



- For use up to SIL 2 (IEC/EN 61508)
- A wire breakage and short-circuit monitoring system, which can be disconnected and includes messages
- Variants with line fault transparency: The device notifies the control system directly of any field-side line faults via the signal output

A3

MY R. STAHL 9170A



The Series 9170 Ex i switching repeaters are used to operate contacts, NAMUR proximity switches and optocouplers. Models are available with one or two channels. The intrinsically safe digital input is always galvanically separated from the output and auxiliary power. The channels in the two-channel devices are galvanically separated. Certain variants transmit frequencies of up to 10 kHz, and the output signal can be inverted.

| | 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 | | | NEC® 506 | | |
| | Class I | | | | | |
| Zone | 0 | 1 | 2 | 20 | 21 | 22 |
| Ex interface | • | • | • | | | |
| Installation in | | | • | | | |

| Selection Table | | | | | | |
|--------------------------|-----------------|--|-----------------------|----------------|----------|--------|
| Output version (control) | | Electronic (35 V/50 mA) | | | | |
| Number of channels | Auxiliary power | Output per channel | Connection type | Product Type | Art. No. | Weight |
| 2 | 24 V DC | 1 electronic output | Screw terminal | 9170/21-14-11s | 203152 | 180 g |
| | | 1 electronic output | Spring clamp terminal | 9170/21-14-11k | 171469 | 180 g |
| Output version (control) | | Electronic (35 V/50 mA) with LFT (line fault transparency) | | | | |
| Number of channels | Auxiliary power | Output per channel | Connection type | Product Type | Art. No. | Weight |
| 2 | 24 V DC | 1 LFT electronic output | Screw terminal | 9170/21-14-12s | 203153 | 180 g |
| Output version (control) | | Power relay (250 V/4 A) | | | | |
| Number of channels | Auxiliary power | Output per channel | Connection type | Product Type | Art. No. | Weight |
| 1 | 24 V DC | 1 change-over contact – power relay | Spring clamp terminal | 9170/11-12-11k | 203286 | 180 g |
| | | 2 change-over contacts – power relay | Screw terminal | 9170/11-13-21s | 203294 | 180 g |
| | 110 to 230 V AC | 2 change-over contacts – power relay | Spring clamp terminal | 9170/11-13-21k | 203295 | 180 g |
| 2 | 24 V DC | 1 change-over contact – power relay | Screw terminal | 9170/21-12-11s | 203147 | 225 g |
| | | 1 change-over contact – power relay | Spring clamp terminal | 9170/21-12-11k | 203151 | 225 g |
| | 110 to 230 V AC | 1 change-over contact – power relay | Screw terminal | 9170/21-12-21s | 203281 | 225 g |
| | | 1 change-over contact – power relay | Spring clamp terminal | 9170/21-12-21k | 203282 | 225 g |

Selection Table

| Output version (control) | | Signal relay (125 V/1 A) | | | | |
|--------------------------|-----------------|---------------------------------------|-----------------------|----------------|----------|--------|
| Number of channels | Auxiliary power | Output per channel | Connection type | Product Type | Art. No. | Weight |
| 1 | 24 V DC | 2 change-over contacts – signal relay | Screw terminal | 9170/11-11-11s | 203283 | 180 g |
| | | 2 change-over contacts – signal relay | Spring clamp terminal | 9170/11-11-11k | 203284 | 180 g |
| 2 | 24 V DC | 1 change-over contact – signal relay | Screw terminal | 9170/21-10-11s | 203143 | 225 g |
| | | 1 change-over contact – signal relay | Spring clamp terminal | 9170/21-10-11k | 203144 | 225 g |
| | | 2 NO – signal relay | Screw terminal | 9170/21-11-11s | 203145 | 225 g |
| | | 2 NO – signal relay | Spring clamp terminal | 9170/21-11-11k | 203146 | 225 g |

LFT – line fault transparency

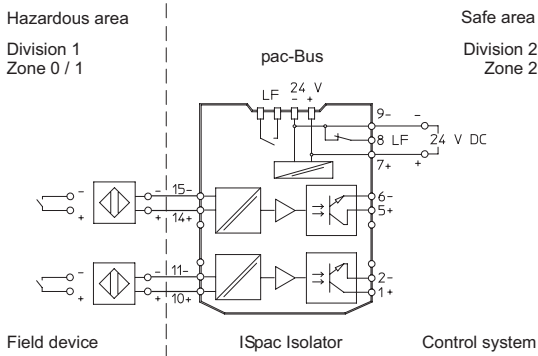
The device notifies the control system directly of any field-side line faults via the signal output.

