AXONIC

Static flow meters for thermal energy C&I applications

Axonic is a static ultrasonic flow meter perfectly adapted to the needs of district heating and cooling applications. With our proven know-how of static metering technology it has been developed for heating and cooling applications where water is used as an energy transfer medium.
Axonic is equipped with an universal interface which allows it to be easily combined with Itron calculators such as CF51, CF55 or CF800. It is powered by the connected calculators and therefore it doesn't require its own source of electrical power (e.g. battery).

FEATURES AND BENEFITS

- High accuracy and repeatability
- Outstanding dynamic range
- Still measurement also when exceeding qmax
- Robust and reliable design
- Ease of installation thanks to an innovative mobile flange design
- Insensitive to flow disturbances
- Optional 2nd pulse output
- Self diagnostic functions
- High pressure versions (PN40)
- Various choice of lengths
- Insulation compliant

Revenue protection

Axonic helps to protect the revenue of district heating companies by featuring extraordinary metrological performance, such as a high accuracy according to MID class 2 , long term stability and an outstanding dynamic range up to R400. AXONIC is still measuring also when exceeding qmax and helps reducing billing losses.

In addition, the fully concentric flow channel design creates a flow profile that is insensitive against up, and downstream flow disturbances and therefore reliable in any type of installation, even if space for flow meter installation is very limited.

In combination with Itron calculators it features intelligent diagnostic functions to control and optimize the entire thermal energy system.

Advanced functions

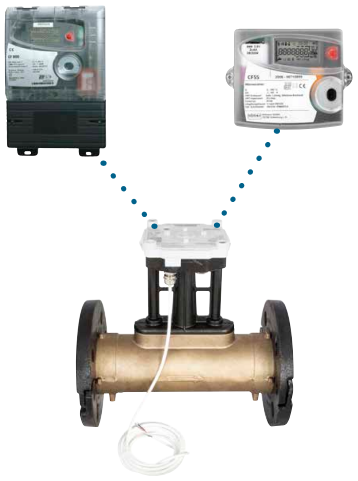
In the field the Axonic flow meter permanently monitors the operating conditions. In case of abnormal conditions, such as back-flow or air in the pipe, the meter sends a dedicated warning to the connected Itron calculator that can be transmitted via advanced reading systems in order to prompt a quick response by the system operator.

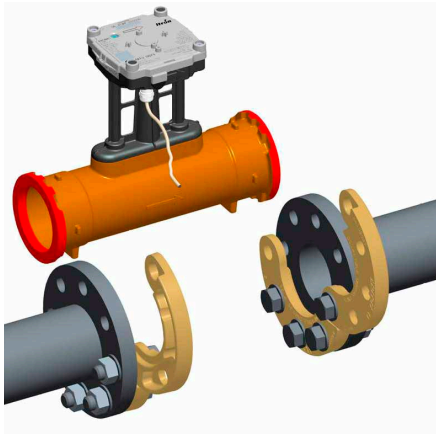
Applications

- Heating
- Cooling

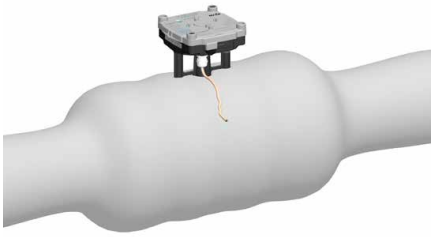
Standards

- MID approval according to 2014/32/EU
- Cooling approval according PTB 7.2
- Class 2 acc. to EN1434
- Environmental class EN1434 class C, MID class E2 + M2
- IP 68





Mobile Flanges



Insulation

FEATURES AND BENEFITS

Innovative mobile flange design

Axonic PN16 and PN25 versions are equipped with Itron's innovative mobile flanges. As a result the weight of the meter itself is lower and due to the step by step mounting of flanges and meter, the installation of Axonic is simplified and requires only one field operator.
In addition, this concept allows installation of the meter even if the counter flanges are not fully concentric to each other.

Insulation compliant

According the latest energy efficiency regulations all pipes and equipment that are installed in thermal energy systems shall be insulated in order to avoid any unnecessary energy losses. The design of Axonic follows this target; thanks to the extra-long neck the flow meter can be fully insulated, even in high temperature applications. The electronic part, that is naturally sensitive to high temperatures, remains outside the insulation and keeps cool.

