

Application Data Sheet

COMPLETE ONE FORM PER TANK



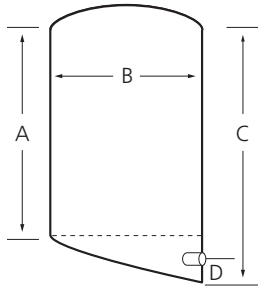
- Tank Liquid Level
- Inventory Monitoring
- Process Integration

Supplement 1000-2, Effective: May 2009

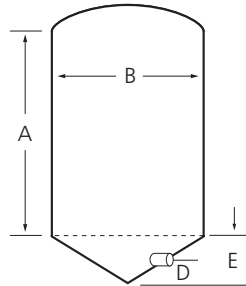
Company Information		Contact Information	
COMPANY	DATE	NAME	
ADDRESS		TITLE	
CITY	STATE	EMAIL	
PLANT NAME / LOCATION		PHONE	FAX

Tank Information			
TANK NAME	MANUFACTURER	YEAR MANUFACTURED	
CAPACITY	DENSITY / SPECIFIC GRAVITY	SERIAL NO.	
FLUID	PROCESS / STORAGE TEMP.	READOUT UNITS #1	VOLUME (GALLONS, LITERS, etc)
		READOUT UNITS #2	WEIGHT (POUNDS, KILOGRAMS, etc) DEPTH (FEET, METERS, etc)

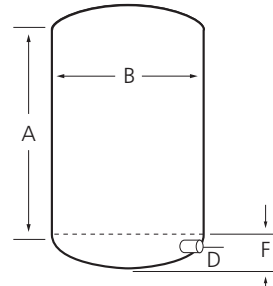
Tank Shapes—Diaphragm Sensors:



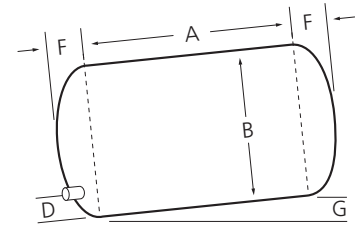
Vertical / Silo



Cone Bottom



Dish Bottom



Horizontal Cylinder

TANK SHAPE <input type="checkbox"/> Vertical / Silo <input type="checkbox"/> Cone Bottom <input type="checkbox"/> Dish Bottom <input type="checkbox"/> Horizontal Cylinder	BOTTOM OF TANK TO CENTER OF SHELL i.e. RESERVE D = <input type="checkbox"/> in. <input type="checkbox"/> cm
STRAIGHT SIDE A = <input type="checkbox"/> in. <input type="checkbox"/> cm	DEPTH OF CONE (CONE BOTTOM) E = <input type="checkbox"/> in. <input type="checkbox"/> cm
INSIDE DIAMETER B = <input type="checkbox"/> in. <input type="checkbox"/> cm	DEPTH OF DISH (DISH BOTTOM & HORIZONTAL CYLINDER) F = <input type="checkbox"/> in. <input type="checkbox"/> cm
SLOPED BOTTOM C = <input type="checkbox"/> in. <input type="checkbox"/> cm	PITCH OF TANK (HORIZONTAL CYLINDER) G = <input type="checkbox"/> in. <input type="checkbox"/> cm
TANK WALL <input type="checkbox"/> Insulated (double wall) <input type="checkbox"/> Non-Insulated (single wall)	
MOUNTING <input type="checkbox"/> 2-in. Flange <input type="checkbox"/> 3-in. Flange <input type="checkbox"/> 4-in. Flange <input type="checkbox"/> Flush-Weld Shell <input type="checkbox"/> 2-in. Tri-Clamp <input type="checkbox"/> Other:	
SPECIAL CONDITIONS <input type="checkbox"/> Cooling Jacket <input type="checkbox"/> Multiple Compartments <input type="checkbox"/> Internal Heating Coil <input type="checkbox"/> Internal Agitator/Mixer <input type="checkbox"/> Steam Trace Fittings <input type="checkbox"/> Sediment Accumulation	



