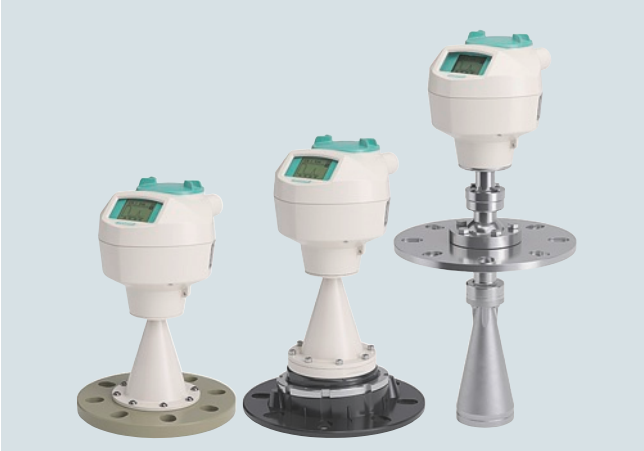
Overview



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

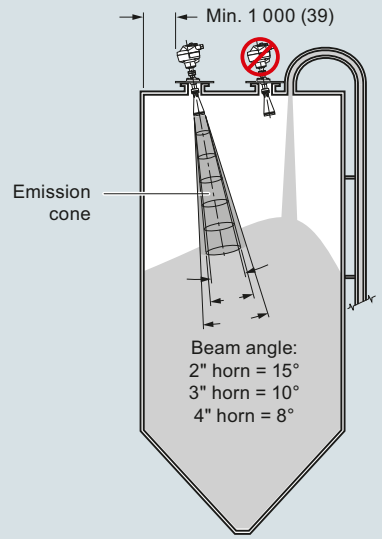
SITRANS LR260 includes a graphical local user interface (LUI) that improves setup and operation using an intuitive Quick Start Wizard and echo profile displays for diagnostic support. Startup is easy using the Quick Start wizard with a few parameters required for basic operation.

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

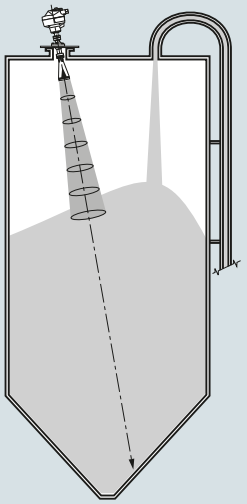
- Key Applications: cement powder, plastic pellets, aggregates, coal, solids and liquids bulk storage vessels.

Configuration

Installation of SITRANS LR260 Level Probing Radar

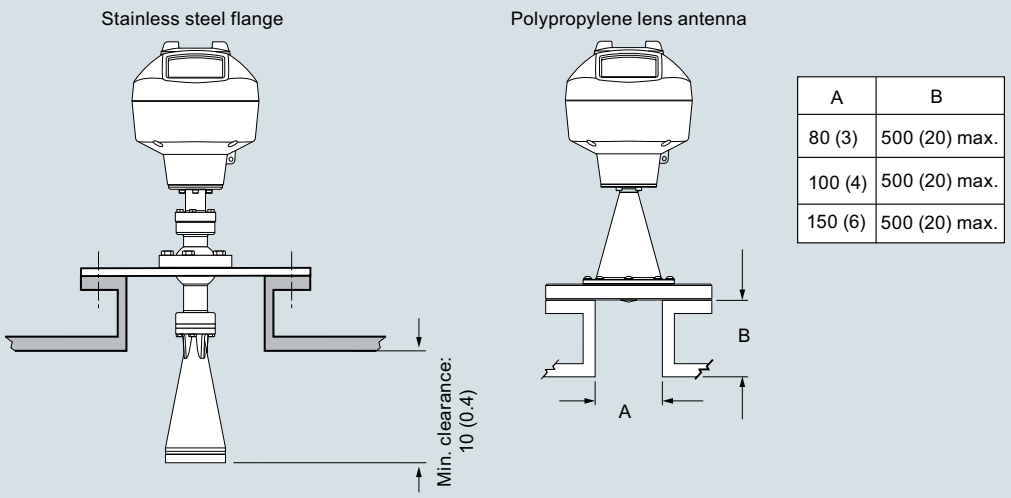


Positioning with Easy Aimer



SITRANS LR260 installation, dimensions in mm (inch)

Mounting on a nozzle



A	B
80 (3)	500 (20) max.
100 (4)	500 (20) max.
150 (6)	500 (20) max.

SITRANS LR260, mounting on a nozzle, dimensions in mm (inch)

Technical specifications

Mode of operation	
Measuring principle	Pulse radar level measurement
Frequency	K-band (25.0 GHz)
Minimum detectable distance	• Stainless steel horn - 50 mm (2 inch), from end of horn • Polypropylene lens antenna - 200 mm (8 inch), from end of horn
Maximum measuring range[1)]	
Solids	• 2" horn: 10 m (32.8 ft) • 3" horn: 20 m (65.6 ft) • 4" horn: 30 m (98.4 ft)
Liquids	• 2" horn: 20 m (65.6 ft) • 3" horn: 30 m (98.4 ft) • 4" horn: 30 m (98.4 ft)
Output - HART	
Power	4 ... 20 mA (± 0.02 mA accuracy)
Fail signal	Nominal 24 V DC (max. 30 V DC)
Load	3.6 mA ... 23 mA; or last value 230 ... 600 Ω
Output - PROFIBUS PA	• Per IEC 61158-2 • 15.0 mA • Profile version 3.01, Class B
Performance (according to reference conditions IEC 60770-1)	
Maximum measured error (including hysteresis and non-repeatability)	• 25 mm (1 inch) from minimum detectable distance to 500 mm (20 inch) • Remainder of range = 6 mm (0.23 inch) or 0.05 % of spa (whichever is greater)
Rated operating conditions	
Installation conditions	
Location	Indoor/outdoor
Ambient conditions (enclosure)	
• Ambient temperature	-40 ... +80 °C (-40 ... +176 °F)
• Installation category	I
• Pollution degree	4
Medium conditions	
Dielectric constant ε_r	ε_r > 1.6, antenna and application dependent
Process temperature	• Stainless steel horn - -40 ... +200 °C (-40 ... +392 °F) • Polypropylene lens antenna - -40 ... +80 °C (-40 ... +176 °F)
Process pressure	• 0.5 bar g (7.25 psi g) maximum • 3 bar g (43.5 psi g) optional with 80 °C (176 °F) temperature max

