



# ALIAPD

## Positive Displacement Flowmeter-Oval Gear

### Model APF850 Series

## GENERAL

**ALIAPD** The APF850 Series is designed in Oval Gear technology with digit display for totalizer & flowrate and providing scaled pulse and analog output 4-20 mA.

APF850 Series Oval Gear flowmeters are both with high accuracy and easily adaptable to most industrial applications.

## FEATURES

- 15-40 mm (1/2"~1-1/2") lines sizes
- Handles viscosities up to 50000 cP
- Wide range of application
- Various process connection types available
- 5 Digit totalizer (resettable) / 8 digit totalizer (LCD)
- 4-20 mA or pulse output
- High accuracy of +/-0.5% of reading (or +/-0.2% of reading)
- Display with auto sleep function that gets up to 6 years of battery life

## STANDARD SPECIFICATION

- Size : 15S, 015, 020, 025, 040 mm
- Flow Range : 5-5000 L/hr
- Accuracy : +/-0.5% of reading (Standard)  
: +/-0.2% of reading (Option)
- Repeatability : +/-0.1% of reading
- Material
  - Body, Cover & Flange : Cast Iron / Stainless Steel 316
  - Roots : Polyphenylene sulfide (PPS)
  - O-Rings : PTFE
  - Register Housing : Aluminum Alloy
- Max. Viscosity : 0.5-200 cP (Standard)  
: 201-50000 cP (Optional)
- Operating Temperature : -10~120 °C (Standard)  
: -10~150 °C (Optional)
- Max. Pressure : 19 kgf/cm<sup>2</sup>
- Process Connection
  - Thread : NPT (Male) with Coupling
  - Flange : JIS 10K FF / ANSI 150# FF
- Power Supply : 3.6 V Battery, Size D \* 1 ea
- Battery Life : 3-6 years
- Protection Class : IP65  
: Intrinsically Safe, Eex ia IIC T5  
: Explosion Proof, Ex d IIB T6
- Painting : Dark Grey



- Flow Range
  - 15S mm : 5-200 L/hr@5 cP
  - 015 mm : 10-700 L/hr@5 cP
  - 020 mm : 20-1300 L/hr@5 cP
  - 025 mm : 50-3500 L/hr@5 cP
  - 040 mm : 100-5000 L/hr@5 cP
- Display
  - Flowrate / Totalizer : 5 Digit Flowrate / 8 Digit Totalizer
  - Dual Totalizer : 5 Digit Totalizer (Resettable, Magnet)  
: 8 Digit Totalizer (Reset from Internal)
- Engineer Unit : L, m<sup>3</sup>, ft<sup>3</sup>, Gal
- Time Unit : Sec, min, hr
- Current Output
  - Load : Rohm (VDC-6) \* 50
- Pulse Output
  - Without Display : Reed Switch (2 wires, Unscaled Pulse)  
: 2-36 VDC, 500 mA Max.
  - With Display : Open Collector (2 wires, Scaled Pulse)  
: 11-26 VDC, 50 mA Max.
- Cable Entry : 1/2" NPT (F)
- Optional : Strainers, U-Type or Y-Type  
: Air Eliminator
- Ambient Temperature : -25~60 °C



