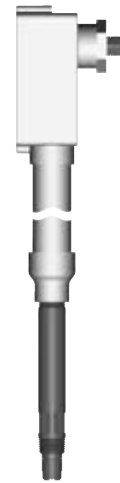
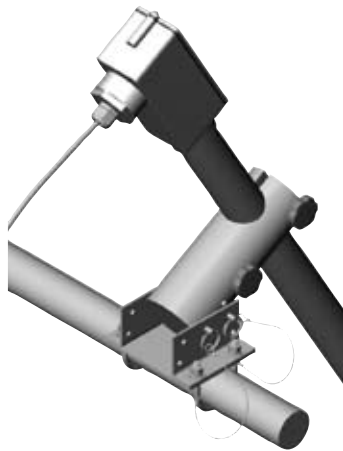


**Thermo Scientific AquaSensors™  
AnalogPlus™ and DataStick™  
Immersion Mounting Hardware  
User Guide**



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The specifications, descriptions, drawings, ordering information and part numbers within this document are subject to change without notice.

This publication supersedes all previous publications on this subject.

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## **Contact Information:**

To contact Thermo Scientific AquaSensors Technical Support:

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Outside the United States call 978.232.6000 or fax 978.232.6031.

In Europe, the Middle East and Africa, contact your local authorized dealer.

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## **Immersion Hardware Part Numbers:**

Sidewall mounting (PN: MH3083, MH2083, MH3083-T)

Handrail mounting (PN: MH1242, MH2242, MH1242-T)

Ball float mounting (PN: MH1252, MH2252, MH1252-T)

Multisensor Float Platform (MHFB02)

Wash Hardware (MH1132, MH2132, MH1142, MH1222)

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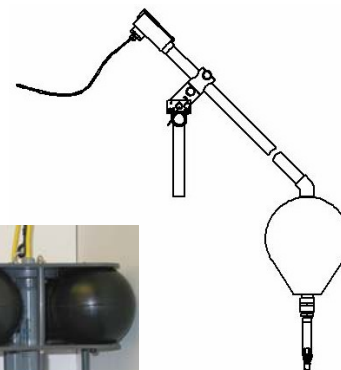
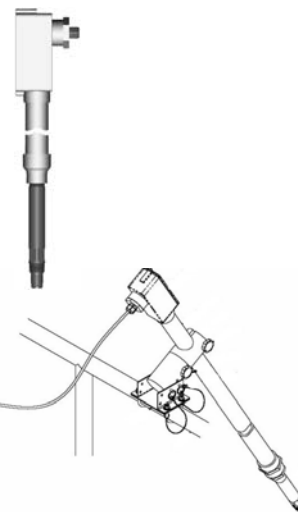
## General Information

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Immersion mounting hardware for DataStick™ and AnalogPlus™ sensors is provided in four different configurations. With each configuration, wash hardware may also be installed to automatically clean sensors on a periodic basis.

1. **Side Wall Immersion Mounting:** For mounting a sensor on the sidewall of a vessel. The assembly consists of a seven-foot pole with an integral junction box. Customer supplied U-bolts are commonly used for mounting. To remove the sensor, the hardware must be lifted out of the tank and laid down on the walkway. The pole protects the sensor cable from damage.
2. **Hand Rail Swivel Mounting:** For positioning a sensor at a fixed height from the bottom of the tank. The assembly consists of a seven-foot pole with an integral junction box and swivel rail mounting hardware. The sensor is placed some distance away from the wall of the tank and the swivel hardware is locked in place to maintain position. The sensor is removed from the tank by unlocking the swivel hardware and swinging the sensor onto the supporting rail bracket.
3. **Ball Float Mounting:** For positioning a sensor at a fixed height below the water level. The assembly consists of a seven-foot pole with a junction box, swivel rail mounting and a ball float. In this configuration the swivel hardware is left unlocked so that the extension moves in relation to the water level. The float keeps the sensor at a constant depth below the waterline.
4. **Multisensor platform float:** For mounting up to four DataStick measurement systems positioned at a specific location in a pond or tank. The float is held in place with a tether and a drag plate is used to keep the sensors oriented correctly.
5. **Wash Head:** For periodic cleaning of sensor heads that may become coated with dirt or grease. Use an AV38 or AV88 relay for timed control of compressed air or water blasts to the sensor head.



