Instruction Manual

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Instrument Model Number _____

Instrument Serial Number _____

Form Number AIC2003

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Table of Contents

Section 1 General

1.1 DESCRIPTION

The Anderson SE transmitter is an integral unit designed to measure static head pressure in sanitary process and storage vessels. The transmitter converts this pressure into a 4-20mA DC signal. This signal is proportional to the height of liquid above it, not necessarily to the volume or weight.

The signal may be interfaced with Anderson Digital Indicators, Anderson Microprocessor Based Monitors, or customer supplied instrumentation. The transmitter can be supplied to match a variety of connections including flush mount styles and sanitary clamp type. The sensors are all-welded construction and are fully 3-A authorized. All wetted parts are 316L stainless steel, electropolished, with the remainder constructed of 304 and 316 stainless. All units are supplied with an integral conduit housing for ease of installation and come with a seal-tight wire grommet already installed.

The model SE "Easy Vent" transmitter provides a moisture resistant transmitter for applications where venting to a dry atmosphere is difficult or impractical. All moisture susceptible components are protected while still allowing required venting to atmosphere.

1.2 PRINCIPLES OF OPERATION

The transmitter requires power from an external source between 12 and 36 VDC. This power should be regulated if below 24 VDC. A strain gauge circuit bridge within the sensor measures changes in pressure at the diaphragm and outputs a linear, proportional signal to the conditioning circuit. This circuit develops the 4-20mA signal and provides temperature compensation. Zero and Span adjustments are provided on this circuit and are accessed by removing the cap. The model SE transmitter is designed to be used in vented applications where the storage vessel is open to atmosphere at all times.

1.3 SPECIFICATIONS

Level Measurement Range: Factory calibrated for ranges between 30 inches and 1350 inches of water column

Rangeability

	Minimum	Maximum	Proof Pressure
SE5 Series	0-30 " w.c.	0-140 " w.c.	10 psig**
SE6 Series	0-140.1 " w.c.	0-415 " w.c.	30 psig**
SE7 Series	0-415.1 " w.c.	0-830 " w.c.	60 psig
SE8 Series	0-830.1 " w.c.	0-1350 " w.c.	100 psig

** For extended over range capability, SE 6 may be factory calibrated for range as low as 0-75" w.c. (SE 7 min. range is 0-150" w.c.)

Calibrated Accuracy: ± 0.25% of calibrated range

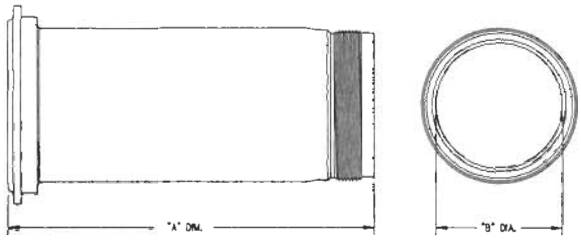
Repeatability: Better than 0.1%

Hysteresis: Less than 0.1%

1.3 SPECIFICATIONS Continued

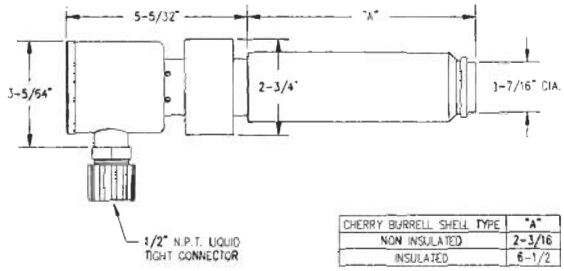
Stability	± 0.3% of calibrated range/ 6 months
Resolution	Infinite
Process Temperature Limits	0°F to 250°F (-18°C to 121°C)
Ambient Temperature Limits	40°F to 120°F (4.4°C to 49°C)
Compensated Temperature Range (process and ambient)	40°F to 120°F (4.4°C to 49°C)
Effect of Process Temperature Change	±0.02% of Upper Range Limit (URL) per 10°F (Zero shift only)
Effect of Ambient Temperature Change	±0.04% of Upper Range Limit (URL) per 10°F (Zero Shift Only)
Excitation	12-36 VDC (24V nominal). Supply should be regulated if below 24 VDC
Output	4-20mA DC
Maximum Loop Resistance	150 ohms at 12 VDC, 1350 ohms at 36 VDC
Cable Recommended	18-24 AWG, .187" to .250" diameter, stranded, 2 conductor with ground, shielded and PVC coated for use with seal-tight wire grommet.
Housing Material	304 and 316 stainless steel
Wetted Parts	316L stainless steel electropolished

