



GENERAL

SMC's ALGPD flowmeter employs the positive displacement principle of operation. The force of the liquid moving through the flowmeter drives the measuring gears. The liquid stream is divided into the fixed volume cavities between the gear teeth and metering body. The rotation of the gears is measured by means of a pick-up sensor located in the cover. When the measuring gears rotate by one tooth pitch, the sensor emits a signal/frequency, which corresponds to the geometrical tooth volume. The signal is converted into a square wave pulse by the pre-amplifier.



The pulse or frequency output is processed by secondary instruments ranging from a basic signal conditioner, indicator/totalizer to more complex flow computers, which compensate for temperature, pressure, density, viscosity and provide accurate volumetric or mass flow measurement.

FEATURES

- ☐ Suitable for high viscosity fluid media
- ☐ 100:1 turndown ratio; excellent low-flow performance
- ☐ High pressure operation; up to 6000 psig
- ☐ High temperature operation up to +400 °F (204 °C)
- ☐ Magnetic-type or modulated carrier frequency pickoffs available
- ☐ Available for ¼" through 1½" line sizes
- ☐ NIST traceable calibration report included with every meter

SPECIFICATIONS

Gear Flowmeters – ALGPD Series

- Process Connections: Female threads(NPT, SAE, BSP)
- Line Sizes: ¼"~1½"
- Materials of construction:
 - Housing: Ductile iron (nickel-plated)
 - Cover: Stainless steel #304
 - Gears: Stainless steel #416
 - Pickoff sensor: Stainless steel #304 w/ epoxy encapsulant
 - Bearings: Stainless steel #440C
- Operating Pressure: 6000 psig (410 barg) max.
- Process Temperature: - 40 °F to 221 °F (-40 °C to 105 °C) Std.
- 40 °F to 400 °F (Optional)
- Flow Rates: 0.01~110 GPM (0.04~416 LPM)
- Viscosities: 5 up to 25,000 cSt

- Turndown Ratio: 100:1
- Linearity: ±0.5% of reading over 100:1 Turndown
- Repeatability: ±0.05% of reading

Electronics – Magnetic Pickoff

- Output Type: 30 mV peak-to-peak sinusoid
- Power Supply: None required

Electronics – Modulated Carrier Pickoff

- Output Type: 5 TTL/CMOS, Open Collector, PNP, NPN, 0-5V_{DC} pulse
- Power Supply: 7-30 V_{DC}
- Power Consumption: Less than 600 mW



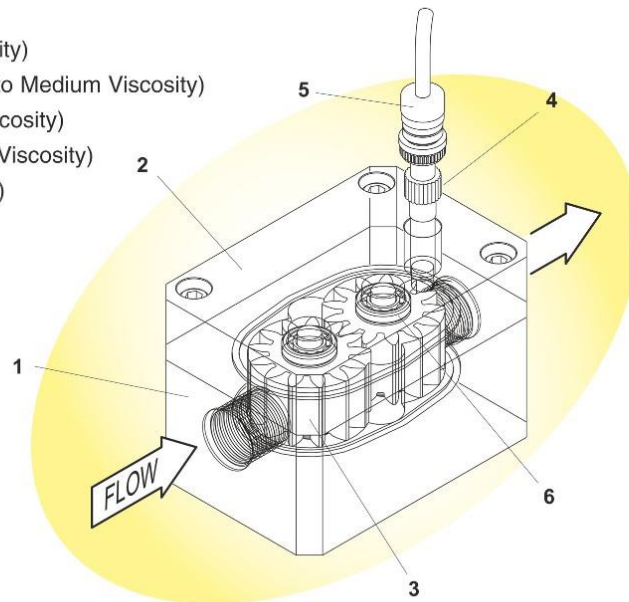
➤ Flow Ranges

Model Code	Nominal Line Size	Flow Range (GPM)	Approximate Max Frequency (Hz)	Approximate K-Factor (pulses/gallon)
ALGPD-4-8	1/4"	0.01 - 0.50	1000	120,000
ALGPD-8	1/2"	0.10 - 20	480	1,440
ALGPD-16	1"	0.50 - 40	800	1,200
ALGPD-20	1 1/4"	0.50 - 70	800	686
ALGPD-24	1 1/2"	1 - 110	360	196

