



### APPLICATION

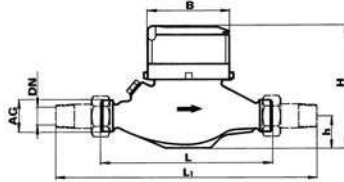
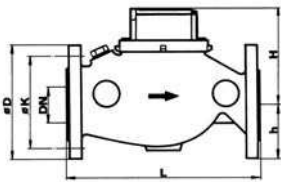
- Horizontal installation
- For hot water up to 120 °C
- Model 414 with carbide bearing
- Overall and connection dimensions to DIN ISO 4064
- DN 15 - 50 mm – PN 16
- DN 20 - 40 mm – with flange, PN 16 and PN 40 available
- Operating pressure to DIN 2401
- Max. 24 V, (SELV), 0.2 A
- Protection class IP 65
- Volume measuring component for measuring heat for billing hot water consumption
- Facility for remote transmission of flow rates
- Cable length: 3 m (0.25mm<sup>2</sup>)

### FLANGE

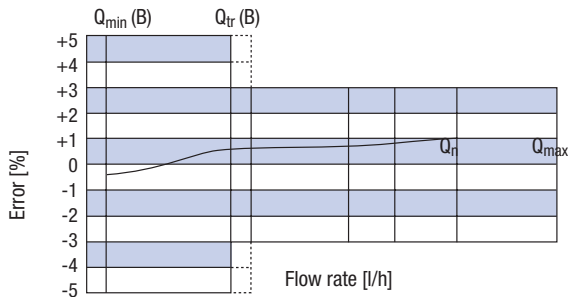
DN 15-50/PN 16  
AND DN 20-40/PN 40

### COUPLING THREAD

DN 15-40/PN 16



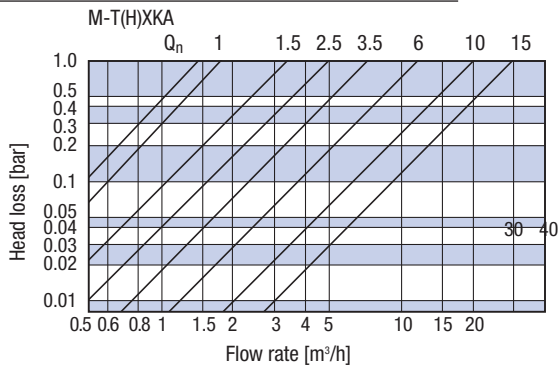
### TYPICAL ERROR GRAPH FOR MODELS 413/414



### NOTE

When using the contact water meters as volume measuring components, we recommend that the meters are selected so that the head loss of 0.1 bar is not exceeded at maximum load!

### HEAD LOSS GRAPHS FOR MODELS 413/414



### FEATURES

Models 413 and 414 are multi-jet impeller meters designed to the latest technical standards with completely dry running operation and magnetic coupling. Only the impeller operates in the wet chamber to prevent faults due to sediment.

The roller counter is dustproof and condensation-proof and can be rotated for easier reading.

The built-in pulse transmitter is cast in a waterproof enclosure and is easily replaceable. The meters are equipped with a sealed shield for protection against magnetic interference.

The pulse transmitter for volume measuring components is fitted with a 100 Ω, 1/4 W protective resistor (cable length 3 m)

The compact design in subassemblies simplifies maintenance and repair.

### NOTE

HYDROMETER contact water meter models 413 and 414 can be supplied calibrated on request. The meter is tested for compliance with the figures specified in the calibration regulations.