FIGURE 1-1 SHELL AND SENSOR DIMENSIONS

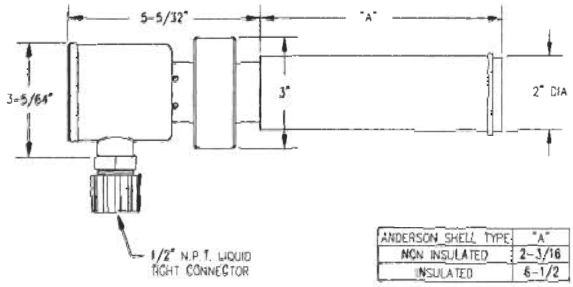


SHELL TYPE

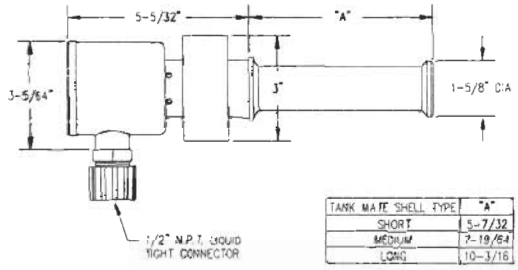
Transmitter Fitting Type	"A" Dimensions	"B" Dimensions
Anderson Long Fitting	6-3/16 inches	2-1/8"
Anderson Short Fitting	1-7/8 inches	2-1/8"
Cherry Burrell Long Fitting	6-3/16 inches	1-1/2"
Cherry Burrell Short Fitting	1-7/8 inches	1-1/2"
King Gage Short Fitting	1-7/8 inches	1-1/16"
King Gage Standard Fitting	6-1/4 inches	1-1/16"
King Gage Long Fitting	8-1/2 inches	1-1/16"
Tank Mate Short Fitting*	3-10/32 inches	1-1/4"
Tank Mate Medium Fitting*	5-15/32 inches	1-1/4"
Tank Mate Long Fitting*	8-11/32 inches	1-1/4"



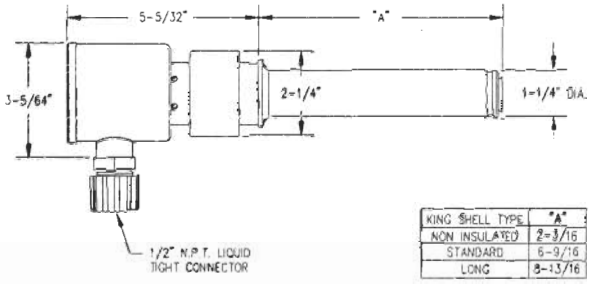
CHERRY BURRELL SHELL TYPE	"A"
NON INSULATED	2-3/16
INSULATED	6-1/2



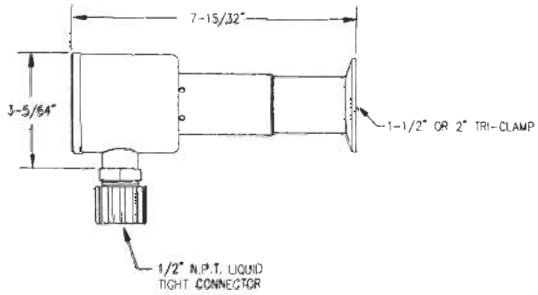
ANDERSON SHELL TYPE	"A"
NON INSULATED	2-3/16
INSULATED	6-1/2



TANK MATE SHELL TYPE	"A"
SHORT	5-7/32
MEDIUM	7-19/64
LONG	10-3/16



KING SHELL TYPE	"A"
NON INSULATED	2-3/16
STANDARD	6-9/16
LONG	8-13/16



Section 2 Installation

2.1 TANK SHELL INSTALLATION

If Anderson flush mount style sensors are to be utilized on a new application, weld-in shells must be installed in the vessel. The shells are provided with an installation guideline sheet. The procedures should be closely followed to preclude shell distortion, damaged threads, or other installation problems. Note that shell location should also be considered. Close proximity to removable agitators or other parts should be avoided. Also, for vertical tanks, the transmitter should be placed at a level at least as high as the height at which any sloped bottom reached the straight side. If placed below this point or placed in a vessel with a dished or cone bottom, the pressure exerted by the product in this area will result in a nonlinear volume-to-height ratio. Thus, a Microprocessor based receiver must be utilized to achieve the desired accuracy. If a simple linear display is used in such an application, this "nonlinear" portion of the tank will represent some inaccuracy which should be spread over the entire tank height to minimize it's effect.

