



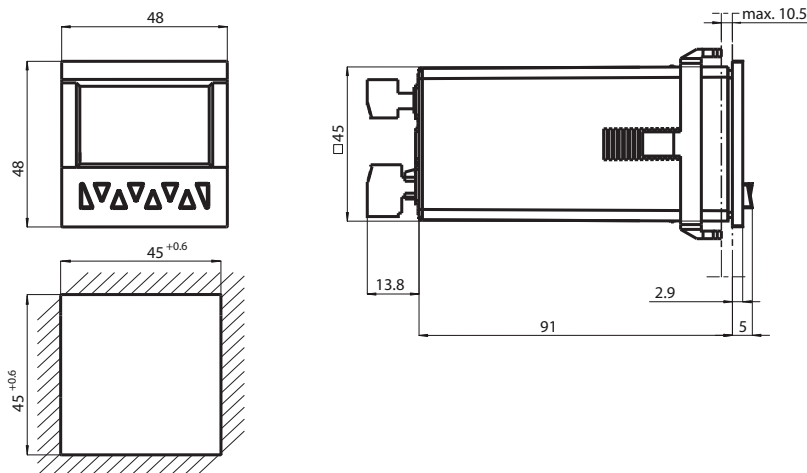
## Timer, Counter, Tachometer KC-LCDC-48-2R-24VDC

- Counter/Timer/Tachometer
- Adding/subtracting via 2 separate inputs
- Batch controller with 2 pre-selections
- Easy-to-read backlit 2-line LCD display with icons for the displayed preselection and the status of both outputs
- Multicolor display
- Display range and preselection range from -999999 up to 999999  
Overflow will be evaluated correctly up to 1 decade
- PNP and NPN sensors can be connected
- Degree of protection IP65 (front only)

LCD batch controller with 2 relay outputs and 24 VDC supply voltage



### Dimensions



### Technical Data

#### General specifications

|               |                    |
|---------------|--------------------|
| Pre-selection | 2-fold             |
| Data storage  | > 10 years, EEPROM |
| Programming   | keypad-driven menu |

#### Indicators/operating means

|               |                                                                         |
|---------------|-------------------------------------------------------------------------|
| Type          | 2-line, 2 x 6-digit LC display with leading sign<br>Multicolor, backlit |
| Display value | digit height 9 mm                                                       |
| Pre-selection | digit height 7 mm                                                       |
| Key interlock | via "high" potential at "LOCK" input                                    |
| Decimal point | 0 to max 5 fractional digits                                            |
| Scale factor  | 0.0001 ... 99.9999                                                      |
| Reset         | manually or external                                                    |

#### Electrical specifications

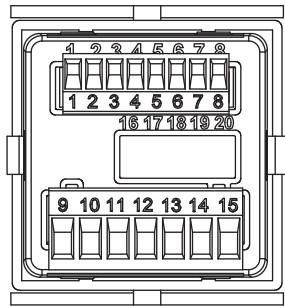
|                   |                               |
|-------------------|-------------------------------|
| Fusing            | 10 ... 30 V DC: T 0.2 A       |
| Operating voltage | U <sub>B</sub> 10 ... 30 V DC |
| Power consumption | P <sub>0</sub> max. 1.5 W     |

