

Overview



SITRANS LR150 is a compact radar transmitter for continuous level measurement of liquids, slurries, and solids to a range of 15 m (49.2 ft).

Benefits

- Bluetooth connectivity for easy setup with SITRANS mobile IQ.
- Optional HMI with pushbutton programming and local diagnostic data.
- Chemically resistant PVDF sensor.
- HART 7.0 communication for intelligent integration into your application.
- 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.
- 2 mm accuracy and zero near range distance yields optimum inventory management capability.
- Compact design fits in limited space installations.
- Hazardous area variants available for safe use in explosive gas or dust environments (pending).

Application

SITRANS LR150 is a W band FMCW radar level transmitter, with a chemically resistant PVDF sensor, for years of trouble-free, reliable measurement service.

4 to 20 mA loop powered with HART, providing accurate level measurement to ranges of 15 m (49.2 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 or locally with an optional HMI.

SITRANS LR150

Selection and ordering data

SITRANS LR150 Radar level transmitter		Article No.									
Non-contact, HART, 15 m (49.2 ft) range, for liquids and solids.		7ML534 0 - ● A ● 0 7 - 4 ● ● ●									
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.											
Bluetooth function											
Without					0						
With					1						
Process connection											
1-½" NPT							A				
R 1-½" (BSPT)							B				
G 1-½" (BSPP)							C				
Type of protection											
Ordinary Locations/General Purpose (Non-Ex) ²⁾									A		
ATEX II 1G, 1/2G Ex ia IIC T4 Ga, Ga/Gb; Gas Ex-Zone 0/Class 1, Div. 1 & Div. 2 ¹⁾									C		
Electrical connections/cable entry											
M20										F	
½" NPT										K	
Local HMI											
Without display (closed lid of PBT/PC material)											0
With display (closed lid of PBT/PC material)											1
With display (clear lid with plastic window of PC material)											3

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
Inspection certificate 3.1 (EN 10204) - device with test data	C25
INMETRO, IA MASC	E25
NEPSI, CCOE	E27
EACEx	E24
ATEX, IECEX, cFMUS, cCSAUS	E49
CSA-Japan-Ex	E29
WHG and VLAREM II	E61
NSF 61 Drinking Water and FDA, EG1935/2004	E84

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 inch mount, 80 mm (3.1 inch) offset	A5E50507509
Bracket, 316L Stainless steel, 1 inch mount, 200 mm (7.9 inch) offset	A5E50507511
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 LR150 HMI with connection cable	A5E50812988
SITRANS LR140/LR150 Blind lid with o-ring	A5E50822955
SITRANS LR150 clear lid with o-ring	A5E50822960
Flat gasket, FKM, for G1.5 inch sensor	A5E50822967

Accessories	Article No.
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
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 RTU3030C compact, remote data manager with alarming	6NH3112-3BA00-0-XX0
HART modem with USB interface	7MF4997-1DC
Intrinsically Safe barrier	7NG4124-1AA00
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	

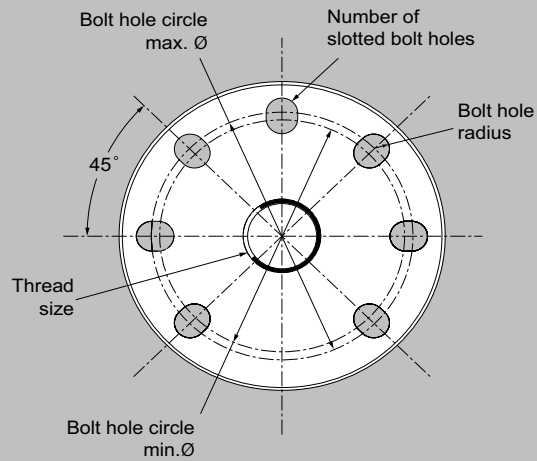
- 1) Must be ordered in combination with order code E24, E25, E27, E49. or E29.
2) Not available with order code E24, E25, E27, E49. or E29.

