

Remote I/O

IS1+ Remote I/O Digital output module

For Zone 2 Ex i

9475/33-08-50 Art. No. 210657



- Eight channels for Ex i solenoid valves up to 30 mA
- Ex ia outputs with line fault monitoring
- Modules in Zone 2, Cl. I, II, Div. 2 can be hot swapped

MY R. STAHL 9475D



9475/33-08 series digital output modules for Zone 2, Cl. I, II, Div. 2 have eight channels for actuating Ex i solenoid valves or indicator lamps. All outputs are short-circuit proof, galvanically separated from the system and individually monitored to check for wire breakage/short-circuiting.

Technical Data

Explosion Protection

| | |
|---------------------------------|---|
| Application range (Zones) | 2 |
| Ex interface zone | 0 1 2 20 21 22 |
| IECEX gas certificate | IECEX DEK 12.0070X |
| IECEX gas explosion protection | Ex ec ia [ia Ga] IIC T4 Gc |
| IECEX dust certificate | IECEX DEK 12.0070X |
| IECEX dust explosion protection | [Ex ia Da] IIIC |
| ATEX gas certificate | DEKRA 12 ATEX0232X |
| ATEX gas explosion protection | ⊕ II 3 (1) G Ex ec ia [ia Ga] IIC T4 Gc |
| ATEX dust certificate | DEKRA 12 ATEX0232X |
| ATEX dust explosion protection | ⊕ II (1) D [Ex ia Da] IIIC |
| FMus certificate | FM17US0332X |
| cFM certificate | FM16CA0134X |
| Marking cFMus | NI, Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, AEx/Ex nA ia [ia] IIC AIS Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G; T4 at Ta = 75°C See Doc. 9475 6 031 004 1 |
| Certificates | 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 |
| Declaration of Conformity | ATEX (EUK), China (CCC) |
| Installation | Zone 2, Cl. I, Div. 2 and in the safe area |
| Further information | see respective certificate and operating instructions |

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Safety Data

| | | | | | | | | |
|--|--|------|-----|------|-----|------|------|------|
| Max. voltage U_o/V_{oc} | 19.4 V | | | | | | | |
| Max. current I_o (Ex ia) | 143 mA | | | | | | | |
| Max. power P_o (Ex ia) | 692 mW | | | | | | | |
| Max. current I_o (Ex ib) | 37.8 mA | | | | | | | |
| Max. power P_o (Ex ib) | 506 mW | | | | | | | |
| Internal inductance | Negligible | | | | | | | |
| Max. internal capacitance C_i | 16.5 nF (in the following tables, C_i has been subtracted from C_o) | | | | | | | |
| Max. connectable inductance L_o /capacitance C_o | | | | | | | | |
| Output ia | | | | | | | | |
| IIC | L_o [mH] | 1.44 | 1.4 | 0.65 | 0.5 | 0.2 | 0.1 | 0.05 |
| | C_o [nF] | -- | 103 | 113 | 113 | 153 | 183 | 227 |
| IIB/IIIC | L_o [mH] | 7.5 | 5.0 | 2.0 | 0.5 | 0.2 | 0.1 | 0.02 |
| | C_o [nF] | 673 | 883 | 943 | 943 | 1083 | 1283 | 1493 |
| Output ib | | | | | | | | |
| IIC | L_o [mH] | 6.3 | 2.0 | 0.65 | 0.5 | 0.2 | 0.1 | 0.05 |
| | C_o [nF] | 113 | 113 | 123 | 123 | 153 | 193 | 227 |
| IIB/IIIC | L_o [mH] | 58 | 20 | 10 | 5.0 | 0.2 | 0.1 | 0.02 |
| | C_o [nF] | 363 | 723 | 953 | 963 | 1083 | 1283 | 1493 |

Electrical Data

| | |
|-------------------------------|--|
| Number of channels | 8 Ex i outputs |
| Connection Ex i field signals | Pluggable, blue terminals, 16-pin, 2.5 mm ² , screw or cage clamp version with lock |

Auxiliary Power

| | |
|--------------------------------|--------------------------------------|
| Power supply connection | BusRail types 9494 |
| Auxiliary power version | Intrinsically safe Ex ia via BusRail |
| Behaviour during undervoltage | All outputs "OFF" |
| Current consumption | 250 mA |
| Max. power consumption | 6 W |
| Max. power dissipation outputs | 4.8 W |

