

# WESAN WS E

Electronic Meter | Woltman

**DIEHL**  
Metering



## APPLICATION

Fully electronic bulk water meter for measuring of fluctuating flows in the utility sector.

## FEATURES

- ▶ Electronic sensor control for recording flow rate
- ▶ Lithium battery, lifetime up to 12 years
- ▶ Optical ZVEI interface equipped as standard
- ▶ Adjustable reading date for billing
- ▶ Rotatable integrator
- ▶ Single-line 7-digit display for easy meter reading
- ▶ For horizontal installation
- ▶ Outstanding long-term accuracy even under extreme loads
- ▶ Extended measuring range better than metrological class

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## ELECTRONIC - BASIC FEATURES

	WESAN WS E
Ambient class	OIML R49 class C / MID E2 + M1
Protection class	IP 54 or IP 68
Interfaces standard	Optical ZVEI
Interfaces optional*	M-Bus, L-Bus, pulse

\* Possible combinations

- M-Bus / pulse
- L-Bus / forward pulse
- only M-Bus

Note: HYDRO-SET Software for configuration of meters, readout of measured values and printout of meter logs. Available under [www.diehl.com/metering](http://www.diehl.com/metering) (Products - downloads)

## DISPLAY

	WESAN WS E
Display indication	LCD, 7-digit
Unit	m <sup>3</sup> /h - l/h - m <sup>3</sup> - l
Total values	9,999.999 - 999,999.9 - 99,999.99 - 9,999.999
Values displayed	Flow rate

## VOLUME - / PULSE OPEN COLLECTOR

	WESAN WS E	
Max. frequency	Hz	90
Max. input voltage	V	30
Max. input current	mA	27
Max. voltage drop at active output	V/mA	2/27
Max. current through inactive output	µA/V	5/30
Max. reverse voltage without destroying outputs	V	6
Pulse duration	ms	5.5
Min. pulse pause	ms	5.5

## SUPPLY VOLTAGE

	WESAN WS E		
Operating voltage	UN	VDC	3.0 (lithium battery)
Battery lifetime			Up to 12 years
Nominal power	PN	µW	30

## INTERFACES - OVERVIEW

	WESAN WS E
Optical	ZVEI interface for communication, M-Bus protocol
M-Bus	According to EN 1434-3. Data reading and parametrization are via two wires with polarity reversal protection.
L-Bus	Interface for the radio module IZAR RADIO EXTERN
Pulse	Output for volume (open collector)

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## PULSE INTERFACE - SPECIFICATION

WESAN WS E		
DN 50 - 125   Pulse rates	l/pulse	Decadic 1 ... 1000
DN 50 - 125   Display		1 digit after comma
DN 50 - 125   Pulse value 1	l/pulse	1 (factory setting)
DN 50 - 125   Pulse value 2	l/pulse	100 (factory setting)
DN 150   Pulse rates	l/pulse	Decadic 10 ... 10000
DN 150   Display		0 digits after comma
DN 150   Pulse value 1	l/pulse	10 (factory setting)
DN 150   Pulse value 2	l/pulse	1000 (factory setting)
Pulse variants		Two forward pulses; one forward and one backward pulse; pulse and direction signal

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## GENERAL

			WESAN WS E				
Temperature range	°C		0 ... 30				
Temperature safety	°C		0 ... 50				
Ambient operating temperature	°C		0 ... 55				
Ambient storage temperature	°C		0 ... 55				
Mounting position			Only horizontal				
Nominal pressure	PN	bar	16*				

\* See also special versions.

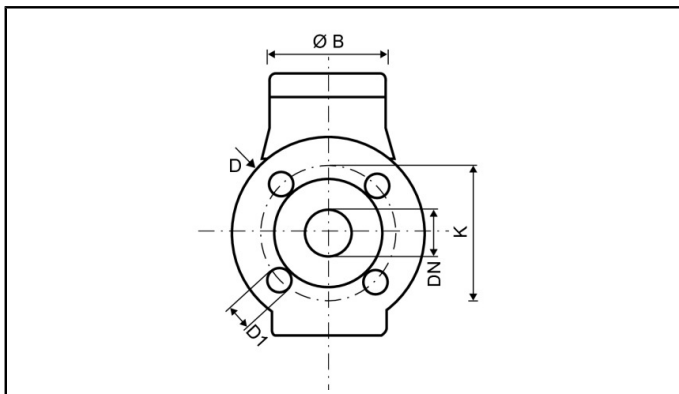
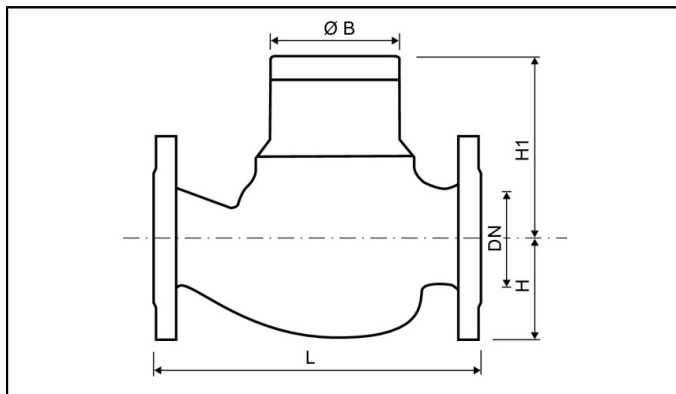
## TECHNICAL DATA

