

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

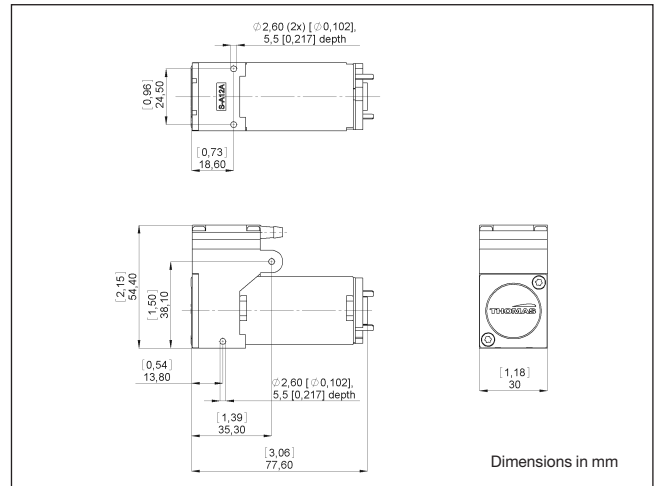
- Medical devices
- Gas detection
- Analysis
- Battery operated systems



THOMAS
A Gardner Denver Product

Diaphragm Pump 1410V DC

Flow	4,3 l/min
Final Vacuum	75 %



Pneumatic Data

Description	1410V/2,2/E/DC	
Part number	12 V	14100053
	24 V	14100056
Max. flow	4,3 l/min	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	50 %	

Electrical Data

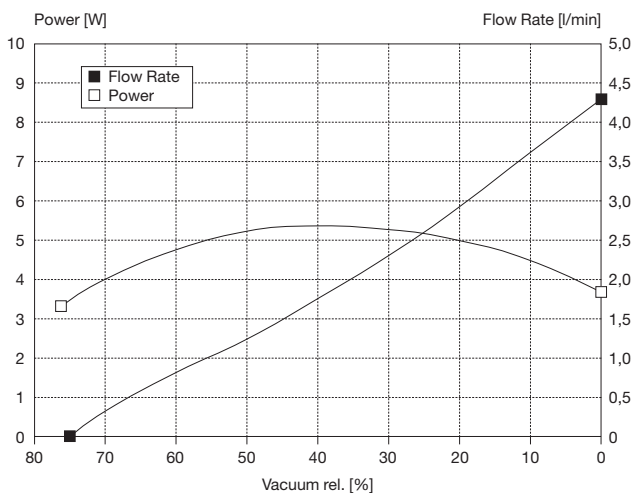
Motor type	DC brush	
Nominal speed	3.400 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	5,3 W	
Motor insulation class	E	
Protection class	IP00 (Housing IP20)	

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



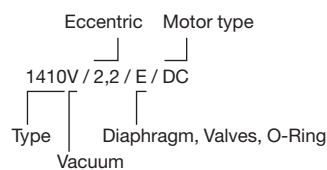
Wetted Parts

Pump head	PAA (IXEF)
Diaphragm	EPDM
Valves	EPDM

Options

PPS (Ryton®)

Model key:

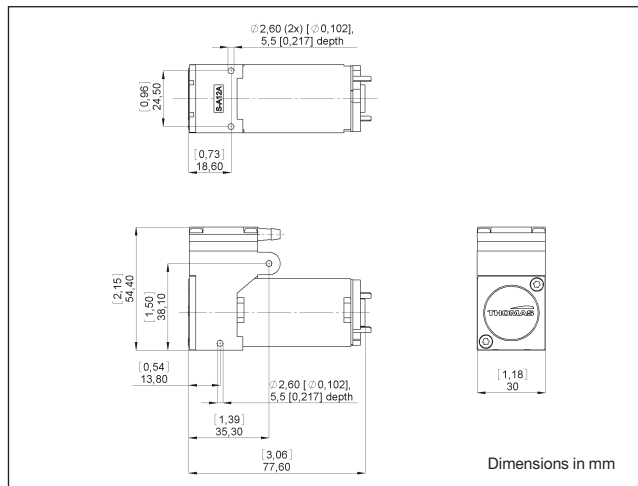
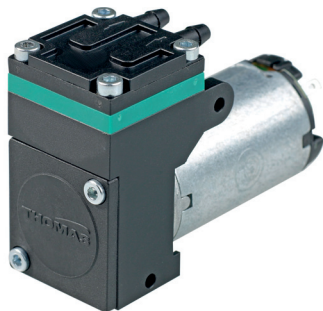