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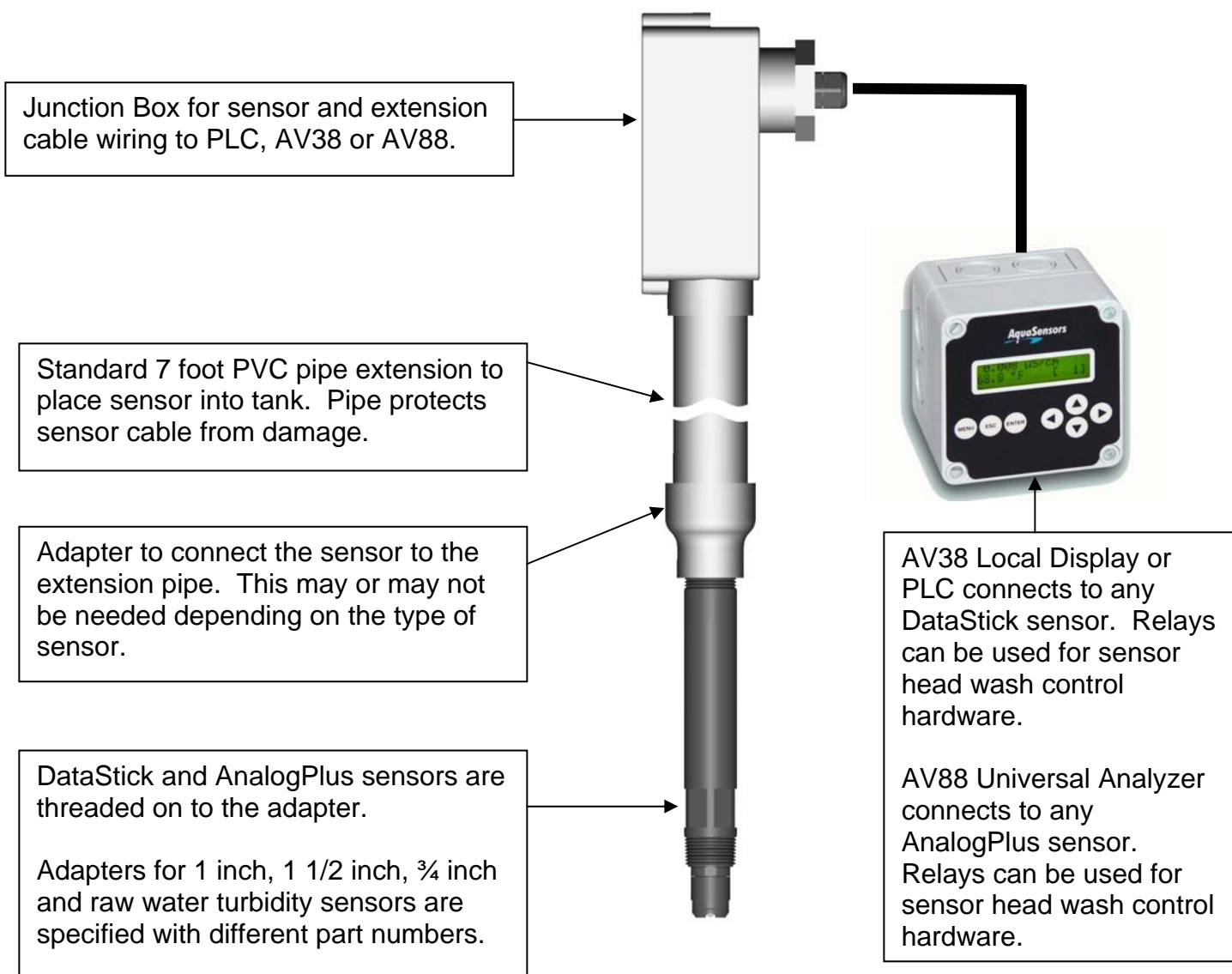
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## Side Wall Immersion Mounting

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Standard immersion mounting hardware is used to rigidly mount a sensor on the sidewall of a vessel. It is usually secured with U-bolts (customer supplied). The mounting assembly consists of a seven-foot pole with an integral junction box. Different pole lengths can be configured on request. To remove the sensor, the hardware must be lifted out of the tank and laid down on the walkway. The pole protects the sensor cable from damage.