Design	
Enclosure	
• Construction	Aluminum, polyester powder-coated
• Conduit entry	2 x M20 x 1.5 or 2 x ½" NPT
Degree of protection	Type 4X/NEMA 4X, Type 6/ NEMA 6, IP67, IP68
Weight	• Approximately 8.2 kg (18 lb) including 4 inch stainless steel flange and stainless steel aimer with 4 inch horn antenna • Approximately 3.4 kg (7.5 lb) including 3 inch (80 mm) polypropylene lens antenna
Display (local)	Graphic LCD, with bar graph representing level
Stainless steel process connection and antenna	
Material	304 stainless steel (flange), 316L stainless steel (threaded)
RF emitter	PTFE
Universal aiming flanges[2)]	2 inch (50 mm), 3 inch (80 mm), 4 inch (100 mm), 6 inch (150 mm)
Threaded connections	2" NPT (ASME B1.20.1), R (BSPT, EN 10226-1), G (BSPP, EN ISO 228-1)
Air purge	Option
Dust cover	PTFE, option
Aluminum process connection and antenna	
Material	Polyester powder coated cast aluminum horn
RF emitter	PTFE
Universal aiming flanges[2)]	3 inch (80 mm), 4 inch (100 mm), 6 inch (150 mm)
Air purge	Not available
Dust cover	Polypropylene, option
Polymeric flange process connection and antenna	
Material	Polyester powder coated cast aluminum horn
Lens	Polypropylene
Universal polypropylene flanges[2)]	3 inch (80 mm), 4 inch (100 mm), 6 inch (150 mm)
Certificates and approvals	
General	$CSA_{US/C}$, CE, FM
Radio	Europe (RED), FCC, Industry Canada, RCM
Hazardous	CSA/FM Class II, Div. 1, Groups E, F, G, Class III ATEX II 1D, 1/2D, 2D Ex ta IIIC T100 °C Da IECEx/ATEX II 1 GD Ex ia IIC T4 Ga, Ex ta IIIC T100 °C Da CSA/FM Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G SABS ARP0108 Ex ia IIC T4 Ga
Programming	
Intrinsically Safe Siemens handheld programmer	Infrared receiver
• Approvals for handheld programmer	IS model: ATEX II 1GD Ex ia IIC T4 GaEx iaD 20 T135 °C Ta = -20 ... +50 °C CSA/FM Class I, II, and III, Div. 1, Groups A, B, C, D, E, F, G, T6 Ta = 50 °C
Handheld communicator	HART communicator 375
PC	SIMATIC PDM
Display (local)	Graphic local user interface including quick start wizard and echo profile displays.

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.

SITRANS LR260

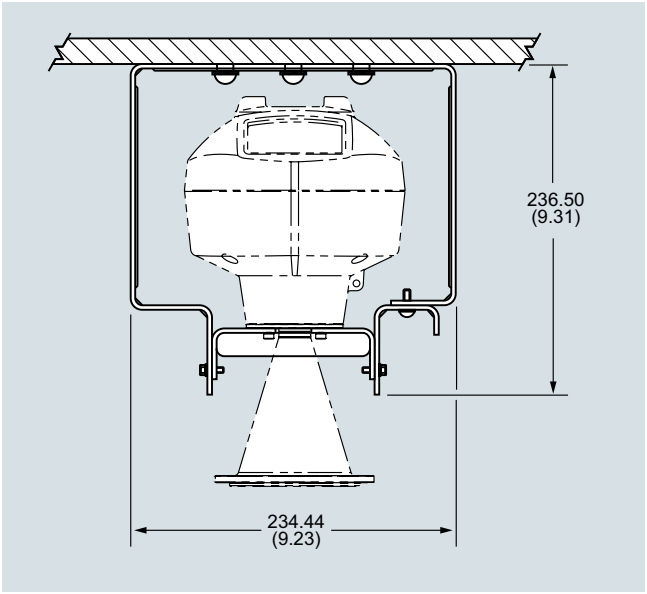
Selection and Ordering data	Article No.
SITRANS LR260 Radar level transmitter with horn	7ML5427-
Continuous, non-contact, 30 m (98.4 ft) range, for liquids and solids.	0 ■ ■ ■ 0 - ■ ■ ■ ■
Order handheld programmer separately	
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	
Process connection	
Universal flat faced flange, 304 stainless steel, fits ANSI/DIN/JIS flanges, Easy Aimer with integral (Easy Aimer ball)	
2 inch (50 mm)[7]	A
3 inch (80 mm)[7]	B
4 inch (100 mm)[7]	C
6 inch (150 mm)[7]	D
Threaded connection, 316L stainless steel	
2" NPT (ASME B1.20.1) (tapered thread)[2)5)]	E
R 2" [(BSPT), EN 10226-1] (tapered thread)[2)5)]	F
G 2" [(BSPP), EN ISO 228-1] (parallel thread)[2)5)]	G
Polypropylene lens antenna	
Without flange, without mounting bracket[8)]	H
Without flange, with mounting bracket[8)]	J
Universal polymeric flange, flat face, with polypropylene lens, FKM seal	
DN80 PN16, ANSI 3", 150 lb, DN80 PN16/10K[6)]	K
DN100 PN16, ANSI 4", 150 lb, DN100 PN16/10K	L
DN150 PN16, ANSI 6", 150 lb, DN150 PN16/10K	M
Universal aluminum aiming flange, fits ANSI/DIN/JIS	
3 inch (80 mm)[6)8)]	N
4 inch (100 mm)[6)8)]	P
6 inch (150 mm)[6)8)]	Q
For custom process connections, contact a local sales person. For more information, please visit http://www.automation.siemens.com/aspa_app.	Z
Antenna	
2" Horn antenna, fits 50 mm or 2" nozzles[1)]	A
2" Horn antenna with 100 mm extension[1)]	B
2" Horn antenna with 200 mm extension[1)]	C
2" Horn antenna with 500 mm extension[1)2)]	D
2" Horn antenna with 1 000 mm extension[1)2)]	E
3" Horn antenna, fits 80 mm or 3" nozzles[3)]	F
3" Horn antenna with 100 mm extension[3)]	G
3" Horn antenna with 200 mm extension[3)]	H
3" Horn antenna with 500 mm extension[2)3)]	J
3" Horn antenna with 1 000 mm extension[2)3)]	K
4" Horn antenna, fits 100 mm or 4" nozzles	L
4" Horn antenna with 100 mm extension	M
4" Horn antenna with 200 mm extension	N
4" Horn antenna with 500 mm extension[2)]	P
4" Horn antenna with 1 000 mm extension[2)]	Q
Aluminum painted 3" horn[2)]	R
For custom antennas, contact a local sales person. For more information, please visit http://www.automation.siemens.com/aspa_app.	Z
Purge (self cleaning) connection	
No purge connection	0
Purge connection[7)]	1
Output/communication	
4 ... 20 mA, HART	0
PROFIBUS PA	1
Cable inlet	
2 x M20 x 1.5	A
2 x ½" NPT	B
Note: Polymeric cable glands will be provided with M20 devices.	