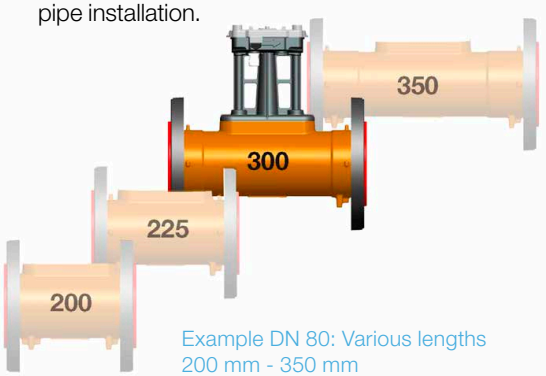
Optional parallel pulse output

Optionally Axonic is available with a 2nd pulse output that can have a different configuration than the main output.

This 2nd pulse output allows simple integration of the Axonic flow signal into building control systems and provides a valuable additional benefit.

Various choice of lengths

Beside the typical standard lengths Axonic can be supplied in various special lengths, that make an exchange against older mechanical woltman type meters possible without conversion of the the pipe installation.



Example DN 80: Various lengths
200 mm - 350 mm

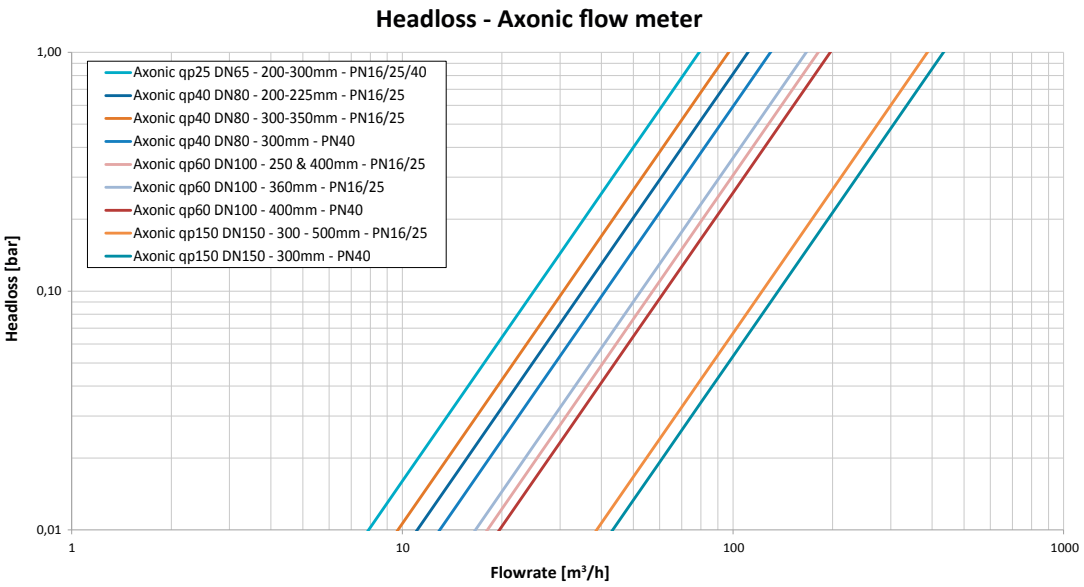
SPECIFICATIONS

Type		DN 65 /qp 25	DN 80 /qp 40	DN 100 /qp 60	DN 150 /qp 150
Maximum overflow	qss (m³/h)	55	88	132	330
Maximum flow	qs (m³/h)	50	80	120	300
Nominal flow	qp (m³/h)	25	40	60	150
Minimum flow (R250)	qi (l/h)	100	160	240	600
Cut off flow	qc (l/h)	40	80	100	300
Dynamic range (approval)		400H / 250V	250 H,V	250 H,V	250 H, 100 V
Accuracy class			EN1434 class C2		
Head loss qp	bar	≤ 0,10	≤ 0,17	≤ 0,13	≤ 0,15
Flow profile sensitivity class		U0D0	U0D0	U0D0	U0D0
Water temperature (heat version)	°C		1…130°C/150°C (permanent / accidental)		
Water temperature (cooling version)	°C	1…50°C	1…50°C	1…50°C	1…50°C
Ambient temperature	°C	-25°C … +60°C	-25°C … +60°C	-25°C … +60°C	-25°C … +60°C
Storage / transport temperature	°C	-25°C …+60°C	-25°C …+60°C	-25°C …+60°C	-25°C …+60°C