Technical Data

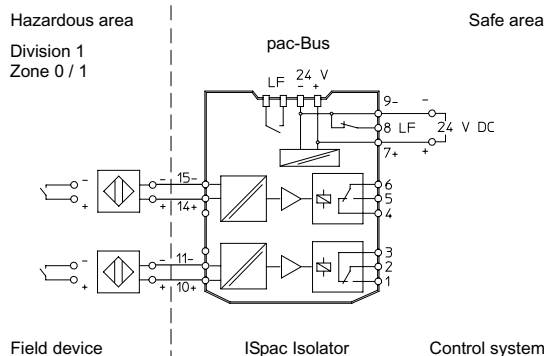
| Variant | Electronic (35 V/50 mA) | Power relay (250 V/4 A) | Signal relay (125 V/1 A) |
|---------------------------------|---|--|---|
| Explosion Protection | | | |
| IECEX gas explosion protection | Ex ec nC [ia Ga] IIC T4 Gc | Ex [Ex ia Ga] IIC | Ex ec nC [ia Ga] IIC T4 Gc |
| IECEX dust explosion protection | [Ex ia Da] IIIC | [Ex ia Da] IIIC | [Ex ia Da] IIIC |
| ATEX gas explosion protection | Ⓜ II 3 (1) G Ex ec nC [ia Ga] IIC T4 Gc | Ⓜ II (1) G Ex [Ex ia Ga] IIC | Ⓜ II 3 (1) G Ex ec nC [ia Ga] IIC T4 Gc |
| ATEX dust explosion protection | Ⓜ II (1) D [Ex ia Da] IIIC | Ⓜ II (1) D [Ex ia Da] IIIC | Ⓜ II (1) D [Ex ia Da] IIIC |
| Certificates | ATEX (BVS), Brazil (ULB), Canada (FM), China (NEPSI), IECEX (BVS), Korea (KGS), SIL (exida), USA (FM) | ATEX (BVS), Brazil (ULB), Canada (FM), Canada (UL), China (NEPSI), IECEX (BVS), India (PESO), Korea (KGS), SIL (exida), USA (FM), USA (UL) | ATEX (BVS), Brazil (ULB), Canada (FM), China (NEPSI), IECEX (BVS), India (PESO), Korea (KGS), SIL (exida), USA (FM) |
| Ship approval | CCS, EU RO MR (DNV) | CCS, EU RO MR (DNV) | CCS, EU RO MR (DNV) |
| Declaration of Conformity | ATEX (EUK), China (CCC) | ATEX (EUK), China (CCC) | ATEX (EUK), China (CCC) |
| Installation | In Zone 2, Division 2 and safe areas | In safe areas | In Zone 2, Division 2 and safe areas |
| Further information | See relevant certificate and operating instructions | See relevant certificate and operating instructions | See relevant certificate and operating instructions |
| Safety Data | | | |
| Max. voltage U_o | 9.6 V | 9.6 V | 9.6 V |
| Max. current I_o | 10 mA | 10 mA | 10 mA |
| Max. power P_o | 24 mW | 24 mW | 24 mW |
| Safety-related max. voltage | 253 V | 253 V | 253 V |
| Functional Safety | | | |
| SIL | 2 | 2 | 2 |
| Input | | | |
| Input signal | As per EN 60947-5-6 (NAMUR) | As per EN 60947-5-6 (NAMUR) | As per EN 60947-5-6 (NAMUR) |
| Output | | | |
| Output switching frequency | 10 kHz | 6 Hz | 15 Hz |
| Ambient Conditions | | | |
| Ambient temperature | -20 °C ... +70 °C (Single device) -20 °C ... +60 °C (Group assembly) | -20 °C ... +70 °C (Single device) -20 °C ... +60 °C (Group assembly) | -20 °C ... +70 °C (Single device) -20 °C ... +60 °C (Group assembly) |
| Storage temperature | -40 °C ... +80 °C | -40 °C ... +80 °C | -40 °C ... +80 °C |
| Mounting / Installation | | | |
| Mounting type | DIN rail NS35/15, NS35/7.5 | DIN rail NS35/15, NS35/7.5 | DIN rail NS35/15, NS35/7.5 |

