

# Vortex Flow Meter

- Well suited for liquids, gases, & steam
- No moving parts
- 4...20mA, pulse & RS485 Modbus
- Medium temperatures up to 662°F (350°C)
- ANSI B16.5 flanges up to 12"
- ANSI class 150, 300, & 600
- EN1092-1 flanges up to DN 300
- Wafer flanges



## About

The P79 Vortex Flowmeter is engineered for precise measurement of liquids, gases, and steam. Leveraging the vortex shedding principle, it offers stable performance with minimal pressure loss and no moving parts, making it maintenance-free. This versatile flowmeter supports high-temperature applications up to 662°F (350°C) and is available in various configurations.. It delivers accurate readings across a broad flow range, meeting the demands of industrial environments.

## Applications

- ✓ Steam Measurement
- ✓ Gas Measurement
- ✓ Liquid Measurement
- ✓ Energy Management
- ✓ HVAC Systems
- ✓ Petrochemical Industry
- ✓ Food & Beverage
- ✓ Pharmaceuticals
- ✓ Power Plants
- ✓ Pulp & Paper Industry

# Flow Rates

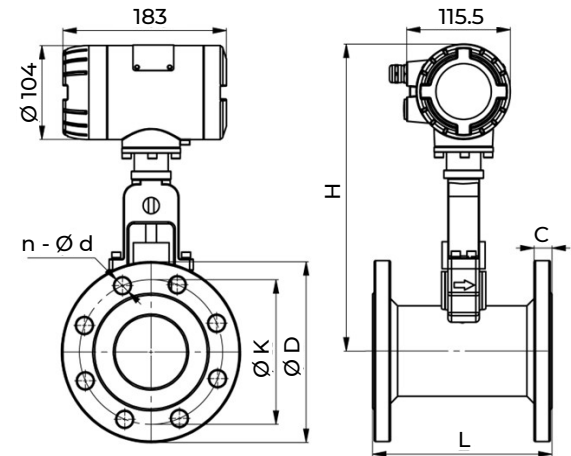
## Measuring Range

Liquid		Gas		Steam		Pipe Diameter	
Gallons/minute	m <sup>3</sup> /h	CFM	m <sup>3</sup> /h	CFM	m <sup>3</sup> /h	Inches	mm
1.3...26	0.3...6	1.8...17	3...30	1.5...23	2.5...40	½"	DN15
1.8...4	0.4...10	2.4...23	4...40	1.8...47	3...80	¾"	DN20
2.2...61	0.5...14	3...35	5...60	2.4...70	4...120	1"	DN25
2.6...8	0.6...20	3.6...58	6...100	3...117	5...200	1 ¼"	DN32
3.5...132	0.8...30	4.7...117	8...200	6...176	10...300	1 ½"	DN40
4.4...220	1...50	5.9...176	10...300	8.9...264	15...450	2"	DN50
13.2...396	3...90	17.7...353	30...600	17...470	30...800	2 ½"	DN65
17.6...572	4...130	23...470	40...800	23...765	40...1300	3"	DN80
26.4...880	6...200	35...706	60...1200	35...1177	60...2000	4"	DN100
44...1320	10...300	58...1177	100...2000	58...1765	100...3000	5"	DN125
70...1981	16...450	94...1765	160...3000	94...2648	160...4500	6"	DN150
132...3522	30...800	176...2942	300...5000	176...5297	300...9000	8"	DN200 (Flange Only)
264...5283	60...1200	353...4120	600...7000	353...7062	600...12000	10"	DN250 (Flange Only)
352...8806	80...2000	470...5885	800...10000	470...9417	800...16000	12"	DN300 (Flange Only)