1410... Stock programme

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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	14100054
	24 V	14100057
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

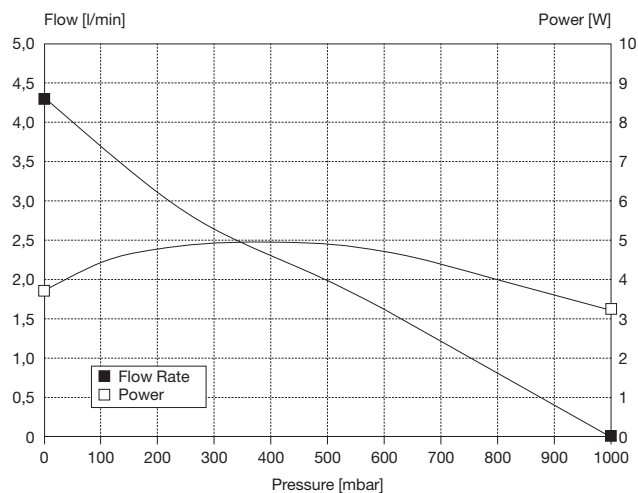
Motor type	DC brush	
Nominal speed	3.400 rpm	
Nominal voltage	12/24 V DC	
Max. power consumption	5,0 W	
Motor insulation class	E	
Protection class	IP00 (Housing IP20)	

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



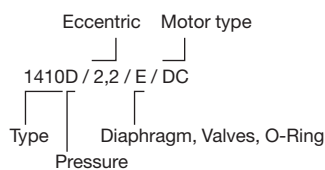
Wetted Parts

Pump head	PAA (IXEF)
Diaphragm	EPDM
Valves	EPDM

Options

PPS (Ryton®)

Model key:

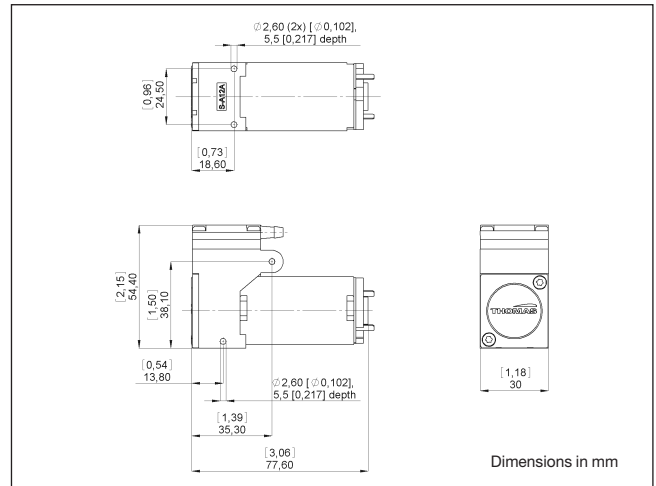
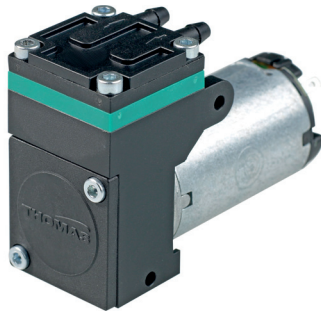


1410... Stock programme

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Diaphragm Pump 1410VD DC

Flow	3,3 l/min
Final Pressure	1,9 bar
Final Vacuum	75 %



Pneumatic Data

Description	1410VD/1,5/E/DC	
Part number	12 V	14100055
	24 V	14100058
Max. flow	3,3 l/min	
Max. intermittent pressure	1,9 bar	
Max. continuous pressure	0,7 bar	
Max. restart pressure	0,5 bar	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	50 %	