Selection and Ordering data	Article No.
Approvals	
General purpose, $CSA_{US/C}$, FM, Industry Canada, FCC, CE, RED, RCM	A
CSA/FM Class II, Div. 1, Groups E, F, G, Class III, Industry Canada, FCC, RCM	B
ATEX II 1D, 1/2D, 2D Ex ta IIIC T100 °C Da, CE, RED, RCM, INMETRO	C
Non-incendive, CSA/FM Class I, Div. 2, Groups A, B, C, D, Industry Canada, FCC, RCM	D
Intrinsically safe, IECEx/ATEX II 1 GD Ex ia IIC T4 Ga, Ex ta IIIC T100 °C Da, RED, RCM	E
Intrinsically safe, CSA/FM Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G, Industry Canada, FCC, RCM	F
Intrinsically safe, South Africa ARP0108 Ex ia IIC T4 Ga	G
Pressure rating	
Rating per pressure/temperature curves in manual, stainless steel versions[7)]	0
0.5 bar g (7.25 psi g) maximum	1
Rating per pressure/temperature curves in manual, polypropylene lens antenna with 3 inch (80 mm) flange version[6)]	2

Selection and Ordering data	Order code
Further designs	
Please add "**-Z**" to Article No. and specify Order code(s).	
Long tag (device parameter, max. 27 characters) plate stainless steel 304/1.4301	**Y15**
Factory test certificate - M to DIN 55350, Part 18	**C11**
Inspection certificate 3.1 (EN 10204) - material of pressure-containing and wetted parts	**C12**
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Accessories	Article No.
Mounting bracket suitable for wall or ceiling mounting, for aluminum painted horn versions only	**A5E46342367**
One metallic cable gland M20 x 1.5, rated -40 ... +80 °C (-40 ... +176 °F), HART	**7ML1930-1AP**
One metallic cable gland M20 x 1.5, rated -40 ... +80 °C (-40 ... +176 °F), PROFIBUS PA	**7ML1930-1AQ**
Handheld programmer, Infrared, Intrinsically Safe	**7ML1930-1BK**
Polypropylene lens kit for dust protection, polypropylene lens antenna and aluminum flange versions	**A5E46610601**
Polypropylene lens replacement kit, polypropylene lens antenna and polymeric flange versions	**A5E46342366**
Dust cap, PTFE, for 2 inch (50 mm) horn	**7ML1930-1DE**
Dust cap, PTFE, for 3 inch (75 mm) horn	**7ML1930-1BL**
Dust cap, PTFE, for 4 inch (100 mm) horn	**7ML1930-1BM**
HART modem/USB (for use with a PC and SIMATIC PDM)	**7MF4997-1DB**
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	
Note: Products shipped with plastic cable gland, rated to -20 °C. If -40 °C rating required, then metallic cable gland is recommended.	

