

## 5002F Series

**THOMAS**  
by Gardner Denver

### FEATURES

- > Self priming
- > Dry running
- > Oil-less, non lubricated
- > Suitable for continuous operation
- > Chemical resistant pump materials for aggressive media

### TYPICAL APPLICATIONS

- > Chemical Industry
- > Medical Devices
- > Laboratory and Analysis
- > Industrial Applications
- > Hygiene

Consult factory for customized solutions

### BASE MODEL

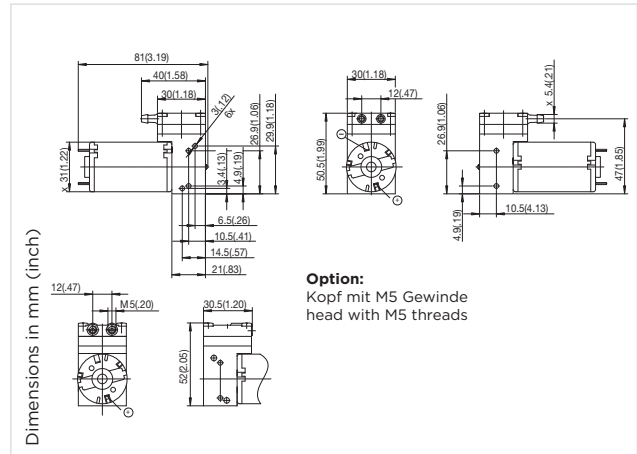
5002F  
5002F Twin



Diaphragm

# Diaphragm Liquid Pump 5002F

<b>Flow</b>	<b>400 ml/min</b>
<b>Pressure height</b>	<b>up to 40 m H<sub>2</sub>O</b>
<b>Suction height</b>	<b>6 m H<sub>2</sub>O</b>



## HYDRAULIC DATA

Description	PA/EPDM	PPS/FPM	Carbon/PTFE
Part number	12 V DC 24 V DC <b>53001002</b> <b>53001003</b>	<b>53001005</b> <b>53001006</b>	<b>53001008</b> <b>53001009</b>
Max. flow	400 ml/min	400 ml/min	400 ml/min
Max. intermittent pressure height	40 m H <sub>2</sub> O	40 m H <sub>2</sub> O	40 m H <sub>2</sub> O
Max. continuous pressure height	up to 15 m H <sub>2</sub> O	up to 15 m H <sub>2</sub> O	up to 10 m H <sub>2</sub> O
Max. suction height	6 m H <sub>2</sub> O	6 m H <sub>2</sub> O	5 m H <sub>2</sub> O

## ELECTRICAL DATA

Motor type	Permanent magnet	Permanent magnet	Permanent magnet
Nominal speed	3000 rpm	3000 rpm	3000 rpm
Nominal voltage	12/24 V DC	12/24 V DC	12/24 V DC
Max. power consumption @ 10 m H <sub>2</sub> O	5 W	7 W	7 W
Motor insulation class	A	A	A
Protection class	IP20	IP20	IP20
EMC protection	Basic EMC filter (2L)	Basic EMC filter (2L)	Basic EMC filter (2L)

## GENERAL DATA

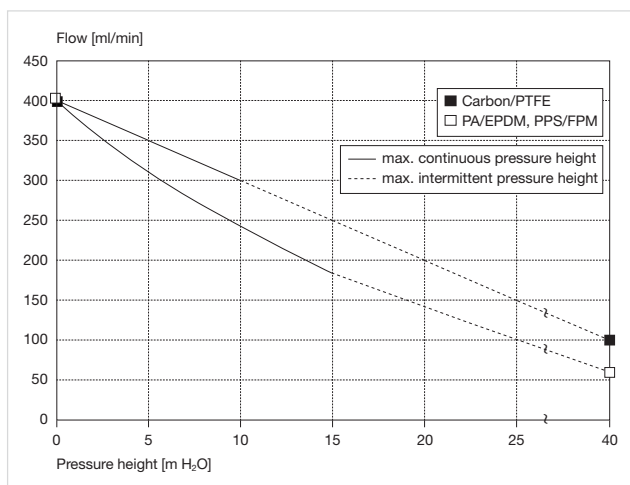
Ambient temperature	0 to 40 °C	15 to 40 °C	15 to 40 °C
Media temperature	0 to 70 °C	15 to 70 °C	15 to 70 °C
Weight	0,19 kg	0,19 kg	0,19 kg

