

FEATURES

- > Oil-less
- > Low power consumption
- > Low sound level
- > Low vibration
- > Long lifetime
- > Compact design
- > Lightweight

TYPICAL APPLICATIONS

- > Medical devices
- > Gas monitoring and detection
- > Clinical chemistry analyzers

BASE MODEL

1420 BLDC P



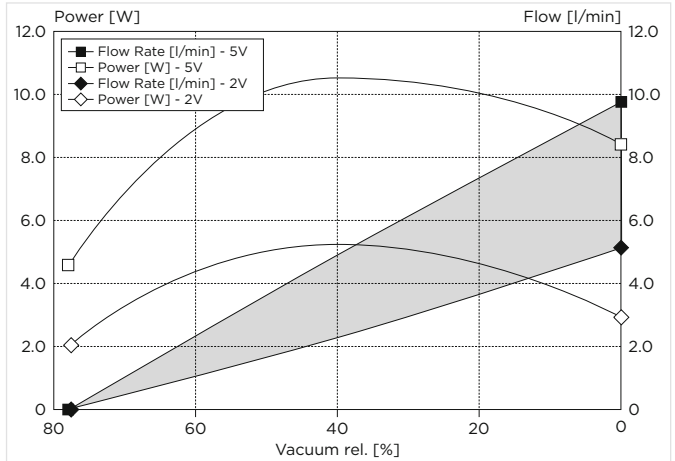
Diaphragm

Diaphragm Pump 1420VP BLDC Performance

Flow	9.8 l/min
Final Vacuum	78 %



FLOW CURVES



PNEUMATIC DATA*

Max. flow	9.8 l/min
Max. intermittent vacuum	78 %
Max. continuous vacuum	78 %
Max. restart vacuum	78 %

*@ Speed control 5 V DC

ELECTRICAL DATA

Motor type	Brushless DC
Nominal voltage	12/24 V DC
Max. power consumption	10.5 W
Insulation class	B
Protection class	IP20
Drive electronics	Integrated
Connector housing	Molex KK 22-01-3047
Connector terminal	Molex KK 08-50-0031

OPERATING CONDITIONS*

Media temperature	5 to 40 °C
Ambient temperature	5 to 40 °C
Storage temperature	-30 to 70 °C
Storage humidity	15 to 85 % (no condensation)

*Standard configuration part number 14200800/14200801

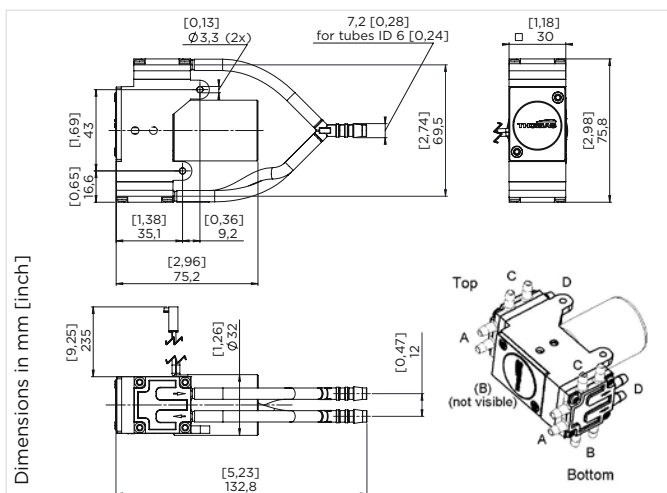
ELECTRICAL CONNECTION

Pin 1	V Supply	Red	12 V DC (max. range 10 - 18 V) 24 V DC (max. range 10 - 28 V)
Pin 2	Ground	Black	Ground for V Supply (Pin 1) and Speed Control (Pin 3)
Pin 3	Speed Control	White	Analog 0.6 - 4.8 V DC PWM 5 - 20 kHz / 20 - 90 % Input voltage threshold 0.5 V DC
Pin 4	Tacho out	Green	18 Pulses per revolution - Pulse time ,High' 400 μs±50 μs / ,Low' speed dep. - Output level ,Low' min. 0 V / max. 0.5 V - Output level ,High' min. 4 V / max. 5 V

