

## 1410 Series

**THOMAS**

by Gardner Denver

### FEATURES

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

### TYPICAL APPLICATIONS

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

### BASE MODEL

1410 LC

1410 DC

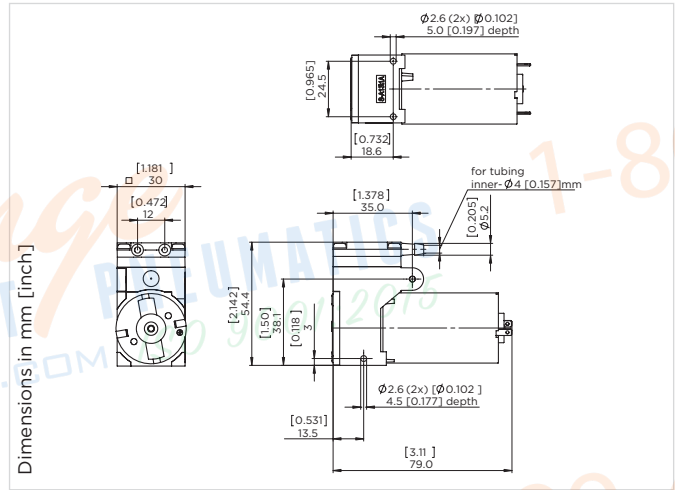
1410 BLDC



Diaphragm

# Diaphragm Pump 1410V DC

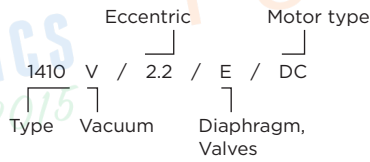
<b>Flow</b>	4.2 l/min
<b>Final Vacuum</b>	75 %



PNEUMATIC DATA		
Description	1410V/2.2/E/DC	
Part number	12 V	<b>14100300</b>
	24 V	<b>14100301</b>
Max. flow	4.2 l/min	
Max. intermittent vacuum	75 %	
Max. continuous vacuum	75 %	
Max. restart vacuum	50 %	

1410... Stock programme

Model key:

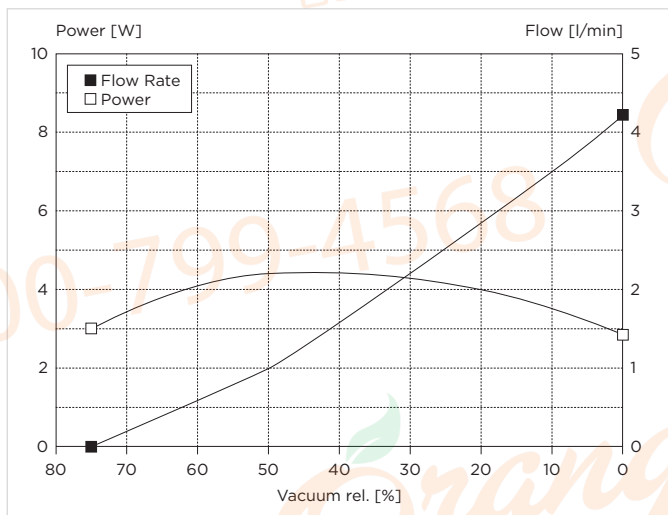


ELECTRICAL DATA	
Motor type	DC brush
Nominal speed	3000 rpm
Nominal voltage	12/24 V DC
Max. power consumption	4.4 W
Motor insulation class	A
Protection class	IP20

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

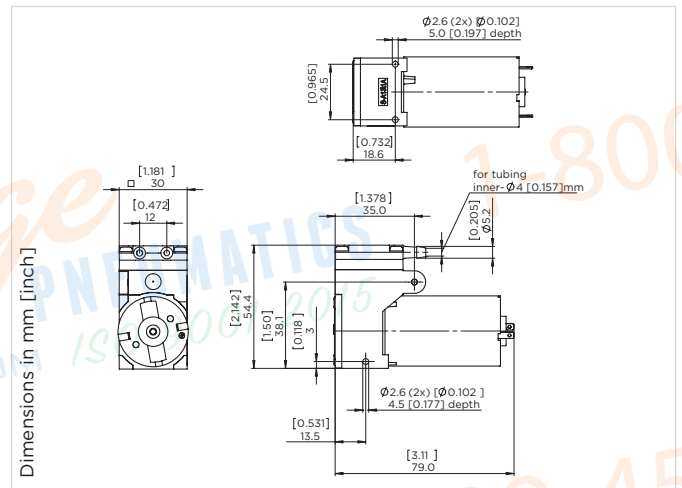
WETTED PARTS		OPTIONS	
Pump head	PA	PPS	
Diaphragm	EPDM	FKM	
Valves	EPDM	FKM	

## FLOW CURVES



# Diaphragm Pump 1410D DC

Flow	4.3 l/min
Final Pressure	1.0 bar



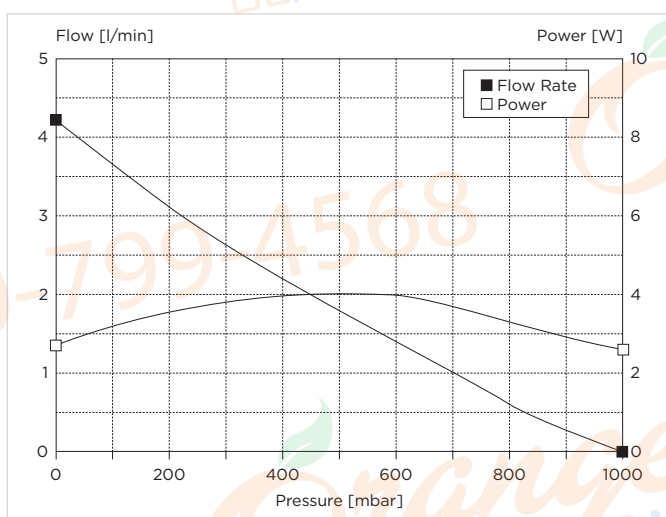
PNEUMATIC DATA	
Description	1410D/2.2/E/DC
Part number	12 V <b>14100302</b> 24 V <b>14100303</b>
Max. flow	4.3 l/min
Max. intermittent pressure	1.0 bar
Max. continuous pressure	1.0 bar
Max. restart pressure	0.5 bar

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

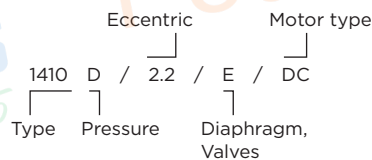
WETTED PARTS		OPTIONS	
Pump head	PA	PPS	
Diaphragm	EPDM	FKM	
Valves	EPDM	FKM	

## FLOW CURVES



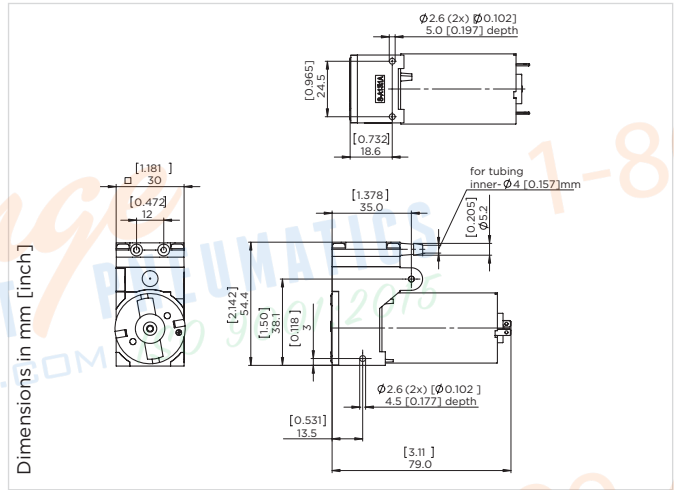
1410... Stock programme

Model key:



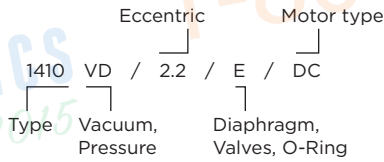
# Diaphragm Pump 1410VD DC

<b>Flow</b>	<b>3.2 l/min</b>
<b>Final Pressure</b>	<b>1.9 bar</b>
<b>Final Vacuum</b>	<b>73 %</b>



