# Rotary Vane Pumps

# Miniature Series


## PRODUCT FEATURES

- Maintenance free
- Oil-less
- Compact
- Pulsation free
- High flow
- Low vibration
- No valves
- Reversible

## TYPICAL APPLICATIONS

- Automotive
- Medical
- Analysis
- Automation
- Fuell Cell

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by Gardner Denver

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# Rotary Vane Vacuum and Pressure Pumps

## Product Overview

| Model | Flow | Max. Pressure | Max. vaccum | Page |
|---|---|---|---|---|
| **G 01-K-LC** | 2,2 l/min | 80 mbar | 7 % | **3** |
| **G 01-K-EB** | 1,4 l/min | 40 mbar | 4 % | **4** |
| **G 01 EB** | 1,6 l/min | 180 mbar | 20 % | **5** |
| **G 01-4 EB** | 1,4 l/min | 280 mbar | 29 % | **6** |
| **G 02 EB** | 3,6 l/min | 190 mbar | 19 % | **7** |
| **G 02-4 EB** | 3,7 l/min | 310 mbar | 31 % | **8** |
| **G 02-8** | 2,7 l/min | 410 mbar | 37 % | **9** |
| **BL-G 02-4** | 2,1 l/min | 200 mbar | 19 % | **10** |
| **G 04 EB** | 6,8 l/min | 150 mbar | 16 % | **11** |
| **G 04-4 EB** | 5,1 l/min | 240 mbar | 26 % | **12** |
| **G 04-8** | 4,4 l/min | 260 mbar | 25 % | **13** |
| **G 045-LC** | 6,5 l/min | 750 mbar | 63 % | **14** |
| **G 045** | 6,1 l/min | 750 mbar | 70 % | **15** |
| **G 07** | 21 l/min | 1400 mbar | 77 % | **16** |
| **G 07-N** | 20 l/min | 900 mbar | 72 % | **17** |
| **G 08** | 15,5 l/min | 1400 mbar | 83 % | **18** |
| **G 08-T** | 36 l/min | 1400 mbar | 93 % | **19** |
| **BL-G 085 M** | 8,5 l/min | 450 mbar | 50 % | **20** |
| **G 09** | 11 l/min | 370 mbar | 35 % | **21** |

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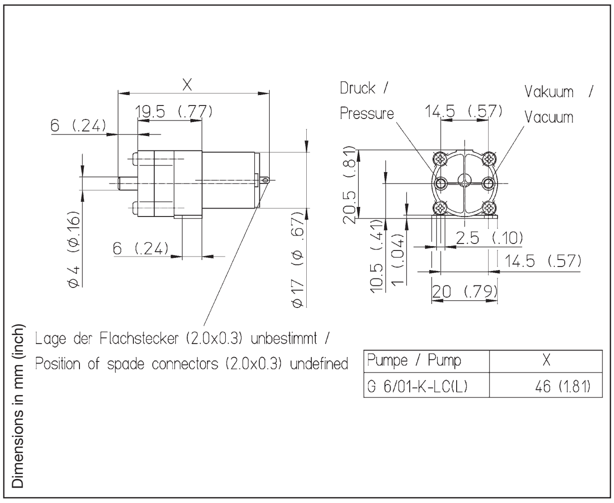
# Rotary Vane Pump G 01-K-LC

| | |
|---|---|
| **Flow** | **2,2 l/min** |
| **Max. pressure** | **80 mbar** |
| **Max. vacuum** | **7 %** |

OIL-LESS



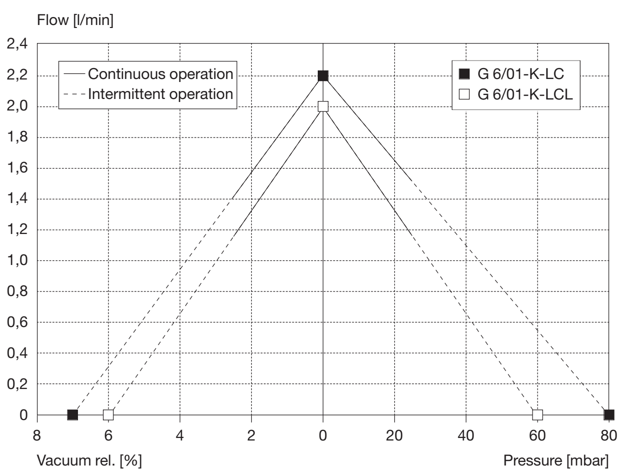

| Pneumatic Data | | |
|---|---|---|
| Description | G 6/01-K-LCL | G 6/01-K-LC |
| Part number | 50027 | 50017 |
| Max. flow | 2,0 l/min | 2,2 l/min |
| Max. intermittent pressure | 60 mbar | 80 mbar |
| Max. continuous pressure | 25 mbar | 25 mbar |
| Max. intermittent vacuum | 6 % | 7 % |
| Max. continuous vacuum | 2,5 % | 2,5 % |

| Electrical Data | | |
|---|---|---|
| Motor type | Permanent magnet | Permanent magnet |
| Nominal voltage | 6 V DC | 6 V DC |
| Min. current consumption | 0,17 A | 0,18 A |
| Max. current consumption | 0,23 A | 0,27 A |
| Protection class | IP40 | IP40 |
| Motor bearing | Sleeve bearing | Sleeve bearing |

| General Data | | |
|---|---|---|
| Ambient temperature | 0 to 40 °C | 0 to 40 °C |
| Weight | 0,03 kg | 0,03 kg |
| Direction of rotation | cw/ccw | cw/ccw |

All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 6 / 01 - K - LCL

DC

Plastic housing

Model type

Improved condensation tolerance

500... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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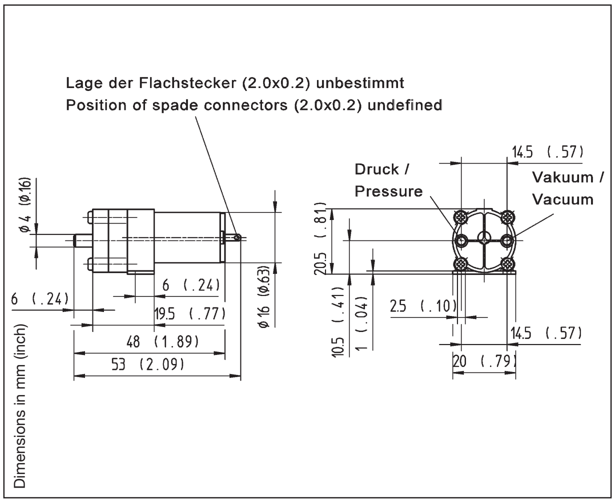
# Rotary Vane Pump G 01-K-EB

| | |
|---|---|
| **Flow** | **1,4 l/min** |
| **Max. pressure** | **40 mbar** |
| **Max. vacuum** | **4 %** |

OIL-LESS



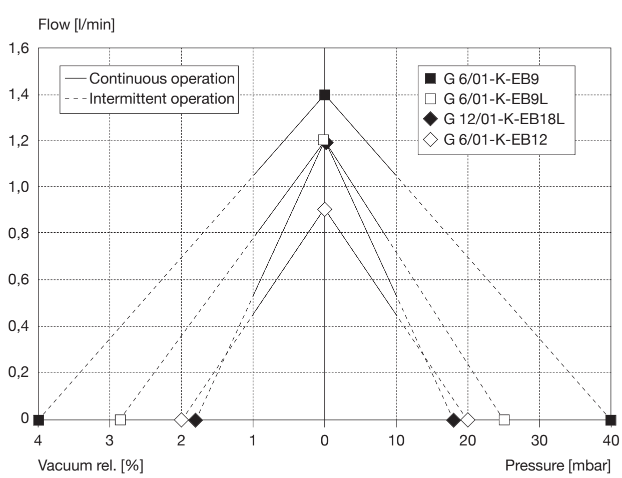

| Pneumatic Data | | | | |
|---|---|---|---|---|
| Description | G 6/01-K-EB12 | G 6/01-K-EB9L | G 6/01-K-EB9 | G 12/01-K-EB18L |
| Part number | 50251 | 50094 | 50250 | 50080 |
| Max. flow | 0,9 l/min | 1,2 l/min | 1,4 l/min | 1,2 l/min |
| Max. intermittent pressure | 20 mbar | 25 mbar | 40 mbar | 18 mbar |
| Max. continuous pressure | 10 mbar | 10 mbar | 10 mbar | 10 mbar |
| Max. intermittent vacuum | 2 % | 2,8 % | 4 % | 1,8 % |
| Max. continuous vacuum | 1 % | 1 % | 1 % | 1 % |

| Electrical Data | | | | |
|---|---|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 6 V DC | 6 V DC | 6 V DC | 12 V DC |
| Min. current consumption | 18 mA | 36 mA | 50 mA | 25 mA |
| Max. current consumption | 30 mA | 65 mA | 70 mA | 48 mA |
| Protection class | IP50 | IP50 | IP50 | IP50 |
| Motor bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing |

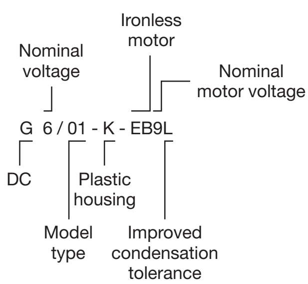
| General Data | | | | |
|---|---|---|---|---|
| Ambient temperature | -20 to 40° C | -20 to 40° C | -20 to 40° C | -20 to 40° C |
| Weight | 0,04 kg | 0,04 kg | 0,04 kg | 0,04 kg |
| Direction of rotation | cw/ccw | cw/ccw | cw/ccw | cw/ccw |

All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:




50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation

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.

