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SITRANS LU10

Overview

SITRANS LU10 is an ultrasonic long-range level monitor for liquids and solids, offering 10-point monitoring in a single unit.

Handheld programmer shown is an accessory and must be ordered separately.

Benefits

- Ten point, long-range level monitoring
- Automatic level-to-volume conversion for standard or custom tank shapes
- Dolphin Plus compatible
- Backlit LCD display with reading in standard engineering units
- Easy to install, easy to program using removable infrared keypad (optional)

Application

It can be used in a wide range of applications to scan liquids, solids or a combination of both contained in vessels of differing size, shape, and configuration up to 60 m (200 ft).

SITRANS LU10 uses ultrasonic technology to measure level, space, distance, volume, or average/differential. Transducers can be mounted up to 365 m (1 200 ft) from the monitor. The SITRANS LU10 features patented Sonic Intelligence echo processing software for superior reliability. Readings are displayed in user-selectable linear engineering units on the LCD.

- Key Applications: chemical storage, liquid storage, bulk solids storage (sugar, flour bins, grains, cereals), plastic pellets, tank farms

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Technical specifications

Mode of operation	
Measuring principle	Ultrasonic level measurement
Measuring range	Max. 0.3 ... 60 m (1 ... 200 ft)
Measuring points	Max. 10
Output	
Ultrasonic transducer	EchoMax series, ST-H transducers
Relays	SPDT Form C relays, rated 5 A at 250 V AC, resistive load
mA output	SITRANS LU A0 module (option): 0/4 ... 20 mA, optically isolated
• Max. load	750 Ω, isolated
• Resolution	0.1 % of range
Accuracy	
Error in measurement	0.25 % of range or 6 mm (0.24 inch), whichever is greater
Resolution	0.1% of measuring range or 2 mm (0.08 inch), whichever is greater
Temperature compensation	-50 ... +150 °C (-58 ... +302 °F) • Integral temperature sensor • External TS-3 temperature sensor (expandable to 10 inputs with optional TIB-9 card) • Programmable fixed temperature
Rated operating conditions	
Ambient conditions	
Ambient temperature for enclosure	-20 ... +50 °C (-4 ... +122 °F)
Design	
Weight	2.7 kg (6 lb)
Material (enclosure)	Polycarbonate
Degree of protection (wall mount)	IP65/Type 4X/NEMA 4X
Electrical connection	
Ultrasonic transducer	RG62-A/U coaxial cable with low capacitance
Signal transmission	2-core copper conductor, twisted, shielded, 0.5 ... 0.75 mm^2 (22 ... 18 AWG), Belden 8760 or equivalent is acceptable
Electrical connection and relay connection	Copper conductor according to local requirements, rated 250 V 5 A
Synchronization	Up to 16 LU10 units can be synchronized together

Power supply	100/115/200/230 V AC ± 15 %, 50/60 Hz, 31 VA
Displays and controls	51 x 127 mm (2 x 5 inch) graphics LCD with backlighting
Memory	EEPROM (non-volatile), no backup battery required
Programming	Using removable programmer (ordered separately) or Dolphin Plus (option)
Certificates and approvals	• CE, C-TICK, FM, $CSA_{US/C}$, ATEX II 3D • Lloyd's register of Shipping (Categories ENV1, ENV2, ENV3 and ENV5)
Options	
Expansion card	TIB-9, increases the number of TS-3 inputs from 1 ... 10
• External temperature sensor	TS-3
• Communications	• Dolphin Plus: Siemens Windows-compatible interface and Com-Verter link (infrared)
• I/O devices	• Max. 3 I/O devices per SITRANS LU10 • SITRANS LU AO analog output module (max. 1)

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SITRANS LU10

Selection and Ordering data	Article No.
SITRANS LU10 Ten point ultrasonic long-range level monitoring system for liquids and solids applications, and ranges up to 60 m (200 ft).	**7ML5007-**
Input voltage 100/115, 200/230 V AC, selectable	**1**
Feature software Standard	**A**
Application software Standard	**A**
Data communications No module (SmartLinx ready)	**0**
TIB-9 temperature card None With TIB-9 card	**0** **1**
Enclosure Wall mount Wall mount, drilled, 12 x M20 x1.5 for cable glands Note: Cable glands are not included and should be ordered as a separate line on the order.	**1** **2**
Approvals CE, $CSA_{US/C}$, FM[1)] ATEX II 3D[1)] CE, C-TICK[2)]	**A** **B** **D**

