

Level Product Portfolio

LevelWave and LevelStar Series



LR01 LevelWave



LG01 LevelWave



244LVP LevelStar



244LD LevelStar



167LP



Level, Density and Interface Measurements

The Right Measurements on the Level

We apply superior Foxboro technology and experience to continuously measure the level, interface, or density of liquids in industrial processes. Based on the proven Archimedes buoyancy principle and utilizing no moving parts, our level transmitters are rugged and extremely reliable, requiring virtually no maintenance.

They also supply precise measurements, even at extreme process temperatures from -196°C to $+500^{\circ}\text{C}$ (-320°F to $+930^{\circ}\text{F}$) and pressures from vacuum to 500 bar.

Our loop-powered buoyancy transmitters offer HART and FOUNDATION Fieldbus communication. Plus LCDs and push buttons for easy calibration. Their process-wetted materials are available in steel, stainless steel, inconel, Duplex, or Hastelloy C. To withstand your challenging process environment, they are FM/ATEX rated explosion-proof and intrinsically safe, approved for SIL2 applications with a proof-test interval up to 5 years.

Call on one reliable level transmitter family for all your measuring ranges and applications.



Our Level Transmitter Family

The 244LD LevelStar Buoyancy transmitter is the flagship product for the range of buoyancy transmitters offered. Its rugged design for extreme process temperatures makes it a top choice for all industrial process level measurements.

The 244LVP is a value-based solution for all industry applications, due to a robust, modular design, wherein reliability is equally as important as durability and accuracy.

The 167LP Pneumatic transmitter is used for measuring level, interface, or density of liquids. The transmitter converts the lifting force of the displacer body to an analog pneumatic output. Ideal for extreme process level measurements.



Selection Guide

LevelStar Sandwich- and Flange-Mounted Versions



Model	244LD LevelStar
Type / Design	Sandwich Mounted
Measurements	Level, Interface, Density
Size	DN70 / 80 / 100 ANSI 3" / 4"
Accuracy	±0.2% at Level, Density, and Interface measurement. Increased accuracy with customized adjustments.
Pressure Range	Full vacuum up to 500 bar / 7,250 psi
Process Temperature Range	-196°C to +500°C (-320°F to +932°F)
Ambient Temperature Range	-50°C to +85°C (-58°F to +185°F)
Measuring Range	Up to 50 m / 165'
Body Material ¹	316L Stainless Steel, 321, Duplex Inconel® 625, 825 Carbon Steel Hastelloy C
Housing Material	Aluminum & Stainless Steel
Certifications and Approvals	ATEX ia / d, FM, CSA, GOST-R, NEPSI, INMETRO SIL2, NACE
Communication Protocols	HART, FOUNDATION Fieldbus
Protection Category	IP66
Accessories	Heating / Cooling
Specifications*	PSS EML0171 G



244LVP LevelStar

167LP LevelStar

Flange Mounted

Sandwich Mounted

Level, Interface, Density

Level, Interface, Density

DN50 / 80 / 100 ANSI 2" / 3" / 4"

DN80 / 100 ANSI 3" / 4"

±0.2 % at Level, Density, and Interface measurement.
Increased accuracy with customized adjustments.

Relative error <1%

Full vacuum up to 150 bar / 2,175 psi

Full vacuum up to 250 bar / 3,625 psi

-50°C to +150°C (-58°F to +302°F)

-196°C to +500°C (-320°F to +932°F)

-50°C to +70°C (-50°F to +158°F)

-50°C to +90°C (-58°F to +194°F)

Up to 12 m / 40'

Up to 50 m / 165'

316L Stainless Steel / 316Ti

316 Stainless Steel
Carbon Steel
Hastelloy C

Aluminum & Stainless Steel

Aluminum

ATEX ia / d, FM, CSA, GOST-R, NEPSI, INMETRO
SIL2, NACE

ATEX ia / d
NACE

HART, FOUNDATION Fieldbus

Pneumatic

IP66

IP55 / IP65

On Request

Heating / Cooling

PSS EML1710 G

PSS EML0110 A

¹ Others on Request.

* Please use this term in our search window on www.schneider-electric.com to access more product details.



LevelWave Radar

Description

LevelWave Series Models LR01 and LG01 Radar level measurement devices offer accurate reliable level measurement for the widest choice of installation and applications.

The LevelWave Radar Series is state-of-the-art measurement technology combined with robust and durable instrumentation. Each device has a unique 360-degree rotation, which allows for side or top mounting as standard, making it much simpler to fit into an existing space. For greater ease, all LevelWave instruments feature a user-friendly external display, offering easy, intuitive configuration for a new operator. For further effortless operation for busy engineers, there is an option for full digital remote electronics up to a distance of 100 meters.

LG01 and LR01 LevelWave Radar Series



Benefit

The Foxboro LG01 LevelWave Guided Wave Radar transmitter is designed to perform continuous level measurement in a wide range of industries and applications. A modular design of housing and sensor ensures suitability for a variety of mounting positions and applications. It's a universal measurement device for liquids and solids.

With Quick Noise Scanning to reduce false reflections, the LG01 Guided Wave Radar can be used for liquid level measurement in process tanks for various chemical products as well as liquid and solid volume measurement for storage tanks.

