

Tankgauging Systems by Murphy TANKTEND™



SM3H TANKTEND™ (horizontal model shown)

BGT1, UT1 and SM Series

- For Single or Multi-Tank Systems
- Above and Below Ground
- Accurate Remote Indication
- Monitors in Inches, Feet, Meters etc.
- Economical Inventory Monitoring

Description

The Murphy TANKTEND™ Series models BGT1 (for single above ground tanks), UT and SM (for remote monitoring of below/above ground tanks) can meet most any single or multi-tank remote inventory monitoring requirements.

All of the Murphy TANKTEND™ systems are available with a Vapor Recovery option, which will compensate for gas blankets or head pressure caused by vapor recovery storage systems.

BGT1 Series

The BGT1 is the heart of the analog TANKTEND™ monitoring systems. It is a sensitive instrument designed to measure the weight of a fluid column and give a readout in a specific range of inches, feet, or meters of product equal to the level in a storage tank.

Pressure created by the weight of the fluid (static head pressure) is transmitted to a bellows chamber. Changing pressures (fluid levels) expand or contract the bellows which apply movement to a rod and pinion gear mechanism of the gauge indicating pointer.

The BGT1 is factory-calibrated for the specific gravity of the product to be measured.

UT1 Series

UT1 Series tankgauging system is designed for use on below ground storage tanks. The UT1 system consists of a BGT1 gauge and a pressure purge pump all enclosed in a weather resistant box.

The built-in manually-operated pressure squeeze bulb purges the UT1 Series primary pneumatic sensing line.

SM Series

These panels are designed to monitor levels on above/below ground, single or multi-tank systems (4 tanks maximum). The SM Series system uses BGT1 Series air purge actuated gauges.

SM Series panels are easy-to-install. They can be conveniently mounted remote from the tank location(s) in the control room or the cashier station.

A push-button actuated electric pump clears sensing lines for current readings. The P100 pump (included with the SM Series panels) supplies the purge air.

Applications

- Petroleum Products
- Water Storage
- Diesel and Other Fuels
- Organic Oils and Fluids

Basic Models

- BGT1:** Basic tank gauge system
 - BGT1VR:** Model for vapor recovery
 - UT1:** Enclosed below ground tank system
 - UT1VR:** Model for vapor recovery
 - SM1:** Above/Below ground single tank panel
 - SM2:** Above/Below ground 2 tank panel
 - SM3:** Above/Below ground 3 tanks panel
 - SM4:** Above/Below ground 4 tanks panel
- SM Series models available with VR option and horizontal (H) or vertical (V) mountings.*

Ranges (BGT1, SM, UT1)*

Dial in Inches	Dial in Feet
0-48 in. (1.219 m)	0-5 ft. (1.524 m)
0-60 in. (1.524 m)	0-8 ft. (2.439 m)
0-96 in. (2.438 m)	0-10 ft. (3.049 m)
0-126 in. (3.200 m)	0-12 ft. (3.658 m)
0-144 in. (3.657 m)	

NOTE: For ranges listed BELOW and applications with over 20 ft. (6 m) of tubing length, consult the factory.

0-192 in. (4.876 m)	0-15 ft. (4.573 m)
	0-22 ft. (6.707 m)
	0-34 ft. (10.366 m)
	0-40 ft. (12.196 m)

* Consult the factory for other scales.

Specifications

BGT1 Series

- Dial:** White dial with green and black markings
4-1/2 in. (114 mm) diameter.
- Case:** Die cast aluminum, painted.
- Sensing Element:** Bellows movement for greater accuracy—sensitivity on low ranges.
- Lens:** Optically clear polycarbonate.
- Sensing Connection:** 1/4 NPT female.
- Shipping Weight:** 6 lbs. (2.72 kg).
- Shipping Dimensions:** 10 x 9 x 6 in. (254 x 229 x 153 mm).

UT1 Series

- Case:** Weatherproof enclosure; painted.
- Shipping Weight:** 26 lbs. (11.79 kg).
- Shipping Dimensions:** 16 x 16 x 10 in. (406 x 406 x 254 mm).

