

# Maintenance & Operating Instructions

For

**Dixon Bayco**

**FT150 SERIES SENSORS**

**FT151 SERIES SENSORS**

**FT152 SERIES RETAIN SENSORS**

**FT155 SERIES THERMISTOR DUMMY**

## For Sales and Service Contact

Europe:  
Dixon Group Europe Ltd.  
Preston, England  
Phone: +44 (0) 1772 323529  
Fax: +44 (0) 1772 314664  
Email: [enquiries@dixoneurope.co.uk](mailto:enquiries@dixoneurope.co.uk)

Mexico:  
Dixva, S. de R.L. de C.V.  
Monterrey, N.L.  
Phone: 01-800-00-DIXON (34966)  
Fax: 01-81-8354-8197  
E-mail: [contactenos@dixonvalve.com.mx](mailto:contactenos@dixonvalve.com.mx)

Canada:  
Dixon Group Canada Limited  
Innisfil (Barrie), Ontario  
Phone: 705-436-1125  
Fax: 705-436-6251  
Toll Free: 877-963-4966  
E-mail: [isales@dixongroupcanada.com](mailto:isales@dixongroupcanada.com)

Asia Pacific:  
Dixon (Asia Pacific) Pty Ltd Wingfield, South  
Australia  
Phone: +61 8 8202 6000  
Fax: +61 8 8202 6099  
E-mail: [enquiries@dixonvalve.com.au](mailto:enquiries@dixonvalve.com.au)

USA:  
Dixon Bayco USA  
Chestertown, Maryland  
Phone: 410-778-2000  
Fax: 410-778-4702  
Toll Free: 800-355-1991  
E-mail: [dixonbayco@dixonvalve.com](mailto:dixonbayco@dixonvalve.com)



*The Right Connection®*

[dixonvalve.com](http://dixonvalve.com)

FloTech Thermo-Optic sensor and Thermistor Dummy are mechanically and functionally compatible with Civacon and Scully Thermistor, Thermo-Optic and Thermistor Dummy components. These “Electronic” Thermistor sensors will provide reliable operation when installed as replacements to conventional “Green Tipped” Thermistor sensors. FloTech Thermo-Optic sensors and electronic dummy provide high reliability, long life, and quick start up in cold weather. “Civacon” is a registered trademarks of Civacon / Dover Corporation.

