

# Temperature controllers

LED temperature controllers

For temperature sensors with limit value (AC+DC)

Codix 564

new



The temperature controller Codix 564 displays temperature values in high resolution. In addition it can monitor and control 2 limit values. All current temperature sensors, such as thermocouple types B, E, J, K, N, R, S and T, as well as mV inputs, Pt100 and resistance inputs, can be connected to the device.

These fast displays set new standards when it comes to user friendliness. Their easy-to-read 14-segment LED display, easy-to-understand running help texts and a practical quick-start guide eliminate the need to wade through time-consuming full instruction manuals.

**NEW: with optional analogue output**

|                                        |                                       |                                       |                                        |                                          |                          |                                             |                                               |                            |                                    |                             |
|----------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|------------------------------------------|--------------------------|---------------------------------------------|-----------------------------------------------|----------------------------|------------------------------------|-----------------------------|
| <b>DC</b><br>10 ... 30 V               | <b>AC</b><br>90 ... 260 V             | <b>A..Z*</b><br>6 LEDs                | <b>Prog</b><br>Menu-driven programming | <b>mV, Ω</b><br>Display linearization    | <b>Temperature input</b> | <b>2, 3, 4</b><br>2-, 3-, 4-wire technology | <b>min / max</b><br>Min / Max value detection | <b>2</b><br>2 limit values | <b>AC/DC</b><br>Galvanic isolation | <b>15 bit</b><br>Resolution |
| <b>Power supply</b>                    |                                       | <b>14-segment LED display</b>         |                                        |                                          |                          |                                             |                                               |                            |                                    |                             |
| <b>-20° + 65°</b><br>Temperature range | <b>DIN 96 x 48</b><br>DIN front bezel | <b>Installation in mosaic systems</b> | <b>Operation with gloves</b>           | <b>mA, V</b><br>Analogue output optional |                          |                                             |                                               |                            |                                    |                             |

## User-friendly

- Practical quick-start guide for setting the parameters and operating the device
- Help text as running text
- Easy-to-read 14-segment LED, 6-digit display, 14 mm high
- Simple programming via 4 keys on the front
- One front key as well as 2 additional inputs can be programmed for specific applications
- Characteristic curves for thermocouples and RTD permanently stored
- MIN/MAX memory function, individually resettable

## Powerful

- Sampling rate of 10 readings per second
- Customised linearization via 12 control points
- 2 relay outputs (changeover contacts) for limit monitoring with hysteresis and ON/OFF delay function
- Analogue output for the current measured value, MIN-value, MAX-value
- Auxiliary sensor power supply with AC version
- Inputs and outputs galvanically isolated
- Digital filter (first-order) for smoothing display fluctuations with unstable input signals

## Order code

6.564.010.X0X

- a** Input type  
4 = Temperature signal input <sup>1)</sup>
- b** Outputs  
0 = relays <sup>1)</sup>
- c** Power supply  
0 = 90 ... 260 V AC <sup>1)</sup>  
3 = 10 ... 30 V DC <sup>1)</sup>
- d** Further outputs (optional)  
0 = none <sup>1)</sup>  
9 = analogue output <sup>1)</sup>  
(only for DC version)

**Delivery specification:**

- Process device
- Mounting clip
- Gasket
- Instruction manual, multilingual
- 1 sheet of self-adhesive symbols
- Quick-start guide

<sup>1)</sup> Stock types

Practical quick-start guide for setting the parameters and operating the device. The guide can be affixed directly to the front of the unit and can be removed and re-applied as required.



## Accessories

### Mounting frame with cut-out 92 x 45 mm

for snap-on mounting on 35 mm top-hat DIN rail,  
for counters 96 x 48 mm

grey

Order-No.

**G300005**

Suitable gaskets as well as further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).

