

### 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, and 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.
- Remote configuration via EDD with SIMATIC PDM or SITRANS DTM

### 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.

# Level Measurement

## Continuous level measurement

### Controllers / SITRANS LT500 - HydroRanger / MultiRanger

#### Selection and ordering data

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.		Article No. 7ML60 ● ● - ● ● ● ● ● - ● A A ●									
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.											
<b>Product type</b>											
HydroRanger											
MultiRanger											
<b>Feature set</b>											
Level, volume, and flow											
<b>Sensor input type</b>											
4 ... 20 mA input(s)											
<b>Number of measurement points</b>											
Single point version											
Dual point version											
<b>Relay output</b>											
1 relay (1 Form A), 250 V AC											
3 relays (2 Form A, 1 Form C), 250 V AC											
6 relays (4 Form A, 2 Form C), 250 V AC											
<b>Mounting, enclosure design</b>											
Wall mount, standard enclosure											
Wall mount, 4 entries, M20 cable glands included											
Panel mount											
<b>Type of protection</b>											
Ordinary Locations/General Purpose (Non-Ex), cCSA <sub>US</sub> , FM, CE, UKCA, RCM											
<b>Removable data storage</b>											
Included, (8 GB micro SD)											
<b>Input voltage</b>											
10 ... 30 V DC											
100 ... 230 V AC											

Selection and ordering data	Order code
<b>Further designs</b>	
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
<b>Certificates</b>	
Declaration of compliance 2.1 (EN 10204) - delivery meets order requirements	C19
Factory certificate 2.2 (EN 10204)	C14
<b>Communication</b>	
4 ... 20 mA, active output, with HART	F01
Modbus RTU	F04
PROFIBUS PA	F05
PROFIBUS DP	F06
ProfiNet	F07
<b>Specials</b>	
Special design	Y99
For customs, contact a local sales person. For more information please visit <a href="http://www.automation.siemens.com/aspa_app">http://www.automation.siemens.com/aspa_app</a>	

#### Selection and ordering data (continued)

Spare parts and accessories	Article No.
<b>Operating Instructions</b>	
All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/processinstrumentation/documentation">http://www.siemens.com/processinstrumentation/documentation</a>	
<b>Optional equipment</b>	
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-.....
<b>Spare parts</b>	
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

#### Technical specifications

SITRANS LT500 - HydroRanger / MultiRanger	
<b>Mode of operation</b>	Level, space, distance, volume, flow, head, difference, average, totalization
<b>Sensor input</b>	
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 mm <sup>2</sup> (22 ... 18 AWG)
Max. cable length	500 m (1 640.42 ft)
Sensor input communication	<ul style="list-style-type: none"> <li>4 ... 20 mA</li> <li>HART protocol, for supported sensors: SITRANS LR110, LR120, SITRANS Probe LU240</li> </ul>
4 ... 20 mA sensor input	
• Resolution	0.025 % of full scale
• Accuracy	0.1 % of full scale
HART sensor input	Resolution, range, and accuracy are dependent on connected sensor
<b>Digital input</b>	
Quantity	2
Switching threshold, low	0 ... 0.5 V DC

#### Technical specifications (continued)

SITRANS LT500 - HydroRanger / MultiRanger	
Switching threshold, high	10 ... 50 V DC
Input current	Max. 3 mA
Bias voltage	24 V
<b>Analog output</b>	
Quantity	1 or 2
Range	0 ... 20 mA or 4 ... 20 mA isolated
• Max. load	750 Ω
• Resolution	0.1 % of range
Accuracy	±20 μA
Startup current	3.6 mA
Fail-safe	Programmable as high, low, last reliable, set value, or hold per NAMUR NE43
Wiring	2 conductor, twisted, shielded, 0.5 ... 0.75 mm <sup>2</sup> (22 ... 18 AWG)
<b>Relay output</b>	
Quantity	Up to 6, 4 form A and 2 form C
Rating	5 A at 250 V AC, 5 A at 30 V DC, non-inductive
Durability	50 000 operations min. per relay (5 A at 30 V DC, resistive load)

