Maintenance & Operating Instructions

For

Dixon Bayco

API Compatible 5 Wire Optic Onboard Monitor System

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Mounting Instructions

Monitor

FloTech model FT103 API Compatible Onboard Monitor is typically mounted on the tank main frame rail, fitting storage box, or any flat surface in easy viewing area near the bottom loading connections. Use the monitor housing as a template to transfer, with a black marker, the four mounting holes to the mounting surface. Drill the holes through and mount the monitor using four 3/8 nuts and bolts. See Diagram F1.

To protect the electronics, keep the monitor lid on the enclosure until you are ready to wire the monitor.

Sensors

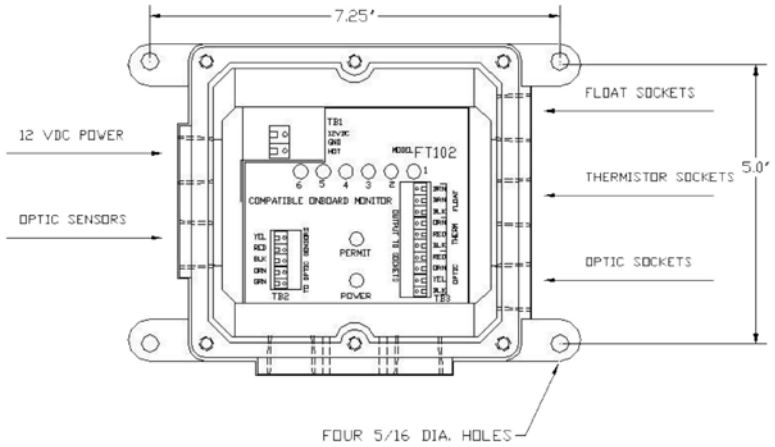
FloTech model FT100 can be mounted in a 2”NPT female pipe coupling or through a 2 3/8” hole. When mounting in a 2 3/8” hole the gasket and lock nut provided are used to retain the probe holder in the tank shell or manhole. After the sensor is mounted remove the cap.

Loosen the probe clamp screw and adjust the probe to the correct level point. This is typically 3% of compartment volume. 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.

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 one half second. The loading rack will also have a reaction time.

Once the probe is adjusted to the proper height, tighten the clamp screw.

DIAGRAM F1 – ONBOARD MONITOR MOUNTING



Sensor Wiring

It is highly recommended to use FloTech FT400 jacketed 5-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.

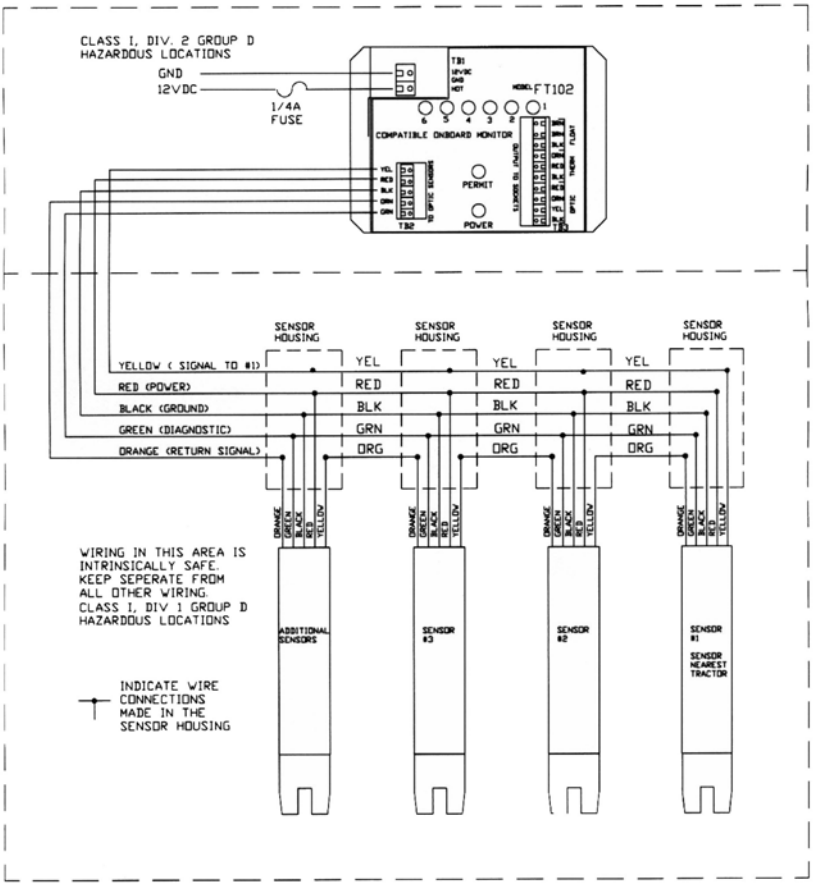
All sensor wires must enter or leave the probe holder through one of the 1/2NPT openings. Use FloTech FT402 ½ NPT cable glands to ensure a water tight seal. Unused conduit openings must have a ½ NPT pipe plug installed. Use pipe dope on all ½ NPT threads to ensure a water tight seal.

