# Modular Housings

Knick

## VariTrans® A 26000

**The specialist for ±10 V and ±20 mA. With calibrated range selection and broad-range power supply.**

### The Task
The transmission and conversion of standard 0 ... ±20 mA and 0 ... ±10 V signals frequently used in industry, for example, for speed monitoring with tacho-generators.

### The Problems
Measuring errors occur due to potential differences when bipolar measurement signals are transmitted. In addition, the signal adaptation previously required calibration of the isolators.

### The Solution
Knick provides a tailormade solution. Thanks to the calibrated selection of the input and output parameters using DIP switches, the Knick VariTrans® P 26000 universal isolation amplifiers can be used without complicated readjustment.
The broad-range power supply for all common supply voltages from 20 to 253 V AC/DC offers maximum flexibility.

### The Housing
At just 12.5 mm wide, the modular housing with pluggable screw terminals allows simple and fast assembly and prewiring of enclosures. Housings with fixed screw terminals are also available for extremely high mechanical loads. The easy-to-open housing allows simple configuration of the input and output ranges and provides good protection against contact and unintentional adjustment.

### The Advantages
The analog transmission of the measurement signal with transformer isolation and the digitally controlled range selection guarantee excellent signal transmission:

– Gain error only 0.1 %
– Excellent pulse formation
– Extremely low residual ripple
– Maximum long-term stability and reliability

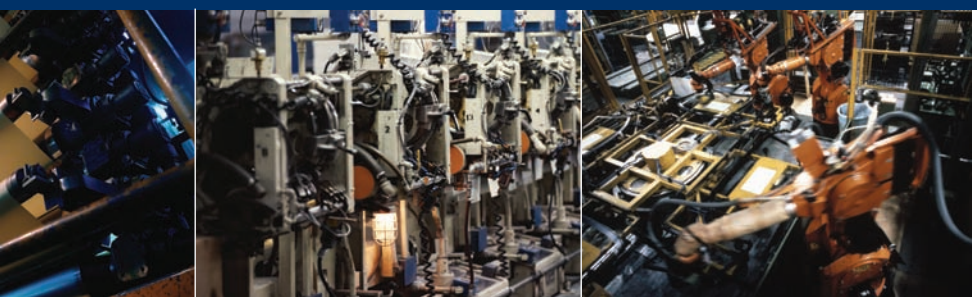
### The Technology
A microcontroller monitors the control element settings and controls the calibrated range selection. Interference to the signal transmission – for example, due to contact resistance in the range switch – is thus ruled out.

Thanks to the VariPower® power supply, the devices can be used all over the world with almost any power supply. The extremely low power consumption and the related minimal self-heating significantly increase reliability. The consequence: a 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).*

