H 632
13.05.08 MC
REV. 02

WOLTMANN VOLUMETRIC METERS WITH PULSE TRANSMITTERS

KWP – KWS Eng.

- **Woltmann type**
- **KWP: cold water max. 30°C; KWS: hot water max.120 °C**
- **PN 16 flanged connections**
- **EEC approved (KWP)**
- **PTB approved (KWS)**
- **Horizontal or vertical mounting**

CE

1. APPLICATION

Volumetric meters are designed for measuring the flow of cold water (KWP) or hot water (KWS) circulating in heating or cooling plants.
By means of the pulse transmitter they send the instantaneous value measured to an electronic device which processes the data according to specific requirements.

2. OPERATION

The meters use a Woltmann-type turbine. The number of revolutions of this turbine is directly proportional to the volume of liquid in circulation. The rotary movement is transmitted, through calibrated mechanisms, to the mechanical totalizer and to the pulse transmitter which sends a signal to close a Reed switch.

3. MODELS

Code	DN mm	Tmax °C	**Qn** m³/h	Qmax m³/h	Qt m³/h	Qmin m³/h	Kvs m³/h	Pulse transmitter pul/lt (K)	pul/m³	l/pul	Weight Kg	**Omolog. CEE Approva. PTB**
Cold water												**cl. B 75/33 CEE**
KWP 50 M	50	30	**15**	30	3	0.45	112	0.001	1	**1,000**	10,.2	D 95 6.132.35
KWP 65 M	65	30	**25**	50	5	0.75	205	0.001	1	**1,000**	11.2	D 95 6.132.35
KWP 80 M	80	30	**40**	80	8	1.20	365	0.001	1	**1,000**	13.0	D 95 6.132.35
KWP 100 M	100	30	**60**	120	12	1.80	365	0.001	1	**1,000**	16.0	D 95 6.132.35
KWP 125 M	125	30	**100**	200	20	3.00	335	0.001	1	**1,000**	21.5	D 95 6.132.35
KWP 150 M	150	30	**150**	300	30	4.50	980	0.001	1	**1,000**	39.0	D 86 6.132.22
KWP 200 M	200	30	**250**	500	50	7.50	1,800	0.001	1	**1,000**	47.0	D 86 6.132.22
Hot water												**PTB No.**
KWS 50 M	50	120	**15**	30	2.4	0.6	150	0.001	1	**1,000**	11.1	22. 56 01.01
KWS 65 M	65	120	**25**	30	4.0	1.0	145	0.001	1	**1,000**	11.6	22. 56 01.01
KWS 80 M	80	120	**32**	45	8.0	2.0	320	0.001	1	**1,000**	12.5	22. 56 01.01
KWS 100 M	100	120	**60**	180	9.0	2.0	300	0.001	1	**1,000**	19.8	22. 56 01.01
KWS 125 M	125	120	**100**	250	15.0	3.0	610	0.001	1	**1,000**	22.4	22. 56 01.01
KWS 150 M	150	120	**150**	350	22.5	4.5	1,000	0.001	1	**1,000**	32.5	22. 16 87.01
KWS 200 M	200	120	**250**	600	37.5	8.0	2,000	0.001	1	**1,000**	45.0	22. 16 87.01

Qmax – Maximum temporary flow measurable by meter
Qn – Nominal flow: continuous flow measurable by meter
Qt – Transitory flow: minimum limit with error less than ± 2%.
Qmin – Minimum flow: minimum limit with error less than ± 5%.
PTB = German meterorological institute

4. TECHNICAL DATA

Nominal pressure	PN 16	Maximum reading :	
Protection	IP 68	DN 50…125	999.999 m³
Body	painted cast iron (epoxy powder)	DN 150 and 200	9.999.999 m³
Transmission movement	with magnetic joint	Minimum reading :	
Timer	vacuum, direct reading	DN 50…125	1 liter
Cover	shockproof plastic	DN 150 and 200	10 liter
Counter mechanism	according AWWA standard (USA)	Approval	EEC/PTB (see table)

5. PULSE TRANSMITTER

Each meter is provided with a pulse transmitter with connecting cable 2 x 0.5 mm² x 2m) for remote transmission of flow rate measured.
The pulse transmitter consists of a rotating magnet, operated by the mechanical totalizer; this acts on a Reed electric switch which opens and closes with a frequency equal to the number of rotations of the magnet and, accordingly, in proportion to the flow value measured.

6. SIZING

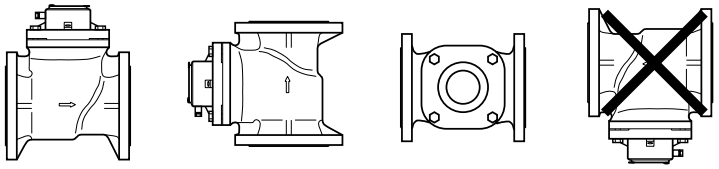
The volumetric meter must not be sized in relation to the pipe diameter but in relation to the plant flow.
The maximum plant flow must be as near as possible to the nominal flow Qn of the meter, but must not exceed it.

