

PADDLE WHEEL WATER METER

with Magnetic Drive & Magnetic register For
Irrigation & Wastewater

Model Turbo-IR-M

The TURBO-IR-M uses a multi-blade plastic paddle mounted at the top of the water passage, where disturbance from solids suspended in the water is minimal, providing:

- Accurate metering in water containing solid debris
- Low head loss
- Magnetic drive



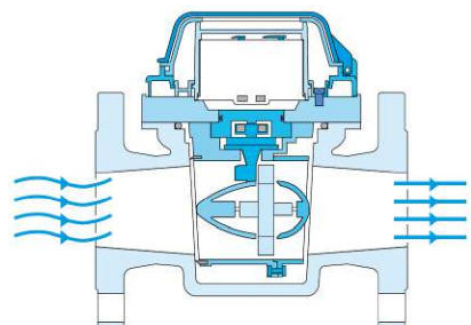
- [1] BERMAD Water Meter Model Turbo-IR
- [2] Combination Air Valve Model C30
- [3] Strainer Model 70-F
- [4] Kinetic Air Valve Model K10
- [5] Flow Control & Pressure Reducing Valve Model IR-472-RVXZ

Features & Benefits

- Magnetic drive
- "Reed switch" sensor allow one or two pulse outputs option
- Easy maintenance

Operation:

The TURBO-IR uses a multi-blade plastic paddle mounted at the top of the water passage, where disturbance from solids suspended in the water is minimal, permitting accuracy of metering in water containing up to 30% solid debris. Ideal for irrigation and waste water applications.





Technical Data

Pressure Rating:
16 bar

Operating Temperature:
Water up to 50°C

End Connections - Flanged:
ISO PN16, ANSI Class 150

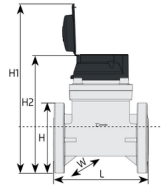
Materials

Body & Cover:
Ductile Iron

Coating:
Polyester Green

Technical Specifications

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



Size (DN)	Pattern	End Connection	Weight (Kg)	L (mm)	H (mm)	H1 (mm)	H2 (mm)	W	KV
2" ; DN50	Straight flow	Flanged	10.5	200	172.5	353.5	281.5	125	115
2½" ; DN65	Straight flow	Flanged	11.8	200	182.5	363.5	291.5	140	192
3" ; DN80	Straight flow	Flanged	15.5	225	200	381	309	160	219
4" ; DN100	Straight flow	Flanged	17.5	250	215	391	319	180	402
5" ; DN125	Straight flow	Flanged	19.5	250	245	406	334	200	584
6" ; DN150	Straight flow	Flanged	30.5	300	314	434	362	240	1059
8" ; DN200	Straight flow	Flanged	42.5	350	372	491	419	295	1826
10" ; DN250	Straight flow	Flanged	60	450	450	544	472	350	2373
12" ; DN300	Straight flow	Flanged	82.5	500	504	599	527	400	4017

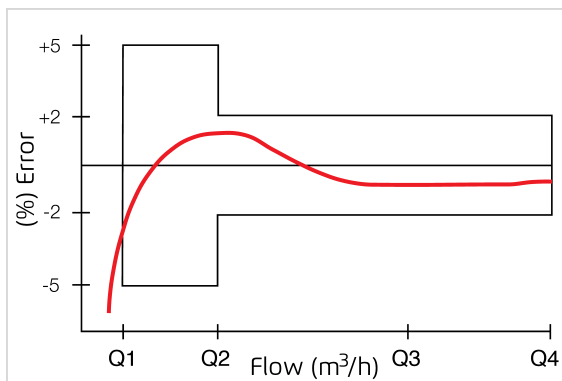
Flow Properties

Size (DN) Q @ (m³/h)	Accuracy	DN50 2"	DN65 2½"	DN80 3"	DN100 4"	DN125 5"	DN150 6"	DN200 8"	DN250 10"	DN300 12"
Q1 Minimum Flow	±5%	2.8	4	6	10	14	20	36	48	64
Q2 Transitional Flow	±2%	10.5	15	22.5	37.5	52.5	75	135	180	240
Q3 Permanent Flow	±2%	35	50	75	125	175	250	450	600	800
Q4 Maximum Flow (Short Time)	±2%	70	100	150	250	350	500	900	1200	1600
Max. reading, m³		999,999					9,999,999		99,999,999	
Min. reading, liter		10							1000	

