

SITRANS LR 200 is a cost-effective level measurement solution for liquid bulk storage or simple process vessels. The 2-wire loop-powered pulse radar instrument is ideally suited for chemical plants and tank farms.

SITRANS LR 200's unique design allows safe and simple programming using the Intrinsically Safe handheld programmer without having to open the instrument's lid. It also features a built-in alpha-numeric display in four languages. The SITRANS LR 200 has a standard Uni-Construction polypropylene rod antenna that offers excellent chemical resistance and is hermetically sealed. With other instruments, you may need to consider compatibility of multiple materials including the seal between the materials. The Uni-Construction antenna features an internal, integrated shield that eliminates vessel nozzle interference.

Start-up is easy with as few as two parameters for basic operation. Installation is simplified as the electronics are mounted on a rotating head that swivels, allowing the instrument to line up with conduit or wiring connections or simply to adjust the position for easy viewing.

SITRANS LR 200 features patented Sonic Intelligence signal-processing technology for superior reliability.

Technical Specifications

Power

- nominal 24 Vdc with max. 550 Ohm.
- maximum 30 Vdc
- 4 to 20 mA

Output

- mA
 - range: 4 to 20 mA
 - accuracy: ± 0.02 mA
 - span: proportional or inversely proportional

Performance*

- frequency: 5.8 GHz (North America 6.3 GHz)
- measurement range: 20 m (65 ft.)
- blanking distance: 0.3 m
- accuracy: \pm the greater of 0.1% of range or 10 mm
- influence of ambient temperature: 0.006% / K
- repeatability: ± 5 mm
- dielectric constant: $\epsilon_r > 3$ (for < 3 use waveguide antenna or stillpipe)
- memory: non-volatile EEPROM, no battery required
- failsafe: mA programmable high, low, or hold upon LOE condition

Interface

- analog output: 4 to 20 mA ± 0.02 mA accuracy
- display (local): multi-segment alphanumeric liquid crystal with bar graph (representing level) available in four languages
- communication: HART[®]
- configuration
 - Siemens SIMATIC PDM (PC)
 - HART[®] handheld communicator
 - Siemens Milltronics infrared handheld programmer

Programmer (infrared keypad)

- approval: ATEX EEx ia IIC T4, SIRA certificate Ex002030
- ambient temperature: -20 to 40°C (-5 to 104°F)
- interface: proprietary infrared pulse signal
- power: 3 V lithium battery (non-replaceable)

Mechanical

Enclosure (electronic):

- construction: aluminum, polyester powder-coated
- conduit entry: 2 M20 or 1/2" NPT with adapter
- ingress protection: Type 4X / NEMA 4X, Type 6 / NEMA 6, IP67



Product Features

- Uni-Construction polypropylene rod antenna standard
- Easy installation and simple startup
- Programming using infrared intrinsically safe handheld programmer, SIMATIC PDM, or HART[®]
- Communication using HART[®]
- Patented Sonic Intelligence[®] signal processing
- Extremely high signal-to-noise ratio
- Auto False-Echo Suppression of fixed obstructions
- Various flanges, horn and waveguide antenna options available

Process Connections:

- process connection: 1.5" NPT, BSP, or G (polypropylene rod antenna)
- flange connections: refer to Radar Accessories page for more connections

Weight

- < 2 kg (polypropylene rod antenna)

Antenna

- polypropylene rod: hermetically sealed construction, standard 100 mm (4") shield for maximum 100 mm (4") nozzle, or optional 250 mm (10") long shield
- for information on PTFE rod, horns and waveguides, see Radar Accessories page

Environmental

- location: indoor/outdoor
- altitude: 5000 m (16404 ft.) max.
- ambient temperature: -40 to 80°C (-40 to 176°F)
- relative humidity: suitable for outdoor (Type 6 / NEMA 6 / IP67 enclosure)
- installation category: I
- pollution degree: 4

Process

- temperature at process connection: varies with process connection type. See Derating curves for more information
- pressure (vessel): varies with process connection type. See Derating curves for more information

