Description:                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------|
| Product type:                                                                                                                                                        | D1xH1        | Heat Detector                                 |
| Element guard:[g]                                                                                                                                                    | N            | No guard                                      |
|                                                                                                                                                                      | G            | With guard                                    |
| Temperature code: [t]                                                                                                                                                | 01           | 140°F / 60°C                                  |
|                                                                                                                                                                      | 02           | 160°F / 71°C                                  |
|                                                                                                                                                                      | 03           | 190°F / 88°C                                  |
|                                                                                                                                                                      | 04           | 210°F / 99°C                                  |
|                                                                                                                                                                      | 05           | 225°F / 107°C                                 |
|                                                                                                                                                                      | 06           | 275°F / 135°C                                 |
|                                                                                                                                                                      | 07           | 325°F / 163°C                                 |
|                                                                                                                                                                      | 08           | 360°F / 182°C                                 |
|                                                                                                                                                                      | 09           | 450°F / 232°C                                 |
|                                                                                                                                                                      | 10           | 500°F / 260°C                                 |
|                                                                                                                                                                      | 11           | 600°F / 316°C                                 |
|                                                                                                                                                                      | 12           | 725°F / 385°C                                 |
| Cable entries:[e]                                                                                                                                                    | M            | 1 × 3/4"NPT & 1 x M20                         |
|                                                                                                                                                                      | A            | 2 x M20 – adaptor)                            |
|                                                                                                                                                                      | B            | 2 × 1/2"NPT – adaptors                        |
|                                                                                                                                                                      | C            | 2 × 3/4"NPT – adaptors                        |
|                                                                                                                                                                      | E            | 1 × 1/2"NPT – adaptor, 1 × 3/4"NPT            |
|                                                                                                                                                                      | <b>Note:</b> | All types contain 1 × 3/4" NPT pendant entry  |
| Stopping plug/adaptor material: [m]                                                                                                                                  | B            | Brass                                         |
|                                                                                                                                                                      | N            | Nickel Plated                                 |
|                                                                                                                                                                      | S            | Stainless Steel                               |
| Equipment tag: [s]                                                                                                                                                   | 1            | No Duty label, no Equip. tag                  |
|                                                                                                                                                                      | 2            | Duty label                                    |
|                                                                                                                                                                      | 3            | Duty label + Equip. tag                       |
|                                                                                                                                                                      | 6            | Equip. tag only                               |
|                                                                                                                                                                      | 7            | Special label requirement                     |
| Product version: [v]                                                                                                                                                 | A            | Zone 1/21, Class I/II Div 1                   |
|                                                                                                                                                                      | B            | IECEX/ATEX/NEC/CEC Zone 1/21                  |
|                                                                                                                                                                      | H            | High temp Zone 1/21, Class I/II Div 1         |
|                                                                                                                                                                      | E            | Zone 1/21, Class I/II Div 2                   |
|                                                                                                                                                                      | <b>Note:</b> | Versions A, H & E : IECEX, ATEX, UL, cUL, ULC |
|                                                                                                                                                                      | G            | Honeywell TC809B1008 module IECEX, ATEX       |
|                                                                                                                                                                      | Z            | Ziton A45E-2 module IECEX, ATEX               |
|                                                                                                                                                                      | M            | Johnson Controls MIM800 module IECEX, ATEX    |
|                                                                                                                                                                      | C            | Hochiki CHQCP2 monitor IECEX, ATEX            |
|                                                                                                                                                                      | P            | Apollo XP95 mini module IECEX, ATEX           |
|                                                                                                                                                                      | E            | Consilium IC10 module IECEX, ATEX             |
|                                                                                                                                                                      | S            | Siemens XTRI-M module IECEX, ATEX             |
|                                                                                                                                                                      | D            | Securiton SDI 82X-I module IECEX, ATEX        |
|                                                                                                                                                                      | L            | Simplex 4090-9051 Supervised IAM IECEX, ATEX  |
| Product option: [o]                                                                                                                                                  | 1            | Standard product                              |
|                                                                                                                                                                      | W            | Alternate EOL & series wiring                 |
|                                                                                                                                                                      | X            | Custom configuration – contact E2S            |
| Enclosure colour: [x]                                                                                                                                                | R            | Red                                           |
|                                                                                                                                                                      | G            | Grey                                          |
|                                                                                                                                                                      | S            | Special – contact E2S for alternative colours |
| LED indicator: [u]:                                                                                                                                                  | N            | No LED                                        |
|                                                                                                                                                                      | L            | LED with 1.5K ballast resistor                |
|                                                                                                                                                                      | C            | LED without ballast resistor <20mA            |
|                                                                                                                                                                      | <b>Note:</b> | LED only available with Product version B     |
| For product version <b>A, B &amp; H</b> only, suffix the part code with required EOL and series devices as follows for factory installation. See manual for details: |              |                                               |
| E.O.L. and/or Series Module:                                                                                                                                         | ExxxR SxxxR  | Resistor in Ohms e.g. E470R or S1K5R          |
|                                                                                                                                                                      | ED1 SD1      | Diode IN5401 = ED1 or SD1                     |
| [e] / [s]                                                                                                                                                            | ExxxZ SxxxZ  | Zener diode e.g. E5V1Z or S5V1Z = 5.1V        |
| <b>Accessories:</b>                                                                                                                                                  |              |                                               |
| SP77-0001-A4-R or G                                                                                                                                                  |              | Multi angle wall bracket 316 Stainless Steel  |

