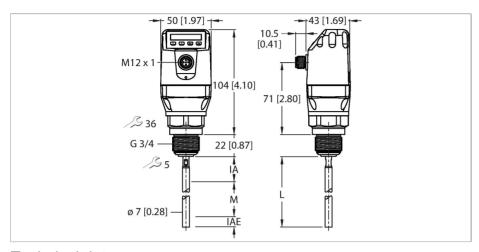
LS-551-1000-LIU22PN8X-H1151 Level Sensor - With Analog Output and 2 \times Switching Outputs



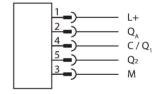
Technical data

Type	LS-551-1000-LIU22PN8X-H1151		
Ident. no.	100015811		
Medium temperature	-20+100 °C		
Application area	liquids		
Probe length (L)	1000 mm		
Max. loading of probe	6 Nm		
Probe accuracy	±5 mm		
Temperature drift	≤ 0.1		
Hysteresis	≥ 2 mm		
Repeatability	≤2 mm		
Inactive area at process connection	25 mm		
Inactive area at probe end	10 mm		
Dielectric constant	≥ 5; ≥ 1.8 mit Koaxialrohr (Zubehör)		
Pressure resistance	-110 bar		
Electrical data			
Operating voltage	1230 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)		

Features

- Multiple output signals: one system for both level detection and continuous level monitoring
- Low maintenance and quick commissioning without calibration
- High flexibility due to cutable probe
- Compact, rotatable display housing ensures easy installation
- Small inactive areas, ideal for small containers
- Process temperature to 212 °F
- Process pressure up to 145 psi
- Coaxial tubes 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
- 1 × transistor output (PNP/NPN switchable))
- Process connection G3/4" male thread
- Probe length 1000 mm

Wiring diagram





Functional principle

The LS-5 series liquid level sensors uses time-of flight technology to measure electromagnetic waves to generate a level signal. The advanced technology enables calibration free commissioning with probes that can be cut to length for quick integration into most applications. Highly resistant to deposit formations with no moving parts, the LS-5 series offers significant cost saving due to multiple output signals for both continuous level detection and point level monitoring. Simply setup with four buttons and integral display, or through an IO-Link interface