## Technical Data

|                                                 |  |                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Input</b>                                    |  |                                                                                                                                                                                                                                                                                                     |
| Connection                                      |  | Counter inputs: A and B<br>Control/reset inputs: LOCK, RESET, GATE, MPI                                                                                                                                                                                                                             |
| Signal voltage                                  |  |                                                                                                                                                                                                                                                                                                     |
| High                                            |  | $0.6 \times U_e \dots 30 \text{ V DC}$                                                                                                                                                                                                                                                              |
| Low                                             |  | $0 \dots 0.2 \times U_e$                                                                                                                                                                                                                                                                            |
| Counting frequency                              |  | 30 Hz / 55 kHz                                                                                                                                                                                                                                                                                      |
| Minimum pulse duration                          |  | Control/reset inputs: 10 ms / 1 ms                                                                                                                                                                                                                                                                  |
| Impedance                                       |  | 5 kOhm                                                                                                                                                                                                                                                                                              |
| Count modes                                     |  |                                                                                                                                                                                                                                                                                                     |
| Pulse counter                                   |  | Counting with counting direction (cnt.dir),<br>difference counting (up.dn),<br>up/down counting (quad),<br>Cumulative counting (up.up),<br>up/down counting x 2 (quad 2),<br>up/down counting x 4 (quad 4),<br>additional functions for counter input A and counter input B:<br>A/B, (A-B)/A x 100% |
| Frequency counter                               |  | functions for input A and input B:<br>A, A-B, A+B quad, A/B, (A-B)/A x 100 %                                                                                                                                                                                                                        |
| Timer                                           |  | Time measurement via GATE input (FrErun),<br>counter input A: Start, counter input B: Stop (InpA.InpB.),<br>counter input B: Start/Stop (InpB.InpB.),<br>time measuring via RESET input (auto)                                                                                                      |
| <b>Output</b>                                   |  |                                                                                                                                                                                                                                                                                                     |
| Relay                                           |  | changeover contact , Make contact                                                                                                                                                                                                                                                                   |
| Switching voltage                               |  | max. 250 V AC / 110 V DC                                                                                                                                                                                                                                                                            |
| Switching current                               |  | max. 3 A AC/DC, min. 30 mA DC,                                                                                                                                                                                                                                                                      |
| Switching power                                 |  | max. 750 VA / 90 W                                                                                                                                                                                                                                                                                  |
| Sensor supply                                   |  | connected power supply is looped through,<br>max. 80 mA                                                                                                                                                                                                                                             |
| Output I                                        |  | Relay with make contact, NC or NO progr.                                                                                                                                                                                                                                                            |
| Mechanical life                                 |  | $2 \times 10^7$ switching cycles                                                                                                                                                                                                                                                                    |
| Electrical life                                 |  | $1 \times 10^5$ switching cycles at 3 A                                                                                                                                                                                                                                                             |
| Output II                                       |  | Relay with changeover contact                                                                                                                                                                                                                                                                       |
| Mechanical life                                 |  | $2 \times 10^7$ switching cycles                                                                                                                                                                                                                                                                    |
| Electrical life                                 |  | $5 \times 10^4$ cycles at 3 A                                                                                                                                                                                                                                                                       |
| Response time                                   |  | Relay: approx. 7 ms<br>Frequency counter: 100/600 ms                                                                                                                                                                                                                                                |
| <b>Compliance with standards and directives</b> |  |                                                                                                                                                                                                                                                                                                     |
| Directive conformity                            |  |                                                                                                                                                                                                                                                                                                     |
| EMC Directive 2004/108/EC                       |  | EN 61000-6-2:2005                                                                                                                                                                                                                                                                                   |
| Standard conformity                             |  |                                                                                                                                                                                                                                                                                                     |
| Emitted interference                            |  | DIN EN 55011:2009, Class B                                                                                                                                                                                                                                                                          |
| Mech. capacity                                  |  | EN 60068-2-6:2008<br>$10 \dots 55 \text{ Hz} / 1 \text{ mm} / \text{XYZ}$<br>30 min in each direction                                                                                                                                                                                               |
| Shock and impact resistance                     |  | EN 60068-2-27:1995<br>100 G / 2 ms / XYZ<br>3 times in each direction                                                                                                                                                                                                                               |
| <b>Ambient conditions</b>                       |  |                                                                                                                                                                                                                                                                                                     |
| Ambient temperature                             |  | $-20 \dots 65 \text{ }^\circ\text{C}$ ( $-4 \dots 149 \text{ }^\circ\text{F}$ )                                                                                                                                                                                                                     |
| Storage temperature                             |  | $-25 \dots 75 \text{ }^\circ\text{C}$ ( $-13 \dots 167 \text{ }^\circ\text{F}$ )                                                                                                                                                                                                                    |
| Relative humidity                               |  | $\leq 93 \text{ \%}$ at $40 \text{ }^\circ\text{C}$ (noncondensing)                                                                                                                                                                                                                                 |
| Altitude                                        |  | $0 \dots 2000 \text{ m}$                                                                                                                                                                                                                                                                            |
| <b>Mechanical specifications</b>                |  |                                                                                                                                                                                                                                                                                                     |
| Degree of protection                            |  | IP65 (front)                                                                                                                                                                                                                                                                                        |
| Mass                                            |  | approx. 138 g                                                                                                                                                                                                                                                                                       |
| Dimensions                                      |  | 48 mm x 48 mm x 109.8 mm                                                                                                                                                                                                                                                                            |

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Connection



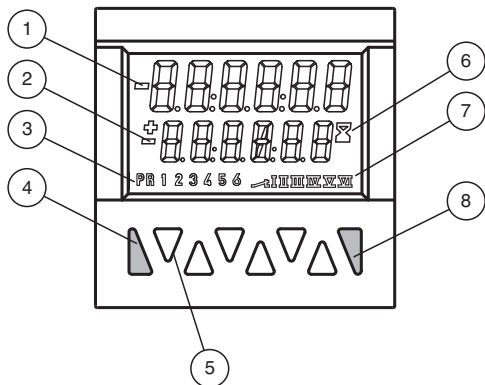
Signal and control inputs

- 1 Sensor supply voltage
- 2 GND (0V)
- 3 INP A (Signal input A)
- 4 INP B (Signal input B)
- 5 RESET (Reset input)
- 6 LOCK (Input Keypad lock)
- 7 GATE (Gate input)
- 8 MPI (User input)

Supply voltage and outputs

- 9 Relay contact C.
  - 10 Relay contact N.O.
  - 11 Relay contact C.
  - 12 Relay contact N.O.
  - 13 Relay contact N.C.
  - 14 10 ... 30 V DC
  - 15 GND (0V)
- Output 1 (9, 10)  
Output 2 (11, 12)  
Supply voltage (14, 15)

Assembly



- 1 Current count value
- 2 Preset value
- 3 Indicator preset value (at 9)
- 4 Reset key
- 5 Decade keys 1 to 6 / Keys for programming
- 6 Run display for timer
- 7 Shows the active output
- 8 Prog/Mode key