

Level measurement

Continuous level measurement – Radar transmitters

SITRANS LR260

Overview



SITRANS LR260 is a 2-wire 25 GHz pulse radar level transmitter for continuous monitoring of solids and liquids in storage vessels including extreme levels of dust and high temperatures, to a range of 30 m (98.4 ft).

Benefits

- Graphical local user interface (LUI) makes operation simple with plug-and-play setup using the intuitive Quick Start Wizard
- LUI displays echo profiles for diagnostic support
- 25 GHz high frequency allows for small horn antennas mounted easily in nozzles
- Communication using HART or PROFIBUS PA
- Process Intelligence signal processing for improved measurement reliability and Auto False-Echo Suppression of fixed obstructions
- Programming using infrared Intrinsically Safe handheld programmer or SIMATIC PDM

Application

SITRANS LR260 includes a graphical local user interface (LUI) that improves setup and operation using an intuitive Quick Start Wizard, and echo profile displays for diagnostic support. Startup is easy using the Quick Start wizard with a few parameters required for basic operation.

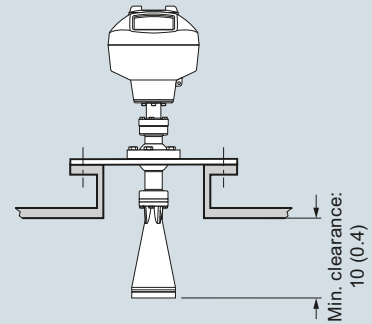
SITRANS LR260's unique design allows safe and simple programming using the Intrinsically Safe handheld programmer without having to open the instrument's lid.

SITRANS LR260 measures virtually any solids material to a range of 30 m (98.4 ft).

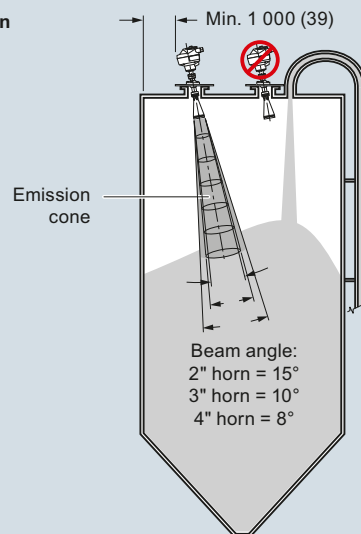
- Key Applications: cement powder, plastic powder/pellets, grain, flour, coal, solids and liquids bulk storage vessels, and other applications.

Configuration

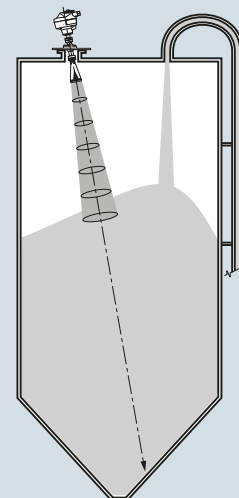
Mounting on a nozzle



Installation



Positioning with easy Aimer



SITRANS LR260 installation, dimensions in mm (inch)

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Technical specifications

Mode of operation		Design
Measuring principle	Pulse radar level measurement	Enclosure
Frequency	K-band (25.0 GHz)	• Construction
Minimum detectable distance	0.05 m (2 inch) from end of horn	• Conduit entry
Maximum measuring range ¹⁾		Degree of protection
• Solids	<ul style="list-style-type: none"> • 2" horn: 10 m (32.8 ft) • 3" horn: 20 m (65.6 ft) • 4" horn: 30 m (98.4 ft) 	Weight
• Liquids	<ul style="list-style-type: none"> • 2" horn: 20 m (65.6 ft) • 3" horn: 30 m (98.4 ft) • 4" horn: 30 m (98.4 ft) 	Display (local)
Output - HART		Flange and horn (easy aimer model)
Power	<ul style="list-style-type: none"> • 4 ... 20 mA (± 0.02 mA accuracy) • Nominal 24 V DC (max. 30 V DC) 	• Material
Fail signal Load	3.6 mA ... 23 mA; or last value 230 ... 600 Ω	• Horn antenna
Output - PROFIBUS PA		Process connections
	<ul style="list-style-type: none"> • Per IEC 61158-2 • 15.0 mA • Profile version 3.01, Class B 	• Universal flanges ²⁾
Performance (according to reference conditions IEC60770-1)		Mechanical (Threaded Connection model)
Maximum measured error (including hysteresis and non-repeatability)	<ul style="list-style-type: none"> • 25 mm (1 inch) from minimum detectable distance to 300 mm (11.8 inch) • Remainder of range = 10 mm (0.39 inch) or 0.1% of span (whichever is greater) 	• Threaded connection
Rated operating conditions		• Materials
Installation conditions		
• Location	Indoor/outdoor	Certificates and approvals
Ambient conditions (enclosure)		General
• Ambient temperature	-40 ... +80 °C (-40 ... +176 °F)	Radio
• Installation category	I	Hazardous
• Pollution degree	4	
Medium conditions		
Dielectric constant ϵ_r	$\epsilon_r > 1.6$, antenna and application dependent	
Process temperature	-40 ... +200 °C (-40 ... +392 °F)	
Process pressure	<ul style="list-style-type: none"> • 0.5 bar g (7.25 psi g) maximum • 3 bar g (43.5 psi g) optional with 80 °C (176 °F) temperature max 	
		Programming
		Intrinsically Safe Siemens handheld programmer
		• Approvals for handheld programmer
		Handheld communicator
		PC
		Display (local)

