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

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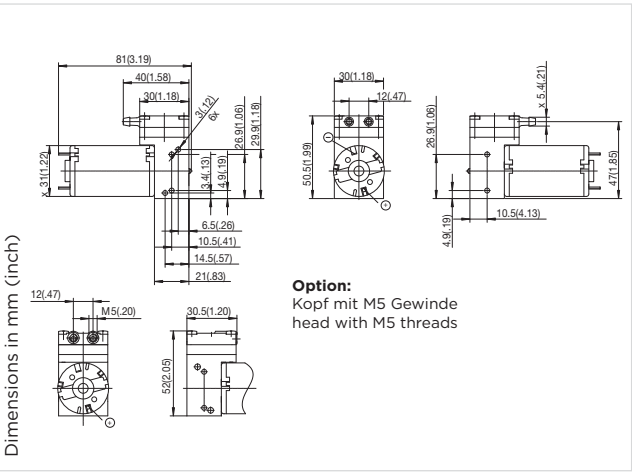
Diaphragm Liquid Pump **5002F**

Flow	**400 ml/min**
Pressure height	**up to 40 m H_2O**
Suction height	**6 m H_2O**



Option:
Kopf mit M5 Gewinde
head with M5 threads

HYDRAULIC DATA

Description		PA/EPDM	PPS/FPM	Carbon/PTFE
Part number	12 V DC	**53001002**	**53001005**	**53001008**
	24 V DC	**53001003**	**53001006**	**53001009**
Max. flow		400 ml/min	400 ml/min	400 ml/min
Max. intermittent pressure height		40 m H_2O	40 m H_2O	40 m H_2O
Max. continuous pressure height		up to 15 m H_2O	up to 15 m H_2O	up to 10 m H_2O
Max. suction height		6 m H_2O	6 m H_2O	5 m H_2O

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_2O	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

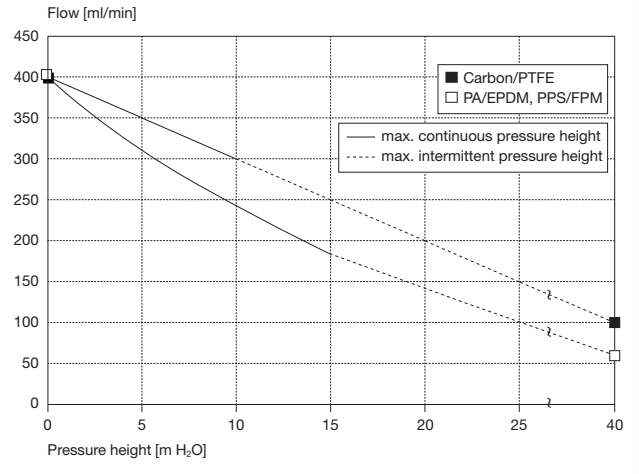
Ambient temperature	0 to 40 °C	15 to 40 °C	15 to 40 °C
Media temperature	0 to 70 °C	15 to 70 °C	15 to 70 °C
Weight	0,19 kg	0,19 kg	0,19 kg

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

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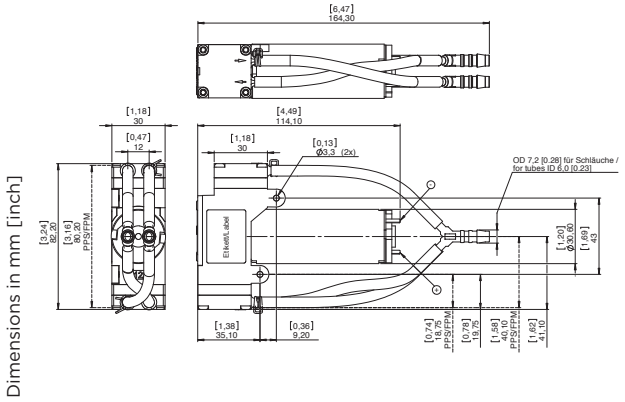
Diaphragm Liquid Pump **5002F Twin DC**

Flow	**1100 ml/min**
Pressure height	**up to 25 m H_2O**
Suction height	**4,5 m H_2O**



HYDRAULIC DATA

Description		5002F Twin DC Carbon/EPDM	5002F Twin DC PPS/FPM
Part number	12 V	**53200001**	**53200051**
	24 V	**53200002**	**53200052**
Max. flow (parallel config.)		1000 ml/min	1100 ml/min
Max. intermittent pressure height		25 m H_2O	25 m H_2O
Max. continuous pressure height		10 m H_2O	10 m H_2O
Max. suction height		4,5 m H_2O	4,5 m H_2O

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_2O	6,5 W	8,2 W
Motor insulation class	E	E
Protection class	IP00	IP00
EMC protection	Yes	Yes

