# HART analogue universal module for Zone 1/Div. 1

Series 9468/32



- 8 channels can be used individually as inputs or outputs
- Intrinsically safe Ex ia IIC inputs/outputs with line fault monitoring and an LED fault and status display for each channel
- Module in Zone 1 can be replaced without having to disconnect the power supply (i.e. hot-swapped)

## WebCode 9468A

The 9468/32 HART analogue universal module for Zone 1 has eight channels which can be used separately for Ex i operation of 2-/3-conductor HART transmitters, 4-conductor transmitters or control valves/positioners with 0/4 to 20 mA signals. HART communication is bidirectional.
All inputs/outputs are short-circuit proof, galvanically separated from the system and individually monitored to check for line faults.

| | IECEx / ATEX | | | | | |
|---|---|---|---|---|---|---|
| Zone | 0 | 1 | 2 | 20 | 21 | 22 |
| Ex interface | • | • | • | • | • | • |
| Installation in | | • | • | | | |

| | NEC® 500 CE Code Appendix J | | | | | |
|---|---|---|---|---|---|---|
| | Class I | | Class II | | Class III | |
| Division | 1 | 2 | 1 | 2 | 1 | 2 |
| Ex interface | • | • | • | • | • | • |
| Installation in | • | • | | | | |

| | CE Code Section 18 | | | | | |
|---|---|---|---|---|---|---|
| | NEC® 505 Class I | | | NEC® 506 | | |
| Zone | 0 | 1 | 2 | 20 | 21 | 22 |
| Ex interface | • | • | • | | | |
| Installation in | | • | • | | | |

### Selection Table

| Installation | Zone 1, Zone 2 and safe areas | | | |
|---|---|---|---|---|
| Number of channels | Channel status LEDs | Product Type | Art. No. | Weight |
| 8 Ex i inputs/outputs | No | 9468/32-08-10 | 296070 | 275 g |
| | Yes | 9468/32-08-11 | 210659 | 275 g |

Please order terminals separately – see accessories and spare parts.

### Technical Data

| Variant | 9468/32-08-10 | 9468/32-08-11 |
|---|---|---|
| Explosion Protection | | |
| IECEx gas explosion protection | Ex ia [ia Ga] IIC T4 Gb | Ex ia [ia Ga] IIC T4 Gb |
| IECEx dust explosion protection | [Ex ia Da] IIIC | [Ex ia Da] IIIC |
| ATEX gas explosion protection | Ⓔx II 2 (1) G Ex ia [ia Ga] IIC T4 Gb | Ⓔx II 2 (1) G Ex ia [ia Ga] IIC T4 Gb |
| ATEX dust explosion protection | Ⓔx II (1) D [Ex ia Da] IIIC | Ⓔx II (1) D [Ex ia Da] IIIC |
| Certificates | ATEX (DEK), Brazil (ULB), Canada (FM), China (NEPSI), IECEx (DEK), India (PESO), USA (FM) | ATEX (DEK), Brazil (ULB), Canada (FM), China (NEPSI), IECEx (DEK), India (PESO), Korea (KTL), USA (FM) |
| Ship approval | ABS, BVIS, EU RO MR (DNV), KR, LR | ABS, BVIS, EU RO MR (DNV), KR, LR |
| Declaration of Conformity | ATEX (EUK), China (CCC) | ATEX (EUK), China (CCC) |
| Safety Data | | |
| Max. voltage $U_o$ | 24.4 V | 24.4 V |
| Max. current $I_o$ (2-conductor) | 80 mA | 80 mA |
| Max. current $I_o$ (3-conductor) | 81.8 mA | 81.8 mA |

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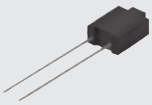
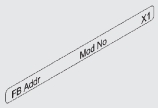
## Technical Data