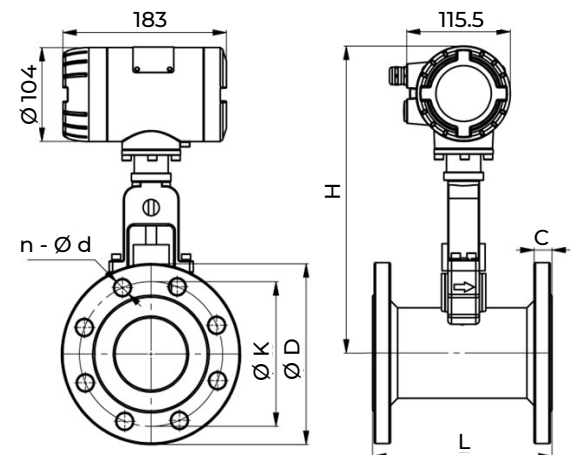
# ANSI Class B16.5 Dimensions

## ANSI Class 150 Flange, ASME B16.5 with Integrated Transmitter



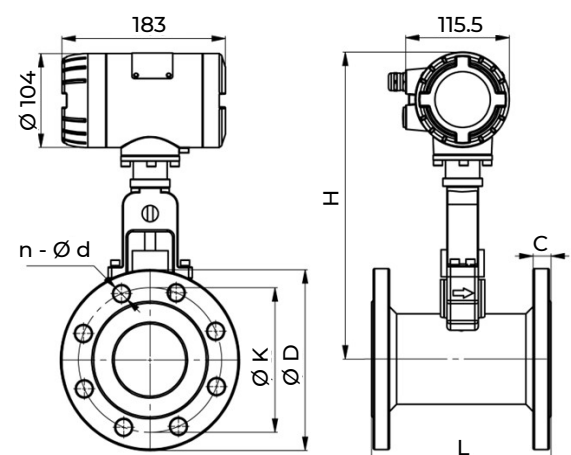
Nominal Diameter	Flowmeter		Flange				Pressure Rate (PSI)
	L	H	C	D	K	n - Ø d	
½"	145	315	11.5	90	60.5	4 - Ø 16	Class 150
¾"	180	315	13	100	70	4 - Ø 16	
1"	200	315	14.5	110	79.5	4 - Ø 16	
1 ¼"	200	322	16	120	89	4 - Ø 16	
1 ½"	200	322	17.5	130	98.5	4 - Ø 16	
2"	200	325	19.5	150	120.5	4 - Ø 18	
2 ½"	200	335	22.5	180	139.5	4 - Ø 18	
3"	200	340	24	190	152.5	4 - Ø 18	
4"	250	350	24	230	190.5	8 - Ø 18	
5"	250	362	24	255	216	8 - Ø 22	
6"	300	375	25.5	280	241.5	8 - Ø 22	
8"	350	400	29	345	298.5	8 - Ø 22	
10"	400	425	30.5	405	365	12 - Ø 26	
12"	400	450	32	485	432	12 - Ø 26	

## ANSI Class 300 Flange, ASME B16.5 with Integrated Transmitter



Nominal Diameter	Flowmeter		Flange				Pressure Rate (PSI)
	L	H	C	D	K	n - Ø d	
½"	145	315	14.5	95	66.5	4 - Ø 16	Class 300
¾"	180	315	16	120	82.5	4 - Ø 18	
1"	200	315	17.5	125	89	4 - Ø 18	
1 ¼"	200	322	19.5	135	98.5	4 - Ø 18	
1 ½"	200	322	21	155	114.5	4 - Ø 22	
2"	200	325	22.5	165	127	8 - Ø 18	
2 ½"	200	335	25.5	190	149	8 - Ø 22	
3"	200	340	29	210	168.5	8 - Ø 22	
4"	250	350	32	255	200	8 - Ø 22	
5"	250	362	35	280	235	8 - Ø 22	
6"	300	375	37	320	270	12 - Ø 22	
8"	350	400	41.5	380	330	12 - Ø 26	
10"	400	425	48	445	387.5	16 - Ø 29.5	
12"	400	450	51	520	451	16 - Ø 32.5	

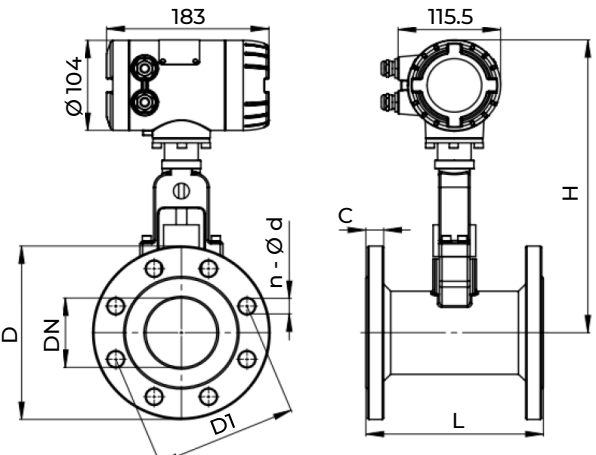
## ANSI Class 600 Flange, ASME B16.5 with Integrated Transmitter