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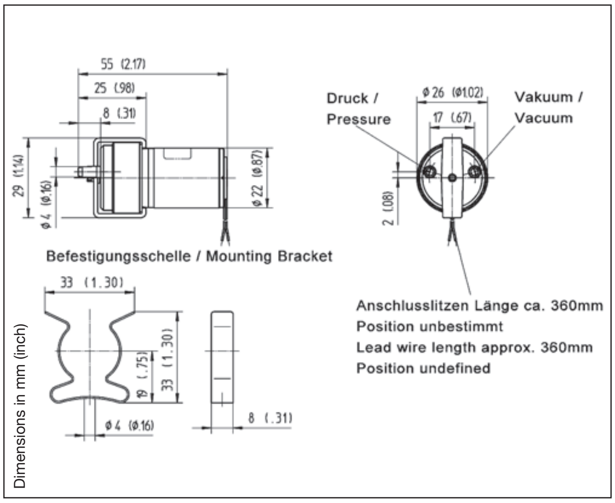
# Rotary Vane Pump G 01 EB

| | |
|---|---|
| **Flow** | **1,6 l/min** |
| **Max. pressure** | **180 mbar** |
| **Max. vacuum** | **20 %** |

OIL-LESS



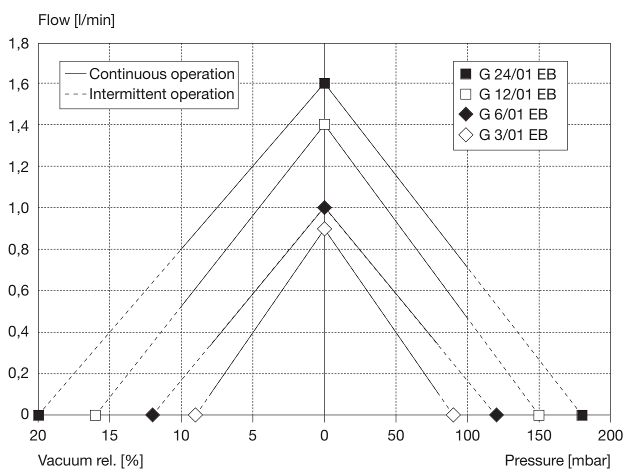

| **Pneumatic Data** | | | | |
|---|---|---|---|---|
| Description | G 3/01 EB | G 6/01 EB | G 12/01 EB | G 24/01 EB |
| Part number | 50083 | 50081 | 50096 | 50099 |
| Max. flow | 0,9 l/min | 1,0 l/min | 1,4 l/min | 1,6 l/min |
| Max. intermittent pressure | 90 mbar | 120 mbar | 150 mbar | 180 mbar |
| Max. continuous pressure | 80 mbar | 80 mbar | 100 mbar | 100 mbar |
| Max. intermittent vacuum | 9 % | 12 % | 16 % | 20 % |
| Max. continuous vacuum | 8 % | 8 % | 10 % | 10 % |

| **Electrical Data** | | | | |
|---|---|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 3 V DC | 6 V DC | 12 V DC | 24 V DC |
| Min. current consumption | 0,12 A | 0,07 A | 0,09 A | 0,05 A |
| Max. current consumption | 0,28 A | 0,19 A | 0,20 A | 0,13 A |
| Protection class | IP50 | IP50 | IP50 | IP50 |
| Motor bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing |

| **General Data** | | | | |
|---|---|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,1 kg | 0,1 kg | 0,1 kg | 0,1 kg |
| Direction of rotation | cw | cw | cw | cw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 6 / 01 EB

DC — Ironless motor — Model type

500... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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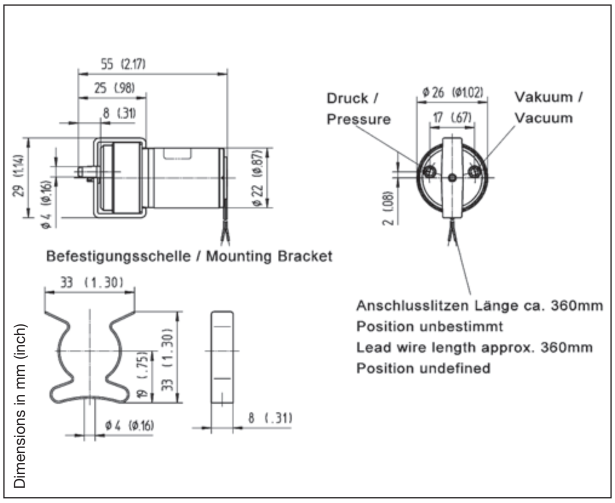
# Rotary Vane Pump G 01-4-EB

| | |
|---|---|
| **Flow** | **1,4 l/min** |
| **Max. pressure** | **280 mbar** |
| **Max. vacuum** | **29 %** |

OIL-LESS




## Pneumatic Data

| Description | G 6/01-4 EB | G 12/01-4 EB | G 24/01-4 EB |
|---|---|---|---|
| Part number | 50088 | 50090 | 50092 |
| Max. flow | 1,0 l/min | 1,4 l/min | 1,4 l/min |
| Max. intermittent pressure | 180 mbar | 280 mbar | 280 mbar |
| Max. continuous pressure | 100 mbar | 100 mbar | 100 mbar |
| Max. intermittent vacuum | 20 % | 28 % | 29 % |
| Max. continuous vacuum | 10 % | 10 % | 10 % |

## Electrical Data

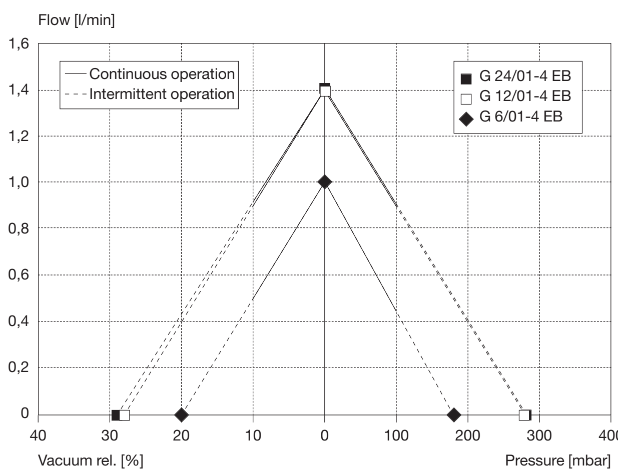
| | | | |
|---|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 6 V DC | 12 V DC | 24 V DC |
| Min. current consumption | 0,10 A | 0,11 A | 0,06 A |
| Max. current consumption | 0,32 A | 0,31 A | 0,17 A |
| Protection class | IP50 | IP50 | IP50 |
| Motor bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing |

## General Data

| | | | |
|---|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,1 kg | 0,1 kg | 0,1 kg |
| Direction of rotation | cw/ccw | cw/ccw | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage | Number of vanes

G 6 / 01 - 4 EB

DC | Ironless motor

Model type

500... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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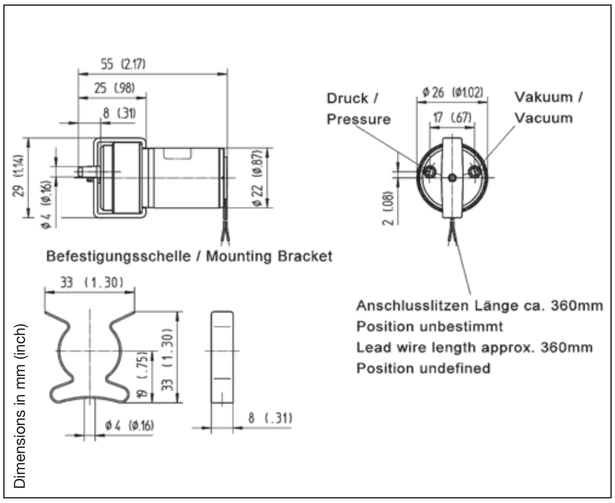
# Rotary Vane Pump G 02 EB

| | |
|---|---|
| **Flow** | **3,6 l/min** |
| **Max. pressure** | **190 mbar** |
| **Max. vacuum** | **19 %** |

