Isolators

Ex i relay modules

Ex i field circuit

9172/21-11-00k Art. No. 160370

- Compact relay module with two channels
- For separating intrinsically safe and non-intrinsically safe signal and control circuits
- Ex i and non-Ex i actuation available

MY R. STAHL **9172A**

The Series 9172 relay module separates intrinsically safe and non-intrinsically safe binary signal and control circuits. To do this, it makes intrinsically safe binary inputs and outputs with two channels available. Depending on the version, the device has either an intrinsically safe control system or an intrinsically safe output contact, and can therefore be used as an output or input isolator.

Technical Data

Explosion Protection	
Application range (zones)	2
Ex interface zone	0, 1, 2, 20, 21, 22
IECEx gas certificate	IECEx BVS 09.0002 X
IECEx gas explosion protection	Ex ec nC [ia Ga] IIC T4 Gc
IECEx dust certificate	IECEx BVS 09.0002 X
IECEx dust explosion protection	[Ex ia Da] IIIC
ATEX gas certificate	BVS 04 ATEX E 097 X
ATEX gas explosion protection	Ⓔx II 3 (1) G Ex ec nC [ia Ga] IIC T4 Gc
ATEX dust certificate	BVS 04 ATEX E 097 X
ATEX dust explosion protection	Ⓔx II (1) D [Ex ia Da] IIIC
FMus certificate	FM16US0122X
cFM certificate	FM16CA0067X
Marking cFMus	Class I, Div. 2, Groups A,B,C,D; Class I, Zone 2, Group IIC AIS Class I,II,III, Div. 1, Groups A,B,C,D,E,F,G; Class I, Zone 0, [AEx/Ex ia] IIC T4 at Ta = 70°C See Doc. 91 726 01 31 1
Certificates	ATEX (BVS), Canada (FM), China (NEPSI), IECEx (BVS), India (PESO), SIL (exida), USA (FM)
Ship approval	CCS, EU RO MR (DNV)
Declaration of conformity	ATEX (EUK), China (CCC)
Installation	In Zone 2, Division 2 and safe areas
Further information	See relevant certificate and operating instructions
Safety Data	
Contact Ui/Ii AC	45 V/4 A
Contact Ui/Ii DC 1	45 V/0.25 A

Isolators
Ex i relay modules
Ex i field circuit
9172/21-11-00k Art. No. 160370

Safety Data	
Contact Ui/Ii DC 2	30 V/4 A
Internal capacitance C_i (contact)	negligible
Internal inductance L_i (contact)	negligible
Safety-related max. voltage	253 V
Max. safety voltage	253 V
Electrical Data	
Number of channels	2
Auxiliary Power	
Auxiliary power	without
Max. power dissipation	0.4 W
Polarity reversal protection	Yes
Galvanic Isolation	
Test voltage as per standard	EN IEC 60079-11
Ex i input to output	1.5 kV AC
Input to input	350 V AC
Input	
Input	Non-Ex i signal
Switching signal input	12 – 31.2 V
Input current consumption 1	< 25 mA at 12 V
Input current consumption 2	< 17 mA at 24 to 31.2 V
Output	
Output	Change-over contact - Ex i
Min. output load condition	1 V / 1 mA
Max. output DC load condition	30 V / 4 A 45 V/0.25 A
Max. output AC load condition	30 V / 4 A cos φ > 0.7
I_{off} max	0 mA
Output switching frequency	≤ 15 Hz
Switching delay ON/OFF	≤ 10 ms
Switching delay OFF/ON	≤ 10 ms
Output electrical service life	≥ 1 x 10^5 operating cycles
Electrical service life note	Resistive load
Output mechanical service life	≥ 1 x 10^7 operating cycles
Ambient Conditions	
Ambient temperature	-20 °C ... +70 °C (Single device) -20 °C ... 60 °C (Group assembly)
Ambient temperature	-4 °F ... +158 °F (Single device) -4 °F ... +140 °F (Group assembly)
Note	Installation conditions influence the ambient temperature. Please observe the "Cabinet installation guide".
Storage temperature	-40 °C ... +80 °C
Storage temperature	-40 °F ... +176 °F
Maximum relative humidity	95%
Use at the height of	< 2000 m
Electromagnetic compatibility	Tested to the following standards and regulations: EN 61326-1 For use in industrial areas; NAMUR NE 21

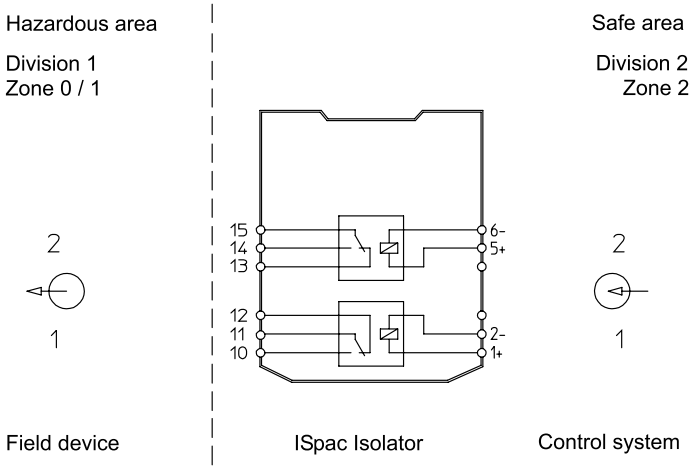
Mechanical Data

Degree of protection (IP)	IP30
Degree of protection (IP) terminals	IP20
Fire resistance (UL 94)	V0
Enclosure material	Polyamide
Min. rigid conductor cross section	0.2 mm²
Max. rigid conductor cross section	2.5 mm²
Min. flexible conductor cross section	0.2 mm²
Max. flexible conductor cross section	2.5 mm²
Width	17.6 mm
Width, inches	0.69 in
Height	114.5 mm
Height in inches	4.51 in
Length	128 mm
Length in inches	5.04 in
Weight	190 g
Weight	0.42 lb

Mounting / Installation

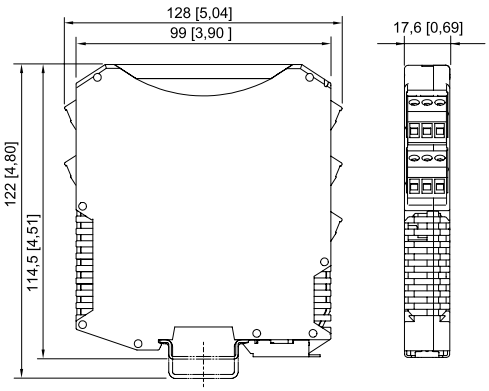
Mounting type	DIN rail NS35/15, NS35/7.5
Grid dimension	17.6 mm
Connection type	Spring clamp terminal
Connection cross-section AWG	24 ... 14

Technical Drawings – Subject to Alterations



Connection diagram 9172/21-11-00

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



ISpac Series 9146, 9147, 9160, 9162, 9163, 9165, 9167, 9170, 9172, 9175, 9176, 9180, 9182, 9193, ISbus Series 9412 with spring clamp terminal

We reserve the right to make alterations to the technical data, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.