Electrical Data

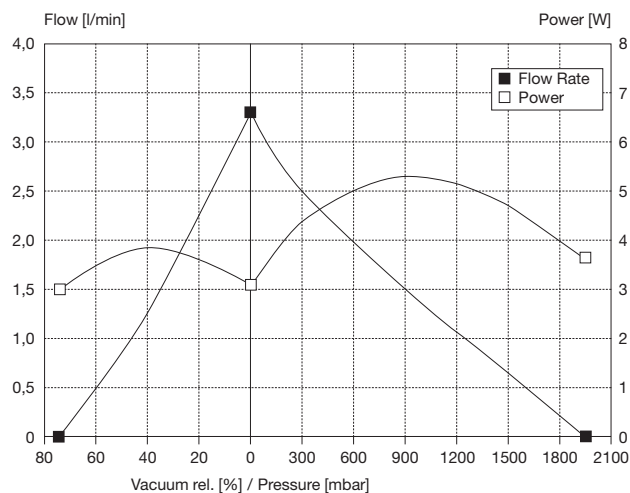
Motor type	DC brush
Nominal speed	3.400 rpm
Nominal voltage	12/24 V DC
Max. power consumption	5,3 W
Motor insulation class	E
Protection class	IP00 (Housing IP20)

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

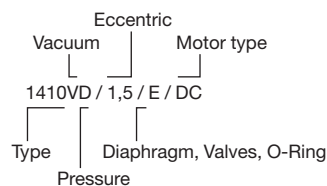
Flow Curves



Wetted Parts

Pump head	PAA (IXEF)	Options	PPS (Ryton®)
Diaphragm	EPDM		
Valves	EPDM		

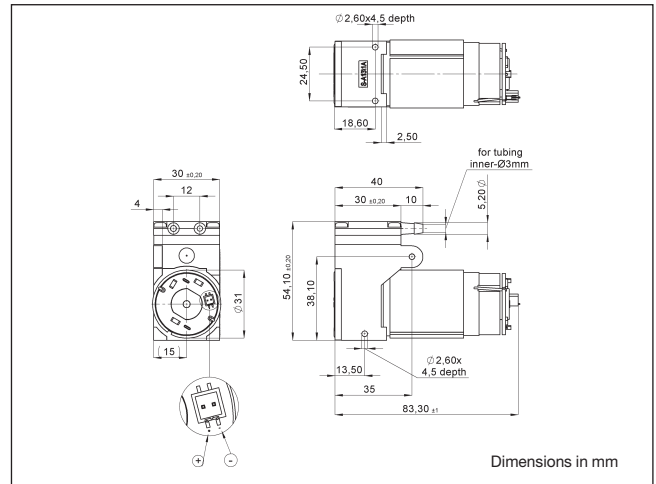
Model key: 1410... Stock programme



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

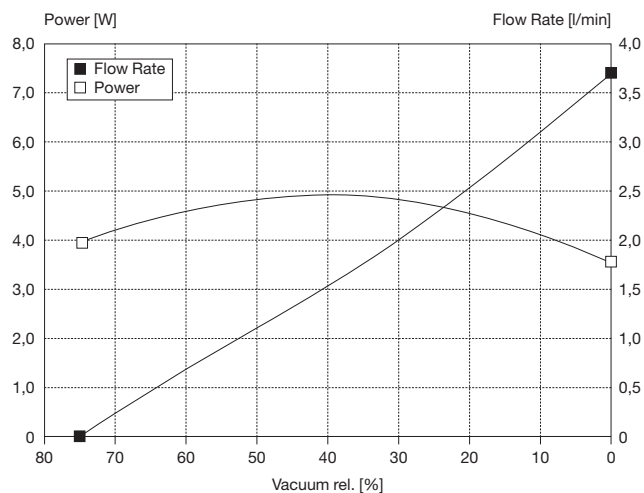
* Suitable connector	Housing, receptacle, 1.5mm, pitch	Molex P/N: 87439-0200
	2x Crimp receptacle, 1.5mm, pitch	Molex P/N: 87421-0000

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



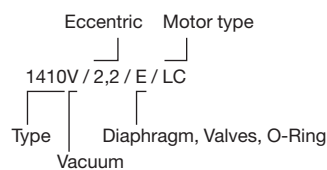
Wetted Parts

Pump head	PAA (IXEF)
Diaphragm	EPDM
Valves	EPDM

Options

PPS (Ryton®)