For new applications and also select retrofit applications, Anderson can supply shell plugs that will allow you to use the tank until a transmitter is in place. Consult the accessory list at the end of this publication for more information.

2.2 INSTALLATION OF LEVEL TRANSMITTER

Before installation of the transmitter, flush out and wipe clean the inside surface of the weld-in shell. Inspect with a flashlight for any debris or surface damage to the face of the shell. Pay careful attention to the area where the gasket surface meets the shell. Be sure that no sharp edges, gouges, or scrapes exist. In addition, inspect the shell threads for damage prior to transmitter installation.

There are three different gasket types available. The first is a "Tapered" gasket supplied with Anderson and Cherry Burrell fittings (note-gaskets are not interchangeable). Second, an O-ring type gasket is supplied for King Gage style and Tank Mate fittings (note - gaskets are not interchangeable). Lastly, Tri-Clamp style fittings require a customer supplied gasket.

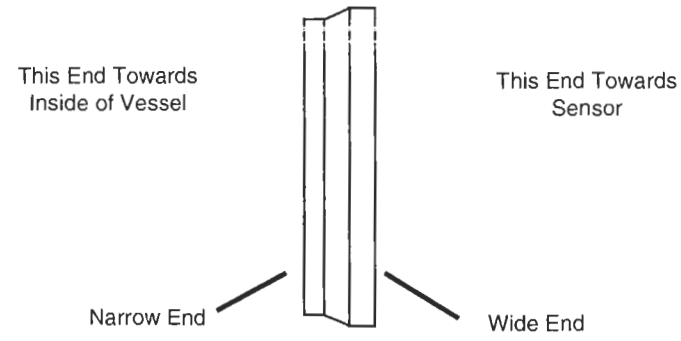
For sensors with Anderson and Cherry Burrell style fittings, refer to Figure 2-1 for proper installation of the gasket. Be sure that the wide end is slipped into the transmitter first. For King Gage Style and Tank Mate fittings, a rubber O-ring will be supplied. Be sure the O-ring fits snug on the fitting. Do not use standard O-ring gaskets as proper sealing may not occur. For Tri-Clamp sensors, be sure that the correct gasket is utilized. The gasket should not come in contact with the face of the transmitter diaphragm. Consult the accessory list at the end of this publication for information on spare gaskets.

Once the gasket is properly installed, carefully slide the transmitter into the tank shell.

You may apply Petro-Jel or another food grade lubricant to the threads of the shell prior to threading on the nut. DO NOT lubricate the gasket. The gasket to shell seal should be a dry fit.

WARNING: Hand tighten the nut only enough to provide adequate seal of the gasket to the shell. Be sure the gasket and transmitter face are flush with the shell on the inside of the vessel. DO NOT over-tighten as this will cause the gasket to bulge into the tank. Carefully inspect for proper seal.

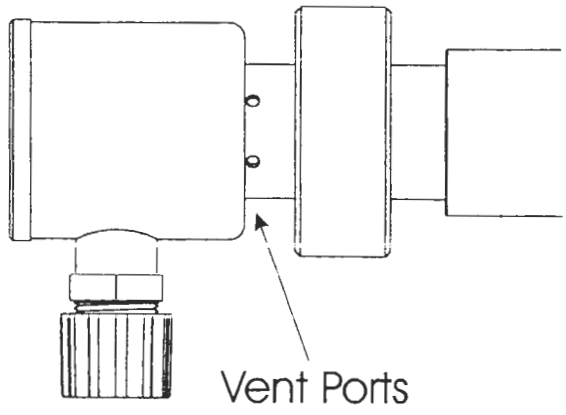
FIGURE 2-1 TAPERED GASKET INSTALLATION



The transmitter housing must be vented to allow the internal sensor to reference atmospheric pressure. If not vented, the 4-20mA output of the transmitter will be inaccurate due to changes in the barometric pressure as well as during periods when the transmitter housing internal temperature is changing.

All critical internal components of the model SE transmitter are protected against moisture damage. Venting is provided via the integral ports as shown in Figure 2-2. These ports should remain open to atmosphere, and free of any foreign materials/product buildup. Under normal conditions, water, cleaning solution, etc. is free to flow through the vent ports without effecting operation.

