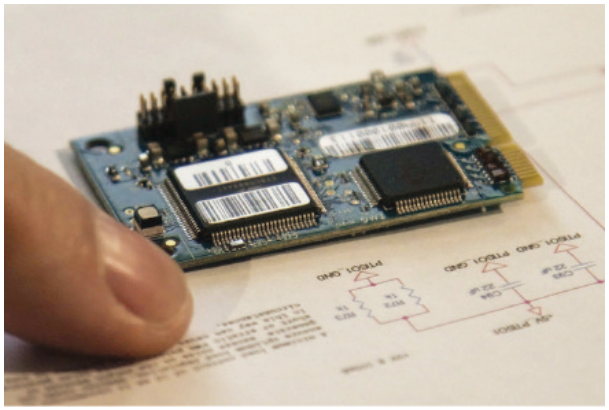
Flowboards & Flowsensors

Transonic Flowboards & Flowsensors can be integrated inside an original manufacturer's biomedical device to measure true volume flow and other associated parameters. They can be custom designed to meet the unique needs of your application.



Transonic Flowboards

Transonic Flowsensors

Regulatory Approvals

Because custom Transonic® OEM Flowboards and Flowsensors derive from standard Transonic products, there already exists a substantial database of independent Transonic validation publications, historical safety and effectiveness records and equivalency data to submit for Medical Device Approval, FDA clearance and Clinical Performance Validation. Transonic can assist your regulatory team with guidance on submissions and responses to regulatory requests.

Performance Guarantee

Because *Transonic Inside* products are derived from standard Transonic components, their performance in an OEM setting can usually be assessed before the formal onset of a custom OEM project by using off-the-shelf Transonic Flowsensors and Flowmeters. Transonic guarantees that its custom OEM products, when developed and implemented under Transonic's co-engineering program, will match or exceed the performance of standard Transonic products.

OEM Products (OEM-701-fly) Rev E 2021 A4

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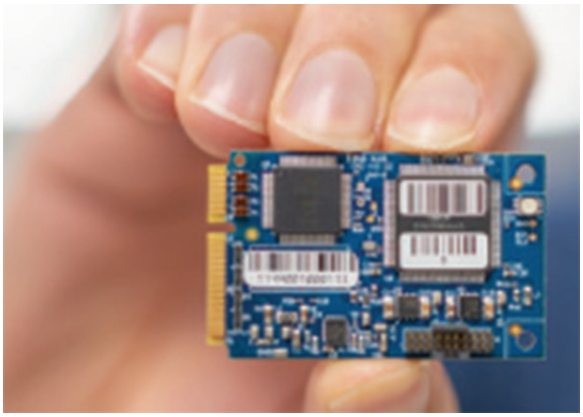
Flowboards

Flowboard Specifications

Standard Transonic Flowboards, as featured below, are available for integration into OEM biomedical devices. Flowboards may be customized, if necessary, to meet additional requirements. Contact the Transonic Inside team to learn more about customization opportunities.

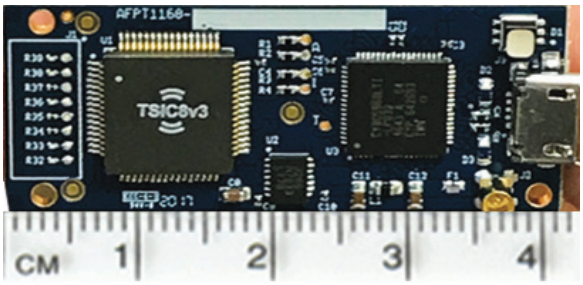
AFPT1199

Our newest and most advanced flowmeter board. Combines performance with a compact design, added configuration flexibility and improved ease of assembly. Flowboard is used with an external host controller. No onboard software/protocol validation required.



AFPT1168

This Transonic Flowboard features a remarkably small, lightweight design while offering exceptional flow measurement performance. For use with an external host controller. No onboard software/protocol validation required.



Specifications	AFPT1168	AFPT1199
Board size:	1.75" x 0.70" x 0.25"	1.93" x 1.18" x 0.20"
Power requirements:	<0.25W @ 5VDC	<0.5W @ 5VDC
Output Interface:	SPI , UART (SCI)	SPI , UART (SCI) CANOpen
Output via:	Command response interogation or streaming	Command response interogation or streaming
Outputs:	Flow, Signal Quality, Indicator Dilution Status	Flow, Signal Quality, Indicator Dilution Status
Flowsensors:	0.125" to 1.25" OD Tubing Clamp-on Sensors; 5 mm - 25 mm ID Inline Sensors	0.125" to 1.25" OD Tubing Clamp-on Sensors; 5 mm - 25 mm ID Inline Sensors
Transducer Frequency:	0.6 - 3.6 MHz	0.6 - 9.6 MHz
Bubble Detection:	Performed by monitoring signal quality.	Performed by monitoring signal quality
RoHS:	Compliant	Compliant

Flowsensors

Flowsensor Specifications

Clamp-on or Inline Flowsensors measure volume flow in non-aerated liquids including, but not limited to saline, buffer solutions, blood and water with high resolution and low zero offset. Flowsensors are calibrated for the specific tubing on which they are used.

