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SITRANS LT500

Overview



SITRANS LT500 is a versatile, single and multi-vessel level monitor/controller for virtually any application in a wide range of industries.

Benefits

- Easy to use HMI display with local four-button programming, menu-driven parameters, and wizard support for key applications.
- English, German, French, Spanish, Chinese, Italian, Portuguese, Japanese, Danish, Dutch, Swedish, Finnish, Polish, and Russian texts on the HMI.
- Removable terminal blocks for ease of wiring.
- Digital input for back-up level override from point level device.
- Communication options for HART, Modbus RTU, PROFIBUS PA, PROFIBUS DP, ProfiNet.
- Single or dual point level monitoring.
- Auto False-Echo Suppression for fixed obstruction avoidance.
- Up to 6 independent programmable relays for pump control, alarms, or remote totalization.
- Level, volume, and flow measurements in open channels, differential control, extended pump control, and alarm functions.
- Wall and panel mounting options.

Application

SITRANS LT500 can be used with SITRANS LR110, LR120, Probe LU240 or any level device generating a mA signal. SITRANS LT500 offers true dual point monitoring and digital communications. SITRANS LT500 is low maintenance and economical. With its advanced control functions, it can operate pumps during lower cost time periods and manage pump rosters for efficiency.

SITRANS LT500 will monitor open channel flow and features advanced relay alarming and pump control functions as well as volume conversion.

- Key Applications: wet wells, flumes/weirs, bar screen control, hoppers, chemical storage, liquid storage, crusher bins, dry solids storage

Design

SITRANS LT500 is available in wall or panel mounting options.

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Technical specifications

Sensor input	
Number of inputs	1 or 2
Terminal voltage	Max. 26 V, Min. 18 V (0 ... 22.6 mA)
Wiring	2 conductor, twisted, shielded, 0.5 ... 0.75 mm² (22 ... 18 AWG)
Max. cable length	500 m (1 640.42 ft)
Sensor input communication	• 4 ... 20 mA • HART protocol, for supported sensors: SITRANS LR110, LR120, SITRANS Probe LU240
4 ... 20 mA sensor input	
• Resolution	0.025 % of full scale
• Accuracy	0.1 % of full scale
HART sensor input	Resolution and accuracy are dependent on connected sensor
Discrete input	
Quantity	2 (1 additional available on optional HART communication)
Switching threshold, low	0 ... 0.5 V DC
Switching threshold, high	10 ... 50 V DC
Input current	Max. 3 mA
Bias voltage	24 V
Analog output	
Quantity	2
Range	0 ... 20 mA or 4 ... 20 mA
• Max. load	750 Ω
• Resolution	0.1 % of range
Accuracy	±20 µA
Wiring	2 conductor, twisted, shielded, 0.5 ... 0.75 mm² (22 ... 18 AWG)
Relay output	
Quantity	Up to 6, 4 form A and 2 form C
Rating	5 A at 250 V AC, non-inductive
Rated operating conditions	
Installation conditions	
• Location	Indoor/outdoor
• Installation category	II
• Pollution degree	4
Ambient conditions	
• Ambient temperature	-20 ... +50 °C (-4 ... +122 °F)

Design	
Weight	
• Wall mount	1.22 kg (2.68 lb)
• Panel mount	1.35 kg (2.97 lb)
Enclosure	
• Material	Polycarbonate
• Degree of protection	
- Wall mount	IP65/Type 4X/NEMA 4X
- Panel mount	IP54/Type 3/NEMA 3
Display and control	
LCD display	60 x 40 mm (2.36 x 1.57 inch) LCD, 240 x 160 pixels resolution
Menu navigation	4 push button keys
Memory card	8 GB Industrial micro SD
Power supply	
AC version	100 ... 230 V AC, ±15 %, 50/60 Hz, 36 VA (17 W)
DC version	12 ... 30 V DC (20 W)
Certificates and approvals	• CE, RCM • FM, $_{C}$CSA$_{US}$, $_{C}$UL$_{US}$
Communication	
Service interface	USB 2.0 mini A cable
Optional Fieldbus	• HART, with Active/Passive 4 ... 20 mA • Modbus RTU • PROFIBUS PA • PROFIBUS DP • ProfiNet