PULSE OUTPUT AND POWER SUPPLY CHARACTERISTICS

Pulse output (pulse A and B)	
Type	open collector (drain)
Polarity	non-reversible (see manual)
Pulse-length	≥ 5ms, optional up to 500ms (value indicated in type plate)
Max. input voltage	30V DC
Max. input current	27mAv
Drop off Voltage (ON)	≤0,3V at 0,1 mA / ≤ 2V at 27mA
Resistance (OFF state)	6 MΩ
Max. output frequency	128 Hz
Pulse weight options	8 p/L up to 2500 L/p (value indicated on type plate)
Power supply	
Nominal voltage	3,2….6V
Average current consumption	< 50 µA
Peak current consumption	< 3 mA

HEAD LOSS

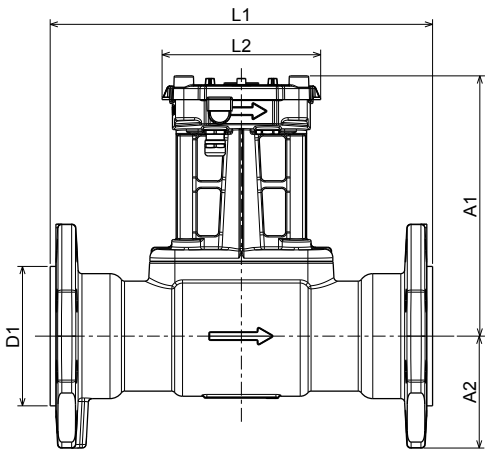


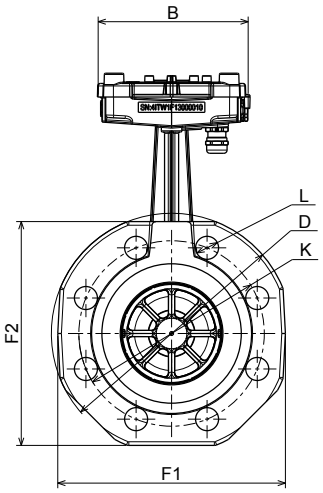
DIMENSIONS

Type			DN 65 qp25			DN80 qp 40			DN100 qp 60			DN150 qp 150		
			PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40	PN16	PN25	PN40
Body length (available versions)	L1	mm	200 300	300	300	200 225 300 350	300	350	250 360 400	360	400	300 500	500	300
Electronic	L2	mm	124	124	124	124	124	124	124	124	124	124	124	124
	B	mm	119	119	119	119	119	119	119	119	119	119	119	119
Height	A1	mm	204	204	204	209	209	209	219	219	219	244	244	244
	A2	mm	93	93	88	100	100	100	111	118	112	143	150	144
Bolt circle diameter	K	mm	145	145	145	160	160	160	180	190	190	240	250	250
Bolt holes diameter	L	mm	19	19	18	19	19	18	20	23	22	24	28	26
Number of holes			4	8	8	8	8	8	8	8	8	8	8	8
Flange dimensions*	D	mm	185	185	188	200	200	203	220	235	238	285	300	300
	D1	mm	108	108	109	128	128	120	156	156	149	216	216	203
	F1	mm	-	-	178	-	-	194	-	-	228	-	-	288
	F2	mm	-	-	175	-	-	190	-	-	224	-	-	288
Weight (length)		kg (mm)	8,0 (200) 9,0 (300)	9,0 (300)	10,5 (300)	9,3 (200) 9,6 (225) 10,4 (300) 10,9 (350)	10,4 (300)	14,0 (350)	13,0 (250) 14,0 (360) 15,0 (400)	16,0 (360)	20,0 (400)	24,0 (300) 28,0 (500)	31,0 (500)	32,0 (300)

*Flanges PN16 and PN 25 according EN 1092-2 / Mobile Flanges Elevated interface type B

*Flanges PN40 according EN 1092-1 / Type 21 PN40 Male hubbed socket Type E





ITEM CODES AXONIC

All products equipped with 3 m cable length, Pulse A active, Pulse B disabled. Heat: MID certificate and test report / Cooling: including factory test report.

