

DIAPHRAGM



Diaphragm Pumps 1410 SERIES

JADE

MODELS

1410 V
1410 D
1410 VD



1410 DC Series



1410 LC Series



1410 BLDC Series

FEATURES

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

TYPICAL APPLICATIONS

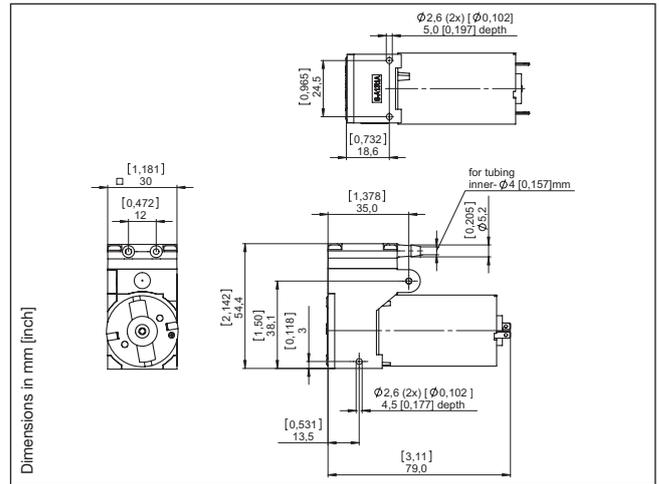
- Medical devices
- Gas detection
- Analysis
- Battery operated systems



THOMAS
A Gardner Denver Product

Diaphragm Pump 1410V DC

Flow	4,2 l/min
Final Vacuum	75 %



Pneumatic Data

Description	1410V/2,2/E/DC	
Part number	12 V	14100300
	24 V	14100301
Max. flow	4,2 l/min	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	50 %	

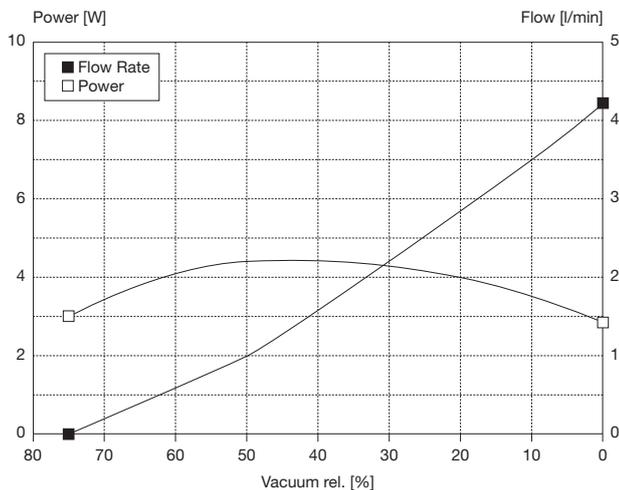
Electrical Data

Motor type	DC brush	
Nominal speed	3000 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	4,4 W	
Motor insulation class	A	
Protection class	IP20	

General Data

Ambient temperature	15 to 40 °C	
Media temperature	15 to 40 °C	
Weight	190 g	
Port direction	D	

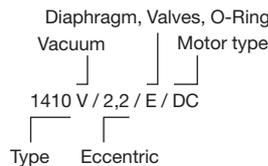
Flow Curves



Wetted Parts

Pump head	PA	Options
Diaphragm	EPDM	PPS
Valves	EPDM	FKM
		FKM

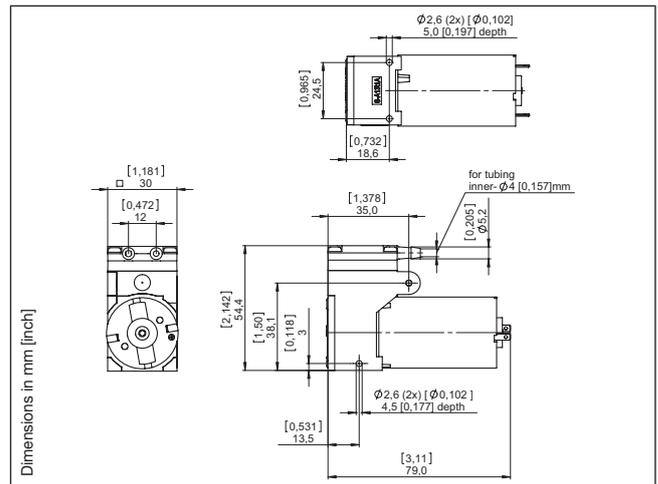
Model key: 1410... Stock programme



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Diaphragm Pump 1410D DC

Flow	4,3 l/min
Final Pressure	1,0 bar



Pneumatic Data

Description	1410D/2,2/E/DC	
Part number	12 V	14100302
	24 V	14100303
Max. flow	4,3 l/min	
Max. intermittent pressure	1,0 bar	
Max. continuous pressure	1,0 bar	
Max. restart pressure	0,5 bar	

