

MIPULS - ULTRASONIC INLINE WATER METERS

Transit-time, battery-powered MIPULS Ultrasonic Water Meter utilizes advanced digital processing technology. According to EN1434 Standard. No moving parts and not any external power. Advantages from ultra-low power consumption, high accuracy and reliability. The meters are designed for easy installation. Commonly, it is unnecessary for customer to set any parameters in the application field. The meters have the same overall length as the industrial turbine water meter but can be used just as well as mechanical water meters. Compact and remote electronic unit versions available.



Features

- Integral transmitter suitable for harsh environments.
- Very low minimum measurable flow velocity (0.003m/s).
- Available with optional infrared meter reading function (AMR).
- DC or Battery powered operates for over 6 years*.
- On-board self-diagnostic function and fault indicator.
- Self-adjusting transducers circuitry adapting for changing pipe parameters
- Fast response to flow transients, tracks flow rate changes better than electromagnetic meters.
- Low maintenance no moving parts or flow obstructions translates into long-term stability.

Applications

- Process control and instrumentation
- Measure flow rate and total flow in water networks

TECHNICAL SPECIFICATIONS

Accuracy	Conforms to EN14154-2005, OIML R49-2009 Class 1; Better than 1.0%
Repeatability	Better than 0.2%
Sensitivity/ Dead band	0.0003m/s
Body:	Carbon steel or 304 Stainless Steel
Display	- total flow, flow rate, velocity, working time and date - signal intensity, quality and battery status
Connection and output	- RS485 (ModBus available) - 4-20mA output - GPRS wireless module available - OCT(open collector output) for total flow All the output need external power supply (5VDC-24VDC) connected to 24VDC terminal
Operation	Magnetic wand with reed for programming/display
Sampling period	0.5s
Fluid	Water or other liquids within -20 to +121°C
Environment temperature	-25...+65°C
Other functions	- Automatic display scrolling of commonly used value can be programmed - Self-diagnostic fault detection and indication - Baud rate: 300, 1200, 2400, 4800, 9600, parity - Storing data of total flow of last 35 months - 8 digits negative/positive totalizes, inside 64 digit calculating capacity - Data storing when power off, other programmable functions
Power Supply	3.6V lithium battery, can work with 3.1V or by 9...28Vdc supply
Consumption	- For recording data twice per second for pipe DN300, the consumption is 0.18mW - Water meter will enter into energy saving mode when the pipe is empty. Consumption is < 30% as normal working
Enclosure class	IP68, can work under water. Nitrogen tightness test performed in our lab
Pipe size	Suitable for pipe size DN40-600, DN600-1000 are hot-tapped insertion type
Flange connection	Flanges according to DIN, ANSI, JIS or other std. Customer requirements for smaller pipe size, pls contact our technical office



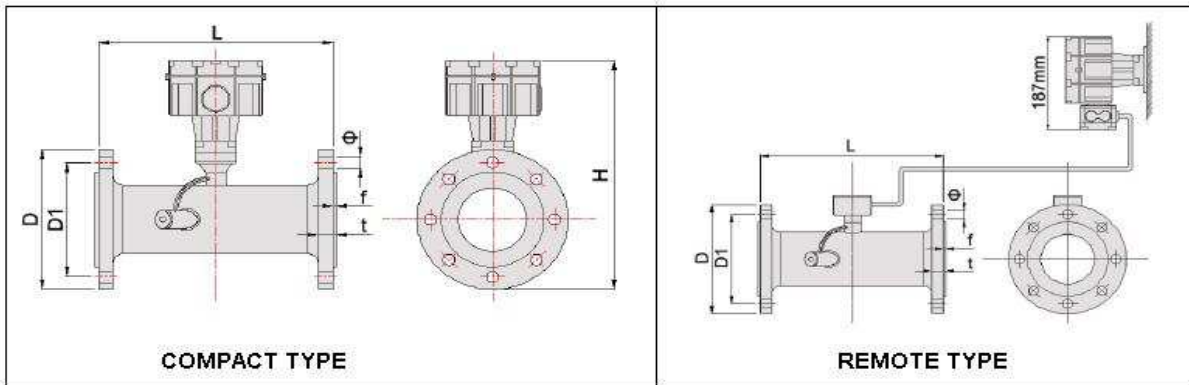
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MECHANICAL DIMENSIONS