Technical data

Output 3 Switching output (PNP/NPN) Switching output Communication protocol IO-Link Output function NO/NC, PNP/NPN, analog output Analog output Current output 420 mA High level signal current 3.84 mA Load resistance, current output < 0.5 kΩ Voltage output 010 V High level signal voltage Uv - 2 V Low level signal voltage ≤ 2 V Low level signal voltage < 2 V Low level si	Output 2	IO-Link/switching output (PNP)	
Communication protocol IO-Link Output function NO/NC, PNP/NPN, analog output Analog output 420 mA High level signal current 2020.5 mA Low level signal current 3.84 mA Load resistance, current output < 0.5 kΩ	Output 3	Switching output (PNP/NPN)	
Output function NO/NC, PNP/NPN, analog output Analog output 420 mA High level signal current 2020.5 mA Low level signal current 3.84 mA Load resistance, current output ≤ 0.5 kΩ Voltage output 010 V High level signal voltage Uv - 2 V Low level signal voltage ≤ 2 V Load resistance voltage output ≥ 0.75 kΩ Response time typical < 400 ms	Switching output		
Analog output Current output 420 mA High level signal current 2020.5 mA Low level signal current 3.84 mA Load resistance, current output \$010 V High level signal voltage Uv - 2 V Low level signal voltage \$\leq 2 V\$ Low level signal voltage \$\leq 2 V\$ Load resistance voltage output \$\leq 0.75 kΩ\$ Response time typical \$\leq 400 ms\$ IO-Link IO-Link 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, PTFE, FKM Process connection G 3¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display Digital display	Communication protocol	IO-Link	
Current output 420 mA High level signal current 2020.5 mA Low level signal current 3.84 mA Load resistance, current output ≤ 0.5 kΩ Voltage output 010 V High level signal voltage Uv - 2 V Low level signal voltage ≤ 2 V Load resistance voltage output ≥ 0.75 kΩ Response time typical < 400 ms	Output function	NO/NC, PNP/NPN, analog output	
High level signal current Low level signal current 3.84 mA Load resistance, current output Voltage output 010 V High level signal voltage Uv - 2 V Low level signal voltage Load resistance voltage output Response time typical IO-Link IO-Link IO-Link specification V1.1 IO-Link sperification V1.1 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, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display Digital display	Analog output		
Low level signal current 3.84mA Load resistance, current output $\leq 0.5 \text{k}\Omega$ Voltage output 010V High level signal voltage Uv - 2 V Low level signal voltage $\leq 2 \text{V}$ Load resistance voltage output $\geq 0.75 \text{k}\Omega$ Response time typical $< 400 \text{ms}$ IO-Link IO-Link port type Class A Com 2 (38.4 kBaud) Frame type 2.2 Included in the SIDI GSDML Yes Mechanical data Plastic, PBT Materials (contact with media) Stainless steel 1.4404, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display Digital display	Current output	420 mA	
Load resistance, current output ≤ 0.5 kΩ Voltage output 010 V High level signal voltage Uv - 2 V Low level signal voltage ≤ 2 V Load resistance voltage output ≥ 0.75 kΩ Response time typical < 400 ms	High level signal current	2020.5 mA	
Voltage output 010 V High level signal voltage Uv - 2 V Low level signal voltage ≤ 2 V Load resistance voltage output ≥ 0.75 kΩ Response time typical < 400 ms	Low level signal current	3.84 mA	
High level signal voltage Low level signal voltage Load resistance voltage output Response time typical IO-Link IO-Link specification V 1.1 IO-Link port type Class A Transmission physics COM 2 (38.4 kBaud) Frame type 1.1 Included in the SIDI GSDML Mechanical data Housing material Housing material Plastic, PBT Materials (contact with media) Process connection Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -40+80 °C Display Digital display	Load resistance, current output	≤ 0.5 kΩ	
Low level signal voltage ≤ 2 V Load resistance voltage output ≥ 0.75 kΩ Response time typical < 400 ms	Voltage output	010 V	
Load resistance voltage output ≥ 0.75 kΩ Response time typical < 400 ms	High level signal voltage	Uv - 2 V	
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, PTFE, FKM Process connection G 3¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Digital display	Low level signal voltage	≤ 2 V	
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, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Load resistance voltage output	≥ 0.75 kΩ	
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, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Response time typical	< 400 ms	
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, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	IO-Link		
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, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	IO-Link specification	V 1.1	
Frame type 2.2 Included in the SIDI GSDML Yes Mechanical data Housing material Housing material Plastic, PBT Materials (contact with media) Stainless steel 1.4404, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Digital display	IO-Link port type	Class A	
Included in the SIDI GSDML Mechanical data Housing material Materials (contact with media) Process connection Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Transmission physics	COM 2 (38.4 kBaud)	
Mechanical data Housing material Plastic, PBT Materials (contact with media) Stainless steel 1.4404, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Frame type	2.2	
Housing material Materials (contact with media) Stainless steel 1.4404, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Included in the SIDI GSDML	Yes	
Materials (contact with media) Stainless steel 1.4404, PTFE, FKM Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Mechanical data		
Process connection G ¾" male thread Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Housing material	Plastic, PBT	
Electrical connection Connector, M12 × 1 Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Materials (contact with media)	Stainless steel 1.4404, PTFE, FKM	
Protection class IP67 Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Process connection	G ¾" male thread	
Environmental conditions Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Electrical connection	Connector, M12 × 1	
Ambient temperature -20+60 °C Storage temperature -40+80 °C Display functions Display Digital display	Protection class	IP67	
Storage temperature -40+80 °C Display functions Display Digital display	Environmental conditions		
Display functions Display Digital display	Ambient temperature	-20+60 °C	
Display Digital display	Storage temperature	-40+80 °C	
	Display functions		
MTTF 194 years	Display	Digital display	
	MTTF	194 years	

Accessories

LSCT-51-0700	100001882	LSCT-34-0700	100001883
	Coavial tube for LS-5 level concors		Coaxial tube for LS-5 level concers

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic

Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic



	containers, tube length 700 mm, process connection G3/4"		containers, tube length 700 mm, process connection 3/4" NPT
LSRP-1000	100002197	LSCT-51-1000	100015813
	Probe rod for screwing into LS-5 level sensors, length 1000 mm		Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 1000 mm, process connection G3/4"
LSCT-51-1500	100015814	LSCT-51-2000	100015815
	Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 1500 mm, process connection G3/4"		Coaxial tube for LS-5 level sensors (only G3/4") for use in non-metallic containers, tube length 2000 mm, process connection G3/4"
LSCT-34-1000	100015818	LSCT-34-1500	100015817
	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		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
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		

Accessories

Accessories