Continuous level measurement Ultrasonic transmitters

SITRANS LU150

Overview



SITRANS LU150 is a short-range integrated ultrasonic level transmitter. This general purpose, 2-wire, 4 to 20 mA loop powered transmitter is ideal for liquids, slurries, and bulk materials in open or closed vessels to 5 m (16.4 ft).

Benefits

- · Easy to install, program, and maintain
- · Accurate and reliable
- Sanitary models available
- Patented Sonic Intelligence echo processing
- Integral temperature compensation

Application

The transducer is available in PVDF copolymer, making the device suitable for use in a wide variety of applications.

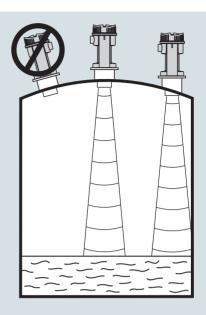
SITRANS LU150 is easy to install and maintain, and can be quickly removed for cleaning as required by the food, beverage and pharmaceutical industries.

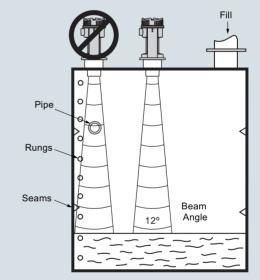
The reliability of the level data is based on the Sonic Intelligence echo processing algorithms. A filter discriminates between the true echo and false echoes from acoustic or electrical noises and agitator blades in motion. The ultrasonic pulse propagation time to the material and back is temperature-compensated and converted into distance for display, analog output.

 Key Applications: chemical storage vessels, filter beds, mud pits, liquid storage vessels, food applications

Configuration

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SITRANS LU150 mounting

Article No.

7ML5201-

Continuous level measurement Ultrasonic transmitters

SITRANS LU150

| Technical specifications | | Selection and ordering data | |
|--|--|--|--|
| Mode of Operation | | SITRANS LU150 Ultrasonic level transmitter | |
| Measuring principle | Ultrasonic level measurement | Continuous, non-contact, 5 m (16.4 ft) range. | |
| Input | | Monitors level in liquids and slurries. Basic level performance. | |
| Measuring range | 0.25 5 m (0.8 16.4 ft) | ↗ Click on the Article No. for the online | |
| Frequency | 54 kHz | configuration in the PIA Life Cycle Portal | |
| Output | | Transducer/Process connection (PVDF) PVDF copolymer, 2" NPT | |
| mA | 4 20 mA | [(Taper), ANSI/ASME B1.20.1] | |
| • Span | Proportional/inversely proportional | PVDF copolymer, R 2" [(BSPT), EN 10226] | |
| Max. load | 600 Ω in the loop at 24 V DC | PVDF copolymer, G 2" [(BSPP), EN ISO 228-1] | |
| Power supply | | PVDF copolymer, 4" Sanitary mounting | |
| Supply voltage | 12 30 V DC, 0.1 A surge | Cable inlet M20 x 1.5 [General Purpose cable gland | |
| Max. power consumption | 0.75 W (25 mA at 24 V DC) | -20 +60 °C (-4 +140 °F) included] | |
| Certificates and approvals | CE, CSA _{US/C} | 1/2" NPT stainless steel entry | |
| Accuracy | | (no cable gland included) | |
| Error in measurement | 0.25 % of measuring range (in air) | Further designs | |
| Resolution | 3 mm (0.125 inch) | Please add "-Z" to Article No. | |
| Temperature compensation | Built in | and specify Order code(s). | |
| Echo processing | Sonic Intelligence | Stainless steel tag [13 x 45 mm (0.5 x 1.75 incl Measuring-point number/identification | |
| Rated operation conditions | | (max. 20 characters) specify in plain text | |
| Beam angle | 12° | Test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000 | |
| Ambient temperatureStandard | -30 +60 °C (-22 +140 °F) | Operating Instructions | |
| Metallic mounting | -20 +60 °C (-4 +140 °F) | All literature is available to download for free, in range of languages, at | |
| Storage temperature Standard | -30 +60 °C (-22 +140 °F) | http://www.siemens.com/processinstrumentation | |
| Metallic mounting | -20 +60 °C (-4 +140 °F) | Accessories | |
| Max. static operating pressure | Normal atmospheric pressure | Tag, stainless steel, 12 x 45 mm (0.47 x 1.77 ir one text line | |
| Weight | 1.3 kg (2.9 lb) | Universal Box Bracket Mounting kit | |
| 0 | 1.5 kg (2.9 lb) | Sanitary 4" mounting clamp | |
| Material Electronics enclosure Transducer | PBT PVDF copolymer | 3" ASME, DN 65 PN 10, JIS 10K 3B ETFE Flan adapter for 2" NPT | |
| Degree of protection | IP68 / NEMA 6 / TYPE 6 | 3" ASME, DN 65 PN 10, JIS 10K 3B ETFE Flan adapter for 2" BSPT | |
| Process connection | 2" NPT [(Taper), ANSI/ASME B1.20.1] | 2" BSP nylon plastic locknut | |
| | • R 2" [(BSPT), EN 10226] | 2" NPT nylon plastic locknut | |
| | G 2" [(BSPP), EN ISO 228-1] 4" sanitary | Cable Gland - General Purpose -20 +60 °C | |
| Flange adapter | 3" Universal, (fits DN 65, PN 10 and 3" ASME) | (-4 +140 °F) | |