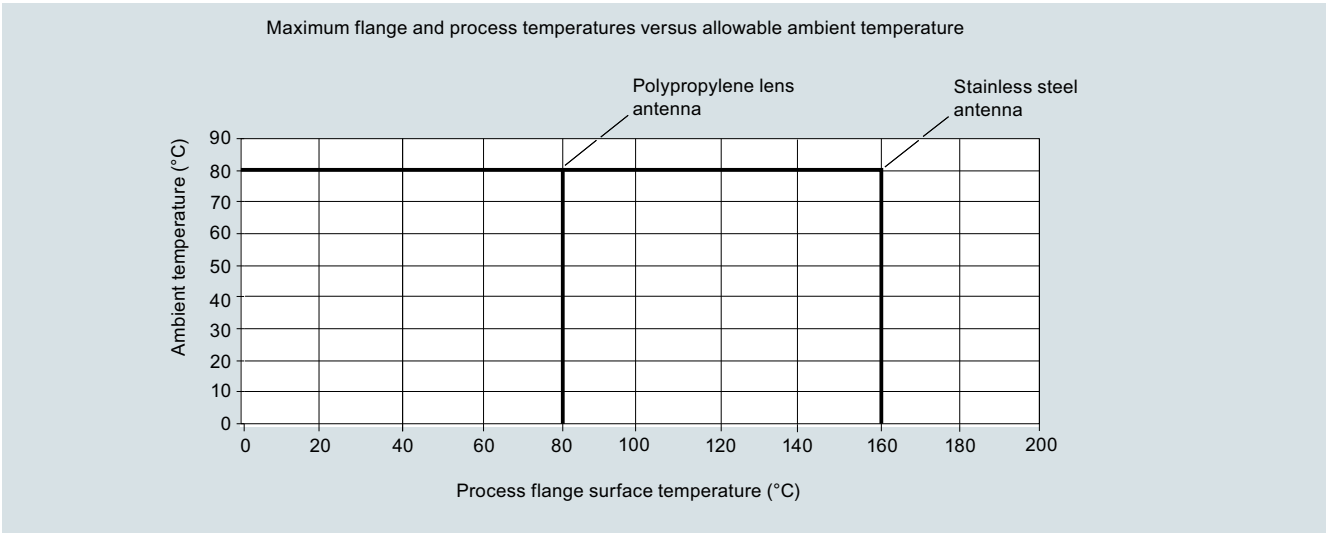
1) Maximum measurement range 10 m (32.8 ft) solids or 20 m (65.6 ft) liquids.
2) Available only with Purge option 0.
3) Maximum measurement range 20 m (65.6 ft) solids or 30 m (98.4 ft) liquids.
4) Available only with Pressure rating option 0.
5) Available only with Antenna options A, B, F, G, L, and M.
6) Available only with Antenna option R.
7) Not available with Antenna option R.
8) Available only with Pressure rating option 1 only.

Options



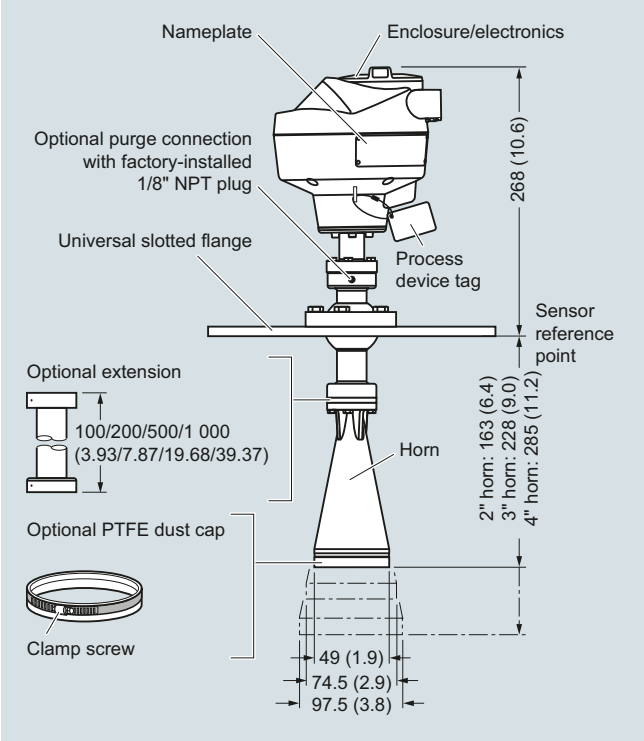
SITRANS LR260 Polypropylene lens antenna, wall mount, dimensions in mm (inch)

Characteristic curves



SITRANS LR260 process flange surface/ambient temperature curve

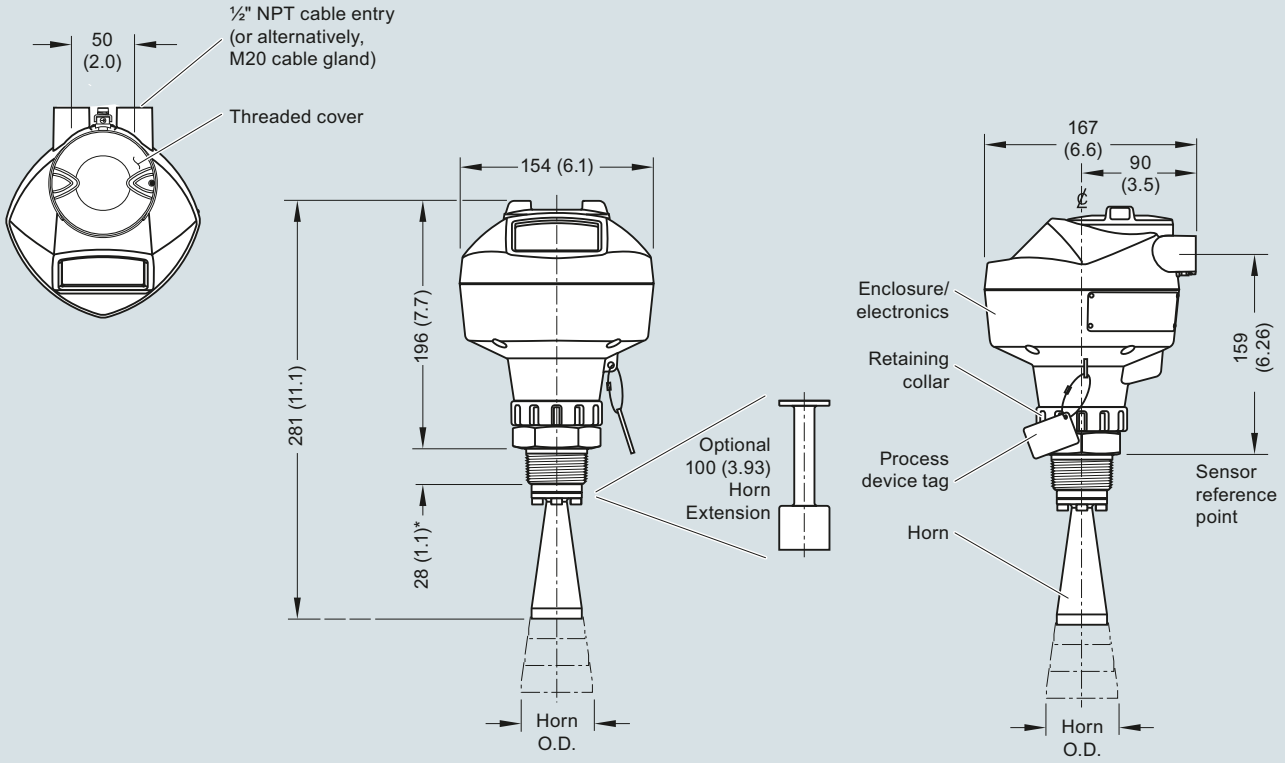
Dimensional drawings



SITRANS LR260 Stainless steel flange, dimensions in mm (inch)

