



Varec

A COGNESENSE BRAND

7660

Tactical Fuel Gauge

For fuel supply officers, petroleum operations specialists, logistics commanders, and military engineers who need automated inventory measurement without permanent tank infrastructure, certified hazardous area operation, and rapid deployment across forward operating bases, expeditionary fuel points, and disaster response sites, the 7660 Tactical Fuel Gauge delivers automated, continuous pressure and temperature measurement in collapsible storage tanks (CSTs). It installs in minutes as a direct vent pipe replacement, operates across arctic to desert temperatures, and daisy-chains up to four gauges per 8240 Tactical Data Unit. Unlike conventional gauges designed for rigid fixed tanks, the 7660 is purpose-built for the flexible, unpredictable geometry of bladder tanks — the only field-ready automated measurement solution for the collapsible storage infrastructure used by defense and humanitarian organizations.



Key Features

Direct Vent Pipe Replacement

Installs into the existing CST vent pipe opening without drilling, cutting, or modifying the tank, reducing setup time and minimizing operator error.

Military-Grade Quick Disconnects

All power and communications cables use MIL-C-5015 bayonet quick disconnects for fast, tool-free deployment and removal in field conditions.

Dual Pressure and Temperature Measurement

A single sensor captures both pressure (for level calculation) and temperature via an integrated Pt 100 resistance thermometer, eliminating separate instruments.

Hazardous Area Certified

Approved to ISA/CSA Class 1 Division 2 and ATEX/IECEX Ex II 3(1) G standards for safe operation in fuel vapor environments without additional explosion protection.

Daisy-Chain Network Architecture

Up to four 7660 TFGs can connect in series to a single 8240 TDU, reducing cable runs, infrastructure costs, and configuration complexity across multi-tank fuel points.

IP68 Sensor Protection

Rated IP68 at 30 bar, protecting internal components during full fuel immersion — essential for sensors resting on the floor of collapsible tanks.

Typical Applications



FORWARD OPERATING BASE FUEL POINTS

Manual tracking creates accountability gaps; automated gauging provides verified inventory data to command without adding personnel.



EXPEDITIONARY AVIATION FUEL FARMS

JIG and FAA standards require accurate quantities at every transfer point; the 7660 TFG delivers continuous measurement at remote airstrips.



DISASTER RELIEF FUEL DEPOTS

Temporary fuel infrastructure demands rapid setup; vent-pipe replacement installs a full gauging system in minutes with no tools.



REMOTE OIL & GAS SITES

Unmanned locations require autonomous data collection; daisy-chained TFGs supply tank inventory without operator presence.



MILITARY LOGISTICS HUBS

DoD accountability requirements call for auditable records; HART data feeds FuelsManager for timestamped custody-transfer documentation.



TEMPORARY MINING OPERATIONS

Collapsible tanks enable fuel storage where permanent tanks aren't practical; TFGs provide reliable measurement without site modification.

Benefits



Eliminates Manual Measurement Error

Automated pressure sensing replaces dip-stick methods, removing human error from the inventory baseline and improving data accuracy.



Rapid Deployment and Redeployment

Vent-pipe installation and military quick-disconnects enable complete gauge installation in minutes with no special tools.



Continuous 24/7 Inventory Visibility

Queried or continuous measurement provides real-time data upstream, supporting round-the-clock operational decision-making at all command levels.



Theft and Loss Detection

Validated measurement data in FuelsManager highlights discrepancies between receipts and disbursements, helping deter fraud and detect losses early.



Single-Sensor Dual Measurement

Combined pressure and temperature sensing in one unit reduces hardware count, cable complexity, and potential failure points per tank.