# Universal Isolation Amplifiers



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## The Facts

**Flexible and highly accurate**
Calibrated range selection without complicated readjustment

**VariPower®**
**broad-range power supply, 20 ... 253 V AC/DC**

**Extremely compact design**
12.5 mm modular housing; up to 80 active isolators per meter of mounting rail

**Fast and easy configuration**
Housing simple to open

**Pluggable screw terminals**
Simple, time-saving assembly and prewiring of enclosures

**3-port isolation**
Protection against incorrect measurements or damage

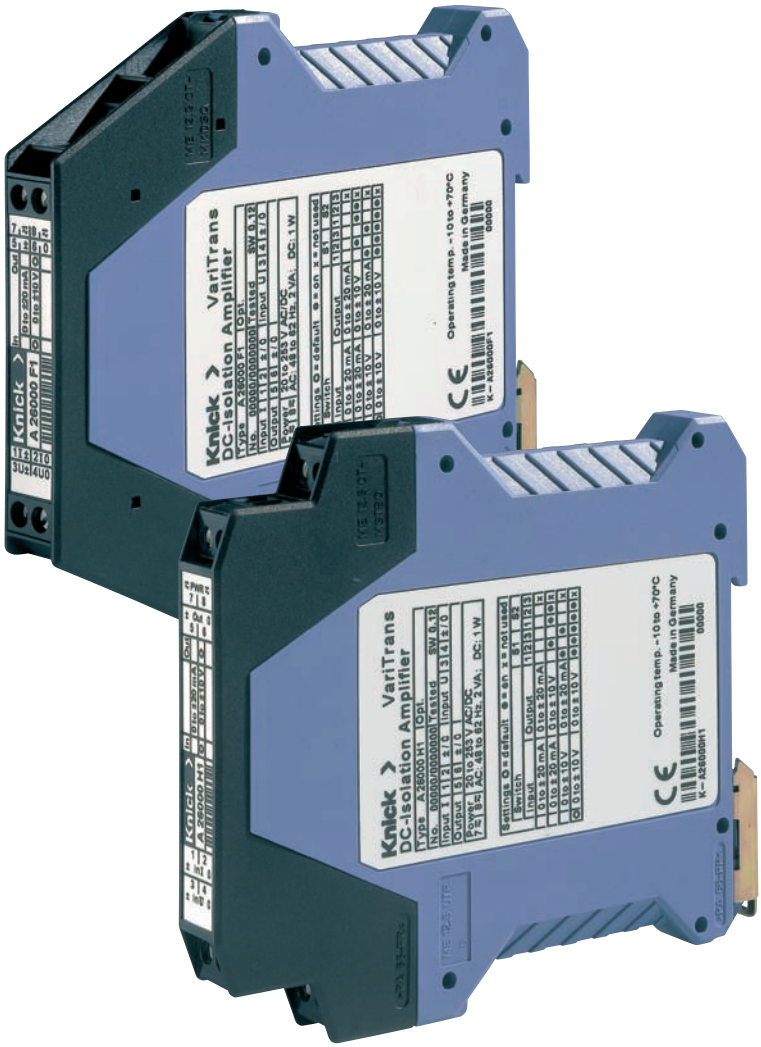
**Maximum accuracy**

**Specific test report**
following EN 10204 2.3

**Safe Isolation**
according to EN 61140 protects against unpermitted high voltages

**Maximum reliability**
No repair and failure costs

**5-year warranty**



# VariTrans® A 26000

## Product Line

| Devices | Input | Output | Order No. With pluggable screw terminal | Order No. With fixed screw terminal |
|---|---|---|---|---|
| VariTrans® A 26000<br>Input and output calibrated switchable | 0 ... ±20 mA,<br>0 ... ±10 V | 0 ... ±20 mA,<br>0 ... ±10 V | A 26000 H1 | A 26000 F1 |
| VariTrans® A 26000<br>with fixed settings | 0 ... ±20 mA<br>0 ... ±20 mA<br>0 ... ±10 V<br>0 ... ±10 V | 0 ... ±20 mA<br>0 ... ±10 V<br>0 ... ±20 mA<br>0 ... ±10 V | A 26016 H1<br>A 26018 H1<br>A 26036 H1<br>A 26038 H1 | A 26016 F1<br>A 26018 F1<br>A 26036 F1<br>A 26038 F1 |

Power supply

20 ... 253 V AC/DC

## Specifications

### Input data

| | | |
|---|---|---|
| Inputs | 0 ... ±20 mA<br>0 ... ±10 V | Terminal selectable/switchable (factory setting ±10 V)<br>or fixed settings (see Product line) |
| Input resistance | Current input<br>Voltage input | Voltage drop approx. 250 mV at 20 mA<br>Approx. 1 Mohm |
| Overload | Current input<br>Voltage input | ≤ 300 mA<br>Voltage limitation with suppressor diode 30 V,<br>max. permitted continuous current 30 mA |

### Output data

| | | |
|---|---|---|
| Outputs | 0 ... ±20 mA<br>0 ... ±10 V | Terminal selectable/switchable (factory setting ±10 V)<br>or fixed settings (see Product line) |
| Load | With output current<br>With output voltage | ≤ 10 V (500 ohms at 20 mA)<br>≤ 10 mA (1 kohm at 10 V)[1] |
| Offset | 20 µA or 10 mV | |
| Residual ripple | < 10 $mV_{rms}$ | |

