

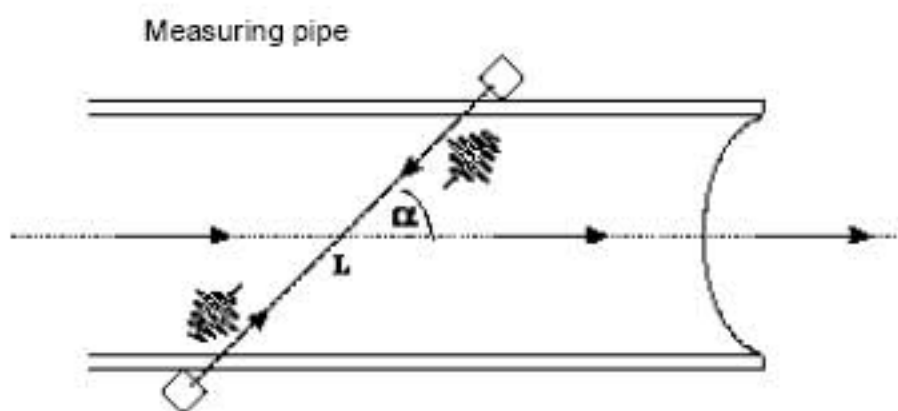
Datasheet

IntraSonic Flow Meter IS 200-MR (fixed installation on meter-run for high accuracy)

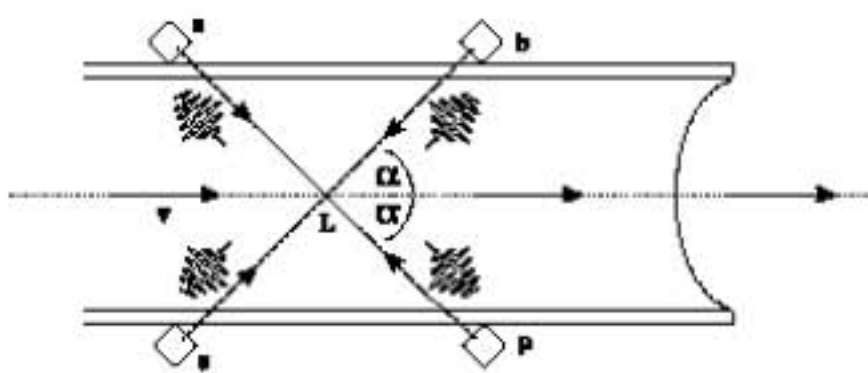
The IntraSonic IS200 is a flowmeter for measuring the flow of volume in a defined piping system. The special feature of this system is the high accuracy. Further option are temperature inputs for Energy calculations.

This flowmeter operates according to the transit-time principle. Because of the carry effect the run-time of the ultrasonic impulses in the measuring section are depending on the flow speed

Single beam (version IS200-MR1)



Dual beam (version IS200-MR2)



The signal is measured with and against the direction of the flow.

The transducers are mounted on the outside of the pipe. (fixed installation). Because there is no intervention required in the piping system, there will be no pressure loss in the system and no wear to the transducers. Flow measurement of chemical aggressive fluids is therefore no problem.

The control matrix has a clear structure and is easy comprehensible. The operation can be done without an additional device and without opening the flowmeter housing.

The data exchange between the flowmeter and a computer can be executed by a Windows® terminal program. There is no requirement for additional software.

