

2920



Varec

Float & Tape Transmitter (FTT)

A COGNESENSE BRAND

For terminal operators, refinery engineers, inventory managers, and EPCs who need to connect existing mechanical float & tape gauges to SCADA, inventory management software, and enterprise systems without replacing installed field hardware, the 2920 Float & Tape Transmitter delivers $\pm 1/16$ in (1.58 mm) level accuracy, multi-protocol digital output, and battery-free absolute capacitive encoding that retains exact level position through power interruptions. The 2920 mounts directly to Varec, L&J, GSI, and Sakura float & tape gauges, converting the mechanical displacement of the float into a calibrated digital signal published over Modbus, GPU Bi-Phase Mark, Mark/Space, or L&J Tankway - making the measurement available to FuelsManager®, RTUs, PLCs, DCS systems, and third-party SCADA hosts.

Unlike competitive transmitters that require battery-backed memory to restore level position after a power outage, the 2920's absolute capacitive encoder inherently retains the correct tank level without supplementary hardware. The transmitter also accepts a 3-wire RTD input and up to four HART devices, consolidating level, temperature, and diagnostic data from multiple field instruments into a single tank-top connection. An explosion-proof IP66/NEMA 4 die-cast aluminum enclosure with a capacitive-touch LCD provides on-site configuration and diagnostics without a laptop or external calibration tool.



Key Features

Absolute Capacitive Encoder

Advanced absolute capacitive encoding technology delivers high precision level measurement and automatically retains accurate tank level positioning through power interruptions—without requiring batteries or external backup systems.

Universal Direct Mount Compatibility

The 2920 installs directly onto existing mechanical gauges from Varec, L&J, GSI, and Sakura, enabling rapid digital modernization while preserving the tank's existing mechanical hardware.

Multi-Protocol Communications

The transmitter supports a broad range of communication protocols—including Modbus, GPU Bi-Phase Mark, Mark/Space, and L&J Tankway—ensuring compatibility with both legacy and modern automation platforms.

Integrated HART and RTD Inputs

Built-in support for a 3wire RTD and up to four HART devices allows the 2920 to consolidate level, temperature, and diagnostic data into a single instrument, reducing the number of devices required on the tank top.

Capacitive Touch TankSide Display

A local, capacitive touch display provides simple on tank access to configuration settings, operational information, and diagnostic alerts, improving ease of use during commissioning and maintenance.

Explosion Proof, Rugged Construction

The transmitter is housed in a diecast aluminum IP66/NEMA 4 enclosure, providing long-term durability and certified safety for hazardous industrial environments.



Typical Applications



TERMINAL INVENTORY MANAGEMENT

Real-time digital level and temperature data improves throughput planning and overall inventory control.



REFINERY PROCESS TANKS

Integrated alarming and optional relay outputs enhance process safety and compliance.



AVIATION FUEL FARMS

Provides full host connectivity while maintaining reliable local indication for critical fuel operations.



MECHANICAL GAUGE MODERNIZATION

Delivers a complete digital upgrade while preserving existing mechanical gauges—avoiding costly equipment replacement.



PLC / DCS INTEGRATION

Analog and digital outputs simplify integration into centralized plant automation systems.



HARDWIRED ALARM SYSTEMS

Optional SPDT limit switches provide reliable overfill protection and local annunciation.

Benefits



Retains Level Through Power Loss

Batteryless absolute encoding ensures the transmitter always restores the correct tank level after outages.



Drop-In Replacement for Legacy Gauges

Direct-mount design allows rapid modernization across multiple gauge brands.



Consolidates Multiple Instruments

Combines temperature, HART diagnostics, and level into one device, reducing tank-top clutter.



Universal Protocol Support

Ensures compatibility across nearly any facility architecture - legacy or modern.



Explosion Proof Safety

Rugged diecast enclosure meets ATEX and IECEx requirements for hazardous environments.



