

# Multifunction Transducer Temperature Measuring Converter

## AD-VC 5

### Description

The digital temperature measuring converter of series VarioCheck VC5B are freely programmable digital measuring transducer with two analogue outputs and up to 4 limiting value relays. The input of all characteristics directly on the device, or use the configuration software „AD-Studio“.

VarioCheck fulfils all tasks of a universal measuring value recording through integral function modules such as selectable relay functions, simulation modus, free linearizing curves and a wide range of supply voltage.



### 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.
- Current- and voltage input different scaleable and simultaneously useful. Must not connect the clamps 8 and 9.
- Galvanic 3-circuit separation of input, output and supply.
- LCD for display of different operating modes, lit in several colours (R/Y/B).
- 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.
- Monitoring of the measuring signal with up to 4 freely adjustable limiting values.
- Monitoring functions such as limiting values, window function or signal trend each with relay.
- Non-volatile saving of all set parameters.

### Business data

#### Order number

|               |               |
|---------------|---------------|
| AD-VC5 GVF R0 | without relay |
| AD-VC5 GVF R2 | two relays    |
| AD-VC5 GVF R4 | four relays   |

### 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 |
| Resolution                        | 16 Bit                    |
| Accuracy                          | 0,5 K                     |
| Smallest measuring spans          | 20 K                      |
| Max line resistance <sup>1)</sup> | 10 Ohm/cable              |
| Sensor supply                     |                           |
| Pt100                             | 1 mA                      |
| Pt500, Pt1000                     | 210 µA                    |

<sup>1)</sup> 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 |
| Resolution                        | 16 Bit                    |
| Accuracy                          | 0,5 K                     |
| Smallest measuring spans          | 20 K                      |
| Max line resistance <sup>1)</sup> | 10 Ohm/cable              |
| Sensor supply                     |                           |
| Ni100                             | 1 mA                      |
| Ni500, Ni1000                     | 210 µA                    |

<sup>1)</sup> 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                                   | Comparative place temperature about parametre eligible   |
| Resolution                                 | 16 Bit   |
| Accuracy                                   | 0,2 % of measuring range                                 |
| Measuring range type J<br>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                     | +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 |



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Page 1/2

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### Technical specifications

#### Current output 20 mA

|                 |               |
|-----------------|---------------|
| Output range    | 0 ... 20,4 mA |
| Resolution      | 10 Bit        |
| Accuracy        | 20 µA         |
| Max. burden     | 500 Ohm       |
| Residual ripple | 20 µAss       |

#### Voltage output 10 V

|                 |              |
|-----------------|--------------|
| Output range    | 0 ... 10,2 V |
| Resolution      | 10 Bit       |
| Accuracy        | 10 mV        |
| Min. burden     | 5 kOhm       |
| Residual ripple | 10 mVss      |

If current output and voltage output are used at the same time, both circles may not be connected.

#### Relay outputs A..D

|                          |             |
|--------------------------|-------------|
| Max switching voltage    | AC 250 V AC |
| Max switching current AC | 2 A AC      |
| Max switching voltage    | DC 50 V DC  |
| Max switching current DC | 2 A DC      |

#### Display

|                  |   |
|------------------|---|
| Graphic-LCD      | 42x64 Pixel, background RGB lights  |
| Digital display  | 4-digit, can be configured  |
| Display function | scaled input signal, input signal, output, limits, scaled dimension as quasi analogue bar, scaling unit |

#### Transmission behaviour

|                       |                            |
|-----------------------|----------------------------|
| Sampling rate         | 1 measure/s                |
| Linearity error       | 0,2 % of full scale        |
| Temperature influence | +/-100 ppm/K of full scale |

### Supply

|                                  |                                    |
|----------------------------------|------------------------------------|
| Supply voltage                   | 50 ... 253 V AC<br>20 ... 253 V DC |
| Max power consumption at 24V DC  | 2,6 W                              |
| Max power consumption at 230V AC | 5 VA                               |

### Housing

|                     |                                      |
|---------------------|--------------------------------------|
| Dimension           | BxHxT 33x110x128 mm                  |
| Manner of fastening | DIN rail mounting 35mm, EN 50022     |
| Type of protection  | IP 20                                |
| Connection method   | detachable terminal clamp, 5 mm grid |
| Wire cross section  | max. 2,5 mm <sup>2</sup>             |
| Weight              | ca. 200 g                            |

### Environmental conditions

|                                 |                            |
|---------------------------------|----------------------------|
| Permissible ambient temperature | -10 ... +60 °C             |
| Storage and transport           | -10 ... 70 °C (no thawing) |

### EMC

|                                       |                         |
|---------------------------------------|-------------------------|
| Product family standard <sup>1)</sup> | EN 61326                |
| Emitted interference                  | EN 55011, CISPR11 Cl. B |

<sup>1)</sup> during checking, slight signal deviations are possible.

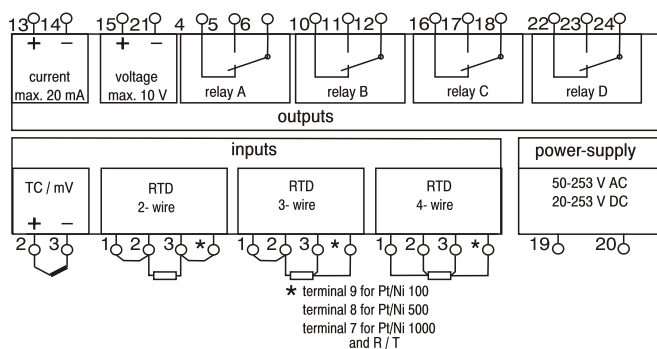
### Electrical safety requirements

|                         |            |
|-------------------------|------------|
| Product family standard | EN 61010-1 |
|-------------------------|------------|

### Galvanic isolation, test voltages

|                                    |                       |
|------------------------------------|-----------------------|
| Input to output                    | 2,5 kV, 1min          |
| Input/output to auxiliary voltages | 4 kV, 1min            |
| Outputs together                   | no galvanic isolation |
| Input to the programming interface | no galvanic isolation |

### Block and wiring diagram



### Dimensions

