

## 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 4501).
- Selection of direct or inverted function for each channel via PR 4501.
- 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.

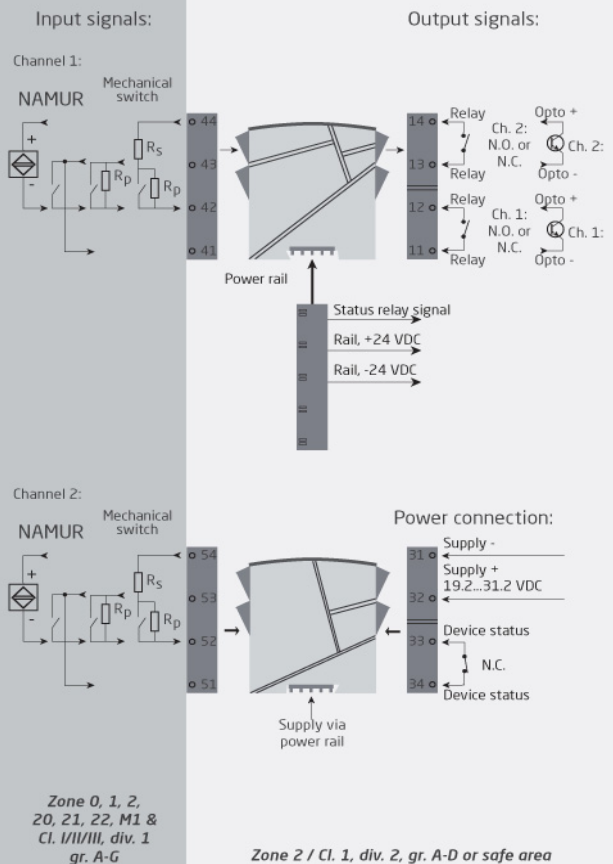
#### Technical characteristics

- 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  | Switch         | Channels   |
|-------|----------------|------------|
| 9202B | Opto : 1       | Single : A |
|       | Relay N.O. : 2 | Double : B |
|       | Relay N.C. : 3 |            |

**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 & 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                                         |
| 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..... | ≤ 3 W (2 channels)  |

**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.....                   | Communication enabler 4511 / Programming front 4501 |
| 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.....  | 110 VDC / 125 VAC |
| Max. current.....  | 0.3 ADC / 0.5 AAC |
| Max. AC power..... | 62.5 VA / 32 W    |

**NPN outputs**

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

**Observed authority requirements**

|          |                |
|----------|----------------|
| EMC..... | 2014/30/EU     |
| LVD..... | 2014/35/EU     |
| EAC..... | TR-CU 020/2011 |

**Approvals**

|                            |                                                    |
|----------------------------|----------------------------------------------------|
| ATEX 2014/34/EU.....       | KEMA 07ATEX0146 X                                  |
| IECEX.....                 | KEM 06.0039X                                       |
| FM.....                    | 3034430-C                                          |
| INMETRO.....               | NCC 12.1307 X                                      |
| UL.....                    | UL 61010-1                                         |
| EAC Ex TR-CU 012/2011..... | RU C-DK.GB08.V.00410                               |
| CCOE.....                  | P337349/5                                          |
| DNV-GL Marine.....         | Stand. f. Certific. No. 2.4                        |
| SIL.....                   | SIL 2 certified & fully assessed acc. to IEC 61508 |