

evo 1610

OIML Certified Radar Gauge

For terminal operators, refinery engineers, custody-transfer specialists, and EPCs who need OIML certified accuracy, non-contact level measurement, safe calibration in hazardous areas, and seamless system integration, the EVO 1610 delivers ± 0.5 mm accuracy, OIML R85 custody-transfer certification, and FMCW radar technology that performs in the most challenging storage and process applications. The evo 1610 comes in two variants. One of which is a low-power native intrinsically safe Foundation Fieldbus (FF) radar level gauge. Any certified Foundation Fieldbus handheld calibrator can be used to program and calibrate the device using readily available Foundation Fieldbus Device Descriptors (DD's). The other variant of the evo 1610 features a local graphical LCD display, supports a wide range of industry standard protocols, including L&J Tankway and Modbus on RS-485, and can be calibrated via infrared with the MCG 2150 Remote Calibrator.



Key Features

FMCW Technology

Frequency-modulated continuous wave radar measures level via frequency shift rather than pulse reflection, remaining unaffected by pressure, temperature, or vapor composition.

Accuracy & Resolution

± 0.5 mm accuracy with 0.1 mm resolution ensures audit-ready custody-transfer data and detects

Remote Calibration

The MCG 2150 Remote Calibrator enables safe, wireless setup without opening explosion-proof enclosures.

Protocol Integration

HART, Modbus, RS-485, and Tankway communications simplify integration with DCS/PLC and legacy systems.

Global Certifications

FM, CSA, ATEX, and IECEx approvals ensure worldwide compliance and faster project approvals.

Environmental Performance

Non-contact radar eliminates product contamination, lowers VOC emissions, and reduces maintenance.

Typical Applications



CUSTODY TRANSFER

Inaccurate measurements cause costly disputes. EVO 1610's ± 0.5 mm accuracy ensures fair trade and reconciled inventories.



CHEMICAL STORAGE

Corrosive vapors attack contact sensors. The non-contact radar design minimizes fouling and extends gauge life.



FOAMY LIQUIDS

Foam disrupts ultrasonic readings. FMCW radar penetrates foam and vapor for continuous, reliable results.



PROCESS MONITORING

Multi-protocol output allows real-time inventory visibility and predictive maintenance integration.



CRYOGENIC & HIGH-PRESSURE SERVICE

Rapid temperature or dielectric changes affect capacitance probes. EVO 1610 automatically compensates for these variations.



REFINED PRODUCTS STORAGE

Provides reliable, drift-free level measurement across gasoline, diesel, jet fuel, and other finished products to support safe loading, blending, and tank-farm operations.

Benefits



Revenue Loss

Billing discrepancies arise from measurement errors. Custody-grade accuracy protects profits.



Maintenance Costs

Moving parts and drift increase downtime. Solid-state FMCW electronics require no mechanical wear components.



Safety Risks

Manual calibration requires tank entry. Infrared ground-level calibration improves safety and saves time.



Integration Delays

Legacy systems complicate retrofits. Multi-protocol support allows drop-in replacements with minimal wiring changes.



Compliance Pressure

Custody-transfer operations demand certified gauges. EVO 1610's OIML R85, FM, and ATEX approvals simplify audits and acceptance testing.