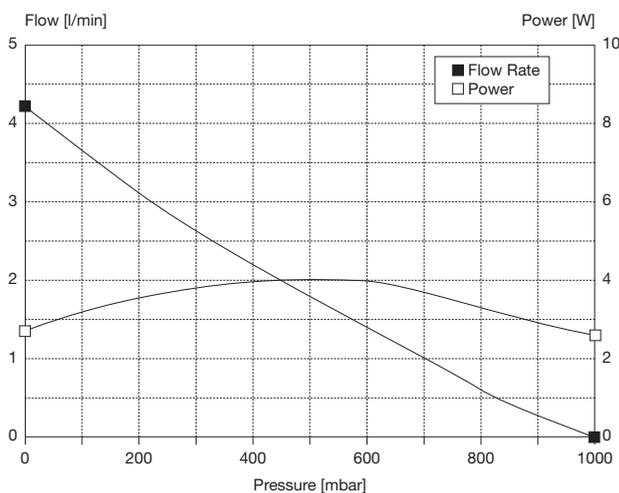
Electrical Data

Motor type	DC brush
Nominal speed	3000 rpm
Nominal voltage	12/24 V DC
Max. power consumption	4,0 W
Motor insulation class	A
Protection class	IP20

General Data

Ambient temperature	15 to 40 °C
Media temperature	15 to 40 °C
Weight	190 g
Port direction	D

Flow Curves



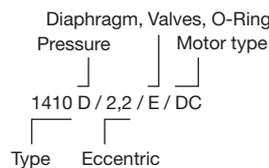
Wetted Parts

Pump head	PA
Diaphragm	EPDM
Valves	EPDM

Options

PPS

Model key:

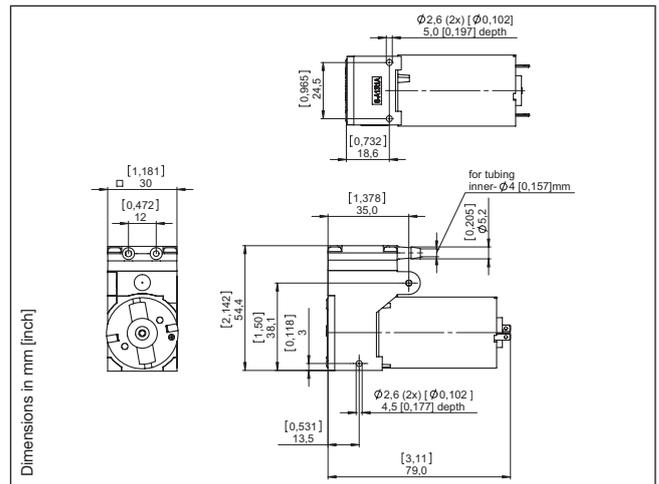


1410... Stock programme

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Diaphragm Pump 1410VD DC

Flow	3,2 l/min
Final Pressure	1,9 bar
Final Vacuum	73 %



Pneumatic Data

Description	1410VD/1,5/E/DC	
Part number	12 V	14100304
	24 V	14100305
Max. flow	3,2 l/min	
Max. intermittent pressure	1,9 bar	
Max. continuous pressure	0,7 bar	
Max. restart pressure	0,5 bar	
Max. intermittent vacuum	73 %	
Max. continuous vacuum	73 %	
Max. restart vacuum	50 %	