GENERAL DATA

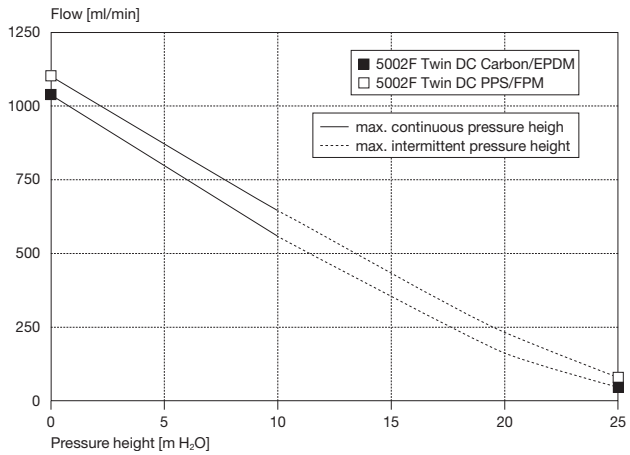
Ambient temperature	0 to 40 °C	0 to 40 °C
Media temperature	0 to 70 °C	0 to 70 °C
Weight	0,34 kg	0,33 kg

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

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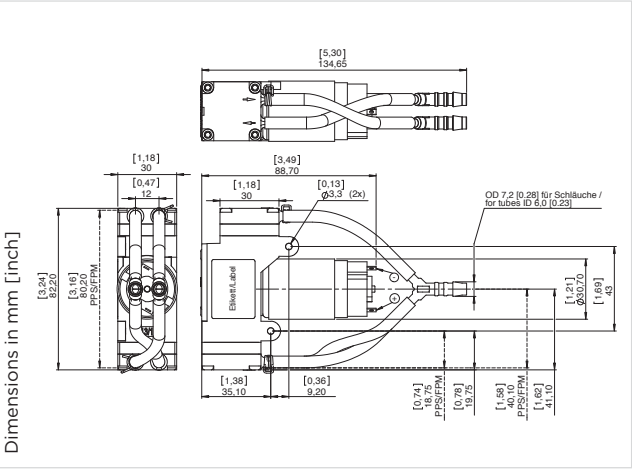
Diaphragm Liquid Pump **5002F Twin LC**

Flow	**1100 ml/min**
Pressure height	**up to 25 m H_2O**
Suction height	**4,5 m H_2O**



HYDRAULIC DATA

Description		5002F Twin LC Carbon/EPDM	5002F Twin LC PPS/FPM
Part number	12 V	**53200003**	**53200053**
	24 V	**53200004**	**53200054**
Max. flow (parallel config.)		1000 ml/min	1100 ml/min
Max. intermittent pressure height		25 m H_2O	25 m H_2O
Max. continuous pressure height		10 m H_2O	10 m H_2O
Max. suction height		4,5 m H_2O	4,5 m H_2O

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_2O	7,2 W	10,0 W
Motor insulation class	F	F
Protection class	IP00	IP00
EMC protection	Yes	Yes

GENERAL DATA

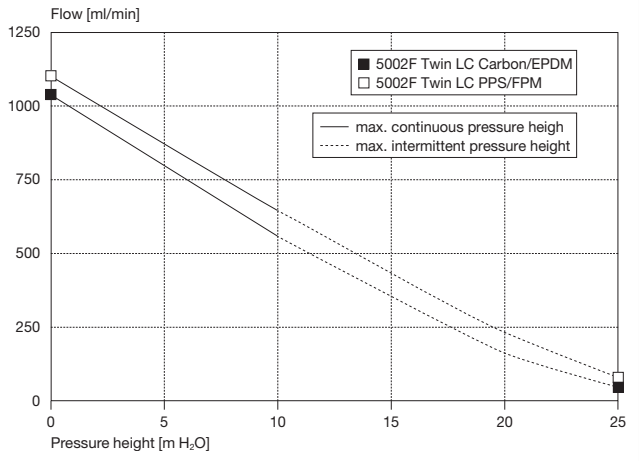
Ambient temperature	0 to 40 °C	0 to 40 °C [1)]
Media temperature	0 to 70 °C	0 to 70 °C
Weight	0,24 kg	0,23 kg

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. [1)]Motor housing temperature must not exceed 65°C

FLOW CURVES



5320... Stock programme

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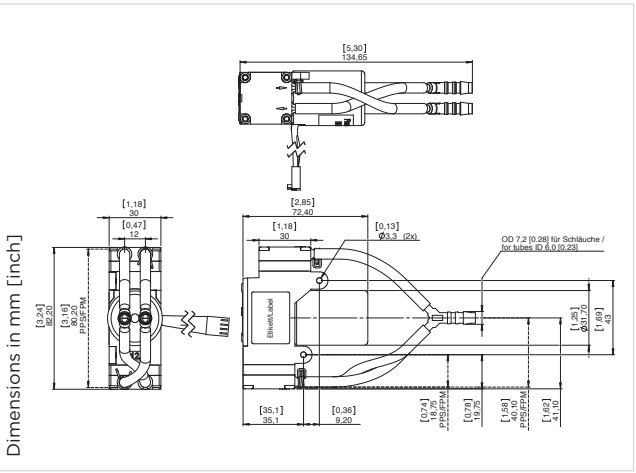
Diaphragm Liquid Pump **5002F Twin BLDC**

