BasicLine BL 510 Standard-Signal Isolators

1. General Information

The warning symbol on the device (exclamation point in triangle) means: Observe instructions!

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.

Take protective measures against electrostatic discharge (ESD) when switching the ranges.

Caution

Only trained and qualified personnel should install the BasicLine BL 510 standard-signal isolators. Do not connect the devices to power supply before they are professionally installed. Do not change the measuring range during operation. Be sure to observe the national codes and regulations for installation and selection of cables and lines.

You must install a two-pole circuit breaker between device and mains supply (next to the device). It must be easily accessible and clearly identifiable by the operator. Mains supply must be protected by a fuse ≤ 20 A.

2. Intended Use

The BasicLine BL 510 standard-signal isolators are used for galvanic isolation of 0(4) to 20 mA and 0 to 10 V standard signals. DIP switches allow selection of calibrated input and output signals (see rating plate).

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. The system installer

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

3. Configuration

Set the DIP switch according to the table on the housing (factory setting 0 ... 20 mA to 0 ... 20 mA).

4. Mounting, Electrical Connection

The units are snapped onto TS 35 standard rails and laterally fixed by suitable end brackets. See dimension drawing for terminal assignments. Conductor cross-sections single wire or stranded 0.5 ... 2.5 mm2, with ferrule 0.5 ... 1.5 mm2, AWG 26-14, tightening torque 0.4 Nm.

5. Declarations and Approvals

See www.knick.de for Declaration of Conformity with EMC Directive.
UL Listed, File No. E340287, Standard: UL 61010-1,
CAN/CSA C22.2 No. 61010-1

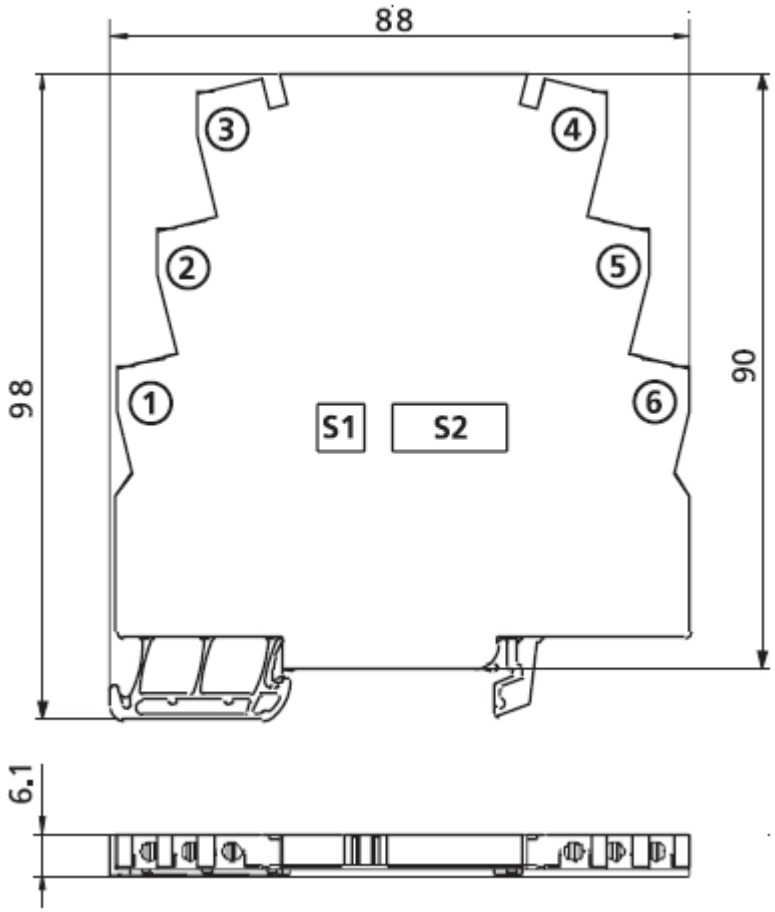
6. Specifications

Input data	
Inputs	0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, calibrated selection
Input resistance Current input Voltage input	 Voltage drop ≤ 0.1 V at 20 mA (approx. 350 mV with open current output or power failure) Approx. 100 kΩ
Overload capacity Current input Voltage input	 ≤ 100 mA limited to 30 V by suppressor diode max. permissible continuous current: 3 mA

Output data	
Outputs	0 ... 20 mA, 4 ... 20 mA, 0 ... 10 V, calibrated selection
Load with output current with output voltage	 ≤ 10 V (≤ 500 Ω at 20 mA) ≤ 1 mA (≥ 10 kΩ at 10 V)
Residual ripple	< 10 mV_{rms}
General Data	
Transmission error 1)	< 0.3 % full scale
Temperature coefficient 2)	< 0.01 %/K full scale
Cutoff frequency	> 100 Hz
Test voltage	510 kV AC input against output against power supply
Working voltage (basic insulation)	150 V with overvoltage category II and pollution degree 2 according to EN 61010-1
EMC	Product family standard: EN 61326
Ambient temperature	
Operation Transport and storage	0 ... +55 °C -25 ... +85 °C
Ambient conditions	Stationary application, weather-protected Relative humidity 5 ... 95 %, no condensation Altitude up to 2000 m Water or wind-driven precipitation (rain, snow, hail) excluded
⚠ Power supply (voltage supply with double, reinforced insulation SELV, PELV)	24 V DC (± 15 %), approx. 0.6 W
Ingress protection	IP 20
Dimensions W/H/D	88 mm / 98 mm / 6.1 mm
Weight	Approx. 50 g

1) Additional error in live-zero operation 20 µA or 10 mV

2) Average TC in specified operating temperature range 0 ... +55 °C



1. Input +
2. Input –
3. Power supply –
4. Power supply +
5. Output –
6. Output +

Order information

Type	In	Out	Order No.
BasicLine BL 510	0...20 mA, 4...20 mA, 0...10 V	0...20 mA, 4...20 mA, 0...10 V	BL 510