Nominal Diameter	Flowmeter		Flange				Pressure Rate (MPa)
	L	H	C	D	K	n - Ø d	
½"	145	315	14.5	95	66.5	4 - Ø 16	Class 600
¾"	180	315	16	120	82.5	4 - Ø 18	
1"	200	315	17.5	125	89	4 - Ø 18	
1 ¼"	200	322	21	135	98.5	4 - Ø 18	
1 ½"	200	322	22.5	155	114.5	4 - Ø 22	
2"	200	325	25.5	165	127	8 - Ø 18	
2 ½"	200	335	29	190	149	8 - Ø 22	
3"	200	340	32	210	168.5	8 - Ø 22	
4"	250	350	38.5	275	216	8 - Ø 26	
5"	250	362	44.5	330	267	8 - Ø 29.5	
6"	300	375	48	355	292	12 - Ø 29.5	
8"	350	400	55.5	420	349	12 - Ø 32.5	
10"	400	425	63.5	510	432	16 - Ø 35.5	
12"	400	450	67	560	489	20 - Ø 35.5	

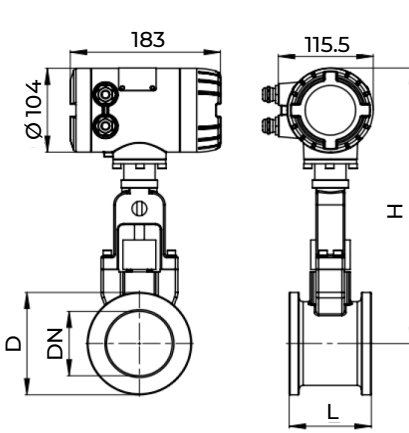
# Dimensions EN1092-1 Flanges

## Dimensions (Millimeters) – Flange



Nominal Diameter	Flowmeter		Flange			Pressure Rate (MPa)	Weight (kg)
	L	H	D	D1	n - Ø d		
15	145	315	95	65	4-Ø14	4.0	7.2
20	180	315	105	75	4-Ø14		8.3
25	200	315	115	85	4-Ø14		8.6
32	200	322	140	100	4-Ø18		9
40	200	322	150	110	4-Ø18		11.4
50	200	325	165	125	4-Ø18		14.5
65	200	335	185	145	4-Ø18	1.6	17.5
80	200	200	200	160	8-Ø18		23
100	250	350	220	180	8-Ø18		32
125	250	362	250	210	8-Ø18		44
150	300	375	285	240	8-Ø22		56
200	350	400	340	295	12-Ø22		63.9
250	400	425	395	350	12-Ø22	1.0	73.9
300	400	450	445	400	12-Ø22		83.5

## Dimensions (Millimeters) – Wafer



Nominal Diameter	L	H	D
15	70	315	49.5
20	70	315	49.5
25	70	315	49.5
32	70	322	63
40	70	322	63
50	80	325	78
65	80	335	93.5
80	100	340	106.5
100	120	350	138
125	140	362	156
150	160	375	180

# Build Your Part Number

## Series P79

Example: P79MSE443E1T2X17D

### Output Signal - *select one*

<b>A</b>	4...20mA + Pulse Frequency 0...5KHz
<b>B</b>	4...20mA with HART + pulse frequency 0...5KHz
<b>M</b>	RS485 Modbus

### Medium - *select one*

<b>L</b>	Liquid
<b>G</b>	Gas
<b>S</b>	Steam (must select option X below)

### Accuracy Error Compensation - *select one*

<b>E1</b>	None
<b>E2</b>	Pressure Compensation (recommended for liquid and gas applications with dynamic pressure changes)
<b>E3</b>	Temperature Compensation (recommended for liquid and gas applications with dynamic temperature changes)
<b>E4</b>	Pressure + Temperature Compensation (must select for gas & steam applications)

### Process Connection Material

<b>42</b>	304 Stainless Steel (standard)
<b>43</b>	316L Stainless Steel

### Electrical Connection - *select one*

<b>E1</b>	NPT ½" Threaded Hub
<b>E2</b>	M20 x 1.5 Cable gland

### Medium Temperature - *select one*

<b>T1</b>	-40...482°F (-40...250°C) Standard
<b>T2</b>	-40...662°F (-40...350°C)

