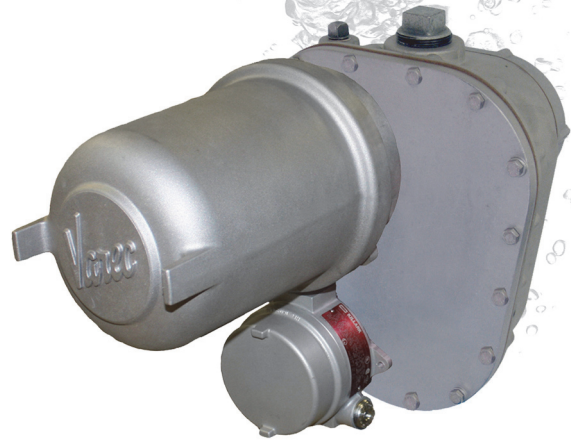


# 2910 Float & Tape Transmitter

Transmit level and temperature data from the tank side to the control room and activate alarms or relays with SPDT cam-operated switches

**Varec**<sup>®</sup>



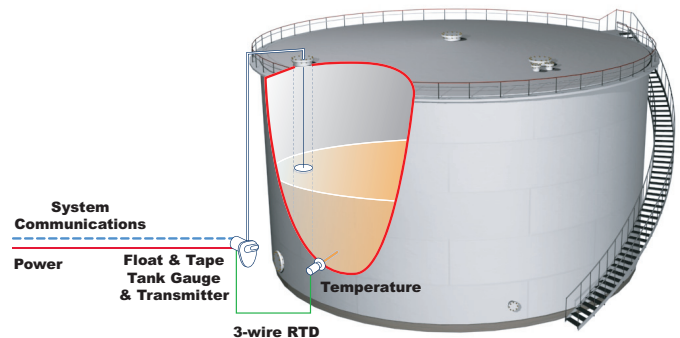
## Highlights

- Easy in-service installation - mounts directly to most mechanical tank gauges, including Varec, GSI, L&J and Sakura
- Minimal service or repair with no parts to wear out - absolute encoder utilizes capacitive sensors and precision direct-drive gearing transmits accurate level reading to the control room
- Integrate temperature measurement for volumetric calculations with an on-board 3-wire RTD temperature input
- Industry Standard Protocols - MODBUS, Mark/Space, or Tankway options
- Activate alarms or relays with; 2 discrete inputs (as standard), 2 inputs or 4 contact outputs (as option) or 2-4 SPDT cam-operated switches (as option)
- 20-65 VDC or optional 40-240 VAC on-board power supply
- No battery back-up is required - maintains the correct level reading during and after a power outage
- cFMus (USA and Canada), IECEx and ATEX approved for use in hazardous areas
- IP66, NEMA Type 4 enclosure rating
- Self-diagnostics - identifies problems and goes off-line without closing the entire field communication loop. Serial port connection for advanced diagnostics and troubleshooting
- Isolated power and communications circuits

## Applications

The 2910 Float & Tape Transmitter (FTT) provides data from the tank-side to the control room for use in inventory management volumetric calculations. The 2910 FTT utilizes precision direct-drive gearing and an absolute capacitive encoder to accurately convert the mechanical level measurement from the connected tank gauge. It is also able to integrate a single temperature sensor and provide cam-operated switches for the indication of alarms or drive relays. The encoder and electronics can be ordered as a single unit (no housing) so that they can be placed inside an existing housing at the

tank-side. Alternatively, it can be ordered as a limit switch only device that does not require power.



Example Tank Gauging System

## Technical Specifications

### Performance

|               |                   |
|---------------|-------------------|
| Accuracy      | ± 1/16" (1.58 mm) |
| Repeatability | ± 1/16" (1.58 mm) |

### Functional

|                        |  |
|------------------------|--|
| Available ranges       | 0 to 120 ft; Meters: 0 to 36 m<br><b>Note!</b> Limit switch range is 100 ft (30 M).  |
| Field communications   | Mark/Space<br>Optically isolated from the micro controller.<br>EIA-485/GSI Type MODBUS®<br>L&J Tankway   |
| Temperature RTD input  | High-accuracy 20-bit analog-to-digital converter. 3-wire RTD Copper (CU90, CU100) or Platinum (PT100).   |
| Discrete inputs        | Standard (DC Unit) Option: Two (2) discrete inputs.<br>Optional (AC Unit): 4 discrete inputs<br>Host Signal: Open/Closed                                   |
| Contact outputs        | Optional (AC Unit): Four (4) software-driven contact outputs<br>Host Signal: Open/Closed<br>Ratings:<br>0.6 A @ 125 Vac<br>1 A @ 30 Vdc<br>0.6 A @ 110 Vdc |
| Limit switches ratings | 11 amp - 125, 250, 277 VAC<br>4 amp - 125 VAC Tungsten Filament Lamp Load<br>1/3 HP - 125 VAC, 250 VDC<br>1/2 amp - 125 VDC, 1/4 amp - 250 VDC             |

