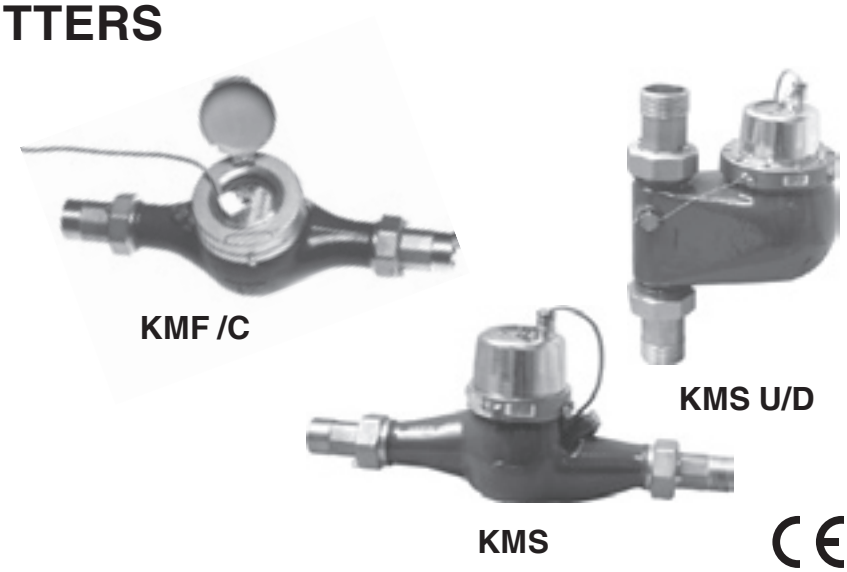
H621
10.04.07 MC
REV. 01

MULTIPLE-JET VOLUMETRIC METERS WITH PULSE TRANSMITTERS

KMF/C - KMS - U/D Eng.



- **For water:**
  – cold/hot/superheated
- **Unions:**
  – threaded male
  – standardised flange
- **Installation:**
  – KMF/C only horizontal Class B
  – KMS only horizontal Class A
  – KMS U vertical Class A (flow up)
  – KMS D vertical Class A (flow down)
- **EEC approved**