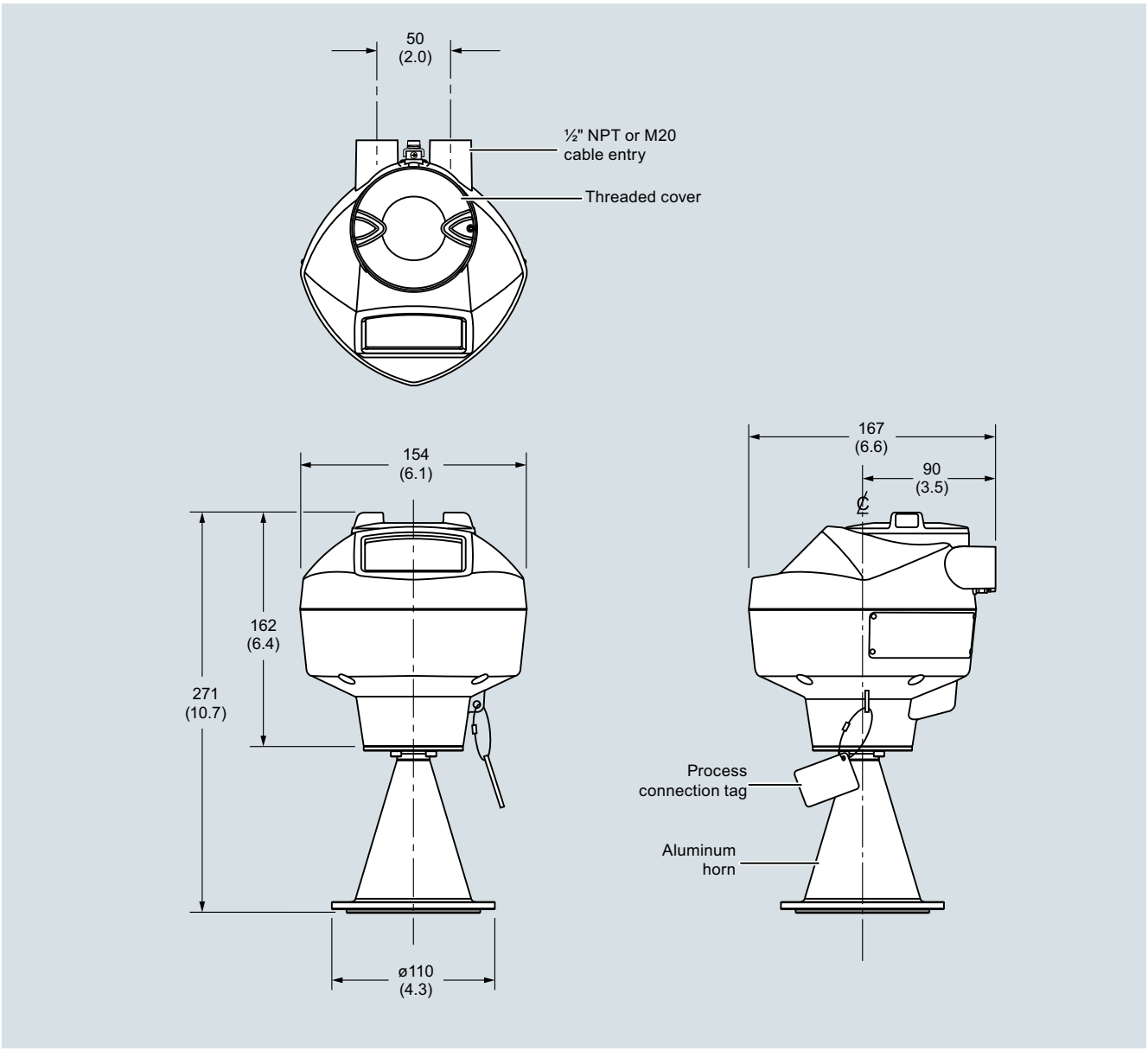
SITRANS LR260

SITRANS LR260

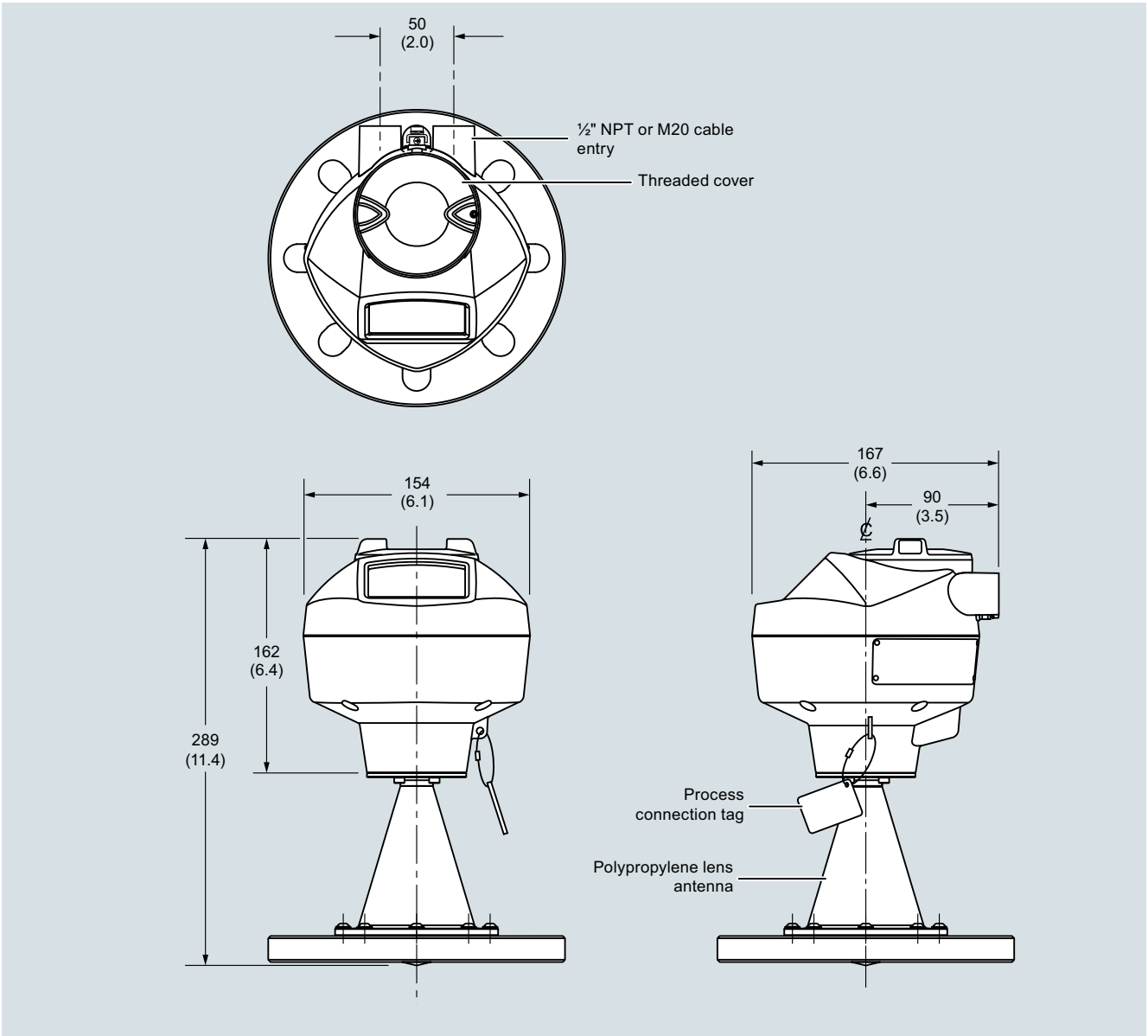


Antenna Type	Antenna O.D.	Height to sensor reference point			Beam angle	Measurement range
		1-1/2" threaded connection	2" threaded connection	3" threaded connection		
2" horn	47.8 (1.88)	N/A	166 (6.55)	180 (7.09)	15 degrees	20 m (65.6 ft)
3" horn	74.8 (2.94)	N/A	199 (7.85)	213 (8.39)	10 degrees	30 m (98.4 ft)
4" horn	94.8 (3.73)	N/A	254 (10)	268 (10.55)	8 degrees	30 m (98.4 ft)

SITRANS LR260 Stainless steel threaded, dimensions in mm (inch)