1410... Stock programme

Model key:



## PNEUMATIC DATA

Description	1410VD/1.5/E/DC	
Part number	12 V	<b>14100304</b>
	24 V	<b>14100305</b>
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

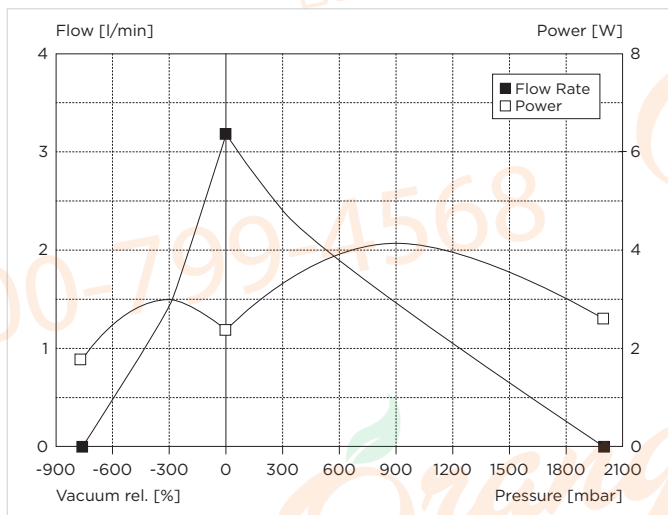
Ambient temperature	15 to 40 °C
Media temperature	15 to 40 °C
Weight	190 g
Port direction	D

## WETTED PARTS

Pump head	PA	PPS
Diaphragm	EPDM	
Valves	EPDM	

## OPTIONS

## FLOW CURVES



# Diaphragm Pump 1410V LC

<b>Flow</b>	<b>3.7 l/min</b>
<b>Final Vacuum</b>	<b>75 %</b>



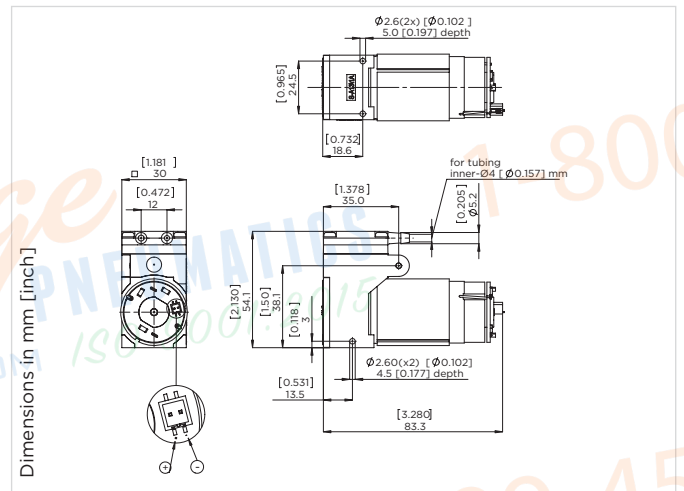
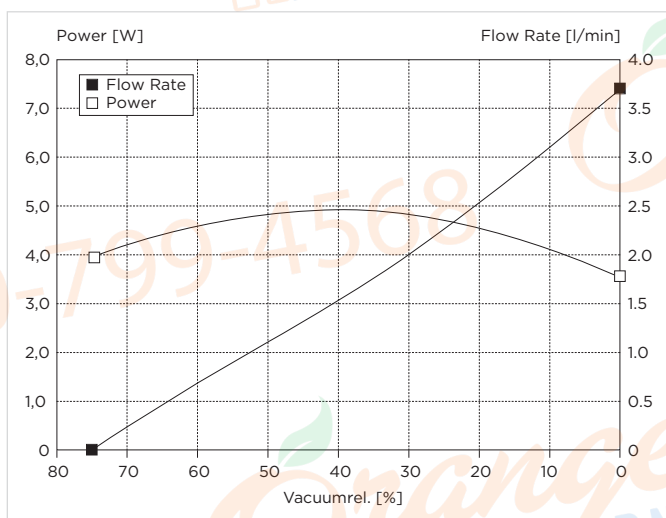
PNEUMATIC DATA	
Description	1410V/2.2/E/LC
Part number	12 V <b>14100103</b> 24 V <b>14100106</b>
Max. flow	3.7 l/min
Max. intermittent vacuum	75 %
Max. continuous vacuum	75 %
Max. restart vacuum	75 %