Applications:

- Hydraulic Test Stand (Low Viscosity)
- Aerospace and Automobile (Low to Medium Viscosity)
- Batching and Mixing (Medium Viscosity)
- Petrochemicals (Medium to High Viscosity)
- Lube Oil Blending (High Viscosity)

Construction:

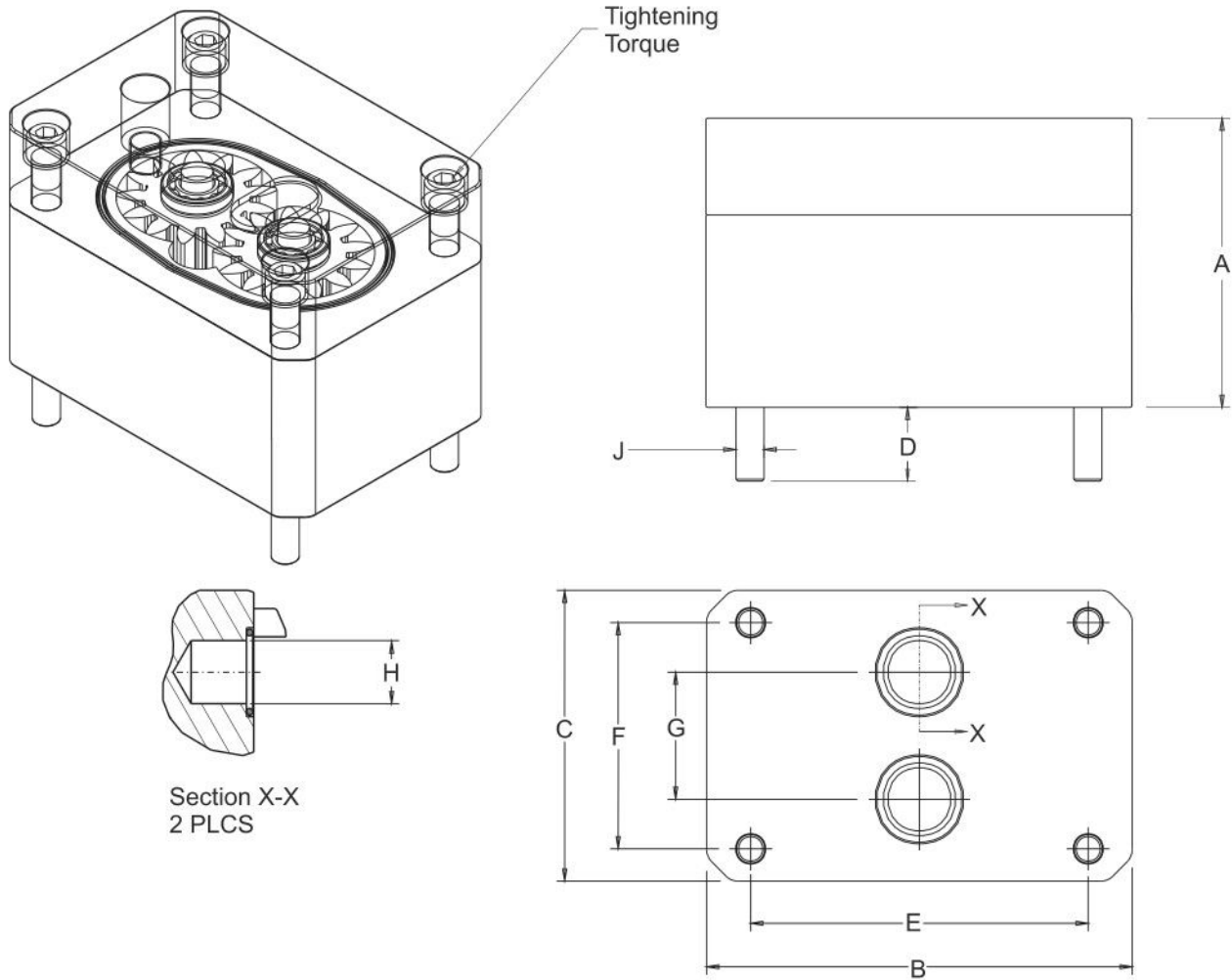


Item #	Description	Material of Construction
1	Housing	Ductile Iron (Nickel Plated)
2	Cover	304 Stainless Steel
3	Gear	416 Stainless Steel
4	Pickup Sensor	303 Stainless Steel (Housing) with solid epoxy encapsulation
5	Mating Connector	MS 3102A-10SL
6	Bearing	440C stainless Steel

Note: Other materials are available upon special order



➤ Dimensions



-All dimensions in units of inches-

Model Code	A	B	C	D	E	F	G	H-DIA.	J	Torque (ft-lbs)	Weight (lbs)
ALGPD-4-8	1.95	3.38	2.50	0.43	2.750	1.600	0.775	0.261	1/4-20 UNC-2A	18	6
ALGPD-8	2.89	4.50	4.00	0.75	3.500	3.000	1.218	0.500	1/4-20 UNC-2A	18	18
ALGPD-16	3.85	6.62	4.50	1.12	5.250	3.500	1.968	0.975	7/16-14 UNC-2A	106	30
ALGPD-20	4.48	6.62	4.50	1.12	5.250	3.500	1.986	0.975	7/16-14 UNC-2A	106	35
ALGPD-24	6.94	8.00	6.56	1.25	4.250	5.625	3.216	1.250	1/2-20 UNC-2A	160	85



Please contact your SmartMeasurement application engineer

You also need to provide the following information:

Type of fluid
Full-scale flow rate
Line Size
Process Pressure & Temperature
Pressure Drop
Type of Electronics
Power Requirements