FIGURE 2-2 SENSOR VENTING



2.3 ELECTRICAL WIRING

2.3.1 Signal Cable

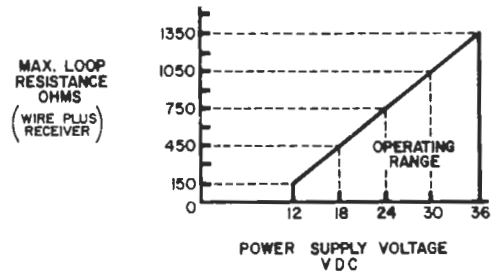
Anderson recommends the use of 22-24 AWG, 2 conductor cable. It should be foil shielded with a continuous drain wire. Although 2 conductor twisted wire without ground may be satisfactory, the possibility exists of electrical fields from equipment or power supply lines being sufficiently strong to induce error in the signal if unshielded wire is routed through or near them. As a result, Anderson strongly recommends the use of cable, as specified above, in addition to properly grounding the shield wire. The shield wire should be grounded at one end of the loop only. Otherwise, induced ground loop currents may flow through the shield between the multiple grounding points causing error in the mA signal.

NOTE: The use of larger diameter cable may make entry of the cable into the transmitter housing via the supplied seal-tight fitting difficult. Before choosing an alternate cable, be sure to check compatibility with the supplied seal-tight wire grommet.

2.3.2 Transmitter Power

The model SE Level Transmitter requires 12-36 VDC for proper operation. If below 24 VDC, a regulated supply is recommended. The total loop resistive load (signal wire, signal receiver, optional display, but not including transmitter) must not exceed the value given in Figure 2-3 corresponding to the voltage of the DC power supply used. Allow 23.3 ohms per 1000 feet for each conductor of 24 AWG sized wire (the smaller the AWG gauge, the larger the wire cross section).

FIGURE 2-3 REQUIRED SUPPLY VOLTAGES



2.3.3 Transmitter Wiring

The signal cable may be routed into the transmitter via the supplied seal-tight grommet, or alternately via 1/2" liquid-tight conduit. As mentioned, be sure the cable diameter used is compatible with the supplied seal-tight grommet, if utilized. For cable routing through liquid-tight conduit, the seal-tight grommet may be removed from the transmitter. A 1/2" NPT Female thread will be exposed for connection of the conduit. When utilizing the liquid-tight conduit connection, silicone sealant should be used to fill the end of the conduit. This will prevent excessive moisture from entering the transmitter.

Strip and tin the leads and connect to the removable terminal block in the transmitter conduit housing. See Figure 2-4 for proper wiring connections. Once wiring is completed, snap the terminal block back in place.

For reference, Figure 2-5 shows a complete diagram of a typical transmitter loop.

2.4 TRANSMITTER ELECTRONIC "ZERO" CALIBRATION

Upon installation and as part of routine maintenance of a transmitter, a Zero calibration adjustment must be performed. The procedure is as follows:

Tools Required: Digital Multimeter (known accurate)
Fine - Straight bladed screwdriver
8" to 10" length of 22-24 AWG wire

NOTE: This procedure cannot be accomplished with the transmitter on a test bench. The unit must be installed in its designated vessel before calibration can be performed.

First, be sure that the tank is drained of all product or at least below the level of the transmitter. The transmitter should be wired to a signal receiver at this point, with power in the loop. Next, remove the screw on cap from the end of the unit. Pull out the removable plug and remove the wire located on the (-) minus terminal. Replace the wire just removed from the (-) terminal with the short 8" to 10" length of wire. At this point, replace the plug into the socket and refer to Figure 2-5 for connection of the meter. Your Digital Multimeter should be set in the mA DC mode. The (+) positive lead is attached to the short length of wire coming from the plug, with the (-) negative lead attached to the wire first removed from the plug.

At this point, you should see 4.00 mA registering on the meter display. If not, use the fine bladed screwdriver to adjust the "ZERO" potentiometer. This adjustment is shown in Figure 2-4.

WARNING: DO NOT adjust the "SPAN" potentiometer. This adjustment is factory set. Adjustments to this potentiometer will only be made if a full calibration is to take place.

Once adjusted to 4.00 mA, the unit is ready for operation. Lastly, remove the plug and replace the wires as originally located. If unable to achieve a proper reading, be sure to check for proper connections, continuity of sensor cable, and possible damage or blown fuse in multimeter. For further assistance, consult you local authorized Distributor or Anderson Technical Services Department directly.

