RUBIN
Cold water

Applications

RUBIN cold water meters operate according to the flowrate measuring principle using a Woltmann turbine and are designed for high-volume water measurement. The complete modular system covers a wide measuring range in all areas of water supply management.

Features

- High overload capacity
- Symmetrical control for high accuracy in both directions (optional)
- Register unit to IP 68 (protected against continuous immersion)
- The hydrodynamic counter-pressure generated by the special geometry helps to ensure a floating, low-friction turbine bearing

Your benefits

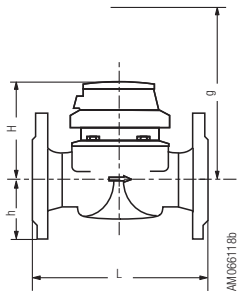
- The register unit can be rotated through 360° to provide the best reading position
- Optional local and/or remote display
- The hermetically encapsulated roller counter can be retrofitted with up to 3 pulsers without destroying seals
- The measuring units can be removed and certified

VD 1-301e 03.2011

Range

RUBIN WPDK

- Woltman turbine meters with dry-type registers, IP 68
- Low pressure loss
- Better than Metrological Class B
- Error tolerances: ±2 % of flow rate in the upper measuring range, Qt≤Q≤Qmax, and ±5 % in the lower measuring range, Qmin≤Q<Qt
- The meter can be installed in horizontal, vertical oder inclined positions. The meter head must however face upwards or to the side. The inlet and outlet straight pipe sections should be 3 x DN and 2 x DN, respectively.
- Powder-coated grey cast iron housing with flange connections
- Nominal pressure: PN 16 [1]
- Maximum temperature: 50 °C [2]
- Pressure loss: <0.25 bar at Qn according to factory specification

Nominal diameter	**DN**	**mm**	**40**	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250** [5]	**300** [5] [6]
		Inches	1 1/2	2	2 1/2	3	4	5	6	8	10	12
Article No.			92419	92421	92422	92423	92424	92425	92426	92427	180535	180535
Maximum flowrate	Qmax [3]	m^3/h	60	90	120	200	300	350	600	1200	1600	2000
Nominal flowrate	**Qn**	**m^3/h**	**40**	**50**	**70**	**120**	**230**	**250**	**450**	**800**	**1250**	**1400**
Transitional flowrate	Qt	m^3/h	0.8	0.7	0.8	0.8	1.8	2	4	6	11	15
Minimum flowrate	Qmin	m^3/h	0.3	0.3	0.4	0.5	0.8	1.0	1.8	4	6	12
Starting flow at approx.		m^3/h	0.15	0.15	0.20	0.25	0.25	0.50	1.0	1.5	3	8
According to EEC type approval class B [4]												
Maximum flowrate	Qmax [3]	m^3/h	30	30	50	80	120	200	300	500	800	1200
Nominal flowrate	**Qn**	**m^3/h**	**15**	**15**	**25**	**40**	**60**	**100**	**150**	**250**	**400**	**600**
Transitional flowrate	Qt	m^3/h	3	3	5	8	12	20	30	50	80	120
Minimum flowrate	Qmin	m^3/h	0.45	0.45	0.75	1.20	1.80	3.00	4.5	7.5	12	18
Smallest readable volume		Litres	1	1	1	1	1	1	10	10	10	10
Recording capacity		Mio m^3	1	1	1	1	1	1	10	10	10	10
Body surface finish						blue coating						
Weight		approx. kg	7.5	8	10	15	18	21	36	51	73	100
	**Overall length**											
		L	220	200	200	225	250	250	300	350	450	500
		h	96	73	85	95	105	118	135	162	194	226
		H	120	120	120	150	150	160	177	206	231	256
		g	200	200	200	270	270	280	356	441	466	491

1) PN 10 and PN 40 on request
2) Available up to 130°C (as WPDH hot water meters)
3) During a maximum total of 24 h
4) EEC type approval of model: D95 / 6.132.36, class B; the values shown are those taken from the official verifications
5) Supplied on request
6) Larger diameters available on request.

