

Description

The 4-channel transmitter AD-MV 554 GT is a programmable measuring device for measuring resistance and millivolt signals. Thanks to the integrated function blocks and free linearization curves, the AD-MV 554 GT can be used universally, preferably for temperature measurement with temperature sensors. The measured values are accessed via appropriate registers using the Modbus RTU protocol. Device addresses from 1 to 99 can be set using the address switches accessible on the front. All parameters are set up via the RS485 interface using the "AD-Studio" PC configuration software. The interface parameters can also be set for inserting the devices into existing bus systems. The operating voltage is indicated by means of a green light-emitting diode. The data communication is signaled with a yellow light emitting diode. Invalid measuring signals outside the defined measuring range are detected. In this case the green LED flashes.

**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.
- Freely definable scaling of the quantity to be measured through stating range, decimal point position and unit from the list or defined unit.
- Zoom function, expanded scale, linearizing, inverse modus.
- Non-volatile saving of all set parameters.
- 4 measuring channels

Business data

Order number
AD-MV 554 GT

Information**Downloads****Technical specifications****Resistance thermometer inputs Pt100, Pt500, Pt1000 to DIN EN 60751**

Measuring range	-200 ... +850 °C
Connection method	2-, 3-, 4-wire system
Resolution	16 Bit
Accuracy	2 K
Smallest measuring spans	30 K
Max line resistance ¹⁾	10 Ohm / cable
Sensor supply	
For 4-wire connection	< 500 µA
For 2 - and 3-wire connection	< 250 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-, 4-wire system
Resolution	16 Bit
Accuracy	2 K
Smallest measuring spans	30 K
Max line resistance ¹⁾	10 Ohm / cable
Sensor supply	
For 4-wire connection	< 500 µA
For 2 - and 3-wire connection	< 250 µA

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

Thermocouples

Comparative place:	
Internal	Measurement at device terminals
External	Cold junction temperature selectable by parameters
Resolution	16 Bit
Accuracy	0,2 % of measuring range
Measuring range type J	-200 ... +1200 °C
To DIN EN 60584:	
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	+400 ... +1800 °C
After standard ASTM E988:	
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
Resolution	16 Bit
Accuracy	0,2 % of measuring range



Technical specifications**Transmission behaviour**

Sampling rate	1 measure / s
Temperature influence	+/- 100 ppm / K of full scale

RS485-Bus

Software protocol	Modbus-RTU
Data format	19200, e, 8, 1
Max. bus users	99
Bus termination	120 ohms both sides at the end
Max. length of bus	500 m (no spur lines)
Cable	twisted and shielded

LEDs

Green [On]	Supply (blinking on error)
Yellow [DATA]	RS485 Communication

Controls

Address switch	01 ... 99
----------------	-----------

Supply

Supply voltage	20 ... 253 V DC / 50 ... 253 V AC
Max. power consumption	0,6 W / 1,4 VA

Housing

Dimensions (WxHxD)	71 x 90 x 58 mm ³
Manner of fastening	DIN rail mounting 35mm, EN 50022
Type of protection	IP 20
Connection method	screw clamp
Bolting torque terminals	0,5 Nm
Wire cross section	max. 2,5 mm ²
Weight	ca. 30 g

Environmental conditions

Permissible ambient temperature	-10 ... +50 °C
Storage and transport	-10 ... +70 °C (no condensation)

EMC

Product family standard ²⁾	EN 61326-1
Emitted interference	EN 55011, CISPR11 Cl. B, Gr. 1

²⁾ 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

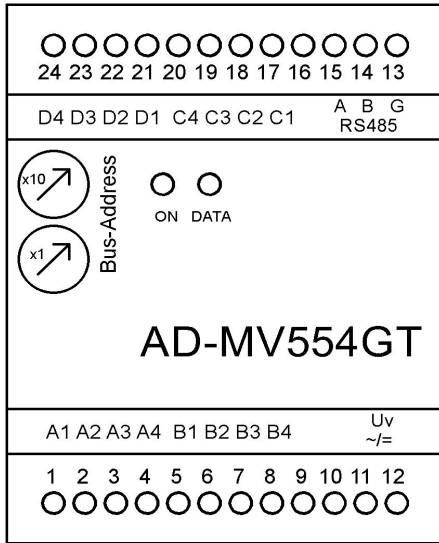
Signal / supply unit	3 kV, 50 Hz (1 min.)
Signal / RS485 bus	no galvanic isolation
Signal / Signal	no galvanic isolation

