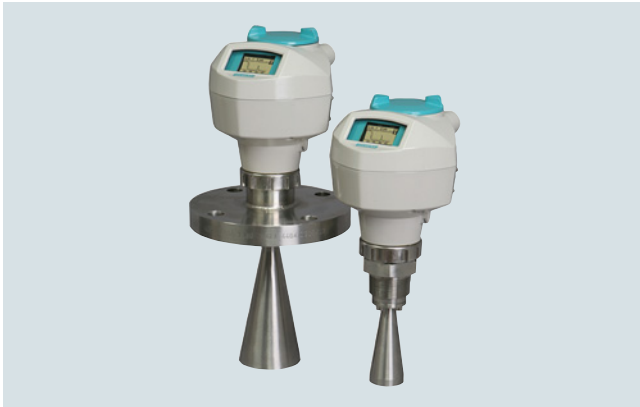


## Overview



SITRANS LR250 is a 2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20 m (66 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 antennas for easy mounting in nozzles
- Insensitive to mounting location and obstructions, and less sensitive to nozzle interference
- Short blanking distance for improved minimum measuring range to 50 mm (2 inch) from the end of the antenna
- Communication using HART, PROFIBUS PA, or FOUNDATION Fieldbus
- Process Intelligence signal processing for improved measurement reliability and Auto False-Echo Suppression of fixed obstructions
- Programming using infrared Intrinsically Safe handheld programmer or over a network using SIMATIC PDM, Emerson AMS, or Field Device Tools such as PACTware or Fieldcare via SITRANS DTM
- Functional Safety (SIL 2). Device suitable for use in accordance with IEC 61508 and IEC 61511
- 3 mm (0.118 inch) accuracy in accordance with IEC 60770-1
- Suitable for API 2350

## Application

SITRANS LR250 includes a graphical local user interface (LUI) that improves setup and operation by including 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.

The 25 GHz frequency creates a narrow, focused beam allowing for smaller horn antenna options and decreasing sensitivity to obstructions.

SITRANS LR250's unique design allows safe and simple programming using the Intrinsically Safe handheld programmer without saving to open the instrument's lid.

SITRANS LR250 measures superbly on low dielectric media, and in small vessels, as well as tall and narrow vessels.

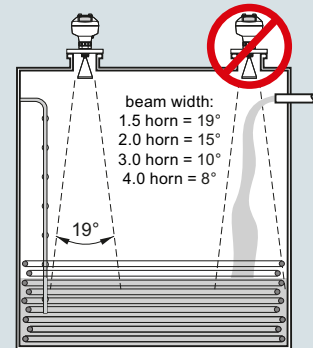
- Key Applications: liquid bulk storage tanks, process vessels, vaporous liquids, high temperatures, low dielectric media and applications with functional safety requirements

## Configuration

### Installation

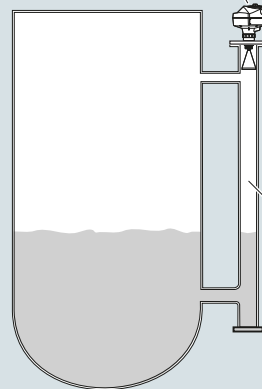
#### Note:

- Beam angle is the width of the cone where the energy density is half of the peak energy density.
- The peak energy density is directly in front of and in line with the horn antenna.
- There is a signal transmitted outside of the beam angle; therefore false targets may be detected.
- Use largest possible antenna.



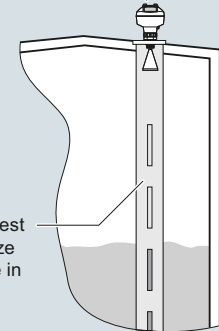
### Mounting on bypass

Orient front or back of device toward vent.

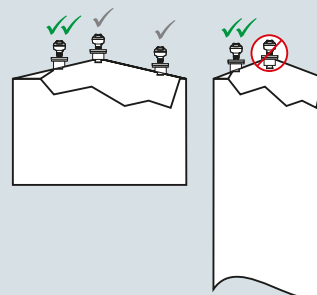


### Mounting on stilling well

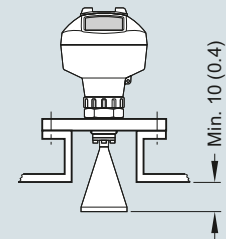
Orient front or back of device toward stillpipe slots.



### Mounting on vessel



### Mounting on a nozzle



SITRANS LR250 installation, dimensions in mm (inch)