### COUNTER



#### TECHNICAL DATA

Model		413 / 414									
Type		M-TXKA / M-THXKA									
Nominal diameter	DN mm	15	20	15	20	20	25	25	40	50	
Nominal flow rate	Q <sub>n</sub> m <sup>3</sup> /h	1	1	1.5	1.5	2.5	3.5	6	10	15	
Flow rate at 0.1 bar head loss	m <sup>3</sup> /h	0.6	0.6	1.0	1.0	1.6	2.2	3.8	6.3	9.5	
Maximum flow rate	Q <sub>max</sub> m <sup>3</sup> /h	2	2	3	3	5	7	12	20	30	
Transition flow limit	Q <sub>t</sub> l/h	80	80	120	120	200	280	480	800	1200	
Lower measuring range limit	Q <sub>min</sub> l/h	25	25	30	30	50	65	90	160	200	
Meter thread to ISO 228/1	AG inch	G 3/4 B	G 1 B	G 3/4 B	G 1 B	G 1 B	G 1 1/4 B	G 1 1/4 B	G 2 B	-	
Coupling thread to DIN 2999 (ISO 7/1)	inch	R 1/2	R 3/4	R 1/2	R 3/4	R 3/4	R 1	R 1	R 1 1/2	-	
Flange PN 16	Outer dia. D mm	95	105	95	105	105	115	115	150	165	
to DIN 2501; DN 20 - 50 mm	Hole pitch dia. K mm	65	75	65	75	75	85	85	110	125	
also PN 25/40	Number of bolts	4	4	4	4	4	4	4	44		
Overall length	(without coupling) L mm	165	190	165	190	190	260	260	300	270	
	(with coupling) L1 mm	245	288	245	288	288	378	378	438	-	
Height	H mm	135	135	135	135	135	140	140	155	180	
	h mm	40	40	40	40	40	45	45	50	83	
Width	B mm	96	96	96	96	96	102	102	137	166	
Dial indication range		min. 0.05 l / max. 100,000 m <sup>3</sup>									
Weight	without coupling	kg	1.7	1.9	1.7	1.9	1.9	2.9	2.9	5.1	-
	with coupling	kg	2.1	2.3	2.1	2.3	2.3	3.5	3.5	6.3	-
	with flanges	kg	3.5	3.7	3.5	3.7	3.7	4.9	4.9	8.6	12.5
Flow resistance coefficient Zeta		22.9	72.4	8.2	26.1	10.2	13.1	4.4	10.5	11.3	

Minor technical changes may occur in the course of further development.

The M-T(H)XK Qn 6 (DN 32) is also available with G 1 1/2 B meter thread to DIN ISO 4064.

\*Manufacturer's note: Please read the note below the head loss graph before selecting suitable meter sizes.