Technical specifications

SITRANS LR150	
Mode of operation	
Measuring principle	W band FMCW radar
Measuring range	0 ... 15 m (0 ... 49.2 ft)
Frequency	80 GHz nominal
Beam angle	8°
Power Supply	
HART	
• Voltage	12 ... 35 V DC
• Current	4 ... 20 mA
Communications	
4 ... 20 mA	HART 7.0
Accuracy	± 2 mm
Rated operating conditions	
Vessel pressure	-1 ... +3 bar (14.50 ... 43.51 psi g)
Ambient temperature	-40 ... +70 °C (-40 ... +158 °F)
Process temperature	-40 ... +80 °C (-40 ... +176 °F)
Storage temperature	-40 ... +80 °C (-40 ... +176 °F)
Minimum dielectric of the medium	1.6
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
Cable inlet	M20 or ½" NPT
Certificates and approvals	
	CE, ATEX, IECEx, cFMUS, cCSAUS, EAC, NEPSI, FDA, Reg. (EC) No. 1935/2004
Radio	CE, FCC, IC, Anatel, ICASA, NCC, KC, CITC, RCM, WPC, Telec, NBTC, MCMC
Water monitoring, flow	MCERTS Class 1
Canadian Registration Number (CRN)	
British Columbia	OF22218.51
Alberta	OF20596.2
Saskatchewan	OF2002.3
Manitoba	OF7032.4
Ontario	OF22218.5
New Brunswick	OF05183.6
Nova Scotia	OF1490.07
Prince Edward Island	OF1490.08
Newfoundland and Labrador	OF1490.09
Yukon	OF1490.0
Northwest Territories	OF1490.0Y
Nunavut	OF1490.0T
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 (available for Android, Apple and Windows devices). For more information: http://www.siemens.com/mobileIQ
Optional HMI	4 button with display of variables and diagnostic data
SIMATIC PDM	SIMATIC PDM allows for remote PC configuration and diagnostics (for installation on a network).
SITRANS DTM	

SITRANS LR150

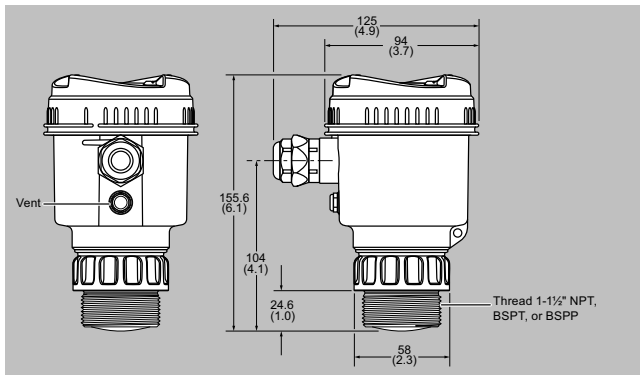
Options



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

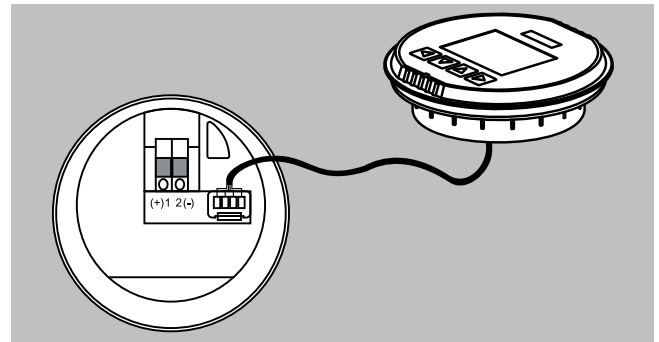
SITRANS LR150, Polypropylene adapter flange

Dimensional drawings



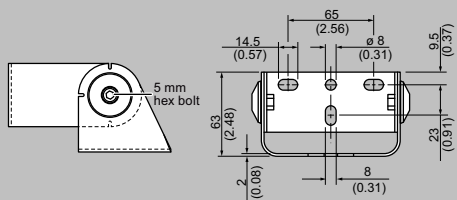
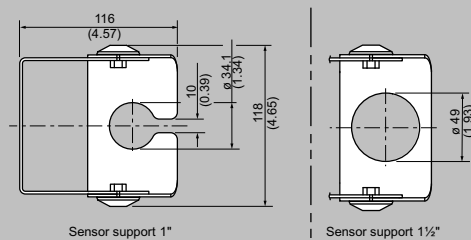
SITRANS LR150, dimensions in mm (inch)

Circuit diagrams

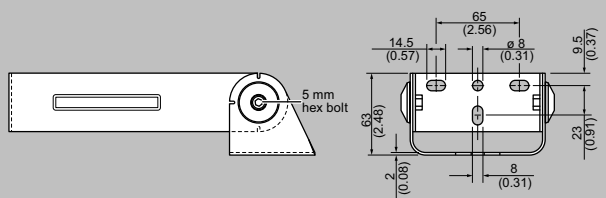
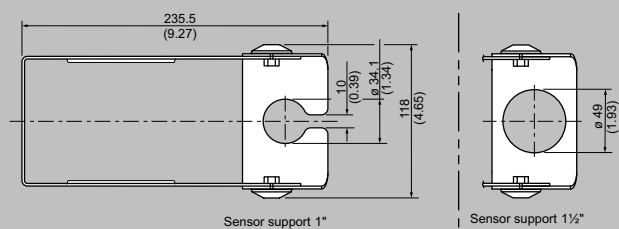


SITRANS LR150 connections

Mounting bracket, 80 mm



Mounting bracket, 200 mm



SITRANS LR150 mounting brackets, dimensions in mm (inch)