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Overview



SITRANS LR100 is a 2 wire loop powered radar transmitter for continuous level measurement of liquids and slurries to a range of 10 m (32.8 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 10 m (32.8 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.

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Selection and ordering data

SITRANS LR100 Radar level transmitter Continuous, non-contact, 10 m (32.8 ft) range, for liquids and slurries, 8 m (26 ft) integrated cable connection.	Article No. 7ML530	7 - 1 A ● 0 6 - 0 A A 0
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Process connection		
1-½" NPT [(Taper), ASME B1.20.1]/electrical connection 1" NPT		A
R 1-½" [(BSPT), EN 10226]/electrical connection 1" BSPT		B
G 1-½" [(BSPP), EN ISO 228-1]/electrical connection 1" BSPT		C

Selection and Ordering data	Order code
Further designs	
Please add "**-Z**" to Article No. and specify Order code(s).	
Tag (device parameter, max. 32 characters) plate stainless steel 304/1.4301	**Y15**

Accessories	Article No.
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Accessories	
Easy Aimer 2, aluminum, NPT with ¾" x 1" PVC coupling	**7ML1830-1AQ**
Easy Aimer 2, aluminum with M20 adapter and 1" and 1½" BSPT aluminum couplings	**7ML1830-1AX**
Easy Aimer 304, NPT with 1" stainless steel coupling	**7ML1830-1AU**
Easy Aimer 304, with M20 adapter and 1" and 1½" BSPT 304 stainless steel couplings	**7ML1830-1GN**
Bracket, 316L stainless steel,1 inch mount, 80 mm (3.1 inch) offset	**A5E50507509**
Bracket, 316L stainless steel,1 inch mount, 200 mm (7.9 inch) offset	**A5E50507511**
Bracket, 316 L stainlsess steel, 1.5 inch mount, 80 mm (3.1 inch) offset	**A5E50507514**
Bracket, 316 L stainless steel, 1.5 inch mount, 200 mm (7.9 inch) offset	**A5E50507516**
FMS-200 universal box bracket, mounting kit	**7ML1830-1BK**
FMS-210 channel bracket, wall mount	**7ML1830-1BL**
FMS-220 extended channel bracket, wall mount	**7ML1830-1BM**
FMS-310 channel bracket, floor mount	**7ML1830-1BN**
FMS-320 extended channel bracket, floor mount	**7ML1830-1BP**
FMS-350 bridge channel bracket, floor mount (see Mounting Brackets catalog page for more information)	**7ML1830-1BQ**
1" NPT locknut, plastic	**7ML1830-1DS**

Accessories	Article No.
1" BSP locknut, plastic	**7ML1830-1DR**
1-½ BSP locknut, plastic	**7ML1830-1DP**
Plastic adapter 1" BSP - 20 mm	**7ML1830-1EA**
Plastic adapter 1" NPT	**7ML1930-1FX**
Plastic adapter 1" NPT/M20	**7ML1830-1EF**
Polypropylene adapter flange, 2"/DN50, universal, 1.5" NPT	**A5E50868980**
Polypropylene adapter flange, 2"/DN50, universal, 1,5" BSPT	**A5E50868982**
Polypropylene adapter flange, 3"/DN80, universal, 1.5" NPT	**A5E50868988**
Polypropylene adapter flange, 3"/DN80, universal, 1,5" BSPT	**A5E50868998**
Polypropylene adapter flange, 4"/DN100, universal, 1.5" NPT	**A5E50869003**
Polypropylene adapter flange, 4"/DN100, universal, 1.5" BSPT	**A5E50869005**
Note: other polypropylene adapter flange sizes available via PVR request.	
SIMATIC RTU3010C compact, remote data manager with alarming	**6NH3112-0BA00-0X-X0**
SIMATIC RTU3030C compact, remote data manager with alarming	**6NH3112-3BA00-0X-X0**
SITRANS RD100, loop powered display - see Chapter 7	**7ML5741-.....-.**
SITRANS RD150, remote digital display for 4 to 20 mA and HART devices - see Chapter 7	**7ML5742-.....-....**
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-.....-..**
For applicable back up point level switch - see point level measurement section	

