



HART transparent driver

9107B

- 24 VDC supply via power rail or connectors
- Fast response time
- High active output load 725 Ohm / 20 mA
- Output line fault detection via status relay
- SIL2 certified via Full Assessment according to IEC 61508



Application

- 9107B is a 1- or 2-channel isolated 1:1 driver barrier for intrinsic safety applications.
- Operation and drive control of I/P converters, valves and indicators mounted in the hazardous area.
- Operation of HART devices is possible as the unit transmits HART communication signals bi-directionally.
- 9107B can be mounted in the safe area or in zone 2 / Cl. 1, div. 2 and transmit signals to zone 0, 1, 2 and zone 20, 21, 22 including mining / Class I/II/III, Div. 1, Gr. A-G.
- The PR 45xx displays the process value for each channel and can be used to define high and low limits for detection of loop current level. If these limits are exceeded, the status relay will activate.
- Dual channel versions can be used for signal splitter applications - 1 in and 2 out.

Advanced features

- The PR 45xx detachable display and the green and red front LEDs indicate operation status for each channel.
- A tag number can be defined for each channel.
- Output line fault detection.
- In the 1-channel version the status relay can be used as a simple limit switch.
- Suitable for the use in systems up to Performance Level "d" according to ISO-13849.

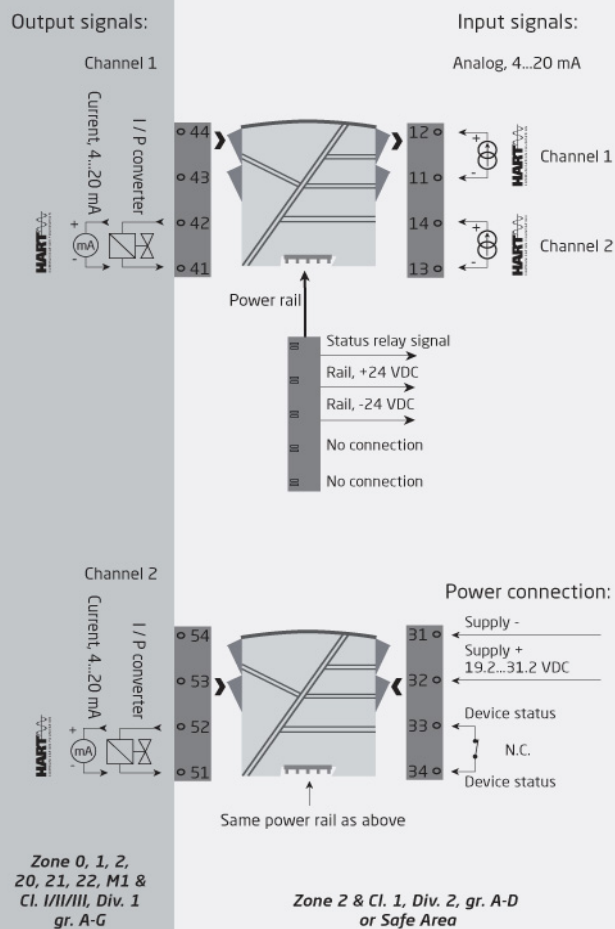
Technical characteristics

- High galvanic isolation of 2.6 kVAC.
- High accuracy better than 0.1%.
- Continuous check of vital stored data for safety reasons.

Mounting

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

Applications



Order

| Type | Associated apparatus | Unit channels | I.S. / Ex approvals |
|------|----------------------|--------------------------|---|
| 9107 | Yes : B | Single : A Double : B | ATEX, IECEx, FM, : - INMETRO, EAC-Ex cULus, ATEX, IECEx, : -U9 FM, INMETRO, EAC-Ex |

Example: 9107BB

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..... | 250 g |
| Weight incl. 4501 / 451x (approx.)..... | 265 g / 280 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..... | 1.25 A SB / 250 VAC |
| Max. required power..... | ≤ 1.0 W / ≤ 1.8 W (1 ch. / 2 ch.) |
| Max. power dissipation, 1 / 2 ch..... | ≤ 1.0 W / ≤ 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 |
| Status relay to supply..... | 1.5 kVAC / 150 VAC reinforced isolation |

Response time

| | |
|--|--------------------------------|
| Response time (0...90%, 100...10%)..... | < 5 ms |
| Programming..... | PR 45xx |
| Signal dynamics, input..... | Analog signal chain |
| Signal dynamics, output..... | Analog signal chain |
| HART bi-directional communication frequency range..... | 0.5...7.5 kHz |
| Signal / noise ratio..... | > 60 dB |
| Accuracy..... | Better than 0.1% of sel. range |
| mA, absolute accuracy..... | ≤ ±16 µA |
| mA, temperature coefficient..... | ≤ ±1.6 µA / °C |
| Effect of supply voltage change on output (nom. 24 VDC)..... | < ±10 µA |
| EMC immunity influence..... | < ±0.5% of span |
| Extended EMC immunity: NAMUR NE21, A criterion, burst..... | < ±1% of span |

Input specifications

Current input

| | |
|---|---------------|
| Measurement range..... | 3.5...23 mA |
| Sensor error detection: Loop break 4...20 mA..... | < 1 mA |
| Input voltage drop, supplied unit..... | < 2 V @ 23 mA |
| Input voltage drop, non-supplied unit..... | < 4 V @ 23 mA |

Output specifications

Current output

| | |
|------------------------------|-------------------------|
| Signal range..... | 3.5...23 mA |
| Load (@ current output)..... | ≤ 725 Ω |
| Load stability..... | ≤ 0.01% of span / 100 Ω |
| Current limit..... | ≤ 28 mA |

Status relay

| | |
|--|---|
| Relay function..... | N.C. |
| Programmable low setpoint..... | 0...29.9 mA |
| Programmable high setpoint..... | 0...29.9 mA |
| Hysteresis for setpoints..... | 0.1 mA |
| Max. voltage..... | 125 VAC / 110 VDC |
| Max. current..... | 0.5 AAC / 0.3 ADC |
| Max. voltage - hazardous installation..... | 32 VDC / 32 VAC |
| Max. current - hazardous installation..... | 1 ADC / 0.5 AAC |
| of span..... | = normal measurement range 4...20 mA |

Observed authority requirements

| | |
|-------------|----------------|
| EMC..... | 2014/30/EU |
| LVD..... | 2014/35/EU |
| ATEX..... | 2014/34/EU |
| RoHS..... | 2011/65/EU |
| EAC..... | TR-CU 020/2011 |
| EAC Ex..... | TR-CU 012/2011 |

Approvals

| | |
|--------------------------|---|
| ATEX..... | DEKRA 11ATEX0247 X |
| IECEx..... | DEK 11.0088X |
| c FM us..... | FM16US0465X / FM16CA0213X |
| INMETRO..... | DEKRA 16.0002 X |
| c UL us, UL 61010-1..... | E314307 |
| c UL us, UL 913..... | E233311 (only 9107xx-U9) |
| EAC Ex..... | RU C-DK.A65.B.00355/19 |
| DNV-GL Marine..... | TAA00000JD |
| ClassNK..... | TA18527M |
| SIL..... | SIL 2 certified & fully assessed acc. to IEC 61508 |