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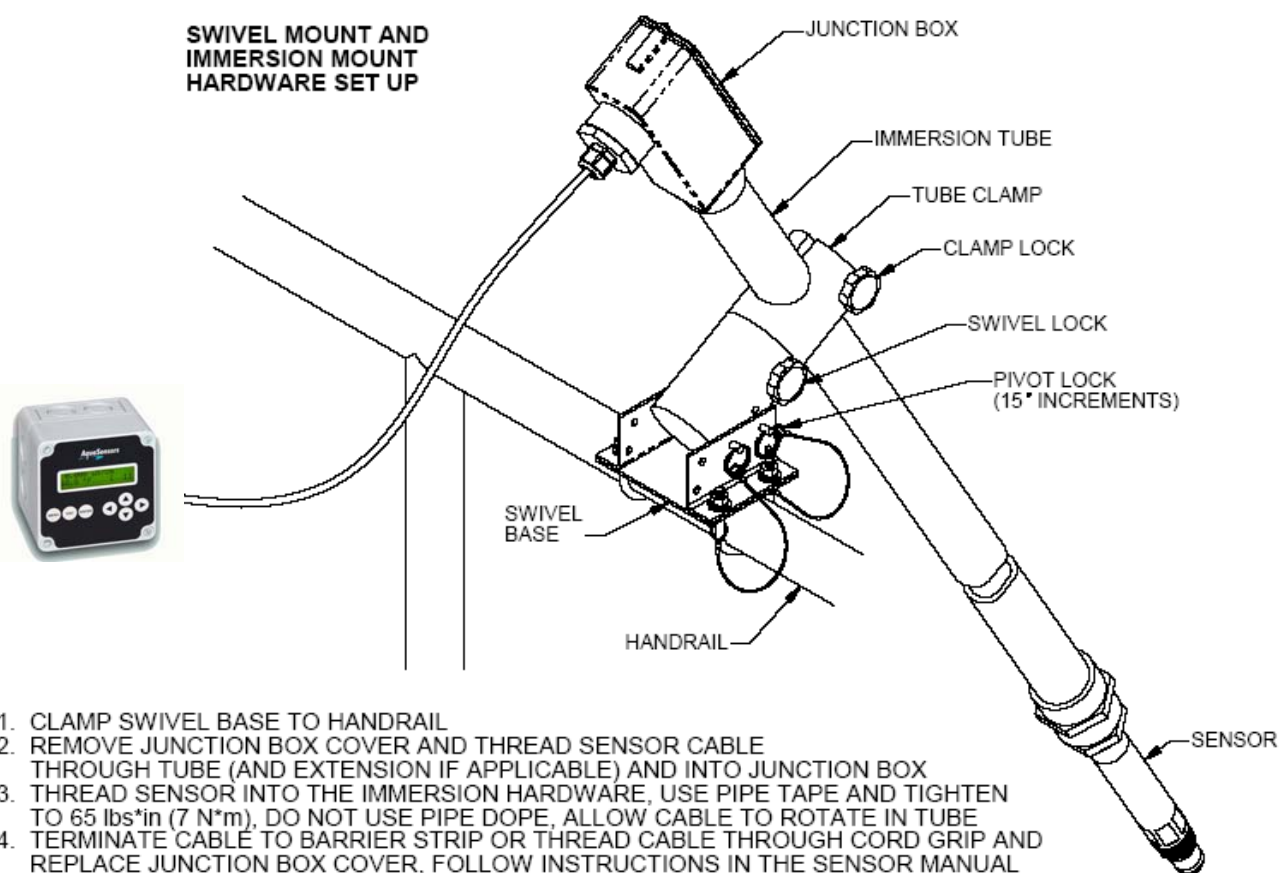
## Immersion Mount with Hand Rail Swivel Positioning

