

Decathlon Series

Sanitary Flowmeters

Description

The patented Flow Technology Decathlon Series of sanitary in-line flowmeters is ideal for liquid flow applications in the food, dairy, and pharmaceutical industries.

Features

- 1/8" to 2" line sizes
- Reference accuracy $\pm 0.05\%$ of rate
- Only two moving parts
- Bearingless design
- CIP compatible without disassembly
- Easy to install and maintain
- Handles viscosities up to 1,000,000 cP
- Operating temperatures up to 400° F (204° C)
- Wide range of applications
- Non-intrusive sensor
- Up to 1000:1 turndown
- Variety of connection types available

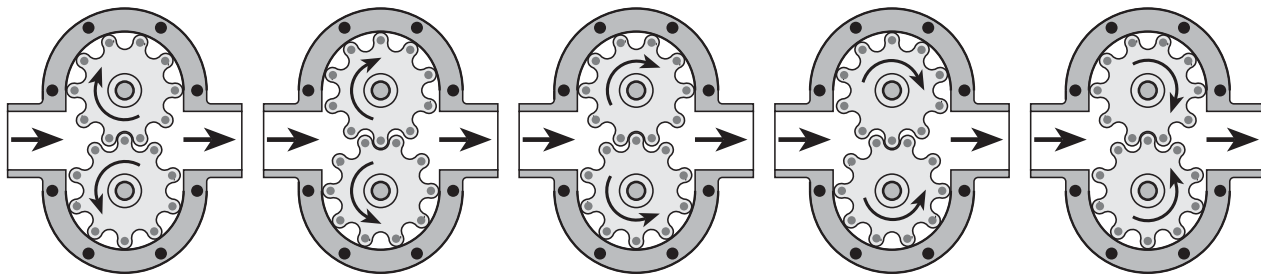


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Sanitary Flowmeters

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

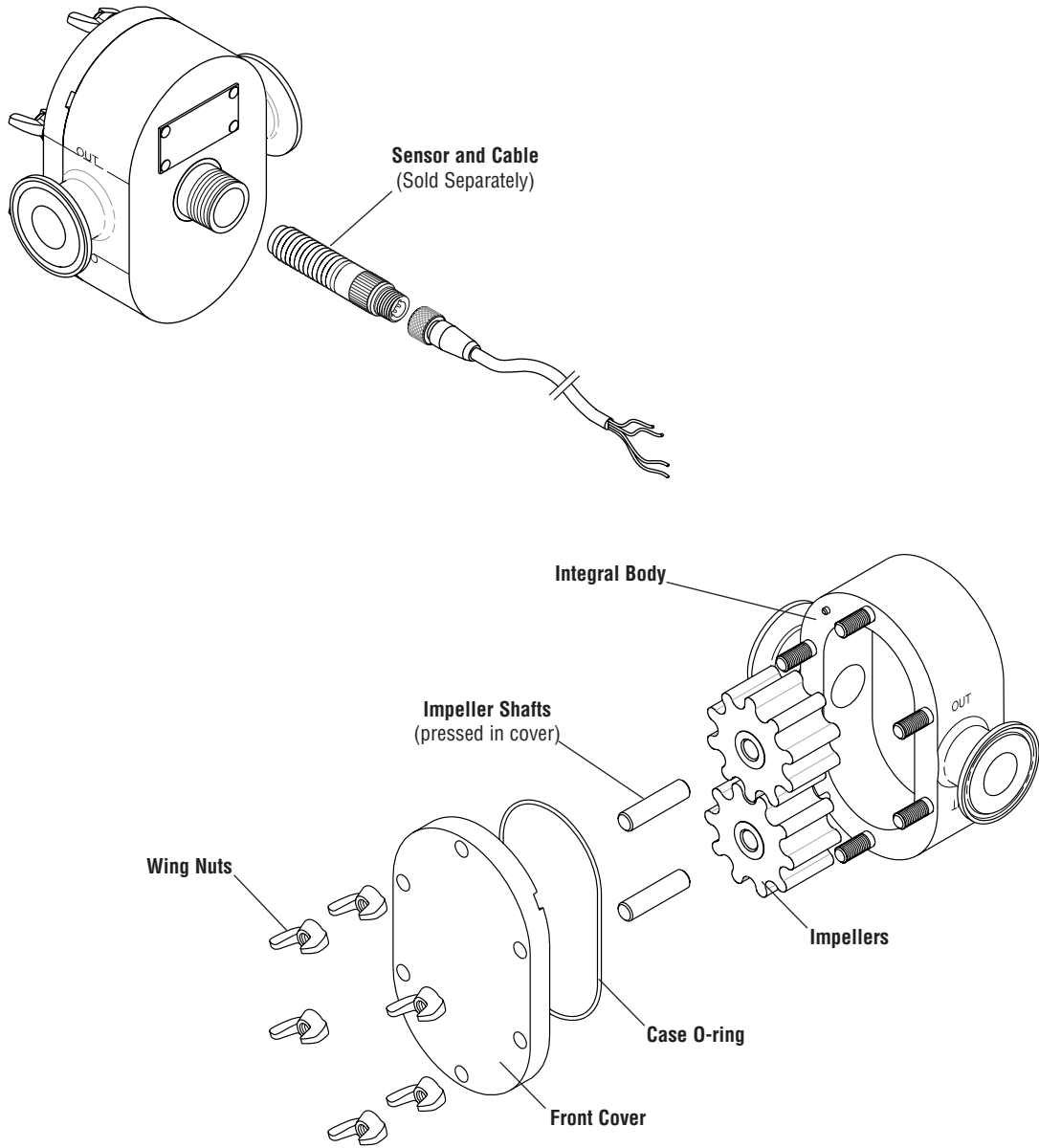
Principle of Operation



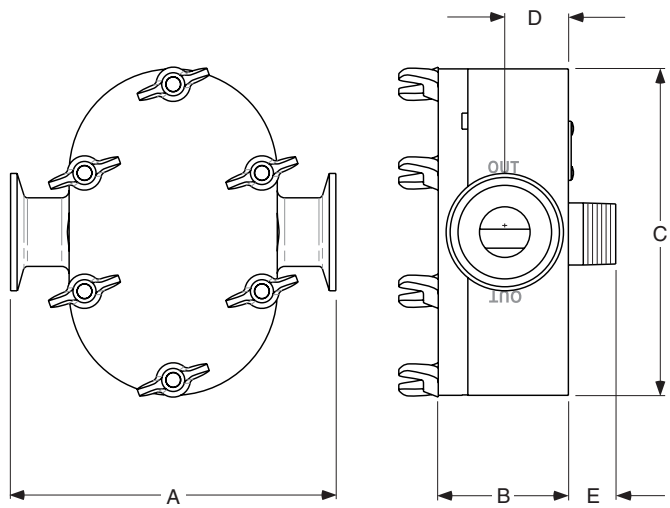
Flow Technology positive displacement flowmeters use two rotating impellers driven by the flowing liquid. Magnets imbedded in the impellers activate a non-intrusive sensor which generates a pulsed output signal. Each pulse represents a known volume of liquid that is captured between the lobes of the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

Flowmeter Assembly Diagrams

DC01F, DC02F, DC05F, DC10F, DC15F, DC20F



Dimensions



Specifications

Process Temperature	Up to 400° F (204° C) Based on impeller materials
Operating Pressure	250 psig maximum (1724 kPa) Higher pressure ratings available upon request

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

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	
<i>Hall Effect Sensor:</i>	5–24 VDC squarewave pulse depending on supply voltage, 3-wire
<i>Magnetic Pick-up Sensor:</i>	10 mV to 10 V sine-wave pulse depending on flow rate, 2-wire, explosion-proof optional
Signal Conditioners, 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	UHMWPE, HTC, standard (See Flowmeter Ordering on last page)
O-Rings	Viton®, standard Other materials available upon request

Model Specifications

Basic Model No.	Nominal Meter Size	Standard Connection	Maximum Flow Rate		Recommended Mesh Size	Weight	
			GPM	L/min		lbs	kg
