

# Level Plus<sup>®</sup>

Magnetostrictive Liquid Level Transmitters  
with Temposonics<sup>®</sup> Technology

**Tank Farm Applications**  
Product Information



## **AUTOMATIC TANK GAUGING... SET IT AND FORGET IT!**

The Level Plus® Tank Slayer® liquid-level transmitter features 4-IN-1 measurement of the product level, interface level, average temperature, and volume from one process opening.

For Aboveground Storage Tank (AST) applications such as Automatic Tank Gauging (ATG) on fuel terminals, the Tank Slayer® liquid-level transmitter can provide inventory grade measurement of the product (gasoline, diesel, crude) level while also monitoring the interface (water) level if present.

The Tank Slayer® transmitter also has the ability to combine the level measurement(s) with a temperature measurement that allows for temperature compensation for precise inventory records

### **Features**

- 4-IN-1 Measurement
  - Product Level
  - Interface Level
  - 16 Temperature Points
  - Volume Output
- Inherent Accuracy:  $\pm 1$  mm
- Explosion Proof / Flameproof
- Intrinsically Safe
- 12 or 24 VDC input power
- Max Tank Height of 22 m (72.2 ft.)
- Flexible Hose
- Wetted Parts: 316L stainless steel (1.4404)

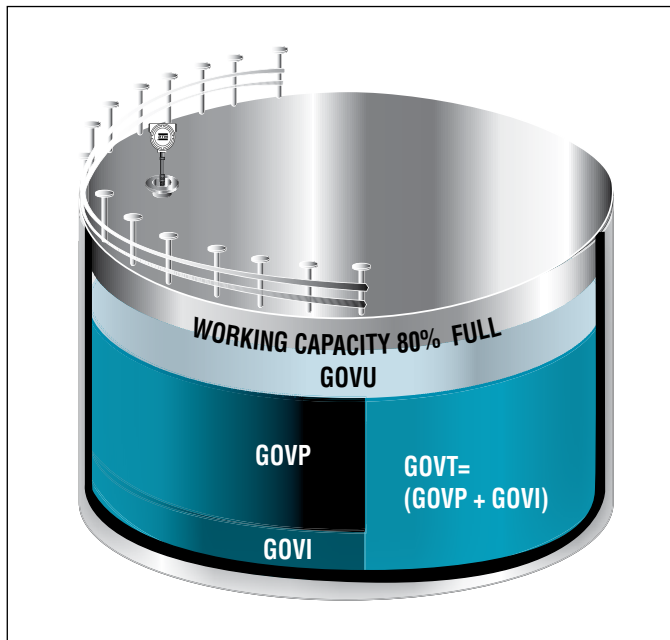


Fig. 1: Tank Slayer® transmitter's volume measurements



Fig. 2: Tank Slayer® transmitter

## **VOLUME MEASUREMENTS**

Liquid-level measurements are taken and converted into volume measurements using a strapping table. The Tank Slayer® level transmitter can provide the volume measurements in addition to the level measurements using (up to) a 200 point strapping table and the working capacity of the tank as shown in 'Figure 1. Tank Slayer® transmitter's volume measurements'. The benefit of using the Tank Slayer® to calculate volume is that there is only one place to load the strap table and no additional PLC programming is necessary.

### **Volume outputs include**

- Gross Observed Volume of the Product (GOVP)
- Gross Observed Volume of the Interface (GOVI)
- Gross Observed Volume of the Total (GOVT)
- Gross Observed Volume of the Ullage (GOVU)

## **TEMPERATURE COMPENSATION**

Temperature compensated volumes allow inventory records to adequately take into account variations in physical volume due to fluctuations in the temperature of the liquid. The American Petroleum Institute (API) created formulas for calculating temperature compensation on standard petroleum liquids. MTS has incorporated these formulas into the Tank Slayer® level transmitter along with the ability to measure an average temperature to allow the Tank Slayer® to output a temperature corrected volume.

The Tank Slayer® level transmitter can be ordered with 1, 5, 12 or 16 temperature measurement points with the average temperature calculated using only the submerged temperature points.

## EASE OF INSTALLATION...

The complete installation of the Tank Slayer® level transmitter occurs from the top of the tank (as shown in 'Figure 3') and does not require a confined space permit or taking the tank out of service. The Tank Slayer® can be installed and commissioned in less than an hour by no more than two people using common hand tools.

