

HART[®] TRANSPARENT REPEATER



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



Application:

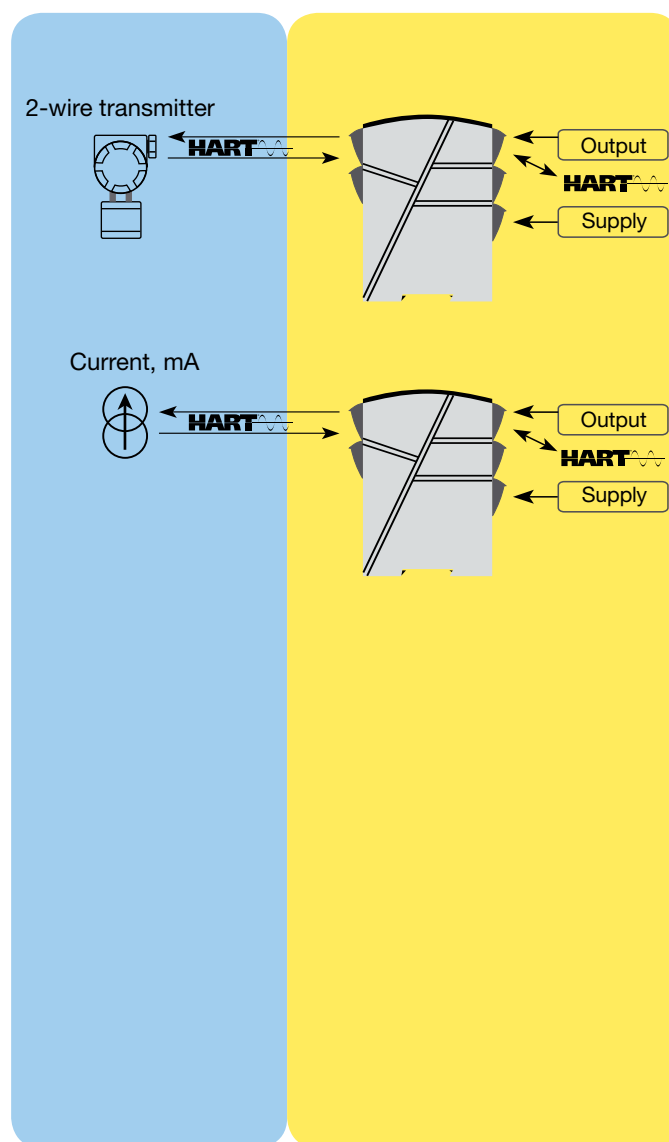
- Power supply and Ex safety barrier with 2-way HART[®] communication for 2-wire transmitters installed in the hazardous area.
- Ex safety barrier with 2-way HART[®] communication for supplied current transmitters installed in the hazardous area.
- Signal isolator with low response time on analogue current 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 analogue 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:

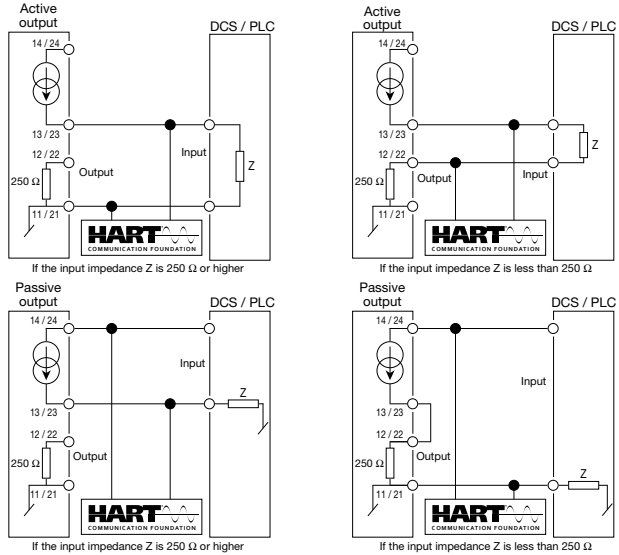
- Mounted vertically or horizontally on a DIN rail. As the modules can be mounted without distance between neighbouring units, up to 84 channels can be mounted per metre.
- PR5106B is recommended as Ex safety barrier for 5335D and 6335D.