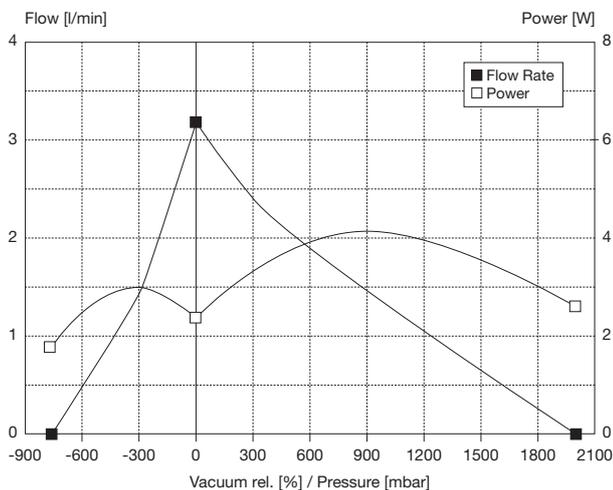
Electrical Data

Motor type	DC brush	
Nominal speed	3000 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	4,3 W	
Motor insulation class	A	
Protection class	IP20	

General Data

Ambient temperature	15 to 40 °C	
Media temperature	15 to 40 °C	
Weight	190 g	
Port direction	D	

Flow Curves



Wetted Parts

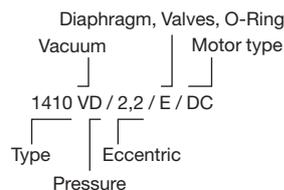
Pump head	PA
Diaphragm	EPDM
Valves	EPDM

Options

PPS

Model key:

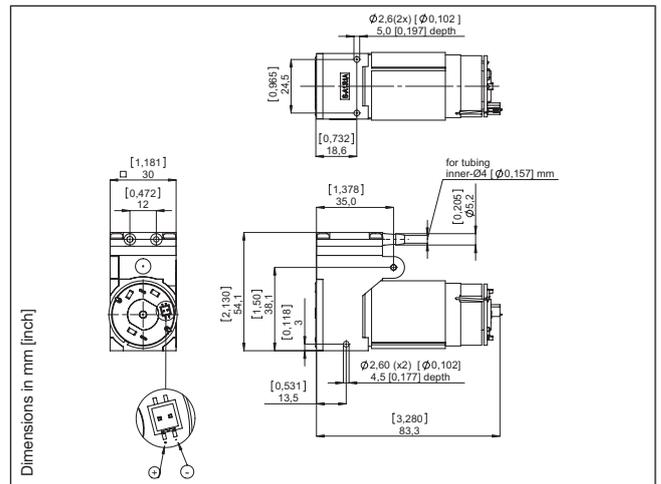
1410... Stock programme



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Diaphragm Pump 1410V LC

Flow	3,7 l/min
Final Vacuum	75 %



Pneumatic Data

Description	1410V/2,2/E/LC	
Part number	12 V	14100103
	24 V	14100106
Max. flow	3,7 l/min	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	75 %	

Electrical Data

Motor type	DC brush	
Nominal speed	3000 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	5,0 W	
Motor insulation class	F	
Protection class	IP00	

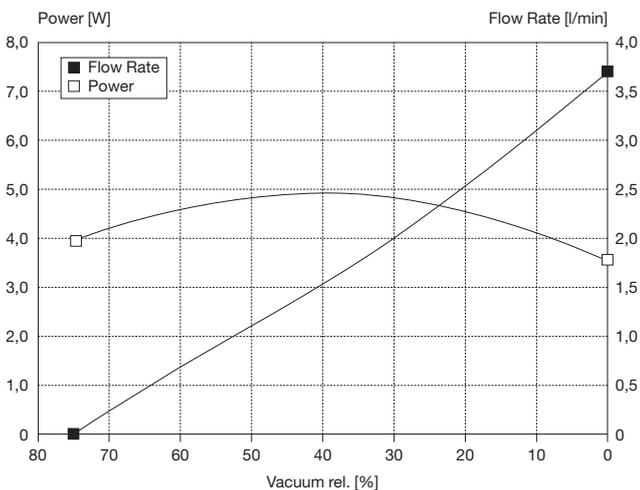
* Suitable connector	Housing, receptacle, 1.5mm, pitch	Molex P/N: 87439-0200
	2x Crimp receptacle, 1.5mm, pitch	Molex P/N: 87421-0000