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

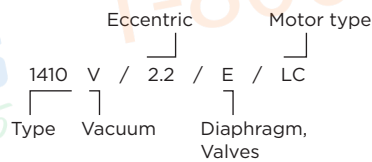
WETTED PARTS		OPTIONS	
Pump head	PA	PPS	
Diaphragm	EPDM		
Valves	EPDM		

## FLOW CURVES



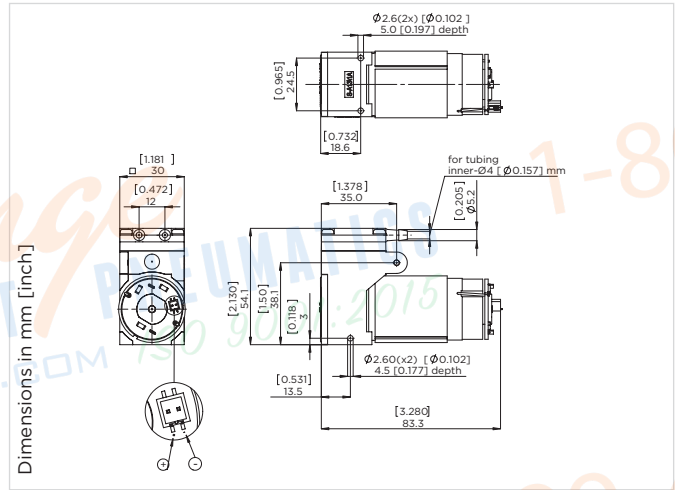
1410... Stock programme

Model key:



# Diaphragm Pump 1410D LC

<b>Flow</b>	<b>3.7 l/min</b>
<b>Final Pressure</b>	<b>1.0 bar</b>



## PNEUMATIC DATA

Description	1410D/2.2/E/LC	
Part number	12 V	<b>14100104</b>
	24 V	<b>14100107</b>
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

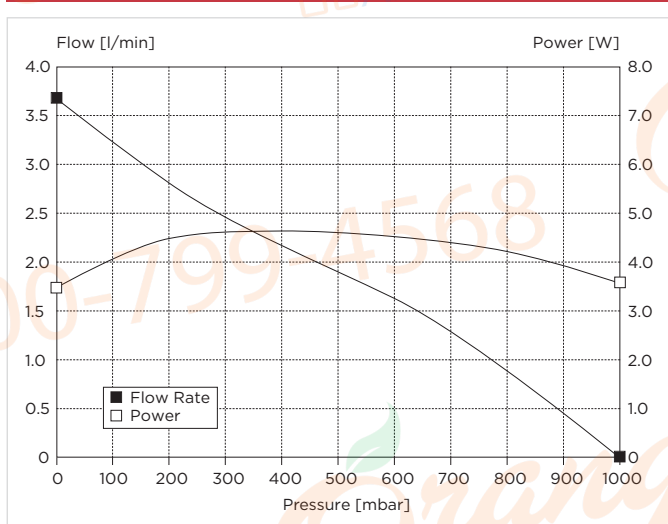
## WETTED PARTS

Pump head	PA
Diaphragm	EPDM
Valves	EPDM

## OPTIONS

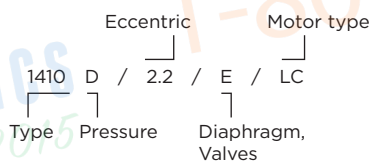
PPS
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## FLOW CURVES