PHYSICAL DATA

Dimensions l x w x h	75.2 x 32 x 75.8 mm (w/o tubing)
Weight	198 g
Mounting on side	Through hole Ø 3.3 mm

DIMENSIONAL DRAWING



MODEL KEY

1420 - V - P - DD - 12V - BLDC P - 3800 - 22 - EEE - PAA

Pos	Options	Description
1	1420	Product Line
2	V / D / VD	Vacuum / Pressure / Vacuum-Pressure
3	P / R / O	Tubing: Parallel / series / no tubing
4	AA / BB / CC / DD	Port position: standard DD over motor
5	12 V / 24 V	Nominal voltage
6	BLDC P	Motor: BLDC Performance
7	3800	Nominal motor speed (motor dependent)
8	12 / 15 / 19 / 22	Eccentric: e.g. 22 → 2.2 mm
9	EEE / FFF	Diaphragm, valve, seal material: EPDM / FKM
10	PAA / PPS	Pump head material: IXEF / Ryton

ORDER INFORMATION

Part Number	Model Key
14200800	1420-V-P-DD-12V-BLDC P-3800-22-EEE-PAA
14200801	1420-V-P-DD-24V-BLDC P-3800-22-EEE-PAA
Other configurations	Upon request
To order call	ASIA +86 510 6878 2258
To order call	EMEA +49 8141 22800
To order call	USA +1 920 457 4891
Or go online @	www.trythomaspumps.com
Or go online @	www.gd-thomas.com/en/shop.html

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 whatsoever in connection therewith. Thomas does not warrant, guarantee or assume any obligation or liability in connection with this information.

Diaphragm Pump 1420DP BLDC Performance

Flow	9.2 l/min
Final Pressure	1.0 bar



PNEUMATIC DATA*

Max. flow	9.2 l/min
Max. intermittent pressure	1.0 bar
Max. continuous pressure	1.0 bar
Max. restart pressure	1.0 bar

*@ Speed control 5 V DC

OPERATING CONDITIONS*

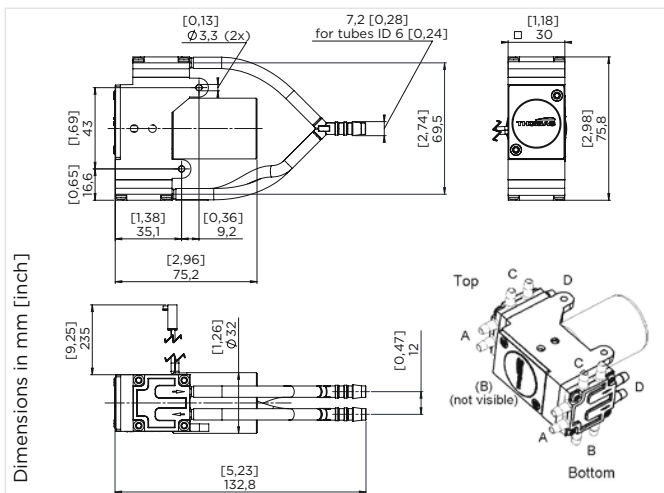
Media temperature	5 to 40 °C
Ambient temperature	5 to 40 °C
Storage temperature	-30 to 70 °C
Storage humidity	15 to 85 % (no condensation)

