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.
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 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
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
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 sel. range
Effect of supply voltage change.................. < ±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............................... 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........................................ ≤ 29 mA
Passive 2-wire 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

Observed authority requirements
EMC.................................................... 2014/30/EU
LVD..................................................... 2014/35/EU
EAC.................................................... TR-CU 020/2011
Approvals
ATEX.................................................... DEMKO 00ATEX127483, II (1)
G [Ex ia] IIC........................................ UL 913, UL 508
EAC Ex................................................ RU C-DK-HA65.B.00355/19

<table>
<thead>
<tr>
<th>Type</th>
<th>Input</th>
<th>Output</th>
<th>Channels</th>
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<tbody>
<tr>
<td>5106B</td>
<td>4...20 mA : B</td>
<td>4...20 mA : 2</td>
<td>Single : A</td>
</tr>
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<td></td>
<td>20...4 mA : 9</td>
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<td>Double : B</td>
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</tbody>
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of span........................................... = of the presently selected range