

# LK1023



## Electronic level sensor

LK0472B-B-00KQPKG/US



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 Programming buttons
- 4 housing connection flat-pin connector 6.3 mm DIN 46244



### Product characteristics

|                              |                                                 |
|------------------------------|-------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 2                    |
| Factory setting              | hydrous coolants; water; media similar to water |
| Probe length L [mm]          | 472                                             |

### Application

|                                             |                                                                                                                                      |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Media                                       | hydrous coolants; oils; oil-based media; water; media similar to water                                                               |
| Dielectric constant of the medium           | > 2                                                                                                                                  |
| Cannot be used for                          | extremely conductive media; adhering media; granulates; bulk material; acids; alkali; hygienic areas and electroplating applications |
| Maximum speed of the change of level [mm/s] | 200                                                                                                                                  |
| Tank pressure [bar]                         | 0.5; (when mounting with mounting accessories: E43001 - E43007, E43019)                                                              |

### Coolants

|                         |                                                |
|-------------------------|------------------------------------------------|
| Medium temperature [°C] | 0...35; (with climate tube E43101: 35...60 °C) |
|-------------------------|------------------------------------------------|

### Oil

|                                    |                 |
|------------------------------------|-----------------|
| Medium temperature [°C]            | 0...70          |
| Medium temperature short time [°C] | 0...90; (< 1 h) |

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|                                                 |                        |                                                                                                                                                           |
|-------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water                                           |                        |                                                                                                                                                           |
| Medium temperature                              | [°C]                   | 0...35; (with climate tube E43101: 35...60 °C)                                                                                                            |
| <b>Electrical data</b>                          |                        |                                                                                                                                                           |
| Operating voltage                               | [V]                    | 18...30 DC                                                                                                                                                |
| Current consumption                             | [mA]                   | < 50                                                                                                                                                      |
| Protection class                                |                        | III                                                                                                                                                       |
| Reverse polarity protection                     |                        | yes                                                                                                                                                       |
| Power-on delay time                             | [s]                    | < 3                                                                                                                                                       |
| Measuring principle                             |                        | capacitive                                                                                                                                                |
| <b>Inputs / outputs</b>                         |                        |                                                                                                                                                           |
| Number of inputs and outputs                    |                        | Number of digital outputs: 2                                                                                                                              |
| <b>Outputs</b>                                  |                        |                                                                                                                                                           |
| Total number of outputs                         |                        | 2                                                                                                                                                         |
| Output signal                                   |                        | switching signal; IO-Link                                                                                                                                 |
| Electrical design                               |                        | PNP/NPN                                                                                                                                                   |
| Number of digital outputs                       |                        | 2                                                                                                                                                         |
| Output function                                 |                        | normally open / closed; (configurable)                                                                                                                    |
| Max. voltage drop switching output DC           | [V]                    | 2.5                                                                                                                                                       |
| Permanent current rating of switching output DC | [mA]                   | 200                                                                                                                                                       |
| Short-circuit protection                        |                        | yes                                                                                                                                                       |
| Type of short-circuit protection                |                        | thermal, pulsed                                                                                                                                           |
| Overload protection                             |                        | yes                                                                                                                                                       |
| <b>Measuring/setting range</b>                  |                        |                                                                                                                                                           |
| Factory setting                                 |                        | hydrous coolants; water; media similar to water                                                                                                           |
| Probe length L                                  | [mm]                   | 472                                                                                                                                                       |
| Active range A                                  | [mm]                   | 390                                                                                                                                                       |
| Inactive range I1 / I2                          | [mm]                   | 60 / 22                                                                                                                                                   |
| <b>Setting range</b>                            |                        |                                                                                                                                                           |
| Set point SP                                    | [mm]                   | 35...390                                                                                                                                                  |
| Reset point rP                                  | [mm]                   | 30...385                                                                                                                                                  |
| In steps of                                     | [mm]                   | 5                                                                                                                                                         |
| Reference point OP                              | [mm]                   | 139 - 163 - 188 - 212 - 236 - 261 - 285 - 310 - 334 - 358 - 383 - 407 - OFF                                                                               |
| Hysteresis, OP                                  | [mm]                   | 3                                                                                                                                                         |
| <b>Accuracy / deviations</b>                    |                        |                                                                                                                                                           |
| Measuring error                                 |                        | ± 5                                                                                                                                                       |
|                                                 | [% of the final value] |                                                                                                                                                           |
| Repeatability                                   |                        | ± 2                                                                                                                                                       |
| Resolution                                      | [mm]                   | 5                                                                                                                                                         |
| <b>Software / programming</b>                   |                        |                                                                                                                                                           |
| Parameter setting options                       |                        | hysteresis / window; normally open / closed; switching logic; SP/rP position; adjustment OP; medium selection; offset setting; switch-on/switch-off delay |

