

## Level Measurement

Continuous level measurement - Ultrasonic controllers

### 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 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

### Technical specifications

<b>Mode of operation</b>		<b>Power supply</b>	
Measuring principle	Ultrasonic level measurement	100/115/200/230 V AC ± 15 %, 50/60 Hz, 31 VA	
Measuring range	Max. 0.3 ... 60 m (1 ... 200 ft)	<b>Displays and controls</b>	
Measuring points	Max. 10	51 x 127 mm (2 x 5 inch) graphics LCD with backlighting	
<b>Output</b>		Memory	EEPROM (non-volatile), no backup battery required
Ultrasonic transducer	EchoMax series, ST-H transducers	Programming	Using removable programmer (ordered separately) or Dolphin Plus (option)
Relays	SPDT Form C relays, rated 5 A at 250 V AC, resistive load	<b>Certificates and approvals</b>	
mA output	SITRANS LU AO module (option): 0/4 ... 20 mA, optically isolated	<ul style="list-style-type: none"> <li>• CE, RCM, FM, CSA<sub>US/C</sub>, ATEX II 3D</li> <li>• Lloyd's register of Shipping (Categories ENV1, ENV2, ENV3 and ENV5)</li> </ul>	
<ul style="list-style-type: none"> <li>• Max. load</li> <li>• Resolution</li> </ul>	750 Ω, isolated 0.1 % of range	<b>Options</b>	
<b>Accuracy</b>		Expansion card	TIB-9, increases the number of TS-3 inputs from 1 ... 10
Error in measurement	0.25 % of range or 6 mm (0.24 inch), whichever is greater	External temperature sensor	TS-3
Resolution	0.1 % of measuring range or 2 mm (0.08 inch), whichever is greater	Communications	Dolphin Plus: Siemens Windows-compatible interface and ComVerter link (infrared)
Temperature compensation	-50 ... +150 °C (-58 ... +302 °F) <ul style="list-style-type: none"> <li>• Integral temperature sensor</li> <li>• External TS-3 temperature sensor (expandable to 10 inputs with optional TIB-9 card)</li> <li>• Programmable fixed temperature</li> </ul>	I/O devices	<ul style="list-style-type: none"> <li>• Max. 3 I/O devices per SITRANS LU10</li> <li>• SITRANS LU AO analog output module (max. 1)</li> </ul>
<b>Rated operating conditions</b>			
Ambient conditions			
<ul style="list-style-type: none"> <li>• Ambient temperature for enclosure</li> </ul>	-20 ... +50 °C (-4 ... +122 °F)		
<b>Design</b>			
Weight	2.7 kg (6 lb)		
Material (enclosure)	Polycarbonate		
Degree of protection (wall mount)	IP65/Type 4X/NEMA 4X		
<b>Electrical connection</b>			
Ultrasonic transducer	RG62-A/U coaxial cable with low capacitance		
Signal transmission	2-core copper conductor, twisted, shielded, 0.5 ... 0.75 mm <sup>2</sup> (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		

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##### Selection and Ordering data

###### SITRANS LU10

Ten point ultrasonic long-range level monitoring system for liquids and solids applications, and ranges up to 60 m (200 ft).

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

###### Input voltage

100/115, 200/230 V AC, selectable

###### Feature software

Standard

###### Application software

Standard

###### Data communications

No module (SmartLinx ready)

###### TIB-9 temperature card

None

With TIB-9 card

###### 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.

###### Approvals

CE, CSA<sub>US/C</sub>, FM<sup>1)</sup>

ATEX II 3D<sup>1)</sup>

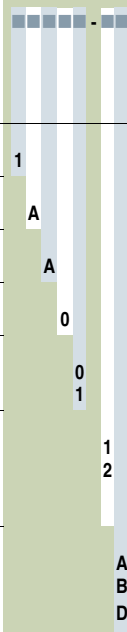
CE, RCM<sup>2)</sup>

<sup>1)</sup> Available with enclosure option 1 only

<sup>2)</sup> Available with enclosure option 2 only

##### Article No.

7ML5007-



##### Selection and Ordering data

###### 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

##### Order code

Y15

###### Operating Instructions

English

French

German

Article No.

