

Signal Splitter / Repeater RN 21000

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

The Signal Splitter/Repeater RN 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 supplies also 2-wire transmitters with power.

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
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

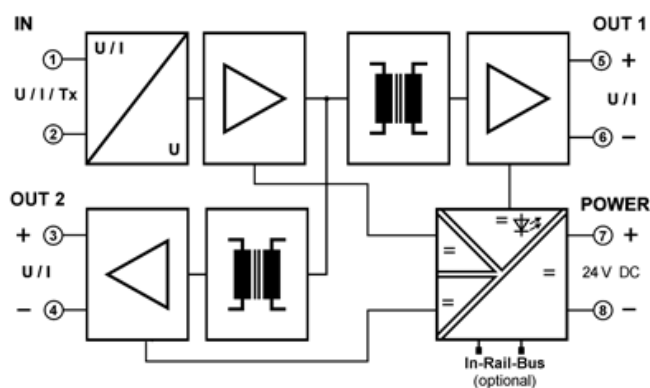


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Years Warranty

Defects occurring within 5 years from delivery are remedied free of charge at our plant (carriage and insurance paid by sender)

Block diagram



Technical Data

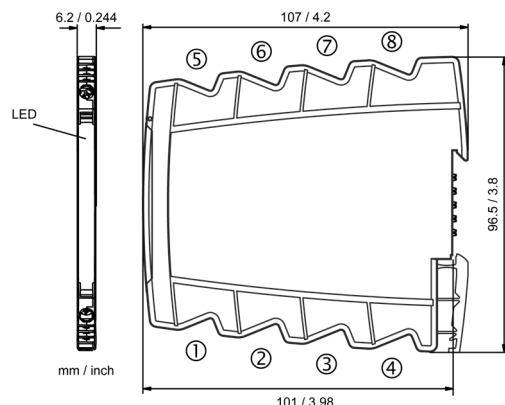
Input				
Input signal	0 ... 20 mA 4 ... 20 mA	0 ... 10 V 2 ... 10 V	0 ... 5 V 1 ... 5 V	calibrated switchable
Input resistance	Current input Voltage input		≤ 35 Ω ≥ 100 kΩ	
Overload	Current input Voltage input		≤ 50 mA ≤ 30 V	
Transmitter supply voltage	16 V (open circuit voltage < 22 V)			
Max. supply current	< 35 mA			
Output I / Output II				
Output signal	0 ... 20 mA 4 ... 20 mA	0 ... 10 V 2 ... 10 V	0 ... 5 V 1 ... 5 V	calibrated switchable
Load	Current output: ≤ 6 V (300 Ω at 20mA)		Voltage output: ≤ 2 mA (5 kΩ at 10 V)	
Offset	Current output: < 20 µA		Voltage output: < 10 mV	
Linear transmission range	-1 ... +110 %			
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 ₁₀₋₉₀)	100 µs			
Test voltage	3 kV, 50 Hz, 1 Min.		Input against Output I against Output II against power supply	
Working voltage ²⁾ (Basic insulation)	Up to 600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1 between all circuits.			
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 (- 13 to + 158 °F) - 40 °C to + 85 °C (- 40 to + 185 °F)	
Power supply	24 V DC		16.8 ... 31.2 V DC, approx. 1.3 W	
EMV ³⁾	EN 61326-1			
Approvals	ATEX DEMKO 17 ATEX 1793X		 II 3 G Ex nA IIC T4 Gc	
Construction	6.2 mm housing, protection class: IP 20			
Weight	approx. 70 g			

1) Average TC based on the final value in specified operating temperature range

2) 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.

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)			
8 - Power supply (connected to In-Rail -Bus)			

Connection

Captive plus-minus clamp screws
Wire cross-section max. 2.5 mm² / AWG 14
Stripped length 6 ... 8 mm / 0,28 in
Screw terminal torque 0,8 Nm / 7 lbf in
Optional power connection via In-Rail-Bus (see accessories)

Devices	Order No.
Isolation Signal Splitter, calibrated range selection	RN 21000 S
Isolation Signal Splitter, calibrated range selection, In-Rail-Bus for power supply	RN 21000 B