Technical Drawings – Subject to Alterations

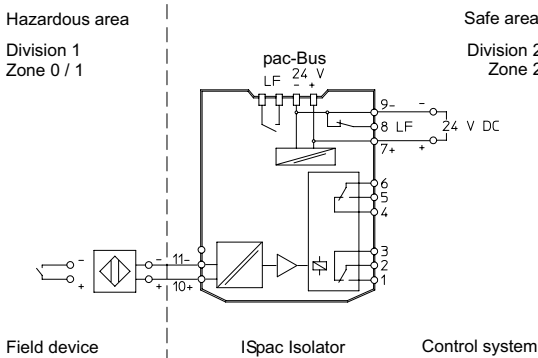
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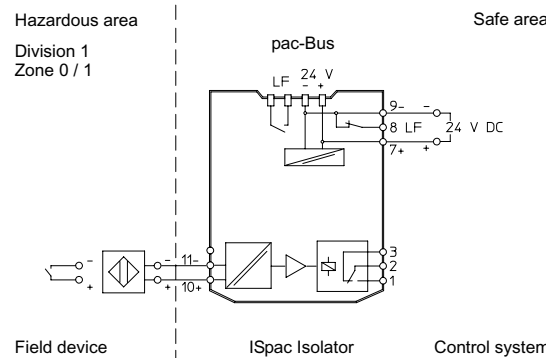
Connection diagram 9170/21-14-11