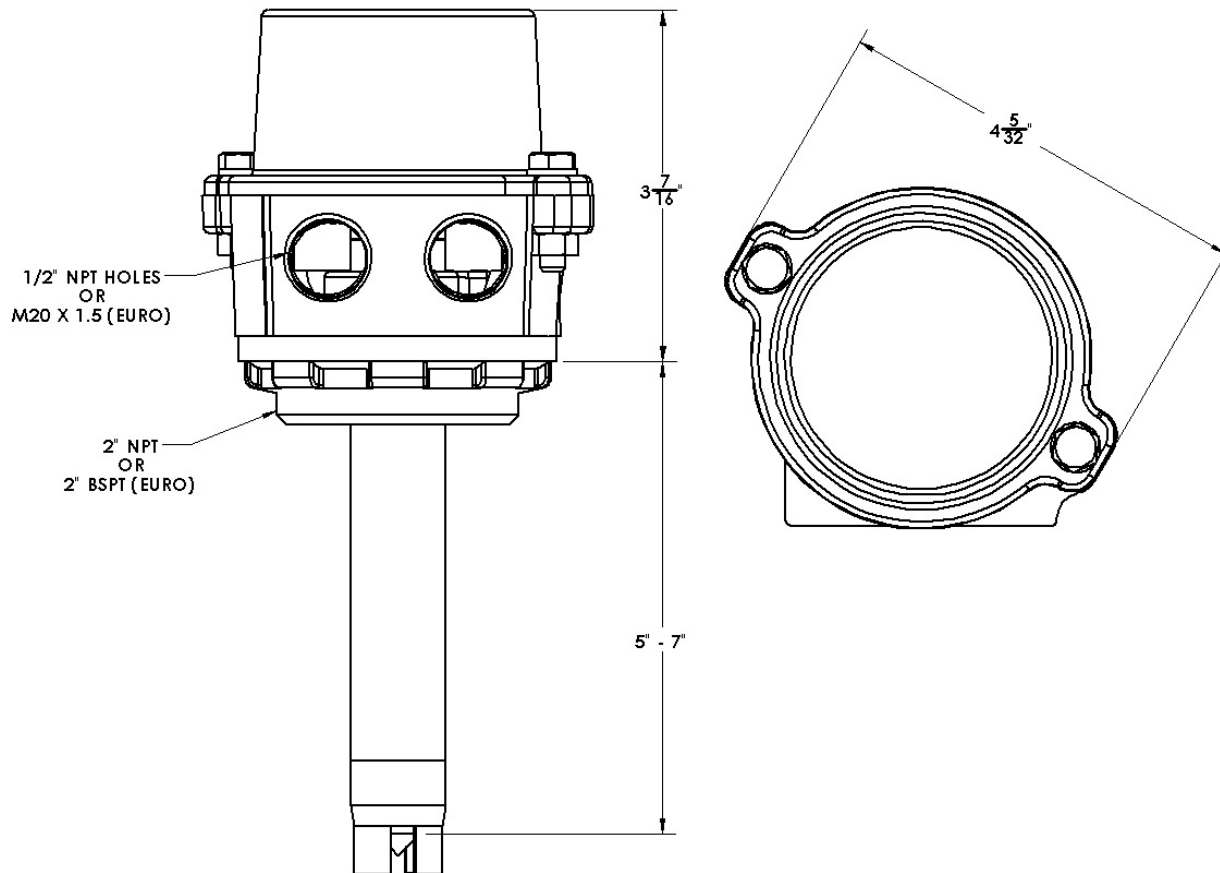
## ***INSTALLATION INSTRUCTIONS:***

### ***FT150/FT151 OVERFILL PROBES***

FloTech overfill probe housings can be mounted in a 2”NPT (2” BSPT for European style) female pipe coupling or through a 2 3/8” hole. When mounting in a 2 3/8” hole the gasket and lock nut provided are used to retain the probe holder in the tank shell or manhole. After the sensor is mounted remove the cap.

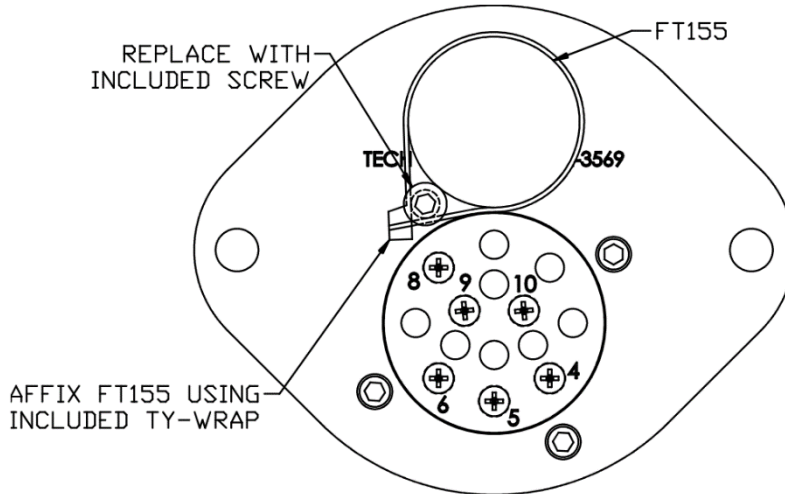
Loosen the probe clamp screw and adjust the probe to the correct level point. This is typically 60 gallons (227 liters) above the sensor prism OR 3% of compartment volume whichever is greater. It is not recommended cutting the standard 7” sensor to a shorter length. This will cause insufficient time to stop the flow of product within the load racks reaction time. Longer 12” or 18” sensors may be cut to length with a tubing cutter.

**IMPORTANT: The actual sensing point adjustment should be determined by the total response time required to prevent a tank overfill condition. The FloTech sensor reaction time is 35ms. Wet testing the sensor should switch instantaneous. The loading rack will also have a reaction time. Once the probe is adjusted to the proper height, tighten the clamp screw.**



