



- Transit-time ultrasonic liquid flow measurement
- Non-invasive Clamp-On Transducers for flexible tubing
- Easy to install – no need to splice lines or stop process
- Does not induce additional shear stress
- Economical – reusable transducers last for years.

## Technical Specification

Features	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 / plug)	137 g	153 g	225 – 245 g	380 – 400 g
Cable length	2.9 m	2.9 m	2.9 m	2.9 m
IP-Code	IP 67	IP 67	IP 67	IP 67
Housing / lid material	Epoxy resin, aluminum, stainless steel		Polymeric compound, aluminum, stainless steel	
Cleaning and disinfection	Disinfect easily using alcohol based surface cleaners			
Compatible FlowMeters	All BioProTT™ FlowTrack or FlowMCP			

## Accuracy and Resolution (in Combination with BioProTT™ FlowMeters)

Outer Tubing Diameter (OD)	Accuracy	Resolution
up to OD 3/4"	± 3% of reading ± 20 ml/min	2 ml/min
up to OD 7/8"	± 3% of reading ± 80 ml/min	2 ml/min
up to OD 1-1/8"	± 3% of reading ± 200 ml/min	3 ml/min
up to OD 1-5/8"	± 3% of reading ± 400 ml/min	4 ml/min

## Calibration

<b>Tubing types</b>	Flexible tubing, e.g. (platinum cured) silicone, thermoplastic elastomers (TPE), PVC, polyurethane
<b>Medium types</b>	Liquids including buffer solutions, cell culture media, fermentation media, hydrocarbons, nutrition media, saline solutions, water, blood, blood substitutes
<b>Medium operating temperature</b>	4 to 50 °C (40 to 122 °F)
<b>Calibration Tables</b>	Up to seven (7) calibration tables can be programmed in each transducer's electronic storage. On-site calibration adjustment with user adaptable calibration factor to enhance accuracy

**Note:**

The specified accuracies were determined under following conditions: Medium: Water, Medium temperature: Calibration temperature ± 5 °C ( ± 9 °F), Straight inlet section: 10 x inner diameter (ID) of tubing, fully developed flow profile, Tubing: Raumedic-ECC-Blood Line™ PVC (3/8" x 3/32") with acoustic couplant applied. As the measurement allows a maximum flexibility with respect to positioning the sensor, the given accuracy is a standard under the reference conditions.

# BioProTT™ Clamp-On Transducer

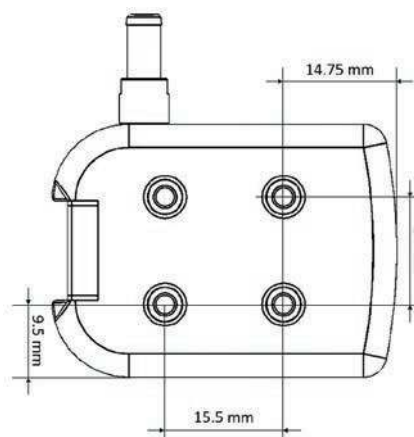
## Transducer Sizes and Flow Measurement Range

Type	Maximum Flow Range*	Tube Size					
		ID [in]	WT [in]	OD [in]	ID [mm]	WT [mm]	OD [mm]
<b>BioProTT™ Clamp-On Transducer</b>	[l/min]						
BCT 1/8 x 1/16"	up to ± 4	1/8	1/16	1/4	3.18	1.59	6.35
BCT 11/64 x 3/64"	up to ± 6	11/64	3/64	17/64	4.30	1.25	6.80
BCT 3/16 x 1/16"	up to ± 6	3/16	1/16	5/16	4.76	1.59	7.94
BCT 1/4 x 1/16"	up to ± 8	1/4	1/16	3/8	6.35	1.59	9.53
BCT 1/4 x 3/32"	up to ± 8	1/4	3/32	7/16	6.35	2.38	11.11
BCT 3/8 x 1/16"	up to ± 10	3/8	1/16	1/2	9.53	1.59	12.70
BCT 3/8 x 3/32"	up to ± 10	3/8	3/32	9/16	9.53	2.38	14.29
BCT 3/8 x 1/8"	up to ± 10	3/8	1/8	5/8	9.53	3.18	15.88
BCT 1/2 x 3/32"	up to ± 20	1/2	3/32	11/16	12.70	2.38	17.46
BCT 1/2 x 1/8"	up to ± 20	1/2	1/8	3/4	12.70	3.18	19.05
BCT 1/2 x 3/16"	up to ± 20	1/2	3/16	7/8	12.70	4.76	22.23
BCT 3/4 x 1/8"	up to ± 50	3/4	1/8	1	19.05	3.18	25.40
BCT 3/4 x 3/16"	up to ± 50	3/4	3/16	1 - 1/8	19.05	4.76	28.56
BCT 1 x 1/8"	up to ± 100	1	1/8	1 - 1/4	25.40	3.18	31.75
BCT 1 x 3/16"	up to ± 100	1	3/16	1 - 3/8	25.40	4.76	34.93
BCT 1-1/4 x 3/16"	up to ± 100	1 1/4	3/16	1 - 5/8	31.75	4.76	41.28

**Note:** Custom sizes on request. \* Qmax depends on medium and tube size and can be customized for every calibration table.

## Ambient Conditions

<b>Air pressure</b>	70 to 106 kPa
<b>Operating altitude</b>	up to 3000 m (9842 feet)
<b>Storage temperature range</b>	-20 to 45 °C (-4 to 113 °F)
<b>Transport temperature range</b>	-20 to 55 °C (-4 to 131 °F)
<b>Humidity storage, transport and operation</b>	10 to 96 % (non-condensing)



## Optional Mounting Feature

<b>Thread size</b>	M3
<b>Recommended thread length of the screw in the base body</b>	4 mm
<b>Tightening torque</b>	max. 0.7 Nm
<b>Maximum load</b>	2 kg

## em-tec

em-tec GmbH  
 Lerchenberg 20  
 86923 Finning, Germany  
 P: +49 8806 9236 0  
 F: +49 8806 9236 50  
 E: em-tec-info@psgdover.com  
 em-tec.de