

TURBO-BAR WATER METER SERIES

Heavy duty and designed to handle high flow rates, the Turbo-Bar-E/M Magnetic Drive Water Meter with Electronic Register (Turbo-Bar-E) or Magnetic Register (Turbo-Bar-M), covers a very wide flow range, and is particularly suited to industrial, waterworks, water distribution, water monitoring, and Irrigation applications. Based on the Woltman principle, the helical blades of the turbine rotate around the axis of flow, the Turbo-Bar-E/M is a long-life product, easy to maintain at low cost.

Turbo-Bar-E

Woltman Water Meter with Electronic Register

Features and Benefits

- Universal E-Register - suits all water meters types and sizes made by BERMAD
- Instant flow rate
- Forward and reverse flow indication
- 12 digits LCD display
- Data logging capabilities
- Fast pulse output rate
- Dry, IP68, NEMA 6P Sealed Register
- Battery lifetime - 8 years



Turbo-Bar-M

Woltman Water Meter with Magnetic Register

Features and Benefits

- Magnetic drive
- Dry, IP68; NEMA 6P Sealed Register
- "Reed switch" sensor allow one or two pulse outputs option
- Easy maintenance
- ID 2004/22/EEC Approved, according to OIML R49, EN14154 (sizes 40 - 300 mm).



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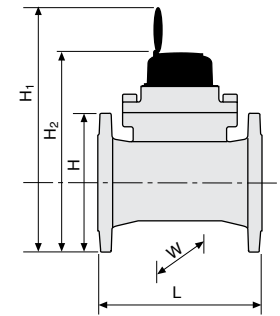


Technical data

- **Body, Cover:** Ductile Iron
- **Coating:** Polyester Blue
- **End Connections - Flanged:** ISO PN16, ANSI Class 150
- **Pressure Rating:** ISO PN16
- **Operating Temperature:** water up to 50°C; 122°F

Dimensions and Weights

Nominal Size	mm	40	50	65	80	100	125	150	200	250	300	400	500
	Inch	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	16"	20"
L, length (mm)		260	200	200	225	250	250	300	350	450	500	500	500
H, height (mm)		170.5	180.5	190.5	200.5	215	245	277.5	335	398	452	647	784.5
H1, height (mm)		408	347.3	357.3	367.3	377.3	392.3	436.6	466.6	584.5	611.5	731.5	846.5
H2, height (mm)		336	275.3	285.3	295.3	305.3	320.3	364.6	394.6	512.5	539.5	659.5	774.5
W, flange type (mm)		160	170	190	200	230	250	285	340	395	445	600	700
Weight (kg)		13	12	14	16	19	20	39	52	105	120	187	256

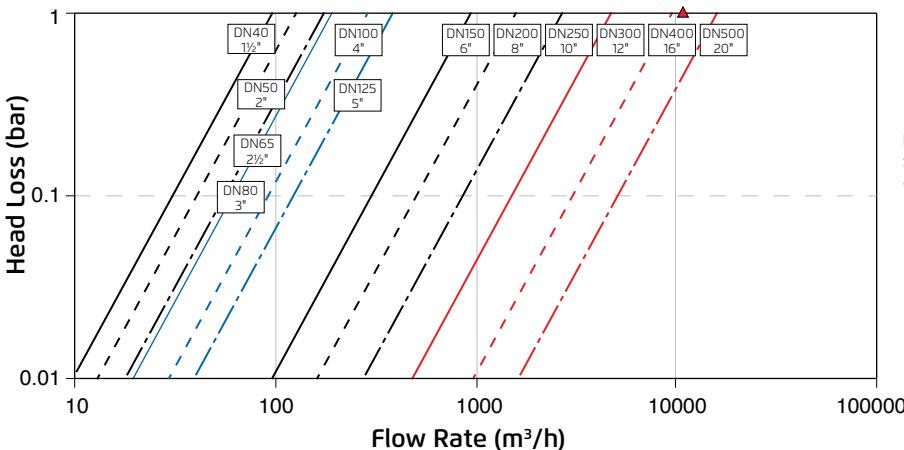


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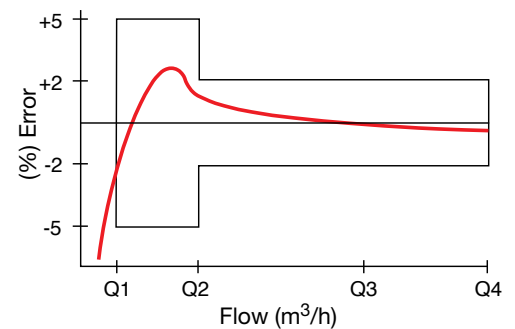
Metrological Data

	Accuracy	mm	40	50	65	80	100	125	150	200	250	300	400	500	
		Inch	1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	16"	20"	
Qmin (Minimum flow), m³/h	±5%		0.5	0.5	0.8	1.3	1.3	2	3.1	5	8	12.5	32	50	
Qt (Transitional flow), m³/h	±2%		0.8	0.8	1.3	2	2	3.2	5.0	8.0	12.6	20	51	80	
Qn (Permanent flow), m³/h	±2%		25	40	63	63	100	160	250	400	630	1000	1600	2500	
Qmax (Peak flow,short time), m³/h	±2%		31	50	79	79	79	200	313	500	788	1250	2000	3125	
Q2/Q1			1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
Q3/Q1			50	80	80	50	50	80	80	80	80	80	50	50	
Kv=Q/√Δp			95	125	170	190	280	380	950	1580	2688	4700	9500	15000	
Max. reading, m³			999,999						9,999,999			99,999,999			
Min. reading, liter			1						10			100			
Pressure loss Δp, bar			according to chart												

