Sontex

Thermal Energy ■ Flow Metering ■

Superstatic 440

Static Fluidic Oscillator Heat Meter

Superstatic 440
The precise and measuring stable heat meter
The right alternative

The Supestatic 440 is the heat and cooling meter with the most complete range of flows in the heat meter industry, from DN15 – DN 500 and qp 1 – qp 1500 respectively. The unique static measuring principle of fluidic oscillation without moving parts in the pipe and the robust design ensures a precise, stable and reliable measuring of flow over a long time.

The multifunctional, modular Supercal integrator with a large variety of communication modules, e.g. bi-directional Supercom radio, M-Bus, LON, GSM etc., allows a wide field of applications and an easy integration in any district heating, district cooling or building management system.

Over 30 different cooling liquids (Glycols) and unlimited blends are pre-programmed and available for free, for a correct cooling or solar energy measurement.

Superstatic 440
The static heat meter with the unique measuring principle

Superstatic 440 – the static heat meter that uses the unique fluidic oscillation measuring principle

The static heat meter Supestatic 440 is using a specific behaviour of liquids for the precise measuring:
The fluidic oscillation.

The principle of fluidic oscillation was developed by Sontex to its perfection and ensures a stable and precise measuring in a robust and reliable design that is resistant to impurities and poor water conditions.

The static flow sensor is free of moving parts or other objects in the pipe, e.g. mirrors that may be influenced by unexpected bad water quality or deposit.

The design of the fluidic oscillator flow sensor of the Superstatic 440 is highly modular, this means all replacement parts are the same over the whole range from qp 1 – qp 1500 m^3/h.

Main features:
The heat and cooling meter Superstatic 440 is designed and optimised to measure the consumption of thermal energy in any district heating, district cooling or building management system for the individual billing of thermal energy cost and can be easily integrated in any Smart Metering environment.

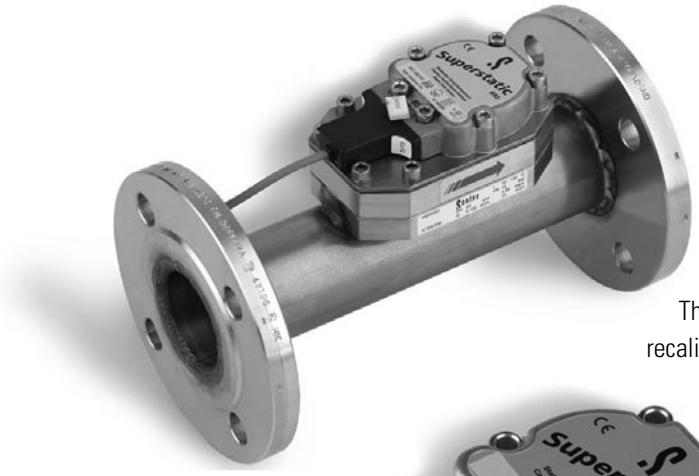
- Complete range of flows qp 1 – qp 1500 m^3/h, DN 15 – DN 500
- Cost efficient recalibration: Only the measuring head must be changed – the pipe stays in the system
- Very easy and cost efficient maintenance and repair
- Corrosion resistant materials
- No influence to magnetite fouling
- MID EN 1434 class 2 homologation for complete range DN 15 – DN 500
- No straight sections of piping necessary up to DN 40
- No moving parts
- Same meter for horizontal, riser and down pipes installation
- Heating and cooling meter -20°C – 130°C
- Over 30 cooling liquids (Glycols) and unlimited blends freely programmable with the Supercal integrator
- Multifunctional Supercal integrator with bi-directional Supercom radio, M-Bus, LON, GSM, Relay, RS-232, Analogue modules, etc. (see also leaflet Supercal 531)

Superstatic 440
qp 1 – qp 1500m³/h, DN 15 – DN 500
Class 2 EN 1434

Nominal flow qp	Threaded connection	Flanged connection	PN	Mounting length	Maximal flow qs	Minimal flow qi	Low flow threshold value (50°C)	Pressure loss at qp	Threaded hole for sensor	Weight	Material
m³/h	G"	DN	PN	mm	m³/h	l/h	l/h	bar		kg	
1	3/4"	(15)	16/25	110	2	10	4	0.2	Yes	2.5	brass
1	1"	(20)	16/25	190	2	10	4	0.2	Yes	3.4	brass
1.5	3/4"	(15)	16/25	110	3	15	10	0.09	Yes	2.5	brass
1.5	1"	(20)	16/25	190	3	15	10	0.09	Yes	3.4	brass
2.5	1"	(20)	16/25	190	5	25	10	0.25	Yes	3.5	brass
3.5	1 1/4"	(25)	16/25	260	7	35	15	0.16	Yes	4	brass
3.5		25	16/25	260	7	35	15	0.16		6	brass
6	1 1/4"	(25)	16/25	260	12	60	30	0.16	Yes	4	brass
6		25	16/25	260	12	60	30	0.16		6	brass
10	2"	(40)	16/25	300	20	100	50	0.25	Yes	5.5	brass
10		40	16/25	300	20	100	50	0.25		8.5	brass
15		50	16/25	270	30	150	75	0.25		10	ss/ci
25		65	16/25	300	50	250	125	0.25		12.5	ss/ci
40		80	16/25	225	80	800	400	0.09		14	ss/ci
40		80	16/25	300	80	800	400	0.09		15.5	ss/ci
60		100	16/25	250	120	1200	600	0.1		17	ss/ci
60		100	16/25	360	120	1200	600	0.1		20	ss/ci
100		125	16/25	250	200	2000	1000	0.1		18.5	ss
150		150	16/25	300	300	3000	1500	0.1		24	ss
150		150	16/25	500	300	3000	1500	0.1		27	ss
250		200	16/25	350	500	5000	2500	0.1		42	ss
400		250	16/25	450	800	8000	4000	0.1		58	ss
800		350	10/16	500	1600	32000	16000	0.1		105	steel
1500		500	10/16	500	3000	60000	30000	0.1		190	steel