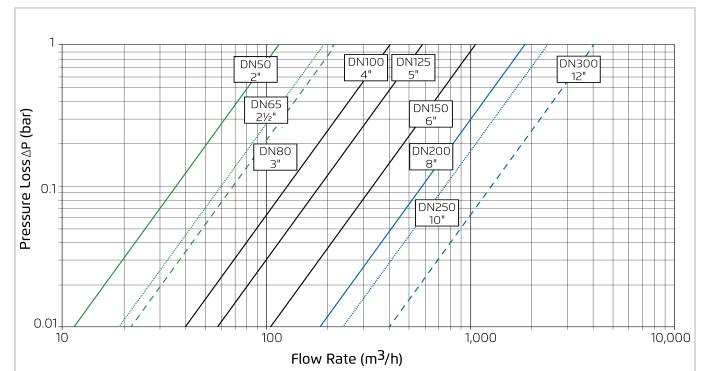
Pulse Option

Register Type	Dry contact Reed Switch			
Size (DN)	One pulse per			
	100L	1m³	10m³	100m³
1½"-5" ; DN40-125	✓	✓		
6"-8" ; DN150-200		✓	✓	
10"-12" ; DN250-300			✓	✓

Accuracy Curve



Flow Chart



Differential Pressure & Flow Calculation

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

$K_v = \text{m}^3/\text{h} @ \Delta P \text{ of } 1 \text{ bar}$
 $Q = \text{m}^3/\text{h}$
 $\Delta P = \text{bar}$



Magnetic Register



Turbo-IR-M Register

Output Type

Dry contact output

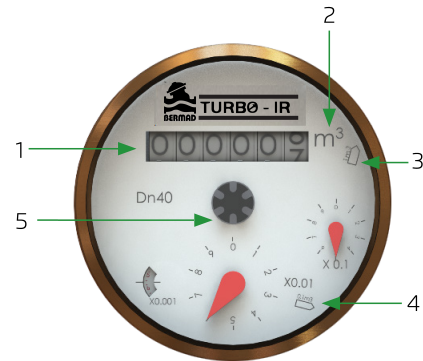
Output Cable Characteristic

Wire	Function
Red	Pulse Out
Black	GND/COMMON

Output Characteristic

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

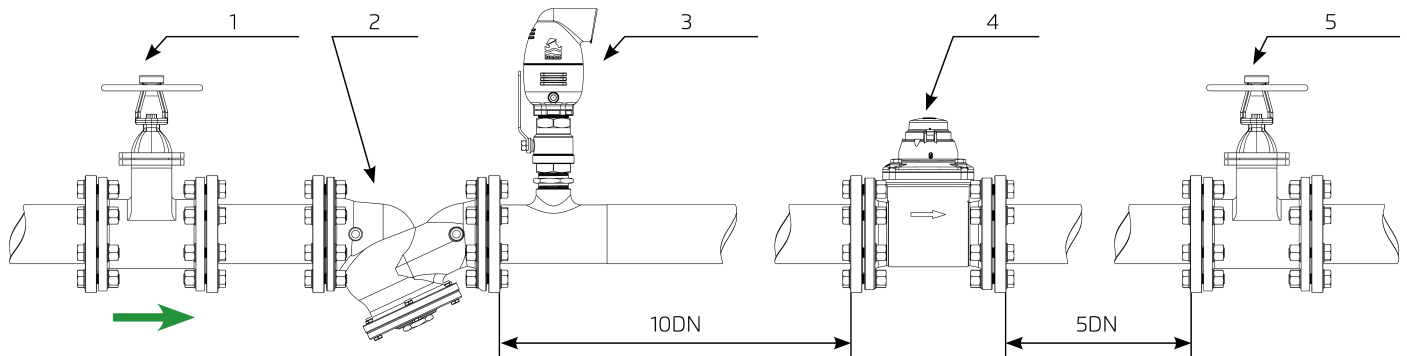
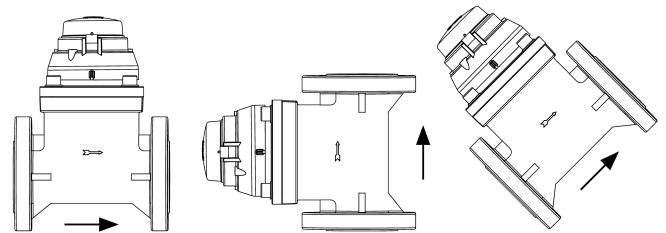
Display



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-IR must be filled with water to operate.



[1] Isolation Valve

[2] Strainer

[3] Air Valve

[10DN] Unrestricted
pipe, minimum
10XDN

[4] Turbo-IR

[5] Isolation Valve

[5DN] Unrestricted
pipe, minimum
5XDN