3201 South State Street, Ann Arbor, Michigan 48108-1625 U.S.A.

P: 734-662-5691 F: 734-662-6652 www.king-gage.com

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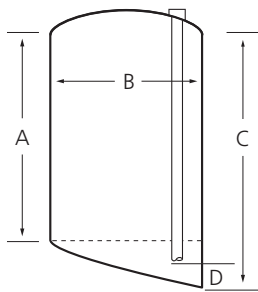
- Tank Liquid Level
- Inventory Monitoring
- Process Integration

Supplement 1000-2, Effective: May 2009

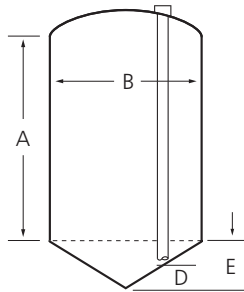
Company Information		Contact Information	
COMPANY	DATE	NAME	
ADDRESS		TITLE	
CITY	STATE	EMAIL	
PLANT NAME / LOCATION		PHONE	FAX

Tank Information			
TANK NAME	MANUFACTURER	YEAR MANUFACTURED	
CAPACITY	DENSITY / SPECIFIC GRAVITY	SERIAL NO.	
FLUID	PROCESS / STORAGE TEMP.	READOUT UNITS #1	VOLUME (GALLONS, LITERS, etc)
		READOUT UNITS #2	WEIGHT (POUNDS, KILOGRAMS, etc)
			DEPTH (FEET, METERS, etc)

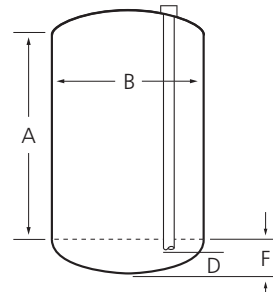
Tank Shapes—Downpipe Systems:



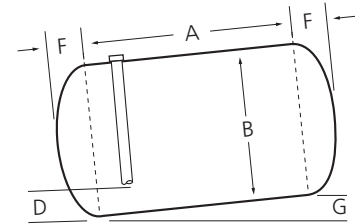
Vertical / Silo



Cone Bottom



Dish Bottom



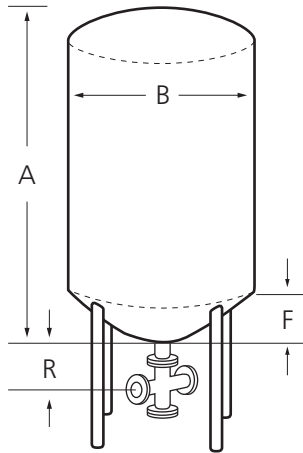
Horizontal Cylinder

TANK SHAPE <input type="checkbox"/> Vertical / Silo <input type="checkbox"/> Cone Bottom <input type="checkbox"/> Dish Bottom <input type="checkbox"/> Horizontal Cylinder	BOTTOM OF TANK TO BOTTOM OF DOWNPIPE i.e. RESERVE D = <input type="checkbox"/> in. <input type="checkbox"/> cm
STRAIGHT SIDE A = <input type="checkbox"/> in. <input type="checkbox"/> cm	DEPTH OF CONE (CONE BOTTOM) E = <input type="checkbox"/> in. <input type="checkbox"/> cm
INSIDE DIAMETER B = <input type="checkbox"/> in. <input type="checkbox"/> cm	DEPTH OF DISH (DISH BOTTOM & HORIZONTAL CYLINDER) F = <input type="checkbox"/> in. <input type="checkbox"/> cm
SLOPED BOTTOM C = <input type="checkbox"/> in. <input type="checkbox"/> cm	PITCH OF TANK (HORIZONTAL CYLINDER) G = <input type="checkbox"/> in. <input type="checkbox"/> cm
SPECIAL CONDITIONS <input type="checkbox"/> Multiple Compartments <input type="checkbox"/> Internal Heating Coil <input type="checkbox"/> Internal Agitator/Mixer <input type="checkbox"/> Sediment Accumulation	

Other Considerations/Requirements

Sensor Location (Below Tank)

If the intended mounting location for the sensor is below the tank, please provide the dimension identified as "R" depicted below. This applies to a sensor installed on a piping outlet that extends down from the bottom of the tank. Measure the distance from the center of the mounting location to the lowest point on the tank bottom. (It is not recommended to install a sensor on the bottom leg of a piping tee.)