7. INSTALLATION

In order for the volumetric meter to maintain its metering capacity within the stated error margins, the installation instructions must be strictly followed :

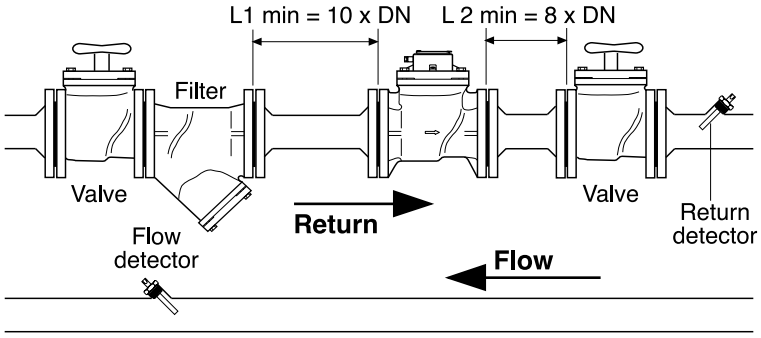
- It must be installed on the return pipe of the heating plant, reflecting the direction of flow indicated on the body, and positioned between the two shut-off valves so as to ensure that it is accessible for maintenance.
- Install a filter upstream of the meter to ensure that any impurities present in the plant do not compromise the accuracy of the meter. This filter must be cleaned two days after the first start-up of the plant and thereafter at least once a year.
- You should ensure that, upstream of the meter, there is a straight length of pipe equal to10 times its diameter, and, downstream, a length eight times its diameter.
- There should be no reductions in diameter either above or below the meter.

7.1. MOUNTING POSITION



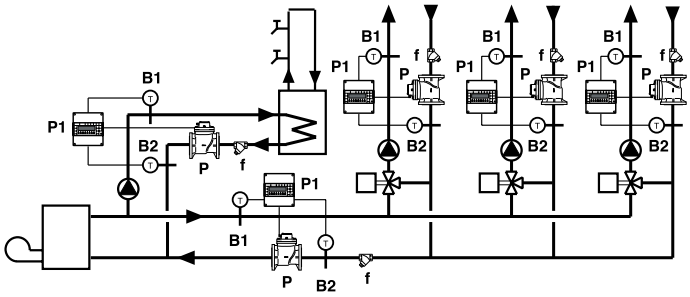
(Class B) (Class A) (Class B)

7.1. EXAMPLE OF MOUNTING



L1 and **L2** min. according to UNI EN 1434-6 Regulations

8. SCHEMATIC DIAGRAM

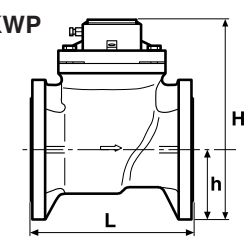


B1 – Flow detector
B2 – Return detector
f – Filter
P – Volumetric meter
P1 – Energy metering integrator

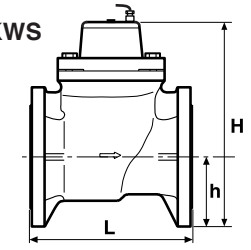
9. OVERALL DIMENSIONS

Type	PN 16flanged hole No. KWP	PN 16flanged hole No. KWS	L mm	H mm KWP	H mm KWS	h mm KWP	h mm KWS
KW... 50	4	4	200	198	216	75	75
KW... 65	4	4	200	206	216	83	75
KW... 80	4/8	4	225	243	216	89	75
KW... 100	8	4	250	259	310	105	110
KW... 125	8	8	250	269	325	115	125
KW... 150	8	8	300	380	362	135	145
KW... 200	8/12	12	350	408	389	163	172