The Tank Slayer® is able to be installed on fixed roof tanks, internal floating roof tanks, and external floating roof tanks. Installation requirements are simple requiring a vertical mount that allows clearance for the float traveling up and down the flexible hose. There is no special requirement for stilling wells, distance from tank obstructions, and can be installed through a 1" FNPT opening in the tank.

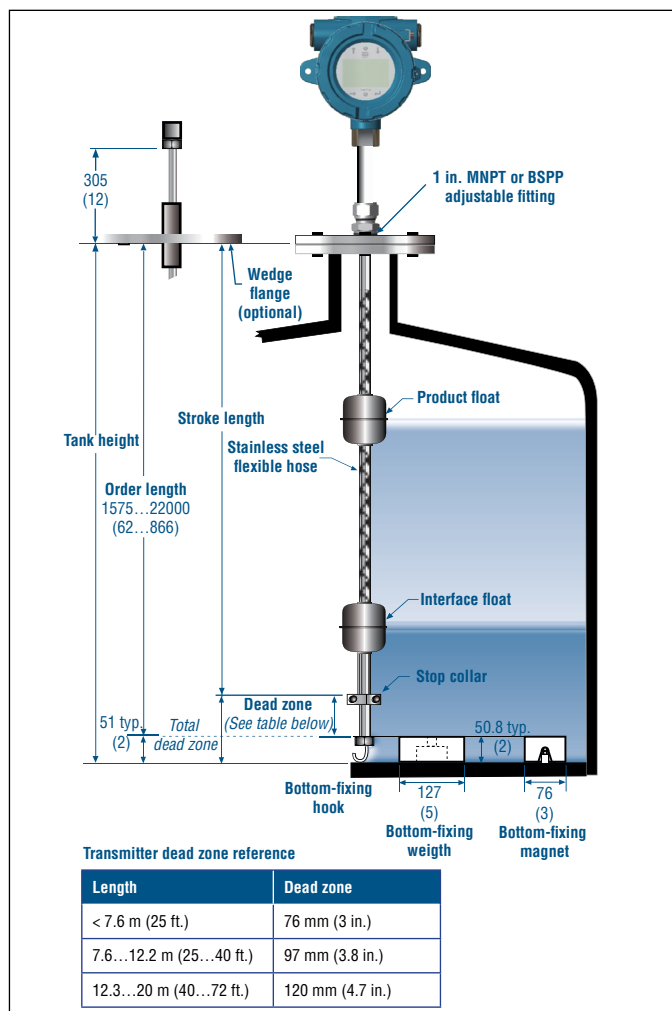


Fig. 3: Tank Slayer® transmitter

## FIELD SERVICEABLE

The Tank Slayer® transmitter is designed to be modular so that if any component becomes damaged the transmitter can be serviced in the field without having to take the tank out of service. All electronic components of the Tank Slayer® can be replaced from the top of the tank without removing the transmitter from the tank or having to empty the tank. MTS has developed a user-friendly guide (available at [www.mtssensors.com](http://www.mtssensors.com)) to assist with replacing the transmitter's electronic components in the field using basic hand tools.

## SPOOL PIECE

How do you install your new ATG when you already use your only stilling well for manual gauging and sampling? Other level gauge manufacturers will require you to shutdown your tank to install a separate stilling well which can potentially cost a company thousands of dollars.

MTS has a better solution. Install the Tank Slayer® transmitter and a spool piece (as shown in 'Figure 4') mounted on top of your stilling well. Unlike other level transmitters, the Tank Slayer® does not have to be removed or taken out of service during manual gauging, sampling or installation.



Fig. 4: Spool piece with open door

Adding the spool piece allows the Tank Slayer® to be installed in the same stilling well where manual gauging and sampling is performed. When manually gauging and sampling the user is able to open the door on the spool piece and gauge / sample the tank without affecting the Tank Slayer® transmitter.

## INSTALLED COSTS

When considering different ATG's make sure to look at the overall installed costs including the level transmitter, temperature measurement, cabling, conduit, heaters, sun shields, and tank modifications. The installed cost can easily exceed the cost of the level transmitter. MTS offers one of the lowest installed costs on the market from its 4-IN-1 capability to combine product level, interface level, temperature, and volume into a single tank opening. Do not be fooled by the low price of the level transmitter without investigating the total installed costs of the system.

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