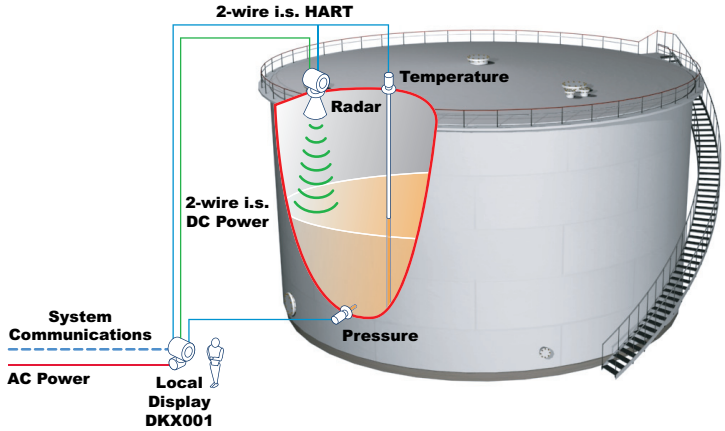
FMR62 Series Radar Tank Gauges

For 80GHz level measurement in aggressive liquids or applications with hygiene requirements.

Highlights

- Accuracy: ±1mm (0.04in)
- 2-wire technology: Reduces on tank wiring costs and allows easy implementation into existing systems.
- Non-contact measurement: Tank top is almost independent from product properties.
- Integrated PEEK antenna or PTFE-plated, flush-mounted antenna
- Standard range to 262 ft (80 m).
- Easy onsite operation using built-in touch control display without opening enclosure (or optional push button display with cover removed).
- Access historic data from device integrated memory (HistoROM) and transfer configuration setting from device to device.
- Easy commissioning and diagnostics using Windows® based software.
- HART protocol.
- High temperatures: Suitable for process temperatures from -40°C (-40°F), up to 200°C (392°F).
- Pressure: -1 to +25 bar (-14.5 to +362.6 psi)
- Approved for use in explosive hazardous locations.
- Optional: Integrated over voltage protection.
- SIL 2 approved for overspill protection system applications or SIL 3 for standalone applications.
- Optional remote display (FHX50).
- Bluetooth®wireless technology for commissioning, operation, and maintenance via free iOS/Android app SmartBlue, with optional BT10 Bluetooth module



Example Tank Gauging System

Product Options

Approvals & Certifications

- FM, CSA, ATEX, IECEx, NEPSi, KC, INMETRO, JPN, and TIIS

Antenna

- FKM Viton GLT, –40 to 200 °C (–40 to 392 °F) (with or without gas-tight feed through)
- FFKM Kalrez, –20 to 200 °C (–4 to 392 °F) (with or without gas-tight feed through)
- PTFE cladded, –40 to 200 °C (–40 to 392 °F) (with or without gas-tight feed through)

Seal

- Integrated, PEEK, 3/4"
- Integrated, PEEK, 1-1/2"
- PTFE cladded flush mount DN50/2"
- PTFE cladded flush mount DN80/3"

Process Connections

- Thread: ISO228 G3/4, ISO228 G1-1/2, ANSI MNPT3/4, ANSI MNPT1-1/2: 316L
- Tri-Clamp ISO2852 DN40-51 (2"), ISO2852 DN70-76.1 (3"), ISO2852 DN101.6 (4")
- NPS Cl.150, PTFE > 316/316L; 2", 3", 4", 6"
- NPS 4" Cl.300, PTFE > 316/316L
- PN10/16, PTFE > 316L; DN50, DN80, DN100, SN150
- 10K, PTFE > 316L; 50A, 80A, 100A, 150A
- DIN11851 PN25 slotted nut, PTFE > 316L; DN50, DN80
- DN, & RF

Output Options

- HART

Gland Entry

- Metric, NPT, G

Accuracy

- Accuracy, ±1mm (0.04in)

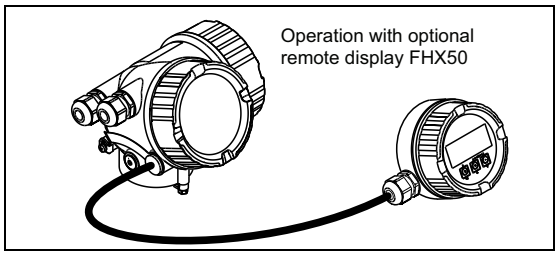
Technical Specifications

NOTE! This product conforms to all applicable industry standards and approvals, such as climate class, electromagnetic (EMC), vibration, and radio frequency (RF). See product installation manual.

NOTE! These specfications apply to the FMR60 under reference operating conditions (DIN EN IEC 61298-2 / DIN EN IEC 60770-1) with no major interfererence reflections inside the signal beam.

