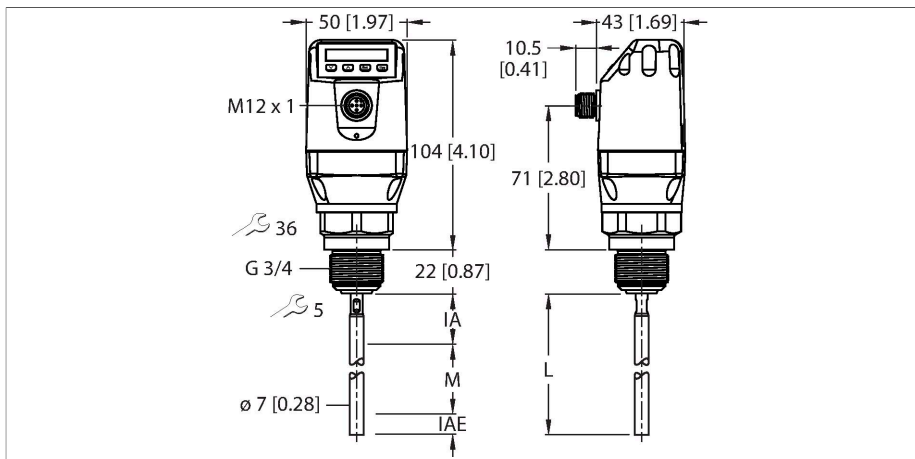


# LS-551-0400-LIU22PN8X-H1151

## Level Sensor – With Analog Output and 2 × Switching Outputs



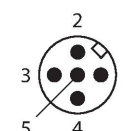
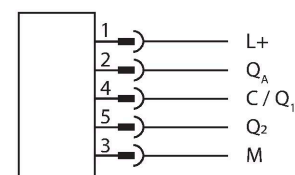
### Technical data

Type	LS-551-0400-LIU22PN8X-H1151
ID	100001856
Medium temperature	-20...+100 °C
Application area	liquids
Probe length (L)	400 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)
- 2 × PNP/IO-Link or PNP/NPN transistor outputs, each switchable
- Dielectric constant: ≥ 5 for mono-rod probe/rope probe or ≥ 1.8 with coaxial tube
- Process connection G3/4" male thread
- Probe length 400 mm

### Wiring diagram



## Technical data

Switching output	
Communication protocol	IO-Link
Output function	NO/NC, PNP/NPN, analog output
Analog output	
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
IO-Link	
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
Mechanical data	
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
Environmental conditions	
Ambient temperature	-20...+60 °C
Storage temperature	-40...+80 °C
Tests/approvals	
UL registration number	E356899
Displays/Operating elements	
Display	Digital display
MTTF	194 years

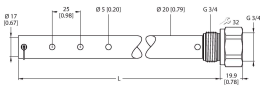
## Functional principle

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-51-0400

100001876

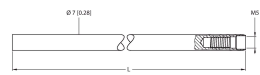


Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 400 mm, process connection G3/4"

HY134/0

LSRP-1000

100002197

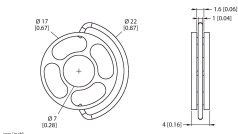


Rod probe for screwing into LS-5 level sensors, length 1000 mm

HY134/0

LSAB2

100016515

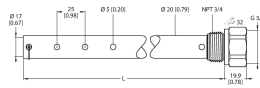


PTFE centering star for mounting probes in the LS-5 product series in LSCT-xx-xxxx coaxial tubes

HY134/0

LSCT-34-0400

100001877

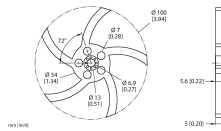


Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 400 mm, process connection 3/4" NPT

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