| Variant | 9468/32-08-10 | 9468/32-08-11 |
|---|---|---|
| Safety Data | | |
| Max. power $P_o$ (2-conductor) | 488 mW | 488 mW |
| Max. power $P_o$ (3-conductor) | 499 mW | 499 mW |
| Electrical Data | | |
| Number of channels | 8 Ex i inputs/outputs | 8 Ex i inputs/outputs |
| Channels | Each can be configured as input or output<br>(3-conductor, 4-conductor transmitters or active mA sources occupy 2 channels) | Each can be configured as input or output<br>(3-conductor, 4-conductor transmitters or active mA sources occupy 2 channels) |
| Nominal signal | 0 to 20 mA<br>4 to 20 mA | 4 to 20 mA<br>0 to 20 mA |
| Supply voltage | 16 V | 16 V, at 20 mA for 2-conductor transmitters |
| Communication signal | HART protocol | HART protocol |
| Connection Ex i field signals | Pluggable, blue terminals, 16-pin, 2.5 mm², screw type or cage clamp version with lock | Pluggable, blue terminals, 16-pin, 2.5 mm², screw type or cage clamp version with lock |
| Notes | In order to operate an active 4-conductor HART transmitter, a 9164 must be connected between each channel. A 9164 is not required when operating a 4-conductor transmitter without HART communication. | In order to operate an active 4-conductor HART transmitter, a 9164 must be connected between each channel. A 9164 is not required when operating a 4-conductor transmitter without HART communication. |
| Auxiliary Power | | |
| Current consumption | 220 mA (at 20 mA per channel) | 220 mA (at 20 mA per channel) |
| Max. power consumption | 5.3 W | 5.3 W (at 20 mA/channel) |
| Max. power dissipation outputs | 3.7 W | 3.7 W (at 20 mA. 500 Ω/channel) |
| Max. power dissipation inputs | 2.7 W | 2.7 W (at 20 mA/channel) |
| Input | | |
| Max. input resistance | 14.1 Ω per channel | 14.1 Ω per channel |
| Output | | |
| Output max. load resistance | 700 Ω at 21.8 mA<br>750 ohm at 20 mA | 750 ohm at 20 mA<br>700 Ω at 21.8 mA |
| Output step response (10 to 90%) | 40 ms | 40 ms |
| Ambient Conditions | | |
| Ambient temperature | -40 °C ... +75 °CObserve operating instructions | -40 °C ... +75 °CObserve operating instructions |
| Mechanical Data | | |
| Degree of protection (IP) (IEC 60529) | IP20 | IP20 |

## Accessories

| Figure | Description | Art. No. | Weight |
|---|---|---|---|
| Pluggable terminal | | | |
|  | 2.5 mm² with lock, 16-pin, screw connector, blue,<br>for connecting the field signals to I/O modules, for intrinsically safe field circuits<br>Labelling: 1 to 16<br>Note: A second terminal is additionally required for I/O module Series 9470 and 9482<br>Labelling: 17 to 32 | 162702 | 28 g |
|  | 2.5 mm² with lock, 16-pin, spring clamp connection, blue,<br>for connecting the field signals to I/O modules, for intrinsically safe field circuits, incl. test jacks<br>Labelling: 1 to 16<br>Note: A second terminal is additionally required for I/O module Series 9470 and 9482<br>Labelling: 17 to 32 | 162695 | 28 g |
| Electronic relay | | | |
|  | The 9174 electronic relay module makes it possible to switch Ex e loads using intrinsically safe control.<br>Input: Ex i; output: 48 V/2 A DC, Ex e | 212340 | 110 g |

## Accessories

| Figure | Description | Art. No. | Weight |
|---|---|---|---|
| **mA isolating repeater** | | | |
|  | The mA isolating repeaters are used to connect 4-conductor transmitters to active 2-conductor inputs and for galvanic separation.<br>Input: Sink, Ex e<br>Output: Sink, Ex i | 224365 | 140 g |
|  | The mA isolating repeaters are used to connect 4-conductor transmitters to active 2-conductor inputs and for galvanic separation.<br>Input: Sink, Ex i<br>Output: Sink, Ex i | 224364 | 90 g |
| **Resistor error message suppression** | | | |
|  | The resistors are used to suppress error messages for unused I/O channels<br>Resistance value: 5K6/0.5 W<br>Suitable for: AIM 9468; UMH 9469; DIOM 9470; DIOM 9471; DIOM 9472; DOM 9475<br>For intrinsically safe circuits (simple apparatus according to EN 60079-11) | 244911 | - |
| | The resistors are used to suppress error messages for unused I/O channels<br>Resistance value: 62R/0.5 W<br>Suitable for: AOM 9468; UMH 9469; DIOM 9472; TIM 9482 | 244912 | - |
| **Partition** | | | |
|  | For mounting between intrinsically safe and non-intrinsically safe connections between I/O modules to maintain a tight string length of 50 mm | 220101 | 10 g |
| **Warning label** | | | |
|  | "Clean modules only with a damp cloth." | 162796 | 1 g |
| **DIN A4 sheet** | | | |
|  | For label plate on I/O modules; 6 plates per sheet;<br>IS Wizard printout; packaging unit = 20 sheets | 162832 | 1 g |
| **Labelling strips** | | | |
|  | "FB Addr … Mod No …" for pluggable terminal, 26 pieces on the sheet | 162788 | 1 g |
| **Vibration bracket set** | | | |
|  | When installed in environments with extreme vibration (> 0.7 g and max. 4 g), the 9490 vibration brackets may be used as an additional measure and provide mechanical stability for the individual modules.<br>For mounting: All I/O modules, except 9477/12 and 9478<br>Number of brackets in a set: 8<br>Screws (item no. 275516) must be ordered separately. | 271920 | - |
| **Set of screws** | | | |
| | Set of M5 x 14 screws (self-tapping) for 9490 vibration brackets<br>Number of screws in a set: 25 | 275516 | - |

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A4

## Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations