

SITRANS Probe LR is a 2-wire, loop powered, 5.8 GHz (6.3 GHz in North America) radar transmitter for level and volume monitoring of liquids and slurries in storage and process vessels. The Probe LR is ideal for applications with chemical vapours, temperature gradients, vacuum or simple pressure, such as tank farms, chemical storage, digesters and long-range applications. SITRANS Probe LR has a range of 0.3 to 20 m (1 to 65 ft).

Probe LR is designed for safe and simple programming using the Intrinsically Safe hand programmer without having to open the instrument's lid. It has a standard Uni-Construction polypropylene rod antenna that offers excellent chemical resistance and is hermetically sealed. The Uni-Construction antenna includes an internal, integrated shield that eliminates vessel nozzle interference. SITRANS Probe LR incorporates Sonic Intelligence[®] signal processing. The Probe LR also has a high signal-to-noise ratio leading to improved reliability. Start-up is easy with as few as two parameters for basic operation. Programming is simple using SIMATIC PDM, HART[®] handheld communicator, or the Intrinsically Safe hand programmer.



Product Features

- Uni-Construction polypropylene rod antenna standard
- Easy installation and simple startup
- Programming using infrared intrinsically safe handheld programmer, SIMATIC PDM, or HART handheld communicator
- Communication using HART
- Patented Sonic Intelligence[®] signal processing
- Extremely high signal-to-noise ratio
- Auto False-Echo Suppression of false echoes

Technical Specifications

Power

- nominal 24 V DC with max. 550 Ohm.
- maximum 30 V DC
- 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: 0.3 to 20 m (1 to 65 ft.)
- blanking distance: 0.3 m (1 ft), plus shield length
- accuracy: \pm the greater of 0.1% of range or 10 mm (0.4")
- influence of ambient temperature: 0.006% / K
- repeatability: ± 5 mm
- dielectric constant: $\epsilon_r > 1.6$ (for < 3 use stillpipe)
- update time: 1 second
- memory: non-volatile EEPROM, no battery required

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 II 1 G, EEx ia IIC T4, certificate SIRA 01ATEX2147 CSA and FM Class 1, Div. 1, Gr. A, B, C, D T6 @ max. ambient temperature of 40 °C (104 °F)
- 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):

- body construction: PBT (Polybutylene Terephthalate)
- lid construction: PEI (Polyether Imide)
- conduit entry: 2 x M20 or 2 x 1/2" NPT with adapter
- ingress protection: Type 4X / NEMA 4X, Type 6 / NEMA 6, IP67, IP68

Process Connections:

- process connection: 1.5" NPT, BSP, or G

Weight

- 1.97 kg (4.35 lb)

Antenna

- polypropylene rod: hermetically sealed construction, standard 100 mm (4") shield for maximum 100 mm (4") nozzle, or optional 250 mm (10") long shield

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: -40 to 80 °C (-40 to 176 °F)
- pressure (vessel): 3 bar, gauge (43.5 psi, gauge)

