

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.

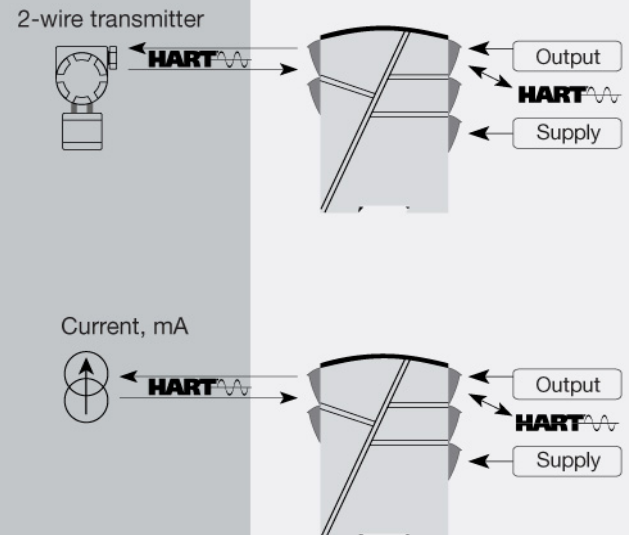
Technical characteristics

- 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.

Connections



Order:

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

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 mm² 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

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

Auxiliary supplies
 2-wire supply (pin 44...42
 and 54...52)..... 25...17 VDC / 0...20 mA

Fuse..... 400 mA SB / 250 VAC
 Max. required power..... ≤ 3 W (2 channels)
 Internal consumption..... ≤ 2 W (2 channels)
 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

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

Observed authority requirements

EMC..... 2014/30/EU
 LVD..... 2014/35/EU

Approvals

ATEX 2014/34/EU..... DEMKO 00ATEX127483, II (1)
 G [Ex ia] IIC
 UL..... UL 913, UL 508
 EAC..... TR-CU 020/2011
 EAC Ex TR-CU 012/2011..... RU C-DK.GB08.V.00410