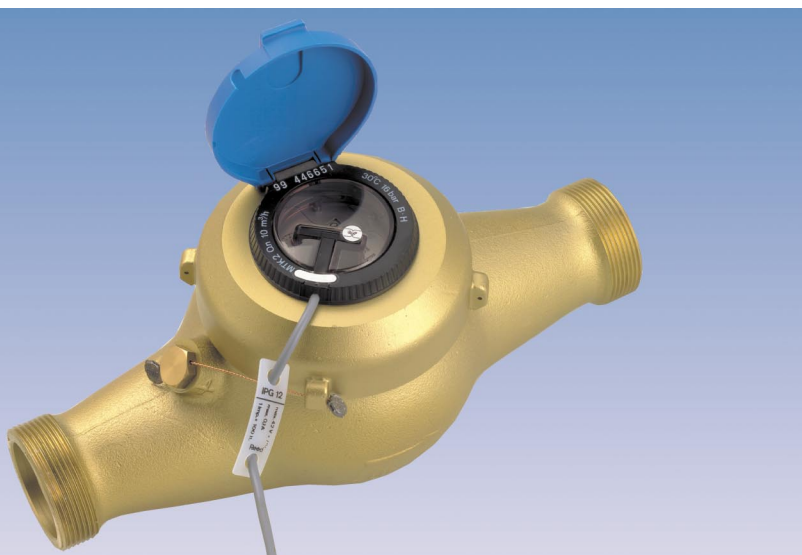


Threaded Water Meters

for cold or hot water



- High precision
- Low differential pressure
- Long life time
- Simple mounting
- PTB approval

The MT range of water meters 15–50 mm

Thanks to its balanced hydraulic design, the MT multi-jet impeller meter has a larger measuring range and improved accuracy at low flow rates.

The only moving part in the wet enclosure of the meter is the impeller. A light fast running magnetic clutch transmits the rotation of the impeller to the counting device.

The design of the magnetic clutch ensures that the accumulation of deposits has been virtually eliminated. The counter capsule is vacuumized and hermetically sealed, which guarantees optimum long term reliability. It forms a self contained unit which can be turned 360° around its own axis for easy reading.

The meter corresponds to the EEC regulations and has a permissible

operating pressure of 16 bar (test pressure 25 bar).

The MT range of water meters is for installation in horizontal pipes. The MT-V model is available for installation in vertical pipes. In all cases the dial must face upwards.

The MT range of meters is normally fitted with BSP screwed couplings, but can be provided with flanged ends as an option.

The MTK is a cold water meter rated up to 30 °C (peak 40 °C) and has an accuracy of $\pm 2\%$ in the flow range Q_t to Q_{max} .

The MTWH is a hot water meter rated up to 110 °C and has an accuracy of $\pm 3\%$ in the flow range Q_t to Q_{max} .

The MTH is a hot water meter rated up to 130 °C and has an accuracy of $\pm 3\%$ in the flow range Q_t to Q_{max} . Available on special order.

The UNICO type water meter 15–20 mm

The UNICO type water meter is a low cost domestic water meter. The UNICO has a single jet impeller and is rated to 90 °C (10 bar).

The UNICO can also be installed in both horizontal and vertical lines providing the display is not below the meter. Accuracy is $\pm 3\%$ in the flow range Q_t to Q_{max} . Alternative single jet meters may be offered to suit requirements.

Materials

Both the UNICO and the MT range of meters have a high specification thermo-plastic measuring element inserted into a high grade brass body.