### Transmission behavior

| | |
|---|---|
| Gain error | < 0.1 % meas.val. (DC) |
| Cut-off frequency | > 5 kHz, –3 dB |
| Temperature coefficient[2] | 0.0075 %/K full scale (reference temperature 23 °C) |

1) Higher output load on request
2) Average TC in specified operating temperature range –10 °C ... +70 °C

## Specifications *(continued)*

### Power supply

| | | |
|---|---|---|
| Power supply | 20 ... 253 V AC/DC | AC 48 ... 62 Hz, approx. 2 VA<br>DC approx. 0.9 W |

### Isolation

| | |
|---|---|
| Galvanic isolation | 3-port isolation between input, output, and power supply |
| Test voltage | 4 kV AC input against output against power supply |
| Working voltage (basic insulation) | 1000 V AC/DC with overvoltage category II and pollution degree 2 according to EN 61010-1.<br>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 | Safe Isolation according to EN 61140 by reinforced insulation in accordance with EN 61010-1.<br>Working voltages up to 300 V AC/DC with overvoltage category II and pollution degree 2 between input and output and power supply.<br>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 | 5 kV, 1.2/50 µs, according to IEC 255-4 |
| EMC [3] | European EMC regulations; EN 61326 |
| Approvals | CUL: File No. E 216767, Standards UL 3101-1, CSA-C 22.2-95, No. 10101-1<br>GL: No. 14593-99 HH |

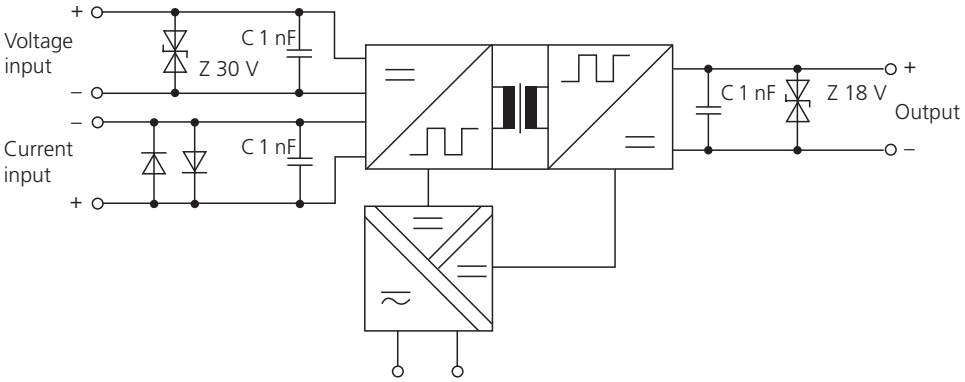
### Other data

| | |
|---|---|
| MTBF [4] | Approx. 91 years |
| Ambient temperature | Operation: –10 ... +70 °C<br>Transport and storage: –40 ... +85 °C |
| Design | Modular housing, width 12.5 mm, see dimension drawing for other measurements,<br>Pluggable screw terminals: Type H1<br>Fixed screw terminals: Type F1 |
| Ingress protection | IP 20 |
| Mounting | Metal lock for mounting on 35 mm top hat rail according to EN 50022<br>See dimension drawings for conductor cross section |
| Weight | Approx. 150 g |

3) Slight deviations are possible while there is interference
4) 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

