



# Transonic Precision Flowprobes

# Perivascular Flowprobe Specifications

## PS-Series, PR-Series, PAX-Series, PMP- & V-Series

PRECISION PROBE SERIES	VESSEL OD mm MA-PROBES acute application	VESSEL OD mm MC-PROBES chronic application	BIDIRECTIONAL FLOW				Zero Offset <sup>4</sup> ml/min	ACCURACY		ULTRASOUND FREQUENCY
			Resolution <sup>1</sup> ml/min	Scale Low Flow ml/min	Settings <sup>2</sup> Normal Flow ml/min	Maximum Range <sup>3</sup> ml/min		Absolute Accuracy <sup>5</sup> %	Relative Accuracy %	
<b>PS-SERIES NANOPROBES</b>										
0.5PS	0.3 - 0.5	0.3 - 0.48	0.03	1.5	6	30	± 0.12	± 15	± 2	14.4
0.7PS	0.5 - 0.7	0.4 - 0.7	0.05	2.5	10	50	± 0.2	± 15	± 2	9.6
1.5PS	1.2 - 1.5	1.2 - 1.5	0.075	10	40	200	± 0.8	± 15	± 2	4.8
<b>V-SERIES</b>										
0.5 V	0.25 - 0.5	NA	0.05	2.5	10	50	± 0.25	± 15	± 3	7.2
0.7 V	0.35 - 0.7	NA	0.075	5.0	20	100	± 0.5	± 15	± 3	4.8
<b>PR-SERIES</b>										
1PR	0.7 - 1.2	0.7 - 1.0	0.05	5	20	100	± 0.2	± 10	± 2	7.2
1.5PR	1.2 - 1.8	1.0 - 1.5	0.075	10	40	200	± 0.4	± 10	± 2	4.8
<b>PS-SERIES</b>										
2PS	1.5 - 2.0	1.3 - 1.8	0.1	25	100	500	± 1	± 10	± 2	3.6
2.5PS	1.8 - 2.5	1.5 - 2.4	0.1	25	100	500	± 1	± 10	± 2	3.6
3PS	2.5 - 3.7	2.4 - 3.4	0.4	50	200	1L	± 2	± 10	± 2	3.6
4PS	3.3 - 4.4	3.0 - 4.0	0.8	100	400	2L	± 4	± 10	± 2	2.4
6PS	4.4 - 6.6	4.0 - 6.0	2.0	250	1L	5L	± 10	± 10	± 2	1.8
8PS	6.6 - 8.8	5.8 - 8.0	4.0	500	2L	10L	± 20	± 10	± 2	1.2
10PS	8.3 - 11.0	7.3 - 10.0	8.0	500	2L	10L	± 20	± 10	± 2	1.2
12PS	9.8 - 13.0	8.6 - 12.0	8.0	1L	4L	20L	± 40	± 10	± 2	0.9
14PS	11.3 - 15.0	10.0 - 14.0	16.0	1L	4L	20L	± 40	± 10	± 2	0.9
16PS	13.3 - 17.7	12.0 - 16.0	20.0	2.5L	10L	50L	± 100	± 10	± 2	0.6
20PS	16.0 - 21.0	14.0 - 19.0	40.0	2.5L	10L	50L	± 100	± 10	± 2	0.6
<b>PAX-SERIES CARDIAC OUTPUT PROBES</b>										
8 PAX	6 - 8	6 - 7	4	500	2L	10L	± 20	± 10	± 2	3.6
10 PAX	8 - 10	8 - 9	4	500	2L	10L	± 20	± 10	± 2	3.6
12 PAX	9 - 12	9 - 11	8	1L	4L	20L	± 40	± 10	± 2	2.4
14 PAX	11 - 14	11 - 13	8	1L	4L	20L	± 40	± 10	± 2	2.4
16 PAX	12 - 16	12 - 15	20	2.5L	10L	50L	± 100	± 10	± 2	1.8
20 PAX	16 - 20	16 - 19	20	2.5L	10L	50L	± 100	± 10	± 2	1.8
24 PAX	19 - 24	19 - 23	40	5L	20L	100L	± 200	± 10	± 2	1.2
28 PAX	22 - 28	22 - 27	40	5L	20L	100L	± 200	± 10	± 2	1.2
32 PAX	25 - 32	25 - 31	80	10L	40L	200L	± 400	± 10	± 2	0.9
36 PAX	28 - 36	28 - 35	80	10L	40L	200L	± 400	± 10	± 2	0.9
<b>PMP-SERIES HANDLE PROBES</b>										
2 PMP	1.5 - 2.5	NA	0.1	25	100	0.5	± 1	± 15	± 2	3.6
3 PMP	2.5 - 3.7	NA	0.4	50	200	1.0	± 2	± 15	± 2	3.6
4 PMP	3.3 - 4.4	NA	0.8	100	400	2.0	± 4	± 15	± 2	2.4
6 PMP	4.4 - 6.6	NA	2.0	250	1L	5.0	± 10	± 15	± 2	1.8
8 PMP	6.6 - 8.8	NA	4.0	500	2L	10.0	± 20	± 15	± 2	1.2
10 PMP	8.3 - 11.0	NA	4.0	500	2L	10.0	± 20	± 15	± 2	1.2
12 PMP	9.8 - 13.0	NA	8.0	1L	4L	20.0	± 40	± 15	± 2	0.9
14 PMP	11.3 - 15.0	NA	16.0	1L	4L	20.0	± 40	± 15	± 2	0.9