CE

1. AVAILABLE MODELS

Code	DN	Tmax. °C	**Qn.** m^3/h	Qmax. m^3/h	Qt. l./h	Qmin. l./h	Kvs m^3/h	Pulse Transmitter p/l (K)	p/m^3	l/p	Approx weight Kg.	Approval
Cold water												**EEC 75/33**
KMF 15 D	1/2"	30	**1.5**	3	120	30	4.5	0.1	100	**10**	1.2	B 89.317.01
KMF 20 D	3/4"	30	**2.5**	5	150	50	6.7	0.1	100	**10**	1.9	B 89.317.02
KMF 25 C	1"	30	**3.5**	7	280	70	7.2	0.01	10	**100**	3.2	B 89.317.03
KMF 32 C	1"1/4	30	**5**	10	400	100	12.8	0.01	10	**100**	3.5	B 89.317.04
KMF 40 C	1"1/2	30	**10**	20	800	200	22	0.01	10	**100**	6.1	B 89.317.05
KMF 50 C	2"	30	**15**	30	3000	450	30.5	0.01	10	**100**	9.7	B 89.317.06
Hot water												
KMC 15 D	1/2"	90	**1.5**	3	120	30	4.5	0.1	100	**10**	1.2	–
KMC 20 D	3/4"	90	**2.5**	5	150	50	6.7	0.1	100	**10**	1.9	–
KMC 25 C	1"	90	**3.5**	7	280	70	7.2	0.01	10	**100**	3.2	–
KMC 32 C	1"1/4	90	**5**	10	400	100	12.8	0.01	10	**100**	3.5	–
KMC 40 C	1"1/2	90	**10**	20	800	200	22	0.01	10	**100**	6.1	–
KMC 50 C	2"	90	**15**	30	3000	450	30.5	0.01	10	**100**	9.7	–
Superheated water												**EEC 75/830**
KMS 15 D	1/2"	120	**1.5**	3	150	30	3	0.1	100	**10**	1.5	22.16 - 80.07
KMS 20 D	3/4"	120	**2.5**	5	250	50	5	0.1	100	**10**	1.7	22.16 - 80.07
KMS 25 C	1"	120	**3.5**	7	280	65	7	0.01	10	**100**	2.5	22.16 - 80.07
KMS 32 C	1"1/4	120	**6**	12	480	90	12	0.01	10	**100**	2.5	22.16 - 80.07
KMS 40 C	1"1/2	120	**10**	20	1000	160	20	0.01	10	**100**	4.7	22.16 - 80.07
KMS 50 C	2"	120	**15**	30	1200	200	30	0.01	10	**100**	6.3	22.16 - 80.07
KMS 50 CF	50 (mm)	120	**15**	30	1200	200	30	0.01	10	**100**	12.5	22.16 - 80.07
vertical up												
KMS U15 D	3/4"	120	**1.5**	3	150	30	3	0.1	100	**10**	2.1	22.16 - 80.07
KMS U20 D	3/4"	120	**2.5**	5	250	50	5	0.1	100	**10**	2.1	22.16 - 80.07
KMS U25 C	1"	120	**3.5**	7	280	65	7	0.01	10	**100**	3.1	22.16 - 80.07
KMS U32 C	1"	120	**6**	12	480	90	12	0.01	10	**100**	3.1	22.16 - 80.07
KMS U40 C	1"1/2	120	**10**	20	1000	160	20	0.01	10	**100**	5.5	22.16 - 80.07
vertical down												
KMS D15 D	3/4"	120	**1.5**	3	150	30	3	0.1	100	**10**	2.1	22.16 - 80.07
KMS D20 D	3/4"	120	**2.5**	5	250	50	5	0.1	100	**10**	2.1	22.16 - 80.07
KMS D25 C	1"	120	**3.5**	7	280	65	7	0.01	10	**100**	3.1	22.16 - 80.07
KMS D32 C	1"	120	**6**	12	480	90	12	0.01	10	**100**	3.1	22.16 - 80.07
KMS D40 C	1"1/2	120	**10**	20	1000	160	20	0.01	10	**100**	5.5	22.16 - 80.07

Qn. – Nominal flow: maximum continuous flow measurable by meter.
Qmax. – Maximum flow: maximum temporary limit supportable by the meter..
Qt. – Transition flow: minimum limit with error below ± 2%.
Qmin. – Minimum flow: minimum limit with error below ± 5%.
Kvs – Flow coefficient: flow in m m^3/h with pressure drop of 100 kPa = 10 mWG = 1 bar.

2. APPLICATION

Volumetric meters are used to measure the flow of cold, hot or superheated water circulating in heating and cooling sites; or, if installed in DHW plants, for measuring consumption.
Moreover, by means of the pulse transmitter supplied, they can transmit the instantaneous value measured to an electronic device which processes the data received so that it can be used as required.

3. OPERATION

Using a multiple-jet turbine, the number of revolutions made by this is directly proportional to the volume of fluid in circulation.
The rotary movement of this device is transmitted by gears to the mechanical totalisor and to the pulse transmitter which sends the signal (closure of a Reed switch) to the integrator.

4. TECHNICAL DATA

Nominal pressure	PN 16	Maximum reading timer:	
Protection	IP 68	– KMF/KMC 15...32	99 999 m^3
Timer	dry and in vacuum	– KMF/KMC 40 - 50	999.999 m^3
Timer protection	metal	– KMS	100 000 m^3
Transparent disk	anti-scratch tempered glass	Minimum reading timer:	
Internal filter	dry	– KMF/KMC	0,05 l
Connecting cable	2 x 0.5 mm^2 x 2 m	– KMS	0.1 l

5. PULSE TRANSMITTER

Each meter is provided with pulse transmitter with connecting cable for remote transmitting of the flow value metered.
The pulse transmitter consists of a rotating magnet, operated by a mechanical totalisor, which acts on two Reed switches which open and close with a frequency equal to the number of rotations of the magnet and so proportionally to the flow value metered.

6. SIZING

The volumetric meter must **not** be sized according to the diameter of the pipework but as a function of the site flow.
The maximum flow of the site must be as close as possible to the nominal flow Qn of the meter, but must not exceed it.

