Decathlon Series

Industrial Flowmeters

Description

The patented Flow Technology Decathlon Series of industrial in-line flowmeters is ideal for a wide variety of liquid flow applications. These applications include, but are not limited to, paints, resins, petrochemicals, lubricants, fuels, polyurethanes and adhesives. These flowmeters are both highly accurate and easily adaptable to most industrial applications.

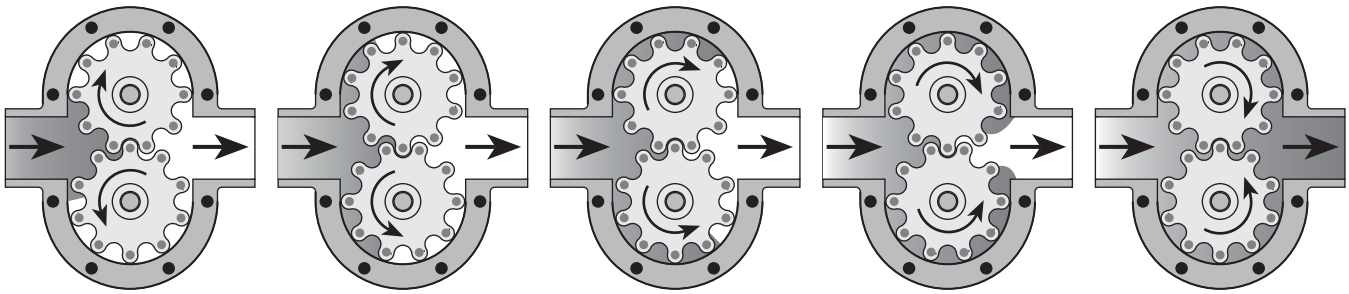
Features

- 1/8" to 2" line sizes
- Reference accuracy ±0.05% of rate
- Only two moving parts
- Bearingless design
- Easy to install and maintain
- Handles viscosities up to 1,000,000 cP+
- Up to 1000 psig operating pressure
- Operating temperatures up to 400° F (204° C)
- Wide range of applications
- Non-intrusive sensor
- Up to 1000:1 turndown
- Various process connection types available
- Handles pulsating flow streams

Decathlon Series
Industrial Flowmeters

Protected by one or more U.S. Patents:
4641522, 4815318, 4911010, 4996888, 5027653, 5325715