**FT155 THERMISTOR DUMMY**

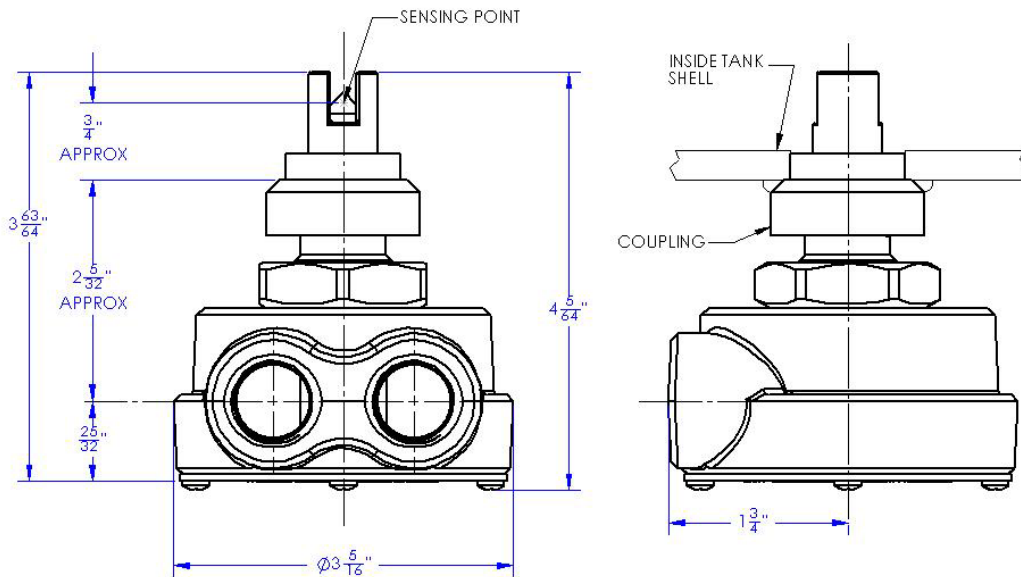
FloTech model FT155 sold after March 31<sup>st</sup> 2015 is designed to be mounted on the back side of an API socket faceplate. The wiring should be contained entirely within the socket housing when closed. The included mounting screw and zip tie are necessary for proper mounting within the socket housing. First remove the indicated screw on the back side of the faceplate then replace with the included screw. Once the screw has been replaced, the FT155 should be affixed as shown below using the included zip tie.



**FT152 RETAIN PROBES**

FloTech model FT152 is designed to fit into a 1/2 NPT half coupling welded into the bottom of each compartment. The mounting location should be the lowest point of the tank. The collar should not protrude more than 3/4 inch outside the tank and flush with the inside of the tank when possible. FloTech supplies a 1/2 NPT weld coupling with each sensor. The coupling requires a 1 1/8 inch diameter hole cut in the bottom of the tank. After the welded coupling has cooled, install the sensor using pipe sealant or Teflon tape to lubricate and seal the threads. **NOTE:** Check thread engagement to ensure the retain sensor prism tip is set deep enough into the tank as to clear weld collar.

**NOTE: DO NOT USE THE BODY OF THE SENSOR TO TIGHTEN!**



**WIRING INSTRUCTIONS:**

It is highly recommended to use FloTech FT401 jacketed 7-conductor cable when wiring a new system. FloTech cable is designed to be oil, UV, and abrasion resistant. We incorporate a noble tin plated stranded copper wire which resist corrosion. These features will provide years of reliable service.

After all sensors are mounted in each compartment, align the conduit openings so they face the roll over rail. Thread in cable glands and pull a length of cable through the conduit openings between each sensor. Cut to length leaving approximately 8 inches extra length exiting the top of each probe holder.

**FOR HOUSINGS USING NPT SIDE OPENINGS:**

All sensor wires must enter or leave through one of the ½ NPT openings. Use FloTech FT402 ½ NPT cable glands to ensure a water tight seal. Unused conduit openings must have a ½ NPT pipe plug installed. Use pipe dope on all ½ NPT threads to ensure a water tight seal.