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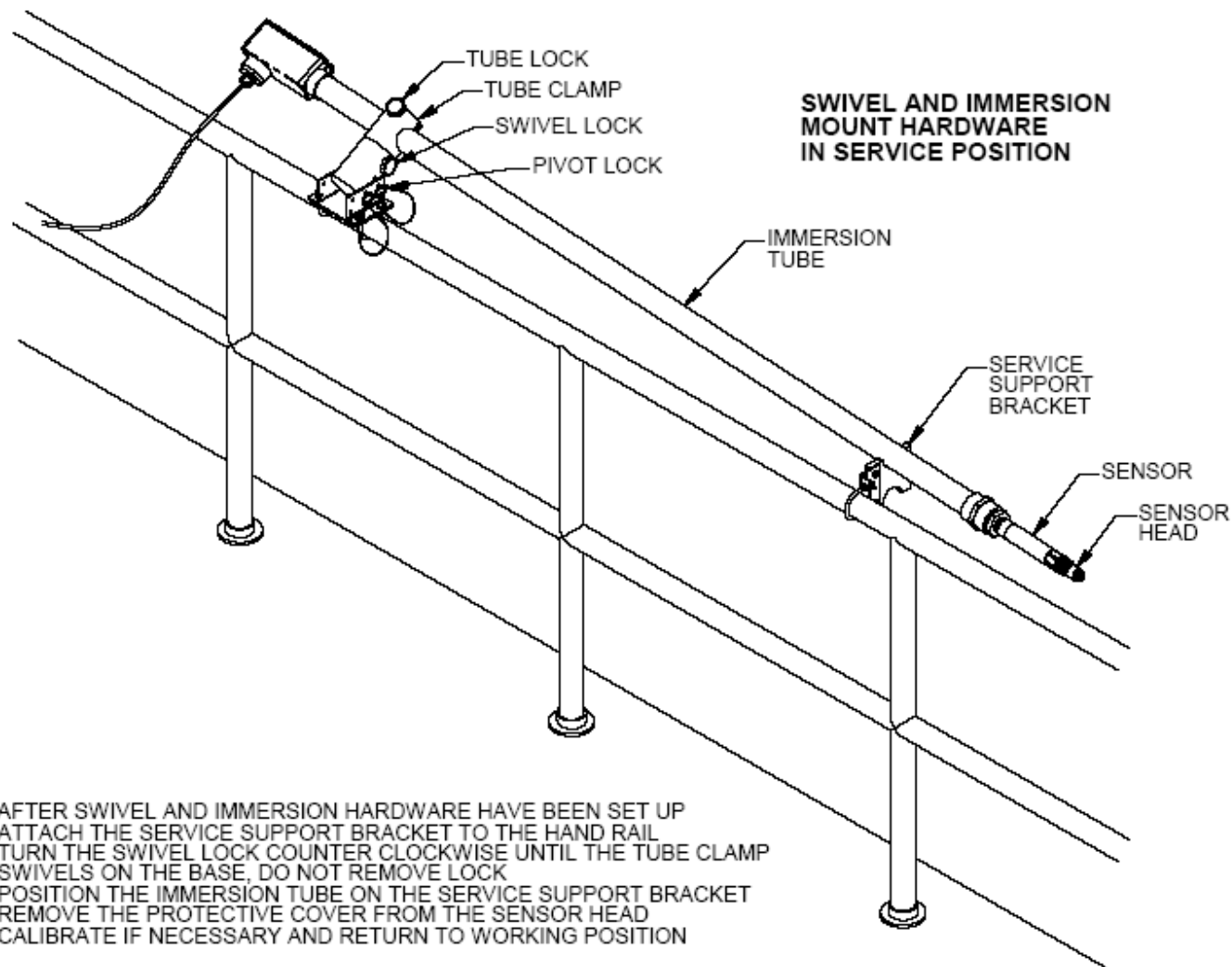
Standard immersion mounting hardware with handrail swivel positioning is used to rigidly mount a sensor away from the sidewall of a vessel near the surface of the water. When the sensor is positioned in the tank the pivot and swivel features are locked into place, insuring that the sensor position will remain fixed in the tank. Different pole lengths can be configured on request or easily modified on site.

To remove the sensor, the swivel is unlocked and the pole swings up as shown in the illustration on the next page. The pole protects the sensor cable from damage. The junction box is used to connect the sensor cable in the pipe and to take an extension cable to a local display or a remote digital network. When automatic cleaning of the sensor is needed an AV38 local display, an AV88 universal analyzer or a PLC with relays can be configured to activate a solenoid valve to release air or water.



1. CLAMP SWIVEL BASE TO HANDRAIL
2. REMOVE JUNCTION BOX COVER AND THREAD SENSOR CABLE THROUGH TUBE (AND EXTENSION IF APPLICABLE) AND INTO JUNCTION BOX
3. THREAD SENSOR INTO THE IMMERSION HARDWARE, USE PIPE TAPE AND TIGHTEN TO 65 lbs\*in (7 N\*m), DO NOT USE PIPE DOPE, ALLOW CABLE TO ROTATE IN TUBE
4. TERMINATE CABLE TO BARRIER STRIP OR THREAD CABLE THROUGH CORD GRIP AND REPLACE JUNCTION BOX COVER, FOLLOW INSTRUCTIONS IN THE SENSOR MANUAL FOR PROPER WIRING HOOK UP
5. INSERT TUBE CLAMP INTO BASE AND ADJUST SWIVEL LOCK
6. ADJUST PIVOT TO DESIRED ANGLE AND LOCK
7. ADJUST TUBE TO DESIRED DEPTH AND LOCK

The swivel hardware makes it easy to access the sensor head for service, cleaning and calibration as shown below.