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SITRANS LT500

Selection and Ordering data	Article No.
SITRANS LT500 ↗ Continuous, non-contact, for liquids, slurries, and solids. Monitors level, volume, and volume flow, for virtually any application in a wide range of process industries. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	**7ML60** ☐☐ - ☐☐☐☐ - ☐ **AA** ☐
Product type	
HydroRanger	**0**
MultiRanger	**1**
Feature set	
Level, volume, and flow	**3**
Sensor input type	
4 ... 20 mA input(s)	**0**
Number of measurement points	
Single point version	**A**
Dual point version	**B**
Relay output	
1 relay (1 Form A), 250 V AC	**A**
3 relays (2 Form A, 1 Form C), 250 V AC	**B**
6 relays (4 Form A, 2 Form C), 250 V AC	**C**
Mounting, enclosure design	
Wall mount, standard enclosure	**0**
Wall mount, 4 entries, M20 cable glands included	**1**
Panel mount	**2**
Type of protection	
Non Ex (general purpose) $_{C}CSA_{US}$, FM, CE, RCM	**0**
Removable data storage	
Included, (8 GB micro SD)	**1**
Input voltage	
10 ... 30 V DC	**2**
100 ... 230 V AC	**3**

Selection and Ordering data	Order code
Further designs	
Please add "**-Z**" to Article No. and specify Order code(s).	
Stainless steel tag [13 x 45 mm (0.5 x 1.75 inch)]: Tag (device parameter, max. 32 characters) plate stainless steel 304/1.4301	**Y15**
Mass storage	
Enable mass storage function with SD card (Not available for USA)	**Y80**
Certificates	
Factory test certificate - M to DIN 55350, Part 18	**C19**
Factory certificate 2.2 (EN 10204) - wetted parts	**C14**
Communication	
4 ... 20 mA, active output, with HART	**F01**
Modbus RTU	**F04**
PROFIBUS PA	**F05**
PROFIBUS DP	**F06**
ProfiNet	**F07**
Specials	
Special design	**Y99**
For customs, contact a local sales person. For more information please visit http://www.automation.siemens.com/aspa_app	

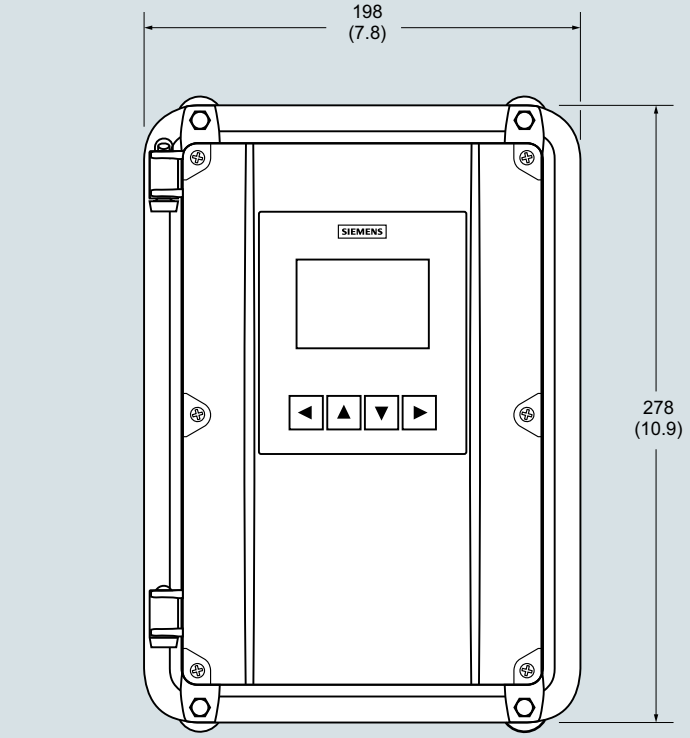
Selection and Ordering data	Order code
Operating Instructions	
All literature is available to download for free, in a range of languages, at http://www.siemens.com/processinstrumentation/documentation	