Changes reserved without notice.
Preliminary Issue November 2005

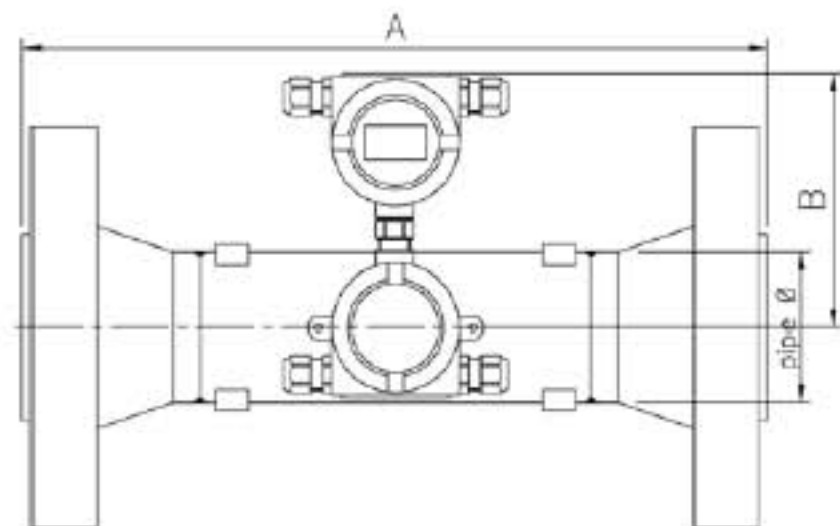


Fig. 1: IS200-MR, front view

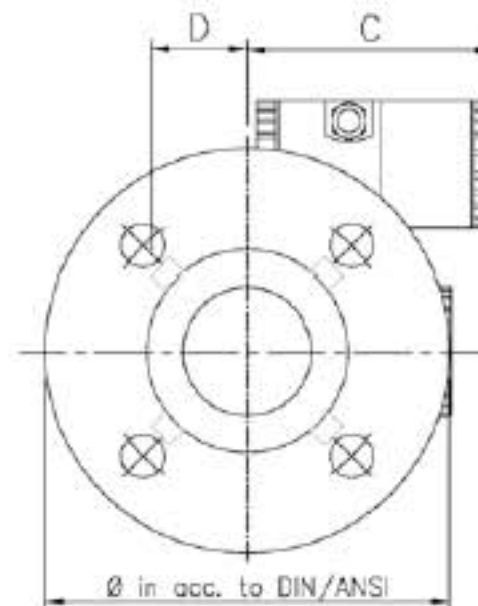


Fig. 2: IS200-MR, front view

Characteristics

- Easy installation, sensors already installed.
- No requirement for configuration.
- Measurement is not depending on conductivity and fluid pressure.
- No direct contact of sensors with the fluid and therefore no corrosion in case of aggressive chemicals.
- Certification for explosive atmospheres (in preparation).

Quality comes first!

Technical Data

Measurement

Measuring procedure:	Ultrasonic transit-time principle
Resolution:	0,01 cm/s
Accuracy:	±0,50% (single beam) ±0,25% (dual beam)
Response time:	1 - 3s adjustable
Damping:	1-100s
Measuring cycles:	400 per second
Measurable liquids:	All acoustically conductive liquids

Transmitter

General

Number of channels:	1 (type IS200-MR1) 2 (type IS200-MR2)
Language:	German or English (to be selected)
Power supply:	10-36V DC
Power consumption:	< 5 W
Protection class:	IP 67 (NEMA 4X)
Explosion protection:	(in preparation)
CE	(in preparation)
Indicator:	2 x 16 Indication point matrix with backgroundlighting
Operation:	Optical keyboard for direct programming
Housing material:	Die-cast aluminium
Size:	WxHxD: 115x270x205 mm
Weight :	3,8 kg
Storage temperature:	0 to 40°C
Ambient temperature:	-10 to +50 °C

Indicator

Largest indication:	15.000.000
Floating point:	0 to 6s adjustable
Totalizing:	Overflowcounter (in preparation)

Measured value memory

Type:	SRAM battery operated 32000 measured value (In preparation)
Data memory:	Min. 7 years

Clock

Type:	Quarz, battery operated
Function:	Time/Date
Data memory:	Min. 7 years

Process input (optional)

2 x Temperature:	PT100 (3-wire system) -50 - +450 °C
Resolution:	0,05 °C

Process output standard

Current:	1 x 4 - 20mA (1- channel) 2 x 4 - 20mA (2- channel)
Power supply:	Internal 14V DC External max. 40V DC

R max. load

Internal:	500Ω
External:	1500Ω

Resolution:

Allocation:	12 bit Velocity, Flow-rate or temperature Free scalable
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Interface:

RS485	Output of all measured values
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Process output (optional)

Current:	second 4-20 mA (1- channel)
Frequency:	1 x 0- 5kHz (1- channel) 2 x 0 -5kHz (2- channel)
Allocation:	Velocity, flow-rate or temperature Free scalable Resolution 12 bit
2 x Pulse output	(in preparation)
2 x Relais	SPDT, 30V DC / 1A Error or limited value (in preparation)
Fieldbus :	(in preparation)

All outputs are galvanically isolated from the base unit. The analoge outputs can be selected as current or frequency output.