OIL-LESS



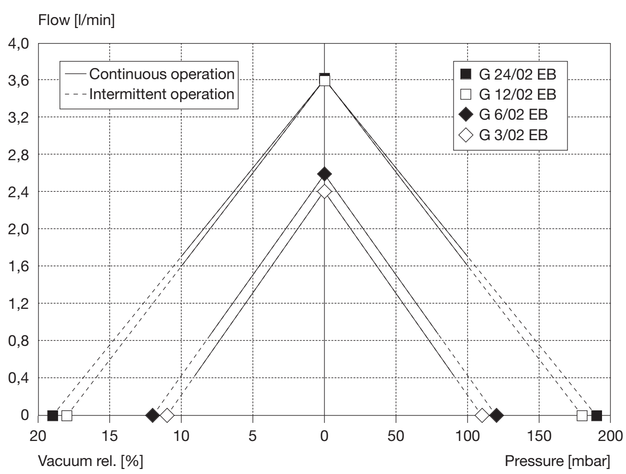

| Pneumatic Data | | | | |
|---|---|---|---|---|
| Description | G 3/02 EB | G 6/02 EB | G 12/02 EB | G 24/02 EB |
| Part number | 50084 | 50103 | 50095 | 50098 |
| Max. flow | 2,4 l/min | 2,6 l/min | 3,6 l/min | 3,6 l/min |
| Max. intermittent pressure | 110 mbar | 120 mbar | 180 mbar | 190 mbar |
| Max. continuous pressure | 90 mbar | 80 mbar | 100 mbar | 100 mbar |
| Max. intermittent vacuum | 11 % | 12 % | 18 % | 19 % |
| Max. continuous vacuum | 9 % | 8 % | 10 % | 10 % |

| Electrical Data | | | | |
|---|---|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 3 V DC | 6 V DC | 12 V DC | 24 V DC |
| Min. current consumption | 0,16 A | 0,09 A | 0,09 A | 0,07 A |
| Max. current consumption | 0,53 A | 0,30 A | 0,33 A | 0,18 A |
| Protection class | IP50 | IP50 | IP50 | IP50 |
| Motor bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing |

| General Data | | | | |
|---|---|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,1 kg | 0,1 kg | 0,1 kg | 0,1 kg |
| Direction of rotation | cw | cw | cw | cw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 6 / 02 EB

DC

Ironless motor

Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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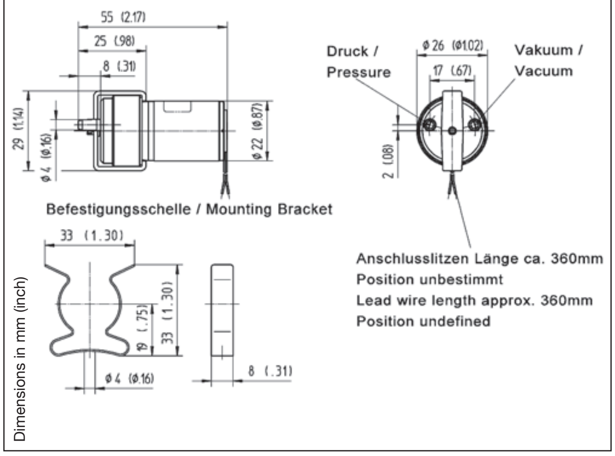
# Rotary Vane Pump G 02-4 EB

| | |
|---|---|
| **Flow** | **3,7 l/min** |
| **Max. pressure** | **310 mbar** |
| **Max. vacuum** | **31 %** |

OIL-LESS



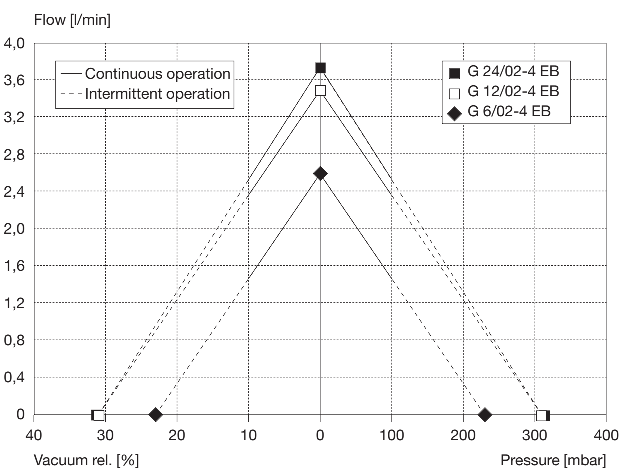

| Pneumatic Data | | | |
|---|---|---|---|
| Description | G 6/02-4 EB | G 12/02-4 EB | G 24/02-4 EB |
| Part number | 50089 | 50091 | 50093 |
| Max. flow | 2,6 l/min | 3,5 l/min | 3,7 l/min |
| Max. intermittent pressure | 230 mbar | 310 mbar | 310 mbar |
| Max. continuous pressure | 100 mbar | 100 mbar | 100 mbar |
| Max. intermittent vacuum | 23 % | 31 % | 31 % |
| Max. continuous vacuum | 10 % | 10 % | 10 % |

| Electrical Data | | | |
|---|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 6 V DC | 12 V DC | 24 V DC |
| Min. current consumption | 0,13 A | 0,15 A | 0,09 A |
| Max. current consumption | 0,53 A | 0,51 A | 0,27 A |
| Protection class | IP50 | IP50 | IP50 |
| Motor bearing | Sleeve bearing | Sleeve bearing | Sleeve bearing |

| General Data | | | |
|---|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,1 kg | 0,1 kg | 0,1 kg |
| Direction of rotation | cw/ccw | cw/ccw | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage — Number of vanes

G 6 / 02 - 4 EB

DC — Model type — Ironless motor

500... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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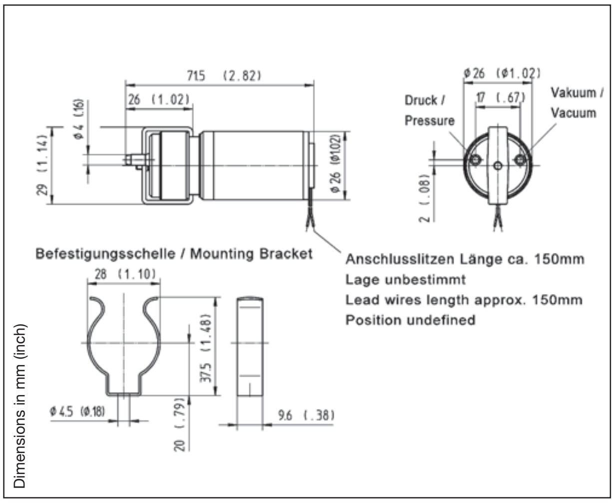
# Rotary Vane Pump G 02-8

| | |
|---|---|
| **Flow** | **2,7 l/min** |
| **Max. pressure** | **410 mbar** |
| **Max. vacuum** | **37 %** |

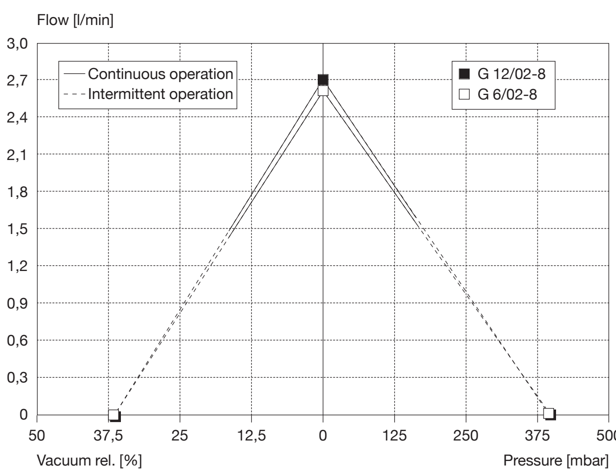

| Pneumatic Data | | |
|---|---|---|
| Description | G 6/02-8 | G 12/02-8 |
| Part number | 50163 | 50165 |
| Max. flow | 2,6 l/min | 2,7 l/min |
| Max. intermittent pressure | 410 mbar | 410 mbar |
| Max. continuous pressure | 200 mbar | 200 mbar |
| Max. intermittent vacuum | 37 % | 37 % |
| Max. continuous vacuum | 20 % | 20 % |

| Electrical Data | | |
|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 6 V DC | 12 V DC |
| Min. current consumption | 0,23 A | 0,11 A |
| Max. current consumption | 0,70 A | 0,35 A |
| Protection class | IP50 | IP50 |
| Motor bearing | Ball bearing | Ball bearing |

| General Data | | |
|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,13 kg | 0,13 kg |
| Direction of rotation | cw/ccw | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage — Number of vanes

G 6 / 02 - 8

DC — Model type

501... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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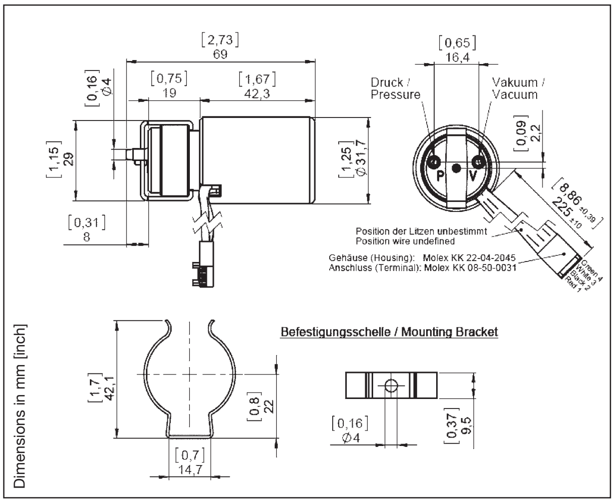
# Rotary Vane Pump BL-G 02-4

| | |
|---|---|
| **Flow** | **2,4 l/min** |
| **Max. pressure** | **200 mbar** |
| **Max. vacuum** | **22 %** |

