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: Rs(hunt) = 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**
  - 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

**Observed authority requirements**
- **EMC**
  - 2014/30/EU
- **LVD**
  - 2014/35/EU
- **EAC**
  - TR-CU 020/2011

**Approvals**
- **ATEX**
  - DEMKO 00ATEX127483, II (1) G [EEx ia] IIC
  - UL 913, UL 508
- **EAC Ex**
  - RU C-DK.HA65.B.00355/19