



SmartRadar LT

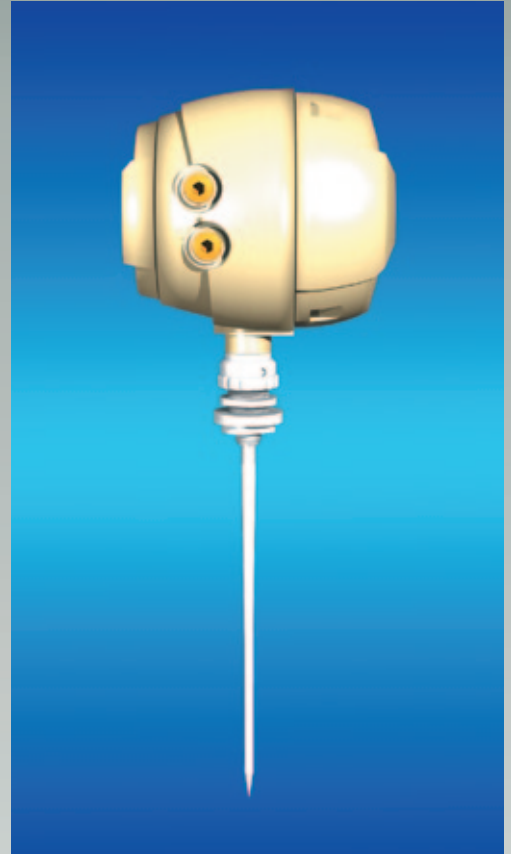
The advanced radar level gauge for intermediate storage tanks of liquids

The SmartRadar LT is the latest radar level gauge from Enraf. It features a number of innovative technological developments, resulting in a state-of-the-art instrument.

SmartRadar LT is intended for level measurement of intermediate storage tanks with an accuracy complying with the API standards, Chapter 3.1B. It is a reliable instrument which will continue to give consistent results for many years to come.

The SmartRadar LT has reaped the benefit of Enraf's advanced digital processing and digitizing know-how. Using the new digital Advanced Radar Transceiver (ART) and the new Smart Echo Analysis (SEA) means highly reliable processing resulting in superb measuring results.

In addition to Enraf's own Bi-Phase Mark communication protocol, HART and other protocols are also available for integrating SmartRadar LT into an existing control system. Remote service and diagnostics can also be realized using these communication protocols.



For all applications



Benefits

- Accuracy for intermediate measurements
- Remote service
- Extremely reliable
- Maintenance free
- Withstands thunderstorms



Enraf

Technical specifications

SmartRadar LT

Measuring specifications

Measuring range	: 0 m to 40 m (0 ft to 131 ft), with RoD antenna 0 m to 18 m (0 ft to 59 ft)
Minimum ullage	: 0.5 m (1.6 ft), with high pressure antenna 0.5 m (1.6 ft) from cone end
Instrument accuracy	: ± 3 mm (0.12")
Measuring resolution	: 0.1 mm (0.004")

Principles

Measuring principle	: FM Synthesized Pulse Reflectometer
Signal processing	: Advanced Digital Signal Processing (ADSP)
Operating frequency	: X-band (9.5 GHz to 10.6 GHz) (FCC: 9.5 GHz to 10.5 GHz)

Mechanica

Dimensions	: See drawing opposite
Weight	: 10 kg excluding antenna and separator
Cable entries	: 3pcs 3/4"NPT (Pending on regulations Ex-d cable glands must be used)

Environmental

Ambient temperature	: -40 °C to +60 °C (-40 °F to +140 °F) - For Ex applications -40 °C to +60 °C (-40 °F to +140 °F)
Storage temperature	: -50 °C to +85 °C (-58 °F to +185 °F)
Protection class	: IP 54 according to EN 60529 (For U.S. NEMA 4)
Safety	: Explosion-proof - EEx de [ia/ib] IIB T4 according to CENELEC - Class 1, Division 1, Groups B, C and D, acc. ANSI / NFPA 70 (Factory Mutual)
Over voltage protection	: II
Pullution degree	: I

Materials

Instrument unit housing	: Aluminum alloy G-AlSi7 Mg Wa, mat. No. 3.2371
Instrument unit finish	: Chromatized according to MIL-C-5541C
O-rings: Wetted	: Viton
Non-wetted	: Buna NBR70

