

# STAHL Intrinsically Safe Isolators



## Overview

STAHL's easy-to-connect and user-friendly isolating barriers provide intrinsic safety and galvanic separation between the control system and the field device, insulating the field device from other parts of the system. Their isolating barrier range is easy to use and boasts an impressive range of functions and a long service life.

## Features

- Compact: Dual Channel modules for most functions
- Analog cards are HART capable
- Analog and digital cards are rated for SIL applications
- pac-Bus provides time-saving system for wiring

## STAHL Intrinsically Safe Isolators Selection Guide

Part Number	Price	Isolator Type	Field Device	Channels	Controller Side (PLC/DCS)	Drawing
<b>Analog Input (From Hazardous Area)</b>						
<a href="#">9260-13-11-10S</a>	\$471.00	Transmitter (1 channel)	0 to 20 mA or 4 to 20 mA	1 in / 1 out	Output range will match input range (active or passive)	<a href="#">PDF</a>
<a href="#">9260-19-11-10S</a>	\$665.00	Transmitter (splitter)	0 to 20 mA or 4 to 20 mA	1 in / 2 out	Output range will match input range (active)	<a href="#">PDF</a>
<a href="#">9260-23-11-10S</a>	\$746.00	Transmitter (2 channel)	0 to 20 mA or 4 to 20 mA	2 in / 2 out	Output range will match input range (active)	<a href="#">PDF</a>

<b>Analog Output (To Hazardous Area)</b>						
<a href="#">9165-16-11-11S</a>	\$526.00	Isolating repeater	Output range will match input range (active)	1 in / 1 out	0 to 20 mA or 4 to 20 mA	<a href="#">PDF</a>
<a href="#">9265-26-11-10S</a>	\$750.00	Isolating repeater	Output range will match input range (active)	2 in / 2 out	0 to 20 mA or 4 to 20 mA	<a href="#">PDF</a>

<b>Digital Input (From Hazardous Area)</b>						
<a href="#">9270-11-16-14S</a>	\$291.00	Switching repeater, 1 channel DC power	NAMUR sensor* or dry contacts	1 in / 1 out	1 changeover contact (SPDT relay)	<a href="#">PDF</a>
<a href="#">9170-11-13-21S</a>	\$212.00	Switching repeater, 1 channel AC power	NAMUR sensor* or dry contacts	1 in / 2 out	2 changeover contacts (2 SPDT relays)	<a href="#">PDF</a>
<a href="#">9270-21-17-14S</a>	\$337.00	Switching repeater, 2 channel DC power	NAMUR sensor* or dry contacts	2 in / 2 out	1 NO relay (max 250V / 2A)	<a href="#">PDF</a>
<a href="#">9170-21-12-21S</a>	\$261.00	Switching repeater, 2 channel AC power	NAMUR sensor* or dry contacts	2 in / 2 out	1 changeover contact (SPDT relay)	<a href="#">PDF</a>
<a href="#">9172-20-11-00S</a>	\$285.00	Ex i relay module (2 channel)	Intrinsically safe coil (14 to 30 V)	2 in / 2 out	1 changeover contact (SPDT relay)	<a href="#">PDF</a>

<b>Digital Output (To Hazardous Area)</b>						
<a href="#">9275-10-24-48-11S</a>	\$351.00	Digital output	Open circuit: 24.3 V 48mA at 9.7 V	1 in / 1 out	15 to 30 V for ON 0 to 5 V for OFF	<a href="#">PDF</a>
<a href="#">9175-20-14-11S</a>	\$490.00	Digital output	Open circuit: 17.5 V 43mA at 12V	2 in / 2 out	15 to 31.2 V for ON 0 to 5 V for OFF	<a href="#">PDF</a>