General Data

Ambient temperature	15 to 40 °C	
Media temperature	15 to 40 °C	
Weight	180 g	
Port direction	D	

radio interference suppression according to EN 55011-B

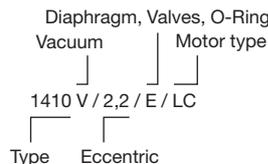
Flow Curves



Wetted Parts	
Pump head	PA
Diaphragm	EPDM
Valves	EPDM

Options	
PPS	

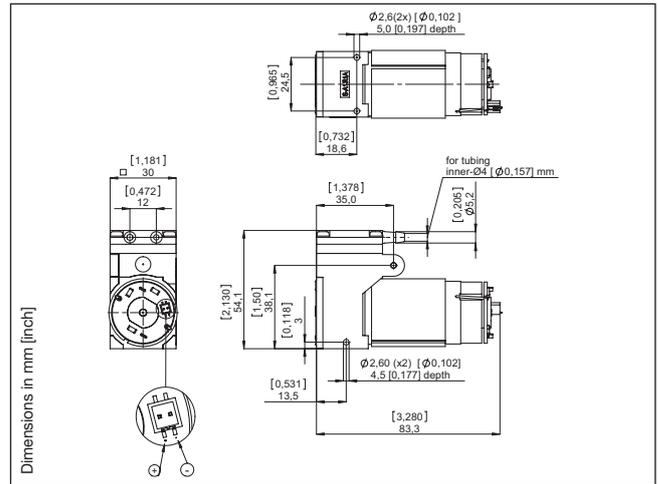
Model key: 1410... Stock programme



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Diaphragm Pump 1410D LC

Flow	3,7 l/min
Final Pressure	1,0 bar



Pneumatic Data

Description	1410D/2,2/E/LC	
Part number	12 V	14100104
	24 V	14100107
Max. flow	3,7 l/min	
Max. intermittent pressure	1,0 bar	
Max. continuous pressure	1,0 bar	
Max. restart pressure	1,0 bar	

Electrical Data

Motor type	DC brush	
Nominal speed	3000 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	4,8 W	
Motor insulation class	F	
Protection class	IP00	

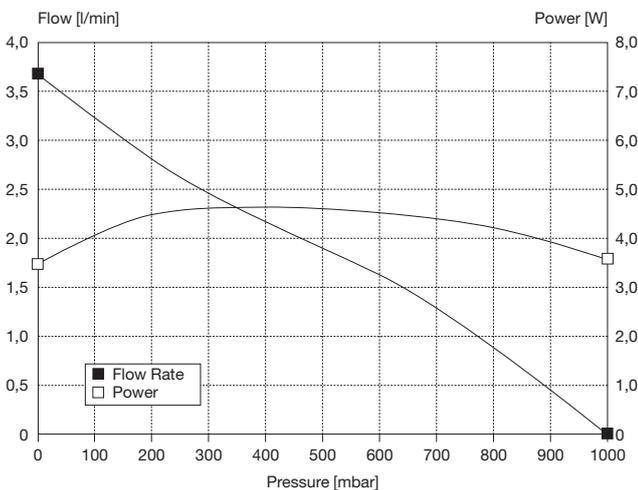
* Suitable connector	Housing, receptacle, 1.5mm, pitch	Molex P/N: 87439-0200
	2x Crimp receptacle, 1.5mm, pitch	Molex P/N: 87421-0000

General Data

Ambient temperature	15 to 40 °C	
Media temperature	15 to 40 °C	
Weight	180 g	
Port direction	D	