ss = stainless steel ci = cast iron

Superstatic 440
Cost efficient recalibration and easy maintenance



Recalibration and maintenance of the heat meter Superstatic 440 is now easy, quick and cost efficient.

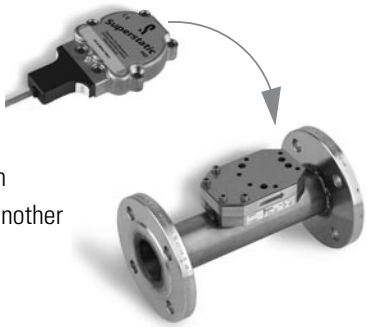
The MID homologation defines that only the measuring head must be recalibrated.

By using the static heat meter Superstatic 440 the cost for recalibration and maintenance drop drastically as only the sensor head must be recalibrated or exchanged.
The exchange is simple and fast.
The pipe stays in the system.
The interruption of operation of the heating system and the labour is minimal – a very important cost saving factor.

The use of high-quality corrosion resistant materials and the robust design ensure the measuring precision and durability over several calibration periods. The Superstatic 440 finished the last heat meter durability tests of the German District Heating Association (AGFW) always with best marks (5 stars).

Thanks to the complete range of flows of the static heat meter Superstatic 440, from qp 1 – qp 1500 m^3/h, any requirement can be covered with the same meter type. The same multifunctional integrator Supercal fits in the whole range and offers all necessary interfaces and many additional features and data for a successful integration in building management systems.

With the modular integrator it's only necessary to recalibrate the upper part of the integrator where all relevant metrological data are stored. This means the lower part, the body of the integrator remains on site and the cover is recalibrated – another important cost saving factor.



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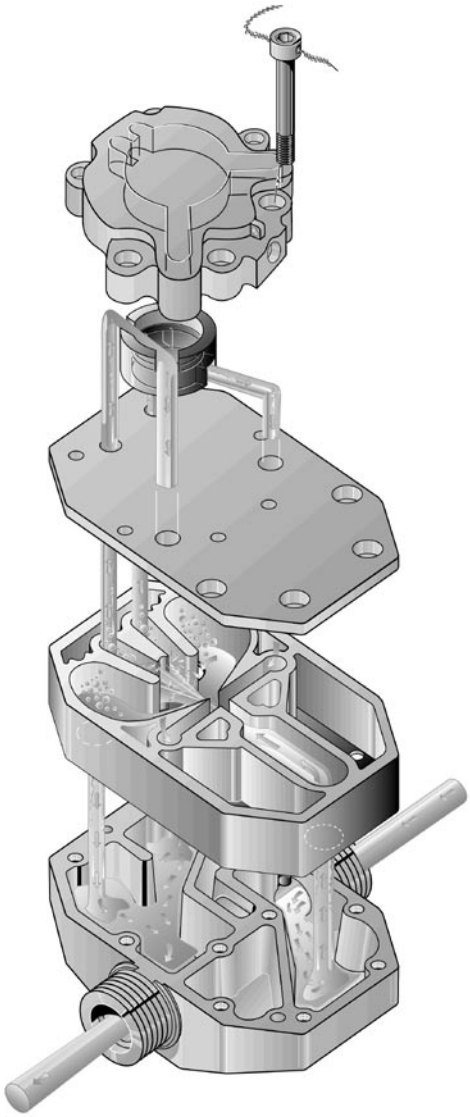

Description of the measuring principle

In the oscillator the liquid is directed to a nozzle and accelerated to a jet (Oscillating jet). Opposite of the nozzle the jet is redirected by a separator to the left or right into a channel that leads to the measuring head with a piezoelectric sensor. The pressure of the liquid on the sensor generates an electrical pulse. The liquid flows back to the pipe through a return loop and redirects the jet into the other channel where the action is repeated and fluidic oscillation is created.
The frequency of the fluidic oscillation, i.e. the generated electrical pulses by the sensor, is linear proportional to the flow thus the flow can be calculated.
A positive side effect is a self-cleaning of the oscillator due to the increased speed of the oscillating jet.

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