BERMAD TURBO-IR Water Meter Series

The TURBO-IR-E/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

Water Meter with Electronic Register

TURBO-IR-E

Features and Benefits

- Digital display (LCD, 4-8 digits) of Flow Rate and Volume
- Electronically improves metering sensitivity
- Reduces reverse flow from accumulated volume
- Programmable Measuring units and Pulse rate
- Battery lifespan – 10 years
- Integrated two pulse outputs option
- Can easily upgrade any Standard IR meter
- Dry, IP68; NEMA 6P SEALED REGISTER

Water Meter with Magnetic Register

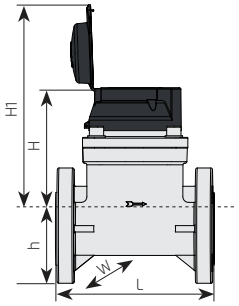
TURBO-IR-M

Features and Benefits

- Magnetic drive
- Dry, IP68; NEMA 6P SEALED REGISTER
- "Reed switch" sensor allow one or two pulse outputs option
- Easy maintenance

Dimensions and Weights

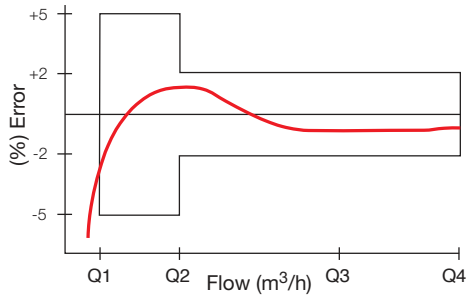
Nominal Size	mm	50	65	80	100	125	150	200	250	300
	Inch	2"	2½"	3"	4"	5"	6"	8"	10"	12"
L, Length (mm)		200	200	225	250	250	300	350	450	500
h, Height (mm)		75	82	95	106	110	135	162	194	220
H, Height (mm)		177	180	185	185	193	198	224	248	274
H1, Height (mm)		247	250	255	255	263	268	294	318	344
W, Width (mm)		125	140	160	180	200	240	295	350	400
Weight (kg)		10.5	11.8	15.5	17.5	19.5	30.5	42.5	60	82.5



Metrological Data

	Accuracy	DN50	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
		2"	2½"	3"	4"	5"	6"	8"	10"	12"
Qmin (Minimum flow), m³/h	±5%	2.8	4	6	10	14	20	36	48	64
Qt (Transitional flow), m³/h	±2%	10.5	15	22.5	37.5	52.5	75	135	180	240
Qn (Permanent flow), m³/h	±2%	35	50	75	125	175	250	450	600	800
Qmax (Peak flow, short time), m³/h	±2%	70	100	150	250	350	500	900	1,200	1,600
Min reading unit (m³)		0.01	0.01	0.01	0.01	0.01	0.01	0.1	1	1
Max register capacity (m³)		99,999.999 - 999,999.99 - 9,999,999.9 - 99,999,999								
Kv=Q/√Δp		115	192	219	402	584	1,059	1,826	2,373	4,017