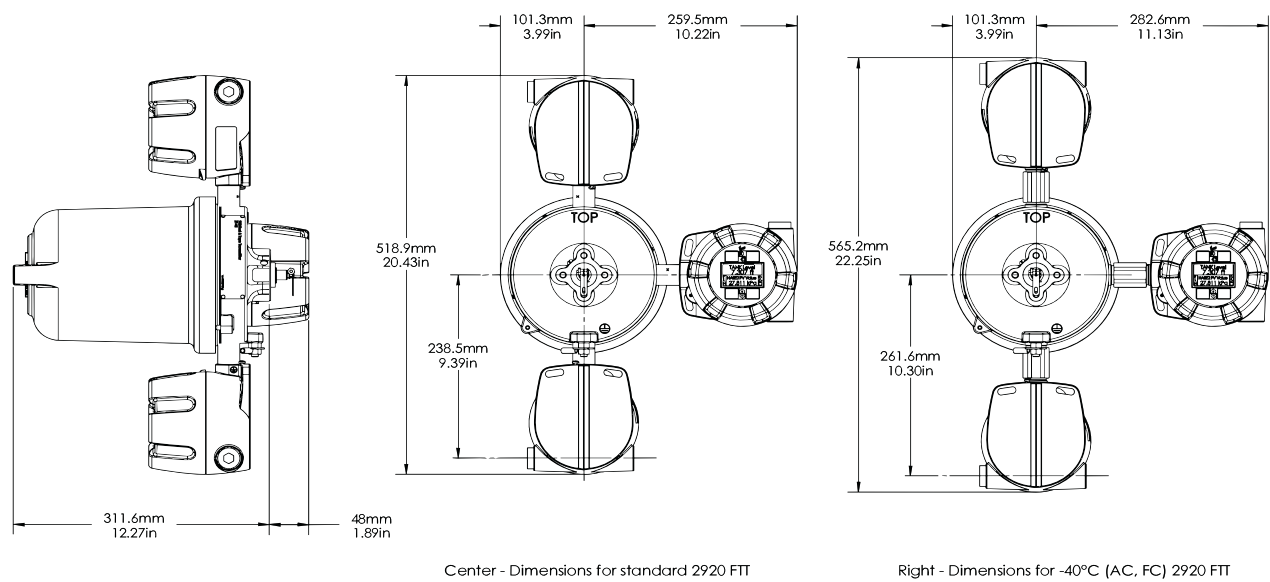
Flexible Relay Automation

Optional relay and annunciator outputs provide local control and overfill prevention functions.

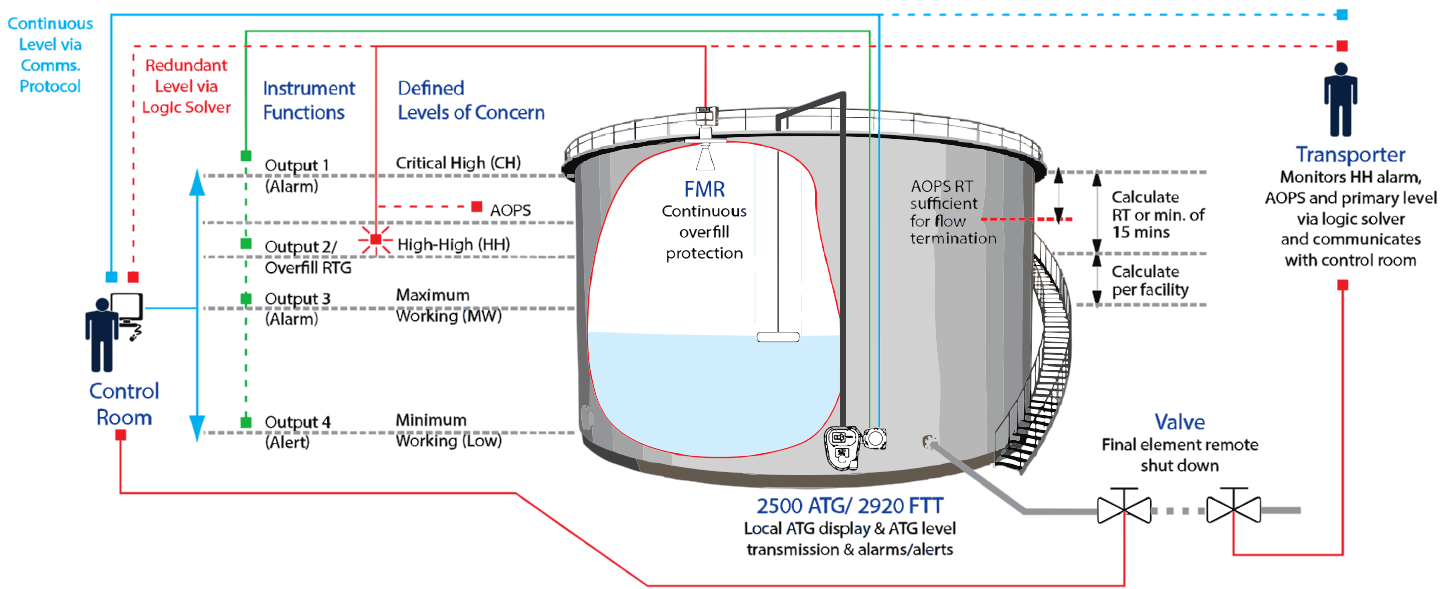
Technical Specifications

Specification	Details
Accuracy & Range	±1/16 in (1.58 mm) accuracy; measurement ranges up to ~120 ft (36 m)
Encoder Technology	Absolute capacitive encoder with direct drive gearing; retains level through power outages
Supported Protocols	Modbus (EIA-485/GSI Type), GPU Bi-Phase Mark, Mark/Space, L&J Tankway
Standard I/O	2 digital inputs, 1 analog input, 2 analog outputs (4–20 mA)
Optional I/O	Additional 2 digital inputs + 4 dry contact outputs, or 2–4 SPDT limit switches
Temperature & HART	3-wire RTD input; HART master for up to 4 devices
Power Requirements	20–65 VDC or 40–65 / 110 / 220–240 VAC with galvanic isolation
Environmental Tolerance	–13 to +185 °F (cFMus), –4 to +185 °F (ATEX/IECEx), extended –40 to +185 °F; 0–95% RH non-condensing
Enclosure	Explosion-proof die-cast aluminum; IP66 / NEMA 4; ¾" NPT conduit entries
Mounting Compatibility	Direct mount for Varec, L&J, GSI, and Sakura float and tape gauges

