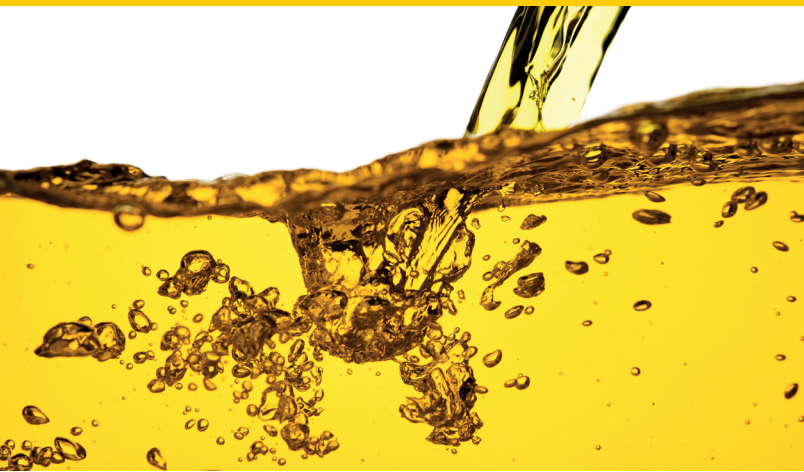


# TURCK

Your Global Automation Partner

## LRS Series Radar Sensors for Level Measurement



### Level Radar Sensors with IO-Link & Extensive Diagnostics

Turck's IO-Link capable LRS radar sensors complete Turck's portfolio for level measurement in the 0.35 to 10-meter range. These devices use Frequency Modulated Continuous Wave (FMCW) technology to measure distance and velocity simultaneously. The LRS family includes variants rated to IP67/69K and are recommended for liquid level applications where optical or ultrasonic sensors are unsuitable due to disturbance factors such as dust, wind or light.

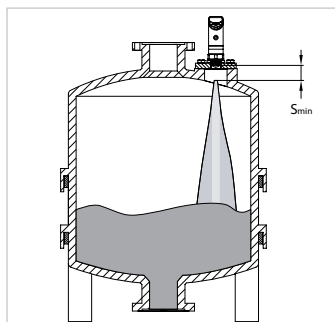
The LRS radar sensors also offer detailed analysis functions which were previously only possible in the high-end radar sensors used in the process industry. The absence of a metal guide probe enables the sensor to be used easily in agitated liquid level applications and simplifies commissioning.

The touchpad of the LRS series with capacitive buttons and a translucent front cap is based on the same concept as Turck's Fluid 2.0 sensor platform, and enables the output of distance, level and volume values. The LRS sensors are available either with two switching outputs or with one switching and one analog output. Thanks to their additional IO-Link interface and intelligent decentralized signal preprocessing, all variants provide a large quantity of additional information for processing in condition monitoring applications in IIoT: besides signal strength, this includes temperature values, operating hours or switching cycles. Users of Turck's IO-Link master can call up the Turck Radar Monitor via the IODD configurator without any additional software. The configuration tool offers access to all relevant parameters.

### Your benefits

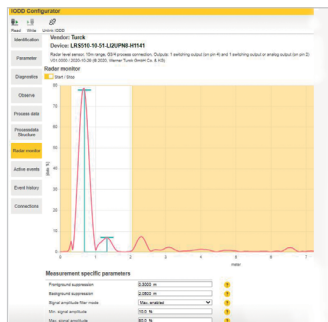
- Robust against harsh environmental conditions
- Distance, level and volume measurement in a single unit
- Simple sensor data visualization and configuration via Turck's IO-Link masters
- Foreign object suppression via distance and signal intensity filter
- Identical look and feel to other fluid sensors from Turck's Fluid 2.0 portfolio

# Technical Data



Suitable for tanks up to 10 m

Optimally suited for use in tanks up to 10 m. The narrow opening angle reduces interference from foreign objects or can be easily filtered out with the help of the Turck Radar Monitor.



Data visualization

The Turck Radar Monitor visualizes the sensor data, making the sensor alignment much easier. All other sensor-specific parameters and filters can also be set directly and according to the application.

## General data

Radar data	
Frequency range	122...123 GHz
Range	35...1000 cm
Resolution	1 mm
Minimum size measuring range/switching range	500 mm
Linearity tolerance	$\leq \pm 0.1 \%$
Edge length of the standard target	100 mm
Radiant power	10 dBm (ERP), 20 dBm (EIRP)
Electrical data	
Ripple	$< 10 \%$ Uss
DC rated operational current	$\leq 250$ mA
No-load current	$\leq 100$ mA
Output function	NC/NO contact programmable, PNP/NPN, analog output or IO-Link
Switching frequency	$\leq 10$ Hz
Typical response time	$< 10$ ms
IO-Link	
IO-Link specification	V 1.1, Class A
Communication mode	COM 2 (38.4 Kbaud)
Process data width	32 bit
Minimum cycle time	3ms
Profile support	Smart Sensor Profile
Mechanical data	
Dimensions	$\varnothing 38 \times 127.1$ mm
Housing material	Stainless steel/plastic, 1.4404 (AISI 316L)/Grilamid TR90 UV
Ambient temperature	$-25...+65$ °C
Pressure resistance	0...16 bar
Type of protection	IP67, IP69K
Vibration resistance	IEC 60947-5-2
EMC	EN 60068-2-27, EN 60068-2-6
Approvals	CE, UL, ETSI EN 305550-2, FCC/CFR.47 Part 15

## Device data

Part Number	Opening angle	Operating voltage	Output	Process connection
<a href="#">LR5510-10-51-LI2UPN8-H1141</a>	10°	18...33 VDC	4...20 mA/0...10 V, IO-Link	G3/4"
<a href="#">LR5510-10-69-LI2UPN8-H1141</a>	6°			G1"
<a href="#">LR5510-10-34-LI2UPN8-H1141</a>	10°			NPT3/4"
<a href="#">LR5510-10-57-LI2UPN8-H1141</a>	6°			NPT 1"
<a href="#">LR5510-10-51-2UPN8-H1141</a>	10°	10...33 VDC	Switching output, IO-Link	G3/4"
<a href="#">LR5510-10-69-2UPN8-H1141</a>	6°			G1"
<a href="#">LR5510-10-34-2UPN8-H1141</a>	10°			NPT3/4"
<a href="#">LR5510-10-57-2UPN8-H1141</a>	6°			NPT 1"