

## 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

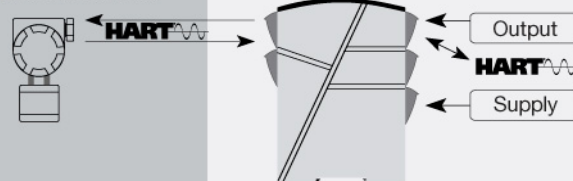
- Mounted vertically or horizontally on a DIN rail. As the devices can be mounted without distance between neighboring units, up to 84 channels can be mounted per meter.

#### Note

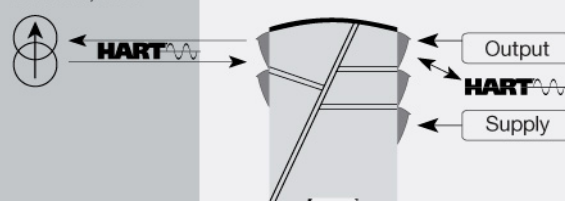
- Not suitable for new installations requiring certification to the latest ATEX standards - see ATEX certificate DEMKO 00ATEX127483 and EU Declaration of Conformity for details.

#### Applications

##### 2-wire transmitter



##### Current, mA



**Order:**

| Type  | Input         | Output                         | Channels                 |
|-------|---------------|--------------------------------|--------------------------|
| 5106B | 4...20 mA : B | 4...20 mA : 2<br>20...4 mA : 9 | Single : A<br>Double : B |

**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 mm <sup>2</sup> stranded wire |
| Screw terminal torque..... | 0.5 Nm                                |

**Common specifications****Supply**

|                                 |                                                 |
|---------------------------------|-------------------------------------------------|
| Supply voltage, universal.....  | 21.6...253 VAC, 50...60 Hz or<br>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 /<br>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<br>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<br>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<br>unit.....     | Nom. 10 Ω               |
| Input resistance: Non-supplied<br>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                 |

**Passive 2-wire mA output**

|                                                            |                                      |
|------------------------------------------------------------|--------------------------------------|
| Signal range.....                                          | 4...20 mA                            |
| Max. external 2-wire supply.....                           | 29 VDC                               |
| Effect of external 2-wire<br>supply voltage variation..... | < 0.005% of span / V                 |
| Output ripple.....                                         | < 3 mVRMS on HART<br>communication   |
| of span.....                                               | = of the presently selected<br>range |

**Observed authority requirements**

|          |                |
|----------|----------------|
| EMC..... | 2014/30/EU     |
| LVD..... | 2014/35/EU     |
| EAC..... | TR-CU 020/2011 |

**Approvals**

|                      |                                               |
|----------------------|-----------------------------------------------|
| ATEX.....            | DEMKO 00ATEX127483, II (1)<br>G [EEEx ia] IIC |
| c UL us, UL 913..... | E233311                                       |
| EAC Ex.....          | RU C-DK.HA65.B.00355/19                       |