Electrical

Power supply	: 100 V to 240 V AC, autoselect (+10 % to -15 %) optional 24 V DC to 64 V DC, autoselect (+10 % to -15 %)
Frequency variations	: 45 / 65 Hz
Power rating	: Basic 10 VA, 25 VA max. with options
Lightning protection	: Full galvanic separation via isolation transformers

Transmission

Type	: Serial, ASCII coded, Bi-Phase Mark modulated (BPM)
Protocol	: Standard Enraf fieldbus (GPU protocol)
Common mode rejection	: >69 dB
Cabling	: Two conductors, twisted pair, $R_{\max} = 200 \Omega / \text{line}$, $C_{\max} = 1 \mu / \text{F}$, max. lenght 10 km

Options

i.s. output channel	: For Tank side Indicator
Communication boards	
Output	: - RS-232C or RS-485, for indoor use or radio modem connection 4 - 20 mA with digital communication based on HART protocol, - accuracy ± 0.1 %, full scale
Alarm relay output	: 1 x SPDT, galvanically isolated, $V_{\max} = 240$ V AC, $I_{\max} = 3$ A
Infrared connector	: Serial communication with Portable Engineering Terminal (PET)

Outputs

- Standard : Enraf Bi-Phase Mark communication
- Optional : • RS-232C or RS-485 level output
- HART & 4 - 20 mA level output

For communication to indicators and systems

- Intrinsically-safe channel for the Tank Side Indicator
- Relay for hard wire level alarms

Inputs

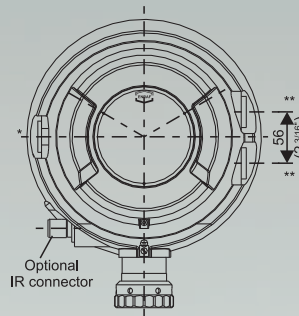
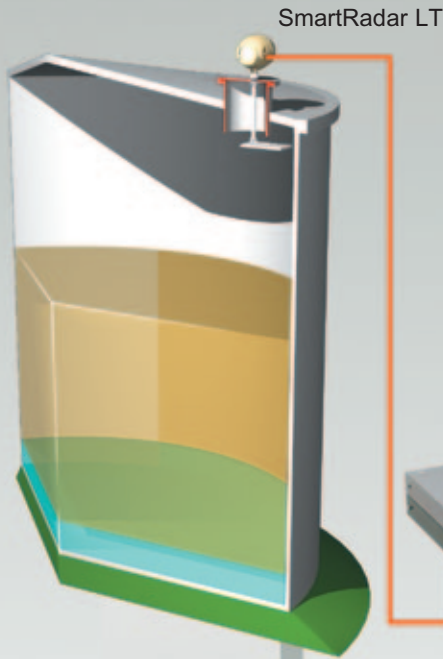
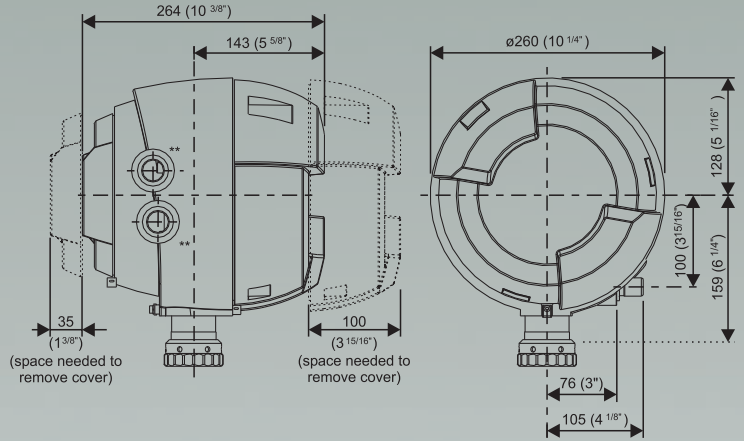
- HART pressure transmitters
- Spot temperature element
- Average temperature element
- Interface probe
- Independent level alarm probe

Configuration

- Ensite configuration program for use with a PC or laptop using Enraf Bi-Phase Mark communication, RS-232C, RS-485, HART interface
- Portable Engineering Terminal using infra-red connector

Display (optional)

- Field Display Indicator and Control Panel Indicator using Enraf Bi-Phase Mark communication
- Tank Side Indicator using intrinsically-safe connection



* Cable entry 3/4" NPT, Ex-i (1x)
 ** Cable entry 3/4" NPT (2x)



CIU Prime



CIU Plus



Entis Pro Inventory system



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