

Pressure vacuum generator PGVA

FESTO



Characteristics

At a glance

The pressure/vacuum generator is used for the decentralised generation and supply of compressed air and vacuum.

This can be used to pneumatically supply a pressure- or vacuum-controlled solution using a 24 V power supply. The unit is ideal for small-scale or mobile applications, such as pressure-controlled fluid handling in automated laboratory systems or medical devices.

The pressure and vacuum generator PGVA is a complete solution and integrates the compressor, the air preparation including filtration, and the buffer tanks into one unit. The supply of pressure and vacuum is controlled individually or via predefined values. The unit can be very easily integrated mechanically and connected electrically using specific interfaces.

Highlights:

- Complete solution with integrated compressor
- Proportional pressure/vacuum regulation or preset fixed values
- Flexible to use and easy to integrate
- Easy to operate and configure
- Dynamic and precise

Controlled pressure/vacuum generation using pressure and vacuum generator PGVA-1

- Pressure and vacuum are generated in a closed control loop with integrated compressor, buffer tank, pressure sensors and proportional valve. Using a standardised communication interface, the required pressure level can be specified manually via the integrated user interface or automatically by a logic controller. Pressure and vacuum are supplied via the same duct at the output. This can be connected to the hydrophobic filter supplied to prevent the ingress of possible contaminated or damp air.

Constant pressure/vacuum generation using PGVA-2 pressure and vacuum generator

- The supply of pressure and vacuum is ensured via two independent ducts at the output. The pressure and vacuum level is generated based on the preset fixed values. This eliminates the communication interface for adjustable control within the pressure and vacuum generator. A 24 V power supply is sufficient to guarantee the supply.

Number of output channels

[1] 1 single channel



PGVA-1 has one output channel.

[2] 2 channels



PGVA-2 has two output channels.

Pressure regulation

[P] Proportional

[] None

Diagrams

Further information → [pgva](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

Type code

| | | |
|-------------|----------------------------|--|
| 001 | Series | |
| PGVA | Pressure vacuum generators | |
| 002 | Number of output channels | |
| 1 | 1 single channel | |
| 2 | 2 channels | |
| 003 | Pressure regulation | |
| | None | |
| P | Proportional | |
| 004 | Pressure range | |
| | None | |
| D30 | -0.45...0.45 bar | |

| | | |
|------------|------------------------|--|
| 005 | Output pressure 1 | |
| | None | |
| P1 | 0.8 bar | |
| 006 | Output pressure 2 | |
| | None | |
| V1 | -0.62 bar | |
| 007 | Pneumatic connection | |
| Q4 | Push-in connector 4 mm | |
| 008 | Filter design | |
| A | 0.01 µm | |

Datasheet

General technical data PGVA-1

| | | |
|------------------------------|-------------------------|-------------------------|
| Number of output channels | 1 single channel | 2 channels |
| Mounting position | optional | |
| Type of mounting | with female thread M4 | |
| Display | LED | |
| Pneumatic connection, port 1 | QS-4 | |
| Output pressure 1 | -0.45 bar | -0.62 bar |
| Output pressure 2 | 0.45 bar | 0.8 bar |
| Grade of filtration | 0.01 µm | |
| Standard flow rate | 1 l/min | 1.2 l/min |
| Product weight | 3.2 kg | 1.8 kg |
| Dimensions (W x L x H) | 210 mm x 208 mm x 76 mm | 169 mm x 208 mm x 55 mm |

Electrical data PGVA-1

| | | |
|------------------------------------|---|---------------------------|
| Number of output channels | 1 single channel | 2 channels |
| Electrical power consumption | 19 W | 11 W |
| Nominal operating voltage DC | 24 V | |
| Permissible voltage fluctuations | +/- 10% | |
| Power supply, function | Digital output Load and functional earth | Load and functional earth |
| Power supply, connection type | Socket | |
| Power supply, connection system | Terminal strip | |
| Power supply, number of pins/wires | 5 | |

Operating and environmental conditions PGVA-1

| | |
|--|--|
| Storage temperature | -20 ... 70°C |
| Ambient temperature | 0 ... 40°C |
| Relative air humidity | 0 - 85%, Non-condensing |
| Sound power level | 55 dB(A) |
| Vibration resistance | Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6 |
| Shock resistance | Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27 |
| Absolute accuracy in ± %FS at room temperature | 1 %FS |
| Degree of protection | IP20 |
| Approval | RCM trademark |
| Corrosion resistance class CRC ¹⁾ | 0 - No corrosion stress |
| CE mark (see declaration of conformity) ²⁾ | To EU EMC Directive In accordance with EU RoHS Directive |
| CE marking (see declaration of conformity) ³⁾ | To UK instructions for EMC To UK RoHS instructions |

1) More information www.festo.com/x/topic/kbk

2) For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... -> Support/Downloads.