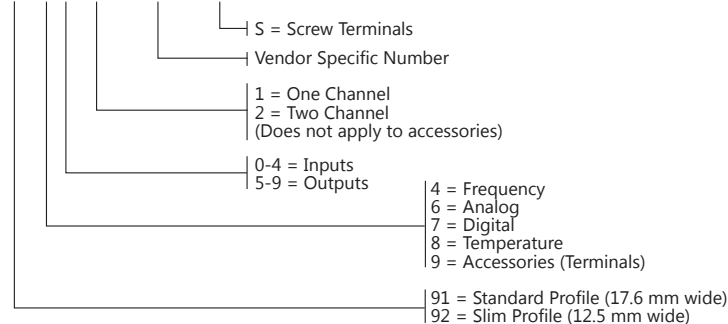
<b>Temperature Converter (From Hazardous Area)</b>						
<a href="#">9182-10-51-11S</a>	\$602.00	Temperature transmitter	Thermocouple and RTD	1 in / 1 out	0 to 20 mA or 4 to 20 mA (active)	<a href="#">PDF</a>
<a href="#">9180-10-77-11S</a>	\$506.00	RTD repeater	RTD (PT 100)	1 in / 1 out	Equal to input signal (resistor)	<a href="#">PDF</a>
<a href="#">9180-20-77-11S</a>	\$740.00	RTD repeater	RTD (PT 100)	2 in / 2 out	Equal to input signal (resistor)	<a href="#">PDF</a>

<b>Frequency Transmitter (From Hazardous Area)</b>						
<a href="#">9146-10-11-12S</a>	\$743.00	Frequency transmitter	NAMUR sensor* or voltage pulses	1 in / 1 out	0 to 20 mA or 4 to 20 mA (active) with two configurable dry contacts	<a href="#">PDF</a>
<a href="#">9146-20-11-11S</a>	\$964.00	Frequency transmitter	NAMUR sensor* or voltage pulses	2 in / 2 out	0 to 20 mA or 4 to 20 mA (active)	<a href="#">PDF</a>

\* A NAMUR sensor is an intrinsically safe 2-wire sensor which supplies one of two signal levels depending on sensor state.