FIGURE 2-4 TRANSMITTER CONNECTIONS AND ADJUSTMENTS

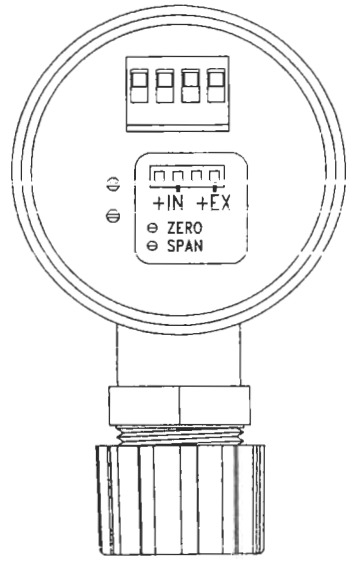
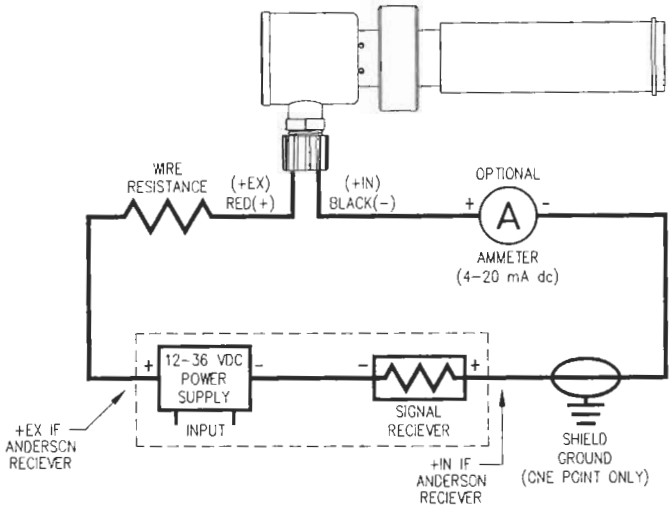


FIGURE 2-5 TRANSMITTER LOOP DIAGRAM



Section 3 Calibration

3.1 PRINCIPLES OF CALIBRATION

The SE transmitter is designed to output a linear 4-20mA signal proportional to the height of liquid above it. Calibration of the unit is dependent on whether the specific gravity of the product remains constant or varies with each product stored in the vessel. Varying the specific gravity of a product causes direct changes in the amount of pressure exerted on the transmitter diaphragm.

For standard applications where the product specific gravity remains constant, calibration is simply based on maximum height of product above the transmitter, multiplied by specific gravity. This signal may be interfaced with Digital Panel Meters, Anderson Digital Indicators, or customer supplied equipment.

Note: If the above application utilizes a Nonlinear vessel (Nonlinear volume to height relationship), a microprocessor based indicator capable of scaling the display output will be required.

For applications where the specific gravity is known to vary based on the product held in the tank, calibration of the transmitter is now based on the maximum height of product above the transmitter, multiplied by the specific gravity of the "Heaviest" product to be held in the tank . To achieve a correctly scaled output, the signal must be sent to a Microprocessor based instrument capable of doing mathematical calculations. The signal will be scaled based on the maximum specific gravity used for the transmitter calibration, in addition to the specific gravity of the product held in the tank at the time of the reading. Standard Digital Indicators do not have capability such as this and as a result, are not suitable for this type of application. Again, a Microprocessor based system would be needed to provide correctly scaled output.

Calibration of the unit is performed via non-interactive "Zero" and "Span" adjustments located within the conduit housing.

3.2 FACTORY CALIBRATION

The calibrated range of a transmitter is generally determined from either a tank print supplied by the Customer/Distributor or by actual measurements gathered by the Customer/Distributor. This information, used in conjunction with the product specific gravity, transmitter orientation, and process temperature are used to provide a unit factory calibrated to the actual application.

The calibration measurement range of a transmitter, as ordered from the above information, is etched on the body of the unit along with a corresponding model and serial number.

Example: A vertical storage tank for ice cream mix with a specific gravity of 1.15 with a straight side height of 100 inches above the sensor level.

Range, unless otherwise specified: 0-115" water column [100" x Sp. Gravity (1.15)] = Span

NOTE: Specific gravity can be calculated from weight per gallon by dividing by the weight per gallon of water (8.345 nominal).

Example: Specific gravity of raw milk, which weighs 8.62 lbs/gallon is calculated as:
8.62 ÷ 8.345 = 1.032

When calibrating at the factory, the sensor is oriented as it will be in the tank, since changes in the angle of the sensor will cause a zero offset. The sensor is then "zeroed" to 4.00 mA output with no pressure applied. Next, a pressure equal to the maximum pressure exerted by a full tank of product is placed on the diaphragm. The sensor is "spanned" to a 20.00mA output at this pressure. This process is repeated until the sensor is accurate at zero and full span. A final check is done at 10% intervals across the span to insure linearity.