radio interference suppression according to EN 55011-B

Flow Curves



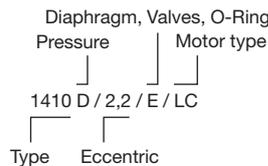
Wetted Parts

Pump head	PA
Diaphragm	EPDM
Valves	EPDM

Options

PPS

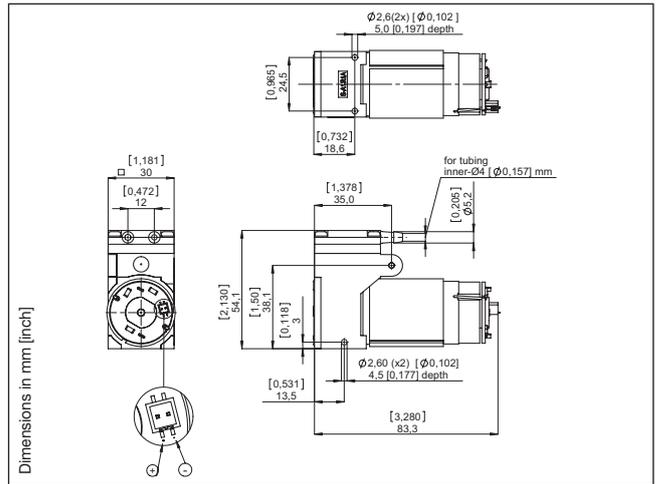
Model key: 1410... Stock programme



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Diaphragm Pump 1410VD LC

Flow	2,6 l/min
Final Pressure	1,9 bar
Final Vacuum	75 %



Pneumatic Data

Description	1410VD/1,5/E/LC	
Part number	12 V	14100105
	24 V	14100108
Max. flow	2,6 l/min	
Max. intermittent pressure	1,9 bar	
Max. continuous pressure	0,7 bar	
Max. restart pressure	1,9 bar	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	75 %	

Electrical Data

Motor type	DC brush	
Nominal speed	3000 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	5,0 W	
Motor insulation class	F	
Protection class	IP00	

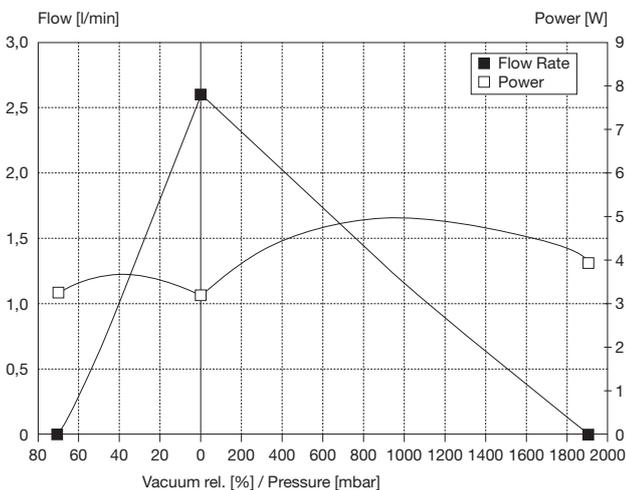
* Suitable connector	Housing, receptacle, 1.5mm, pitch	Molex P/N: 87439-0200
	2x Crimp receptacle, 1.5mm, pitch	Molex P/N: 87421-0000

General Data

Ambient temperature	15 to 40 °C	
Media temperature	15 to 40 °C	
Weight	180 g	
Port direction	D	

radio interference suppression according to EN 55011-B

Flow Curves



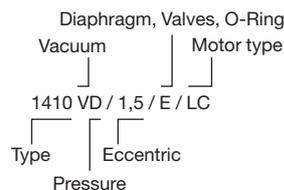
Wetted Parts

Pump head	PA
Diaphragm	EPDM
Valves	EPDM

Options

PPS

Model key:



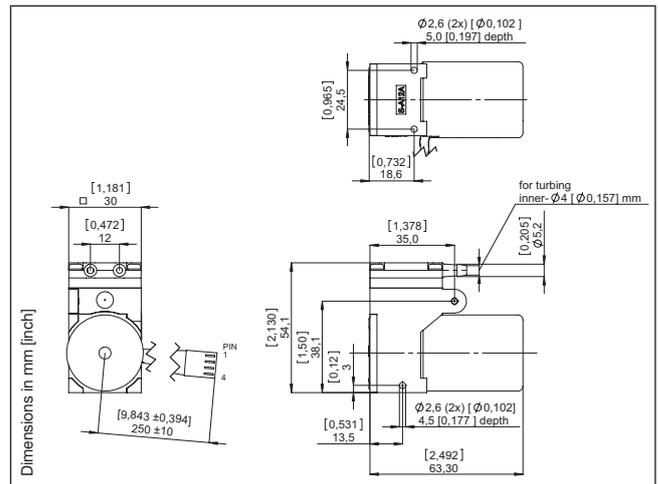
1410... Stock programme

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Diaphragm Pump 1410V BLDC

Flow	5,5 l/min
Final Vacuum	75 %



Pneumatic Data		
Description	1410V/2,2/E/BLDC	
Part number	12 V	14100210
	24 V	14100211
Max. flow	5,5 l/min	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	75 %	