# VariTrans® A 26000

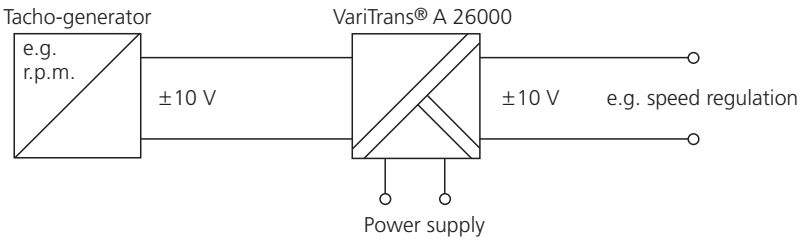
## Block Diagram




## Application Examples

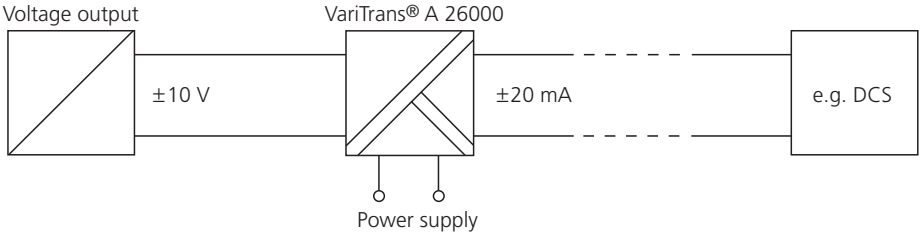
**Electrical isolation**

for safe coupling of the measurement signals to the evaluation electronics



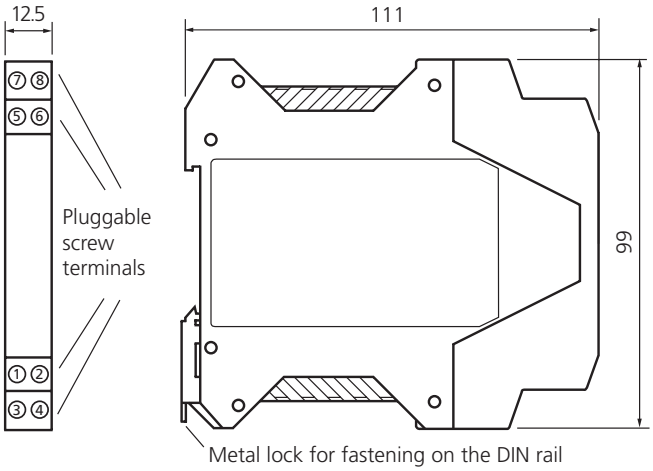

**Signal conversion**

for conversion of voltage signals into current signals, for example, for interference-free signal transmission over long distances

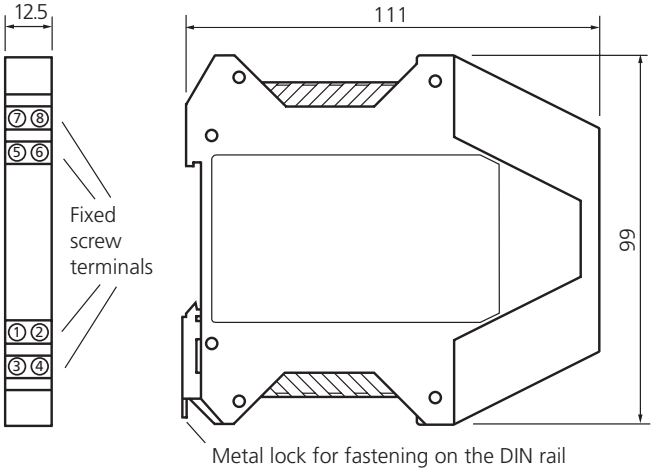


## Dimension Drawings and Terminal Assignments

### Housing with pluggable screw terminals




### Housing with fixed screw terminals




All dimensions in mm!

Terminal Assignments

| | | | |
|---|---|---|---|
| 1 | Input | + | Current |
| 2 | Input | – | Current |
| 3 | Input | + | Voltage |
| 4 | Input | – | Voltage |
| 5 | Output | + | |
| 6 | Output | – | |
| 7 | Power supply | ≈ | |
| 8 | Power supply | ≈ | |

Conductor cross-section max. 2,5 $mm^2$

Multi-wire connection max. 1 $mm^2$
(two wires with same cross-section)