

Woltman Turbine Meter

WPH – Magnetic Drive, Dry Type

40-500 mm



Description

Heavy duty, particularly suited for high flow rates, TURBOBAR WPH water meters cover a very wide flow range. They are used in industrial, waterworks, water distribution, water monitoring and agricultural applications. Based on the Woltmann principle, the helical blades of the turbine rotate about the axis of flow. The TURBOBAR is a long-life product that is easy to maintain at low cost.

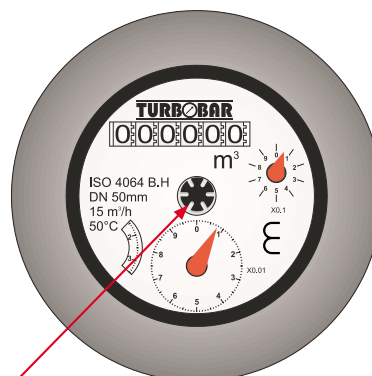
- Meets or exceeds all relevant metrological standards including ISO 4064 class B, EEC
- US gallons registration available on request

Major Operating Characteristics

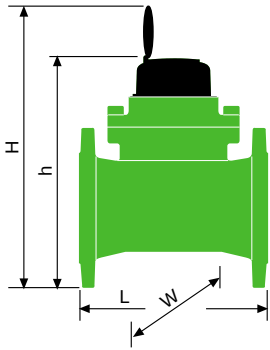
- Low pressure loss
- Pressure rating: PN 16
- Working temperature: 50°C

Features and Benefits

- Removable and interchangeable measuring element
- Dry type register
 - Hermetically sealed
 - Adjustable to any position (360°) for easy reading
- Accommodates three kinds of data output devices (1x Opto-Electronic Sensor, 2x reed switch), according to two types of pulse generators, without breaking the approval seal
 - Digital flow converter device and a digital counter are available on request
- Magnetic transmission keeps the register completely separate from water, only the impeller and transmission shaft contact water



Rotating star for leak detection and electronic calibration



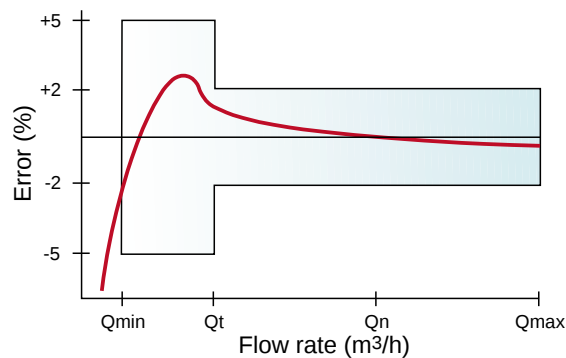
Dimensions and Weights

Nominal size DN	in	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	16"	20"
	mm	40	50	65	80	100	125	150	200	250	300	400	500
L (Length mm)		260	200	200	225	250	250	300	350	450	500	500	500
H (Height mm)		345	352	362	367	382	392	443	474	587	625	697	769
h (Height mm)		268	275	285	290	305	315	366	397	510	548	620	690
Width (mm)		160	170	190	190	230	290	280	340	405	480	600	720
Weight (kg)		12.6	12.0	13.5	16.0	19.0	20.3	38.0	52.0	105.0	120.0	187.0	256.0

