

## 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)

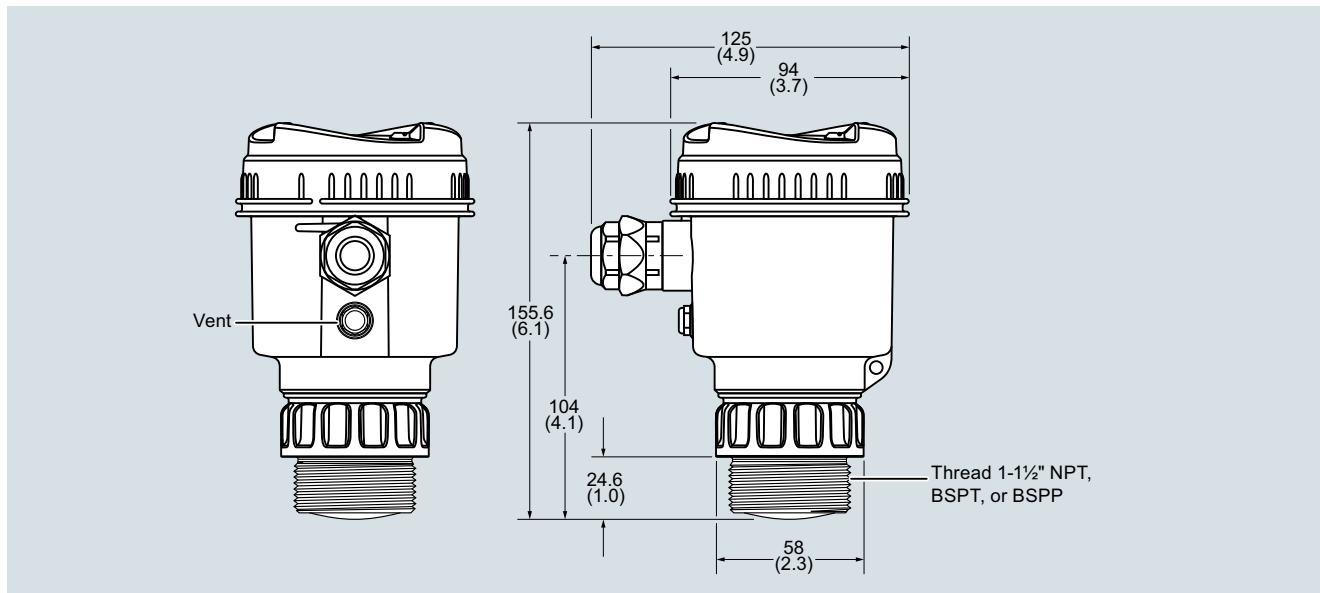
#### Technical specifications (continued)

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	
	CE, cFMus, cCSAus, RCM, EAC
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: <a href="http://www.siemens.com/mobileIQ">http://www.siemens.com/mobileIQ</a>

#### Selection and ordering data

#### Article No.

Selection and ordering data	Article No.
<b>SITRANS LR140 Radar level transmitter</b> Non-contact, 8 m (26.2 ft) range, for liquids and solids. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	<b>7ML533</b> <b>7 - 1 A 0 7 - 4 A 0</b>
<b>Process connection</b> 1-½" NPT R 1-½" (BSPT) G 1-½" (BSPP)	<b>A B C</b>
<b>Electrical connections/Cable entry</b> M20 ½" NPT	<b>F K</b>
<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).	Order code
Tag (device parameter, max. 32 characters) plate stainless steel 304/1.4301	<b>Y15</b>
<b>Operating Instructions</b> All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/processinstrumentation/documentation">http://www.siemens.com/processinstrumentation/documentation</a>	
<b>Accessories</b>	Article No.
Bracket, Stainless steel, 1 inch mount, 80 mm (3.1 inch) offset	<b>A5E50507509</b>
Bracket, Stainless steel, 1 inch mount, 200 mm (7.9 inch) offset	<b>A5E50507511</b>
Bracket, Stainless steel, 1.5 inch mount, 80 mm (3.1 inch) offset	<b>A5E50507514</b>
Bracket, Stainless steel, 1.5 inch mount, 200 mm (7.9 inch) offset	<b>A5E50507516</b>
SITRANS LR140/LR150 Blind lid with o-ring	<b>A5E50822955</b>
Flat gasket, FKM, for G1.5 inch sensor	<b>A5E50822967</b>
SIMATIC RTU3010C compact, remote data manager with alarming	<b>6NH3112-0BA00-0XX0</b>
SIMATIC RTU3030C compact, remote data manager with alarming	<b>6NH3112-3BA00-0XX0</b>
SITRANS RD100, loop powered display - see Chapter 7	<b>7ML5741-.....-</b>
SITRANS RD150, remote digital display for 4 to 20 mA and HART devices - see Chapter 7	<b>7ML5742-.....-</b>
SITRANS RD200, universal input display with Modbus conversion - see Chapter 7	<b>7ML5740-.....-</b>
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion - see Chapter 7	<b>7ML5744-.....-</b>
For applicable back up point level switch - see point level measurement section	

