Level Measurement
Continuous level measurement
Radar level transmitters

SITRANS LR150

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.

Technical specifications

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 • Current	 12 ... 35 V DC 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)
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, $_C$FM$_{US}$, $_C$CSA$_{US}$, EAC, NEPSI, FDA/EG 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	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 (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	

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Selection and ordering data

	Article No.
SITRANS LR150 Radar level transmitter	**7ML534**
Non-contact, HART, 15 m (49.2 ft) range, for liquids and solids.	**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	
Non Ex (ordinary locations)[2]	**A**
Ex i (ia) (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**

	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**
IINMETRO, IA MASC	**E25**
NEPSI, CCOE	**E27**
EACEx	**E24**
ATEX, IECEx, $_{C}$FM$_{US}$, $_{C}$CSA$_{US}$	**E49**
CSA-Japan-Ex	**E29**
WHG and Vlarem	**E61**

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.
SIMATIC RTU3030C compact, remote data manager with alarming	**6NH3112-3BA00-0XX0**
Intrinsically Safe barrier	**7NG4124-1AA00**
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 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**
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	

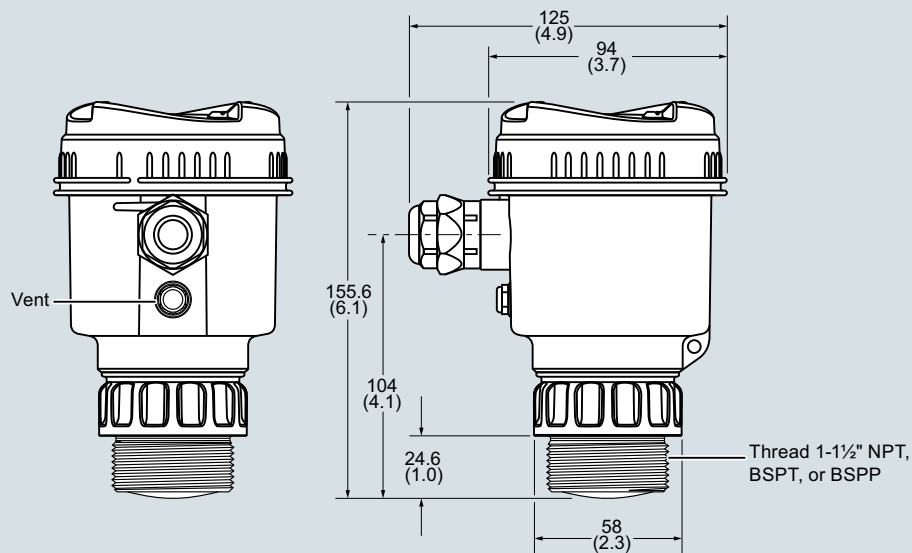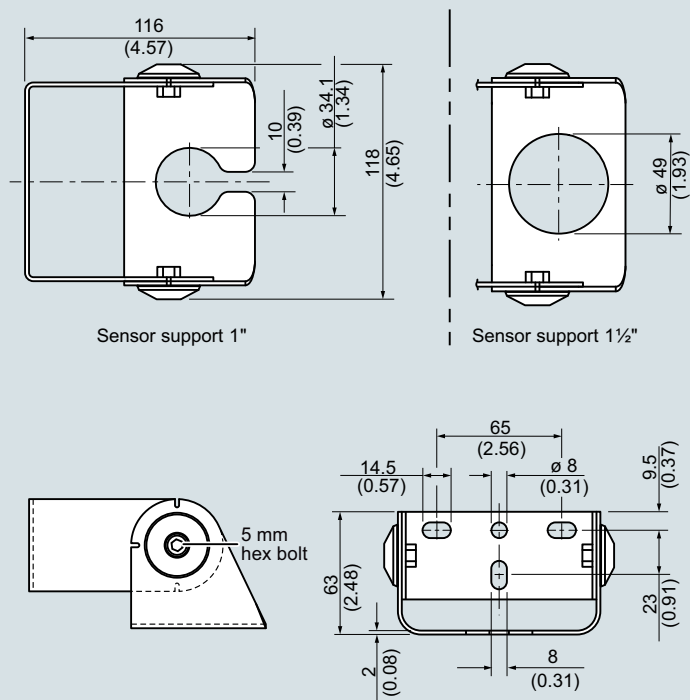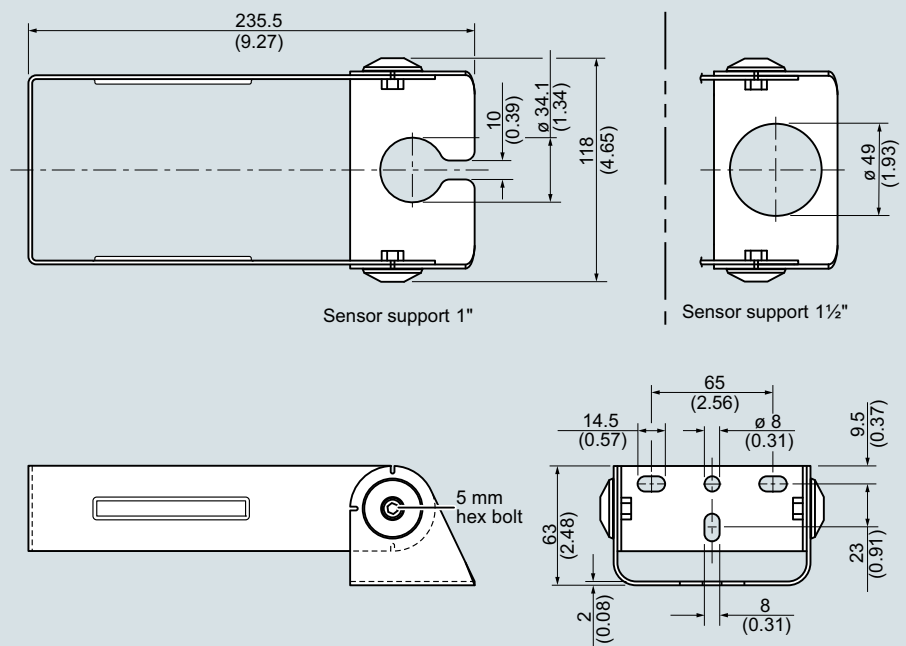[1] Must be ordered in combination with order code E24, E25, E27, E49 or E29.

[2] Not available with order code E24, E25, E27, E49, or E29.

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Dimensional drawings

SITRANS LR150, dimensions in mm (inch)

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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

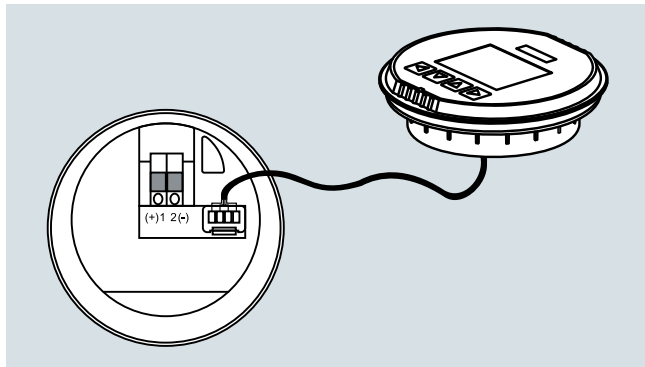SITRANS LR150 mounting brackets, dimensions in mm (inch)

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■ **Circuit diagrams**

SITRANS LR150 connections

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