

Modules

Knick >

IsoTrans® 46

For isolation of 0 ... 20 mA standard signals.

Knick has expanded its range of loop-powered isolators with the IsoTrans® 46, a competitively priced, compact model with a modular design.

The Task

The IsoTrans® 46 isolates 0 ... 20 mA standard current signals avoiding parasitic voltages or currents and eliminating

grounding problems. It is optionally available with Safe Isolation to EN 61140.

The Technology

The IsoTrans® 46 draws its power as voltage drop directly from the measurement signal. This saves on the costs for power supplies and cabling and increases reliability.

**Warranty
5 years!**

Defects occurring within 5 years from delivery are remedied free of charge at our works (carriage and insurance paid by sender).



Loop-Powered Isolators for Standard Signals

Isolation Amplifiers
Transmitters

Indicators

Process Analytics

Portable Meters

Laboratory Meters

Sensors

Fittings

Knick ➤



■ The Facts

Galvanic isolation between input and output signal

Protection against measurement errors caused by grounding problems and parasitic interference voltage

Maximum reliability

No maintenance work, therefore the related costs are not incurred

5-year warranty

Safe Isolation according to EN 61140

Protection of maintenance staff and subsequent devices against non-permitted high voltages

Module mounting height 11 mm

Extremely low mounting height, mounting on Eurocard with width of just 3 TE

No power supply required

Cost saving due to lower wiring effort, no mains influences



IsoTrans® 46

■ Product Line

Devices	Order No.
IsoTrans® 46, module	46 Mk
Power supply	
None, supply from input signal	
Options	
Safe Isolation to EN 61140, test voltage 4 kV AC	453

■ Specifications

Input data

Input	0 ... 20 mA ¹⁾
Operating current	< 20 µA
Overload	100 mA, 30 V
Voltage drop	Approx. 2.5 V ²⁾

Output data

Output	0 ... 20 mA, max. 27.5 V
Load error	< 0.02 % meas. val./100 ohms
Residual ripple	< 5 mV

Transmission behavior

Transmission error	< 0.1 % full scale
Rise and fall time	Approx. 5 ms at 500 ohms load
Temperature coefficient ³⁾	< 0.002 %/K of meas. val. per 100 ohms load

1) Linear transmission up to 50 mA

2) Approx. 3.5 V at 50 mA

3) Average TC, reference temperature 23 °C

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Specifications (continued)

Isolation

Test voltage	510 V AC 4 kV AC with option 453
Working voltages (basic insulation)	150 V with overvoltage category I and pollution degree 4 according to EN 61010-1 Permissible working voltages for other overvoltage categories and pollution degrees and for reinforced insulation/Safe Isolation on request. For applications with high working voltages, you should ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.
Protection against electric shock (Opt. 453)	Safe Isolation according to EN 61140 by reinforced insulation in accordance with EN 61010-1. For applications with high working voltages, you should ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.

Standards and approvals

Surge withstand according to IEC 255-4	5 kV 1.2/50 μ s (only with Option 453)
Surge withstand according to EN 61010-1	850 V > 6 kV with Option 453
EMC ⁴⁾	According to NAMUR NE 21, European EMC regulations according to 89/336/EEC directive, EN 61326

Other data

MTBF ⁵⁾	Approx. 1281 years
Ambient temperature	Operation: -10 ... +70 °C Transport and storage: -30 ... +80 °C
Design	Mk module, encapsulated, see dimension drawings for further measurements
Weight	Approx. 13 g

4) Valid for 4 ... 20 mA, slight deviations possible during interference.

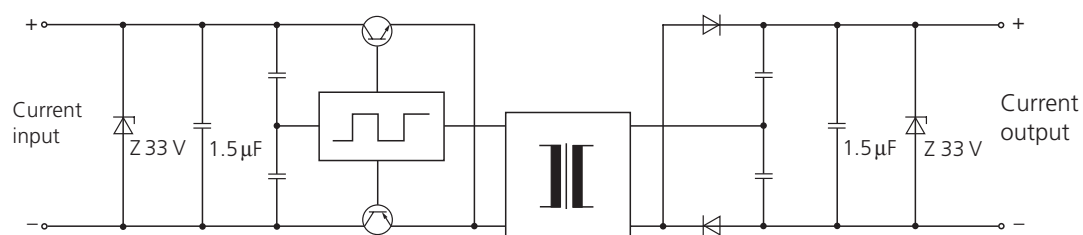
5) Mean Time Between Failures – MTBF – according to EN 61709 (SN 29500).

Conditions: stationary operation in well-kept rooms, average ambient temperature 40 °C, no ventilation, continuous operation

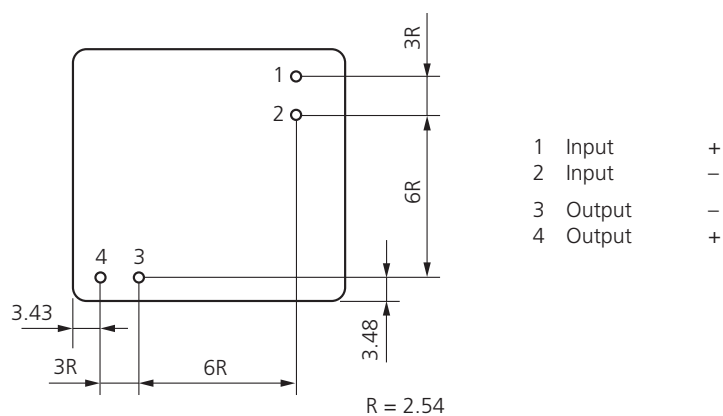
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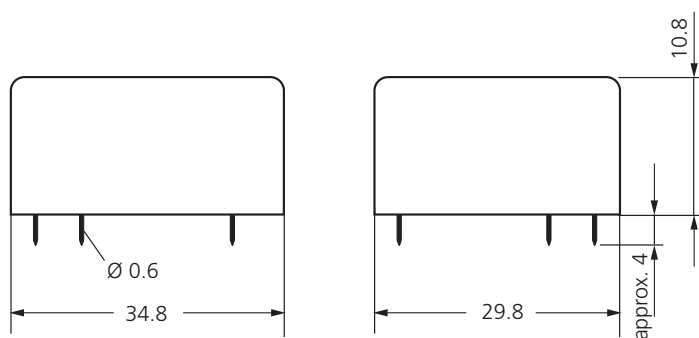
■ Block Diagram



■ Dimension Drawings and Pin Assignments



Pin View



All dimensions in mm!