## Part Number Nomenclature

### 9260-13-11-10S



# STAHL Intrinsically Safe Isolators Analog



## STAHL Analog Intrinsically Safe Isolators Specifications

		Analog Input			Analog Output	
		9260-13-11-10S	9260-19-11-10S	9260-23-11-10S	9165-16-11-11S	9265-26-11-10S
<b>Isolator Type</b>		Transmitter (1 channel)	Transmitter (splitter)	Transmitter (2 channel)	Isolating repeater	Isolating repeater
<b>Explosion Protection</b>	Installation Location (per NEC 500)	Class I, Division 2	Class I, Division 2	Class I, Division 2	Class I, Division 2	Class I, Division 2
	Ex Interface (per NEC 500)	Class I, II, III Division 1 or 2	Class I, II, III Division 1 or 2	Class I, II, III Division 1 or 2	Class I, II, III Division 1 or 2	Class I, II, III Division 1 or 2
	Agency Approvals	ATEX (BVS), Canada / USA (UL), IEC Ex (BVS), SIL (BVD)	ATEX (BVS), Canada / USA (UL), IEC Ex (BVS), SIL (BVD)	ATEX (BVS), Canada / USA (UL), IEC Ex (BVS), SIL (BVD)	ATEX (BVS), Canada (FM), EAC (ENDCE), IECEx (BVS), India (PESO), Korea (KTL), Russia (Meteorological certificate), SIL (exida), USA (FM)	ATEX (BVS), Canada/USA (UL), EAC (ENDCE), IECEx (BVS), Korea (KTL), SIL (BVS)
<b>Safety Data</b>	Max Voltage ( $U_0$ )	25.2 V	25.2 V	25.2 V	25.6 V	25.2 V
	Max Current ( $I_0$ )	93mA	93mA	93mA	96mA	93mA
	Max Power ( $P_0$ )	587mW	587mW	587mW	605mW	587mW
<b>Functional Safety</b>	Safety Integrity Level (SIL)	2	2	2	2	2
<b>Electrical Data</b>	Number of Channels	1 in / 1 out	1 in / 2 out	2 in / 2 out	1 in / 1 out	2 in / 2 out
	Line Fault Detection Relay	No	No	No	Yes	No
	Auxiliary Power Range	19.2 to 30VDC	19.2 to 30VDC	19.2 to 30VDC	18 to 31.2 VDC	19.2 to 30 VDC
	Nominal Current	76mA	75mA	100mA	55mA	85mA
	Power Consumption	1.8 W	1.8 W	2.4 W	1.3 W	2W
	Max Power Dissipation	1.2 W	1.45 W	1.45 W	1.1 W	1.4 W
	Operation Indication	Green LED "PWR"	Green LED "PWR"	Green LED "PWR"	Green LED "PWR" Red LED "LF1"	Green LED "PWR"
	Input Function	Galvanic isolated transmitter power supply	Galvanic isolated transmitter power supply	Galvanic isolated transmitter power supply	Galvanic isolated current repeater	Galvanic isolated current repeater
	Input Type	0 to 20 mA or 4 to 20 mA	0 to 20 mA or 4 to 20 mA	0 to 20 mA or 4 to 20 mA	0 to 20 mA or 4 to 20 mA	0 to 20 mA or 4 to 20 mA
	Output (Channel A)	Output range will match input range (active or passive)	Output range will match input range (active)	Output range will match input range (active)	Output range will match input range (active)	Output range will match input range (active)
	Output Load Resistance Max ( $R_L$ )	1000Ω	450Ω	450Ω	800Ω	700Ω
	HART Compatible	Yes - transparent to HART	Yes - transparent to HART (output channel A)	Yes - transparent to HART	Yes - transparent to HART	Yes - transparent to HART
	Supply Voltage for Transmitter	≥ 16V at 20mA	≥ 16V at 20mA	≥ 16V at 20mA	–	–
	Output (Channel B)	–	Output range will match input range (active) (without HART)	Output range will match input range (active)	–	Output range will match input range (active)
<b>Ambient Conditions</b>	Operating Temperature (Group Assembly)	-20°C to 60°C [-4°F to 140°F]	-20°C to 60°C [-4°F to 140°F]	-20°C to 60°C [-4°F to 140°F]	-20°C to 60°C [-4°F to 140°F]	-40°C to 70°C [-40°F to 158°F]
	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]	-40°C to 80°C [-40°F to 176°F]	-40°C to 80°C [-40°F to 176°F]	-40°C to 80°C [-40°F to 176°F]	-40°C to 85°C [-40°F to 185°F]
<b>Mechanical Data</b>	Degree of Protection	IP20	IP20	IP20	IP20	IP20
	Width	12.5 mm [0.49 in] (slim profile)	12.5 mm [0.49 in] (slim profile)	12.5 mm [0.49 in] (slim profile)	17.6 mm [0.69 in] (standard)	12.5 mm [0.49 in] (slim profile)
	Mounting Type	DIN rail	DIN rail	DIN rail	DIN rail	DIN rail
	Wire Gauge Range	24 - 12 AWG	24 - 12 AWG	24 - 12 AWG	24 - 12 AWG	16 - 12 AWG
	Mounting Position	Vertical or horizontal	Vertical or horizontal	Vertical or horizontal	Vertical or horizontal	Vertical or horizontal
	Weight	0.23 lb [103g]	0.24 lb [108g]	0.23 lb [105g]	0.25 lb [114g]	0.43 lb [195g]