The Foxboro LR01 Continuous Wave Free Space Radar incorporates a modular design of housing and antenna that ensures suitability for a variety of mounting positions and applications. The Empty-Tank Spectrum filter allows for measurements with fixed or moving parts in tank. It is ideally designed for measurement of liquids, pastes, and slurries in storage and process tanks as well as water and wastewater applications.

Selection Guide

Radar vs. LevelStar Displacer

Foxboro Field Devices offer more than radar level meters. Foxboro Field Devices offer different product solutions for level, density, and interface measurement. For each application requirement there are dedicated solutions available from Foxboro. Use this table to assist you with selecting the best product for your needs.



Model	Free-Space Radar LR01	Guided Wave Radar LG01	Displacer 244LD
Parameters			
Density	No	No	Good
Interface (emulsion layer)	No	No	Good
Very Low Dielectric Constant	No	Suitable ¹	Good
Multipurpose Tanks	Good	Good	Suitable ¹
Tank with Built-In Components	Suitable ¹	Suitable ¹	Suitable ¹
Dished Vessel / Tank End	Suitable ¹	Good	Good
Strong Moving Media	Good	Suitable ¹	Suitable ¹
Steam Generation	No	No	Good
Media with Foam / Boiling Surface	No	Suitable ¹	Good
Pressure >40 Bar	No	No	Good
Direct Measurement Inside the Tank	Good	Good	Good
Non-Contact Measurement	Good	No	No
Temperature >+250°C (482°F)	No	Suitable ¹	Good
Temperature <-50°C (-58°F)	Good	No	Good
Specifications*	PSS EML3020 A	PSS EML3010 A	PSS EML0710 G

¹ Under certain conditions.

* Please use this term in our search window on www.schneider-electric.com to access more product details.



With the LevelWave Series, different tanks can be managed through remote electronics option for a distance of up to 100 m / 328'.



The LevelWave Series has a broad accessory portfolio such as stainless steel weather protection to ensure operation in all extremes of temperature and weather conditions.

Selection Guide

LevelWave Radar Series

Here is a quick breakdown of the most commonly used process parameters to help you select which product suits your application best.



Model	Free-Space Radar LR01	Guided Wave Radar LG01
Process Parameters		
Measuring Range ≤ 30 m; $\leq 98.43'$	Good	Good
Measuring Range ≤ 40 m; $\leq 131.23'$	No	Good
Storage Tanks	Good	Good
Still Well / Reference Chambers	Suitable ¹	Good
Complex Process Tanks (e.g., with agitators)	Suitable ¹	Good
Pressure ≤ 40 barg; ≤ 580 psig	Good	Good
Process Connection Temperature $\leq +250^\circ\text{C}$; $\leq +482^\circ\text{F}$	Good	Good
Process Connection Temperature $\leq +300^\circ\text{C}$; $\leq +572^\circ\text{F}$	No	Good
2-wire Technology	Good	Good
Profibus PA / FOUNDATION Fieldbus	Good	Good
ATEX, FM, IECEx and Other Approvals	Good	Good
SIL2	Good	Good
Specifications*	PSS EML3020 A	PSS EML3010 A

¹ Under certain conditions.

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For superior performance in petrochemical and oil & gas applications. The 244LD LevelStar comes with a wear-free design for rough conditions.



The LR01 is used in the food & beverage industry. Non-contact with the process so no EHEDG or 3-A sanitary certificate needed.

Selection Guide

LevelWave Radar Series



Model	LR01 Free-Space Radar
Frequency	X-band (10 GHz)
Technology	Frequency Modulated Continuous Wave (FMCW)
Media	Liquids, Pastes and Slurries
Calibrated Accuracy	±5 mm (±0.2")
Pressure Range	40 bar / 580 psi
Process Temperature Range	-60°C to +250°C (-76°F to +482°F)
Ambient Temperature Range	-40°C to +80°C (-40°F to +176°F)
Measuring Range	30 m / 100'
Material (Probe/Antenna)	Stainless Steel, PP, PTFE
Housing Material	Aluminum, Stainless Steel
Remote Version	Up to 100 m / 328'
Certifications and Approvals	ATEX, IECEx, FM, CSA, NEPSI, SIL, NACE
Communication Protocols	HART, FOUNDATION Fieldbus, Profibus PA
Process Connections ¹	ANSI, EN / DIN, JIS, NPT-Thread
Protection Category	IP66 / 67
Accessories	Heating / Cooling, Weather Protection, Purging (liquid or gas)
Specifications*	PSS EML3020 A-EN



LG01 Guided-Wave Radar

L-band (1 GHz)

Time-Domain Reflectometry (TDR)

Liquids, Pastes, Solids

±3 mm (±0.12")

40 bar / 580 psi

-50°C to +300°C (-58°F to +572°F)

-40°C to +80°C (-40°F to +176°F)

40 m / 130'

Stainless Steel, Hastelloy C

Aluminum, Stainless Steel

Up to 100 m / 328'

ATEX, IECEx, FM, CSA, NEPSI,
SIL, NACE

HART, FOUNDATION Fieldbus, Profibus PA

ANSI, EN / DIN, JIS, NPT-Thread

IP66 / 67

Heating / Cooling, Weather Protection, Purging (liquid or gas)

PSS EML3010 A-EN

¹ Others on Request.

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