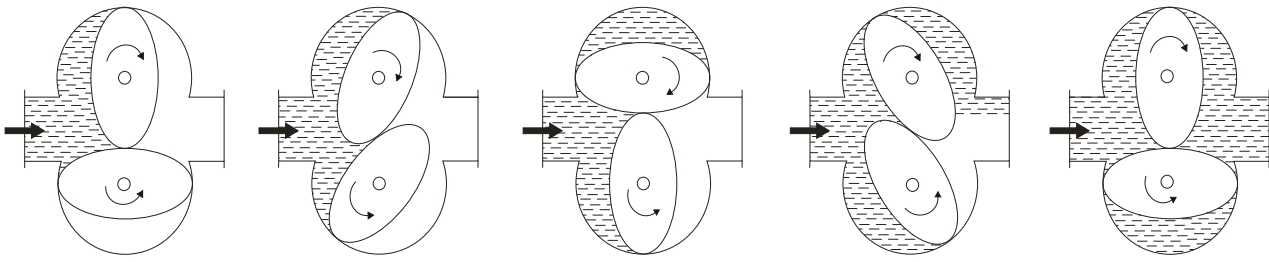
## ALIA TECHNOLOGY LLC

633 W. 5th Street, 26th Floor, Los Angeles, CA 90071, USA  
TEL : + 1 - 213 - 533 - 4139 FAX : + 1 - 213 - 223 - 2317



URL : [www.alia-inc.com](http://www.alia-inc.com)  
E-mail : [alia@alia-inc.com](mailto:alia@alia-inc.com)  
APF850V1.2.3.r2.A4.en

**WORKING PRINCIPLE**



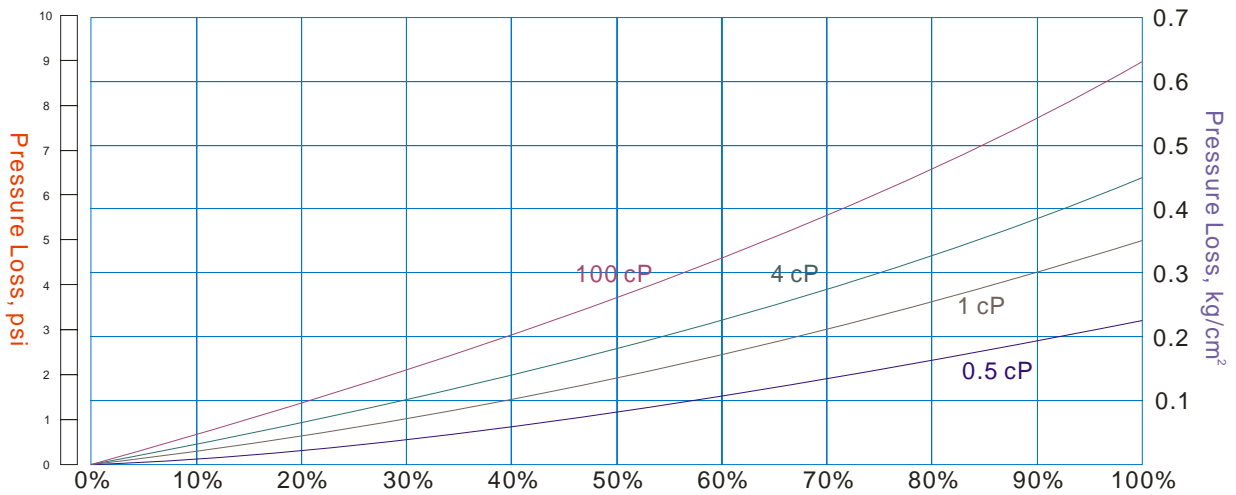
**STANDARD FLOW RANGE**

Accuracy: +/-0.5% of reading

Unit: L/hr

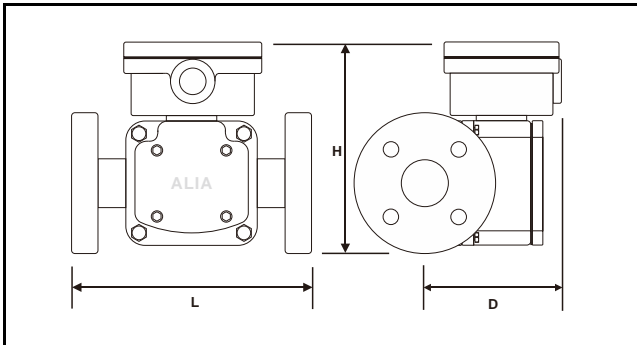
Normal Size		Viscosity (cP)							
mm	Inch	0.5-2	2-5	5-10	10-50	50-150	150-500	500-2000	> 2000
15S	1/2"	15-200	8-200	5-200	3-200	2.5-200	2-200	1.5-160	1-140
015	1/2"	30-700	13-700	10-700	7-700	5-700	3-700	2-500	1.6-430
020	3/4"	60-1300	30-1300	20-1300	16-1300	13-1300	11-1300	9-1000	7-700
025	1"	150-3500	78-3500	50-3500	42-3500	38-3500	34-3500	29-2800	25-2300
040	1-1/2"	300-5000	150-5000	100-5000	80-5000	67-5000	56-5000	45-4100	37-3500