Cable inlet

- 1 inlet for M20, optional 1/2" NPT
- s, non-contact, 5 m (16.4 ft) range. 0 0 0 vel in liquids and slurries. performance. n the Article No. for the online ration in the PIA Life Cycle Portal. er/Process connection (PVDF) olymer, 2" NPT NSI/ASME B1.20.1] Е olymer, R 2" [(BSPT), EN 10226] F olymer, G 2" [(BSPP), EN ISO 228-1] G olymer, 4" Sanitary mounting J [General Purpose cable gland °C (-4 ... +140 °F) included] в ainless steel entry С land included) esigns Order code "-Z" to Article No. y Order code(s). teel tag [13 x 45 mm (0.5 x 1.75 inch)]: -point number/identification Y15 haracters) specify in plain text cate: Manufacturer's test certificate 5350, Part 18 and to ISO 9000 C11 Instructions e is available to download for free, in a nguages, at siemens.com/processinstrumentation/documentation Article No. ies 7ML1930-1AC ess steel, 12 x 45 mm (0.47 x 1.77 inch), e 7ML1830-1BK Box Bracket Mounting kit mounting clamp 7ML1830-1BR ON 65 PN 10, JIS 10K 3B ETFE Flange 7ML1830-1BT 2" NPT ON 65 PN 10, JIS 10K 3B ETFE Flange 7ML1830-1BU 2" BSPT 7ML1830-1DQ on plastic locknut 7ML1830-1DT
 - on plastic locknut id - General Purpose -20 ... +60 °C A5E34457564 °F)

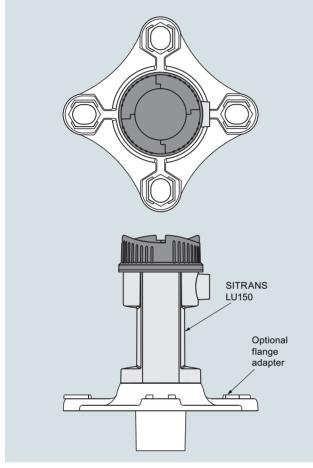
Continuous level measurement Ultrasonic transmitters

SITRANS LU150

Options

SITRANS LU150, Flange Adapter

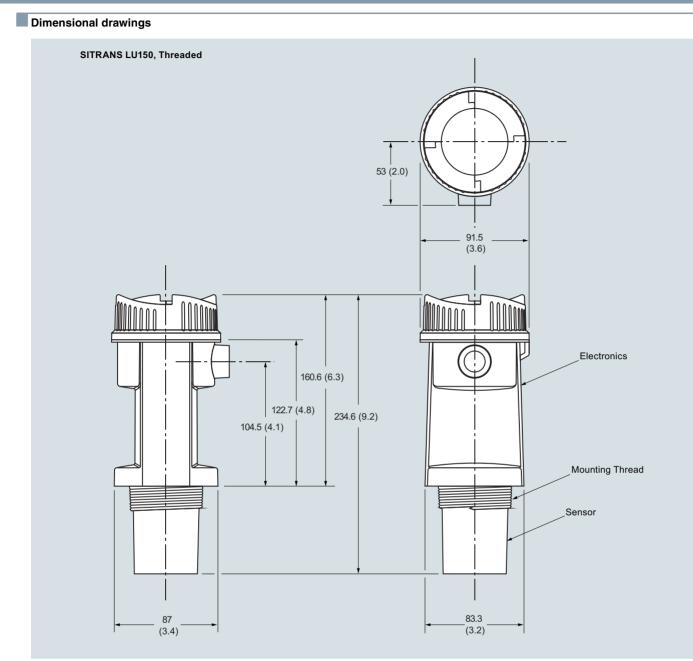
The SITRANS LU150 can be fitted with the optional 75 (3) flange adapter for mating to 3" ANSI, DIN 65 PN10 and JIS 10K3B flanges.



