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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, configurable 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, Russian, and Korean languages on the HMI.
- Removable terminal blocks for ease of wiring.
- Digital inputs for back-up level override from point level device, totalizer control, or pump interlock.
- Communication options for HART, Modbus RTU, Modbus TCP, PROFIBUS PA, PROFIBUS DP, PROFINET, EtherNet/IP.
- Configuration and monitoring via WebIQ (browser based) over PROFINET, EtherNet/IP, or Modbus TCP
- Remote configuration and diagnostic management of supported sensors (SITRANS LR110, SITRANS LR120, SITRANS Probe LU240).
- Single or dual point level monitoring.
- Advanced process intelligence echo processing for reliable accurate measurement in difficult applications.
- Parameter back-up and copy functions.
- Auto False-Echo Suppression for fixed obstruction avoidance.
- IQ Guard for health monitoring, NE107 diagnostics, up to 200 saved echo profiles, event logging, data logging, parameter change logging, hundreds of diagnostics, limit monitoring, self check validation, parameter back-up and copy functions, and programming configuration backup/report.
- Real-time clock supporting energy saving algorithms for minimizing pump operation during high cost energy periods.
- Smart device connection for file storage and sharing via USB.
- Up to 6 independent programmable relays for pump control, alarms, or remote totalization.
- Time to spill/empty monitoring and alarming.
- Level, volume, and flow measurements in open channels, differential control, extended pump control, and alarm functions.
- Wall, panel, and remote panel mounting options.
- Remote configuration via EDD with SIMATIC PDM and SITRANS DTM via USB.
- MCERTS certified for open channel flow.
- Removable terminal blocks for ease of wiring.
- Patented digital receiver for improved performance in electrically noisy applications (close proximity to VSDs).

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Application

SITRANS LT500 mA HART version can be used with SITRANS LR110, LR120, Probe LU240 or any level device generating a mA signal. The ultrasonic version can connect any EchoMax or legacy transducer. 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, panel, or remote panel mounting options.

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Selection and ordering data

SITRANS LT500 mA Hart version 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.	
Product brand[3]	
SITRANS LT500	2
SITRANS LT500 HydroRanger	0
SITRANS LT500 MultiRanger	1
Feature set	
Level, Volume, and Flow[4]	3
Level, Volume, and Flow, high accuracy[5]	4
Sensor input type	
4 ... 20 mA input(s) for radar sensors	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
Remote panel mount	3
Type of protection	
Ordinary Locations/General Purpose (Non-Ex), $_{C}$CSA$_{US}$, $_{C}$UL$_{US}$ FM, CE, UKCA, RCM, EAC[8]	0
Ex rated[1]	1
Removable data storage	
Included, (8 GB micro SD)	1
Input voltage	
12 ... 30 V DC	2
100 ... 230 V AC	3

Selection and ordering data	
Further designs	**Order code**
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**
Approvals	
CSA (USA & Canada)	
CSA Class I, Div. 2, Group A, B, C and D; Class II, Div 2, Group F & G; Class III/Class I, Zone 2 GP IIC T3 Zone 22 GP IIIB T160 °C	**E21**
ATEX, IEC Ex (Europe & Australia) ATEX & IEC Ex II 3G/D	**E31**
Certificates	
Declaration of compliance 2.1 (EN 10204) - delivery meets order requirements	**C19**
Factory certificate 2.2 (EN 10204)	**C14**
Communication	
HART with 4 ... 20 mA active output[6]	**F01**
Modbus RTU	**F04**
Modbus TCP	**F13**
PROFIBUS PA	**F05**

Selection and ordering data	
PROFIBUS DP	**F06**
PROFINET	**F07**
EtherNet/IP	**F09**
Product version	
Suitable for high temperatures +60 °C (140 °F)[7]	**J20**
Specials	
Special design	**Y99**
For customs, contact a local sales person. For more information please visit http://www.automation.siemens.com/aspa_app	
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	
Optional equipment	**Article No.**
Tag, stainless steel, 12 x 45 mm, one text line, (max. 16 characters)	**7ML1930-1AC**
Barriers in a NEMA 4X/IP65 enclosure	**A5E50255823**

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Selection and ordering data (continued)

Selection and ordering data	
Barrier suitable for LR1xx & LU240 (STAHL: 9001/01-280-110-101)	A5E50113513
Sunshield/pipe mount plate, 304 Stainless steel	7ML1930-1GA
Panel mount installation kit for Hydro+ cutout (Remote panel mount LT500 required)	A5E53663857
M12 IP65/IP67/IP69/IP69K external mount receptacle port to individual cable leads M20 mounting	A5E53796231
Ethernet cable 4 inch/100 mm long	A5E53796237
RJ45 external mount receptacle to receptacle adaptor	A5E53796234
M20 plastic cable gland with split seal for use with RJ45 cables, includes M20 nut	A5E54001790
USB cable, 2 m (6.56 ft), standard USB-B to USB-mini B	7ML1930-1GD
Wall mount installation hardware	A5E42140728
AC power supply surge protector	5SD7432-7
DC power supply surge protector	5SD7432-5
SITRANS RD100, loop powered display	7ML5741-.....-.
SITRANS RD150, remote digital display for 4 ... 20 mA and HART devices	7ML5742-.....-....
SITRANS RD200, universal input display with Modbus conversion	7ML5740-.....-..
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion	7ML5744-.....-..
Industrial Ethernet cables	6XV1870-.....-..
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

