

# Level instruments

## Continuous level measurement - Radar transmitters

SITRANS LR200

### Overview



SITRANS LR200 is a 2-wire, 6 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
- 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 LR200's unique design allows safe and simple programming using the Intrinsically Safe handheld programmer without having to open the instrument's lid. It also features a built-in alphanumeric display in four languages.

The SITRANS LR200 has a standard Uni-Construction polypropylene rod antenna that offers excellent chemical resistance and is hermetically sealed. The Uni-Construction antenna features an internal, integrated shield that eliminates vessel nozzle interference.

Start-up is easy with as few as two parameters for basic operation. Installation is simplified as the electronics are mounted on a rotating head that swivels, allowing the instrument to line up with conduit or wiring connections or simply to adjust the position for easy viewing. SITRANS LR200 features patented Process Intelligence signal-processing technology for superior reliability.

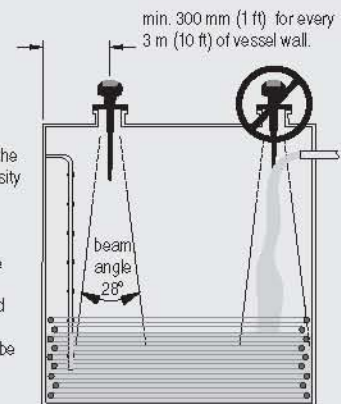
- Key Applications: liquid bulk storage tanks, process vessels with agitators, vaporous liquids, high temperatures, asphalt, digesters

### Configuration

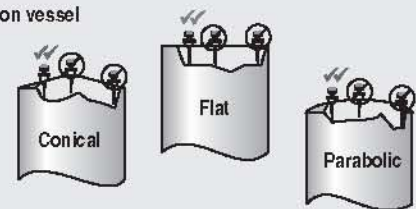
#### Installation

#### Note:

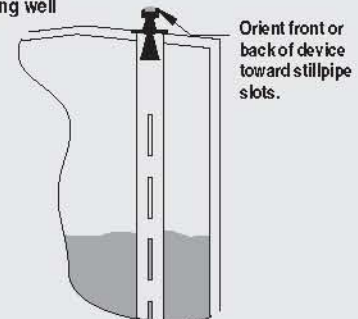
- Beam angle is the width of the cone where the energy density is half of the peak energy density.
- The peak energy density is directly in front of and in line with the rod antenna.
- There is a signal transmitted outside of the beam angle; therefore false targets may be detected



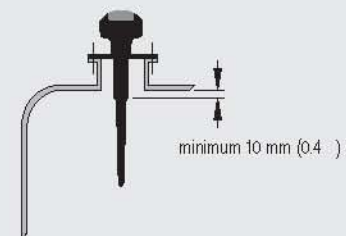
#### Mounting unit on vessel



#### Mounting unit on stilling well



#### Mounting on a nozzle



SITRANS LR200 installation

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### SITRANS LR200

#### Technical specifications

##### Mode of operation

Measuring principle	Radar level measurement
Frequency	5.8 GHz (North America 6.3 GHz)
Measuring range	0.3 to 20 m (1.0 to 65 ft)

##### Output

• Analog output	4 to 20 mA
• Accuracy	± 0.02 mA
• Span	Proportional or inversely proportional
• Communications	HART® Optional: PROFIBUS PA (Profile 3.0, Class B)
• Fail-safe	Programmable as high, low or hold (Loss of Echo)

##### Performance (according to reference conditions IEC60770-1)

• From end of antenna to 600 mm:	40 mm (1.57")
• Remainder of range:	10 mm (0.4") or 0.1% of span (whichever is greater)

##### Rated operating conditions

Installation conditions	
• Location	Indoor/outdoor
Ambient conditions (enclosure)	
• Ambient temperature	-40 to +80 °C (-40 to +176 °F)
• Installation category	I
• Pollution degree	4

##### Medium conditions

• Dielectric constant $\epsilon_r$	$\epsilon_r > 1.6$ (for $\epsilon_r < 3$ , use waveguide antenna or stillpipe)
• Vessel temperature and pressure	Varies with connection type; see Pressure/Temperature curves for more information

##### Design

• Enclosure	
- Material	Aluminium, polyester powder coated
- Cable inlet	2 x M20x1.5 or 2 x 1/2" NPT with adapter
• Degree of protection	Type 4X/NEMA 4X, Type 6/NEMA 6, IP67, IP68
• Weight	< 2 kg (4.4 lbs) (polypropylene rod antenna)
• Display (local)	Multi-segment alphanumeric liquid crystal with bar graph (representing level) available in four languages
• Antenna	
- Material	Polypropylene rod, hermetically sealed construction, optional PTFE
- Dimensions	Standard 100 mm (4") shield for maximum 100 mm (4") nozzle, or optional 250 mm (10") long shield
- Optional rods, horn and waveguides	Refer to SITRANS LR200/LR300 Antennas for optional rods, horns and waveguides

##### Process connections

• Process connection	1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] R 1 1/2" [(BSPT), EN 10226], or G 1 1/2" [(BSPP), EN ISO 228-1] (polypropylene rod antenna)
• Flange connection	Refer to SITRANS LR200/LR300 Antennas for more connections

##### Power supply

4 to 20 mA/HART	
- General Purpose, Non-incendive, Intrinsically Safe	Nominal 24 V DC (max. 30 V DC) with max. 550 $\Omega$
- Flame proof, Increased safety, Explosion proof	Nominal 24 V DC (max. 30 V DC) with max. 250 $\Omega$
PROFIBUS PA	<ul style="list-style-type: none"> <li>• 10.5 mA</li> <li>• per IEC 61158-2</li> </ul>

##### Certificates and approvals

• General	CSA <sub>US/C</sub> , CE, FM, C-TICK
• Marine	<ul style="list-style-type: none"> <li>• Lloyd's Register of Shipping</li> <li>• ABS Type Approval</li> </ul>
• Radio	FCC, Industry Canada and European (R&TTE), C-TICK
• Hazardous	
- Flame proof (Europe)	ATEX II 1/2 G EEx dmiia IIC T4
- Increased safety (Europe)	ATEX II 1/2 G EEx emia IIC T4
- Explosion proof (USA/Canada)	CSA/FM (barrier not required) T4, Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Class III
- Non-incendive (USA)	FM (barrier not required) T5, Class I, Div. 2, Groups A, B, C, D
- Intrinsically Safe (Europe)	ATEX II 1G EEx ia IIC T4
- Intrinsically Safe (USA/Canada)	CSA/FM (barrier required) T4, Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Class III
- Intrinsically Safe (Australia)	ANZEX Ex ia IIC T4 [Ta = -40 to +80 °C (-40 to +176 °F)] IP67
- Intrinsically Safe (International)	IECEx TSA 04.0020X T4
• Brazil - INMETRO	BR-Ex ia IIC T4

##### Programming

• Intrinsically Safe Siemens handheld programmer	Infrared receiver
- Approvals for handheld programmer	IS model: ATEX II 1GD Ex ia IIC T4 Ga Ex iaD 20 T135°C Ta = -20 to +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	<ul style="list-style-type: none"> <li>• SIMATIC PDM</li> <li>• AMS</li> </ul>
• Display (local)	Multi-segment alphanumeric liquid crystal with bar graph (representing level) available in four languages

HART® is a registered trademark of the Hart Communications Foundation.

