



- non-invasive flow measurement of liquids
- no additional shear stress
- for use on flexible tubing
- fully compatible with the BioProTT™ FlowTrack Series
- economical—designed for long-term use

Technical Specification

	up to OD 5/8"	up to OD 3/4"	up to OD 1-1/8"	up to OD 1-5/8"
Size (H x W x D)	25 x 33 x 45 mm	27 x 38 x 51 mm	35 x 43 x 69 mm	46 x 56 x 84 mm
Weight Transducer Head	52 g	72 g	140 - 160 g	295 - 315 g
Total Weight (incl. cable and plug)	137 g	153 g	225 - 245 g	380 - 400 g
Housing and Lid Material	epoxy resin, aluminum, brass		polymeric compound, aluminum, brass	
Cable Length	2.9 m ±5 cm			
IP-Code	<p>Please note: It is possible to adjust the cable length as long as the total length (incl. extension cable) does not exceed 4 m.</p> sensor head and cable: IP67 sensor connector: IP67 in mated condition			
Compatibility	BioProTT™ FlowTrack Series			
Connector plug	16-pin round plug			
Expected Product Life	10 years			

Accuracy* (in Combination with a BioProTT™ FlowTrack Device)

Outer Tubing Diameter (OD)	Accuracy	Resolution
up to OD 3/4"	±3% of reading ±20 ml/min	The resolution depends on the respective measurement system.
up to OD 7/8"	±3% of reading ±80 ml/min	
up to OD 1-1/8"	±3% of reading ±200 ml/min	
up to OD 1-5/8"	±3% of reading ±400 ml/min	

***Please note:**

The accuracy largely depends on the calibration parameters. The specified accuracies were determined under the following conditions: Medium: Water; Medium Temperature: Calibration Temperature; Straight Inlet Section: 15 x Inner Diameter (ID) of the tube; fully developed flow profile (i.e. system was given time to adjust to ambient temperature; tube was fully filled with liquid; steady flow); Tubing: Raumedic ECC Blood Line™ PVC (3/8" x 3/32"). The installation position of the BioProTT™ Clamp-On Transducer as well as the positioning of pumps and valves within the circuit impact the measurement and must be taken into account when it comes to the accuracy of the BioProTT™ FlowMeasurement System.

Adjustment and Calibration

Recommended tube type	flexible, non-reinforced tubing, e.g. (platinum cured) silicone, thermo-plastic elastomers (TPE), PVC, polyurethane
Medium type	liquids including buffer solutions, cell culture media, fermentation media, hydrocarbons, nutrition media, salines solutions, water, blood, blood substitutes Please note: Due to safety and hygienic reasons, the adjustment is carried out using water or, in some cases, Glycerol.
Medium Operating Temperature	4 °C to 45 °C (40 °F to 113 °F)
Calibration Tables	<ul style="list-style-type: none"> • up to seven calibration tables can be stored to each sensor plug for different applications • on-site calibration is possible, as is the use of a customer-specific calibration factor to enhance accuracy

BioProTT™ Clamp-On Transducer

Range of BioProTT™ Clamp-On Transducers and Their Flow Measurement Range

Size*	Qmin**	Qmax**	Tube Size***		
			ID [in]	WT [in]	OD [in]
BCT 1/8" x 1/16"	300 ml/min	2 500 ml/min	1/8	1/16	1/4
BCT 11/64" x 3/64"	300 ml/min	6 000 ml/min	11/64	3/64	17/64
BCT 3/16" x 1/16"	300 ml/min	6 000 ml/min	3/16	1/16	5/16
BCT 1/4" x 1/16"	300 ml/min	8 000 ml/min	1/4	1/16	3/8
BCT 1/4" x 3/32"	300 ml/min	8 000 ml/min	1/4	1/16	7/16
BCT 3/8" x 1/16"	300 ml/min	10 000 ml/min	3/8	1/8	1/2
BCT 3/8" x 3/32"	300 ml/min	10 000 ml/min	3/8	3/32	9/16
BCT 3/8" x 1/8"	300 ml/min	10 000 ml/min	1/8	1/8	5/8
BCT 1/2" x 3/32"	300 ml/min	20 000 ml/min	1/2	3/32	11/16
BCT 1/2" x 1/8"	300 ml/min	20 000 ml/min	1/2	1/8	3/4
BCT 1/2" x 3/16"	300 ml/min	20 000 ml/min	1/2	3/16	7/8
BCT 3/4" x 1/8"	1 500 ml/min	50 000 ml/min	3/4	1/8	1
BCT 3/4" x 3/16"	1 500 ml/min	50 000 ml/min	3/4	3/16	1-1/8
BCT 1" x 1/8"	4 000 ml/min	up to 100 000 ml/min	1	1/8	1-1/4
BCT 1" x 3/16"	4 000 ml/min	up to 100 000 ml/min	1	3/16	1-3/8
BCT 1-1/4" x 3/16"	4 000 ml/min	up to 100 000 ml/min	1-1/4	3/16	1-5/8

*Custom sizes are available upon request.

****Please note:**

- While a measurement is possible outside the given flow measurement range, the accuracy indicated above is only valid within that range.
- The possible Qmax depends on the tubing.

*** ID = Inner Diameter; WT = Wall Thickness; OD = Outer Diameter

Ambient Conditions during Transport, Storage, and Operation

Transport and Storage

Atmospheric Pressure	70 kPa to 106 kPa
Temperature Range	-20 °C to 55 °C (-4 °F to 131 °F)
Relative Humidity	10 % to 96 % (non-condensing)

Operation

Atmospheric Pressure	70 kPa to 106 kPa
Operating Altitude	up to 3 000 m (9842 feet)
Temperature Range	10 °C to 40 °C (50 °F to 104 °F)
Relative Humidity	10 % to 96 % (non-condensing)

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