

# STAHL Intrinsically Safe Isolators Configuration Set



## ISpac Wizard Software and Configuration Set

The 9199-20-02 configuration set allows serial communication between a PC and an isolator via the included USB-to-Serial Converter.

This set-up allows for quick programming. The software is provided on an included USB drive or as a free download. The software allows the user to save configuration files easily so that the same configuration can be duplicated on multiple cards. Windows operating system is required

The configuration set will work with the following safety isolators:

- 9182 series Temperature Converter Isolator (for thermocouple applications)
- 9146 series Frequency Transmitter Isolator



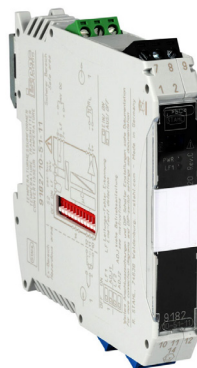
### Configuration Set Selection Guide

| Part Number                       | Price    | Description                                                          |
|-----------------------------------|----------|----------------------------------------------------------------------|
| <a href="#"><u>9199-20-02</u></a> | \$312.00 | STAHL configuration set, for use with STAHL 9146 and 9182 isolators. |

# STAHL Intrinsicly Safe Isolators Temperature Converter

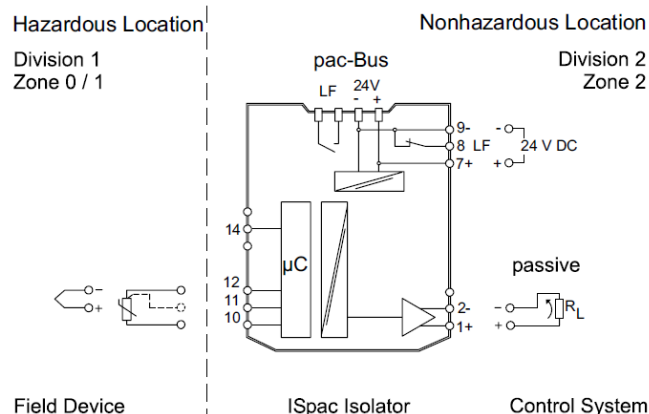


| STAHL Intrinsicly Safe Isolators<br>Temperature Converter Specifications |                                                               |                                                                                                                                                     |
|--------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                          |                                                               | Thermal Input                                                                                                                                       |
|                                                                          |                                                               | 9182-10-51-11S                                                                                                                                      |
| Isolator Type                                                            |                                                               | Temperature transmitter                                                                                                                             |
| Explosion Protection                                                     | Installation Location (per NEC 500)                           | Class I, Division 2                                                                                                                                 |
|                                                                          | Ex Interface (for intrinsically safe interface) (per NEC 500) | Class I, II, III Division 1 or 2                                                                                                                    |
|                                                                          | Agency Approvals                                              | ATEX (BVS), Brazil (ULB), Canada (FM), EAC (ENDCE), IECEx (BVS), India (PESO), Korea (KTL), Russia (Meteorological certificate), USA (FM), USA (UL) |
| Safety Data                                                              | Max Voltage ( $U_0$ )                                         | 6.5 V                                                                                                                                               |
|                                                                          | Max Current ( $I_0$ )                                         | 19.7 mA                                                                                                                                             |
|                                                                          | Max Power ( $P_0$ )                                           | 32mW                                                                                                                                                |
| Functional Safety                                                        | Safety Integrity Level (SIL)                                  | –                                                                                                                                                   |
| Electrical Data                                                          | Number of Channels                                            | 1 in / 1 out                                                                                                                                        |
|                                                                          | Line Fault Detection Relay                                    | Yes                                                                                                                                                 |
|                                                                          | Auxiliary Power Range                                         | 18 to 31.2 VDC                                                                                                                                      |
|                                                                          | Nominal Current                                               | 70mA                                                                                                                                                |
|                                                                          | Power Consumption                                             | 1.9 W                                                                                                                                               |
