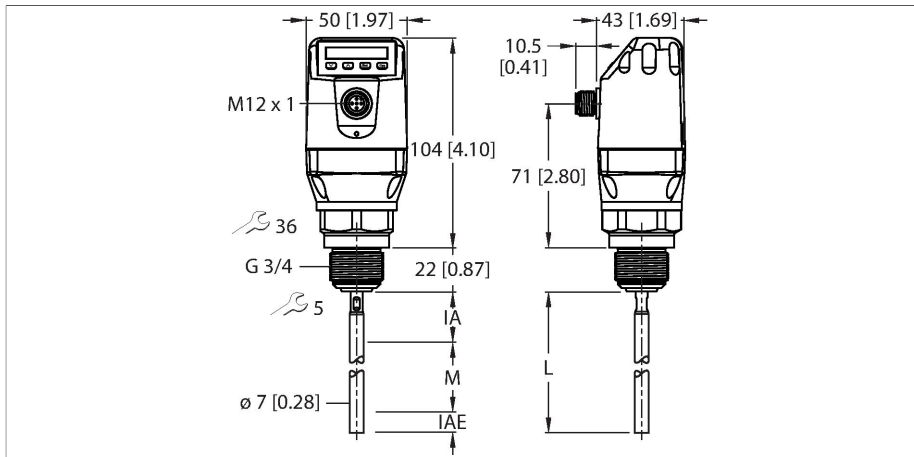


LS-551-0300-LIU24PN8X-H1181

Level Sensor – With Analog Output and 4 × Switching Outputs



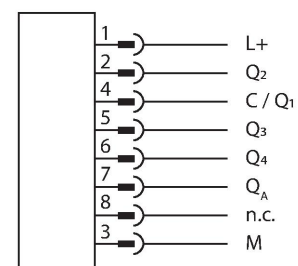
Technical data

Type	LS-551-0300-LIU24PN8X-H1181
ID	100001854
Medium temperature	-20...+100 °C
Application area	liquids
Probe length (L)	300 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
Electrical data	
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
Outputs	
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

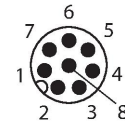
- Level detection and continuous level measurement
- Easy to service and quick to deploy without calibration
- Very flexible since probes can be shortened
- Easy installation thanks to compact, rotatable housing with display
- Process temperature up to 100 °C
- Process pressure up to 10 bar
- Small blind 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 300 mm

Wiring diagram



Technical data

Output 4	Switching output (PNP/NPN)
Output 5	Switching output (PNP/NPN)
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 _v - 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-51-0300100001874

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 300 mm, process connection G3/4"

LSCT-34-0300100001875

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 300 mm, process connection 3/4" NPT

LSRP-1000100002197

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

LSAB1100016514

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

LSAB2100016515

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