## WETTED PARTS

Pump head	PA	PPS	Carbon
Diaphragm	EPDM	FPM	PTFE
Valves	EPDM	FPM	FFPM

The technical data is based on the use of PVC measuring tubing, 4 x 1,5 mm (ID x wall thickness), 1 m length, 65° shore hardness. The use of a different tubing will change the flow.

## FLOW CURVES



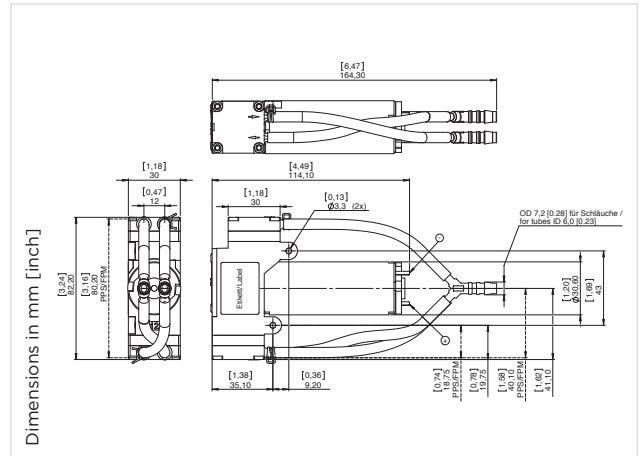
## OPTIONS

- > Pump head with M5 female thread (PA, PPS)
- > Pulsation damper

**5300...** Stock programme

# Diaphragm Liquid Pump 5002F Twin DC

<b>Flow</b>	<b>1100 ml/min</b>
<b>Pressure height</b>	<b>up to 25 m H<sub>2</sub>O</b>
<b>Suction height</b>	<b>4,5 m H<sub>2</sub>O</b>



## HYDRAULIC DATA

Description	5002F Twin DC Carbon/EPDM	5002F Twin DC PPS/FPM
Part number	12 V 24 V	
	<b>53200001</b> <b>53200002</b>	<b>53200051</b> <b>53200052</b>
Max. flow (parallel config.)	1000 ml/min	1100 ml/min
Max. intermittent pressure height	25 m H <sub>2</sub> O	25 m H <sub>2</sub> O
Max. continuous pressure height	10 m H <sub>2</sub> O	10 m H <sub>2</sub> O
Max. suction height	4,5 m H <sub>2</sub> O	4,5 m H <sub>2</sub> O

## ELECTRICAL DATA

Motor type	Permanent Magnet	Permanent Magnet
Nominal speed	2700 rpm	2500 rpm
Nominal voltage	12/24 V DC	12/24 V DC
Max. power consumption @ 10 m H <sub>2</sub> O	6,5 W	8,2 W
Motor insulation class	E	E
Protection class	IPO0	IPO0
EMC protection	Yes	Yes

## GENERAL DATA

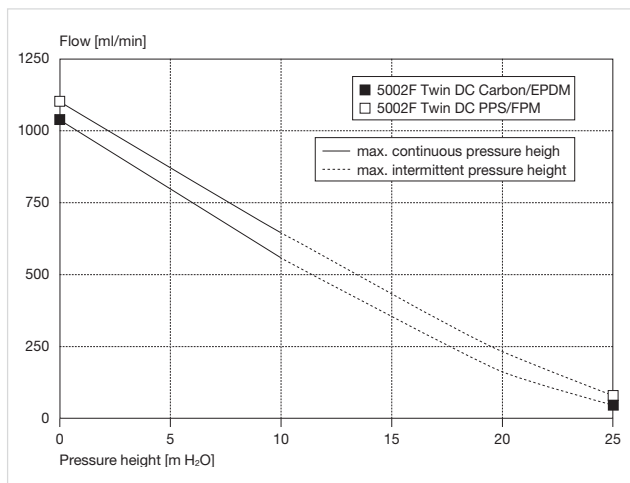
Ambient temperature	0 to 40 °C	0 to 40 °C
Media temperature	0 to 70 °C	0 to 70 °C
Weight	0,34 kg	0,33 kg

