

AMFLO® SONIC DryX

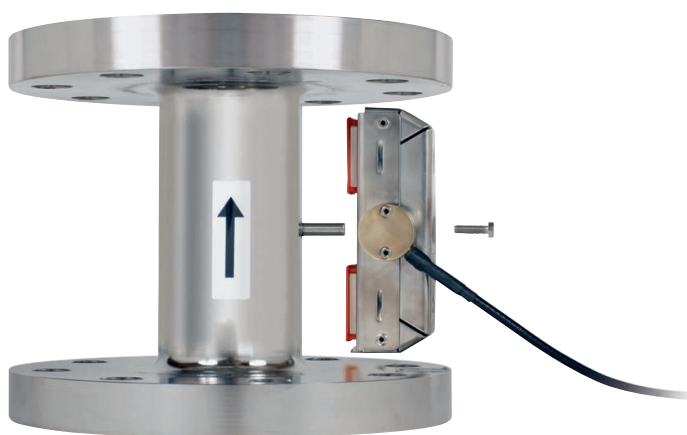
Ultrasonic flow sensor



Swiss Made

Applications

Flow sensor with innovative exchange concept. Highest customer benefits for district heating.



Features

- Installation length can be customised
- No in- and outlet sections required
- Sensor exchange with running process

Benefits

- Easy replacement of meters
- Less planning effort
- Lower cost of ownership

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General Information

The AMFLO® SONIC DryX is a flow meter for water. Flow is measured using ultrasound.

Technical data

Nominal diameter	DN 32 - 250
Measuring tube	AISI 316 L (1.44.04)
Fluid	Water
Nominal pressure	PN 40 / PN 25 / PN 16
Degree of protection	IP 68 (sensor head electronics)
Fluid temperature	0 - 130 °C
Ambient temperature	5 - 55 °C
Accuracy	Class 2 acc. to EN1434
Connection cable	10 m, fixed

Range of measurement (approved acc. EN 1434 class 2, measurement dynamic 1:250)

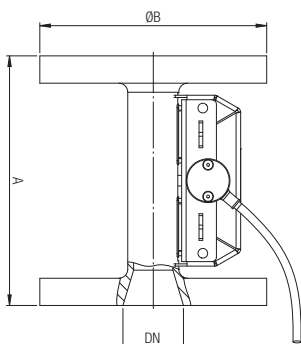
Nominal diameter DN	mm	32	40	50	65	80
qi (Minimum flow)	m³/h	0.048	0.08	0.12	0.2	0.32
qp (Nominal flow)	m³/h	12	20	30	50	80
qs (Maximum flow)	m³/h	15	25	37.5	62.5	100
v (qi)	m/s	0.017	0.018	0.017	0.017	0.018
v (qp)	m/s	4.15	4.42	4.24	4.19	4.42
Δp (qp/2)*	mbar	37	46	46	44	51
Flow at Δp = 100 mbar	m³/h	9.9	14.7	22.1	37.9	56.1
Kvs	m³/h	31.2	46.6	69.7	119.8	177.5
Resolution	ml	18	30	44	73	117

Nominal diameter DN	mm	100	125	150	200	250
qi (Minimum flow)	m³/h	0.48	0.8	1.2	2	3.2
qp (Nominal flow)	m³/h	120	200	300	500	800
qs (Maximum flow)	m³/h	150	250	375	625	1000
v (qi)	m/s	0.017	0.018	0.019	0.018	0.018
v (qp)	m/s	4.24	4.52	4.71	4.42	4.53
Δp (qp/2)*	mbar	49	55	63	58	62
Flow at Δp = 100 mbar	m³/h	85.5	134.8	188.9	328.3	508.0
Kvs	m³/h	270.3	426.3	597.4	1038	1606
Resolution	ml	175	292	438	730	1167

* equivalent to standard values of qp acc. to EN 1434

Dimensions and device connection

Flange holes according to EN 1092-1



Nominal diameter DN	mm	32	40	50	65	80
Minimum length* A	mm	150	165	200	200	175
Flange ØB	mm	140	150	165	185	200
Weight	kg	5.5	6.5	8	10	12.5

