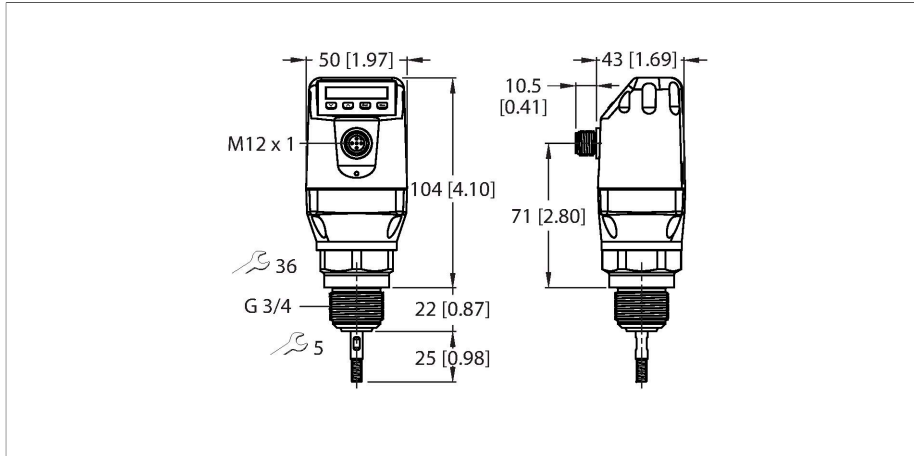


# LS-551-0000-LIU22PN8X-H1151

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



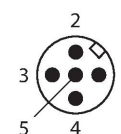
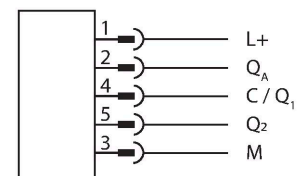
### Technical data

Type	LS-551-0000-LIU22PN8X-H1151
ID	100001844
Medium temperature	-20...+100 °C
Application area	liquids
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

### Wiring diagram



### Functional principle

## Technical data

<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

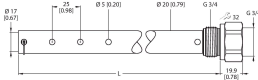
The level sensors of the LS-5 series work according to the principle of the guided microwave. The so-called Time Domain Reflectometry (TDR) is used. This method emits an electromagnetic wave along the probe. When the wave reaches the medium, it is partially reflected due to the dielectric constant compared 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-51-0500

100001878

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 500 mm, process connection G3/4"

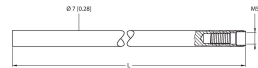


10001878

### LSRP-0500

100002196

Rod probe for screwing into LS-5 level sensors, length 500 mm

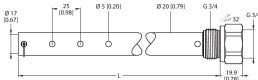


10002196

### LSCT-51-1500

100015814

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 1500 mm, process connection G3/4"

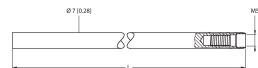


100015814

### LSRP-2000

100015371

Rod probe for screwing into LS-5 level sensors, length 2000 mm

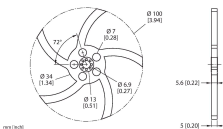


100015371

### 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

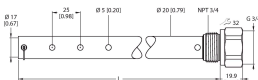


100016514

### LSCT-34-1500

100015817

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 1500 mm, process connection 3/4" NPT

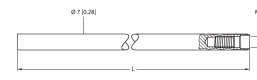


100015817

### LSRP-1000

100002197

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

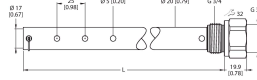


10002197

### LSCT-51-2000

100015815

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 2000 mm, process connection G3/4"

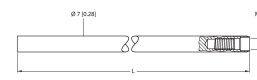


100015815

### LSRP-1500

100015812

Rod probe for screwing into LS-5 level sensors, length 1500 mm

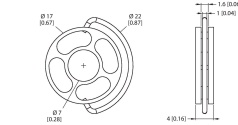


100015812

### LSAB2

100016515

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

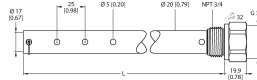


100016515

### LSCT-34-1000

100015818

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 1000 mm, process connection 3/4" NPT

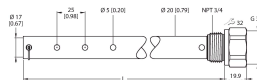


100015818

### LSCT-34-2000

100015816

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 2000 mm, process connection 3/4" NPT



100015816