SM Series

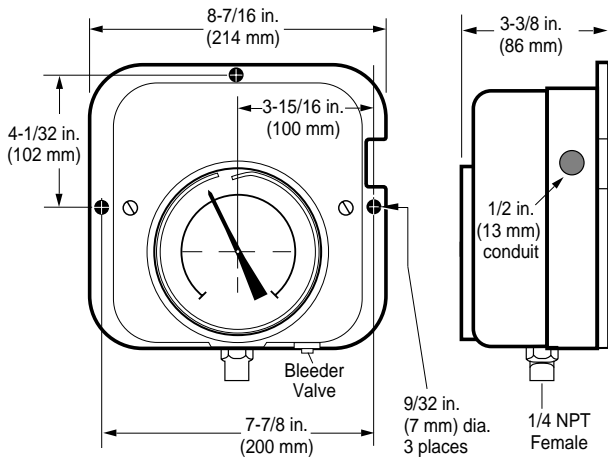
- Panel:** Hollow wall mount, cold rolled steel, painted.
- Shipping Weight (P100 Pump included):**
SM1: 27 lb. (12.25 kg) approximately.
SM2: 44 lb. (20 kg) approx.
SM3: 54 lb. (24.5 kg) approx.
SM4: 65 lb. (29.5 kg) approx.
- Shipping Dimensions for All SM Series Models (P100 Pump included):**
40 x 9 x 15-3/4 in. (1016 x 229 x 400 mm).

P100 Pump (For SM Models)

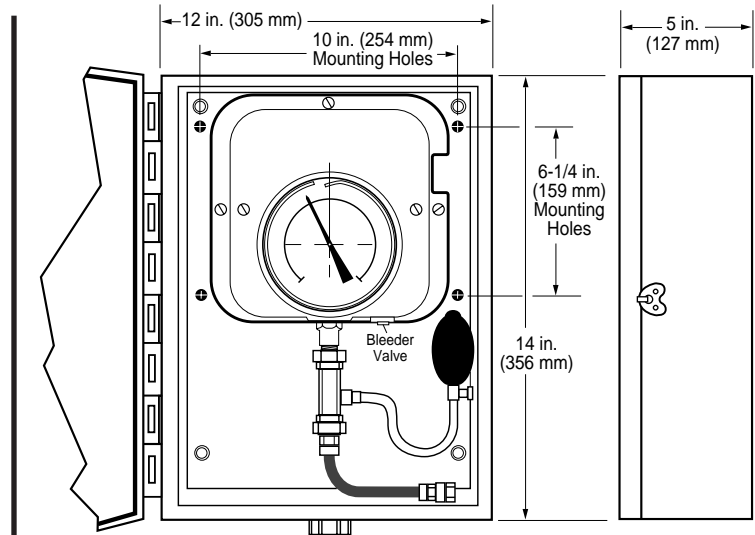
- Operating Voltage:** 120 VAC or 230 VAC.
- Case:** Weatherproof enclosure; painted.
- Shipping Weight:** 10 lbs. (4.53 kg).
- Shipping Dimensions:** 12 x 12 x 10 in. (305 x 305 x 254 mm).