IMPORTANT: Once installed, the sensor "zero" should be checked and adjusted to 4.00 mA.

3.3 FIELD OR "WET" CALIBRATION

For maximum accuracy, the transmitter should be "wet" calibrated in place. To accomplish this, an accurate means of determining actual volumes or height of product in the vessel is required. This can be a product flow meter, a water meter, or a compilation of load weight or volume tickets as received over a given period. If the rate at which product being processed is accurately known, this rate can be multiplied by the total time of processing, to yield an accurate amount of product in a vessel. The procedures for wet calibration on vertical tanks are outlined in 3.3.1, below. All procedures require the installation of an accurate mA meter in the powered loop.

If your sensor is operating with an Anderson Microprocessor based monitor, please call Anderson Technical Services for additional information on wet calibration procedures.

Note: Non-linear (non-linear volume to height) tanks will require the development of a custom "look-up" table for proper wet calibration.

3.3.1 Procedure #1: Calibration with product

1. With the tank empty, and at the normal process temperature, remove the transmitter cap and adjust the zero "pot" to give a 4.00mA output.

2. With a known volume, weight, or height in the vessel and the vessel at least half full of product, determine the proper output.

NOTE: Product should be at the normal use temperature for maximum accuracy.

3.3.1 Procedure #1: Calibration with product - continued

Example: A 20,000 gallon vertical silo is filled with 15,200 gallons of product. What is the proper output?

Known: Tank Radius = 60"
Tank Height (straight side above sensor) = 410"
The volume held below the sensor is 200 gallons.

A. Subtract 200 from 15,200 to yield volume above the sensor (15,000).

B. Calculate the exact volume (V) that could be held above the sensor.
$V = (\pi r^2 h)$ divided by 231
$V = [3.14(60^2)\ (410")]$ divided by 231 = 20,063 gal.

C. Divide "A" by "B" 15,000 ÷ 20,063 = .7476

D. Multiply "C" by 16 (.7476 x 16) = 11.96

E. Add 4.0 to "D" to yield the proper output (11.96 + 4) = 15.96

3. Remove the transmitter cap and adjust the span pot, "S", to give this output (15.96 in above example).

4. After the tank is empty and still at or near the normal product temperature, check for a 4.00mA output. The transmitter is designed for minimum zero and span interaction so less than .02 mA offset should be expected.

3.3.2 Procedure #2: Calibration with water

1. With the tank empty and at or near the normal process temperature, remove the transmitter cap screw and adjust the zero, "pot" to yield a 4.00mA output.

2. Fill the vessel to at least half-full with a known volume of water. Divide this volume by the maximum volume that could be held above the sensor to yield the percent full. Remember to subtract any volume held below the sensor before dividing by the maximum volume.

NOTE: This percent full is not corrected for specific gravity.

3. Correct for specific gravity by dividing:

Percent Full ÷ Specific Gravity = Percent Full (Product)

4. Calculate the proper output using the following formula:
Proper Output = (Percent Full (Product) x 16) + 4

Example: A 10,000 gallon tank with 8,000 gallons of water. Normal product specific Gravity equals 1.1. What is the proper output?

Known: Tank Radius = 60"
Tank Height (straight side above sensor) = 205"
Tank holds 200 gal. below the sensor

A. Zero the transmitter with the tank empty and at or near the normal process temperature.

B. Fill the tank with a known volume. 8,000 gal - 200 gal. (below sensor) = 7,800 gal.

Max. Volume above sensor =
(π r^2 h) divided by 231 =
$3.14(60)^2$ 205" ÷ 231 = 10,032 gal.

Determine the percent full, uncorrected for specific gravity, by dividing 7,800 by 10,032

7,800 ÷ 10,032 = .7775 (percent full)

C. Correct the percent full for specific gravity by dividing:

.7775 ÷ 1.1 = .7068% (product)

D. Calculate the proper output using: Output = (Percent Full (Prod.) x 16) + 4
(.70689 x 16) + 4 = 15.31 mA

Span the transmitter to give 15.31mA output.

E. Check the zero with the tank empty.

NOTE: If you are re-calibrating a spare transmitter or moving a transmitter from one tank to another, be sure that the applications are compatible. First, be sure that the tank shell fitting for the new application matches the sensor to be utilized. Next, determine the measurement range of the new application (max height of product x specific gravity). Referring to Section 1.3 - Specifications, be sure the new application falls within the rangeability of the existing sensor.