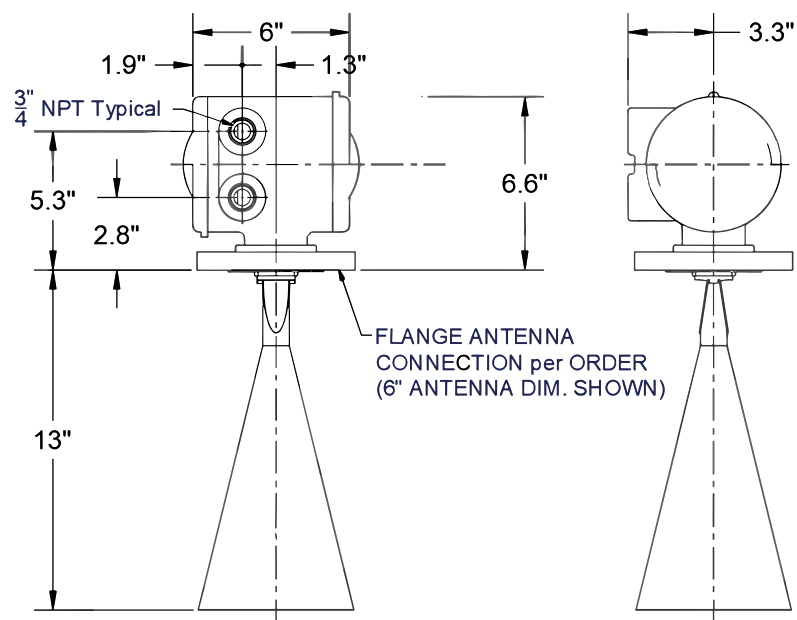
Lifecycle Savings

Reduced maintenance and faster commissioning lower total ownership costs over the gauge's service life.

