

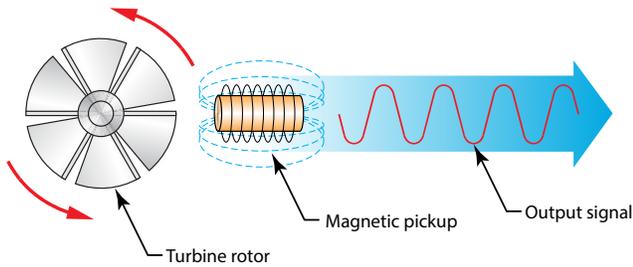


### DESCRIPTION

Originally developed for the secondary oil recovery market, the B20 is an ideal meter for liquid flow measurement on or off the oil field. The B20 turbine flow meter is specifically designed for low flow capacity waterflood projects. Engineered to withstand the demands of the most rigorous flow measurement applications, the B20 series provides dependable operation with low maintenance.

### OPERATION

Fluid entering the meter passes through an inlet flow straightener which reduces the fluids turbulent flow pattern and improves the fluid's velocity profile. Fluid then passes through the turbine, causing it to rotate at a speed proportional to the fluid velocity. As each turbine blade passes through the magnetic field at the base of the magnetic pickup, a low level AC voltage pulse is generated in the pickup coil. These pulses produce an output frequency proportional to the volumetric flow through the turbine. The output frequency is used by the monitor to represent flow rate and total flow passing through the turbine flow sensor.



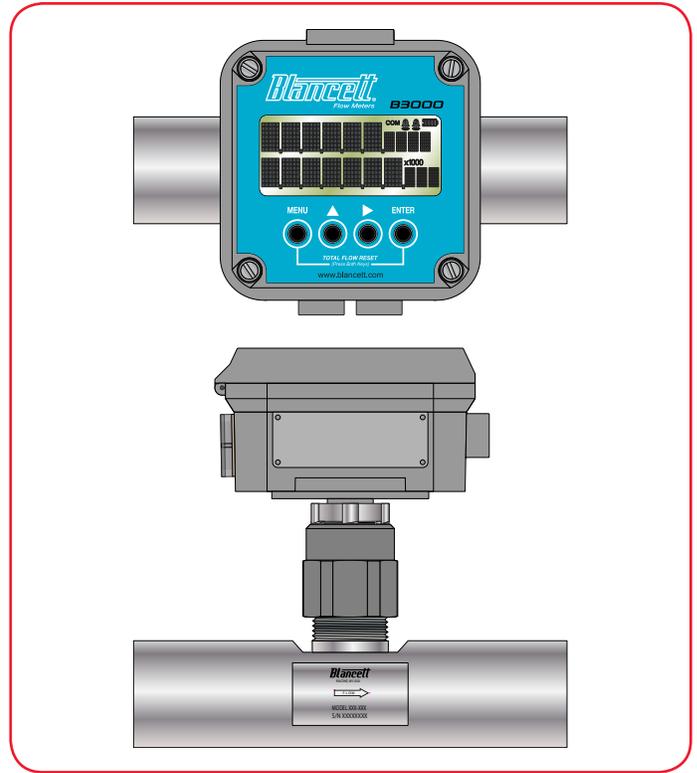
### APPLICATIONS

The Blancett B20 Series water meters are designed as standalone water monitors suitable for rigorous oil field applications. The monitor is powered by a long lasting lithium battery or a solar cell eliminating the need for external power.

Two totalizers allow the monitor to measure daily pumping total and a grand total of up to seven digits. Two levels of password protection prevents unauthorized clearing of totals and changes in programing information.

Typical applications include:

- Secondary oil recovery
- Enhanced oil recovery
- Industrial applications
- Chemical and polymer flood systems



### FEATURES

- Accurate and repeatable flow measurement from 0.6...50 gpm (20...1700 bpd) in five bore size steps.
- Battery or solar power displays. Typical battery life is six years.
- Sensor and display matched at the factory for easy field installation.
- Job and grand totalizers for added flexibility.
- Superior materials of construction for high performance in aggressive environments.
- Only one moving part for reduced maintenance costs. Enclosure is rated NEMA 4X (water tight and corrosion proof) for harsh field environments.



## SPECIFICATIONS

### Turbine Flow Sensor

Materials of Construction	
<b>Body</b>	316 Stainless Steel
<b>Rotor</b>	CD4MCU Stainless Steel
<b>Rotor Support</b>	316 Stainless Steel
<b>Rotor Shaft and Bearing</b>	Tungsten Carbide
Operating Parameters	
<b>Temperature</b>	-150...250° F (-101...121° C)
	The meter should not be subjected to temperatures above 350° F (177° C), or below -150° F (-101° C) or the freezing point of the metered liquid.
<b>Maximum Pressure</b>	5000 psi (344.7 bar)
<b>Accuracy</b>	±1% of reading for B20-D and B20-E meters. ±1% of reading over the upper 70% of the measuring range for B20-A, B20-B, and B20-C meters.
<b>Repeatability</b>	±0.1%
<b>Calibration</b>	Water (NIST traceable calibration)
<b>End Connections</b>	1 in. NPT Female

