

## Repeater Power Supply HART DC 52500



Read these instructions before using the product and retain for future information.

### DC 52500

#### ► Short description

The HART Repeater Power Supply 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, data protocols for HART communication will be transmitted. It allows bidirectional communication with the field device from every point of the cabling.

The 3-way isolation guarantees reliable decoupling of the sensor circuit from the processing circuit and prevents linked measurement circuits from influencing each other. The Protective Separation with high isolation level provides protection for personnel and downstream devices against impermissibly high voltage.

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

#### ► Functioning

The input signal is modulated and then electrically decoupled using a transformer. The isolated signal is then made available at the output, demodulated, filtered and amplified.

#### ► Mounting, Electrical Connection

The repeater power supply is mounted on standard 35 mm DIN rail.

##### Terminal assignments

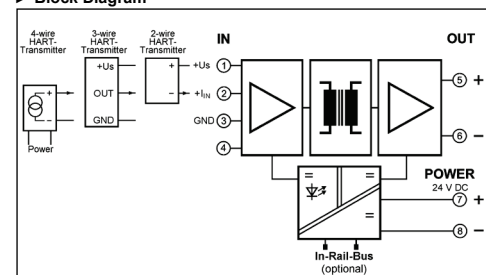
|                           |                  |
|---------------------------|------------------|
| 1 Transmitter Supply Tx + | 5 Output +       |
| 2 Input I +               | 6 Output -       |
| 3 Input GND               | 7 Power supply + |
| 4                         | 8 Power supply - |

#### ► Technical Data

| Input   |   |  |
|---|---|--|
| Input signal  | 0/4 ... 20 mA   |  |
| Input resistance (DC)   | ≤ 50 Ω  |  |
| Overload  | ≤ 50 mA / ≤ 30 V  |  |
| Transmitter supply (Tx)   | 16 V (open circuit / short circuit < 22 V / 35 mA)  |  |
| Communication signal  | Bidirectional HART transmission,<br>internal AC impedance ~ 250 Ohm   |  |
| Output  |   |  |
| Output signal   | 0/4 ... 20 mA   |  |
| Load  | ≤ 12 V (600 Ω at 20 mA)   |  |
| Linear transmission range                                       | -1 to +110 %  |  |
| Residual ripple   | < 10 mV <sub>rms</sub>  |  |
| General data  |   |  |
| Transmission error  | < 0.1 % full scale  |  |
| Temperature coefficient <sup>(1)</sup>                          | < 100 ppm/K   |  |
| Cut-off frequency -3 dB   | 100 Hz, > 2.5 kHz HART signal   |  |
| Response time T <sub>99</sub>                                   | 7 ms  |  |
| Test voltage  | 3 kV, 50 Hz, 1 min.<br>Input against output against power supply  |  |
| Working voltage <sup>(2)</sup><br>(Basic insulation)            | 600 V AC/DC for overvoltage category II and<br>contamination class 2 acc. to EN 61010-1   |  |
| Protection against<br>dangerous body<br>currents <sup>(2)</sup> | Protective Separation by reinforced insulation acc.<br>to EN 61010-1 up to 300 V AC/DC for overvoltage<br>category II and contamination class 2 between<br>input and output and power supply. |  |
| Ambient temperature   | Operation -25 °C to +70 °C (-13 to +158 °F)<br>Transport and storage -40 °C to +85 °C (-40 to +185 °F)  |  |
| Power supply  | 24 V DC 16.8 V ... 31.2 V, approx. 1.3 W  |  |
| EMC <sup>(3)</sup>  | EN 61326-1  |  |
| MTBF  | 399 years acc. to SN 29500 (stationary continuous<br>operating, average ambient temperature 40 °C)  |  |
| Construction  | 6.2 mm (0.244") housing, protection type: IP 20<br>mounting on 35 mm DIN rail acc. to EN 60715  |  |
| Connection terminals<br>(see order information)                 | - Screw terminals (plus-minus clamp screws)<br>- Cage clamp terminals (Push-In)   |  |
| Weight  | Approx. 70 g  |  |

- Average TC in specified operating temperature range
- As far as relevant the standards and rules mentioned above are considered by development and production of our devices. In addition relevant assembly rules are to be considered by installation of our devices in other equipment. For applications with high working voltages, take measures to prevent accidental contact and make sure that there is sufficient distance or insulation between adjacent situated devices.
- Minor deviations possible during interference

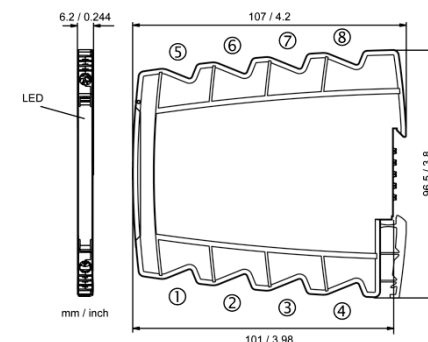
#### ► Block Diagram



#### ► Order Information

| Repeater Power Supply HART     | Order No.  |
|--------------------------------|------------|
| Screw terminals                | DC 52500 S |
| Screw terminals, In-Rail-Bus   | DC 52500 B |
| Push-In terminals              | DC 52504 S |
| Push-In terminals, In-Rail-Bus | DC 52504 B |

#### ► Dimensions



#### ► Connection data

| Connection                           | Screw terminals  | Push-In terminals  |
|--------------------------------------|--|--|
| Wire cross-section stranded ferruled | 0.5 mm <sup>2</sup> - 2.5 mm <sup>2</sup><br>AWG 20 - 14 | 0.5 mm <sup>2</sup> - 1.5 mm <sup>2</sup><br>AWG 20 - 16 |
| Wire cross-section solid wire        | 0.5 mm <sup>2</sup> - 2.5 mm <sup>2</sup><br>AWG 20 - 14 | 0.5 mm <sup>2</sup> - 2.5 mm <sup>2</sup><br>AWG 20 - 14 |
| Stripped length                      | 8 mm / 0.3 in  | 8 mm / 0.3 in  |
| Screw terminal torque                | 0.6 Nm / 5 lbf in  | -  |

#### LIMITED WARRANTY

DRAGO Automation GmbH hereby warrants that the Product will be free from defects in materials or workmanship for a period of **five (5) years** from the date of delivery ("Limited Warranty"). This Limited Warranty is limited to repair or replacement at DRAGO's option and is effective only for the first end-user of the Product. This Limited Warranty applies only if the Product:

- is installed according to the instructions furnished by DRAGO;
- is connected to a proper power supply;
- is not misused or abused; and
- there is no evidence of tampering, mishandling, neglect, accidental damage, modification or repair without the approval of DRAGO or damage done to the Product by anyone other than DRAGO.

Delivery conditions are based upon the „GENERAL CONDITIONS FOR THE SUPPLY OF PRODUCTS AND SERVICES OF THE ELECTRICAL AND ELECTRONICS INDUSTRY“, recommended by the Zentralverband Elektrotechnik- und Elektronikindustrie (ZVEI) e.V. .

Subject to change!

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