



- Compact Ex i frequency transmitter for monitoring speed in hazardous areas
- Offers a variant combining limiting value evaluation + frequency to current conversion + pulse divider function with a width of just 17.6 mm
- Simple parameterisation using "ISpac Wizard" software

A3

MY R. STAHL 9146A



Series 9146 Ex i frequency transmitters monitor the speed of rotating parts on one or two channels, e.g. the speed of fans or centrifuges. The frequency measured at the intrinsically safe input (between 0.001 and 20 kHz) is issued as a unit signal from 0/4 to 20 mA or processed by a frequency divider. In one-channel devices, these frequency transmitters check whether speeds have exceeded or fallen below the limiting values.

| | 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 | | | • | | | |

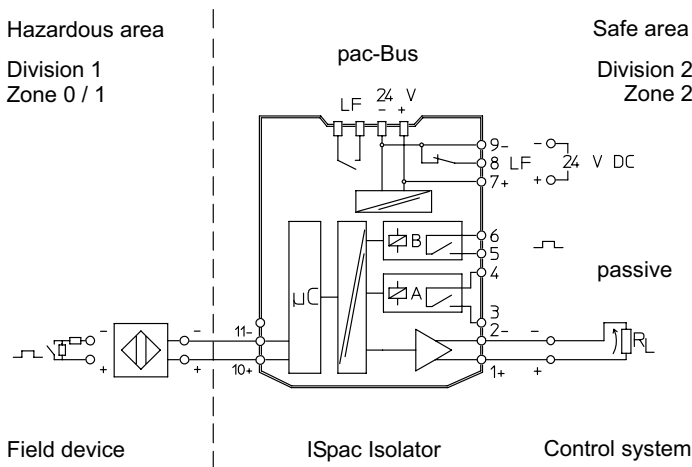
| Selection Table | | | | | | |
|--------------------|-----------------------------|---------------------|-----------------------|----------------|----------|--------|
| Number of channels | 1 | | | | | |
| Output signal | Limit contact (per channel) | Pulse output | Connection type | Product Type | Art. No. | Weight |
| 0/4 to 20 mA | 2 NO/NC | One configurable NO | Screw terminal | 9146/10-11-12s | 159883 | 125 g |
| | 2 NO/NC | One configurable NO | Spring clamp terminal | 9146/10-11-12k | 159884 | 125 g |
| Number of channels | 2 | | | | | |
| Output signal | Limit contact (per channel) | Pulse output | Connection type | Product Type | Art. No. | Weight |
| 0/4 to 20 mA | without | without | Screw terminal | 9146/20-11-11s | 159886 | 135 g |
| | without | without | Spring clamp terminal | 9146/20-11-11k | 159887 | 135 g |

Parameterisation ex works optionally available for all variants. Art. No. 270534

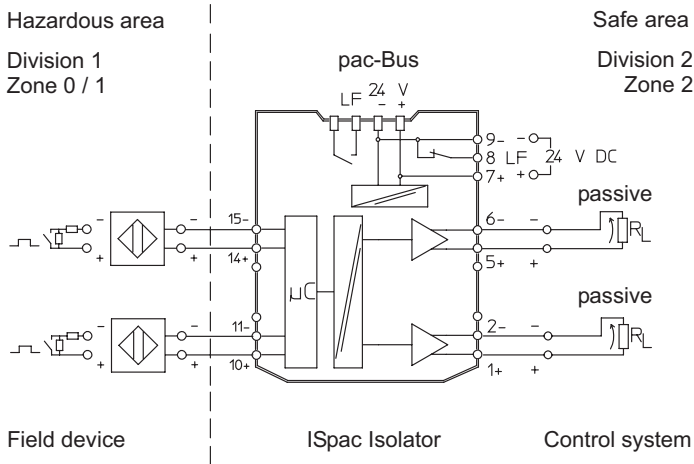
| Technical Data | | |
|---------------------------------|--|--|
| Variant | Number of channels 1 | Number of channels 2 |
| Explosion Protection | | |
| IECEX gas explosion protection | Ex ec nC [ia Ga] IIC T4 Gc | Ex ec nC [ia Ga] IIC T4 Gc |
| IECEX dust explosion protection | [Ex ia Da] IIIC | [Ex ia Da] IIIC |
| IECEX firedamp protection | [Ex ia Ma] I | [Ex ia Ma] I |
| ATEX gas explosion protection | Ⓢ II 3 (1) G Ex ec nC [ia Ga] IIC T4 Gc | Ⓢ 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 |
| ATEX firedamp protection | Ⓢ I (M1) [Ex ia Ma] I | Ⓢ I (M1) [Ex ia Ma] I |
| Certificates | ATEX (BVS), Canada (FM), IECEx (BVS), India (PESO), USA (FM) | ATEX (BVS), Canada (FM), IECEx (BVS), India (PESO), USA (FM) |