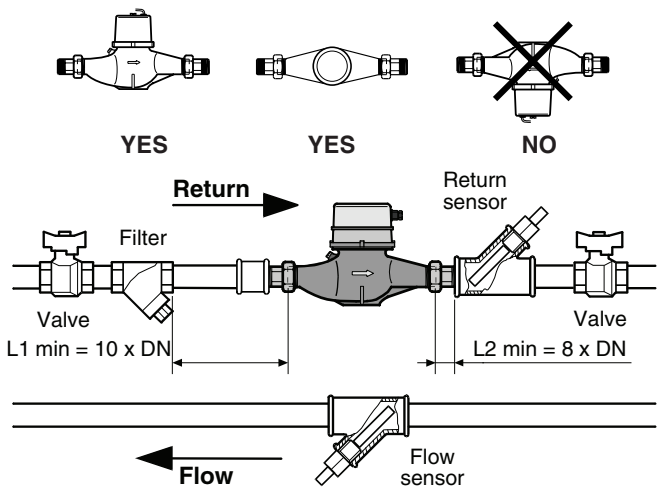
7. INSTALLATION

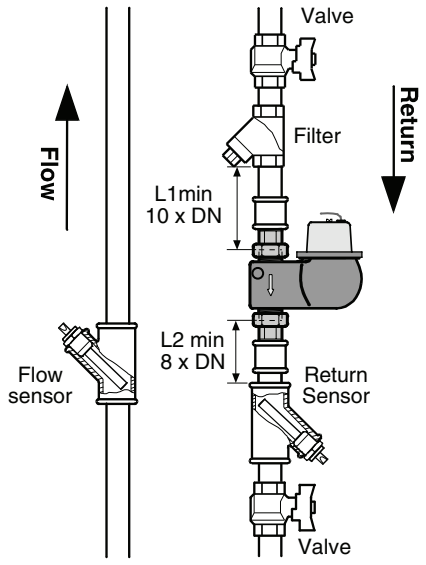
In order for the volumetric meter to maintain over time its metering capacity within the stated error margins, the installation instructions must be strictly followed:

- It must be installed on the return pipe of the site, respecting the direction of flow stamped on the body, and must be positioned between 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 site do not compromise the accuracy of the meter. This filter must be cleaned two days after the first start-up of the site and thereafter at least once a year.
- You should ensure that, upstream of the meter, there is a straight length of pipe equal to 10 times its diameter (see diagrams with installation examples); and, downstream, a length equal to eight times its diameter (in accordance with UNI EN 1434-6 standard). Moreover, it is recommended that there should be a reduction in the diameter of the pipework both above and below the meter..

8. INSTALLATION POSITION

Examples of correct installation:



