

# WPD / WPHD

## Woltman meter with impeller axis arranged in parallel to the flow direction

The bulk water meter WPD / WPHD is used to record high flows in drinking water distribution and in industry, with low pressure loss and a predominantly constant flow profile at the same time.

The meter is equipped with a 6-roller dry dial register (IP68) and a modulator disc. This enables electronic, reaction-free scanning and is the basis for remote reading of the meter data via radio with LoRaWAN® or wM-Bus. A combined M-Bus / pulse module is also possible.

A mechanical pulser can also be connected in parallel.



### Performance characteristics at a glance

- Woltman parallel type
- All materials, which are used in the drinking water section, comply with the required standards, guidelines and the current German drinking water approval (other country-specific drinking water approvals on request)
- WPD (DN 40 - 150), WPHD (DN 200 - 300)
- For horizontal and vertical installation
- Replaceable MID-compliant metrological unit
- Highest precision and reliability even in case of low flow rates
- Flood-proof hermetically sealed glass/copper register (IP68)
- Low starting flow and high overload security
- Wide measuring range, low pressure loss
- Hydraulic bearing relief
- Durable measuring stability
- Swirl-reducing inlet
- No straight inlet or outlet needed (U0/D0) according to OIML R49 and DIN EN ISO 4064

- Optimally equipped for remote readout
- Register rotatable 355°
- Operating pressure MAP 16 (optionally MAP 10)
- Approved in accordance with MID and OIML

### Applications

- For the consumption measurement of cold and clean drinking water or service water up to 50°C.
- For measuring high flows

### AMR options

- Can be combined with stationary GSM system
- Retrofittable with EDC module (Electronic Data Capture):
  - EDC- LPWAN radio module (868 MHz) for LoRaWAN®
  - EDC- wireless M-Bus radio module (868 MHz)
  - EDC- combined M-Bus and pulse module

Technical data										
Nominal diameter	DN	mm	40	50	50	50	65	65	80	80
Permanent flowrate	Q <sub>3</sub>	m <sup>3</sup> /h	25	25	40	63	40	63	63	100
Attainable measuring range	Q <sub>3</sub> /Q <sub>1</sub>	R	R160H50V	R200H50V	R315H80V	R315H125V	R200H80V	R315H125V	R315H125V	R315H125V
Standard measuring range <sup>1</sup>	Q <sub>3</sub> /Q <sub>1</sub>	R	R100H50V	R160H50V	R160H63V	R160H63V	R160H63V	R160H63V	R160H63V	R160H63V
Overload flowrate	Q <sub>4</sub>	m <sup>3</sup> /h	31.25	31.25	50	78.75	50	78.75	78.75	125
Minimum flowrate <sup>2</sup>	Q <sub>1</sub>	m <sup>3</sup> /h	0.25/0.5	0.16/0.5	0.25/0.64	0.40/1.0	0.25/0.64	0.40/1.0	0.40/1.0	0.63/1.59
Transitional flowrate <sup>2</sup>	Q <sub>2</sub>	m <sup>3</sup> /h	0.40/0.8	0.25/0.8	0.4/1.02	0.63/1.6	0.4/1.02	0.63/1.6	0.63/1.6	1.0/2.54
Start-up flow rate	-	m <sup>3</sup> /h	0.065	0.065	0.065	0.065	0.065	0.065	0.11	0.11
Display range	min.	l	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	max.	m <sup>3</sup>	999.999	999.999	999.999	999.999	999.999	999.999	999.999	999.999
Temperature range	-	°C	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50
Operating pressure	MAP	bar	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16
Pulse value reed	-	l/pulse	100	100	100	100	100	100	100	100
Pulse value modulator disc	-	l/pulse	10	10	10	10	10	10	10	10
Pressure loss class at Q <sub>3</sub>	Δp	bar	0.63	0.10	0.25	0.63	0.16	0.40	0.10	0.40
Mechanical environmental condition	-	-	M2	M2	M2	M2	M2	M2	M2	M2
Climatic condition <sup>4</sup>	-	°C	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55
Flow profile sensitivity	-	-	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0