KWP

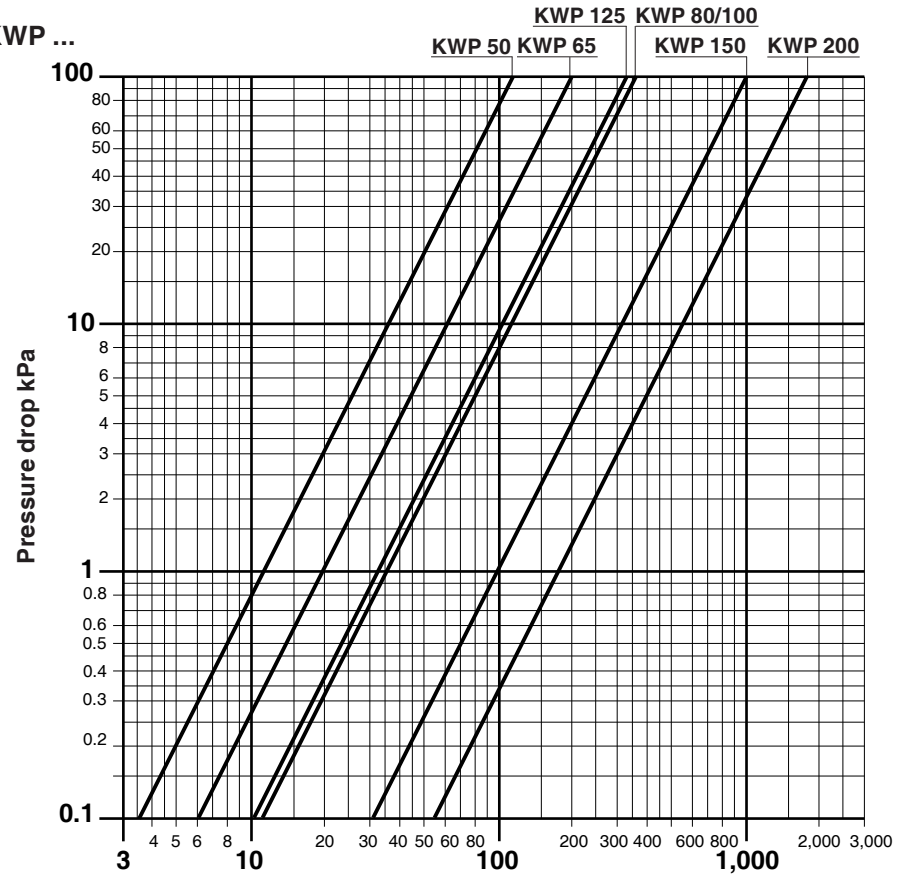


KWS



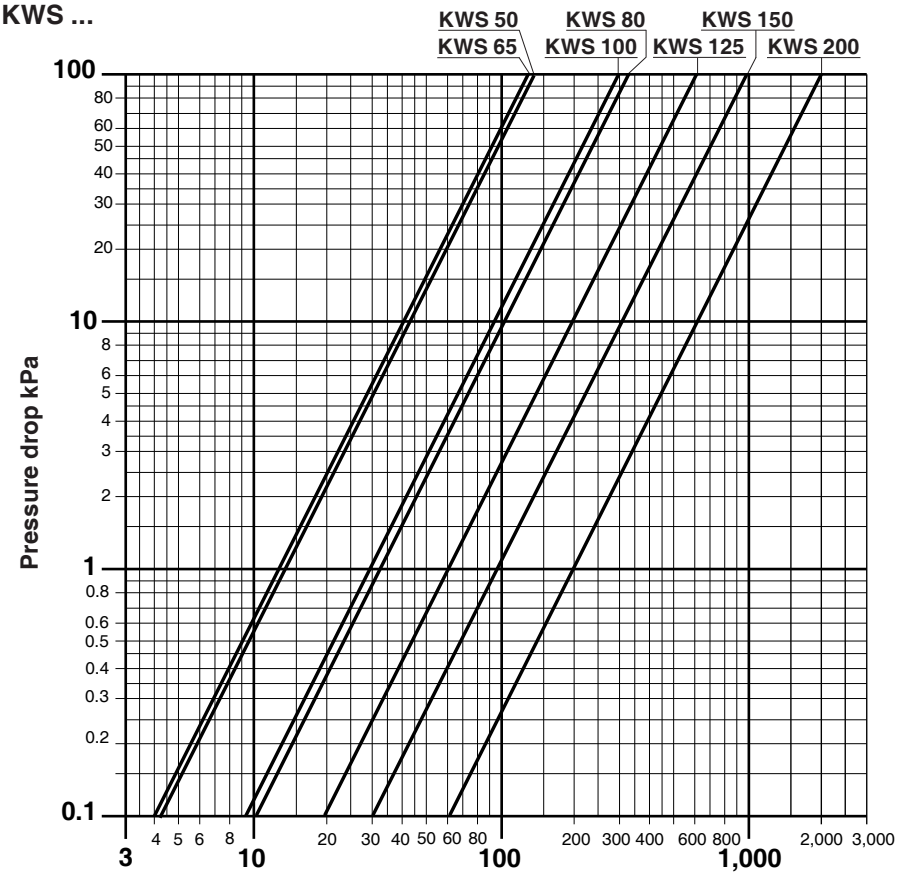
10. PRESSURE DROP (100 kPa = 10 mWG = 1 bar)

Volumetric meter KWP ...



100 kPa = 10 mWG = 1 bar

Volumetric meters KWS ...



100 kPa = 10 mWG = 1bar

Amendments to data sheets

Date	Revision No.	Page	Section	Amendment description
21.01.04 LB	–	2	6. Installation	Flow detector moved on schematic diagram.
27.09.07 MC	01	2 3	3.Models 9. Overall dimensions 10. Pressure drop	Amended: flow rates (Qmax, Qt, and Qmin); the weights, initials, approval codes of the approval and certifying organizations Amended overall dimensions, added number of holes in the flanges and “KWS” drawing. Amended diagram for new flow rates.
13-05-08 MC	02	1	3. Models	Add Kvs column

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