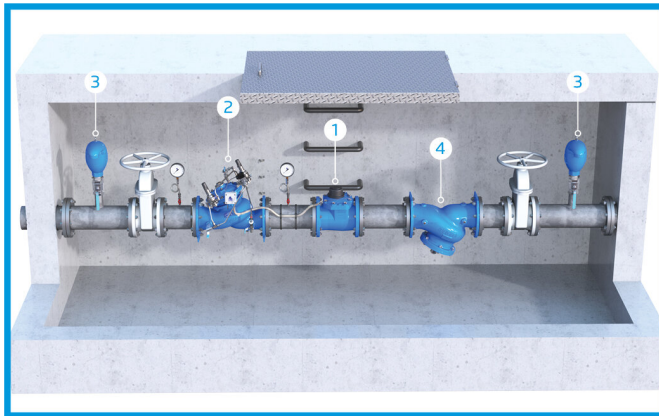


WOLTMAN WATER METER

with Magnetic Drive & Magnetic Register

Model Turbo-Bar-M

Heavy duty and designed to handle high flow rates, the Turbo-Bar-M Magnetic Drive Water Meter with Magnetic Register 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-M is a long-life product, easy to maintain at low cost.



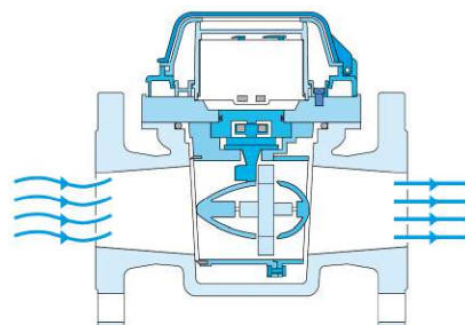
- [1] BERMAD Water Meter Model Turbo-Bar-M
- [2] Pressure Reducing Valve Model 720-45
- [3] Combination Air Valve Model C70
- [4] Strainer Model 70-F

Features & 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)

Operation:

BERMAD TURBO-BAR with magnetically driven register with high reliability hermetically sealed, the register is separated from the measuring element. Velocity type water meter counting the flow velocity, assuming a line profile full with water at known section.





Technical Data

Pressure Rating:
250 psi

Operating Temperature:
Water up to 122°F

End Connections - Flanged:
ANSI Class 150

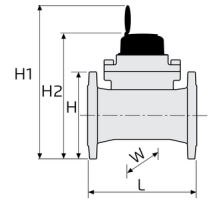
Materials

Body & Cover:
Ductile Iron

Coating:
Polyester Blue

Technical Specifications

For other end connection types,
Please refer to [BERMAD](#) full engineering page.

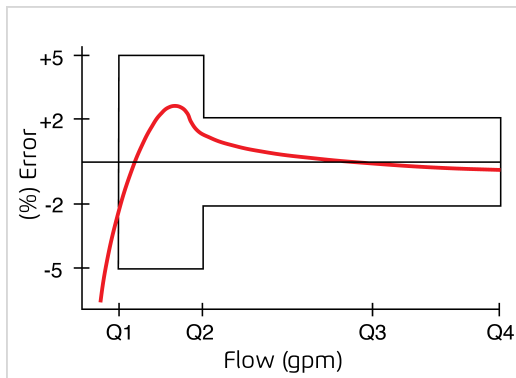


Size (DN)	Pattern	End Connection	Weight (Lb)	L (In)	H (In)	H1 (In)	H2 (In)	W	CV
1½" ; DN40	Straight flow	Flanged	28.7	10¼	6¾	16	13¼	6¾	110
2" ; DN50	Straight flow	Flanged	26.4	7¾	7¾	13¾	10¾	7¾	144
2½" ; DN65	Straight flow	Flanged	30.9	7¾	7½	14	11¼	7½	196
3" ; DN80	Straight flow	Flanged	35.3	8¾	7¾	14¾	11¾	7¾	219
4" ; DN100	Straight flow	Flanged	41.9	9¾	8¾	14¾	12	9	323
5" ; DN125	Straight flow	Flanged	44.1	9¾	9¾	15¾	12¾	9¾	439
6" ; DN150	Straight flow	Flanged	86	11¾	10¾	17¼	14¾	11¼	1097
8" ; DN200	Straight flow	Flanged	114.6	13¾	13¼	18¾	15½	13¾	1825
10" ; DN250	Straight flow	Flanged	231.4	17¾	15¾	23	20¾	15½	3105
12" ; DN300	Straight flow	Flanged	264.5	19¾	17¾	24	21¼	17½	5429
14" ; DN350	Straight flow	Flanged	264.5	19¾	17¾	24	21¼	17½	5429
16" ; DN400	Straight flow	Flanged	412.1	19¾	25¾	28¾	25¾	23¾	10973
20" ; DN500	Straight flow	Flanged	564.2	19¾	30¾	33¾	30¾	27½	17325