# Level instruments

## Continuous level measurement - Radar transmitters

SITRANS LR200

Selection and Ordering data	Order No.
<b>SITRANS LR200, Uni-Construction polypropylene rod antenna version</b> 2-wire, 6 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). Max. 3 bar g (43.5 psi g) pressure and +80 °C (+176 °F)	C) <b>7ML5422-0</b>
<b>Enclosure/Cable inlet</b> Aluminum, Epoxy painted 2 x 1/2" NPT, Siemens LUI interface 2 x M20x1.5, Siemens LUI interface	2 3
<b>Polypropylene antenna type - (Max. 3 Bar pressure and +80 °C)</b> 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1], c/w integral 100 mm shield R 1 1/2" [(BSPT), EN 10226], c/w integral 100 mm shield G 1 1/2" [(BSPP), EN ISO 228-1], c/w integral 100 mm shield 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1], c/w integral 250 mm shield R 1 1/2" [(BSPT), EN 10226], c/w integral 250 mm shield G 1 1/2" [(BSPP), EN ISO 228-1], c/w integral 250 mm shield	A B C D E F
<b>Approvals</b> General Purpose, CE <sup>1)</sup> General Purpose, CSA <sub>USC</sub> , FM, for North America only <sup>2)</sup> CSA Class I and II, Div. I, Groups A, B, C, D, G, 6.3 GHz, for North America only, Intrinsically Safe with suitable barrier <sup>2)</sup> FM, Class I and II, Div. I, Groups A, B, C, D, E, F, G, for North America only, Intrinsically Safe with suitable barrier <sup>2)</sup> ATEX II 1G EEx ia IIC T4, Intrinsically Safe with suitable barrier <sup>1)</sup> FM, Class I, Div. 2, Groups A, B, C, D, for North America only (no barrier required) <sup>2) 3)</sup> ATEX II 1/2 G EEx emia IIC T4 (no barrier required) <sup>1) 4) 5)</sup> ATEX II 1/2 G EEx dmia IIC T4 (no barrier required) <sup>1) 5)</sup> CSA/FM Class I, II and III, Div. 1, Groups A, B, C, D, E, F, G (no barrier required) <sup>2) 3) 5)</sup>	A B C D E F G H J
<b>Communication/Output</b> 4 to 20 mA, HART <sup>®</sup> PROFIBUS PA	1 2
<b>Further designs</b> Please add "-Z" to Order No. and specify Order code(s).	Order code
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters); specify in plain text Test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000 Namur NE43 compliant, device preset to failsafe <3.6 mA <sup>5)</sup>	Y15 C11 N07
<b>Instruction manual for HART/MA device</b> English German Note: The instruction manual should be ordered as a separate line item on the order. Multi-language Quick Start manual This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	Order No. C) <b>7ML1998-5JP02</b> C) <b>7ML1998-5JP32</b> C) <b>7ML1998-5XC82</b>

Selection and Ordering data	Order No.
<b>SITRANS LR200, Uni-Construction polypropylene rod antenna version</b> 2-wire, 6 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). Max. 3 bar g (43.5 psi g) pressure and +80 °C (+176 °F)	C) <b>7ML5422-0</b>
<b>Instruction manual for PROFIBUS PA device</b> English German Note: The instruction manual should be ordered as a separate line item on the order. Multi-language Quick Start manual This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	C) <b>7ML1998-5JR01</b> C) <b>7ML1998-5JR31</b> C) <b>7ML1998-5XD81</b>
<b>Accessories</b> Handheld programmer, Intrinsically safe, EEx ia HART modem/RS-232 (for use with a PC and SIMATIC PDM) HART modem/USB (for use with a PC and SIMATIC PDM) One metallic cable gland M20x1.5, rated -40 °C to +80 °C (-40 to +176 °F) for General Purpose or ATEX EEx e installations (available for HART only) One metallic cable gland M20x1.5, rated -40 to +80 °C (-40 °F to +176 °F) with integrated shield connection (available for PROFIBUS PA) One General Purpose polymeric cable gland M20x1.5, rating for -20 to +80 °C (-4 to +176 °F) SITRANS RD100 Remote display - see RD100 on page 5/304 SITRANS RD200 Remote display - see RD200 on page 5/306	C) <b>7ML1930-1BK</b> D) <b>7MF4997-1DA</b> D) <b>7MF4997-1DB</b>  <b>7ML1930-1AP</b>  <b>7ML1930-1AQ</b>  <b>7ML1930-1AM</b>
1) Includes European Radio approval (R&TTE), 5.8 GHz, C-TICK 2) Includes Radio approval FCC, 6.3 GHz 3) Available with enclosure option 2 only 4) Available with enclosure option 3 only 5) Available with communication option 1 only	
C) Subject to export regulations AL: N, ECCN: EAR99 D) Subject to export regulations AL: N, ECCN: EAR99H	

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# Level instruments

## Continuous level measurement - Radar transmitters

### SITRANS LR200

Selection and Ordering data	Order No.
<b>SITRANS LR200, Flange Adapter, Sanitary Version</b>	C) 7 ML 5 4 2 4 -
2-wire, 6 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).	
<b>Antenna material (uses antenna adapter)</b>	
PTFE, one piece rod antenna	0
UHMW-PE, one piece rod antenna	1
<b>Process connection</b>	
Sanitary fitting clamp	A
<b>Configuration/Connection size</b>	
2" connection, rod antenna only	A
3" connection, rod antenna only	B
4" connection, rod antenna only	C
<b>Antenna extension</b>	
No extension	0
<b>Mounting Clamp</b>	
No mounting clamp	0
Mounting clamp included, not available with Pressure rating option 0	1
<b>Enclosure/Cable inlet</b>	
Aluminum, Epoxy painted	
2 x 1/2" NPT, Siemens LUI interface	C) 2
2 x M20x1.5, Siemens LUI interface	C) 3
<b>Communication/Output</b>	
4 to 20 mA, HART®	A
PROFIBUS PA	B
<b>Approvals</b>	
General Purpose, CE <sup>1)</sup>	A
General Purpose, CSA <sub>uscc</sub> FM, for North America only <sup>2)</sup>	C) B
CSA Class I and II, Div. I, Groups A, B, C, D, G, for C) North America only,	C
Intrinsically Safe with suitable barrier <sup>2)</sup>	D
FM, Class I and II, Div. I, Groups A, B, C, D, E, F, G, C) for North America only,	D
Intrinsically Safe with suitable barrier <sup>2)</sup>	E
ATEX II 1G EEx ia IIC T4,	E
Intrinsically Safe with suitable barrier <sup>1)</sup>	F
FM, Class I, Div. 2, Groups A, B, C, D, FCC 6.3 GHz, for North America only (no barrier required) <sup>3)</sup>	C) F
ATEX II 1/2 G EEx emia IIC T4 (no barrier required) <sup>1) 4) 5)</sup>	G
ATEX II 1/2 G EEx dmia IIC T4 (no barrier required) <sup>1) 5)</sup>	H
CSA/FM Class I, II and III, Div. 1, Groups A, B, C, C) D, E, F, G (no barrier required) <sup>2) 3) 5)</sup>	J
<b>Pressure rating</b>	
Rating per Pressure/Temperature curves in Manual 0.5 bar g (7.25 psi g) maximum	0
	1
<b>Further designs</b>	Order code
Please add "-Z" to Order No. and specify Order code(s).	
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters); specify in plain text	Y15
Namur NE43 compliant, device preset to failsafe <3.6 mA <sup>5)</sup>	N07