DIN EN 1092-1

Flange specifications mm

Nominal Diameter DN	Pressure bar	L	H	D	D1	t	d x n
50	40	200	309	165	125	20	18X4
65	16	200	327	185	145	20	18X4
80		225	342	200	160	20	18X8
100		250	362	220	180	22	18X8
125		250	390	250	210	22	22X8
150		300	420	285	240	24	22X8
200	10	350	474	340	295	24	22X8
250		450	536	405	355	26	22X12
300		500	588	460	410	28	22X12
350		550	645	520	470	30	22X16
400		600	699	580	525	32	26X16
500	6	800	815	670	620	38	26X20
600		1000	918	780	725	42	30X20

ANSI B16.5 according ANSI#150

Nominal Diameter DN	Pressure bar	L	H	D	D1	t	d x n
50	150Lb 20bar	200	301,5	150	120,7	17,6	18X4
65		200	324,5	180	139,7	20,7	18X4
80		225	337,0	190	152,4	22,3	18X8
100		250	367,0	230	190,5	22,3	18X8
125		250	392,5	255	215,9	22,3	22X8
150		300	417,5	280	241,3	23,9	22X8
200		350	476,5	345	298,5	27,0	22X8
250		450	541,0	405	362,0	28,6	26X12
300		500	608,0	485	431,8	30,2	26X12
350		550	660,0	535	476,3	33,4	27X12
400		600	714,0	595	539,8	35,0	27X16



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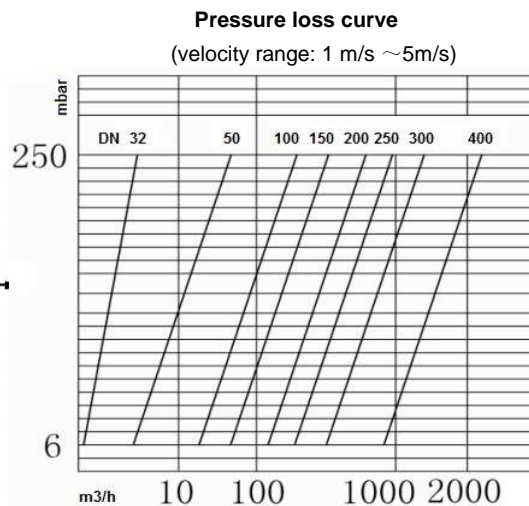
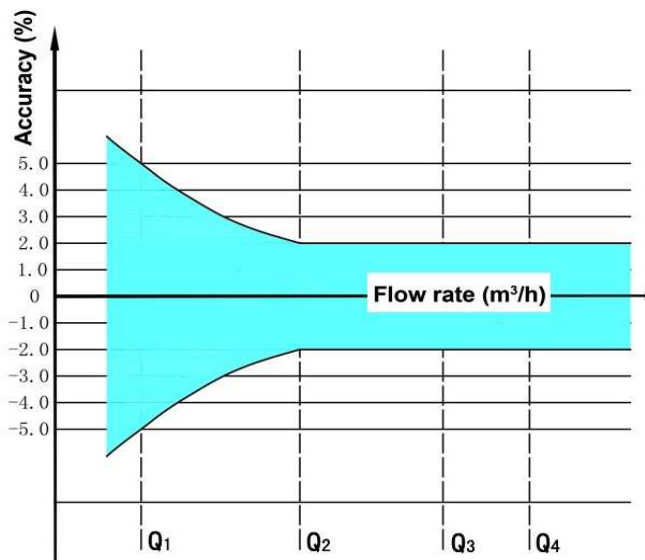
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METROLOGICAL REQUIREMENTS

Nominal Diameter mm	Q3/Q1	Q2/Q1	Minimum flowrate	Transitional flowrate	Permanent flowrate	Overload flowrate	Total flow	
			Q1 (m ³ /h)	Q2 (m ³ /h)	Q3 (m ³ /h)	Q4 (m ³ /h)	Max. m3	Min.m3
32	50	1.6	0.126	0.202	6.3	8	99999999	0.0001
40	50	1.6	0.200	0.320	10	13		
50	50	1.6	0.500	0.800	25	31		
65	50	1.6	0.800	1.280	40	50		
80	50	1.6	1.260	2.016	63	79		
100	50	1.6	2.000	3.200	100	125		
125	50	1.6	2.000	3.200	100	125		
150	50	1.6	3.200	5.120	160	200		
200	50	1.6	5.000	8.000	250	313		
250	50	1.6	8.000	12.800	400	500		
300	50	1.6	12.600	20.160	630	788		
350	50	1.6	12.600	20.160	630	788		
400	50	1.6	20.000	32.000	1000	1250		
500	50	1.6	32.000	51.200	1600	2000		
600	50	1.6	50.000	80.000	2500	3125		



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