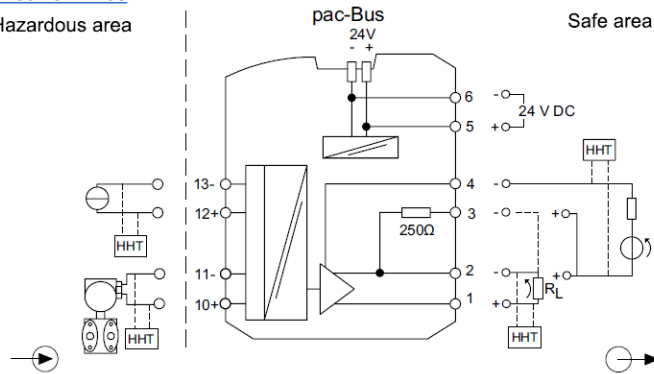
# STAHL Intrinsically Safe Isolators

## Analog

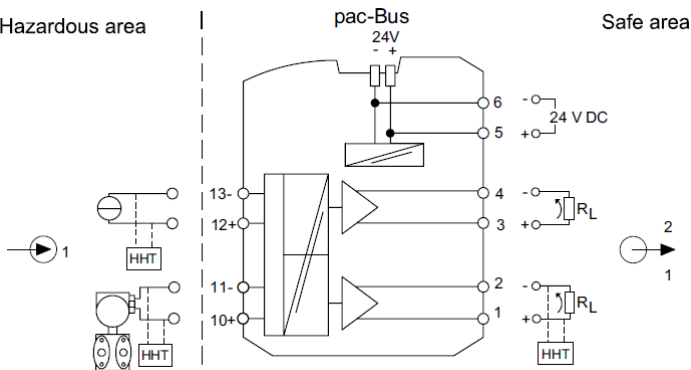
### Connection Diagrams

**9260-13-11-10S**

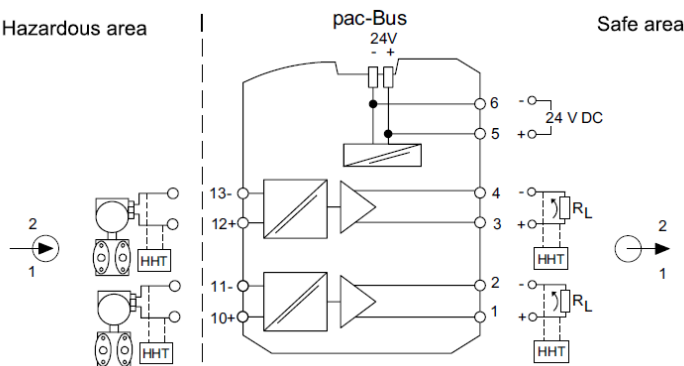
Hazardous area

**9260-19-11-10S**

Hazardous area

**9260-23-11-10S**

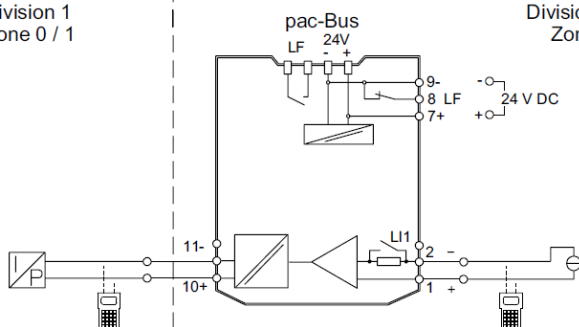
Hazardous area

**9165-16-11-11S**

Hazardous Location

Division 1  
Zone 0 / 1

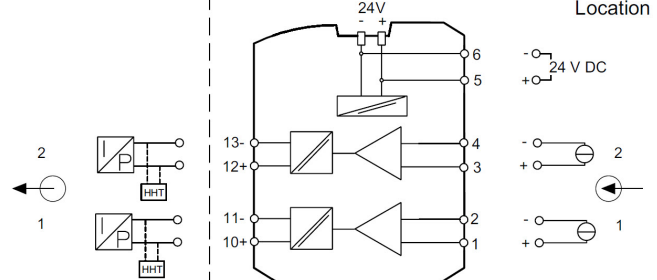
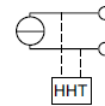
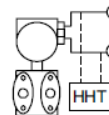
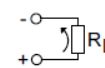
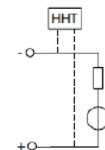
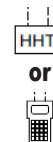
Nonhazardous Location

