



# Signal Converter



[www.drago-automation.de](http://www.drago-automation.de)

## Separating Potentials - Linking System 6 mm Series

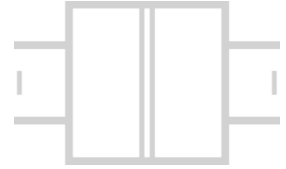


**TEMPERATURE °CONTROLS Pty Ltd**  
[www.temperature.com.au](http://www.temperature.com.au)

**6 mm Series**

# Passive Isolator DH 11000

Separation of 0(4) ... 20 mA Standard Signal



The input loop-powered isolator DH 11000 provides galvanic separation for 0(4) ... 20 mA standard signals, while transferring the measurement signal to the output with a high degree of accuracy.

The unit avoids interference voltage carry-over and effectively suppressing parasitic noise. The very low drop voltage of 2.3 V and the high level of accuracy work together to make the DH 11000 the first choice in system design.

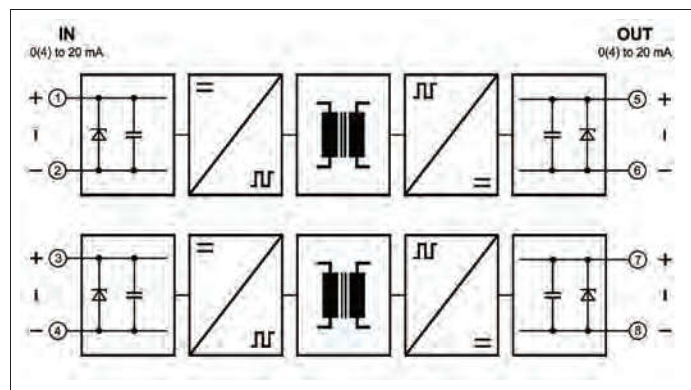
Intelligent design and their consequential avoidance of highly integrated components result in extremely long service lives and reliability - without any falsification of the measurement signal.

The DH 11000 requires no additional power supply since the auxiliary power is obtained from the input signal without distorting it. This not only saves costs during installation, but also increases reliability.

- **Galvanic isolation across input and output**  
Protection against erroneous measurements due to parasitic voltages or ground loops
- **No power supply required**  
Saving costs since wiring is reduced and line influences are omitted
- **Extremely slim design, 1- and 2-channel versions**  
Only 3.1 mm DIN-rail per channel
- **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

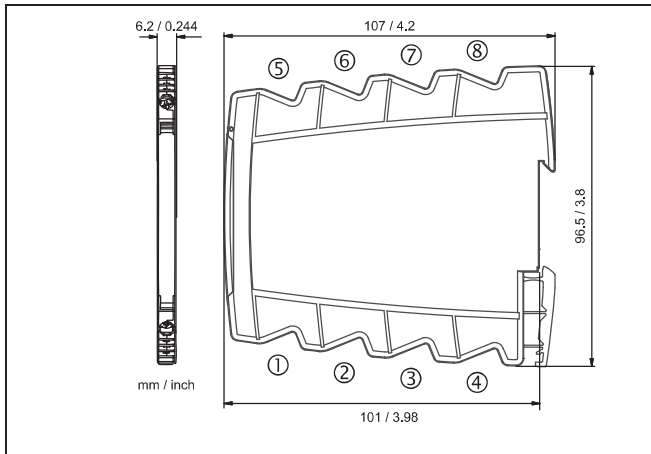


### Technical Data

Input	
Input signal	0(4) ... 20 mA
Start-up current	< 200 $\mu$ A
Voltage drop	< 2.3 V
Overload	$\leq$ 50 mA, 30 V
Output	
Output signal	0(4) ... 20 mA
Load	600 $\Omega$
Cut-off frequency -3 dB	100 Hz
Response time $T_{99}$	5 ms
Residual ripple	< 10 mV <sub>rms</sub>
General Data	
Transmission error	< 0.1 % full scale
Load error	< 0.05 % of measured value / 100 $\Omega$ load
Temperature coefficient <sup>1)</sup>	< 100 ppm/K
Test voltage	3 kV AC, 50 Hz, 1 min. all circuits against one another
Working voltage <sup>2)</sup> (Basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1
Protection against electrical shock <sup>2)</sup>	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 - 25 to + 70 °C (- 13 to + 158 °F) Transport and Storage - 40 to + 85 °C (- 40 to + 185 °F)
EMC <sup>3)</sup>	EN 61326-1
Approvals	ATEX DEMKO 16 ATEX 1 685X  II 3 G Ex nA IIC T4 Gc IECEX IECEX UL 16.0055X Ex nA IIC T4 Gc UL E478692 USA/Canada 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



Subject to change!

### Terminal assignments

1	+ Input I
2	- Input I
3	+ Input II
4	- Input II
5	+ Output I
6	- Output I
7	+ Output II
8	- Output II

### Connection

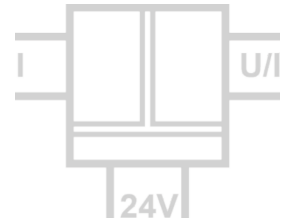
Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
 Stripped length 6 ... 8 mm / 0.28 in  
 Screw terminal torque 0.8 Nm / 7 lbf in

### Product line

Device	Order No.
Loop-Powered Isolator, 1-channel	DH 11010 S
Loop-Powered Isolator, 2-channel	DH 11020 S

# Repeater Power Supply DC 52100

Powering and Isolation of  
2- and 3-wire Transmitters



The repeater power supply DC 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 DC 52100 can be easily set by using DIP switch. Due to the calibrated range selection no further adjustment is necessary.

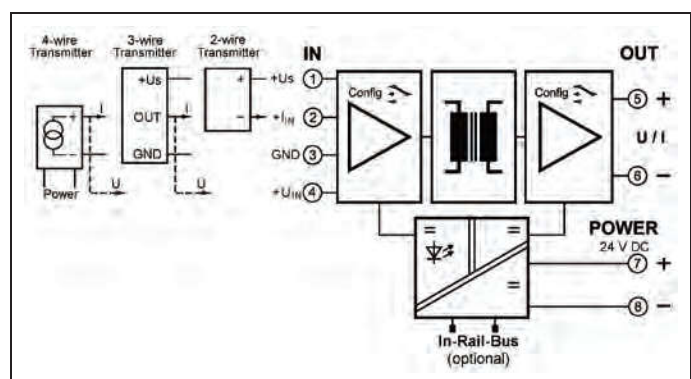
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **Universal operation of Transmitters**  
Energization and separation of field located 2-, 3- and 4-wire transmitters with current or voltage output
- **Calibrated signal setting via DIP switch**  
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 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

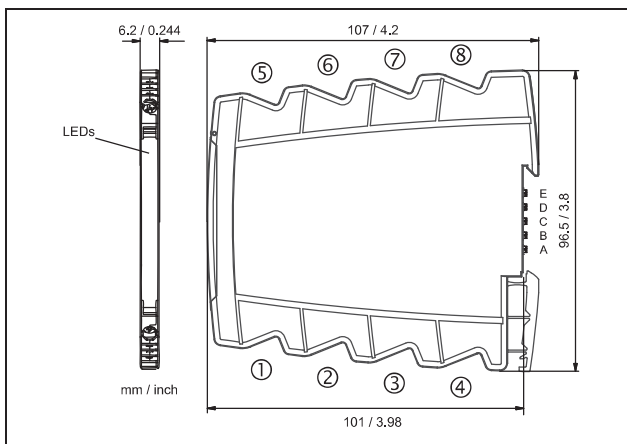


### Technical Data

Input	
Input signal (calibrated switchable)	0 ... 20 mA    4 ... 20 mA    0 ... 10 V    2 ... 10 V
Input resistance	Current input $\leq 25 \Omega$ Voltage input $\geq 100 k\Omega$
Overload	50 mA / 30 V
Transmitter supply (Tx)	17 V (open circuit voltage/short circuit current $< 22 V/35 mA$ )
Output	
Output signal (calibrated switchable)	0 ... 20 mA    4 ... 20 mA    0 ... 10 V    2 ... 10 V
Load	Current output: $\leq 12 V (600 \Omega \text{ at } 20 mA)$ Voltage output: $\leq 5 mA (2 k\Omega \text{ at } 10 V)$
Linear transmission range	-1 ... +110 %
Residual ripple	$< 10 mV_{rms}$
General Data	
Transmission error	$< 0.1 \%$ full scale
Temperature coefficient <sup>1)</sup>	$< 100 ppm/K$
Cut-off frequency -3 dB (switchable)	5 kHz    100 Hz
Response time $T_{99}$	150 $\mu s$ 7 ms
Test voltage	3 kV AC, 50 Hz, 1 min.    Input against output against power supply
Working voltage <sup>2)</sup> (Basic Insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1
Protection against electrical shock <sup>2)</sup>	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    -25 °C to +70 °C    (-13 to +158 °F) Transport and storage    -40 °C to +85 °C    (-40 to +185 °F)
Power supply	24 V DC    voltage range 16.8 V ... 31.2 V DC, approx. 1.3 W
EMC <sup>3)</sup>	EN 61326-1
Approvals	ATEX    DEMKO 16 ATEX 1685X     II 3 G Ex nA IIC T4 Gc IECEX    IECEX UL 16.0055X    Ex nA IIC T4 Gc UL    E478692 USA/Canada    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



Subject to change!

