Decathlon Series

Sanitary PD Flow Meters

Description

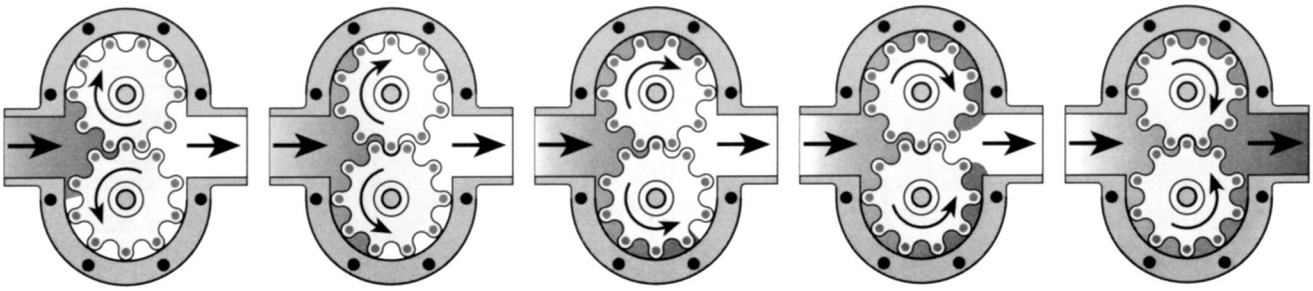
The patented Flow Technology Decathlon Series of sanitary in-line flowmeters is ideal for liquid flow applications in the food, dairy, and pharmaceutical industries.

Features

- 1/8" to 2" line sizes
- Handles viscosities up to 1,000,000 cP
- Only two moving parts
- Bearingless design
- CIP compatible without disassembly
- Easy to install and maintain
- Reference accuracy ±0.05% of rate
- 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

