# Level sensor for limit detection with overspill protection (German Federal Water Act)



140 125 73,5 38 1 Tightening torque 20...25 Nm



| Product characteristics  Number of inputs and outputs Factory setting Process connection  Application  Special feature  Media  Cannot be used for Probe length Fank pressure  [bar]  Oil  Medium temperature Short time  Pecipical feature  Medium temperature  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  Medium temperature Short time  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications Subject to the German Federal Water Act : 0100 °C)  Medium temperature Short time  [°C]  -25150; (1 h; applications Subject to the German Federal Water Act : 0100 °C)   |                              |       |   |  |
|--|------------------------------|-------|---|--|
| Factory setting hydrous media Process connection G 1/2 external thread  Application  Special feature Gold-plated contacts  Media Liquids  Recommended media water; hydrous media; oils; oil-based media  Cannot be used for See the operating instructions, chapter "Function and features".  Probe length [mm] 38  Tank pressure [bar] -140; (applications subject to the German Federal Water Act : -0,510 bar)  Oil  Medium temperature [°C] -25100; (applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time [°C] -2585; (applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class III  Reverse polarity protection yes  Inputs / outputs   | Product characteristics      |       |   |  |
| Process connection  Application  Special feature  Special feature  Media  Recommended media  Cannot be used for  Probe length  Tank pressure  [bar]  Medium temperature  [°C]  Medium temperature  Medium temperature  Medium temperature  Medium temperature  Medium temperature  Medium temperature  [°C]  Med | Number of inputs and outputs |       | Number of digital outputs: 2  |  |
| Application  Special feature  Media  Recommended media  Recommended media  Cannot be used for  Probe length  Tank pressure  [bar]  Toli  Medium temperature  [°C]  -25100; (applications subject to the German Federal Water Act : 0100 °C)  Water  Medium temperature  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  | Factory setting              |       | hydrous media   |  |
| Special feature  Media  Recommended media  Recommended media  Cannot be used for  Probe length  Tank pressure  [bar]  Medium temperature  [°C]  Medium temperature short time  Medium temperature  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature short time  [°C]  -2585; (applications subject to the German Federal Water Act : 0100 °C)  Medium temperature  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Medium temperature  Medium temperature  [°C]  -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage  [V]  1830 DC  Current consumption  [mA]  - 50  Protection class  Reverse polarity protection  yes  Inputs / outputs   | Process connection           |       | G 1/2 external thread   |  |
| Media       Liquids         Recommended media       water; hydrous media; oils; oil-based media         Cannot be used for       See the operating instructions, chapter "Function and features".         Probe length       [mm]       38         Tank pressure       [bar]       -140; (applications subject to the German Federal Water Act : -0,510 bar)         Oil       Medium temperature       [°C]       -25100; (applications subject to the German Federal Water Act : 0100 °C)         Medium temperature short time       [°C]       -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)         Medium temperature short time       [°C]       -2585; (applications subject to the German Federal Water Act : 085 °C)         Medium temperature short time       [°C]       -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)         Electrical data         Operating voltage       [V]       1830 DC         Current consumption       [mA]       < 50  | Application                  |       |   |  |
| Recommended media  Cannot be used for  Probe length  [mm]  Tank pressure  [bar]  -140; (applications subject to the German Federal Water Act: -0,510 bar)  Medium temperature  [°C]  -25100; (applications subject to the German Federal Water Act: 0100 °C)  Medium temperature short time  [°C]  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act: 0100 °C)  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act: 0100 °C)  Medium temperature  [°C]  -25150; (1 h; applications subject to the German Federal Water Act: 0100 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act: 0100 °C)  Electrical data  Operating voltage  [M]  1830 DC  Current consumption  [mA]  - 50  Protection class  Reverse polarity protection  Inputs / outputs   | Special feature              |       | Gold-plated contacts  |  |