# Temperature controllers

|                                    |                                                         |                  |
|------------------------------------|---------------------------------------------------------|------------------|
| <b>LED temperature controllers</b> | <b>For temperature sensors with limit value (AC+DC)</b> | <b>Codix 564</b> |
|------------------------------------|---------------------------------------------------------|------------------|

| General technical data             |                                                |
|------------------------------------|------------------------------------------------|
| Display                            | 6-digit, 14 segment LED                        |
| Digit height                       | 14 mm                                          |
| Display range                      | -199999 ... 999999, with leading zero blanking |
| Data retention                     | > 10 years, EEPROM                             |
| Operation                          | 5 keys                                         |
| Operating temperature              | -20°C ... +65°C (non-condensing)               |
| Storage temperature                | -25°C ... +75°C                                |
| Relative humidity (non-condensing) | R.H. 93 % at +40°C                             |
| Altitude                           | up to 2000 m                                   |

| Electrical characteristics           |                                                                                                                             |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Power supply                         | AC supply 90 ... 260 V AC / max. 9 VA 50 / 60 Hz ext. fuse protection: T 0.1 A                                              |
|                                      | DC supply 10 ... 30 V DC / max. 3.8 W with galvanic isolation and reverse polarity protection ext. fuse protection: T 0.4 A |
| Mains hum suppression (programmable) | 50 Hz or 60 Hz                                                                                                              |
| Sensor power supply                  | AC supply 24 V DC $\pm$ 15 %, 30 mA                                                                                         |
| EMC                                  | Emitted interference EN 55011 class B                                                                                       |
|                                      | Immunity to interference EN 61000-6-2 with shielded signal and control cables                                               |
| Device safety                        | Designed to EN 61010 part 1                                                                                                 |
|                                      | Protection class 2                                                                                                          |
|                                      | Application area Pollution level 2                                                                                          |

| Mechanical characteristics |                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------|
| Housing                    | Panel mount housing to DIN 43700 RAL 7021                                           |
| Dimensions                 | 96 x 48 x 102 mm                                                                    |
| Panel cut-out              | 92 + 0.8 x 45 + 0.6 mm                                                              |
| Installation depth         | approx. 92 mm incl. terminals                                                       |
| Weight                     | approx. 180 g<br>200 g with analogue output                                         |
| Protection                 | IP65 (front side)                                                                   |
| Housing material           | Polycarbonate UL94 V-2                                                              |
| Vibration resistance       | acc. to EN 60068-2-6 10 - 55 Hz / 1 mm / XYZ 30 min in each direction               |
| Shock resistance           | acc. to EN 60068-2-27 100G / XYZ 3 times in each direction                          |
|                            | acc. to EN 60068-2-29 10G / 6 ms / XYZ 2000 times in each direction                 |
| <b>Connections</b>         |                                                                                     |
| Power supply and outputs   | Plug-in screw terminal, 8-pin, RM 5.00, core cross-section max. 2.5 mm <sup>2</sup> |
| Signal and control inputs  | Plug-in screw terminal, 9-pin, RM 3.50, core cross-section max. 1.5 mm <sup>2</sup> |

| Alarm outputs      |                                                  |
|--------------------|--------------------------------------------------|
| Relays             | changeover contacts                              |
| Switching voltage  | max. 250 V AC / 125 V DC<br>min. 5 V AC / 5 V DC |
| Switching current  | max. 5 A AC / 5 A DC<br>min. 10 mA DC            |
| Switching capacity | max. 1250 VA / 150 W                             |
| Pull-in time       | approx. 10 ms                                    |

