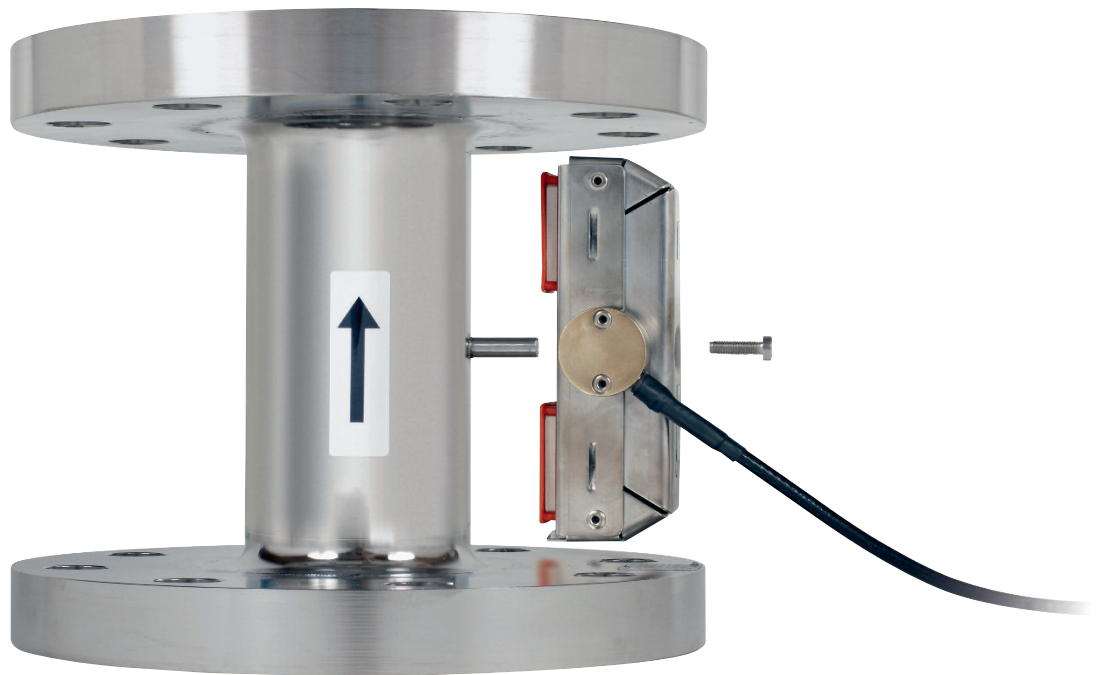


AMFLO® SONIC DryX

Ultrasonic flow sensor

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

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)

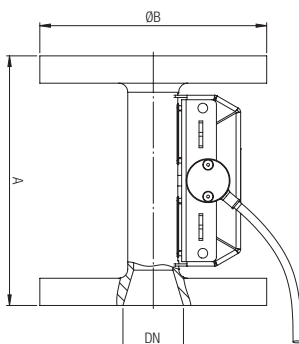
Nominal diameter DN	mm	32	40	50	65	80
qi (Minimum flow)	m³/h	0.048	0.08	0.12	0.2	0.32
qp (Nominal flow)	m³/h	12	20	30	50	80
qs (Maximum flow)	m³/h	15	25	37.5	62.5	100
v (qi)	m/s	0.017	0.018	0.017	0.017	0.018
v (qp)	m/s	4.15	4.42	4.24	4.19	4.42
Δp (qp/2)*	mbar	37	46	46	44	51
Flow at Δp = 100 mbar	m³/h	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

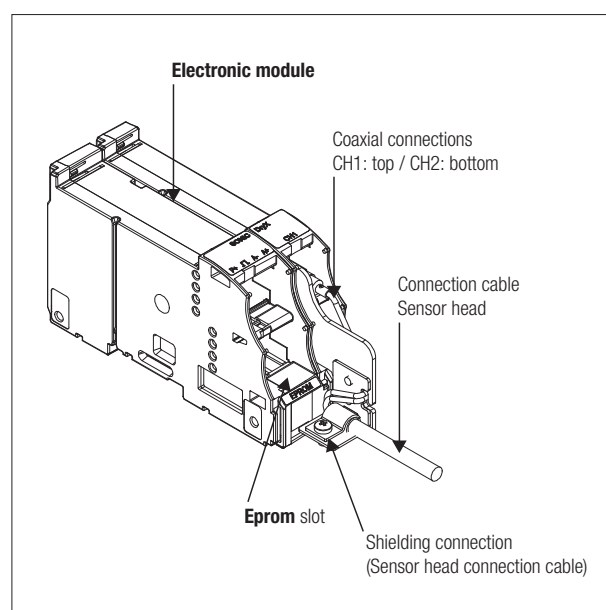
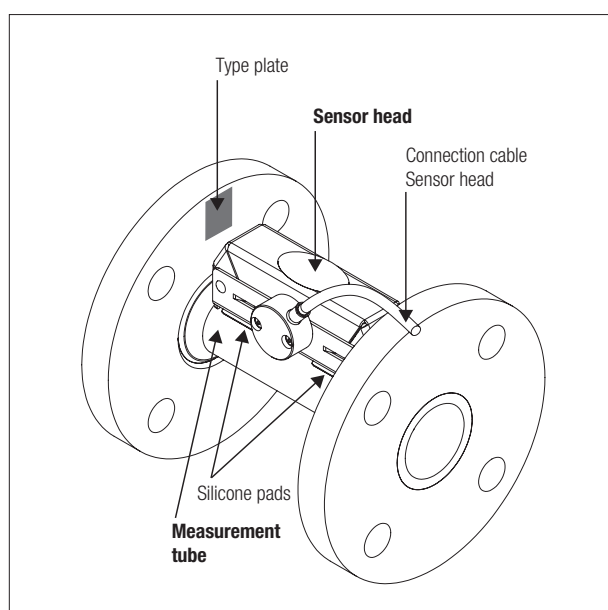
Nominal diameter DN	mm	100	150	200	250
Minimum length* A	mm	200	240	290	330
Flange ØB	mm	220	300	375	450
Weight	kg	19	28-35	35-61	86-97

* 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. reverified 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)	Nominal 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		
	400	95358		

Nominal diameter (mm)	Nominal length (mm)	Art. No.		
		PN40	PN25	PN16
DN 100	200	94753	95108	
	250	94754	95109	
	350	95360	95359	
	360	94755	95110	
	375	-	95361	
DN 125	400	95362	-	
	250	95003	95321	
	350	95004	95322	
	375	-	95363	
DN 150	400	95005	95323	
	300	95007	95324	
	350	95008	95325	
	360	-	95364	
DN 200	400	95009	95326	
	500	95010	95327	
	350	95012	95328	95332
	400	95013	95329	95333
	450	-	-	95365
DN 250	490	95014	95330	95334
	500	95015	95331	95335
	400	95017	95336	95340
	450	95018	95337	95341
	575	95019	95338	95342
	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



CALEC® energy master

Calculator	Art. No.
230V-Pt 100 CALEC® energy master	94763
24V-Pt 100 CALEC® energy master	94764
230V-Pt 100 CALEC® energy master (without protective housing)	95366
24V-Pt 100 CALEC® energy master (without protective housing)	95367

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