OIL-LESS




## Pneumatic Data

| | |
|---|---|
| Description | BL-G 12/02-4 |
| Part number | 50180 |
| Max. flow | 2,1 l/min |
| Max. intermittent pressure | 200 mbar |
| Max. continuous pressure | 150 mbar |
| Max. intermittent vacuum | 19 % |
| Max. continuous vacuum | 15 % |

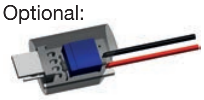
## Electrical Data

| | | |
|---|---|---|
| Motor type | | Brushless DC |
| Nominal voltage | | 12 V DC |
| Drive electronics | | integrated with reverse supply voltage protection |
| Min. current consumption | | 0,16 A |
| Max. current consumption | | 0,33 A |
| Protection class | | IP00 |
| Motor bearing | | Ball bearing |
| Connector | Housing: | Molex KK 22-01-2045 |
| | Terminal: | Molex KK 08-50-0031 |

Wiring diagram

| | Function | Colour | Control |
|---|---|---|---|
| Pin 1 | V Supply | Red | 12 VDC (max. voltage range: 10..18 VDC)<br>24 VDC (max. voltage range: 10..28 VDC) |
| Pin 2 | Ground | Black | Ground for Vsupply (PIN 1) and Speed Control (PIN3) |
| Pin 3 | Speed control | White | analog: 0..5 VDC (max. 28V)<br>PWM: 6..20 kHz - 14..96%<br>Speed voltage input threshold: 0,2 V |
| Pin 4 | Tacho out | Green | 18 pulses per revolution<br>Pulse time „LOW“: 195 µs<br>Output level „LOW“: 0 / max. 0,5 V<br>Output level „HIGH“: min. 4 V / max. 5 V |

Optional:

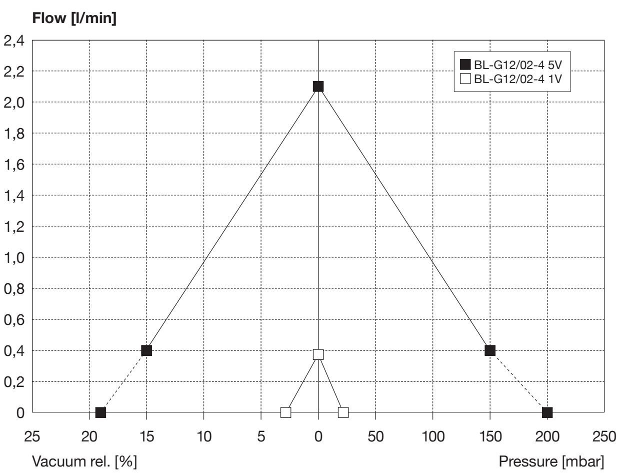


Adapter for 2-wire duty incl. potentiometer for speed adjustment
part number 29011932

## General Data

| | |
|---|---|
| Ambient temperature | 0 to 50 °C |
| Weight | 0,13 kg |
| Direction of rotation | cw |

## Flow Curves




Pumps include mounting bracket
Above performance values are based on max. control voltage 5V
All listed values are measured at standard atmospheric conditions and at 50Hz.

Model key:

Nominal voltage | Number of vanes

BL - G 12/02 - 4

Brushless motor | DC | Model type

501... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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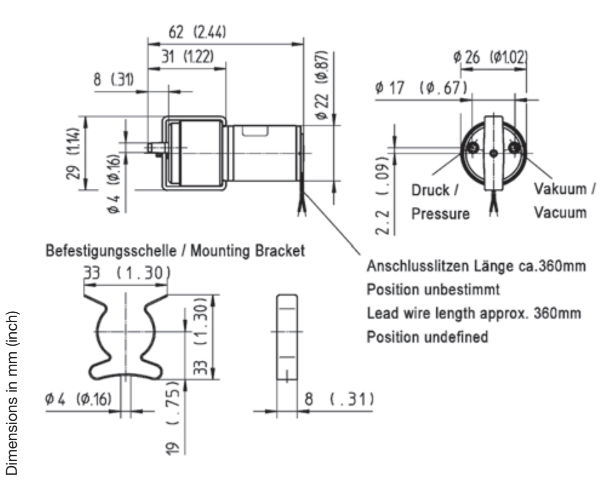
# Rotary Vane Pump G 04 EB

| | |
|---|---|
| **Flow** | **6,8 l/min** |
| **Max. pressure** | **150 mbar** |
| **Max. vacuum** | **16 %** |

OIL-LESS



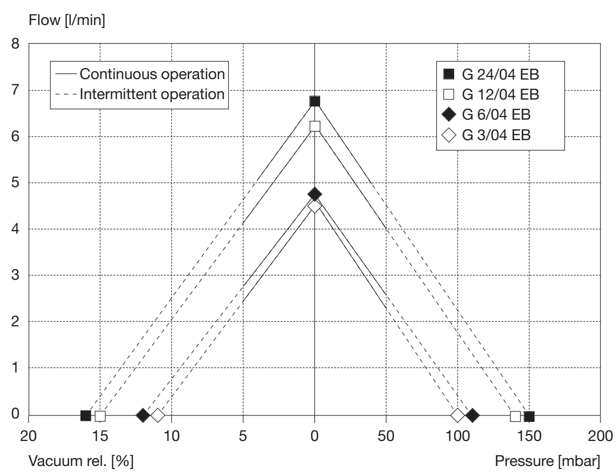

| Pneumatic Data | | | | |
|---|---|---|---|---|
| Description | G 3/04 EB | G 6/04 EB | G 12/04 EB | G 24/04 EB |
| Part number | 50085 | 50102 | 50097 | 50104 |
| Max. flow | 4,5 l/min | 4,7 l/min | 6,2 l/min | 6,8 l/min |
| Max. intermittent pressure | 100 mbar | 110 mbar | 140 mbar | 150 mbar |
| Max. continuous pressure | 50 mbar | 50 mbar | 50 mbar | 40 mbar |
| Max. intermittent vacuum | 11 % | 12 % | 15 % | 16 % |
| Max. continuous vacuum | 5 % | 5 % | 5 % | 4 % |

| Electrical Data | | | | |
|---|---|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 3 V DC | 6 V DC | 12 V DC | 24 V DC |
| Min. current consumption | 0,26 A | 0,16 A | 0,18 A | 0,11 A |
| Max. current consumption | 0,80 A | 0,48 A | 0,47 A | 0,26 A |
| Protection class | IP50 | IP50 | IP50 | IP50 |
| Motor bearing | Ball bearing/Sleeve bearing | Ball bearing/Sleeve bearing | Ball bearing/Sleeve bearing | Ball bearing/Sleeve bearing |

| General Data | | | | |
|---|---|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,1 kg | 0,1 kg | 0,1 kg | 0,1 kg |
| Direction of rotation | cw | cw | cw | cw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 6 / 04 EB

DC

Ironless motor

Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation

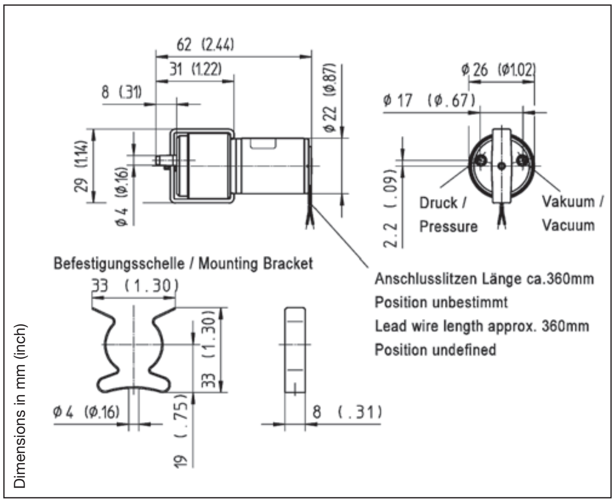


THOMAS
by Gardner Denver

# Rotary Vane Pump G 04-4-EB

| | |
|---|---|
| **Flow** | **5,1 l/min** |
| **Max. pressure** | **240 mbar** |
| **Max. vacuum** | **26 %** |

OIL-LESS




## Pneumatic Data

| | | |
|---|---|---|
| Description | G 6/04-4 EB | G 12/04-4 EB |
| Part number | 50101 | 50100 |
| Max. flow | 4,0 l/min | 5,1 l/min |
| Max. intermittent pressure | 200 mbar | 240 mbar |
| Max. continuous pressure | 50 mbar | 50 mbar |
| Max. intermittent vacuum | 21 % | 26 % |
| Max. continuous vacuum | 5 % | 5 % |

