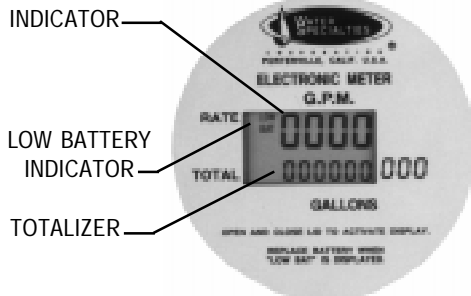




**MODEL ML-20-D**  
 150 psi WELDING SADDLE METER  
 SOLID STATE ELECTRONIC PROPELLER METER  
 DIGITAL INDICATOR-TOTALIZER  
 SIZES 4" thru 72"



TYPICAL  
DIGITAL INDICATOR-TOTALIZER



### DESCRIPTION

**MODEL ML-20-D WELDING SADDLE METERS** are manufactured to the highest standards. Materials used on all meters and flow ranges for the low velocity meter meet or exceed AWWA standard C704. The weld-on design permits use in a wide range of applications with up to 150 psi working pressure. It is necessary, upon ordering, to furnish the I.D. dimension of the pipe the meter is to be mounted on for calibration purposes. The O.D. dimension or wall thickness must also be furnished for proper fit of the saddle to the pipe.

**INSTALLATION** is made by cutting a hole in the existing pipe line and then welding the saddle to the line. The removable meter head assembly can then be bolted to the saddle. The meter can be installed horizontally, or inclined on suction or discharge lines. The meter must have a full flow of liquid for proper accuracy. Fully opened gate valves, fittings, or other obstructions that tend to set up flow disturbances should be a minimum of ten pipe diameters upstream and two pipe diameters downstream from the meter. Installations with less than ten pipe diameters of straight pipe require straightening vanes. Meters with straightening vanes require at least five pipe diameters upstream and one pipe diameter downstream of the meter. An optional remote mounting kit with up to 100 feet of cable is available to locate the indicator-totalizer at remote locations.

**PROPELLER** is magnetically coupled with the electronic sensor through the sealed gearbox. This completely eliminates water entering the meter assembly, and eliminates all moving parts except for the propeller. The propeller is a conical shaped three bladed propeller, injection molded of thermoplastic material resistant to normal water corrosion and deformity due to high flow velocities.

**BEARING** is a water lubricated ceramic sleeve and spindle bearing system with a ceramic/stainless steel spindle. Dual ceramic thrust bearings, standard on all meters, handle flows in both forward and reverse directions. The bearing design promotes extended periods of maintenance free propeller operation. Bearings within the sealed meter mechanism are shielded precision stainless steel bearings and are factory lubricated for the life of the meter.

**DIGITAL INDICATOR-TOTALIZER** has a non-volatile EEPROM memory to store totalizer count (updated every 60 minutes while running). The indicator dial can be furnished in GPM, CFS, MGD or any standard liquid measuring units with a choice of totalizer measuring units. The display is programmable to update from 0.5 to 5 seconds, and timeout from 1 to 9999 seconds.

**INDICATOR (rate) FUNCTION** is a five digit indicator with .35" tall numbers, programmable with 0 to 4 decimal point place with 0.0001 to 9999 rate scaling and totalizing factors. The calculation method is 1/Tau. It has programmable smoothing of 0 to 99%. The rate zero time is 8 seconds.

**TOTALIZER FUNCTION** is an eight digit totalizer with .20" tall numbers, programmable with 0 to 4 decimal places, and a total scaling factor of 0.0001 to 9999. The totalizer can be reset from the front panel or disabled permanently.

**O-RING SEALS** are used at the meter head and all points where seals are required, making the sensor probe completely immune to any of the corrosive effects of atmospheric moisture or the liquids measured by the meter assembly.

### SPECIFICATIONS

**ACCURACY** Plus or minus 2% of actual flow within the range specified for each meter size.

**PRESSURE RANGE** Up to 150 PSI maximum working pressure.  
**TEMPERATURE RANGE** 140° F Maximum. Consult factory for special construction for higher temperatures.

**MINIMUM FLOWS** As shown for each meter size and construction are required for accurate registration. See flow chart.

**MAXIMUM FLOWS** As shown for each meter size and construction are rated for continuous operation. See flow chart.

**INTERMITTENT FLOWS** As shown for each meter size are rated for 10% to 15% of the total time the meter is operating. Consult factory for High Velocity construction when intermittent flows are higher than shown on flow chart and/or when longer operating periods are required.

**MATERIALS** Used in construction are chosen to minimize the corrosive effects of the liquids measured by the meter assembly.

PROPELLER MAGNET - permanent ceramic type

PROPELLER BEARING - ceramic sleeve type  
 PROPELLER SPINDLE - ceramic coated stainless steel

PROPELLER - injection molded thermoplastic

GEARBOX - cast bronze

SEPARATOR - stainless steel

METER HEAD BOLTS - stainless steel (4"-20"), plated steel (24"-72")

METER HEAD - cast iron or fabricated steel, fusion epoxy coated.

