

Modular Housings

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**Unbelievably simple isolation!
20 mA transmission with electrical isolation.**

The Task

Preventing measuring errors or even destruction of the system normally requires floating connection of the sensors and actuators to the sensitive MSR electronics.

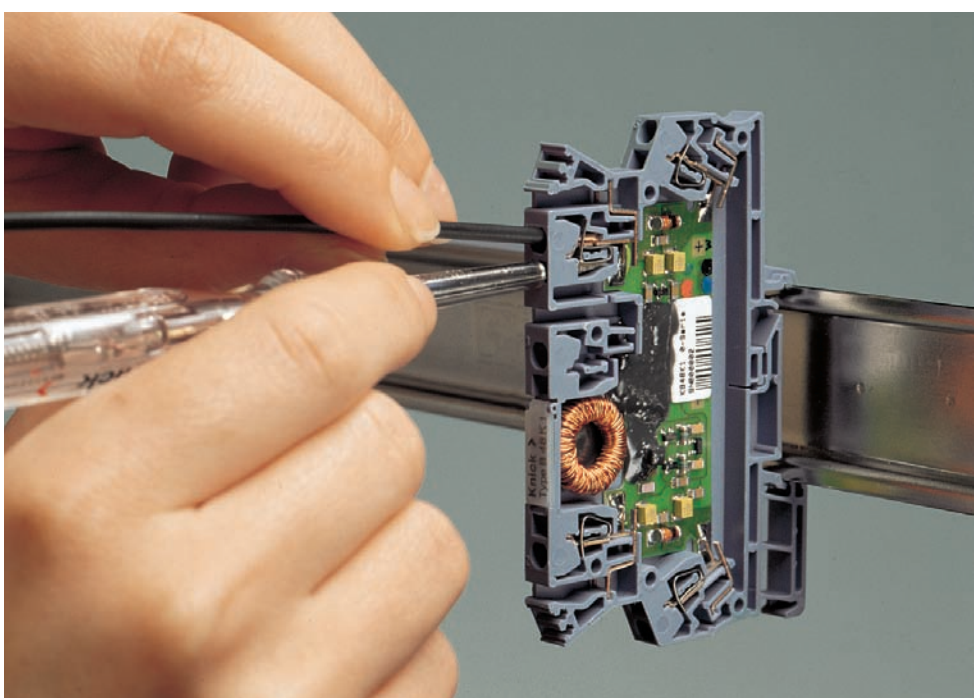
The Problem

was solved up to now with additional devices for electrical isolation after the routing and distributor level.

The Solution

comes in form of the 6-mm wide IsoTrans® B 48 isolating terminal. It fulfills all tasks set for modern terminals and safely and reliably isolates 0(4) ... 20 mA signals using loop power without distorting the measurement signal.

IsoTrans® B 48



The Connections

use Z-springs and allow simple, fast, and safe connection of the wires.

The Technology

The constantly improved circuit concept of our isolators that have been tried and tested over decades and draw their power as a voltage drop from the measurement signal and the use of a

specialty developed flat-core transformer have led to this extremely narrow housing with a width of just 6 mm. That are up to 166 isolating terminals per meter of mounting rail.

Loop-Powered Isolators for Standard Signals

Isolation Amplifiers
Transmitters

Indicators

Process Analytics

Portable Meters

Laboratory Meters

Sensors

Fittings



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■ The Facts

Substantial cost- and space-savings

due to the omission of a whole installation stage

Minimum wiring effort

due to loop-powered electrical isolation and the combination of terminal and isolator in one device

Fast, simple, and safe wiring using Z-springs

High level of safety thanks to proven circuit technology

Galvanic isolation

Protection against incorrect measurements or damage to the equipment due to parasitic voltages

Extremely compact design

at just 6 mm in width the modular housing allows up to 166 channels per meter

Easy to use and to maintain

Simple and fast installation due to innovative Z-springs

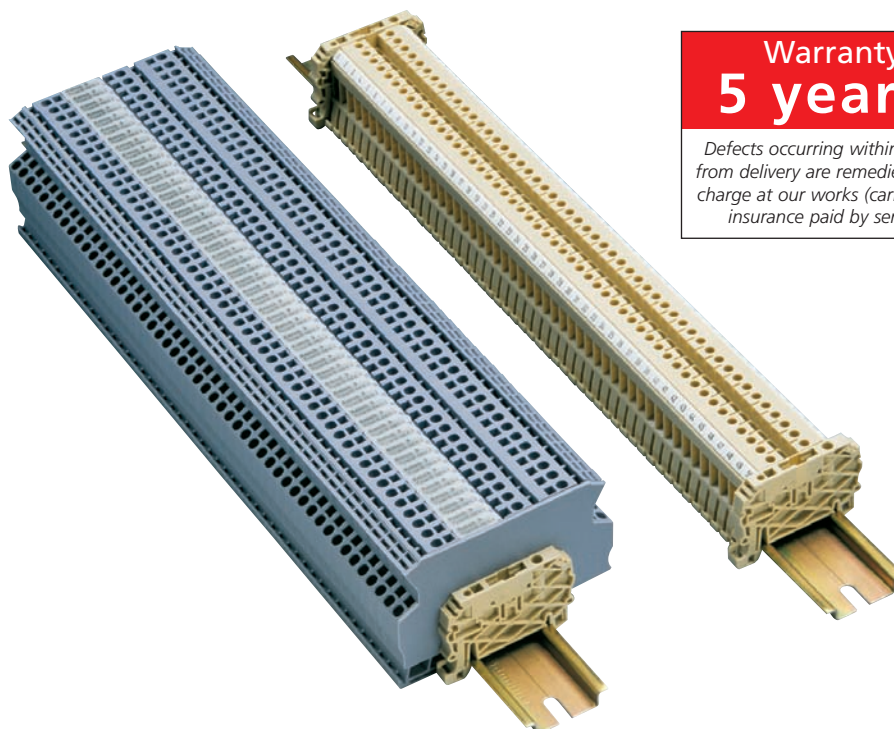
No power supply required

Cost saving due to lower wiring effort, no mains influences

High accuracy

No distortion of measurement signal

5-year warranty



Warranty
5 years!