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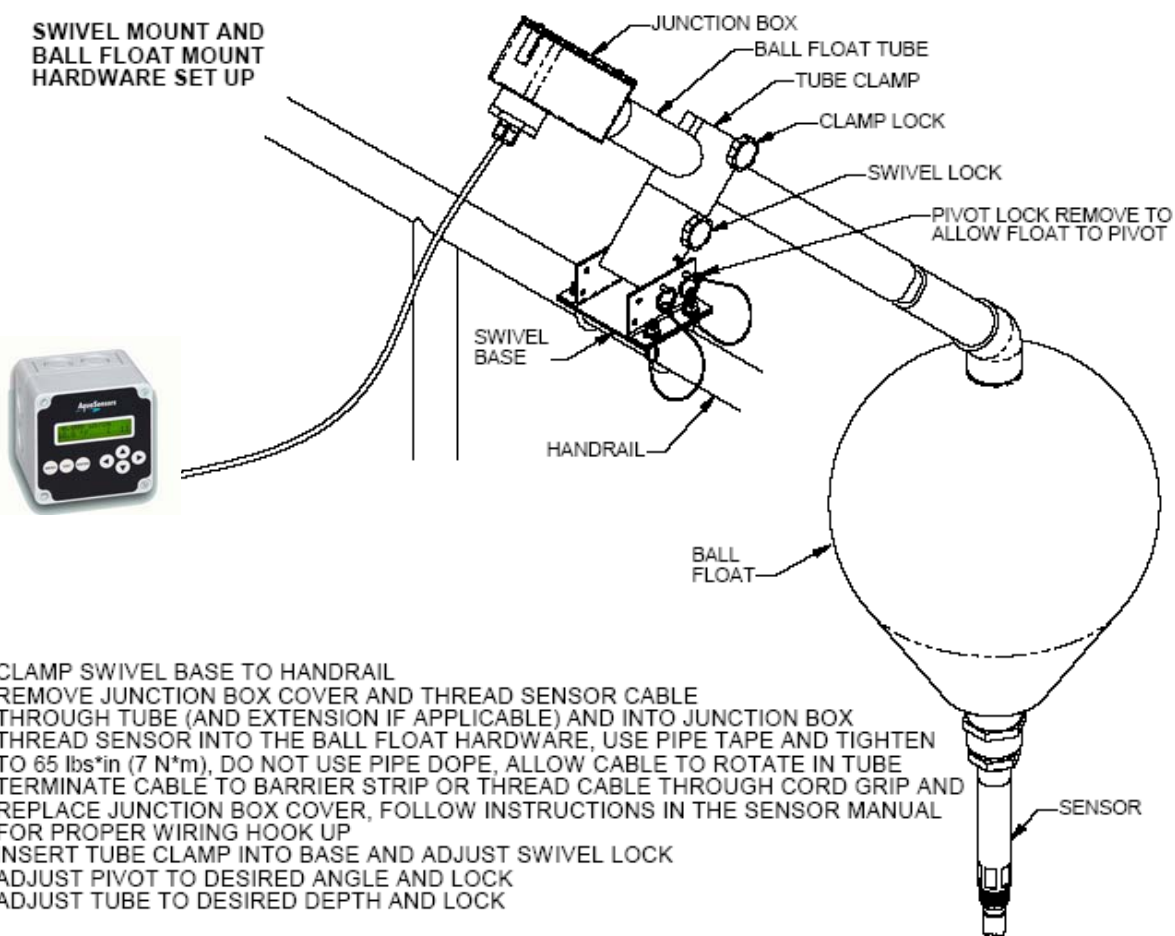
## Immersion Mount with Ball Float

