

## GENERAL

**ALIAPD** The APF830 series is a positive displacement meter designed with a pair of tooth profile helical rotors, which displays totalizer with a mechanical pointer and provides 4-20 mA or pulse output. It has the advantages of no pulsation, low noise, high accuracy, high reliability, large measuring scope and strong environment adaptability. APF830 series helical rotor flowmeter could be used in commercial measurement and engineering management control in petrochemical, metallurgical, electronics and other industries.

## FEATURES

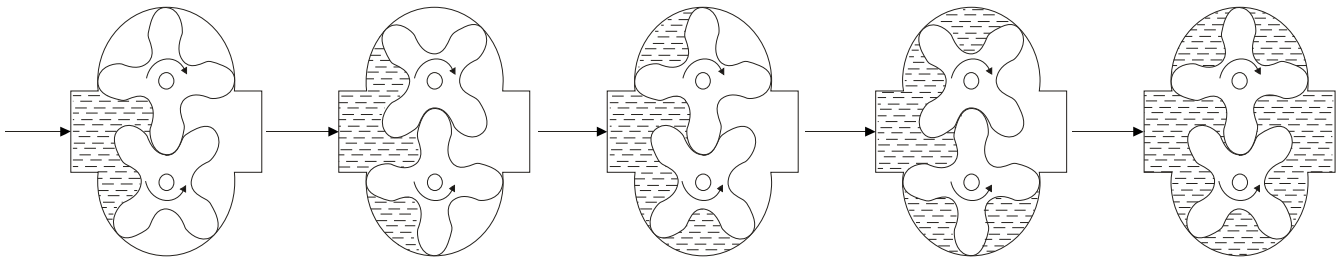
- Pipe size : 25-300 mm (1"-12")
- Fluid viscosity up to 20,000 cP
- High measurement accuracy, wide flow range and good repeatability
- Helical rotors rotate evenly, with little vibration and long lifetime
- Insensitive to viscosity variations in the measured liquid
- 6 Digit totalizer + 2 digit pointer
- High accuracy +/-0.5% of reading (or +/-0.2% of reading)
- 4-20 mA or pulse output

## STANDARD SPECIFICATION

- |                       |  |                        |  |
|-----------------------|--|------------------------|--|
| ● Size                | : 25, 40, 50, 80, 100, 150, 200, 250, 300 mm   | ● Process Connection   | : Flange   |
| ● Measuring Range     | : 0.5-950 m <sup>3</sup> /hr   | ● Flange Type          | : JIS 10K / JIS 20K / JIS 40K<br>: ANSI 150# / ANSI 300# / ANSI 600#<br>: DIN PN10 / PN16 / PN25 / PN40            |
| ● Accuracy            | : +/-0.5% of reading (Standard)<br>: +/-0.2% of reading (Option)                                   | ● Mechanical Register  |  |
| ● Repeatability       | : +/-0.1% of reading (Standard)<br>: +/-0.07% of reading (Option)                                  | Totalizer (Non-Reset)  | : 6 Digit + 2 Pointer  |
| ● Material            |  | Totalizer (Resettable) |  |
| Body & Cover & Flange | : Cast Steel / S.S. 304 / S.S. 316   | Upper Counter          | : 6 Digit + 2 Pointer (Non-Resettable)   |
| Helical Rotor         | : Cast Iron / S.S. 304 / S.S. 316  | Lower Counter          | : 4 Digit + 2 Pointer (Resettable)   |
| O-Rings               | : Viton  | ● Resolution           | : 0.1 Liter (25 mm)<br>: 1 Liter (40-80 mm)<br>: 10 Liter (100-300 mm)   |
| Shaft Sleeve          | : Ball / Ceramic Bearing   | ● Current Output       | : 4-20 mA (2 Wires)<br>Load : Rohm=(VDC-9) * 50  |
| Register Housing      | : Aluminum Alloy   | ● Pulse Output         | : Open Collector (3 Wires, Unscaled Pulse)<br>Rating : 11-26 VDC, 50 mA Max.                                       |
| ● Max. Viscosity      | : 0.3-400 cP (Standard)<br>: 400-2000 cP (Option)  | ● Cable Entry          | : M20 (Standard) / 1/2" NPTF (Option)  |
| ● Operating Temp.     | : -10~120 °C (-10~80 °C with Output)<br>: -10~120 °C with Output (Option)<br>: -10~250 °C (Option) | ● Protection Class     | : IP65<br>: Intrinsically Safe, Eex ia IIC T6<br>: Explosion Proof, Ex d IIB T6                                    |
| ● Ambient Temperature | : -25~60 °C  | ● Optional             | : Heating Jacket (Hot oil or Steam)<br>: Strainers, T-Type or Y-Type<br>: Strainer with Air Eliminator, Flange End |
| ● Max. Pressure       | : 63 kgf/cm <sup>2</sup> (≤DN100)<br>: 25 kgf/cm <sup>2</sup> (≥DN150)                             |                        |  |
| ● Painting            |  |                        |  |
| Body, Register        | : Red lead + Alia Blue   |                        |  |
| Housing               | : Red lead + Alia Blue   |                        |  |