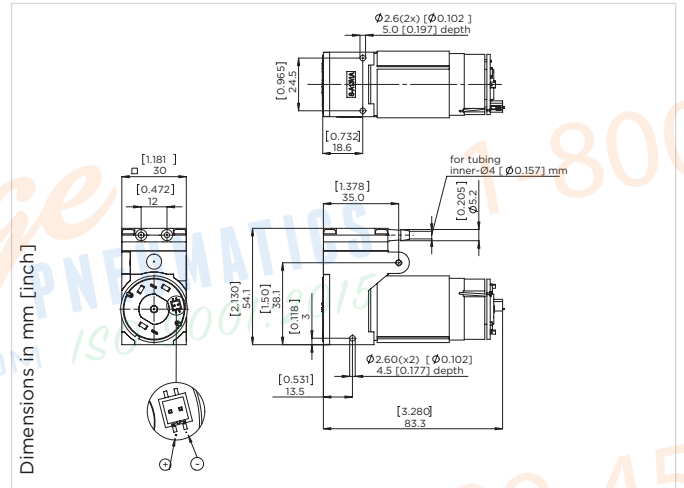
1410... Stock programme

Model key:



# 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	<b>14100105</b>
	24 V	<b>14100108</b>
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 %	

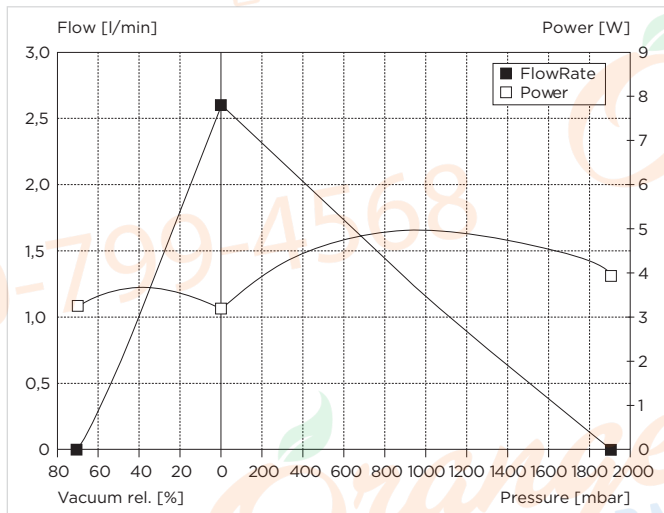
## ELECTRICAL DATA

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

## FLOW CURVES



## WETTED PARTS

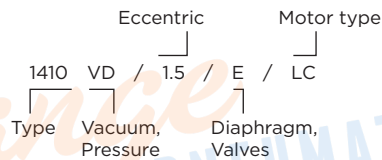
Pump head	PA
Diaphragm	EPDM
Valves	EPDM

## OPTIONS

PPS
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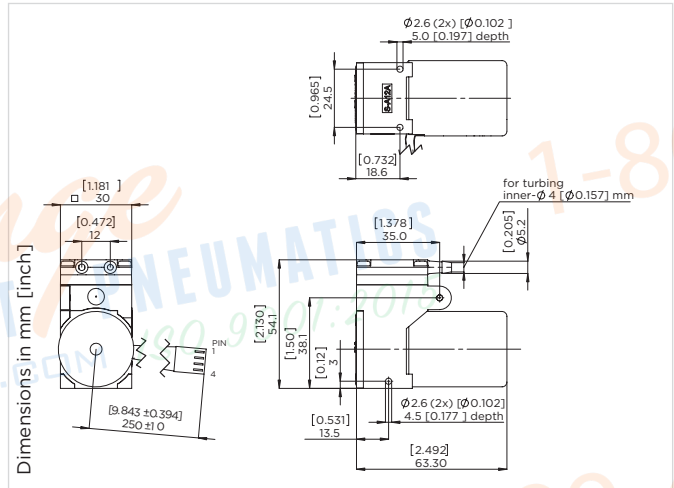
1410... Stock programme

Model key:



# Diaphragm Pump 1410V BLDC

<b>Flow</b>	<b>5.5 l/min</b>
<b>Final Vacuum</b>	<b>75 %</b>



## PNEUMATIC DATA

Description	1410V/2.2/E/BLDC	
Part number	12 V	<b>14100210</b>
	24 V	<b>14100211</b>
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 22-01-3047
	Terminal:	Molex KK 08-50-0031

