

# M12 Field Housings

**Knick** >

**Compact, robust standard-signal isolator with IP68 protection: IsoTrans® M12-A 200. With M12 connection technology for decentralized automation. For the safe isolation of 0(4) ... 20 mA standard signals.**

## The Task

If a singular analog signal isolation is required outside the enclosure, the ideal IP 68 isolator is now available: IsoTrans® M12-A 200. No further protective housing is required for the installation. A metal clamp available as accessory offers a secure fixture.

## The Housing

Fully cast and system-compatible, the new IsoTrans® M12-A 200 by Knick supports modern installation concepts and is destined for low-priced applications directly on plant and machinery – even in wet, dirty, or dusty environments.

## IsoTrans® M12-A 200



## The Technology

The wiring of the IsoTrans® M12-A 200 is effected easily and quickly using low-priced standard cables with M12 connectors or sockets. The innovative standard signal isolator is plugged directly onto the sensor-actuator distributor or is simply inserted into the cable.

IsoTrans® M12-A 200 shows virtually no self-heating, minimizing the aging of the electronic components. This means maximum reliability and exceptional durability.



# Loop-Powered Isolators for Standard Signals

Isolation Amplifiers  
Transmitters

Indicators

Process Analytics

Portable Meters

Laboratory Meters

Sensors

Fittings



## Knick >

### ■ The Facts

**Easy connection using a screw-on M12 connector**

**Fully cast housing**  
with IP 68 protection

**Fast and easy installation**  
Even without tools

**Preassembled connections**  
to prevent wiring errors

**Safe electrical isolation**

**Maximum protection of personnel and equipment**

**Safe Isolation**  
according to EN 61140

**Excellent pulse imaging,**  
Undistorted transmission, even  
of critical input signals

**Extremely low gain error**  
of only 0.1 %

**Reduction of system costs** by  
appropriate electrical isolation

**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).*

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## IsoTrans® M12-A 200

### ■ Product Line

Devices	Input	Output	Order No.
IsoTrans® M12-A 200	0 ... 20 mA, 4 ... 20 mA	0 ... 20 mA, 4 ... 20 mA	M12-A200
IsoTrans® M12-A 210 with Bürdenstop®	0 ... 20 mA, 4 ... 20 mA	0 ... 20 mA, 4 ... 20 mA	M12-A210

### Accessories

Retaining bracket for wall mounting, stainless steel			ZU 0610
Signal line, 4-pole, M12 plug, straight – M12 socket, straight	Length 0.3 m		ZU 0611
Signal line, 4-pole, M12 plug, straight – M12 socket, straight	Length 0.6 m		ZU 0612
Signal line, 4-pole, M12 plug, straight – M12 socket, straight	Length 1.5 m		ZU 0613
Signal line, 4-pole, M12 plug – one side open	Length 1.5 m		ZU 0614
Signal line, 4-pole, M12 socket – one side open	Length 1.5 m		ZU 0615

### ■ Specifications

Input data	IsoTrans® M12-A 200 (without Bürdenstop®)	IsoTrans® M12-A 210 (with Bürdenstop®)
Inputs	0(4) ... 20 mA/max. 18 V	0(4) ... 20 mA/max. 3 V
Operating current	< 150 µA	
Voltage drop	Approx. 1.7 V at 20 mA	Approx. 1.5 V at 20 mA
Overload	40 mA, 18 V	50 mA, 3 V
<b>Output data</b>		
Outputs	0(4) ... 20 mA/max. 12 V (600 ohms load at 20 mA)	0(4) ... 20 mA/max. 1.2 V (60 ohms load at 20 mA)
Residual ripple	< 10 mV <sub>rms</sub>	
<b>Transmission behavior</b>		
Transmission error	< 0.1 % full scale	
Load error	< 0.05 % meas. val./100 ohms	Negligible
Response time (T <sub>99</sub> )	Approx. 5 ms at 500 ohms load	Approx. 5 ms at 60 ohms load
Temperature coefficient <sup>1)</sup>	< 0.002 %/K of meas. val. per 100 ohms load (reference temperature 23 °C)	< 0.002 %/K of meas. val. (reference temperature 23 °C)

1) Average TC in specified operating temperature range 0 °C ... +60 °C

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## Specifications (continued)

### Isolation

Galvanic isolation	Isolation between input and output and all other circuits
Test voltage	1.5 kV AC, 50 Hz
Working voltage (basic insulation)	300 V AC/DC across input and output and all other circuits with overvoltage category II and pollution degree 3
Protection against electric shock	Safe Isolation according to EN 61140 by reinforced insulation in accordance with EN 61010-1. Working voltage up to 300 V AC/DC across input and output and all other circuits with overvoltage category II and pollution degree 3. 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

EMC <sup>2)</sup>	Product standard: EN 61326 Emitted interference: Class B Immunity to interference: Industry
cUL	Standards: UL 508 and CAN/CSA 22.2 no. 14-95

### Other data

MTBF <sup>3)</sup>	Approx. 945 years
Chopper frequency	Approx. 100 kHz
Ambient temperature	Operation: 0 ... +60 °C Transport and storage: -25 ... +85 °C
Design	M12 field housing with 4 pole M12 circular connectors H 36 mm, W 83.3 mm, D 14 mm
Ingress protection	IP68
Mounting	Retaining bracket for wall mounting
Weight	Approx. 50 g

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

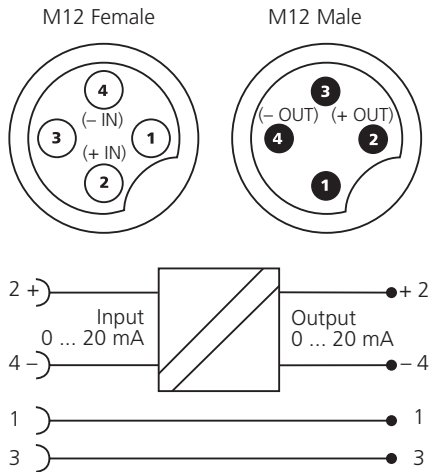
3) Mean Time Between Failures – MTBF – according to EN 61709 (SN 29500).