## Electrical Data

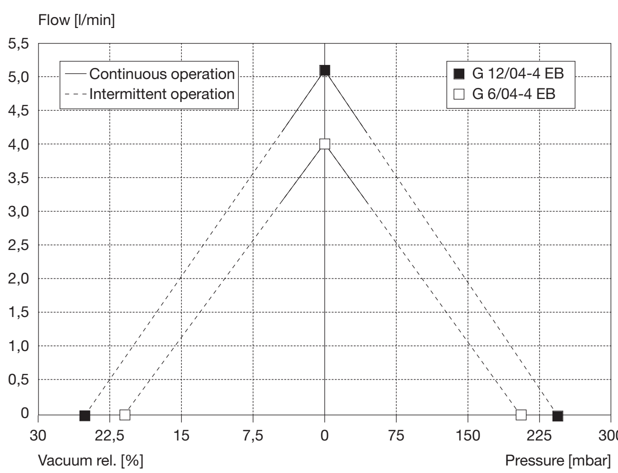
| | | |
|---|---|---|
| Motor type | Ironless Core DC | Ironless Core DC |
| Nominal voltage | 6 V DC | 12 V DC |
| Min. current consumption | 0,30 A | 0,29 A |
| Max. current consumption | 0,85 A | 0,70 A |
| Protection class | IP50 | IP50 |
| Motor bearing | Ball bearing/Sleeve bearing | Ball bearing/Sleeve bearing |

## General Data

| | | |
|---|---|---|
| Ambient temperature | -30 to 50 °C | -30 to 50 °C |
| Weight | 0,1 kg | 0,1 kg |
| Direction of rotation | cw/ccw | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage — Number of vanes

G 6 / 04 - 4 EB

DC — Ironless motor — Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation

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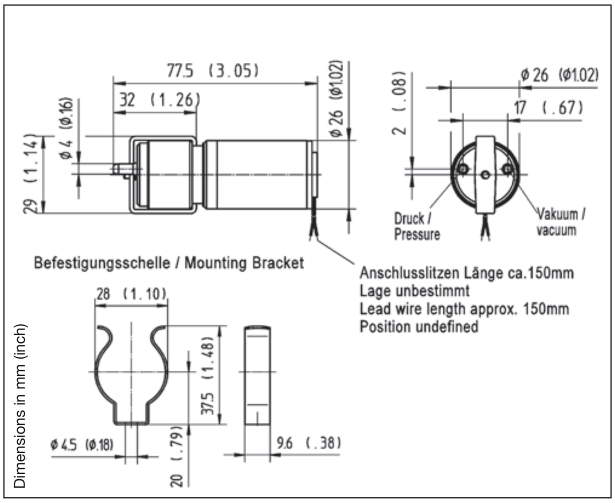
# Rotary Vane Pump G 04-8

| | |
|---|---|
| **Flow** | **4,4 l/min** |
| **Max. pressure** | **260 mbar** |
| **Max. vacuum** | **25 %** |

OIL-LESS



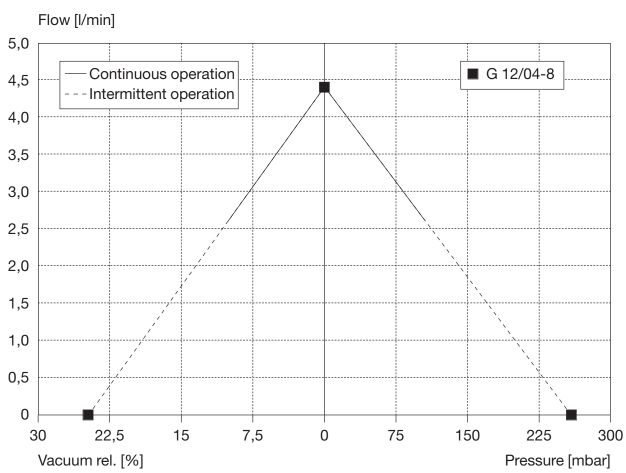

| Pneumatic Data | |
|---|---|
| Description | G 12/04-8 |
| Part number | 50119 |
| Max. flow | 4,4 l/min |
| Max. intermittent pressure | 260 mbar |
| Max. continuous pressure | 100 mbar |
| Max. intermittent vacuum | 25 % |
| Max. continuous vacuum | 10 % |

| Electrical Data | |
|---|---|
| Motor type | Ironless Core DC |
| Nominal voltage | 12 V DC |
| Min. current consumption | 0,21 A |
| Max. current consumption | 0,51 A |
| Protection class | IP50 |
| Motor bearing | Ball bearing |

| General Data | |
|---|---|
| Ambient temperature | -30 to 50 °C |
| Weight | 0,14 kg |
| Direction of rotation | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage
Number of vanes
G 12 / 04 - 8
DC
Model type

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation





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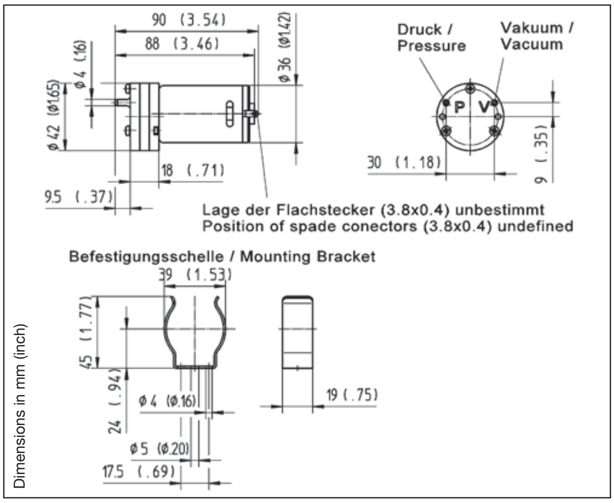
# Rotary Vane Pump G 045-LC

| | |
|---|---|
| **Flow** | **7,5 l/min** |
| **Max. pressure** | **900 mbar** |
| **Max. vacuum** | **63 %** |


OIL-LESS




## Pneumatic Data

| | |
|---|---|
| Description | G 12/045-LC |
| Part number | 50213 |
| Max. flow | 6,5 l/min |
| Max. intermittent pressure | 750 mbar |
| Max. continuous pressure | 100 mbar |
| Max. intermittent vacuum | 63 % |
| Max. continuous vacuum | 10 % |

## Electrical Data

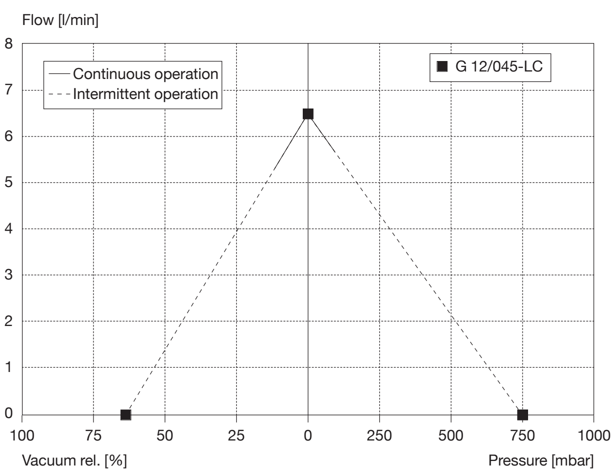
| | |
|---|---|
| Motor type | Permanent magnet |
| Nominal voltage | 12 V DC |
| Min. current consumption | 1,8 A |
| Max. current consumption | 3,5 A |
| Protection class | IP20 |
| Motor bearing | Ball bearing / Sleeve bearing |

## General Data

| | |
|---|---|
| Ambient temperature | -10 to 40 °C |
| Weight | 0,25 kg |
| Direction of rotation | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 12 / 045 - LC

DC

Model type

502... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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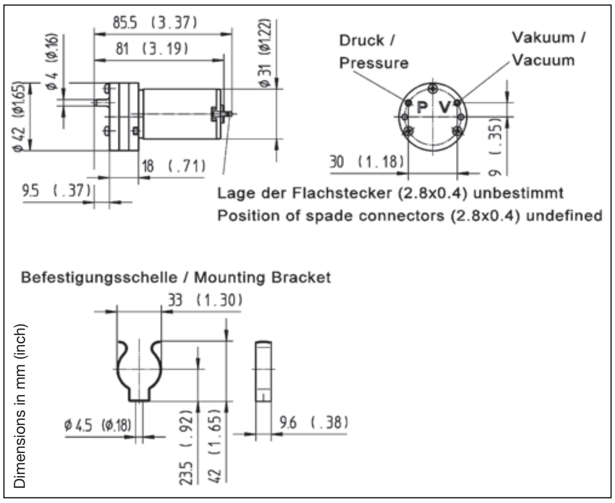
# Rotary Vane Pump G 045

| | |
|---|---|
| **Flow** | **6,1 l/min** |
| **Max. pressure** | **750 mbar** |
| **Max. vacuum** | **70 %** |