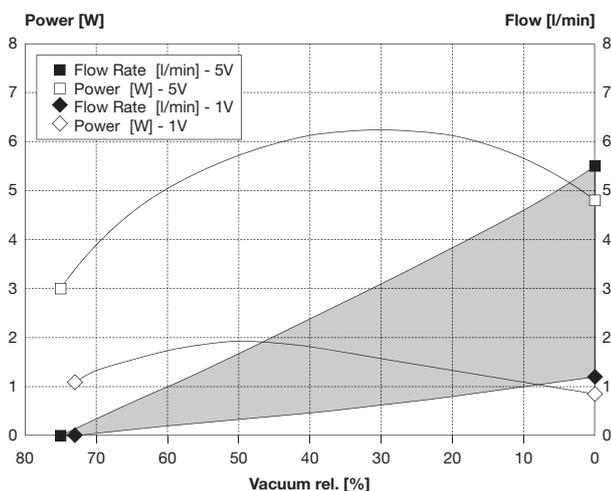
Electrical Data		
Motor type	Brushless DC	
Nominal speed	0 – 4600 rpm	
Nominal voltage	12/24 V DC	
Drive electronics	integrated with reverse supply voltage protection	
Max. power consumption	6,3 W	
Motor insulation class	B	
Protection class	IP20	
Connector	Housing:	Molex KK 22-01-2045
	Terminal:	Molex KK 08-50-0031

Wiring diagram			
	Function	Colour	Control
Pin 1	V Supply	Red	12 V DC (max. voltage range: 10..18 V DC) 24 V DC (max. voltage range: 10..28 V DC)
Pin 2	Ground	Black	Ground for Vsupply (PIN 1) and Speed Control (PIN 3) analog: 0..5 V DC (max. 28V) PWM: 6..20kHz - 14..96% Speed voltage input threshold: 0,2 V
Pin 3	Speed Control	White	
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

Optional: Adapter for 2-wire duty incl. potentiometer for speed adjustment

General Data	
Ambient temperature	15 to 40 °C
Media temperature	15 to 40 °C
Weight	170 g
Port direction	D

Flow Curves vs. Speed Control Input



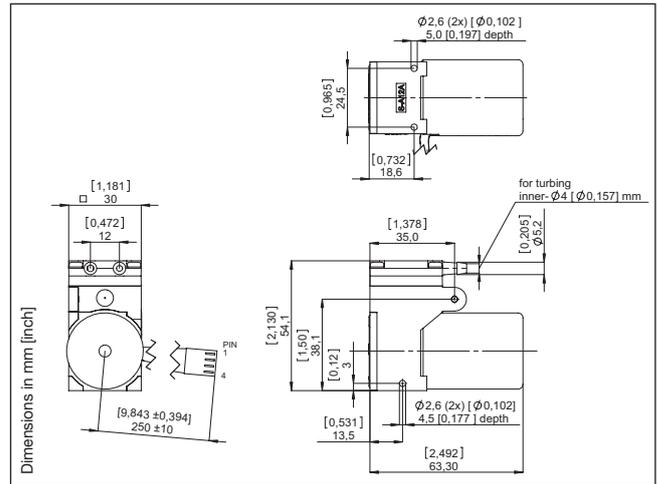
Wetted Parts	Options
Pump head	PA
Diaphragm	EPDM
Valves	EPDM
	PPS

Model key:
 Diaphragm, Valves, O-Ring
 Vacuum | Motor type
 1410 V / 2,2 / E / BLDC
 Type | Eccentric

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Diaphragm Pump 1410D BLDC

Flow	5,5 l/min
Final Pressure	1,0 bar



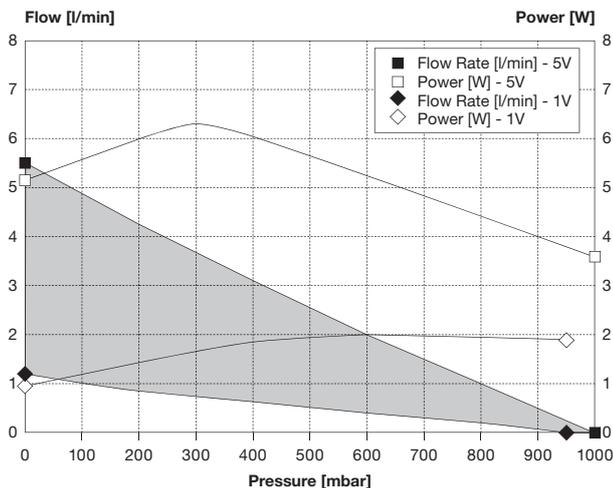
Pneumatic Data		
Description	1410D/2,2/E/BLDC	
Part number	12 V	14100212
	24 V	14100215
Max. flow	5,5 l/min	
Max. intermittent pressure	1,0 bar	
Max. continuous pressure	1,0 bar	
Max. restart pressure	1,0 bar	

