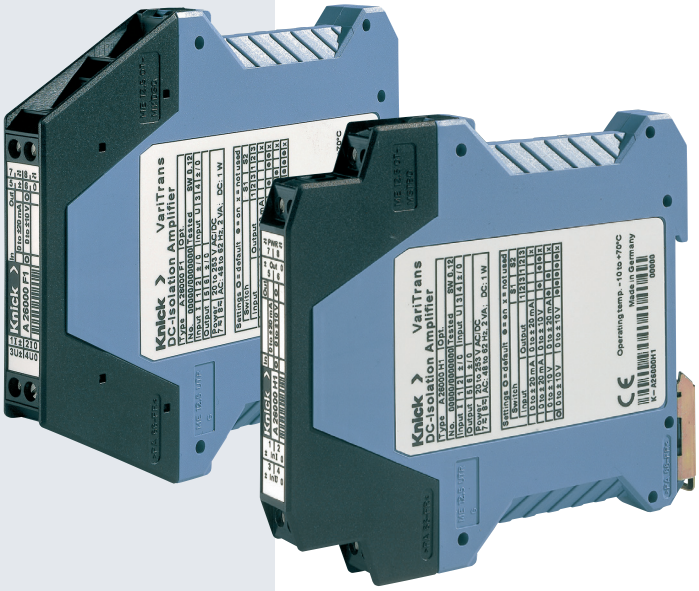
VariTrans A 26000

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 bipolar signals frequently used in industry, for example to monitor the speed with tachometer generators.

The Problems

Measuring errors occur due to potential differences when bipolar measuring signals are transmitted. In addition, the signal matching previously required calibration of the isolators.

The Solution

Knick provides a tailor-made solution. Thanks to the calibrated selection of the input and output parameters using DIP switches, the Knick VariTrans A 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 a width of just 12.5 mm, the modular housing with pluggable screw terminals allows for simple and fast assembly and pre-wiring of enclosures. Housings with fixed screw terminals are also available for extremely high mechanical loads. The easy-to-open housing allows for simple configuration of the input and output ranges and provides good protection against contact and unintentional adjustment.

The Advantages

Analog transmission of the measurement signal with transformer-based 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 with the signal transmission – due to contact resistance in the range switch, for example – is ruled out in this manner.

Thanks to the VariPower power supplies, the devices can be used internationally with virtually all supply voltages. The extremely low power consumption and the related minimal self-heating significantly increase reliability. The result: a 5-year warranty.

Knick

The Facts

– **Flexible and highly accurate**
Calibrated range selection without time-consuming adjusting

– **Broad-range power supply**
VariPower 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**
Easy-to-open housing

– **Pluggable screw terminals**
Simple, time-saving assembly and pre-wiring of enclosures

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

– **Extremely high precision**

– **Specific test report**
following EN 10204 2.3

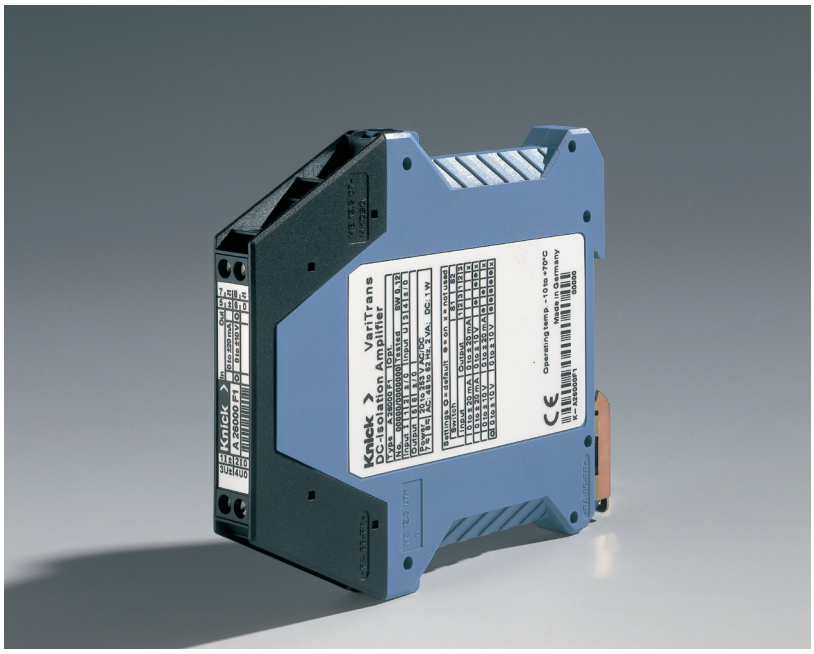
– **Protective separation**
according to EN 61140 protects against excessively high voltages

– **Maximum reliability**
No repair or failure costs

– **5-year warranty**

Warranty
5 years!

