PERFORMANCE MADE SMARTER

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 4501 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 4501 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.

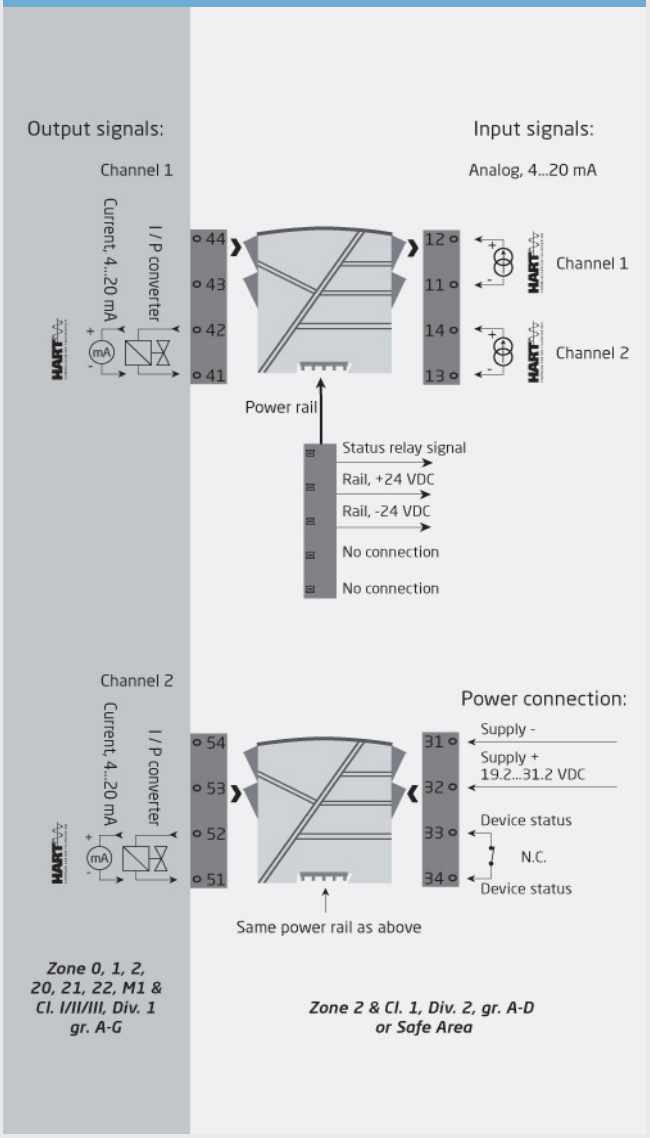
Technical characteristics

- 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	Unit channels	
9107B	Single	: A
	Double	: B

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/ 4501/4511	109 x 23.5 x 116 / 131 mm
Weight approx.	250 g
Weight incl. 4501 / 4511 (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	110 VDC / 125 VAC
Max. current	0.3 ADC / 0.5 AAC
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
RoHS	2011/65/EU
EAC	TR-CU 020/2011

Approvals

ATEX 2014/34/EU	DEKRA 11ATEX0247 X
IECEx	DEK 11.0088X
FM	FM16US0465X / FM16CA0213X
INMETRO	DEKRA 16.0002 X
UL	UL 61010-1
EAC Ex TR-CU 012/2011	RU C-DK.GB08.V.00410
DNV-GL Marine	Stand. f. Certific. No. 2.4
ClassNK	TA18527M
SIL	SIL 2 certified & fully assessed acc. to IEC 61508