Galvanic Isolation

| | |
|--------------------------------------|------------------------------|
| Test voltage for galvanic separation | Acc. to standard EN 60079-11 |
| Auxiliary power/system components | ≥ 1500 V AC |
| I/O module / I/O module | ≥ 500 V AC |
| I/O channels/system components | ≥ 500 V AC |
| I/O channels / ground (PA) | ≥ 500 V AC |

Output

| | |
|--------------------------------|--------------|
| Ex i output rated operation | 12.6 V/30 mA |
| Internal resistance of outputs | 170 Ω |
| Open-circuit voltage U_a | 17.5 V |

Remote I/O

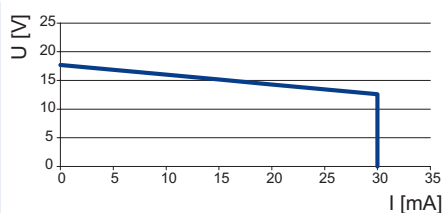
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9475/32-08-52, 9475/33-08-50 output characteristic



Device Specific Data

| | |
|-----------------------------------|---|
| Diagnostics message module | OFF ON |
| Line fault monitoring | ON without test current ON OFF |
| Test current signal | 0,2 ... 0,28 mA |
| Output behaviour in case of error | ON Keep last value OFF |
| LED module requires maintenance | "M/S" LED, blue |
| LED operating conditions | "RUN" LED, green |
| Retrievable parameters | Type Software revision Serial number Manufacturer Hardware revision |
| Signal status bit | "1" = Output supplied with power "0" = High-impedance output |
| Wire breakage output | > 12 kΩ (with deactivated test current can be detected only if the output is switched on) |
| Short circuit output | < 30 Ω (response range 30 ... 60 Ω) (can be detected only if the output is switched on) |

Diagnostics

| | |
|-----------------|----------------|
| LED group error | "ERR" LED, red |
|-----------------|----------------|

Ambient Conditions

| | |
|-------------------------------|---|
| Ambient temperature °C | -40°C ... +75°C |
| Ambient temperature °F | -40°F ... +167°F |
| Storage temperature °C | -40°C ... +80°C |
| Storage temperature °F | -40°F ... +176°F |
| Max. operating altitude | < 2000 m |
| Max. relative humidity | 95% (without condensation) |
| Shock (semi-sinusoidal) | (IEC EN 60068-2-27) 15 g (3 shocks per axis and direction) |
| Vibration (sinusoidal) | (IEC EN 60068-2-6) Frequency range 2 ... 13.2 Hz Amplitude 1 mm (peak value) Frequency range 13.2 ... 100 Hz Acceleration amplitude 0.7 g |
| Electromagnetic compatibility | Tested to the following standards and regulations: EN 61326-1 (2006) IEC 61000-4-1 to 61000-4-6, NAMUR NE 21 |
| Note | (observe operating instructions) |

Mechanical Data

| | |
|---------------------------------------|-------------------|
| Degree of protection (IP) (IEC 60529) | IP20 |
| Module enclosure | Polyamide 6GF |
| Fire resistance (UL 94) | V2 |
| Pollutant class | Corresponds to G3 |

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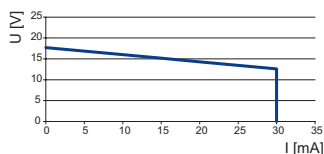
Mechanical Data

| | |
|------------------------|---------|
| Width | 96.5 mm |
| Width, inches | 3.8 in |
| Height | 67 mm |
| Length | 128 mm |
| Length, inches | 5.04 in |
| Mounting depth, inches | 2.64 in |
| Weight | 275 g |
| Weight | 0.61 lb |

Mounting / Installation

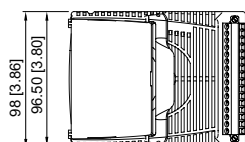
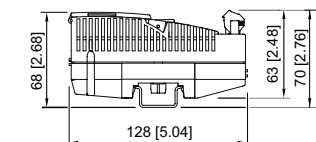
| | |
|----------------------|-------------------------------------|
| Mounting type | on NS 35/15 DIN rail (DIN EN 60715) |
| Mounting orientation | Vertical Horizontal |