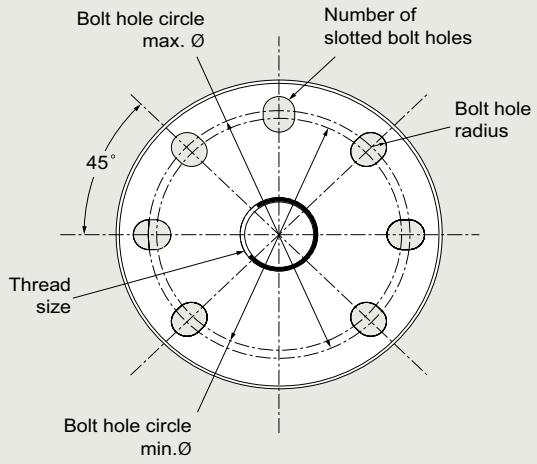
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Technical specifications

SITRANS LR100	
Mode of operation	
Measuring principle	W band FMCW radar
Measuring range	0 ... 10 m (0 ... 32.8 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	1-½" NPT, 1-½" BSPT, or 1-½" BSPP
Degree of protection	Type 4X/6P, IP66/68
Cable connection	• 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	CE, $_{C}$FM$_{US}$, $_{C}$CSA$_{US}$, RCM, EAC
Radio	CE, FCC, IC, Anatel, ICASA, NCC, KC, CITC, RCM, WPC, Telec, NBTC, MCMC
Canadian Registration Number (CRN)	
• British Columbia	0F22218.51
• Alberta	0F20596.2
• Saskatchewan	0F2002.3
• Manitoba	0F7032.4
• Ontario	0F22218.5
• Quebec	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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Options

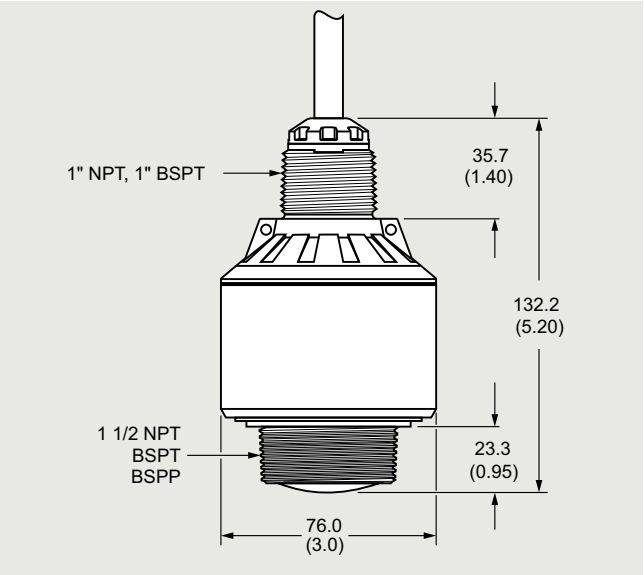


Part number	Adapter flange size	OD ± 1	B.C.D. max. for slotted holes (bmax.) ± 0.75	B.C.D. min. for slotted holes (bmin.) ± 0.75	Bolt hole radius ± 0.25	Number of slotted holes	Thread size
A5E50868980 A5E50868982 A5E50868983	2"/DN50	200	160	150	R 9.5	8	1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP
A5E50868988 A5E50868998 A5E50869002	3"/DN80	200	160	150	R 9.5	8	1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP
A5E50868953 A5E50868975 A5E50869003 A5E50869005 A5E50869010	4"/DN100	229	191	175	R 9.5	8	1" NPT, PP 1" BSPT, PP 1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP
A5E50868976 A5E50868977 A5E50869012 A5E50869014 A5E50869015	6"/DN150	285	242	240	R 11.5	8	1" NPT, PP 1" BSPT, PP 1.5" NPT, PP 1.5" BSPT, PP 1.5" BSPP, PP