## Level Measurement

Continuous level measurement  
Radar transmitters

### SITRANS LR250 Horn Antenna

#### Technical specifications

<b>Mode of operation</b>		<b>Power supply</b>	
Measuring principle	Radar level measurement	4 ... 20 mA/HART	Nominal 24 V DC (max. 30 V DC) with max. 550 Ω
Frequency	K-band (25.0 GHz)	PROFIBUS PA	<ul style="list-style-type: none"> <li>• 15 mA</li> <li>• Per IEC 61158-2</li> </ul>
Minimum measuring range	50 mm (2 inch) from end of antenna	FOUNDATION Fieldbus	<ul style="list-style-type: none"> <li>• 20.0 mA</li> <li>• Per IEC 61158-2</li> </ul>
Maximum measuring range	20 m (65 ft), antenna dependent		
<b>Output</b>		<b>Certificates and approvals</b>	
HART	Version 5.1	General	CSA <sub>US/C</sub> , CE, FM, RCM
• Analog output	4 ... 20 mA	Radio	FCC, Industry Canada, RED, RCM
• Accuracy	± 0.02 mA	Hazardous	
• Fail-safe	<ul style="list-style-type: none"> <li>• Programmable as high low or hold (loss of echo)</li> <li>• NE 43 programmable</li> </ul>	• Explosion Proof (Brazil)	INMETRO Ex d ia mb IIC T4 Ga/Gb, Ex ia ta IIIC T100 °C Da
PROFIBUS PA	Profile 3.01	• Increased Safety (Brazil)	INMETRO Ex e ia mb IIC T4 Ga/Gb, Ex ia ta IIIC T100 °C Da
• Function blocks	2 Analog Input (AI)	• Intrinsically Safe (Brazil)	INMETRO Ex ia IIC T4 Ga, Ex ia ta IIIC T100 °C Da
FOUNDATION Fieldbus	H1	• Explosion Proof (Canada/USA)	CSA/FM Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Class III T4
• Functionality	Basic or LAS	• Intrinsically Safe (Canada/USA)	CSA/FM Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Class III T4
• Version	ITK 5.2.0	• Non-incendive (Canada/USA)	CSA/FM Class I, Div. 2, Groups A, B, C, D T5
• Function blocks	2 Analog Input (AI)	• Flame Proof/Increased Safety (China)	NEPSI Ex d ia mb IIC T4 Ga/Gb, Ex ia mb IIC T4 Ga/Gb, Ex iaD tD A20 IP67 T100 °C
<b>Performance (according to reference conditions IEC60770-1)</b>		• Intrinsically Safe (China)	NEPSI Ex ia IIC T4 Ga, Ex iaD tD A20 IP67 T100 °C
Maximum measured error	3 mm (0.118 inch)	• Non-sparking (China)	NEPSI Ex nA IIC T4 Gc
Influence of ambient temperature	< 0.003 %/K	• Intrinsically Safe (Europe)	ATEX II 1G Ex ia IIC T4 Ga
<b>Rated operating conditions</b>		• Non-sparking (Europe)	ATEX II 3G Ex nA IIC T4 Gc
Installation conditions		• Flame Proof (International/Europe)	IECEX/ATEX II 1/2 GD, 1D, 2D, Ex e mb ia IIC T4 Ga/Gb, Ex ia ta IIC T100 °C Da
• Location	Indoor/outdoor	• Increased Safety (International/Europe)	IECEX/ATEX II 1/2 GD, 1D, 2D, Ex e mb ia IIC T4 Ga/Gb, Ex ia ta IIIIC T100 °C Da
Ambient conditions (enclosure)		• Intrinsically Safe (International)	IECEX/ATEX II 1 G Ex ia IIC T4 Ga, IECEX/ATEX II 1D Ex ia ta IIC T100 °C Da
• Ambient temperature	-40 ... +80 °C (-40 ... +176 °F)	• Explosion Proof (Russia/Kazakhstan)	EAC Ex d
• Installation category	I	• Increased Safety (Russia/Kazakhstan)	EAC Ex e
• Pollution degree	4	• Intrinsically Safe (Russia/Kazakhstan)	EAC Ex ia
<b>Medium conditions</b>		• Marine	<ul style="list-style-type: none"> <li>• Lloyd's Register of Shipping</li> <li>• ABS Type Approval</li> <li>• Bureau Veritas</li> </ul>
Dielectric constant $\epsilon_r$	> 1.6, antenna and application dependent	• Functional Safety	SIL-2 suitable in accordance with IEC 61508/61511
Process temperature	-40 ... +200 °C (-40 ... +392 °F) (at process connection with FKM O-ring) -20 ... +200 °C (-4 ... +392 °F) (at process connection with FFKM O-ring)		
Process pressure	Up to 40 bar g (580 psi g), process connection and temperature dependent. See Pressure/Temperature curves for more information		
<b>Design</b>			
Enclosure			
• Material	Aluminum, polyester powder-coated		
• Cable inlet	2 x M20 x 1.5 or 2 x 1/2" NPT		
Degree of protection	Type 4X/NEMA 4X, Type 6/NEMA 6, IP67, IP68		
Weight	< 3 kg (6.6 lb) 3.75 mm (1/2 inch) threaded connection with 1/2" horn antenna		
Display (local)	Graphic local user interface including quick start wizard and echo profile display		
Antenna			
• Material	316L stainless steel [optional alloy N06022/2.4602 (Hastelloy C-22 or equivalent)]		
• Dimensions (nominal horn sizes)	Standard 1.5 inch (40 mm), 2 inch (48 mm), 3 inch (75 mm), 4 inch (95 mm) horn, and optional 100 mm (4 inch) horn extension		
Process connections			
• Process connection	1 1/2", 2" or 3" NPT [(Taper), ANSI/ASME B1.20.1] R 1 1/2", 2" or 3" [(BSPT), EN 10226] G 1 1/2", 2" or 3" [(BSPP), EN ISO 228-1]		
• Flange connection	2", 3", 4" (ANSI 150, 300 lb), 50, 80, 100 mm (PN 16, 40, JIS 10K)		

**Programming**

Intrinsically Safe Siemens handheld programmer	Infrared receiver
• Approvals for handheld programmer	IS model: ATEX II 1 GD Ex ia IIC T4 Ga Ex ia D 20 T135 °C T <sub>a</sub> = -20 ... +50 °C CSA/FM Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G, T6 T <sub>a</sub> = +50 °C IECEX SIR 09.0073
Handheld communicator	HART communicator 375/475
PC	<ul style="list-style-type: none"> <li>• SIMATIC PDM</li> <li>• Emerson AMS</li> <li>• SITRANS DTM (for connection into FDT such as PACTware or Field-care)</li> </ul>
Display (local)	Graphic local user interface including quick start wizard and echo profile displays

## Level Measurement

Continuous level measurement  
Radar transmitters

### SITRANS LR250 Horn Antenna

#### Selection and Ordering data

##### SITRANS LR250 horn antenna

2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20 m (66 ft) (antenna dependent). Ideal for small vessels and low dielectric media.

↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

#### Process Connection and Antenna Material

316L (1.4435 or 1.4404) stainless steel, PTFE emitter, FKM seal<sup>1)</sup> **0**  
 316L (1.4435 or 1.4404) stainless steel, PTFE emitter, FFKM seal<sup>1)</sup> **1**  
 Hastelloy C-22/2.4602 (or equivalent), PTFE emitter, FKM seal<sup>2)</sup> **2**  
 Hastelloy C-22/2.4602 (or equivalent), PTFE emitter, FFKM seal<sup>2)</sup> **3**

#### Process Connection Type

Threaded connection 316L

1½" NPT (ASME B1.20.1) (tapered thread)<sup>3)</sup> **A A**  
 R 1½" [(BSPT), EN 10226-1] (tapered thread)<sup>3)</sup> **A B**  
 G 1½" [(BSPP), EN ISO 228-1] (parallel thread)<sup>3)</sup> **A C**  
 2" NPT (ASME B1.20.1) (tapered thread)<sup>4)</sup> **A D**  
 R 2" [(BSPT), EN 10226-1] (tapered thread)<sup>4)</sup> **A E**  
 G 2" [(BSPP), EN ISO 228-1] (parallel thread)<sup>4)</sup> **A F**  
 3" NPT (ASME B1.20.1) (tapered thread)<sup>4)</sup> **A G**  
 R 3" [(BSPT), EN 10226-1] (tapered thread)<sup>4)</sup> **A H**  
 G 3" [(BSPP), EN ISO 228-1] (parallel thread)<sup>4)</sup> **A J**

Flanged connection 316L<sup>4)</sup>

2" Class 150 ASME B16.5, raised face **B D**  
 3" Class 150 ASME B16.5, raised face **B E**  
 4" Class 150 ASME B16.5, raised face **B F**  
 2" Class 300 ASME B16.5, raised face **C D**  
 3" Class 300 ASME B16.5, raised face **C E**  
 4" Class 300 ASME B16.5, raised face **C F**  
 50A 10K JIS B 2220 flat face **F A**  
 80A 10K JIS B 2220 flat face **F B**  
 100A 10K JIS B 2220 flat face **F C**  
 DN 50 PN 16 EN 1092-1 Type B1 raised face **G A**  
 DN 80 PN 16 EN 1092-1 Type B1 raised face **G B**  
 DN 100 PN 16 EN 1092-1 Type B1 raised face **G C**  
 DN 150 PN 16 EN 1092-1 Type B1 raised face **G D**  
 DN 50 PN 40 EN 1092-1 Type B1 raised face **H A**  
 DN 80 PN 40 EN 1092-1 Type B1 raised face **H B**  
 DN 100 PN 40 EN 1092-1 Type B1 raised face **H C**  
 DN 150 PN 40 EN 1092-1 Type B1 raised face **H D**

Article No.

7ML5431-

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#### Selection and Ordering data

##### SITRANS LR250 horn antenna

2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20 m (66 ft) (antenna dependent). Ideal for small vessels and low dielectric media.

Flanged connection Hastelloy C<sup>4)</sup>

2" Class 150 ASME B16.5 raised face **J A**  
 3" Class 150 ASME B16.5 raised face **J B**  
 4" Class 150 ASME B16.5 raised face **J C**  
 2" Class 300 ASME B16.5 raised face **J D**  
 3" Class 300 ASME B16.5 raised face **J E**  
 4" Class 300 ASME B16.5 raised face **J F**  
 DN 50 PN 16 EN 1092-1 Type B1 raised face **K A**  
 DN 80 PN 16 EN 1092-1 Type B1 raised face **K B**  
 DN 100 PN 16 EN 1092-1 Type B1 raised face **K C**  
 DN 50 PN 40 EN 1092-1 Type B1 raised face **K D**  
 DN 80 PN 40 EN 1092-1 Type B1 raised face **K E**  
 DN 100 PN 40 EN 1092-1 Type B1 raised face **K F**  
 50A 10K JIS B 2220 raised face **L A**  
 80A 10K JIS B 2220 raised face **L B**  
 100A 10K JIS B 2220 raised face **L C**  
 DN 50 PN 16 EN 1092-1 Type B1 raised face **M A**  
 DN 80 PN 16 EN 1092-1 Type B1 raised face **M B**  
 DN 100 PN 16 EN 1092-1 Type B1 raised face **M C**  
 DN 150 PN 16 EN 1092-1 Type B1 raised face **M D**  
 DN 50 PN 40 EN 1092-1 Type B1 raised face **M E**  
 DN 80 PN 40 EN 1092-1 Type B1 raised face **M F**  
 DN 100 PN 40 EN 1092-1 Type B1 raised face **M G**  
 DN 150 PN 40 EN 1092-1 Type B1 raised face **M H**

#### Communication/Output

PROFIBUS PA<sup>5)</sup> **1**  
 4 ... 20 mA, HART, start-up at < 3.6 mA **2**  
 FOUNDATION Fieldbus<sup>5)</sup> **3**

#### Enclosure/Cable inlet

Aluminum, Epoxy painted  
 2 x ½" NPT **0**  
 2 x M20 x 1.5 **1**

#### Antenna

1½" horn **A**  
 2" horn (fits 2" ASME or DN 50 nozzles) **B**  
 3" horn (fits 3" ASME or DN 80 nozzles) **C**  
 4" horn (fits 4" ASME or DN 100 nozzles) **D**  
 1½" horn with 100 mm extension **E**  
 2" horn with 100 mm extension **F**  
 3" horn with 100 mm extension **G**  
 4" horn with 100 mm extension **H**  
 Hastelloy C22 (or equivalent)  
 2" horn (fits 2" ASME or DN 50 nozzles) **J**  
 3" horn (fits 3" ASME or DN 80 nozzles) **K**  
 4" horn (fits 4" ASME or DN 100 nozzles) **L**  
 2" horn (fits 2" ASME or DN 50 nozzles) with 100 mm extension **M**  
 3" horn (fits 3" ASME or DN 80 nozzles) with 100 mm extension **N**  
 4" horn (fits 4" ASME or DN 100 nozzles) with 100 mm extension **P**

Article No.

