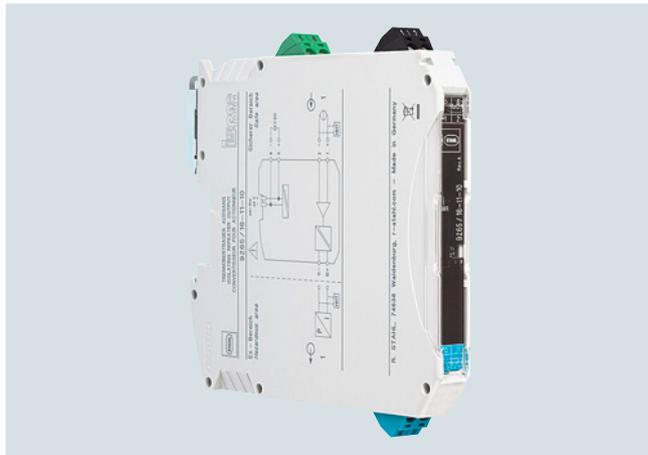


Supplementary components

Supply units and isolation amplifiers

SITRANS I200

Overview



Analog output 0/4 to 20 mA for HART

The one-channel and two-channel Ex i output isolating transformers are used for intrinsically safe operation of valve positioners, i/p converters or indicators.

Operation of intrinsically safe HART valve positioners (e.g. SIPART PS2) is also possible. The devices transfer a superimposed HART communication signal bidirectionally.

The SITRANS I200 is used for intrinsically safe operation of regulating valves, I/P converters or indicators.

- Superimposed HART communication signals are transmitted bidirectionally by the output isolator.
- Input, output and auxiliary power are electrically isolated from each other.
- The two channels of the two-channel versions are galvanically isolated from each other.

Benefits

- Compact one and two-channel Ex i output isolating transformer
- Narrow design – 12.5 mm (0.49 inch) width – for one and two-channel version
- For HART output signals 0/4 to 20 mA
- Output intrinsically safe [Ex ia] IIC
- Galvanic isolation between input, output and auxiliary power
- Wire break and short-circuit monitoring and messaging (can be switched off)
- Installation permissible in Zone 2 and Div. 2
- Can be used up to SIL 2 (IEC/EN 61508)

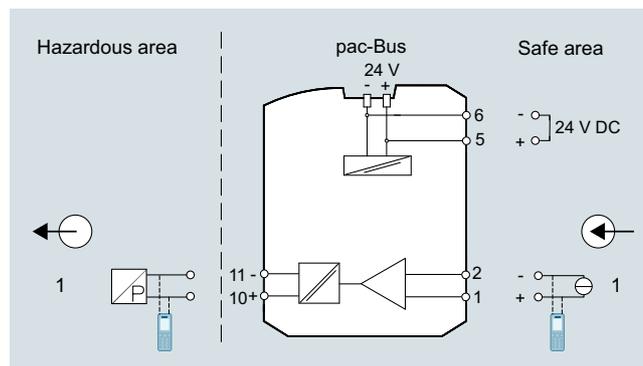
	Zones					
	0	1	2	20	21	22
Ex intrinsically safe interface	X	X	X	X	X	X
Installation in			X			X

Design

The SITRANS I200-Ex i output isolation transformer is comprised of a compact plastic enclosure (IP30) and is equipped with push-in screw terminals.

On the front are a green LED for indicating the power supply status and a red LED for signaling errors.

The auxiliary power supply can be individually connected using push-in screw terminals.



SITRANS I200 output isolating transformer, function block diagram

Selection and ordering data

	Article No.
SITRANS I200 Isolating power supply, Ex	7NG4131-1AA00
<ul style="list-style-type: none"> • Single/dual channel • Rail mounting • For HART signals 0/4 ... 20 mA • Intrinsic safe operation of positioners e.g. SIPART PS2, I/p converters and indicators • Width 12.5 mm • Approved up to SIL 2 (IEC/EN 61508) 	