Order: 5106B

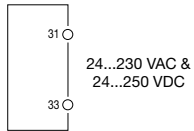
Type	Input	Output	Channels
5106B	4...20 mA : B	4...20 mA : 2 20...4 mA : 9	Single : A Double : B

Outputs:



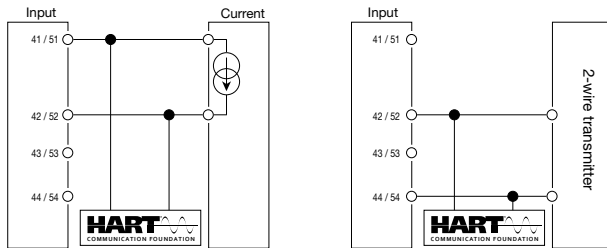
Connections:

Supply:



! Connections are identical for channel 1 and channel 2

Inputs:



Electrical specifications:

Specifications range:

-20 to +60°C

Common specifications:

Supply voltage, universal 21.6...253 VAC, 50...60 Hz
 19.2...300 VDC
 Internal consumption ≤ 2 W (2 channels)
 Max. consumption..... ≤ 3 W (2 channels)
 Fuse..... 400 mA SB / 250 VAC
 Isolation voltage, test / operation..... 3.75 kVAC / 250 VAC
 Signal / noise ratio..... Min. 60 dB (0...100 kHz)
 Response time (0...90%, 100...10%).. < 25 ms
 Calibration temperature..... 20...28°C
 Effect of supply voltage change
 (24...250 V) < ±10 µA
 Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
mA	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	≤ ±16 µA	≤ ±1.6 µA/°C

EMC immunity influence	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Auxiliary supply:

2-wire supply
 (pin 44...42 and 54...52)..... 25...17 VDC / 0...20 mA
 Max. wire size..... 1 x 2.5 mm² stranded wire
 Screw terminal torsion..... 0.5 Nm
 Relative humidity..... < 95% RH (non-cond.)
 Dimensions (HxWxD)..... 109 x 23.5 x 130 mm
 DIN rail type..... DIN 46277
 Protection degree..... IP20
 Weight 246 g

Current input:

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

Current output and 2-wire 4...20 mA output:

Signal range (span)..... 4...20 mA
 Min. signal range (span) 16 mA
 Load (max.)..... 20 mA / 600 Ω / 12 VDC
 Load stability ≤ 0.01% of span / 100 Ω
 Current limit..... ≤ 28 mA
 Ripple on HART® communication..... < 3 mVRMS
 Max. external 2-wire supply 29 VDC
 Effect of external 2-wire supply voltage change < 0.005% of span / V

EEx / I.S. approval:

DEMKO 00ATEX127483 II (1) GD
 [EEx ia] IIC
 Applicable for zone..... 0, 1, 2, 20, 21 or 22

Ex / I.S. data:

Terminal 31...33
 U_m : 250 V
 Terminal 44 to 42, 41 (54 to 52, 51)
 U_o : 28 VDC
 I_o : 91 mADC
 P_o : 0.65 W
 L_o : 3.0 mH
 C_o : 80 nF
 Terminal 41 to 42 (51 to 52)
 U_o : 10 VDC
 I_o : 2 mADC
 P_o : 5 mW
 L_o : 1 H
 C_o : 3 µF

UL, applicable for zone IS, Cl. I, Div. 1, Gr. A, B, C, D
 IS, Cl. I, zone 0 / 1, Gr. IIC
 IS, Cl. II, Div. 1 Gr. E, F, G
 UL Control Drawing..... 5106QU01

GOST R approval:

VNIIFTRI, Cert No..... www.prelectronics.com

Observed authority requirements: Standard:

EMC 2004/108/EC EN 61326-1
 LVD 2006/95/EC EN 61010-1
 PELV/SELV..... IEC 364-4-41
 and EN 60742
 ATEX 94/9/EC..... EN 50014, EN 50020 and
 EN 50281-1-1
 UL..... UL 913, UL 508

Of span = of the presently selected range