HART transparent repeater

9106A

- 24 VDC supply via power rail or connectors
- Active and passive mA input
- Active or passive output via the same two terminals
- Splitter function - 1 in and 2 out
- SIL2 / SIL3 Full Assessment and certified acc. to IEC 61508

Application

• 9106A is a 1- or 2-channel isolated 1:1 repeater.
• The device supplies 2-wire SMART transmitters and can also be used for 2-wire SMART current sources. HART & BRAIN protocols are supported and are transferred bi-directionally.
• 9106A can be mounted in and receive signals from non-classified area or zone 2.
• For duplication/migration purposes, the outputs can be sent to two different DCS/PLC/HMI or any monitoring system.
• In safety applications (SIL loops), the 9106AxB can be used as a splitter with the following output configuration: When using 9106AxB in a SIL2 safety function, channel 1 is used for the safety loop. Channel 2 can be used for any non-safety device. For higher safety purposes (SIL 3), 9106AxB can be used as a splitter for SIL 3 loops. Channel 1 and 2 are then connected to the same safety PLC, where channel 2 is used as a redundant diagnostic channel. (For more information, consult the FMEDA Report and the Safety Manual).

Advanced features

• The detachable display and the green and red front LEDs indicate operation status for each channel.
• Monitoring of error events and cable breakage on input via the individual status relay and/or a collective electronic signal via the power rail.

Technical characteristics

• High galvanic isolation of 2.6 kVAC.
• Fast response time <5 ms
• High accuracy better than 0.1%.
• 2-wire transmitter supply >16 V.

Mounting

• The devices can be mounted vertically or horizontally without distance between neighbouring units.
### Environmental Conditions

- **Operating temperature**: -20°C to +60°C
- **Storage temperature**: -20°C to +85°C
- **Calibration temperature**: 20...28°C
- **Relative humidity**: < 95% RH (non-cond.)
- **Protection degree**: IP20
- **Installation in**: Pollution degree 2 & measurement / overvoltage cat. II

### Mechanical specifications

- **Dimensions (HxWxD)**: 109 x 23.5 x 104 mm
- **Dimensions (HxWxD) w/ 4501 / 4511**: 109 x 23.5 x 116 / 131 mm
- **Weight incl. 4501 / 4511 (approx.)**: 265 g / 350 g
- **DIN rail type**: DIN EN 60715/35 mm
- **Wire size**: 0.13...2.08 mm² / AWG 26...14 stranded wire
- **Screw terminal torque**: 0.5 Nm
- **Vibration**: IEC 60068-2-6
- **2...13.2 Hz**: ±1 mm
- **13.2...100 Hz**: ±0.7 g

### Common specifications

- **Supply**
  - **Supply voltage**: 19.2...31.2 VDC
  - **Fuse**: 1.25 A SB / 250 VAC
  - **Max. required power**: ≤ 1.1 W / ≤ 1.9 W (1 ch. / 2 ch.)
  - **Max. power dissipation, 1 / 2 ch.**: ≤ 0.8 W / ≤ 1.2 W
- **Isolation voltage**
  - **Test /working**: Input to any
  - **2.6 kVAC / 300 VAC**: reinforced isolation
  - **Analog output to supply**: 2.6 kVAC / 300 VAC reinforced isolation
  - **Status relay to supply**: 1.5 kVAC / 150 VAC reinforced isolation
- **Response time**
  - **(0...90%, 100...10%)**: ≤ 5 ms
  - **SMART bi-directional communication**
  - **frequency range**: 0.5...7.5 kHz
  - **Signal / noise ratio**: > 60 dB
  - **Accuracy**: Better than 0.1% of sel. range
  - **mA, absolute accuracy**: ≤ ±16 μA
  - **mA, temperature coefficient**: ≤ ±1.6 μA / °C
  - **Effect of supply voltage change on output** (nom. 24 VDC): ≤ ±10 μA
  - **EMC immunity influence**: ≤ ±0.5% of span
  - **Extended EMC immunity**: NAMUR NE21, A criterion, burst:

### Input specifications

- **Current input**
  - **Measurement range**: 3.5...23 mA
  - **2-wire transmitter supply**
    - 9106A1x: 16 V / 20 mA
    - 9106A2x: 15 V / 20 mA
  - **Sensor error detection: Loop break 4...20 mA**: < 1 mA
  - **Input voltage drop, supplied unit**: ≤ 4 V @ 23 mA

### Output specifications

- **Current output**
  - **Signal range**: 3.5...23 mA
  - **Load (@ current output)**: ≤ 0.01% of span / 100 Ω
  - **Current limit**: ≤ 28 mA

### Observed authority requirements

- **EMC**: 2014/30/EU
- **LVD**: 2014/35/EU
- **RoHS**: 2011/65/EU
- **EAC**: TR-CU 020/2011

### Approvals

- **UL**: UL 61010-1
- **DNV-GL Marine**: SIL 2 / SIL 3 certified & fully assessed acc. to IEC 61508