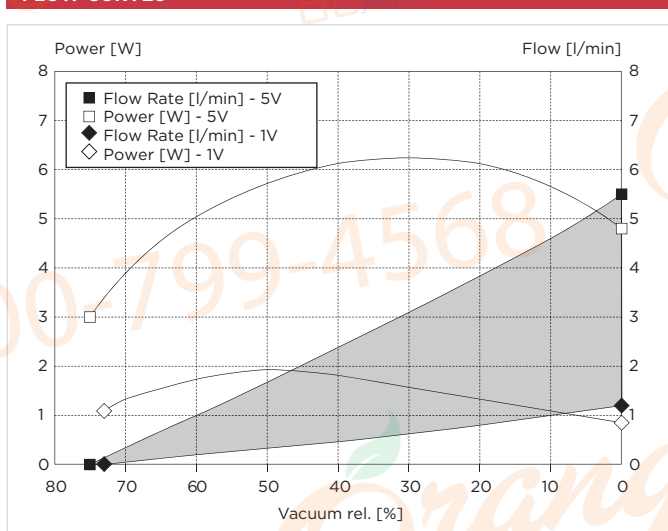
## GENERAL DATA

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

## WETTED PARTS

Pump head	PA	PPS
Diaphragm	EPDM	
Valves	EPDM	

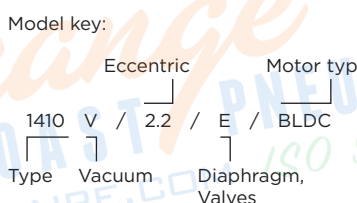
## FLOW CURVES



## WIRING DIAGRAM

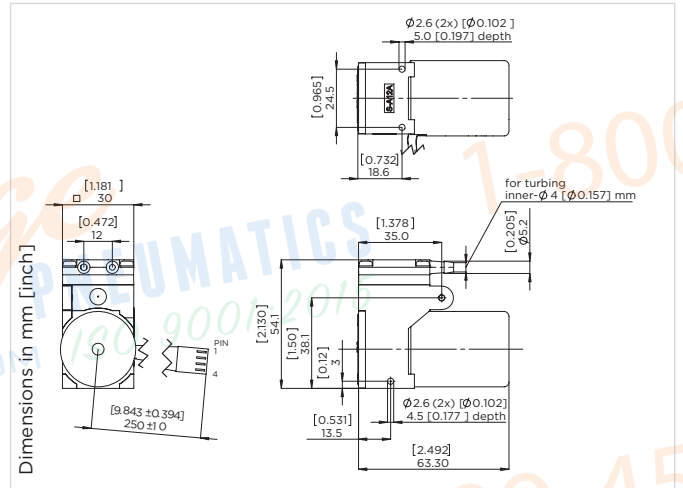
Pin 1	V Supply	Red	12 V DC (max. voltage range: 10..18 V DC) 24 V DC (max. voltage range: 10..28 V DC)
Pin 2	Ground	Black	Ground for Vsupply (PIN 1) and Speed Control (PIN 3) analog: 0..5 V DC (max. 28V) PWM: 6..20kHz - 14..96% Speed voltage input threshold: 0.2 V
Pin 3	Speed Control	White	
Pin 4	Tacho 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



# Diaphragm Pump 1410D BLDC

Flow	5.5 l/min
Final Pressure	1.0 bar

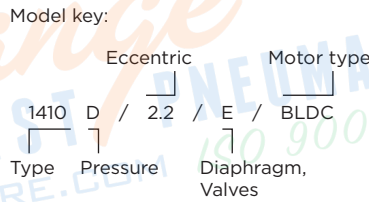


PNEUMATIC DATA	
Description	1410D/2.2/E/BLDC
Part number	12 V <b>14100212</b> 24 V <b>14100215</b>
Max. flow	5.5 l/min
Max. intermittent pressure	1.0 bar
Max. continuous pressure	1.0 bar
Max. restart pressure	1.0 bar

WIRING DIAGRAM			
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 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
Pin 4	Tacho out	Green	