## Coding

### D1xH1-A: Product version: A

IECEX / ATEX

Ex db IIC T4 Gb Ta -55°C to +80°C (T5:+70°C, T6:+55°C)

Ex tb IIIC T106°C Db Ta -55°C to +80°C

NEC Class Zone

Class I Zone 1 AEx db IIC T4 Gb Ta -55°C to +80°C (T5:+70°C, T6:+55°C)

Zone 21 AEx tb IIIC T106°C Db Ta -55°C to +80°C

CEC Class Zone

Ex db IIC T4 Gb Ta -55°C to +80°C (T5:+70°C, T6:+55°C)

Ex tb IIIC T106° Db Ta -55°C to +80°C

NEC / CEC Class Division

Class I Div 1 ABCD T4A Ta -55°C to +80°C (T5:+75°C, T6:+60°C)

Class II Div 1 EFG T4A Ta -55°C to +80°C

### D1xH1-A: Product version: B

IECEX / ATEX

Ex db IIC T4 Gb Ta -55°C to +80°C (T5:+70°C, T6:+55°C)

Ex tb IIIC T106°C Db Ta -55°C to +80°C

NEC Class Zone

Class I Zone 1 AEx db IIC T4 Gb Ta -55°C to +80°C (T5:+70°C, T6:+55°C)

Zone 21 AEx tb IIIC T106°C Db Ta -55°C to +80°C

CEC Class Zone

Ex db IIC T4 Gb Ta -55°C to +80°C (T5:+70°C, T6:+55°C)

Ex tb IIIC T106° Db Ta -55°C to +80°C

### D1xH1-H: Product version: H

IECEX / ATEX

Ex db IIC T4 Gb Ta -55°C to +125°C (T5:+90°C, T6:+75°C)

Ex tb IIIC T130°C Db Ta -55°C to +125°C (T85°C:+80°C)

NEC Class Zone

Class I Zone 1 AEx db IIC T4 Gb Ta -55°C to +125°C (T5:+90°C, T6:+75°C)

Zone 21 AEx tb IIIC T130°C Db Ta -55°C to +125°C (T85°C:+80°C)

CEC Class Zone

Ex db IIC T4 Gb Ta -55°C to +125°C (T5:+90°C, T6:+75°C)

Ex tb IIIC T130°C Db Ta -55°C to +125°C (T85°C:+80°C)

NEC / CEC Class Division

Class I Div 1 ABCD T4 Ta -55°C to +125°C

Class I Div 1 ABCD T4A Ta -55°C to +115°C (T5:+95°C, T6:+80°C)

Class II Div 1 EFG T4 Ta -55°C to +125°C (T5:+95°C)

### D1xH1-E: Product version: E

IECEX / ATEX

Ex db eb IIC T5 Gb Ta -55°C to +80°C (T6:+75°C)

Ex tb IIIC T85°C Db Ta -55°C to +80°C

NEC Class Zone

Class I Zone 1 AEx db eb IIC T5 Gb Ta -55°C to +80°C (T6:+75°C)

Zone 21 AEx tb IIIC T85°C Db Ta -55°C to +80°C

CEC Class Zone

Ex db eb IIC T5 Gb Ta -55°C to +80°C (T6:+75°C)