Example: Existing Sensor is SE-1
That unit has rangeablility of 30" WC to 300" WC
New application calls for 987" WC
Existing sensor cannot be calibrated for desired range, would require SE-3

Section 4 Maintenance and Troubleshooting

4.1 GENERAL

Required maintenance of the level transmitter includes a regular calibration program along with verification of the venting system integrity. In addition, a visual check of the diaphragm and gasket should take place at regular intervals. Small dents in the diaphragm will cause a "pre-load" or positive zero offset, which generally can be adjusted out. Larger dents. creases. or punctures are very detrimental and will require a complete repair or replacement. The best protection against this is to place the shell in a protected location away from removable agitators and such.

NOTE: The transmitter should be left in place for normal cleaning operations. Re moval of the unit opens risk for damage to the diaphragm area. If the transmit ter must be removed, a protective cap should be immediately placed over the diaphragm area. Be sure that the cap does not press on the diaphragm directly.

4.2 CALIBRATION CHECKS

To maintain proper accuracy, Anderson recommends quarterly zero signal (4.00 mA) checks. A record of these readings will help to maintain a consistent schedule. If the output stays within 1/4% (.04 mA) of 4.00 mA during this 3 month period, the checks may be made at 6 month intervals. If re-zeroing does not correct inaccuracies seen in the receiver, calibration of the receiver itself should be performed. Consult associated manuals for your individual equipment.

WARNING: Unless performing full calibration of the unit, do not adjust the "SPAN" potentiometer. This adjustment is Factory set. Testing of the transmitter "SPAN" will require stepping through one of the procedures outlined in the Calibration section (section 3) or the use of a stand alone pressure calibration system. The unit may also be returned to the factory for calibration. Call Anderson Technical Services directly for further information.

4.3 VENT SYSTEM

The model SE Level Transmitter, because of its unique water resistant design, may be vented directly to atmosphere without the need for additional moisture filtering. The vent system, however, must be maintained to allow for proper operation of the unit.

- Be sure the vent port (Figure 2-2) is not obstructed. These ports must be open to atmosphere.

4.4 GASKETS

Anderson recommends that gaskets be changed once a year. It is important that the holding nut not be over tightened when reinstalling a transmitter. Forcing the nut will push the gasket into the tank. Always do a visual check from the inside of the vessel to be sure the gasket is properly sealed.

NOTE: If you are utilizing Teflon gaskets, these gaskets must be discarded each time the transmitter is removed from the tank. Unlike standard silicone gaskets, Teflon material retains any imperfections resulting from scratches or damage in the shell surface. When utilized again, the imperfections may result in an unsanitary seal.

4.5 TROUBLESHOOTING

As with any current loop, power supply and loop continuity are both imperative. If a problem occurs, a methodical approach, beginning at the power supply is best.

4.5.1 Troubleshooting Steps

1. Measure power supply voltage across + and - terminals. Should read between 12 and 36 VDC.

2. Disconnect one wire (+) from the signal receiver and install an accurate milliamp meter in series with the receiver. The signal should correspond proportionally to the height of liquid in the tank (range of 4 mA empty tank to 20 mA full tank).

NOTE: Above may differ if signal scaling is being done via microprocessor based receiver. Product specific gravity values must be used in calculation.

3. If step 1 and 2 are satisfactory , the problem is with the receiver. (If supplied by Anderson. refer to the instruction manual for that instrument).

4. Check all wiring connections between loop components. If OK, proceed to step 5.

5. With loop disconnected, the next step is to determine if there is a short to the housing. This is accomplished by placing the (+) lead of the ohm meter on the +EX terminal, and the (-) lead to the housing. The process should then be reversed. In both cases, the meter should register infinite resistance. The process should then be repeated on the +IN terminal of the sensor. Again, the meter should register infinite resistance. If test is OK, proceed to step 6,

6. Wire transmitter independently of loop using two 9 volt batteries for power and milliamp meter as a receiver. If signal is proper, approximately 4mA with no product on sensor, then problem is with external wiring.

NOTE: Be sure to observe proper polarity as described in Figure 2-5.

If any of the above indicate a transmitter problem, refer to Section 4.6 for return information.

NOTE: Tank shell "plugs" are available from the factory if a tank must be used while the sensor is out for repair. Contact the Technical Service Dept. at 1-518-922-5315 for details. Have the transmitter serial number on hand to expedite shipping of the proper plug.

