PAQUiN SENSORS
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Thermal Mass Flow Meter

- For dry air and dry gases
- 4...20mA, HART, RS485 Modbus, Pulse Frequency 0...5KHz
- 2 Galvanically isolated & user programmable relays for flow, temperature or one for each
- Stainless steel, Hastelloy C, and Titanium
- Process connections in ANSI flanges & NPT threads
- Exd II CT6 Gb for hazardous applications

About

The P85 is a high-performance thermal mass flowmeter designed for air and dry gas flow measurement using advanced heat transfer principles. Its robust construction supports applications in challenging environments, offering high accuracy (±1.5%), low-pressure loss, and a wide turndown ratio. With versatile material options and integrated or remote transmitter setups, the P85 provides a reliable and user-friendly solution for industries requiring precise and stable flow measurement.

Applications

- ✓ For air and dry gases
- ✓ Water Treatment Plants
- ✓ Power Plants
- ✓ Chips Manufacturing
- ✓ Chemical Processing
- ✓ Food & Beverage
- ✓ Oil & Gas
- ✓ Environmental Applications
- ✓ Industrial HVAC

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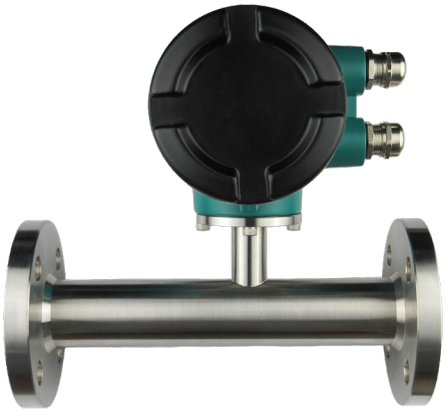
Flow Ranges

Flow Ranges			
Measurable Range		**Nominal Pipe Diameter**	
SCFM	**Nm³/h**	**Inches**	**mm**
0.2...37.4	0.3...60	½"	DN15
0.3...68.5	0.5...110	¾"	DN20
0.5...109	0.7...175	1"	DN25
0.8...180.7	1.2...290	1 ¼"	DN32
1.3...280.3	2...450	1 ½"	DN40
1.9...436.1	3...700	2"	DN50
3.2...747.6	5....1200	2 ½"	DN65
5...1121.5	8...1800	3"	DN80
7.5...1744.5	12...2800	4"	DN100



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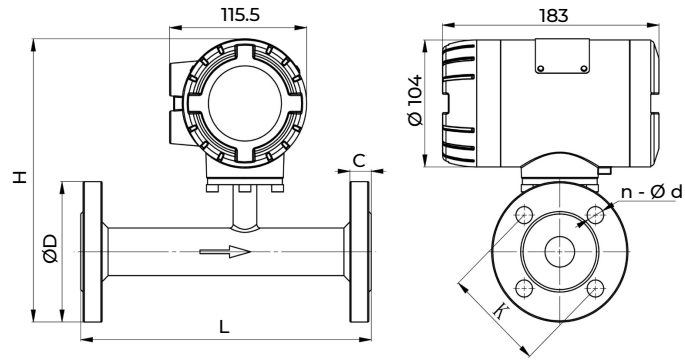
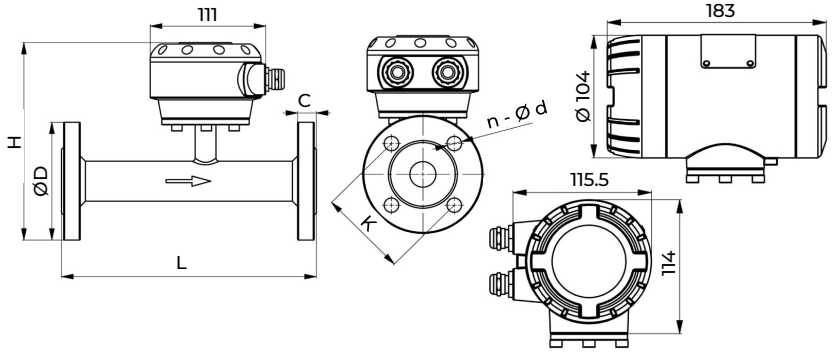
ANSI Flange Dimensions

ANSI Class 150 Flange, ASME B16.5 with Integrated Transmitter (Dimensions mm)