# Level Measurement

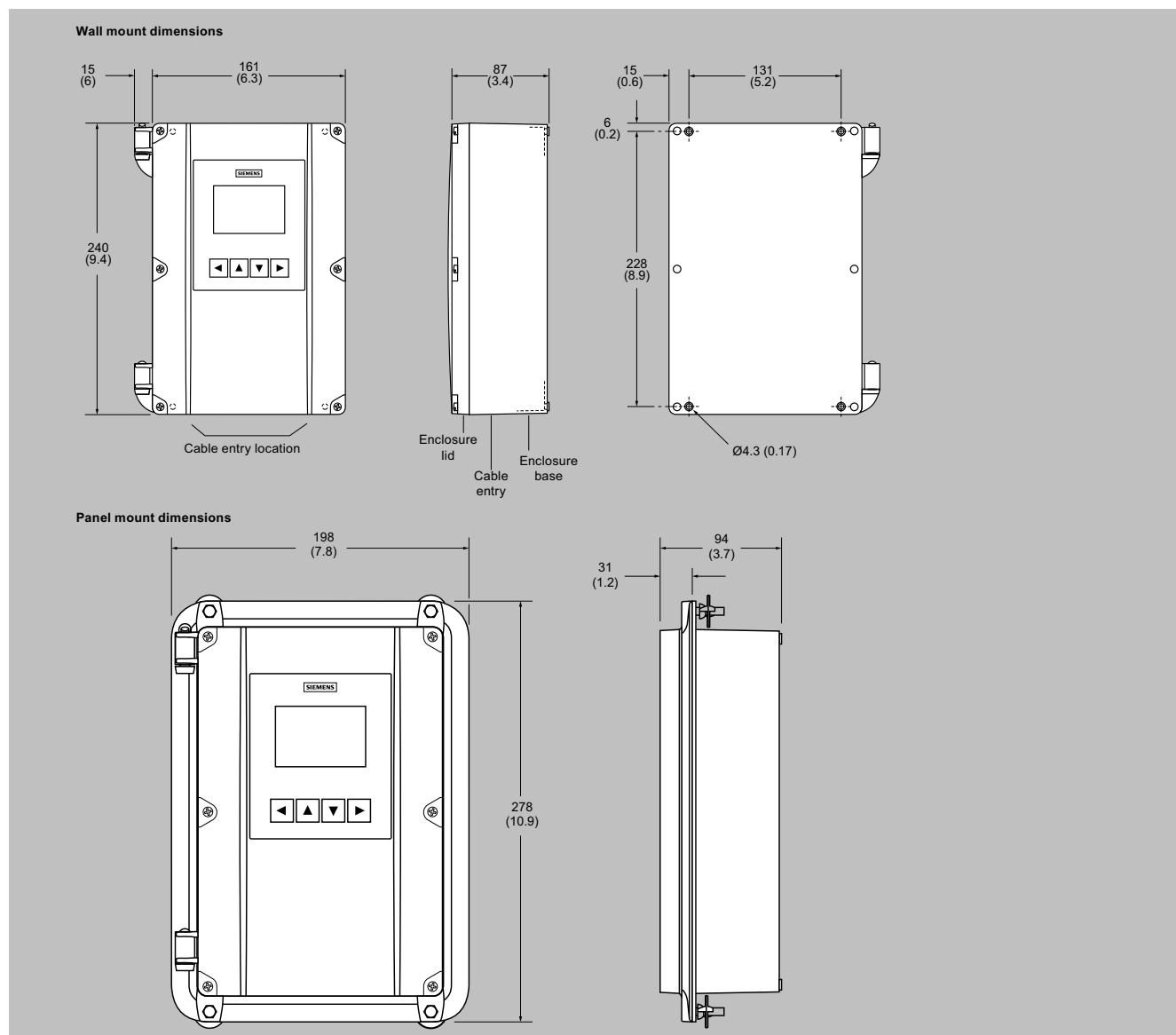
## Continuous level measurement

### Controllers / SITRANS LT500 - HydroRanger / MultiRanger

#### Technical specifications (continued)

<b>SITRANS LT500 - HydroRanger / MultiRanger</b>	
Fail-safe	Programmable as energized, de-energized, or hold
<b>Rated operating conditions</b>	
Installation conditions	
• Location	Indoor/outdoor
• Installation category	II
• Pollution degree	4
Ambient conditions	
• Ambient temperature	-20 ... +50 °C (-4 ... +122 °F)
• Storage temperature	-20 ... +50 °C (-4 ... +122 °F)
<b>Design</b>	
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
- Panel mount	IP54/Type 3
<b>Display and control</b>	
LCD display	60 x 40 mm (2.36 x 1.57 inch) LCD, 240 x 160 pixels resolution
Menu navigation	4 push button keys
Update time	1 second or less
Memory	Program and parameters store in non-volatile Flash memory
<b>Memory card</b>	8 GB Industrial micro SD
<b>Power supply</b>	
AC version	100 ... 230 V AC, ±15 %, 50/60 Hz, 36 VA (17 W)
DC version	12 ... 30 V DC (20 W)
<b>Certificates and approvals</b>	• CE, UKCA, RCM, EAC, FM, cCSAus, cULus
<b>Communication</b>	
Service interface	USB 2.0 mini A cable
Optional Fieldbus	<ul style="list-style-type: none"> <li>• HART 7, with Active/Passive 4 ... 20 mA</li> <li>• Modbus RTU</li> <li>• PROFIBUS PA per profile 4.01</li> <li>• PROFIBUS DP</li> <li>• ProfiNet</li> </ul>
Remote configuraiton	<ul style="list-style-type: none"> <li>• EDD via SIMATIC PDM</li> <li>• SITRANS DTM via PACTware</li> </ul>

