

Decathlon Series

Sanitary Flowmeters



Description

The patented Flowdata Decathlon Series of sanitary in-line flowmeters is ideal for liquid flow applications in the food, dairy, and pharmaceutical industries. These highly accurate and durable flowmeters meet 3A certification standards.

Features

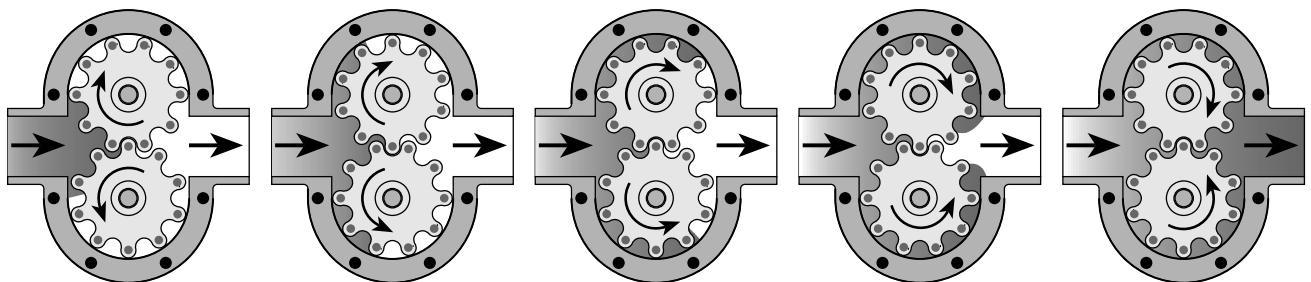
- Meets 3A, USDA and USPHS Standards
- 1/8" to 4" Line Sizes
- Reference Accuracy $\pm 0.05\%$ of Rate
- Only Two Moving Parts
- Bearingless Design
- CIP Compatible Without Disassembly
- Easy to Install and Maintain
- Handles Viscosities up to 1,000,000 cP
- Operating Temperatures up to 400°F
- Wide Range of Applications
- Non-Intrusive Sensor
- Up to 1000:1 Turndown
- Variety of Connection Types Available



Sanitary Decathlon Series

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

Principle of Operation



Flowdata 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.

Specifications:

Process Temperature:

Up to 400°F [204°C] (Based on impeller materials)

Operating Pressure:

250 psig. maximum [1724 kPa], standard
Higher pressure ratings available upon request

Turndown Ratio:

(Ratios based on maximum rated flow)
10:1 standard on low viscosity fluids
100:1 standard on medium viscosity fluids
Up to 1000:1 on high viscosity fluids

Reference Accuracy:

±0.05% of rate (repeatability)
Note: Each flowmeter is individually calibrated on a ballistic calibrator in the flow lab on a liquid representing the specific application.

Linearity:

±0.5% of rate over upper 80% of full span, typical
Up to ±0.1% of rate over full turndown range with enhanced signal conditioning

Output:

Sensors: (1 required per meter)

Hall Effect Sensor: 5 to 24 VDC
square-wave pulse depending on supply voltage, 3 wire

Magnetic Pick-up Sensor: 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

Construction Materials:

Body (Case): 316L 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

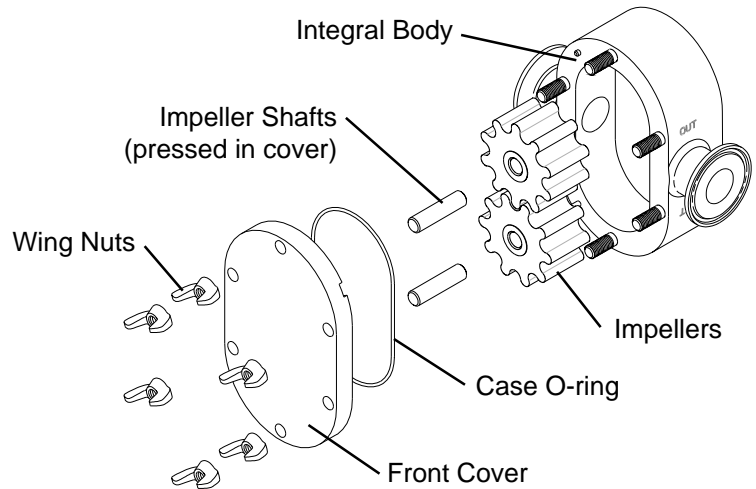
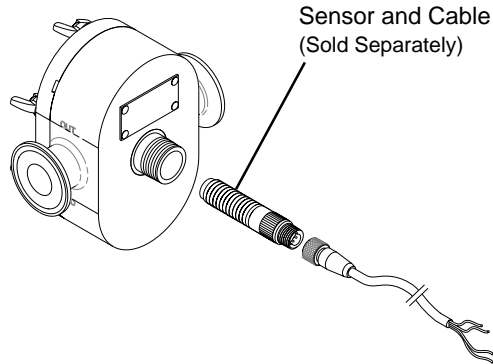
Note: Materials of construction and designs that are not approved by the 3A Council or the FDA are also available. A meter using these materials or designs will not be labeled or certified 3A compliant.

Model Specs.	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
DC30F	3"	3" Clamp	200	757	30	100	45
DC40F	4"	4" Clamp	300	1136	30	139	63

Dimensions inches [mm]	A	B	C	D	E	Diagram	
						Front View	Side View
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 [27]	.80 [20]		
DC10F	7.0 [178]	2.7 [69]	6.7 [170]	1.4 [35]	.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]		
DC30F	10.3 [262]	6.4 [163]	12.8 [325]	3.2 [82]	.80 [20]		
DC40F	13.3 [338]	6.9 [175]	15.0 [381]	3.5 [88]	.80 [20]		

Flowmeter Assembly Diagram

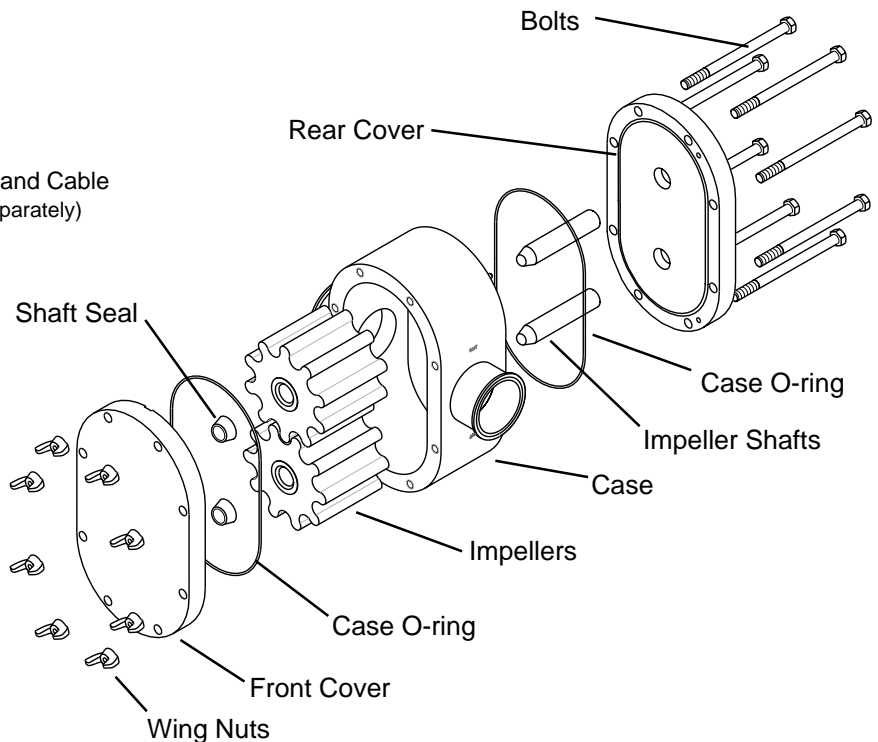
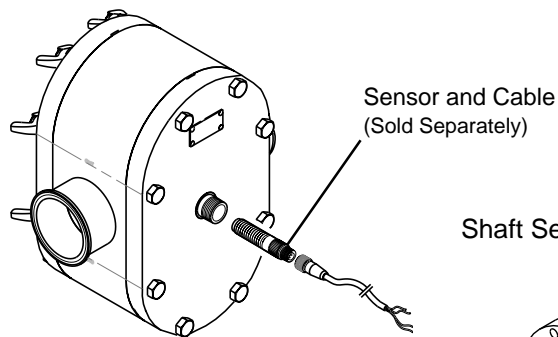
DC01F, DC02F, DC05F,
DC10F, DC15F, DC20F **