SITRANS LR100, Polypropylene adapter flange

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Dimensional drawings

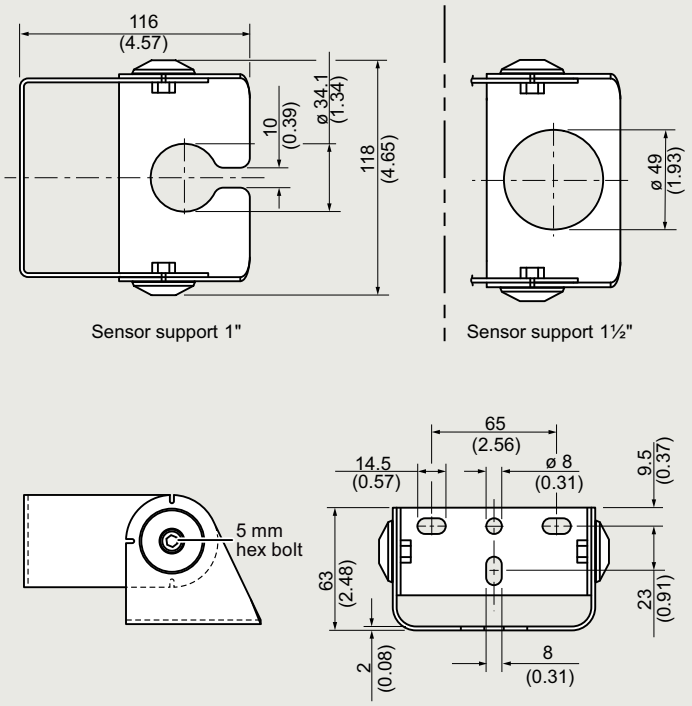


SITRANS LR100, dimensions in mm (inch)

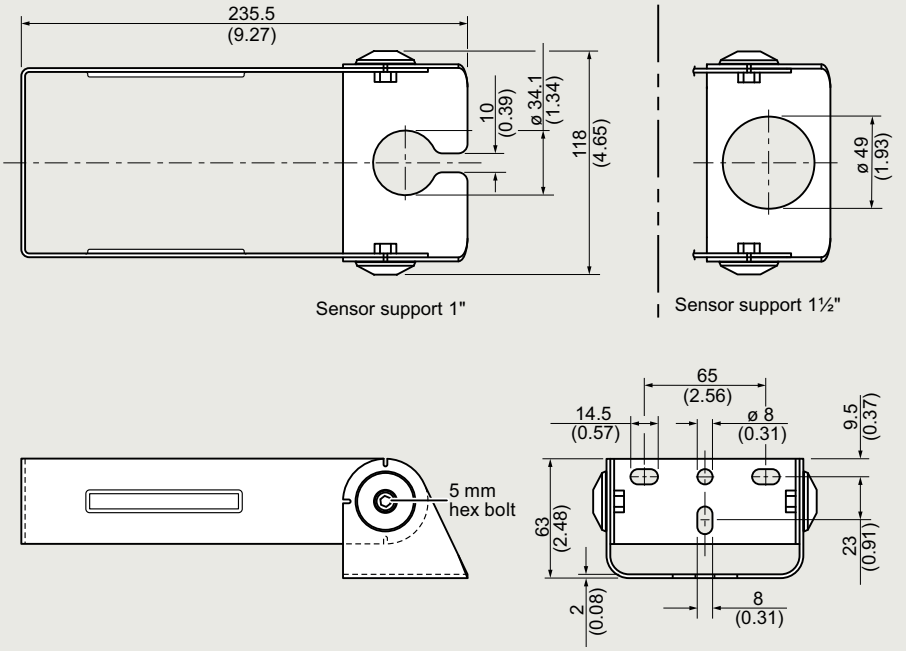
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Dimensional drawings (continued)

Mounting bracket, 80 mm



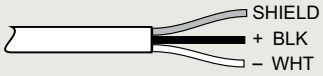
Mounting bracket, 200 mm



SITRANS LR100 mounting brackets, dimensions in mm (inch)

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Circuit diagrams



12 ... 35 V DC
4 ... 20 mA
Loop powered

SITRANS LR100 connections