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

# M12 Field Housings

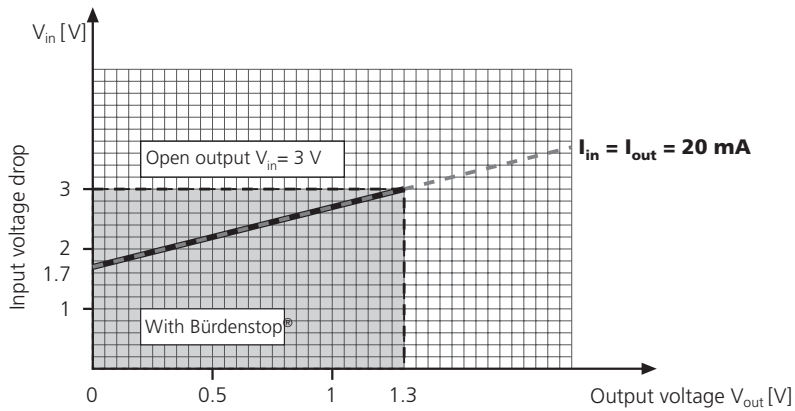
## IsoTrans® M12-A 200

### Terminal Assignments

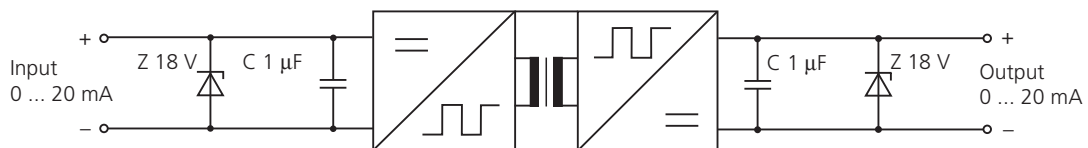


### Transfer Function with Bürdenstop® (Load Stop)

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### Block Diagram

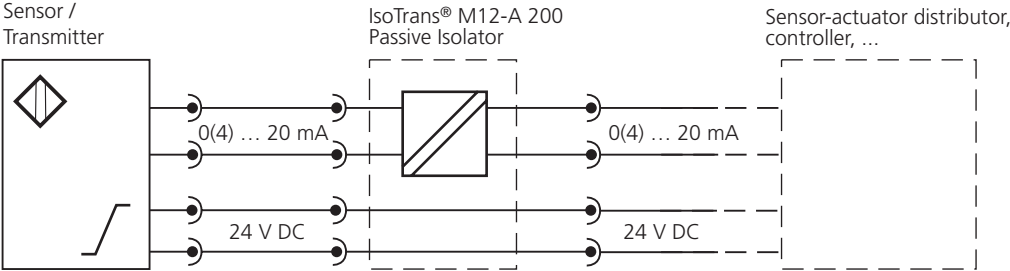


# Loop-Powered Isolators for Standard Signals

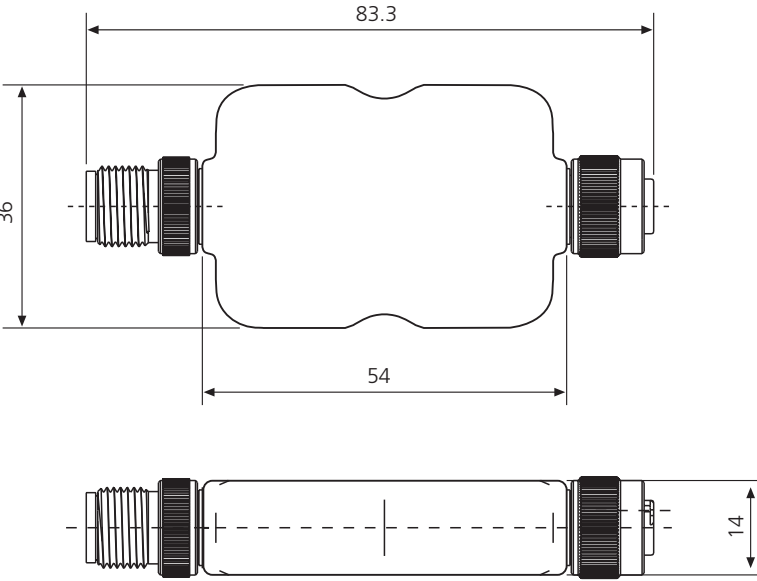
Isolation Amplifiers Transmitters	Indicators	Process Analytics	Portable Meters	Laboratory Meters	Sensors	Fittings
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### Application Example



### Dimension Drawings and Terminal Assignments



All dimensions in mm!