Selection and Ordering data	Order No.
<b>SITRANS LR200, Flange Adapter, Sanitary Version</b>	C) 7 ML 5 4 2 4 -
2-wire, 6 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).	
<b>Instruction manual for HART/ma device</b>	
English	C) 7ML1998-5JP02
German	C) 7ML1998-5JP32
Note: The instruction manual should be ordered as a separate line item on the order.	
Multi-language Quick Start manual	C) 7ML1998-5XC81
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	
<b>Instruction manual for PROFIBUS PA device</b>	
English	C) 7ML1998-5JR02
German	C) 7ML1998-5JR32
Note: The instruction manual should be ordered as a separate line item on the order.	
Multi-language Quick Start manual	C) 7ML1998-5XD81
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	
<b>Accessories</b>	
Handheld programmer, Intrinsically safe, EEx ia	C) 7ML1930-1BK
HART modem/RS-232 (for use with a PC and SIMATIC PDM)	D) 7MF4997-1DA
HART modem/USB (for use with a PC and SIMATIC PDM)	D) 7MF4997-1DB
One metallic cable gland M20x1.5, rated -40 °C to +80 °C (-40 to +176 °F) for General Purpose or ATEX EEx e installations (available for HART only)	7ML1930-1AP
One metallic cable gland M20x1.5, rated -40 to +80 °C (-40 °F to +176 °F) with integrated shield connection (available for PROFIBUS PA)	7ML1930-1AQ
One General Purpose polymeric cable gland M20x1.5, rating for -20 to +80 °C (-4 to +176 °F)	7ML1930-1AM
SITRANS RD100 Remote display - see RD100 on page 5/304	
SITRANS RD200 Remote display - see RD200 on page 5/306	
<b>Sanitary fitting clamps</b>	
2", 304 stainless steel	7ML1830-1HD
3", 304 stainless steel	7ML1830-1HE
4", 304 stainless steel	7ML1830-1HF
<sup>1)</sup> Includes European Radio approval (R&TTE), 5.8 GHz, C-TICK	
<sup>2)</sup> Includes Radio approval FCC, 6.3 GHz	
<sup>3)</sup> Available with enclosure option 2 only	
<sup>4)</sup> Available with enclosure option 3 only	
<sup>5)</sup> Available with communication option A only	
C) Subject to export regulations AL: N, ECCN: EAR99	
D) Subject to export regulations AL: N, ECCN: EAR99H	

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## Continuous level measurement - Radar transmitters

SITRANS LR200

Selection and Ordering data	Order No.
<b>SITRANS LR200, Flange Adapter/PTFE Rod Antenna Version</b>	C) 7 ML 5 4 2 3 -
2-wire, 6 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).	
<b>Antenna material (uses antenna adapter)</b> PTFE, uses antenna adapter and additional process connection below	1
<b>Process connection (refer to Pressure/Temperature curves in Instruction manual)</b> <u>Flanges (316L stainless steel)</u> DN 50 PN 16, Type A, flat faced DN 80 PN 16, Type A, flat faced DN 100 PN 16, Type A, flat faced DN 150 PN 16, Type A, flat faced  2" ASME 150 lb, flat faced 3" ASME 150 lb, flat faced 4" ASME 150 lb, flat faced 6" ASME 150 lb, flat faced  DN 50 PN 40, flat faced DN 80 PN 40, flat faced DN 100 PN 40, flat faced DN 150 PN 40, flat faced  2" ASME 300 lb, flat faced, available with Pressure rating option 1 only 3" ASME 300 lb, flat faced 4" ASME 300 lb, flat faced 6" ASME 300 lb, flat faced  JIS DN 50 10K JIS DN 80 10K JIS DN 100 10K JIS DN 150 10K (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1, or JIS B 2220 standard.) <u>Threaded connection (316L stainless steel)</u> 1½" NPT [(Taper), ANSI/ASME B1.20.1] 2" NPT [(Taper), ANSI/ASME B1.20.1] R 1½" [(BSPT), EN 10226]  R 2" [(BSPT), EN 10226] G 1½" [(BSPP), EN ISO 228-1] G 2" [(BSPP), EN ISO 228-1]	AA BA CA DA  FB GB HB JB  AC BC CC DC  FD  GD HD JD  AE BE CE DE  LA MA LC  MC LE ME
<b>Antenna extensions or Inactive shield length</b> No antenna extension 50 mm (2") extension, PTFE 100 mm (4") extension, PTFE  100 mm (4") extension, 316L stainless steel shield <sup>1)</sup> 150 mm (6") extension, 316L stainless steel shield <sup>1)</sup> 200 mm (8") extension, 316L stainless steel shield <sup>1)</sup>  250 mm (10") extension, 316L stainless steel shield <sup>1)</sup> Custom inactive shield length 101 mm to 1000 mm (in 1 mm increments) <u>Add order code Y01 and plain text: "Inactive shield length...mm"<sup>1)</sup></u>	0 1 2 3 4 5 6 7
<b>Process seal/gasket</b> Integral Gasket, for flat faced flange process connections only, not for Antenna extension options 3 to 6 FKM O-ring, not available for combination of flat faced flanges with Antenna extension options 0, 1 or 2	0 1
<b>Enclosure/Cable inlet</b> <u>Aluminum, Epoxy painted</u> 2 x ½" NPT, Siemens LUI interface 2 x M20x1.5, Siemens LUI interface	C) C) 2 3
<b>Communication/Output</b> 4 to 20 mA, HART® PROFIBUS PA	A B

Selection and Ordering data	Order No.
<b>SITRANS LR200, Flange Adapter/PTFE Rod Antenna Version</b>	C) 7 ML 5 4 2 3 -
2-wire, 6 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).	
<b>Approvals</b> General Purpose, CE <sup>2)</sup> General Purpose, CSA <sub>USC</sub> -FM, for North America only <sup>3)</sup> CSA Class I and II, Div. I, Groups A, B, C, D, G, for North America only, Intrinsically Safe with suitable barrier <sup>3)</sup> FM, Class I and II, Div. I, Groups A, B, C, D, E, F, G, for North America only, Intrinsically Safe with suitable barrier <sup>3)</sup> ATEX II 1G EEx ia IIC T4, Intrinsically Safe with suitable barrier <sup>2)</sup> FM, Class I, Div. 2, Groups A, B, C, D, FCC 6.3 GHz, for North America only (no barrier required) <sup>3) 4)</sup> ATEX II 1/2 G EEx emia IIC T4 (no barrier required) <sup>2) 5) 6)</sup> ATEX II 1/2 G EEx dmia IIC T4 (no barrier required) <sup>2) 6)</sup> CSA/FM Class I, II and III, Div. 1, Groups A, B, C, D, E, F, G (no barrier required) <sup>2) 4) 6)</sup>	A B C D E F G H J
<b>Pressure rating</b> Rating per Pressure/Temperature curves in Manual 0.5 bar g (7.25 psi g) maximum	0 1
<b>Further designs</b> Please add "-Z" to Order No. and specify Order code(s).	Order code
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters); specify in plain text Inactive custom shield lengths: Enter the total length of the inactive shield in plain text description (in 1 mm increments).	Y15
Namur NE43 compliant, device preset to failsafe <3.6 mA <sup>6)</sup>	Y01 N07
<b>Instruction manual for HART/mA device</b>	Order No.
English	C) 7ML1998-5JP02
German	C) 7ML1998-5JP32
Note: The instruction manual should be ordered as a separate line item on the order.	
Multi-language Quick Start manual	C) 7ML1998-5XC81
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	
<b>Instruction manual for PROFIBUS PA device</b>	
English	C) 7ML1998-5JR02
German	C) 7ML1998-5JR32
Note: The instruction manual should be ordered as a separate line item on the order.	
Multi-language Quick Start manual	C) 7ML1998-5XD81
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	

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# Level instruments

## Continuous level measurement - Radar transmitters

### SITRANS LR200

#### Selection and Ordering data

Order No.

#### SITRANS LR200, Flange Adapter/PTFE Rod Antenna Version

C) 7ML5423-

2-wire, 6 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).