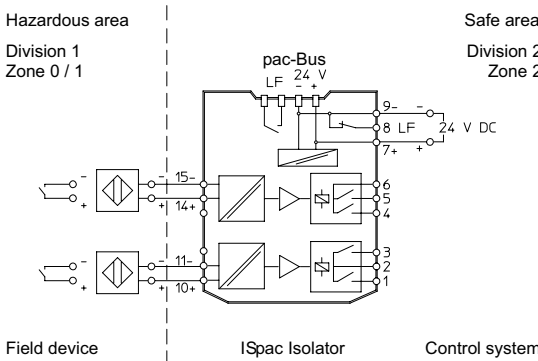
Connection diagram 9170/21-12-11



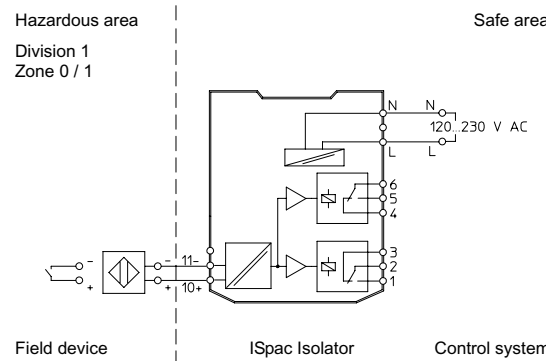
Connection diagram 9170/11-11-11



Connection diagram 9170/11-12-11

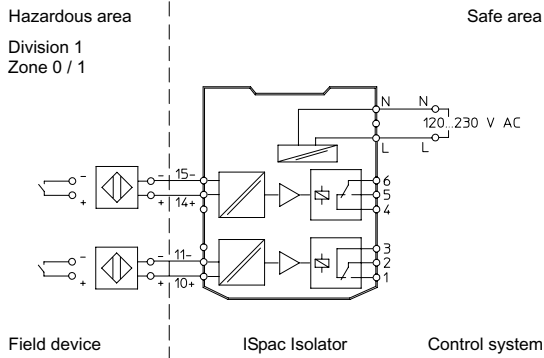


Connection diagram 9170/21-11-11

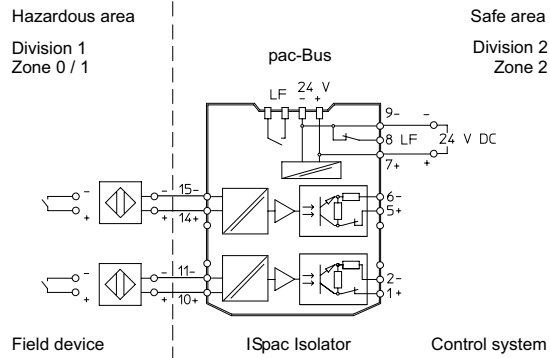


Connection diagram 9170/11-13-21

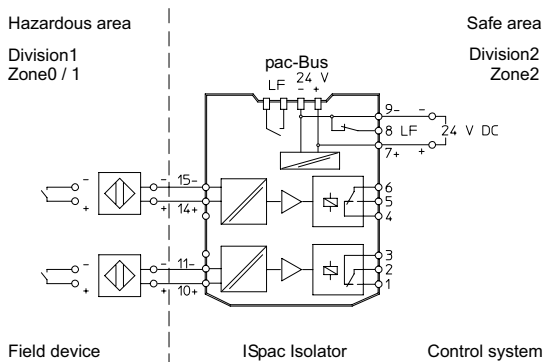
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Connection diagram 9170/21-12-21



Connection diagram 9170/21-14-12

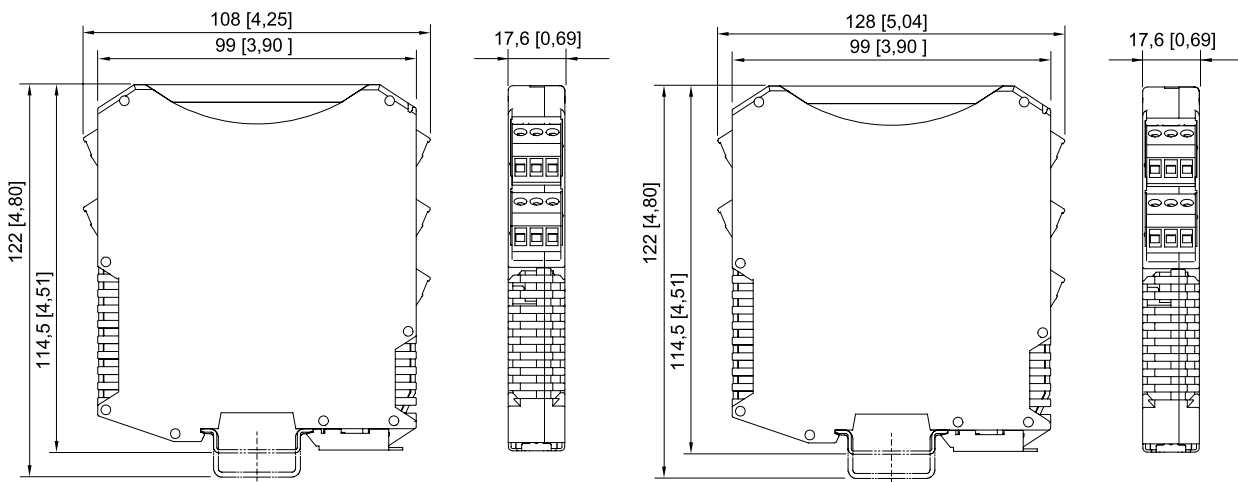


Connection diagram 9170/21-10-11

Accessories

| Figure | Description | Art. No. | Weight |
|----------------------------|---|----------|--------|
| Resistive coupling element | | | |
| | Additional connection of contacts also in hazardous areas to enable short-circuit and wire breakage detection | 105944 | 10 g |

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



ISpac Series 9143, 9146, 9147, 9160, 9162, 9163, 9165, 9167, 9170, 9172, 9175, 9176, 9180, 9182, 9193, ISbus Series 9412 with screw terminal

ISpac Series 9146, 9147, 9160, 9162, 9163, 9165, 9167, 9170, 9172, 9175, 9176, 9180, 9182, 9193, ISbus Series 9412 with spring clamp terminal