

Description

The digital temperature measuring transformer AD-MV 550 GVD serves the galvanic separation and transformation of resistance transmitter or thermocouples to an impressed output signal (i.e. 0-20 mA). All measuring ranges and outputs can be freely parameterized. This can be carried out via the optional control panel AD-VarioControl or via the programming software AD-Studio. Due to its current-sinking output, transmitter signals can also be galvanic separated or transformed. The wide range power pack covers all supply regions.



Specific characteristics

- Resistance thermometer inputs, types Pt/Ni 100, Pt/Ni 500, Pt/Ni 1000
- Thermocouples inputs, types J, T, K, E, N, S, R, B, C or inputs a mV/T-characteristic curve. Selectable internal or external reference junction
- A bipolar mV-Voltage input. Free linearizing curves possible.
- bipolar current or voltage output
- current sink output
- Operating module as an accessory
- 23 mm narrow housing with detachable terminal clamp

Business data

Order number

Temperature Measuring Converter AD-MV 550 GVD

Accessory (optional)

Operating module AD-VarioControl
 USB programming adapter AD-VarioPass
 Configuration software [AD-Studio](#)

Information

Downloads

Tender text [mv550gvd.zip](#)
 Operation manual VarioControl [man-variocontrol-ad-en.pdf](#)



Technical specifications

Resistance thermometer inputs Pt100, Pt500, Pt1000 to DIN EN 60751

Measuring range	-200 ... +850 °C
Connection method	2-, 3- oder 4-wire system
Accuracy	0,5 K
Smallest measuring spans	20 K
Max line resistance ¹⁾	10 Ohm/cable
Sensor supply	
Pt100	1 mA
Pt500, Pt1000	210 µA

¹⁾ With 2-conductor the line resistance comes as an offset into the measurement.

Resistance thermometer inputs Ni100, Ni500, Ni1000 to DIN EN 43760

Measuring range	-60 ... +230 °C
Connection method	2-, 3- oder 4-wire system
Accuracy	0,5 K
Smallest measuring spans	20 K
Max line resistance ¹⁾	10 Ohm/cable
Sensor supply	
Ni100	1 mA
Ni500, Ni1000	210 µA

¹⁾ With 2-conductor the line resistance comes as an offset into the measurement.

Thermocouples

Comparative place:

Internal	measurement with LM35 in the device connecting terminals
External	Cold junction temperature selectable by parameters
Measuring range type J To DIN EN 60584:	-200 ... +1200 °C
Measuring range type T	-200 ... +400 °C
Measuring range type K	-200 ... +1360 °C
Measuring range type E	-200 ... +1000 °C
Measuring range type N	-200 ... +1300 °C
Measuring range type S	-40 ... +1760 °C
Measuring range type R	-40 ... +1760 °C
Measuring range type B After standard ASTM E988:	+400 ... +1800 °C
Measuring range type C	0 ... +2320 °C
Smallest measuring spans	100 K

Voltage inputs

Measuring range	-18 ... +18 mV
	-36 ... +36 mV
	-72 ... +72 mV
	-144 ... +144 mV

Output current

Max. output range	-21,5 ... 21,5 mA DC
Max. burden	400 Ohm
Residual ripple	40 µAss

Output voltage

Max. output range	-10,5 ... 10,5 V DC
Min. burden	10 kOhm
Residual ripple	30 mVss



Technical specifications

Current sink output

Current sink 0/4 ... 20 mA DC
 Max. voltage to be applied 35 V DC

Resolution

Input 16 bit
 Output 12 bit

Transmission behaviour

Linearity error 0,2 % of full scale
 Rise time 600 ms (output auf 90 %)
 Temperature influence +/- 100 ppm/K of full scale

Supply

Voltage range AC 50 ... 253 V AC, 50/60 Hz
 Nominal voltage AC 230 V AC
 Voltage range DC 20 ... 253 V DC
 Nominal voltage DC 24 V DC
 Power consumption AC / DC 2,4 VA / 1,2 W

Housing

Dimensions (WxHxD) 23x110x134 mm
 With operating module (bxhxt) 23x110x138 mm
 Type of protection IP 20
 Connection method detachable terminal clamp
 Terminals, wire cross section 2,5 mm² flex wire / 4 mm² one wire
 Bolting torque terminals 0,5 Nm
 Weight ~ 150 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 ¹⁾ EN 61326-1
 Emitted interference EN 55011, CISPR11 Cl. B, Gr. 1
¹⁾During electromagnetic disturbance minor changes in output signal are possible.

Electrical safety requirements

Product family standard EN 61010-1
 Overvoltage category II
 Pollution degree 2

Galvanic isolation, test voltages

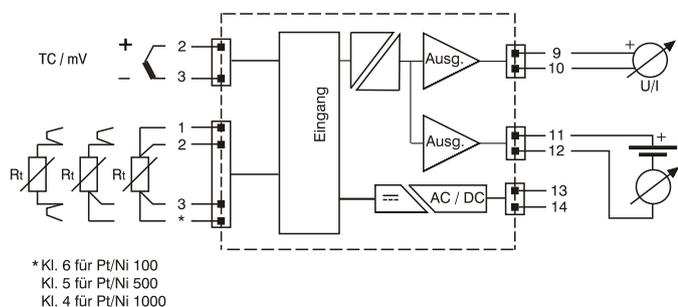
Input/output 2,5 kV (1 min)
 Signal/auxiliary voltage 4 kV (1 min)

Display and operating elements

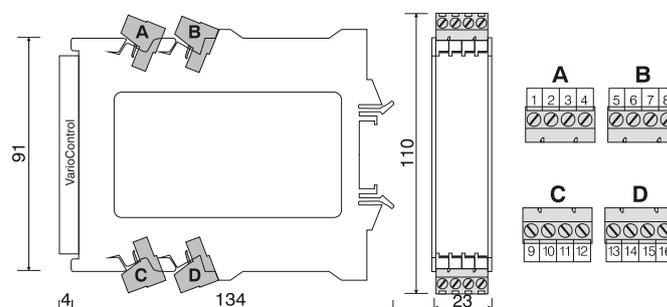


On: LED for operating display in green
 on - normal operation
 flashing (1 Hz) - Signal failure, signal outside range limits
AD-PC: Communication interface for configuration by a PC
 Communication interface for VarioControl

Block and wiring diagram



Dimensions



Modbus Communication

The optional AD-VarioConnect operating module has an RS-485 interface. The data is transferred via the Modbus RTU protocol, the AD-VarioConnect operating module represents a Modbus slave. Communication takes place according to the master-slave procedure and starts with a request from the master, e.g. from a PLC or a PC. Each bus participant must have a unique address. If a slave detects that its address has been addressed by the master, the slave always sends an answer. The slaves never communicate with each other. They are also not able to start a communication with the master.

The Modbus master can read out the individual registers of the AD-MB 550 GVD via the addresses.

The default standard data format is 19200,e,8,1 with slave address 1. These settings can be changed via the AD-VarioConnect operating module.

Start address	Number of registers	Name	Unit	Data type	read	write
Measured values:						
40801	2	Input signal	Ohm / mV	7	1	0
40803	2	Cold-junction temperature	°C	7	1	0
40805	2	Scaled input	°C / ...	7	1	0
40905	2	Output signal 2	mA	7	1	1
40907	2	Output signal 1	mA / V	7	1	0

Legend of the datatypes:

U08: 1	S08: 2	U16: 3	S16: 4	U32: 5	S32: 6	float: 7
--------	--------	--------	--------	--------	--------	----------