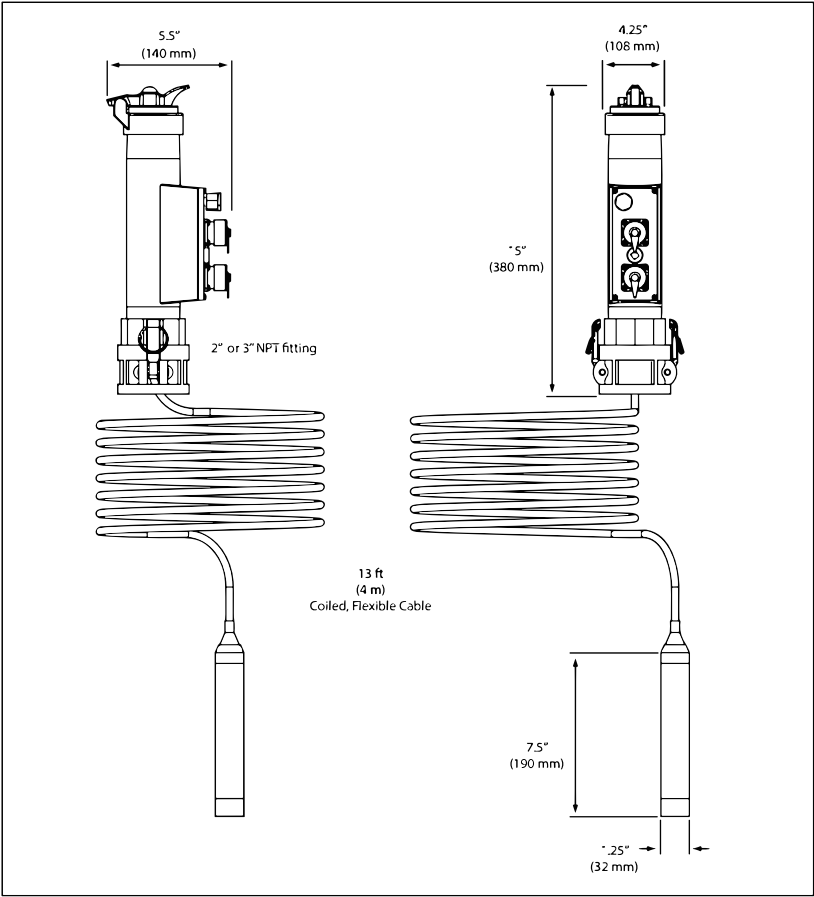
Compliance-Ready Data Output

HART protocol output integrates with FuelsManager to generate auditable records meeting DoD, JIG, and FAA reporting standards.