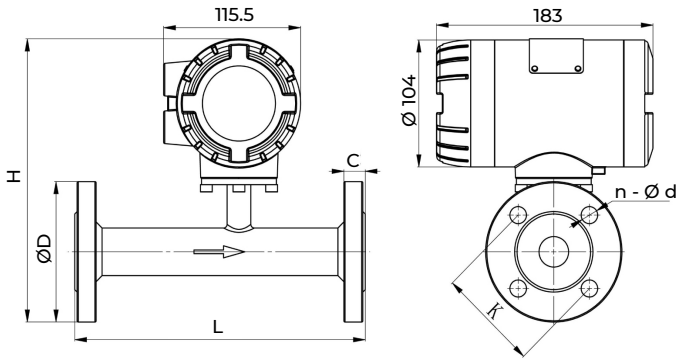
ANSI	L	H	D	K	n - Ø d	C	Pressure Rating
½"	200	218	90	60.5	4 – Ø 16	11.5	Class 150
¾"	200	228	100	70	4 – Ø 16	13	
1"	245	234	110	79.5	4 – Ø 16	14.5	
1 ¼"	245	255	120	89	4 – Ø 16	16	
1 ½"	245	320	130	98.5	4 – Ø 16	17.5	
2"	245	330	150	120.5	4 – Ø 18	19.5	
2 ½"	300	343	180	139.5	4 – Ø 18	22.5	
3"	300	359	190	152.5	4 – Ø 18	24	
4"	300	370	230	190.5	8 – Ø 18	24	

ANSI Class 150 Flange, ASME B16.5 with Remote Transmitter (Dimensions mm)



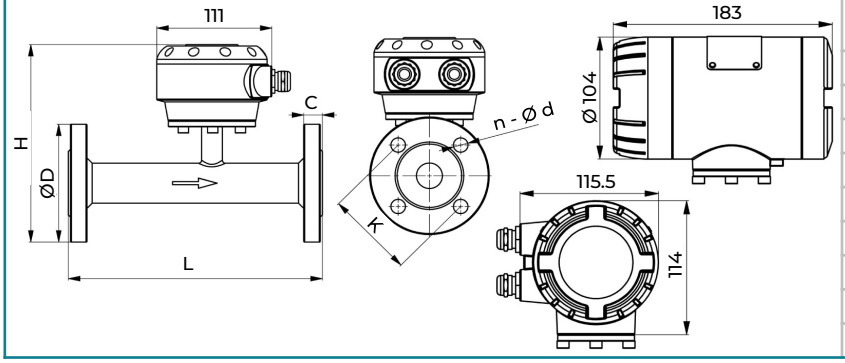
ANSI	L	H	D	K	n - Ø d	C	Pressure Rating
½"	200	161	90	60.5	4 – Ø 16	11.5	Class 150
¾"	200	171	100	70	4 – Ø 16	13	
1"	245	177	110	79.5	4 – Ø 16	14.5	
1 ¼"	245	198	120	89	4 – Ø 16	16	
1 ½"	245	207	130	98.5	4 – Ø 16	17.5	
2"	245	215	150	120.5	4 – Ø 18	19.5	
2 ½"	300	220	180	139.5	4 – Ø 18	22.5	
3"	300	227	190	152.5	4 – Ø 18	24	
4"	300	254	230	190.5	8 – Ø 18	24	

ANSI Class 300 Flange, ASME B16.5 with Integrated Transmitter (Dimensions mm)



ANSI	L	H	D	K	n - Ø d	C	Pressure Rating
½"	200	221	95	66.5	4 – Ø 16	14.5	Class 300
¾"	200	238	120	82.5	4 – Ø 18	16	
1"	245	242	125	89	4 – Ø 18	17.5	
1 ¼"	245	263	135	98.5	4 – Ø 18	19.5	
1 ½"	245	333	155	114.5	4 – Ø 22	21	
2"	245	338	165	127	8 – Ø 18	22.5	
2 ½"	300	348	190	149	8 – Ø 22	25.5	
3"	300	369	210	168.5	8 – Ø 22	29	
4"	300	383	255	200	8 – Ø 22	32	

ANSI Class 300 Flange, ASME B16.5 with Remote Transmitter (Dimensions mm)



ANSI	L	H	D	K	n - Ø d	C	Pressure Rating
½"	200	164	95	66.5	4 – Ø 16	14.5	Class 300
¾"	200	181	120	82.5	4 – Ø 18	16	
1"	245	185	125	89	4 – Ø 18	17.5	
1 ¼"	245	206	135	98.5	4 – Ø 18	19.5	
1 ½"	245	220	155	114.5	4 – Ø 22	21	
2"	245	223	165	127	8 – Ø 18	22.5	
2 ½"	300	225	190	149	8 – Ø 22	25.5	
3"	300	237	210	168.5	8 – Ø 22	29	
4"	300	267	255	200	8 – Ø 22	32	