Technical Drawings – Subject to Alterations



9475/32-08-52, 9475/33-08-50 output characteristic

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



Accessories

Pluggable terminal

| | | Art. No. |
|--|---|----------|
| | 2.5 mm ² with lock, 16-pin, screw connector, blue, for connecting the field signals to I/O modules, for intrinsically safe field circuits Labelling: 1 to 16 Note: A second terminal is additionally required for I/O module Series 9470 and 9482 Labelling: 17 to 32 | 162702 |
| | 2.5 mm ² with lock, 16-pin, spring clamp connection, blue, for connecting the field signals to I/O modules, for intrinsically safe field circuits, incl. test jacks Labelling: 1 to 16 Note: A second terminal is additionally required for I/O module Series 9470 and 9482 Labelling: 17 to 32 | 162695 |





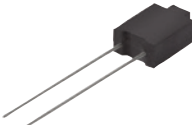


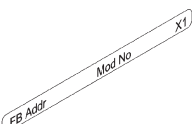
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| Electronic relay | | Art. No. |
|--|--|----------|
|  | The 9174 electronic relay module makes it possible to switch Ex e loads using an intrinsically safe control system. Input: Ex i; output: 31.2 V/2 A DC, Ex e | 212340 |
|  | The electronic relay modules are used to switch Ex e loads using an intrinsically safe (Ex i) or non-intrinsically safe (Ex e) control system. Coil circuit: Ex i or non-Ex i (Ex e)* Contact circuit: Non-Ex i (Ex e) *It is possible to switch between Ex i and non-Ex i circuits, or vice versa, at any time without restriction. Note: Cannot be used with 9475/32-04-12, 9475/32-08-52, 9475/33-08-50 | 282457 |
| Ex i/Ex e relay module for Zone 1 | | Art. No. |
|  | The Ex i/Ex e relay module is used for the galvanically isolated switching of intrinsically safe (Ex i) and non-Ex i (Ex e) electrical circuits. Coil circuit: Ex i or non-Ex i (Ex e) Contact circuit: Ex i or non-Ex i (Ex e) Thanks to the integrated safeguarding for the contact and coil circuit, additional safeguarding is not necessary. Note: no usable with 9475/32-04-12, 9475/32-08-52, 9475/33-08-50 | 273000 |
| Partition | | Art. No. |
|  | For mounting between intrinsically safe and non-intrinsically safe connections between I/O modules to maintain a tight string length of 50 mm | 220101 |
| Resistor error message suppression | | Art. No. |
|  | The resistors are used to suppress error messages for unused I/O channels Resistance value: 5K6/0.5 W Suitable for: AIM 9468; UMH 9469; DIOM 9470; DIOM 9471; DIOM 9472; DOM 9475 For intrinsically safe circuits (simple apparatus according to EN 60079-11) | 244911 |
| Warning label | | Art. No. |
|  | "Clean modules only with a damp cloth." | 162796 |
| DIN A4 sheet | | Art. No. |
|  | For label plate on I/O modules; 6 plates per sheet; IS Wizard printout; packaging unit = 20 sheets | 162832 |
| Labelling strips | | Art. No. |
|  | "FB Addr ... Mod No ..." for pluggable terminal, 26 pieces on the sheet | 162788 |


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| Vibration bracket set | | Art. No. |
|--|---|-----------------|
|  | 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. For mounting: All I/O modules, except 9477/12 and 9478 Number of brackets in a set: 8 Screws (item no. 275516) must be ordered separately. | 271920 |

| Set of screws | | Art. No. |
|----------------------|---|-----------------|
| | Set of M5 x 14 screws (self-tapping) for 9490 vibration brackets Number of screws in a set: 25 | 275516 |

Spare Parts

| Ex i LED indicator lamp | | Art. No. |
|--|--|-----------------|
|  | 8010/3-02 LED indicator lamp for intrinsically safe circuits, Ex i | 237972 |

| LED indicator lamp for front installation | | Art. No. |
|--|-----------------------------|-----------------|
|  | for Ex i front installation | 240901 |

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.