### Monitor

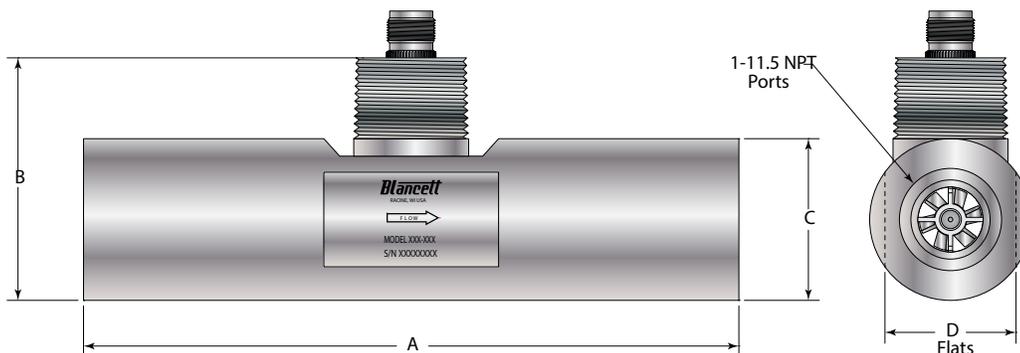
<b>Display</b>	Simultaneously shows Rate and Total 5 x 7 Dot Matrix LCD, STN Fluid 6-Digit Rate, 0.5 inch (12.7 mm) numeric 7-Digit Total, 0.5 inch (12.7 mm) numeric Engineering Unit Labels 0.34 inch (8.6 mm)
<b>Battery</b>	3.6V DC lithium D size Cell gives up to 6 years of service life
<b>Solar</b>	Internal battery (3.6V DC Ni-Cd) provides up to 30 days of power after 6...8 hours exposure of the integrated photovoltaic cell to direct sunlight.
<b>Input Frequency Range</b>	1...3500 Hz
<b>Frequency Accuracy</b>	±0.1%
<b>Trigger Sensitivity</b>	30 mV <sub>p-p</sub> (High) or 60 mV <sub>p-p</sub> (Low) - (selected by circuit board jumper).
<b>Amplified Pulse</b>	Direct connection to amplified signal (pre-amp output from sensor).
<b>Totalizer Operation</b>	Monitors contain two totalizers, job and grand. The user can enable/disable the grand totalizer function. If grand totalizer is enabled, it shares the 7-digit display line with the job totalizer; alternating between job and grand. Grand totalizer rollovers are displayed with a count value that increments at each rollover. Totalizers are automatically backed up on to non-volatile FLASH memory every 20 minutes and prior to battery expiration or manually via the keypad.
<b>Totalizer Reset</b>	The job totalizer can be reset by pressing the <b>MENU</b> and <b>ENTER</b> buttons simultaneously.
<b>Environmental Limits</b>	-22...158° F (-30...70° C); 0...90% humidity, non-condensing.
<b>Materials</b>	Polycarbonate, stainless steel, polyurethane, thermoplastic elastomer, acrylic.
<b>Enclosure Ratings</b>	NEMA 4X/IP 66

### Flow Rates

Part Number	Meter Bore Size	End Connection	Flow Ranges		
B20-Ax-xxx	0.375 in. (9.5 mm)	1 in. Female NPT	0.6...3.0 gpm	20...100 bpd	3.3...16 m <sup>3</sup> /d
B20-Bx-xxx	0.500 in. (12.7 mm)		0.75...7.5 gpm	25...250 bpd	4.1...41 m <sup>3</sup> /d
B20-Cx-xxx	0.750 in. (19.1 mm)		2...15 gpm	68...515 bpd	10.9...81.75 m <sup>3</sup> /d
B20-Dx-xxx	0.875 in. (22.2 mm)		3...30 gpm	100...1000 bpd	16...160 m <sup>3</sup> /d
B20-Ex-xxx	1.000 in. (25.4 mm)		5...50 gpm	170...1700 bpd	27.25...272.5 m <sup>3</sup> /d

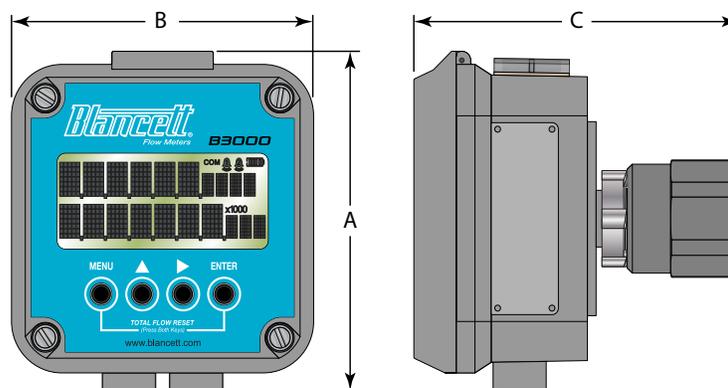
## DIMENSIONS

### Turbine Meter



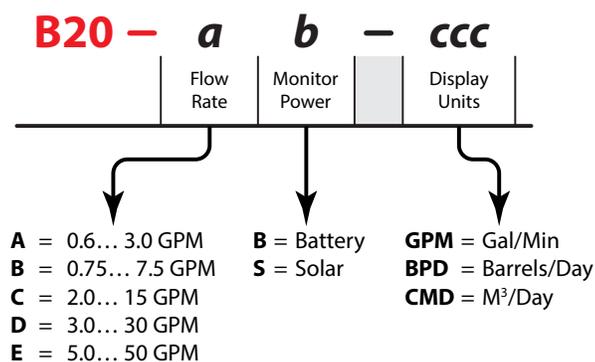
A	B	C	D
7.5 in. (190.5 mm)	2.78 in. (70.6 mm)	1.85 in. (46.0 mm)	1.5 in. (38.1 mm)

### Monitor



A	B	C
5.0 in. (127.0 mm)	4.5 in. (114.3 mm)	4.9 in. (124.5 mm)

## MODEL NUMBER CONSTRUCTION



## Control. Manage. Optimize.

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