PERFORMANCE MADE SMARTER

Pulse isolator

9202B

– Interface for NAMUR sensors and switches
– Extended self-diagnostics and detection of cable fault
– 1 or 2 channels
– Can be supplied separately or installed on power rail, PR type 9400
– SIL 2-certified via Full Assessment

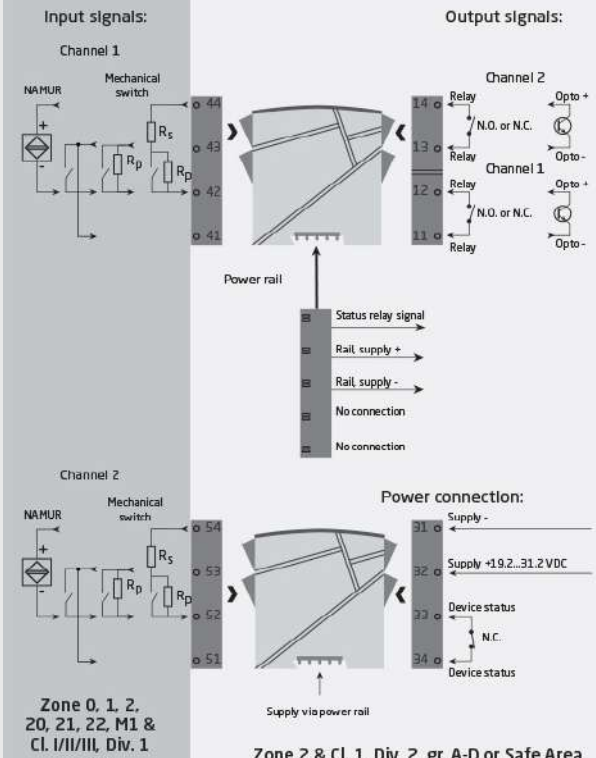
Advanced features
- Configuration and monitoring by way of detachable display front (PR 4500).
- Selection of direct or inverted function for each channel via PR 4500.
- Advanced monitoring of internal communication and stored data.
- Optional redundant supply via power rail and/ or separate supply.
- SIL 2 functionality is optional and must be activated in a menu point.

Application
- 9202B can be mounted in the safe area or in zone 2 / Cl. 1 div. 2 and receive signals from zone 0, 1, 2 and zone 20, 21, 22 including mining / Class I/II/III, Div. 1, Gr. A-G.
- Pulse isolator for transmission of signals to the safe area from NAMUR sensors and mechanical switches installed in the hazardous area.
- Monitoring of error events and cable breakage via the individual status relay and/or a collective electronic signal via the power rail.
- The 9202B has been designed, developed and certified for use in SIL 2 applications according to the requirements of IEC 61508.
- Suitable for the use in systems up to Performance Level “d” according to ISO-13849.

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.

Applications



Order

Type	Version	Unit channels	I.S. / Ex approvals
9202B	Opto : 1 Relay N.O. : 2 Relay N.C. : 3	Single : A Double : B	ATEX, IECEx, FM, INMETRO, CCC, EAC-Ex, UKEX : - UL 913, ATEX, IECEx, FM, INMETRO, CCC, EAC-Ex, UKEX : -U9 KCs, ATEX, IECEx, FM, INMETRO, CCC, EAC-Ex, UKEX : -KCs

Example: 9202B2B

Environmental Conditions

Operating temperature	-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 & meas. / overvoltage cat. II

Mechanical specifications

Dimensions (HxWxD)	109 x 23.5 x 104 mm
Dimensions (HxWxD) w/ PR 4500	109 x 23.5 x 131 mm
Weight approx.	170 g
DIN rail type	DIN EN 60715/35 mm
Wire size	0.13...2.08 mm^2 AWG 26...14 stranded wire
Screw terminal torque	0.5 Nm
Vibration	IEC 60068-2-6
2...13.2 Hz	±1 mm
13.2...100 Hz	±0.7 g

Common specifications

Supply

Supply voltage	19.2...31.2 VDC
Fuse	400 mA SB / 250 VAC
Max. required power	≤ 1.1 W...≤ 1.3 W / ≤ 1.5 W...≤ 1.9 W (1 / 2 ch.)
Max. power dissipation, 1 / 2 ch	≤ 1.2 W / ≤ 1.6...1.8 W

Isolation voltage

Test /working: Input to any	2.6 kVAC / 300 VAC reinforced isolation
Analog output to supply	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

Auxiliary supplies

NAMUR supply	8 VDC / 8 mA
Programming	PR 4500 communication interfaces
Response time for cable fault	< 200 ms

Input specifications

Sensor types	NAMUR according to EN 60947-5-6 / mechanical contact
Frequency range	0...5 kHz
Min. pulse length	> 0.1 ms
Input resistance	Nom. 1 kΩ
Trig level, signal	< 1.2 mA, > 2.1 mA
Trig level, cable fault	< 0.1 mA, > 6.5 mA

Output specifications

Relay output

Max. switching frequency	20 Hz
Max. voltage	250 VAC / 30 VDC
Max. current	2 AAC / 2 ADC
Max. AC power	500 VA / 60 W

Status relay

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

NPN output

Max. switching frequency	5 kHz
Min. pulse length	> 0.1 ms
Max. load, current / voltage	80 mA / 30 VDC
Max. voltage drop at 80 mA	2.5 VDC

Observed authority requirements

LVD	2014/35/EU & UK SI 2016/1101
EMC	2014/30/EU & UK SI 2016/1091
ATEX	2014/34/EU & UK SI 2016/1107
RoHS	2011/65/EU & UK SI 2012/3032
EAC	TR-CU 020/2011
EAC Ex	TR-CU 012/2011
EAC LVD	TR-CU 004/2011

Approvals

ATEX	KEMA 07ATEX0146 X
IECEx	KEM 06.0039X
UKEX	DEKRA 21UKEX0179X
UKEX	DEKRA 23UKEX0105X
c FM us	FM19US0055X / FM19CA0028X
INMETRO	DEKRA 23.0007X
c UL us, UL 61010-1	E314307
c UL us, UL 913	E233311 (only 9202xxx-U9)
CCC	2020322309003424
KCs	21_AV4BO_0179X / 21_AV4BO_0180X (only 9202Bxx-KCs)
EAC Ex	RU C-DK.HA65.B.00355/19
DNV Marine	TAA00000JD
ClassNK	TA24034M
SIL	SIL 2 certified & fully assessed acc. to IEC 61508