Warranty
Defects occurring within 5 years from delivery date shall be remedied free of charge at our plant (carriage and insurance paid by sender).



VariTrans A 26000

Product Line

Device	Input	Output	Order No. with pluggable screw terminal	Order No. with fixed screw terminal
VariTrans A 26000 with calibrated switching of input and output	0 … ±20 mA 0 … ±10 V	0 … ±20 mA 0 … ±10 V	**A 26000 H1**	**A 26000 F1**
VariTrans A 26000 with fixed settings	0 … ±20 mA	0 … ±20 mA	**A 26016 H1**	**A 26016 F1**
	0 … ±20 mA	0 … ±10 V	**A 26018 H1**	**A 26018 F1**
	0 … ±10 V	0 … ±20 mA	**A 26036 H1**	**A 26036 F1**
	0 … ±10 V	0 … ±10 V	**A 26038 H1**	**A 26038 F1**

Power supply

20 … 253 V AC/DC

Specifications

Input data

Inputs	0 … ±20 mA 0 … ±10 V	terminal selectable / switchable (default setting ±10 V) or fixed setting (see product line)
Input resistance	Current input Voltage input	voltage drop approx. 250 mV at 20 mA approx. 1 Mohm
Overload capacity	Current input Voltage input	≤ 300 mA Voltage limiting to 30 V by suppressor diode, max. allowable continuous current: 30 mA

Output data

Outputs	0 … ±20 mA 0 … ±10 V	terminal selectable / switchable (default setting ±10 V) or fixed setting (see product line)
Load	with output current with output voltage	≤ 10 V (500 ohms at 20 mA) ≤ 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)
Cutoff frequency	> 5 kHz, –3 dB
Temperature coefficient[2)]	0.0075 %/K full scale (reference temp. 23 °C)

Knick

Specifications *(continued)*

Power supply

Power supply	20 … 253 V AC/DC	AC 48 … 62 Hz, approx. 2 VA 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. For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.
Protection against electric shock	Protective separation according to EN 61140 by reinforced insulation according to EN 61010-1. Working voltages up to 300 V AC/DC across input and output and power supply with overvoltage category II and pollution degree 2. For applications with high working voltages, 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]	EN 61326	
Approvals	CUL:	File No. E 216767, Standards UL 3101-1, CSA-C 22.2-95, No. 10101-1
	GL:	No. 14593-99 HH

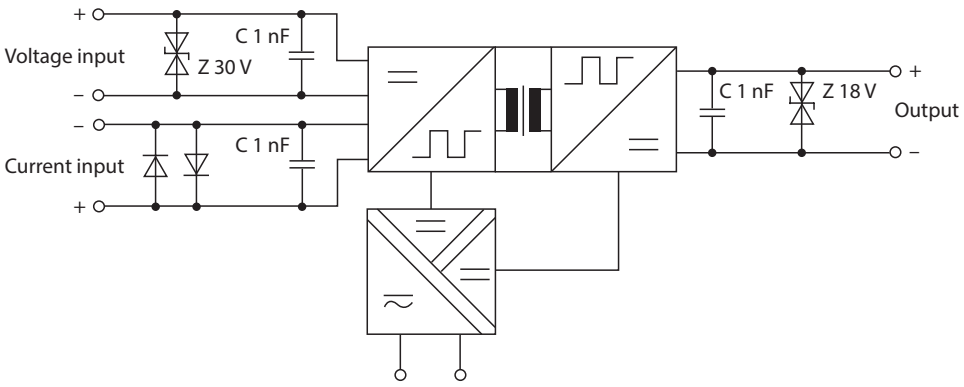
Further data

MTBF[4]	Approx. 91 years	
Ambient temperature	Operation:	-10 … +70 °C
	Transport and storage:	–40 … +85 °C
Design	Modular housing, 12.5 mm wide, see dimension drawings for further measurements, pluggable screw terminals: Type H1 fixed screw terminals: Type F1	
Ingress protection	IP 20	
Mounting	Metal interlock to attach to 35-mm mounting rail according to EN 50022. See dimension drawings for conductor cross-section	
Weight	Approx. 150 g	

