Digital Temperature Measuring Transducer

VarioCheck® VC5

The VarioCheck AD-VC5 combines Isolation Amplifier, Temperature-Measuring-Transducer, Indicating Device, Simulator, Linearizer and Limit Switch in one unit.

- for thermocouples
- resistance thermometer
- 2 analogue outputs
- 4 limiting value relays

ADAMCZEWSKI
Elektronische Messtechnik GmbH

Freely programmable digital measuring transformer
VarioCheck® VC5

Function and applications

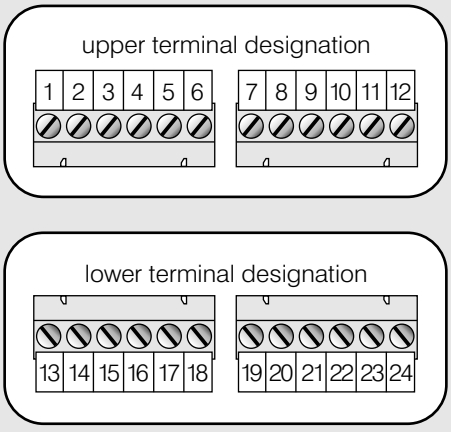
The digital multi-function measuring transformer of series VarioCheck VC 5 GVF are freely programmable digital measuring transformer with two analogue outputs and up to 4 limiting value relays. Extensive standard equipment and additional options solve almost all imaginable tasks of a modern evaluation. The input of all characteristics is carried out directly at the device or, alternatively, via the configuration software „VarioConfig“.

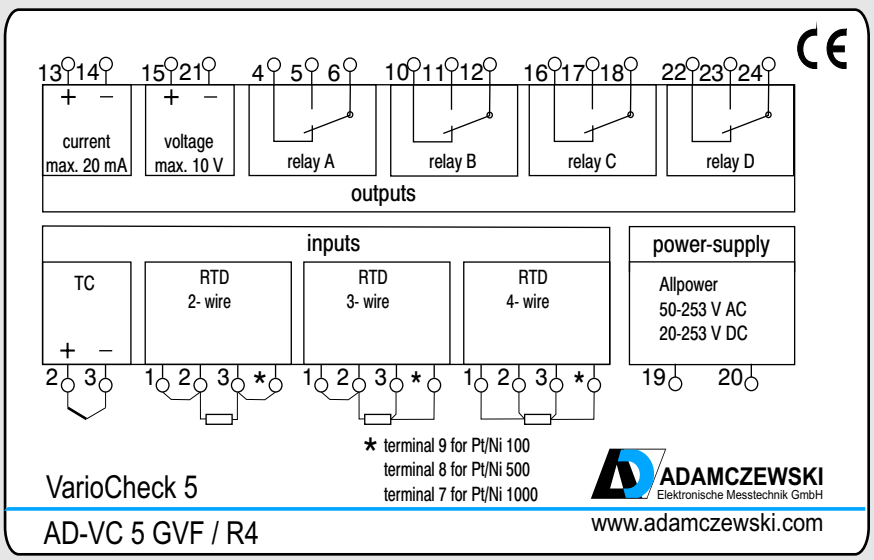
VarioCheck fulfils all tasks of a universal and secure measuring value recording through integral function modules such as limiting value messages, freely adjustable hysteresis, selectable relay functions, time-delayed switching, automatic or manual simulation modus, free linearizing curves and a wide range of supply voltage.

Features

- Thermocouples inputs, types J, T, K, E, N, S, R, B
- Resistance thermometer inputs, types Pt/Ni 100, Pt/Ni 500, Pt/Ni 1000
- mV - Voltage input
- Internal and external reference junction
- Current and voltage output, differently scalable and can be utilised simultaneously
- Galvanic 3-circuit separation of input, output and supply
- Error message with missing or defective sensor at measuring range 4-20 mA
- LCD for display of different operating modes, lit in several colours (R/Y/B)
- Display backlight detachable, display contrast adjustable
- 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
- Automatic or manual simulation operation
- Monitoring of the measuring signal with up to 4 freely adjustable limiting values
- Slave pointer function (saving min. and max. value)
- Locking the parameterizing via edit lock
- Non-volatile saving of all set parameter
- Menu languages switchable to: German, English, French
- Pluggable and codable terminal strips

connecting diagram:
AD-VC 5 GVF R4





Special functions of the multi-measuring transducer VarioCheck® VC5

For instance: ...the simulation mode
In simulation mode, the VC 3 GVF offers the possibility to specify the scaled value manually. This possibility is, for instance, an important aid during commissioning, if no measuring values, or not the required measuring values, from the process exist yet. All other device functions, such as limiting value editing and analogue output, continue to function without limitation, as if the scaled value is derived from the measuring value. This characteristic can also be utilised, for instance, to specify the nominal value on the analogue output.

For instance: ...the linearizing of characteristics
A free table with 24 x/y value pairs is available for characteristics linearizing. During this, it is very helpful that the Y-values are entered already in scaled values. The characteristics data for a horizontal cylinder and a ball container are already completely entered and have only to be activated.

