

Level Measurement

Continuous level measurement
Radar level transmitters

SITRANS LR100

Overview



SITRANS LR100 is a 2 wire loop powered radar transmitter for continuous level measurement of liquids and slurries to a range of 8 m (26 ft).

Benefits

- Bluetooth connectivity for easy setup with SITRANS mobile IQ
- Chemically resistant PVDF enclosure
- W band FMCW radar yields narrow beam with small antenna for superior performance in short range applications
- Approved for open air applications outside of a tank
- Compact design fits in limited space installations

Application

SITRANS LR100 is a W band FMCW radar level transmitter, packaged in a hermetically sealed PVDF enclosure for years of trouble-free reliable measurement service.

4 to 20 mA loop powered, it provides accurate level measurement to ranges of 8 m (26 ft). Measurement is possible non-intrusively through plastic vessel tops for easy installation. Programming is convenient using the Bluetooth connection and SITRANS mobile IQ application on your smart device.

Technical specifications

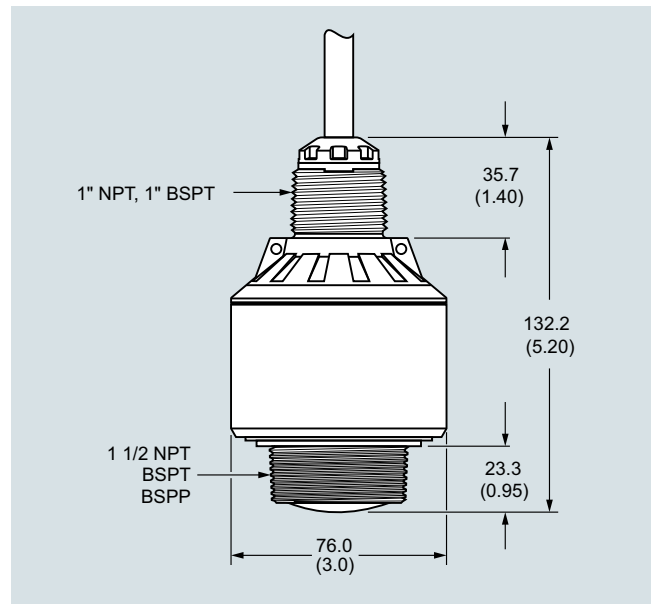
Mode of operation	
Measuring principle	W band FMCW radar
Measuring range	0 ... 8 m (0 ... 26 ft)
Frequency	80 GHz nominal
Beam angle	8°
Power Supply	
Voltage	12 ... 35 V DC
Current	4 ... 20 mA
Accuracy	
	± 5 mm
Rated operating conditions	
Vessel pressure	-1 ... +3 bar (14.50 ... 43.51 psi g)
Ambient temperature	-40 ... +60 °C (-40 ... +140 °F)
Process temperature	-40 ... +60 °C (-40 ... +140 °F)
Storage temperature	-40 ... +80 °C (-40 ... +176 °F)
Design	
Weight	0.5 kg (1.1 lb), plus 0.1 kg/m (0.2 lb/ft) cable length
Material (enclosure)	PVDF
Process connection	1-1/2" NPT, 1-1/2" BSPT, or 1-1/2" BSPP
Degree of protection	IP66/IP68
Cable connection	<ul style="list-style-type: none"> • 8 m (26 ft) long, 2 conductor, twisted with shield 18 AWG, PVC jacket • 1" NPT or 1" BSPT threaded connection
Certificates and approvals	
General	Ordinary locations, CE, c_{FMUS} , c_{CSAUS} , RCM, FCC, Industry Canada
Canadian Registration Number (CRN)	
• British Columbia	0F22218.51
• Alberta	0F20596.2
• Saskatchewan	0F2002.3
• Manitoba	0F7032.4
• Ontario	0F22218.5
• Québec	0F05183.6
• New Brunswick	0F1490.07
• Nova Scotia	0F1490.08
• Prince Edward Island	0F1490.09
• Newfoundland and Labrador	0F1490.0
• Yukon	0F1490.0Y
• Northwest Territories	0F1490.0T
• Nunavut	0F1490.0N
Programming	
SITRANS mobile IQ App	SITRANS mobile IQ is a Bluetooth app that provides an intuitive interface to quickly configure, set up and monitor SITRANS LR100 series. For more information: http://www.siemens.com/mobileIQ