Selection and ordering data	
Replacement lid with 4 button HMI panel mount version	A5E50113560
Replacement lid with 4 button HMI remote panel mount version	A5E52897553
Replacement lid with blind remote panel mount version	A5E53276261
Retrofit kit for wall mount to panel mount version	A5E50114010
Retrofit kit for wall mount to remote panel mount version	A5E53276259
Panel mount cable extension, 2.5 m (8.2 ft)	7ML1930-1GF
Remote panel mount gasket and fastener kit	7ML1830-1PK
Replacement terminal blocks for 4 ... 20 mA input(s) sensor type version	A5E38824197
Ethernet RJ45 to termination pin adaptor (for use with Ethernet based communication cards)	A5E53671319
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	A5E50113570
EtherNet/IP communications module	A5E50113562
Modbus TCP communications module	A5E50113566

[1] Available only with order code E21 and E31, and Mounting, enclosure design options 0 or 1.
[2] Available only with Sensor input type option 1.
[3] Branding only affects the name marked on the label, no other difference in form or function.
[4] MCERTS class 2 certified.
[5] MCERTS class 1 certified.
[6] HART communication card not required for standard mA output.
[7] Available only with Relay output option A or B, Type of protection option 0, and Voltage input option 2. Note, relays are de-rated to 1A. Does not include Mcerts approvals.
[8] Not available with Ex approval options E21 and E31.

SITRANS LT500 Ultrasonic version **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.	
Product brand[3]	
SITRANS LT500	2
SITRANS LT500 HydroRanger	0
SITRANS LT500 MultiRanger	1
Feature set	
Level, Volume, and Flow[4]	3
Level, Volume, and Flow, high accuracy[5]	4
Sensor input type	
Ultrasonic transducer input(s)	1
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

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Selection and ordering data (continued)

SITRANS LT500 Ultrasonic version 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 ●
Mounting, enclosure design	
Wall mount, standard enclosure	0
Wall mount, 4 entries, M20 cable glands included	1
Panel mount	2
Remote panel mount	3
Type of protection	
Ordinary Locations/General Purpose (Non-Ex), CSA, $_{c}UL_{US}$, FM, CE, UKCA, RCM, EAC	0
Ex rated[1)]	1
Removable data storage	
Included, (8 GB micro SD)	1
Input voltage	
12 ... 30 V DC	2
100 ... 230 V AC	3

Selection and ordering data	
Further designs	**Order code**
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**
Approvals	
CSA (USA & Canada)	
CSA Class I, Div. 2, Group A, B, C and D; Class II, Div 2, Group F & G; Class III//Class I, Zone 2 GP IIC T3 Zone 22 GP IIIB T160 °C	**E21**
ATEX, IEC Ex (Europe & Australia) ATEX & IEC Ex II 3G/D	**E31**
Certificates	
Declaration of compliance 2.1 (EN 10204) - delivery meets order requirements	**C19**
Factory certificate 2.2 (EN 10204)	**C14**
Communication	
HART with 4 ... 20 mA active output[6)]	**F01**
Modbus RTU	**F04**
Modbus TCP	**F13**
PROFIBUS PA	**F05**
PROFIBUS DP	**F06**
PROFINET	**F07**
EtherNet/IP	**F09**
Product version	
Suitable for high temperatures +60 °C (140 °F)[7)]	**J20**
Specials	
Special design	**Y99**
For customs, contact a local sales person. For more information please visit http://www.automation.siemens.com/aspa_app	
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	
Optional equipment	**Article No.**
Tag, stainless steel, 12 x 45 mm, one text line, (max. 16 characters)	**7ML1930-1AC**
Sunshield/pipe mount plate, 304 Stainless steel	**7ML1930-1GA**
Panel mount installation kit for Hydro+ cutout (Remote panel mount LT500 required)	**A5E53663857**
Coaxial cable converter in a NEMA 4X/IP65 enclosure	**A5E53332217**
M12 IP65/IP67/IP69/IP69K external mount receptacle port to individual cable leads M20 mounting	**A5E53796231**
M20 plastic cable gland with split seal for use with RJ45 cables, includes M20 nut	**A5E54001790**
Ethernet cable 4 inch/100 mm long	**A5E53796237**
RJ45 external mount receptacle to receptacle adaptor	**A5E53796234**
Wall mount installation hardware	**A5E42140728**
AC power supply surge protector	**5SD7432-7**
DC power supply surge protector	**5SD7432-5**
USB cable, 2 m (6.56 ft), standard USB-B to USB-mini B	**7ML1930-1GD**
SITRANS RD100, loop powered display	**7ML5741-.....-.**
SITRANS RD150, remote digital display for 4 ... 20 mA and HART devices	**7ML5742-.....-....**
SITRANS RD200, universal input display with Modbus conversion	**7ML5740-.....-..**
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion	**7ML5744-.....-..**
Industrial Ethernet cables	**6XV1870-.....-..**
Spare parts	
Replacement motherboard, single point, US comes with DC power module	**A5E52897550**
Replacement motherboard, dual point, US comes with DC power module	**A5E52897552**
Replacement motherboard, single point, US comes with AC power module	**A5E52897548**
Replacement motherboard, dual point, US comes with AC power module	**A5E52897549**
Replacement lid with 4 button HMI	**A5E50113559**

