Repeater Power Supply RC 52100

Powering and Isolation of 2– and 3-wire Transmitters

The repeater power supply RC 52100 is used to supply and separate 2- and 3-wire transmitters and active sensor signals.

The repeater power supply supplies the transmitter with power and transmits the current or voltage measuring signal with high accuracy galvanic isolated to the output. Alternative the measuring input accepts active signals from 4-wire transmitters.

The input and output range of RC 52100 can be easily set by using DIP switch. Due to the calibrated range selection no further adjustment is necessary.

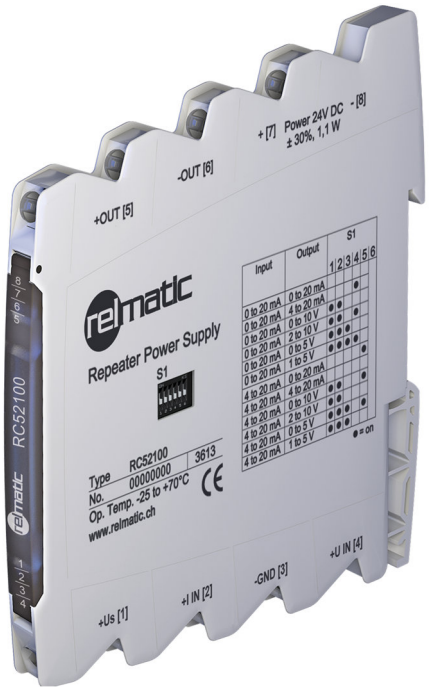
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.

- Universal operation of Transmitters
  Energization and separation of field located 2-, 3- and 4-wire transmitters with current or voltage output
- Calibrated signal setting
  Input and output range can be set by using DIP switch – high precision without any further adjustment
- 3-Port-isolation
  Protection against erroneous measurements due to parasitic voltages or ground loops
- Extremely slim design
  6.2 mm 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

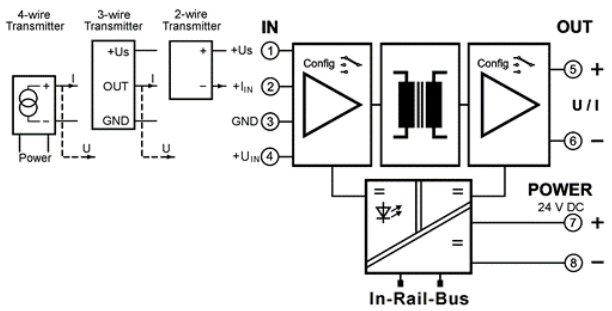
Zone 2

5 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

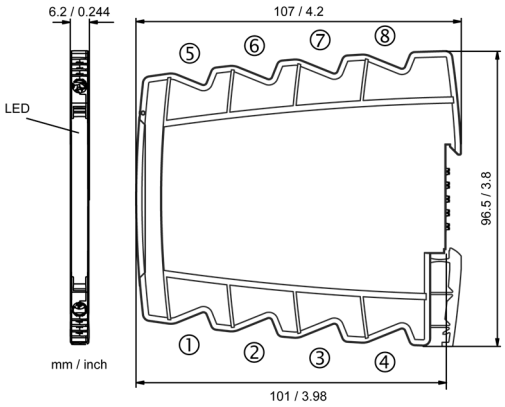


Technical Data

Input					
Input signal	0 ... 20 mA	4 ... 20 mA	0 ... 10 V	2 ... 10 V	calibrated switchable
Input resistance	Current input ≤ 25 Ω		voltage input ≥ 100 kΩ		
Overload	50 mA / 30 V				
Transmitter supply voltage	17 V (open circuit voltage < 22 V)				
max. supply current	30 mA				
Output					
Output signal	0 ... 20 mA	4 ... 20 mA	0 ... 10 V	2 ... 10 V	calibrated switchable
Load	Current output: ≤ 12 V (600 Ω at 20 mA)		Voltage output: ≤ 5 mA (2 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)	100 Hz				
Response time (T_{10-90})	3.5 ms				
Test voltage	3 kV, 50 Hz, 1 Min.		Input against output 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[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 Transport and storage		- 25 °C bis + 70 °C - 25 °C bis + 85 °C		(–13 to +158 °F) (–40 to +185 °F)
Power supply	24 V DC		16.8 V ... 31.2 V DC, approx. 1.2 W		
EMV[3)]	EN 61326-1				
Approvals	ATEX DEMKO 17 ATEX 1793X		⟨Ex⟩ 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 + Transmitter supply voltage U_S
2 + Input current
3 - Input GND
4 + Input voltage

5 + Output
6 - Output

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 mm^2 / 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)

Device	Order No.
Repeater Power Supply, calibrated range selection	RC 52100 S
Repeater Power Supply, calibrated range selection, In-Rail-Bus for power supply	RC 52100 B