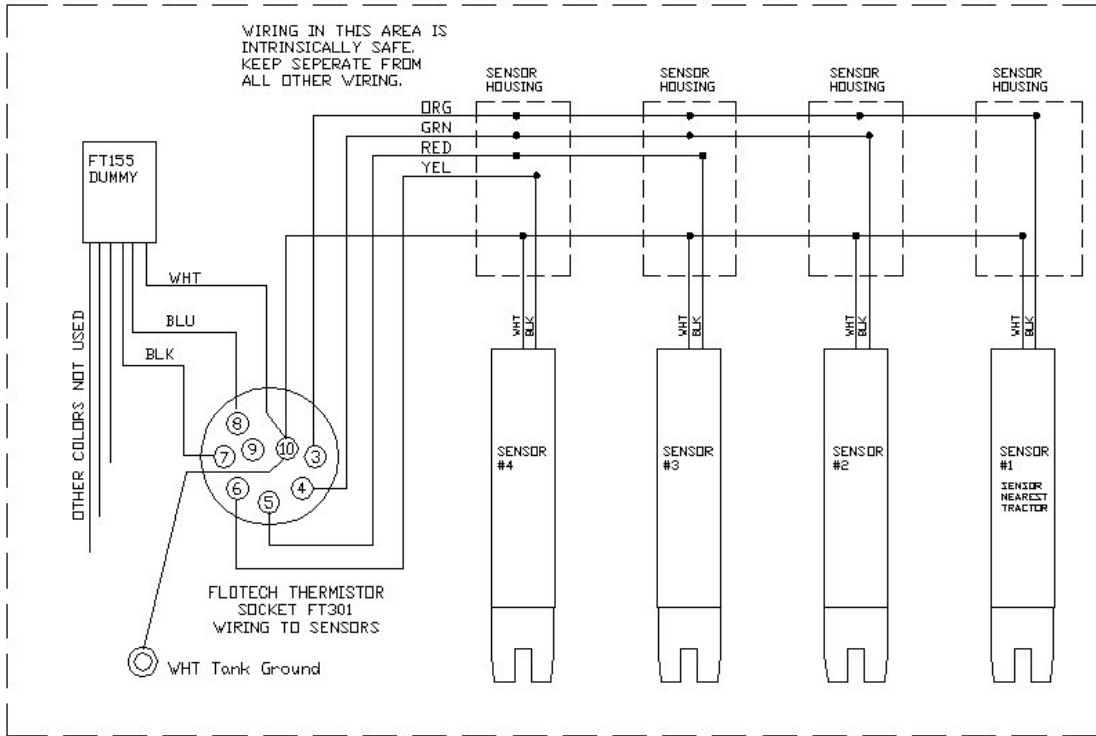
**FOR EUROPEAN HOUSINGS USING METRIC M20 X 1.5 SIDE OPENINGS:**

All sensor wires must enter or leave through one of the M20 X 1.5 threaded openings. Use FloTech FT402E M20 X 1.5 cable glands with thread sealant to ensure a water tight seal. Unused conduit openings must have a M20 X 1.5 plug with o-ring installed.

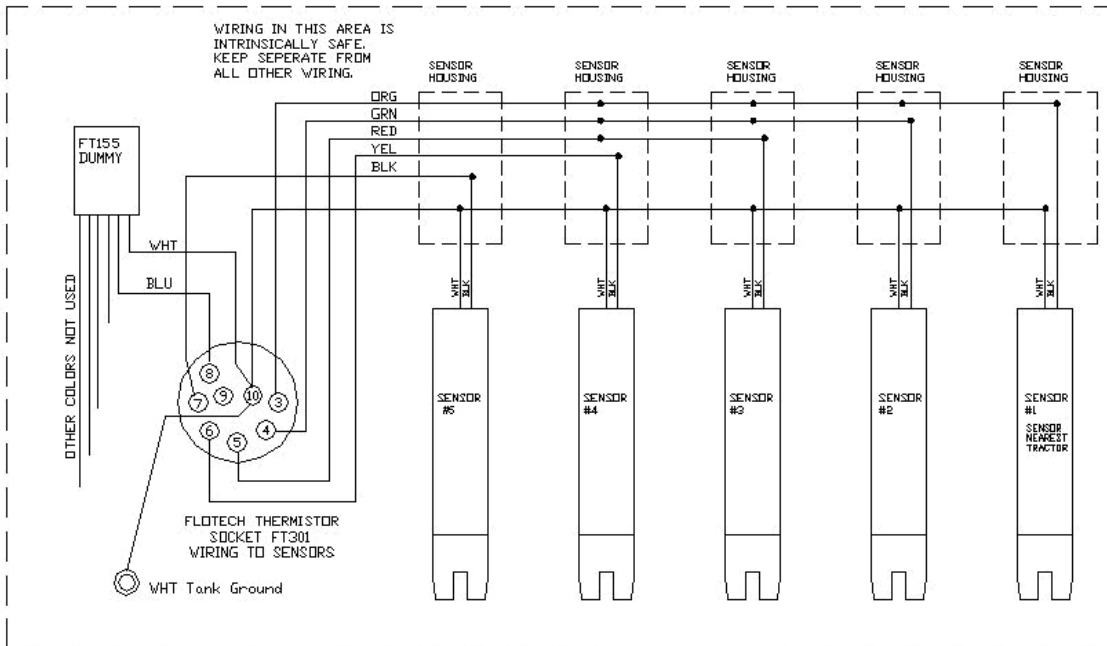
Wire the sensor according to diagram F1 below. Double check your wiring connection when complete. NOTE: It is highly recommended to use a small amount of Silicone RTV sealant in each crimp connection. Fill the FloTech butt end crimps with Silicone RTV sealant prior to inserting the wires then crimp. This will provide a watertight and vibration resistant connection.