7ML5431-

0 -

Selection and Ordering data	Article No.
<b>SITRANS LR250 horn antenna</b>	<b>7ML5431-</b>
2-wire, 25 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20 m (66 ft) (antenna dependent). Ideal for small vessels and low dielectric media.	<b>0 -</b>
<b>Approvals</b>	
General Purpose: CE, CSA, FM, FCC, RED, RCM	<b>A</b>
Intrinsically Safe: CSA/FM Class I, Div. 1, Groups A, B, C, D, Class II, Div. 1, Groups E, F, G, Class III T4 FCC, Industry Canada	<b>B</b>
Intrinsically Safe: IECEx/ATEX II 1 G Ex ia IIC T4 Ga, IECEx/ATEX II 1D Ex ia ta IIIC T100 °C Da, INMETRO Ex ia IIC T4 Ga, Ex ia ta IIIC T100 °C Da, CE, RED, RCM	<b>C</b>
Non-incendive: CSA/FM Class I, Div. 2, Groups A, B, C, D T5, FCC, Industry Canada	<b>D</b>
Non Sparking: ATEX II 3G Ex nA IIC T4 Gc, CE, RED, RCM	<b>E</b>
Increased Safety: IECEx/ATEX II 1/2 GD, 1D, 2D Ex e mb ia IIC T4 Ga/Gb, Ex ia ta IIIC T100 °C Da, INMETRO Ex e ia mb IIC T4 Ga/Gb, Ex ia ta IIIC T100 °C Da, CE, RED, RCM <sup>6)</sup>	<b>F</b>
Flameproof: IECEx/ATEX II 1/2 GD 1D, 2D Ex d mb ia IIC T4 Ga/Gb, Ex ia ta IIIC T100 °C Da, INMETRO Ex d ia mb IIC T4 Ga/Gb, Ex ia ta IIIC T100 °C Da, CE, RED, RCM <sup>6)</sup>	<b>G</b>
Explosion proof: CSA/FM Class I, II, and III, Div. 1, Groups A, B, C, D, E, F, G, FCC, Industry Canada <sup>b)</sup>	<b>H</b>
Non Sparking: NEPSI Ex nA IIC T4 Gc	<b>K</b>
Intrinsically Safe: NEPSI Ex ia IIC T4 Ga, Ex iaD tD A20 IP67 T100 °C	<b>L</b>
Flameproof: NEPSI Ex d ia mb IIC T4 Ga/Gb, Ex iaD tD A20 IP67 T100 °C <sup>6)</sup>	<b>M</b>
Increased Safety: NEPSI Ex e ia mb IIC T4 Ga/Gb, Ex iaD tD A20 IP67 T100 °C <sup>6)</sup>	<b>N</b>
<b>Pressure rating</b>	
Rating per Pressure/Temperature curves in manual	<b>0</b>
0.5 bar g (7.25 psi g) maximum <sup>7)</sup>	<b>1</b>

<sup>1)</sup> Available with process connection options AA ... HD and Antenna Versions A ... H only

<sup>2)</sup> Available with process connection options JA ... MH and Antenna Versions J ... P only

<sup>3)</sup> Not available with Antenna options B, C, D, F, G, H.

<sup>4)</sup> Not available with Antenna options A and E.

<sup>5)</sup> Available with Approval options A, B, C, D, K, and L.

<sup>6)</sup> Available only with Communications option 2.

<sup>7)</sup> Available with Process Connection and Antenna Material 0, 1, 2, and 3 only

## Level Measurement

Continuous level measurement  
Radar transmitters

### SITRANS LR250 Horn Antenna

#### Selection and Ordering data

Order code

#### Further designs

Please add "**-Z**" to Article No. and specify Order code(s).

Plug M12 with mating Connector<sup>1)2)3)</sup>

**A50**

Plug 7/8" with mating Connector<sup>2)3)4)</sup>

**A55**

Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)];  
Measuring-point number/identification  
(max. 27 characters); specify in plain text

**Y15**

Manufacturer's Test Certificate: M to DIN 55350,  
Part 18 and to ISO 9000

**C11**

Material inspection certificate 3.1 of EN 10204

**C12**

Functional Safety (SIL 2). Device suitable for use in  
accordance with IEC 61508 and IEC 61511<sup>3)5)</sup>

**C20**

Namur NE43 compliant, device preset to failsafe  
< 3.6 mA<sup>5)</sup>

**N07**

#### Operating Instructions

Article No.

All literature is available to download for free, in a  
range of languages, at [http://www.siemens.com/  
processinstrumentation/documentation](http://www.siemens.com/processinstrumentation/documentation)

#### Selection and Ordering data

Article No.

#### Accessories

Handheld programmer, Intrinsically safe, EEx ia

**7ML1930-1BK**

HART modem/USB  
(for use with a PC and SIMATIC PDM)

**7MF4997-1DB**

One metallic cable gland M20 x 1.5,  
rated -40 ... +80 °C (-40 ... +176 °F),  
HART (two are required)

**7ML1930-1AP**

One metallic cable gland M20 x 1.5,  
rated -40 ... +80 °C (-40 ... +176 °F), PROFIBUS PA  
and FOUNDATION Fieldbus (two are required)<sup>6)</sup>

**7ML1930-1AQ**

FDA approved FKM O-ring for 2" G (BSPP) process  
connections -28 ... +80 °C (-28 ... +176 °F)

**7ML1830-3AN**

SITRANS RD100, loop powered display -  
see Chapter 7

**7ML5741-...**

SITRANS RD200, universal input display with  
Modbus conversion - see Chapter 7

**7ML5740-...**

SITRANS RD300, dual line display with totalizer  
and linearization curve and Modbus conversion -  
see Chapter 7

**7ML5744-...**

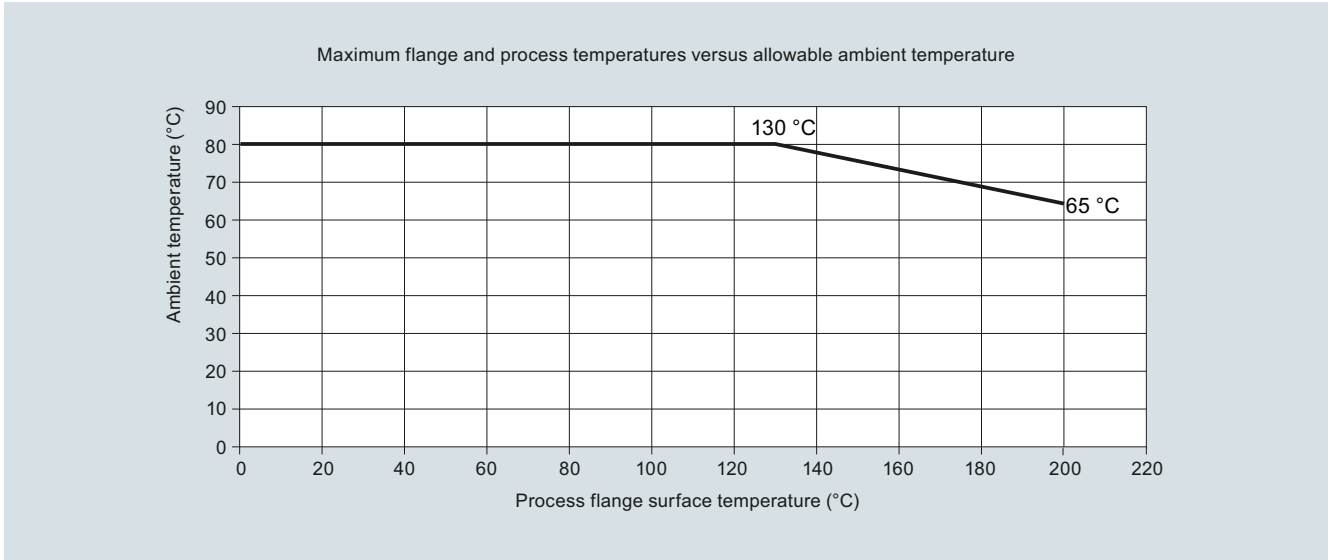
SITRANS RD500 web, universal remote monitoring  
solution for instrumentation - see Chapter 7