### Terminal assignments

- 1 + Transmitter supply voltage  $U_{Tx}$
- 2 + Input current
- 3 - Input GND
- 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 max. 2.5 mm<sup>2</sup> / 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)

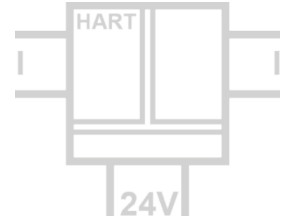
### Product line

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



# Repeater Power Supply HART DC 52500

Powering and Isolation of  
SMART Transmitters with HART Communication



The Repeater Power Supply DC 52500 is used to supply and separate 2- and 3-wire SMART Transmitters and active sensor signals with HART communication.

It supplies the transmitter with power and transmits the measuring signal with high accuracy galvanic isolated to the output. Alternative the measuring input accepts active 0/4 ... 20 mA signals from 4-wire transmitters.

In addition to the analog signal, the DC 52500 also transmits data protocols for HART communication. It allows bidirectional communication with the field device from every point of the cabling.

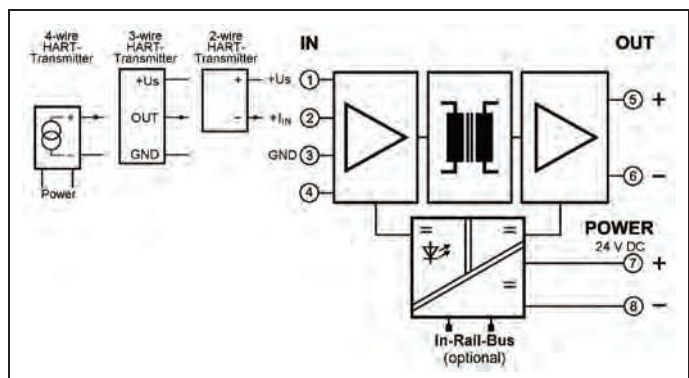
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **Universal operation of SMART Transmitters**  
Energization and separation of field located 2-, 3- and 4-wire transmitters
- **Bidirectional HART transmission**  
HART data transfer for repeater and isolator operation
- **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 installation
- **Optional In-Rail-Bus mounting rail connector**  
allows for fast and economical installation
- **Protective Separation acc. to EN61140**  
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

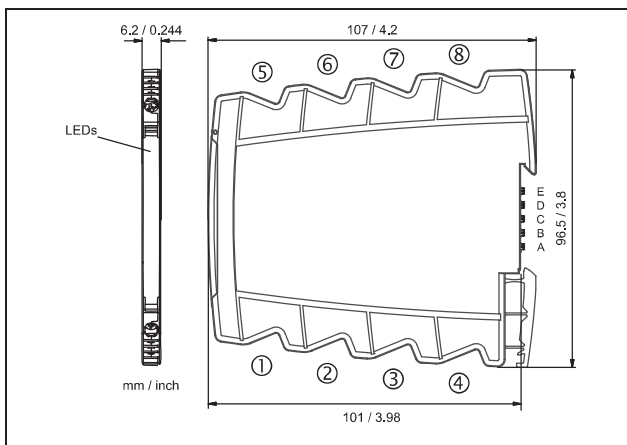


### Technical Data

Input		
Input signal	0/4 ... 20 mA	(4 ... 20 mA with HART signal)
Input resistance	≤ 50 Ω	
Over load	50 mA / 30 V	
Transmitter supply (Tx)	16 V (open circuit voltage/short circuit current < 22 V/35 mA)	
Communication signal	Bidirectional HART transmission, internal AC impedance 250 Ω	
Output		
Output signal	0/4 ... 20 mA	(4 ... 20 mA with HART signal)
Load	0 ... 600 Ω (at 20 mA)	(230 ... 600 Ω with HART signal)
Linear transmission range	-1 ... +110 %	
Residual ripple	< 10 mV <sub>rms</sub>	
General Data		
Transmission error	< 0.1 % full scale	
Temperature coefficient <sup>1)</sup>	< 100 ppm/K	
Cut-off frequency -3 dB	100 Hz	> 2,5 kHz HART signal
Response time T <sub>99</sub>	7 ms	
Test voltage	3 kV AC, 50 Hz, 1 min. Input against output against power supply	
Working voltage <sup>2)</sup> (Basic Insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1	
Protection against electrical shock <sup>2)</sup>	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	- 25 °C to + 70 °C (- 13 to + 158 °F)
	Transport and storage	- 40 °C to + 85 °C (- 40 to + 185 °F)
Power supply	24 V DC voltage range 16.8 V ... 31.2 V DC, approx. 1.3 W	
EMC <sup>3)</sup>	EN 61326-1	
Approvals	ATEX	DEMKO 16 ATEX 1685X
	IECEX	IECEX UL 16.0055X
	UL	E478692 USA/Canada
		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



Subject to change!

### Terminal assignments

1	+ Transmitter supply voltage U <sub>Tx</sub>
2	+ Input current
3	- Input GND
4	n.c.
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 max. 2.5 mm<sup>2</sup> / 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)

### Product line

Device	Order No.
Repeater Power Supply , bidirectional HART transmission	DC 52500 S
Repeater Power Supply , bidirectional HART transmission, In-Rail-Bus for power supply	DC 52500 B

# Isolation Amplifier DN 25000

Isolation and Conversion of Standard Signals



The Isolation Amplifier DN 25000 is used for isolation and conversion of 0/4 ... 20 mA and 0/2 ... 10 V standard signals.

The input and output range of DN 25000 can be easily set by using DIP switch. Due to the calibrated range selection no further adjustment is necessary. Also the cut-off frequency can be adapted to the measurement task by using the DIP Switch.

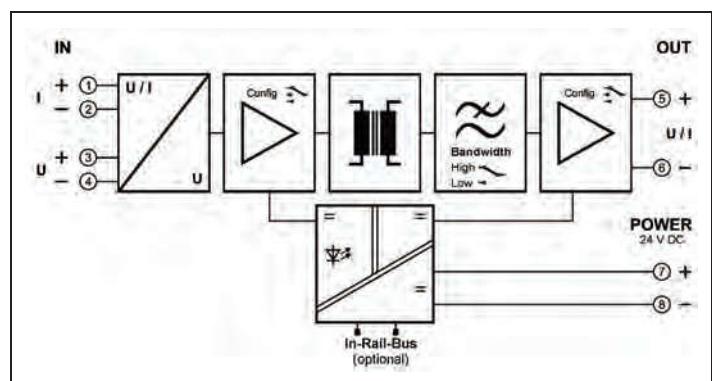
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **Calibrated signal setting via DIP switch**  
Input and output range can be set by using DIP switch – high precision without any further adjustment
- **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
- **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





**Technical Data**

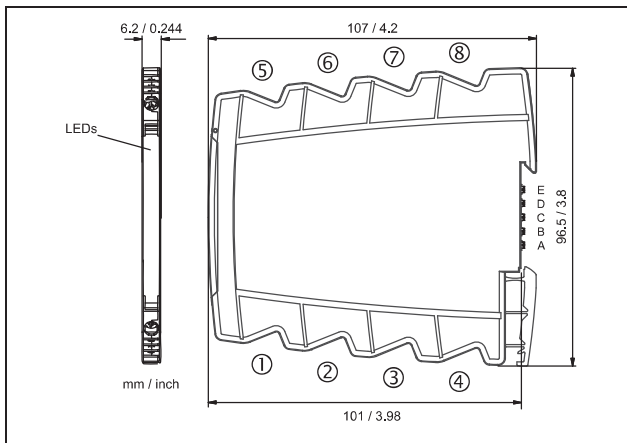
Input		
Input signal	0 ... 20 mA	4 ... 20 mA
(calibrated switchable)	0 ... 10 V	2 ... 10 V
Input resistance	Current input	≤ 25 Ω
	Voltage input	≥ 100 kΩ
Overload	Current input	< 50 mA
	Voltage input	< 30 V