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Selection and ordering data (continued)

Selection and ordering data	
Replacement lid with 4 button HMI panel mount version	**A5E50113560**
Replacement lid with 4 button HMI remote panel mount version	**A5E52897553**
Replacement lid with blind remote panel mount version	**A5E53276261**
Retrofit kit for wall mount to panel mount version	**A5E50114010**
Retrofit kit for wall mount to remote panel mount version	**A5E53276259**
Replacement terminal blocks for Ultrasonic transducer input(s) sensor type version	**A5E52897545**
Panel mount cable extension, 2.5 m (8.2 ft)	**7ML1930-1GF**
Ethernet RJ45 to termination pin adapter (for use with Ethernet based communication cards)	**A5E53671319**
Remote panel Mount Gasket and Fastener Kit	**7ML1830-1PK**

Selection and ordering data	
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	**A5E50113570**
EtherNet/IP communications module	**A5E50113562**
Modbus TCP communications module	**A5E50113566**

[1] Available only with order code E21 and E31, and Mounting, enclosure design option 0 or 1.
[2] Available only with Sensor input type option 1.
[3] Branding only affects the name marked on the label, no other difference in form or function.
[4] MCERTS class 2 certified.
[5] MCERTS class 1 certified.
[6] HART communication card not required for standard mA output.
[7] Available only with Relay output option A or B, Type of protection option 0, and Voltage input option 2. Note, relays are de-rated to 1A. Does not include Mcerts approvals.
[8] Not available with Ex approval options E21 and E31.

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Technical specifications

SITRANS LT500 mA HART version	
Mode of operation	Level, space, distance, volume, flow, head, level difference, level average, totalization
Sensor input, mA HART version	
Number of inputs	1 or 2
PV measurement	Advanced process intelligence
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	
• Range	Dependent on connected sensor up to 10^{10}
• Resolution	0.025 % of full scale
• Accuracy	0.1 % of full scale
Note: resolution, range, and accuracy are dependent on connected sensor	
• Sensor power source	Limited Energy Source according to IEC 61010-1
Digital input	
Quantity	2
Switching threshold, low	0 ... 0.5 V DC
Switching threshold, high	10 ... 50 V DC
Input current	Max. 3 mA
Bias voltage supply	24 V
Isolation	Galvanically Isolated to the SELV (Safety Extra Low Voltage) 50 V level
Analog output	
Quantity	1 or 2
Range	0 ... 20 mA or 4 ... 20 mA isolated
Max. load	750 Ω
Resolution	0.1 % of range
Update time	Up to 1 measurement per second
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 mm² (22 ... 18 AWG)
Isolation	Galvanically Isolated to 500 V
Relay output	
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 • High temperature option - 1 A at 250 V AC, 1 A at 30 V DC, non-inductive
Durability	50 000 operations min. per relay (5 A at 30 V DC, resistive load)
Minimum applicable load	10 mA at 12 V
Fail-safe	Programmable as energized, de-energized, or hold
Wiring	Copper conductors per local requirements to meet 250 V 5 A contact rating
Rated operating conditions	
Installation conditions	
• Location	Indoor/outdoor

Technical specifications (continued)