For instance: ...the diversity of the limiting value functions
The limiting value functions can be set separately for each individual relay. Whether hysteresis function or window function, time delays can also be defined singly for each operating mode. Also, the mode of action of the relays can be adapted to the application.

For instance: ...the user-friendly operation
The device is equipped with three short-stroke keys at the front for operating, for display of the measuring value and the parameter in a graphic display with clout background lighting and a communication interface for configuration via a PC. The menu language can be defined directly in the device, the colour of the display immediately indicates the operating mode or errors and with the PC-interface, the documentation of the complete configuration is ensured.

For instance: ...the functional housing
With a width of only 33 mm and the proven clip foot, the device can be easily mounted. And with the standard clamps, which can be pulled off, it can be clamped on without problems. The clear hood protects the device against contamination and uncontrolled reconfigurations of the operating indicator.

Specification
VarioCheck® VC5

Resistance thermometer

Pt 100, 500, 1000 (EN 60751)	-200 .. +850 °C
Ni 100, 500, 1000 (EN 43760)	-60 .. +230 °C
Connection method	2-, 3-, und 4-wire
Resolution/Accuracy	16 bit / 0,5°K

thermocouples

J, T, K, E, N, S, R, B (EN 60584)	
Reference junction	internal / external
Resolution/Accuracy	16 bit / 0,2%

Voltage input 18 mV

Measuring range	-18 .. +18 mV
Resolution/Accuracy	16 bit / 1 µV
Input resistance	> 1 MOhm

Voltage input 36 mV

Measuring range	-36 .. +36 mV
Resolution/Accuracy	16 bit / 1 µV
Input resistance	> 1 MOhm

Voltage input 72 mV

Measuring range	-72 .. +72 mV
Resolution/Accuracy	16 bit / 2,5 µV
Input resistance	> 1 MOhm

Voltage input 144 mV

Measuring range	-144 .. +144 mV
Resolution/Accuracy	16 bit / 5 µV
Input resistance	> 1 MOhm

Current output

Output range	0...20,4 mA
Resolution/Accuracy	10 Bit / ca. 20 µA
Maximum burden	500 Ohm
Residual ripple	20 µAss

Voltage output 10V

Output range	0 – 10,2 V
Resolution/Accuracy	10 bit / ca. 10 mV
Maximum burden	5 kOhm
Residual ripple	10 mVss

Relay outputs A...D

Version	up to 4 change-over contacts
Max. switching voltage AC/DC	250 V AC / 50 V DC
Max. switching current AC/DC	2 A AC / 2 A DC

Transient response

Rise time	100 ms (output to 90% with input of 0-20mA)
Linearity error	<0,2 % of end value
Temperature influence	+/- 100 ppm/K of end value

Supply

supply voltage	20..253V DC and 50..253V AC
Max. power consumption at 24V DC / 230V AC	2,6 W / 5 VA

Housing

Manner of fastening	DIN rail 35mm, EN 50022
Type of protection	IP20
Clamp cross section	max. 2,5 mm²
Weight	ca. 200 g

Environmental conditions

Admissible ambient temperature	-10..60 °C
Storage and transport	-10..70 °C

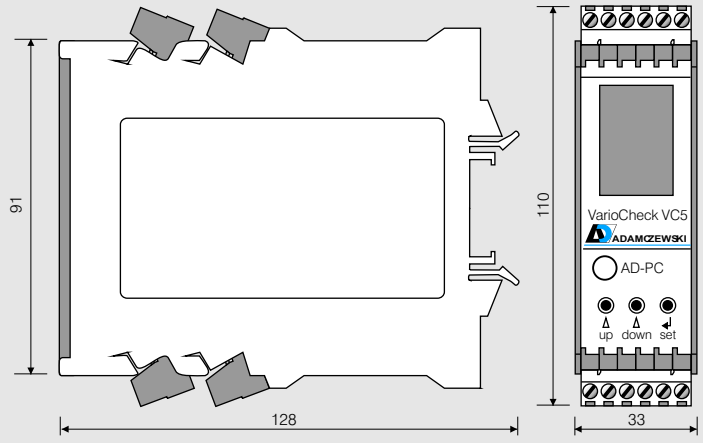
EMC	EN 61326
Discharge static electricity, ESD	IEC 61000-4-2
Electromagnetic fields [1]	IEC 61000-4-3
Quick transients, burst	IEC 61000-4-4
Impulse voltage, surge	IEC 61000-4-5
Route controlled HF-signals	IEC 61000-4-6
Error transmission	EN55011, CISPR11 class B, living area

[1] During checking, slight signal deviations are possible

Galvanic separation, test voltages

Input to output	2,5 kV, 1 min
Input/output to auxiliary voltages	4 kV, 1 min

Dimensions AD-VC5 GVF



Type key:

Type of device	Charateristics
AD-VC5 GVF R0	- resistance thermometer - thermocouples - mV-voltage input - current output - voltage output - LCD display
AD-VC5 GVF R2	as AD-VC5 GVF R0, however 2 relay outputs
AD-VC5 GVF R4	as AD-VC5 GVF R0, however 4 relay outputs

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