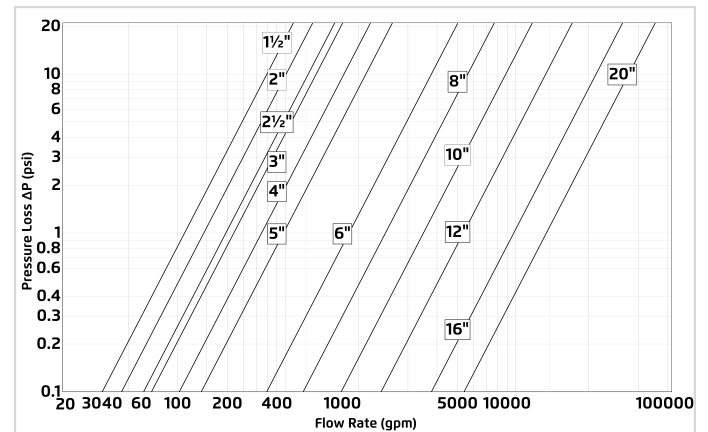
Flow Properties

Size (DN)	Accuracy	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400	DN500
Q @ (gpm)		1½"	2"	2½"	3"	4"	5"	6"	8"	10"	12"	14"	16"	20"
Q1 Minimum Flow	±5%	2.2	2.2	3.5	5.7	5.7	8.8	13.6	22	35.2	55	55	140.9	220.1
Q2 Transitional Flow	±2%	3.5	3.5	5.7	8.8	8.8	14	22	35.2	55.5	88	88	224.5	352.2
Q3 Permanent Flow	±2%	110	176.1	277.4	277.4	440	704.4	1100.7	1761	2774	4403	4403	7044.6	11007.2
Q4 Maximum Flow (Short Time)	±2%	136.5	220.1	348	348	348	880.6	1378	2201.4	3469.5	5503.6	5503.6	8805.8	13759
Q2/Q1		7	7	7	7	7	7	7	7	7	7	7	7	7
Q3/Q1		220.1	352.2	352.2	220.1	220.1	352.2	352.2	352.2	352.2	352.2	352.2	220.1	220.1
Max. reading, gal		999,999				9,999,999				99,999,999				
Min. reading, gal		0.26				2.6				26.4				

Accuracy Curve



Flow Chart



Differential Pressure & Flow Calculation

$$\Delta P = \left(\frac{Q}{C_v} \right)^2$$

C_v = gpm @ ΔP of 1 psi
 Q = gpm
 ΔP = psi



Magnetic Register



Turbo-Bar-M Register

Output Type

Dry contact output

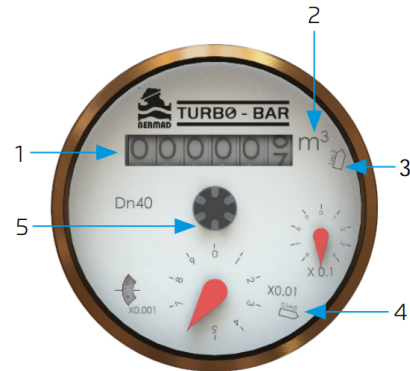
Output Cable Characteristic

Wire	Function
Red	Pulse Out
Black	GND/COMMON

Output Characteristic

Cable Length - supplied	4.9 ft
Maximum Cable Length	164 ft
Maximum Applied Voltage	24 AC/DC Max
Switch Current	0.01 A max

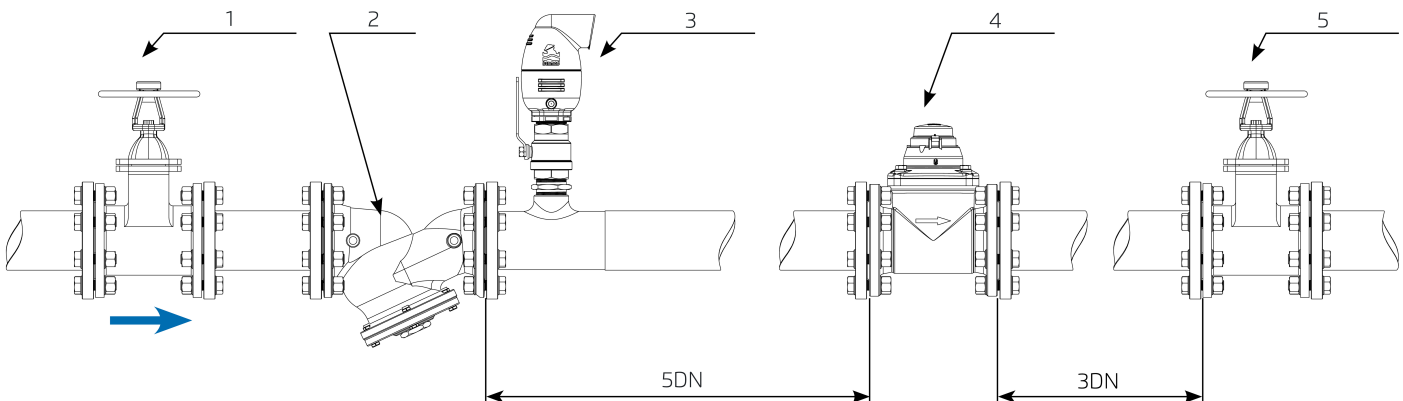
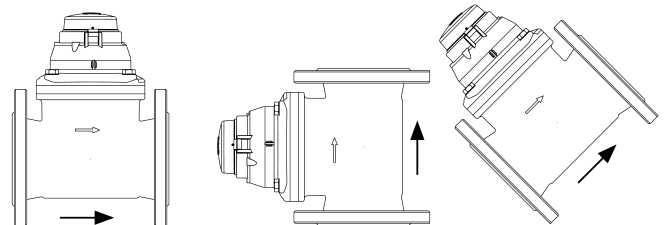
Display



Num	Description
1	Volume
2	Volume units
3	Pulse output #1
4	Pulse output #2
5	Flow indicator

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 must be filled with water to operate.



[1] Isolation Valve

[2] Strainer

[3] Air Valve

[5DN] Unrestricted
pipe, minimum
5XDN

[4] Turbo-Bar

[5] Isolation Valve

[3DN] Unrestricted
pipe, minimum
3XDN