*Standard configuration part number 14200802/14200803

PHYSICAL DATA

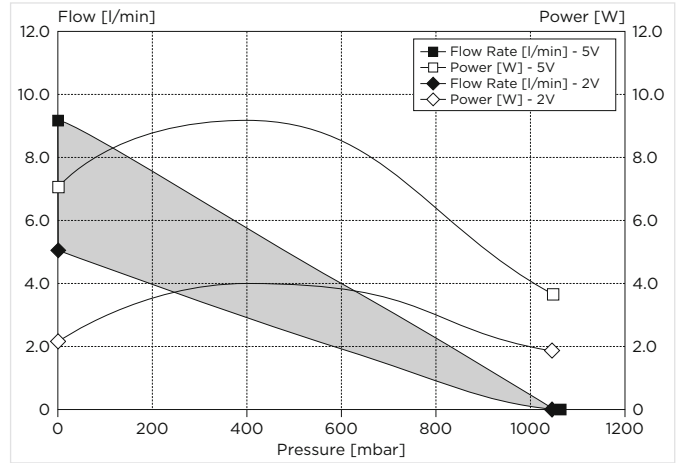
Dimensions l x w x h	75.2 x 32 x 75.8 mm (w/o tubing)
Weight	198 g
Mounting on side	Through hole Ø 3.3 mm

DIMENSIONAL DRAWING



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 whatsoever in connection therewith. Thomas does not warrant, guarantee or assume any obligation or liability in connection with this information.

FLOW CURVES



ELECTRICAL DATA

Motor type	Brushless DC
Nominal voltage	12/24 V DC
Max. power consumption	9.5 W
Insulation class	B
Protection class	IP20
Drive electronics	Integrated
Connector housing	Molex KK 22-01-3047
Connector terminal	Molex KK 08-50-0031

ELECTRICAL CONNECTION

Pin 1	V Supply	Red	12 V DC (max. range 10 - 18 V) 24 V DC (max. range 10 - 28 V)
Pin 2	Ground	Black	Ground for V Supply (Pin 1) and Speed Control (Pin 3)
Pin 3	Speed Control	White	Analog 0.6 - 4.8 V DC PWM 5 - 20 kHz / 20 - 90 % Input voltage threshold 0.5 V DC
Pin 4	Tacho out	Green	18 Pulses per revolution - Pulse time ,High' 400 µs±50 µs / ,Low' speed dep. - Output level ,Low' min. 0 V / max. 0.5 V - Output level ,High' min. 4 V / max. 5 V

MODEL KEY

1420 - D - P - DD - 12V - BLDC P - 3900 - 22 - EEE - PAA

Pos	Options	Description
1	1420	Product Line
2	V/D/VD	Vacuum / Pressure / Vacuum-Pressure
3	P/R/O	Tubing: Parallel / series / no tubing
4	AA/BB/CC/DD	Port position: standard DD over motor
5	12 V/24 V	Nominal voltage
6	BLDC P	Motor: BLDC Performance
7	3900	Nominal motor speed (motor dependent)
8	12/15/19/22	Eccentric: e.g. 22 ⇒ 2.2 mm
9	EEE/FFF	Diaphragm, valve, seal material: EPDM / FKM
10	PAA/PPS	Pump head material: IXEF / Ryton

ORDER INFORMATION

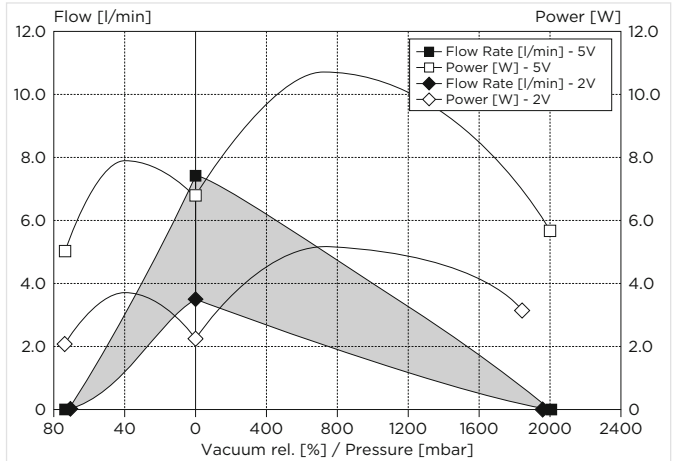
Part Number	Model Key
14200802	1420-D-P-DD-12V-BLDC P-3900-22-EEE-PAA
14200803	1420-D-P-DD-24V-BLDC P-3900-22-EEE-PAA
Other configurations	Upon request
To order call	ASIA +86 510 6878 2258
To order call	EMEA +49 8141 22800
To order call	USA +1 920 457 4891
Or go online @	www.trythomaspumps.com
Or go online @	www.gd-thomas.com/en/shop.html

