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.
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/ 4501/451x................................... 109 x 23.5 x 116 / 131 mm
Weight approx............................................... 170 g
Weight incl. 4501 / 451x (approx.).......................... 185 g / 200 g
DIN rail type.................................................. DIN EN 60715/35 mm
Wire size...................................................... 0.13...2.06 mm² 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