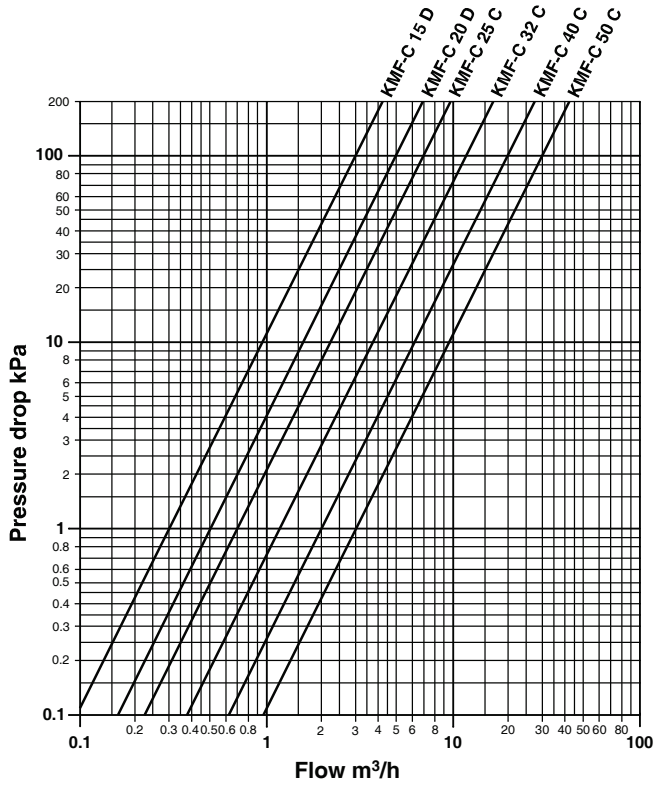


– **KMF/KMC** = horizontal class **(B)**
– **KMS** = horizontal class **(A)**

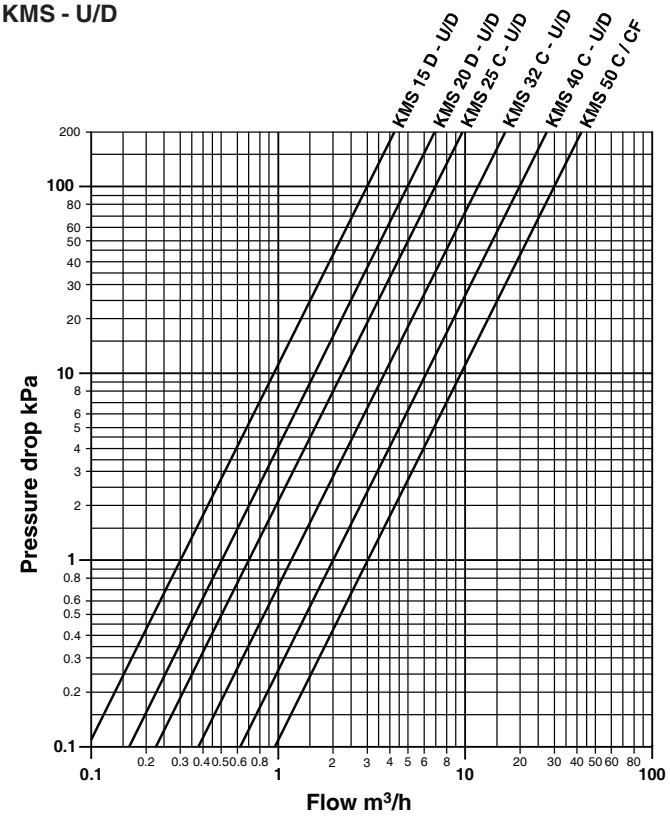
– **KMS U** = vertical class **(A) flow upwards**
– **KMS D** = vertical class **(A) flow downwards**

9. PRESSURE DROP

KMF-C



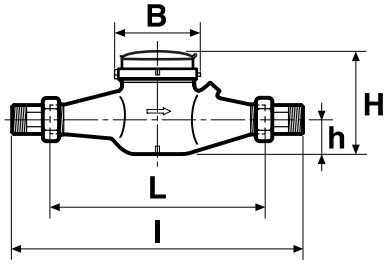
KMS - U/D



Pressure drop: 100 kPa = 10 mWG = 1 bar

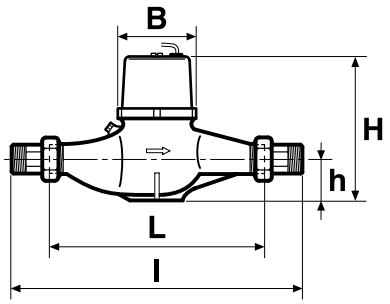
10. OVERALL DIMENSIONS

KMF/C

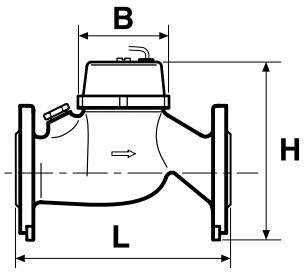


Model	L mm	l mm	H mm	h mm	B mm
KMF 15 D	165	245	114	36.5	97.5
KMF 20 D	190	288	114	36.5	97.5
KMF 25 C	260	378	123	43	97.5
KMF 32 C	260	378	123	43	97.5
KMF 40 C	300	438	163	64.5	130
KMF 50 C	300	461	175	77	154
KMC 15 D	165	245	114	36.5	97.5
KMC 20 D	190	288	114	36.5	97.5
KMC 25 C	260	378	123	43	97.5
KMC 32 C	260	378	123	43	97.5
KMC 40 C	300	438	163	64.5	130
KMC 50 C	300	461	175	77	154
KMS 15 D	165	245	136	41	96
KMS 20 D	190	288	136	41	96
KMS 25 C	260	378	147	44	102
KMS 32 C	260	378	147	44	102
KMS 40 C	300	438	161	46	137
KMS 50 C	270	388	205	43.5	165
KMS 50 CF	270	–	235	–	165