Nominal diameter	DN	mm	50	65	80	100	150
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	25	40	63	100	250
Minimum flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.63	1	1,6	2.5	6.25
Transitional flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	1	1.6	2.52	4	10
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	31.25	50	78.75	125	312.5
Nominal flow rate (DIN ISO 4064)	Q <sub>n</sub>	m <sup>3</sup> /h	15	25	40	60	150
Minimum flow rate	Q <sub>min</sub>	m <sup>3</sup> /h	0.2	0.2	0.25	0.3	0.8
Transition flow rate	Q <sub>t</sub>	m <sup>3</sup> /h	1	1.2	1.5	1.5	5
Maximum flow rate (short-term)	Q <sub>max</sub>	m <sup>3</sup> /h	50	50	110	180	350
Starting flow rate		l/h	60	60	90	90	150
Flow rate at 0.1 bar pressure loss		m <sup>3</sup> /h	19	21	42	70	160
Pressure loss at Q <sub>3</sub>		bar	0.4	0.4	0.4	0.25	0.25

## APPROVAL

Nominal diameter	DN	mm	50	65	80	100	150
National			6.132 / 96.12	6.132 / 96.12	6.132 / 96.12	6.132 / 96.12	6.132 / 92.06
Metrological class			B•H	B•H	B•H	B•H	B•H
MID (A 0445/3505/2011)			•	•	•	•	•
Dynamic range (Q <sub>3</sub> /Q <sub>1</sub> )	R		40•H	40•H	40•H	40•H	40•H

## DIMENSIONS

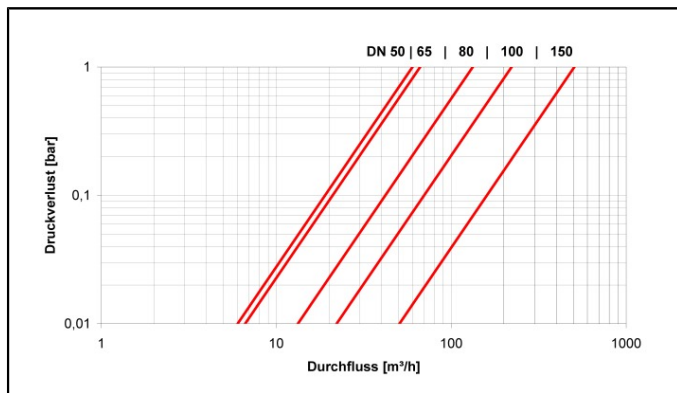


Nominal diameter	DN	mm	50	65	80	100	150
Overall length (DIN 19625)	L	mm	270	300	300	360	430 / 500
Overall length (DIN ISO 4064)	L	mm	300	300	350	350	500
Flange diameter	D	mm	165	185	200	220	285
Hole circle diameter	K	mm	125	145	160	180	240
Number of screwholes		pcs	4	4	4 / 8	8	8
Screw hole diameter	D1	mm	18	18	18	18	23
Height	H	mm	85	97	102	113	141
Height	H1	mm	135	135	180	190	351
Height to remove measuring insert		mm	240	240	330	340	620
Diameter	Ø B	mm	110	110	110	110	110
Meter width		mm	173	173	239	239	310
Weight		kg	14.5	17.7	24	28	79.5

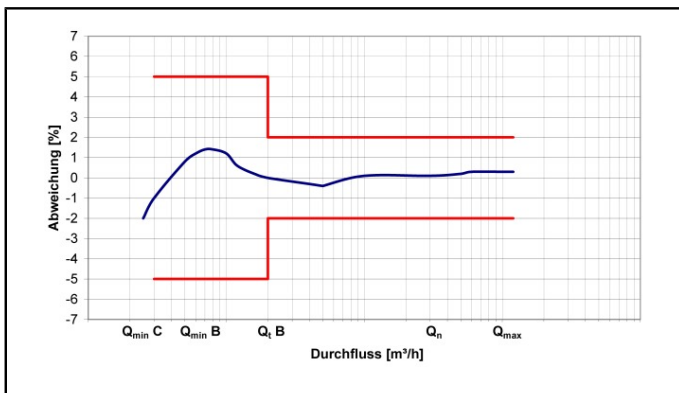
## SPECIAL VERSIONS

- Versions with different nominal pressure on request
- Flange for ANSI and BS on request
- CuZn parts in V2A on request
- Temperature up to 90 °C on request
- Special body length on request
- Special pulse values on request

## PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH



Pressure loss graph



Typical error graph