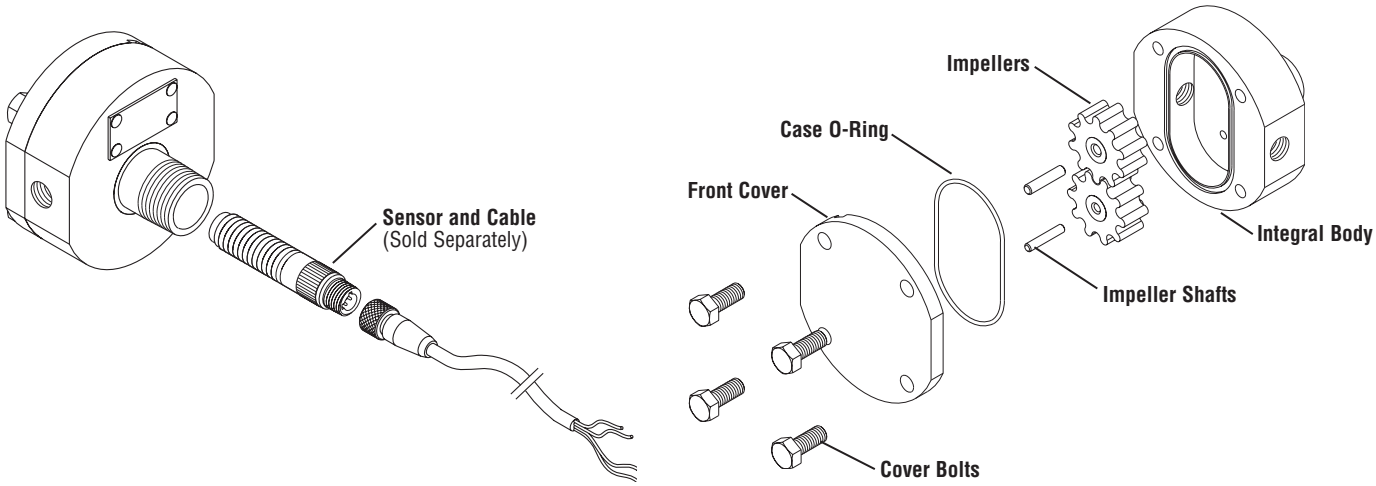
Principle of Operation



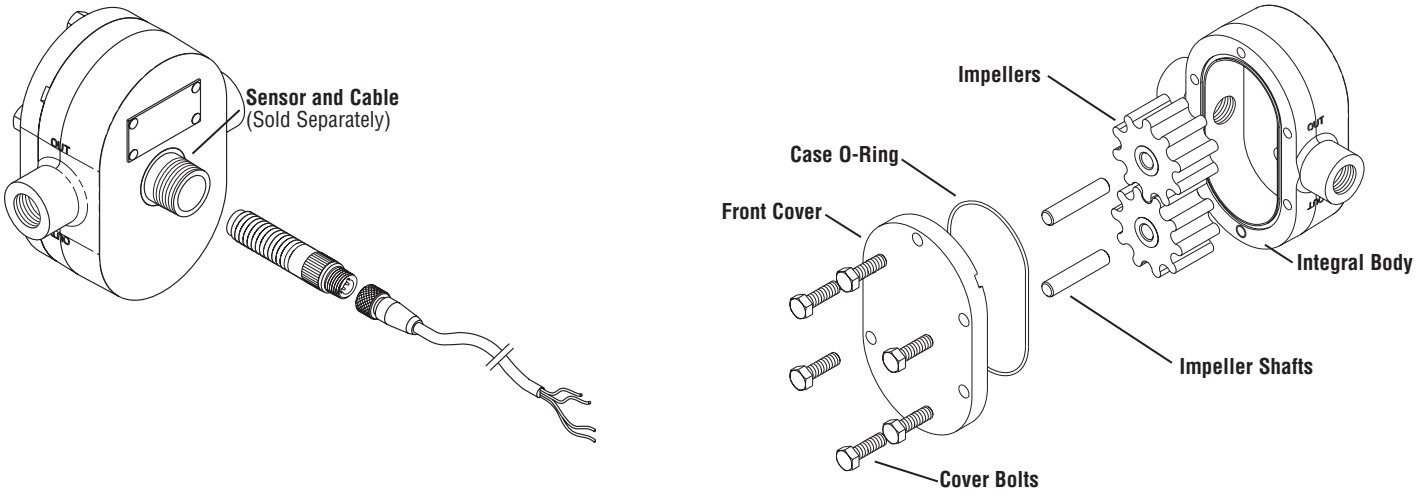
Flow Technology positive displacement flowmeters use two rotating impellers driven by the flowing liquid. Magnets imbedded in the impellers activate a non-intrusive sensor which generates a pulsed output signal. Each pulse represents a known volume of liquid that is captured in between the lobes of the impellers. A K-factor converts the pulses into engineering units for remote data collection and digital display.

Flowmeter Assembly Diagrams

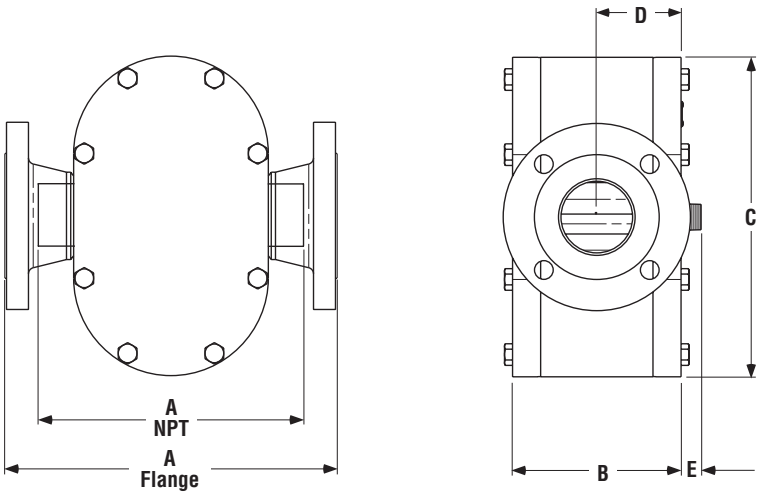
DC01I, DC02I



DC05I, DC10I, DC15I, DC20I



Dimensions



Specifications

Operating Temperature — Up to 400° F (204° C) based on impeller materials

Operating Pressure

Standard	250 psig max. (1724 kPa)
Optional	Up to 1000 psig (6895 kPa)

Turndown Ratio
(model's max. rated flow ÷ its minimum flow rate)

Low viscosity fluids	10:1 standard
Medium viscosity fluids	100:1 standard
High viscosity fluids	Up to 1000:1

Repeatability
(Reference Accuracy) — ±0.05% of rate (repeatability)

Note: Each flowmeter is individually calibrated on a ballistic calibrator traceable to NIST in the flow lab on a liquid representing the specific application.