Pressure loss curves

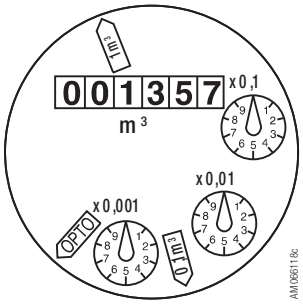
(see page 7)

Type approval

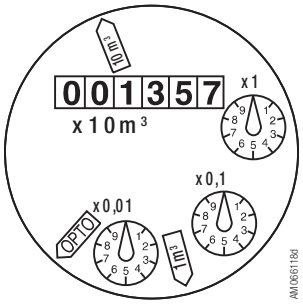
SVGW	DN 40...300	8407-1530	(WPDK 40...300)

Roller counters

WPDK 50...125



WPDK 150...300

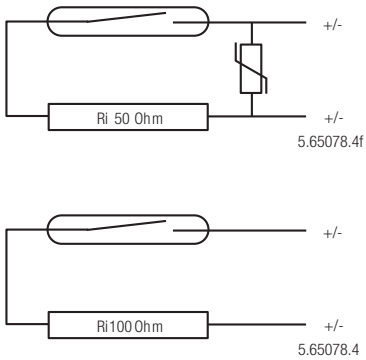


Pulsers

WPDK

The Reed and optoelectric pulsers can be retrofitted without destroying the seals. The Reed DS 01 pulser can be installed in two positions with different pulse values as indicated on the dial. Smaller pulse values are to be stated when ordering special versions of the RD (on request).

Reed pulsers RD 01 and RD 011



Switch type	• Reed contact tube protected with an inert gas filling; plug-in design
Contact protection	• RD 01: with protective resistor (50 Ω) and varistor • RD 011: with protective resistor (100 Ω) • RD 011: mit Schutzwiderstand 100 Ω
Switch voltage	• RD 01: max. 48 VAC or DC • RD 011: max. 125 VAC or DC
Switch current	• RD 01: max. 200 mA • RD 011: max. 35 mA
Quiescent current	• Contact open
Contact rating	• RD 01: max. 4 W • RD 011: max. 2 W
Ambient temperature	• -10...+70 °C
Protection class	• IP 68 according to IEC 144
Connection	• Fixed mounting cable, length: 3 m
Article No. RD 01	• 93746
Article No. RD 011	• 93747

Optoelectronic pulsers OD 01 and OD 03

Switch type	• IR reflex light barrier to DIN 19234; plug-in design
Switch voltage	• 8.2 VDC
Switch current	• <1.2 mA
Quiescent current	• >2.1 mA
Forward/reverse flow recognition	• This is integrated by means of an additional current threshold at 1.5 mA
Ambient temperature	• -10...+70 °C
Protection class	• IP 68 according to IEC 144
Connection	• Fixed mounting cable, length: 3 m
Article No. OD 01	• 93750
Article No. OD 03	• 93752