#### Accessories

Handheld programmer, Intrinsically safe, EEx ia HART modem/RS-232 (for use with a PC and SIMATIC PDM)

C) 7ML1930-1BK

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

D) 7MF4997-1DA

One metallic cable gland M20x1.5, rated -40 °C to +80 °C (-40 to +176 °F) for General Purpose or ATEX EEx e installations (available for HART only)

D) 7MF4997-1DB

Antenna, rod, PTFE

7ML1930-1AP

Antenna extension, 50 mm (2") PTFE

7ML1830-1HC

Antenna extension, 100 mm (4") PTFE

7ML1830-1CG

One metallic cable gland M20x1.5, rated -40 to +80 °C (-40 to +176 °F) with integrated shield connection (available for PROFIBUS PA)

7ML1830-1CH

One General Purpose polymeric cable gland M20x1.5, rating for -20 to +80 °C (-4 to +176 °F)

7ML1930-1AQ

SITRANS RD100 Remote display - see RD100 on page 5/304

7ML1930-1AM

SITRANS RD200 Remote display - see RD200 on page 5/306

- 1) Available with process connection options BA, CA, DA, GB, HB, JB, BC, CC, DC, GD, HD, JD, BE, CE, DE, MA, MC, ME only  
 2) Includes European Radio approval (R&TTE), 5.8 GHz, C-TICK  
 3) Includes Radio approval FCC, 6.3 GHz  
 4) Available with enclosure option 2 only  
 5) Available with enclosure option 3 only  
 6) Available with communication option A only

C) Subject to export regulations AL: N, ECCN: EAR99

D) Subject to export regulations AL: N, ECCN: EAR99H

#### Selection and Ordering data

Order No.

#### SITRANS LR200, Flange Adapter/Horn Antenna Version

C) 7ML5425-

2-wire, 6 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 Material (uses antenna adapter)

316L stainless steel with PTFE cone emitter  
 316L stainless steel with PTFE cone emitter and purge connection with 1/8" NPT inlet<sup>1)</sup>  
 Sliding waveguide system with 1000 mm (40") waveguide<sup>1)</sup>

0

1

2

#### Process connection (refer to Pressure/Temperature curves on specification sheets)

##### Flanges (316L stainless steel)

DN 50 PN 16, Type A, flat faced<sup>1)</sup>

AA

DN 80 PN 16, Type A, flat faced

BA

DN 100 PN 16, Type A, flat faced

CA

DN 150 PN 16, Type A, flat faced

DA

DN 200 PN 16, Type A, flat faced

EA

DN 80 PN 10/16 DIN EN1092-1 form B1

BF

DN 100 PN 10/16 DIN EN1092-1 form B1

CF

DN 150 PN 10/16 DIN EN1092-1 form B1

DF

DN 200 PN 16 DIN EN1092-1 form B1

EF

2" ASME 150 lb, flat faced<sup>1)</sup>

FB

3" ASME 150 lb, flat faced

GB

4" ASME 150 lb, flat faced

HB

6" ASME 150 lb, flat faced

JB

8" ASME 150 lb, flat faced

KB

DN 50 PN 40, flat faced<sup>1)</sup>

AC

DN 80 PN 40, flat faced

BC

DN 100 PN 40, flat faced

CC

DN 80 PN 25/40 DIN EN1092-1 form B1

CG

DN 100 PN 25/40 DIN EN1092-1 form B1

DG

DN 150 PN 25/40 DIN EN1092-1 form B1

EG

2" ASME 300 lb, flat faced<sup>1)</sup>

FD

3" ASME 300 lb, flat faced

GD

4" ASME 300 lb, flat faced

HD

JIS DN 50 10K<sup>1)</sup>

AE

JIS DN 80 10K

BE

JIS DN 100 10K

CE

JIS DN 150 10K

DE

JIS DN 200 10K

EE

(Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1, or JIS B 2220 standard.)

#### Communication/Output

4 to 20 mA, HART<sup>®</sup>

0

PROFIBUS PA

1

#### Process seal/gasket

FKM (-40 to +200 °C)

0

Nitrile (-40 to +100 °C), sliding waveguide systems only

1

FFKM (-35 to +200 °C)

2

#### Enclosure/Cable inlet

##### Aluminum, Epoxy painted

2 x 1/2" NPT, Siemens LUI interface

2

2 x M20x1.5, Siemens LUI interface

3

#### Horn size/Waveguide options

80 mm (3") horn<sup>2)</sup>

D)

B

100 mm (4") horn<sup>2)</sup>

D)

C

150 (6") mm horn

D)

D

200 (8") mm horn

D)

E

100 mm (4") horn with 100 mm (4")

D)

F

waveguide extension<sup>2)</sup>

100 mm (4") horn with 150 mm (6")

D)

G

waveguide extension<sup>2)</sup>

100 mm (4") horn with 200 mm (8")

D)

H

waveguide extension<sup>2)</sup>

100 mm (4") horn with 250 mm (10")

D)

J

waveguide extension<sup>2)</sup>

# Level instruments

## Continuous level measurement - Radar transmitters

SITRANS LR200

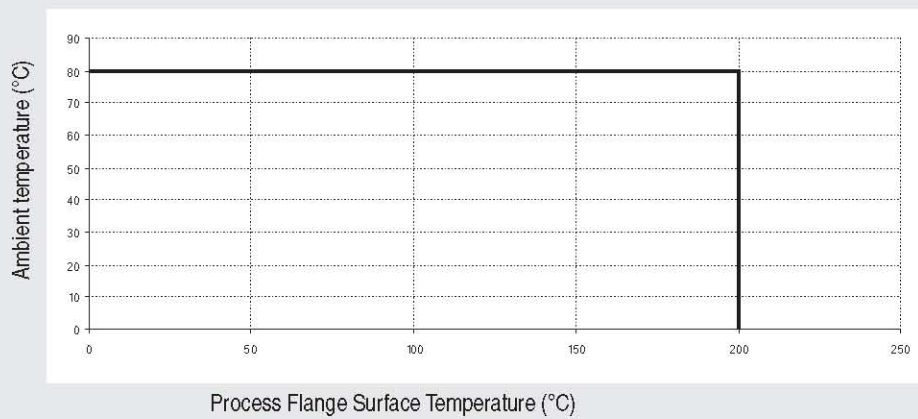
Selection and Ordering data	Order No.	Selection and Ordering data	Order No.
<b>SITRANS LR200, Flange Adapter/Horn Antenna Version</b> 2-wire, 6 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries in storage and process vessels including high temperature and pressure, to a range of 20 m (66 ft).	<b>7ML5425-</b> 	<b>SITRANS LR200, Flange Adapter/Horn Antenna Version</b> 2-wire, 6 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).	<b>7ML5425-</b> 
150 mm (6") horn with 100 mm (4") waveguide extension 150 mm (6") horn with 150 mm (6") waveguide extension 150 mm (6") horn with 200 mm (8") waveguide extension 150 mm (6") horn with 250 mm (10") waveguide extension 200 mm (8") horn with 100 mm (4") waveguide extension 200 mm (8") horn with 150 mm (6") waveguide extension 200 mm (8") horn with 200 mm (8") waveguide extension 200 mm (8") horn with 250 mm (10") waveguide extension Waveguide only - Waveguide length 500 mm to 3000 mm (in 1 mm increments) (Add order code Y01 and plain text: "waveguide length...mm")	<b>K</b> <b>L</b> <b>M</b> <b>N</b> <b>P</b> <b>Q</b> <b>R</b> <b>S</b> <b>T</b>	<b>Instruction manual for HART/ma device</b> English German Note: The instruction manual should be ordered as a separate line item on the order. Multi-language Quick Start manual This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	<b>C) 7ML1998-5JP02</b> <b>C) 7ML1998-5JP32</b>  <b>C) 7ML1998-5XC82</b>
<b>Approvals</b> General Purpose, CE <sup>3)</sup> General Purpose, CSA <sub>USC</sub> , FM, for North America only <sup>4)</sup> CSA Class I and II, Div. I, Groups A, B, C, D, G, for North America only, Intrinsically Safe with suitable barrier <sup>4)</sup> FM, Class I and II, Div. I, Groups A, B, C, D, E, F, G, for North America only, Intrinsically Safe with suitable barrier <sup>4)</sup> ATEX II 1G EEx ja IIC T4, Intrinsically Safe with suitable barrier <sup>3)</sup> FM, Class I, Div. 2, Groups A, B, C, D, for North America only (no barrier required) <sup>4) 5)</sup> ATEX II 1/2 G EEx emja IIC T4 (no barrier required) <sup>3) 6) 7)</sup> ATEX II 1/2 G EEx dmja IIC T4 (no barrier required) <sup>3) 7)</sup> CSA/FM Class I, II and III, Div. 1, Groups A, B, C, D, E, F, G (no barrier required) <sup>4) 5) 7)</sup>	<b>A</b> <b>B</b> <b>C</b> <b>D</b> <b>E</b> <b>F</b> <b>G</b> <b>H</b> <b>J</b>	<b>Instruction manual for PROFIBUS PA device</b> English German Note: The instruction manual should be ordered as a separate line item on the order. Multi-language Quick Start manual This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and instruction manual library.	<b>C) 7ML1998-5JR02</b> <b>C) 7ML1998-5JR32</b>  <b>C) 7ML1998-5XD81</b>
<b>Pressure rating</b> Rating per Pressure/Temperature curves in Manual 0.5 bar g (7.25 psi g) maximum	<b>0</b> <b>1</b>	<b>Accessories</b> Handheld programmer, Intrinsically safe, EEx ia HART modem/RS-232 (for use with a PC and SIMATIC PDM) HART modem/USB (for use with a PC and SIMATIC PDM <sup>®</sup> ) One metallic cable gland M20x1.5, rated -40 °C to +80 °C (-40 to +176 °F) (available for HART only) One metallic cable gland M20x1.5, rated -40 °C to +80 °C (-40 to +176 °F) with integrated shield connection (available for PROFIBUS PA) One General Purpose polymeric cable gland M20x1.5, rating for -20 to +80 °C (-4 to +176 °F) SITRANS RD100 Remote display - see RD100 on page 5/304 SITRANS RD200 Remote display - see RD200 on page 5/306	<b>C) 7ML1930-1BK</b> <b>D) 7MF4997-1DA</b>  <b>D) 7MF4997-1DB</b>  <b>7ML1930-1AP</b> <b>7ML1930-1AQ</b>  <b>7ML1930-1AM</b>
<b>Further designs</b> Please add " <b>-Z</b> " to Order No. and specify Order code(s).	Order code	1) Available with pressure rating option 1 only 2) For stillpipe applications only 3) Includes European Radio approval (R&TTE), 5.8 GHz, C-TICK 4) Includes Radio approval FCC, 6.3 GHz 5) Available with enclosure option 2 only 6) Available with enclosure option 3 only 7) Available with communication option 0 only	
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000 Inspection Certificate Type 3.1 per EN 10204 Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters) specify in plain text Waveguide custom lengths: Enter the total length of the waveguide in plain text description (1 mm increments) Namur NE43 compliant, device preset to failsafe <3.6 mA <sup>7)</sup>	<b>C11</b> <b>C12</b> <b>Y15</b>  <b>Y01</b>  <b>N07</b>	C) Subject to export regulations AL: N, ECCN: EAR99 D) Subject to export regulations AL: N, ECCN: EAR99H	