Selection and Ordering data	Article No.
Optional equipment	
Tag, stainless steel, 12 x 45 mm, one text line, (max. 16 characters)	**7ML1930-1AC**
Barriers in a NEMA 4X/IP65 enclosure	**A5E50255823**
Barrier suitable for LR1xx & LU240 (STAHL: 9001/01-280-110-101)	**A5E50113513**
Sunshield, 304 Stainless steel	**7ML1930-1GA**
SITRANS RD100, loop powered display - see Chapter 7	**7ML5741-.....-.**
SITRANS RD150, remote digital display for 4 ... 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-.....-..**
Spare parts	
Replacement motherboard, single point, includes DC power module	**A5E50113558**
Replacement motherboard, dual point, includes DC power module	**A5E50113557**
Replacement motherboard, single point, includes AC power module	**A5E50113542**
Replacement motherboard, dual point, includes AC power module	**A5E50113543**
Replacement lid with 4 button HMI	**A5E50113559**
Replacement lid with 4 button HMI panel mount version	**A5E50113560**
Retrofit kit for wall mount to panel mount version	**A5E50114010**
Replacement SD card	**A5E50113554**
HART communications module	**A5E50113564**
PROFIBUS PA communications module	**A5E50113568**
Modbus RTU communications module	**A5E50113565**
PROFIBUS DP communications module	**A5E50113567**
ProfiNet communications module	**A5E50113569**

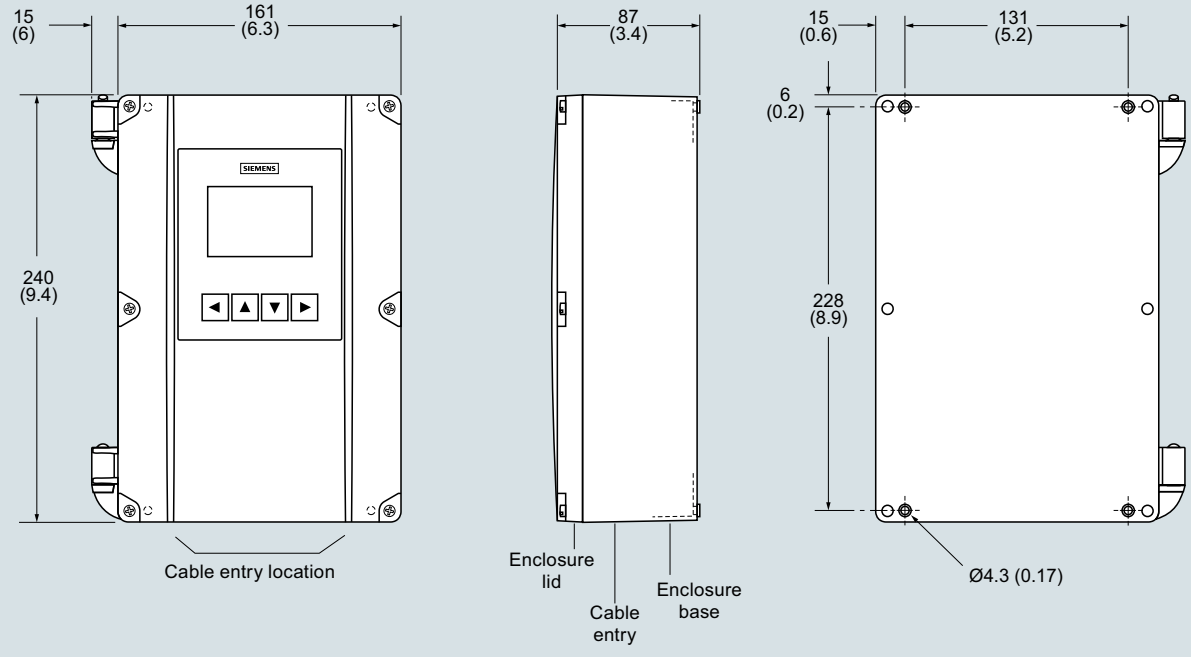
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Dimensional drawings