## WETTED PARTS

Pump head	Carbon	PPS
Diaphragm	EPDM	FPM
Valves	EPDM	FPM
Tubing	PUR	PUR

The technical data is based on the use of PVC measuring tubing, 6 x 2 mm (ID x wall thickness), 1 m length, 75° shore hardness. The use of a different tubing will change the flow.

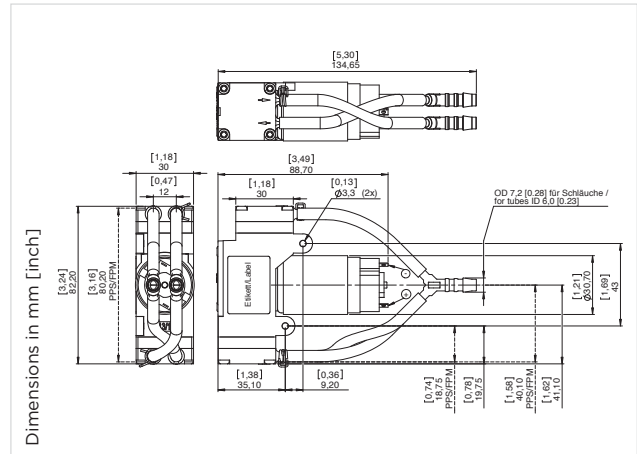
## FLOW CURVES



**5320...** Stock programme

# Diaphragm Liquid Pump 5002F Twin LC

<b>Flow</b>	<b>1100 ml/min</b>
<b>Pressure height</b>	<b>up to 25 m H<sub>2</sub>O</b>
<b>Suction height</b>	<b>4,5 m H<sub>2</sub>O</b>



## HYDRAULIC DATA

Description	5002F Twin LC Carbon/EPDM	5002F Twin LC PPS/FPM
Part number		
12 V	<b>53200003</b>	<b>53200053</b>
24 V	<b>53200004</b>	<b>53200054</b>
Max. flow (parallel config.)	1000 ml/min	1100 ml/min
Max. intermittent pressure height	25 m H <sub>2</sub> O	25 m H <sub>2</sub> O
Max. continuous pressure height	10 m H <sub>2</sub> O	10 m H <sub>2</sub> O
Max. suction height	4,5 m H <sub>2</sub> O	4,5 m H <sub>2</sub> O

## ELECTRICAL DATA

Motor type	Permanent Magnet	Permanent Magnet
Nominal speed	2600 rpm	2200 rpm
Nominal voltage	12/24 V DC	12/24 V DC
Max. power consumption @ 10 m H <sub>2</sub> O	7,2 W	10,0 W
Motor insulation class	F	F
Protection class	IPO0	IPO0
EMC protection	Yes	Yes

## GENERAL DATA

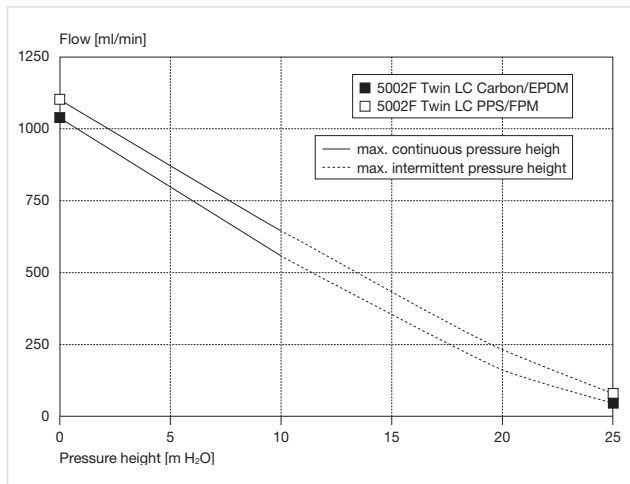
Ambient temperature	0 to 40 °C	0 to 40 °C <sup>1)</sup>
Media temperature	0 to 70 °C	0 to 70 °C
Weight	0,24 kg	0,23 kg