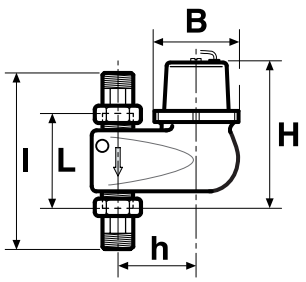
KMS



KMS – CF

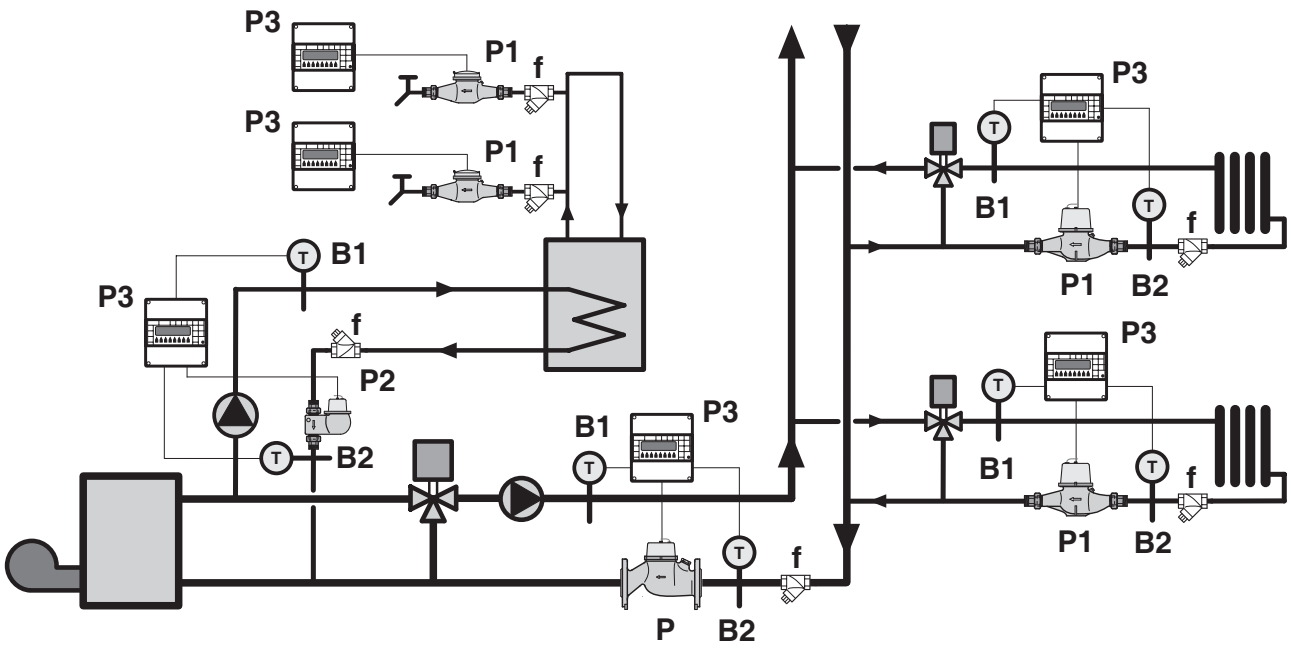


KMS U/D



Model	L mm	l mm	H mm	h mm	B mm
KMS U/D 15	105	203	134	80	120
KMS U/D 20	105	203	134	80	120
KMS U/D 25	150	268	145	94	125
KMS U/D 32	150	268	145	94	125
KMS U/D 40	150	313	127	120	155

11. FUNCTIONAL DIAGRAM (EXAMPLE)



B1– Flow sensor
B2– Return sensor
f – Impurity filter
P – **KMS... -CF** meter

P1 – **KMF/C/S** volumetric meter
P2 – **KMS-U/D** volumetric meter
P3 – Integrator (metering and displaying energy used)

Amendments to data sheet

Date	**Revision No.**	Page	Section	Amendments description
10.04.07 MC	**01**	1...4	General	New meters included with updates to photographs and to the sections regarding the technical data.

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