|                                                                          | Max Power Dissipation                                         | 1.9 W                                                                                                                                               |
|                                                                          | Operation Indication                                          | Green LED "PWR"<br>Red LED "LF"                                                                                                                     |
|                                                                          | Input Function                                                | 2 wire circuits,<br>3 wire circuits, or<br>4 wire circuits                                                                                          |
|                                                                          | Thermocouple Input Type                                       | B, E, J, K, N, R, T<br>(Part 9191-VS-05 is required)                                                                                                |
|                                                                          | Resistance Temperature Detector (RTD) Input Type              | PT 100                                                                                                                                              |
|                                                                          | HART Compatible                                               | No                                                                                                                                                  |
|                                                                          | Supply Voltage for Transmitter                                | Sensor current potentiometer<br>< 0.25 mA                                                                                                           |
| Ambient Conditions                                                       | Output                                                        | 0 to 20 mA<br>or 4 to 20 mA (active)                                                                                                                |
|                                                                          | Output Load Resistance Max ( $R_L$ )                          | 750Ω                                                                                                                                                |
|                                                                          | Operating Temperature (Group Assembly)                        | -20°C to 60°C [-4°F to 140°F]                                                                                                                       |
| Mechanical Data                                                          | Operating Temperature (Single Device Installation)            | -20°C to 70°C [-4°F to 158°F]                                                                                                                       |
|                                                                          | Storage Temperature                                           | -40°C to 80°C [-40°F to 176°F]                                                                                                                      |
|                                                                          | Degree of Protection                                          | IP20                                                                                                                                                |
|                                                                          | Width                                                         | 17.6 mm [0.69 in] (standard)                                                                                                                        |
|                                                                          | Mounting Type                                                 | DIN rail                                                                                                                                            |
|                                                                          | Wire Gauge Range                                              | 16 - 12 AWG                                                                                                                                         |
|                                                                          | Mounting Position                                             | Vertical or horizontal                                                                                                                              |
|                                                                          | Weight                                                        | 0.28 lb [126 g]                                                                                                                                     |



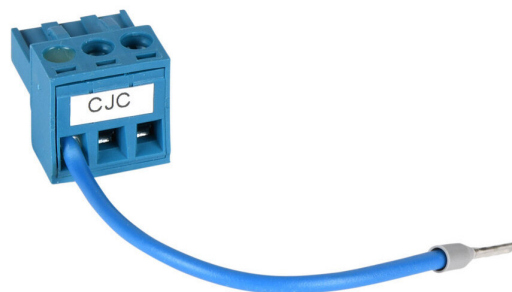
## Connection Diagram

### 9182-10-51-11S



## STAHL Temperature Converter Isolators Accessories Selection Guide

| Part Number       | Price    | Description                                                                                              | Weight        |
|-------------------|----------|----------------------------------------------------------------------------------------------------------|---------------|
| <b>9191-VS-05</b> | \$116.00 | External reference junction (cold junction compensation [CJC]) is required for thermocouple applications | 0.19 oz [5 g] |



External reference junction (CJC) is required for thermocouple applications with **9182-10-51-11S**

# STAHL Intrinsically Safe Isolators Frequency Converter



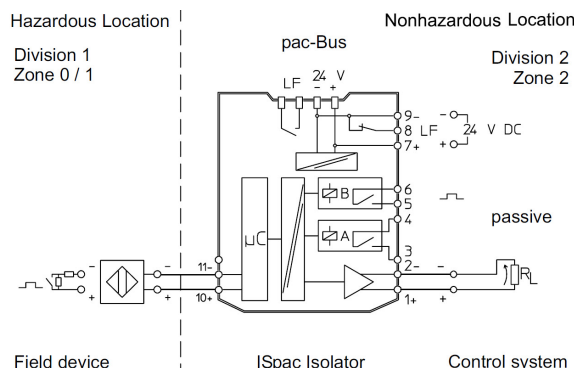
## STAHL Intrinsically Safe Isolators Frequency Converter Specifications\*