**Dimensions and weights:**

Nominal diameter	DN	mm	40	50	50	50	65	65	80	80
Overall length <sup>1</sup>	L	mm	300	200/270/ 300	200/270/ 300	200/270/ 300	200/300	200/300	200/225/ 300/350	200/225/ 300/350
Height	H1	mm	135	135	135	135	135	135	143	143
Height	H2	mm	65	75	75	75	85	85	95	95
Total height approx. <sup>3</sup>	H1+H2	mm	200	210	210	210	220	220	238	238
Installation height of the measuring unit	H3	mm	230	230	230	230	230	230	256	256
Flange diameter	D	mm	150	165	165	165	185	185	200	200
Bolt circle diameter	D1	mm	110	125	125	125	145	145	160	160
Number of bolts	-	pcs.	4	4	4	4	4	4	8	8
Bolt size	-	mm	M16	M16	M16	M16	M16	M16	M16	M16
Bolt diameter	-	mm	19	19	19	19	19	19	19	19
Weight approx.	-	kg	8.8	9.1/10.7/ 11.1	9.1/10.7/ 11.1	9.1/10.7/ 11.1	11.8/13.6	11.8/13.6	14.1/13.4/ 15.9/16.8	14.1/13.4/ 15.9/16.8

<sup>1</sup> Other measuring ranges and overall lengths (ISO overall lengths) on request

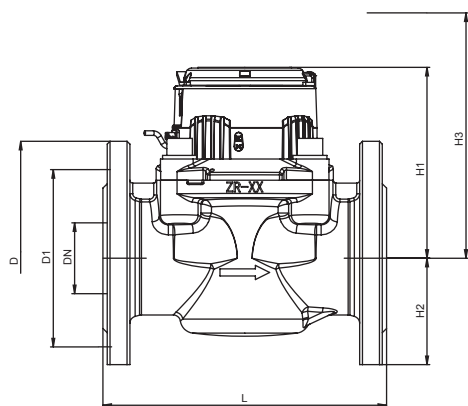
<sup>2</sup> The data refers to the standard measuring range

<sup>3</sup> Total height WPDE + 20 mm

<sup>4</sup> Condensation possible

Flange according to ISO 7005-2. Other flanges on request

Attention: not all versions are available in all markets



Dimensions WPD

**Technical data**

Nominal diameter	DN	mm	80	80	100	100	125	125	150	150
Permanent flowrate	Q <sub>3</sub>	m <sup>3</sup> /h	63	100	100	160	100	160	250	400
Attainable measuring range	Q <sub>3</sub> /Q <sub>1</sub>	R	R315H125V	R315H125V	R315H200V	R315H/315V	R315H200V	R315H/315V	R315H200V	R315H/315V
Standard measuring range <sup>1</sup>	Q <sub>3</sub> /Q <sub>1</sub>	R	R160H63V	R160H63V	R160H63V	R160H63V	R160H63V	R160H63V	R160H63V	R160H63V
Overload flowrate	Q <sub>4</sub>	m <sup>3</sup> /h	78.75	125	125	200	125	200	312.5	500
Minimum flowrate <sup>2</sup>	Q <sub>1</sub>	m <sup>3</sup> /h	0.40/1.0	0.63/1.59	0.63/1.59	1.0/2.54	0.63/1.59	1.0/2.54	1.56/3.97	2.5/6.35
Transitional flowrate <sup>2</sup>	Q <sub>2</sub>	m <sup>3</sup> /h	0.63/1.6	1.0/2.54	1.0/2.54	1.6/4.06	1.0/2.54	1.6/4.06	2.5/6.35	4.0/10.16
Start-up flow rate	-	m <sup>3</sup> /h	0.11	0.11	0.15	0.15	0.15	0.15	0.35	0.35
Display range	min.	l	0.5	0.5	0.5	0.5	0.5	0.5	5	5
	max.	m <sup>3</sup>	999.999	999.999	999.999	999.999	999.999	999.999	999.999 x10	999.999 x10
Temperature range	-	°C	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50
Operating pressure	MAP	bar	0.3 - 10	0.3 - 10	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16	0.3 - 16
Pulse value reed	-	l/pulse	100	100	100	100	100	100	1000	1000
Pulse value modulator disc	-	l/pulse	10	10	10	10	10	10	100	100
Pressure loss class at Q <sub>3</sub>	Δp	bar	0.10	0.40	0.16	0.40	0.16	0.40	0.10	0.40
Mechanical environmental condition	-	-	M2	M2	M2	M2	M2	M2	M2	M2
Climatic condition <sup>4</sup>	-	°C	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55
Flow profile sensitivity	-	-	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0