Appendix A - Spare Parts and Accessories

Consult Anderson Instrument Customer or Technical Services for pricing and availability.

Weld-In Tank Shells (For new applications)

Anderson Long Shell - 316L Stainless	71060-A3
Anderson Short Shell - 316L Stainless	71060-A4
Anderson Long for ASME	71060-A5
Anderson Short for ASME	71060-A6
Anderson Long Heavy-Duty ASME	71060-A7

Tank Shell Plugs (supplied with nut and gasket)

Anderson Long Tank Shell Plug	56511-B1
Anderson Short Tank Shell Plug	56511-B2
Cherry Burrell Long Tank Shell Plug	56511-A1
Cherry Burrell Short Tank Shell Plug	56511-A2
King Long Tank Shell Plug	56511-C1
King Medium Tank Shell Plug	56511-C2
King Short Tank Shell Plug	56511-C3
Tank Mate Long Tank Shell Plug	56511-D1
Tank Mate Medium Tank Shell Plug	56511-D2
Tank Mate Short Tank Shell Plug	56511-D3

Level Sensor Replacement Gaskets

Anderson Style Sensor - Silicone Rubber	44348-A1	(this gasket std)
Cherry Burrell Style Sensor - Silicon Rubber	44292-A1	(this gasket std)
King Gage Style Sensor - Rubber "O" Ring	36240-S0212	(this gasket std)
Tank Mate Style Sensor - Rubber "O" Ring	36240-S0123	(this gasket std)
Anderson Style Sensor - Teflon	44348-B1	

Existing Shell Adaptor Kits

Tank Mate Shell Adaptor (provides threaded connection for sensor)

For insulated (medium and long length) shells	57200-A1
For Un-insulated (short) shells	57200-A2

Rosemount Shell Adaptor Kit (adapts large flange shell to Anderson fitting)

For standard Rosemount/Foxboro large flange tank shell	71089-A1

Calibration Adaptor

- Provide quick connect fitting to sensor - for use with field pressure calibration equipment
- Provides sensor-to-female threaded connection

Anderson Style Fitting Calibration Adapter	73198-A1
Cherry Burrell Style Fitting Calibration Adapter	73198-A2
King Gage Style Fitting Calibration Adapter	73198-A3
Tank-Mate Style Fitting Calibration Adapter	73198-A4

Appendix B

Warranty and Return Statement

These products are sold by The Anderson Instrument Company (Anderson) under the warranties set forth in the following paragraphs. Such warranties are extended only with respect to a purchase of these products, as new merchandise, directly from Anderson or from an Anderson distributor, representative or reseller, and are extended only to the first buyer thereof who purchases them other than for the purpose of resale.

Warranty

These products are warranted to be free from functional defects in materials and workmanship at the time the products leave the Anderson factory and to conform at that time to the specifications set forth in the relevant Anderson instruction manual or manuals, sheet or sheets, for such products for a period of one year.

THERE ARE NO EXPRESSED OR IMPLIED WARRANTIES WHICH EXTEND BEYOND THE WARRANTIES HEREIN AND ABOVE SET FORTH. ANDERSON MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE PRODUCTS.

Limitations

Anderson shall not be liable for any incidental damages, consequential damages, special damages, or any other damages, costs or expenses excepting only the cost or expense of repair or replacement as described above.

Products must be installed and maintained in accordance with Anderson instructions. Users are responsible for the suitability of the products to their application. There is no warranty against damage resulting from corrosion, misapplication, improper specifications or other operating condition beyond our control. Claims against carriers for damage in transit must be filed by the buyer.

This warranty is void if the purchaser uses non-factory approved replacement parts and supplies or if the purchaser attempts to repair the product themselves or through a third party without Anderson authorization.

Returns

Anderson's sole and exclusive obligation and buyer's sole and exclusive remedy under the above warranty is limited to repairing or replacing (at Anderson's option), free of charge, the products which are reported in writing to Anderson at its main office indicated below.

Anderson is to be advised of return requests during normal business hours and such returns are to include a statement of the observed deficiency. The buyer shall pre-pay shipping charges for products returned and Anderson or its representative shall pay for the return of the products to the buyer.

Approved returns should be sent to:

ANDERSON INSTRUMENT COMPANY INC.
156 AURIESVILLE ROAD
FULTONVILLE, NY 12072 USA

ATT: REPAIR DEPARTMENT

Anderson Instrument Co. Inc.
156 Auriesville Road
Fultonville, NY 12072
1-800-833-0081
Fax 518-922-8997