Diaphragm Pump 1420VDP BLDC Performance

Flow	7.4 l/min
Final Vacuum	75 %
Final Pressure	2.0 bar



FLOW CURVES



PNEUMATIC DATA*

Max. flow	7.4 l/min
Max. intermittent vacuum	75 %
Max. continuous vacuum	75 %
Max. restart vacuum	75 %
Max. intermittent pressure	2.0 bar
Max. continuous pressure	2.0 bar
Max. restart pressure	2.0 bar

*@ Speed control 5 V DC

ELECTRICAL DATA

Motor type	Brushless DC
Nominal voltage	12/24 V DC
Max. power consumption	10.8 W
Insulation class	B
Protection class	IP20
Drive electronics	Integrated
Connector housing	Molex KK 22-01-3047
Connector terminal	Molex KK 08-50-0031

OPERATING CONDITIONS*

Media temperature	5 to 40 °C
Ambient temperature	5 to 40 °C
Storage temperature	-30 to 70 °C
Storage humidity	15 to 85 % (no condensation)

*Standard configuration part number 14200804/14200805

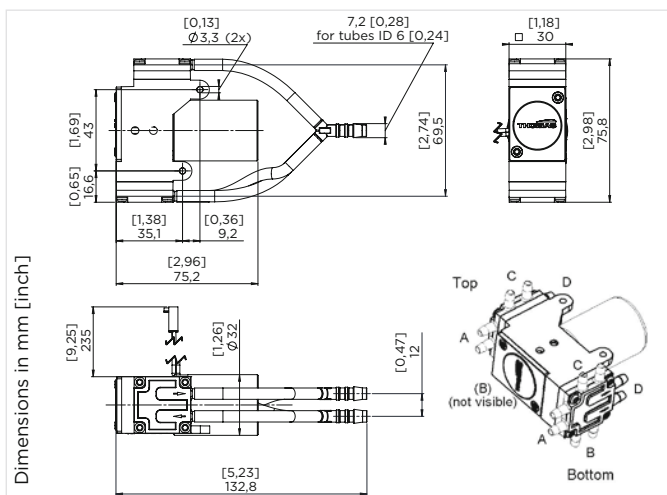
ELECTRICAL CONNECTION

Pin 1	V Supply	Red	12 V DC (max. range 10 - 18 V) 24 V DC (max. range 10 - 28 V)
Pin 2	Ground	Black	Ground for V Supply (Pin 1) and Speed Control (Pin 3)
Pin 3	Speed Control	White	Analog 0.6 - 4.8 V DC PWM 5 - 20 kHz / 20 - 90 % Input voltage threshold 0.5 V DC
Pin 4	Tacho out	Green	18 Pulses per revolution - Pulse time ,High' 400 μs±50 μs / ,Low' speed dep. - Output level ,Low' min. 0 V / max. 0.5 V - Output level ,High' min. 4 V / max. 5 V

PHYSICAL DATA

Dimensions l x w x h	75.2 x 32 x 75.8 mm (w/o tubing)
Weight	198 g
Mounting on side	Through hole Ø 3.3 mm

DIMENSIONAL DRAWING



MODEL KEY

1420 - VD - P - DD - 12V - BLDC P - 4000 - 15 - EEE - PAA

Pos	Options	Description
1	1420	Product Line
2	V/D/VD	Vacuum / Pressure / Vacuum-Pressure
3	P/R/O	Tubing: Parallel / series / no tubing
4	AA/BB/CC/DD	Port position: standard DD over motor
5	12 V/24 V	Nominal voltage
6	BLDC P	Motor: BLDC Performance
7	4000	Nominal motor speed (motor dependent)
8	12/15/19/22	Eccentric: e.g. 15 ⇒ 1.5 mm
9	EEE/FFF	Diaphragm, valve, seal material: EPDM / FKM
10	PAA/PPS	Pump head material: IXEF / Ryton