Linearity

Typical	±0.5% of rate over upper 80% of full span
With enhanced signal conditioning	Up to ±0.1% of rate over full turndown range

Output
(Refer to individual product sheets for complete specifications)

Sensors	
Hall Effect Pickoff:	5–24 VDC square-wave pulse depending on supply, 3-wire FM Approved, intrinsically safe
Magnetic Pickoff:	10 mV to 10 V sine-wave pulse depending on flow rate, 2-wire Explosion-proof optional
Signal Conditioners and Transmitters	Refer to individual product sheets, available from Flow Technology

Materials of Construction

Body (Case)	316 stainless steel, standard
Shafts and Cover	316 stainless steel, standard
Impellers	See Model Numbering System
O-Rings	Viton® or Teflon® standard
Bolts and Nuts	316 stainless steel, standard*

* Note: Intermediate pressure flowmeters use zinc plated Grade 8 bolts and nuts; A286 high strength stainless steel optional.

Model Specifications

Basic Model No.	Nominal Size	Maximum Flow Rate		Recommended Mesh Size		Weight NPT		Weight 150# RF Flange	
	Standard Connection	GPM	L/min	Mesh	[Particle Dia.]	lbs	kg	lbs	kg
DC01I	1/8" NPT	1	3.79	100	[0.006"]	2.1	1.0	-	-
DC02I	1/4" NPT	3	11.40	100	[0.006"]	3.4	1.5	-	-
DC05I	1/2" NPT	12	45.40	80	[0.007"]	8.5	3.9	11	4.8
DC10I	1" NPT	25	94.60	60	[0.009"]	15	6.7	18	8.3
DC15I	1-1/2" NPT	50	189	60	[0.009"]	26	12	32	15
DC20I	2" NPT	100	379	40	[0.015"]	55	25	67	30

Dimensions

Basic Model No.	A (NPT) inches	A (NPT) mm	A (150# RFF) inches	A (150# RFF) mm	B inches	B mm	C inches	C mm	D inches	D mm	E inches	E mm
DC01I	2.9	74	-	-	1.1	28	3.0	76	0.5	12	1.10	28
DC02I	3.3	84	-	-	1.4	36	3.5	89	0.6	16	1.10	28
DC05I	5.4	137	7.4	188	2.2	56	5.6	142	1.1	27	.80	20
DC10I	7.0	178	8.8	224	2.7	69	6.9	175	1.4	35	.80	20
DC15I	6.9	175	10.0	254	3.4	86	8.2	208	1.7	44	.80	20
DC20I	9.5	241	11.8	300	4.5	114	10.8	274	2.3	58	.80	20

Model Numbering System

D C ☐ ☐ I – ☐ ☐ ☐ ☐ – ☐ ☐ ☐ ☐ ☐ ☐ ☐

Basic Model No.

Nominal Size
01 = 1/8"
02 = 1/4"
05 = 1/2"
10 = 1"
15 = 1 1/2"
20 = 2"

Case Material
6 = 316 SS* ✔
0 = Specify

Shaft Material
1 = 316 SS* ✔
C = Tungsten Carbide
0 = Specify

O-Ring Material
1 = Viton® *
2 = Buna N
3 = Chemraz®
4 = Kalrez®
6 = EPDM
9 = Teflon® ✔
0 = Specify

Special Designator
000 = Standard Meter*

Connection Size
01 = 1/8"
02 = 1/4"
05 = 1/2"
10 = 1"
15 = 1 1/2"
20 = 2"
00 = Specify

Connection Type
1 = NPT (Female) §
2 = 150# RF Flange
6 = 300# RF Flange
0 = Specify

Impeller Style (See Chart)
5 = Normal Temperature
A = Normal Temperature, Grooved +
0 = Specify

Impeller Material
3 = UHMWPE + ✔
5 = PPS
9 = PTFE
0 = Specify

Impeller Normal Temperature Chart

Impeller Material	Operating Temperature	CIP Temperature
PPS	-20° F to +400° F	400° F
	(-29° C to +204° C)	(204° C)
PTFE	-20° F to +250° F	250° F
	(-29° C to +121° C)	(121° C)
UHMWPE	-20° F to +150° F	185° F
	(-29° C to +66° C)	(85° C)

Key

*	Standard Configuration
✔	FDA Compliant
CIP	"Clean in Place," a brief cleaning cycle
+	Not available in size 01 and 02 meters
§	Standard on size 1/8" thru 2" only

Material Guide

Name	Description
316 SS ✔	316 Stainless Steel, 316L has reduced carbon
Buna N	Nitrile
Chemraz®	Elastomeric PTFE by Greene, Tweed & Co. Inc
EPDM	Ethylene Propylene
Kalrez®	Perfluorinated Elastomer, by DuPont
PPS	Polyphenylene Sulfide, Ryton® by Phillips Petroleum
PTFE	Polytetrafluoroethylene, Teflon® by DuPont (Impeller)
Teflon® ✔	Polytetrafluoroethylene, by DuPont (O-Ring Material)
UHMWPE ✔	Ultra High Molecular Weight Polyethylene
Viton®	Fluorocarbon, by DuPont

Specifications are for reference only and are subject to change without notice.