| Measuring signal inputs                 |                                                                                       |
|-----------------------------------------|---------------------------------------------------------------------------------------|
| Sampling rate                           | 10 readings/sec                                                                       |
| Temperature drift                       | < 100 ppm/K                                                                           |
| <b>Input Thermocouple</b>               |                                                                                       |
| thermocouple:                           | range: accuracy at 23°C:                                                              |
| type B                                  | +250°C ... 1820°C typ. 1.0°C, max. 2.0°C                                              |
| E                                       | -200°C ... 1000°C typ. 0.2°C, max. 0.5°C                                              |
| J                                       | -210°C ... 1200°C typ. 0.2°C, max. 0.5°C                                              |
| K                                       | -200°C ... 499.9°C typ. 0.6°C, max. 1.0°C<br>-500°C ... 1372°C typ. 0.3°C, max. 0.5°C |
| N                                       | -200°C ... 1300°C typ. 0.3°C, max. 0.7°C                                              |
| R                                       | -50°C ... 1768°C typ. 1.0°C, max. 2.0°C                                               |
| S                                       | -50°C ... 1768°C typ. 1.0°C, max. 2.0°C                                               |
| T                                       | -200°C ... 400°C typ. 0.2°C, max. 0.5°C                                               |
| Resolution J, K, T, E, N                | 1 or 0.1°C/°F                                                                         |
| Resolution S, R, B                      | 1°C/°F                                                                                |
| Reference point                         | internal or external constant                                                         |
| Reference point accuracy                | $\leq \pm 1^\circ\text{C}$                                                            |
| <b>Input mV</b>                         |                                                                                       |
| Measuring range                         | $\pm 105$ mV (resolution $\pm 15$ bit)                                                |
| Measuring accuracy at 23°C (% of range) | typ. 0.02 / max. $\leq 0.05$                                                          |
| Input resistance                        | > 2 M $\Omega$                                                                        |
| <b>Input Pt100</b>                      |                                                                                       |
| Measuring range                         | -200°C ... +850°C                                                                     |
| Resolution                              | 1 or 0.1°C / °F                                                                       |
| Measuring accuracy at 23°C              | typ. 0.3°C, max. $\leq 0.6^\circ\text{C}$                                             |
| Measuring current                       | 200 $\mu\text{A}$                                                                     |
| Connection                              | 2-, 3-, 4-wire                                                                        |
| Lead wire resistance                    | max. 25 $\Omega$ per wire                                                             |
| <b>Input 500 <math>\Omega</math></b>    |                                                                                       |
| Measuring range                         | 0 ... 525 $\Omega$ (resolution $\pm 15$ bit)                                          |
| Measuring accuracy at 23°C              | typ. 0.1 $\Omega$ , max. $\leq 0.2$ $\Omega$                                          |
| Measuring current                       | 200 $\mu\text{A}$                                                                     |
| Connection                              | 2-, 3-, 4-wire                                                                        |
| Lead wire resistance                    | max. 25 $\Omega$ per wire                                                             |

| Control inputs MPI 1 / MPI 2 |                                     |
|------------------------------|-------------------------------------|
| Quantity                     | 2 optocouplers                      |
| Function                     | programmable                        |
| Switching levels             | LOW < 2 V<br>HIGH > 4 V (max. 30 V) |
| Pulse length                 | > 100 ms                            |

| Analogue output (optional - only for DC version) |                                                                           |
|--------------------------------------------------|---------------------------------------------------------------------------|
| Output ranges                                    | 0 (4) ... 20 mA / 0 (2) ... 10 V                                          |
| Load                                             | current output $\leq 500$ $\Omega$<br>voltage output $\geq 2000$ $\Omega$ |
| Resolution                                       | 15 bit                                                                    |
| Update time (basic device measuring rate)        | 100 ms                                                                    |
| Temperature drift                                | $\leq 100$ ppm/K                                                          |
| Accuracy                                         | $\pm 0.1\%$ of the output range<br>high value                             |
| Output ripple                                    | $\leq 10$ mV                                                              |
| Isolation voltage                                | 500 V AC for 1 minute or<br>1 kV DC for 1 second                          |