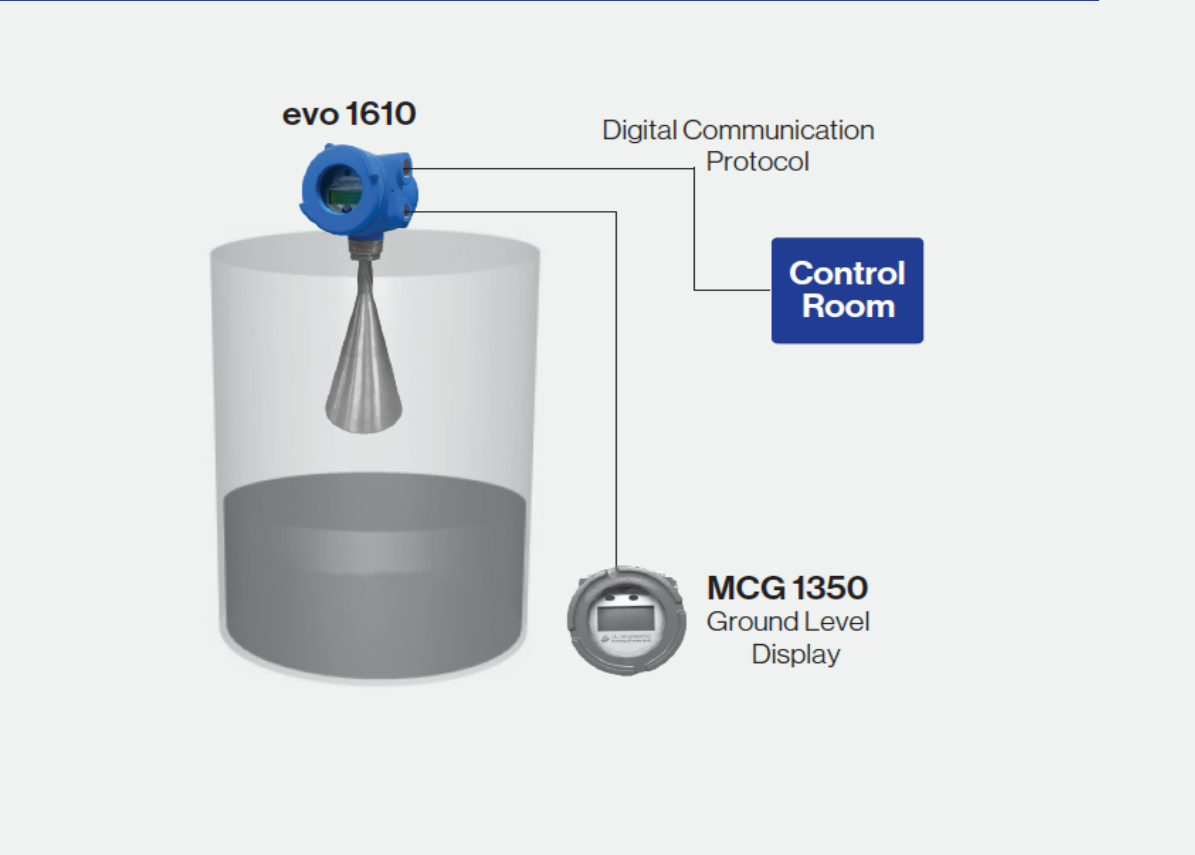
Technical Specifications & Key Features

Model:	EVO 1610 Microwave Radar Tank Gauge
Technology:	Frequency-Modulated Continuous Wave (FMCW) Radar at 10 GHz for non-contact liquid level measurement in oil, gas, and chemical storage applications.
Measurement Performance:	Accuracy: ±0.5 mm (custody-grade) Resolution: 0.1 mm Measurement Type: Continuous, non-contact, independent of vapor, temperature, or pressure variations.
Process Conditions:	Temperature Range (Medium): -40 °F to +185 °F (-40 °C to +85 °C). Ensures antenna and housing stability under rated process conditions. Pressure Rating: Up to 150 PSIG or 300 PSIG (10 bar).
Construction & Materials:	Housing: Aluminum or 316 Stainless Steel. Antenna Seal: PTFE for high chemical resistance and long-term reliability.
Electrical & Communication:	Power Supply: 12 – 65 VDC. Communication Interfaces: RS-485 and L&J Tankway. Protocol Support: Compatible with multi-protocol integration for legacy and modern control systems.
Calibration & Configuration:	Setup Method: Intrinsically safe infrared remote calibration via MCG 2150 handheld unit. Tank Entry: Not required — enhances safety and simplifies commissioning.
Mechanical Connection:	Process Mounting: 2" NPT thread or ANSI/DIN flange options available.
Certifications & Compliance:	Custody Transfer: OIML R85-1 & R85-2. Hazardous Area Approvals: FM, CSA (North America), ATEX, and IECEx (Global).
Compatible Accessories:	MCG 2150 Remote Calibrator (Infrared, Intrinsically Safe). **MCG 1650 Smart Core Display, options output: 4-20mA, Hart, Avg Temperature and Spot Temp. Wired/Wireless proximity switches for remote status and safety monitoring.

Dimensions



Typical System Layout



Model Number Selection

The model number will consist of a base number 1610 followed by 9 digits.
These digits will represent 10 sets of option tables:

A • APPROVAL	
1	FM Explosion Proof
2	CSA Explosion Proof
3	ATEX Explosion Proof
4	IECEX Explosion Proof

B • HOUSING MATERIAL	
1	Aluminum

C • ANTENNA OPTIONS	
0	No Antenna
1	4" Conical Horn Antenna 316SS
2	6" Conical Horn Antenna 316SS
3	8" Conical Horn Antenna 316SS
4	15" Parabolic Antenna
5	4" Stilling Well Antenna 316SS
6	6" Stilling Well Antenna 316SS
7	8" Stilling Well Antenna 316SS

D • PROCESS CONNECTION	
0	No Flange, 2" NPT Connection
3	4" 150# RF ANSI 316SS
4	6" 150# RF ANSI 316SS
5	8" 150# RF ANSI 316SS

E • DIGITAL COMMUNICATION PROTOCOL	
1	Foundation Fieldbus
2	L&J Tankway
3	GPE 31422, 31423
4	Varec 4-Wire (1800, 1900)
5	Modbus on L&J Tankway
6	Modbus on RS-485 (2-Wire)
7	HART
8	WirelessHART

F • POWER	
1	9-32 VDC*
2	48 VDC

G • DISPLAY	
0	No Display*
1	Local LCD Display

H • OMIL	
0	No OMIL
1	OIML R85 Approval

I • GROUND LEVEL DISPLAY COMPATIBILITY	
0	No Ground Level Display*
1	Ground Level Display Compatibility**

*Must choose table E option 1
** Requires MCG evo 1650 Smart Core Ground level Display

Summary

With over a century of innovation in tank measurement, L&J Technologies continues to set the industry standard for precision, reliability, and safety in radar gauging. The EVO 1610 delivers custody-grade accuracy with solid-state FMCW technology, certified for use in hazardous environments under FM, CSA, ATEX, and IECEx standards. Engineered for effortless integration through RS-485, 4–20 mA, L&J Tankway, and Modbus (via MCG 1650 Smart Core), it ensures seamless compatibility with existing systems. By combining advanced measurement performance, intrinsic safety, and simplified maintenance, the EVO 1610 enables operators to protect product integrity, achieve compliance with OIML R85 standards, and reduce total lifecycle costs across terminals, refineries, and process facilities worldwide.

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This document is for information purposes only. All designs subject to change. Certified dimensions, specifications, and performance data available upon request