**WORKING PRINCIPLE**



**FLOW RANGE (Accuracy: +/-0.5% of reading)**

Unit: m<sup>3</sup>/hr

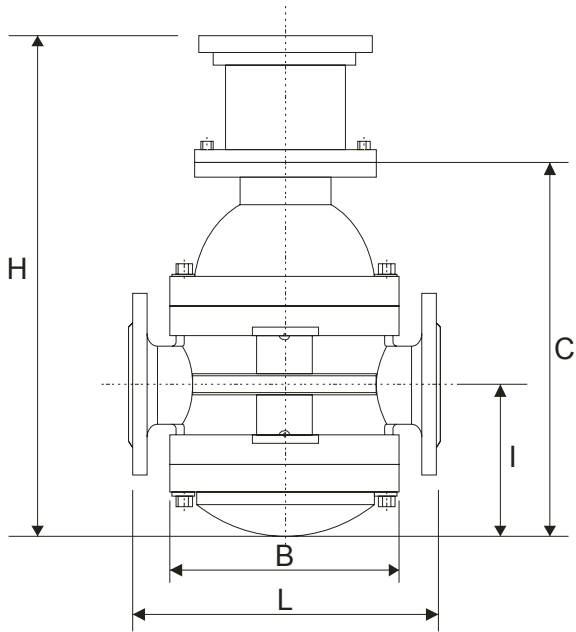
Size		Viscosity (cP)						
		0.3-2		2-5	5-15	15-50	50-400	400-2000
mm	Inch	Gasoline	Kerosene	Diesel	Heavy oil I	Heavy oil II	Heavy oil III	High viscosity liquid
25	1"	2.5-9	1.5-10	1-10	1-10	0.8-10	0.5-10	0.5-6
40	1-1/2"	4-22	3.5-22	3-25	2.5-25	2-25	2-25	1.5-14
50	2"	8-42	7-42	6-45	5-45	4-45	4-45	3-23
65	2-1/2"	20-100	15-100	10-100	8-100	6-100	5-100	5-40
80	3"	20-100	15-100	10-100	8-100	6-100	5-100	5-40
100	4"	25-140	20-140	18-180	16-180	8.5-180	7-180	7-65
150	6"	50-250	30-270	25-270	20-270	15-270	10-270	8.5-100
200	8"	70-360	50-400	40-400	30-400	25-400	15-400	13-160
250	10"	100-550	65-550	55-600	45-600	40-600	35-600	25-240
300	12"	180-800	110-900	95-950	80-950	60-950	50-900	45-400

**FLOW RANGE (Accuracy: +/-0.2% of reading)**

Unit: m<sup>3</sup>/hr

Size		Viscosity (cP)						
		0.3-2		2-5	5-15	15-50	50-400	400-2000
mm	Inch	Gasoline	Kerosene	Diesel	Heavy oil I	Heavy oil II	Heavy oil III	High viscosity liquid
25	1"	3.5-9	3-10	2-10	2-10	1.5-10	1-10	0.8-6
40	1-1/2"	7-22	6-22	4-25	4-25	3-25	2.5-25	2-14
50	2"	15-42	12-42	10-45	8-45	7-45	6-45	4-23
65	2-1/2"	30-100	20-100	15-100	12-100	10-100	8-100	6-40
80	3"	30-100	20-100	15-100	12-100	10-100	8-100	6-40
100	4"	40-140	30-140	25-180	20-180	15-180	10-180	8-65
150	6"	80-250	55-270	45-270	35-270	25-270	20-270	15-100
200	8"	100-360	75-400	60-400	45-400	35-400	25-400	20-160
250	10"	150-550	110-550	80-600	60-600	50-600	40-600	35-240
300	12"	250-800	200-900	160-950	120-950	90-950	70-950	60-340