|                             |                                                                  | 9146-10-11-12S                                                                  | 9146-20-11-11S                                                                  |
|-----------------------------|------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Isolator Type</b>        |                                                                  | Frequency converter (1 channel)                                                 | Frequency converter (2 channel)                                                 |
| <b>Explosion Protection</b> | Installation Location (per NEC 500)                              | Class I, Division 2                                                             | Class I, Division 2                                                             |
|                             | Ex Interface<br>(for intrinsically safe interface) (per NEC 500) | Class I, II, III<br>Division 1 or 2                                             | Class I, II, III<br>Division 1 or 2                                             |
|                             | Agency Approvals                                                 | ATEX (BVS), Canada (FM), EAC (ENDCE),<br>IECEX (BVS), India (PESO), USA (FM)    | ATEX (BVS), Canada (FM), EAC (ENDCE),<br>IECEX (BVS), India (PESO), USA (FM)    |
| <b>Safety Data</b>          | Max Voltage ( $U_0$ )                                            | 10.5 V                                                                          | 10.5 V                                                                          |
|                             | Max Current ( $I_0$ )                                            | 23.4 mA                                                                         | 23.4 mA                                                                         |
|                             | Max Power ( $P_0$ )                                              | 61.4 mW                                                                         | 61.4 mW                                                                         |
| <b>Functional Safety</b>    | Safety Integrity Level (SIL)                                     | –                                                                               | –                                                                               |
| <b>Electrical Data</b>      | Number of Channels                                               | 1 in / 1 out with two configurable dry contacts                                 | 2 in / 2 out                                                                    |
|                             | Line Fault Detection Relay                                       | Yes                                                                             | Yes                                                                             |
|                             | Auxiliary Power Range                                            | 18 to 31.2 VDC                                                                  | 18 to 31.2 VDC                                                                  |
|                             | Nominal Current                                                  | 55mA                                                                            | 75mA                                                                            |
|                             | Power Consumption                                                | 1.32 W                                                                          | 1.8 W                                                                           |
|                             | Max Power Dissipation                                            | 1.1 W                                                                           | 1.5 W                                                                           |
|                             | Operation Indication                                             | Green LED "PWR"<br>Red LED "LF"<br>Yellow LED "STAT"                            | Green LED "PWR"<br>(2) Red LED "LF"<br>(2) Yellow LED "STAT"                    |
|                             | Input Function                                                   | Galvanic isolated frequency converter                                           | Galvanic isolated frequency converter                                           |
|                             | Input Type                                                       | NAMUR sensor or voltage pulses<br>(not to be used with magnetic pickup sensors) | NAMUR sensor or voltage pulses<br>(not to be used with magnetic pickup sensors) |
|                             | Frequency Range                                                  | 0.001 Hz to 20kHz                                                               | 0.001 Hz to 20kHz                                                               |
|                             | HART Compatible                                                  | No                                                                              | No                                                                              |
|                             | Output (Channel A)                                               | 0-20 mA or 4-20 mA (active)<br>with two configurable dry contacts               | 0-20 mA or 4-20 mA (active)                                                     |
|                             | Output Load Resistance Max ( $R_L$ )                             | 600Ω                                                                            | 600Ω                                                                            |
|                             | Output (Channel B)                                               | –                                                                               | 0-20 mA or 4-20 mA (active)                                                     |
| <b>Ambient Conditions</b>   | Operating Temperature (Group Assembly)                           | -40°C to 60°C [-40°F to 140°F]                                                  | -40°C to 60°C [-40°F to 140°F]                                                  |
|                             | Operating Temperature<br>(Single Device Installation)            | -40°C to 70°C [-40°F to 158°F]                                                  | -40°C to 70°C [-40°F to 158°F]                                                  |
|                             | Storage Temperature                                              | -40°C to 80°C [-40°F to 176°F]                                                  | -40°C to 80°C [-40°F to 176°F]                                                  |
| <b>Mechanical Data</b>      | Degree of Protection                                             | IP20                                                                            | IP20                                                                            |
|                             | Width                                                            | 17.6 mm [0.69 in] (standard)                                                    | 17.6 mm [0.69 in] (standard)                                                    |
|                             | Mounting Type                                                    | DIN rail                                                                        | DIN rail                                                                        |
|                             | Wire Gauge Range                                                 | 24 - 14 AWG                                                                     | 24 - 14 AWG                                                                     |
|                             | Mounting Position                                                | Vertical or horizontal                                                          | Vertical or horizontal                                                          |
|                             | Weight                                                           | 0.28 lb [125g]                                                                  | 0.3 lb [135g]                                                                   |