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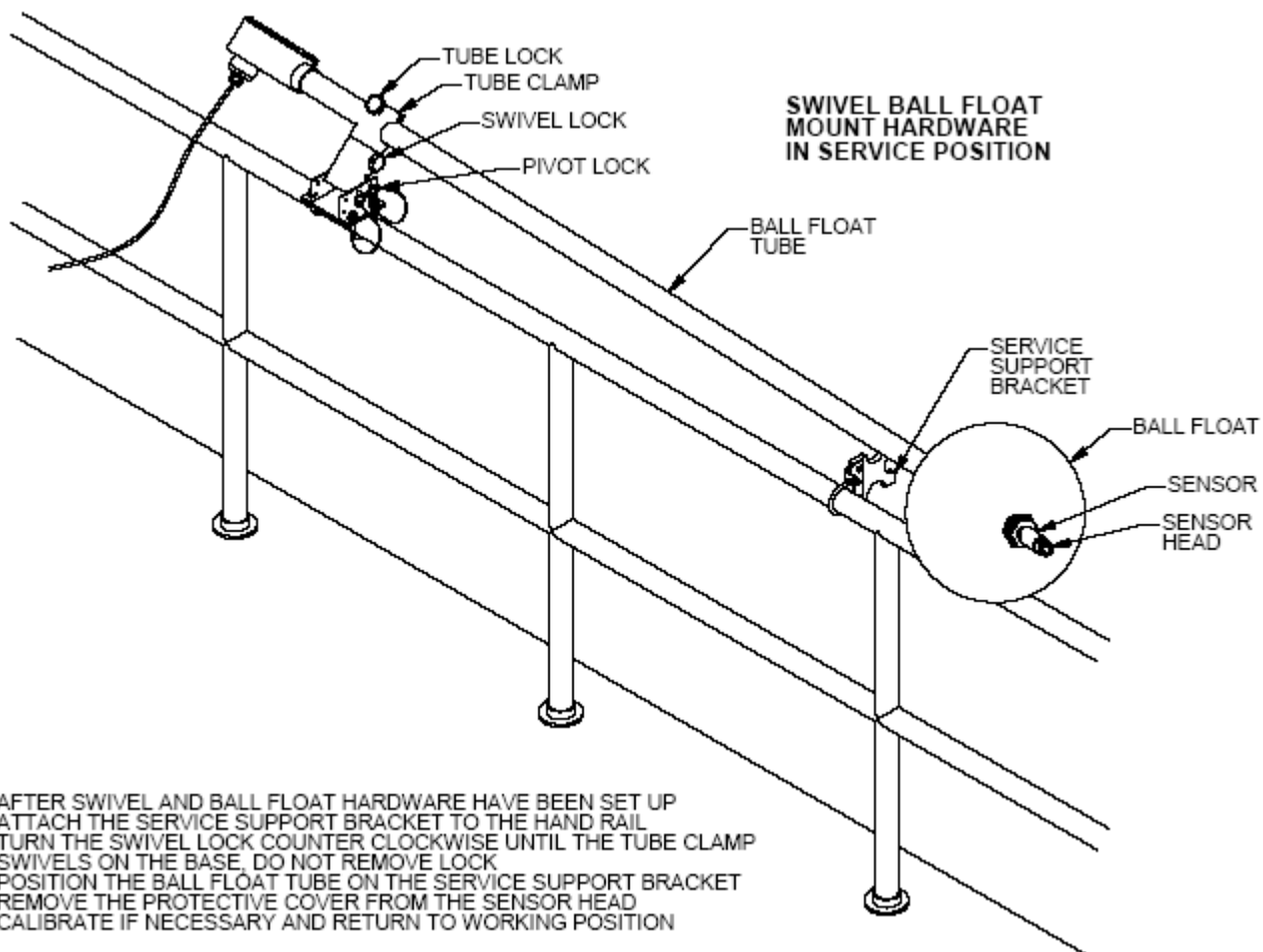
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Standard immersion mounting hardware with a ball float is used to position a sensor at a fixed level below the surface of the water. The swivel hardware is left unlocked so that it can move up or down as the level of the water changes. The ball float is inflated with air and is very robust. There is a 45-degree angle at the end of the extension pipe to maintain the proper positioning of the float in the water.

To remove the sensor, the swivel is unlocked and the pole swings up as shown in the illustration on the next page. The pole protects the sensor cable from damage. The junction box is used to connect the sensor cable in the pipe and to take an extension cable to a local display or a remote digital network. When automatic cleaning of the sensor is needed an AV38 local display, an AV88 universal analyzer or a PLC with relays can be configured to activate a solenoid valve to release air or water.



The swivel hardware makes it easy to access the sensor head and the ball float for service, cleaning and calibration as shown below.

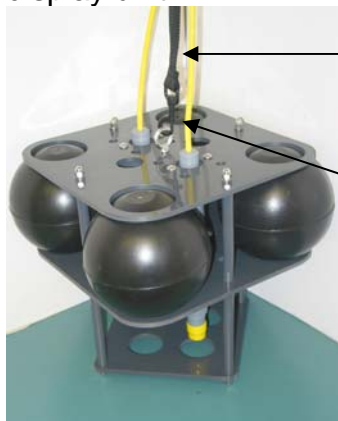


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## MultiSensor Float Platform

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The MultiSensor Float platform can hold up to four DataStick sensors and can be held in place with two or three tether lines. The sensor cables can be routed on the tether to a PLC or AV38 display unit.



Tether the Float with the center hook.

Run sensor cables with slack on the tether.



Thread sensors from the bottom side to insert or remove. Sensor heads can be replaced without removing the DataStick body or cables.