Output		
Output signal	0 ... 20 mA	4 ... 20 mA
(calibrated switchable)	0 ... 10 V	2 ... 10 V
Load	Current output: ≤ 12 V (600 Ω at 20 mA)	Voltage output: ≤ 5 mA (2 kΩ at 10 V)
Linear transmission range	-1 ... +110 %	
Residual ripple	< 10 mV <sub>rms</sub>	

General Data		
Transmission error	< 0.1 % full scale	
Temperature coefficient <sup>1)</sup>	< 100 ppm/K	
Cut-off frequency -3 dB (switchable)	5 kHz	100 Hz 10 Hz
Response time T <sub>99</sub>	150 μs	7 ms 70 ms
Test voltage	3 kV AC, 50 Hz, 1 min.	Input against output against power supply
Working voltage <sup>2)</sup> (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	- 25 °C to + 70 °C (- 13 to + 158 °F)
	Transport and storage	- 40 °C to + 85 °C (- 40 to + 185 °F)
Power supply	24 V DC voltage range 9.6 V ... 31.2 V, approx. 0.7 W	
EMC <sup>3)</sup>	EN 61326-1	
Approvals	ATEX	DEMKO 16 ATEX 1 685X
	IECEX	IECEX UL 16.0055X
	UL	E478692 USA/Canada
	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**



Subject to change!

**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 max. 2.5 mm <sup>2</sup> / 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)

**Product line**

Devices	Order No.
Isolation Amplifier, calibrated range selection	DN 25000 S
Isolation Amplifier, calibrated range selection, In-Rail-Bus for power supply	DN 25000 B

# 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.

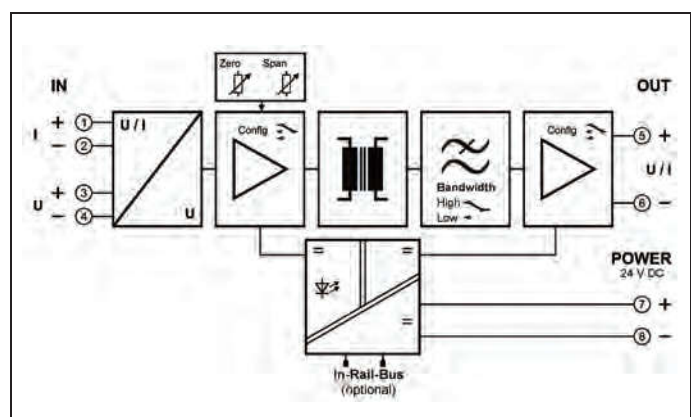
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **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

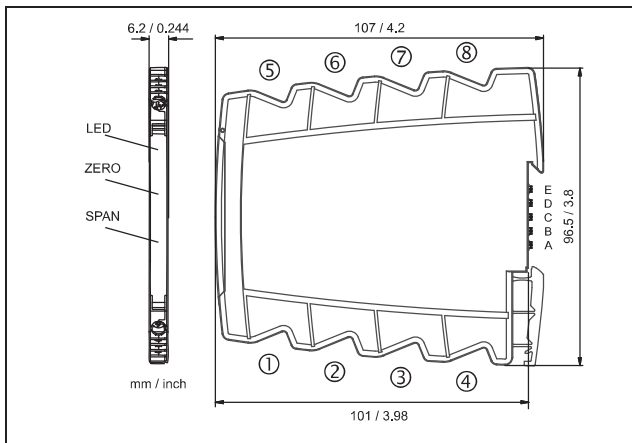


**Technical Data**

Input	Current			Voltage		
Input signal (calibrated switchable)	± 20 mA	0 ... 20 mA	4 ... 20 mA	± 10 V	0 ... 10 V	2 ... 10 V
	± 10 mA	0 ... 10 mA	2 ... 10 mA	± 5 V	0 ... 5 V	1 ... 5 V
Input resistance	≤ 25 Ω			≥ 1 MΩ		
Overload	< 50 mA			< 30 V		
Output	Current			Voltage		
Output signal (calibrated switchable)	± 20 mA	0 ... 20 mA	4 ... 20 mA	± 10 V	0 ... 10 V	2 ... 10 V
	± 10 mA	0 ... 10 mA	2 ... 10 mA	± 5 V	0 ... 5 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 <sub>rms</sub>					
General Data						
Transmission error	< 0.1 % full scale					
Temperature coefficient <sup>1)</sup>	< 100 ppm/K					
Zero/Span compensation (switchable)	± 5 % of measuring range					
Cut-off frequency -3 dB (switchable)	8 kHz		100 Hz			
Response time T <sub>99</sub>	100 μs		7 ms			
Test voltage	3 kV AC, 50 Hz, 1 min. Input against output against power supply					
Working voltage <sup>2)</sup> (Basic Insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1					
Protection against electrical shock <sup>2)</sup>	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		- 25 °C to + 70 °C		(- 13 to + 158 °F)	
	Transport and storage		- 40 °C to + 85 °C		(- 40 to + 185 °F)	
Power supply	24 V DC voltage range 9.6 V ... 31.2 V DC, approx. 0.8 W					
EMC <sup>3)</sup>	EN 61326-1					
Approvals	ATEX	DEMKO 16 ATEX 1685X	II 3 G Ex nA IIC T4 Gc			
	IECEX	IECEX UL 16.0055X	Ex nA IIC T4 Gc			
	UL	E478692 USA/Canada	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**



Subject to change!

**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**

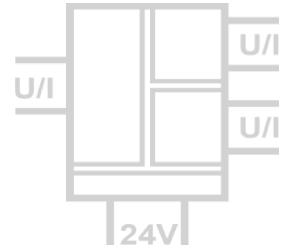
Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
 Stripped length 6 ... 8 mm / 0.28 in  
 Screw terminal torque 0.8 Nm / 7 lbf in  
 Optional power connection via In-Rail-Bus (see accessories)

**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

# 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.

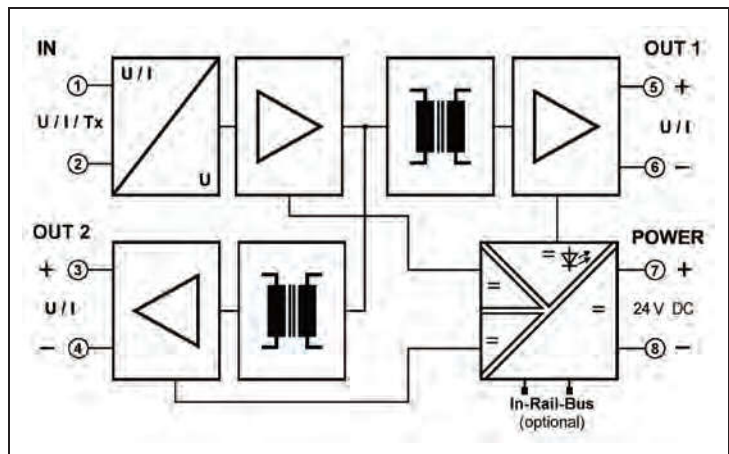
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.