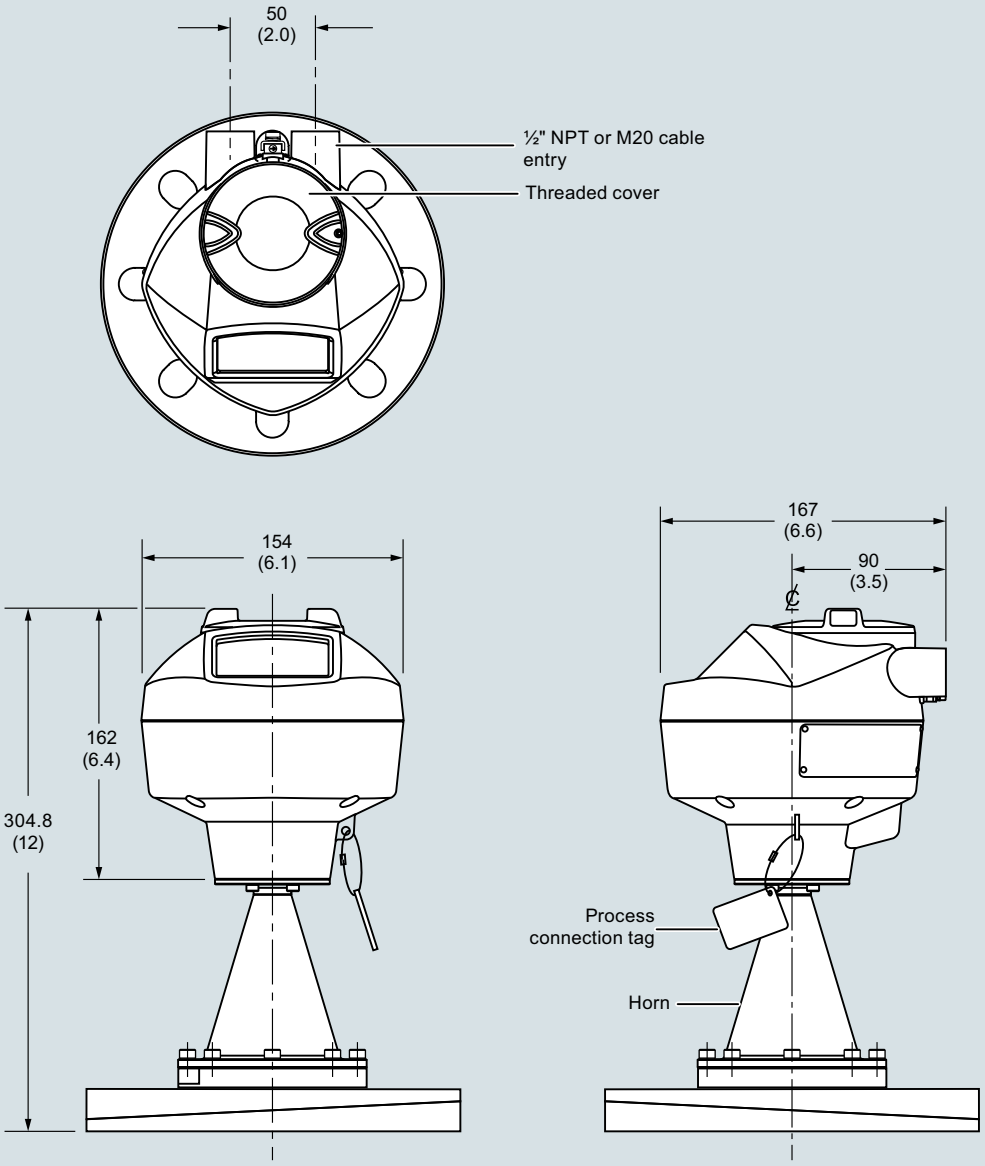


SITRANS LR260 Polypropylene lens antenna, dimensions in mm (inch)



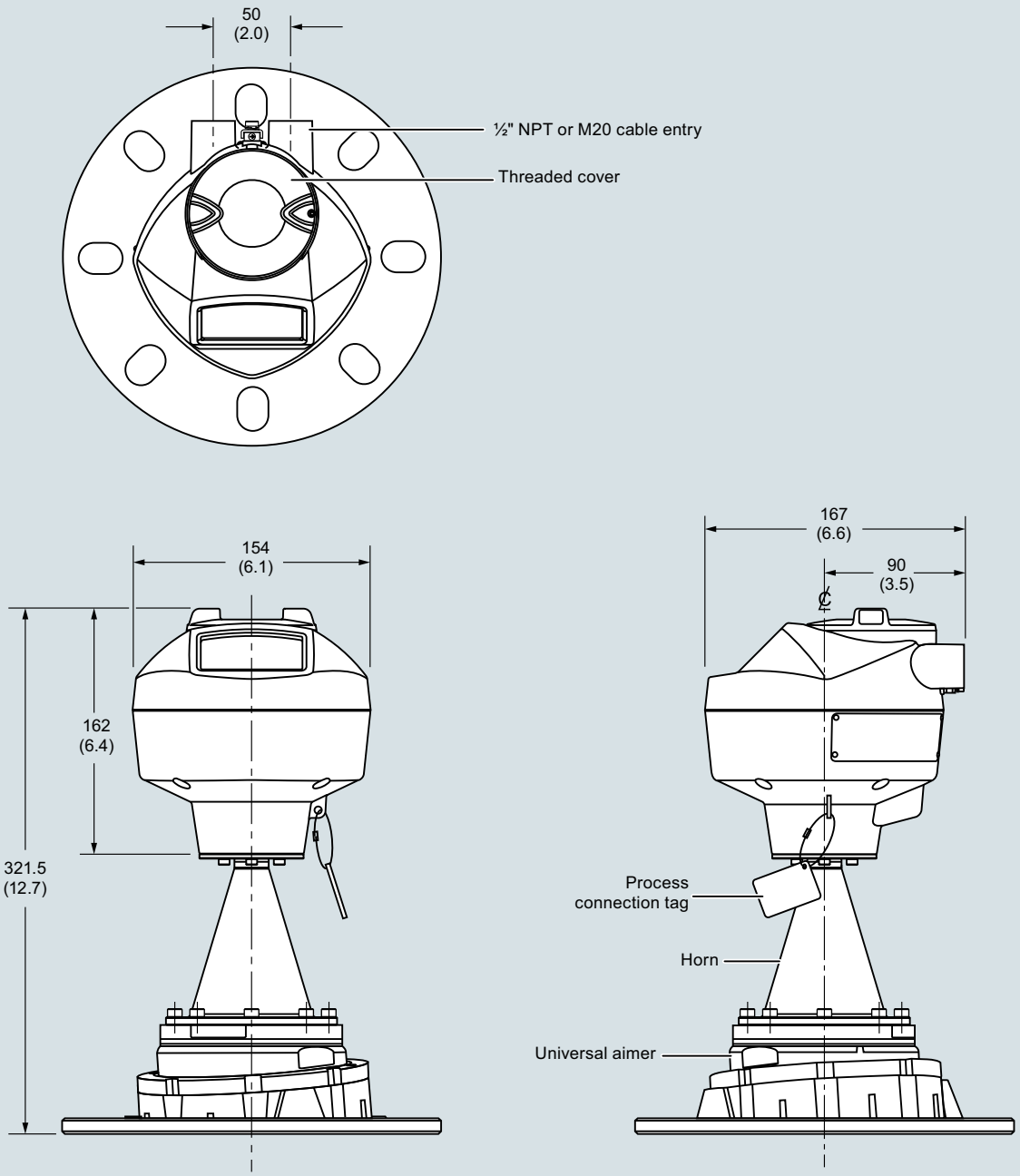
SITRANS LR260 Polypropylene lens antenna with polymeric flange, dimensions in mm (inch)