SITRANS LU150 optional flange adapter, dimensions in mm (inch)

Continuous level measurement Ultrasonic transmitters

SITRANS LU150



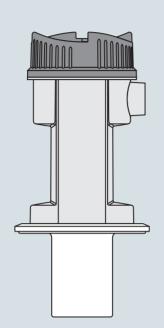
SITRANS LU150, dimensions in mm (inch)

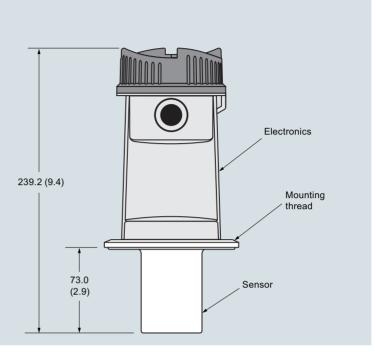
Continuous level measurement Ultrasonic transmitters

SITRANS LU150

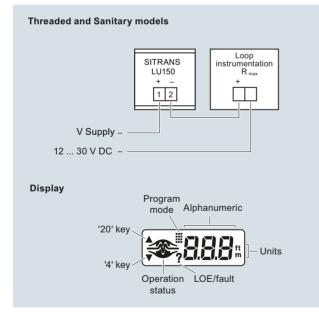
Dimensional drawings (continued)

SITRANS LU150, Sanitary





Circuit diagrams



SITRANS LU150 connections

SITRANS LU150, dimensions in mm (inch)

Continuous level measurement Ultrasonic transmitters

SITRANS LU180

Overview

Configuration



SITRANS LU180 is a short-range integrated ultrasonic level transmitter. It is intrinsically safe (ATEX, CSA, FM, IECEx, NEPSI), 2 wire, 4 to 20 mA loop powered, ideal for liquids, slurries, and bulk materials in open or closed vessels to 5 meters (16.4 feet).

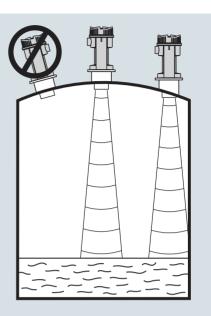
Benefits

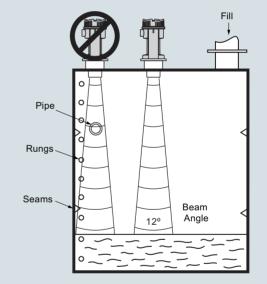
- · Easy to install, program, and maintain
- · Accurate and reliable
- Sanitary models available
- · Patented Sonic Intelligence echo processing
- Integral temperature compensation

Application

The transducer is available in PVDF copolymer, making the device suitable for use in a wide variety of applications. SITRANS LU180 is easy to install and maintain, and can be quickly removed for cleaning as required by the food, beverage and pharmaceutical industries. The reliability of the level data is based on the Sonic Intelligence echo processing algorithms. A filter discriminates between the true echo and false echoes from acoustic or electrical noises and agitator blades in motion. The ultrasonic pulse propagation time to the material and back is temperature compensated and converted into distance for display, analog output.

• Key Applications: chemical storage vessels, filter beds, mud pits, liquid storage vessels, food applications