OIL-LESS



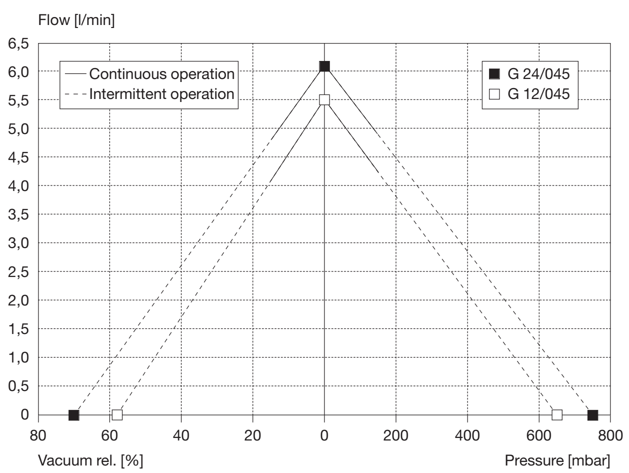

| **Pneumatic Data** | | |
|---|---|---|
| Description | G 12/045 | G 24/045 |
| Part number | 50200 | 50201 |
| Max. flow | 5,5 l/min | 6,1 l/min |
| Max. intermittent pressure | 650 mbar | 750 mbar |
| Max. continuous pressure | 150 mbar | 150 mbar |
| Max. intermittent vacuum | 58 % | 70 % |
| Max. continuous vacuum | 15 % | 15 % |

| **Electrical Data** | | |
|---|---|---|
| Motor type | Permanent magnet | Permanent magnet |
| Nominal voltage | 12 V DC | 24 V DC |
| Min. current consumption | 0,64 A | 0,33 A |
| Max. current consumption | 1,36 A | 0,77 A |
| Protection class | IP30 | IP30 |
| Motor bearing | Ball bearing | Ball bearing |

| **General Data** | | |
|---|---|---|
| Ambient temperature | 10 to 40 °C | 10 to 40 °C |
| Weight | 0,25 kg | 0,25 kg |
| Direction of rotation | cw/ccw | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 12 / 045

DC

Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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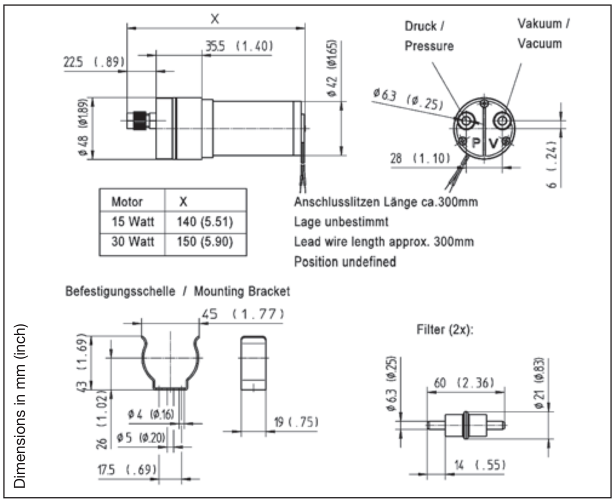
# Rotary Vane Pump G 07

| | |
|---|---|
| **Flow** | **21 l/min** |
| **Max. pressure** | **1,4 bar** |
| **Max. vacuum** | **77 %** |

OIL-LESS




## Pneumatic Data

| Description | G 12/07-15 Watt | G 24/07-15 Watt | G 24/07-30 Watt |
|---|---|---|---|
| Part number | 50336 | 50218 | 50221 |
| Max. flow | 17,0 l/min | 17,5 l/min | 21,0 l/min |
| Max. intermittent pressure | 1,3 bar | 1,0 bar | 1,4 bar |
| Max. continuous pressure | 0,3 bar | | 0,2 bar |
| Max. intermittent vacuum | 76 % | 75 % | 77 % |
| Max. continuous vacuum | 30 % | | 20 % |

## Electrical Data

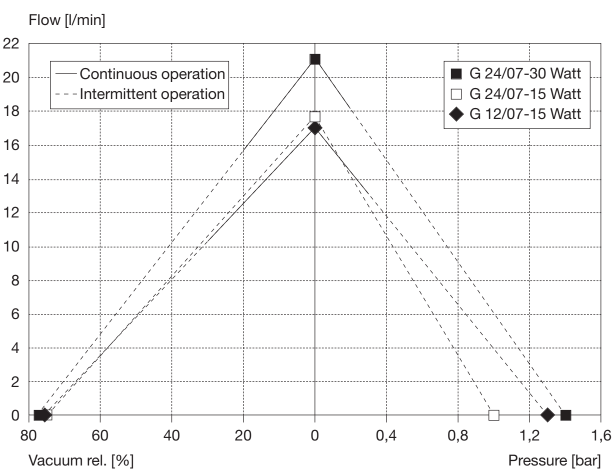
| | | | |
|---|---|---|---|
| Motor type | Permanent magnet | Permanent magnet | Permanent magnet |
| Nominal voltage | 12 V DC | 24 V DC | 24 V DC |
| Min. current consumption | 1,9 A | 1,1 A | 1,9 A |
| Max. current consumption | 3,2 A | 1,6 A | 2,5 A |
| Protection class | IP40 | IP40 | IP40 |
| Motor bearing | Ball bearing | Ball bearing | Ball bearing |

## General Data

| | | | |
|---|---|---|---|
| Ambient temperature | -10 to 40 °C | -10 to 40 °C | -10 to 40 °C |
| Weight | 0,6 kg | 0,6 kg | 0,7 kg |
| Direction of rotation | cw | cw | cw |

Pumps include tube connector (2x) G 1/8 to tube I.D. 6 mm, mounting bracket and filter (2x).
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage
Nominal motor power

G 12 / 07 - 30 Watt

DC

Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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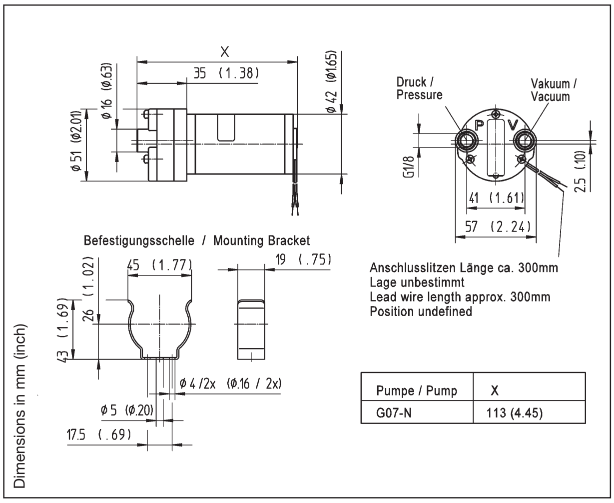
# Rotary Vane Pump G 07-N

| | |
|---|---|
| **Flow** | **20 l/min** |
| **Max. pressure** | **0,9 bar** |
| **Max. vacuum** | **72 %** |


## Pneumatic Data

| | | | |
|---|---|---|---|
| Description | G 12/07-N | G 24/07-N | G 24/07-N rev. |
| Part number | 50316 | 50311 | 50220 |
| Max. flow | 20 l/min | 18 l/min | 17 l/min |
| Max. intermittent pressure | 0,90 bar | 0,80 bar | 0,7 bar |
| Max. continuous pressure | 0,25 bar | 0,30 bar | 0,3 bar |
| Max. intermittent vacuum | 70 % | 72 % | 55 % |
| Max. continuous vacuum | 25 % | 30 % | 30 % |

## Electrical Data

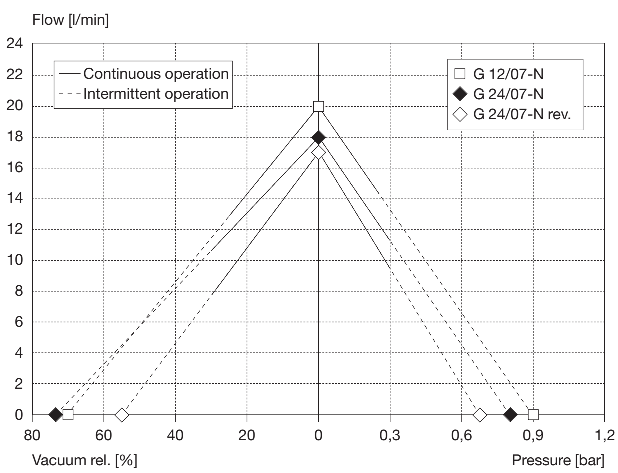
| | | | |
|---|---|---|---|
| Motor type | Permanent magnet | Permanent magnet | Permanent magnet |
| Nominal voltage | 12 V DC | 24 V DC | 24 V DC |
| Min. current consumption | 2,6 A | 0,8 A | 0,9 A |
| Max. current consumption | 4,6 A | 1,6 A | 2,0 A |
| Protection class | IP40 | IP40 | IP40 |
| Motor bearing | Ball bearing | Ball bearing | Ball bearing |

## General Data

| | | | |
|---|---|---|---|
| Ambient temperature | -10 to 40 °C | -10 to 40 °C | -10 to 40 °C |
| Weight | 0,5 kg | 0,5 kg | 0,5 kg |
| Direction of rotation | cw | cw | cw/ccw |

Pumps include mounting bracket.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 12 / 07 - N rev