- **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



6mm

## Technical Data

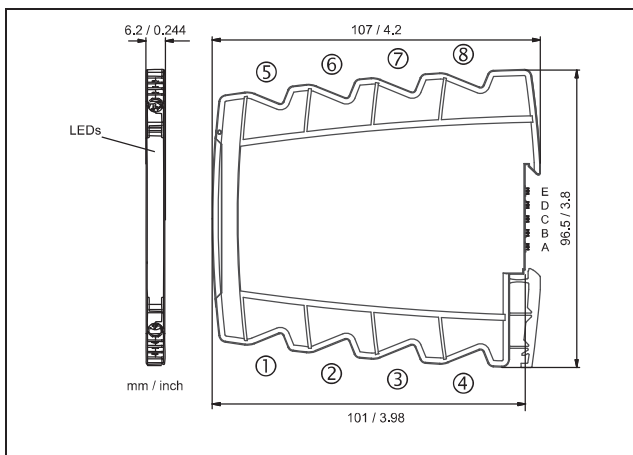
Input			
Input signal	0 ... 20 mA	0 ... 10 V	0 ... 5 V
(calibrated switchable)	4 ... 20 mA	2 ... 10 V	1 ... 5 V
Input resistance	Current input	≤ 35 Ω	
	Voltage input	≥ 100 kΩ	
Overload	Current input	< 50 mA	
	Voltage input	< 30 V	
Transmitter supply Tx (switchable)	16 V (open circuit voltage/short circuit current ≤ 22 V/35 mA)		
Output I / Output II			
Output signal	0 ... 20 mA	0 ... 10 V	0 ... 5 V
(calibrated switchable)	4 ... 20 mA	2 ... 10 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 <sub>rms</sub>		
General Data			
Transmission error	< 0.1 % full scale		
Temperature coefficient <sup>1)</sup>	< 100 ppm/K		
Cut-off frequency -3 dB	5 kHz		
Response time T <sub>99</sub>	150 μs		
Test voltage	3 kV AC, 50 Hz, 1 min. Input against Output 1 against Output 2 against power supply		
Working voltage <sup>2)</sup> (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	- 25 °C to + 70 °C (- 13 to + 158 °F)	
	Transport and storage	- 40 °C to + 85 °C (- 40 to + 185 °F)	
Power supply	24 V DC voltage range 16.8 ... 31.2 V DC, approx. 1.4 W		
EMC <sup>3)</sup>	EN 61326-1		
Approvals	ATEX	DEMKO 16 ATEX 1685X	II 3 G Ex nA IIC T4 Gc
	IECEX	IECEX UL 16.0055X	Ex nA IIC T4 Gc
	UL	E478692 USA/Canada	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



Subject to change!

## 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 max. 2.5 mm<sup>2</sup> / 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)

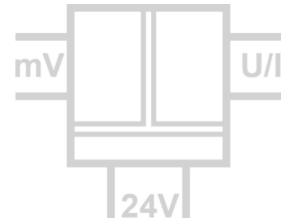
## Product line

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



# Shunt/mV Isolation Amplifier DS 75000

Isolation and Conversion  
of Bipolar and Unipolar mV-Signals



The Isolation Amplifier DS 75000 is used for separation and conversion of bipolar and unipolar mV-signals such as those frequently used for current measuring with shunt resistors or other applications with low sensor voltages.

The input and output range of DS 75000 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.

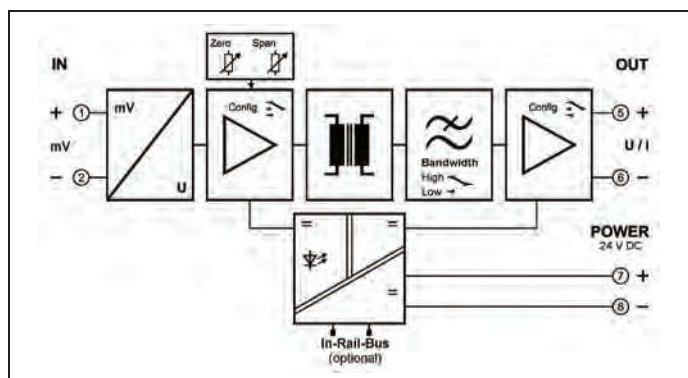


The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. A green LED on the front of the unit has been provided to monitor the power supply.

- **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 shunt/mV signal or measuring section
- **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

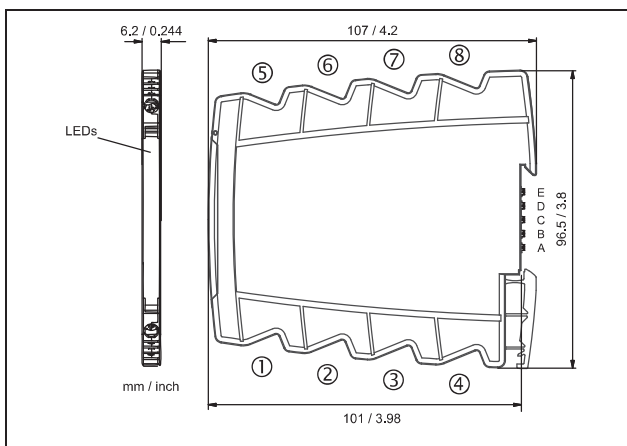


**Technical Data**

Input	
Input signals (calibrated switchable)	± 60 mV    ± 100 mV    ± 150 mV    ± 250 mV    ± 300 mV    ± 500 mV 0 ... 60 mV    0 ... 100 mV    0 ... 150 mV    0 ... 250 mV    0 ... 300 mV    0 ... 500mV
Input resistance	≥ 100 kΩ
Overload	≤ 30 V
Output	
Output signals (calibrated switchable)	<b>Current</b>
	<b>Voltage</b>
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 <sub>rms</sub>
General Data	
Transmission error	< 0.1 % full scale
Temperature coefficient <sup>1)</sup>	< 100 ppm/K
Zero/Span compensation (switchable)	± 5 % of measuring range
Cut-off frequency -3 dB (switchable)	8 kHz    100 Hz
Response time T <sub>99</sub>	100 μs    7 ms
Test voltage	3 kV AC, 50 Hz, 1 min.    Input against output against power supply
Working voltage <sup>2)</sup> (Basic Insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1
Protection against electrical shock <sup>2)</sup>	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    - 25 °C to + 70 °C    (- 13 to + 158 °F) Transport and storage    - 40 °C to + 85 °C    (- 40 to + 185 °F)
Power supply	24 V DC    voltage range 9.6 V ... 31.2 V DC, approx. 0.8 W
EMC <sup>3)</sup>	EN 61326-1
Approvals	ATEX    DEMKO 16 ATEX 1685X    Ex II 3 G Ex nA IIC T4 Gc IECEX    IECEX UL 16.0055X    Ex nA IIC T4 Gc UL    E478692 USA/Canada    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**



Subject to change!

**Terminal assignments**

1	+ Input
2	- Input
3	N.C.
4	N.C.
5	+ Output
6	- Output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

**Connection**

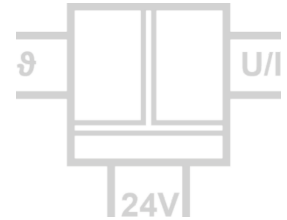
Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
 Stripped length 6 ... 8 mm / 0.28 in  
 Screw terminal torque 0.8 Nm / 7 lbf in  
 Optional power connection via In-Rail-Bus (see accessories)

**Product line**

Device	Order No.
Shunt/mV Isolation Amplifier, calibrated range selection	DS 75000 S
Shunt/mV Isolation Amplifier, calibrated range selection, In-Rail-Bus for power supply	DS 75000 B

# Temperature Transmitter DT 45000

for Pt, Ni, KTY, TC, R, Potentiometer and mV Sensors,  
programmable via USB and DIP switch



The programmable Temperature Transmitter DT 45000 is used for measure industrial process signals. It converts Pt, Ni, KTY or TC sensor signals as well as poti, resistor and mV signals to isolated standard signals.

Due to the easy configuration via USB interface and the calibrated range selection per DIP switch the Transmitter is suitable for flexible use.

The Commissioning Function, switchable on front panel, generates an output reference signal for testing and adjusting of the downstream signal path. With der Teach-In Function the measuring range limits can be set during operation.

With the USB Programming-Kit DRAGOset the Transmitter can be configured and all data can be stored by a PC. In mode of programming no additionally auxiliary power is required.

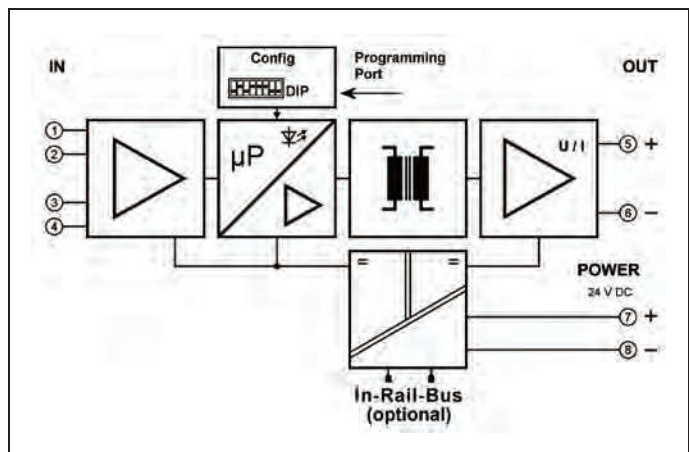
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.