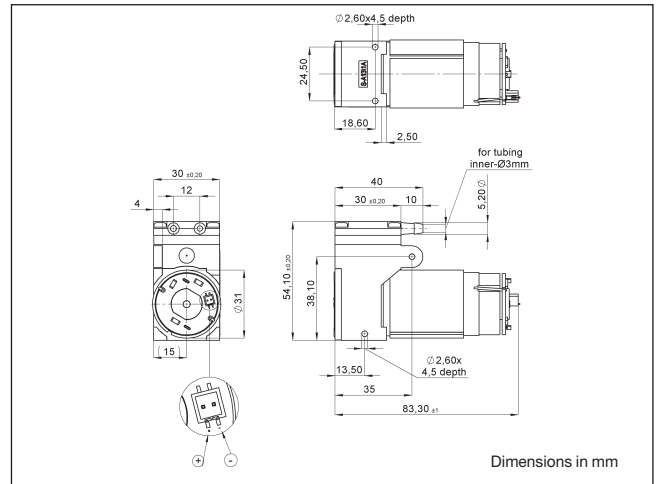
Model key: 1410... Stock programme



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Diaphragm Pump 1410D LC

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



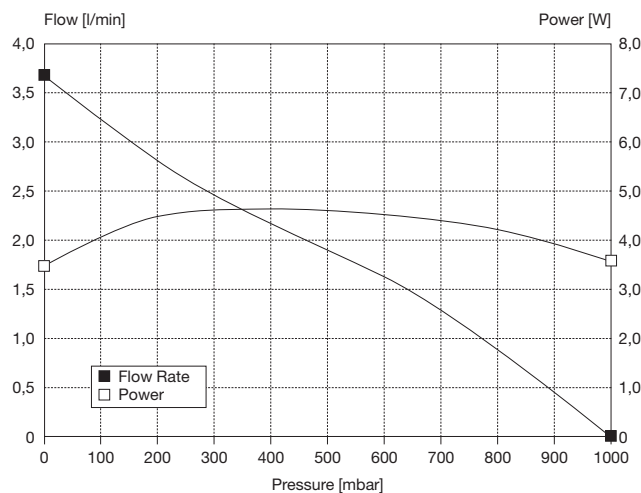
Pneumatic Data		
Description	1410D/2,2/E/LC	
Part number	12 V	14100104
	24 V	14100107
Max. flow	3,7 l/min	
Max. intermittent pressure	1,0 bar	
Max. continuous pressure	1,0 bar	
Max. restart pressure	1,0 bar	

Electrical Data		
Motor type	DC brush	
Nominal speed	3.000 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	

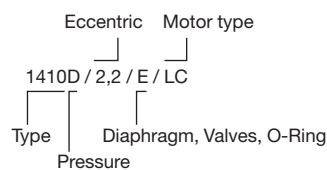
radio interference suppression according to EN 55011-B

Flow Curves



Wetted Parts		Options
Pump head	PAA (IXEF)	PPS (Ryton®)
Diaphragm	EPDM	
Valves	EPDM	