# Temperature controllers

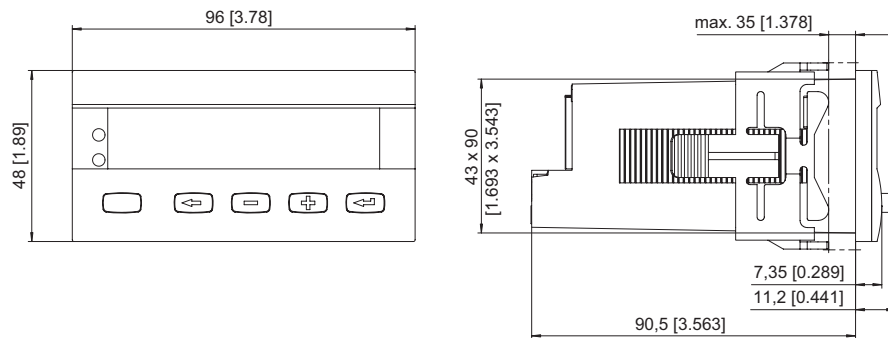
## LED temperature controllers

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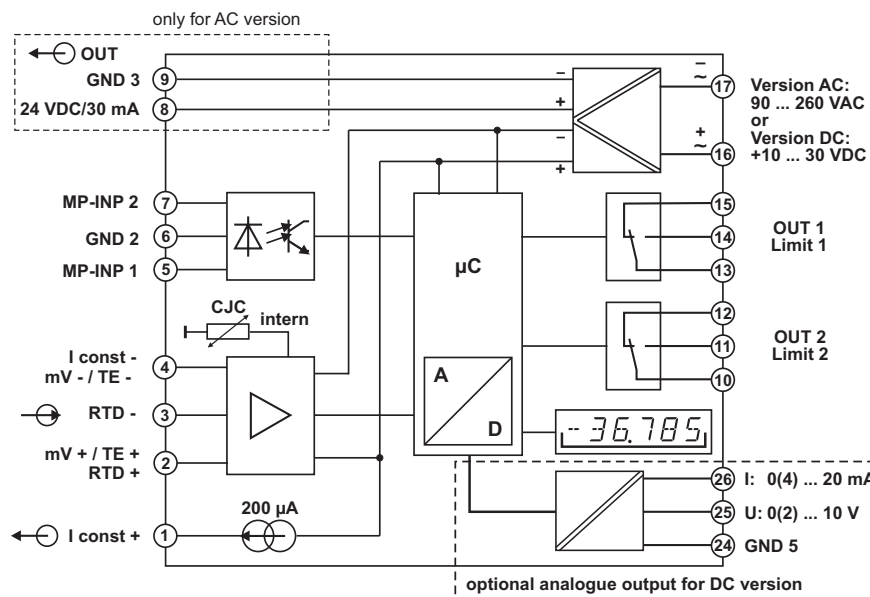
## Codix 564

### Dimensions

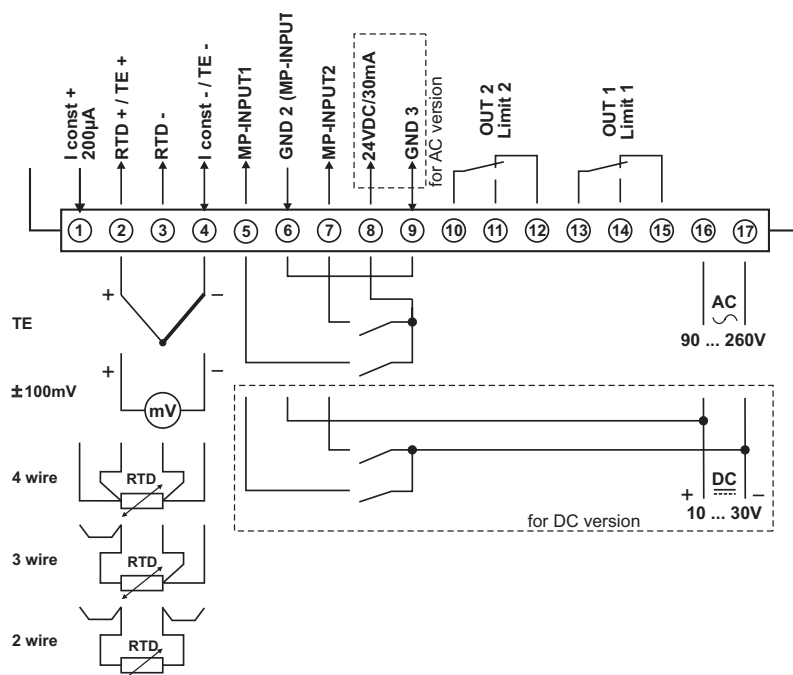
Panel cut-out  
92 mm <sup>+0.8</sup> x 45 mm <sup>+0.6</sup>



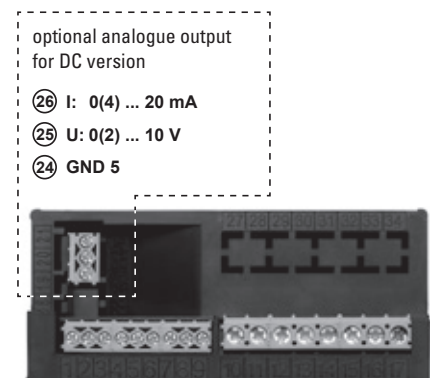
### Block diagram



### Terminal assignment



### Rear side view



Dimensions in mm [inch]