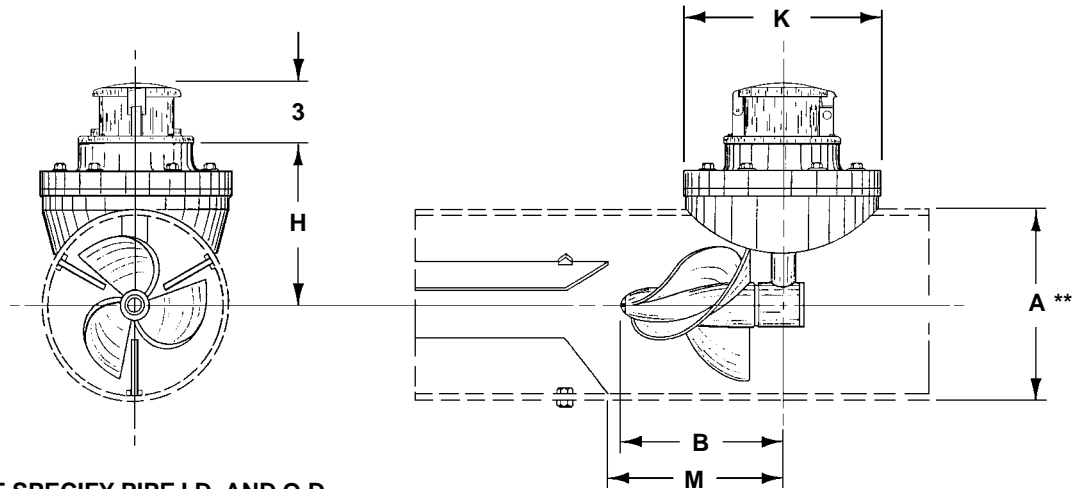
**OPTIONAL EQUIPMENT** Includes a remote mounting kit with up to 100 feet of cable, totalizer extensions, digital transmitter, and a wide range of controls and instruments for indicating, totalizing, and recording flow data for each meter. Special constructions and materials are available upon request.

**ORDERING INFO** Must be specified by the customer and includes:

Minimum & maximum flow ranges  
 Temperature of meter environment  
 Indicator scale & units  
 Totalizer dial units  
 Type of materials and construction  
 Optional equipment desired  
 Pipe I.D. and O.D.

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\*\* PLEASE SPECIFY PIPE I.D. AND O.D.

METER & PIPE SIZE	*LOW VELOCITY CONSTRUCTION MIN. - MAX.	FLOW RANGES, GPM		DIMENSIONS					SHIPPING WEIGHT POUNDS
		STANDARD CONSTRUCTION MIN. - MAX. - INT.	HIGH VELOCITY CONSTRUCTION MIN. - MAX.	A	B	H	K	M	
4	N/A	55-500-700	200-700	4½	8	5 <sup>3</sup> / <sub>16</sub>	9	10	55
6	N/A	120-1200-1500	300-1500	6 <sup>5</sup> / <sub>8</sub>	8	6¼	9	10	55
8	N/A	150-1500-2000	400-2500	8 <sup>5</sup> / <sub>8</sub>	8	7¼	9	10	55
10	N/A	180-2000-3000	500-3500	10¾	8	8½	11	10	60
12	N/A	200-3000-3500	800-5000	12¾	8	9½	11	10	70
14	N/A	300-4000-4500	1000-6000	14	8	10½	13½	10	75
16	N/A	400-5000-6000	1200-7500	16	8	11½	13½	10	75
18	N/A	700-6000-7500	1500-9000	18	8	12½	13½	10	75
20	N/A	850-8000-9000	2000-12000	20	8	13½	13½	10	75
24	N/A	1000-10000-13500	3000-15000	24	11½	17½	21	13½	250
30	N/A	1800-15000-21000	4000-25000	30	11½	20½	21	13½	250
36	N/A	2000-20000-30000	5000-35000	36	11½	23½	21	13½	250
42	N/A	3000-30000-40000	6000-50000	42	11½	27	32	13½	525
48	N/A	5500-35000-50000	7000-60000	48	11½	30	32	13½	525
54	3200-45000	6500-45000-55000	8000-65000	54	11½	33	32	13½	525
60	4000-60000	7500-60000-80000	10000-90000	60	18†	36	32	22†	525
66	4750-75000	8500-75000-95000	12000-105000	66	18†	39	32	22†	525
72	5500-90000	9500-90000-115000	15000-125000	72	18†	42	32	22†	525

Standard construction will be supplied for all main line meters unless special flow range, materials, or construction are required.

\* Low velocity (LV) construction has the same low and maximum flow rates as AWWA C704.

† On High Velocity Meters "B" Dimension is 11½" and "M" dimension is 13½".