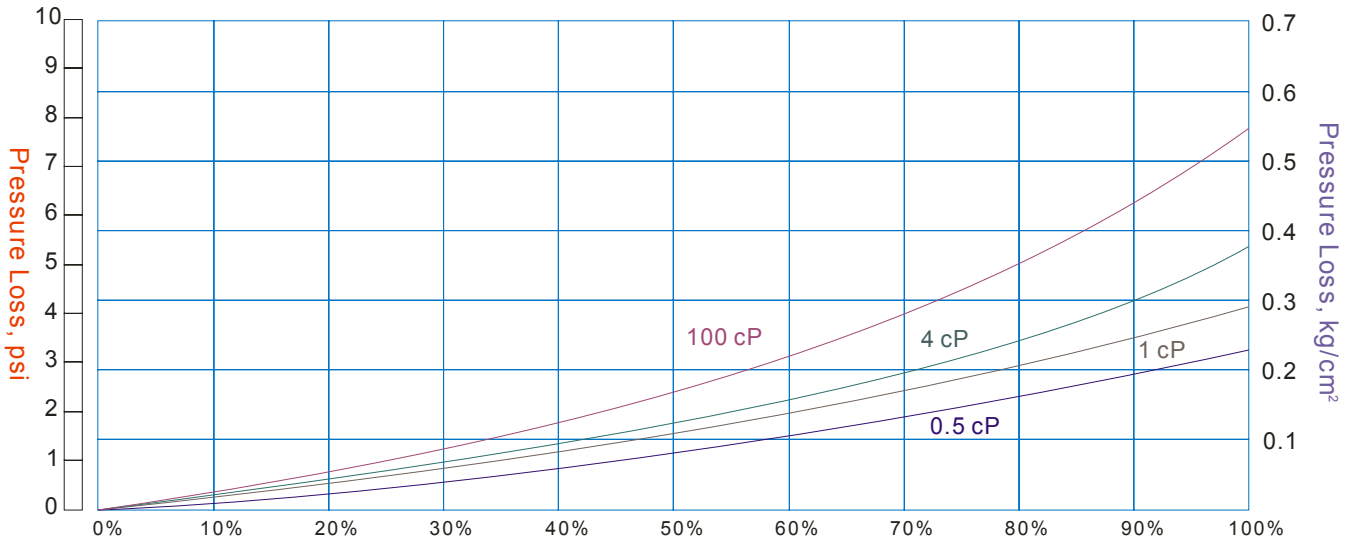
**DIMENSIONS**



Size	Helical Rotor Flowmeter						Weight kg	
	mm	Inch	L	H	B	C	I	CS
25	1"	300	420	175	228	90	29	38
40	1-1/2"	300	450	205	258	112	40	52
50	2"	340	525	240	333	150	62	81
65	2-1/2"	380	580	285	388	175	94	122
80	3"	380	580	285	388	175	94	122
100	4"	440	660	339	468	250	146	190
150	6"	540	740	410	548	270	238	309
200	8"	550	820	455	628	285	337	438
250	10"	700	910	550	718	350	570	741
300	12"	800	1010	645	818	415	855	1105

Note: Size L is for DIN flange.

**PRESSURE LOSS**



Size	Max. Flow	Size	Max. Flow	Size	Max. Flow
25 mm (1")	10 m <sup>3</sup> /hr	80 mm (3")	100 m <sup>3</sup> /hr	200 mm (8")	400 m <sup>3</sup> /hr
40 mm (1-1/2")	25 m <sup>3</sup> /hr	100 mm (4")	180 m <sup>3</sup> /hr	250 mm (10")	600 m <sup>3</sup> /hr
50 mm (2")	45 m <sup>3</sup> /hr	150 mm (6")	270 m <sup>3</sup> /hr	300 mm (12")	950 m <sup>3</sup> /hr

**MODEL SELECTION GUIDE**

APF830 Series										
Example: APF830-CS-050-ADPM-NN-S/V										
APF830-	XX-	XXX	-X	X	X	X	X	-XX	-X	Description
Material	CS-									Cast Steel Body / Cast Iron Helical Rotor
	SS-									304 Body / 304 Helical Rotor
Size	025-300									25, 40, 50, 65, 80, 100, 150, 200, 250, 300 mm
Connection	-1									PN10
	-2									PN16
	-3									PN25
	-4									PN40
	-A									ANSI 150#
	-B									ANSI 300#
	-C									ANSI 600# (Max. pressure 63 kgf/cm <sup>2</sup> )
	-J									JIS 10K
	-K									JIS 20K
	-L									JIS 40K
-Z									Others	
Register	D									Mechanical Register, 6 Digit Counter + 2 Pointer (Non-Resettable)
	R									Mechanical Register, 6 + 2 Digit & 4 + 2 Digit Resettable Counter
Output	N									Without Output
	I									4-20 mA (2 Wires)
	P									Unscaled Pulse Output
Max. Temperature	N									-10~120 °C (Local Display), -10~80 °C (With Signal Output)
	M									-10~120 °C (With Signal Output)
	H									-10~250 °C
Protection Class	-NN									IP65
	-IT									Intrinsically Safe, Eex ia IIC T6
	-EX									Explosion Proof, Ex d IIB T6
Option	-N									None
	-S									Strainer
	-6									Stainless Steel 316 Body
	-C									High Accuracy 0.2%
	-P									Cable Entry 1/2" NPTF
	-V									High Viscosity (More than 400 cP)
	-A									Strainer with Air Eliminator
	-H									Heating Jacket (DN15 flange connection at the heat source inlet)
-M									Ceramic Bearing Shaft Sleeve	