# Level instruments

## Continuous level measurement - Radar transmitters

**SITRANS LR200****Characteristic curves**

Maximum Flange and Process Temperatures versus Allowable Ambient



SITRANS LR200 Ambient/Process Flange Surface Temperature Curve



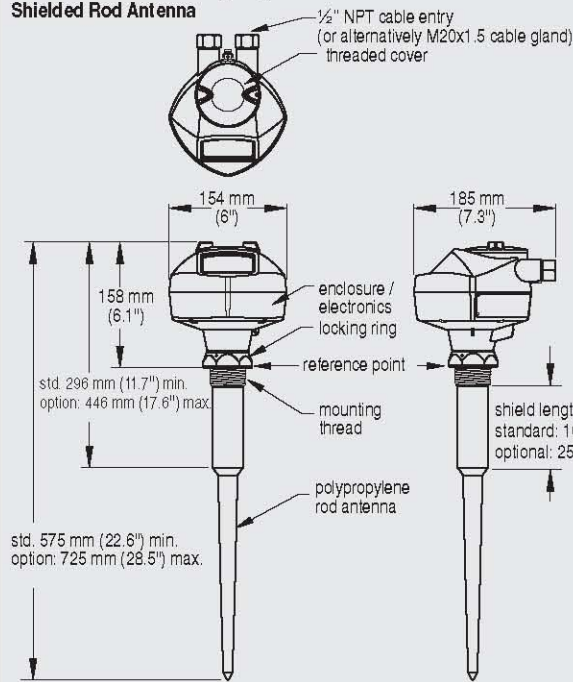
# Level instruments

## Continuous level measurement - Radar transmitters

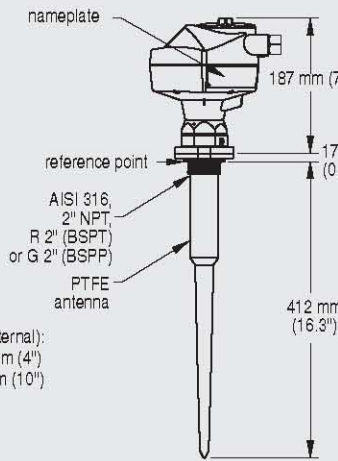
SITRANS LR200

### Dimensional drawings

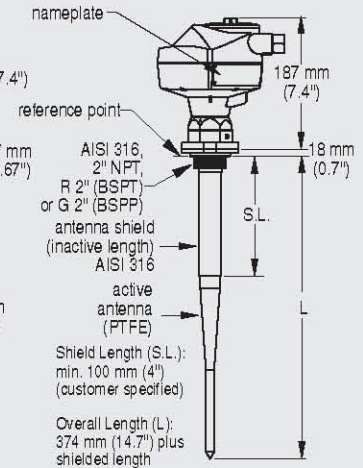
**SITRANS LR200 with Polypropylene Shielded Rod Antenna**



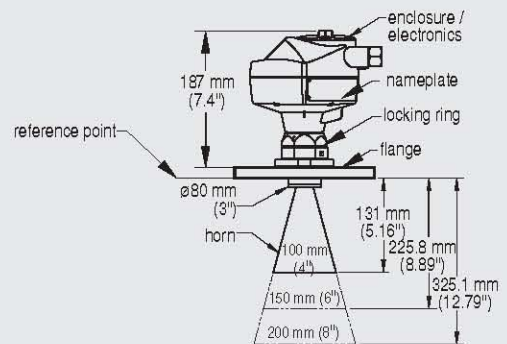
**PTFE Rod Antenna, Threaded**



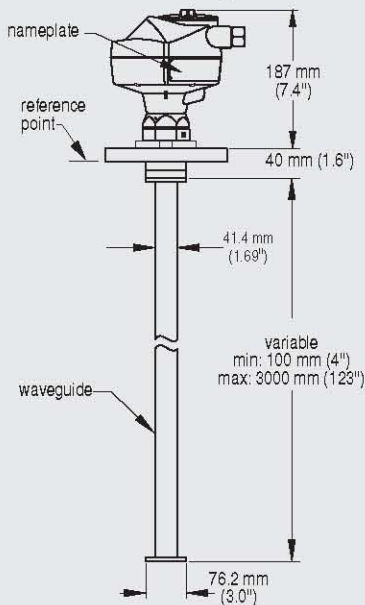
**Threaded Connection PTFE Rod, external shield**



