# Isolation Converter

AD-TW 41 GM

AD-TW 41 ST

## Description

The separation converter serves the galvanic separation of impressed currents. It obtains its auxiliary energy form the input signal. The connection of an additional auxiliary voltage is not necessary. The output current is independent of the connected load up to the maximum value. The isolating transformer is also available as a TWB variant, which does not interrupt the input current if its output current is interrupted (bypass function).

## Application

Economic separation of computer inputs, protection of sensitive units against potential delay, galvanic decoupling in complex measuring units. Optional available FSK-capable (HART® Communications Protocol). Caution: with open output the input becomes high-impedance! To avoid this behavior, the version can be used with bypass.

## Business data

**Order number**

| | |
|---|---|
| AD-TW 41 GM | design GM |
| AD-TWB 41 GM | design GM with Bypass-Function |
| AD-TWH 41 GM | design GM, FSK-transparency (HART®-Protokoll) |
| AD-TW 41 ST | design ST |
| AD-TWB 41 ST | design ST with Bypass-Function |

## Technical specifications

**Input current**

| | |
|---|---|
| Measuring range | 0 ... 20 mA |
| Input voltage | < 25 V |
| Voltage drop device | < 2,5 V |

**Output current**

| | |
|---|---|
| Output range | 0 ... 20 mA |
| Max. burden | 1000 Ohm |
| Burden error | -0,03% / 100 Ohm |
| Residual ripple | 0,5 % (1000 Ohm; 20 mA) |

**Transmission behaviour**

| | |
|---|---|
| Basic accuracy | < 0,2 % |
| Input / output | 1 : 1 |
| Temperature influence | 50 ppm/K |
| Response time | ~ 20 ms |
| Transmission frequency | 500 Hz (500 Ohm) |

**Housing GM**

| | |
|---|---|
| Dimensions (WxHxD) | 15x42,5x102 mm |
| Type of protection | IP 20 |
| Connection method | screw clamp |
| Terminals, wire cross section | 2,5 mm² flex wire / 4 mm² one wire |
| Bolting torque terminals | 0,5 Nm |
| Weight | ~ 60 g |
| Manner of fastening | 35 mm DIN rail 35mm |

**Housing ST**

| | |
|---|---|
| Dimensions (WxHxD) | 15x42,5x102 mm |
| Type of protection | IP 20 |
| Pluggable | |
| Connection method | screw clamp |
| Terminals, wire cross section | 2,5 mm² flex wire / 4 mm² one wire |
| Bolting torque terminals | 0,5 Nm |
| Weight | ~ 50 g |
| Manner of fastening | 35 mm DIN rail 35mm |

**Environmental conditions**

| | |
|---|---|
| Ambient temperature | -10 ... 50 °C |
| Storage and transport | -10 ... 70 °C (no condensation) |

**EMC**

| | |
|---|---|
| Product family standard | EN 61326-1 [1)] |
| Emitted interference | EN 55011, CISPR11 Cl. B, Gr. 1 |

**Galvanic isolation**

Base isolation, functional separation

| | |
|---|---|
| Working voltage | 50 VDC |
| Test voltages input / output | 500 V, 50 Hz (1 min.) |

**Protection circuits**

| | |
|---|---|
| Input | electrical surge protection |
| Output | electrical surge protection |

[1)] During checking, slight signal deviations are possible.



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ADAMCZEWSKI
Elektronische Messtechnik GmbH
Felix-Wankel-Str. 13
Tel. +49 (0)7046-875
vertrieb@ad-messtechnik.de
74374 Zaberfeld
Fax +49 (0)7046-7678
www.adamczewski.com

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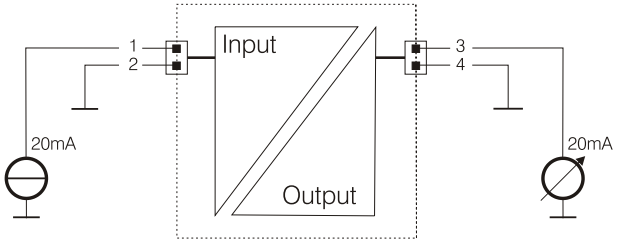
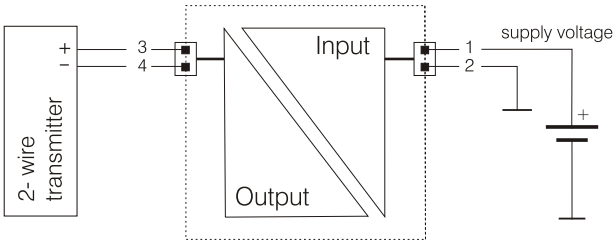
## Block and wiring diagram

GM

Isolation of active current signals

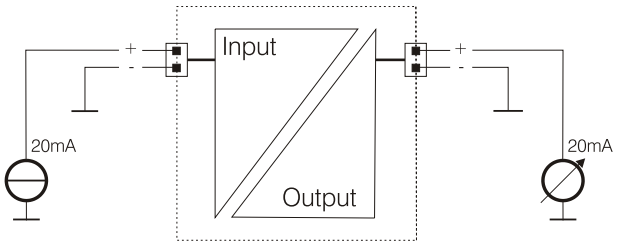



Isolation of transmitter signals

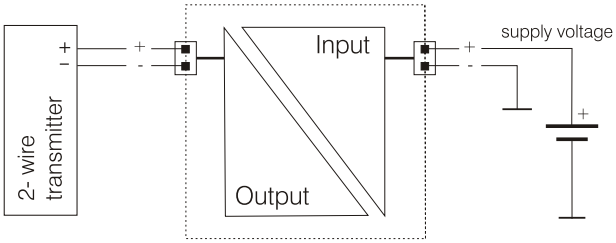


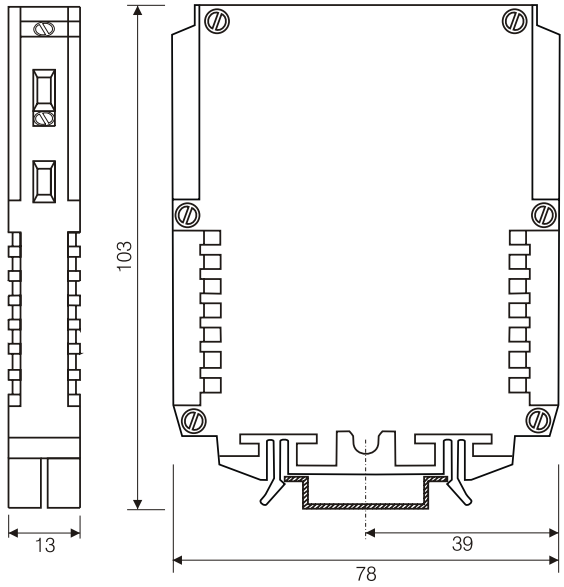
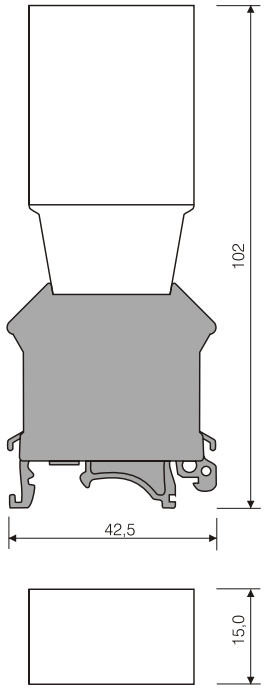

ST

Isolation of active current signals




Isolation of transmitter signals




## Dimensions