Level Measurement
Continuous level measurement
Radar level transmitters

SITRANS LR140

Overview

SITRANS LR140 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 sensor.
- 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 LR140 is a W band FMCW radar level transmitter, packaged in a chemically resistant enclosure with PVDF sensor 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

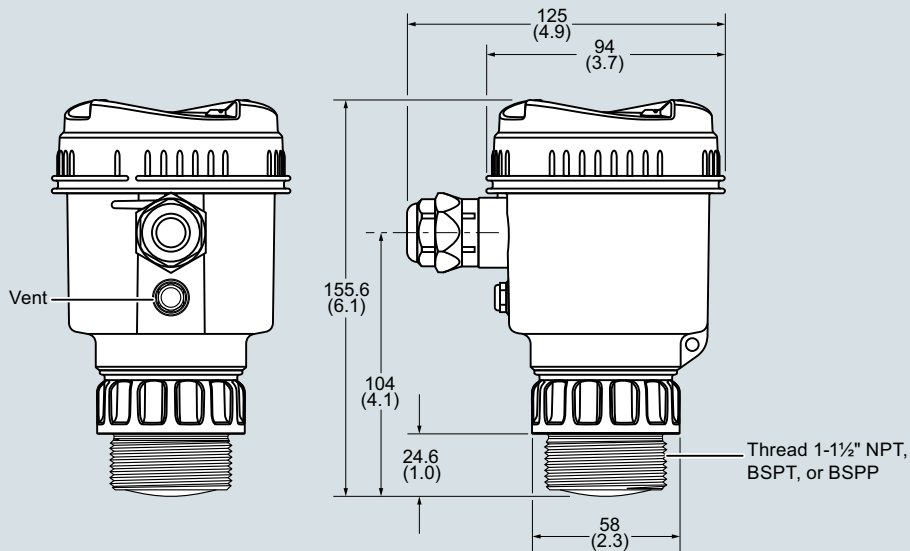| Mode of operation	
Measuring principle	W band FMCW radar
Measuring range	0 ... 8 m (0 ... 26 ft)
Frequency	80 GHz nominal
Beam angle	8°
Power Supply	
Voltage	12 ... 35 V DC
Current	4 ... 20 mA
Accuracy	± 5 mm
Rated operating conditions	
Vessel pressure	-1 ... +3 bar (14.50 ... 43.51 psi g)
Ambient 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)
Material (sensor)	PVDF
Material (enclosure)	PBT
Process connection	1-½" NPT, 1-½" BSPT, or 1-½" BSPP
Degree of protection	IP66/IP67
Certificates and approvals	
General	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	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.

SITRANS LR140 Radar level transmitter	**7ML533**
Non-contact, 8 m (26.2 ft) range, for liquids and solids.	**7 - 1 A ■ 0 7 - 4 A ■ 0**
↗**Click on the Article No. for the online configuration in the PIA Life Cycle Portal.**	