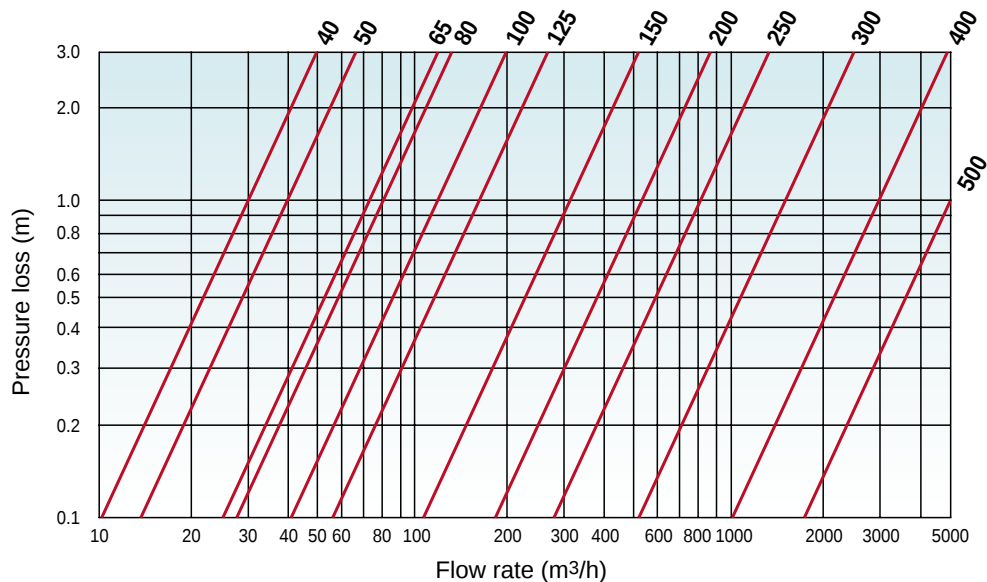
Performance Data

Nominal size	DN	in	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	16"	20"
		mm	40	50	65	80	100	125	150	200	250	300	400	500
Nominal flow rate (ISO 4064)	Qn	m ³ /h	15	15	25	40	60	100	150	250	400	600	1.000	1.500
Max. continuous flow		m ³ /h	20	30	30	60	100	160	180	300	600	1.000	1.500	3.000
Max. flow rate (ISO 4064)	Qmax	m ³ /h	30	30	50	80	120	200	300	500	800	1.200	2.000	3.000
Max. flow peak duty		m ³ /h	30	50	80	120	200	250	300	500	800	1.500	2.500	3.000
Transmition flow rate (±2%)	Qt	m ³ /h	3	3	5	8	12	20	30	50	80	125	200	300
Min. flow rate (±5%)	Qmin	m ³ /h	0.7	0.7	0.75	1.2	1.8	3	4.5	7.5	12	18	30	40
Flow rate Δp = 0.1 bar		m ³ /h	30	38	60	65	100	110	310	550	800	1.250	3.000	5.000
Max. reading		m ³	1.000.000						10.000.000			100.000.000		
Min. reading		l	1						10			100		

Accuracy Curve



Pressure Loss Curve



Data Output Options

Water systems management requires reliable data acquisition. The TURBOBAR WPH provides accurate data acquired directly from within the system.

Pulse Generating Options

- The reed switch pulse transmitter is a magnetic on/off switch that makes and breaks electric pulse contact per each unit of flow.
- The Opto-Electronic Sensor (infrared retro-reflective photocell) produces an electric pulse with high pulse-rate capacity. The pulse is transmitted to a converter* that enables instant flow-rate readout, pulse counting and/or 4-20 mA output.

* Converter available on request.

Reed Switch

- Switching voltage: 48 VAC/DC max
- Switching current: 0.2 A max
- Switching power: 4 W max



Register with Reed Switch

Opto-Electronic Sensor

- Supply voltage: 5-10 VDC
- Output type: PNP
- Output signal
 - High state: $\approx$ supply voltage
 - Low state: <0.5 VDC