Electrical Data		
Motor type	Brushless DC	
Nominal speed	0 – 4600 rpm	
Nominal voltage	12/24 V DC	
Drive electronics	integrated with reverse supply voltage protection	
Max. power consumption	6,3 W	
Motor insulation class	B	
Protection class	IP20	
Connector	Housing:	Molex KK 22-01-2045
	Terminal:	Molex KK 08-50-0031

Wiring diagram		Function	Colour	Control
Optional: Adapter for 2-wire duty incl. potentiometer for speed adjustment	Pin 1	V Supply	Red	12 V DC (max. voltage range: 10..18 V DC) 24 V DC (max. voltage range: 10..28 V DC)
	Pin 2	Ground	Black	Ground for Vsupply (PIN 1) and Speed Control (PIN 3) analog: 0..5 V DC (max. 28V) PWM: 6..20kHz - 14..96% Speed voltage input threshold: 0,2 V
	Pin 3	Speed Control	White	
	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

General Data	
Ambient temperature	15 to 40 °C
Media temperature	15 to 40 °C
Weight	170 g
Port direction	D

Flow Curves vs. Speed Control Input



Wetted Parts	Options
Pump head	PA
Diaphragm	EPDM
Valves	EPDM
	PPS

Model key:

Diaphragm, Valves, O-Ring
Pressure | Motor type

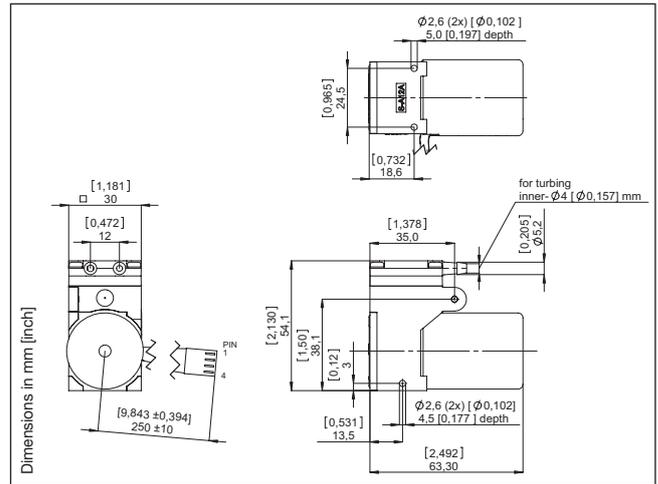
1410 D / 2,2 / E / BLDC

Type | Eccentric

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Diaphragm Pump 1410VD BLDC

Flow	4,3 l/min
Final Pressure	1,9 bar
Final Vacuum	73 %



Pneumatic Data	
Description	1410VD/1,5/E/BLDC
Part number	12 V 14100216
	24 V 14100217
Max. flow	4,3 l/min
Max. intermittent pressure	1,9 bar
Max. continuous pressure	0,7 bar
Max. restart pressure	1,9 bar
Max. intermittent vacuum	73 %
Max. continuous vacuum	73 %
Max. restart vacuum	73 %

Electrical Data	
Motor type	Brushless DC
Nominal speed	0 – 4600 rpm
Nominal voltage	12/24 V DC
Drive electronics	integrated with reverse supply voltage protection
Max. power consumption	7,0 W
Motor insulation class	B
Protection class	IP20
Connector	Housing: Molex KK 22-01-2045
	Terminal: Molex KK 08-50-0031