**PRESSURE LOSS**

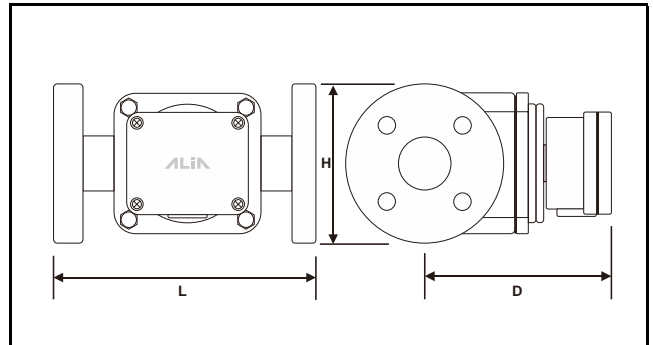


Model Code	Size		Maximum Flowrate
15S	15 mm	1/2"	200 L/hr
015	15 mm	1/2"	700 L/hr
020	20 mm	3/4"	1300 L/hr
025	25 mm	1"	3500 L/hr
040	40 mm	1-1/2"	5000 L/hr

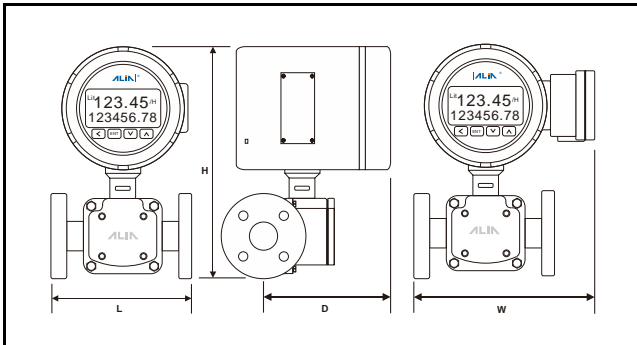
**➤ DIMENSIONS**



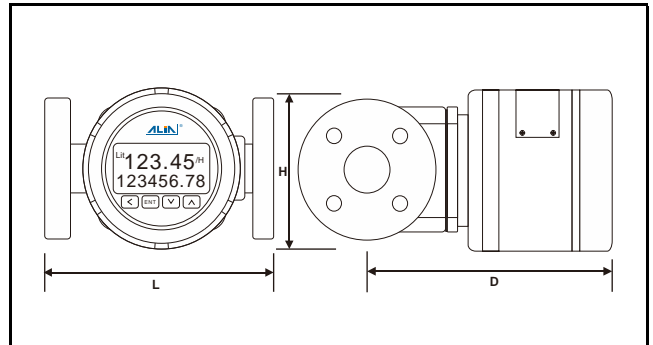
Flange End / Unscaled Pulse Output					
Size		L	H	D	Weight
mm	Inch	mm	mm	mm	kg
15S	1/2"S	----	----	----	----
015	1/2"	170	145	80	4
020	3/4"	170	145	80	4



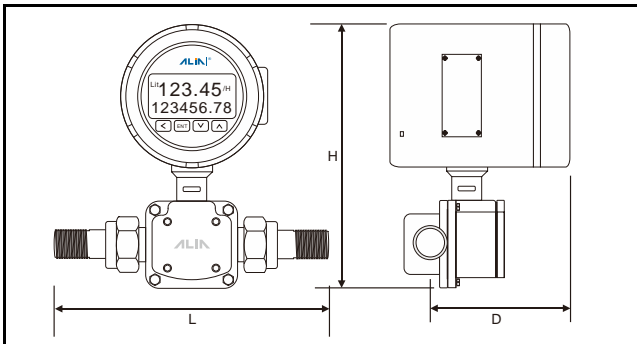
Flange End / Unscaled Pulse Output					
Size		L	H	D	Weight
mm	Inch	mm	mm	mm	kg
025	1"	200	122	120	6.5
040	1-1/2"	200	125	125	9