- **Universal Measuring Input**  
for all common industrial sensor signals
- **Easy configurable via USB or DIP switches**  
complete programmable via USB interface or selectable per DIP switch
- **Switchable Service Functions**  
Simulation and Teach-In Function for an easy commissioning
- **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

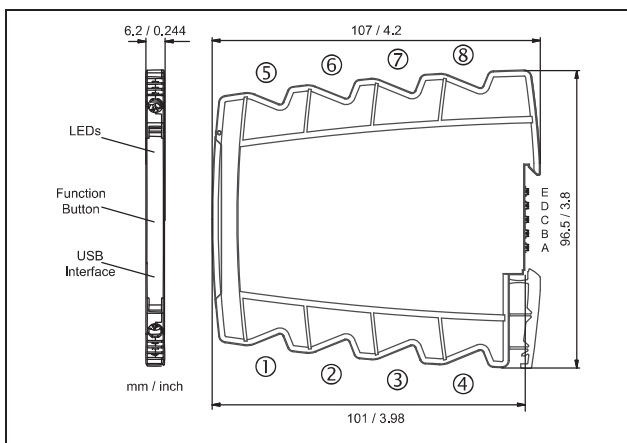


### Technical Data

Input			
Sensor	Type	Span min.	Measuring error
Pt	Pt100, Pt200, Pt500, Pt1000	10 K	< 0.1 K + 0.05 % meas. val.
Ni	Ni100, Ni200, Ni500, Ni1000	10 K	< 0.2 K + 0.05 % meas. val.
KTY	KTY, 29 types	25 K	< 0.3 K + 0.05 % meas. val.
Resistor	0 to 5000 Ω	100 Ω	< 0.1 Ω + 0.02 % meas. val.
Sensor current / connection	0.2 mA / 4-wire, 3-wire, 2-wire		
Cable resistance	< 100 Ω per wire, manual compensation for 2-wire connection programmable		
Thermocouples	Type	Span min.	Measuring error
	E, J, K, L, N, R, S, T, U / B, C, D	50 K / 100 K	< 0.3 K + 0.08 % meas. val.
Cold junction compensation	Internal, external, uncompensated, manual setting		
		Error of Cold junction internal < 1.5 K	
mV Input	±100 mV    ±1000 mV	5 mV / 50 mV	< 50 μV + 0.02 % meas. val.
Potentiometer	100 Ω to 50 kΩ	10 %	< 0.05 %
Output			
Output signal	Current	Voltage	
	0/2 ... 10 mA    0/4 ... 20 mA	0/1 ... 5 V    0/2 ... 10 V	
Load	≤ 12 V (600 Ω at 20 mA)	≤ 5 mA (2 kΩ at 10 V)	
Residual ripple	< 10 mV <sub>rms</sub>		
Transfer range	0 to 102.5 % (3.8 to 20.5 mA at output 4 to 20 mA)    Transfer characteristic rising / falling		
Error signal	Sensor/wire break, error signal programmable		
General data			
Transmission error	< 0.1 % full scale	Temperature coefficient <sup>1)</sup> < 100 ppm/K	
Sampling rate / Response time T <sub>99</sub>	4/s / 250 ms		
Test voltage	3 kV AC, 50 Hz, 1 min.    Input against output    against power supply		
Working voltage <sup>2)</sup> (basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1		
Protection against electric shocks <sup>2)</sup>	Protective Separation by reinforced insulation acc. to EN 61010-1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply		
Ambient temperature	Operation -25 °C to +70 °C (-13 to +158 °F)    Transport and storage -40 °C to +85 °C (-40 to +185 °F)		
Power supply	24 V DC    voltage range 9.6 V to 31.2 V DC,    approx. 0.8 W		
EMC <sup>3)</sup>	EN 61326-1		
Approvals	ATEX    DEMKO 16 ATEX 1685X    Ⓔ II 3 G Ex nA IIC T4 Gc IECEX    IECEX UL 16.0055X    Ex nA IIC T4 Gc UL    E478692 USA/Canada    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



Subject to change!

### Terminal assignments

1	Input
2	Input
3	Input
4	Input
5	+ Output
6	- Output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

### Connection

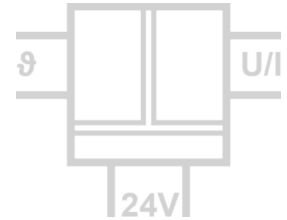
Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
 Stripped length 6 ... 8 mm / 0.28 in  
 Screw terminal torque 0.8 Nm / 7 lbf in  
 Optional power connection via In-Rail-Bus (see accessories)

### Product line

Device	Order No.
Temperature Transmitter, programmable via USB and DIP switch	DT 45000 S
Temperature Transmitter, programmable via USB and DIP switch, In-Rail-Bus for power supply	DT 45000 B

# Pt Temperature Transmitter DT 45200

Temperature Measuring with Pt Sensors,  
configurable via DIP Switch or USB



The Pt Temperature Transmitter DT 45200 is used for measure industrial process signals. It converts Pt sensor signals to isolated standard signals.

Due to the easy setting of the calibrated measuring ranges via DIP switch the Transmitter is suitable for flexible use.

With the USB Programming-Kit DRAGOset the Transmitter can be configured and all data can be stored by a PC. In mode of programming no additionally auxiliary power is required.

The Commissioning Function, switchable on front panel, generates an output reference signal for testing and adjusting of the downstream signal path.

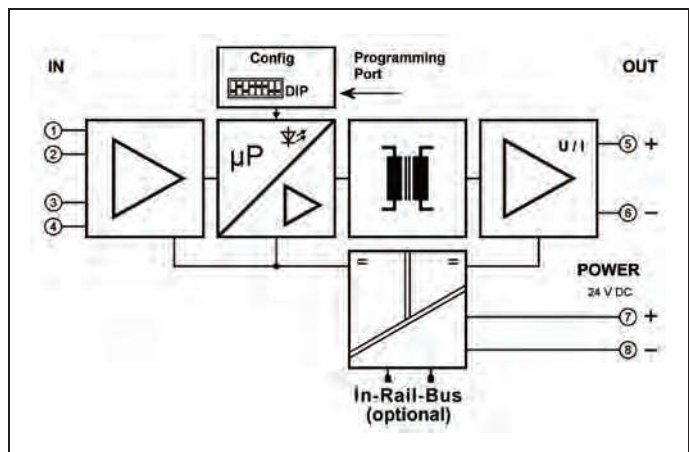
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.



- **Measuring input for all Pt temperature sensors**  
more than 1200 standard ranges ready to use
- **Easy configurable via DIP switches**  
or via USB interface without auxiliary power supply
- **Switchable service functions**  
for an easy commissioning
- **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



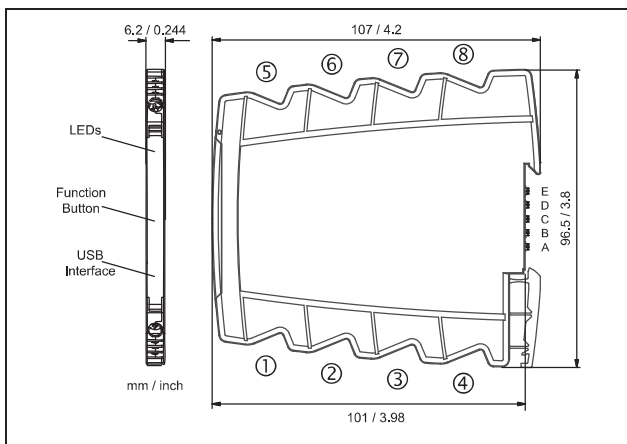


### Technical Data

<b>Input</b>			
Sensor	Pt100, Pt200, Pt500, Pt1000, Pt2000 JPt50, JPt100 (TK3916)	acc. IEC 60751 acc. JIS C 1604	
Measuring range	-200 to +850 °C in calibrated steps of 25 °C, configurable via DIP switch or USB interface		
Measuring span min.	25 K		
Measuring error	< 0.1 K + 0,05 % meas. val.		
Sensor connection	4-wire, 3-wire, 2-wire		
Sensor current	0.2 mA		
Cable resistance	< 100 Ω per wire at 4-wire and 3-wire connection		
<b>Output</b>		<b>Current</b>	<b>Voltage</b>
Output signal	0 ... 20 mA	4 ... 20 mA	0 ... 5 V      0 ... 10 V
Load	≤ 12 V (600 Ω at 20 mA)		≤ 5 mA (2 kΩ at 10 V)
Residual ripple	< 10 mV <sub>rms</sub>		
Transfer range	0 to 102.5 % (3.8 to 20.5 mA at output 4 to 20 mA)    Transfer characteristic rising / falling		
Error signal	Sensor/wire break, Error signal programmable		
<b>General data</b>			
Transmission error	< 0.1 % full scale		
Temperature coefficient <sup>1)</sup>	< 100 ppm/K		
Sampling rate / Response time T <sub>99</sub>	4/s / 250 ms		
Test voltage	3 kV AC, 50 Hz, 1 min.      Input against output    against power supply		
Working voltage <sup>2)</sup> (basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1		
Protection against electric shocks <sup>2)</sup>	Protective Separation by reinforced insulation acc. to EN 61010-1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply		
Ambient temperature	Operation -25 °C to +70 °C (-13 to +158 °F)    Transport and storage -40 °C to +85 °C (-40 to +185 °F)		
Power supply	24 V DC      voltage range 9.6 V to 31.2 V DC,    approx. 0.8 W		
EMC <sup>3)</sup>	EN 61326-1		
Approvals	ATEX    DEMKO 16 ATEX 1685X	Ex nA IIC T4 Gc	
	IECEX    IECEX UL 16.0055X	Ex nA IIC T4 Gc	
	UL      E478692 USA/Canada	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



Subject to change!