<sup>1</sup> Resolution: represents the smallest detectable change in flow, a factor in accuracy.

<sup>2</sup> Transonic flowprobes operate in one of two scales: low flow or normal flow, determined by the range of flow under study. Flowprobes measure bidirectional flow up to 5 times the selected scale setting. The scale settings calibrate the 1 volt reference signal for data collection; the linear range of the flowmeter is equal to ± 5 volts. By using the "low flow button", measurement sensitivity is increased by a factor of four. For example, a 3PS probe set on "lo flo" can process and display up to 5 x 50 ml/min, or 250 ml/min. This linear overrange is important for the proper recording of highly pulsatile peak flows.

<sup>3</sup> Maximum Range for each probe reflects the highest flow rate that can be processed and displayed via the analog connector.

<sup>4</sup> Zero offset on individual probes is often lower than this value and will be specified in the Probe Data Sheet supplied with the probe.

<sup>5</sup> In all cases, the Absolute Accuracy percentage can be raised to relative accuracy levels (± 2%) by *in situ* calibration.



### PS-Series, PR-Series, PAX-Series, PMP- & V-Series

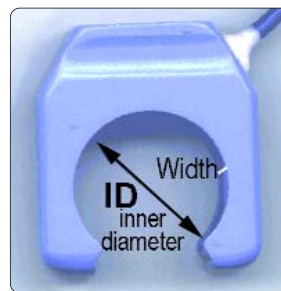
NANOPROBE	WEIGHT <u>gram</u>	LENGTH <u>mm</u>	WIDTH <u>mm</u>	DEPTH <u>mm</u>	LUMEN <u>mm</u>	MAX. CABLE LENGTH <u>cm</u>	CABLE DIAMETER <u>mm</u>
0.5 PS	0.09	3.2	2.3	1.0	0.47	60	1.0
0.7 PS	0.12	3.2	2.7	1.2	0.70	60	1.0
1.5 PS	0.23	4.25	3.75	2.0	1.65	60	1.25

V- SERIES	PROBE BODY			REFLECTOR			CABLE		
	WGT <u>gram</u>	Length <u>mm</u>	WidthP <u>mm</u>	Height1 <u>mm</u>	Height2 <u>mm</u>	WidthR <u>mm</u>	HANDLE <u>cm</u>	LENGTH <u>cm</u>	DIAMETER <u>mm</u>
0.5 V	0.2	6.5	4.0	1.1	1.5	2.0	5	60	1.5
0.7 V	0.25	7.6	3.5	1.8	1.7	2.5	5	60	1.5

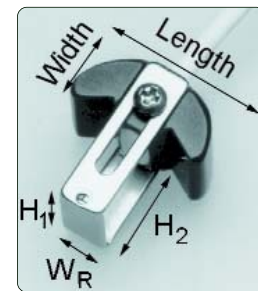
PR- SERIES	PROBE BODY			REFLECTOR			CABLE		
	WGT <u>gram</u>	Length <u>mm</u>	WidthP <u>mm</u>	Height1 <u>mm</u>	Height2 <u>mm</u>	WidthR <u>mm</u>	LENGTH <u>m</u>	DIAMETER <u>mm</u>	
1 PR	0.2	6.5	4.0	1.1	1.5	2.0	60	1.5	
1.5 PR	0.25	7.6	3.5	1.8	1.7	2.5	60	1.5	