SITRANS LT500 mA HART version	
• Installation category	II
• Pollution degree	4
Ambient conditions	
• Ambient temperature	-20 ... +50 °C (-4 ... +122 °F)
• High temperature version	-20 ... +60 °C (-4 ... +140 °F)
• Storage temperature	-20 ... +60 °C (-4 ... +140 °F)
• Humidity	Maximum relative humidity 80 % for temperatures up to 31 °C (88 °F) decreasing linearly to 50 % relative humidity at 40 °C (104 °F)
• Altitude	2 000 m (6 565 ft) maximum
• Vibration resistence	
- Vibration broad-band random, according to IEC 60068-2-64	• 10 ... 200 Hz, 0.0104 g^2/Hz • 200 ... 500 Hz, 0.005 g^2/Hz
- Vibration non-stationary including shock, according to IEC 60068-2-27	• Peak Acceleration: 25 g • Duration: 6 ms • Number of impacts per direction: 1 000 • Impact directions: 6
• Bump/shock resistence	25 g
EMC performance	IEC/EN 61326-1, EN 55011 (Class A)
Design	
Weight	
• Wall mount	1.22 kg (2.68 lb)
• Panel mount	1.35 kg (2.97 lb)
• Remote panel mount	1.73 kg (3.80 lb)
Enclosure	
• Material	High impact polycarbonate lexan per UL 94V-0
• Degree of protection	
• Wall mount	IP65/Type 4X
• Panel mount	IP54/Type 3
• Remote panel mount	IP65/Type 3 (front panel), IP20 (enclosure)
• UV exposure	F1 rating per UL746C
Display and control	
• LCD display	60 x 40 mm (2.36 x 1.57 inch) LCD, 240 x 160 pixels resolution graphical HMI with NE107 diagnostic data, echo profile display and backlight
• Menu navigation	4 push button keys, rated for 1 million button cycles over 10 years
Update time	1 second or less
Memory	Program and parameters stored in non-volatile Flash memory
Real time clock memory retention without power	48 hours
CPU speed	96 MHz
Memory card	8 GB Industrial micro SD, suppoting up to 32 GB
Power supply	
AC version	100 ... 230 V AC, ±15 %, 50/60 Hz, 36 VA (17 W)
DC version	12 ... 30 V DC (20 W)

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Technical specifications (continued)

SITRANS LT500 mA HART version	
Certificates and approvals	• CE, UKCA, RCM, EAC, FM, $_{c}CSA_{US}$, $_{c}UL_{US,}$ KC • RoHS, China RoHS, WEEE, REACH • $_{c}CSA_{US}$ Class I, Div. 2, Group A, B, C and D; Class II, Div 2, Group F & G; Class III & Class I, Zone 2 GP IIC T3 Zone 22, GP IIIB T160°C • ATEX II 3G/D, IECEx 3G/D Ex ec IIC T4 Gc, Ex tc III T85°C Dc • MCERTS • Environmental Product Declaration (EPD) • Siemens EcoTech Profile (SEP)
Production and development certification	• ISO 9001 • ISO 14001 • ISO 18001 • ISO 45001 • IEC ISO/IEC 80079-34 • PED 2014/68/EU
Communication	
Service interface	USB 2.0 mini A cable
Optional Fieldbus	• HART 7, with Active/Passive 4 ... 20 mA • Modbus RTU • Modbus TCP • PROFIBUS PA per profile 4.01 • PROFIBUS DP per profile 4.01 • PROFINET • EtherNet/IP
Remote configuration via service interface	• EDD via SIMATIC PDM • SITRANS DTM via PACTware
Remote configuration via fieldbus	EDS-AOP (EtherNet/IP)
Remote configuration via ethernet network interface	WebIQ Web-based interface for local programming via web browser (only with PROFINET, EtherNet/IP, Modbus TCP)
Remote configuration via Ethernet directly on PC	WebIQ Web-based interface for local programming via web browser (only with Modbus TCP)

SITRANS LT500 Ultrasonic version	
Mode of operation	Level, space, distance, volume, flow, head, difference, average, totalization
Sensor input, ultrasonic version	
Number of inputs	1 or 2
PV measurements	Advanced process intelligence
Measuring range	0.3 ... 60 m (1 ... 196 ft), transducer dependent
Transducer frequency	10 ... 52 kHz
Ultrasonic transducer	Compatible transducers: all EchoMax and ST-H series transducers, legacy coaxial cable connections via converter
Accuracy	
• Error in measurement	• Standard operation: ±1 mm (0.04 inch) plus 0.17 % of measured distance • High accuracy OCM: ±1 mm (0.04 inch), within 3 m (9.84 ft) range (with XRS-5 and TS-3)
• Resolution	• Standard operation: 0.1 % of range or 2 mm (0.08 inch), whichever is greater • High accuracy OCM: 0.6 mm (0.02 inch), within 3 m (9.84 ft) range • Accuracy per IEC 60770-1

Technical specifications (continued)