**7ML5750-...**

For applicable back up point level switch -  
see point level measurement section

- 1) Available with enclosure option 1 only
- 2) To be used with communication options 1 and 3 only.  
Connector has IP67 rating.
- 3) Available with approval options A and B. Available with approval option C  
for use on intrinsically safe applications only. Not rated for dust Ex.
- 4) Available with enclosure option 0 only
- 5) Applicable to communication option 2 only
- 6) For use with communication options 1 and 3 only

**Characteristic curves**



SITRANS LR250 ambient/process flange surface temperature curve

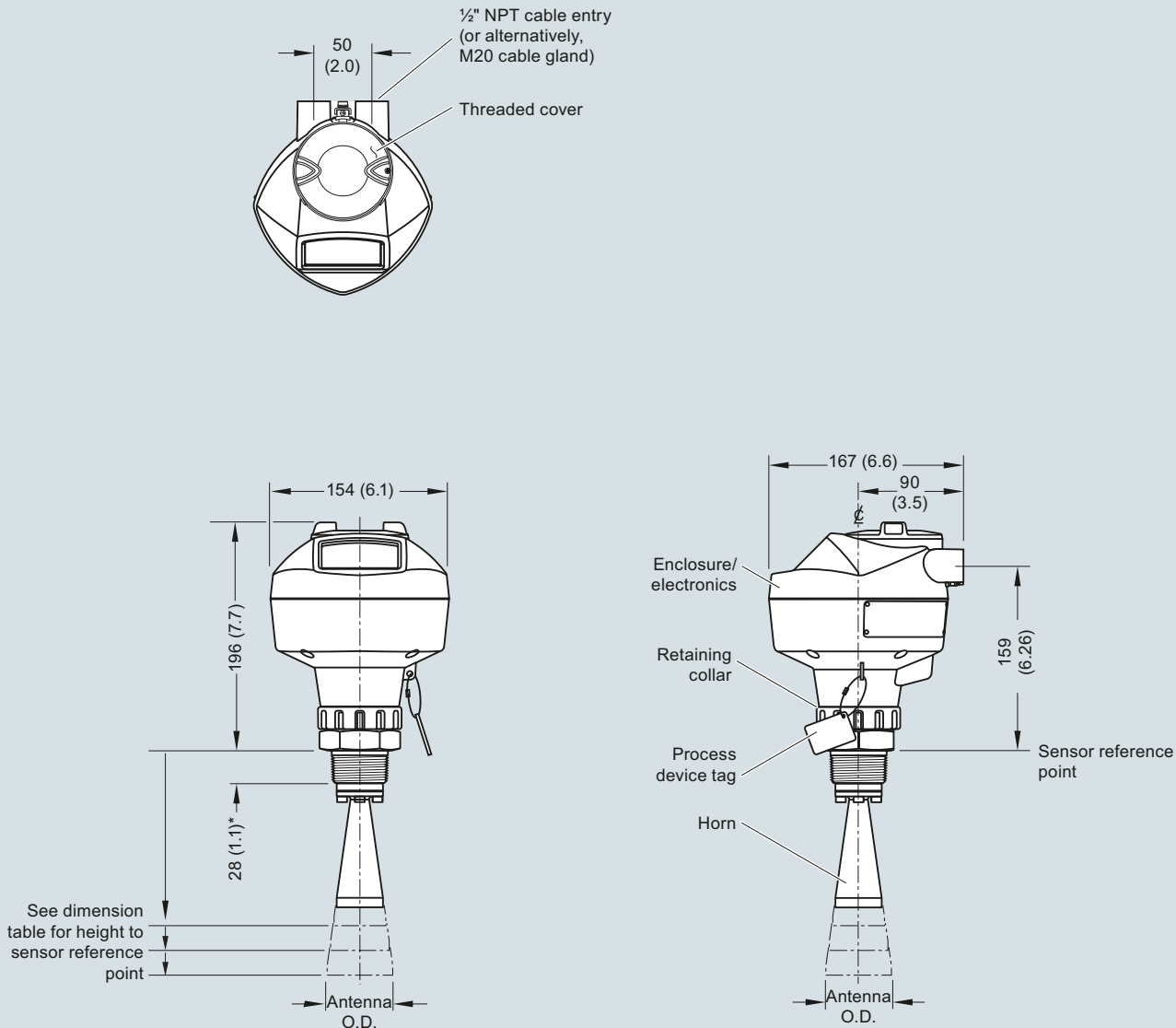
## Level Measurement

Continuous level measurement  
Radar transmitters

### SITRANS LR250 Horn Antenna

#### Dimensional drawings

##### Threaded Horn Antenna



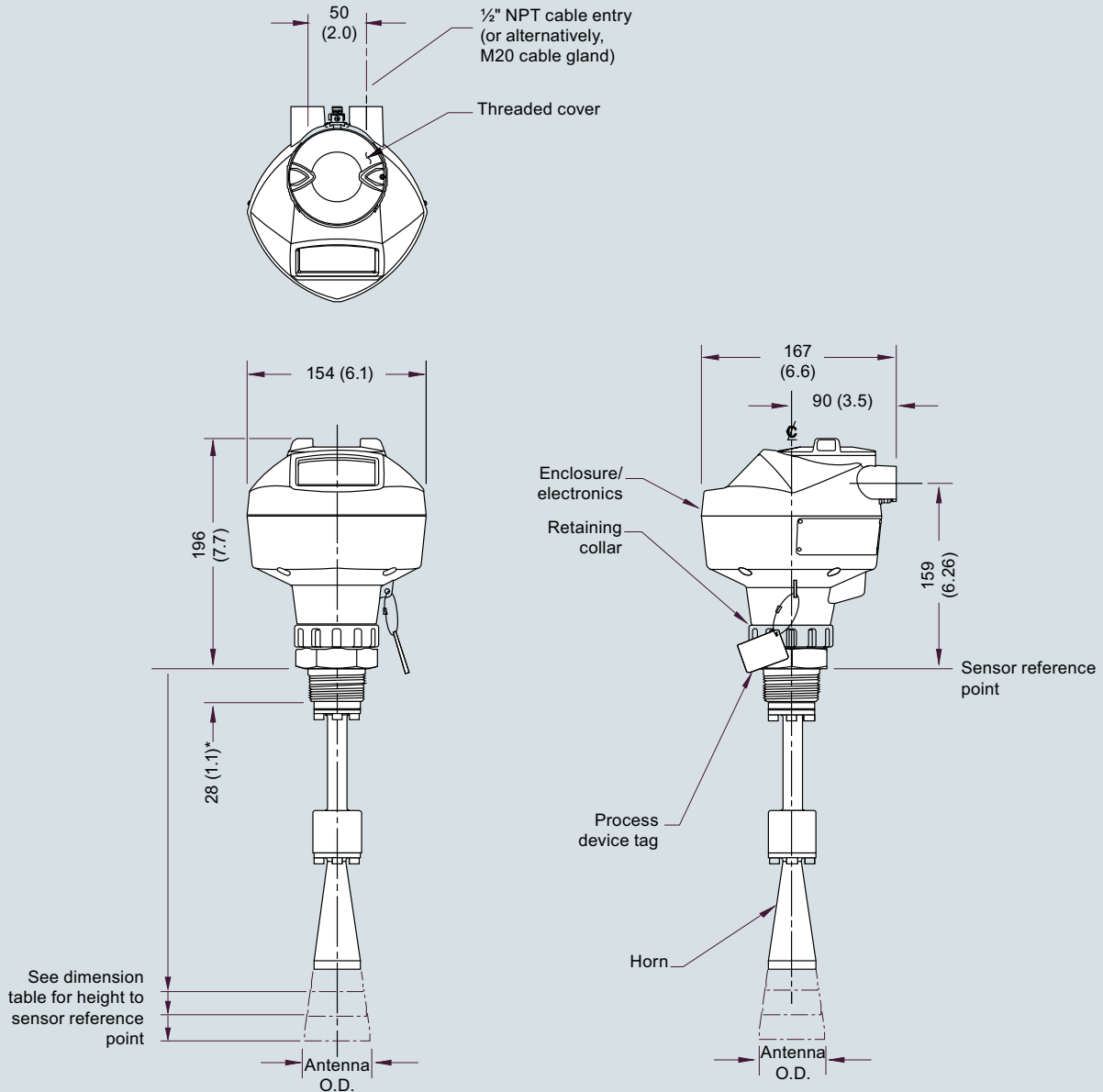
\*28 mm (1.1) for 1.5 inch and 2 inch, 42 mm (1.65) for 3 inch

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		
1.5" horn	39.8 (1.57)	135 (5.3)	N/A	N/A	19 degrees	10 m (32.8 ft)
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 LR250 Threaded Horn Antenna, dimensions in mm (inch)



**Threaded Horn Antenna with Extension**



\*28 mm (1.1) for 1.5 inch and 2 inch, 42 mm (1.65) for 3 inch

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		
1.5" horn	39.8 (1.57)	235 (9.3)	N/A	N/A	19 degrees	10 m (32.8 ft)
2" horn	47.8 (1.88)	N/A	266 (10.47)	280 (11.02)	15 degrees	20 m (65.6 ft)
3" horn	74.8 (2.94)	N/A	299 (11.77)	313 (12.32)	10 degrees	20 m (65.6 ft)
4" horn	94.8 (3.73)	N/A	354 (13.94)	368 (14.49)	8 degrees	20 m (65.6 ft)