Dimensions

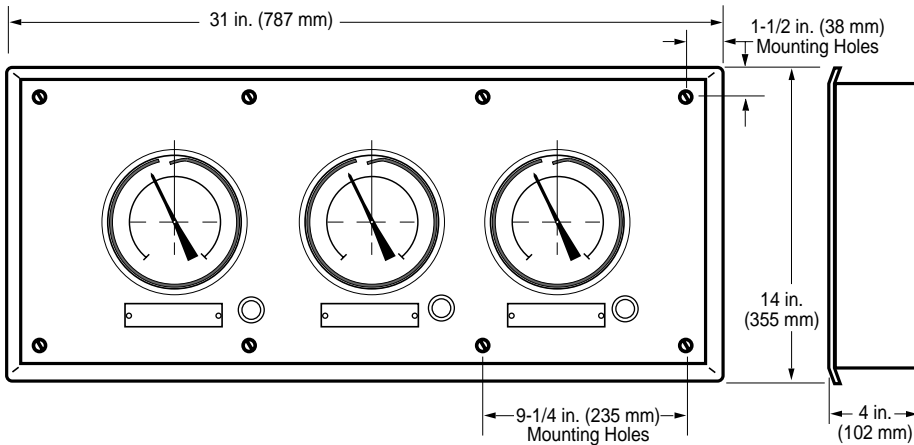
BGT1 Series Model



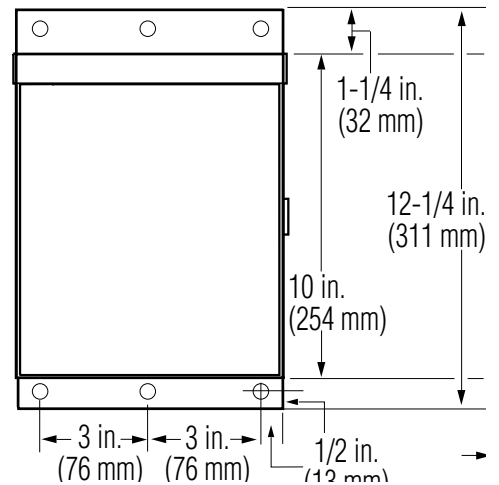
UT1 Series Model



SM Series Model (SM3H model shown)



P100 Pump Enclosure



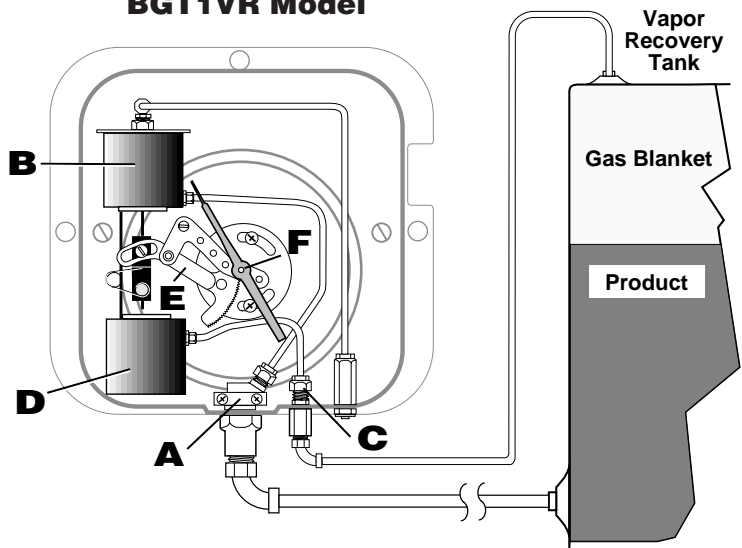
The BGT1VR Operation

Vapor recovery models will compensate for any gas blanket or head pressure caused by vapor recovery or sealed tank storage systems.

The pressure created by the weight of the product applied to port "A" is transmitted by the primary sensing line to a bellows (upper bellows chamber) "B". A secondary port "C" and sensing line compensates for variable head pressure caused by the vapor recovery sealed system.

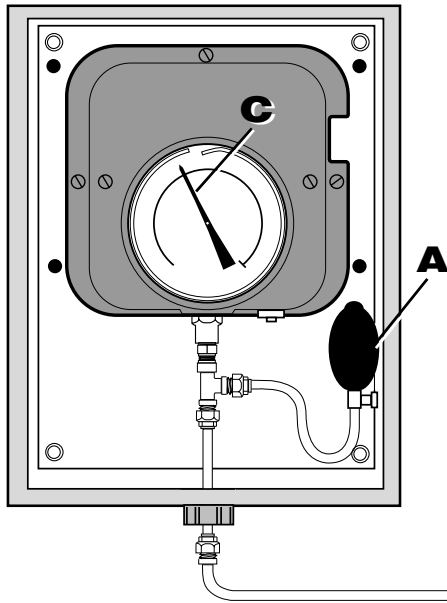
The gas blanket or head pressure is applied to a second bellows "D" (lower bellows chamber). Changing pressures cause the bellows to expand or contract; the rotating movement of the sector and pinion gear "E" positions the indicating pointer "F" at the corresponding reading of product level.

BGT1VR Model



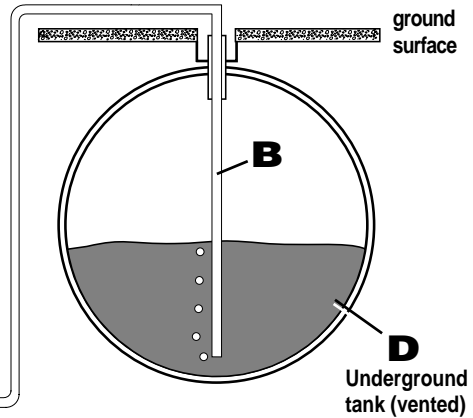
The UT1 Series Operation

UT1 Model



The UT1 TANKTEND™ level monitoring system basic operation:

The operator squeezes the rubber bulb “A” until the line “B” is air purged and the indicator pointer “C” falters and can rise no further (this may take multiple squeezes). The pointer is then allowed to settle by releasing the bulb. The value shown by the pointer is the true reading of fluid level contained in the tank “D”.