SITRANS LT500 Ultrasonic version	
• Temperature compensation	• -40 ... +150 °C (-40 ... +300 °F) • Integral temperature sensor in transducer • External TS-3 temperature sensor (optional) • Programmable fixed temperature values
Wiring	Transducer: 2 copper conductors, twisted, with foil shield/drain wire, 300 V 0.5 ... 0.75 mm² (22 ... 18 AWG)
• Max. cable length	365 m (1 200 ft)
Analog input	
Range	Dependent on connected sensor up to 10^{10}
Resolution	0.025 % of full scale
Accuracy	0.1 % of full scale
Polling rate	>1 Hz
Maximum cable length	500 m (1640.42 ft)
Supply voltage	24 V
Digital input	
Quantity	2
Switching threshold, low	0 ... 0.5 V DC
Switching threshold, high	10 ... 50 V DC
Input current	Max. 3 mA
Bias voltage supply	24 V
Isolation	Galvanically Isolated to the SELV (Safety Extra Low Voltage) 50 V level
Sensor power source	Limited Energy Source according to IEC 61010-1
Analog output	
Quantity	1 or 2
Range	0 ... 20 mA or 4 ... 20 mA isolated
Max. load	750 Ω
Resolution	0.1 % of range
Update time	Up to 1 measurement per second
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 mm² (22 ... 18 AWG)
Isolation	Galvanically Isolated to 500 V
Relay output	
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 • High temperature option - 1 A at 250 V AC, 1 A at 30 V DC, non-inductive
Durability	50 000 operations min. per relay (5 A at 30 V DC, resistive load)
Minimum applicable load	10 mA at 12 V
Fail-safe	Programmable as energized, de-energized, or hold
Wiring	Copper conductors per local requirements to meet 250 V 5 A contact rating
System synchronization	Up to 25 units on the bus (only SITRANS LT500s). Up to 16 units on the bus (if 1 legacy controller is included).
Rated operating conditions	
Installation conditions	
• Location	Indoor/outdoor

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Technical specifications (continued)

SITRANS LT500 Ultrasonic version	
• Installation category	II
• Pollution degree	4
Ambient conditions	
• Ambient temperature	-20 ... +50 °C (-4 ... +122 °F)
• High temperature version	-20 ... +60 °C (-4 ... +140 °F)
• Storage temperature	-20 ... +60 °C (-4 ... +140 °F)
• Humidity	Maximum relative humidity 80 % for temperature up to 31 °C (88 °F) decreasing linearly to 50 % relative at 40 °C (104 °F)
• Altitude	2 000 m (6 565 ft) maximum
• Vibration resistence	
- Vibration broad-band random, according to IEC 60068-2-64	• 10 ... 200 Hz, 0.0104 g^2/Hz • 200 ... 500 Hz, 0.005 g^2/Hz
- Vibration non-stationary including shock, according to IEC 60068-2-27	• Peak Acceleration: 25 g • Duration: 6 ms • Number of impacts per direction: 1 000 • Impact directions: 6
• Bump/shock resistence	25 g
EMC performance	IEC/EN 61326-1, EN 55011 (Class A)
Design	
Weight	
• Wall mount	1.22 kg (2.68 lb)
• Panel mount	1.35 kg (2.97 lb)
• Remote panel mount	1.73 kg (3.80 lb)
Enclosure	
• Material	High impact polycarbonate lexan per UL 94V-0
• Degree of protection	
• Wall mount	IP65/Type 4X
• Panel mount	IP54/Type 3
• Remote panel mount	IP65/Type 3 (front panel), IP20 (enclosure)
UV exposure	F1 rating per UL746C
Display and control	
• LCD display	60 x 40 mm (2.36 x 1.57 inch) LCD, 240 x 160 pixels resolution graphical HMI with NE107 diagnostic data, echo profile display and backlight
• Menu navigation	4 push button keys, rated for 1 million button cycles over 10 years
Update time	1 second or less
Memory	Program and parameters stored in non-volatile Flash memory
Real time clock memory retention without power	48 hours
CPU speed	96 MHz
Memory card	8 GB Industrial micro SD, supporting up to 32 GB
Power supply	
AC version	100 ... 230 V AC, ±15 %, 50/60 Hz, 36 VA (17 W)
DC version	12 ... 30 V DC (20 W)

Technical specifications (continued)

SITRANS LT500 Ultrasonic version	
Certificates and approvals	• $_{c}CSA_{US}$, CE, UKCA, RCM, EAC, FM, $_{c}UL_{US,}$ KC • RoHS, China RoHS, WEEE, REACH • $_{c}CSA_{US}$ Class I, Div. 2, Group A, B, C and D; Class II, Div 2, Group F & G; Class III & Class I, Zone 2 GP IIC T3 Zone 22 GP IIIB T160 °C • ATEX II 3G/D, IECEx 3G/D Ex ec IIC T4 Gc, Ex tc III T85°C Dc • MCERTS • Environmental Product Declaration (EPD) • Siemens EcoTech Profile (SEP)
Production and development certification	• ISO 9001 • ISO 14001 • ISO 18001 • ISO 45001 • IEC ISO/IEC 80079-34 • PED 2014/68/EU
Communication	
Service interface	USB 2.0 mini A cable
Optional Fieldbus	• HART 7, with Active/Passive 4 ... 20 mA • Modbus RTU • Modbus TCP • PROFIBUS PA per profile 4.01 • PROFIBUS DP per profile 4.01 • PROFINET • EtherNet/IP
Remote configuration via service interface	• EDD via SIMATIC PDM • SITRANS DTM via PACTware
Remote configuration via fieldbus	EDS-AOP (EtherNet/IP)
Remote configuration via ethernet network interface	WebIQ Web-based interface for local programming via web browser (only with PROFINET, EtherNet/IP, Modbus TCP)
Remote configuration via ethernet directly on PC	WebIQ Web-based interface for local programming via web browser (only with Modbus TCP)

