

Level measurement

Continuous level measurement
Radar level transmitters

SITRANS LR100

Overview



SITRANS LR100 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 enclosure
- 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 LR100 is a W band FMCW radar level transmitter, packaged in a hermetically sealed PVDF enclosure 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)
Design	
Weight	0.5 kg (1.1 lb), plus 0.1 kg/m (0.2 lb/ft) cable length
Material (enclosure)	PVDF
Process connection	1-½" NPT, 1-½" BSPT, or 1-½" BSPP
Degree of protection	IP66/IP68
Cable connection	• 8 m (26 ft) long, 2 conductor, twisted with shield 18 AWG, PVC jacket • 1" NPT or 1" BSPT threaded connection
Certificates and approvals	
Ordinary locations, CE, cFM _{US} , cCSA _{US} , RCM, FCC, Industry Canada	
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 LR100 Radar level transmitter 
Continuous, non-contact, 8 m (26 ft) range,
for liquids and slurries, 8 m integrated cable
connection

7ML530

7 - 1 B 7 0 6 - 0 A A 0

 Click on the Article No. for the online
configuration in the PIA Life Cycle Portal.

Process connection

1-1/2" NPT [(Taper),
ASME B1.20.1]/electrical connection 1" NPT
R 1-1/2" [(BSPT),
EN 10226]/electrical connection 1" BSPT
G 1-1/2" [(BSPP),
EN ISO 228-1]/electrical connection 1" BSPT

A

B

C

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

Order code

Y15

Operating Instructions

All literature is available to download for free,
in a range of languages, at

<http://www.siemens.com/processinstrumentation/documentation>

Accessories

Easy Aimer 2, aluminum,
NPT with 3/4" x 1" PVC coupling

Easy Aimer 2, aluminum with M20 adapter
and 1" and 1 1/2" BSPT aluminum couplings

Easy Aimer 304, NPT with 1" stainless steel
coupling

Easy Aimer 304, with M20 adapter and
1" and 1 1/2" BSPT 304 stainless steel
couplings

FMS-200 universal box bracket, mounting kit

FMS-210 channel bracket, wall mount

FMS-220 extended channel bracket,
wall mount

FMS-310 channel bracket, floor mount

FMS-320 extended channel bracket,
floor mount

FMS-350 bridge channel bracket,
floor mount (see Mounting Brackets
on page 4/186 for more information)

1" NPT locknut, plastic

1" BSP locknut, plastic

Plastic adapter 1" BSP - 20 mm

Plastic adapter 1" NPT

Plastic adapter 1" NPT/M20

SIMATIC RTU3010C compact,
remote data manager with alarming

SIMATIC RTU3030C compact,
remote data manager with alarming

SITRANS RD100, loop powered display -
see Chapter 7

SITRANS RD150, remote digital display for
4 to 20 mA and HART devices -
see Chapter 7

SITRANS RD200, universal input display with
Modbus conversion - see Chapter 7

SITRANS RD300, dual line display with
totalizer and linearization curve and Modbus
conversion - see Chapter 7

For applicable back up point level switch -
see point level measurement section

Article No.

7ML1830-1AQ

7ML1830-1AX

7ML1830-1AU

7ML1830-1GN

7ML1830-1BK

7ML1830-1BL

7ML1830-1BM

7ML1830-1BN

7ML1830-1BP

7ML1830-1BQ

7ML1830-1DS

7ML1830-1DR

7ML1830-1EA

7ML1930-1FX

7ML1830-1EF

**6NH3112-
0BA00-0XX0**

**6NH3112-
3BA00-0XX0**

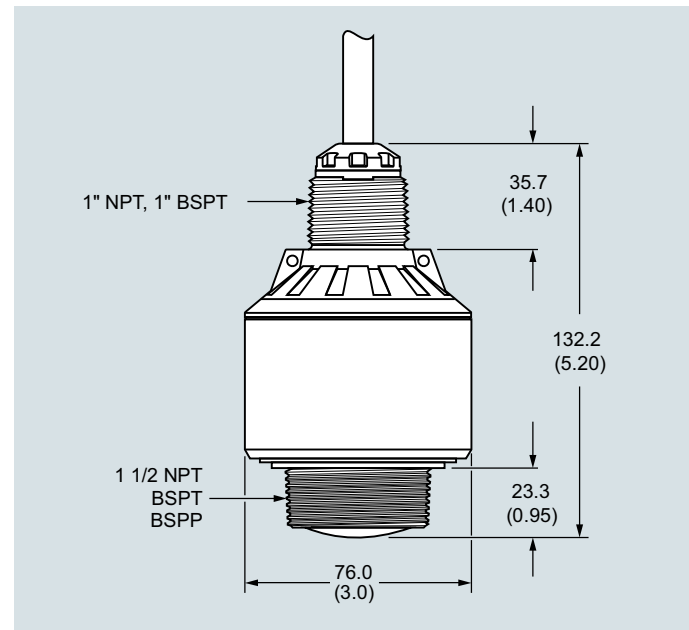
7ML5741-.....

7ML5742-.....

7ML5740-.....

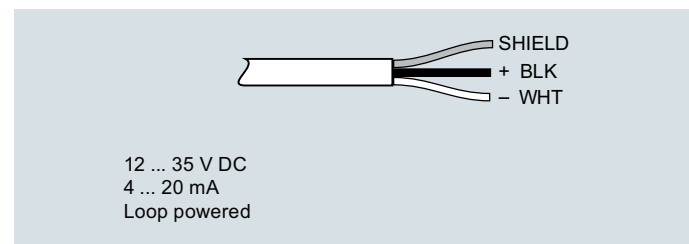
7ML5744-.....

Dimensional drawings



SITRANS LR100, dimensions in mm (inch)

Circuit diagrams



SITRANS LR100 connections