## WETTED PARTS

Pump head	Carbon	PPS
Diaphragm	EPDM	FPM
Valves	EPDM	FPM
Tubing	PUR	PUR

The technical data is based on the use of PVC measuring tubing, 6 x 2 mm (ID x wall thickness), 1 m length, 75° shore hardness. The use of a different tubing will change the flow. <sup>1)</sup>Motor housing temperature must not exceed 65°C

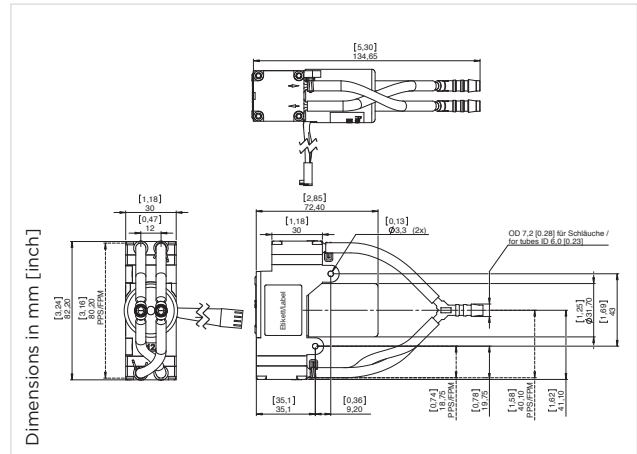
## FLOW CURVES



**5320...** Stock programme

# Diaphragm Liquid Pump 5002F Twin BLDC

<b>Flow</b>	<b>1100 ml/min</b>
<b>Pressure height</b>	<b>up to 25 m H<sub>2</sub>O</b>
<b>Suction height</b>	<b>4,5 m H<sub>2</sub>O</b>



## HYDRAULIC DATA

Description	5002F Twin BLDC Carbon/EPDM	5002F Twin BLDC PPS/FPM
Part number	12 V DC 24 V DC <b>53200005</b> <b>53200006</b>	<b>53200055</b> <b>53200056</b>
Max. flow (parallel config.)	1100 ml/min @ 3 V DC control voltage	1100 ml/min @ 3 V DC control voltage
Max. intermittent pressure height	25 m H <sub>2</sub> O	25 m H <sub>2</sub> O
Max. continuous pressure height	10 m H <sub>2</sub> O	10 m H <sub>2</sub> O
Max. suction height	4,5 m H <sub>2</sub> O	4,5 m H <sub>2</sub> O

## ELECTRICAL DATA

Motor type	Brushless DC	Brushless DC
Nominal speed	2600 rpm @ 3 V DC speed voltage	2500 rpm @ 3 V DC speed voltage
Nominal voltage	12/24 V DC	12/24 V DC
Max. power consumption @ 10 m H <sub>2</sub> O	6,3 W	8,1 W
Motor insulation class	B	B
Protection class	IP20	IP20
EMC protection	Yes	Yes
Connector	Housing Terminal	Molex KK 22-01-2045 Molex KK 08-50-0031