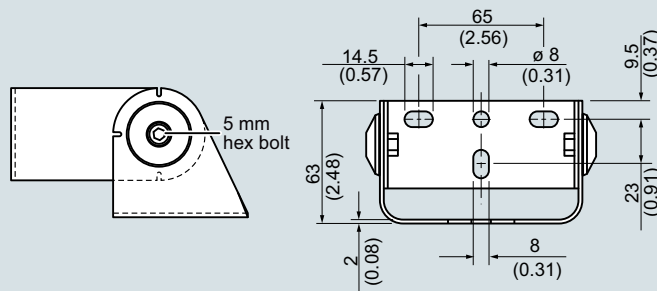
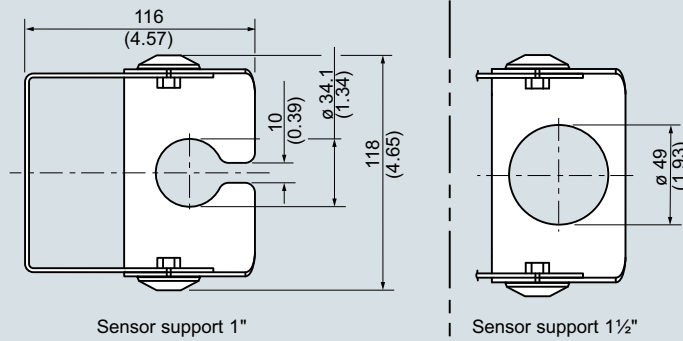
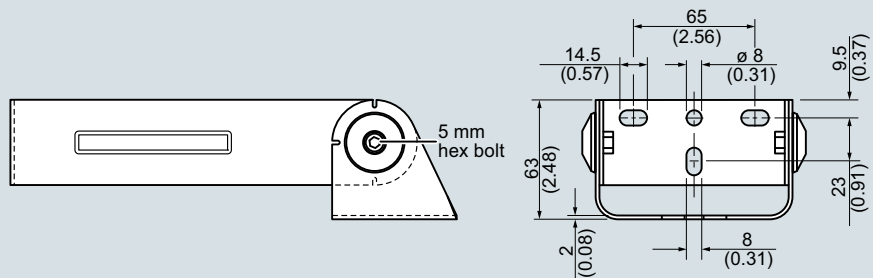
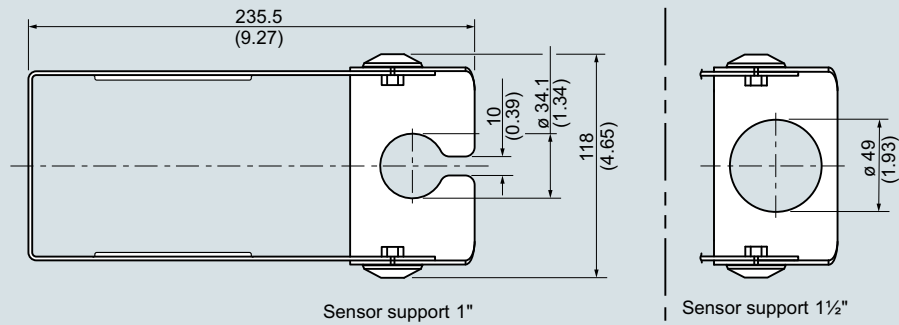
**Dimensional drawings**

SITRANS LR140, dimensions in mm (inch)

**Level measurement**

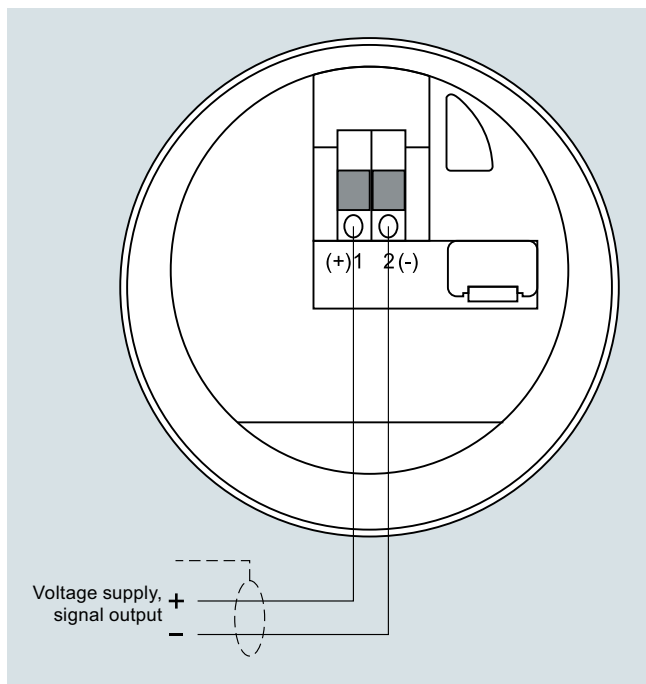
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**SITRANS LR140****Mounting bracket, 80 mm****Mounting bracket, 200 mm**

SITRANS LR140 mounting brackets, dimensions in mm (inch)

**Circuit diagrams**



SITRANS LR140 connections