Approvals

- general: CSA_{US/C}, FM, CE
- radio: FCC, Industry Canada, and European (R&TTE)
- hazardous:
 - Europe: ATEX II 1G EEx ia IIC T4
 - USA: FM Class 1, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Class III; intrinsically safe with suitable barrier)
 - Canada: CSA Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Group G; (intrinsically safe with suitable barrier)

* Under reference conditions

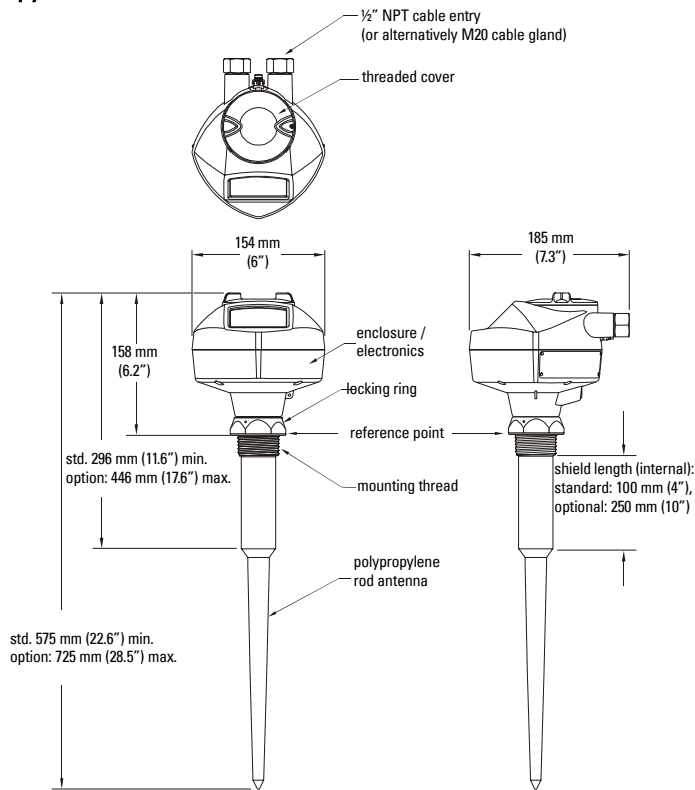
HART is a registered trademark of the Hart Communications Foundation.

Specifications are subject to change without notice.

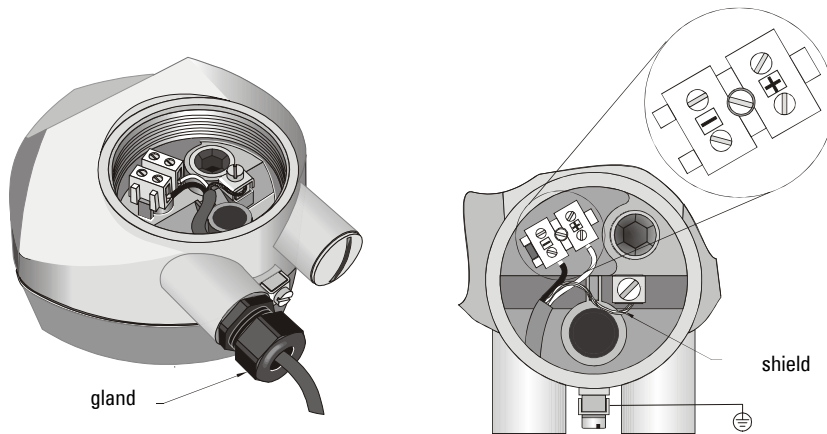
SITRANS LR 200

Dimensions

SITRANS LR 200 with Polypropylene Shielded Rod Antenna



Wiring



Connect the wires to the terminals as shown: the polarity is identified on the terminal block.

Notes

- dc terminal shall be supplied from an SELV source in accordance with IEC-1010-1 Annex H.
- all field wiring must have insulation suitable for rated input voltages.
- use shielded twisted pair cable (wire gauge 14-22)
- separate cables and conduit may be required to conform to standard instrumentation wiring practices or electrical codes.