| Cannot be used for See the operating instructions, chapter "Function and features".  Probe length [mm] 38  Tank pressure [bar] -140; (applications subject to the German Federal Water Act : -0,510 bar)  Oil  Medium temperature [°C] -25100; (applications subject to the German Federal Water Act 0100 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Water  Medium temperature [°C] -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class  Reverse polarity protection yes  Inputs / outputs   | Media                        |       | Liquids   |  |
| Probe length [mm] 38  Tank pressure [bar] -140; (applications subject to the German Federal Water Act: -0,510 bar)  Oil  Medium temperature [°C] -25100; (applications subject to the German Federal Water Act: 0100 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act: 0100 °C)  Water  Medium temperature [°C] -2585; (applications subject to the German Federal Water Act: 085 °C)  Medium temperature short time [°C] -2585; (applications subject to the German Federal Water Act: 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class   III  Reverse polarity protection yes   | Recommended media            |       | water; hydrous media; oils; oil-based media                                   |  |
| Tank pressure [bar] -140; (applications subject to the German Federal Water Act : -0,510 bar)  Oil  Medium temperature [°C] -25100; (applications subject to the German Federal Water Act 0100 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Water  Medium temperature [°C] -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class   III  Reverse polarity protection   yes  | Cannot be used for           |       | See the operating instructions, chapter "Function and features".              |  |
| Oil  Medium temperature [°C] -25100; (applications subject to the German Federal Water Act 0100 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Water  Medium temperature [°C] -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class III  Reverse polarity protection yes   | Probe length                 | [mm]  | 38  |  |
| Medium temperature [°C] -25100; (applications subject to the German Federal Water Act 0100 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Water  Medium temperature [°C] -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class III  Reverse polarity protection yes  Inputs / outputs  | Tank pressure                | [bar] | -140; (applications subject to the German Federal Water Act : -0,510 bar)     |  |
| Medium temperature short time  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Water  Medium temperature  [°C]  -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time  [°C]  -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage  [V]  Current consumption  [mA]  Protection class  III  Reverse polarity protection  yes  Inputs / outputs   | Oil                          |       |   |  |
| time   | Medium temperature [°C]      |       | -25100; (applications subject to the German Federal Water Act 0100 °C)        |  |
| Medium temperature [°C] -2585; (applications subject to the German Federal Water Act : 085 °C)  Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data  Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class III  Reverse polarity protection yes  Inputs / outputs   | ·                            | [°C]  | -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C) |  |
| Medium temperature short time [°C] -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)  Electrical data Operating voltage [V] 1830 DC Current consumption [mA] < 50 Protection class III Reverse polarity protection yes Inputs / outputs  | Water                        |       |   |  |
| Time    C   -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C)   Electrical data   Operating voltage   [V]   1830 DC     Current consumption   [mA]   < 50     Protection class   III     Reverse polarity protection   yes     Inputs / outputs  | Medium temperature [°C]      |       | -2585; (applications subject to the German Federal Water Act : 085 °C)        |  |
| Operating voltage [V] 1830 DC  Current consumption [mA] < 50  Protection class III  Reverse polarity protection yes  Inputs / outputs  | 1-(.1)                       |       | -25150; (1 h; applications subject to the German Federal Water Act : 0100 °C) |  |
| Current consumption [mA] < 50  Protection class III  Reverse polarity protection yes  Inputs / outputs   | Electrical data              |       |   |  |
| Protection class III  Reverse polarity protection yes  Inputs / outputs  | Operating voltage            | [V]   | 1830 DC   |  |
| Reverse polarity protection yes  Inputs / outputs  | Current consumption          | [mA]  | < 50  |  |
| Inputs / outputs   | Protection class             |       | III   |  |
|  | Reverse polarity protection  |       | yes   |  |
|  | Inputs / outputs             |       |   |  |
| Number of inputs and outputs Number of digital outputs: 2  | Number of inputs and outputs |       | Number of digital outputs: 2  |  |