| Technical Data | | |
|--|---|---|
| Variant | Number of channels 1 | Number of channels 2 |
| Explosion Protection | | |
| Ship approval | CCS, EU RO MR (DNV) | CCS, EU RO MR (DNV) |
| Declaration of Conformity | ATEX (EUK) | ATEX (EUK) |
| Safety Data | | |
| Max. voltage U_o | 10.5 V | 10.5 V |
| Max. current I_o | 23.4 mA | 23.4 mA |
| Max. power P_o | 61.4 mW | 61.4 mW |
| Safety-related max. voltage | 253 V | 253 V |
| Auxiliary Power | | |
| Auxiliary power | 24 V DC | 24 V DC |
| Nominal current | 55 mA | 75 mA |
| Input | | |
| Input signal | As per EN 60947-5-6 (NAMUR) | As per EN 60947-5-6 (NAMUR) |
| Input frequency | 0.0010-20000 Hz | 0.0010-20000 Hz |
| Line fault and loss of power signalisation | - Contact (30 V/100 mA), closed against earth in case of error - pac-Bus, potential-free contact (30 V/100 mA) | - Contact (30 V/100 mA), closed against earth in case of error - pac-Bus, potential-free contact (30 V/100 mA) |
| Ambient Conditions | | |
| Ambient temperature | -40 °C ... +70 °C (Single device) -40 °C ... +60 °C (Group assembly) | -40 °C ... +70 °C (Single device) -40 °C ... +60 °C (Group assembly) |
| Storage temperature | -40 °C ... +80 °C | -40 °C ... +80 °C |





Technical Drawings – Subject to Alterations

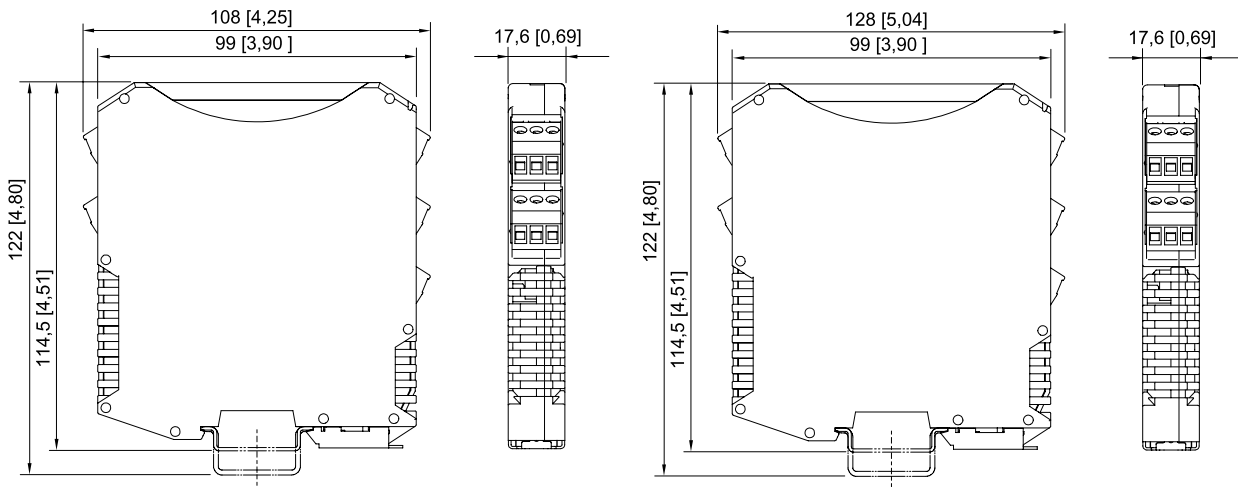


Connection diagram 9146/10-11-12



Connection diagram 9146/20-11-12

| Accessories | | | |
|---|---|----------|--------|
| Figure | Description | Art. No. | Weight |
| 9146 Parameterisation | | | |
|  | Parameterisation ex works optionally available for all variants. | 270534 | - |
| ISpac Wizard parameterising set | | | |
|  | The software is used to commission, configure and diagnose Series 9146, 9162 and 9182 ISpac isolators. For further information, see the operating instructions. Delivery form: USB stick; parameterising software incl. parameterising cable/adaptor System requirements: IBM-compatible PC with MS XP, Vista, Windows 7, 10 RS 232 C interface RS 232/USB adaptor | 202595 | 235 g |
| Resistive coupling element | | | |
|  | The 0/4 to 20 mA signal of channel 1 is converted to a 0/2 to 10 V signal. The resistive coupling element replaces the existing connection terminal. (Set with 5 pieces) | 273968 | 60 g |
|  | Additional connection of contacts also in hazardous areas to enable short-circuit and wire breakage detection | 105944 | 10 g |



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