### Terminal assignments

1	+ Input Pt
2	+ Input 3/4-Leiter
3	- Input 4-Leiter
4	- Input Pt
5	+ Output
6	- Output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

### Connection

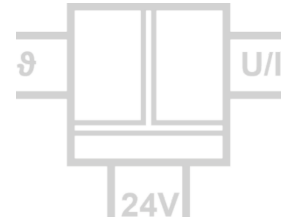
Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
 Stripped length 6 ... 8 mm / 0.28 in  
 Screw terminal torque 0.8 Nm / 7 lbf in  
 Optional power connection via In-Rail-Bus (see accessories)

### Product line

Device	Order No.
Pt Temperature Transmitter, configurable via DIP switch and USB	DT 45200 S
Pt Temperature Transmitter, configurable via DIP switch and USB, In-Rail-Bus for power supply	DT 45200 B

# Ni Temperature Transmitter DT 45400

Temperature Measuring with Ni Sensors,  
configurable via DIP Switch or USB



The Ni Temperature Transmitter DT 45400 is used for measure industrial process signals. It converts Ni sensor signals to isolated standard signals.

Due to the easy setting of the calibrated measuring ranges via DIP switch the Transmitter is suitable for flexible use.

With the USB Programming-Kit DRAGOset the Transmitter can be configured and all data can be stored by a PC. In mode of programming no additionally auxiliary power is required.

The Commissioning Function, switchable on front panel, generates an output reference signal for testing and adjusting of the downstream signal path.

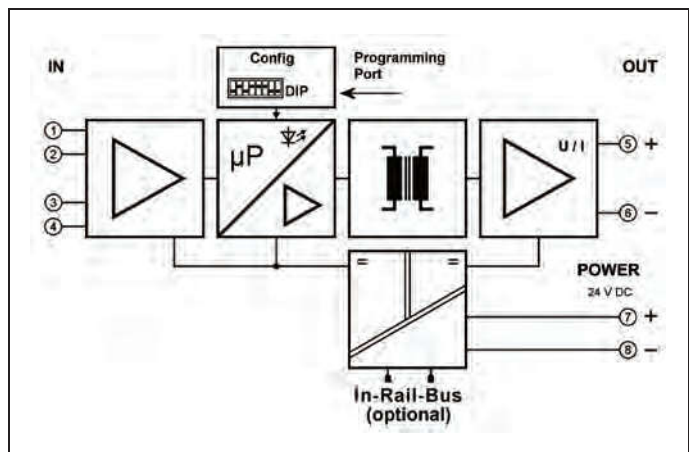
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.



- **Measuring input for all Ni temperature sensors**  
calibrated standard measuring ranges ready to use
- **Easy configurable via DIP switches**  
or via USB interface without auxiliary power supply
- **Switchable service functions**  
for an easy commissioning
- **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

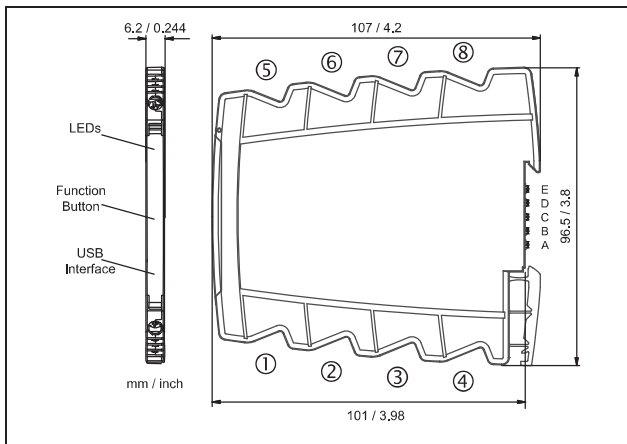


### Technical Data

<b>Input</b>			
Sensor	Ni100, Ni200, Ni500, Ni1000 DIN 43760 (TK6180) Ni120 (TK6720), Ni1000 (TK5000), Ni1000 (TK6370)		
Measuring range	-50 to +250 °C in calibrated steps of 25 °C, configurable via DIP switch or USB interface		
Measuring span min.	25 K		
Measuring error	< 0.2 K + 0,05 % meas. val.		
Sensor connection	4-wire, 3-wire, 2-wire		
Sensor current	0.2 mA		
Cable resistance	< 100 Ω per wire at 4-wire and 3-wire connection		
<b>Output</b>		<b>Current</b>	<b>Voltage</b>
Output signal	0 ... 20 mA	4 ... 20 mA	0 ... 5 V      0 ... 10 V
Load	≤ 12 V (600 Ω at 20 mA)		≤ 5 mA (2 kΩ at 10 V)
Residual ripple	< 10 mV <sub>rms</sub>		
Transfer range	0 to 102.5 % (3.8 to 20.5 mA at output 4 to 20 mA)      Transfer characteristic rising / falling		
Error signal	Sensor/wire break, Error signal programmable		
<b>General data</b>			
Transmission error	< 0.1 % full scale		
Temperature coefficient <sup>1</sup>	< 100 ppm/K		
Sampling rate / Response time T <sub>99</sub>	4/s / 250 ms		
Test voltage	3 kV AC, 50 Hz, 1 min.      Input against output      against power supply		
Working voltage <sup>2)</sup> (basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1		
Protection against electric shocks <sup>2)</sup>	Protective Separation by reinforced insulation acc. to EN 61010-1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply		
Ambient temperature	Operation -25 °C to +70 °C (-13 to +158 °F)      Transport and storage -40 °C to +85 °C (-40 to +185 °F)		
Power supply	24 V DC      voltage range 9.6 V to 31.2 V DC,      approx. 0.8 W		
EMC <sup>3)</sup>	EN 61326-1		
Approvals	ATEX      DEMKO 16 ATEX 1685X      Ex II 3 G Ex nA IIC T4 Gc IECEX      IECEX UL 16.0055X      Ex nA IIC T4 Gc UL      E478692 USA/Canada      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



Subject to change!

### Terminal assignments

1	+ Input Ni
2	+ Input 3/4-Leiter
3	- Input 4-Leiter
4	- Input Ni
5	+ Output
6	- Output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

### Connection

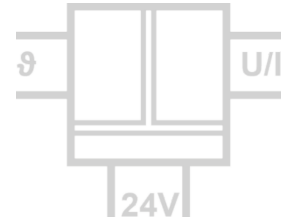
Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / AWG 14  
 Stripped length 6 ... 8 mm / 0.28 in  
 Screw terminal torque 0.8 Nm / 7 lbf in  
 Optional power connection via In-Rail-Bus (see accessories)

### Product line

Device	Order No.
Ni Temperature Transmitter, configurable via DIP switch and USB	DT 45400 S
Ni Temperature Transmitter, configurable via DIP switch and USB, In-Rail-Bus for power supply	DT 45400 B

# KTY Temperature Transmitter DT 45600

Temperature Measuring with KTY Sensors,  
configurable via DIP Switch or USB



The KTY Temperature Transmitter DT 45600 is used for measure industrial process signals. It converts KTY sensor signals to isolated standard signals.

Due to the easy setting of the calibrated measuring ranges via DIP switch the Transmitter is suitable for flexible use.

With the USB Programming-Kit DRAGOset the Transmitter can be configured and all data can be stored by a PC. In mode of programming no additionally auxiliary power is required.

The Commissioning Function, switchable on front panel, generates an output reference signal for testing and adjusting of the downstream signal path.