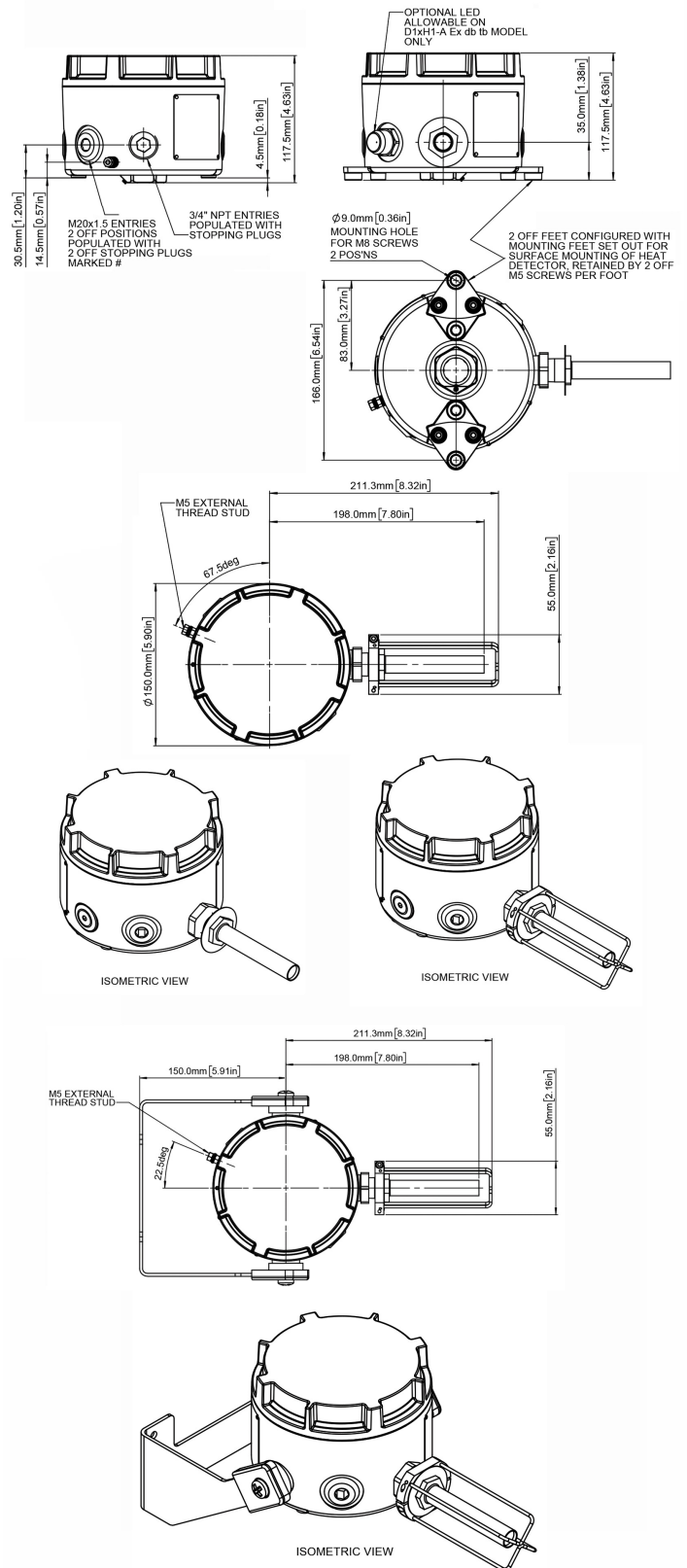
Ex tb IIIC T85° Db Ta -55°C to +80°C

NEC / CEC Class Division

Class I Div 2 ABCD T5 Ta -55°C to +80°C (T6:+75°C)

Class II Div 2 EFG T5 Ta -55°C to +80°C

See installation manuals for full coding



## Note

- E2S H1 detector temperature is factory set.
- Per UL521 requirements – low temperature exposure test is – 22°F (-30°C)
- E2S H1 detectors are designed for long life expectancy, however due to various field conditions it is required that the detectors be tested annually per NFPA guidelines or local fire codes.
- Replace the detector after any fire or heat related event, any mechanical damage, or after 10 years of continuous service.
- To avoid nuisance activations, select a temperature setting a minimum of 100°F above the maximum ambient expected temperature.