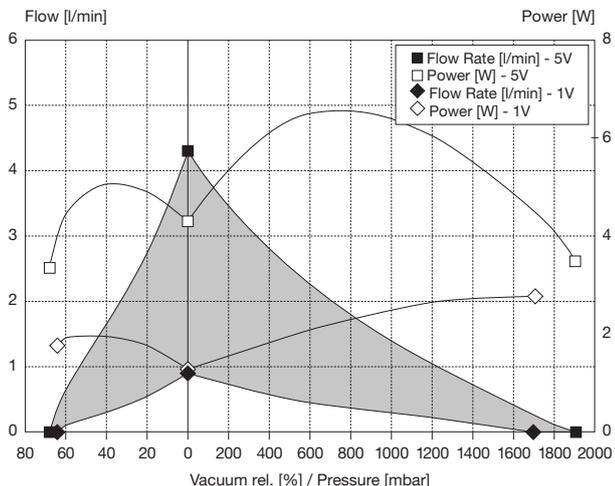
Wiring diagram

Optional: Adapter for 2-wire duty incl. potentiometer for speed adjustment

Pin	Function	Colour	Control
Pin 1	V Supply	Red	12 V DC (max. voltage range: 10..18 V DC) 24 V DC (max. voltage range: 10..28 V DC)
Pin 2	Ground	Black	Ground for Vsupply (PIN 1) and Speed Control (PIN 3)
Pin 3	Speed Control	White	analog: 0..5 V DC (max. 28V) PWM: 6..20kHz - 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

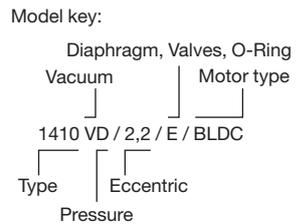
General Data	
Ambient temperature	15 to 40 °C
Media temperature	15 to 40 °C
Weight	170 g
Port direction	D

Flow Curves



Wetted Parts	
Pump head	PA
Diaphragm	EPDM
Valves	EPDM

Options	
	PPS



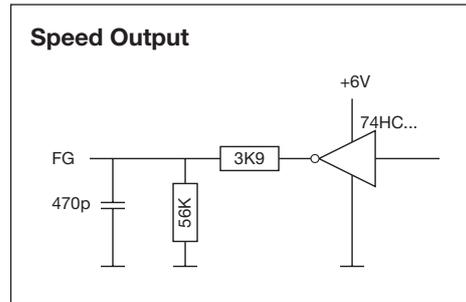
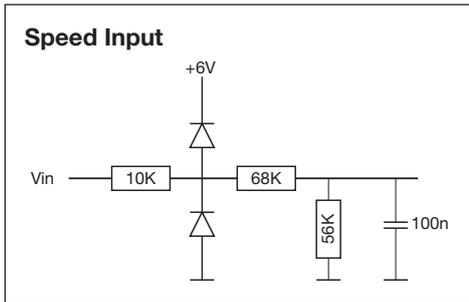
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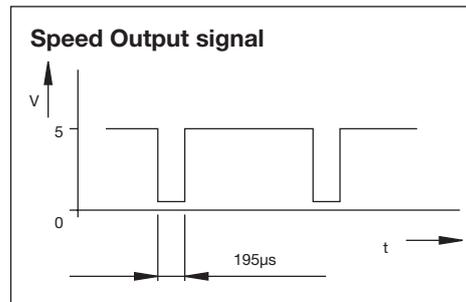
Wiring diagram (Brushless DC motor)

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: 10..28 V DC)
Ground for Vsupply (PIN 1) and Speed Control (PIN 3)
analog: 0..5 V DC (max. 28V) PWM: 6..20kHz - 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



Optional: Adapter for 2-wire duty incl. potentiometer for speed adjustment



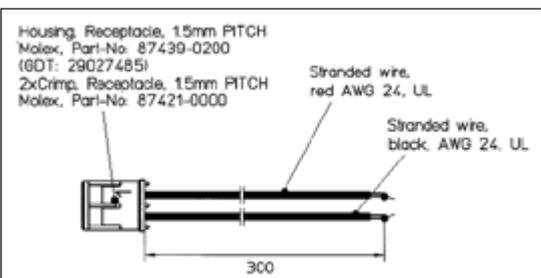
Options / Accessories

P/N 29011932 **Adapter for BLDC motor**
4-2 wire w/ manual speed control
12 V DC “red”

P/N 29011933 **Adapter for BLDC motor**
4-2 wire w/ manual speed control
24 V DC “black”



P/N 29027486 **Cable harness for LC motor version**





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Gardner Denver Thomas GmbH
Benzstraße 28 · Gewerbegebiet Nord · 82178 Puchheim · Germany
Phone: +49 89 80900-0 · Fax: +49 89 808368
e-Mail: thomas.de@gardnerdenver.com · <http://www.gd-thomas.com>