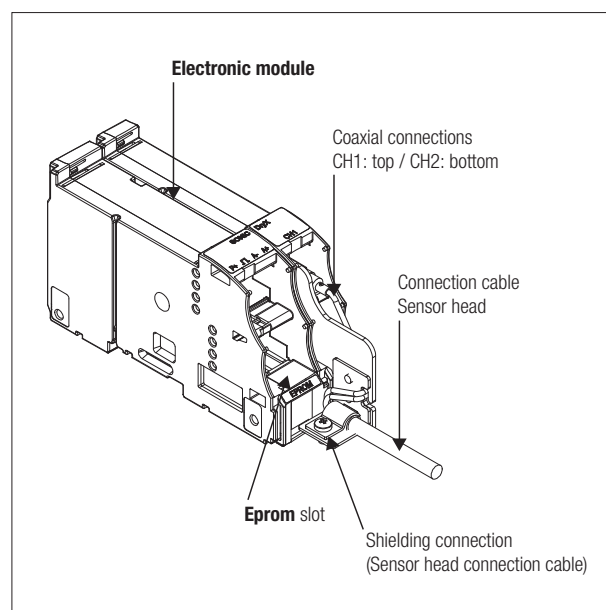
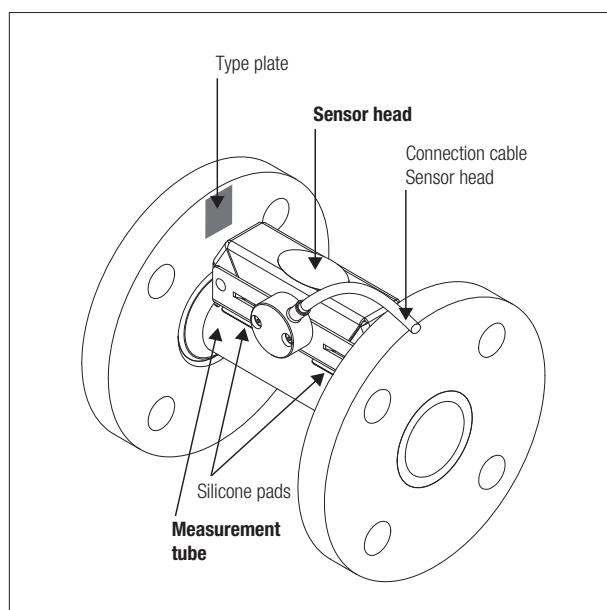
Nominal diameter DN	mm	100	125	150	200	250
Minimum length* A	mm	200	220	240	290	330
Flange ØB	mm	220	270	300	375	450
Weight	kg	19	18-27	28-35	35-61	86-97

* The installation length can be customised to meet specific requirements.

Sensor head with hexalobular screw (Torx) up to DN100 'T20' and above 'T30'

Device description

Component names



Description of functions

The following components are required to ensure functionality:

- Measurement tube with associated Eprom (Eprom number on type plate)
- Electronics: Sensor head with associated electronic module (Eprom number on rating plate)
- Calculator: CALEC® energy master (AMFLO® SONIC DryX software version) with temperature sensors

Measurement tube (incl. associated Eprom)

The data recorded during calibration for the measurement tube are saved in the associated Eprom. This data must be made available to the system by plugging the Eprom into the electronic module.

Electronics (sensor head and electronic module)

The data recorded during calibration for the sensor head tube are saved in the associated electronic module. This is then made available to the system via the connection bus.

Calculator (CALEC® energy master)

The signals are evaluated and displayed in the CALEC® energy master, which is the central unit. It also allows the recorded flow rates to be used for the heat meter function. The temperature sensors are used for energy calculation and for temperature compensation of flow measuring.

Approval, declaration of conformity and verification

This device is approved according to the MID directive 2004/22/CE and the special cooling approval according to the PTB TR K7.2. Instruments for commercial heating and cooling measurements are subject to commercial verification in most countries. Equipment subject to this obligation must be recalibrated resp. reverificated after expiry of the calibration period. The operator is responsible for compliance with the regulations.

Specialities re-verification

- Measurement tube stays three verification periods in the system
- Exchange or verification is only necessary for the electronics and the calculator, without intervention in the hydraulics

System components

Measurement tube



Measurement tube



EPROM

Nominal diameter (mm)	length (mm)	Art. No.		
		PN40	PN25	PN16
DN 32	150		94741	
	200		94742	
	260		94743	
DN 40	165		94744	
	200		94745	
	220		95350	
	300		94746	
DN 50	200		94714	
	270		94715	
	300		95351	
	465		95352	
	475		95353	
DN 65	200		94747	
	300		94748	
	460		95354	
	475		95355	
DN 80	175		94749	
	200		94750	
	225		94751	
	300		94752	
	350		95356	
	380		95657	
	400		95358	

Nominal diameter (mm)	length (mm)	Art. No.		
		PN40	PN25	PN16
DN 100	200		94753	95108
	250		94754	95109
	350		95360	
	360		94755	95110
	375		-	95361
	400		95362	-
DN 125	250		95003	95321
	350		95004	95322
	375		-	95363
	400		95005	95323
DN 150	300		95007	95324
	350		95008	95325
	360		-	95364
	400		95009	95326
	500		95010	95327
DN 200	350		95012	95328
	400		95013	95329
	450		-	-
	490		95014	95330
	500		95015	95331
DN 250	400		95017	95336
	450		95018	95337
	575		95019	95338
	600		95020	95339
				95343

Electronics



Sensor head



Electronic module

Nominal diameter	Art. No.
DN 32	94758
DN 40	94759
DN 50	94713
DN 65	94760
DN 80	94761
DN 100	94762

Nominal diameter	Art. No.
DN 125	95024
DN 150	95025
DN 200	95026
DN 250	95027

Calculator



Calculator	Art. No.
230V-Pt 100	CALEC® energy master
24V-Pt 100	CALEC® energy master
230V-Pt 100	CALEC® energy master (without protective housing)
24V-Pt 100	CALEC® energy master (without protective housing)

For the calculator and the temperature sensors further information is available.

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