Art.-No.	Description		Application	DN (mm)	QP [m³/h]	L [mm]	PN [bar]	Pulse weight [L]
AX-AH24C11Z10FM1EN	AXONIC D65Q25L200P16	H-R250-10L-MID-EN	Heating	65	25	200	16	10
AX-BH24C11Z10FM1EN	AXONIC D65Q25L300P16	H-R250-10L-MID-EN	Heating	65	25	300	16	10
AX-CH24C11Z10FM1EN	AXONIC D65Q25L300P25	H-R250-10L-MID-EN	Heating	65	25	300	25	10
AX-DH24C11Z10FM1EN	AXONIC D65Q25L300P40	H-R250-10L-MID-EN	Heating	65	25	300	40	10
AX-EH24C11Z10FM1EN	AXONIC D80Q40L200P16	H-R250-10L-MID-EN	Heating	80	40	200	16	10
AX-FH24C11Z10FM1EN	AXONIC D80Q40L225P16	H-R250-10L-MID-EN	Heating	80	40	225	16	10
AX-GH24C11Z10FM1EN	AXONIC D80Q40L300P16	H-R250-10L-MID-EN	Heating	80	40	300	16	10
AX-IH24C11Z10FM1EN	AXONIC D80Q40L350P16	H-R250-10L-MID-EN	Heating	80	40	350	16	10
AX-HH24C11Z10FM1EN	AXONIC D80Q40L300P25	H-R250-10L-MID-EN	Heating	80	40	300	25	10
AX-JH24C11Z10FM1EN	AXONIC D80Q40L350P40	H-R250-10L-MID-EN	Heating	80	40	350	40	10
AX-KH24C11Z10FM1EN	AXONIC D100Q60L250P16	H-R250-10L-MID-EN	Heating	100	60	250	16	10
AX-LH24C11Z10FM1EN	AXONIC D100Q60L360P16	H-R250-10L-MID-EN	Heating	100	60	360	16	10
AX-MH24C11Z10FM1EN	AXONIC D100Q60L360P25	H-R250-10L-MID-EN	Heating	100	60	360	25	10
AX-NH24C11Z10FM1EN	AXONIC D100Q60L400P16	H-R250-10L-MID-EN	Heating	100	60	400	16	10
AX-OH24C11Z10FM1EN	AXONIC D100Q60L400P40	H-R250-10L-MID-EN	Heating	100	60	400	40	10
AX-QH24E11Z10FM1EN	AXONIC D150Q150L300P16	H-R250-100L-MID-EN	Heating	150	150	300	16	100
AX-RH24E11Z10FM1EN	AXONIC D150Q150L300P40	H-R250-100L-MID-EN	Heating	150	150	300	40	100
AX-SH24E11Z10FM1EN	AXONIC D150Q150L500P16	H-R250-100L-MID-EN	Heating	150	150	500	16	100
AX-TH24E11Z10FM1EN	AXONIC D150Q150L500P25	H-R250-100L-MID-EN	Heating	150	150	500	25	100
AX-AC24C11Z10FF2EN	AXONIC D65Q25L200P16	C-R250-10L-ITR-EN	Cooling	65	25	200	16	10
AX-BC24C11Z10FF2EN	AXONIC D65Q25L300P16	C-R250-10L-ITR-EN	Cooling	65	25	300	16	10
AX-CC24C11Z10FF2EN	AXONIC D65Q25L300P25	C-R250-10L-ITR-EN	Cooling	65	25	300	25	10
AX-EC24C11Z10FF2EN	AXONIC D80Q40L200P16	C-R250-10L-ITR-EN	Cooling	80	40	200	16	10
AX-FC24C11Z10FF2EN	AXONIC D80Q40L225P16	C-R250-10L-ITR-EN	Cooling	80	40	225	16	10
AX-GC24C11Z10FF2EN	AXONIC D80Q40L300P16	C-R250-10L-ITR-EN	Cooling	80	40	300	16	10
AX-IC24C11Z10FF2EN	AXONIC D80Q40L350P16	C-R250-10L-ITR-EN	Cooling	80	40	350	16	10
AX-HC24C11Z10FF2EN	AXONIC D80Q40L300P25	C-R250-10L-ITR-EN	Cooling	80	40	300	25	10
AX-KC24C11Z10FF1EN	AXONIC D100Q60L250P16	C-R250-10L-ITR-EN	Cooling	100	60	250	16	10
AX-LC24C11Z10FF1EN	AXONIC D100Q60L360P16	C-R250-10L-ITR-EN	Cooling	100	60	360	16	10
AX-MC24C11Z10FF1EN	AXONIC D100Q60L360P25	C-R250-10L-ITR-EN	Cooling	100	60	360	25	10
AX-QC24F11Z10FF1EN	AXONIC D150Q150L300P16	C-R250-100L-ITR-EN	Cooling	150	150	300	16	100
AX-SC24F11Z10FF1EN	AXONIC D150Q150L500P16	C-R250-100L-ITR-EN	Cooling	150	150	500	16	100
AX-TC24F11Z10FF1EN	AXONIC D150Q150L500P25	C-R250-100L-ITR-EN	Cooling	150	150	500	25	100

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