

# Isolators

Transmitter supply unit

Ex i field circuit

9260/13-11-10k Art. No. 261387



- Universal use for 2-wire transmitters and mA sources (4-wire transmitter)
- Slim design – 12.5 mm wide – for one- and two-channel versions
- Can be used for safety levels up to SIL 2 (IEC/EN 61508)

MY R. STAHL 9260A



Series 9260 transmitter supply units can be used for the intrinsically safe operation of two-wire transmitters or intrinsically safe mA sources such as 4-wire transmitters. The device allows HART signals to be transmitted in both directions. The portfolio includes single- and dual-channel devices and a version for signal duplication.

## Technical Data

### Explosion Protection

Application range (zones)	2
Ex interface zone	0, 1, 2, 20, 21, 22
IECEX gas certificate	IECEX BVS 17.0079X
IECEX gas certificate	IECEX BVS 17.0079X
IECEX gas explosion protection	Ex ec [ia Ga] IIC T4 Gc
IECEX dust certificate	IECEX BVS 17.0079X
IECEX dust explosion protection	[Ex ia Da] IIIC
IECEX firedamp certificate	IECEX BVS 17.0079X
IECEX firedamp protection	[Ex ia Ma] I
ATEX gas certificate	BVS 17 ATEX E 087 X
ATEX gas certificate	BVS 17 ATEX E 087 X
ATEX gas explosion protection	⊕ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
ATEX dust certificate	BVS 17 ATEX E 087 X
ATEX dust explosion protection	⊕ II (1) D [Ex ia Da] IIIC
ATEX firedamp certificate	BVS 17 ATEX E 087 X
ATEX firedamp protection	⊕ I (M1) [Ex ia Ma] I
cULus certificate	E81680
Marking cULus	Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, AEx/Ex nA Group IIC AIS Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G; Class I, Zone 0, [Ex ia] IIC T4 any mounting pos. Ta = 60°C See Doc. 9260 6 031 001 3
Certificates	ATEX (BVS), Canada (UL), China (CQM), IECEX (BVS), India (PESO), Korea (KTL), SIL (BVS), USA (UL)
Ship approval	DNV
Declaration of conformity	ATEX (EUK), China (CCC)

#### Safety Data

Max. voltage $U_o$	25.2 V					
Max. current $I_o$	93 mA					
Max. power $P_o$	587 mW					
Max. permissible external capacity $C_o$ for IIC	0.107 $\mu$ F					
Max. permissible external inductance $L_o$ for IIC	3 mH					
Max. permissible external capacity $C_o$ for IIB	0.82 $\mu$ F					
Max. permissible external inductance $L_o$ for IIB	14 mH					
Max. permissible external capa.IIA	2.9 $\mu$ F					
Max. permissible external inductance $L_o$ for IIA	26 mH					
Max. permissible external capacity $C_o$ for IIIC	820 $\mu$ F					
Max. permissible external inductance $L_o$ for IIIC	14 mH					
Max. permissible external capacity $C_o$ for I	4.8 $\mu$ F					
Max. permissible external inductance $L_o$ for I	40 mH					
Internal capacitance isolation amplifier	Negligible					
Internal inductance $L_i$ isolation amplifier	Negligible					
Max. voltage $U_i$	30 V					
Max. current $I_i$	150 mA					
Internal capacitance	Negligible					
Internal inductance	Negligible					
Safety-related max. voltage	253 V AC					
Intrinsically safe limiting values inductance $L_o$ /capacitance $C_o$	Jointly connectable inductance $L_o$ /capacitance $C_o$					
IIC	$L_o$ [mH]	2.200 mH	2 mH	1 mH	0.500 mH	
	$C_o$ [ $\mu$ F]	0.047 $\mu$ F	0.049 $\mu$ F	0.063 $\mu$ F	0.080 $\mu$ F	
IIB	$L_o$ [mH]	16 mH	0.500 mH	0.200 mH	0.100 mH	
	$C_o$ [ $\mu$ F]	0.370 $\mu$ F	0.510 $\mu$ F	0.660 $\mu$ F	0.820 $\mu$ F	
IIIC	$L_o$ [mH]	16 mH	0.500 mH	0.200 mH	0.100 mH	
	$C_o$ [ $\mu$ F]	0.370 $\mu$ F	0.510 $\mu$ F	0.660 $\mu$ F	0.820 $\mu$ F	

#### Functional Safety

SIL	2
HFT	0
SFF	89,20%
$PFD_{avg}$ at $T_{proof}$ 1 year	2,30E-04
$PFD_{avg}$ at $T_{proof}$ 2 years	4,58E-04
$PFD_{avg}$ at $T_{proof}$ 3 years	6,68E-04
$PFD_{avg}$ at $T_{proof}$ 4 years	9,14E-04
$PFD_{avg}$ at $T_{proof}$ 5 years	1,14E-03

#### Electrical Data

Number of channels	1
Transmitter feed operation	Yes
Isolation amplifier operation	Yes
LFD relay	No
Communication signal	HART