R = _____ in. cm

Tank Cleaning Method

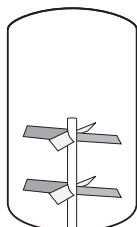
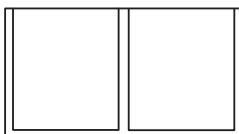
Some process environments require periodic internal cleaning of the tank. If applicable, please indicate cleaning method employed.

- Clean-in-place (CIP) High Temperature Sterilization / SIP
 Passivation Manual Cleaning

Special Conditions

Some of the following tank features may limit the selection of sensor or must be compensated for in programming tank capacity. If applicable, please indicate whether any of the following conditions exist.

- Cooling Jacket Steam Trace Fittings
 Internal Heating Coil Sediment Accumulation
 Insulated Tank Internal Agitator / Mixer
 Multiple Compartments

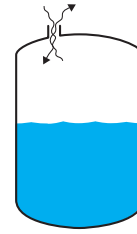


Tank Vent

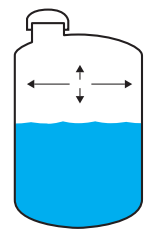
Many tanks are either open at the top or incorporate a vent opening with adequate capacity to always internally maintain normal atmospheric pressure. This permits liquid level to be determined by sensing the hydrostatic pressure (created by liquid depth). When tanks are sealed and/or pressurized, liquid level can be determined using differential pressure measurement. This requires that two different pressure points must be sensed. If applicable, indicate which of the following conditions exist:



Fully Vented Tank



Inadequately Vented Tank



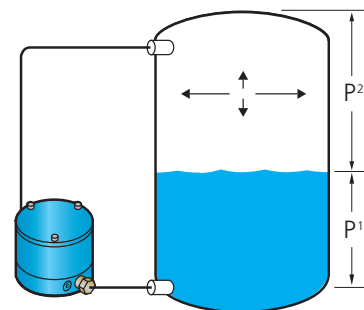
Closed, or Pressurized Tank

- Fully Vented (open) Vented with Vent Filter (screen)
 Closed/Non-Vented tank Emptying tank by applying pressure
 Pressurized (nitrogen blanket or other gas)
 Equipped with pressure relief valve
 (note cracking pressure): _____

Differential Pressure Measurement

This will generally require the use of two (2) sensors, one of which is used to detect the internal pressure condition above the liquid in the tank. (In certain applications, it may be possible to merely connect a static pressure line to the top of the tank in place of an additional sensor.) The other sensor will detect the pressure that exists at or near the tank bottom—which is the result of both the liquid depth plus the pressure above the liquid surface. The difference between these two pressures will represent the liquid depth (hydrostatic) pressure.

Typically, these systems will employ a KING-GAGE D/P transmitter that will output a 4-20mA electronic signal corresponding to the actual tank liquid depth. These D/P transmitters are available for downpipe sensing ("bubbler") systems or diaphragm sensor systems.



Tank Sensor Options

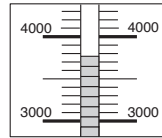
KING-GAGE liquid level sensors take the form of either a diaphragm exposed to the liquid through an opening at or near the tank bottom, or as a downpipe extending down from the tank top and continually purged with compressed air (also referred to as a "bubbler"). Selection of the appropriate sensor depends upon the type of tank, liquid content, or process involved.

