

Knick >

IsoTrans® 46

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

The IsoTrans® 46 complements Knick's loop-powered isolators to a competitively priced, compact series.

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

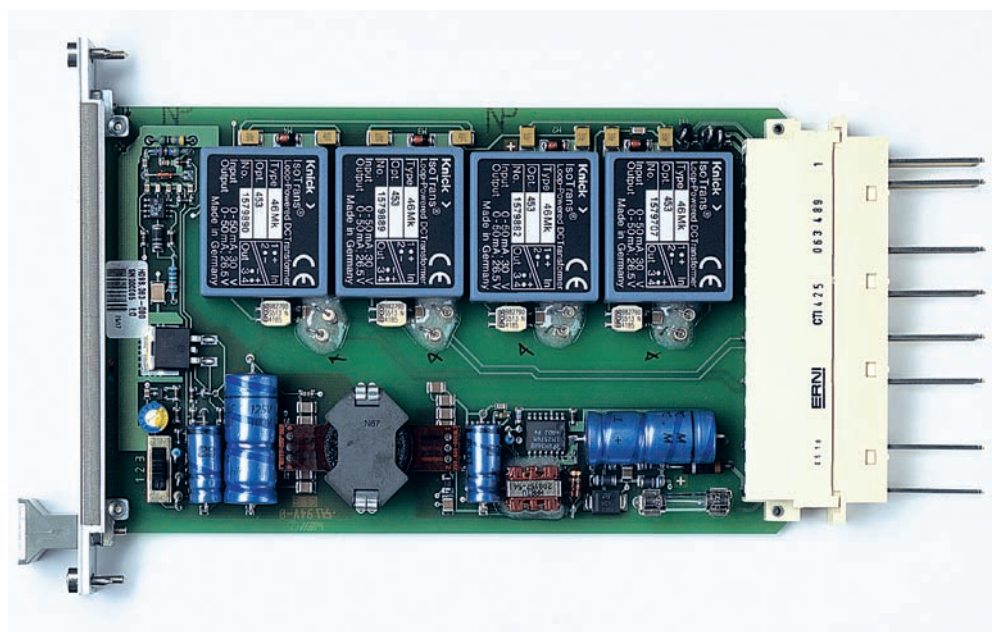
The IsoTrans® 46 draws its power as voltage drop directly from the measurement signal. This saves on the costs for power supplies and cabling and increases reliability.

The Mounting Height

The low height allows use of up to 8 channels on a Eurocard with just 3 TE front plate. This means 224 channels can be accommodated in a 19" rack.

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

No mains supply required

Cost saving due to lower wiring effort, no mains influences

Low power loss

No unnecessary heating in enclosure

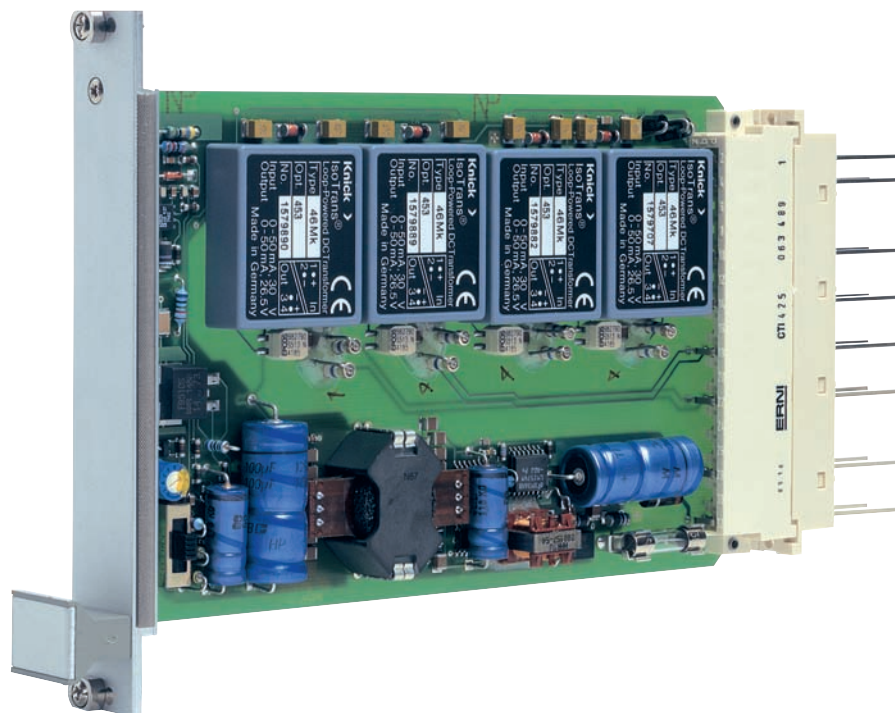
Safe Isolation according to EN 61140

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

Maximum reliability

No maintenance work, therefore the related costs are not incurred

5-year warranty



Eurocards

IsoTrans® 46

■ Product Line

Devices		Order No.
IsoTrans® 46 Eurocards	For up to 8 channels	EK 15–46Mk/... ¹⁾
Power supply		
None, supply from input signal		
Options		
INTERMAS SP/K3-n03T front panel, plastic, gray, width 15 mm, for EK 15 Eurocard, mounted		446
Safe Isolation to EN 61140		453

1) Please indicate the required module number when ordering.