Process connection		
1-½" NPT	A	
R 1-½" (BSPT)	B	
G 1-½" (BSPP)	C	

Electrical connections/Cable entry		
M20		F
½" NPT		K

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

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.
Bracket, Stainless steel,1 inch mount, 80 mm (3.1 inch) offset	**A5E50507509**
Bracket, Stainless steel, 1 inch mount, 200 mm (7.9 inch) offset	**A5E50507511**
Bracket, Stainless steel, 1.5 inch mount, 80 mm (3.1 inch) offset	**A5E50507514**
Bracket, Stainless steel, 1.5 inch mount, 200 mm (7.9 inch) offset	**A5E50507516**
SITRANS LR140/LR150 Blind lid with o-ring	**A5E50822955**
Flat gasket, FKM, for G1.5 inch sensor	**A5E50822967**
SIMATIC RTU3010C compact, remote data manager with alarming	**6NH3112-0BA00-0XX0**
SIMATIC RTU3030C compact, remote data manager with alarming	**6NH3112-3BA00-0XX0**
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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Level Measurement
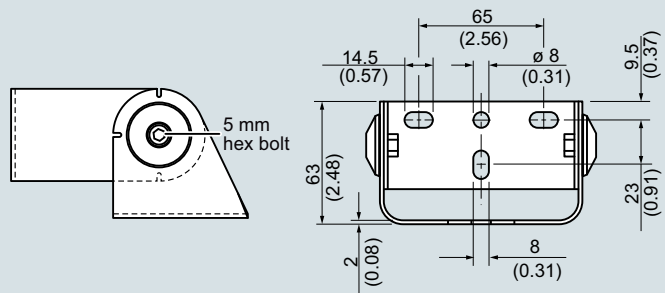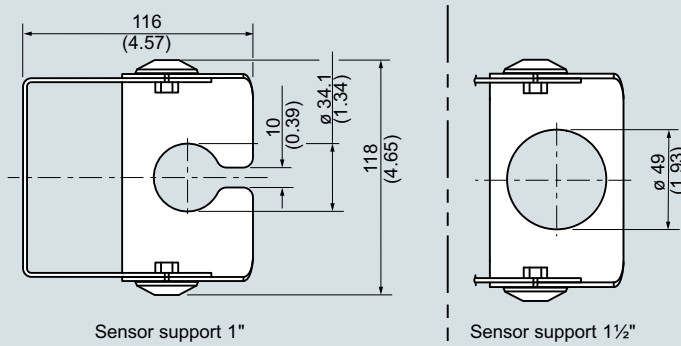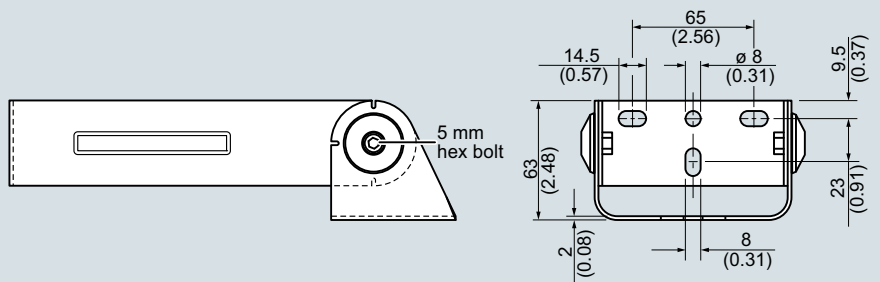Continuous level measurement
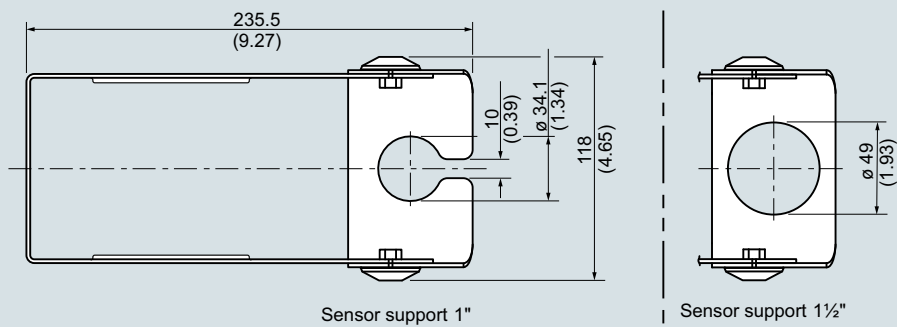Radar level transmitters

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■ **Dimensional drawings**

SITRANS LR140, dimensions in mm (inch)

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Mounting bracket, 80 mm

116
(4.57)

10
(0.39)

ø 34.1
(1.34)

118
(4.65)

ø 49
(1.93)

Sensor support 1"

Sensor support 1½"

5 mm
hex bolt

65
(2.56)

14.5
(0.57)

ø 8
(0.31)

9.5
(0.37)

63
(2.48)

23
(0.91)

2
(0.08)

8
(0.31)

Mounting bracket, 200 mm

235.5
(9.27)

10
(0.39)

ø 34.1
(1.34)

118
(4.65)

ø 49
(1.93)

Sensor support 1"

Sensor support 1½"

5 mm
hex bolt

65
(2.56)

14.5
(0.57)

ø 8
(0.31)

9.5
(0.37)

63
(2.48)

23
(0.91)

2
(0.08)

8
(0.31)

SITRANS LR140, dimensions in mm (inch)

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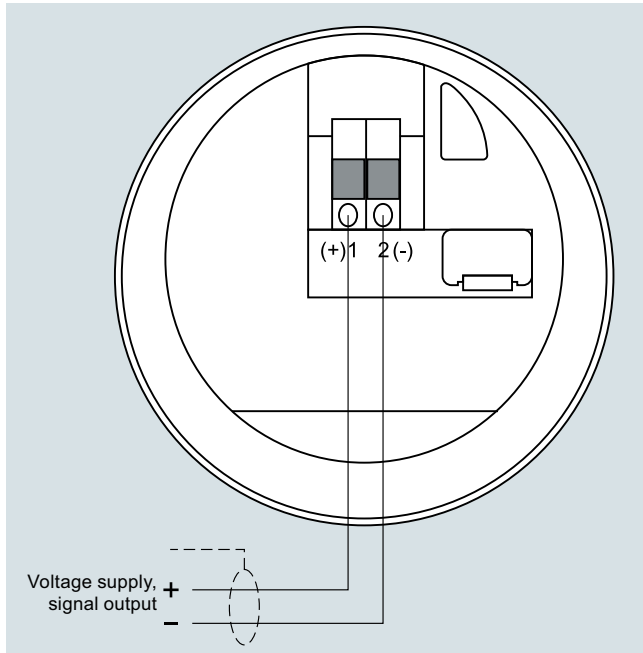Continuous level measurement
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Circuit diagrams

SITRANS LR140 connections