[1)] Available with enclosure option 1 only

[2)] Available with enclosure option 2 only

Selection and Ordering data	Order code
Further designs	
Please add "**-Z**" to Article No. and specify Order code(s).	
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	**Y15**
Operating Instructions	Article No.
English	**7ML1998-5AN02**
French	**7ML1998-5AN12**
German	**7ML1998-5AN32**
Accessories	
Handheld programmer	**7ML1830-2AN**
Tag, stainless steel, 12 x 45 mm (0.47 x 1.77 inch), one text line, suitable for enclosures	**7ML1930-1AC**
Temperature Card TIB 9-card	**7ML1830-1CN**
M20 cable gland kit (6 M20 cable glands, 6 M20 nuts, 3 stop plugs)	**7ML1830-1GM**
M20 cable gland kit (4 M20 cable glands, 4 M20 nuts, 4 washers)	**7ML1930-1FV**
TS-3 Temperature Sensor - see TS-3 on page 4/337	
Sunshield kit, 304 stainless steel	**7ML1930-1GA**
Spare parts	
Card, mother main, AC, comm ready	**7ML1830-1ML**
Card, daughter, comm ready	**7ML1830-1LY**
Card, display See SmartLinx product page 4/337 for more information.	**7ML1830-1LQ**

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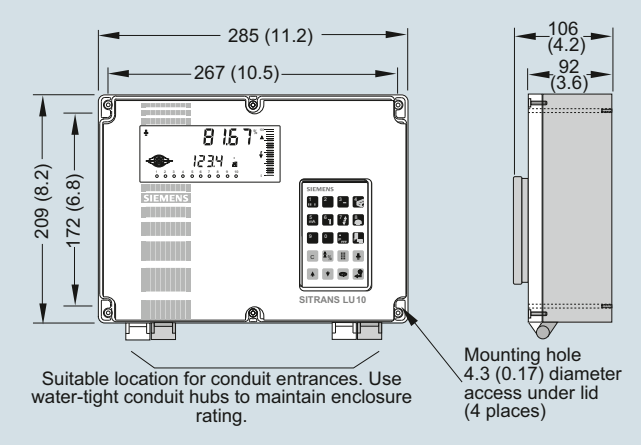
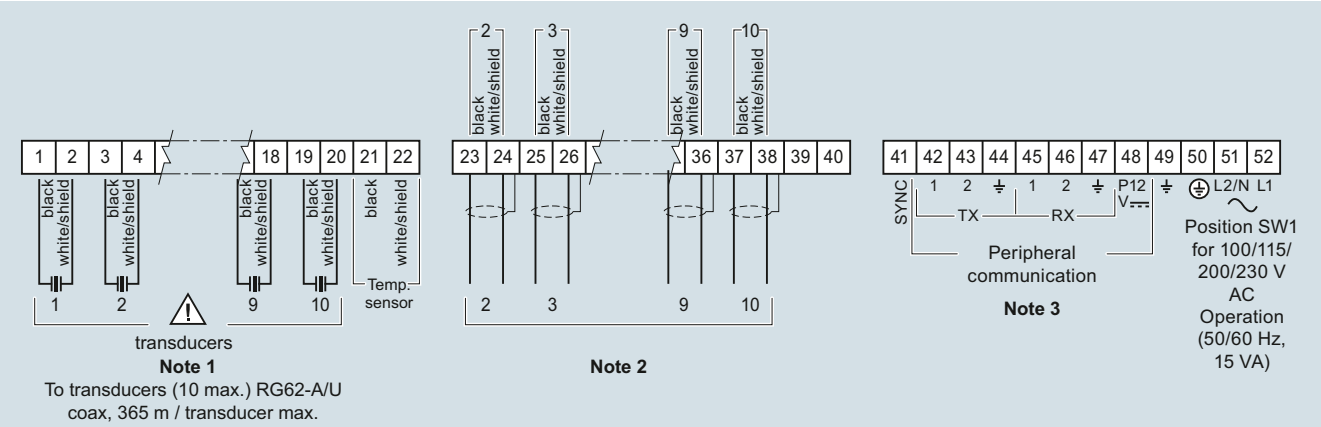
Dimensional drawings



SITRANS LU10, dimensions in mm (inch)

Schematics



Notes:

1. Transducer cables must be run in a grounded metal conduit separate from other wiring (except TS-3 temperature sensor wiring, if applicable).
2. Optional TIB-9 card for multiple temperature sensors. Do not jump the terminals if TS-3s are not used.
3. The SITRANS LU10 is compatible with the following Siemens Milltronics peripherals:
   - SITRANS LU AO - analog output module

SITRANS LU10 connections