



**MODEL VF-32-D**  
 VERTICAL DOWNFLOW METER  
 SOLID STATE ELECTRONIC PROPELLER METER  
 DIGITAL INDICATOR-TOTALIZER  
 SIZES 4" thru 20"

## SPECIFICATIONS

**METER** shall be a velocity propeller type, solid state electronic, sealed housing, vertical down flow 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 VF-32-D** with a digital indicator having a range of 0 to \_\_\_\_\_ and shall be equipped with a six 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 HEAD** shall be connected to the tube by means of a flanged, flat gasket sealed connection with stainless steel bolts designed for easy removal for inspection or repair. The meter head shall be blasted to near white metal and coated with 12-15 mils of fusion coating, applied by the fluidized bed method.

**DROP-PIPE AND SEPARATOR** shall be a stainless steel factory sealed unit having four straightening vanes welded to the drop pipe. However, parts shall be coupled so with proper instructions the parts can be replaced in the field without returning the meter to the factory. The electronic sensor housed in the drop-pipe shall be magnetically driven from the propeller ceramic sleeve magnetic 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 deformity 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. **PROPELLER TESTING ON A HORIZONTAL LINE IS NOT ACCEPTABLE.** The test shall be at near minimum, intermediate, and maximum manufacturers 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 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.

**FCC CERTIFICATION:** Supplier must have digital indicator-totalizer independently tested for compliance to FCC regulations. The test results must indicate that the electromagnetic emissions from the units are within the Class A Specification limits defined by the Code of Federal Regulations Title 47, Part 15, Subpart B.

**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 design in production in the U.S.A. for at least 5 years.