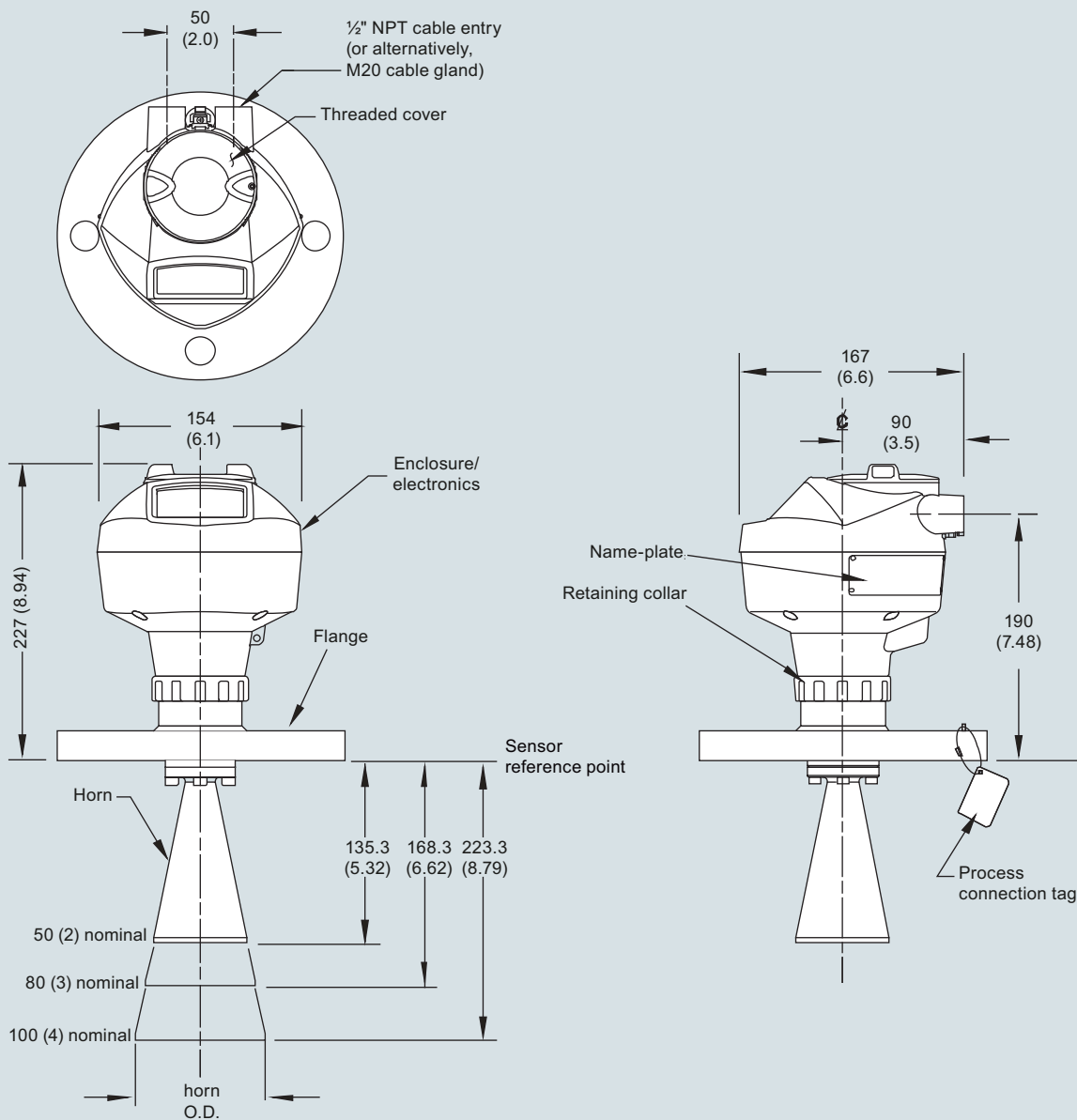
SITRANS LR250 Threaded Horn Antenna with extension, dimensions in mm (inch)

## Level Measurement

Continuous level measurement  
Radar transmitters

### SITRANS LR250 Horn Antenna

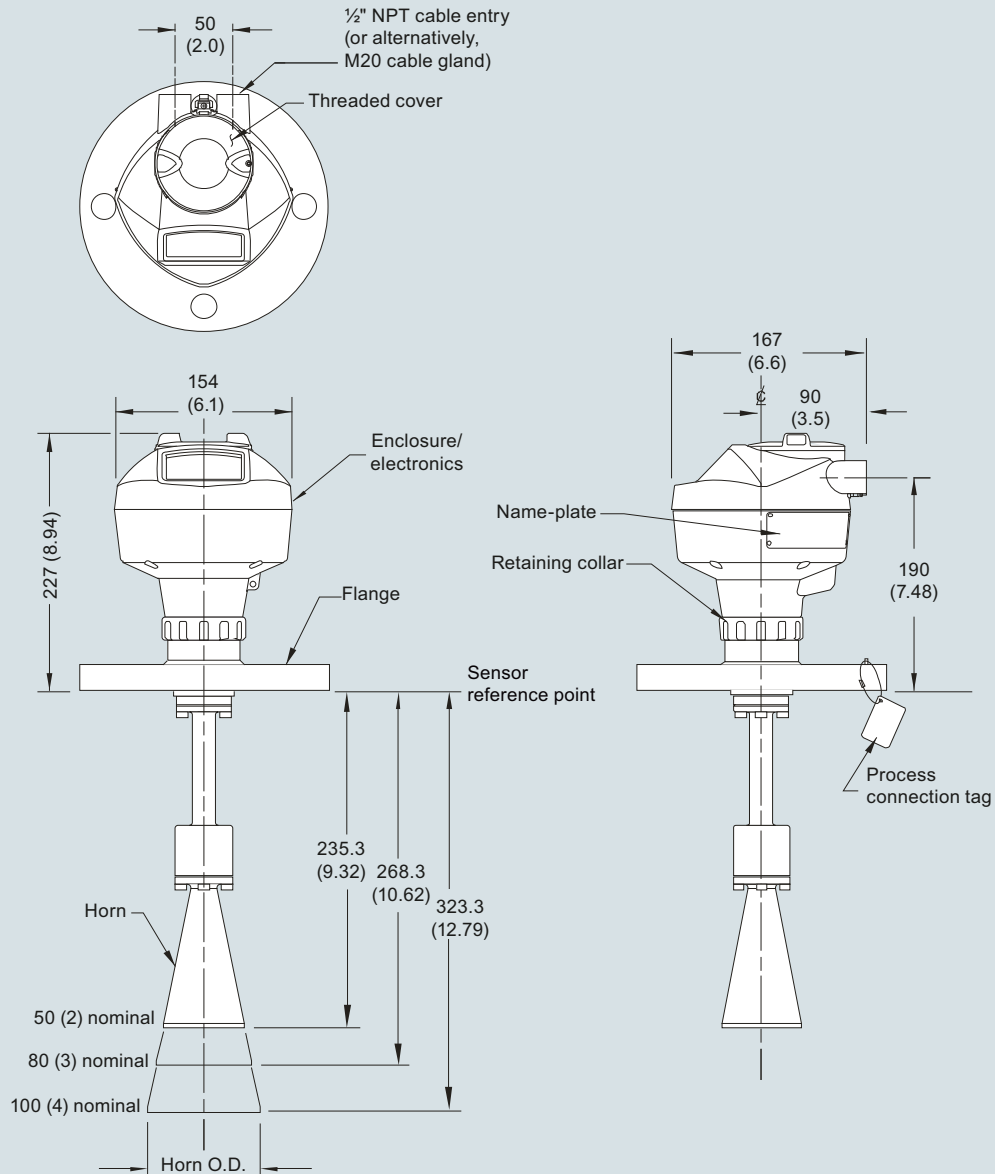
#### Flanged Horn



Nominal Horn Size	Horn O.D.	Height to sensor reference point		Beam angle	Measurement range
		Stainless steel flange raised or flat-faced	Optional alloy flange		
50 (2)	47.8 (1.88)	135.3 (5.32)	138.3 (5.44)	15 degrees	20 m (65.6 ft)
80 (3)	74.8 (2.94)	168.3 (6.62)	171.3 (6.74)	10 degrees	20 m (65.6 ft)
100 (4)	94.8 (3.73)	223.3 (8.79)	226.3 (8.90)	8 degrees	20 m (65.6 ft)