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| Interfaces                    |                                                                                                 |                               |
|-------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------|
| Communication interface       | IO-Link                                                                                         |                               |
| Transmission type             | COM2 (38,4 kBaud)                                                                               |                               |
| IO-Link revision              | 1.1                                                                                             |                               |
| SDCI standard                 | IEC 61131-9                                                                                     |                               |
| Profiles                      | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis                    |                               |
| SIO mode                      | yes                                                                                             |                               |
| Required master port class    | A                                                                                               |                               |
| Process data analog           | 2                                                                                               |                               |
| Process data binary           | 2                                                                                               |                               |
| Min. process cycle time [ms]  | 3.2                                                                                             |                               |
| Supported DeviceIDs           | Type of operation                                                                               | DeviceID                      |
|                               | default                                                                                         | 653                           |
| Operating conditions          |                                                                                                 |                               |
| Ambient temperature [°C]      | 0...60                                                                                          |                               |
| Storage temperature [°C]      | -25...80                                                                                        |                               |
| Protection                    | IP 67                                                                                           |                               |
| Tests / approvals             |                                                                                                 |                               |
| EMC                           | DIN EN 61000-6-2                                                                                |                               |
|                               | DIN EN 61000-6-4                                                                                |                               |
| Shock resistance              | DIN EN 60068-2-27                                                                               | 15 g (11 ms)                  |
| Vibration resistance          | DIN EN 60068-2-6                                                                                | 5 g (10...2000 Hz)            |
| MTTF [years]                  | 265                                                                                             |                               |
| Mechanical data               |                                                                                                 |                               |
| Weight [g]                    | 372.45                                                                                          |                               |
| Dimensions [mm]               | Ø 16                                                                                            |                               |
| Material                      | stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; NBR; PBT; PC; PA; PP; TPV |                               |
| Materials (wetted parts)      | PP                                                                                              |                               |
| Displays / operating elements |                                                                                                 |                               |
| Display                       | Display unit                                                                                    | 2 x LED, green (cm, inch)     |
|                               | Switching status                                                                                | 2 x LED, yellow               |
|                               | Measured values                                                                                 | alphanumeric display, 4-digit |
|                               | Parameter setting                                                                               | alphanumeric display, 4-digit |
| Remarks                       |                                                                                                 |                               |
| Pack quantity                 | 1 pcs.                                                                                          |                               |

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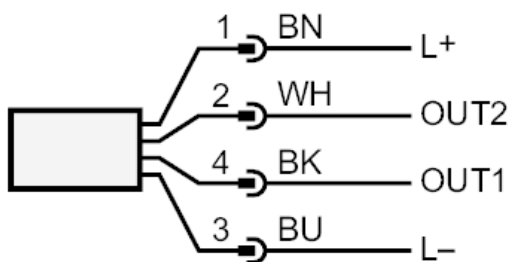
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### Electrical connection

Connector: 1 x M12; coding: A



### Connection



OUT1: Switching output IO-Link  
OUT2: Switching output  
Colors to DIN EN 60947-5-2  
Core colors :

BK = black  
BN = brown  
BU = blue  
WH = white