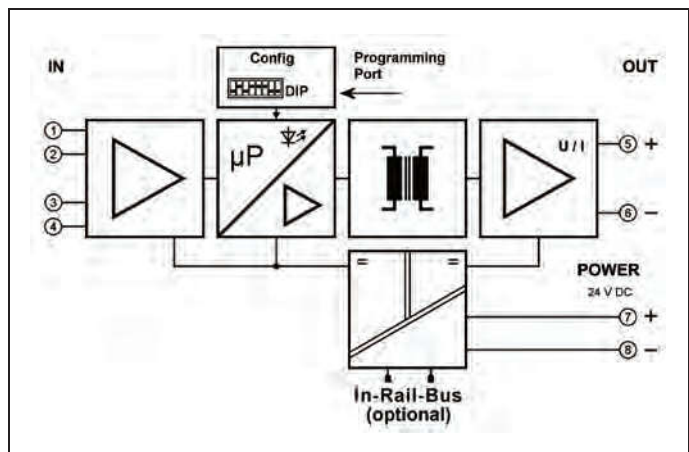
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.



- Measuring input for all KTY temperature sensors calibrated standard measuring ranges, ready to use
- Easy configurable via DIP switches or via USB interface without auxiliary power supply
- Switchable service functions for an easy commissioning
- 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

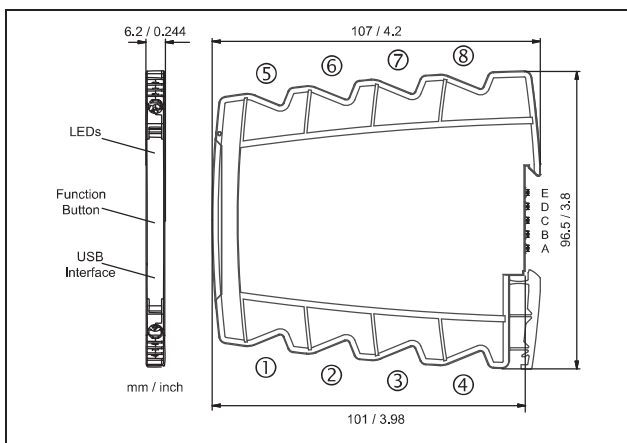


## Technical Data

Input	
Sensor	KT100, KT110, KT130, KT210, KT230, KTY10-5, KTY10-6, KTY10-62, KTY10-7, KTY11-5, KTY11-6, KTY11-7, TY13-5, KTY13-6, KTY13-7, KTY16-6, KTY19-6M, KTY19-6Z, KTY21-5, KTY21-6, KTY21-7, KTY23-5, KTY23-6, KTY23-7, KTY81-110, KTY81-120, KTY81-121, KTY81-122, KTY81-210, KTY81-220, KTY81-221, KTY81-222, KTY81-250, KTY81-251, KTY81-252, KTY82-110, KTY82-120, KTY82-121, KTY82-122, KTY82-150, KTY82-151, KTY82-152, KTY82-210, KTY82-220, KTY82-221, KTY82-222, KTY82-250, KTY82-251, KTY82-252, KTY83-110, KTY83-120, KTY83-121, KTY83-122, KTY83-150, KTY83-151, KTY83-152, KTY84-130, KTY84-150, KTY84-151, KTY84-152, ST-13, ST-15, ST-16, ST-20M, ST-20Z
Messbereich	calibrated steps of 25 °C in complete sensor measuring ranges, configurable via DIP switch or USB interface
Measuring span min.	25 K
Measuring error	< 0.3 K + 0,05 % meas. val.
Sensor connection	3-wire, 2-wire
Sensor current	0,2 mA
Cable resistance	< 100 Ω per wire at 3-wire connection
Output	
	<b>Current</b> <b>Voltage</b>
Output signal	0 ... 20 mA      4 ... 20 mA      0 ... 5 V      0 ... 10 V
Load	≤ 12 V (600 Ω at 20 mA)      ≤ 5 mA (2 kΩ at 10 V)
Residual ripple	< 10 mV <sub>rms</sub>
Transfer range	0 to 102.5 % (3.8 to 20.5 mA at output 4 to 20 mA)      Transfer characteristic rising / falling
Error signal	Sensor/wire break, Error signal programmable
General data	
Transmission error	< 0.1 % full scale
Temperature coefficient <sup>1</sup>	< 100 ppm/K
Sampling rate / Response time T <sub>99</sub>	4/s / 250 ms
Test voltage	3 kV AC, 50 Hz, 1 min.      Input against output      against power supply
Working voltage <sup>2)</sup> (basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1
Protection against electric shocks <sup>2)</sup>	Protective Separation by reinforced insulation acc. to EN 61010-1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply
Ambient temperature	Operation -25 °C to +70 °C (-13 to +158 °F)      Transport and storage -40 °C to +85 °C (-40 to +185 °F)
Power supply	24 V DC      voltage range 9.6 V to 31.2 V DC,      approx. 0.8 W
EMC <sup>3)</sup>	EN 61326-1
Approvals	ATEX      DEMKO 16 ATEX 1685X      Ⓔ II 3 G Ex nA IIC T4 Gc IECEX      IECEX UL 16.0055X      Ex nA IIC T4 Gc UL      E478692 USA/Canada      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



Subject to change!

### Product line

Device	Order No.
KTY Temperature Transmitter, configurable via DIP switch and USB	DT 45600 S
KTY Temperature Transmitter, configurable via DIP switch and USB, In-Rail-Bus for power supply	DT 45600 B

### Terminal assignments

1	+ Input KTY
2	+ Input 3-wire
3	
4	- Input KTY
5	+ Output
6	- Output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

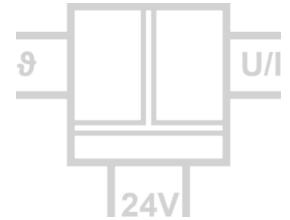
### Connection

Captive plus-minus clamp screws  
 Wire cross-section max. 2.5 mm<sup>2</sup> / 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)



# TC Temperature Transmitter DT 45800

Temperature Measuring with Thermocouple Sensors,  
configurable via DIP Switch or USB



The TC Temperature Transmitter DT 45800 is used for measure industrial process signals. It converts Thermocouple sensor signals to isolated standard signals.

Due to the easy setting of the calibrated measuring ranges via DIP switch the Transmitter is suitable for flexible use.

With the USB Programming-Kit DRAGOset the Transmitter can be configured and all data can be stored by a PC. In mode of programming no additionally auxiliary power is required.

The Commissioning Function, switchable on front panel, generates an output reference signal for testing and adjusting of the downstream signal path.

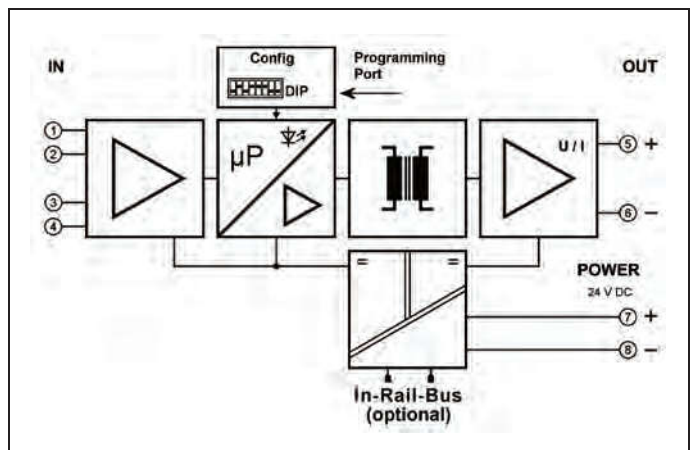
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The status of power supply and sensor connection will be displayed by a LED on front.



