

HART transparent repeater

5106B

- 3- / 5-port 3.75 kVAC galvanic isolation
- Low response time
- 2-wire supply > 17 V in Ex / I.S. area
- 1- or 2-channel version
- Universal supply by AC or DC



Application

- Power supply and Ex / I.S. safety barrier with 2-way HART communication for 2-wire transmitters installed in the hazardous area.
- Ex / I.S. safety barrier with 2-way HART communication for supplied current transmitters installed in the hazardous area.
- Signal isolator with low response time on analog current signals from the hazardous area.

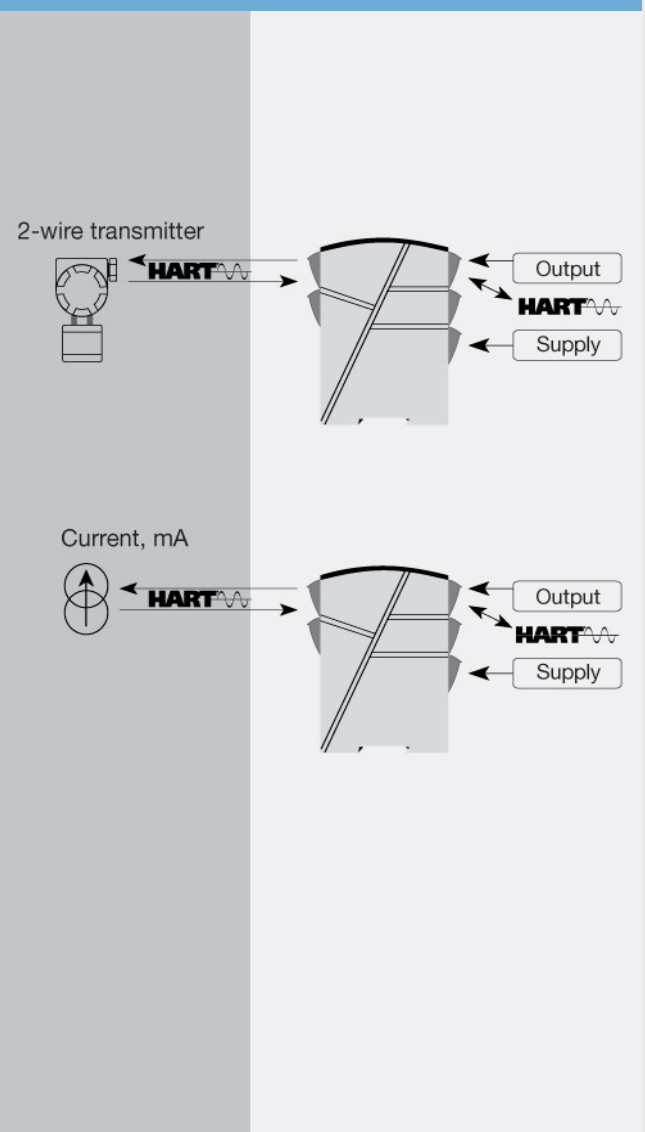
Technical characteristics

- PR5106B primarily processes current signals of 4...20 mA.
- PR5106B is based on microprocessor technology for gain and offset. The analog signal is transmitted at a response time of less than 25 ms.
- Inputs, outputs, and supply are floating and galvanically separated.
- The output can be connected either as an active current transmitter or as a 2-wire transmitter.

Mounting / installation

- Mounted vertically or horizontally on a DIN rail. As the devices can be mounted without distance between neighboring units, up to 84 channels can be mounted per meter.
- PR5106B is recommended as Ex / I.S. safety barrier for 5335D and 6335D.

Applications



Order:

Type	Input	Output	Channels
5106B	4...20 mA : B	4...20 mA : 2	Single : A
		20...4 mA : 9	Double : B

Environmental Conditions

Operating temperature.....	-20°C to +60°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree.....	IP20

Mechanical specifications

Dimensions (HxWxD).....	109 x 23.5 x 130 mm
Weight approx.....	245 g
DIN rail type.....	DIN 46277
Wire size.....	1 x 2.5 mm ² stranded wire
Screw terminal torque.....	0.5 Nm

Common specifications

Supply

Supply voltage, universal.....	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse.....	400 mA SB / 250 VAC
Max. required power.....	≤ 3 W (2 channels)
Internal power dissipation.....	≤ 2 W (2 channels)

Isolation voltage

Isolation voltage, test / working.....	3.75 kVAC / 250 VAC
PELV/SELV.....	IEC 61140

Response time

Response time (0...90%, 100...10%).....	< 25 ms
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Auxiliary supplies

2-wire supply (pin 44...42 and 54...52).....	25...17 VDC / 0...20 mA
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Accuracy.....	Better than 0.1% of selected range
Effect of supply voltage change.....	< ±10 µA
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

Current input

Measurement range.....	4...20 mA
Min. measurement range (span).....	16 mA
Input resistance: Supplied unit.....	Nom. 10 Ω
Input resistance: Non-supplied unit.....	Rshunt = ∞, Vdrop < 4 V

Output specifications

Current output

Signal range.....	4...20 mA
Min. signal range.....	16 mA
Load (@ current output).....	≤ 600 Ω
Load stability.....	≤ 0.01% of span / 100 Ω
Current limit.....	≤ 28 mA

Passive 2-wire mA output

Max. external 2-wire supply.....	29 VDC
Effect of external 2-wire supply voltage variation.....	< 0.005% of span / V

2-wire 4...20 mA output: Signal

range.....	4...20 mA
Output ripple.....	< 3 mVRMS on HART communication
*of span.....	= of the presently selected range

Observed authority requirements

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

Approvals

ATEX 2014/34/EU.....	DEMKO 00ATEX127483, II (1) G [EEx ia] IIC
UL.....	UL 913, UL 508
EAC Ex TR-CU 012/2011.....	RU C-DK.GB08.V.00410