SITRANS LR250 Flanged Horn Antenna, dimensions in mm (inch)

**Flanged Horn with Extension**



Nominal Horn Size	Horn O.D.	Height to sensor reference point		Beam angle	Measurement range
		Stainless steel flange raised or flat-faced	Optional alloy flange		
50 (2)	47.8 (1.88)	235.3 (9.26)	238.3 (9.38)	15 degrees	20 m (65.6 ft)
80 (3)	74.8 (2.94)	268.3 (10.56)	271.3 (10.68)	10 degrees	20 m (65.6 ft)
100 (4)	94.8 (3.73)	323.3 (12.73)	326.3 (12.85)	8 degrees	20 m (65.6 ft)

SITRANS LR250 Flanged Horn Antenna with extension, dimensions in mm (inch)

## Level Measurement

Continuous level measurement  
Radar transmitters

### SITRANS LR250 Horn Antenna

#### Circuit diagrams

4

Connect the wires to the terminals as shown: the polarity is identified on the terminal block.

Gland may or may not be provided depending on approval option.

Shield for HART, PROFIBUS PA, and FOUNDATION Fieldbus Intrinsically Safe versions only.

**Hand Programmer**

SIEMENS			
1	2	3	4
5	6	7	8
9	0	.	+
C	⏪	⏩	⏴
←	↑	↓	→



Part number:  
7ML1930-1BK


**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.

SITRANS LR250 connections

## Selection and ordering data

SITRANS LR250 Specials	Article No.
<b>NOTE:</b> <b>LR260 head can be supplied with any LR250 process connection or antenna as special order. For LR250, this means a stronger signal and longer measurement range is possible.</b>	
<b>SITRANS LR250 horn version enclosures (PROFIBUS PA models)</b>	
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option A, with PROFIBUS PA communication, no process connection	<b>A5E01156836</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option A, with PROFIBUS PA communication, no process connection	<b>A5E01156838</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option B, with PROFIBUS PA communication, no process connection	<b>A5E01156841</b>
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option C, with PROFIBUS PA communication, no process connection	<b>A5E01156843</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option C, with PROFIBUS PA communication, no process connection	<b>A5E01156844</b>
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option D, with PROFIBUS communication, no process connection	<b>A5E01156846</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option D, with PROFIBUS PA communication, no process connection	<b>A5E01156848</b>
<b>SITRANS LR250 horn version enclosures (FOUNDATION Fieldbus models)</b>	
SITRANS LR250 enclosure with board stack, NPT cable inlet, approval option B, with FOUNDATION Fieldbus communication, no process connection	<b>A5E03769538</b>
SITRANS LR250 enclosure with board stack, NPT cable inlet, approval option D, with FOUNDATION Fieldbus communication, no process connection	<b>A5E03769539</b>
SITRANS LR250 enclosure with board stack, M20 cable inlet, approval option E, with FOUNDATION Fieldbus communication, no process connection	<b>A5E03769543</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option C, with FOUNDATION Fieldbus communication, no process connection	<b>A5E02654608</b>
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option A, with FOUNDATION Fieldbus communication, no process connection	<b>A5E02653792</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option A, with FOUNDATION Fieldbus communication, no process connection	<b>A5E02653793</b>

SITRANS LR250 Specials	Article No.
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option C, with FOUNDATION Fieldbus communication, no process connection	<b>A5E02654606</b>
<b>SITRANS LR250 horn version enclosures (&lt; 3.6 mA start-up HART)</b>	
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option A, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E02956317</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option C, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E02956319</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option E, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E02956320</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option F, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E02956322</b>
SITRANS LR250 horn version enclosure with board stack, M20 cable inlet, approval option G, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E02956323</b>
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option A, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E03441096</b>
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option B, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E03441097</b>
SITRANS LR250 horn version enclosure with board stack, NPT cable inlet, approval option H, with HART communication start-up at < 3.6 mA, no process connection	<b>A5E03441099</b>

## Level Measurement

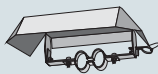
Continuous level measurement  
Radar transmitters

### SITRANS LR250 Specials

#### SITRANS LR250 Specials

Article No.

**Sun shield for SITRANS LR250 enclosure,  
stainless steel**



A5E39142556

**SITRANS LR250 horn antenna and  
extension kits**



38 mm (1.5 inch) horn antenna kit,  
1.5" process connections only

A5E01151539

100 mm (4 inch) horn antenna extension kit,  
1.5" process connections only

A5E01151553

50 mm (2 inch) stainless steel 316L  
horn antenna kit

A5E01151569

75 mm (3 inch) stainless steel 316L  
horn antenna kit

A5E01151571

100 mm (4 inch) stainless steel 316L  
horn antenna kit

A5E01151573

100 mm (4 inch) horn antenna extension kit,  
50 mm (2 inch), 75 mm (3 inch), and 100 mm  
(4 inch) process connection

A5E01151577

50 mm (2 inch) horn antenna kit, Hastelloy C-22

A5E01151584

75 mm (3 inch) horn antenna kit, Hastelloy C-22

A5E01151585

100 mm (4 inch) horn antenna kit, Hastelloy C-22

A5E01151587

5 Dupont 1Gr Polypack, PTFE grease kit

A5E01151626

SITRANS LR250 lid with O-ring

A5E02465410

#### Ex-proof plugs

Ex-proof plugs kit, 1/2" NPT, qty 5

A5E39979991

Ex-proof plugs kit, M20, qty 5

A5E39979992