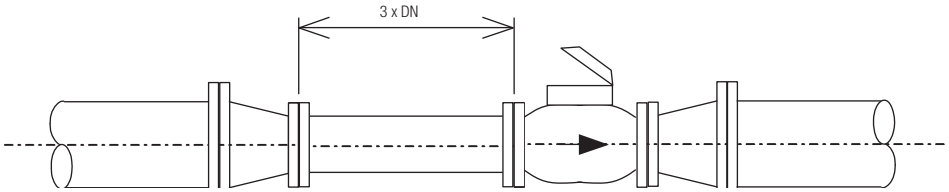
Nominal diameter	**DN**	**mm**	**40**	**50**	**65**	**80**	**100**	**125**	**150**	**200**	**250**	**300**
		Inches	1 1/2	2	2 1/2	3	4	5	6	8	10	12
Pulse values WPDK												
RD 01/11 Reed (standard)		l/pulse	100	100	100	100	100	100	1000	1000	1000	1000
		l/pulse	1000	1000	1000	1000	1000	1000	10'000	10'000	10'000	10'000
RD 01/11 Reed (special version) [1]		l/pulse	10	10	10	10	10	10	100	100	100	100
		l/pulse	1000	1000	1000	1000	1000	1000	10'000	10'000	10'000	10'000
OD 01 optoelectronic		l/pulse	1	1	1	1	1	1	10	10	10	10
OD 03 optoelectronic		l/pulse	10	10	10	10	10	10	100	100	100	100
Pulse frequencies WPDK												
OD 01 optoelectronic	at Qn [2]	Hz	11.11	13.89	19.44	33.33	63.89	69.44	12.50	22.22	34.72	38.89
	at Qmin	Hz	0.083	0.083	0.111	0.139	0.222	0.278	0.050	0.111	0.167	0.333

1) Requires special version counter, to be stated when ordering.
2) Qn as stated in the factory specification

Installation notes

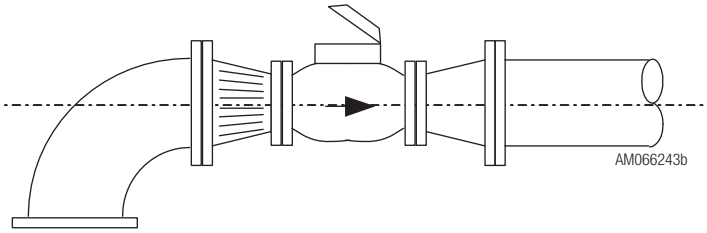
Nominal sizes: pipes, meters and pipe reducers

The choice of the nominal meter size should not automatically be based on the nominal size of the pipe. The decisive factor is the highest flowrate that occurs continuously in the pipe - this determines the nominal flowrate Qn of the meter.



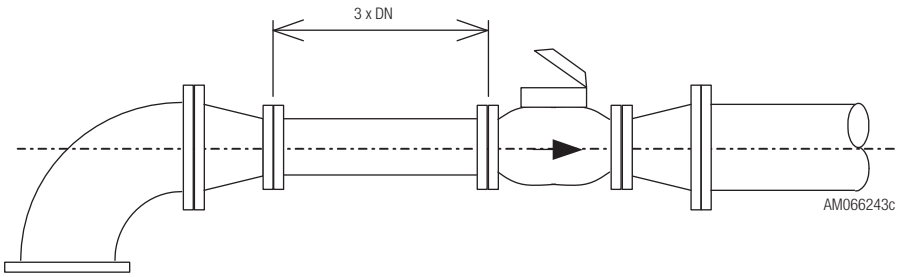
Pipe bends and flow straighteners

The flow profile is modified by the pipe bend or pipe reducers to such an extent that it alters the incoming flow to the meter turbine. As a result, measuring accuracy is impaired which can be prevented by suitable constructural precautions. For these purposes, flow straighteners which regularize the profile can be used, these being installed directly downstream of the pipe bend. If there is enough space, additional "smoothing" sections should be added. Flow straighteners also exist in combination with pipe reducers.



Inlet and outlet sections

Woltman meters attain maximum accuracy if adequate inlet and outlet sections are included in the design of the measuring point. The inlet section should be at least 3 x DN or a flow straightener should otherwise be installed. The requirements for the outlet section are less strict since the only essential requirement is to avoid abrupt changes of cross-section directly after the meter.



Mounting height

RUBIN Woltman meters have exchangeable velocity measuring units which can be tested and calibrated independently of the housing. For this purpose, the old units are removed upwards. When designing the installation, it is important to ensure that there is adequate space above the meter for removal.

Installation position

Meters must not be installed upside-down as then the metrological approval requirements will not be met.