DC

Model type

Resin bonded graphite housing

Reversible

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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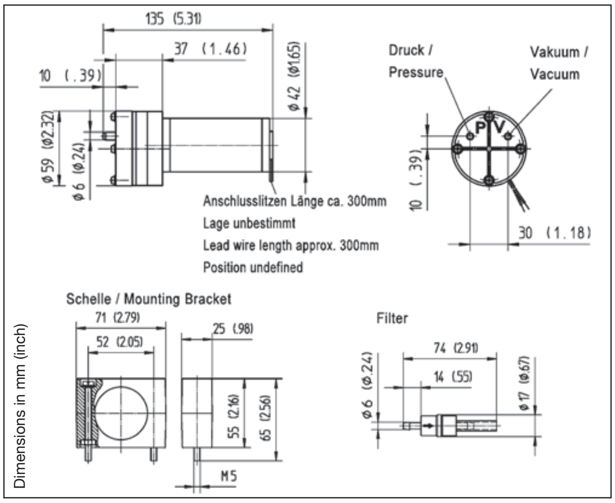
# Rotary Vane Pump G 08

| | |
|---|---|
| **Flow** | **15,5 l/min** |
| **Max. pressure** | **1,4 bar** |
| **Max. vacuum** | **83 %** |

OIL-LESS



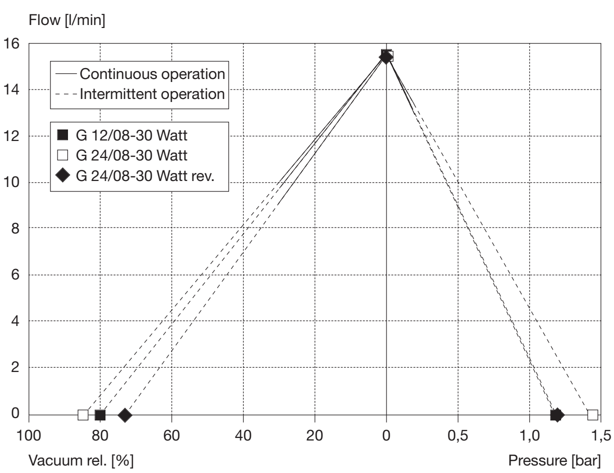

| Pneumatic Data | | | |
|---|---|---|---|
| Description | G 12/08-30 Watt | G 24/08-30 Watt | G 24/08-30 Watt rev. |
| Part number | 50325 | 50358 | 50360 |
| Max. flow | 15,5 l/min | 15,5 l/min | 15,5 l/min |
| Max. intermittent pressure | 1,2 bar | 1,4 bar | 1,2 bar |
| Max. continuous pressure | 0,3 bar | 0,3 bar | 0,3 bar |
| Max. intermittent vacuum | 80 % | 83 % | 74 % |
| Max. continuous vacuum | 30 % | 30 % | 30 % |

| Electrical Data | | | |
|---|---|---|---|
| Motor type | Permanent magnet | Permanent magnet | Permanent magnet |
| Nominal voltage | 12 V DC | 24 V DC | 24 V DC |
| Min. current consumption | 1,5 A | 0,8 A | 0,6 A |
| Max. current consumption | 3,2 A | 1,6 A | 1,8 A |
| Protection class | IP40 | IP40 | IP40 |
| Motor bearing | Ball bearing | Ball bearing | Ball bearing |

| General Data | | | |
|---|---|---|---|
| Ambient temperature | -10 to 40 °C | -10 to 40 °C | -10 to 40 °C |
| Weight | 0,75 kg | 0,75 kg | 0,75 kg |
| Direction of rotation | cw | cw | cw/ccw |

Pumps include mounting bracket and filter.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage — Nominal motor power

G 24 / 08 - 30 Watt rev.

DC — Reversible

Model type

503... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation

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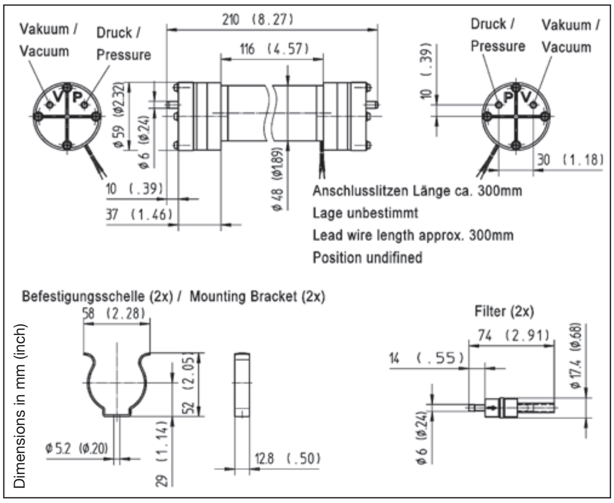
# Rotary Vane Pump G 08-T

| | |
|---|---|
| **Flow** | **36 l/min** |
| **Max. pressure** | **1,4 bar** |
| **Max. vacuum** | **93 %** |

OIL-LESS



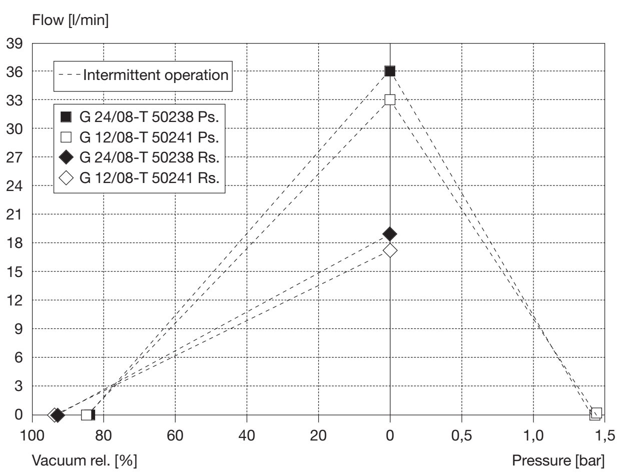

| Pneumatic Data | | | | |
|---|---|---|---|---|
| Description | G 12/08-T | G 12/08-T | G 24/08-T | G 24/08-T |
| Part number | 50241<br>connected in series | 50241<br>connected in parallel | 50238<br>connected in series | 50238<br>connected in parallel |
| Max. flow | 17 l/min | 33 l/min | 19 l/min | 36 l/min |
| Max. intermittent pressure | | 1,4 bar | | 1,4 bar |
| Max. intermittent vacuum | 93 % | 84 % | 93 % | 84 % |

| Electrical Data | | | | |
|---|---|---|---|---|
| Motor type | Permanent magnet | Permanent magnet | Permanent magnet | Permanent magnet |
| Nominal voltage | 12 V DC | 12 V DC | 24 V DC | 24 V DC |
| Min. current consumption | 4,0 A | 4,0 A | 2,0 A | 2,0 A |
| Max. current consumption | 5,0 A | 8,0 A | 2,5 A | 4,0 A |
| Protection class | IP40 | IP40 | IP40 | IP40 |
| Motor bearing | Ball bearing | Ball bearing | Ball bearing | Ball bearing |

| General Data | | | | |
|---|---|---|---|---|
| Ambient temperature | -10 to 40 °C | -10 to 40 °C | -10 to 40 °C | -10 to 40 °C |
| Weight | 1,3 kg | 1,3 kg | 1,3 kg | 1,3 kg |
| Direction of rotation | cw | cw | cw | cw |

Pumps include mounting bracket (2x) and filter (2x).
These pumps are **not** suitable for continuous operation.
All listed values are measured at standard atmospheric conditions.

## Flow Curves




Model key:

Nominal voltage

G 12 / 08 - T

DC

Double headed

Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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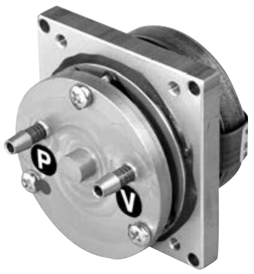
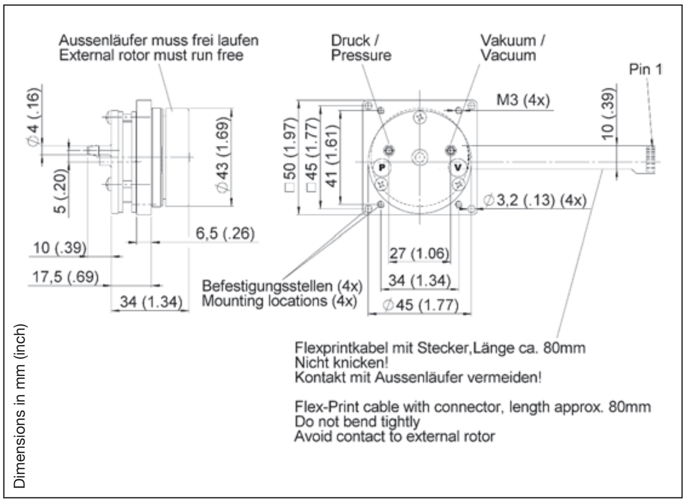
# Rotary Vane Pump BL-G 085 M

| | |
|---|---|
| **Flow** | **8,5 l/min** |
| **Max. pressure** | **450 mbar** |
| **Max. vacuum** | **50 %** |