# Level sensor for limit detection with overspill protection (German Federal Water Act)



LMCCE-A12E-QPKG-2/US

| LMCCE-A12E-QPKG-2/US                            |      |   |  |  |
|---|------|---|--|--|
| Outputs   |      |   |  |  |
| Total number of outputs                         |      | 2   |  |  |
| Output signal                                   |      | switching signal; IO-Link                                     |  |  |
| Electrical design                               |      | PNP   |  |  |
| Number of digital outputs                       |      | 2   |  |  |
| Max. voltage drop switching output DC           | [V]  | 2.5   |  |  |
| Permanent current rating of switching output DC | [mA] | 100   |  |  |
| Short-circuit protection                        |      | yes   |  |  |
| Type of short-circuit protection                |      | pulsed  |  |  |
| Overload protection                             |      | yes   |  |  |
| Measuring/setting range                         |      |   |  |  |
| Factory setting                                 |      | hydrous media   |  |  |
| Response times                                  |      |   |  |  |
| Response time [s]                               |      | < 0.5   |  |  |
| Interfaces                                      |      |   |  |  |
| Communication interface                         |      | IO-Link   |  |  |
| Transmission type                               |      | COM2 (38,4 kBaud)   |  |  |
| IO-Link revision                                |      | 1.1   |  |  |
| SDCI standard                                   |      | IEC 61131-9   |  |  |
| IO-Link device ID                               |      | 0x0001C1  |  |  |
| Profiles  |      | Smart Sensor: Process Data Variable; Device Identification    |  |  |
| SIO mode  |      | yes   |  |  |
| Required master port type                       |      | Α   |  |  |
| Process data analogue                           |      | 1   |  |  |
| Process data binary                             |      | 2   |  |  |
| Min. process cycle time [ms]                    |      | 2.3   |  |  |
| Operating conditions                            |      |   |  |  |
| Ambient temperature [°C]                        |      | -2085   |  |  |
| Note on ambient temperature                     |      | Medium temperature 100150 °C                                  |  |  |
| ·   |      | -4060 °C  |  |  |
| Storage temperature                             | [°C] | -4085   |  |  |
| Protection                                      |      | IP 68; IP 69K   |  |  |
| Tests / approvals                               |      |   |  |  |
| Approval  |      | WHG; General building authority approval; overflow prevention |  |  |
| FMC   |      | DIN EN 61000-6-2  |  |  |
| EMC   |      | DIN EN 61000-6-4 open tanks DIN EN 61000-6-3 closed tanks     |  |  |
| Shock resistance                                |      | DIN EN 60068-2-27 50 g (11 ms)                                |  |  |
| Vibration resistance                            |      | DIN EN 60068-2-6 20 g (102000 Hz)                             |  |  |
| MTTF [years]                                    |      | 222.77  |  |  |
| UL approval                                     |      | UL Approval no. H001  |  |  |
|   |      |   |  |  |

# Level sensor for limit detection with overspill protection (German Federal Water Act)



LMCCE-A12E-QPKG-2/US

| Mechanical data                               |      |   |              |  |  |  |  |
|---|------|---|--------------|--|--|--|--|
| Weight  | [g]  | 249.5   |              |  |  |  |  |
| Dimensions                                    | [mm] | Ø 30 / L = 125                                  |              |  |  |  |  |
| Materials                                     |      | stainless steel (1.4404 / 316L); PEEK; PEI; FKM |              |  |  |  |  |
| Materials (wetted parts)                      |      | PEEK  |              |  |  |  |  |
| Process connection                            |      | G 1/2 external thread                           |              |  |  |  |  |
| Surface characteristics R of the wetted parts | a/Rz | < 0.8   |              |  |  |  |  |
| Displays / operating elements                 |      |   |              |  |  |  |  |
| Display                                       |      | switching status                                | LEDs, yellow |  |  |  |  |
| ызрішу  |      | operating status                                | LEDs, green  |  |  |  |  |
| Remarks                                       |      |   |              |  |  |  |  |
| Pack quantity                                 |      | 1 pcs.  |              |  |  |  |  |

#### **Electrical connection**

Connector: 1 x M12; Contacts: gold-plated

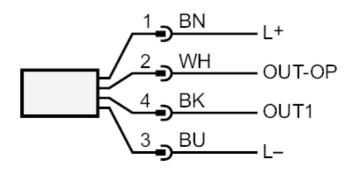


### Level sensor for limit detection with overspill protection (German Federal Water Act)



LMCCE-A12E-QPKG-2/US

#### Connection



OUT1: switching output

OUT-OP switching output overflow prevention to the German Federal Water Act (WHG)

colours to DIN EN 60947-5-2

Core colours:

 BK =
 black

 BN =
 brown

 BU =
 blue

 WH =
 white