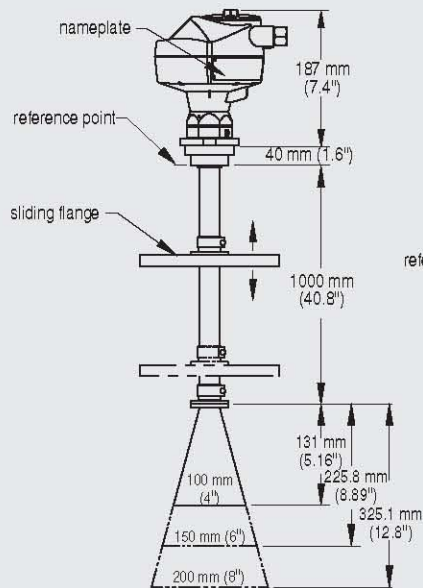
**Horn Antenna with Flat Faced Flange**



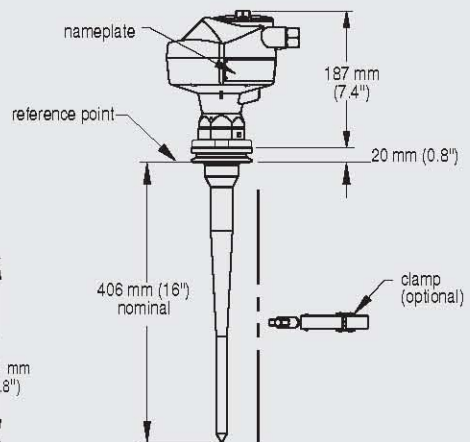
**Waveguide Antenna with Flat Faced Flange**



**Sliding Waveguide**



**Sanitary Rod Antenna**



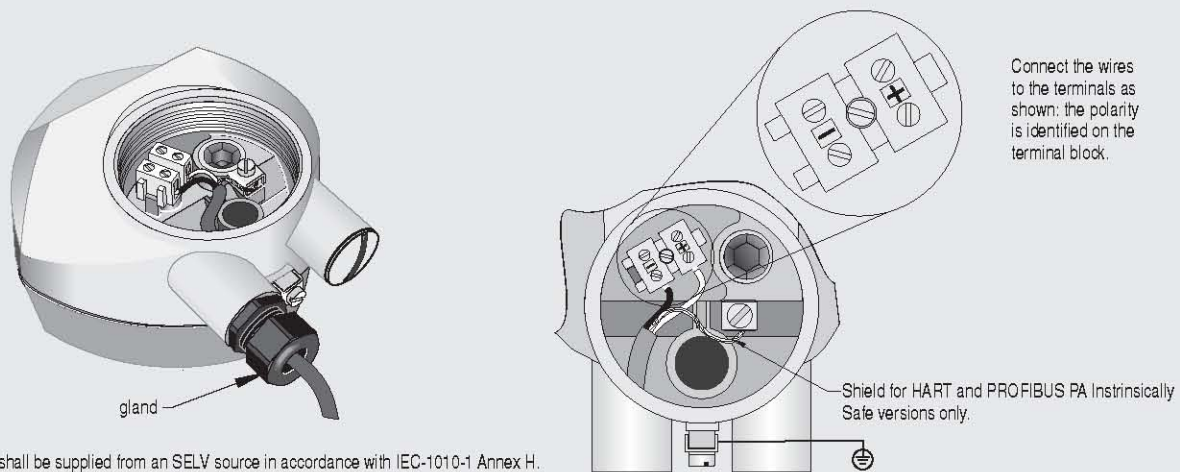
SITRANS LR200 dimensions

# Level instruments

## Continuous level measurement - Radar transmitters

### SITRANS LR200

#### Schematics



#### Notes:

1. DC terminal shall be supplied from an SELV source in accordance with IEC-1010-1 Annex H.
2. All field wiring must have insulation suitable for rated input voltages.
3. Use shielded twisted pair cable (14 to 22 AWG) for HART version.
4. Separate cables and conduit may be required to conform to standard instrumentation wiring practices or electrical codes.

#### Hand Programmer

Part number:  
7ML1930-1BK



SITRANS LR200 connections

# Level instruments

## Continuous level measurement - Radar transmitters

### SITRANS LR200 and SITRANS LR300 Antennas

#### Integration



Antenna configurations for SITRANS LR200

#### Technical specifications

Antenna Types	Flat Faced Flange with Rod	Shielded Rod	Sanitary Rod (1 piece construction)	Horn (4", 6", 8" sizes available)	Waveguide
<b>Connection type</b>	Flat faced flange nominal pipe sizes 50, 80, 100, 150 mm (2, 3, 4, 6")	Threaded 2" NPT, R 2" (BSPT), G 2" (BSPP) or flat faced flange nominal pipe sizes 80, 100 mm (3, 4")	Sanitary fitting clamp 50, 80, 100 mm (2, 3, 4") sizes	Flat faced flange nominal pipe sizes 50, 80, 100, 150 mm (2, 3, 4, 6")	Flat faced flange nominal pipe sizes 50, 80, 100, 150 mm (2, 3, 4, 6")
<b>Wetted parts</b>	PTFE	PTFE, 316L stainless steel, FKM o-ring	UHME-PE or PTFE	316L stainless steel PTFE, FKM o-ring	316L stainless steel PTFE, FKM o-ring
<b>Extensions</b>	50 or 100 mm (2 or 4") PTFE or UHMW-PE	100, 150, 200 or 250 mm (4, 6, 8 or 10") standard shield length	N/A	use waveguide for extensions to 6 m (20 ft) long	two sections (max.) can be connected together. Max. overall length: 3 m (9.8 ft)
<b>Dielectric constant</b>	> 3	> 3	> 3	> 3	> 1.6
<b>Insertion length (max.)</b>	41 cm (16.3")	variable	41 cm (16.3")	variable with extension	variable
<b>Purging option (liquid or gas)</b>	No	No	No	Yes <sup>206</sup>	Yes
<b>Sliding waveguide option for digesters<sup>1)</sup></b>	Yes	No	No	Yes	N/A
<b>Weight<sup>2)</sup></b>	6.5 kg (14.3 lbs)	5.0 kg (11 lbs)	5.0 kg (11 lbs)	7.5 kg (16.5 lbs)	8.0 kg (17.6 lbs) 1 m (39") length

<sup>1)</sup> Maximum pressure 0.5 bar g at +60 °C (7.25 psi g at +140 °F)

<sup>2)</sup> Not including extensions, includes SITRANS LR200 and smallest process connection

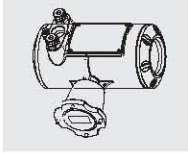
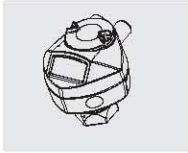
# Level instruments