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

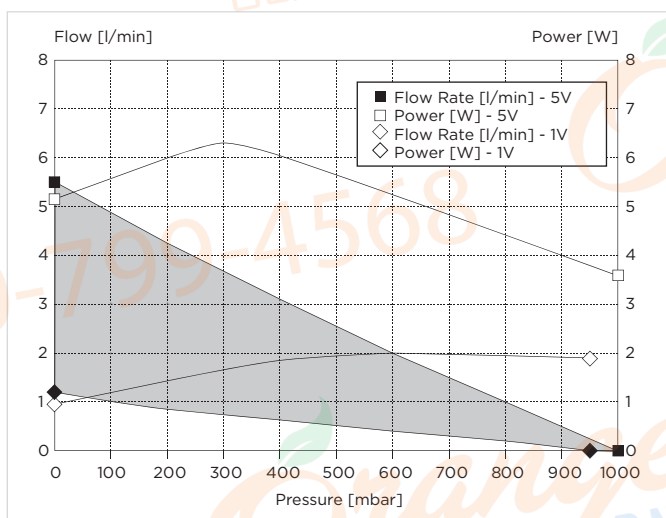
ELECTRICAL DATA	
Motor type	Brushless DC
Nominal speed	0 - 4600 rpm
Nominal voltage	12/24 V DC
Drive electronics	integrated with reverse supply voltage protection
Max. power consumption	6.3 W
Motor insulation class	B
Protection class	IP20
Connector	Housing: Molex KK 22-01-3047 Terminal: Molex KK 08-50-0031



GENERAL DATA	
Ambient temperature	15 to 40 °C
Media temperature	15 to 40 °C
Weight	170 g
Port direction	D

WETTED PARTS		OPTIONS	
Pump head	PA	PPS	
Diaphragm	EPDM		
Valves	EPDM		

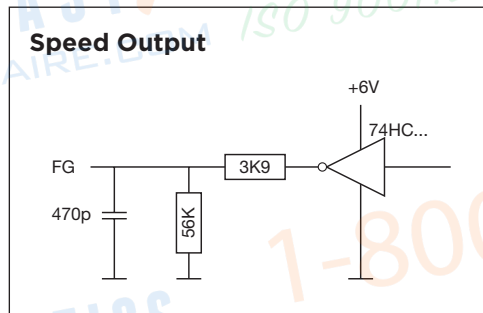
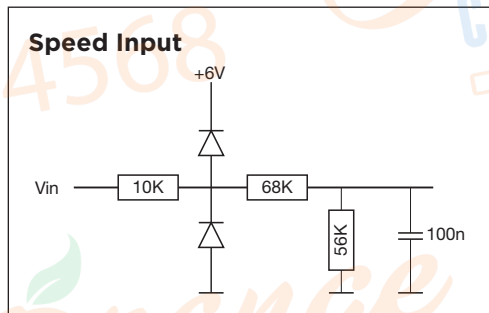
## FLOW CURVES



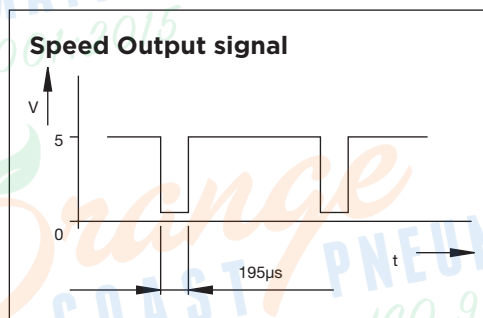


# Wiring diagram (Brushless DC motor)

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 $\mu$ s Output level „LOW“: 0 / max. 0.5 V Output level „HIGH“: min. 4 V / max. 5 V



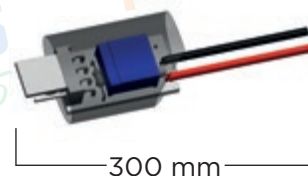
Optional: Adapter for 2-wire duty incl. potentiometer for speed adjustment



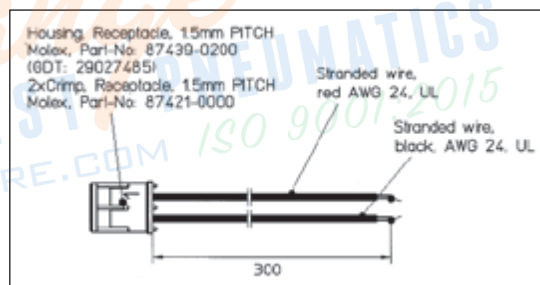
## Options / Accessories

P/N 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**





PUMP AND COMPRESSOR SOLUTIONS FOR OEMS WORLDWIDE

**THOMAS**  
by Gardner Denver

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