Technical specifications

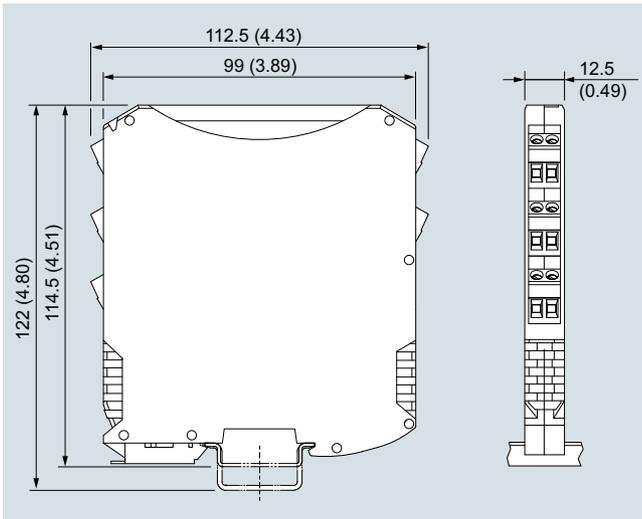
General		Operating conditions	
Number of channels	1	Degree of protection	IP30
LFD relay (LFD = Line fault detection)	No	• Enclosure	IP20
Electrical specifications		• Terminals	IP20
<u>Input</u>		Ambient temperature	-40 °C ... +70 °C (-40 °F ... +158 °F)
Input signal	0/4 ... 20 mA with HART	Storage temperature	-40 °C ... +85 °C (-40 °F ... +185 °F)
Functional range	0 ... 24 mA	Relative humidity	≤ 95%
Response threshold line fault (I_E)	$I_E > 3.6$ mA	Usage in height	< 2 000 m (6 562 ft)
Response of the input to line fault (L_F)	$R_E \geq 1$ M Ω	Electromagnetic compatibility (EMC)	• EN 61326-1 Use in the industrial environment • Namur NE 21
<u>Output</u>		Structural design	
Output signal	0/4 ... 20 mA with HART	Weight	0.170 kg (0.38 lb)
Functional range	0.0 ... 24.0 mA	Enclosure material	Polyamide
Communication signal	HART	Grid size	12.5 mm (0.49 inch)
Max. load resistance R_L	700 Ω	Width	12.5 mm (0.49 inch)
Residual ripple	≤ 20 mV	Height	114.5 mm (4.51 inches)
Settling time (10 ... 90%) (valid for 4 ... 20 mA)	≤ 140 μ s	Length	116 mm (4.57 inches)
No-load voltage U_a	27.00 V	Fire resistance (UL-94)	V0
Average measuring error	0.10%	Mounting type	DIN rail NS35/15. NS35/7.5
Line fault		Mounting position	Any (vertical or horizontal)
• Setting switch	Enabled/disabled for short-circuit	Connection type	Screw terminal
• Response threshold	$I_E > 3.6$ mA	Screw terminals	
• Display	Red "ERR" LED	Core cross-section	
Error detection		• Rigid	0.2 mm ² ... 2.5 mm ² (0.00031 ... 0.0039 inch ²)
• Wire break	$R_L > 10$ k Ω	• Flexible min.	0.2 mm ² ... 2.5 mm ² (0.00031 ... 0.0039 inch ²)
• Short-circuit	$R_L < 50$ Ω	Conductor cross-section AWG	16 ... 12
Error limits temperature influence	≤ 0.1% / 10 K	Certificates and approvals	
<u>Galvanic isolation</u>		<u>ATEX/IECEx explosion protection</u>	
Test voltage according to IEC EN 60079-11		Operating range (zones)	2
• Ex i output to auxiliary power	375 V AC peak value	Ex interface zone	0, 20
• Ex i output to input	375 V AC peak value	Gas/dust explosion protection, firedamp protection for Zones 2 and 22	
Test voltage according to EN 61010/EN 50178		Certificates	• BVS 20 ATEX E 045 X • IECEx BVS 20.0035X
• Input to auxiliary power	300 V _{eff}	• ATEX	• Ex II 3 (1) G Ex ec [ia Ga] IIC T4 Gc • Ex II (1) D [Ex ia Da] IIIC • Ex I (M1) Ex [Ex ia Ma] I
<u>Auxiliary power</u>		• IECEx	• Ex ec [ia Ga] IIC T4 Gc • [Ex ia Da] IIIC • Ex [Ex ia Ma] I
Nominal voltage U_N	24 V DC	Installation	In Zone 2, Div. 2 and in the safe area
Voltage range	19.2 ... 30 V	Certificates	• ATEX (BVS), IECEx (BVS), SIL (BVS) • cULus (applied for) • cUL (applied for)
Rated current	45 mA	Marine approval	DNV GL
Power consumption	1.1 W		
Max. power loss:	1.1 W		
Status indicator	Green "PWR" LED		
Reverse polarity protection	Yes		
Safety specifications			
• Max. voltage U_o	25.2 V		
• Max. current I_o	93 mA		
• Max. power P_o	587 mW		
• Max. permissible external capacitance C_o for IIC/IIIB	0.107 μ F/0.817 μ F		
• Max. permissible external inductance L_o for IIC/IIIB	2 mH/4 mH		
• Internal capacitance C_i / internal inductance L_i	Negligible		
• Max. safety-technical voltage	253 V		
• SIL	2		

Supplementary components

Supply units and isolation amplifiers

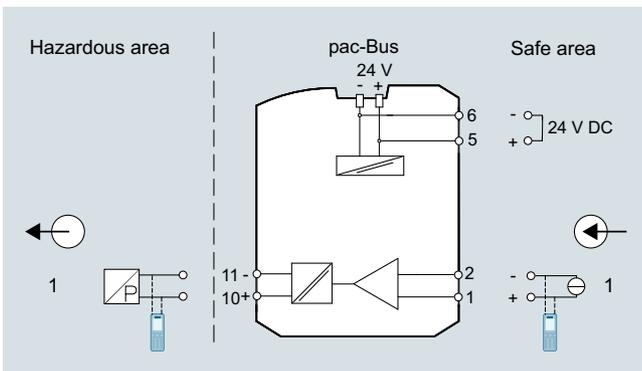
SITRANS I200

Dimensional drawings



SITRANS I200 output isolating transformer HART, dimensions in mm (inch)

Circuit diagrams



SITRANS I200 output isolating transformer HART, connection diagram