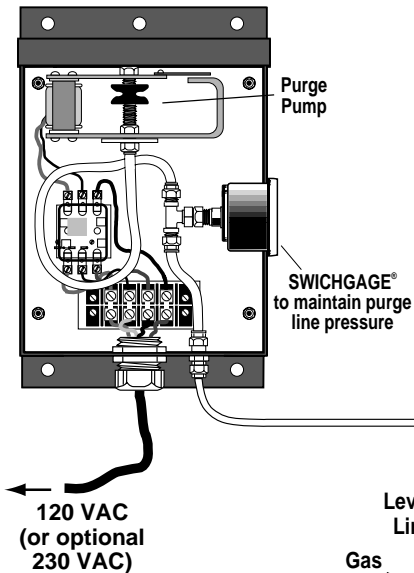


The SM Series Operation

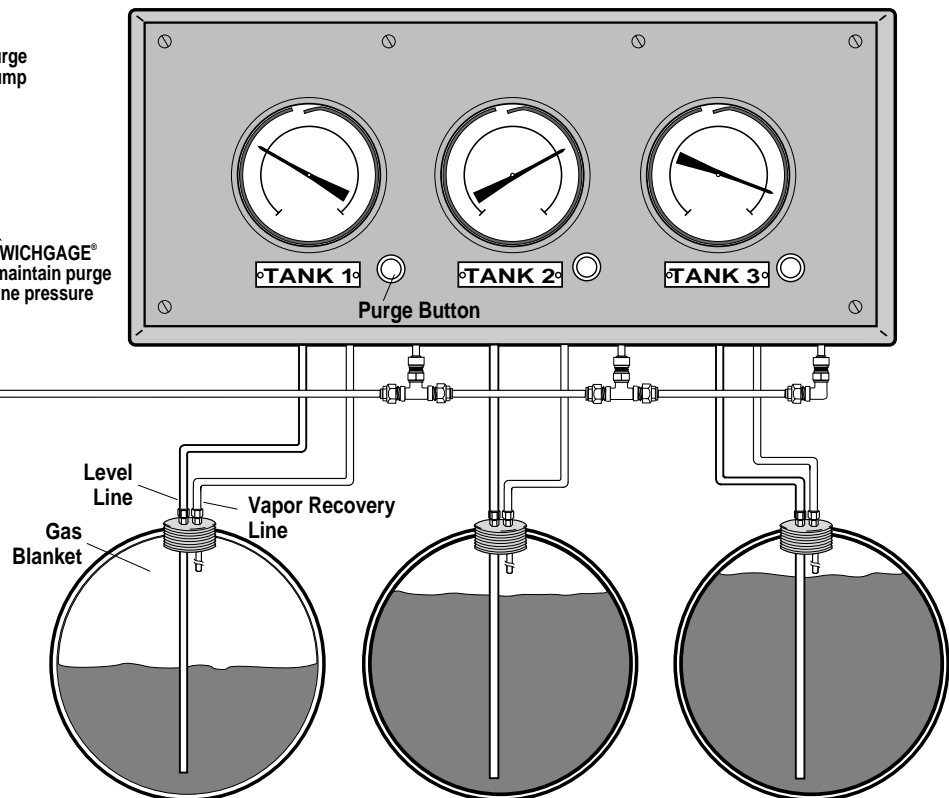
The P100 pump starts automatically to build up purge pressure and stops when sufficient volume is reached. The operator depresses the tank purge button, until the indicator pointer for that tank stops rising. The purge

button is released, the pointer drops slightly and stops to indicate the tank level. The operation is repeated (using the corresponding purge button) for each tank reading. See the schematic below for details.