SITRANS LU180 mounting

Continuous level measurement Ultrasonic transmitters © Siemens 2020

SITRANS LU180

| Technical specifications | | Selection and ordering da |
|---|---|---|
| Mode of operation | | SITRANS LU180 Ultrasonic lev |
| Measuring principle | Ultrasonic level measurement | Continuous, non-contact, 5 m (10 |
| Input | | Monitors level in liquids and sluri performance for intrinsically safe |
| Measuring range | 0.25 5 m (0.8 16.4 ft) | ↗ Click on the Article No. for t |
| Frequency | 54 kHz | configuration in the PIA Life |
| Output | | Transducer/Process connectio |
| mA | 4 20 mA | PVDF copolymer, 2" NPT [(Taper), ANSI/ASME B1.20.1] |
| SpanMax. load | Proportional/ inversely proportional 600 Ω in the loop at 24 V DC | PVDF copolymer, R 2" [(BSPT), E |
| Power supply | | PVDF copolymer, G 2" [(BSPP), E PVDF copolymer, 4" Sanitary mo |
| Supply voltage | 12 30 V DC, 0.1 A surge | Cable inlet |
| Max. power consumption | 0.75 W (25 mA at 24 V DC) | M20 x 1.5 [General Purpose cab |
| Certificates and approvals | CSA: | -20 +60 °C (-4 +140 °F) incl 1/2" NPT stainless steel entry |
| | IS/ Class I, II, III, Div. 1, Groups: A, B, C, D, E, F, G T4 | (no cable gland included) |
| | FM: | Further designs |
| | IS/ Class I, II, III, Div. 1, Groups: A, B, C, D, E, F, G T4 | Please add "-Z" to Article No. and specify Order code(s). |
| | ATEX: | Stainless steel tag [13 x 45 mm (|
| | II 1G Ex ia IIC T4 Ga IECEx Ex ia IIC T4 Ga | Measuring-point number/identific (max. 20 characters) specify in p |
| | NEPSI Ex ia IIC T4 Ga | Test certificate: Manufacturer's te M to DIN 55350, Part 18 and to I |
| Accuracy Error in measurement | 0.25 % of measuring range (in air) | Operating Instructions |
| Resolution | 3 mm (0.125 inch) | All literature is available to down |
| Temperature compensation | Built in | range of languages, at |
| Echo processing | Sonic Intelligence | http://www.siemens.com/process |
| Rated operation conditions | | Accessories |
| Beam angle | 12° | Tag, stainless steel, 12 x 45 mm one text line |
| Ambient temperature | | Universal box bracket mounting |
| Standard Metallic mounting | -40 +60 °C (-40 +140 °F) -20 +60 °C (-4 +140 °F) | Sanitary 4" mounting clamp |
| Storage temperature | , , , , | 3" ASME, DN 65 PN 10, JIS 10K adapter for 2" NPT |
| StandardMetallic mounting | -40 +60 °C (-40 +140 °F) -20 +60 °C (-4 +140 °F) | 3" ASME, DN 65 PN 10, JIS 10K adapter for 2" BSPT |
| Max. static operating pressure | Normal atmospheric pressure | 2" BSP nylon plastic locknut |
| Design | | 2" NPT nylon plastic locknut |
| Weight | 1.3 kg (2.9 lb) | Cable Gland, General Purpose |
| Material | 227 | -20 +60 °C (-4 +140 °F) |
| Electronics enclosure Transducer | PBT PVDF copolymer | |
| Degree of protection | IP68 / NEMA 6 / TYPE 6 | |
| Process connection | 2" NPT [(Taper), ANSI/ASME B1.20.1] R 2" [(BSPT), EN 10226] G 2" [(BSPP), EN ISO 228-1] | |
| Flange adapter | 4" sanitary 3" Universal (fits DN 65, PN 10 and 3" ASME) | |
| Cable inlet | 1 inlet for M20, optional 1/2" NPT | |
| | | |

| Selection and ordering data | Article No. | |
|--|------------------|--|
| SITRANS LU180 Ultrasonic level transmitter | 7ML5202- | |
| Continuous, non-contact, 5 m (16.4 ft) range. Monitors level in liquids and slurries. Basic level performance for intrinsically safe applications. | 0 = 0 | |
| Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| Transducer/Process connection PVDF copolymer, 2" NPT [(Taper), ANSI/ASME B1.20.1] PVDF copolymer, R 2" [(BSPT), EN 10226] PVDF copolymer, G 2" [(BSPP), EN ISO 228-1] PVDF copolymer, 4" Sanitary mounting | E F G J | |
| Cable inlet M20 x 1.5 [General Purpose cable gland -20 +60 °C (-4 +140 °F) included] 1/2" NPT stainless steel entry (no cable gland included) | B | |
| Further designs | Order code | |
| Please add "-2" to Article No. and specify Order code(s). | | |
| Stainless steel tag [13 x 45 mm (0.5 x 1.75 inch)]: Measuring-point number/identification (max. 20 characters) specify in plain text | Y15 | |
| Test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and to ISO 9000 | C11 | |
| Operating Instructions | | |
| All literature is available to download for free, in a range of languages, at | | |
| http://www.siemens.com/processinstrumentation/documentation/ | mentation. | |
| Accessories | Article No. | |
| Tag, stainless steel, 12 x 45 mm (0.47 x 1.77 inch), one text line | 7ML1930-1AC | |
| Universal box bracket mounting kit | 7ML1830-1BK | |
| Sanitary 4" mounting clamp | 7ML1830-1BR | |
| ASME, DN 65 PN 10, JIS 10K 3B ETFE Flange 7ML1830-1BT dapter for 2" NPT | | |
| 3" ASME, DN 65 PN 10, JIS 10K 3B ETFE Flange 7ML1830-1B adapter for 2" BSPT 7 | | |
| 2" BSP nylon plastic locknut | 7ML1830-1DQ | |
| | | |