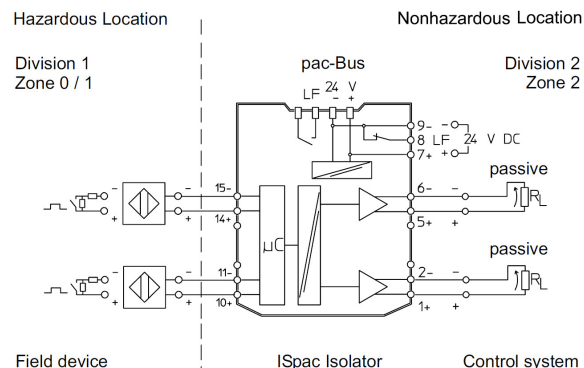
\* The 9146 series frequency converter requires configuration using the 9199-20-02 cable and software.

## Connection Diagrams

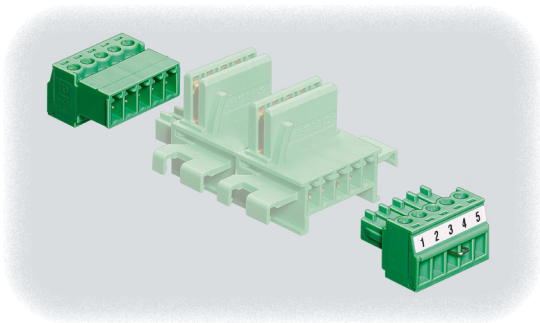
### 9146-10-11-12S



### 9146-20-11-11S



# STAHL Intrinsically Safe Isolators Accessories – pac-Bus System

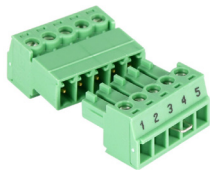


## Benefits of Using the pac-Bus System

- Quick, easy wiring
- Can be installed on standard DIN rail without tools by simply snapping into place
- Can be expanded at any time with additional pac-Bus units
- Suitable for industrial environments subject to vibration
- Optional power supply module 9193 enables refused redundant 24VDC supply and fault signalization

## STAHL Intrinsically Safe Isolators Accessories (pac-Bus System) Selection Guide

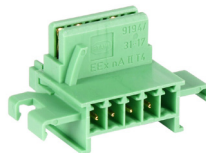
| Part Number           | Price    | Description                                                   | Weight        | Drawing             |
|-----------------------|----------|---------------------------------------------------------------|---------------|---------------------|
| <b>9194-50-01</b>     | \$22.50  | End terminal set for pac-Bus system                           | 0.29 oz [8 g] | <a href="#">PDF</a> |
| <b>9294-31-12</b>     | \$29.50  | pac-Bus terminal for 92xx (12.5 mm [0.49 in] width) isolators | 0.16 oz [5 g] | <a href="#">PDF</a> |
| <b>9194-31-17</b>     | \$22.50  | pac-Bus terminal for 91xx (17.6 mm [0.69 in] width) isolators | 0.16 oz [5 g] | <a href="#">PDF</a> |
| <b>9193/21-11-11S</b> | \$269.00 | pac-Bus supply module                                         | 0.4 lb [180g] | <a href="#">PDF</a> |
| <b>111412</b>         | \$40.00  | Qty 10 spare fuses for use with pac-Bus supply module         | 0.07 lb [2g]  | <a href="#">PDF</a> |