P100 Pump



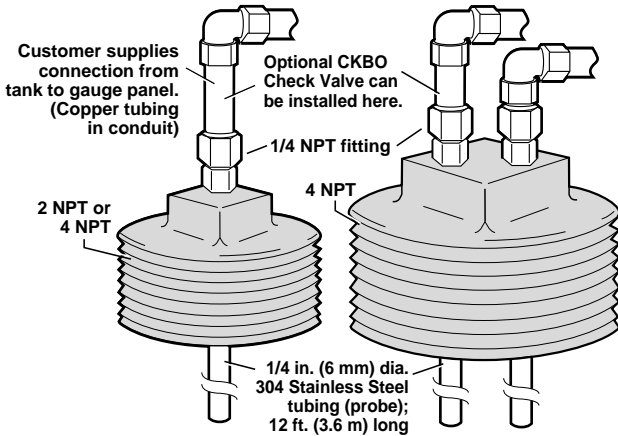
SM3VR Model Shown



UTKN Tank Plug Kit

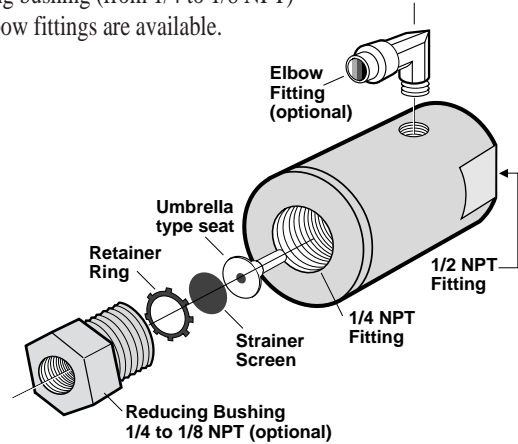
This optional kit includes 12 ft. (3.66 m) x 1/4 in. (6 mm) diameter stainless steel tube, and fittings for below ground tank installations. The tank plug is available in 2 NPT or 4 NPT. See the schematic below for details.

For VR Models



CKBO Check Valve

The CKBO check valve is designed to prevent liquid from backing up into the gauge. The CKBO is installed vertically near the gauge or in-line with the 1/4 in. (6 mm) sensor line in the top of the tank. Optional reducing bushing (from 1/4 to 1/8 NPT) and elbow fittings are available.



How to Order

Specify model number using the diagram below:

SM3VRHZ - 8 ft - 0.86

Select a basic model:

- BGT1:** Basic tank gauge system
- BGT1VR:** w/ Vapor Recovery
- UT1:** Enclosed below ground
- UT1VR:** w/ Vapor Recovery
- SM1†:** 1-tank panel
- SM1VR†:** 1-tank panel w/ VR
- SM2*†:** 2-tanks panel
- SM2VR*†:** 2-tanks panel w/ VR
- SM3*†:** 3-tanks panel
- SM3VR*:** 3-tanks panel w/ VR
- SM4*†:** 4-tanks panel
- SM4VR*†:** 4-tanks panel w/ VR

* Add **V** for vertical mount panel
or **H** for horizontal mount panel.
† Standard operating voltage for 120 VAC
or add "**Z**" for 230 VAC

Select the range and dial readout
(state unit of measurement):

48 in.	5 ft.
60 in.	8 ft.
96 in.	10 ft.
126 in.	12 ft.
144 in.	

If the range you need is shown below, consult the factory first for tubing length limitations.

192 in.	15 ft.
	22 ft.
	34 ft.
	40 ft.

NOTE: For other dials consult the factory.

Specify **Specific Gravity** or
Specify **Liquid Being Measured**

Accessories—Order Separately

- UTKN2:** 2 NPT tank plug
- UTKN2LT:** 2 NPT plug less tubing w/fittings
- UTKN4:** 4 NPT tank plug
- UTKN4LT:** 4 NPT plug less tubing w/fittings
- UTKN4-VR:** 4 NPT plug for vapor recovery
- UTKN4LT-VR:** 4 NPT less tubing for vapor rec.
- CKBO:** Check Valve Assembly
- SMPA:** Pump assembly for 120 VAC
- SMPA230:** Pump assembly for 230 VAC
- P100:** Pump only
- P100RA:** Pump Relay Assembly
- UTSB:** Squeeze Bulb Assembly for UT Series
- 05090051:** Pump Start/Stop SWITCHGAGE®

Warranty

A two-year limited warranty on materials and workmanship is given with this Murphy product. Details are available on request and are packed with each unit.

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.



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