- **Measuring input for all TC temperature sensors**  
more than 1800 standard ranges ready to use
- **Easy configurable via DIP switches**  
or via USB interface without auxiliary power supply
- **Switchable service functions**  
for an easy commissioning
- **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

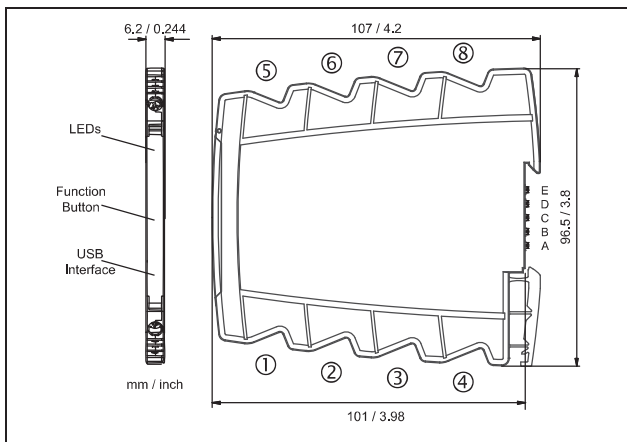


### Technical Data

Input					
Thermocouple	Sensor	Standard	Measuring range	Span min.	Measuring error
Type K	NiCr-Ni	IEC 584	-200 to +1350 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type J	Fe-CuNi	IEC 584	-200 to +1200 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type A	W5Re-W20Re	GOST 8.585	0 to +2500 °C	100 K	< 0.3 K + 0.08 % meas. Val.
Type B	Pt30Rh-Pt6Rh	IEC 584	+250 to +1800 °C	100 K	< 0.3 K + 0.08 % meas. Val.
Type C	W5Re-W26Re	ASTM E988	0 to +2300 °C	100 K	< 0.3 K + 0.08 % meas. Val.
Type D	W3Re-W25Re	ASTM E988	0 to +2300 °C	100 K	< 0.3 K + 0.08 % meas. Val.
Type E	NiCr-CuNi	IEC 584	-200 to +1000 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type L	Fe-CuNi	DIN 43710	-200 to +900 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type N	NiCrSi-NiSi	IEC 584	-200 to +1300 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type R	Pt13Rh-Pt	IEC 584	-50 to +1700 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type S	Pt10Rh-Pt	IEC 584	-50 to +1700 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type T	Cu-CuNi	IEC 584	-200 to +400 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Type U	Cu-CuNi	DIN 43710	-200 to +600 °C	50 K	< 0.3 K + 0.08 % meas. Val.
Cold junction compensation	Internal / OFF		Error of Cold junction compensation < 1.5 K		
Output					
	<b>Current</b>		<b>Voltage</b>		
Output signal	0 to 20 mA	4 to 20 mA	0 to 5 V	0 to 10 V	
Load	≤ 12 V (600 Ω at 20 mA)		≤ 5 mA (2 kΩ at 10 V)		
Residual ripple	< 10 mV <sub>rms</sub>				
Transfer range	0 to 102.5 % (3.8 to 20.5 mA at output 4 to 20 mA)		Transfer characteristic rising / falling		
Error signal	Sensor/wire break, error signal programmable				
General data					
Transmission error	< 0.1 % full scale		Temperature coefficient <sup>1)</sup> < 100 ppm/K		
Sampling rate / Response time T <sub>99</sub>	4/s / 250 ms				
Test voltage	3 kV AC, 50 Hz, 1 min.		Input against output against power supply		
Working voltage <sup>2)</sup> (basic insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1				
Protection against electric shocks <sup>2)</sup>	Protective Separation by reinforced insulation acc. to EN 61010-1 up to 300 V AC/DC for overvoltage category II and contamination class 2 between input and output and power supply				
Ambient temperature	Operation -25 °C to +70 °C (-13 to +158 °F)		Transport and storage -40 °C to +85 °C (-40 to +185 °F)		
Power supply	24 V DC voltage range 9.6 V to 31.2 V DC, approx. 0.8 W				
EMC <sup>3)</sup>	EN 61326-1				
Approvals	ATEX	DEMKO 16 ATEX 1685X	II 3 G Ex nA IIC T4 Gc		
	IECEX	IECEX UL 16.0055X	Ex nA IIC T4 Gc		
	UL	E478692 USA/Canada	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	
2	+ Input TC
3	- Input TC
4	
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 max. 2.5 mm<sup>2</sup> / 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)

Subject to change!

### Product line

Device	Order No.
TC Temperature Transmitter, configurable via DIP switch and USB	DT 45800 S
TC Temperature Transmitter, configurable via DIP switch and USB, In-Rail-Bus for power supply	DT 45800 B



## DRAGOset Box

### DZU 1201

DRAGOset-Box for transmitter with USB interface  
USB programming cable and DRAGOset software

#### System Requirements

- PC with Windows Windows 7, 8.1 or Windows 10
- USB interface

#### Delivery contents of DRAGOset Box DZU 1201

- USB converter
- Software CD
- Quick Start Guide
- Hotline support card

#### Program Functions

- A programming and diagnostic program for all digitally adjustable DRAGO devices with interface
- Clear setting of all device features
- Quickly distribute your specific factory setting
- Programming without additional transmitter cabling
- Diagnostic functions of the transmitter and integration into your system
- Documentation of measuring point
- DRAGOset does not need administrative rights to start, install and update.
- Comfortable online help
- Tips for wiring depending on your settings
- Visualization of the selected transfer function
- and in general ...  
simple · reliable



Symbolic picture

[dragoset.drago-automation.de](http://dragoset.drago-automation.de)



## In-Rail-Bus



### DZU 1401 / DZU 1402

Power terminal for installations with In-Rail-Bus system

The 6.2 mm wide Power Terminals DZU 1401 and DZU 1402 are used for supplying the In-Rail-Bus DIN rail connector with supply voltage up to 32 V DC.

The Power Terminal DZU1401 for standard applications with 4.5 A output current is able to power up to 120 signal converter.

The Power Terminal DZU1402 with two separate and reverse polarity protected voltage inputs allow a redundant voltage supply and a maximum current of 3 A. The status of the power supply of both voltage inputs will be displayed each by a LED on front. A green LED lights up when there is supply voltage on the voltage input. A red LED indicates reversed polarity.

	DZU 1401	DZU 1402
Supply voltage	≤ 32 V DC	≤ 32 V DC
Input current	≤ 4.5 A	≤ 3 A
Recommended fuse	5 A Slow-blow	3.15 A Slow-blow
Drop voltage	≤ 0.2 V	≤ 0.5 V
Operating and fault indication	–	LED green / red
Feeding	2 inputs, directly coupled to In-Rail-Bus	2 redundant inputs, decoupled via diodes
Approvals	–	ATEX, IECEx, UL
Construction	6.2 x 96 x 107 mm	



### In-Rail-Bus Accessories

5-wire bus system for DIN rail

DIN rail profile and bus length, see table (Complete kit without DIN rail)

Description	Order No.		
	Length	120 mm	250 mm
In-Rail-Bus for DIN rail 35 x 7.5 mm	DZU 1410	DZU 1411	DZU 1412
In-Rail-Bus for DIN rail 35 x 15 mm	DZU 1420	DZU 1421	DZU 1422
Carrier rail cover	–	DZU 1431	–

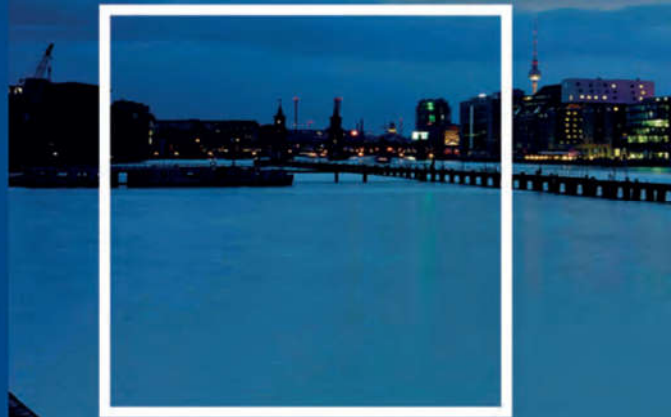
Other lengths up to 500 mm on request



### DZU 1439

Safety caps right/left as a spare part  
(The kits includes safety caps)

Description	Order No.
Safety caps right/left	DZU 1439



**HEAD OFFICE - Sydney:** 7 Yamma Street, Sefton NSW 2162  
**PH:** +61 2 9721 8644 **FAX:** +61 2 9738 9339 **ABN:** 96 650 190 183

**Melbourne:** 8/280 Whitehall Street, Yarraville VIC 3013  
**PH:** +61 3 9687 0000 **FAX:** +61 3 9687 1900

**Brisbane:** 36, 121-125 Kerry Road, Archerfield QLD 4108  
**PH:** +61 7 3373 8424 **FAX:** +61 7 3373 8067

**Email:** [sales@temperature.com.au](mailto:sales@temperature.com.au)

**Buy Online:** [www.temperatureshop.com.au](http://www.temperatureshop.com.au)



Quality  
ISO 9001  
SAI GLOBAL

Phone 1300 744 656

[www.temperature.com.au](http://www.temperature.com.au)