Flow	**1100 ml/min**
Pressure height	**up to 25 m H_2O**
Suction height	**4,5 m H_2O**



HYDRAULIC DATA

Description		5002F Twin BLDC Carbon/EPDM	5002F Twin BLDC PPS/FPM
Part number	12 V DC	**53200005**	**53200055**
	24 V DC	**53200006**	**53200056**
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_2O	25 m H_2O
Max. continuous pressure height		10 m H_2O	10 m H_2O
Max. suction height		4,5 m H_2O	4,5 m H_2O

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_2O		6,3 W	8,1 W
Motor insulation class		B	B
Protection class		IP20	IP20
EMC protection		Yes	Yes
Connector	Housing	Molex KK 22-01-2045	Molex KK 22-01-2045
	Terminal	Molex KK 08-50-0031	Molex KK 08-50-0031

GENERAL DATA

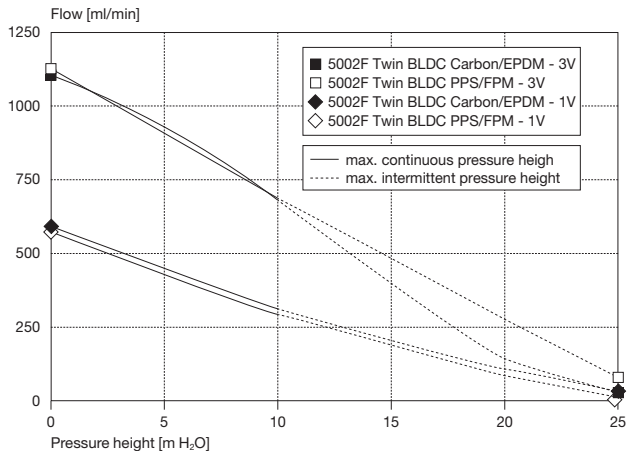
Ambient temperature	0 to 40 °C	0 to 40 °C
Media temperature	0 to 70 °C	0 to 70 °C
Weight	0,22 kg	0,21 kg

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

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

5320... Stock programme

	Function	Colour	Control
Pin 1	V Supply	Red	12 V DC (max. voltage range: 10..18 V DC) 24 V DC (max. voltage range: 14..28 V DC)
Pin 2	Ground	Black	Ground for V Supply (Pin 1) and Speed control (Pin 3)
Pin 3	Speed Control	White	analog: 0..5 V DC (max. 28V) PWM: 6..20 kHz – 14..96% Speed voltage input threshold: 0,2 V
Pin 4	Tacho out	Green	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

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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)	O	+	O	+	+	-	+	-	O
Fuel	+	+	+	+	+	+	+	-	+
Minor inorganic acids (e.g. carbon dioxide, hydrochlorid acid, perchloric acid)	+	+	+	+	+	-	+	+	+
Strong inorganic acids (e.g. carbon dioxide, hydrochloric acid, perchloric acid)	+	-	O	+	+	-	+	+	+
Minor organic acids (e.g. phenol, monochloroacetic acid, citric acid)	+	-	+	+	+	-	+	O	+
Strong organic acids (e.g. phosphoric acid, chloric acid, citric acid)	+	-	+	+	+	-	+	O	+
Oxidizing acids (e.g. nitric acid, chloric acid, sulfuric acid)	O	-	-	+	O	+	+	+	+
Minor alkalis (e.g. caustic soda, ammonia)	+	+	+	+	+	+	+	+	+
Strong alkalis (e.g. caustic soda, ammonia)	+	+	O	+	-	+	+	+	-
Trichlorethylene	O	-	+	+	+	-	+	-	+
Tetrachlorethylene	O	-	+	+	+	-	+	-	+
Acetone	+	+	+	+	-	-	+	+	-
Alcohols (e.g. methanol)	+	+	+	+	+	O	+	+	-
Hot water (hydrolysis resistance)	+	+	+	+	+	O	+	+	+

+ = small or no effect
- = minor or moderate effect
O = 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

THOMAS
by Gardner Denver

The information presented in this material is based on technical data and test results of nominal units. It is believed to be accurate and reliable and is offered as an aid to help in the selection of Thomas products. It is the responsibility of the user to determine the suitability of the product for the intended use and the user assumes all risk and liability in connection there with. Thomas does not warrant, guarantee or assume any obligation or liability in connection with this information.

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