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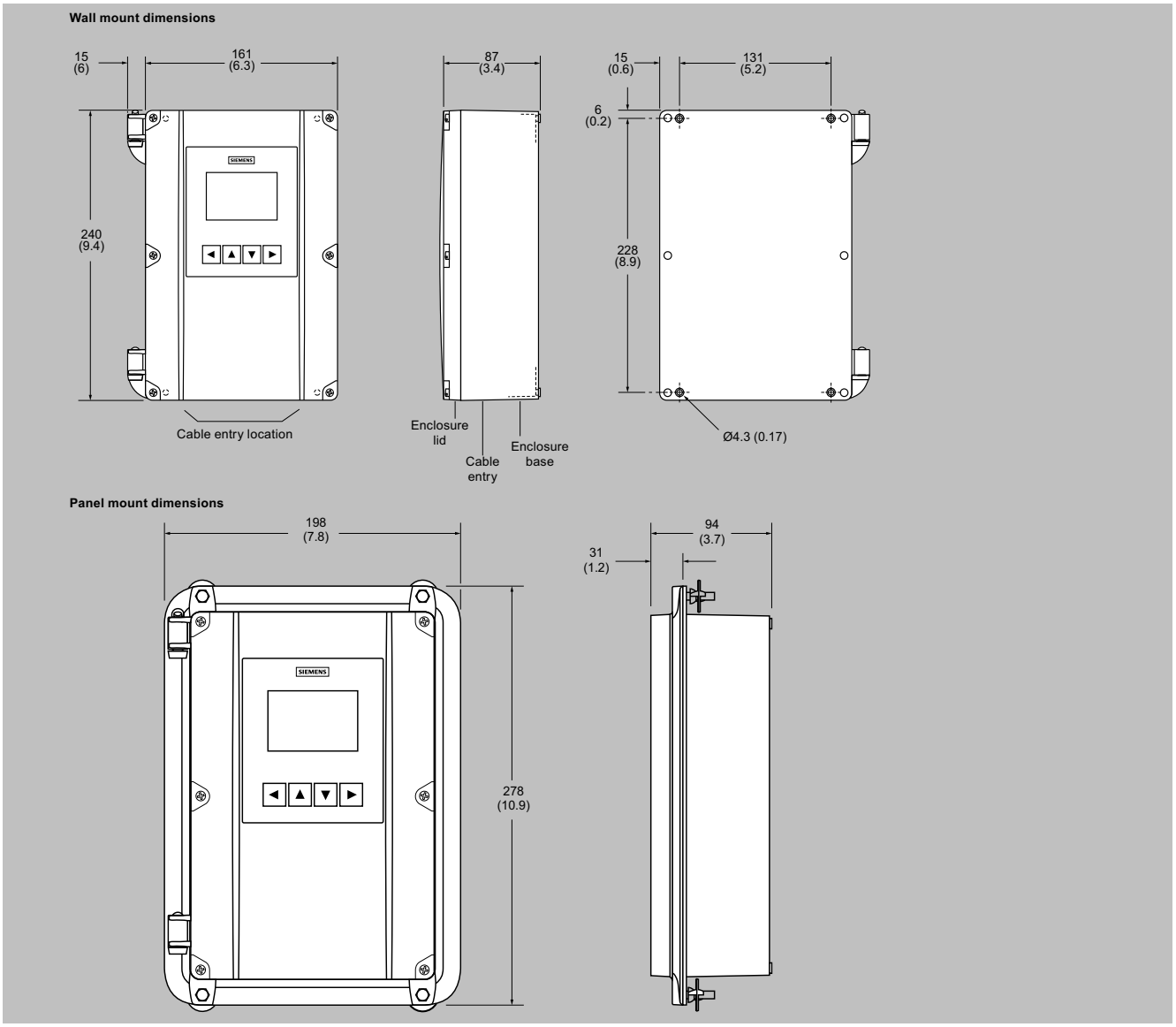
Dimensional drawings



SITRANS LT500, dimensions in mm (inch)

