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.

SITRANS LR140

Selection and ordering data

SITRANS LR140 Radar level transmitter Non-contact, 8 m (26.2 ft) range, for liquids and solids.	Article No. 7ML533	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	

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

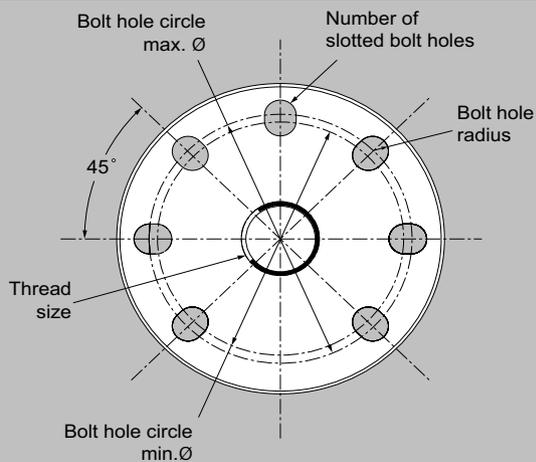| Accessories	Article No.
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	
Accessories	
Bracket, 316L Stainless steel, 1.5 inch mount, 80 mm (3.1 inch) offset	A5E50507514
Bracket, 316L Stainless 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
1-½ BSP locknut, plastic	7ML1830-1DP
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

Accessories	Article No.
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	6NH3112-0BA00-0-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

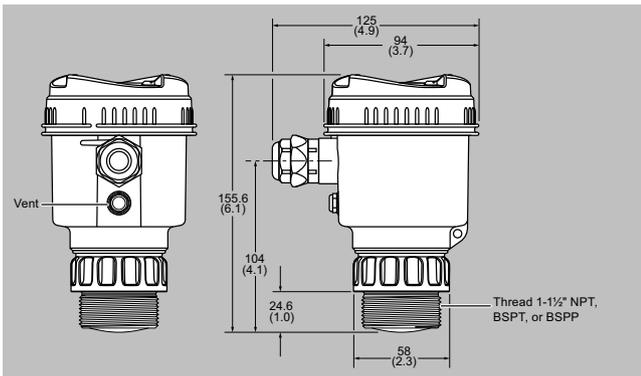| SITRANS LR140	
Mode of operation	
Measuring principle	W band FMCW radar
Measuring range	0 ... 8 m (0 ... 26 ft)
Frequency	80 GHz nominal
Beam angle	8°
Power Supply	
Voltage	12 ... 35 V DC
Current	4 ... 20 mA
Accuracy	± 5 mm
Rated operating conditions	
Vessel pressure	-1 ... +3 bar (14.50 ... 43.51 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	Type 4X, IP66/67
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
New Brunswick	0F05183.6
Nova Scotia	0F1490.07
Prince Edward Island	0F1490.08
Newfoundland and Labrador	0F1490.09
Yukon	0F1490.0
Northwest Territories	0F1490.0Y
Nunavut	0F1490.0T
Programming	0F1490.0N
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

SITRANS LR140

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 LR140, Polypropylene adapter flange
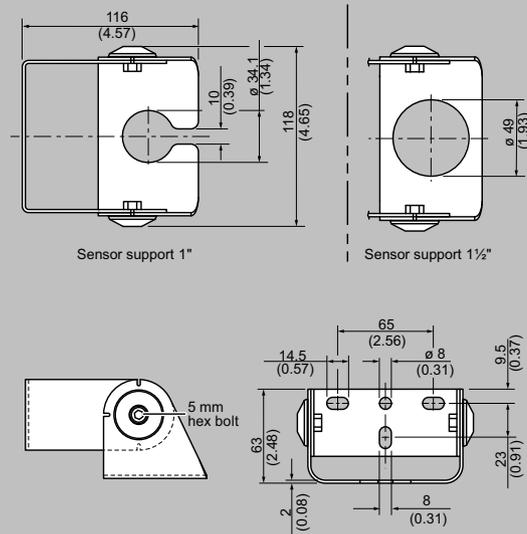
Dimensional drawings
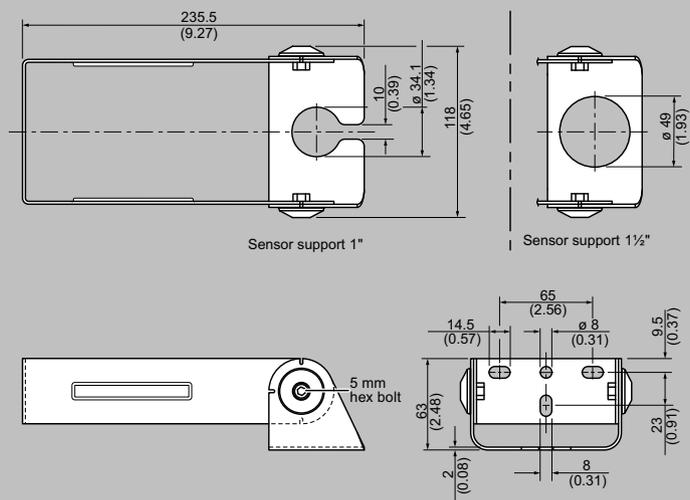

SITRANS LR140, dimensions in mm (inch)

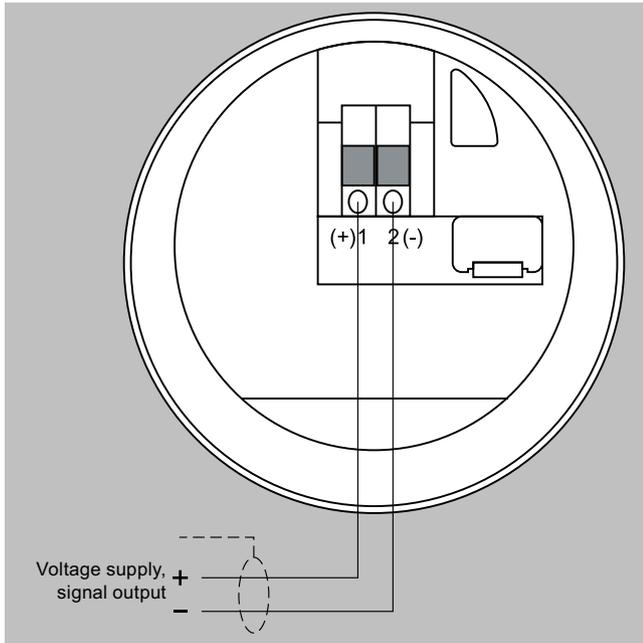## Dimensional drawings (continued)

Mounting bracket, 80 mm

Sensor support 1"

Sensor support 1½"

5 mm hex bolt

Mounting bracket, 200 mm

Sensor support 1"

Sensor support 1½"

5 mm hex bolt

SITRANS LR140 mounting brackets, dimensions in mm (inch)

Circuit diagrams

SITRANS LR140 connections