Dimensions



Typical System Layout



Model Number Selection

N2920-

2920 Float & Tape Transmitter (FTT)

	Housing
FC	"cFMus (USA & Canada) -- Low Temperature Explosionproof, Class I, Division 1, Groups C&D T5 -25 °C ≤ Ta ≤ +85 °C, -- Flameproof, Class I, Zone 1, AEx/Ex d IIB T5 -20 °C ≤ Ta ≤ +85 °C"
FM	"cFMus (USA & Canada) -- Explosionproof, Class I, Division 1, Groups C&D T5 -25 °C ≤ Ta ≤ +85 °C, -- Flameproof, Class I, Zone 1, AEx/Ex d IIB T5 -20 °C ≤ Ta ≤ +85 °C"
FC	"ATEX/IECEX (International) - Low Temperature Flameproof, Zone 1, Ex II 2G, Ex d IIB T5 Gb -20 °C ≤ Ta ≤ +85 °C"
AT	"ATEX/IECEX (International) - Flameproof, Zone 1, Ex II 2G, Ex d IIB T5 Gb -20 °C ≤ Ta ≤ +85 °C"

	Power Input
1	DC
2	AC

	Communications
MS	Mark/Space
MB	EIA-485 MODBUS/GSI Type MODBUS
LJ	Tankway (L&J)
BP	BiPhase Mark

	Limit Switches
0	None
1	2 SPDT Limit Switches (18° adjustable dwell, positive activation) ¹
2	4 SPDT Limit Switches (18° adjustable dwell, positive activation) ¹

	Range (Applies only to models with limit switches) ³
N	N/A (Select this option if no limit switches are supplied) ²
A	0-25 ft
B	0-50 ft
C	0-100 ft
D	0-7.5 m
E	0-15 m
F	0-30 m

	Digital I/O ³
1	2 Digital Inputs
2	4 Digital Inputs + 4 Dry Contact Outputs

	Analog I/O ³
N	None
A	Analog Input (4-20 mA)
B	Analog Output (4-20 mA)
C	Analog Input & Outputs (4-20 mA)

	HART Inputs/Outputs (HART Master) ³
0	None
1	HART Master I/O

	Display
A	Forward (Standard)
B	Reverse
C	Right Side (L&J Gauges)

	Additional Junction Box Price Addition ³
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Example Order Code: N2920-FM-2-MB-0-N-1-N-0

N2920-

2920FTT Electronics Assembly

	Housing
EA	No Housing. Electronics Assembly Only

	Power Input
1	DC
2	AC

	Communications
MS	Mark/Space
MB	EIA-485 MODBUS/GSI Type MODBUS
LJ	Tankway (L&J)
BP	BiPhase Mark

Summary

The 2920 Float & Tape Transmitter converts installed mechanical float & tape gauges into digital field instruments, publishing level and temperature data over open protocols to FuelsManager®, RTUs, PLCs, and SCADA systems. Its battery-free absolute encoder retains level position through power interruptions; its direct-mount compatibility spans the major float & tape gauge platforms, and its consolidated RTD and HART inputs reduce the number of tank-top connections required. For terminals, refineries, and aviation fuel facilities seeking to digitize their mechanical gauge fleet without replacing installed hardware, the 2920 FTT is the direct upgrade path.

	Limit Switches
0	None
1	2 SPDT Limit Switches (18° adjustable dwell, positive activation) ¹
2	4 SPDT Limit Switches (18° adjustable dwell, positive activation) ¹

	Range (Applies only to models with limit switches) ³
N	N/A (Select this option if no limit switches are supplied) ²
A	0-25 ft
B	0-50 ft
C	0-100 ft
D	0-7.5 m
E	0-15 m
F	0-30 m

	Digital I/O ³
1	2 Digital Inputs

	Analog I/O ³
N	None
A	Analog Input (4-20 mA)
B	Analog Output (4-20 mA)
C	Analog Input & Outputs (4-20 mA)

	HART Inputs/Outputs (HART Master) ³
0	None
1	HART Master I/O

	Display
A	Forward (Standard)
B	Reverse
C	Right Side (L&J Gauges)

Example Order Code: N2920-EA-2-MB-0-N-1-N-0

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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