Wire the sensor according to Diagram F2 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.

⚠ **Do not pinch a sensor wire when installing the cap.**

DIAGRAM F2 - SENSOR WIRING



Monitor Wiring

Turn off or disconnect power to the trailer before wiring the monitor.

Only use the conduit opening marked "POWER INPUT" on diagram F1 to wire 12VDC power to the monitor.

After the monitor is bolted to the tank, remove the lid and pull cables from the sensors, sockets, and power into the enclosure. A ¼ amp fast blow fuse must be wiring in series with the 12VDC power input to TB1. Check that the positive 12vdc supply wire is connected to TB1 terminal marker HOT. This is the lower screw on TB1. Be careful that no stray wires are touching the metal barrier or ground terminal. NOTE: This FloTech Onboard Monitor will not work on POSTIVE GROUND electrical systems. Any attempt to wire the monitor to a positive ground system will damage the monitor.

Additional Notes

A. Electrical Apparatus connected to the Onboard Monitor should not use or generate more than 250 volts.

B. Installation should be in accordance with NEC ANSI/NFPA 70 and ANSI/ISA RP12.6. In Canada the system should be installed in accordance with the Canadian Electrical Code.

C. Maximum ambient temperature is 60°C / 140°F.

D. Maximum cable capacitance of 10.1uF and inductance of 4.7mH must not be exceeded.

E. Onboard monitor covered under this control diagram are FT103.

F. Model FT103 Non –Incendive field wiring parameters (FMRC Only) for TB3 terminals BRN/BRN/BLK, ORN/RED/BLK, and RED/ORN/YEL/BLK are:

Vmax. = 30V
Imax. = 250mA

Vmax. > Voc or Vt Ci=0Uf
Imax > Isc or It Li=0mH

Ca>Ci+Ccable La>Li+Lcable

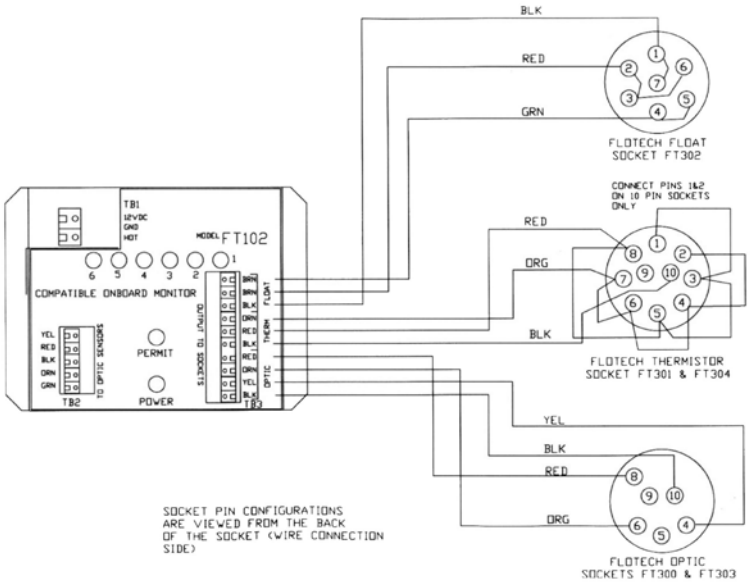
G. FloTech devices connected to TB2 is sensor FT101 and special length versions of same models with s suffix.

Socket Mounting and Wiring

Remove the socket faceplate and set aside. The bag of hardware is needed to re-assemble the socket. Using the socket hole pattern mark drilling locations on the tank where sockets are to be mounted. Mount the sockets using 3/8" nut and bolts. Install black cable glands FloTech model FT402. Pull a length of FloTech cable FT400 from each socket to the corresponding monitor conduit opening. See Diagram F1. Socket wiring Diagram F3 show how to wire all available FloTech socket. Only follow the wiring instruction needed for the type of socket selected on your tank. Follow the wiring color code as this will make troubleshooting an easier task.

Pipe plugs are required for all unused conduit openings in the monitor, sensor, and socket housings.

DIAGRAM F3 - SOCKET WIRING



Control Indicators

Six red LED indicators show when a sensor is wetted or failed. Each red LED is mark 6-1 for each of six possible compartments.

Place one of the BLACK LED covers over the red LED compartments not used on your tank installation. EXAMPLE: If this installation is for a 4 compartment tank trailer then LEDs matching compartments 5 and 6 should be covered with a BLACK cover.

The yellow LED shows when 12VDC power is connected to the monitor. The green LED indicated when all sensors are dry and the system is permissive.

Dixon Bayco Warranty

For complete warranty information, please refer to the latest Dixon catalog.