Decathlon Series
Sanitary Flow Meters

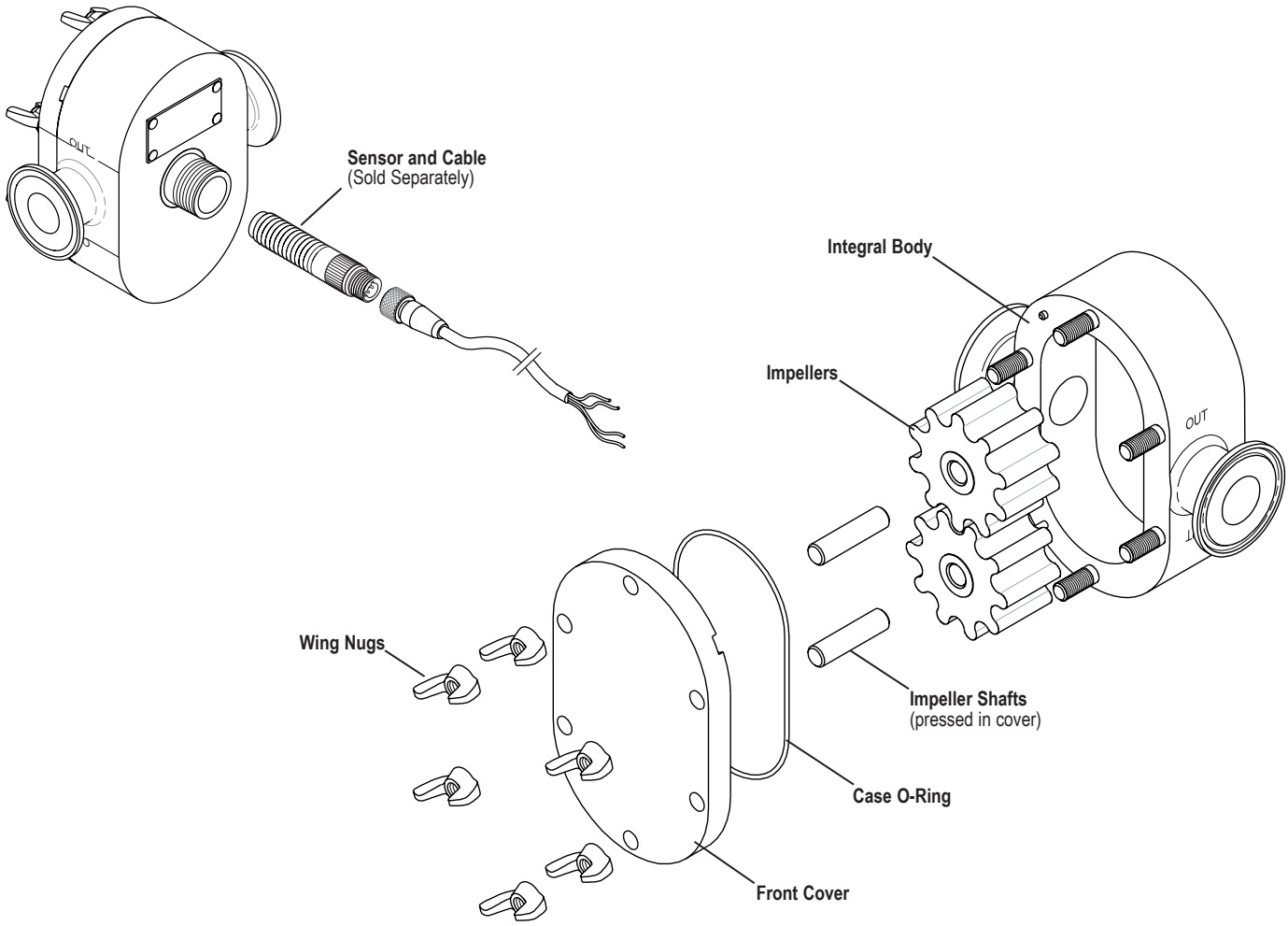
Principle of Operation



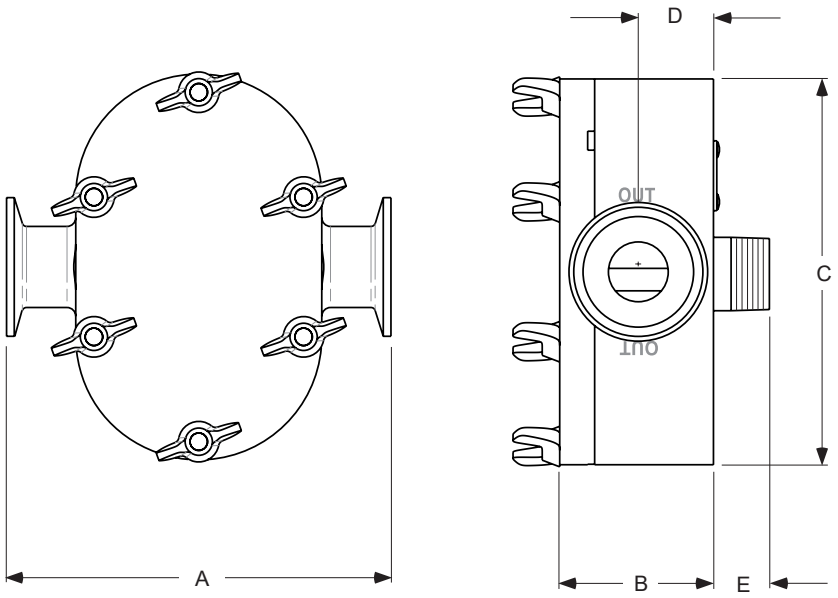
Flow Technology positive displacement flow meters use two rotating impellers driven by the flowing liquid. Magnets imbedded in the impellers activate a non-intrusive sensor which generates a pulsed output signal. Each pulse represents a known volume of liquid that is captured between the lobes of the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

Flow Meter Assembly Diagrams

DC01F, DC02F, DC05F, DC10F, DC15F, DC20F



Dimensions



Decathalon Series Sanitary Flow Meters

Specifications

Process Temperature — Up to 400° F (204° C)
Based on impeller materials

Operating Pressure

Standard — 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 flow meter 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 voltage, 3-wire

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	UHMWPE, HTC, standard (See Flow Meter Ordering on last page)
O-Rings	Viton™, standard Other materials available upon request

Model Specifications

Basic Model No.	Nominal 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	0.8	20
DC10F	7.0	178	2.7	69	6.7	170	1.4	36	0.8	20
DC15F	6.9	175	3.4	86	7.9	201	1.75	44	0.8	20
DC20F	9.5	241	4.5	114	10.6	269	2.3	58	0.8	20

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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	185° F
✓	(-29° C to +66° C)	(85° C)
HTC	-20° F to +400° F	400° F
✓	(-29° C to +204° C)	(204° C)

Key

*	Standard Configuration
✓	FDA Compliant
CIP	"Clean in Place," when cleaning fluid is sent through the flow meter 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 Chemours™
UHMWPE ✓	Ultra High Molecular Weight Polyethylene
Viton™ ✓	Fluorocarbon, by Chemours™

OEM Versions – On approved projects, the Flow Technology flow meters 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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