

## Solenoid / alarm driver

### 9203B

- Universal Ex driver for solenoids, acoustic alarms and LEDs
- Extended self-diagnostics
- 1 or 2 channels
- Can be supplied separately or installed on power rail, PR 9400
- SIL 2-certified via Full Assessment



#### Advanced features

- Universal I.S. driver for the control of solenoids etc. with various I.S. data by way of three built-in I.S. barriers.
- Two hardware versions make it possible to choose either Low (35 mA) or High (60 mA) current output.
- Configuration and monitoring by way of detachable display front (PR 4501).
- Selection of direct or inverted function for each channel via PR 4501 and the possibility of reducing the output current to the hazardous area to suit the application.
- Optional monitoring of the output current to the hazardous area by way of PR 4501.
- Optional redundant supply via power rail and/or separate supply.

#### Application

- 9203B can be mounted in the safe area or in zone 2 / div. 2 and transmit signals to zone 0, 1, 2 and zone 20, 21, 22 including M1 mining / Class I/II/III, Div. 1, Gr. A-G.
- The 9203B is controlled by an NPN/PNP signal or a switch signal.
- Monitoring of internal error events via the individual status relay and/or a collective electronic signal via the power rail.
- The 9203B has been designed, developed and certified for use in SIL 2 applications according to the requirements of IEC 61508.

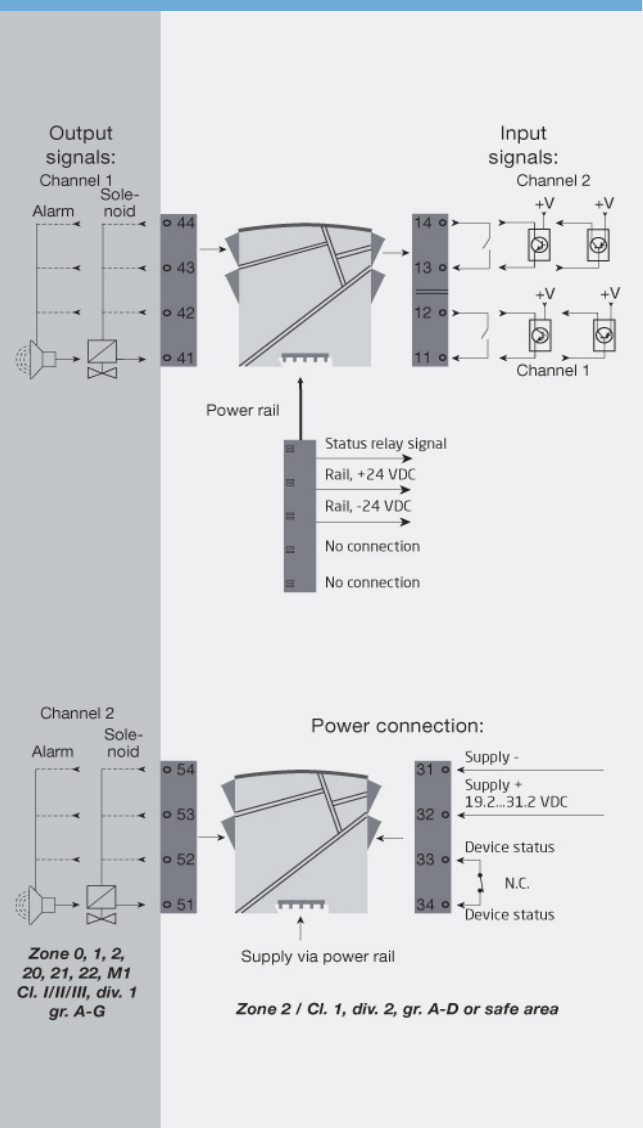
#### Technical characteristics

- 1 green and 2 yellow/red front LEDs indicate operation status and malfunction.
- 2.6 kVAC galvanic isolation between input, output and supply.

#### Mounting

- The devices can be mounted vertically or horizontally without distance between neighbouring units.