[1] Higher output load upon request
[2] Average TC in the specified operating temperature range -10 °C … +70 °C
[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

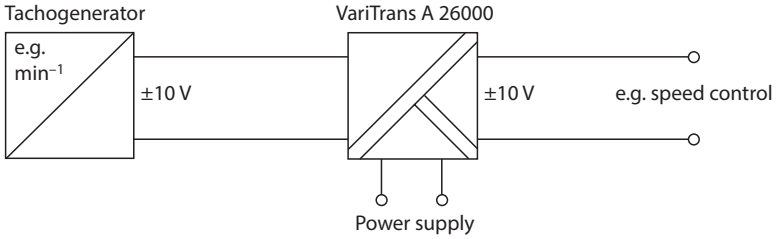
VariTrans A 26000

Block Diagram

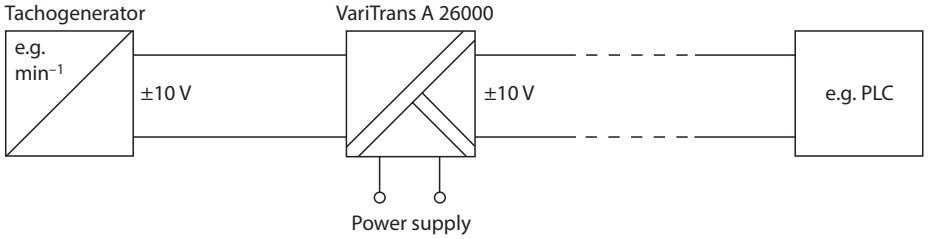


Typical Applications

Potential isolation
for safe connection of the measurement signals to the processing electronics

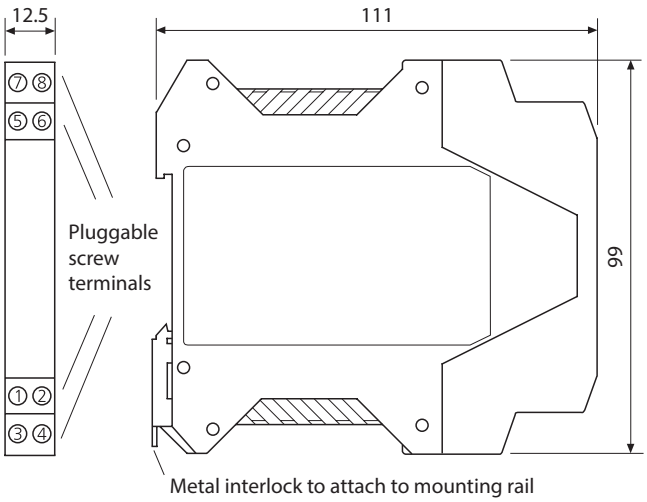


Signal conversion
to convert voltage signals into current signals, e.g. for interference-free signal transmission over long distances

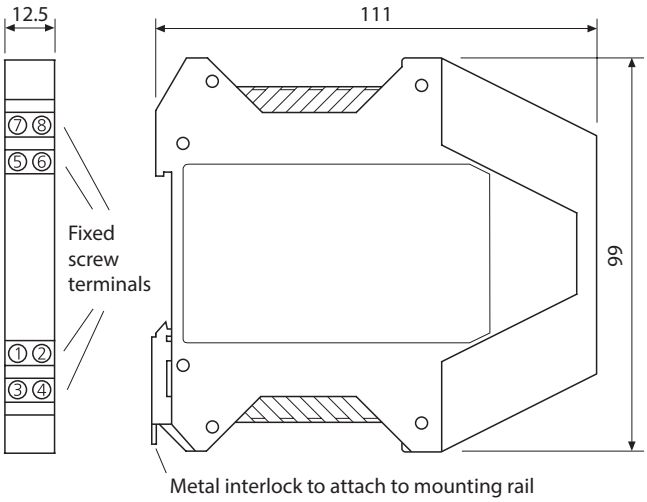


Dimension Drawings and Terminal Assignments

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 AC/DC		
8	Power supply AC/DC		

Conductor cross-section max. 2.5 mm^2

Multi-wire connection max. 1 mm^2
(two wires with equal diameters)