Temperature-Input-Bus-Converter

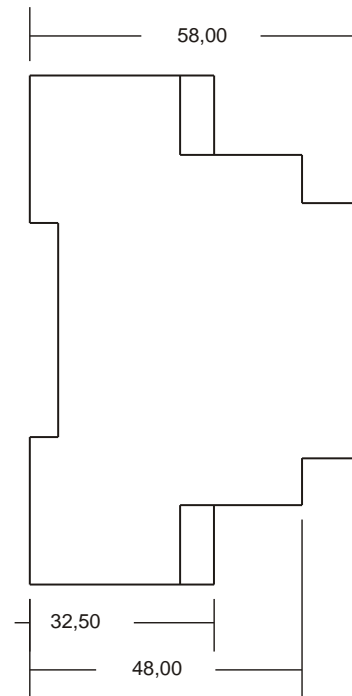
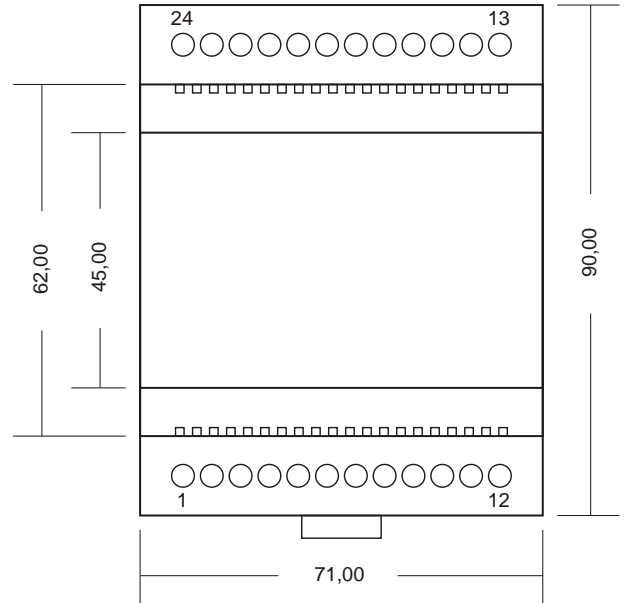
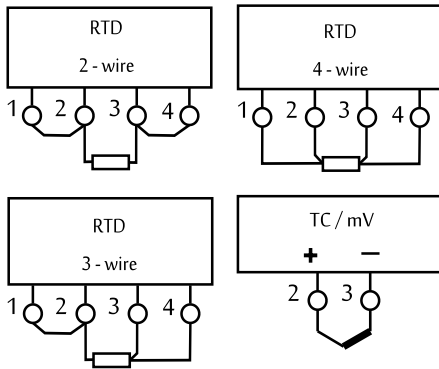
AD-MV 554 GT

Block and wiring diagram

Dimensions



Signal input A ... D



Modbus Communication

The AD-MV 554 GT has an RS485 bus interface on which the Modbus RTU protocol is used. About this bus interface all measured data of the device can be read. The preset standard data format is 19200,e,8,1. Adaptation to a different data format is possible at any time. The bus address (1...99) is set to the side-mounted rotary switches. The address 0 is not permitted for the bus operation. However, on this zero position the device only via the standard data format (19200, e, 8.1) accessible. The position 0 thus represents a service position, the example can be used during parameterization error.

The device parameters are set exclusively using ADAMCZEWSKI configuration software **AD-Studio**.

The AD-MV 554 GT supports the Modbus function **Read Holding Registers (0x03)**. With the **Read Holding Registers** function data can be read from the device. The individual register width is 16 bits. Please see the Modbus specification for detailed explanations of the Modbus communication. This is online available for free.

The following Modbus data are accessible via the RS485 bus:

Readings

MB address	Number	Channel	Name	Unit	Data type	[Code] = Value	read	write
40211	1	A	signal status A	---	U16	0 / 1 / 2 / 4	yes	no
40125	2	A	signal value A	°C / mV	float	####,#	yes	no
40231	6	A	scale unit A	°C / mV	string	unit	yes	no
40121	2	A	terminal temperature A	°C	float	##,####	yes	no
40212	1	B	signal status B	---	U16	0 / 1 / 2 / 4	yes	no
40151	2	B	signal value B	°C / mV	float	####,#	yes	no
40234	6	B	scale unit B	°C / mV	string	unit	yes	no
40147	2	B	terminal temperature B	°C	float	##,####	yes	no
40213	1	C	signal status C	---	U16	0 / 1 / 2 / 4	yes	no
40177	2	C	signal value C	°C / mV	float	####,#	yes	no
40237	6	C	scale unit C	°C / mV	string	unit	yes	no
40173	2	C	terminal temperature C	°C	float	##,####	yes	no
40214	1	D	signal status D	---	U16	0 / 1 / 2 / 4	yes	no
40203	2	D	signal value D	°C / mV	float	####,#	yes	no
40240	6	D	scale unit D	°C / mV	string	unit	yes	no
40199	2	D	terminal temperature D	°C	float	##,####	yes	no