7ML1830-1DT

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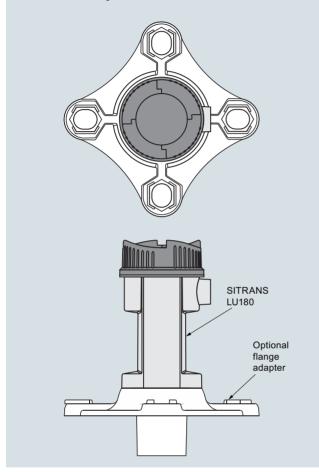
Continuous level measurement Ultrasonic transmitters

SITRANS LU180

Options

SITRANS LU180, Flange Adapter

The SITRANS LU180 can be fitted with the optional 75 (3) flange adapter for mating to 3" ANSI, DIN 65 PN10 and JIS 10K3B flanges.



SITRANS LU180 optional flange adapter, dimensions in mm (inch)

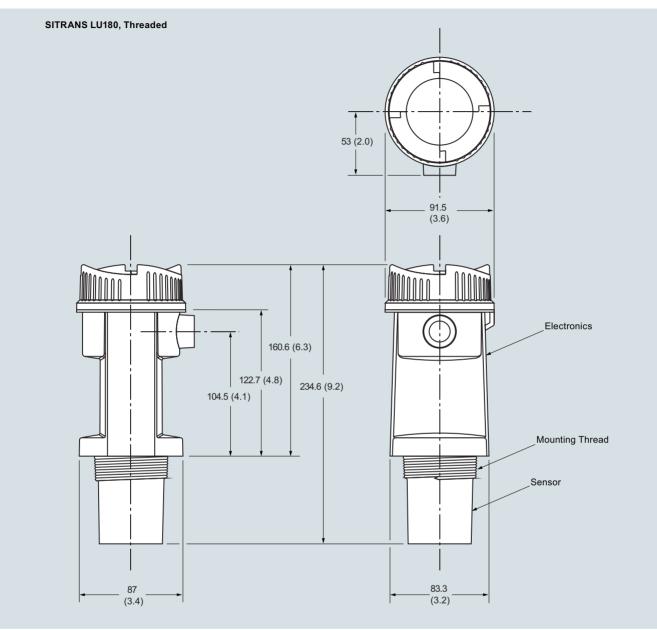
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Continuous level measurement Ultrasonic transmitters

SITRANS LU180

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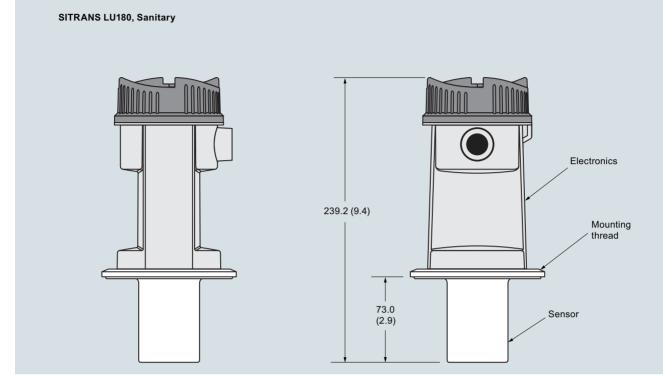
Dimensional drawings



SITRANS LU180, dimensions in mm (inch)

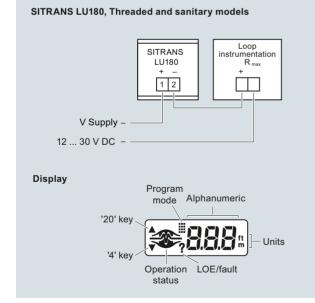
Continuous level measurement Ultrasonic transmitters

SITRANS LU180



SITRANS LU180, dimensions in mm (inch)

Circuit diagrams



SITRANS LU180 connections