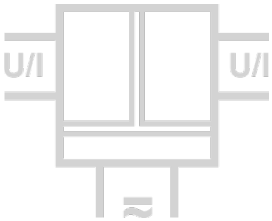
Bipolar Isolation Amplifier DB 64000

Isolation and Conversion of Bipolar and Unipolar Industrial Standard Signals



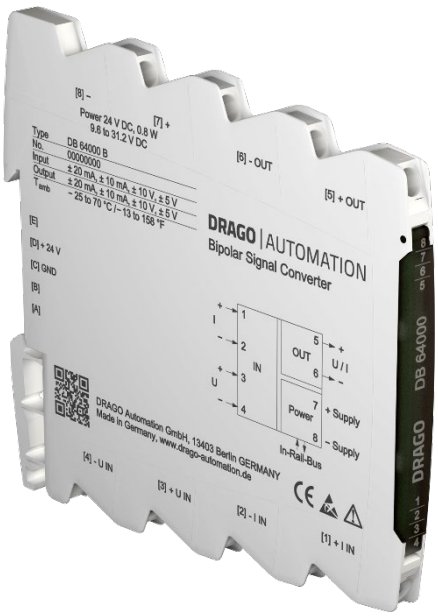
The Bipolar Isolation Amplifier DB 64000 is used for isolation and conversion of bipolar and unipolar industrial standard signals.

The input and output range of DB 64000 can be easily set by using DIP switch. Due to the calibrated range selection no further adjustment is necessary.

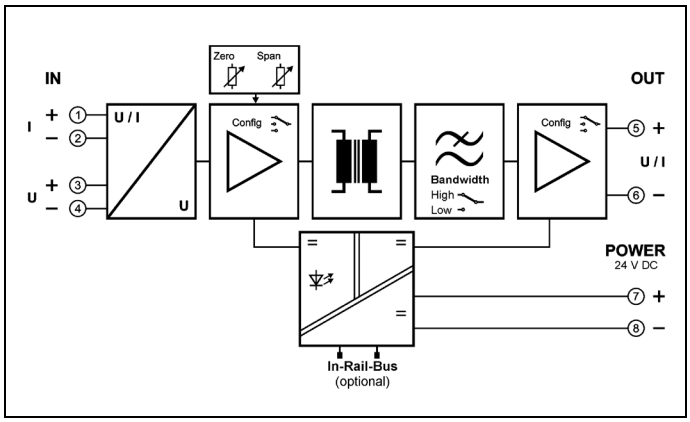
A switchable compensation of the measuring range can be performed at the Zero/Span potentiometers on the front panel. Also the cut-off frequency can be adapted to the measurement task by using the DIP Switch.

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.

- **Calibrated signal setting via DIP switch**
  Input and output range can be set by using DIP switch – high precision without any further adjustment
- **High bandwidth; short response time**
  No signal distortion; no falsification of measured signal
- **Switchable Zero/Span compensation**
  For readjustment of the sensor or field device
- **3-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
- **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



6mm

Technical Data

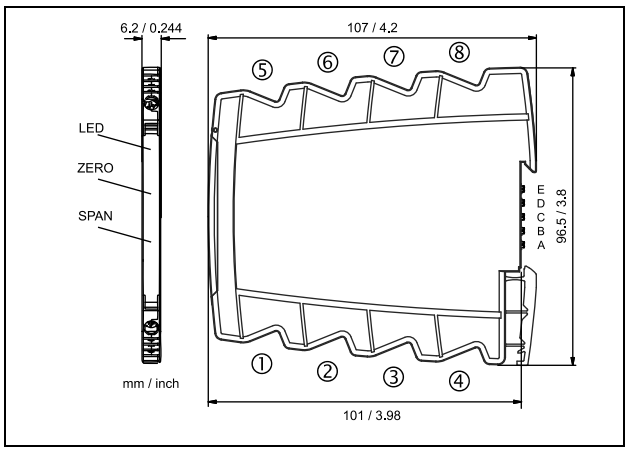
Input	Current			Voltage		
Input signal (calibrated switchable)	± 20 mA ± 10 mA	0 ... 20 mA 0 ... 10 mA	4 ... 20 mA 2 ... 10 mA	± 10 V ± 5 V	0 ... 10 V 0 ... 5 V	2 ... 10 V 1 ... 5 V
Input resistance	≤ 25 Ω			≥1 MΩ		
Overload	< 50 mA			< 30 V		

Output	Current			Voltage		
Output signal (calibrated switchable)	± 20 mA ± 10 mA	0 ... 20 mA 0 ... 10 mA	4 ... 20 mA 2 ... 10 mA	± 10 V ± 5 V	0 ... 10 V 0 ... 5 V	2 ... 10 V 1 ... 5 V
Load	≤ 12 V	(600 Ω at 20 mA)		≤ 5 mA	(2 kΩ at 10 V)	
Linear transmission range	unipolar: –1 ... +110 %		bipolar: –110 ... +110 %			
Residual ripple	< 10 mV_{rms}					

General Data			
Transmission error	< 0.1 % full scale		
Temperature coefficient[1]	< 100 ppm/K		
Zero/Span compensation (switchable)	± 5 % of measuring range		
Cut-off frequency -3 dB (switchable)	8 kHz	100 Hz	
Response time T_{99}	100 µs	7 ms	
Test voltage	3 kV AC, 50 Hz, 1 min.	Input against output 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[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 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 9.6 V ... 31.2 V DC, approx. 0.8 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 current
2	-	Input current
3	+	Input voltage
4	-	Input voltage
5	+	Output
6	-	Output
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

Device	**Order No.**
Bipolar Isolation Amplifier, calibrated range selection	DB 64000 S
Bipolar Isolation Amplifier, calibrated range selection, In-Rail-Bus for power supply	DB 64000 B

DRAGO Automation GmbH, Waldstr. 86-90, 13403 Berlin, GERMANY