

**MODEL ML-04-D**

150 psi FLANGED TUBE METER
SOLID STATE ELECTRONIC PROPELLER METER
DIGITAL INDICATOR - TOTALIZER
SIZES 2" thru 48"

SPECIFICATIONS

METER shall be a velocity propeller type, solid state electronic, sealed housing, flanged tube meter for 150 psi working pressure. It shall comply with the applicable provisions of AWWA, except for the higher standard required in this specification. In the event of conflict, the specification herein shall prevail. The meter shall be a **WATER SPECIALTIES** _____ inch **MODEL ML-04-D** with a digital indicator having a range of 0 to _____ and shall be equipped with a eight digit digital totalizer reading in units of _____ and shall be accurate within $\pm 2\%$ of true flow within a range of _____ to _____ GPM or an approved equal. The meter assembly shall be constructed as follows:

METER TUBE shall be fabricated steel pipe and use 150 lb. AWWA Class "D" flat face steel flanges. The internal and external of the meter tube and meter head shall be blasted to near white metal and coated with 12-15 mils of NSF approved, fusion epoxy coating, applied by the fluidized bed method. Meter tubes shall have a constant nominal inside diameter to offer minimum obstruction to the flow and shall be furnished with four straightening vanes.

METER HEAD shall be connected to the tube by means of a flanged, O-ring sealed, connection with stainless steel bolts. The meter head shall be designed for easy removal of water wetted parts from the tube for inspection or repair without having to remove the complete tube. Water wetted meter components that are permanently attached to the tube will not be accepted.

GEARBOX shall be bronze. The electronic sensor housed in the gearbox shall be magnetically driven from the propeller magnet and be isolated from the water flow by means of an O-ring sealed housing. This completely eliminates water entering the meter assembly, and eliminates all moving parts except for the propeller. Vertical shafts or flexible cables will not be accepted.

PROPELLER shall utilize a water lubricated ceramic sleeve and spindle bearing system. The stainless steel/ceramic spindle on which the propeller is mounted shall be parallel to the direction of the water flow in the pipe. Dual ceramic thrust bearings shall be standard on all meters to handle flows in both the forward and reverse directions. Ball bearings or other types of sleeve bearings will not be accepted. The propeller shall be a conical shaped, three bladed propeller, injection molded of thermoplastic material, resistant to normal water corrosion and deformation due to high flow velocities. Propellers, which have been trimmed, shaved or require varying change gears for the same size meters, will not be accepted.

DIGITAL INDICATOR-TOTALIZER shall be electronically driven by a sensor output directly from, and proportional to, the rotation of the propeller. The unit shall have a non-volatile EEPROM memory so total flow will not be lost during battery change or failure. The unit shall be equipped with a 3VDC lithium battery which is replaceable. The battery life will be 4 years (when used with the display timeout into sleep mode and with a low battery indicator warning 6 months prior to failure). The indicator-totalizer shall continue to function during battery changing. The five digit indicator shall have .35" high numbers and a range of 0 to _____ (specify indicator range and units) and eight digit totalizer with .20" high numbers reading in units of _____ (specify totalizer units) and is accurate and linear within $\pm 0.25\%$, of reading, at all points on the scale when operated between 32° and 160° F. The totalizer shall be resettable from the panel or disabled permanently. The unit shall be encapsulated to protect it from moisture, and installed in an O-ring sealed bonnet with padlock hasp. Adapters shall be available to locate the digital indicator-totalizer-transmitter at remote locations up to 100 feet away. Adapters shall be available to locate the digital indicator-totalizer at remote locations up to 100 feet away.

PARTS & SERVICE: Supplier must have test facilities, spare parts, personnel to maintain, instruct, train or whatever is necessary to assure meters will be maintained throughout the guarantee period. Facilities must be located within _____ miles of the location of the meter.

VOLUMETRIC TESTING of all meters must be performed and approved prior to shipment. The complete meter head assembly must be accuracy tested in the same pipe size and same type tube that the meter will be mounted in. The test shall be at near minimum, intermediate, and maximum manufacturer's specified flow ranges of the meter. The amount of water used to conduct the test must be left on the totalizer. Prior to shipping, a tag shall be attached to the meter showing the totalizer reading after the test. The test facility must be certified annually to an accuracy of $\pm 0.2\%$ and be traceable to the National Institute of Standards and Technology. If desired, the test shall be witnessed by the customer or their selected agent and a copy of the certified accuracy test record must be furnished at no charge to the customer, if requested.

ONE MANUFACTURER shall make all meter sizes and styles required for this contract. The meters shall be manufactured and tested in the U.S.A. and shall be of a design in production in the U.S.A. for at least 5 years.