Non - Ex i Isolators

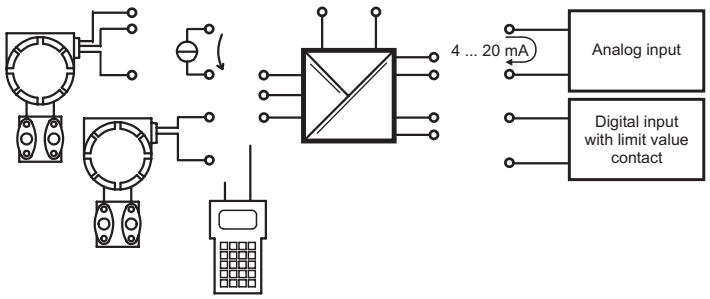
06291E00

Transmitter Supply Unit with Limit Value (Field Circuit Non - Ex i) Type 9162/13-11-62

- Compact trip amplifier with 2 configurable limit values and 0/4 ... 20 mA output
- Suitable for 2- and 3-wire transmitter, 2-wire HART transmitter and mA-sources
- Open circuit and short circuit monitoring and signalisation
- Installation possible in Zone 2

Zones	0	1	2	20	21	22
Ex i interfaces						
Installation in			X			X

The transmitter supply unit and trip amplifier is used for intrinsically safe operation of 2- and 3-wire transmitters or for the connection of mA-sources. Additionally the device offers the capability to set two independent limit values.
Contacts are closed if the limit values are reached.
The device can be easily configured by the ISpac Wizard software.



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Field Circuit Non-Ex i

Transmitter Supply Unit with Limit Value (Field Circuit Non - Ex i) Type 9162/13-11-62

Selection Table

Version	Channels	Input	Output	Limit value contact	Connection type	Order number
Transmitter Supply Unit with Limit Value (Field Circuit Non - Ex i) Type 9162/13-11-62	1	0/4 ... 20 mA with HART	0/4 ... 20 mA with HART	2 NO	Screw terminals	**9162/13-11-62s**
					Spring clamp terminals	**9162/13-11-62k**

Technical Data

Certificates	FM 06 ATEX 0008 X		
Explosion protection	II 3 G Ex nAc nCc IIC T4		
Installation	in Zone 2 and in the safe area		
Power supply	Nominal voltage U_N		24 V DC
	Voltage range		18 ... 31.2 V
	Residual ripple within voltage range	≤	3.6 V_{pp}
	Nominal current (U_N, 20 mA)		83 mA
	Power consumption (U_N, 20 mA)		2 W
	Power losses (at U_N, R_L = 250 Ω)		1.5 W
	Indication		LED green „PWR“
	Polarity reversal protection		yes
	Undervoltage monitoring		yes (no faulty module / output states)
Galvanic isolation	Test voltage		
	Ex i input to output		1.5 kV AC
	Ex i input to power supply		1.5 kV AC
	Ex i input ot error-contact		1.5 kV AC
	Ex i input to limit value contact		1.5 kV AC
	Test voltage under regulations EN 60079-11		
	Output to power supply		350 V AC
	Output to limit value contact		350 V AC
	Error-contact ot power supply and outputs		350 V AC
Input	Input signal		0/4 ... 20 mA with HART
	Function area		0 ... 24 mA
	Max. input current for mA sources		50 mA
	Transmitter supply voltage	≥	16 V at 20 mA (for 2-, 3-wire)
	Supply voltage residual ripple	≤	25 mV_{eff}
	No-load voltage	≤	26 V
	Short-circuit current	≤	35 mA
	Input resistance (AC-Impedance HART)	≈	500 Ω
	Input resistance for mA sources		30 Ω
	Communication signal (at 2-wire transmitter)		HART transmission bidirectional, 0.5 ... 30 kHz
Output	Output signal		0/4 ... 20 mA with HART
	Load resistance R_L		0 ... 600 Ω (terminal 1+/2-)
	Functional range		0 ... 24 mA
	Residual ripple	≤	40 μA_{eff}
	No-load voltage	≤	15.5 V
	Communication signal		HART transmission bidirectional, 0.5 ... 30 kHz
	Signal delay	<	30 ms
	Signal rise time, Signal fall time	<	45 ms
Limit values	Configuration		via software ISpac Wizard
	Messaging		2 NO
	Switching voltage	≤	± 30 V
	Switching current (resistive load)	≤	100 mA
	On-resistance	≤	2.5 Ω (typical < 1 Ω)
	Reclosing lockout		Reset through DIP-switch or „Power-Off“ (configurable)
	Switching delay	<	80 ms
	Reset delay	<	100 ms
Error detection input	Open-circuit	<	2 mA
	Short-circuit	>	22 mA
	Behaviour of output	=	input signal (configurable 0 mA ... 23 mA or „hold last value“)
	Output current at I_E = 0	I_A =	0 mA