#### Connections



Order:

Type	Ex barrier [Ex ia]	Channels	Input
9203B	Low current : 1	Single : A Double : B	Standard : - PNP : 1
	High current : 2	Single : A	NPN : 2

Output loads:

Terminal	9203B1Ax (1 channel) / 9203B1Bx (2 channels)		
	41-42 / 51-52	41-43 / 51-53	41-44 / 51-54
Vout, no load	Min. 24 V	Min. 24 V	Min. 24 V
Vout, with load	Min. 12.5 V	Min. 13.5 V	Min. 14.5 V
Iout, max	35 mA	35 mA	35 mA

Terminal	9203B2Ax (1 channel)					
	41-42		41-43		41-44	
Vout, no load	Min. 24 V		Min. 24 V		Min. 24 V	
Vout, with load	Min. 11.5 V	Min. 9 V	Min. 12.5 V	Min. 10 V	Min. 13.5 V	Min. 11 V
Iout, max	50 mA	60 mA	50 mA	60 mA	50 mA	60 mA

## Environmental Conditions

Specifications range.....	-20°C to +60°C
Storage temperature.....	-20°C to +85°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree.....	IP20
Installation in.....	Pollution degree 2 & measurement / overvoltage cat. II

## Mechanical specifications

Dimensions (HxWxD).....	109 x 23.5 x 104 mm
Dimensions (HxWxD) w/ 4501 / 4511.....	109 x 23.5 x 116 / 131 mm
Weight approx.....	170 g
Weight incl. 4501 / 4511 (approx.).....	185 g / 270 g
DIN rail type.....	DIN EN 60715/35 mm
Wire size.....	0.13...2.08 mm <sup>2</sup> AWG 26...14 stranded wire
Screw terminal torque.....	0.5 Nm
Vibration.....	IEC 60068-2-6 : 2007
Vibration: 2...13.2 Hz.....	±1 mm
Vibration: 13.2...100 Hz.....	±0.7 g

## Common specifications

### Supply

Supply voltage.....	19.2...31.2 VDC
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### Isolation voltage

Test /working: Input to any.....	2.6 kVAC / 300 VAC reinforced isolation
Output 1 to output 2.....	1.5 kVAC / 150 VAC reinforced isolation
Status relay to supply.....	1.5 kVAC / 150 VAC reinforced isolation

Fuse.....	1.25 A SB / 250 VAC
Max. power consumption.....	≤ 3.5 W (2 channels)
Communications interface.....	Communication enabler 4511 / Programming front 4501
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

## Input specifications

### NPN and mechanical switch

Trig level LOW.....	≤ 2.0 VDC
Trig level HIGH.....	≥ 4.0 VDC
Max. external voltage.....	28 VDC
Input impedance.....	3.5 kΩ

### PNP

Trig level LOW.....	≤ 8.0 VDC
Trig level HIGH.....	≥ 10.0 VDC
Max. external voltage.....	28 VDC
Input impedance.....	3.5 kΩ

## Output specifications

### Status relay

Max. voltage.....	110 VDC / 125 VAC
Max. current.....	0.3 ADC / 0.5 AAC
Max. AC power.....	62.5 VA / 32 W

Output ripple.....	< 40 mVRMS
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## Approvals

### General approvals

EMC.....	EN 61326-1
LVD 2006/95/EC.....	EN 61010-1
UL.....	UL 61010-1
EAC TR-CU 020/2011.....	EN 61326-1

### Ex / I.S.

ATEX 2004/108/EC.....	KEMA 07ATEX0147 X
IECEX.....	KEM 09.0001X
FM.....	3035277-C
INMETRO.....	NCC 12.1306 X
EAC Ex TR-CU 012/2011.....	RU C-DK.GB08.V.00410
CCOE.....	P337349/6

### Marine approval

DNV Marine.....	Stand. f. Certific. No. 2.4
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### Functional safety

SIL.....	SIL 2 certified & fully assessed acc. to IEC 61508
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