Technical data for MTK/MTWH and MTH range of water meters

Nominal width DN	mm	15	20	25	32	40	50
BSP connections	inch	1/2	3/4	1	1 1/4	1 1/2	2
Performance nominal flow:							
Maximum continuous flow	Q _n m ³ /h	1.5	2.5	3.5	6	10	15
Maximum peak flow	Q _{max} m ³ /h	3	5	7	12	20	30
Min flow @ ± 2 or 3 %	Q _t m ³ /h	0.12	0.12	0.28	0.28	0.80	0.80
Min flow @ ± 5 %	Q _{min} m ³ /h	0.03	0.03	0.07	0.07	0.20	0.20
Pressure loss @ 65 % of Q _n	bar	0.09	0.11	0.09	0.11	0.09	0.11
Smallest readable unit	lt	0.05	0.05	0.05	0.05	0.05	0.05
Metering capacity	m ³	100 k	100 k	100 k	100 k	100 k	100 k
Overall dimensions horizontal model:							
A basic meter length	mm	165	190	260	260	300	300
B length with couplings	mm	260	285	375	375	440	460
A length with flanges	mm	–	190	260	260	300	300
C total height	mm	105	111	114	118	141	156
D height from centreline	mm	70	71	74	76	87	99
Meter width	mm	97	88	97	101	136	151
Overall dimensions vertical model:							
A basic meter length	mm	105	105	150	150	260	n/a
B height with couplings	mm	200	200	265	265	400	n/a
E total meter projection	mm	150	150	172	175	210	n/a
C projection from centreline	mm	129	129	139	146	172	n/a
Weights:							
Meter without couplings	kg	1.7	1.8	2.9	3.0	5.8	7.5
Meter including couplings	kg	1.9	2.2	3.5	3.8	7.2	9.1
Meter with flanges	kg	–	3.6	4.6	5.0	9.8	12

Approval number:

D 86
6.132.21

Cold water
Horizontal installation

D 86
6.132.22

Cold water
Vertical installation,
increasing and decreasing flow

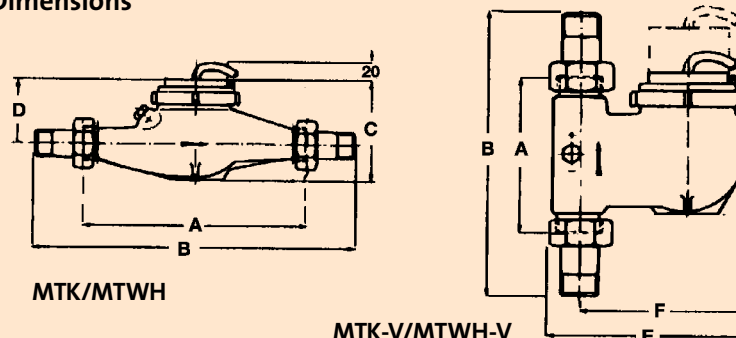
22.16
84.01

Hot water
Horizontal installation

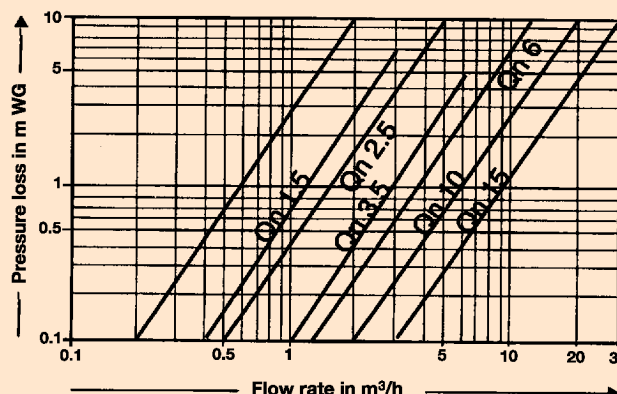
22.16
87.01

Hot water
Vertical installation,
increasing and decreasing flow

Dimensions



Pressure loss curves

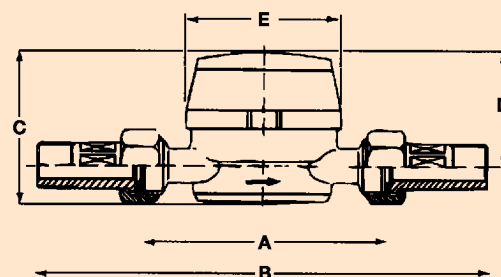


Technical data for UNICO water meters

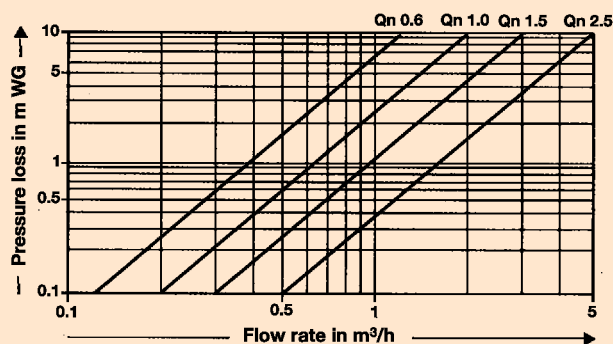
Nominal width DN	mm	15	20
BSP connections	inch	$\frac{1}{2}$	$\frac{3}{4}$
Maximum operating pressure	bar	10	10
Maximum operating temperature	°C	90	90
Performance nominal flow:			
Maximum continuous flow	Q_n m ³ /h	1.5	2.5
Maximum peak flow	Q_{max} m ³ /h	3.0	5.0
Min flow @ $\pm 3\%$	Q_t lt/h	120	200
Min flow @ $\pm 5\%$	Q_{min} lt/h	30	50
Pressure loss @ 65% of Q_n	bar	0.1	0.1
Smallest readable unit	lt	0.05	0.05
Metering capacity	m ³	100 k	100 k
Overall dimensions:			
A total meter length	mm	110	130
B length with couplings	mm	205	225
C total meter height	mm	72	75
D height from centreline	mm	54	54
E meter width	mm	80	80
Weights:			
Meter without couplings	kg	0.5	0.7
Meter including couplings	kg	0.7	1.0

Dependant on demand, alternative 15 and 20 mm hot and cold water meters may be supplied.

Dimensions



Pressure loss curves



Low frequency pulsed output Type IPG-10 (IPG-12)

The IPG-10 is a 2-wire low frequency volt-free contact closure pulse for use with the UNICO and MT range of meters. (MTH is an IPG-12).

This type of pulse is used as the standard input to Energy Integrators and Building/Energy Management Systems. A reed switch is encapsulated within the counter and is switched by a permanent magnet(s) fitted onto one of the rotating indicators of the counter. The cable connection is via a dust proof seal. A range of pulse values is available; see the table opposite. The pulse duration is dependant upon the flow rate. Continuous contact can occur when the water flow stops and connected devices must be suitably protected.

Technical specification type IPG-10 (IPG-12)

Switching element	reed switch
Max. switching voltage	< 42 V.d.c./a.c
Max. switching current	0.1 Amp
Max. switching capacity	4 Watts
Pulse duration	variable
Ambient temperature	max. 100 °C
Standard cable length	3.0 m
Standard cable type	unshielded

Pulse value index:

Q _n of meter	m ³ /h	Pulse	Value in litres
0.6 to 1.0	0.25	0.5	1.0
	2.5	5	10
	25	50	
1.5 to 15	2.5	5	10
	25	50	100
	250	500	

NB, the standard pulse value is 10 lt per pulse

High frequency pulsed output Type IPG-11

The IPG-11 is a 3-wire hall effect generator for use with the UNICO, MTK and MTWH range of meters, but not the MTH.

This type of pulse is normally used for conversion to analogue signals (4–20 mA) or inputs to high definition dosing/batching units. A hall effect transistor is switched on and off by separate magnets fixed onto a disc attached to the high speed flow indicator (star wheel) within the counter. Cable entry is via a strain relief, dust proof seal. Pulse frequency is proportional to the flow rate, the frequency at Q_n is given in the table opposite. As an option the device can be supplied with a fixed pulse value of 0.25, 0.5 or 1 litre.

Continuous contact can occur if the flow stops and connected devices must be suitably protected otherwise the switch may be damaged.

Technical specification type IPG-11

Switching element	hall effect sensor
Operating voltage	4.5–24 volt
Supply current	type 5 mA
Load current	max. 100 mA
Ambient temperature	max. 100 °C
Standard cable length	1.5 m
Standard cable type	unshielded

Frequency table:

Meter size	UNICO	MTK or MTWH
Q _n 0.6	26.5 Hz	
Q _n 1.0	28.3 Hz	
Q _n 1.5	29.6 Hz	17.40 Hz
Q _n 2.5	34.7 Hz	29.00 Hz
Q _n 3.5		19.00 Hz
Q _n 6		32.60 Hz
Q _n 10		27.64 Hz
Q _n 15		35.21 Hz

Frequency in Hz at Q_n.

Scanning at indicating star: 4 pulses per rotation of star shaft.