Transmitter Supply Unit with Limit Value (Field Circuit Non - Ex i) Type 9162/13-11-62

Technical Data

Fault limits

Accuracy, typical data expressed as % of calibrated span at U_N, 23 °C

Linearity error	≤	0.1 %
Offset error	≤	0.1 %
Temperature influence	≤	0.1 % / 10 K
Power supply effect within voltage range	≤	0.01 %
Load resistance effect	≤	0.02 %

Electromagnetic compatibility

Tested under the following standards and regulations:
EN 61326-1 (Use in industrial environment)

Ambient conditions

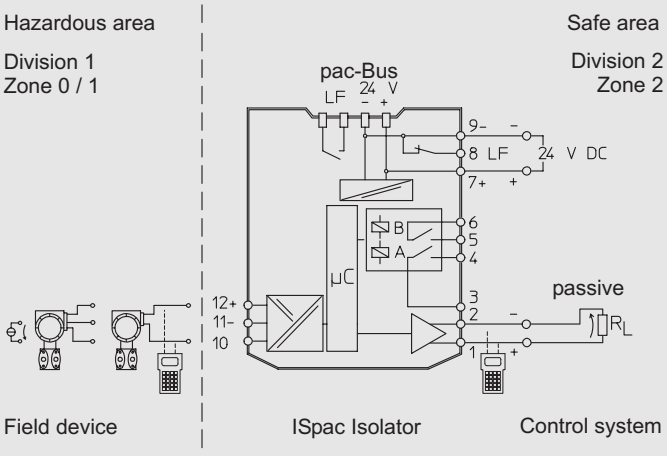
Ambient temperature		- 20 ... + 70 °C (see instructions)
Storage temperature		- 40 ... + 80 °C
Relative humidity (no condensation)	≤	95 %

Mechanical data

	Screw terminals	Spring cage terminals
Connection one wire		
- rigid	0.2 ... 2.5 mm²	0.2 ... 2.5 mm²
- flexible	0.2 ... 2.5 mm²	0.2 ... 2.5 mm²
- flexible, end covering sleeves (without / with plastic sleeving)	0.25 ... 2.5 mm²	0.25 ... 2.5 mm²
Connection two wires		
- rigid	0.2 ... 1 mm²	- -
- flexible	0.2 ... 1.5 mm²	- -
- flexible, end covering sleeves	0.25 ... 1 mm²	0.5 ... 1 mm²

Weight	approx. 160 g
Mounting type	on DIN rail acc. to EN 50022 (NS35/15; NS35/7.5) or in pac-Carrier
Mounting position	horizontal or vertical
Casing protection class	IP30
Terminal protection class	IP20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Connection diagram

