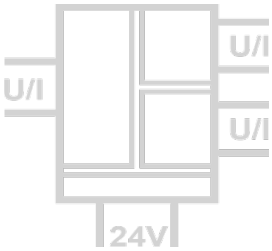
Signal Splitter/Repeater DN 21000

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

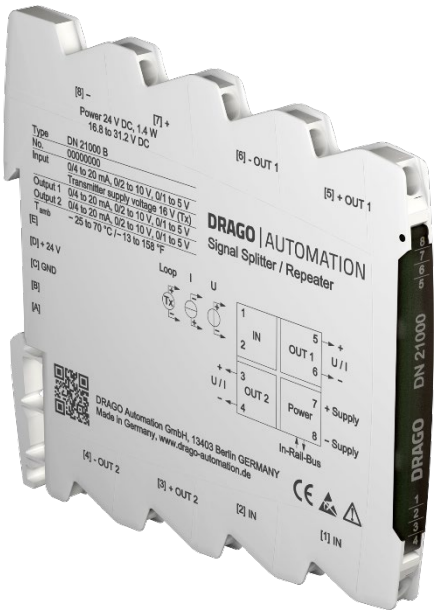


The Signal Splitter/Repeater DN 21000 is used for isolation, conversion and distribution of 0/4 ... 20 mA, 0/1 ... 5 V and 0/2 ... 10 V standard signals. The measuring input can also supply the loop power for 2-wire transmitters.

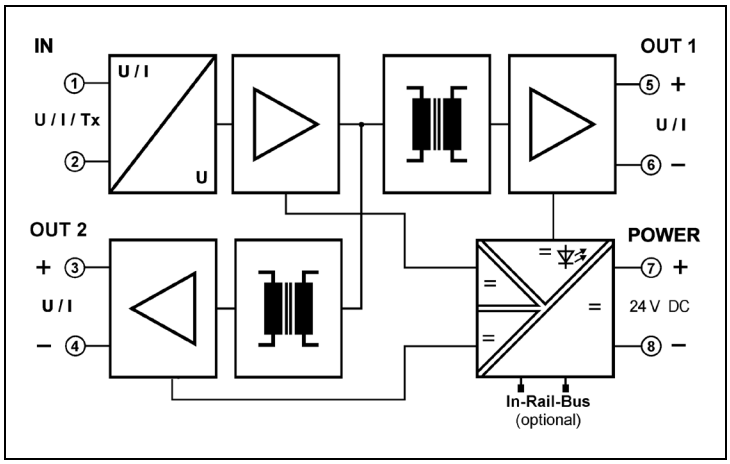
The input and two isolated outputs can be easily configured by using DIP switch. Due to the calibrated range selection no further adjustment is necessary.

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



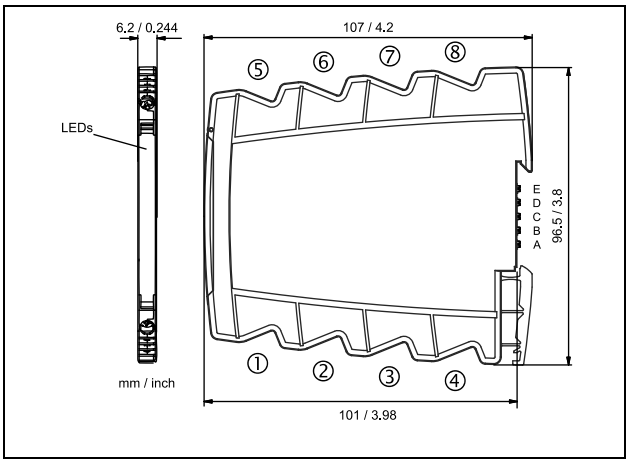
6 mm

Technical Data

Input			
Input signal (calibrated switchable)	0 ... 20 mA 4 ... 20 mA	0 ... 10 V 2 ... 10 V	0 ... 5 V 1 ... 5 V
Input resistance	Current input Voltage input		≤ 35 Ω ≥ 100 kΩ
Overload	Current input Voltage input		< 50 mA < 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 4 ... 20 mA	0 ... 10 V 2 ... 10 V	0 ... 5 V 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 Transport and storage	– 25 °C to + 70 °C – 40 °C to + 85 °C	(– 13 to + 158 °F) (– 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 IECEx UL	DEMKO 16 ATEX 1685X IECEx UL 16.0055X E478692 USA/Canada	Ⓔx 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



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