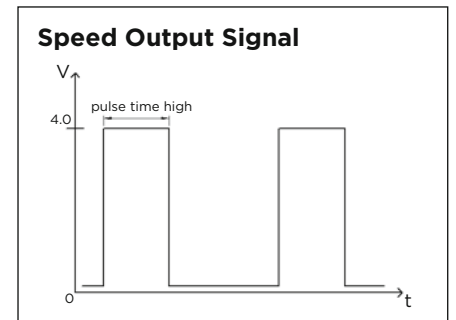
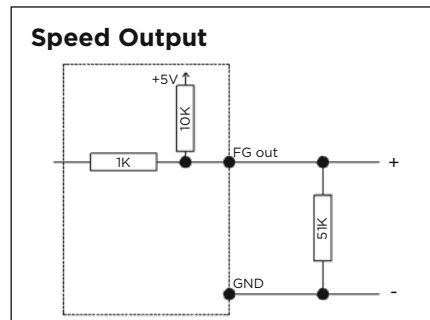
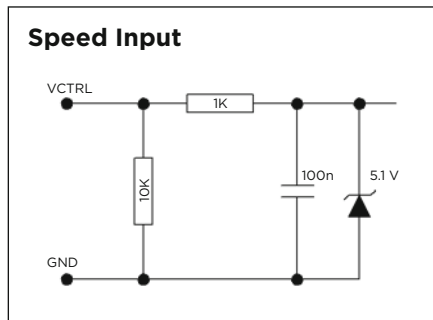
ORDER INFORMATION

Part Number	Model Key
14200804	1420-VD-P-DD-12V-BLDC P-4000-15-EEE-PAA
14200805	1420-VD-P-DD-24V-BLDC P-4000-15-EEE-PAA
Other configurations	Upon request
To order call	ASIA +86 510 6878 2258
To order call	EMEA +49 8141 22800
To order call	USA +1 920 457 4891
Or go online @	www.trythomaspumps.com
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Wiring Diagram BLDC Performance Motor

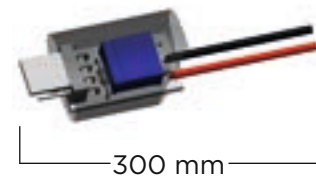
Pin	Function	Colour	Control
Pin 1	V Supply	Red	12 V DC (max. range 10 - 18 V DC) 24 V DC (max. range 10 - 28 V DC)
Pin 2	Ground	Black	Ground for V Supply (Pin 1) and Speed Control (Pin 3)
Pin 3	Speed Control	White	Analog 0.6 - 4.8 V DC PWM 5 - 20 kHz / 20 - 90 % Input voltage threshold 0.5 V DC
Pin 4	Tacho out	Green	18 pulses per revolution Pulse time 'High' 400 μ s \pm 50 μ s / 'Low' speed dependent Output level 'Low' min. 0 V / max. 0.5 V DC Output level 'High' min. 4 V / max. 5 V DC



Accessories

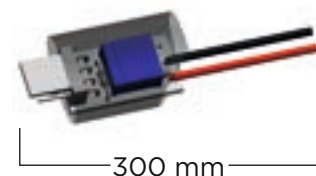
P/N 29011932

Adapter for 12 V BLDC P motor
4 - 2 wire with manual speed control
12 V DC 'red'



P/N 29011933

Adapter for 24 V BLDC motor
4 - 2 wire with manual speed control
24 V DC 'black'



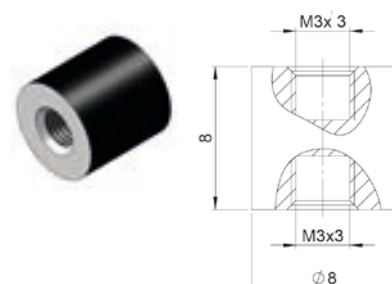
P/N 91420520

Zero Vibration Damper
Mounting bracket, shock mounts including screws and washers



P/N 91420505

Shock Mounts
Two pieces including screws and washers



PUMP AND COMPRESSOR SOLUTIONS FOR OEMS WORLDWIDE

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