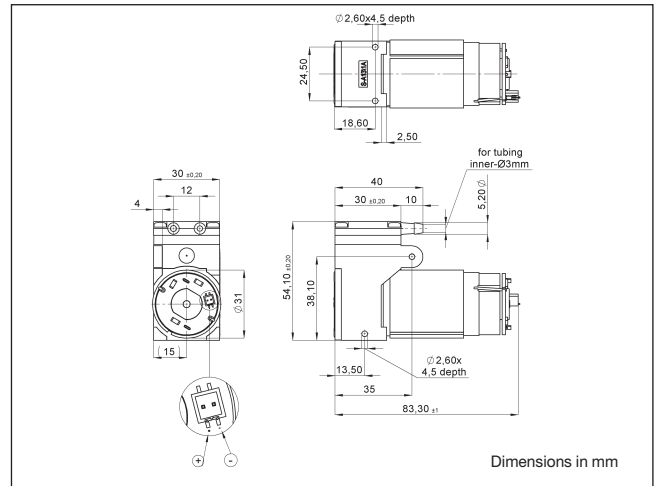
Model key: 1410... Stock programme



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

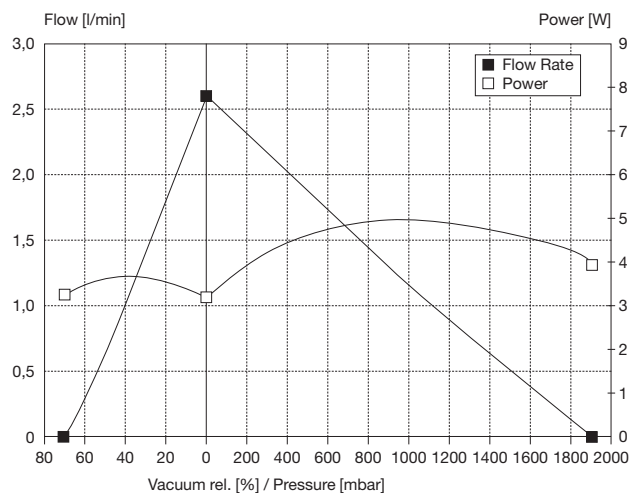
* Suitable connector	Housing, receptacle, 1.5mm, pitch	Molex P/N: 87439-0200
	2x Crimp receptacle, 1.5mm, pitch	Molex P/N: 87421-0000

General Data

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

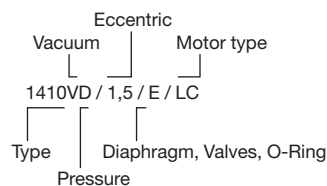
radio interference suppression according to EN 55011-B

Flow Curves



Wetted Parts		Options
Pump head	PAA (IXEF)	PPS (Ryton®)
Diaphragm	EPDM	
Valves	EPDM	

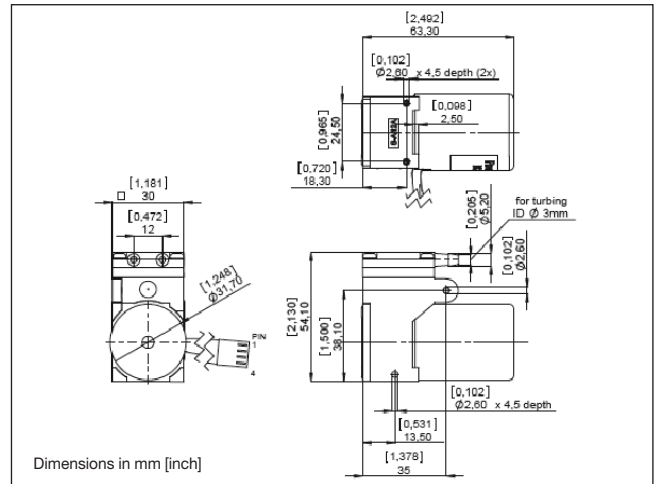
Model key: 1410... Stock programme



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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..4.600 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

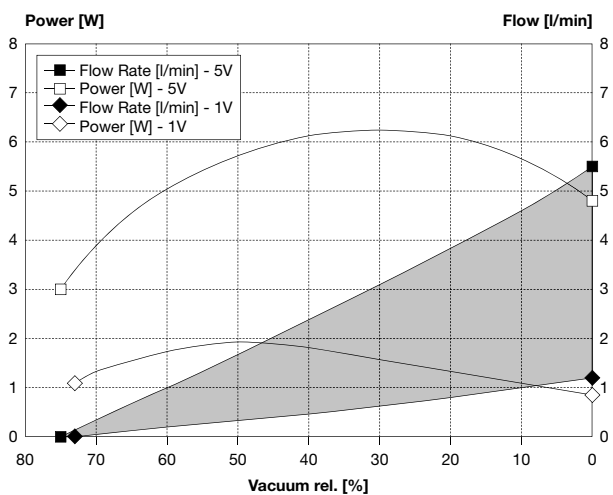
Optional: Adapter for 2-wire duty incl. potentiometer for speed adjustment