Please provide the name of your fluid, including operating density and viscosity

Please provide the max and min flow rate, normal flow rate also

Please provide the line size and connection

We will calibrate flow meter as close to your operating conditions as possible

Please indicate the maximum allowable pressure drop

Please specify output and installation type (wall mount, panel mount, etc.)

Please specify AC or DC power supply

➤ Model Selection Guide

ALGPD									
Example 1: ALGPD-4-8-0.75NPT-BARTM-Ex (ATEX)									
ALGPD-	**	**	**	**	**	**	**	**	Description
¼" (8 mm) 0.01-0.5 USGPM (2.3-113.5 LPH)	4-8								Nominal Line Size
½" (15 mm) 0.10-20USGPM (2.27-4,542 LPH)	8								
1" (25 mm) 0.5-40 USGPM (113.5-9,085 LPH)	16								
1 ¼" (32 mm) 0.5-70 USGPM (113.5-15,900 LPH)	20								
1 ½" (40 mm) 1-110 USGPM (227-24,980 LPH)	24								
MS & NPT, sub plate ¾" NPT	0.75 NPT		Process Connections						
MS & NPT, sub plate 1" NPT	1 NPT								
Manifold Mount	MF								
Other	O								
10 point NIST Cal and Cert water or solvent	CWS		Calibration						
10 point NIST Cal and Cert Oil blend up to 100CST	CO100								
10 point NIST Cal and Cert Oil blend up to 500CST	CO500								
10 point NIST Cal and Cert Other	COther								
Field mounted panel rate/total IP67 (NEMA4X) 9-28VDC -Exi	202D		Transmitter						
Field mounted rate/total IP67 (NEMA4X) , 4-20mA, loop power 8.5-30VDC Exd	BARTM								
EX proof	EX								