

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 (26.2 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	1-1/2" NPT, 1-1/2" BSPT, or 1-1/2" 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
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

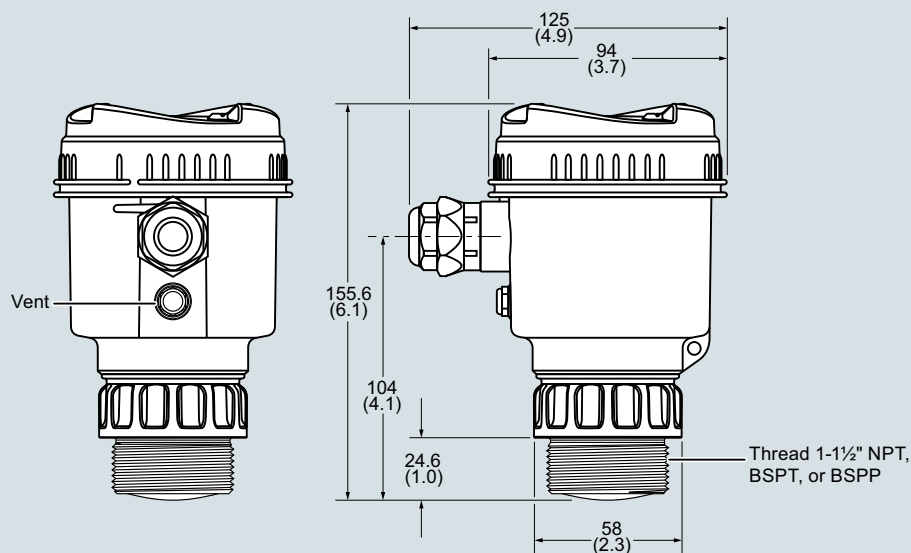
Selection and ordering data

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	A B C
1-1/2" NPT	
R 1-1/2" (BSPT)	
G 1-1/2" (BSPP)	
Electrical connections/Cable entry	F K
M20	
1/2" NPT	
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	

Dimensional drawings

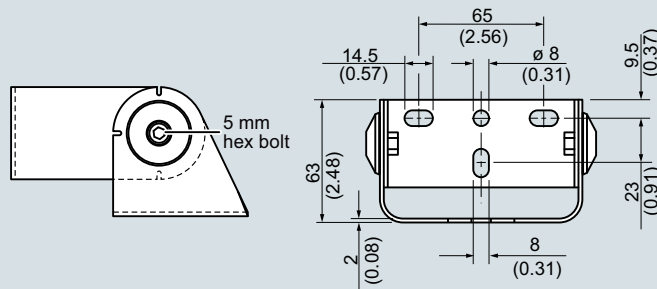
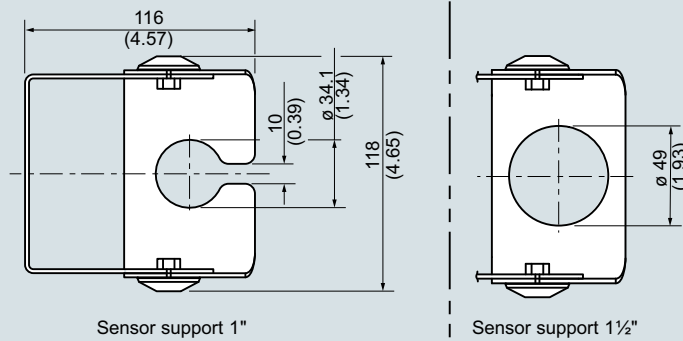
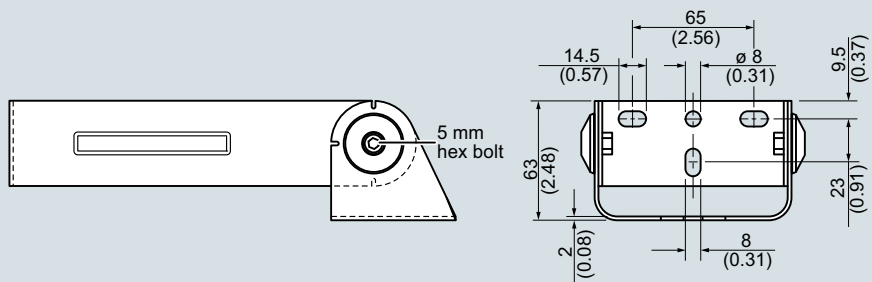
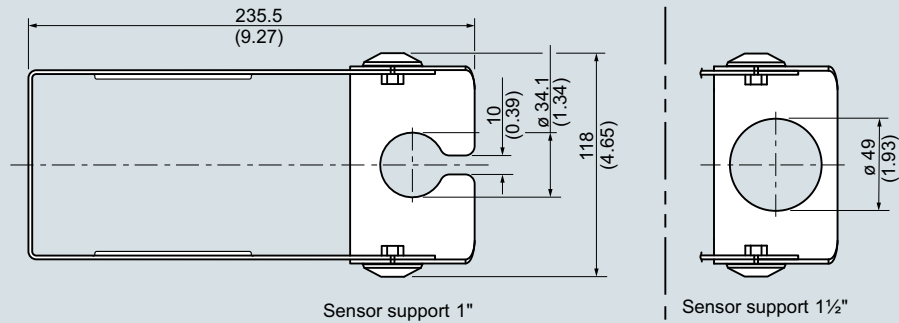


SITRANS LR140, dimensions in mm (inch)

Level measurement

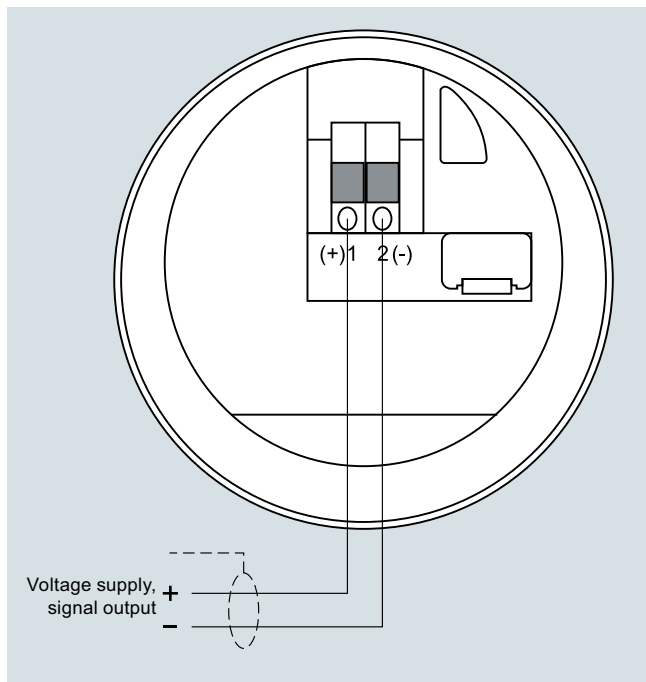
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SITRANS LR140**Mounting bracket, 80 mm****Mounting bracket, 200 mm**

SITRANS LR140, dimensions in mm (inch)

Circuit Diagrams



LR140 connections