## GENERAL DATA

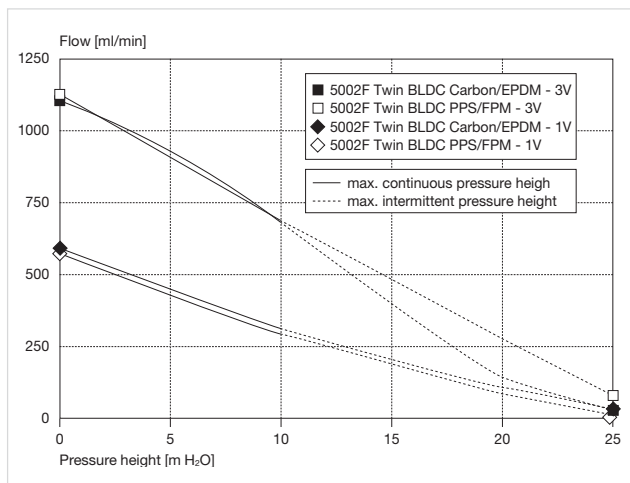
Ambient temperature	0 to 40 °C	0 to 40 °C
Media temperature	0 to 70 °C	0 to 70 °C
Weight	0,22 kg	0,21 kg

## WETTED PARTS

Pump head	Carbon	PPS
Diaphragm	EPDM	FPM
Valves	EPDM	FPM
Tubing	PUR	PUR

The technical data is based on the use of PVC measuring tubing, 6 x 2 mm (ID x wall thickness), 1 m length, 75° shore hardness. The use of a different tubing will change the flow.

## FLOW CURVES



## OPTIONS

**5320...** Stock programme

- > Adapter for 2-wire duty incl. potentiometer for speed adjustment
- > 29011930 (12 V DC), 29011931 (24 V DC)

Function	Colour	Control
Pin 1	V Supply	Red
Pin 2	Ground	Black
Pin 3	Speed Control	White
Pin 4	Tacho out	Green

12 V DC (max. voltage range: 10..18 V DC)  
24 V DC (max. voltage range: 14..28 V DC)  
Ground for V Supply (Pin 1) and Speed control (Pin 3)  
analog: 0..5 V DC (max. 28V)  
PWM: 6..20 kHz - 14..96%  
Speed voltage input threshold: 0,2 V  
18 pulses per revolution  
Pulse time "LOW": 195 µs  
Output level "LOW": 0 / max. 0,5 V  
Output level "HIGH": min. 4 V / max. 5 V

# Chemical Resistance Chart of Wetted Parts

	Thermoplastics					Thermosets		Elastomers	
	PP	PARA	PPS	PTFE	PVDF	PUR	Carbon	EPDM	FPM
Mineral lubricants (e.g. motor oil)	+	+	+	+	+	+	+	-	+
Aliphatic hydrocarbons (e.g. propane, butane)	+	+	+	+	+	+	+	-	+
Aromatic hydrocarbons (e.g. benzene, carbon monoxide)	○	+	○	+	+	-	+	-	○
Fuel	+	+	+	+	+	+	+	-	+
Minor inorganic acids (e.g. carbon dioxide, hydrochlorid acid, perchloric acid)	+	+	+	+	+	-	+	+	+
Strong inorganic acids (e.g. carbon dioxide, hydrochloric acid, perchloric acid)	+	-	○	+	+	-	+	+	+
Minor organic acids (e.g. phenol, monochloroacetic acid, citric acid)	+	-	+	+	+	-	+	○	+
Strong organic acids (e.g. phosphoric acid, chloric acid, citric acid)	+	-	+	+	+	-	+	○	+
Oxidizing acids (e.g. nitric acid, chloric acid, sulfuric acid)	○	-	-	+	○	+	+	+	+
Minor alkalis (e.g. caustic soda, ammonia)	+	+	+	+	+	+	+	+	+
Strong alkalis (e.g. caustic soda, ammonia)	+	+	○	+	-	+	+	+	-
Trichlorethylene	○	-	+	+	+	-	+	-	+
Tetrachlorethylene	○	-	+	+	+	-	+	-	+
Acetone	+	+	+	+	-	-	+	+	-
Alcohols (e.g. methanol)	+	+	+	+	+	○	+	+	-
Hot water (hydrolysis resistance)	+	+	+	+	+	○	+	+	+

+ = small or no effect  
 - = minor or moderate effect  
 ○ = severe effect

The chemical resistance is influenced by temperature and concentration of the medium.  
 The data has to be seen as an indication and does not guarantee the material properties.

PUMP AND COMPRESSOR SOLUTIONS FOR OEMS WORLDWIDE



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