#### ORDER REFERENCES

Model	Q <sub>n</sub> /PN	Type designation	l/pulse	Overall length	Temperature	Connection	*Metrol. cl.	Article number
413	1.0 m <sup>3</sup> /h / 16	M-TXKA	25	190 mm	120 °C	G 1 B	A•H	413 000 77
413	1.0 m <sup>3</sup> /h / 16	M-TXKA	1	190 mm	120 °C	G 1 B	A•H	413 000 79
413	1.0 m <sup>3</sup> /h / 16	M-TXKA	10	190 mm	120 °C	G 1 B	A•H	413 000 80
413	1.5 m <sup>3</sup> /h / 16	M-TXKA	25	190 mm	120 °C	G 1 B	A•H	413 000 20
413	1.5 m <sup>3</sup> /h / 16	M-TXKA	1	190 mm	120 °C	G 1 B	A•H	413 000 21
413	1.5 m <sup>3</sup> /h / 16	M-TXKA	10	190 mm	120 °C	G 1 B	A•H	413 000 22
413	2.5 m <sup>3</sup> /h / 16	M-TXKA	25	190 mm	120 °C	G 1 B	A•H	413 000 45
413	2.5 m <sup>3</sup> /h / 16	M-TXKA	1	190 mm	120 °C	G 1 B	A•H	413 000 46
413	2.5 m <sup>3</sup> /h / 16	M-TXKA	10	190 mm	120 °C	G 1 B	A•H	413 000 47
413	3.5 m <sup>3</sup> /h / 16	M-TXKA	25	260 mm	120 °C	G 1 1/4 B	A•H	413 000 92
413	3.5 m <sup>3</sup> /h / 16	M-TXKA	1	260 mm	120 °C	G 1 1/4 B	A•H	413 000 94
413	3.5 m <sup>3</sup> /h / 16	M-TXKA	10	260 mm	120 °C	G 1 1/4 B	A•H	413 000 95
413	6.0 m <sup>3</sup> /h / 16	M-TXKA	25	260 mm	120 °C	G 1 1/4 B	A•H	413 001 20
413	6.0 m <sup>3</sup> /h / 16	M-TXKA	1	260 mm	120 °C	G 1 1/4 B	A•H	413 001 22
413	6.0 m <sup>3</sup> /h / 16	M-TXKA	10	260 mm	120 °C	G 1 1/4 B	A•H	413 001 23
413	10 m <sup>3</sup> /h / 16	M-TXKA	25	300 mm	120 °C	G 2 B	A•H	413 001 68
413	10 m <sup>3</sup> /h / 16	M-TXKA	1	300 mm	120 °C	G 2 B	A•H	413 001 70
413	10 m <sup>3</sup> /h / 16	M-TXKA	10	300 mm	120 °C	G 2 B	A•H	413 001 71
413	15 m <sup>3</sup> /h / 16	M-TXKA	25	270 mm	120 °C	DIN 2501 flange	A•H	413 002 12
413	15 m <sup>3</sup> /h / 16	M-TXKA	10	270 mm	120 °C	DIN 2501 flange	A•H	413 002 15
413	15 m <sup>3</sup> /h / 16	M-TXKA	100	270 mm	120 °C	DIN 2501 flange	A•H	413 002 16
414	1.0 m <sup>3</sup> /h / 16	M-THXKA	1	190 mm	120 °C	G 1 B	A•H	414 001 11
414	1.0 m <sup>3</sup> /h / 16	M-THXKA	10	190 mm	120 °C	G 1 B	A•H	414 001 12
414	1.5 m <sup>3</sup> /h / 16	M-THXKA	1	190 mm	120 °C	G 1 B	A•H	414 000 07
414	1.5 m <sup>3</sup> /h / 16	M-THXKA	10	190 mm	120 °C	G 1 B	A•H	414 003 95
414	2.5 m <sup>3</sup> /h / 16	M-THXKA	25	190 mm	120 °C	G 1 B	A•H	414 000 58
414	2.5 m <sup>3</sup> /h / 16	M-THXKA	1	190 mm	120 °C	G 1 B	A•H	414 000 59
414	2.5 m <sup>3</sup> /h / 16	M-THXKA	10	190 mm	120 °C	G 1 B	A•H	414 000 60
414	3.5 m <sup>3</sup> /h / 16	M-THXKA	25	260 mm	120 °C	G 1 1/4 B	A•H	414 001 50
414	3.5 m <sup>3</sup> /h / 16	M-THXKA	1	260 mm	120 °C	G 1 1/4 B	A•H	414 001 52
414	3.5 m <sup>3</sup> /h / 16	M-THXKA	10	260 mm	120 °C	G 1 1/4 B	A•H	414 001 53
414	6.0 m <sup>3</sup> /h / 16	M-THXKA	25	260 mm	120 °C	G 1 1/4 B	A•H	414 002 11
414	6.0 m <sup>3</sup> /h / 16	M-THXKA	1	260 mm	120 °C	G 1 1/4 B	A•H	414 002 13
414	6.0 m <sup>3</sup> /h / 16	M-THXKA	10	260 mm	120 °C	G 1 1/4 B	A•H	414 002 14
414	10 m <sup>3</sup> /h / 16	M-THXKA	25	300 mm	120 °C	G 2 B	A•H	414 002 85
414	10 m <sup>3</sup> /h / 16	M-THXKA	1	300 mm	120 °C	G 2 B	A•H	414 002 87
414	10 m <sup>3</sup> /h / 16	M-THXKA	10	300 mm	120 °C	G 2 B	A•H	414 002 88
414	15 m <sup>3</sup> /h / 16	M-THXKA	25	270 mm	120 °C	DIN 2501 flange	A•H	414 003 57
414	15 m <sup>3</sup> /h / 16	M-THXKA	10	270 mm	120 °C	DIN 2501 flange	A•H	414 003 59
414	15 m <sup>3</sup> /h / 16	M-THXKA	100	270 mm	120 °C	DIN 2501 flange	A•H	414 003 60

\* tested to the metrological class indicated!

Key:

A (= metrological class)

H (= installation - horizontal or vertical)

Available pulse rates:

1 · 2.5 · 10 · 25 · 100 · 250 litres/pulse

Other versions and pulse rates available on request.

Note – Please indicate separately when ordering:

For a low-resistance load, e.g. mechanical roller counters, order the pulse output without resistor

Explanation of type designations:

M : multi-jet meter

K : pulse output

A : metal shield

T : dry runner

X : counter type

H : carbide bearing

Note: The types listed in the order references are standard meters.