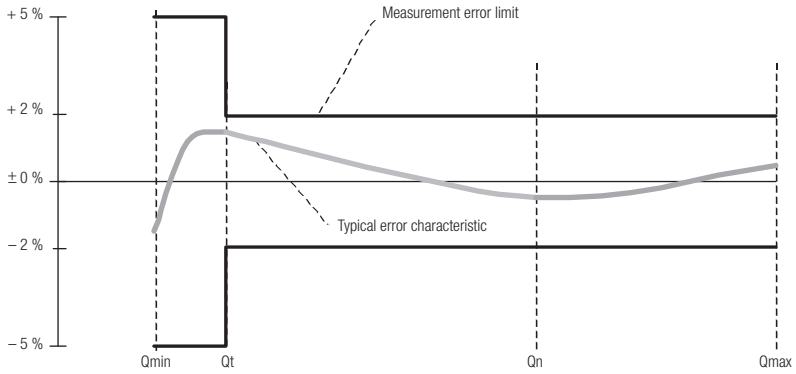
Electrical installation

Electrical cables and installation must be carried out by a specialist in accordance with legal requirements.

Measurement error limits

According to Directive 75/33/EEC and ISO 4064-1

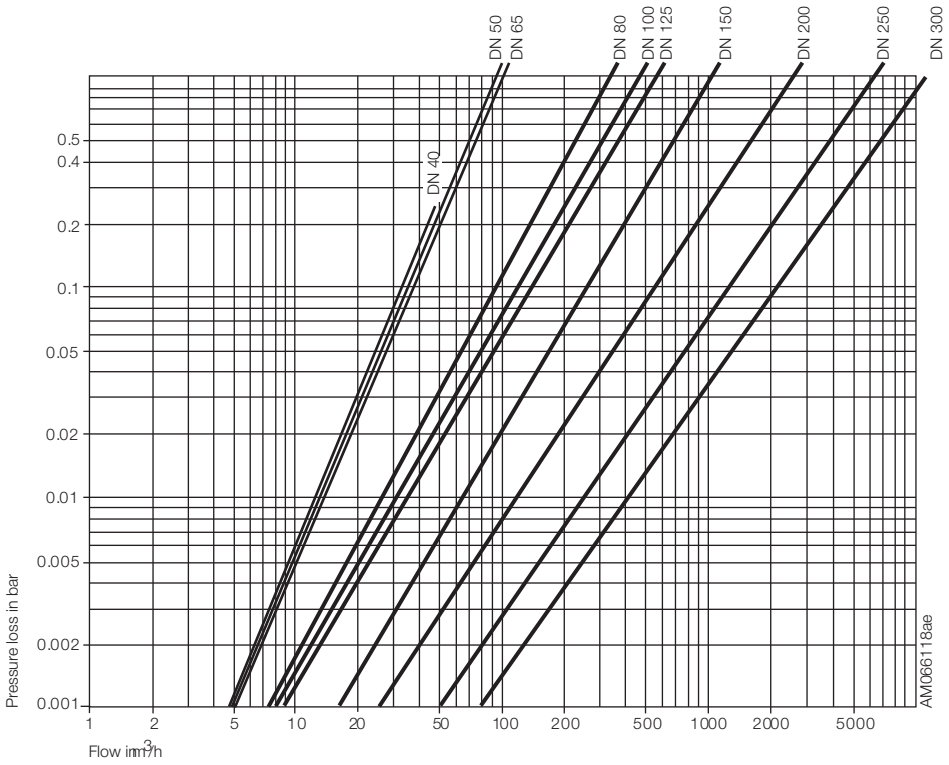
Reference conditions: Medium = water, temperature = 20 °C



Qmin≤Q<Qt	lower load range
Qt≤Q≤Qmax	upper load range

Pressure loss curves

RUBIN WPDK



SALES PARTNER:

HEAD OFFICE:

AQUAMETRO AG
Ringstrasse 75
CH-4106 Therwil
Phone +41 61 725 11 22
Fax +41 61 725 15 95
info@aquametro.com

www.aquametro.com

A0.05 - 03.2011