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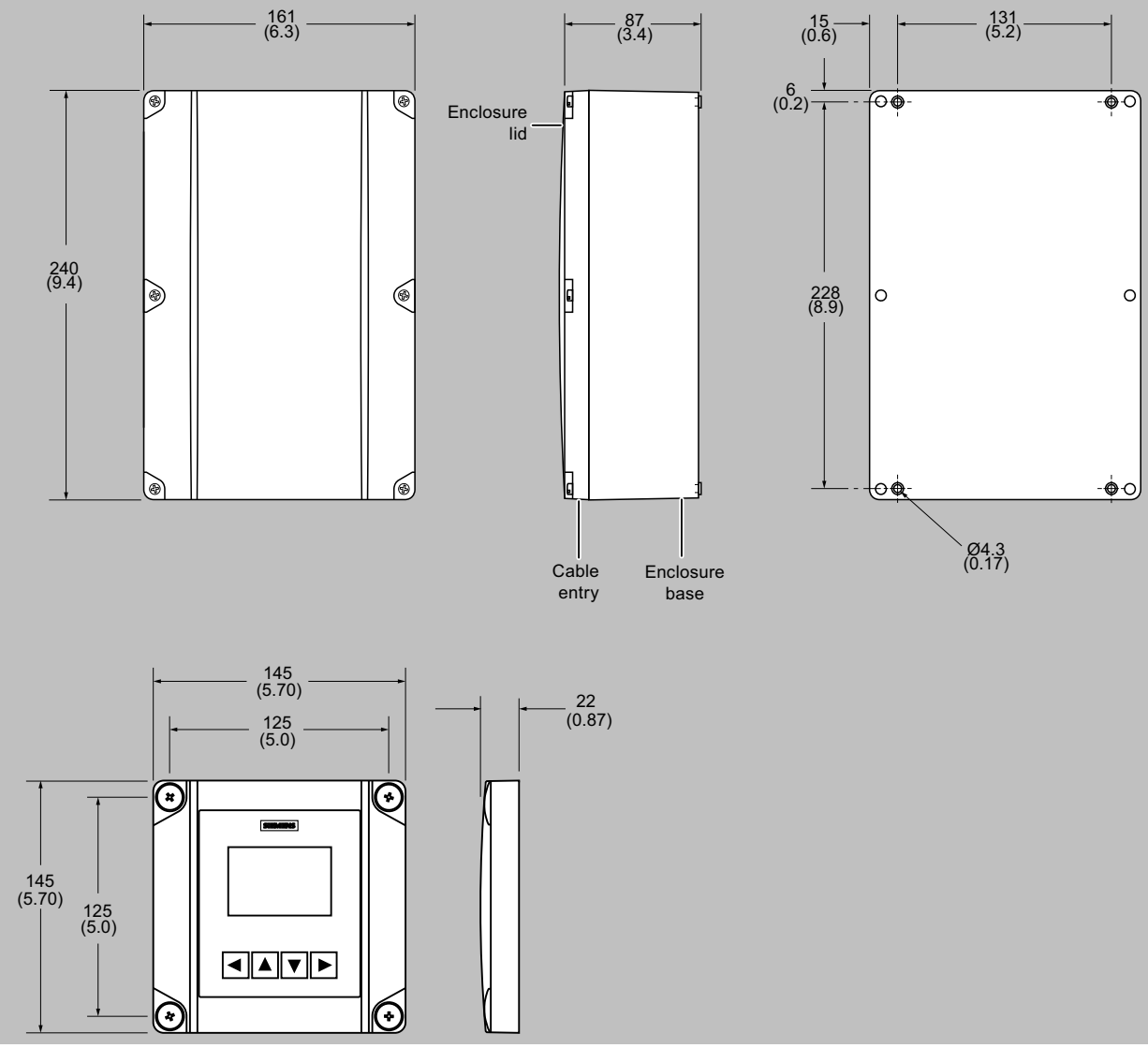
Dimensional drawings (continued)

SITRANS LT500 Remote panel unit



SITRANS LT500 Remote panel unit, dimensions in mm (inch)