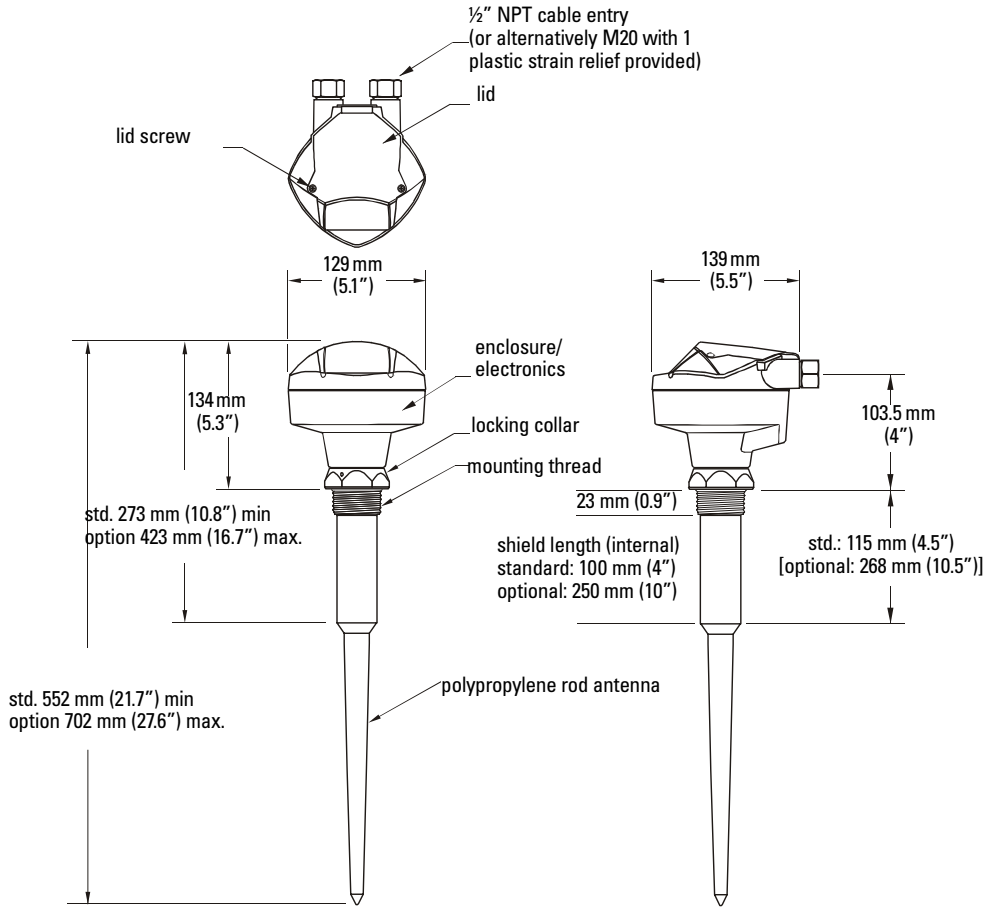
Approvals

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

* Under reference conditions
HART is a registered trademark of the Hart Communications Foundation.
Specifications are subject to change without notice.

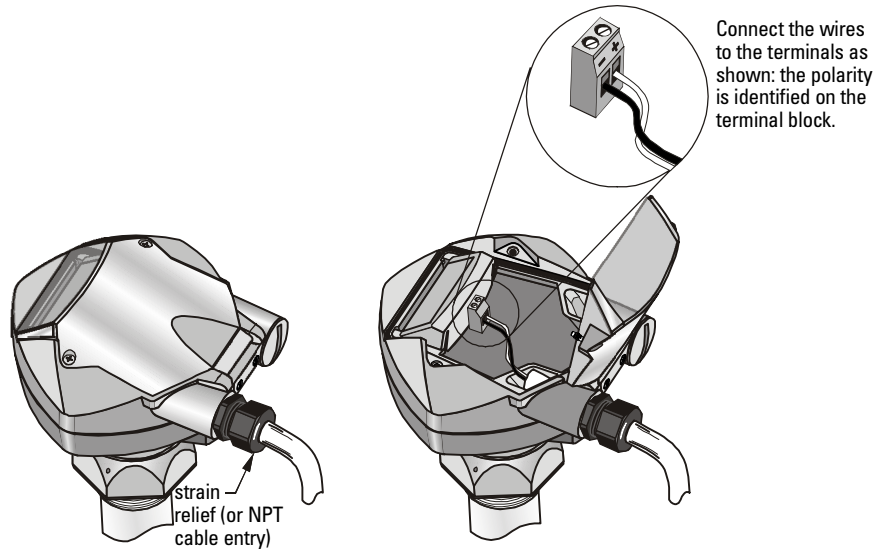
SITRANS Probe LR

Dimensions



LEVEL MEASUREMENT
CONTINUOUS LEVEL

Wiring



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.