DC01F	1/8"	1/2" Clamp	1	3.79	100	2.9	1.3
DC02F	1/4"	1/2" Clamp	3	11.4	100	3.3	1.5
DC05F	1/2"	1" Clamp	12	45.4	80	8.3	3.8
DC10F	1"	1" Clamp	25	94.6	60	14	6.3
DC15F	1-1/2"	1-1/2" Clamp	50	189	60	24	11
DC20F	2"	2" Clamp	100	379	40	53	24

Dimensions

Basic Model No.	A		B		C		D		E	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
DC01F	4.0	102	1.1	28	3.9	99	0.5	11	1.1	28
DC02F	4.0	102	1.4	36	3.9	99	0.7	17	1.1	28
DC05F	5.5	140	2.2	56	5.5	140	1.1	28	.80	20
DC10F	7.0	178	2.7	69	6.7	170	1.4	36	.80	20
DC15F	6.9	175	3.4	86	7.9	201	1.75	44	.80	20
DC20F	9.5	241	4.5	114	10.6	269	2.3	58	.80	20

Model Numbering System

D **C** **F** - - -

Nominal Size

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

Case Material

6 = 316L SS * ✓
0 = Specify

Shaft Material

1 = 316 SS * ✓
0 = Specify

O-Ring Material

1 = Viton® * ✓
2 = Buna N ✓
6 = EPDM
9 = Teflon® ✓
0 = Specify

Impeller Material

3 = UHMWPE † ✓
6 = HTC § ✓
0 = Specify

Special Designator

000 = Standard Meter *

Connection Size

05 = 1/2"
10 = 1"
15 = 1-1/2"
20 = 2"
00 = Specify

Connection Type

3 = Threaded Ferrule
4 = Sanitary Clamp *
0 = Specify

Impeller Temperature

(See Chart)

5 = Normal Temperature
A = Normal Temperature, Grooved Δ
0 = Specify

Impeller Normal Temperature Chart

Impeller Material	Operating Temperature	CIP Temperature
UHMWPE ✓	-20° F to +150° F (-29° C to +66° C)	185° F (85° C)
HTC ✓	-20° F to +400° F (-29° C to +204° C)	400° F (204° C)

Key

*	Standard Configuration
✓	FDA Compliant
CIP	"Clean in Place," when cleaning fluid is sent through the flowmeter for a brief period of time
CF	Consult factory
†	Not available for size 01 and 02 meters
§	Standard for size 01 and 02 meters

Material Guide

Name	Description
316 SS ✓	316 Stainless Steel, 316L has reduced carbon
Buna N ✓	Nitrile
EPDM ✓	Ethylene Propylene
HTC ✓	Proprietary Sanitary Thermoplastic
Teflon® ✓	Polytetrafluoroethylene, by DuPont
UHMWPE ✓	Ultra High Molecular Weight Polyethylene
Viton® ✓	Fluorocarbon, by DuPont

OEM Versions – On approved projects, the Flow Technology flowmeters can be modified to meet the specific needs of an OEM application.

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

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