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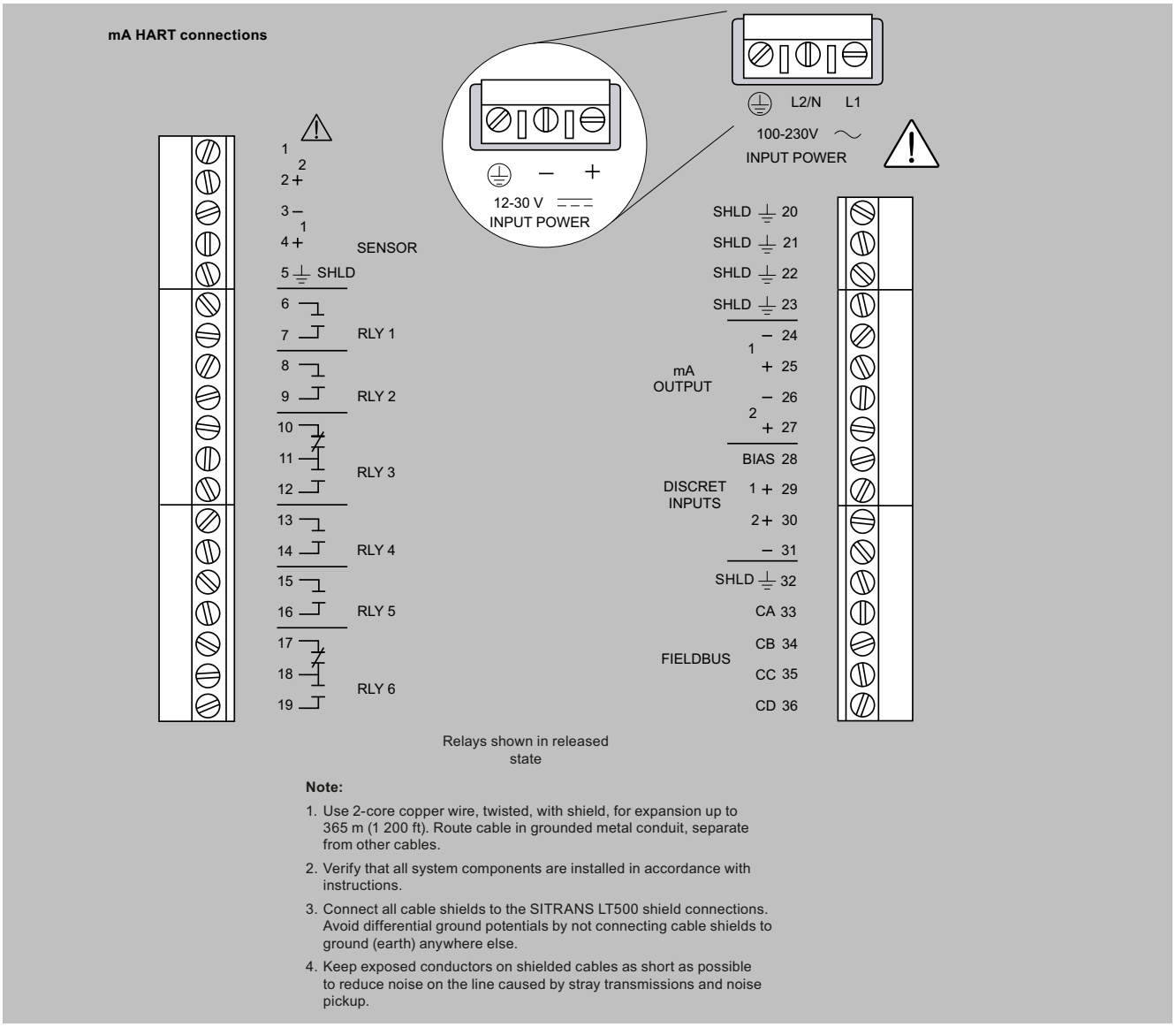
Circuit diagrams



SITRANS LT500 mA HART connections

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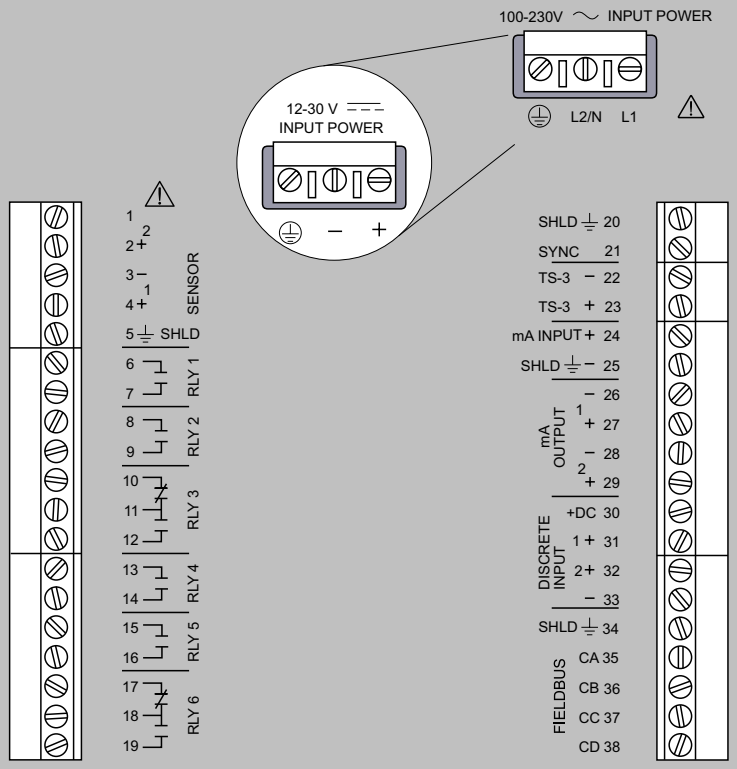
Circuit diagrams (continued)

Ultrasonic transducer connections



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 Ultrasonic transducer connections