■ Specifications

Input data

Input	0 ... 20 mA ²⁾
Operating current	< 20 µA
Configuration	Up to 8 channels
Overload	100 mA, 30 V
Voltage drop	Approx. 2.5 V ³⁾

Output data

Output	0 ... 20 mA, max. 27.5 V (corresponds to 1375 ohms load)
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 ⁴⁾	0.002 %/K of meas. val. per 100 ohms load

Isolation

Test voltage	510 V AC 4 kV AC with Option 453
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2) Linear transmission up to 50 mA 3) Approx. 3.5 V at 50 mA
4) Average TC, reference temperature 23 °C

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Specifications (continued)

Isolation (continued)

Working voltages
(basic insulation)

According to EN 61010-1

Type EK15

Overvoltage category /
Permitted pollution degree

Permitted
working voltage

Input against output
of the same channel

I / degree 4
II / degree 4
III / degree 4

150 V AC/DC
100 V AC/DC
50 V AC/DC

With ≤ 4 channels
Inputs/outputs against inputs or
outputs of external channels

III / degree 2
IV / degree 3

600 V AC/DC
300 V AC/DC

With ≥ 5 channels
Inputs/outputs against inputs or
outputs of external channels

II / degree 2
III / degree 2

600 V AC/DC
300 V

Permitted working voltages for modules with safe isolation (opt. 453) and other overvoltage categories and pollution degrees 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

EMC⁵⁾

NAMUR NE 21, European EMC regulations

Other data

Ambient temperature

Operation: $-10 \dots +70 \text{ }^\circ\text{C}$
Transport and storage: $-30 \dots +80 \text{ }^\circ\text{C}$

Design

Eurocard 3 TE

Pin connector

Type F according to DIN 41612, see also dimension drawings

Socket connector

Type F according to DIN 41612, wire-wrap connection (included in package contents), see also dimension drawings

Front plate (opt. 446)

INTERMAS, SP / K3-n03T, plastic, gray, see also dimension drawings

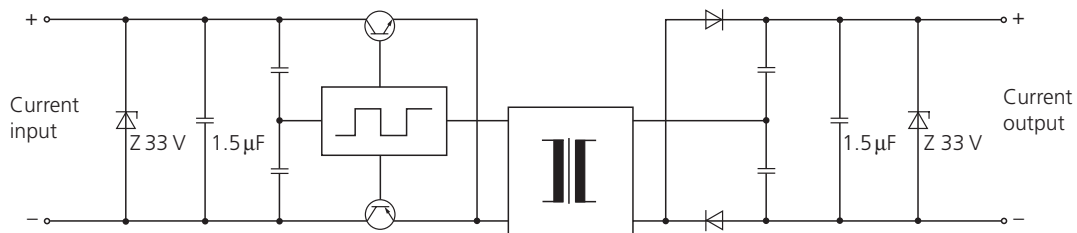
Weight

Approx. 13 g per channel

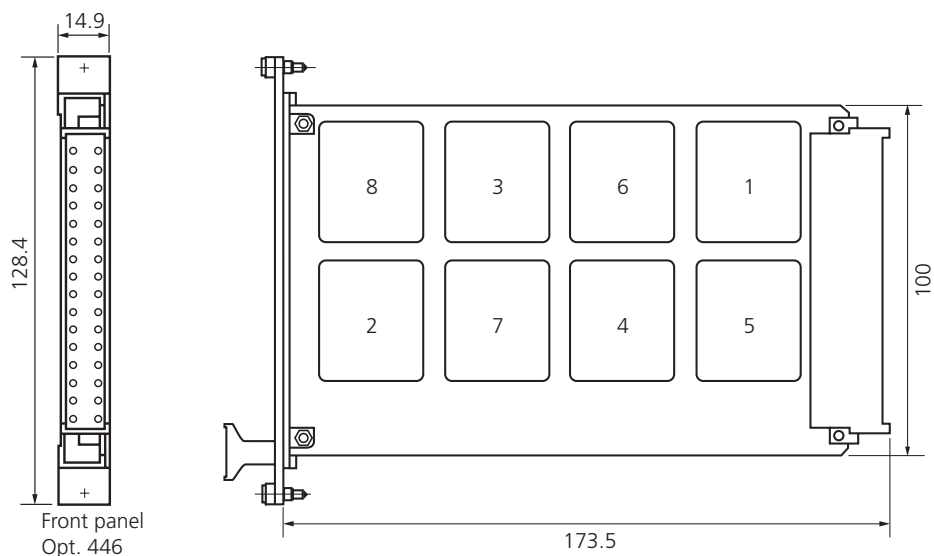
5) Valid for 4 ... 20 mA, slight deviations possible during interference.

IsoTrans[®] 46

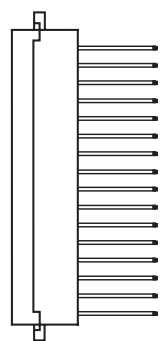
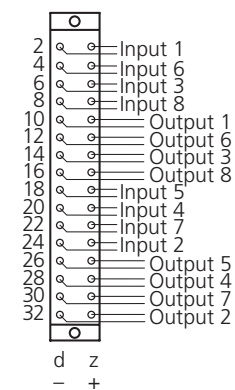
■ Block Diagram



■ Dimension Drawings and Pin Assignments



Front panel
Opt. 446



Plug-in connection
Front panel Opt. 446

Type F acc. to DIN 41612
INTERMAS SP/K3-n3 T,
plastic, gray

All dimensions in mm!