PERFORMANCE MADE SMARTER



HART transparent driver

9107A

– 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

- 9107A is a 1- or 2-channel isolated 1:1 driver.
- Operation and drive control of I/P converters, valves and indicators.
- Operation of HART devices is possible as the unit transmits HART communication signals bi-directionally.
- 9107A can be mounted in the safe area or in zone 2 / Class I, Division 2, Groups A, B, C, D.
- The PR 4500 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 4500 detachable displays 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.

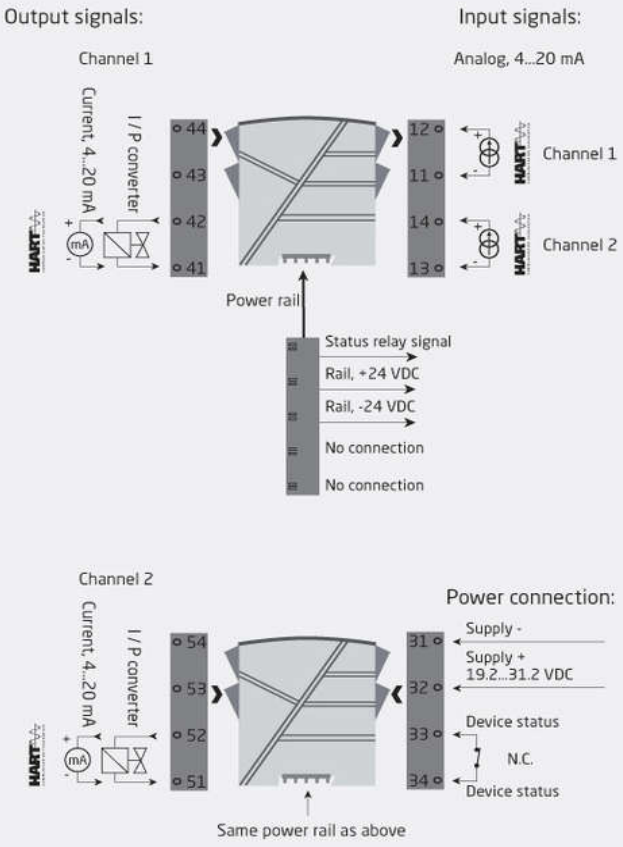
Technical characteristics

- 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



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Order

Type	Unit channels		I.S. / Ex approvals	
9107A	Single	: A	ATEX, IECEx, FM, INMETRO, CCC, EAC-Ex, UKEX	: -
	Double	: B	UL 913, ATEX, IECEx, FM, INMETRO, CCC, EAC-Ex, UKEX	: -U9
			KCs, ATEX, IECEx, FM, INMETRO, CCC, EAC-Ex, UKEX	: -KCs

Example: 9107AB

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 ..... 250 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 4500 communication interfaces
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 & UK SI 2016/1091
LVD ..... 2014/35/EU & UK SI 2016/1101
ATEX ..... 2014/34/EU & UK SI 2016/1107
RoHS ..... 2011/65/EU & UK SI 2012/3032
EAC ..... TR-CU 020/2011
EAC LVD ..... TR-CU 004/2011
EAC Ex ..... TR-CU 012/2011

Approvals

ATEX ..... DEKRA 11ATEX0247 X
IECEx ..... DEK 11.0088X
UKEX ..... DEKRA 21UKEX0173X
c FM us ..... FM16US0465X / FM16CA0213X
c UL us, UL 61010-1 ..... E314307
c UL us, UL 913 ..... E233311 (only 9107xx-U9)
CCC 2020322304003422
KCs ..... 21_AV4BO_0172X (only 9107Ax-KCs)
EAC Ex ..... RU C-DK.HA65.B.00355/19
DNV Marine TAA00000JD
ClassNK TA18527M
SIL ..... SIL 2 certified & fully assessed acc. to IEC 61508