Indicate the application or any special requirements:

- Sanitary Explosion hazard zone
 Industrial Underground tank

Tank Level Indicator (or receiver)

KING-GAGE tank level indicators are available in analog (LED column or fluid filled gauge) or digital display (single or multiple tank). Output signal may also be transmitted to other receivers or devices. If applicable, please indicate how tank level is to be displayed:



- Single tank analog indicator Single tank digital indicator
 PLC (programmable logic controller) Multiple tank digital indicator

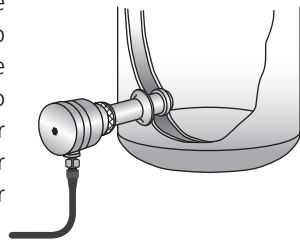
Specify the type of measurement display units for the KING-GAGE indicator (if applicable). If more than one unit is desired, check all that apply:

- gallons pounds liters kilograms
 feet/inches depth meters/cm depth other: _____

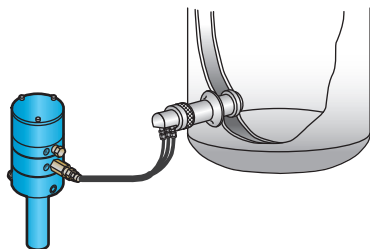
KING-GAGE® Liquid Level Transmitters

We offer pneumatic or electronic sensors to sense pressure created by depth of liquid (known as hydrostatic head) in a tank. These take the form of either a diaphragm exposed to the tank contents through an opening at or near the tank bottom, or as a downpipe extending into the tank which is purged with air. Electronic sensors (including D/P transmitters) generate 4-20 mA output in direct response to pressure which is proportional to depth. Pneumatic sensors work as a force balance providing a direct 1:1 pressure output in conjunction with an air flow control.

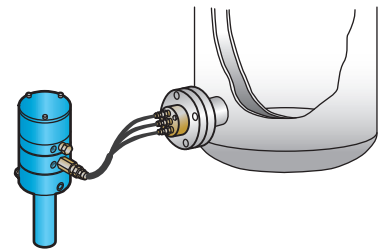
Electronic Transmitter — direct contact pressure sensor providing direct 4-20 mA dc signal output in response to liquid depth. Available mounting options include sanitary (flush diaphragm or Tri-Clamp fitting) and ANSI 150-lb class pipe flange configurations. Works as a two wire transmitter with 14-40 Vdc power supplied over the signal loop wiring for operation by a KING-GAGE indicator or other receiver.



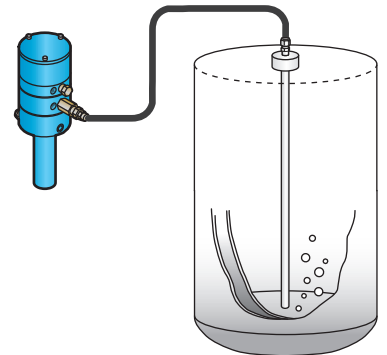
AcraSensor™ — a pneumatic force balance diaphragm sensor designed primarily for flush mounting through the tank wall. When flush mounted, meets sanitary requirements of clean-in-place (CIP) installations. Other sanitary mounting options include Tri-Clamp connections. All pneumatic sensors require an air flow control device such as the 860 Sensor Control or 868 D/P Sensor Control for operation.



TeleSensor™ — a pneumatic force balance diaphragm sensor designed for an external pipe flange connection. The sensor is mounted to a tank nozzle or piping outlet (based on ANSI 150-lb class pipe flange) near the bottom of the vessel. All pneumatic sensors require an air flow control device such as the 860 Sensor Control or 868 D/P Sensor Control for operation.



Downpipe Sensor — a length of pipe extends downward into tank into which a continuous flow of compressed air is fed. Liquid is displaced from the tube by the resulting air pressure which is equal to the hydrostatic head. Excess air bubbles through liquid in tank, hence this type of sensor is sometimes termed a "bubbler". All downpipe sensors require an air flow control device such as the 780 Purge Control or 788 D/P Purge Control (or the positive seal 735 LiquiSeal Purge Control or 738 D/P LiquiSeal Purge Control) for operation.



D/P Transmitters — Differential pressure transmitters are used to convert pneumatic sensor pressure output into electronic 4-20 mA signal. D/P Transmitter may be used in combination with any pneumatic sensor (or incorporated within the air flow control device) for an electronic signal to a digital tank indicator or analog input of a typical PLC.