Panel mount dimensions



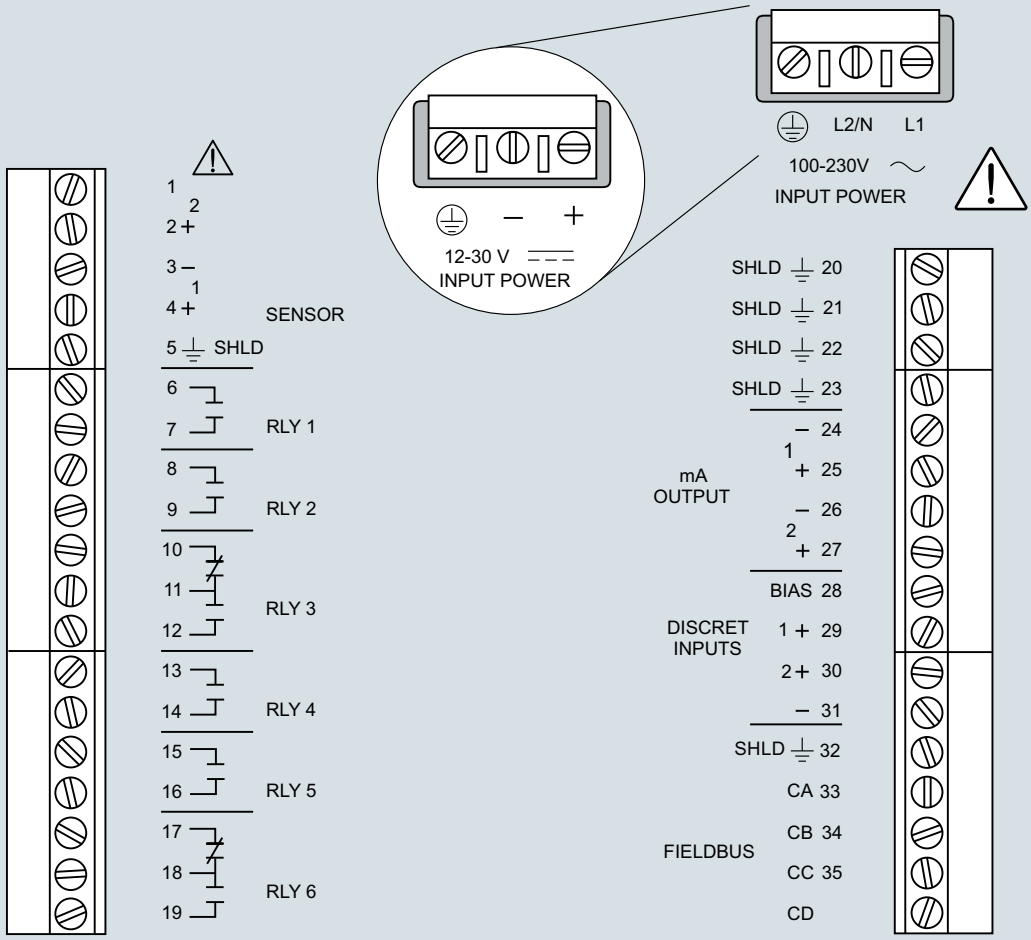
Wall mount dimensions



SITRANS LT500, dimensions in mm (inch)

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Circuit diagrams



Relays shown in released state

Note:

1. Use 2-core copper wire, twisted, with shield, for expansion up to 365 m (1 200 ft). Route cable in grounded metal conduit, separate from other cables.
2. Verify that all system components are installed in accordance with instructions.
3. Connect all cable shields to the SITRANS LT500 shield connections. Avoid differential ground potentials by not connecting cable shields to ground (earth) anywhere else.
4. Keep exposed conductors on shielded cables as short as possible to reduce noise on the line caused by stray transmissions and noise pickup.

SITRANS LT500 connections