Meter run

Process temperature range:	-40 to +120 °C (standard version) -40 to +190 ° (high temperature version)
meter selection:	in acc. to table 1

		PN							DIN			
		16	40	63	100	160	Dimensions		velocity			
DN	pipe-Ø	pipe wallthickness					dim. A length	dim. B	dim. C	dim. D	min.	max.
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[m/s]	[m/s]
50	60,3	2,0	2,0	2,9	4,5	5,6	450,0	220	190,0	70,0	0,01	20
65	76,1	2,3	2,3	2,9	5,0	7,1	450,0		198,0	78,0		
80	88,9	2,3	2,3	3,2	5,6	8,0	600,0		204,0	84,0		
100	114,3	2,6	2,6	3,6	6,3	8,8	600,0		217,0	97,0		
125	139,7	2,6	2,6	4,0	6,3	10,0	650,0		230,0	110,0		
150	168,3	2,6	2,6	4,5	7,1	11,0	650,0		244,0	124,0		
200	219,1	2,9	2,9	6,3	8,0	12,5	850,0		270,0	150,0		
250	273,0	2,9	2,9	6,3	8,8	14,2	850,0		297,0	177,0		
300	323,9	2,9	2,9	7,1	10,0	16,0	1200,0		322,0	202,0		
350	355,6	3,2	3,2	8,0	11,0	17,5	1200,0		338,0	218,0		
400	406,4	3,2	3,2	8,8	12,5	20,0	1200,0		363,0	243,0		
450	457,2	4,0	4,0	10,0	14,2	22,2	1200,0		389,0	269,0		
500	508,0	4,0	4,0	11,0	16,0	25,0	1200,0		414,0	294,0		
600	609,6	5,0	5,0	12,5	17,5	30,0	1200,0		465,0	345,0		

		Class							ANSI			
		150	300	600	1500	2500	Dimensions		velocity			
Inch	pipe-Ø	pipe wallthickness					dim. A (length)	dim. B	dim. C	dim. D	min.	max.
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[inch]	[inch]	[inch]	[inch]	[ft/s]	[ft/s]
2	60,30	2,77	2,77	2,77	5,54	5,54	17,72	8,66	7,48	2,76	0,03	65,62
2 1/2	73,00	3,05	3,05	3,05	7,01	7,01	17,72		7,80	3,07		
3	88,90	3,05	3,05	3,05	7,62	7,62	23,62		8,03	3,31		
4	114,30	3,05	3,05	3,05	8,56	8,56	23,62		8,54	3,82		
5	141,30	3,40	3,40	3,40	9,53	9,53	25,59		9,06	4,33		
6	168,30	3,40	3,40	3,40	10,97	10,97	25,59		9,61	4,88		
8	219,10	3,76	3,76	3,76	12,70	12,70	33,46		10,63	5,91		
10	273,00	4,19	4,19	4,19	12,70	12,70	33,46		11,69	6,97		
12	323,80	4,57	4,57	4,57	12,70	12,70	47,24		12,68	7,95		
14	355,60	4,78	4,78	4,78	19,05	19,05	47,24		13,31	8,58		
16	406,40	4,78	4,78	4,78	21,44	21,44	47,24		14,29	9,57		
18	457,20	4,78	4,78	4,78	23,83	23,83	47,24		15,31	10,59		
20	508,00	5,54	5,54	5,54	26,19	26,19	47,24		16,30	11,57		
22	558,80	5,54	5,54	5,54	28,58	28,58	47,24		6,30	1,57		
24	609,60	5,54	5,54	5,54	30,96	30,96	47,24		18,31	13,58		