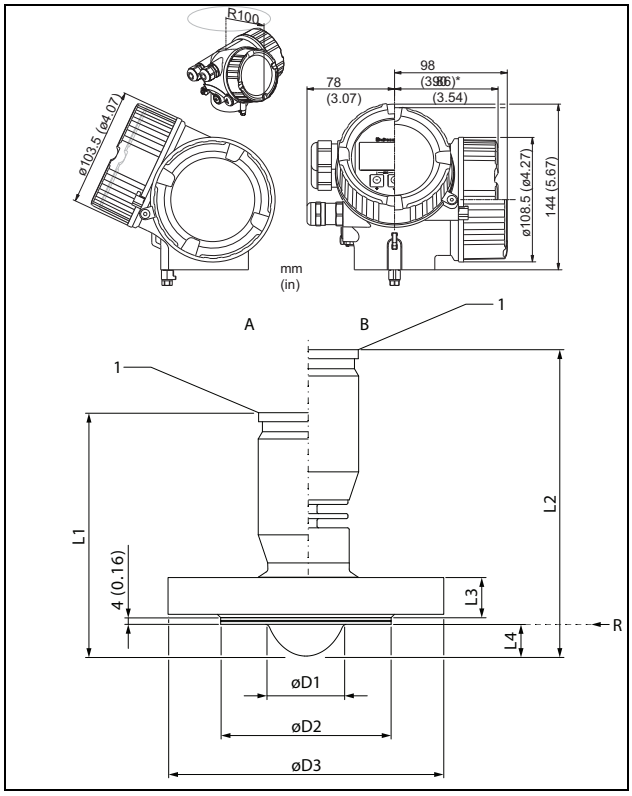
- Temperature = +24 °C (+75 °F) ±5° F (±9° C)
- Pressure = 960 mbar abs. (14 psia) ±100 mbar (±1.45 psi)
- Humidity = 60% ±15%
- Reflector: metal plate with a minimum diameter of 1 m (40 in)
- No major interference reflections inside the signal beam

Reference Accuracy	Measuring distance up to 0.8 m (2.62 ft): max. ±4 mm (±0.16 in) - digital, ±0.03% analog Measuring distance > 0.8 m (2.62 ft): ±1 mm (±0.04 in), digital, ±0.02% analog Non-repeatability - ≤ 1 mm (0.04 in)
Power Consumption	· 2-wire; 4-20mA HART: < 0.9 W · 2-wire; 4-20mA HART, switch output: < 0.9 W · 2-wire; 4-20mA HART, 4-20mA: < 2 x 0.7 W
Current Consumption	HART: Nominal current: 3.6 to 22mA. The start-up current for multidrop mode can be parametrized (is set to 3.6mA on delivery) Breakdown signal (NAMUR NE43): adjustable: 3.59 to 22.5mA
Weight	2.7 - 7.4 kg (5.95 - 16.31 lb) plus flange weight
Enclosure	Degree of protection: • With closed housing tested according to: – IP68, NEMA6P (24 h at 1.83 m under water surface) – For plastic housing with transparent cover (display module): IP68 (24h at 1.00 m under water surface) – IP66, NEMA4X · With open housing: IP20, NEMA1 · Display module: IP22, NEMA2 · Housing GT18: 316L, corrosion resistant · Housing GT19: plastic · Housing GT20: aluminium, seawater repellent, powder coated
Antenna	IP 68 (NEMA 6P)
Conduit Entries	Gland M20; Material dependent on the approval: – For Non-Ex, ATEX, IECEx, NEPSI Ex ia/ic: Plastics M20x1.5 for cable ⌀5 to 10 mm (0.2 to 0.39 in) – For Dust-Ex, FM IS, CSA IS, CSA GP, Ex nA: Metal M20x1.5 for cable ⌀7 to 10 mm (0.28 to 0.39 in) 1) – For Ex d: No gland available Thread – ½" NPT – G ½" – M20 × 1.5 Plug M12 / Plug 7/8" – Only available for Non-Ex, Ex ic, Ex ia
Ambient Temperature	Unit: -40 °F and +176 °F (-40 °C and +80 °C) Display: -4 °F and +158 °F (-20 °C and +70 °C)
Operating Frequency	Approx. 80 GHz, up to 8 devices can be installed in the same tank
Dielectric Constants	A0 - 1.2 to 1.4 - Butane, liquid nitrogen, liquefied hydrogen A - 1.4 to 1.9 - non-conducting liquids, e.g. liquefied gas B - 1.9 to 4 - non-conducting liquids, e.g. benzene, oil, toluene, etc... C - 4 to 10 - e.g. concentrated acids, organic solvents, esters, aniline, alcohol, acetone, etc... D - > 10 - conducting liquids, e.g. aqueous solutions, dilute acids, and alkalis
Approvals	FM, ATEX, IEC Ex, or NEPSI



Dimensions

Note! Aluminum housing shown with example antenna (not all possible configurations shown).



A Seal: PTFE cladded, -40 to 150°C/-40 to 302°F

B Seal: PTFE cladded, -40 to 200°C/-40 to 392°F

R Reference point of the measurement

I Bottom edge of housing

Feature 70 "Antenna"	øD1	L1	L2	L4
GM: PTFE cladded flush mount DN50	48 mm (1.89 in)	147 mm (5.79 in)	190 mm (7.48 in)	19 mm (0.75 in)
GN PTFE cladded flush mount DN80	75 mm (2.95 in)	159 mm (6.26 in)	202 mm (7.95 in)	32 mm (1.26 in)

Note! Refer to TI01303F for the various antenna and process connection dimensions.

Varec, Inc., 5834 Peachtree Corners East, Peachtree Corners (Atlanta), GA 30092 USA
Tel: +1 (770) 447-9202 | Toll Free: +1 (866) 698-2732 | Fax: +1 (770) 662-8939 | www.varec.com

Document Code: TEC092-20210917