Floats will keep sensors below the water line.



Guard will protect sensors and provide drag to keep float upright.

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## Sensor Wash Head Assemblies

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Immersion mounted sensors can be automatically cleaned in process with optional wash hardware that can be attached to the sensor head. The wash units are fastened to the sensor body with a 3/16-inch hex wrench.

The dissolved oxygen DataStick is shown here with and without the MH 1142 air purge system.



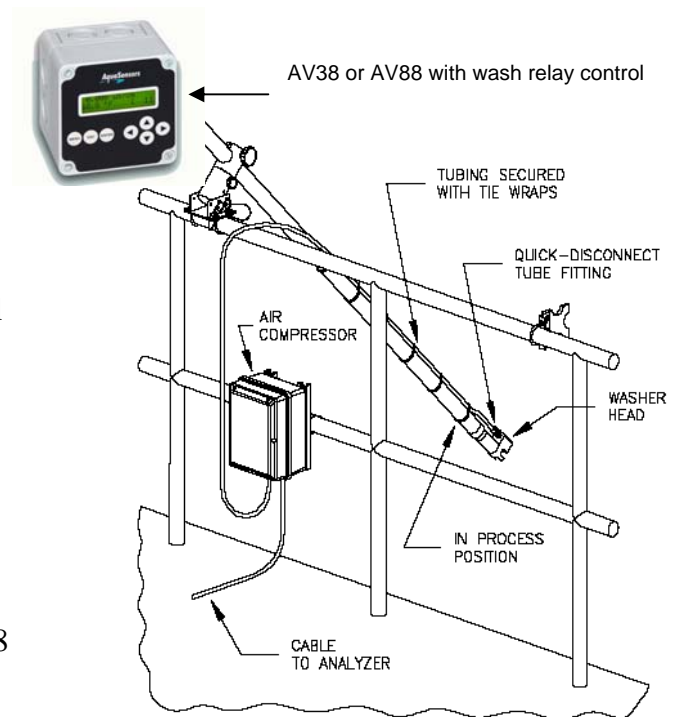
The raw water turbidity sensor is shown with and without the MH1222 wash head.



The AnalogPlus pH sensor (1.5-inch NPT) is shown with the MH2132 wash head.



A hose is connected from the wash hardware to an air compressor through a solenoid valve. If compressed air is not available, Thermo Fisher Scientific can provide a small compressor mounted in a small NEMA 4X enclosure. A solenoid valve used to turn the compressed air or water on and off is activated by an AV38 or AV88 relay. The wash relay is set up by programming the frequency and duration of the wash cycle. The compressor box is usually mounted on the same rail that the immersion hardware is mounted. The sensor cable is connected from the immersion mount hardware junction box to the AV38 or AV88 universal analyzer. The relay cable is wired from the AV38 or AV88 to the solenoid in the compressor box.



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## Immersion Mount Sensor Assembly Part Numbers

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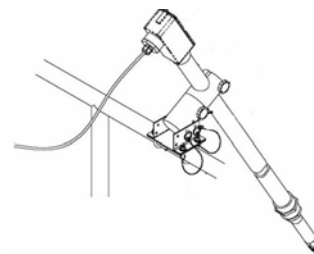
1. **Side Wall Immersion Mounting:** The assembly consists of a seven-foot pole with an integral junction box. Different part numbers are used to specify the type of sensor that can be attached. U-bolts are usually used for mounting.

- MH3083: Sensors with 1 inch NPT Mounting
- MH2083: AnalogPlus Sensors with 1.5 inch NPT Mounting
- MH3083-T: AnalogPlus Toroidal Conductivity Sensors



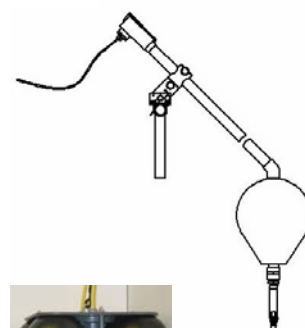
2. **Hand Rail Swivel Mounting:** The assembly consists of a seven-foot pole with an integral junction box and swivel rail mounting hardware.

- MH1242: Sensors with 1 inch NPT Mounting
- MH2242: AnalogPlus Sensors with 1.5 inch NPT Mounting
- MH1242-T: AnalogPlus Toroidal Conductivity Sensors



3. **Ball Float Mounting:** The assembly consists of a seven-foot pole with a junction box, swivel rail mounting and a ball float.