Ultrasonic Flow Meters With Clamp-On Sensors

General use Model IS-100, For explosive condition use Model IS-200

Transducers		Temperature range of Liquid		Weight Kg (LB) APPRO.
Outer Diameter of Piping		- 40 ... 120 °C - 40 ... 248 °F	- 40 ... 190 °C - 40 ... 374 °F	
mm	Inches	233,16 ... 393,16 K	233,16 ... 463,16 K	
13 – 100	0.5 - 3.9	M10	M15	0.4 (0.88)
32 – 200	1.25 - 7.9	M20/M21	M25	0.8 (1.76)
150 – 610	5.9 - 24.0	M30/M31	M35	1.2 (2.64)
500 – 1070	19.7 - 42.1	M40/M41	M45	3.0 (6.6)
900 - 2030	35.43 - 79.92	M51		3.3 (7.26)
2000 - 9000	78.74 - 354.33	M52		3.3 (7.26)

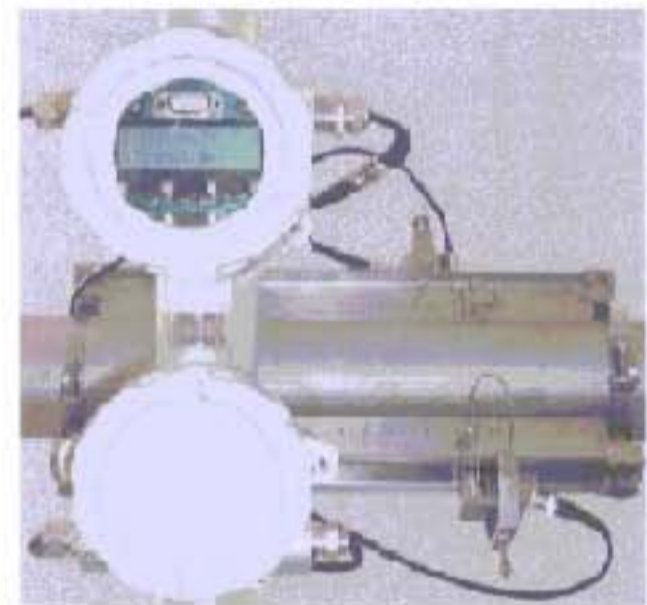
The transducers (sencers) with the code M_0 have a BNC-connection (IP31/NEMA2).
the transducers with the code M_1 have a metric connection with the protection class IP65 (NEMA 4X)



Sencer Installation



Portable Type: IS100 Indicator



Explosion Proof Type IS200



Indicator for IS100

Flow rate: 0.01 - 20 m/s, Resolution: 0.01 cm/s, Accuracy: +/- 1% to 5%
Response time: 1 m-3 S, Damping: 1-100S, measuring cycle; 400/S
Measurable Liquids: All acoustically conductive liquids

IS200-Ex Transmitter & Totalizer

Number of Channels: 1 or 2, Power supply: 10 - 36V dc, Power consum: <5W
Ambient Temperature: -10 to +50o, indicator: 2x16 Matrix with back-lighting
Largest indication: 15000.000, Floating point: 0 to 6 adjustable
Optional Input: Pt100 (3-wire), Output: 2 x 0-5kHz, 2 relays SPDT 30 V dc 1A,
2 x 4-20 mA dc, Max load: 500 Om, Communication: RS485
Protection: IP65, Explosion Proof: EEx d II CT5, Case: Die-cast aluminium

Installation assembly (1 set: Matarial. 316SS, include clamps, straps and plug)

Outer Diameter of Piping system		Mounting Rail		Weight Kg (LBS) Appro.
mm	Inches	Type	for Transducer	
13 – 100	0.5 - 3.9	S10	M1_	1.6 (3.52)
32 – 200	1.25 - 7.9	S20	M2_	2.5 (5.50)
150 – 610	5.9 - 24.0	S30	M3_	4.0 (8.80)
500 – 1070	19.7 - 42.1	S40	M4_	7.0 (15.40)
900 - 2030	35.43 - 79.92	S51	M51	5.6 (12.32)
2000 - 9000	78.74 - 354.33	S52	M52	5.6 (12.32)