Clamp-on Flowsensors

- Non-contact Clamp-on Sensors maintain circuit sterility
- Appropriate for both pre-clinical and clinical use
- Multiple Flowsensor sizes for a variety of tubing diameters

Clamp-on Flowsensors are positioned on the outside of flexible tubing to measure the true volume flow rate within the circuit. This critical measurement is recorded with high accuracy and stability. Their exceptional performance, simple design, and noninvasive technique has made Transonic Clamp-on Flowsensors the standard for medical device design in both clinical and research settings.

The easy clip-on operation of the PXL Flowsensors also makes these Sensors ideal for testing applications where the measurement needs to be quick, reliable, and potentially repeatable on multiple circuits without interrupting flow. Unlike large diameter industrial flow measurement devices, Transonic® provides high resolution Clamp-on Sensors in 1/16 increments for small diameter tubings down to 1/8" OD.

Inline Flowsensors

- Measure flow over a wide dynamic range
- Provide flexibility for tubing circuits sized for tubing outer diameters between 1/8" and 1-1/4"
- Offer high sensitivity for low flow applications and minimize offset

PXN Inline Flowsensors utilize a scheme of ultrasonic illumination that makes it possible to manufacture a flow-through Sensor with a smooth, cylindrical interior without compromising measurement accuracy. These Flowsensors offer more flexibility than Clamp-on Sensors as measurement calibration doesn't depend on the type and exact size of tubing on which they are used. Small diameter PXN Inlines are ideal for low flow isolated heart or perfused organ applications.

Clamp-on Flowsensors

SENSOR SIZE	TUBING ID[1]	WALL THICKNESS
2PXL	3/32	1/32
3PXL	1/8	1/32
4PXL	1/8	1/16
5PXL	3/16	1/16
6PXL	1/4	1/16
7PXL	1/4	3/32
8PXL	3/8 5/16	1/16 3/32
9PXL	3/8	3/32
10PXL	1/2	1/16
11PXL	1/2	3/32
12PXL	1/2	1/8
14PXL	5/8 11/16	1/8 3/32
16PXL	3/4	1/8
20PXL	1	1/8

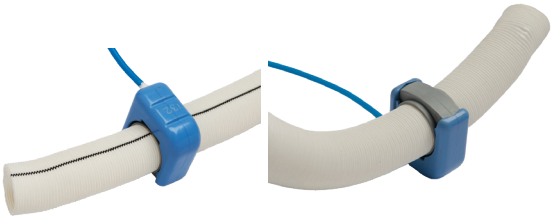
[1]Custom sizing is available for 4-25 mm OD tubing in 1mm increments.

	TUBING ID		BARB OD	
	in	mm	in	mm
1PXN	3/64	1.2	Flexible tubing	
2PXN	1/16	1.6		
3PXN	3/32	2.4		
4PXN	1/8	3.2	0.16	4.0
5PXN	3/16	4.8	0.23	5.8
6PXN	1/4	6.4	0.3	7.6
10PXN	3/8	9.5	0.44	11.1
13PXN	1/2	12.7	0.58	14.7
16PXN	5/8	15.9	0.72	18.3
19PXN	3/4	19.1	0.86	21.9
25PXN	1	25.4	1.14	29.0

COnfidence® Flowprobes

COnfidence Perivascular Flowprobes are designed for adult, pediatric, and neonatal intraoperative flow measurements. They can also be customized and calibrated for VAD outflow through a Dacron graft (see figures). Their small footprint and slim profile permits measurement of volume flow in great arteries and veins with turbulent flow and where a compact probe is needed. COnfidence Flowprobes:

- Measure volume flow, not velocity;
- Are available in 17 sizes including miniature 4 mm and 6 mm sizes for neonatal anatomy;
- Are capable of capturing quick measurements immediately after attachment.



COnfidence Flowprobes applied on Dacron grafts: COnfidence Flowprobes® consist of a Flowprobe shell and a single-use soft, flexible Ultrafit liner that slips into the transducer shell to encircle the vessel and keep the vessel in place.

Documentation

Transonic OEM components have:

- CE-mark certification for the Clamp-on Flowsensor as a Class IIb device
- Transonic ISO13485:2016 and EN46001 certification statement as audited by BSI
- Flowmeter circuit board certification statement indicating that the board is designed under the Transonic Quality System and is equivalent in design and ultrasound performance to Transonic devices marketed in the USA under FDA product clearance.
- Flowboard and Flowsensor documentation of the QA tests to meet CE mark requirements, for the assembled OEM apparatus.

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