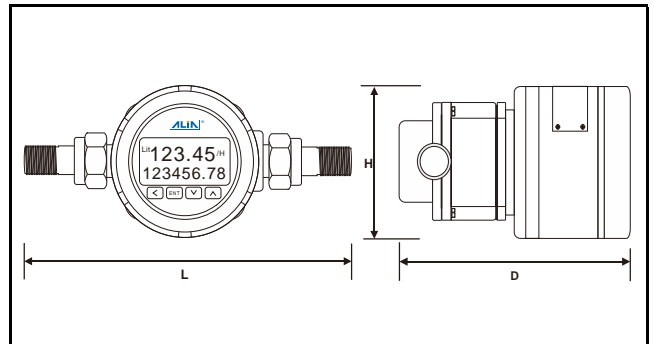
Flange End / Digit Display					
Size		L	H	D	Weight
mm	Inch	mm	mm	mm	kg
15S	1/2"S	----	----	----	----
015	1/2"	170	235	123	5
020	3/4"	170	235	123	5



Flange End / Digit Display					
Size		L	H	D	Weight
mm	Inch	mm	mm	mm	kg
025	1"	200	123	185	7
040	1-1/2"	200	125	190	9



Screw End with Coupling / Digit Display					
Size		L	H	D	Weight
mm	Inch	mm	mm	mm	kg
15S	1/2"S	220	250	120	2.5
015	1/2"	220	250	120	3
020	3/4"	265	250	123	3



Screw End with Coupling / Digit Display					
Size		L	H	D	Weight
mm	Inch	mm	mm	mm	kg
025	1"	317	123	227	5.5

➤ PRODUCTS LINE

Cast Iron	15S	015	020	025	040
	1/2"	1/2"	3/4"	1"	1-1/2"
NPT(M)					
JIS 10K					
ANSI 150#					

S.S. 316	15S	015	020	025	040
	1/2"	1/2"	3/4"	1"	1-1/2"
NPT(M)					
JIS 10K					

➤ MODEL SELECTION GUIDE

APF850 Series											
Example: APF850-CI-040-JRIN-NN-S/V-BH											
APF850-	XX-	XXX	-X	X	X	X	X	-XX	-X	-XX	Description
Material	CI-										Cast Iron Body / PPS (Oval Gear)
	SS-										Stainless Steel 316 Body / PPS (Oval Gear)
Size	15S-040										15S, 015, 020, 025, 040 mm
Process Connection			-T								Thread, NPT (Male) with Coupling
			-J								JIS 10K FF
			-A								ANSI 150# FF
Register			N								Without Display
			R								5 Digit Flowrate / 8 Digit Totalizer (Internal reset)
			T								5 Digit Totalizer (Magnet reset) / 8 Digit Totalizer (Internal reset)
Output			N								None
			U								Unscaled Pulse Output only, Without Display (Reed Switch)
			I								4-20 mA (2 wires) + Scaled Pulse (Open Collector) (Register R)
			P								Scaled Pulse Output (Open Collector 2 wires) (Register R or T)
Max. Temperature			N								-10~120 °C
			H								-10~150 °C
Protection Class			-NN								IP65
			-IT								Intrinsically Safe (Without Display, Unscaled Pulse Output only)
			-EX								Explosion Proof, Ex d IIB T6 (Except Register " N ")
Option			-N								None
			-S								Strainer
			-C								High Accuracy 0.2%
			-V								Viscosity higher than 200 cP
			-A								Air Eliminator
Battery			-NN								None
			-BH								Battery Holders without Battery
			-BT								Battery Holders with Battery 3.6V / Size D * 1 PC