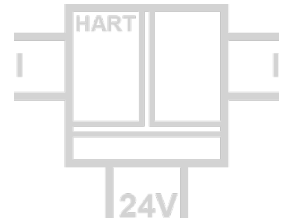


Repeater Power Supply HART DC 52500

Powering and Isolation of
SMART Transmitters with HART Communication



The Repeater Power Supply DC 52500 is used to supply and separate 2- and 3-wire SMART Transmitters and active sensor signals with HART communication.

It supplies the transmitter with power and transmits the measuring signal with high accuracy galvanic isolated to the output. Alternative the measuring input accepts active 0/4 ... 20 mA signals from 4-wire transmitters.

In addition to the analog signal, the DC 52500 also transmits data protocols for HART communication. It allows bidirectional communication with the field device from every point of the cabling.

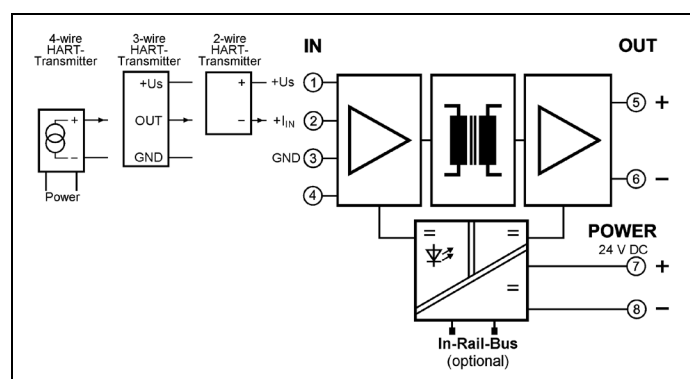
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **Universal operation of SMART Transmitters**
Energization and separation of field located 2-, 3- and 4-wire transmitters
- **Bidirectional HART transmission**
HART data transfer for repeater and isolator operation
- **3-Port isolation**
Protection against erroneous measurements due to parasitic voltages or ground loops
- **Extremely slim design**
6.2 mm slim housing for a simple and space saving installation
- **Optional In-Rail-Bus mounting rail connector**
allows for fast and economical installation
- **Protective Separation acc. to EN61140**
Protects service personnel and downstream devices against impermissibly high voltage
- **5 Years Warranty**
Defects occurring within 5 years from delivery date shall be remedied free of charge at our plant (carriage and insurance paid by sender)



Block diagram



6mm

Technical Data

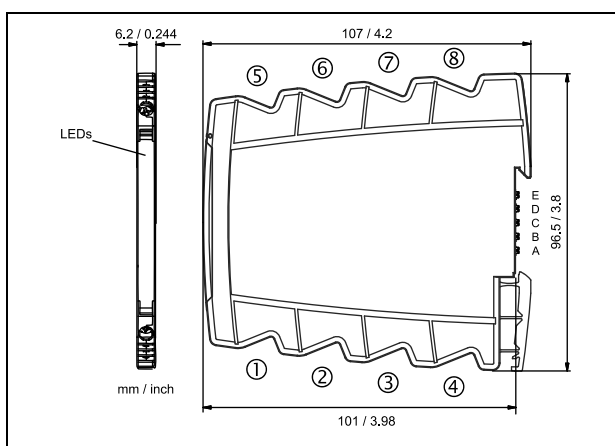
| Input | | |
|---|--|---|
| Input signal | 0/4 ... 20 mA | (4 ... 20 mA with HART signal) |
| Input resistance | ≤ 50 Ω | |
| Over load | 50 mA / 30 V | |
| Transmitter supply (Tx) | 16 V (open circuit voltage/short circuit current < 22 V/35 mA) | |
| Communication signal | Bidirectional HART transmission, internal AC impedance 250 Ω | |
| Output | | |
| Output signal | 0/4 ... 20 mA | (4 ... 20 mA with HART signal) |
| Load | 0 ... 600 Ω (at 20 mA) | (230 ... 600 Ω with HART signal) |
| Linear transmission range | −1 ... +110 % | |
| Residual ripple | < 10 mV _{rms} | |
| General Data | | |
| Transmission error | < 0.1 % full scale | |
| Temperature coefficient ¹⁾ | < 100 ppm/K | |
| Cut-off frequency -3 dB | 100 Hz | > 2,5 kHz HART signal |
| Response time T ₉₉ | 7 ms | |
| Test voltage | 3 kV AC, 50 Hz, 1 min. | Input against output against power supply |
| Working voltage ²⁾ (Basic Insulation) | 600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1 | |
| Protection against electrical shock ²⁾ | Protective separation according to EN 61140 by reinforced insulation in accordance with EN 61010 -1 up to 300 V AC/DC for overvoltage category II and pollution degree 2 | |
| Ambient temperature | Operation | − 25 °C to + 70 °C (− 13 to + 158 °F) |
| | Transport and storage | − 40 °C to + 85 °C (− 40 to + 185 °F) |
| Power supply | 24 V DC voltage range 16.8 V ... 31.2 V DC, approx. 1.3 W | |
| EMC ³⁾ | EN 61326-1 | |
| Approvals | ATEX | DEMKO 16 ATEX 1685X |
| | IECEX | IECEX UL 16.0055X |
| | UL | E478692 USA/Canada |
| | Ex II 3 G Ex nA IIC T4 Gc Ex nA IIC T4 Gc Class I, Division 2 Groups A, B, C, D T4 | |
| Construction | 6.2 mm (0.244") housing, protection class IP 20, mounting on 35 mm DIN rail acc. to EN 60715 | |
| Weight | Approx. 70 g | |

1) Average TC related to full scale value in specified operating temperature range, reference temperature 23 °C

2) For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.

3) Minor deviations possible during interference

Dimensions



Subject to change!

Terminal assignments

| | |
|---|---|
| 1 | + Transmitter supply voltage U_{Tx} |
| 2 | + Input current |
| 3 | - Input GND |
| 4 | n.c. |
| 5 | + Output |
| 6 | - Output |
| 7 | + Power supply (connected to In-Rail-Bus D) |
| 8 | - Power supply (connected to In-Rail-Bus C) |

Connection

Captive plus-minus clamp screws
Wire cross-section 0.5 ... 2.5 mm² / AWG 20-14
Stripped length 8 mm / 0.3 in
Screw terminal torque 0.6 Nm / 5 lbf in
Optional power connection via In-Rail-Bus (see accessories)

Product line

| Device | Order No. |
|---|------------|
| Repeater Power Supply , bidirectional HART transmission | DC 52500 S |
| Repeater Power Supply , bidirectional HART transmission, In-Rail-Bus for power supply | DC 52500 B |