¹⁾ From sensor reference point

²⁾ Universal flange mates with EN 1092-1 (PN 16)/ASME B16.5 (150 lb)/JIS 2220 (10K) bolt hole pattern

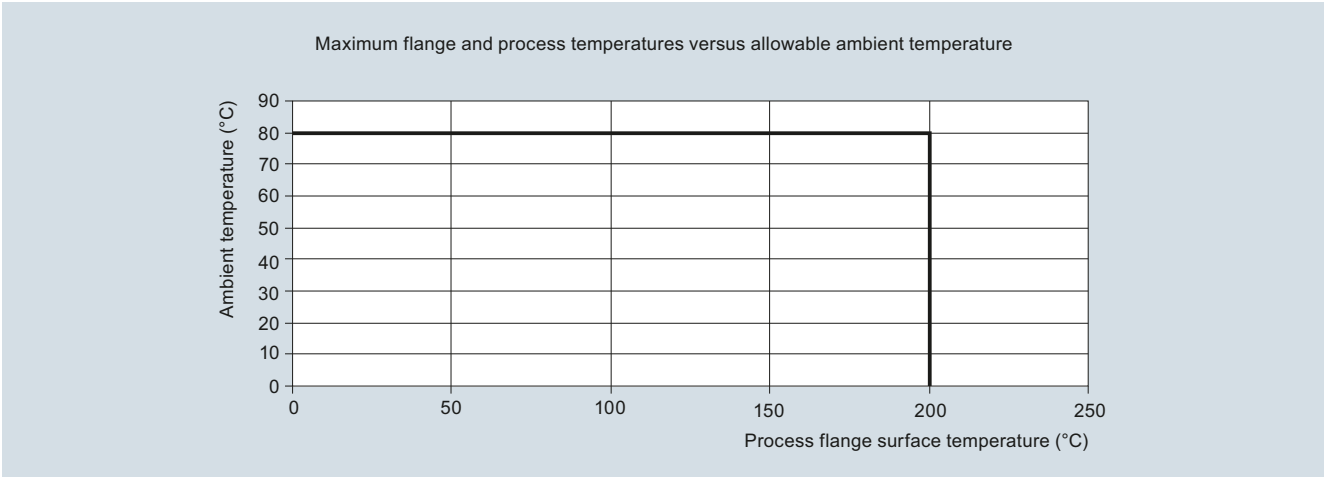
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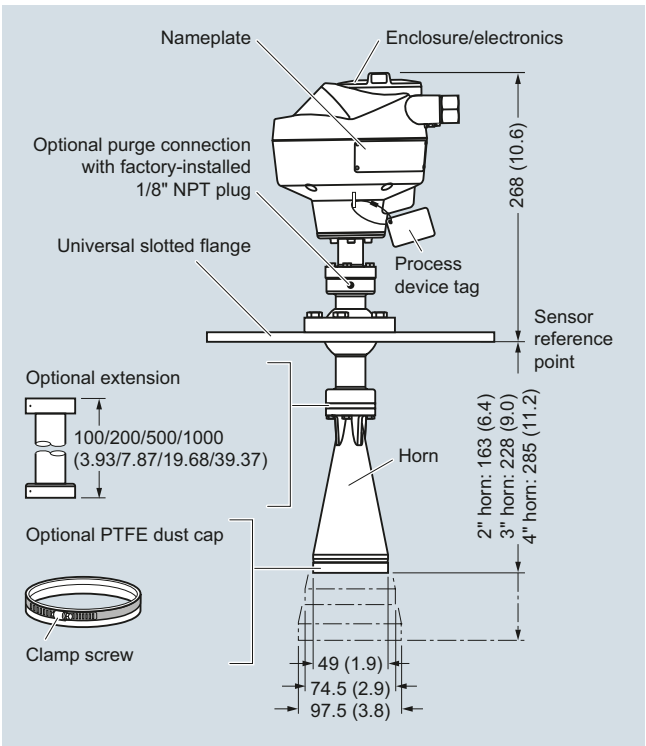
Characteristic curves

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SITRANS LR260 Ambient/Process Flange Surface Temperature Curve

Dimensional drawings



SITRANS LR260, dimensions in mm (inch)