### Dimensional drawings



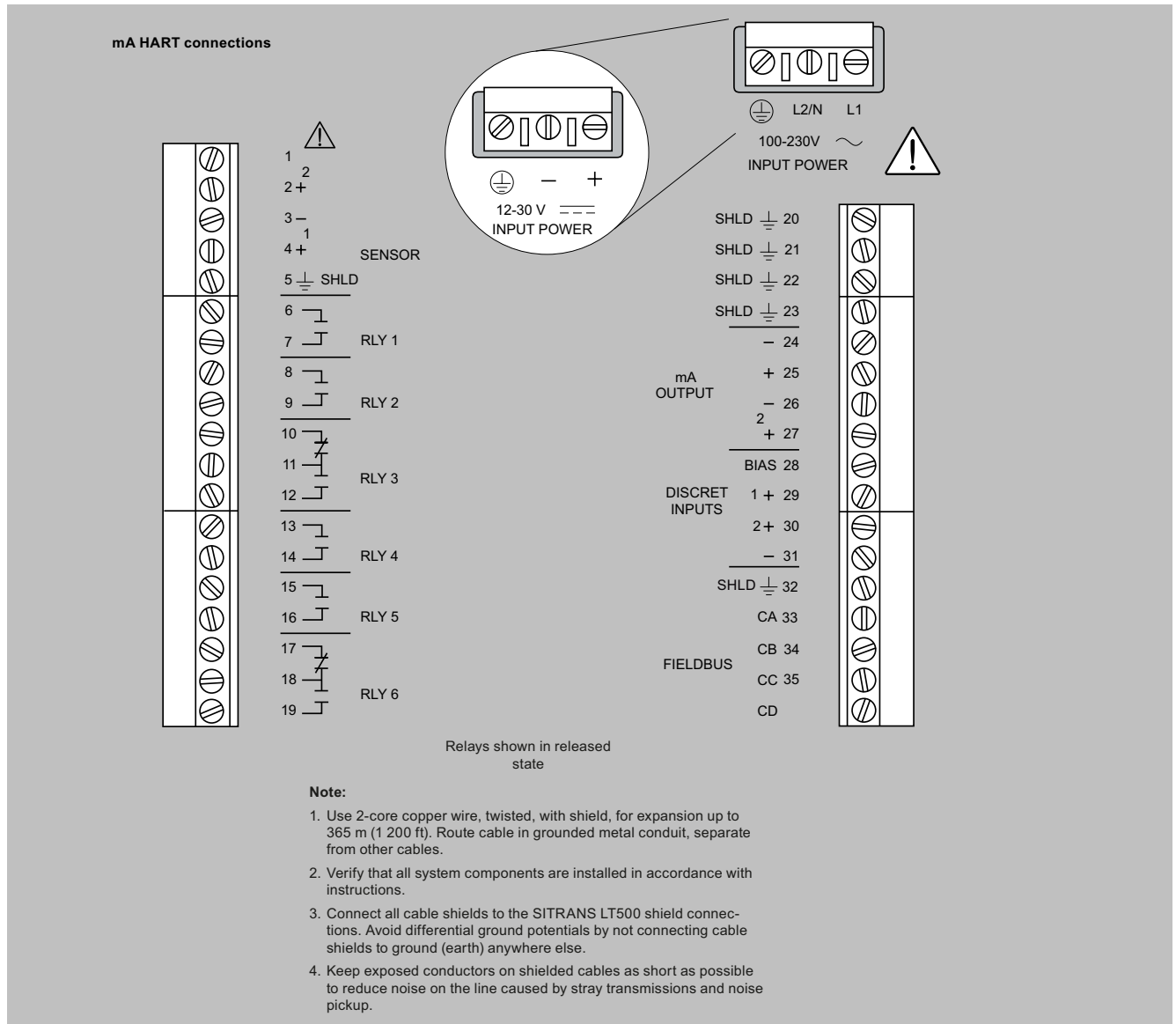
SITRANS LT500, dimensions in mm (inch)

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#### Circuit diagrams



SITRANS LT500 connections