7ML1998-5AN02

7ML1998-5AN12

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 4/189

Sunshield kit, 304 stainless steel

7ML1930-1GA

###### Spare parts

Card, mother main, AC, comm ready

7ML1830-1ML

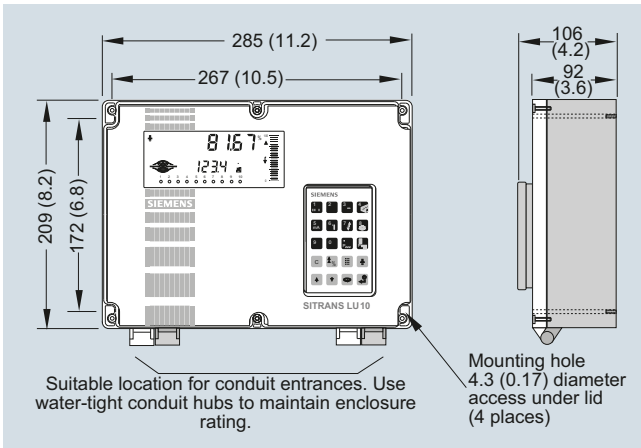
Card, daughter, comm ready

7ML1830-1LY

Card, display  
See SmartLinx product on page 4/362 for more  
information.

7ML1830-1LQ

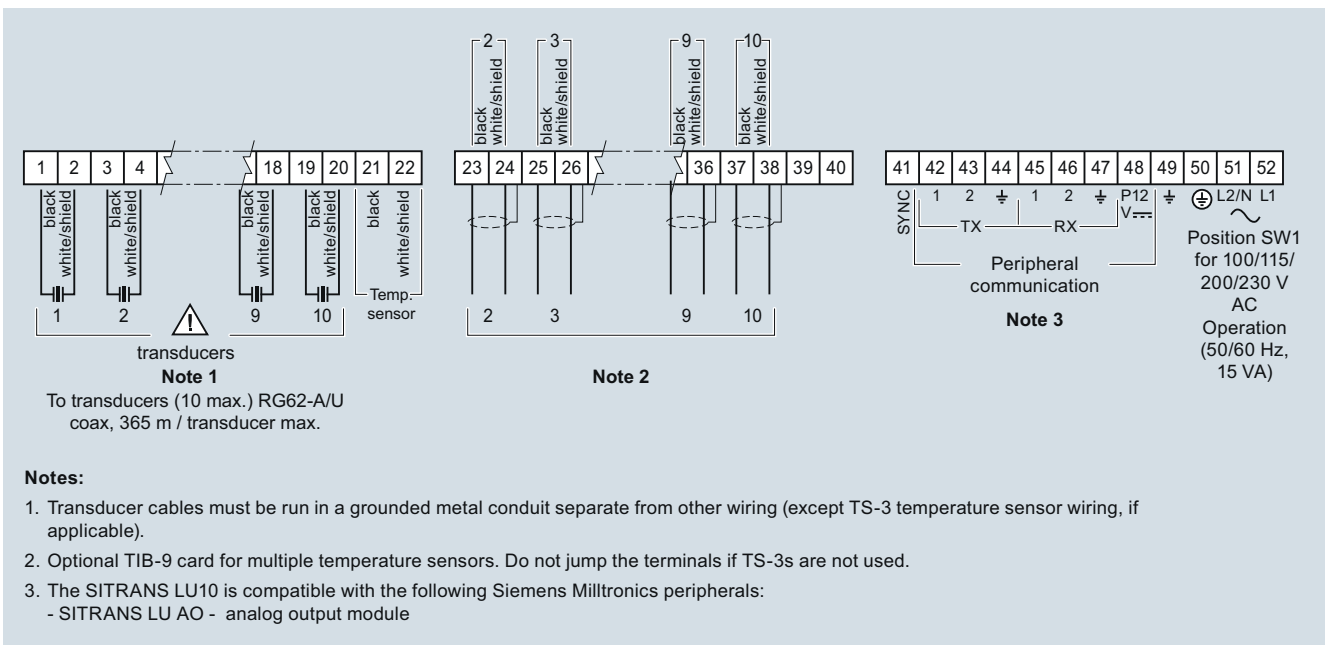
**Dimensional drawings**



SITRANS LU10, dimensions in mm (inch)

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**Schematics**



SITRANS LU10 connections