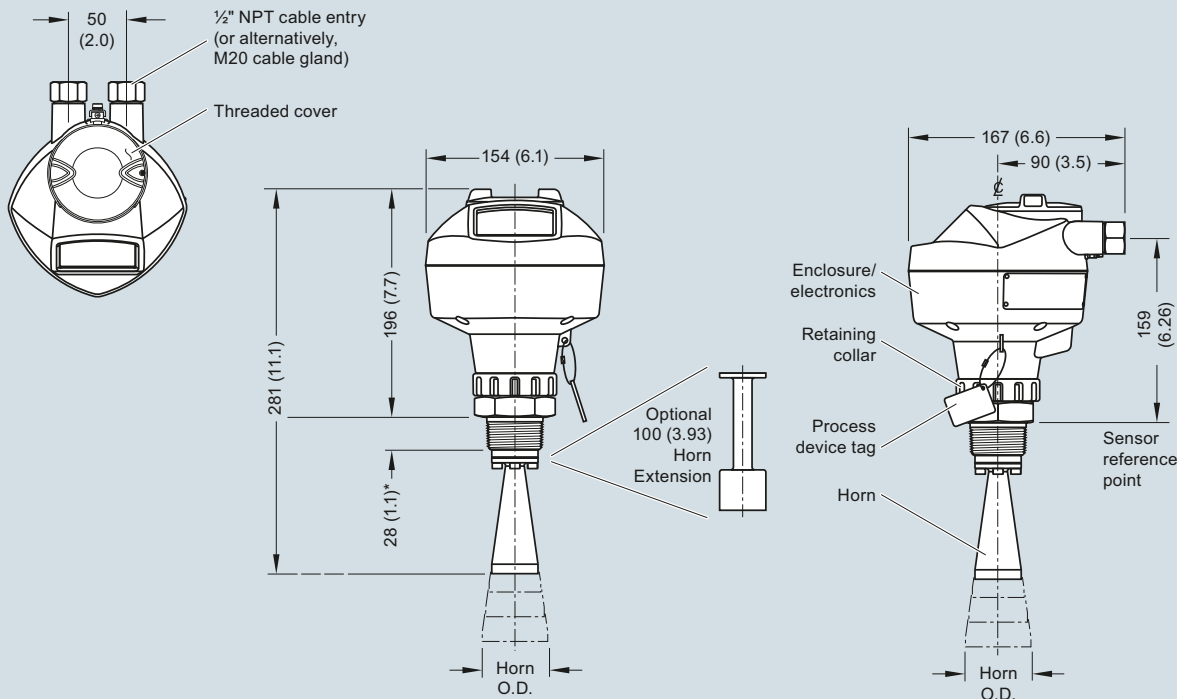
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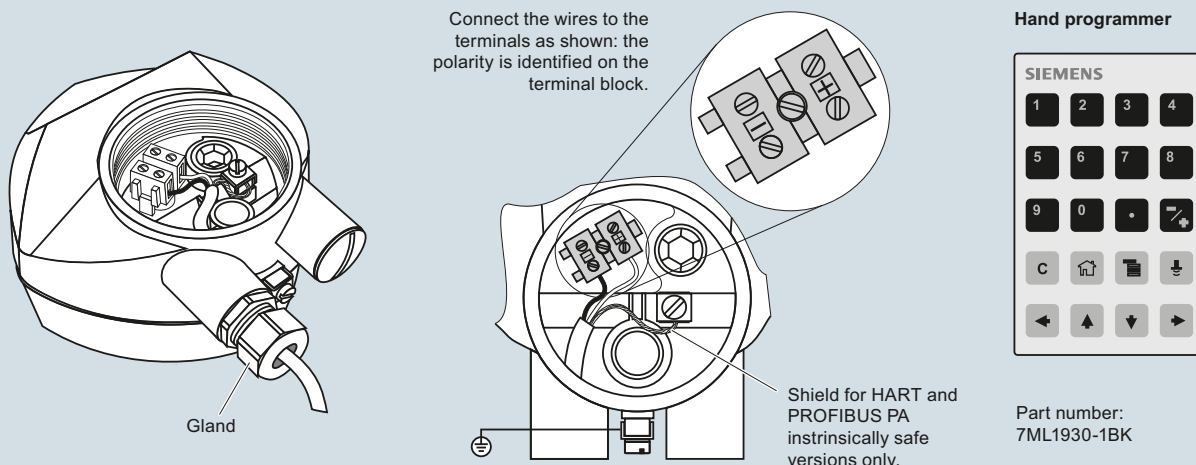
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Antenna Type	Antenna O.D.	Height to sensor reference point			Beam angle	Measurement range
		1-1/2" threaded connection	2" threaded connection	3" threaded connection		
2" horn	47.8 (1.88)	N/A	166 (6.55)	180 (7.09)	15 degrees	20 m (65.6 ft)
3" horn	74.8 (2.94)	N/A	199 (7.85)	213 (8.39)	10 degrees	20 m (65.6 ft)
4" horn	94.8 (3.73)	N/A	254 (10)	268 (10.55)	8 degrees	20 m (65.6 ft)

SITRANS LR260, dimensions in mm (inch)

Schematics



Notes:

1. DC terminal shall be supplied from a source providing electrical isolation between the input and output, to meet the applicable safety requirements of IEC 61010-1.
2. All field wiring must have insulation suitable for rated input voltages.
3. Use shielded twisted pair cable (14 ... 22 AWG) for HART version.
4. Separate cables and conduit may be required to conform to standard instrumentation wiring practices or electrical codes.

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