PS- SERIES	PROBE BODY			REFLECTOR			CABLE		
	WGT <u>gram</u>	Length <u>mm</u>	WidthP <u>mm</u>	Height1 <u>mm</u>	Height2 <u>mm</u>	WidthR <u>mm</u>	LENGTH <u>m</u>	DIAMETER <u>mm</u>	
2 PS	0.3	8.7	3.3	2.5	2.0	3.3	1.0	1.5	
2.5 PS	0.3	8.7	3.3	2.5	3.2	3.3	1.0	1.5	
3 PS	1.2	9.0	5.0	3.7	4.0	3.5	1.0	1.5	
4 PS	1.5	13.3	6.0	4.4	5.5	3.8	1.0	2.0	
6 PS	2.7	13.5	6.7	6.6	7.8	4.0	1.0	2.5	
8 PS	5.0	18.8	7.5	8.8	8.2	6.0	1.0	2.5	
10 PS	5.3	18.7	8.5	11.0	10.0	6.0	1.0	2.5	
12 PS	9.3	22.5	8.5	13.0	12.0	6.2	1.0	3.0	
14 PS	11.6	26.2	8.5	15.0	14.5	7.5	1.0	3.0	
16 PS	16.6	36.0	10.0	17.7	17.0	9.0	1.0	3.0	
20 PS	20.2	31.0	9.0	21.0	21.0	9.0	1.0	3.0	

PAX- SERIES	PROBE			CABLE	
	WGT <u>gram</u>	ID inner diameter <u>mm</u>	Width <u>mm</u>	LENGTH <u>m</u>	DIAMETER <u>mm</u>
8 PAX	3	8	5	2.0	1.5
10 PAX	5	10	7.4	2.0	1.5
12 PAX	7	12	8	2.0	1.5
14 PAX	12	14	9	2.0	1.5
16 PAX	14	16	10	2.0	2.0
20 PAX	15	20	12	2.0	3.0
24 PAX	20	24	15	2.0	3.0
28 PAX	30	28	17	2.0	3.0
32 PAX	40	32	20	2.0	3.0
36 PAX	50	36	22	2.0	3.0

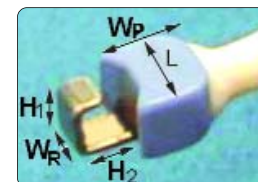


PAX-SERIES



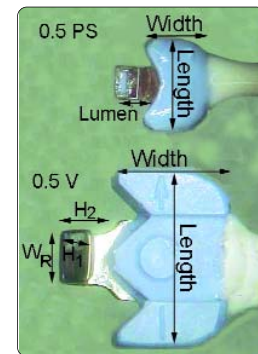
PS-SERIES

PMP SERIES	PROBE BODY			REFLECTOR			LENGTH w/HANDLE <u>mm</u>	CABLE	
	WGT <u>gram</u>	Length <u>mm</u>	WidthP <u>mm</u>	Height1 <u>mm</u>	Height2 <u>mm</u>	WidthR <u>mm</u>		LENGTH <u>m</u>	DIAMETER <u>mm</u>
2 PMP	14	7	5.1	2.7	3.0	3.0	175	2.0	2.2
3 PMP	17	9	7.2	3.5	4.0	4.0	175	2.0	2.2
4 PMP	17	12	9.8	4.7	5.0	5.3	175	2.0	2.2
6 PMP	17	14	9.3	6.6	7.8	4.3	175	2.0	2.2
8 PMP	21	19	9.3	8.8	8.2	6.0	175	2.0	2.2
10 PMP	21	19	8.5	11.0	10.0	6.1	175	2.0	2.2
12 PMP	21	22	9.5	13.0	12.0	6.3	175	2.0	2.2
14 PMP	26	27	11.0	17.5	14.5	7.6	175	2.0	2.2



PMP-HANDLE  
PROBE BODY

**Key**  
**PROBE BODY**  
 L = length of probe body along vessel  
 Wp = width of probe body  
 WGT = without connector  
**REFLECTOR**  
 WR = width of reflector  
 H1 = height of reflector  
 H2 = distance from end of reflector to body of probe.  
 Approximates the probe's lumen.



NANOPROBE & V PROBE  
COMPARISON