### Wetted Sensor Material - *select one*

<b>3S</b>	316L Stainless Steel (standard)
<b>3C</b>	Hastelloy C

### Ex-Proof - *select one*

<b>X1</b>	Non-Hazardous Area
<b>X2</b>	Hazardous Area

# Build Your Part Number

## Series P79

Example: **P79MSE443E1T2X17D**

### Process Connections – select one

#### ANSI Flange Class 150, ASME B16.5 – see page 3

5B	½"
5C	¾"
5D	1"
5E	1 ¼"
5F	1 ½"
5G	2"
5H	2 ½"
5J	3"
5K	4"
5L	5"
5M	6"
5N	8"
5P	10"
5Q	12"

#### ANSI Flange Class 300, ASME B16.5 – see page 3

6T	½"
6U	¾"
6V	1"
6W	1 ¼"
6X	1 ½"
6Y	2"
6Z	2 ½"
7A	3"
7B	4"
7C	5"
7D	6"
7E	8"
7F	10"
7G	12"

#### ANSI Flange Class 600, ASME B16.5 – see page 3

4A	½"
4B	¾"
4C	1"
4D	1 ¼"
4E	1 ½"
4F	2"
4G	2 ½"
4H	3"
4J	4"
4K	5"
4L	6"
4M	8"
4N	10"
4P	12"

# Build Your Part Number

## Series P79

Example: **P79MSE443E1T2X17D**

### Process Connections – select one

#### EN1092-1 Flange– see page 4

1J	DN15
1K	DN20
1L	DN25
1M	DN32
1N	DN40
1P	DN50
1Q	DN65
1R	DN80
1S	1DN00
1T	DN125
1U	DN150
1V	DN200
1W	DN250
1X	DN300

#### Wafer Design – see page 4

3U	15
3V	20
3W	25
3X	32
3Y	40
3Z	50
2A	65
2B	80
2C	100
2D	125
2E	150

#### NPT Male Threaded

9Q	½"
9R	¾"
9S	1"
9T	1 ¼"
9U	1 ½"
9V	2"

#### BSPP Male Threaded

4T	DN10
4U	DN15
4V	DN20
4W	DN25
4X	DN32
4Y	DN40
4Z	DN50

# Technical Parameters

Technical Parameters		
<b>Measuring</b>	Flow Ranges	See Flow Range table (Page 2)
	Accuracy	Liquids +/- 0.75% Gas & Steam +/- 1.5% (at steady pressure and temperature)
<b>Electrical</b>	Output Signal	4...20mA + Pulse Frequency 0...5KHz 4...20mA with HART + Pulse Frequency 0...5KHz RS485 Modbus
	Operating Voltage	18...30VDC
	Electrical Connection	M18 x 1.5 cable gland ½" NPT threaded hub
<b>Environmental</b>	Operating Temperature	Standard: -40...482°F (-40...250°C) High Temperature: -40...662°F (-40...350°C) Ex-proof: -40...176°F (-40...80°C)
	Ambient Temperature	Standard: -40...185°F (-40...85°C) Ex-proof: -22...140°F (-30...60°C) Sensor: -40...176°F (-40...80°C) Transmitter: 5...140°F (-15...60°C)
	Applicable Medium	Liquid Gas Steam
	Ambient Humidity	5...95% Relative Humidity
	Protection Class	IP65
	Ex-proof Optional	Exd II BT5 Gb
<b>Materials</b>	Sensor	316 Stainless Steel Hastelloy C
	Flange	Stainless Steel 304 Stainless Steel 316L
	Display	LCD
	Process Connection	Flange ANSI B16.5 Flange EN1092-1 Wafer

Reference Conditions of Measurement Accuracy	
Flow Range Setting	1.5 x Maximum Reading Value
Ambient Temperature	68°F (20°C)
Humidity	70% Relative Humidity
Atmospheric Pressure	14.94 + 1.45 PSI (103 + 10 kPa)
Medium Temperature	Water: 68°F (20°C) at 3 bar Air: 68°F (20°C) at Standard Atmospheric Pressure
Power	24 VDC +/- 15%
Stability Time	25 minutes