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

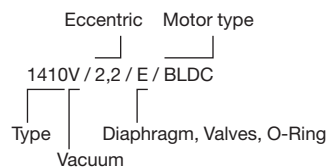
Flow Curve vs. Speed Control Input



Wetted Parts

Pump head	PAA (IXEF)	Options	PPS (Ryton®)
Diaphragm	EPDM		
Valves	EPDM		

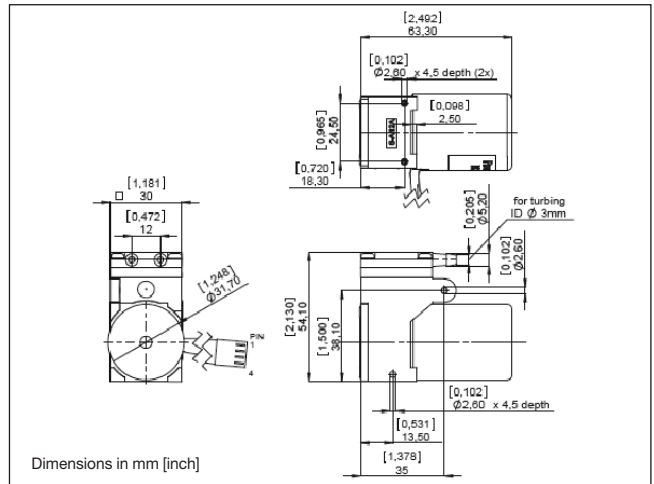
Model key:



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Diaphragm Pump 1410D BLDC

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



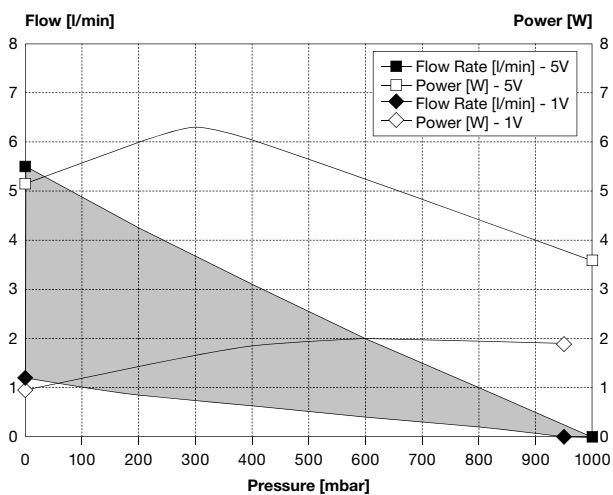
Pneumatic Data		
Description	1410D/2,2/E/BLDC	
Part number	12 V	14100212
	24 V	14100215
Max. flow	5,5 l/min	
Max. intermittent pressure	1,0 bar	
Max. continuous pressure	1,0 bar	
Max. restart pressure	1,0 bar	

Electrical Data		
Motor type	Brushless DC	
Nominal speed	0..4.600 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 VDC (max. voltage range: 10..18 VDC) 24 VDC (max. voltage range: 10..28 VDC)
	Pin 2	Ground	Black	Ground for Vsupply (PIN 1) and Speed Control (PIN 3)
	Pin 3	Speed Control	White	analog: 0..5 VDC (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 Curve vs. Speed Control Input



Wetted Parts	Options
Pump head	PAA (IXEF)
Diaphragm	EPDM
Valves	EPDM
	PPS (Ryton®)

Model key:

Eccentric Motor type

1410D / 2,2 / E / BLDC

Type Diaphragm, Valves, O-Ring

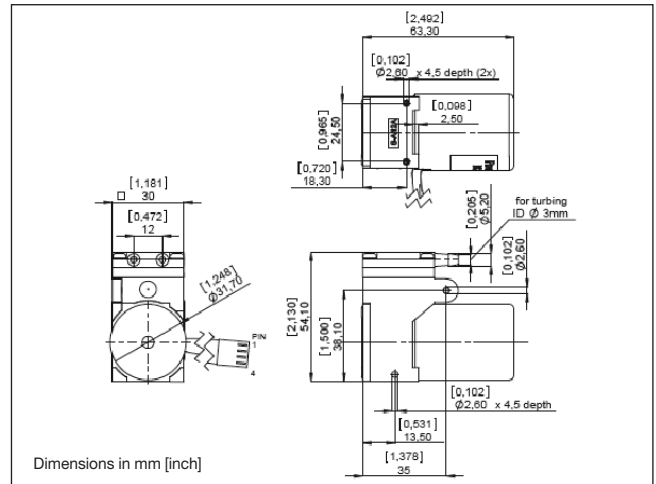
Pressure

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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..4.600 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

