

## Level Measurement

### Continuous level measurement

Radar level transmitters / SITRANS LR100

#### 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.

#### Selection and ordering data

	Article No.
<b>SITRANS LR100 Radar level transmitter</b> Continuous, non-contact, 8 m (26 ft) range, for liquids and slurries, 8 m (26 ft) integrated cable connection.	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.	
<b>Process connection</b>	
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
<b>Further designs</b>	
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.
<b>Operating Instructions</b>	

Version 2023

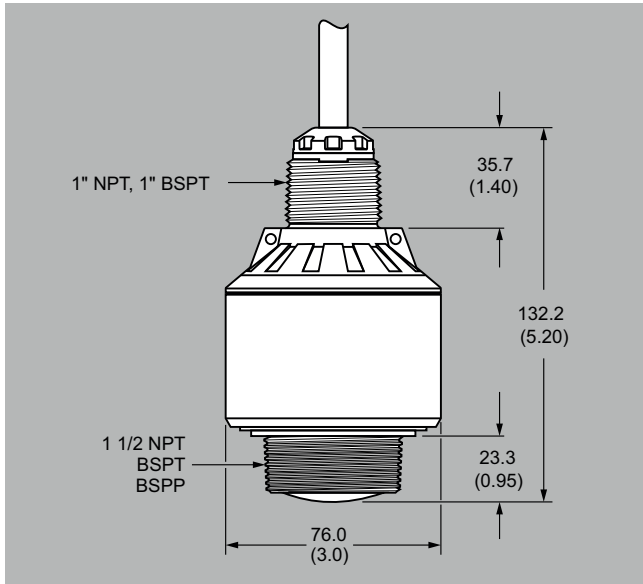
## Selection and ordering data (continued)

Accessories	Article No.
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 stainless 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
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
SIMATIC RTU3010C compact, remote data manager with alarming	6NH3112-0BA00-0-XX0
SIMATIC RTU3030C compact, remote data manager with alarming	6NH3112-3BA00-0-XX0
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	

## Technical specifications

SITRANS LR100	
<b>Mode of operation</b>	
Measuring principle	W band FMCW radar
Measuring range	0 ... 8 m (0 ... 26 ft)
Frequency	80 GHz nominal
Beam angle	8°
<b>Power Supply</b>	
Voltage	12 ... 35 V DC
Current	4 ... 20 mA
<b>Accuracy</b>	
	± 5 mm
<b>Rated operating conditions</b>	
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)
<b>Design</b>	
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"> <li>• 8 m (26 ft) long, 2 conductor, twisted with shield 18 AWG, PVC jacket</li> <li>• 1" NPT or 1" BSPT threaded connection</li> </ul>
<b>Certificates and approvals</b>	
General	Ordinary locations, CE, cFMUS, cCSAus, RCM, EAC
Radio	CE, FCC, IC, Anatel, ICASA, NCC, KC, CITC, RCM, WPC, Telec, NBTC, MCMC
Canadian Registration Number (CRN)	
• British Columbia	OF22218.51
• Alberta	OF20596.2
• Saskatchewan	OF2002.3
• Manitoba	OF7032.4
• Ontario	OF22218.5
• Quebec	OF05183.6
• New Brunswick	OF1490.07
• Nova Scotia	OF1490.08
• Prince Edward Island	OF1490.09
• Newfoundland and Labrador	OF1490.0
• Yukon	OF1490.0Y
• Northwest Territories	OF1490.0T
• Nunavut	OF1490.0N
<b>Programming</b>	
SITRANS mobile IQ App	SITRANS mobile IQ is a Bluetooth app that provides an intuitive interface to quickly con-figure, set up and monitor SITRANS LR100 series.

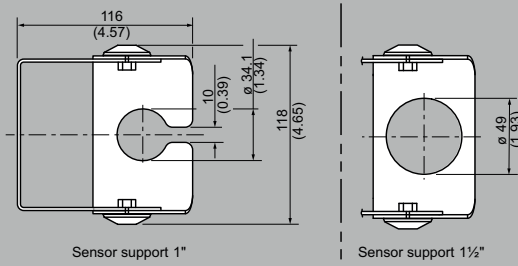
## Dimensional drawings



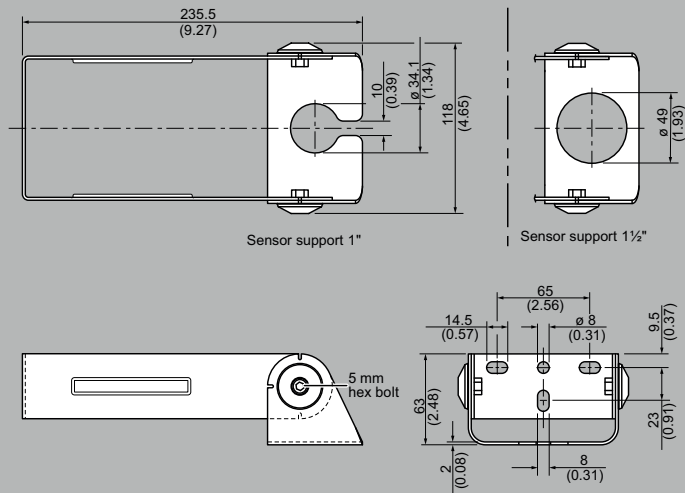
SITRANS LR100, dimensions in mm (inch)

**Dimensional drawings (continued)**

Mounting bracket, 80 mm

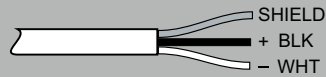


Mounting bracket, 200 mm



SITRANS LR100 mounting brackets, dimensions in mm (inch)

**Circuit diagrams**



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

SITRANS LR100 connections