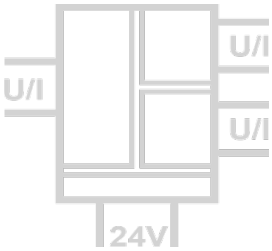
# Signal Splitter/Repeater DN 21000

## Isolation, Conversion and Loop Supply of Standard Signals with 2 Outputs



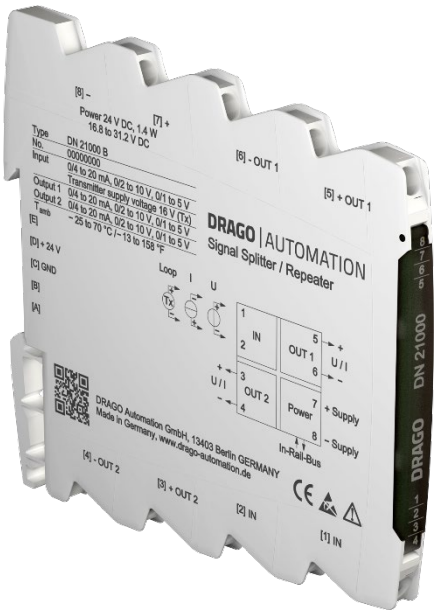

**The Signal Splitter/Repeater DN 21000 is used for isolation, conversion and distribution of 0/4 ... 20 mA, 0/1 ... 5 V and 0/2 ... 10 V standard signals. The measuring input can also supply the loop power for 2-wire transmitters.**

The input and two isolated outputs can be easily configured by using DIP switch. Due to the calibrated range selection no further adjustment is necessary.

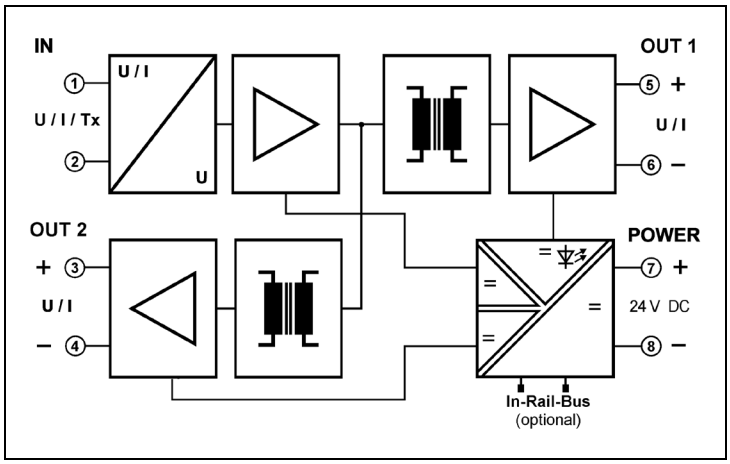
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **Universal configurable operating**
  Signal isolator or repeater power supply for 2-wire transmitters, 2 independent outputs
- **Calibrated signal setting via DIP switch**
  Input and outputs can be set by using DIP switch – high precision without any further adjustment
- **4-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 DIN rail mounting
- **Optional In-Rail-Bus mounting rail connector**
  allows for fast and economical installation
- **Protective Separation acc. to EN 61140**
  Protects service personnel and downstream devices against impermissibly high voltage
- **Maximum reliability**
  No maintenance costs
- **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



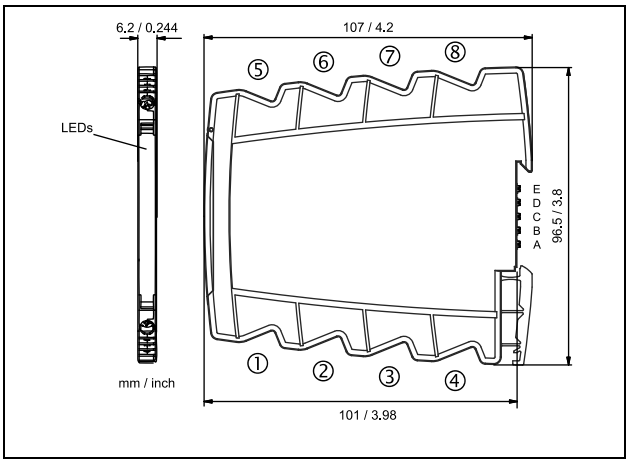
6 mm

## Technical Data

| | | | |
|---|---|---|---|
| **Input** | | | |
| Input signal (calibrated switchable) | 0 ... 20 mA<br>4 ... 20 mA | 0 ... 10 V<br>2 ... 10 V | 0 ... 5 V<br>1 ... 5 V |
| Input resistance | Current input<br>Voltage input | | ≤ 35 Ω<br>≥ 100 kΩ |
| Overload | Current input<br>Voltage input | | < 50 mA<br>< 30 V |
| Transmitter supply Tx (switchable) | 16 V (open circuit voltage/short circuit current ≤ 22 V/35 mA) | | |
| **Output I / Output II** | | | |
| Output signal (calibrated switchable) | 0 ... 20 mA<br>4 ... 20 mA | 0 ... 10 V<br>2 ... 10 V | 0 ... 5 V<br>1 ... 5 V |
| Load | Current output: ≤ 6 V (300 Ω at 20 mA) | | Voltage output: ≤ 5 mA (2 kΩ at 10 V) |
| 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 | 5 kHz | | |
| Response time $T_{99}$ | 150 µs | | |
| Test voltage | 3 kV AC, 50 Hz, 1 min. | Input against Output 1 against Output 2 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 | 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 between all circuits | | |
| Ambient temperature | Operation<br>Transport and storage | – 25 °C to + 70 °C<br>– 40 °C to + 85 °C | (– 13 to + 158 °F)<br>(– 40 to + 185 °F) |
| Power supply | 24 V DC | voltage range 16.8 ... 31.2 V DC, approx. 1.4 W | |
| EMC[3)] | EN 61326-1 | | |
| Approvals | ATEX<br>IECEx<br>UL | DEMKO 16 ATEX 1685X<br>IECEx UL 16.0055X<br>E478692 USA/Canada | Ⓔx II 3 G Ex nA IIC T4 Gc<br>Ex nA IIC T4 Gc<br>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




### Terminal assignments

| | | |
|---|---|---|
| 1 | Input -I +U | + Loop |
| 2 | Input +I -U | - Loop |
| 3 | + | Output II |
| 4 | - | Output II |
| 5 | + | Output I |
| 6 | - | Output I |
| 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 $mm^2$ / 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)

Subject to change!

### Product line

| Devices | Order No. |
|---|---|
| Signal Splitter/Repeater, calibrated range selection | DN 21000 S |
| Signal Splitter/Repeater, calibrated range selection, In-Rail-Bus for power supply | DN 21000 B |