Division 2  
Zone 2**9265-26-11-10S**

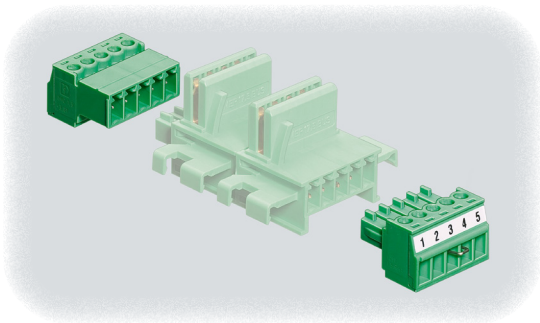
Hazardous Location

Division 1  
Zone 0 / 1

Nonhazardous Location

**Legend****Active (4-wire)  
analog field  
device****Passive (2-wire)  
analog field  
device****Active signal  
to PLC/DCS  
(sinking input)****Passive signal  
to PLC/DCS  
(sourcing input)****HART transparent****Analog field  
device  
(i.e., positioner)****Active signal from  
PLC/DCS**

# STAHL Intrinsically Safe Isolators Accessories – pac-Bus System

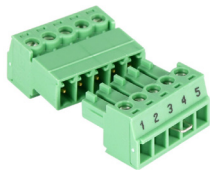
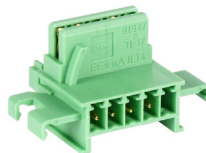


## Benefits of Using the pac-Bus System

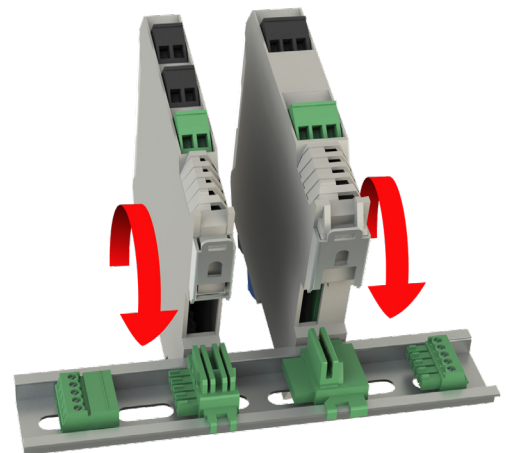
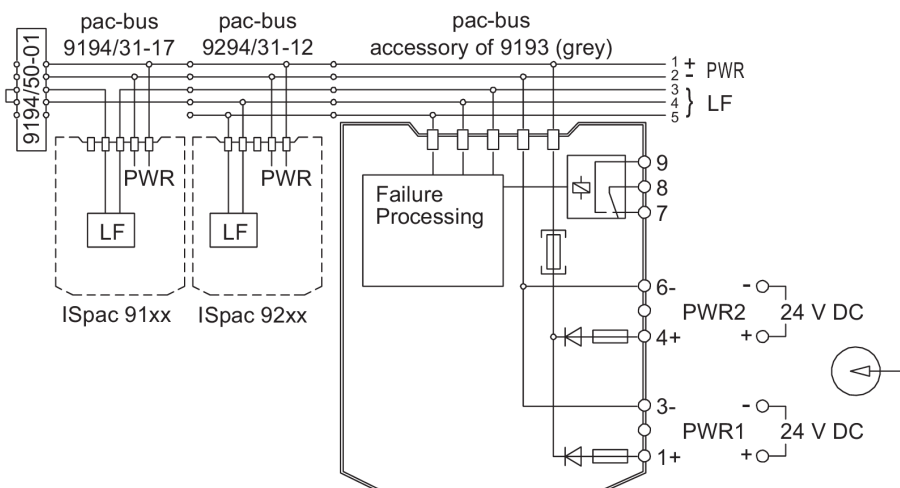
- Quick, easy wiring
- Can be installed on standard DIN rail without tools by simply snapping into place
- Can be expanded at any time with additional pac-Bus units
- Suitable for industrial environments subject to vibration
- Optional power supply module 9193 enables refused redundant 24VDC supply and 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 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 [-40°F to 131°F]
	Storage Temperature	-40°C to 80°C [-40°F to 176°F]
<b>Mechanical Data</b>	Degree of Protection	IP20
	Mounting Type	DIN rail
	Wire Gauge Range	16AWG for terminals 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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