



ALGPD

Positive Displacement Flowmeter

ALPD Series

GENERAL

SMARTMEASUREMENT'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

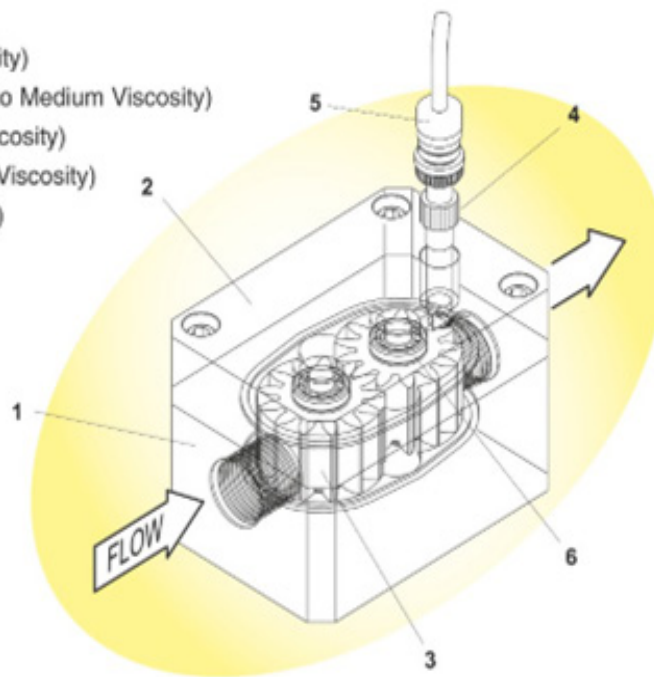
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|-----------------------------|--|--|--|
| • Process Connections: | Female threads(NPT, SAE, BSP) | • Flow Rates: | 0.01~110 GPM (0.04~416 LPM) |
| • Line Sizes: | ¼"~1½" | • Linearity:: | ±0.5% of reading over 100:1 Turn down |
| • Pressure: | Up to 150 psig (10 barg) | • Repeatability: | ±0.05% of reading |
| • Material of Construction: | | Electronics-Magnetic Pickoff | |
| Housing: | Ductile iron (nickel-plated) | • Output Type:: | Must be less then 10 Ω |
| Cover: | Stainless steel #304 | • Power Supply: : | None Required |
| Gears: | Stainless Steel #416 (optional) | Electronics-Modulated Carrier Pickoff | |
| Pickoff Sensor: | Stainless steel #304 w/ epoxy encapsulant | • Output Type: | 5 TTL/CMOS, Open Collector, PNP, NPN, 0-5V _{DC} pulse |
| Bearings: | Stainless Steel #440C | • Power Supply: | 24 V _{DC} , ≤ 100mA |
| • Process Temperature: | - 40°F~221°F (-40°C~105°C) Std.
- 40°F~400°F (Optional) | • Power Consumption: | Less Than 600 mW |

Model Code	Nominal Line Size	Flow Range (GPM)	Approximate Max Frequency (Hz)	Approximate K-Factor (pulses/gallon)
ALGPD-4-8	¼"	0.01 - 0.50	1000	120,000
ALGPD-8	½"	0.10 - 20	480	1,440
ALGPD-16	1"	0.50 - 40	800	1,200
ALGPD-20	1 ¼"	0.50 - 70	800	686
ALGPD-24	1½"	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)