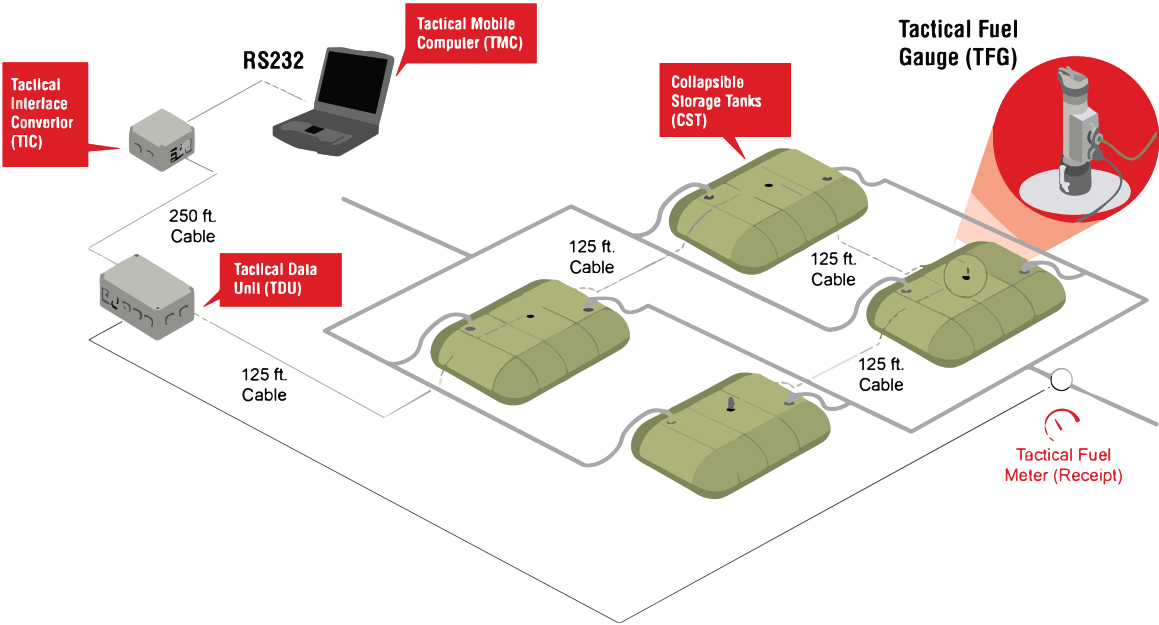
Technical Specifications

Specification	Details
Data Transmission Protocol	4–20 mA (HART)
Environmental Operating Temp.	-4°F to +140°F (-20°C to +60°C)
Power Required	8–36 VDC
Power Consumption	4 mA
Pressure Measurement Ranges	1.45 psig (0.1 bar) to 218 psig (15 bar) 2.9 psig (0.2 bar) to 290 psig (20 bar) ≤ 5.8 psig (0.4 bar) to 363 psig (25 bar)
Sensor Element Type	Integrated resistance thermometer Pt 100, per DIN EN 60751
Temperature Measurement Range	-4°F to +176°F (-20°C to +80°C)
Temperature Resolution	1°K
Sensor Element Dimensions	1.25" Ø × 7.5" long, 13' cable (32 mm Ø × 190 mm long, 4.3 m cable)
Sensor Element Material	PE (polyethylene); compatible with all petroleum fuel products
Sensor Housing	Stainless steel with dry, ceramic-capacitive sensor element
Sensor Element Protection	IP 68 (30 bar)
Vent Pipe Enclosure	Powder-coated aluminum
Vent Pipe Dimensions	4.25 × 5.5 × 15" (108 × 140 × 380 mm)
Vent Pipe Mounting	Standard 2" NPT
Cable Connections	YG95 234/MIL-C-5015 bayonet quick disconnects (×2)
Network Configuration	Up to 4 units daisy-chained per 8240 Tactical Data Unit
Hazardous Area Approvals	ISA/CSA: Class 1, Division 2, Groups C and D ATEX/IECEX: Ex II 3(1)G EX nA [ia Ga] IIB T5 Gc (-40°C ≤ Ta ≤ 85°C)

Dimensions



Typical System Layout



Model Number Selection

N7660

Tactical Fuel Gauge (TFG)

	Approval
AT	ATEX

	Housing Vent Type
1	Not Used
2	2" Passive Vent with Flame Arrestor

	Housing Coupling
A	None
B	2" Cam & Groove Coupling
C	3" Cam & Groove Coupling

	Coatings
0	Not Used
1	Standard Paint

	Accuracy
A	0.1%

Example Code: N7660-1-B-1

Summary

Fuel is the resource that sustains every tactical operation — and accountability for that fuel starts with a single measurement. The 7660 Tactical Fuel Gauge is the hardware that makes that measurement automatic, repeatable, and auditable, in the tanks that no conventional gauge was ever designed to fit. It installs where a vent pipe used to be. It operates in fuel, heat, cold, and field conditions that would compromise general-purpose instruments. It connects in series with other gauges and feeds verified data to FuelsManager® — the software layer that transforms individual tank readings into enterprise-grade inventory intelligence. The 7660 TFG is part of the TacFuels® solution from Varec, a Cognesense company. Cognesense is the only purpose-built platform spanning environmental protection, public health, resource preservation, and operational safety — from physical sensors to AI-driven intelligence. When you deploy the 7660 TFG, you are connecting a collapsible tank at the edge of an operation to a platform trusted in over 100 countries. That is what measure, monitor, protect looks like at the instrument level.

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