OIL-LESS




## Pneumatic Data

| | |
|---|---|
| Description | BL-G 12/085 M |
| Part number | 50209 |
| Max. flow | 8,5 l/min |
| Max. intermittent pressure | 450 mbar |
| Max. continuous pressure | 150 mbar |
| Max. intermittent vacuum | 50 % |
| Max. continuous vacuum | 15 % |

## Electrical Data

| | |
|---|---|
| Motor type* | Brushless DC |
| Nominal voltage | 12 V DC |
| Min. current consumption | 0,7 A |
| Max. current consumption | 2,0 A |
| Protection class | IP00 |
| Motor bearing | Ball bearing |
| Electrical connection | Flex-Print connector, 11 poles, pitch 1,0 mm, top contact style |

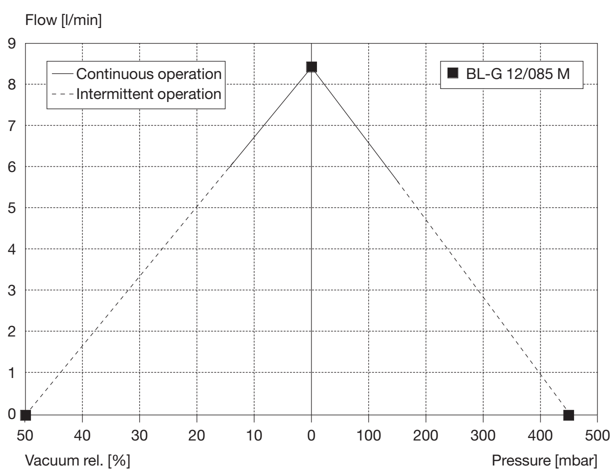
## General Data

| | |
|---|---|
| Ambient temperature | -40 to 60 °C |
| Weight | 0,15 kg |
| Direction of rotation | cw/ccw |

* without electronics
All listed values are measured at standard atmospheric conditions.
Please contact Thomas if further information regarding electrical connection and electronics is required.

Use provided mounting locations only. Do not allow force on either motor or pump head. Motor bearing can be damaged.

## Flow Curves




Model key:

Nominal voltage

BL - G 12/085 M

Brushless motor

Model type

DC

50210 Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation

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**Pin allocation:**

Pin 1 4,5 - 18 VDC
Pin 2 Hall sensor 3
Pin 3 Hall sensor 1
Pin 4 Hall sensor 2
Pin 5 GND
Pin 6 Motor winding 3
Pin 7 Motor winding 2
Pin 8 Motor winding 1

**Option:**

Adaptor for Flex-Print connector to terminal board, part number 63003

BL-G 12/085 M 50210 including external electronics (63002) + adaptor (63003) for Flex-Print connector

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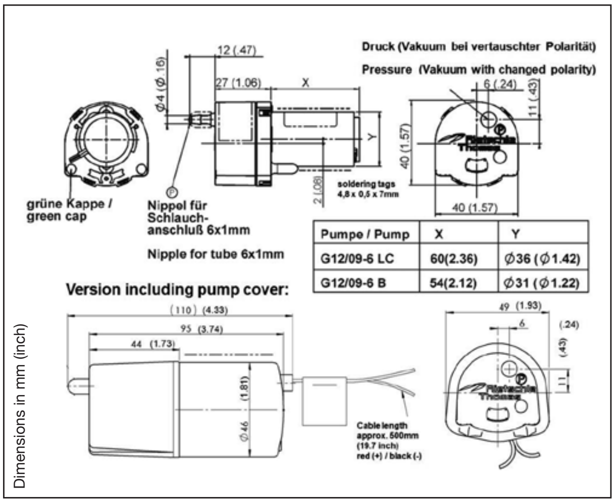
# Rotary Vane Pump G 09

| | |
|---|---|
| **Flow** | **11 l/min** |
| **Max. pressure** | **370 mbar** |
| **Max. vacuum** | **35 %** |


| **Pneumatic Data** | | | |
|---|---|---|---|
| Description | G 12/09-6 B | G 12/09-6 LC | G 24/09-6 LC |
| Part number | 50330/50544 | 50555/50552[1] | 50554/50556[1] |
| Max. flow | 11,0 l/min | 9,0 l/min | 9,0 l/min |
| Max. intermittent pressure | 370 mbar | 350 mbar | 350 mbar |
| Max. continuous pressure | 200 mbar | 150 mbar | 150 mbar |
| Max. intermittent vacuum | 32 % | 35 % | 35 % |
| Max. continuous vacuum | 20 % | 15 % | 15 % |

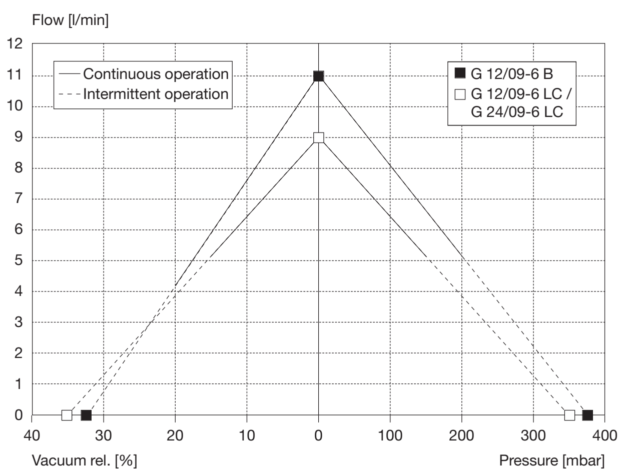
| **Electrical Data** | | | |
|---|---|---|---|
| Motor type | Permanent magnet | Permanent magnet | Permanent magnet |
| Nominal voltage | 12 V DC | 12 V DC | 24 V DC |
| Min. current consumption | 0,7 A | 0,7 A | 0,4 A |
| Max. current consumption | 1,8 A | 2,2 A | 1,3 A |
| Protection class | IP30 | IP20 | IP20 |
| Motor bearing | Ball bearing | Ball bearing/Sleeve bearing | Ball bearing/Sleeve bearing |

| **General Data** | | | |
|---|---|---|---|
| Ambient temperature | -20 to 50 °C | -20 to 50 °C | -20 to 50 °C |
| Weight | 0,24 kg | 0,30 kg | 0,30 kg |
| Direction of rotation | cw/ccw | cw/ccw | cw/ccw |

Mounting bracket (Option) 31911/31914[1] 31947/31914[1]
All listed values are measured at standard atmospheric conditions.
[1] Pump including EPDM-cover for sound reduction.

For vacuum operation: change electrical polarity.
For noise reduction: do not remove green cap. To optimise flow: remove green cap.
Mounting on motor body only. Do not allow force on pump head.

## Flow Curves




Model key:

Nominal voltage — Number of vanes

G 12 / 09 - 6 LC

DC

LC = Low-cost motor
B = Standard motor

Model type

50... Stock programme

Current consumption:
Min.: at open flow
Max.: at max. intermittent operation



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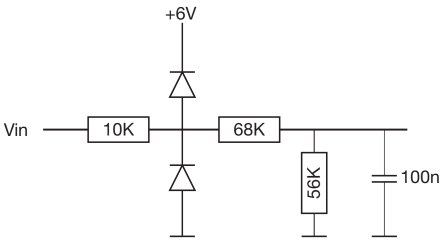
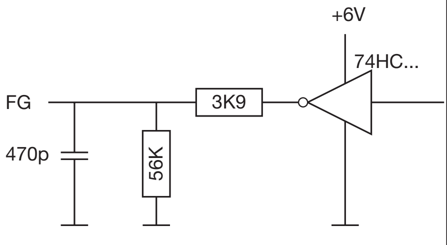
# Wiring diagram (Brushless DC motor)

| | Function | Colour | Control |
|---|---|---|---|
| Pin 1 | V Supply | Red | 12 VDC (max. voltage range: 10..18 VDC)<br>24 VDC (max. voltage range: 10..28 VDC) |
| Pin 2 | Ground | Black | Ground for Vsupply (PIN 1) and Speed Control (PIN3) |
| Pin 3 | Speed control | White | analog: 0..5 VDC (max. 28V)<br>PWM: 6..20 kHz - 14..96%<br>Speed voltage input threshold: 0,2 V |
| Pin 4 | Tacho out | Green | 18 pulses per revolution<br>Pulse time „LOW“: 195 µs<br>Output level „LOW“: 0 / max. 0,5 V<br>Output level „HIGH“: min. 4 V / max. 5 V |

**Speed Input**

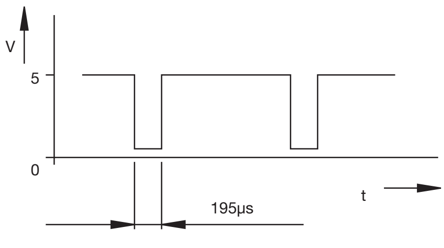



**Speed Output**




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

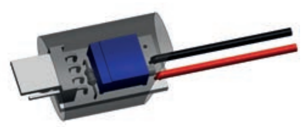
**Speed Output signal**




# 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”



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# Notes

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