



# **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

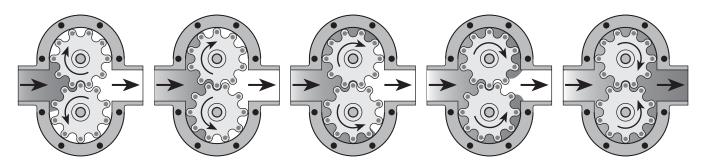


#### **Decathlon Series**

Industrial Flowmeters

 $\begin{array}{c} \text{Protected by one or more U.S. Patents:} \\ 4641522, \, 4815318, \, 4911010, \, 4996888, \, 5027653, \, 5325715 \end{array}$ 

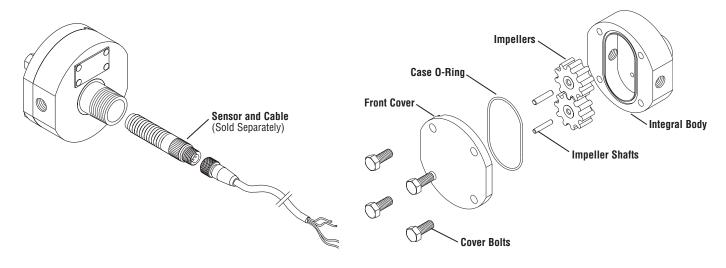
## **Principle of Operation**



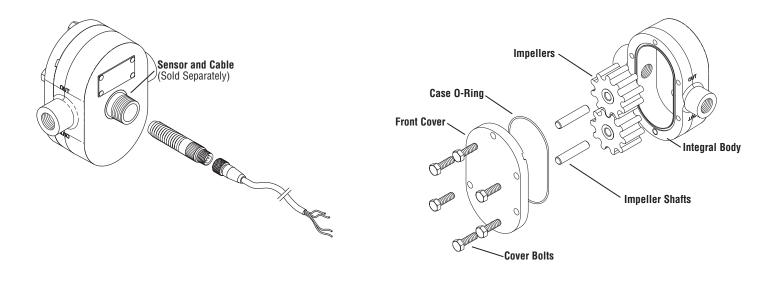
Flow Technology positive displacement flowmeters use two rotating impellers driven by the flowing liquid. Magnets imbedded in the impellers activate a non-intrusive sensor which generates a pulsed output signal. Each pulse represents a known volume of liquid that is captured in between the lobes of the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

## **Flowmeter Assembly Diagrams**

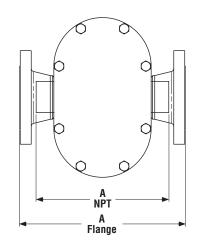
#### **DC01I, DC02I**

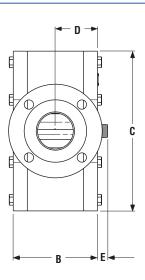


#### DC05I, DC10I, DC15I, DC20I



## **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)  $\pm 0.05\%$  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  $\pm 0.5\%$  of rate over upper

80% of full span

With enhanced

signal conditioning Up to  $\pm 0.1\%$  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.

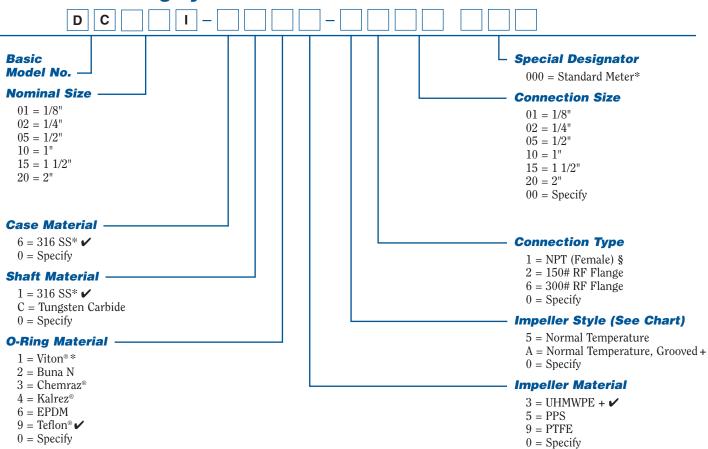
#### **Model Specifications**

Basic	Nominal	Maximum Flow Rate		Reco	Weight				
Model No.	Size			Me	NPT		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	A (NF	PT)	A (150#	RFF)	В		C		D		E	
Model No.	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	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**



## 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	$250^{\circ}\ \mathrm{F}$
	(-29° C to +121° C)	(121° C)
<b>UHMWPE</b>	-20° F to +150° F	185° F
	(-29° C to +66° C)	(85° C)

## Key

*	Standard Configuration
<b>✓</b>	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**

Materiai	Guide					
Name	Description 316 Stainless Steel, 316L has reduced carbon					
316 SS 🗸						
Buna N	Nitrile					
Chemraz®	Elastomeric PTFE by Greene, Tweed & Co. Inc					
<b>EPDM</b>	Ethylene Propylene					
Kalrez®	Perfluorinated Elastomer, by DuPont					
PPS	Polyphenylene Sulfide, Ryton® by Phillips Petroleum					
PTFE	Polytetrafluoroethylene, Teflon <sup>®</sup> by DuPont (Impeller)					
Teflon <sup>®</sup> ✓	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.

#### Local Representative:







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