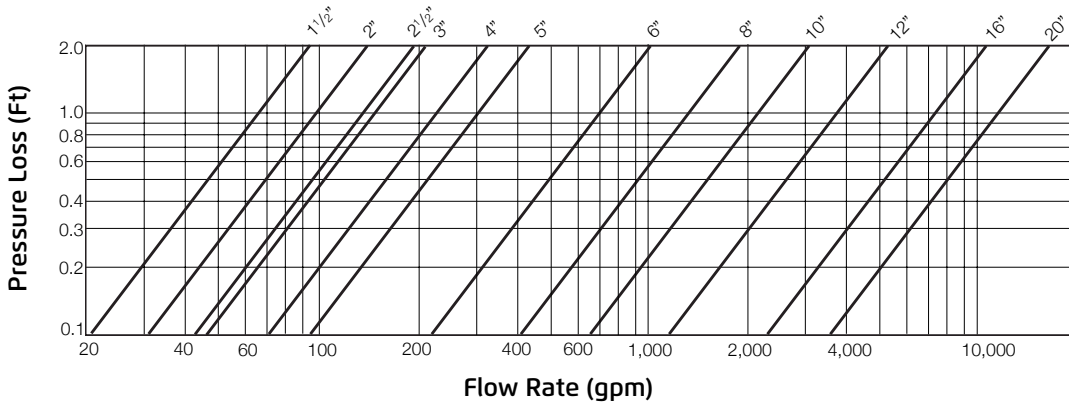
Flow Curve



Accuracy Curve



Flow Curve



Data Output Options

Water system management requires reliable data acquisition. BERMAD Turbo-Bar-E/M provides accurate data meeting all common pulse output specifications.

Electronic Register

Output Type

Programmable open collector pulse output Data

Cable Characteristic

Output Cable	Wire	Function
	Red	Pulse Out
Black	GND/COMMON	

Output Characteristics

Cable Length - supplied	1.5	meter
Maximum Cable Length	50	meter
Maximum Applied Voltage	35	Vdc



Turbo-Bar-E Register

Magnetic Register

Output Type

Dry contact output

Cable Characteristic

Output Cable	Wire	Function
	Red	Pulse Out 2
Black	GND/COMMON	

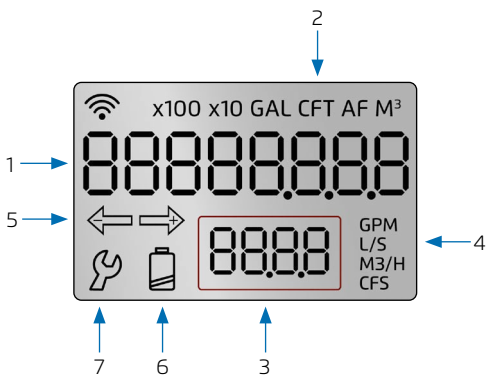
Output Characteristics

Cable Length - supplied	1.5	meter
Maximum Cable Length	50	meter
Maximum Applied Voltage	24	AC/DC Max
Switch Current	0.01	A max



Turbo-Bar-M Register

E-Register Display



Applicable Icons

1. Volume
2. Volume units
3. Flow Rate
4. Flow Rate units
5. Volume direction
6. Battery level indication
7. General warning



Pulse Output Option - Electronic Register

Cubic meter Pulse Output Electronic transmission							
Model	Size		Open Collector				
			1 Pulse for Each				
	In	mm	10 liter	100 liter	1 m ³	10 m ³	100 m ³
Turbo-BAR-E	1½"-2½"	40-65	✓	✓	✓		
	1½"-2½"	80-250		✓	✓	✓	
	1½"-2½"	300			✓	✓	✓

Gallon Pulse Output Electronic transmission							
Model	Size		Open Collector				
			1 Pulse for Each				
	In	mm	1 gal	10 gal	100 gal	1,000 gal	10,000 gal
Turbo-BAR-E	1½"-2½"	40-65	✓	✓	✓	✓	
	1½"-2½"	80-250		✓	✓	✓	
	1½"-2½"	300				✓	✓

Pulse Output Option - Magnetic Register

Cubic meter Pulse Output Magnetic transmission							
Model	Size		Dry contact Reed Switch				Dual pulse output
			1 Pulse for Each				
	In	mm	100 liter	1 m ³	10 m ³	100 m ³	
Turbo-BAR-M	1½"-5"	40-125	✓	✓			S23
	6"-8"	150-200		✓	✓		S12
	10"-12"	250-300			✓	✓	S81

Gallon Pulse Output Magnetic transmission							
Model	Size		Dry contact Reed Switch				Dual pulse output
			1 Pulse for Each				
	In	mm	10 gal	100 gal	1,000 gal	10,000 gal	
Turbo-BAR-M	1½"-5"	40-125	✓	✓			S23
	6"-8"	150-200		✓	✓		S12
	10"-12"	250-300			✓	✓	S81

Installation Recommendations

- The water meter can be installed in any orientation without interfering with metrological performance.
- The arrow on water meter body must be in the same direction with the flow.
- To avoid turbulence that may interfere with accurate measurement, it is recommended to have a length of straight pipe equal to 5 diameters upstream from the water meter.
- Prior to installation, flush the line to remove debris.
- The Turbo-Bar-E/M must be filled with water to operate.

