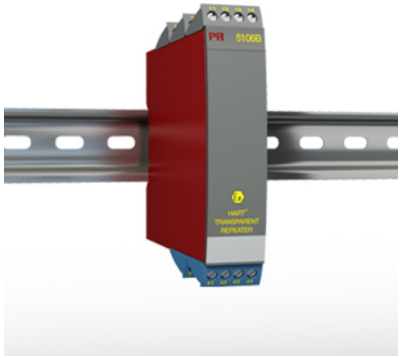
PERFORMANCE MADE SMARTER



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.

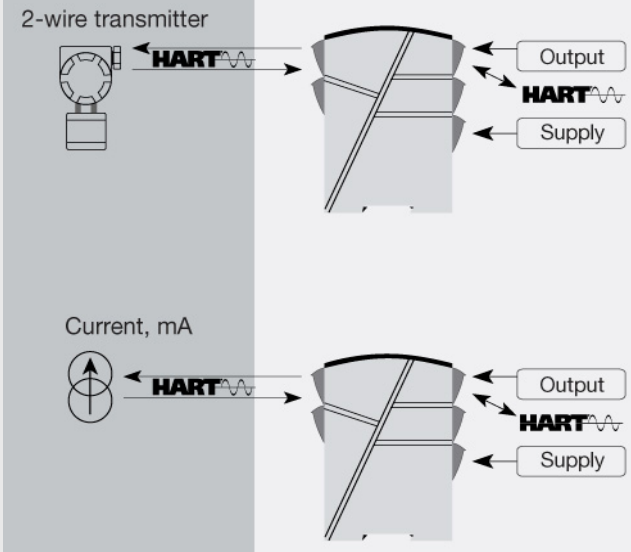
Technical characteristics

- 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.

Connection



Environmental Conditions

Specifications range	-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 voltage, universal	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse	400 mA SB / 250 VAC
Max. power consumption	≤ 3 W (2 channels)
Internal consumption	≤ 2 W (2 channels)
Isolation voltage, test / working	3.75 kVAC / 250 VAC
Signal / noise ratio	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%)	< 25 ms
Effect of supply voltage change	< ±10 µA
Auxiliary supply: 2-wire supply (pin 44...42 and 54...52)	25...17 VDC / 0...20 mA
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), current input	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
2-wire 4...20 mA output: Signal range	4...20 mA
Min. signal range	16 mA
Load (max.)	20 mA/600 Ω/12 VDC
Load stability, current output	≤0.01% of span/100 Ω
Current limit	≤ 28 mA
Max. external 2-wire supply	29 VDC
Effect of external 2-wire supply voltage variation	< 0.005% of span / V
Output ripple	< 3 mVRMS on HART communication
*of span	= Of the presently selected range

Approvals

EMC	EN 61326-1
LVD	EN 61010-1
PELV/SELV	IEC 364-4-41 and EN 60742
ATEX	DEMKO 00ATEX127483
UL	UL 913, UL 508
GOST R	Yes
GOST Ex	Yes