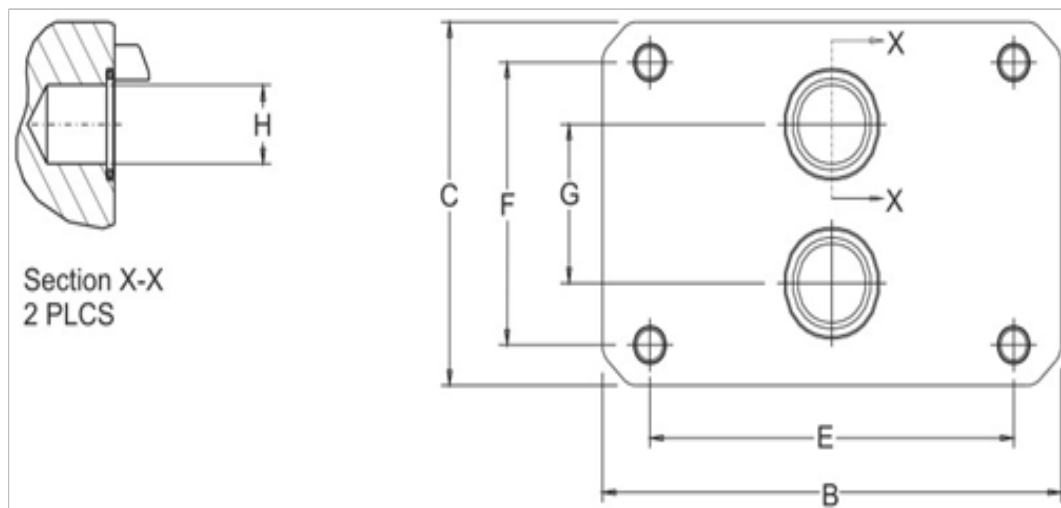
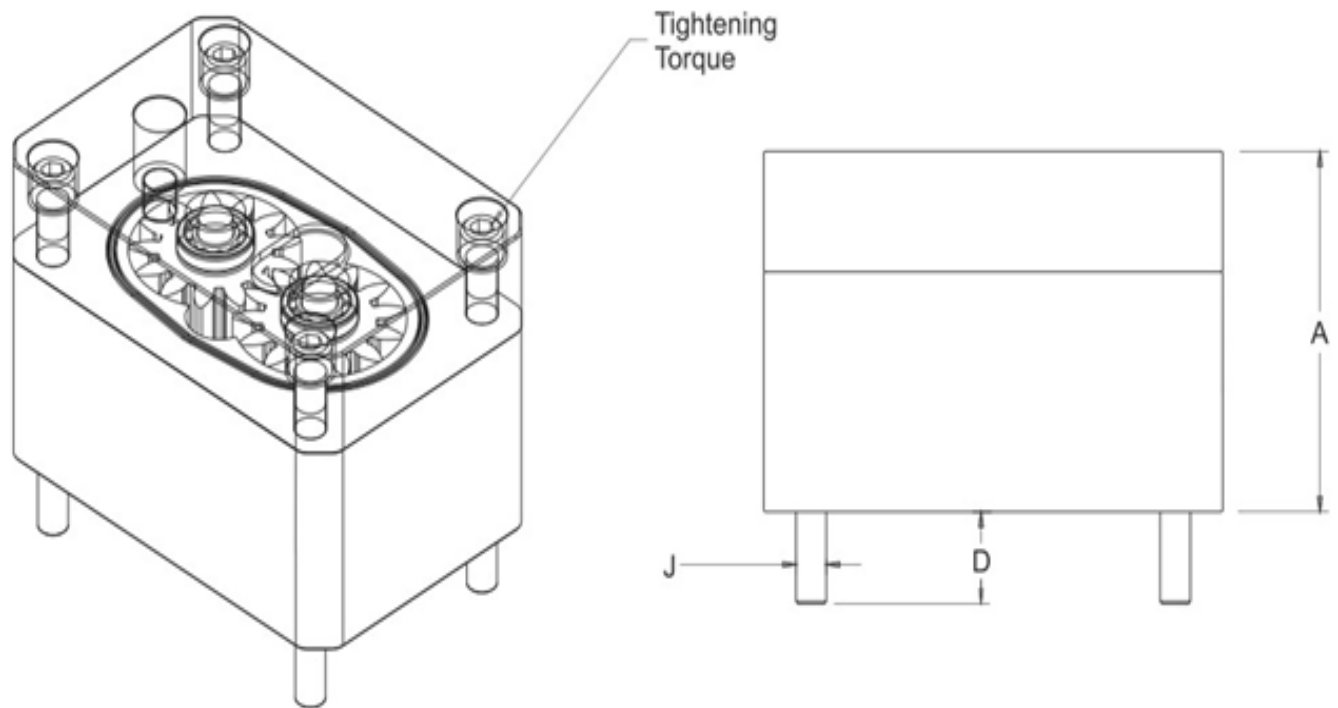
Construction:



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 (fl-lbs)	Weight (lbs)
ALGPD-4-8	1.95	3.38	2.50	0.43	2.750	1.600	0.775	0.261	¼-20 UNC-2A	18	6
ALGPD-8	2.89	4.50	4.00	0.75	3.500	3.000	1.218	0.500	¼-20 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	½-20 UNC-2A	160	85

TYPE OF FLUID	Please provide the name of your fluid, including operating density and viscosity
FULL-SCALE FLOW RATE	Please provide the max and min flow rate, normal rate also
LINE SIZE	Please provide the line size and connection
PROCESS PRESSURE & TEMPERATURE	We will calibrate your flow meter as close to your operating conditions as possible
PRESSURE DROP	Please indicate the maximum allowable pressure drop
TYPE OF ELECTRONICS	Please specify output and installation type (wall mount, panel mount, etc.)
POWER REQUIREMENTS	Please specify AC or DC power supply

ALGPD SERIES

EXAMPLE: 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 8.5-30V _{DC} Exd	BARTM							
EX Proof	EX							