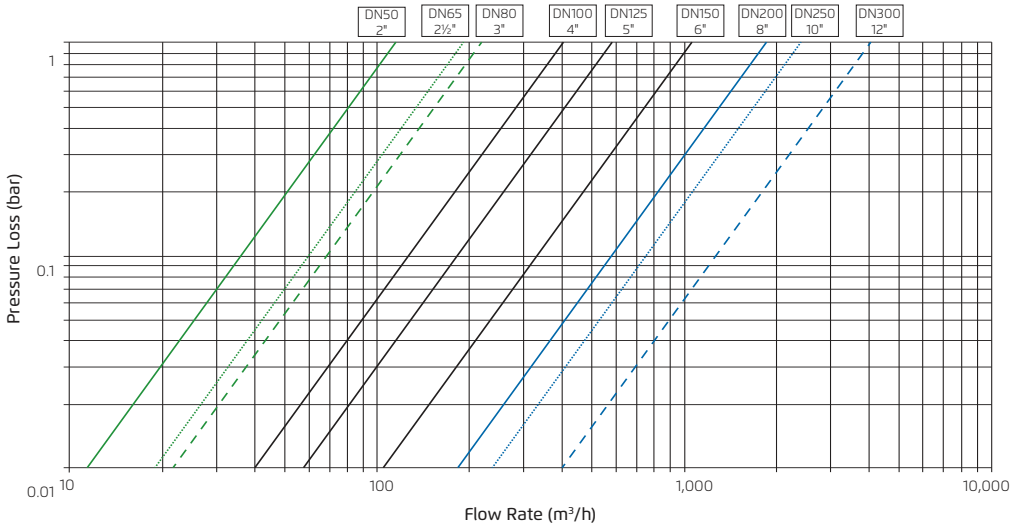
Accuracy Curve



Technical data

- **Body, Cover:** Ductile Iron
- **Coating:** Polyester Green
- **End Connections - Flanged:** ISO PN16, ANSI Class 150
- **Pressure Rating:** ISO PN 16
- **Operating Temperature:** water up to 50°C / 122°F

Turbo-IR-E/M Flow Chart



Data Output Options

Irrigation system management requires on line accurate flow data.
BERMAD Turbo-IR-E/M provides accurate data metering with all common pulse output specifications.

Electronic register

Output Type
Programmable dual open collector pulse output Data

Cable Characteristics		
	Wire	**Function**
Output Cable	White	Pulse Out 1
	Red	Pulse Out 2
	Black	GND/COMMON

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

Turbo-IR-E Register

Magnetic register

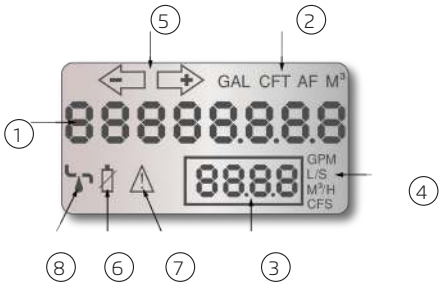
Output Type
Dry contact output

Cable Characteristics		
	Wire	**Function**
Output Cable	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-IR-M Register

E-Register Display



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

Pulse Output Option - Electronic Register

Cubic Meter Pulse Output Electronic transmission								
Model	Size		Dry contact Reed Switch Pulse for Each 1					Dual pulse output
	In	mm	10 liter *	100 liter	1 m^3	10 m^3	100 m^3	
Turbo-IR-E	1½"-2½"	40-65	S4	S3	S2			S34,S23
	3-10"	80-250		S3	S2	S1		S23, S12
	12"	300			S2	S1	S8	S12, S81

* 10 liter pulse works fine up to 360 m^3/h

Gallon Pulse Output Electronic transmission								
Model	Size		Dry contact Reed Switch Pulse for Each 1					Dual pulse output
	In	mm	1 gal	10 gal	100 gal	1,000 gal	10,000 gal	
Turbo-IR-E	1½"-2½"	40-65	S4	S3	S2			S34,S23
	3-10"	80-250		S3	S2	S1		S23, S12
	12"	300			S2	S1	S8	S12, S81

Pulse Output Option - Magnetic Register

Cubic Meter Pulse Output Magnetic transmission							
Models	Size		Dry contact Reed Switch Pulse for Each 1				Dual pulse output
	In	mm	100 liter	1 m^3	10 m^3	100 m^3	
Turbo-IR-M	1½"-5"	40-125	S3	S2			S23
	6"-8"	150-200		S2	S1		S12
	10"-12"	250-300			S1	S8	S81

Gallon Pulse Output Magnetic transmission							
Model	Size		Dry contact Reed Switch Pulse for Each 1				Dual pulse output
	In	mm	10 gal	100 gal	1,000 gal	10,000 gal	
Turbo-IR-M	1½"-5"	40-125	S3	S2			S23
	6"-8"	150-200		S2	S1		S12
	10"-12"	250-300			S1	S8	S81

Installation Recommendation

- The water meter can be installed in any orientation without interfering with metering 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 10 diameters of straight pipe upstream and 5 diameters downstream from the water meter.
- Prior to installation, flush the line to remove debris.
- The TURBO-IR-E/M must be filled with water to operate.