## Continuous level measurement - Radar transmitters

### SITRANS LR200 and SITRANS LR300 Antennas

#### Selection and ordering Data

##### SITRANS LR200 and SITRANS LR300 Specials

	Order No.		Order No.
<b>SITRANS LR300 Aluminum Enclosure Kit with Electronics and Covers (7ML5411, 7ML5412, 7ML5413), calibrated for use with standard rod antenna</b>		SITRANS LR200 aluminum enclosure with board stack, LUI display, 6.3 GHz, NPT cable inlet, approval option C, with HART communication, no process connection. See note 7.	C) <b>A5E01483480</b>
SITRANS LR300 aluminum enclosure with board stack, M20 cable inlet, approval option A, with HART® communication, no process connection. See note 7.	C) <b>PBD-51035860</b>	SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, NPT cable inlet, approval option E, with HART communication, no process connection. See note 7.	C) <b>A5E01483493</b>
SITRANS LR300 aluminum enclosure with board stack, M20 cable inlet, approval option E, with HART communication, no process connection. See note 7.	<b>PBD-51035377</b>	SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, NPT cable inlet, approval option E, with HART communication, no process connection. See note 7.	C) <b>A5E01483536</b>
SITRANS LR300 aluminum enclosure with board stack, M20 cable inlet, approval option G, with HART communication, no process connection. See note 7.	C) <b>PBD-51035336</b>	SITRANS LR200 aluminum enclosure with board stack, LUI display, 6.3 GHz, NPT cable inlet, approval option C, with PROFIBUS PA communication, no process connection. See note 7.	C) <b>A5E01483547</b>
SITRANS LR300 aluminum enclosure with board stack, M20 cable inlet, approval option J, with HART communication, no process connection. See note 7.	C) <b>PBD-51035566</b>	SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, NPT cable inlet, approval option E, with PROFIBUS PA communication, no process connection. See note 7.	C) <b>A5E01483559</b>
<b>SITRANS LR200 Aluminum Enclosure Kit with Electronics and Covers (7ML5422, 7ML5423, 7ML5424, 7ML5425), calibrated for use with standard rod antenna</b>		<b>SITRANS LR200/LR300 Horn Antenna Kits with mounting screws (no emitter supplied)</b>	
SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, M20 cable inlet, approval option A, with HART communication, no process connection. See note 7.	C) <b>A5E01483323</b>	80 mm (3") horn antenna kit	<b>PBD-25500K02A</b>
SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, M20 cable inlet, approval option E, with HART communication, no process connection. See note 7.	C) <b>A5E01483368</b>	100 mm (4") horn antenna kit	<b>PBD-25500K03A</b>
SITRANS LR200 aluminum enclosure with board stack, LUI display, 6.3 GHz, M20 cable inlet, approval option C, with HART communication, no process connection. See note 7.	C) <b>A5E01483389</b>	150 mm (6") horn antenna kit	<b>PBD-25500K05A</b>
SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, M20 cable inlet, approval option E, with PROFIBUS PA communication, no process connection. See note 7.	C) <b>A5E01483420</b>	200 mm (8") horn antenna kit	<b>PBD-25500K07A</b>
SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, M20 cable inlet, approval option A, with PROFIBUS PA communication, no process connection. See note 7.	C) <b>A5E01483440</b>	<b>SITRANS LR300 Extension Kits for Horn Antenna with mounting screws</b>	
SITRANS LR200 aluminum enclosure with board stack, LUI display, 6.3 GHz, M20 cable inlet, approval option C, with PROFIBUS PA communication, no process connection. See note 7.	C) <b>A5E01483456</b>	100 mm (4") extension kit for horn antenna	<b>PBD-25501K0100A</b>
SITRANS LR200 aluminum enclosure with board stack, LUI display, 5.8 GHz, NPT cable inlet, approval option A, with HART communication, no process connection. See note 7.	C) <b>A5E01483468</b>	150 mm (6") extension kit for horn antenna	<b>PBD-25501K0150A</b>
		200 mm (8") extension kit for horn antenna	<b>PBD-25501K0200A</b>
		250 mm (10") extension kit for horn antenna	<b>PBD-25501K0250A</b>
		500 mm (20") extension kit for horn antenna	<b>PBD-25501K0500A</b>
		1000 mm (40") extension kit for horn antenna	<b>PBD-25501K1000A</b>
		<b>SITRANS LR200/LR300 Flanged Rod Antenna Kit with 316L SS flat faced flanges</b>	
		Flanged PTFE rod antenna kit, 2" ASME, 150 lb. See drawing 51003 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a> . See notes 1 and 6.	<b>PBD-51003K020AAAA</b>
		Flanged PTFE rod antenna kit, DN 50 PN16. See drawing 51003 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a> . See notes 1 and 6.	<b>PBD-51003K050AJAA</b>
		Flanged PTFE rod antenna kit, JIS 10K DN 50. See drawing 51003 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a> . See notes 1 and 6.	<b>PBD-51003K050AOAA</b>

# Level instruments

## Continuous level measurement - Radar transmitters

### SITRANS LR200 and SITRANS LR300 Antennas

	Order No.		Order No.
<p><b>SITRANS LR200/LR300 PTFE Rod Antenna Kit with 316L SS 1½" pipe thread process connection</b></p> <p>PTFE rod antenna kit, 1½" NPT 316L SS Process Connection, FKM O-ring; See drawing 51004 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See note 6.</p> <p>PTFE rod antenna kit, R 1½" (BSPT), EN 10226 316L SS Process Connection, FKM O-ring; See drawing 51004 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See note 6.</p> <p>PTFE rod antenna kit, 1½" G 316L SS Process Connection, FKM O-ring; See drawing 51004 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See note 6.</p>	 <p><b>PBD-51004K1AAA</b></p> <p><b>PBD-51004K2AAA</b></p> <p><b>PBD-51004K3AAA</b></p>	<p><b>SITRANS LR200/LR300 Horn Antenna Kit with 316L SS flat faced flange, with PTFE emitter (without waveguide)</b></p> <p>Horn antenna kit, 2" ASME 316L SS flange 3" horn, PTFE emitter; See notes 1 and 6.</p> <p>Horn antenna kit, 2" ASME 316L SS flange 4" horn, PTFE emitter; See notes 1 and 2.</p> <p>Horn antenna kit, 2" ASME 316L SS flange 6" horn, PTFE emitter; See notes 1 and 2.</p> <p>Horn antenna kit, 2" ASME 316L SS flange 8" horn, PTFE emitter; See notes 1 and 2.</p> <p>Horn antenna kit, DN 50 PN 16 316L SS flange 80 mm horn, PTFE emitter; See notes 1 and 2.</p> <p>Horn antenna kit, DN 50 PN 16 316L SS flange 100 mm horn, PTFE emitter; See notes 1 and 2.</p> <p>Horn antenna kit, DN 50 PN 16 316L SS flange 150 mm horn, PTFE emitter; See notes 1 and 2.</p> <p>Horn antenna kit, DN 50 PN 16 316L SS flange 200 mm horn, PTFE emitter; See notes 1 and 2.</p>	 <p><b>PBD-51006K020AAAA</b></p> <p><b>PBD-51006K020AABA</b></p> <p><b>PBD-51006K020AACA</b></p> <p><b>PBD-51006K020AADA</b></p> <p><b>PBD-51006K050AJAA</b></p> <p><b>PBD-51006K050AJBA</b></p> <p><b>PBD-51006K050AJCA</b></p> <p><b>PBD-51006K050AJDA</b></p>
<p><b>SITRANS LR200/LR300 PTFE Rod Antenna Kit with 316L SS 2" pipe thread process connection</b></p> <p>PTFE rod antenna kit, 2" NPT 316L SS Process Connection, FKM O-ring; See drawing 51005 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See note 6.</p> <p>PTFE rod antenna kit, R 2" (BSPT), EN 10226 316L SS Process Connection, FKM O-ring; See drawing 51005 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See note 6.</p> <p>PTFE rod antenna kit, 2" G 316L SS Process Connection, FKM O-ring; See drawing 51005 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See note 6.</p>	 <p><b>PBD-51005K1AAA</b></p> <p><b>PBD-51005K2AAA</b></p> <p><b>PBD-51005K3AAA</b></p>	<p><b>SITRANS LR200/LR300 Sanitary Rod Antenna with Sanitary Fitting Clamp Flange mounting and bushing. See drawing 51010 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a> (Sanitary Fitting Clamps not included)</b></p> <p>PTFE sanitary rod antenna kit, 2" mounting connection. See note 6.</p> <p>PTFE sanitary rod antenna kit, 3" mounting connection. See note 6.</p> <p>PTFE sanitary rod antenna kit, 4" mounting connection. See note 6.</p> <p>UHMW-PE sanitary rod antenna kit, 2" mounting connection. See note 6.</p> <p>UHMW-PE sanitary rod antenna kit, 3" mounting connection. See note 6.</p> <p>UHMW-PE sanitary rod antenna kit, 4" mounting connection). See note 6.</p>	 <p><b>PBD-51010K1AA</b></p> <p><b>PBD-51010K2AA</b></p> <p><b>PBD-51010K3AA</b></p> <p><b>PBD-51010K1AB</b></p> <p><b>PBD-51010K2AB</b></p> <p><b>PBD-51010K3AB</b></p>
<p><b>SITRANS LR200/LR300 PTFE Rod Antenna Kit (100 mm shield) with 316L SS 2" pipe thread process connection</b></p> <p>PTFE rod antenna shielded kit, 2" NPT 316L SS Process Connection, FKM O-ring, 100 mm 316L SS shield. See drawing 51002 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See notes 3 and 6.</p> <p>PTFE rod antenna shielded kit, R 2" (BSPT), EN 10226 316L SS Process Connection, FKM O-ring, 100 mm 316L SS shield. See drawing 51002 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See notes 3 and 6.</p> <p>PTFE rod antenna shielded kit, 2" G 316L SS Process Connection, FKM O-ring, 100 mm 316L SS shield. See drawing 51002 on <a href="http://www.siemens.com/radar">http://www.siemens.com/radar</a>. See notes 3 and 6.</p>	 <p><b>PBD-51002K0100AAA</b></p> <p><b>PBD-51002K0100BAA</b></p> <p><b>PBD-51002K0100CAA</b></p>	<p><b>SITRANS LR200/LR300 PTFE Flanged Rod Antenna Kit with 316L SS shield and 316L SS flat faced flange</b></p> <p>PTFE shielded rod antenna kit, flanged, 3" ASME 150 lb 316L SS flange, 100 mm 316L SS shield. See notes 1 and 6.</p> <p>PTFE shielded rod antenna kit, flanged, DN 80 PN 16 316L SS flange, 100 mm 316L SS shield. See notes 1 and 6.</p> <p>PTFE shielded rod antenna kit, flanged, 3" ASME 150 lb 316L SS flange, 150 mm 316L SS shield. See notes 1 and 6.</p> <p>PTFE shielded rod antenna kit, flanged, DN 80 PN 16 316L SS flange, 150 mm 316L SS shield. See notes 1 and 6.</p>	 <p><b>PBD-51014K0100AAA</b></p> <p><b>PBD-51014K0100EJA</b></p> <p><b>PBD-51014K0150AAA</b></p> <p><b>PBD-51014K0150EJA</b></p>