**Dimensions and weights:**

Nominal diameter	DN	mm	80	80	100	100	125	125	150	150
Overall length <sup>1</sup>	L	mm	225	225	250/350/ 360	250/350/ 360	250	250	300	300
Height	H1	mm	143	143	152	152	152	152	183	183
Height	H2	mm	95	95	105	105	115	115	135	135
Total height approx. <sup>3</sup>	H1+H2	mm	238	238	257	257	267	267	318	318
Installation height of the measuring unit	H3	mm	256	256	266	266	266	266	373	373
Flange diameter	D	mm	200	200	220	220	250	250	285	285
Bolt circle diameter	D1	mm	160	160	180	180	210	210	240	240
Number of bolts	-	pcs.	4	4	8	8	8	8	8	8
Bolt size	-	mm	M16	M16	M16	M16	M16	M16	M20	M20
Bolt diameter	-	mm	19	19	19	19	19	19	23	23
Weight approx.	-	kg	13.4	13.4	16.9/20.5/ 20.6	16.9/20.5/ 20.6	20.1	20.1	31.5	31.5

<sup>1</sup> Other measuring ranges and overall lengths (ISO overall lengths) on request

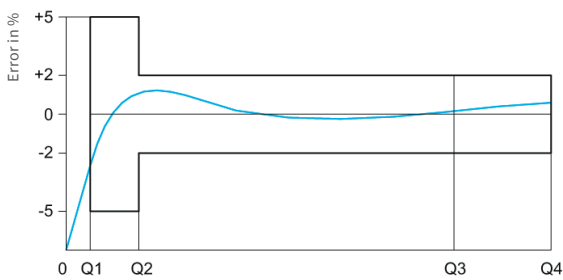
<sup>2</sup> The data refers to the standard measuring range