When wiring is complete, replace each sensor cap and o-ring. CAUTION: Do not pinch a sensor wire when installing the cap.

TO INTRINSICALLY SAFE EQUIPMENT  
REFER TO FLOTECH INSTRUCTION  
SHEET 10157.



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**Diagram F1**

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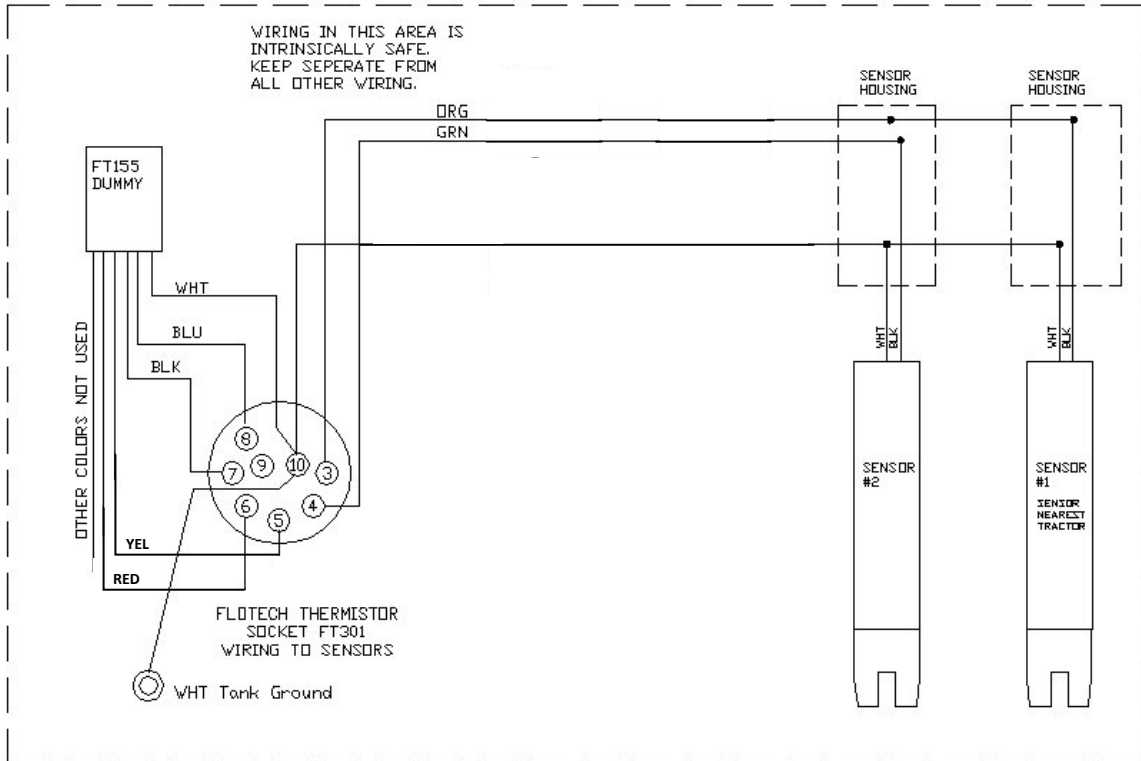
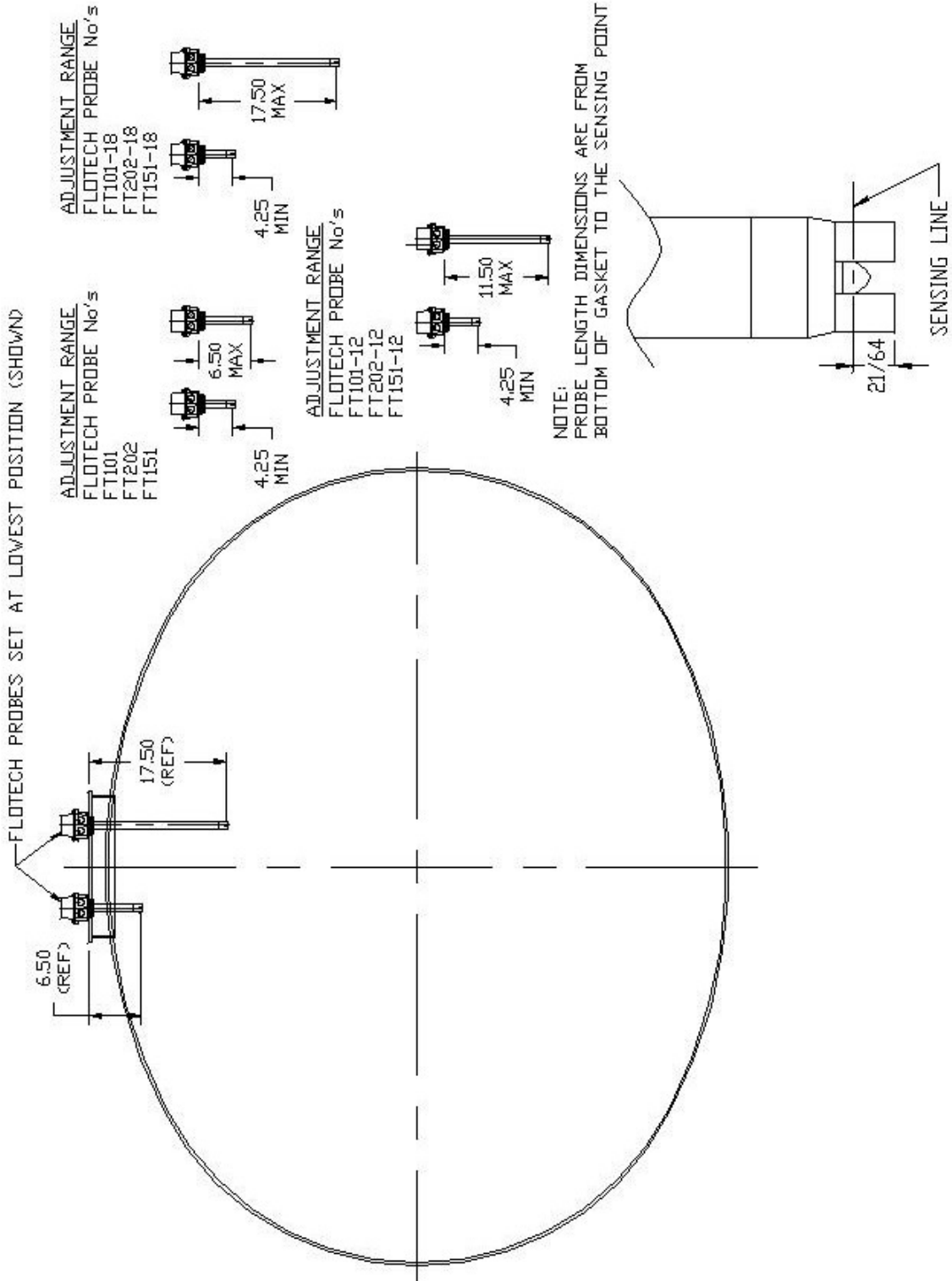


Diagram F1-A





## SENSOR TUBE CUTTING INSTRUCTIONS

1. Remove black plastic thread protector.
2. Measure new length of sensor. Sensor length should be set so a minimum outage of 60 gallons (US) (250 liters Canada) or 3% of compartment capacity, whichever is greater, remain in the tank after the probe is wetted. See diagram below and refer to American Petroleum Institute recommended practice 1004.
3. Hold the tube in hand when cutting with a tubing cutter. DO NOT put the sensor in a vise. This will damage the sensor!
4. Cut the tube with a tubing cutter. DO NOT use any type of saw. DO NOT cut tube shorter than 7 inches overall length.
5. DO NOT cut below the scribed line on the sensor tube. Doing so will void the warranty.
6. Carefully deburr the inside of the tube and replace the thread protector.