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

Modular Housings

IsoTrans® B 48

■ Product Line

Devices	Input	Output	Order No.
IsoTrans® B 48	0 ... 20 mA, 4 ... 20 mA	0 ... 20 mA, 4 ... 20 mA	B 48 K1

Power supply

None, supply from input signal

Accessories

End plate	Shock-hazard protection for the last isolating terminal in the row, required 1x per application!	ZU 0286
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■ Specifications

Input data

Input	0 ... 20 mA (linear transmission up to 22 mA)
Operating current	< 100 µA
Voltage drop	Approx. 2.7 V at 20 mA
Overload	50 mA, 15 V

Output data

Output	0 ... 20 mA, ≤ 500 ohms
Residual ripple	< 10 mV _{rms}

Transmission behavior

Transmission error	< 0.1 % full scale
Load error	< 0.05 % meas. val./100 ohms
Response time (T ₉₀)	Approx. 5 ms at 500 ohm load
Temperature coefficient ¹⁾	< 0.005 %/K of meas. val. per 100 ohm load (reference temperature 23 °C)

Isolation

Test voltage	510 V AC
Working voltage	100 V with overvoltage category II and pollution degree 2 according to EN 61010-1

1) Average TC in specified operating temperature range -25 ... +60 °C

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Specifications (continued)

Standards and approvals

EMC ²⁾	89/336/EEC directive, EN 61326
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Other data

Ambient temperature	Operation: -25 ... +60 °C also when mounted in row Transport and storage: -40 ... +85 °C
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Design	Terminal housing, 6 mm width, terminal using Z-spring technology See dimension drawings for further measurements
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Ingress protection	IP 20 in row or with end plate
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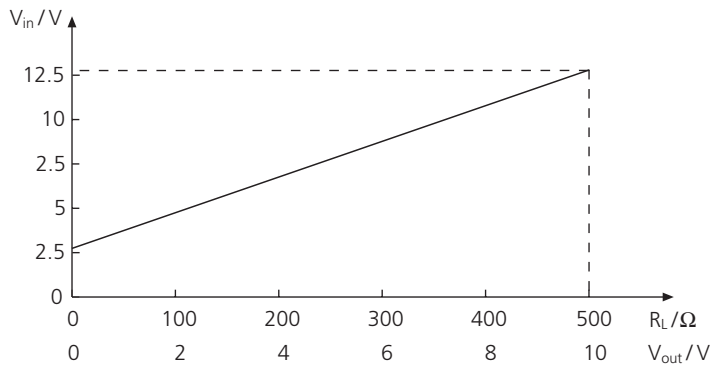
Mounting	For 35 mm top hat rail according to EN 50022, see dimension drawings for conductor cross section
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Weight	12 g
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²⁾ Applies to 4 ... 20 mA, slight deviations are possible while there is interference

■ Input Voltage

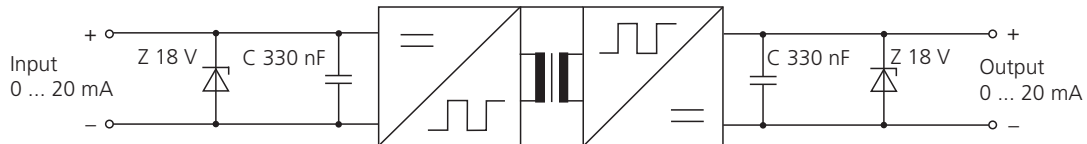
depending on the load at $I_{out} = 20$ mA



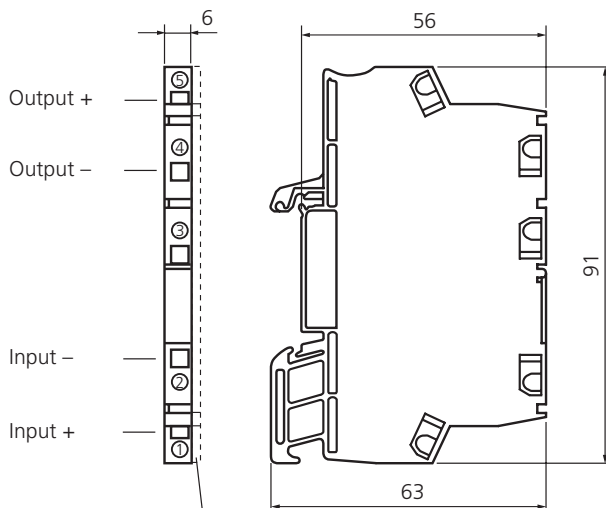
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■ Block Diagram



■ Dimension Drawings and Terminal Assignments



ZU 0286 end plate, 1.5 mm wide, only required for last device in row as shock-hazard protection

Conductor cross-sections:

Single-wire	0.5 ... 2.5 mm ²
Fine-wire	0.5 ... 2.5 mm ²
With ferrule	0.5 ... 1.5 mm ²

All dimensions in mm!