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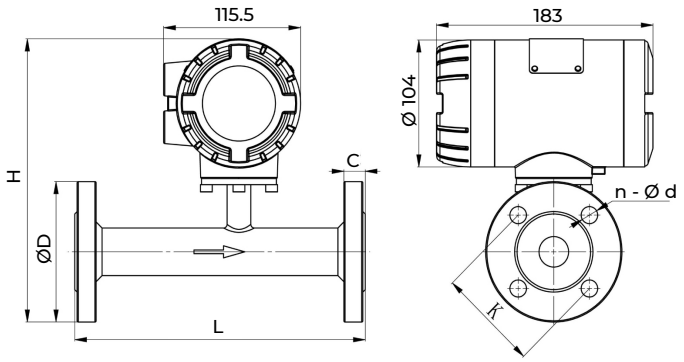
EN 1092-1 Flange Dimensions

EN 1092-1 Flange with Integrated Transmitter

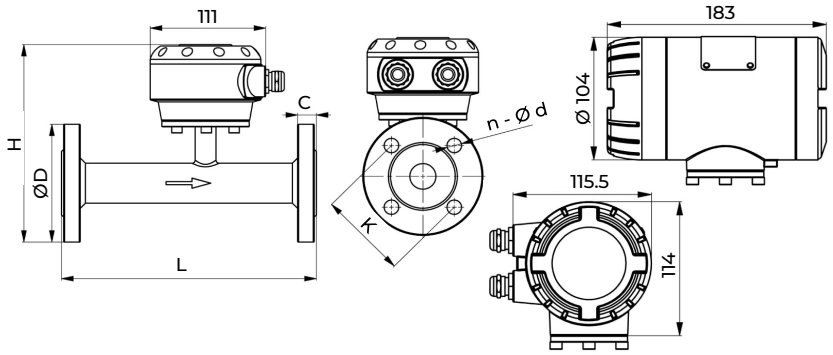
(Dimensions mm)



DN	L	H	D	K	n - Ø d	C	Pressure Rating
15	200	215	95	65	4 – Ø 14	14	PN40
20	200	225	105	75	4 – Ø 14	16	
25	245	231	115	85	4 – Ø 14	16	
32	245	245	140	100	4 – Ø 18	18	
40	245	310	150	110	4 – Ø 18	18	
50	245	322	165	125	4 – Ø 18	20	
65	300	340	185	145	4 – Ø 18	20	
80	300	354	200	160	8 – Ø 18	20	PN16
100	300	375	220	180	8 – Ø 18	22	

EN 1092-1 Flange with Remote Transmitter

(Dimensions mm)



DN	L	H	D	K	n - Ø d	C	Pressure Rating
15	200	158	95	65	4 – Ø 14	14	PN40
20	200	168	105	75	4 – Ø 14	16	
25	245	174	115	85	4 – Ø 14	16	
32	245	188	140	100	4 – Ø 18	18	
40	245	197	150	110	4 – Ø 18	18	
50	245	207	165	125	4 – Ø 18	20	
65	300	217	185	145	4 – Ø 18	20	
80	300	222	200	160	8 – Ø 18	20	PN16
100	300	259	220	180	8 – Ø 18	22	

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Build Your Part Number

Series P85

Example: P85BS2P5SUDE1CNFZ18F

Series
P85

Output Signal - *select one*	
A	4 ... 20 mA + pulse frequency 0...5 KHz
B	4 ... 20 mA (HART) + pulse frequency 0...5 KHz
C	RS485 Modbus

Flow Relays - *select one*	
S1	Without
S2	2 isolated & adjustable normally open relays (250VAC, 10A / 30VDC, 5A) Note: Relays are user programmable and can be set for flow, temperature or one of each

Protection Class - *select one*	
P5	IP65
P7	IP68 (for remote transmitter only)

Wetted Sensor Material - *select one*	
S	316L Stainless Steel (standard)
H	Hastelloy C
T	Titanium

Process Connection Material - *select one*	
U	304 Stainless Steel
V	316L Stainless Steel

Power Supply - *select one*	
D	18...36 VDC
A	85...265 VAC

Electrical Connection - *select one*	
E1	NPT ½" Threaded hub
E2	M20 x 1.5 Cable gland

Connectivity from Sensor to Remote Transmitter - *select one* (note: select only for remote transmitter configurations)	
CN	Without
CY	32.81 ft Cable Length (10m)

Media Temperature - *select one*	
F	-13...248°F (-25...120°C) (standard)
G	-13...482°F (-25...250°C)

Ex-Proof - *select one*	
Z1	Without
Z2	Ex II CT6 Gb

PAQUIN SENSORS
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Build Your Part Number