**9194-50-01**



**9294-31-12**



**9194-31-17**

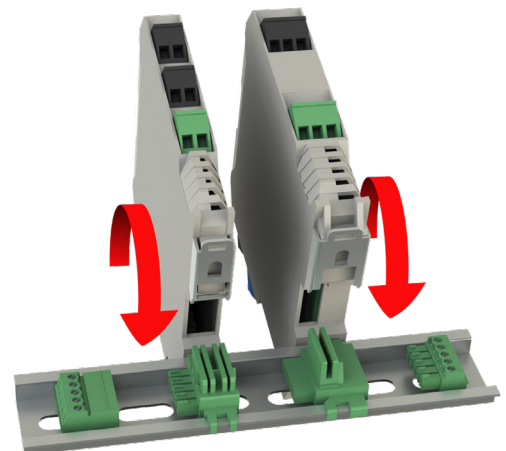
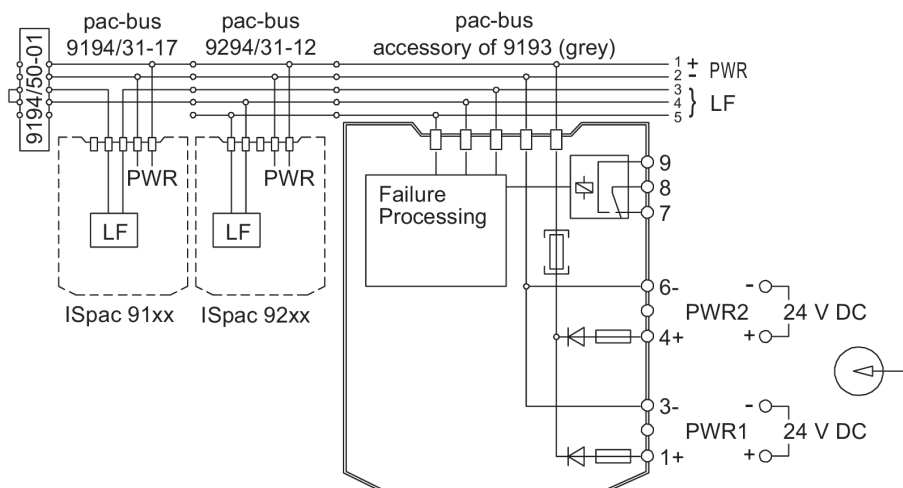


**9193/21-11-11S**



**111412**

## Connection Diagram



Refer to installation instructions for details

# STAHL Intrinsically Safe Isolators Accessories – pac-Bus System



| STAHL pac-Bus Supply Module Specifications |                                                               |                                                                             |
|--------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------|
|                                            |                                                               | <b><u>9193/21-11-11S</u></b>                                                |
| <b>Explosion Protection</b>                | Installation Location (per NEC 500)                           | Class I, Division 2                                                         |
|                                            | Ex Interface (for intrinsically safe interface) (per NEC 500) | Class I, II, III<br>Division 1 or 2                                         |
|                                            | Agency Approvals                                              | ATEX (BVS), Canada (FM), China (NEPSI), IECEx (BVS), India (PESO), USA (FM) |
| <b>Electrical Data</b>                     | Power Supply                                                  | 24VDC 4A, primary and redundant                                             |
|                                            | Auxiliary Power Voltage Range                                 | 18.0 to 31.2 VDC                                                            |
|                                            | Max Power Dissipation                                         | 2.5 W                                                                       |
| <b>Ambient Conditions</b>                  | Operating Temperature                                         | -40°C to 55°C<br>[-40°F to 131°F]                                           |
|                                            | Storage Temperature                                           | -40°C to 80°C<br>[-40°F to 176°F]                                           |
| <b>Mechanical Data</b>                     | Degree of Protection                                          | IP20                                                                        |
|                                            | Mounting Type                                                 | DIN rail                                                                    |
|                                            | Wire Gauge Range                                              | 16AWG for terminals<br>12AWG for ground connections                         |

# Safety Products



*Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.*

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