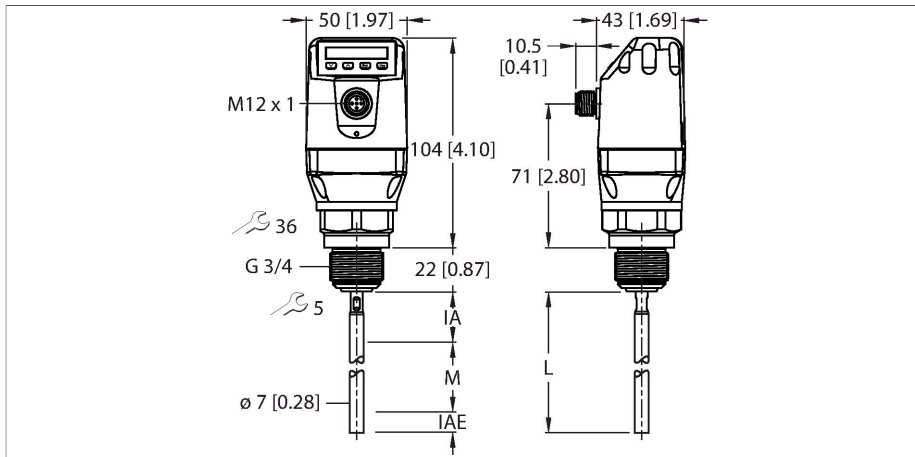


# LS-551-0600-LIU24PN8X-H1181

## Level Sensor – With Analog Output and 4 × Switching Outputs



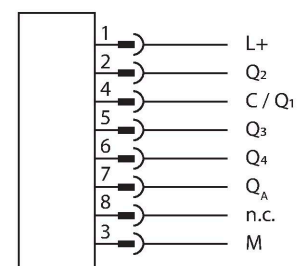
### Technical data

|   |  |
|---|--|
| Type                                      | LS-551-0600-LIU24PN8X-H1181  |
| ID  | 100001866  |
| Medium temperature                        | -20...+100 °C  |
| Application area                          | liquids  |
| Probe length (L)                          | 600 mm   |
| Max. loading of probe                     | 6 Nm   |
| Probe accuracy                            | ± 5 mm   |
| Temperature drift                         | ≤ 0.1  |
| Hysteresis                                | ≥ 2 mm   |
| Reproducibility                           | ≤ 2 mm   |
| Inactive area on process connection (IA)  | 25 mm  |
| Inactive area at end of probe (IAE)       | 10 mm  |
| Dielectric constant                       | ≥ 5; ≥ 1.8 mit Koaxialrohr (Zubehör)                                   |
| Pressure resistance                       | -1...10 bar  |
| <b>Electrical data</b>                    |  |
| Operating voltage $U_b$                   | 12...30 VDC  |
| Current consumption                       | ≤ 100 mA   |
| Short-circuit/reverse polarity protection | yes / yes  |
| Inductive load                            | < 1 H  |
| Capacitive load                           | 100 nF   |
| Insulation class                          | III  |
| <b>Outputs</b>                            |  |
| Output 1                                  | Analog output (current/voltage, automatic switching depending on load) |
| Output 2                                  | IO-Link/switching output (PNP)   |
| Output 3                                  | Switching output (PNP/NPN)   |

### Features

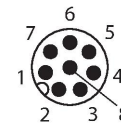
- Level detection and continuous level measurement
- Easy to service and quick to deploy without calibration
- Very flexible since probes can be shortened
- Easy installation thanks to compact, rotatable housing with display
- Process temperature up to 100 °C
- Process pressure up to 10 bar
- Small blind zones, ideal for small containers
- Coaxial tube available for non-metallic tanks
- IO-Link 1.1
- 12...30 VDC
- 1 × analog output 4... 20 mA/0... 10 V (automatic switchover depending on load)
- 1 × transistor output (PNP) or IO-Link
- 3 × transistor output (PNP/NPN switchable)
- Dielectric constant: ≥ 5 for mono-rod probe/rope probe or ≥ 1.8 with coaxial tube
- Process connection G3/4" male thread
- Probe length 600 mm