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Selection and ordering data	Article No.	Order code
<p>SITRANS LR100 Radar level transmitter </p> <p>Continuous, non-contact, 8 m (26 ft) range, for liquids and slurries, 8 m integrated cable connection</p> <p> Click on the Article No. for the online configuration in the PIA Life Cycle Portal.</p>	<p>7ML530</p> <p>7 - 1 B 0 6 - 0 A A 0</p>	<p>SITRANS RD200, universal input display with Modbus conversion - see Chapter 7 7ML5740-.....-</p> <p>SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion - see Chapter 7 7ML5744-.....-</p> <p>For applicable back up point level switch - see point level measurement section</p>
<p>Process connection</p> <p>1-1/2" NPT [(Taper), ASME B1.20.1]/electrical connection 1" NPT R 1-1/2" [(BSPT), EN 10226]/electrical connection 1" BSPT G 1-1/2" [(BSPP), EN ISO 228-1]/electrical connection 1" BSPT</p>	<p>A</p> <p>B</p> <p>C</p>	
<p>Further designs</p> <p>Please add "-Z" to Article No. and specify Order code(s).</p> <p>Tag (device parameter, max. 32 characters) plate stainless steel 304/1.4301</p>	<p>Order code</p> <p>Y15</p>	
<p>Operating Instructions</p> <p>All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation</p>		
<p>Accessories</p> <p>Easy Aimer 2, aluminum, NPT with 3/4" x 1" PVC coupling</p> <p>Easy Aimer 2, aluminum with M20 adapter and 1" and 1 1/2" BSPT aluminum couplings</p> <p>Easy Aimer 304, NPT with 1" stainless steel coupling</p> <p>Easy Aimer 304, with M20 adapter and 1" and 1 1/2" BSPT 304 stainless steel couplings</p> <p>Bracket, Stainless steel, 1 inch mount, 80 mm (3.1 inch) offset</p> <p>Bracket, Stainless steel, 1 inch mount, 200 mm (7.9 inch) offset</p> <p>Bracket, Stainless steel, 1.5 inch mount, 80 mm (3.1 inch) offset</p> <p>Bracket, Stainless steel, 1.5 inch mount, 200 mm (7.9 inch) offset</p> <p>FMS-200 universal box bracket, mounting kit</p> <p>FMS-210 channel bracket, wall mount</p> <p>FMS-220 extended channel bracket, wall mount</p> <p>FMS-310 channel bracket, floor mount</p> <p>FMS-320 extended channel bracket, floor mount</p> <p>FMS-350 bridge channel bracket, floor mount (see Mounting Brackets on page 4/186 for more information)</p> <p>1" NPT locknut, plastic</p> <p>1" BSP locknut, plastic</p> <p>Plastic adapter 1" BSP - 20 mm</p> <p>Plastic adapter 1" NPT</p> <p>Plastic adapter 1" NPT/M20</p> <p>SIMATIC RTU3010C compact, remote data manager with alarming</p> <p>SIMATIC RTU3030C compact, remote data manager with alarming</p> <p>SITRANS RD100, loop powered display - see Chapter 7</p> <p>SITRANS RD150, remote digital display for 4 to 20 mA and HART devices - see Chapter 7</p>	<p>Article No.</p> <p>7ML1830-1AQ</p> <p>7ML1830-1AX</p> <p>7ML1830-1AU</p> <p>7ML1830-1GN</p> <p>A5E50507509</p> <p>A5E50507511</p> <p>A5E50507514</p> <p>A5E50507516</p> <p>7ML1830-1BK</p> <p>7ML1830-1BL</p> <p>7ML1830-1BM</p> <p>7ML1830-1BN</p> <p>7ML1830-1BP</p> <p>7ML1830-1BQ</p> <p>7ML1830-1DS</p> <p>7ML1830-1DR</p> <p>7ML1830-1EA</p> <p>7ML1930-1FX</p> <p>7ML1830-1EF</p> <p>6NH3112-0BA00-0XX0</p> <p>6NH3112-3BA00-0XX0</p> <p>7ML5741-.....-</p> <p>7ML5742-.....-</p>	