<sup>3</sup> Total height WPDE + 20 mm

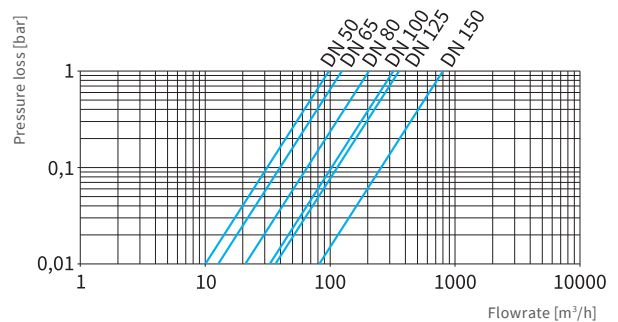
<sup>4</sup> Condensation possible

Flange according to ISO 7005-2. Other flanges on request

Attention: not all versions are available in all markets



Typical error curve



Typical pressure loss curve WPD

# WPHD

## Technical data

Nominal diameter	DN	mm	200	200	250	250	300	300
Permanent flowrate	$Q_3$	$m^3/h$	400	400	630	630	1000	1000
Attainable measuring range	$Q_3/Q_1$	R	R160H125V	R160H125V	R160H125V	R160H125V	R160H125V	R160H125V
Standard measuring range <sup>1</sup>	$Q_3/Q_1$	R	R160H63V	R160H63V	R100H63V	R100H63V	R100H63V	R100H63V
Overload flowrate	$Q_4$	$m^3/h$	500	500	787	787	1250	1250
Minimum flowrate <sup>2</sup>	$Q_1$	$m^3/h$	2.5/6.35	2.5/6.35	6.3/10.0	6.3/10.1	10.0/15.87	10.0/15.88
Transitional flowrate <sup>2</sup>	$Q_2$	$m^3/h$	4.0/10.16	4.0/10.16	10.08/16.0	10.08/16.1	16.0/25.4	16.0/25.5
Start-up flow rate	-	$m^3/h$	2.00	2.00	2.00	2.00	2.00	2.00
Display range	min.	l	5	5	5	5	5	5
	max.	$m^3$	999.999 x10	999.999 x10	999.999 x10	999.999 x10	999.999 x10	999.999 x10
Temperature range	-	$^{\circ}C$	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50	0.1 - 50
Operating pressure	MAP	bar	0.3 - 16	0.3 - 10	0.3 - 16	0.3 - 10	0.3 - 16	0.3 - 10
Pulse value reed	-	l/pulse	1000	1000	1000	1000	1000	1000
Pulse value modulator disc	-	l/pulse	100	100	100	100	100	100
Pressure loss class at $Q_3$	$\Delta p$	bar	0.10	0.10	0.10	0.10	0.10	0.10
Mechanical environmental condition	-	-	M2	M2	M2	M2	M2	M2
Climatic condition <sup>4</sup>	-	$^{\circ}C$	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55	5 - 55
Flow profile sensitivity	-	-	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0	U0/D0

## Dimensions and weights:

Nominal diameter	DN	mm	200	200	250	250	300	300
Overall length <sup>1</sup>	L	mm	350	350	450	450	500	500
Height	H1	mm	215	215	267	267	250	250
Height	H2	mm	160	160	193	193	220	220
Total height approx. <sup>3</sup>	H1+H2	mm	375	375	460	460	470	470
Installation height of the measuring unit	H3	mm	460	460	460	460	470	470
Flange diameter	D	mm	340	340	405	395	460	445
Bolt circle diameter	D1	mm	295	295	355	350	410	400
Number of bolts	-	pcs.	12	8	12	12	12	12
Bolt size	-	mm	M20	M20	M24	M20	M24	M20
Bolt diameter	-	mm	23	23	28	23	28	23
Weight approx.	-	kg	49	49	68	68	105	105

<sup>1</sup> Other measuring ranges and overall lengths (ISO overall lengths) on request

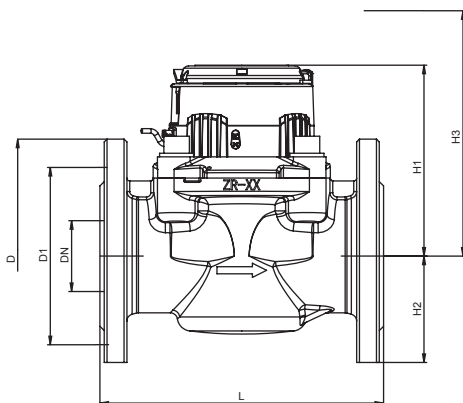
<sup>2</sup> The data refers to the standard measuring range

<sup>3</sup> Total height WPHDE + 20 mm

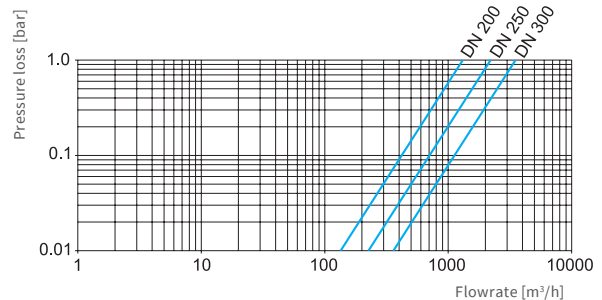
<sup>4</sup> Condensation possible

Flange according to ISO 7005-2. Other flanges on request

Attention: not all versions are available in all markets



Dimensions WPHD



Typical pressure loss curve WPHD

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