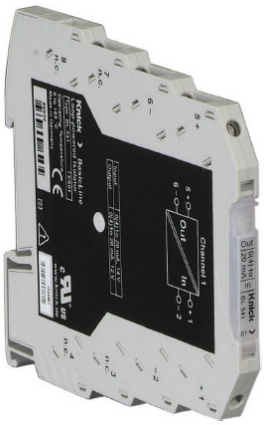
BasicLine BL 541/2



Caution!

Be sure to take protective measures against electrostatic discharge (ESD) when handling the devices!

Note for installation

Installation must be performed by qualified personnel.

Warning! Protection against electric shock

For applications with high working voltages, take measures to prevent accidental contact and make sure that there is sufficient distance or insulation between adjacent devices.

Intended use

The Series BasicLine 54x standard-signal isolators are used for galvanic isolation of 0(4) to 20mA standard signals. The measured signal is transmitted 1:1. Power supply is not required.

Warning against misuse

Do not operate the device outside the conditions specified by the manufacturer, as this might result in hazards to operators or malfunction of the equipment.

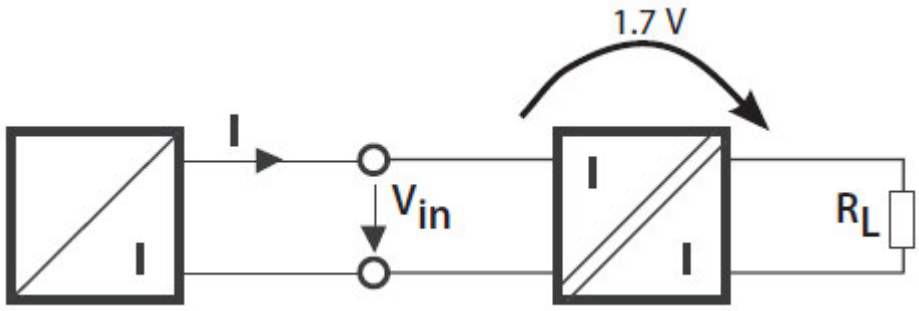
Caution

The system installer is responsible for the safety of the system in which the device is integrated.

Method of operation

BasicLine 54x standard-signal isolators draw the power required for their isolation task from the input signal (“passive isolators”).

A current signal I = 20 mA and a voltage drop of 1.7 V (typ.) across the passive isolator result in a load-dependent input voltage of Vin = 1.7 V + 20 mA * RL (load)



Mounting, electrical connection

The standard-signal isolators are snapped onto TS 35 standard rails and are laterally fixed by suitable end brackets. See housing for terminal assignments. Conductor cross-section max. 2.5 mm2

BasicLine BL 541 and BL 542

Input data	
Input	0(4) ... 20 mA / max. 18 V
Min. operating current	Approx. 150 µA
Voltage drop	Approx. 1.7 V at 20 mA
Overload capacity	30 mA, 18 V
Output data	
Output	0(4) ... 20 mA / max. 12 V (600 Ω load at 20 mA)
Residual ripple	< 10 mV_{rms}
Transmission behavior	
Transmission error	< 0.2 % full scale
Load error	< 0.05 % meas.val. per 100 Ω load
Temperature influence *	< 0.002 %/K meas.val. per 100 Ω load (reference temperature 23 °C)

*) Average TC in specified operating temperature range

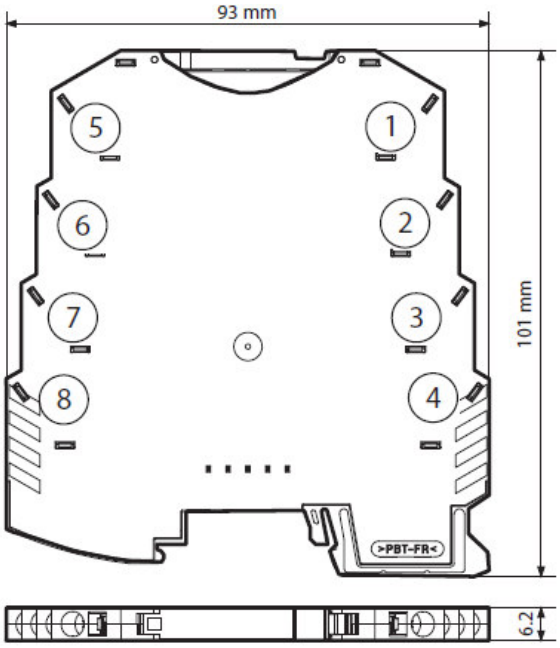
Isolation	
Test voltage	1.5 kV AC
Working voltage (basic insulation)	Up to 300 V AC/DC across input and output of the same channel and across the channels themselves for overvoltage category II and pollution degree 2 according to EN 61010-1 For applications with high working voltages, take measures to prevent accidental contact and make sure that there is sufficient distance or insulation between adjacent devices.

Further data	
Ambient temperature	
during operation	0 ... +55 °C (mounted in row)
during storage	-25 ... + 85 °C
Mounting	For 35-mm mounting rail (EN 60715)
Ingress protection	IP 20
Weight	Approx. 50 g

Standards and approvals	
EMC**	Product standard EN 61326

**) Applies to 4 ... 20 mA,
slight deviations are possible while there is interference

Dimension drawing



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

Order information

Type	Order No.
BL 541, one channel	BL 541
BL 542, two channels	BL 542