#### Auxiliary Power

Auxiliary power	24 V DC
Auxiliary power nominal voltage	24 V DC
Auxiliary power voltage range	19.2 ... 30 V
Nominal current	76 mA
Max. power dissipation	1.2 W
Power consumption	1.8 W
Polarity reversal protection	Yes
Operation indication	Green "PWR" LED

#### Galvanic Isolation

Test voltage as per standard	EN IEC 60079-11
Ex i input to output	375 V peak value
Ex i input to auxiliary power	375 V peak value
Test voltage as per standard	EN 61010/EN 50178
Output to auxiliary power	300 V <sub>eff</sub>
Output to output	300 V <sub>eff</sub>

#### Input

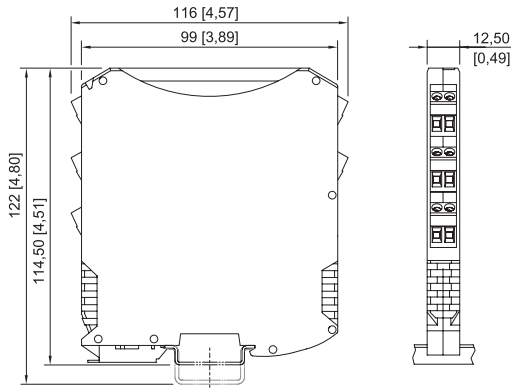
Input function	Isolation amplifier Transmitter power unit
Input	0/4 ... 20 mA with HART
Input signal	0/4 to 20 mA with HART
Function range input	0 ... 24 mA
Short-circuit current	≥ 22.5 mA
Supply voltage for transmitter	≥ 16 V at 20 mA
Isolation amplifier voltage drop	< 3,5 V

#### Output

Output	0/4 to 20 mA with HART
Output signal	0/4 to 20 mA active/passive
Function range output	0 – 24 mA
Output A	0/4 to 20 mA
Behaviour of the output	= input signal
Output current at I <sub>e</sub> =0	0 mA
Output residual ripple	< 20 mV <sub>eff</sub>
Load resistance R <sub>L</sub>	0 ... 1000 Ω
Settling time 10-90%	< 200 μs
Settling time note	Isolating repeater: < 600 μs
Deviations / error note	Information in % of the measuring range (20 mA) at U <sub>N</sub> , 23 °C
Deviation	≤ 0,1 %
Typical deviation	0.05 %
Temperature influence error limits	< 0.1% / 10 K




<b>Output</b>	
Behaviour of the output	= input signal
<b>Device Specific Data</b>	
Operating status LED designation	PWR
Operating conditions LED colour	green
<b>Ambient Conditions</b>	
Ambient temperature	-40 °C ... 70 °C (Single device) -40 °C ... 60 °C (Group assembly)
Ambient temperature	-40 °F ... +158 °F (Single device) -40 °F ... +140 °F (Group assembly)
Storage temperature	-40 °C ... 80 °C
Storage temperature	-40 °F ... +176 °F
Maximum relative humidity	10 to 95%
Use at the height of	< 2000 m
Max. operating altitude	2000 m
Electromagnetic compatibility	EN 61326-1 Use in industrial environment Immunity according to EN 61000-6-2 Interference emission to EN 61000-6-4
<b>Mechanical Data</b>	
Degree of protection (IP)	IP30
Degree of protection (IP) terminals	IP20
Fire resistance (UL 94)	V0
Enclosure material	Polyamide
Grid dimension	12.5 mm
Width	12.5 mm
Width, inches	0.49 in
Height	114.5 mm
Height in inches	4.51 in
Length	112.5 mm
Length in inches	4.43 in
Weight	185 g
Weight	0.41 lb
<b>Mounting / Installation</b>	
Mounting type	DIN rail NS35/15, NS35/7.5
Mounting orientation	Horizontal Vertical
Connection type	Spring clamp terminal
Min. rigid conductor cross section	0.2 mm <sup>2</sup>
Max. rigid conductor cross section	1.5 mm <sup>2</sup>
Min. flex conductor cross section	0.2 mm <sup>2</sup>
Max. flex conductor cross section	1.5 mm <sup>2</sup>
Connection cross-section AWG	24 ... 16

#### Dimensional Drawings (All Dimensions in mm [inches]) – Subject to Alterations



ISpac Series 9260, 9270, 9275, 9276, 9282 with spring clamp terminal

## Accessories

Resistive coupling element		Art. No.
	Replacement for blue screw terminal (Ex i field circuit) Application: Use of the device for non-Ex i field circuits.	247644
Supply module		Art. No.
	Redundant supply of 24 V DC auxiliary power (with fuse) and reading out the collective error message from Series 92xx ISpac modules which support this function. Screw terminal connection	268183
	Redundant supply of 24 V DC auxiliary power (with fuse) and reading out the collective error message from Series 92xx ISpac modules which support this function. Spring clamp terminal connection	268184
pac-Bus		Art. No.
	Wiring auxiliary power and collective error message	262928

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