** DC20F has shafts and seals like DC30F

Flowmeter Assembly Diagram

DC30F, DC40F



Flowdata Product Families

Exact Series:

Patented dual rotor turbine flowmeters provide diagnostics, turbulence insensitivity and the widest turndown in the industry for liquid & gas applications in the aerospace, automotive, industrial and petrochemical industries.

TrickleMeter™ Series:

Low flow, precision gear meters for pressures from 5 psi to 6000 psi on applications such as chemical injection, resins, adhesives, lubricants and greases.

Decathlon Series

DC-I Industrial Series:

Industrial, in-line flowmeters for liquid flows with working pressures of up to 1000 psig.

DC-F Sanitary Series:

Sanitary, in-line flowmeters for "clean industry" applications such as food, beverage, dairy, and pharmaceutical.

DC-E Economical Series:

Economical, in-line flowmeters designed to handle basic industrial flow applications.

AP-I Flowmeters:

Engineered thermoplastic, in-line flowmeters for "ultra-pure" or aggressive chemical applications such as acids, caustics, and DI water.

HP-I Flowmeters:

High pressure, in-line flowmeters for operating pressures up to 10,000 psig.

Flow Controls:

Rate/Totalizers, Batch Controllers, Mass Flow Computers, Sensors, Transmitters, Signal Conditioners, HART® protocol and More.

DC-F Series Flowmeter Ordering

Part Number DC □□ F - □□ □□ - □□ □□ - □□□

Nominal Size

01	1/8"	15	1-1/2"
02	1/4"	20	2"
05	1/2"	30	3"
10	1"	40	4"

Case Material

* 6 316L SS ✓
0 Specify

Shaft Material

* 1 316 SS ✓
0 Specify

O-ring Material

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

Impeller Material

† 3 UHMWPE ✓ 0 Specify
§ 6 HTC ✓

Impeller Temperature (See Chart)

5 Normal Temperature
A Normal Temperature, Grooved
0 Specify

Connection Type

3 Threaded Ferrule 0 Specify
* 4 Sanitary Clamp

Connection Size

05	1/2"	20	2"	00	Specify
10	1"	30	3"		
15	1-1/2"	40	4"		

Special Designator

* 000 Standard Meter

OEM Versions - On approved projects, the Flowdata flowmeters can be modified to meet the specific needs of an OEM application.

Impeller Normal Temperature Chart

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

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

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
Grooved Impeller not available in size 01 and 02 meters

Limited Warranty

For a period of not less than one (1) year nor more than two (2) years from the original date of shipment. Seller warrants that the products described in this Warranty are free from defects in workmanship and materials only. For specific Warranty periods please refer to Seller's Warranty schedule. Seller shall not be liable for any special, incidental or consequential damages. This Warranty extends to the original purchaser of the product warranted hereunder and to each transferee owner of the product during the term of the Warranty. In the event of a defect, malfunction, or failure of the product not caused by any misuse or damage to the product while in possession of the owner, the warrantor will remedy the failure or defect, within a reasonable amount of time after written notification from the owner of same. The remedy will consist of repair or replacement of the product only, at the warrantor's option. The owner must return the defective or malfunctioning component part(s) to the factory for such repair or replacement. If this product or one of its component parts is modified in any way by the owner, transferee owner, his agent or employee, this Warranty shall become null and void.

Local Representative:



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