3 inch (80 mm) universal aluminum aiming flange



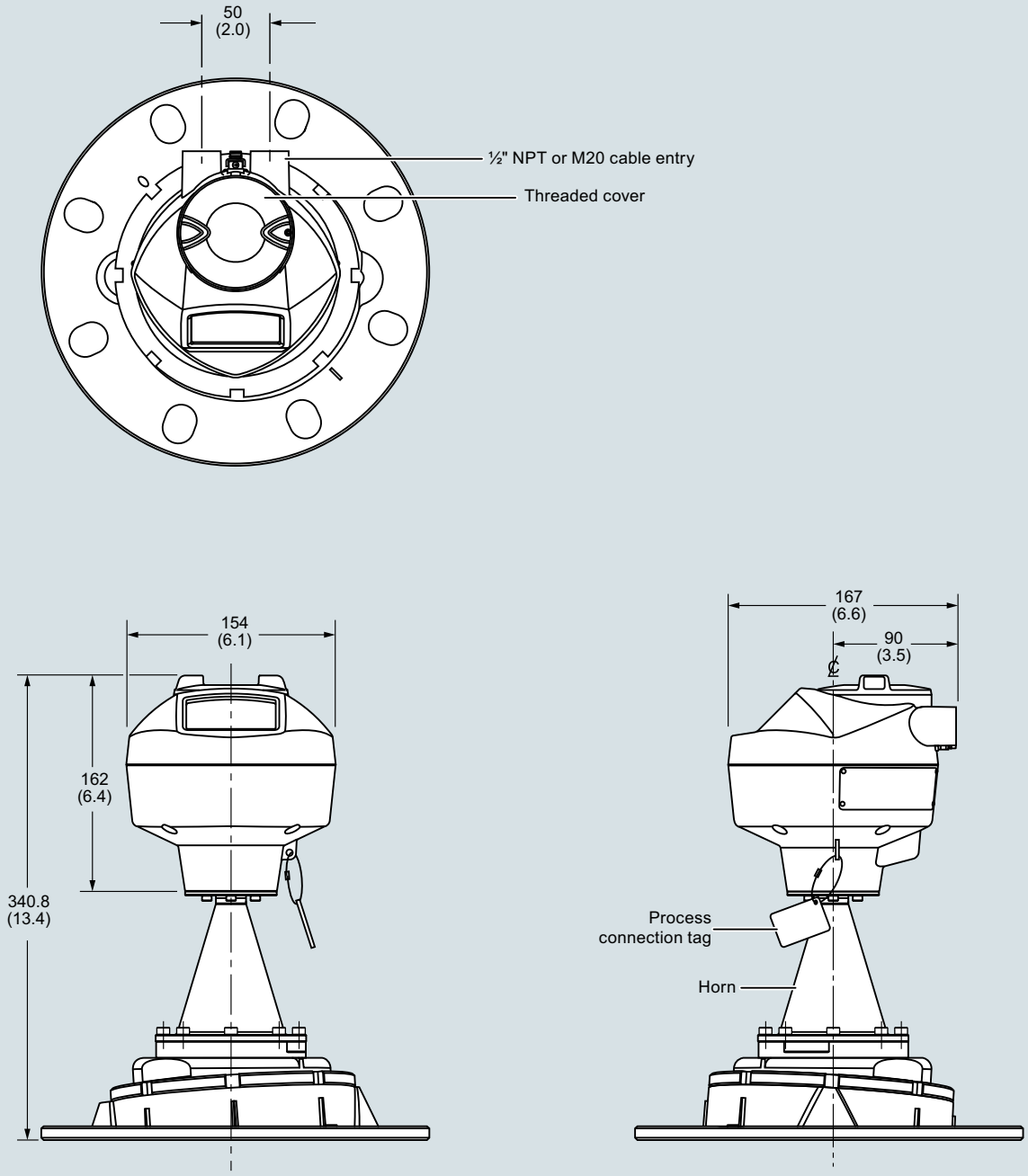
SITRANS LR260 Polypropylene lens antenna with 3 inch (80 mm) universal aluminum aiming flange, dimensions in mm (inch)

4 inch (100 mm) universal aluminum aiming flange



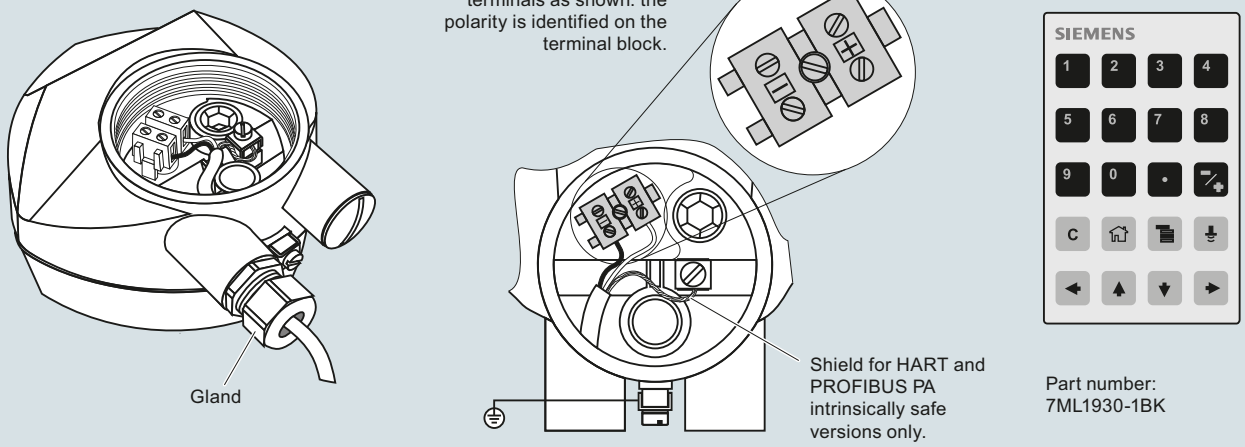
SITRANS LR260 Polypropylene lens antenna with 4 inch (100 mm) universal aluminum aiming flange, dimensions in mm (inch)

6 inch (150 mm) universal aluminum aiming flange



SITRANS LR260 Polypropylene lens antenna with 6 inch (150 mm) universal aluminum aiming flange, dimensions in mm (inch)

Circuit diagrams



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 LR260 connections