Register with Opto-Electronic Sensor

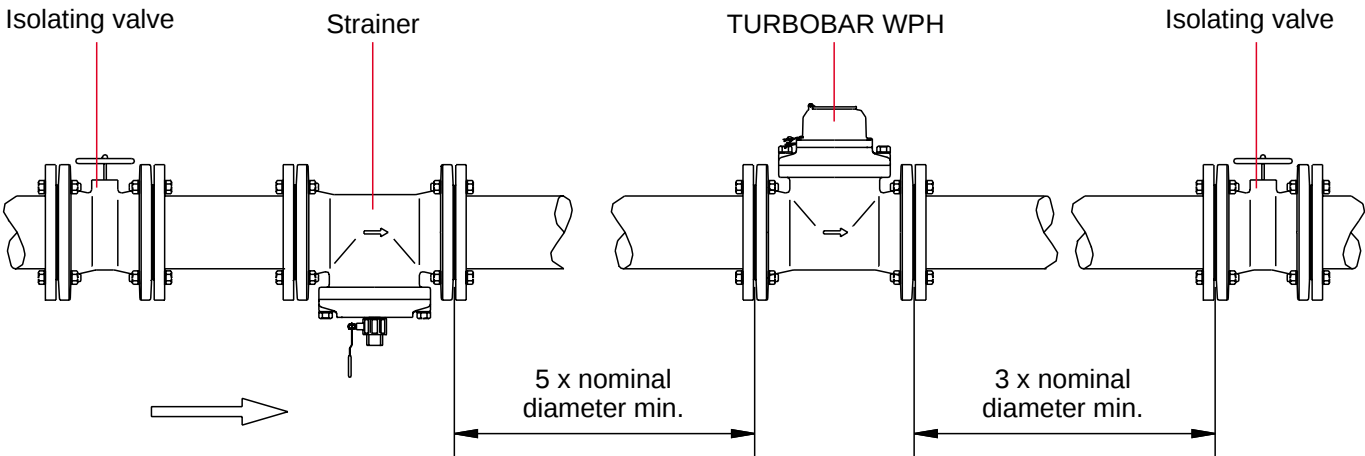
Data Output Options

Size		Reed Switch					Opto Electronic Sensor		
		1 Pulse for Each							
in	mm	10 Liter	100 Liter	1 m³	10 m³	100 m³	1 Liter	10 Liter	100 Liter
11/2"	40	O	X	X			X		
2"	50	O	X	X			X		
21/2"	65	O	X	X			X		
3"	80	O	X	X			X		
4"	100	O	X	X			X		
5"	125	O	X	X			X		
6"	150		O	X	X			X	
8"	200		O	X	X			X	
10"	250		O	X	X			X	
12"	300			O	X	X			X
16"	400			O	X	X			X
20"	500			O	X	X			X
Order codes		S4	S3	S2	S1	S8	SA	SB	SC

Pulse in US gallons available on request
All factory configured options are field accessible

- ☐ Factory configured standard
☐ Factory configured on request

Recommended Installations



Installation Considerations

Proper installation helps maximize the accuracy and life of the TURBOBAR WPH. All turbine meters are sensitive to turbulence conditions caused by diameter changes, pumps, tees, valves, etc. Therefore, install the meter far from these disturbances and according to the following specifications:

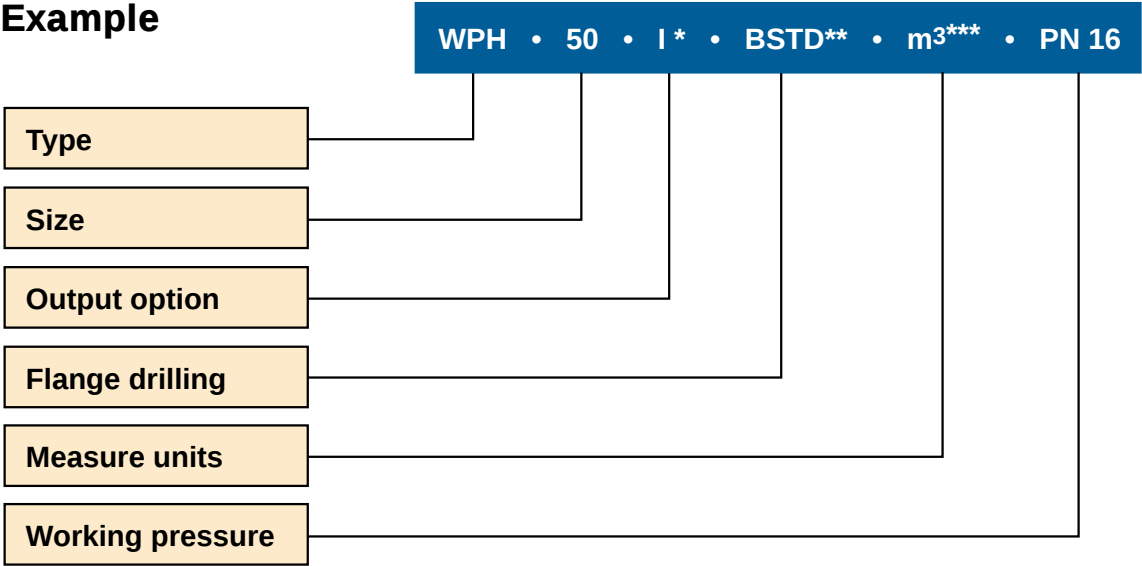
- upstream - 5 diameters min.
- downstream - 3 diameters min.

Recommendation: Install a strainer upstream of the TURBOBAR WPH to eliminate debris that could damage or stop the measuring element.

Cautions:

- Prior to installing a TURBOBAR WPH in a new line, flush the line to remove debris.
- Ensure that the TURBOBAR WPH is full of water during measuring.

Order Example



* I = Standard register with pulse options ready to use.
For pulse definitions see Data Output Options table (page 3).

** ISO, AWWA, etc.

*** Available in US gallons.