### Wiring diagram



## Technical data

|                                    |   |
|------------------------------------|---|
| Output 4                           | Switching output (PNP/NPN)                    |
| Output 5                           | Switching output (PNP/NPN)                    |
| <b>Switching output</b>            |   |
| Communication protocol             | IO-Link                                       |
| Output function                    | NO/NC, PNP/NPN, analog output                 |
| <b>Analog output</b>               |   |
| Current output                     | 4...20 mA                                     |
| High level signal current          | 20...20.5 mA                                  |
| Low level signal current           | 3.8...4 mA                                    |
| Load resistance current output     | ≤ 0.5 kΩ                                      |
| Voltage output                     | 0...10 V                                      |
| High level signal voltage          | U <sub>v</sub> - 2 V                          |
| Low-level signal voltage           | ≤ 2 V   |
| Load resistance voltage output     | ≥ 0.75 kΩ                                     |
| Response time typical              | < 400 ms                                      |
| <b>IO-Link</b>                     |   |
| IO-Link specification              | V 1.1   |
| IO-Link port type                  | Class A                                       |
| Transmission physics               | COM 2 (38.4 kBaud)                            |
| Frame type                         | 2.2   |
| Included in the SIDI GSDML         | Yes   |
| <b>Mechanical data</b>             |   |
| Housing material                   | Plastic, PBT                                  |
| Materials (contact with media)     | Stainless steel 1.4404 (AISI 316L), PTFE, FKM |
| Process connection                 | G 3/4" male thread                            |
| Sealing material                   | Aramid fibers, bound with NBR                 |
| Electrical connection              | Connector, M12 × 1                            |
| Protection class                   | IP67  |
| <b>Environmental conditions</b>    |   |
| Ambient temperature                | -20...+60 °C                                  |
| Storage temperature                | -40...+80 °C                                  |
| <b>Tests/approvals</b>             |   |
| UL registration number             | E356899                                       |
| <b>Displays/Operating elements</b> |   |
| Display                            | Digital display                               |
| MTTF                               | 194 years                                     |



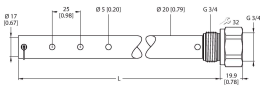
## Functional principle

The level sensors of the LS-5 series work according to the principle of the guided microwave. The so-called Time Domain Reflectometry (TDR) is used. This method emits an electromagnetic wave along the probe. When the wave reaches the medium, it is partially reflected due to the dielectric constant compared to air. The electromagnetic wave is picked up again by the sensor and the distance to the liquid can now be determined via the transit time.

## Accessories

LSCT-51-0600

100001880

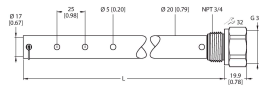


Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 600 mm, process connection G3/4"

HY134/0

LSCT-34-0600

100001881

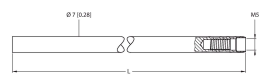


Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 600 mm, process connection 3/4" NPT

HY134/0

LSRP-1000

100002197

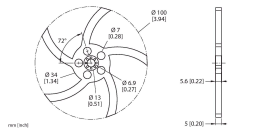


Rod probe for screwing into LS-5 level sensors, length 1000 mm

HY134/0

LSAB1

100016514

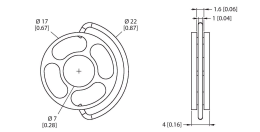


PTFE centering star for mounting probes in the LS-5 product series in bypass and immersion pipes with a diameter of 40...100 mm

HY134/0

LSAB2

100016515



PTFE centering star for mounting probes in the LS-5 product series in LSCT-xx-xxxx coaxial tubes

HY134/0