## Level instruments

### Continuous level measurement - Radar transmitters

#### SITRANS LR200 and SITRANS LR300 Antennas

	Order No.
PTFE shielded rod antenna kit, flanged, 3" ASME 150 lb 316L SS flange, 200 mm 316L SS shield. See notes 1 and 6.	<b>PBD-51014K0200AAA</b>
PTFE shielded rod antenna kit, flanged, DN 80 PN 16 316L SS flange, 200 mm 316L SS shield. See notes 1 and 6.	<b>PBD-51014K0200EJA</b>
PTFE shielded rod antenna kit, flanged, 3" ASME 150 lb 316L SS flange, 250 mm 316L SS shield. See notes 1 and 6.	<b>PBD-51014K0250AAA</b>
PTFE shielded rod antenna kit, flanged, DN 80 PN 16 316L SS flange, 250 mm 316L SS shield. See notes 1 and 6.	<b>PBD-51014K0250EJA</b>
<b>PTFE paste</b>	
Kit, PTFE paste, Tube, 250 mL. See note 7.	C) <b>PBD-51036065</b>
<b>Cable gland</b>	
One polymeric cable gland M20x1.5, rated -20 to +80 °C (-4 to +176 °F) for General Purpose and ATEX EEx e	<b>7ML1930-1AN</b>
One metallic cable gland M20x1.5, rated -40 to +80 °C (-40 to +176 °F) for General Purpose or ATEX EEx e installations (available for HART only)	<b>7ML1930-1AP</b>
One metallic cable gland M20x1.5, rated -40 to +80 °C (-40 to +176 °F) with integrated shield connection (available for PROFIBUS PA)	<b>7ML1930-1AQ</b>

C) Subject to export regulations AL: N, ECCN: EAR99

Please contact [nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com) for special requests.

Note 1: Available in flange sizes including ASME, DIN and JIS: please contact [nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com).

Note 2: Available with no pressure rating

Note 3: Available in other shield lengths: please contact [nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com).

Note 4: Available with no pressure rating and with General Purpose Approvals only

Note 5: Please contact [nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com) for pricing and part number. Submit completed Application Questionnaire found on page 5/190.

Note 6: Available with Pressure rating; serial number of original unit required with completed Application Questionnaire found on page 5/190.

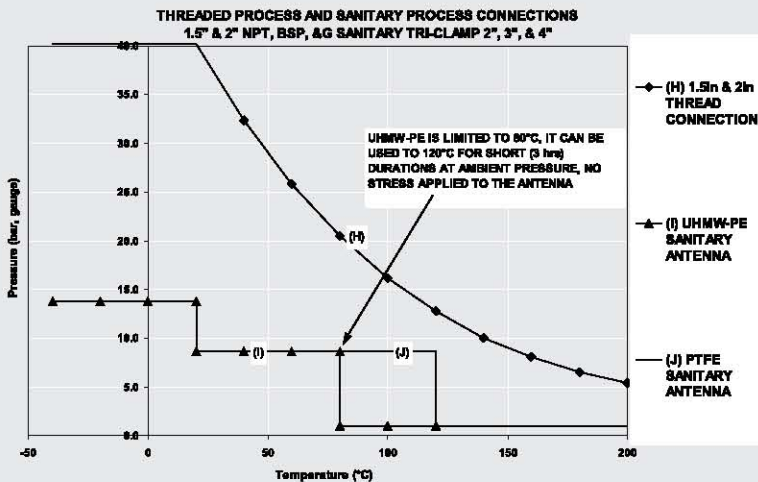
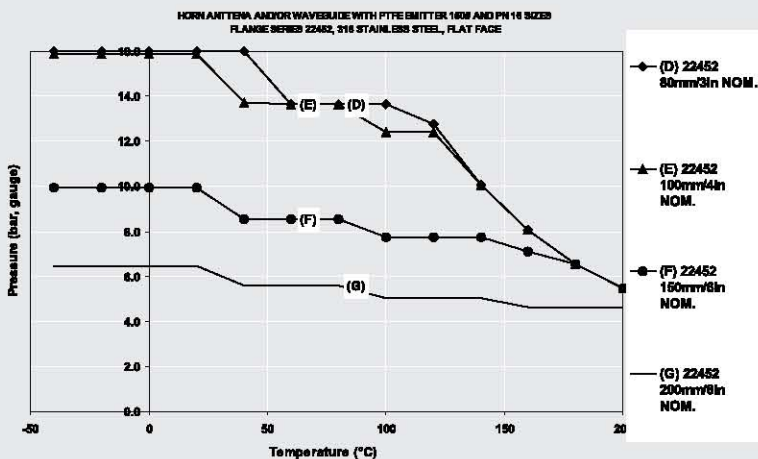
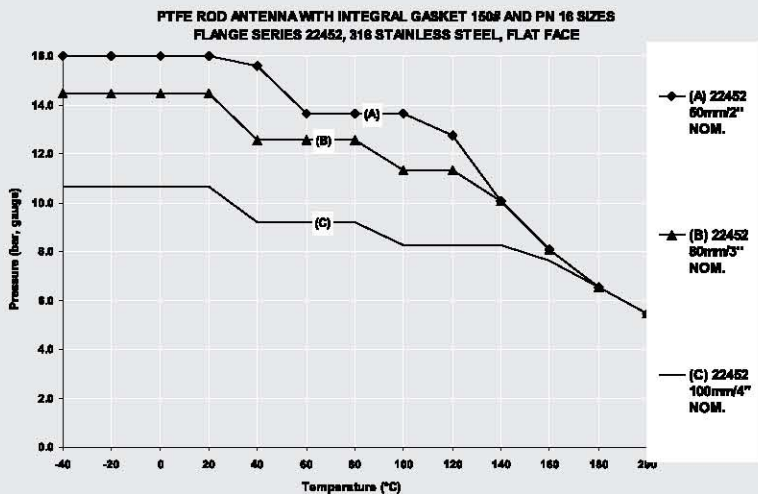
Note 7: Subject to export regulations AL: N, ECCN: EAR99

# Level instruments

## Continuous level measurement - Radar transmitters

SITRANS LR200 and SITRANS LR300 Antennas

### Characteristic curves



SITRANS LR200/LR300 Process Pressure/Temperature derating curves