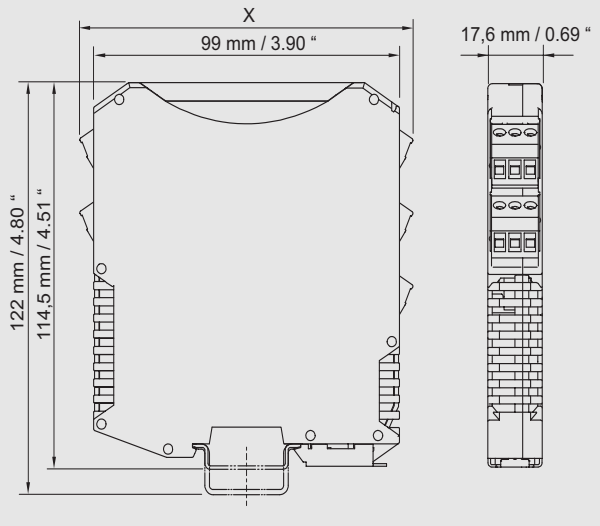


Accessories and Spare Parts

Designation	Description	Order number
Parameterising set ISpac - Wizard	The software is used to commission, configurate and diagnose on the ISpac Isolators Series 9146, 9162 and 9182. For further information see operating instructions. Supplied: as CD-ROM; Parameterising software incl. Parameterising cable / adapter. System requirements: • IBM compatible PC with MS Windows 98, NT, 2000, XP, Vista, Windows 7 • CD-ROM drive • RS 232 C interface • RS 232 / USB adapter	**9199/20-02**

Transmitter Supply Unit with Limit Value (Field Circuit Non - Ex i) Type 9162/13-11-62

Dimensional Drawing (All Dimensions in mm / inches) - Subject to Alterations



	Dimension X
Screw terminals	108 mm
Spring cage terminals	128 mm

Transmitter Supply Unit with Limit Value (Field Circuit Non - Ex i) Type 9162/13-11-62

Customer Specific Set-up Sheet

R. STAHL offers the service to configure ISpac isolators according to your requirements.
There are two options:

1. The form can be downloaded on the product page ISpac, section "Data sheet". Please edit the form directly on your PC.
2. Download the software at ISpac Wizard free: "http://www.r-stahl.com/downloads/software/ex-i-isolators.html". Create them using the software configuration. Forward the .prj file to your R. STAHL sales office.

Order-No.: **-Pos.:** **Pieces:**

Type	Channels	Output	Limit value
9162/13-11-62.	1	0/4 mA ...20 mA	2 NO
9162/13-11-64.	1	0/4 mA... 20 mA	2 NO

with: ☐ Screw terminal s ☐ Spring cage terminal k
Please read the operating instructions before you fill in the following form.

	Default	Channel 1
Signal-Tag	ID-Nr.	
Output		
Signal	0 mA...24mA	
Fault behaviour (9162-13-11-62)	Output Fault value (2.4 mA)	☐ Hold last value ☐ Fault control off ☐ Output Fault value:
Fault behaviour (9162-13-11-64)	Output Fault value (2.4 mA)	☐ Output Fault value:
Limit value for Relay A		
Signalling	deactivated	☐ activated ☐ deactivated
Value	2.4 mA	mA (0.29 mA ... 24 mA)
Behavior contact	inactive	☐ inactive ☐ closes, if value > limit value Not for 9162/13-11-64 ☐ closes, if value < limit value Not for 9162/13-11-64 ☐ opens, if value > limit value ☐ opens, if value < limit value
Hysteresis	0.24 mA	mA (0.24 mA ... 2.4 mA)
Reset lockout	inactive	☐ active ☐ inactive
Limit value for Relay B		
Signalling	deactivated	☐ activated ☐ deactivated
Value	2.4 mA	mA (0.29 mA ... 24 mA)
Behavior contact	inactive	☐ inactive ☐ closes, if value > limit value Not for 9162/13-11-64 ☐ closes, if value < limit value Not for 9162/13-11-64 ☐ opens, if value > limit value ☐ opens, if value < limit value
Hysterese	0.24 mA	mA (0.24 mA... 2.4 mA)
Reset lockout	inactive	☐ active ☐ inactive

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