Dimensional drawings



SITRANS LR100, dimensions in mm (inch)

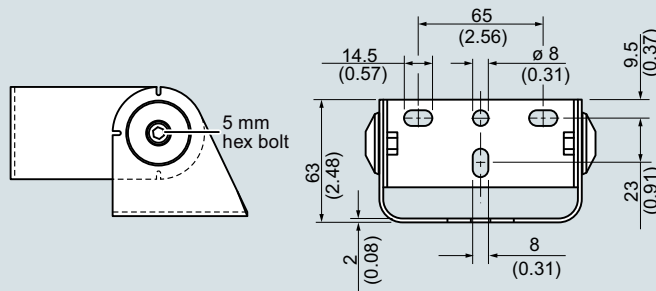
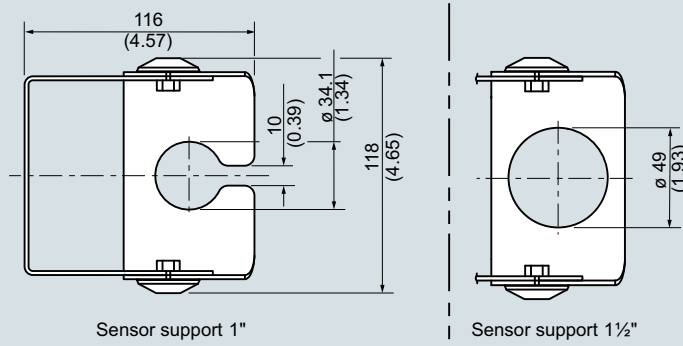
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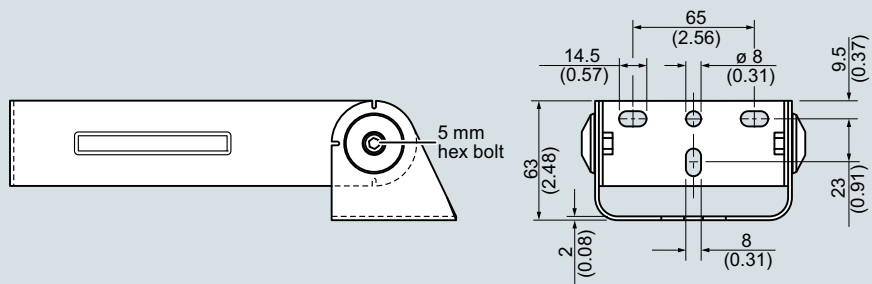
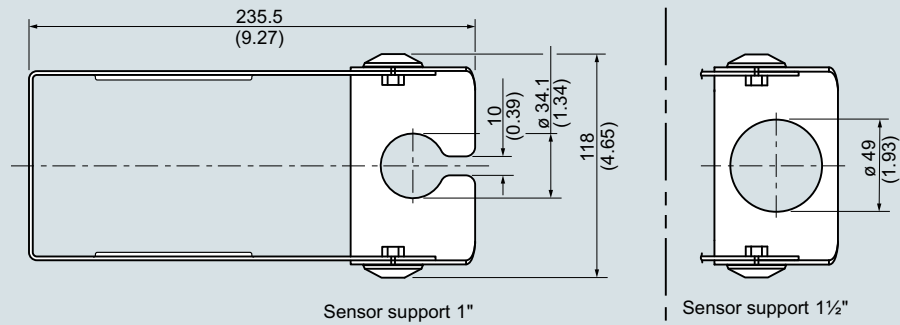
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Mounting bracket, 80 mm

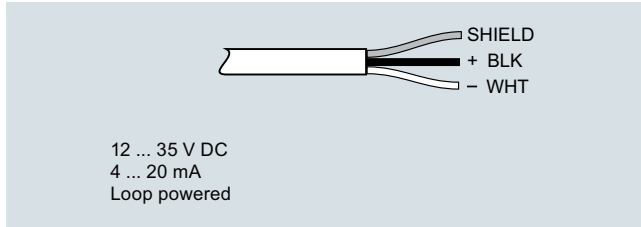


Mounting bracket, 200 mm



SITRANS LR100, mounting brackets, dimensions in mm (inch)

Circuit diagrams



SITRANS LR100 connections