Series P85

Example: P85BS2P5SUDE1CNFZ18F

Process Connections & Transmitter - ***select one***

ANSI Flange Class 150, ASME B16.5 with Integrated Transmitter – *see page 3*	
5B	½”
5C	¾”
5D	1”
5E	1 ¼”
5F	1 ½”
5G	2”
5H	2 ½”
5J	3”
5K	4”

ANSI Flange Class 150, ASME B16.5 with Remote Transmitter – *see page 3*	
5X	½”
5Y	¾”
5Z	1”
6A	1 ¼”
6B	1 ½”
6C	2”
6D	2 ½”
6E	3”
6F	4”

ANSI Flange Class 300, ASME B16.5 with Integrated Transmitter – *see page 4*	
6T	½”
6U	¾”
6V	1”
6W	1 ¼”
6X	1 ½”
6Y	2”
6Z	2 ½”
7A	3”
7B	4”

ANSI Flange Class 300, ASME B16.5 with Remote Transmitter – *see page 4*	
7P	½”
7Q	¾”
7R	1”
7S	1 ¼”
7T	1 ½”
7U	2”
7V	2 ½”
7W	3”
7X	4”

PAQUIN SENSORS
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Build Your Part Number

Series P85

Example: P85BS2P5SUDE1CNFZ18F

Process Connections & Transmitter (continued...) - ***select one***	

NPT Female Threaded with Integrated Transmitter	
9C	½”
9D	¾”
9E	1”
9F	1 ¼”
9G	1 ½”
9H	2”
9J	2 ½”
9K	3”
9L	4”

NPT Female Threaded with Remote Transmitter	
9M	½”
9N	¾”
9P	1”
9Q	1 ¼”
9R	1 ½”
9S	2”
9T	2 ½”
9U	3”
9V	4”

NPT Male Threaded with Integrated Transmitter	
8A	½”
8B	¾”
8C	1”
8D	1 ¼”
8E	1 ½”
8F	2”
8G	2 ½”
8H	3”
8J	4”

NPT Male Threaded with Integrated Transmitter	
8K	½”
8L	¾”
8M	1”
8M	1 ¼”
8N	1 ½”
8P	2”
8Q	2 ½”
8R	3”
8S	4”

PAQUIN SENSORS
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Technical Parameters

Technical Parameters		
Measuring	Measuring Range	See flow range table page 2 for complete details
	Applicable Medium	Dry air and dry gases
	Accuracy	1.5%
	Repeatability	±0.25% of Reading
	Response Time	< 100ms
	Magnet Polarity	< 0.164 ft/s (< 0.05 m/s)
Electrical	Output Signal	4...20mA + pulse (0...5KHz) 4...20mA (HART) + pulse (0...5KHz) RS485 Modbus 2 isolated & adjustable normally open relays (250VAC, 10A / 30VDC, 5A) Relays are user programmable and can be set for flow, temperature or one of each
		Pulse: Frequency 0...5 KHz
	Supply Voltage	85...265 VAC 18...36 VDC
	Power Consumption	Less than 20W
	Electrical Connection	M18 x 1.5 Cable gland NPT ½" Threaded hub
Environmental	Ambient Temperature	Sensor: -13...140°F (-25...60°C)
	Ambient Humidity	≤ 85% Relative Humidity (68°F / 20°C)
	Medium Temperature	-13...248°F (-25...120°C) Standard -13...482°F (-25...250°C) High Temperature
	Protection Class	Integrated Transmitter: IP65 Remote Transmitter: IP68
	Ex proof	Exd II CT6 Gb
Materials	Sensor	316 Stainless Steel Hastelloy C Titanium
	Transmitter Housing	Aluminum Alloy
	Process Connection	304 Stainless Steel 316L Stainless Steel
	Display	LCD
	Process Connection	Flange, Thread

Reference Conditions of Measurement Accuracy	
Ambient Temperature	68°F (20°C)
Medium Temperature	68°F (20°C)
Pressure	15 psi
Power	24 VDC + 15%
Stability Time	25 minutes
Upstream Straight Pipeline	10 x DN
Downstream Straight Pipeline	5 x DN
Flow State	Uniform Distribution

Features	
Auto "ZERO" Calibration	See manual for details
Self-Monitoring and Diagnostic	Monitor Citation Circuit, Electrode, and Transmitter Malfunction
Change Flow Direction in Real Time	See Manual for Details
Bi-Directional Measurement	Measuring both forward and reverse flow
Selectable Flow Rate Unit of Measurement	SCFM, g/s, t/m, t/h, kg/m, kg/h, NL/min, NL/h, Nm^3/min, Nm^3/h
Damping Time	0...32 seconds programmable
Low Flow Cut Off	Adjustable in 0...10%
Output	Relay, Pulse, 4...20mA, RS485, HART
Display	Instantaneous / accumulated flow rate, current, alarm, and flow velocity