### Physical

|                 |   |
|-----------------|---|
| Weight          | Net 13 lbs (5.9 kg). Shipping 18 lbs (8.2 kg)   |
| Encoder         | Absolute, capacitive  |
| Gearing system  | Stainless Steel, Direct Drive   |
| Enclosure       | Explosion proof die-cast aluminum<br>Rated IP66 (NEMA 4)  |
| Conduit entries | 2910 FTT Enclosure: 2 x 3/4" NPT (standard configuration uses one entry)<br>Terminal junction box: 2 x 3/4" NPT |

### Environmental

|                       |                                     |
|-----------------------|-------------------------------------|
| Operating temperature | -4 °F to +185 °F (-20 °C to +85 °C) |
| Operating humidity    | 0 to 95% non-condensing             |

### Power

|                    |  |
|--------------------|--|
| Power requirements | Standard: 20 to 65 VDC 0.02A<br>Optional: 40 to 65 / 110 / 220 – 240 VAC<br>500 mW nominal, 50/60 Hz |
| Galvanic Isolation | Built in - Both AC and DC  |

## Order Codes

| Approvals |  |
|-----------|--|
| EA        | None (encoder & electronics upgrade only) cFMus (USA & Canada) - Explosion Proof Class I Division 1 (Ta>= 25°C)/ Zone 1      |
| FM        | cFMus (USA & Canada) - Explosion proof Class I Division 1 (Ta≥ -25°C)/Zone 1 (Ta≥-20°C) Groups C&D (Ta≤+85°C), NEMA 4 & IP66 |
| AT        | ATEX/IECEx (International) - Flameproof Ex II 2G, Ex d IIB T5 Gb -20°C ≤ Ta ≤ +85°C, IP66                                    |

| Power Input |                          |
|-------------|--------------------------|
| 0           | NA (Limit Switches Only) |
| 1           | DC                       |
| 2           | AC                       |

| Input |                                |
|-------|--------------------------------|
| NA    | NA (Limit Switches Only)       |
| MS    | Mark/Space                     |
| MB    | EIA-485 MODBUS/GSI Type MODBUS |
| LJ    | Tankway (L&J)                  |

| Range (Applies only to models with limit switches) |  |
|--|--|
| 0  | N/A (Select this option if no limit switches are supplied) |
| 1  | 0-25 ft  |
| 2  | 0-50 ft  |
| 3  | 0-100 ft   |
| 4  | 0-7.5 m  |
| 5  | 0-15 m   |
| 6  | 0-30 m   |

| Limit Switches |   |
|----------------|---|
| N              | No additional limit switches  |
| A              | Two (2) SPDT Limit Switches (180° adjustable dwell, positive activation)  |
| B              | Four (4) SPDT Limit Switches (180° adjustable dwell, positive activation) |

| Additional Junction Box |                               |
|-------------------------|-------------------------------|
| 0                       | No additional JB <sup>1</sup> |
| 1                       | Additional JB <sup>2</sup>    |

| Digital Inputs/Outputs |                                 |
|------------------------|---------------------------------|
| A                      | No Additional DIDO <sup>3</sup> |
| B                      | Additional DIDO <sup>4</sup>    |

|        |  |  |  |  |  |  |                      |
|--------|--|--|--|--|--|--|----------------------|
| N2910- |  |  |  |  |  |  | Complete designation |
|--------|--|--|--|--|--|--|----------------------|

### Notes:

<sup>1</sup>Communications code NA comes with 0 junction boxes. Communications codes MS, MB, and LJ come with 1 or 2 junction boxes depending on the options chosen.

<sup>2</sup>Applies only to Communications Code NA

<sup>3</sup>Select this option if Communications code= NA. Communications codes MS, MB, and LJ come with 2 discrete inputs. Power Input code 2 (AC models) come with a total of 4 discrete inputs and 4 dry contact outputs.

<sup>4</sup>Select this option for Power Input code 1 (DC models). Comes with a total of 2 discrete inputs and 4 dry contact outputs.