- MH1242: Sensors with 1 inch NPT Mounting
- MH2242: AnalogPlus Sensors with 1.5 inch NPT Mounting
- MH1242-T: AnalogPlus Toroidal Conductivity Sensors



4. **Multisensor platform float:** The float is held in place with a tether and a drag plate is used to keep the sensors oriented correctly. It is designed for use with DataStick™ measurement systems.

- Part Number: MHFB02



5. **Wash Head:** For periodic cleaning of sensor heads that may become coated with dirt or grease.

- MH1132: Sensors with 1 inch NPT Mounting
- MH2132: AnalogPlus Sensors with 1.5 inch NPT Mounting
- MH1142: Dissolved Oxygen air purge system
- MH1222: Raw Water Turbidity air purge system



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## Limited Warranty

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### WARRANTY/REPLACEMENT PLAN

Thermo Fisher Scientific warrants its Mounting Hardware against material and workmanship defect for a period of one year from the date of shipment.

In the event that a defect is discovered during the warranty period, Thermo Fisher Scientific agrees, at its option, to repair or replace the defective product. Any product repaired or replaced under this warranty will be warranted only for the remainder of the original product warranty period.

This warranty does not apply to consumable products associated with this product including, but not limited to, chemical reagents and salt bridges.

Products may not be returned without authorization from Thermo Fisher Scientific. To obtain authorization, please call Thermo Fisher Scientific for a return material authorization number.

#### Limitations:

This warranty does not cover:

1. Damage caused by misuse, neglect (lack of appropriate maintenance), alteration, accident or improper application or installation.
2. Damage caused by any repair or attempted repair not authorized by Thermo Fisher Scientific.
3. Any product not used in accordance with the instructions furnished by Thermo Fisher Scientific.
4. Damage caused by acts of God, natural disaster, acts of war (declared or undeclared), acts of terrorism, work actions, or acts of any governmental jurisdiction.
5. Freight charges to return merchandise to Thermo Fisher Scientific.
6. Travel fees associated with on-site warranty repair.

This warranty is the sole expressed warranty made by Thermo Fisher Scientific in connection with its products. All other warranties, whether expressed or implied, including without limitation, the warranties of merchantability and fitness for a particular purpose, are expressly disclaimed.

The liability of Thermo Fisher Scientific shall be limited to the cost of the item giving rise to the claim. In no event shall Thermo Fisher Scientific be liable for incidental or consequential damages.

This warranty is the sole and complete warranty for Thermo Fisher Scientific. No person is authorized to make any warranties or representations on behalf of Thermo Fisher Scientific.

Thermo Fisher Scientific reserves the right to change or modify this warranty at any time.

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## Terms and Conditions

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### Terms and Conditions of Sale

The following terms and conditions will be presumed acceptable unless changes are made in writing and accepted by both parties in a reasonable amount of time.

Any standard or boilerplate terms and conditions supplied with a written purchase order will not be applicable unless accepted in writing by both parties.

**Quotations:** All quotations shall be in writing. Written quotations shall be valid for 30 days from the date issued. Verbal quotations or price lists are not valid.

**Pricing:** All pricing is in **US Dollars**. Thermo Fisher Scientific reserves the right to change pricing without notice.

**Terms:** Payment terms are **net 30 days** from the date of invoice with approved credit. Thermo Fisher Scientific reserves the right to deny credit or revoke previously extended credit. Past due accounts are subject to interest charges. Other acceptable payment terms are cash, certified check, money order, credit card or letter of credit confirmed by any United States of America bank. Other payment terms are not valid unless accepted in writing.

Sales taxes shall be included on the invoice unless a valid tax exemption certificate is supplied.

**Return Material Authorization:** Contact Thermo Fisher Scientific Customer Service for a Return Material Authorization (RMA) number. Items returned without an RMA number will be rejected.

All returned merchandise must be in unused, resalable condition, and must not be contaminated with hazardous materials.

Cancelled orders must be returned within 30 days of the date on the invoice and shall be subject to expenses incurred that may include, but are not limited to, inspection and restocking fees. Items returned within 60 days shall be subject to a restocking charge that is equal to 15% of the purchase price. Items returned after more than 60 days shall be subject to a restocking charge equal to 25% of the purchase price. Thermo Fisher Scientific reserves the right to reject any return that is not under warranty after 60 days. Non-stock items are normally not returnable.

**Transportation:** Orders are shipped FOB Thermo Fisher Scientific, or factory, by the most efficient means available. Appropriate charges, such as freight and insurance will be added to invoices. All shipments will be insured. Goods damaged in shipment must be reported by the recipient to the freight carrier for claims.



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258491-001 Rev. A 01-09