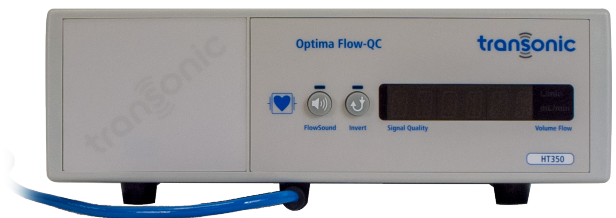


Know True Circuit & Pump Flows with HQD_XL Tubing Flowsensors & Optima HT350-Series Flowmeters

HQD_XL Clamp-on Tubing Flowsensors with HT350-Series Optima Flowmeters take gold standard transit-time ultrasound flow measurements to the next level. To measure true Delivered Blood Flow during ECMO & CP Bypass, Tubing Flowsensors clamp around circuit tubing to measure the flow within the tubing.

A range of Tubing Flowsensor sizes are available with measurement resolution down to 0.5 mL/min. Sensor size is determined by the outer diameter of the tubing on which the Sensor will be applied (see chart at bottom and on second side). Clinical Tubing Flowsensors are calibrated for blood at 37° degrees Celsius. A 24 inch (60 cm) sample of the tubing to be used is required in order to calibrate a Sensor precisely.

Transonic Tubing Flowsensors can measure most non-aerated liquids including saline and buffer solutions, blood and water. No physical contact is made with the fluid media.



HT350-Series single-channel Optima Flowmeter



Transonic XL-Series Flowsensors are reusable, factory-calibrated for specific tubing size, material, fluid temperature, and available for 1/8" to 3/4" OD tubing (3.2mm OD to 31.8mm OD)

HQD_XL SENSORS	TUBING (INCHES)			
	CAT #	ID	WALL	OD
HQD2XL	IN SIZES 2XL-5XL RATIO OF TUBING WALL THICKNESS TO OD MUST NOT EXCEED 1.5 FOR PVC; 1:3 FOR SILICONE			1/8
HQD3XL				3/16
HQD4XL				1/4
HQD5XL				5/16
HQD6XL	1/4	1/16		3/8
HQD7XL	1/4	3/32		7/16
HQD8XL	3/8	1/16		1/2
HQD9XL	3/8	3/32		9/16
HQD10XL	1/2	1/16		5/8
HQD11XL	1/2	3/32		11/16
HQD12XL	1/2	1/8		3/4

STOCK TUBING			
Procedure	Cat # HQD_XL Series	TUBING (inches) Inner Diameter Wall Thickness	Tygon Stock Tubing: If using tubing of different diameter or type, discuss tubing with a customer service representative.
PED CPB, ECMO	HQD6XL	1/4 x 1/16	Tygon ND 100-65; Tygon E-3603
	HQD7XL	1/4 x 3/32	Tygon ND 100-65; Tygon E-3603
	HQD8XL	3/8 x 1/16	Tygon ND 100-65; Tygon E-3603
ADULT CPB	HQD 9XL	3/8 x 3/32	Tygon ND 100-65; Tygon E-3603
	HQD 10XL	1/2 x 1/16	Tygon ND 100-65; Tygon E-3603
	HQD 11XL	1/2 x 3/32	Tygon ND 100-65; Tygon E-3603

HQD_XL Tubing Flowsensors

For Use with HT350/360 Optima Flowmeters during CP Bypass & ECMO

Specifications

SENSOR SIZE	BIDIRECTIONAL FLOW OUTPUTS			SYSTEM ACCURACY SPECIFICATIONS ²		ULTRASOUND FREQUENCY
	RESOLUTION ¹	STANDARD FLOW SCALE	MAX FLOW (STD SCALE)	MAX ZERO OFFSET	ABSOLUTE ACCURACY	
	mL/min	1V output in mL/min	5V output in L/min	mL/min	% of reading	MHz
HQD2XL	0.5	200	1	± 4.0	± 10	3.6
HQD3XL	1.0	400	2	± 8.0	± 10	3.6
HQD4XL	1.0	400	2	± 8.0	± 10	2.4
HQD5XL	1.0	400	2	± 8.0	± 10	2.4
HQD6XL	2.5	1 L	5	± 15	± 10	2.4
HQD7XL	5	2 L	10	± 30	± 10	1.8
HQD8XL	5	2 L	10	± 30	± 10	1.8
HQD9XL	5	2 L	10	± 30	± 10	1.8
HQD10XL	10	4 L	20	± 60	± 10	1.2
HQD11XL	10	4 L	20	± 60	± 10	1.2
HQD12XL	10	4 L	20	± 60	± 10	1.2

Calibration is dependent on tubing material, wall thickness, ultrasound velocity of liquid flowing through the tube & temperature. Resolution represents the smallest detectable flow change at 0.1 Hz filter (average flow output).