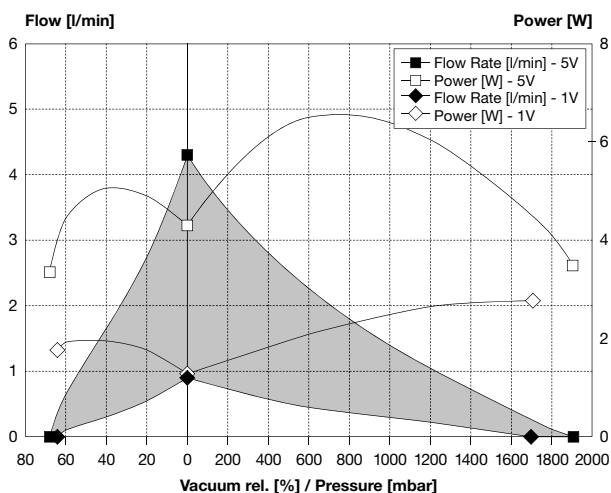
Wiring diagram

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

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



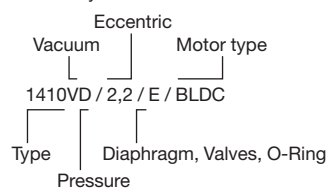
Wetted Parts

Pump head	PAA (IXEF)
Diaphragm	EPDM
Valves	EPDM

Options

PPS (Ryton®)

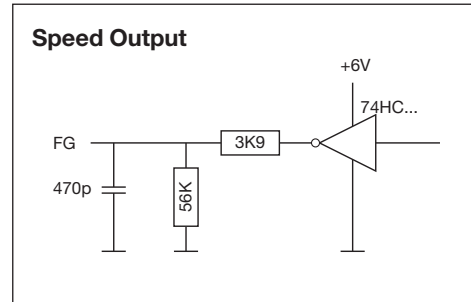
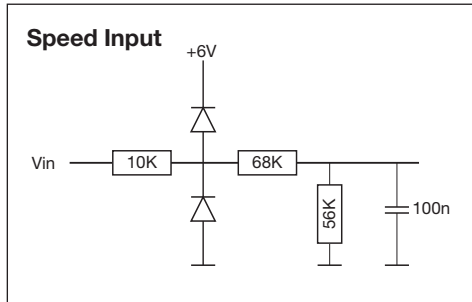
Model key:



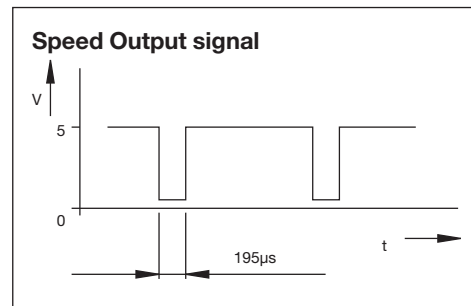
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Wiring diagram (Brushless DC motor)

Function	Colour	Control
Pin 1 V Supply	Red	12 VDC (max. voltage range: 10..18 VDC) 24 VDC (max. voltage range: 10..28 VDC)
Pin 2 Ground	Black	Ground for Vsupply (PIN 1) and Speed Control (PIN 3)
Pin 3 Speed Control	White	analog: 0..5 VDC (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 μ s 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



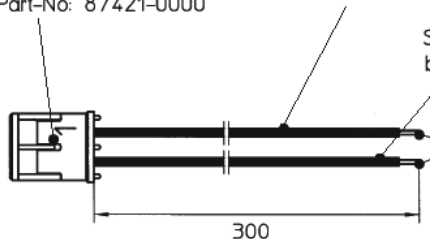
Options / Accessories

P/N 29027486 Cable harness for LC-Motor

Housing, Receptacle, 1,5mm PITCH
Molex, Part-No: 87439-0200
(GDT: 29027485)
2xCrimp, Receptacle, 1,5mm PITCH
Molex, Part-No: 87421-0000

Stranded wire,
red AWG 24, UL

Stranded wire,
black, AWG 24, UL





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