If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

3) For information about the area of use, see the declaration of conformity at: www.festo.com/catalogue/... -> Support/Downloads.

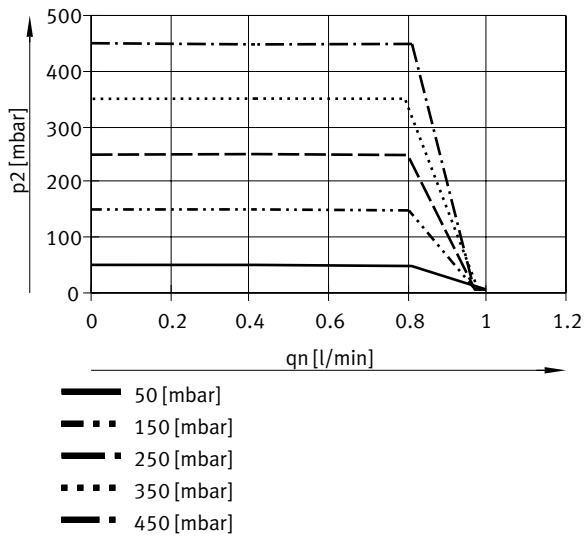
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials PGVA-1

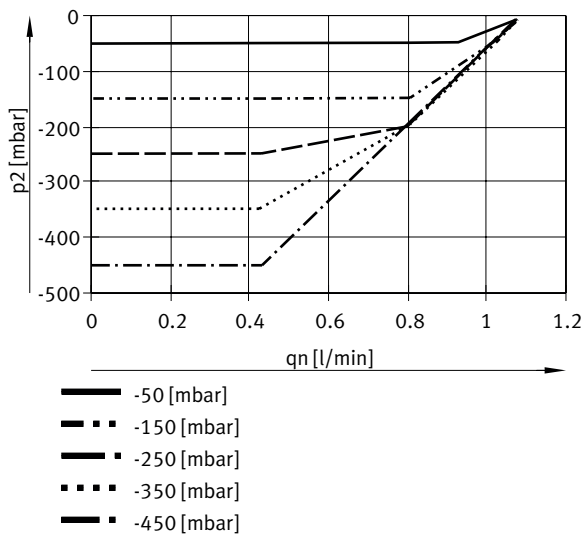
| | |
|------------------------|--------------------------|
| Note on materials | RoHS-compliant |
| Material housing | Aluminium, powder-coated |
| Housing colour | grey |
| LABS (PWIS) conformity | VDMA24364 zone III |

Datasheet

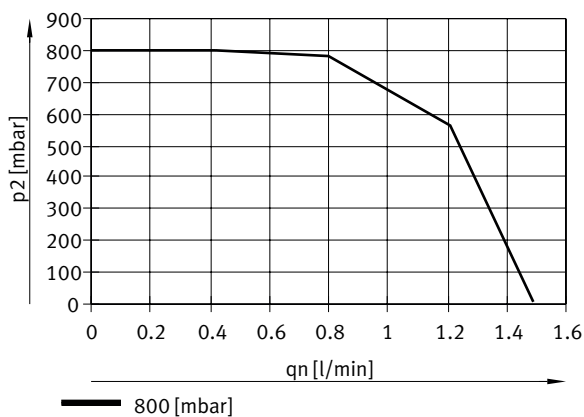
Pressure range PGVA-1



Vacuum pressure range PGVA-1

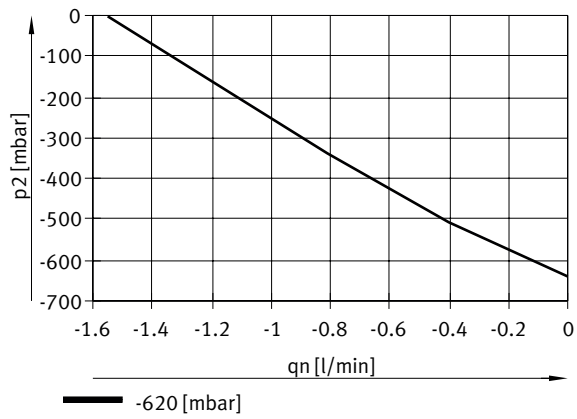


Pressure range PGVA-2



Datasheet

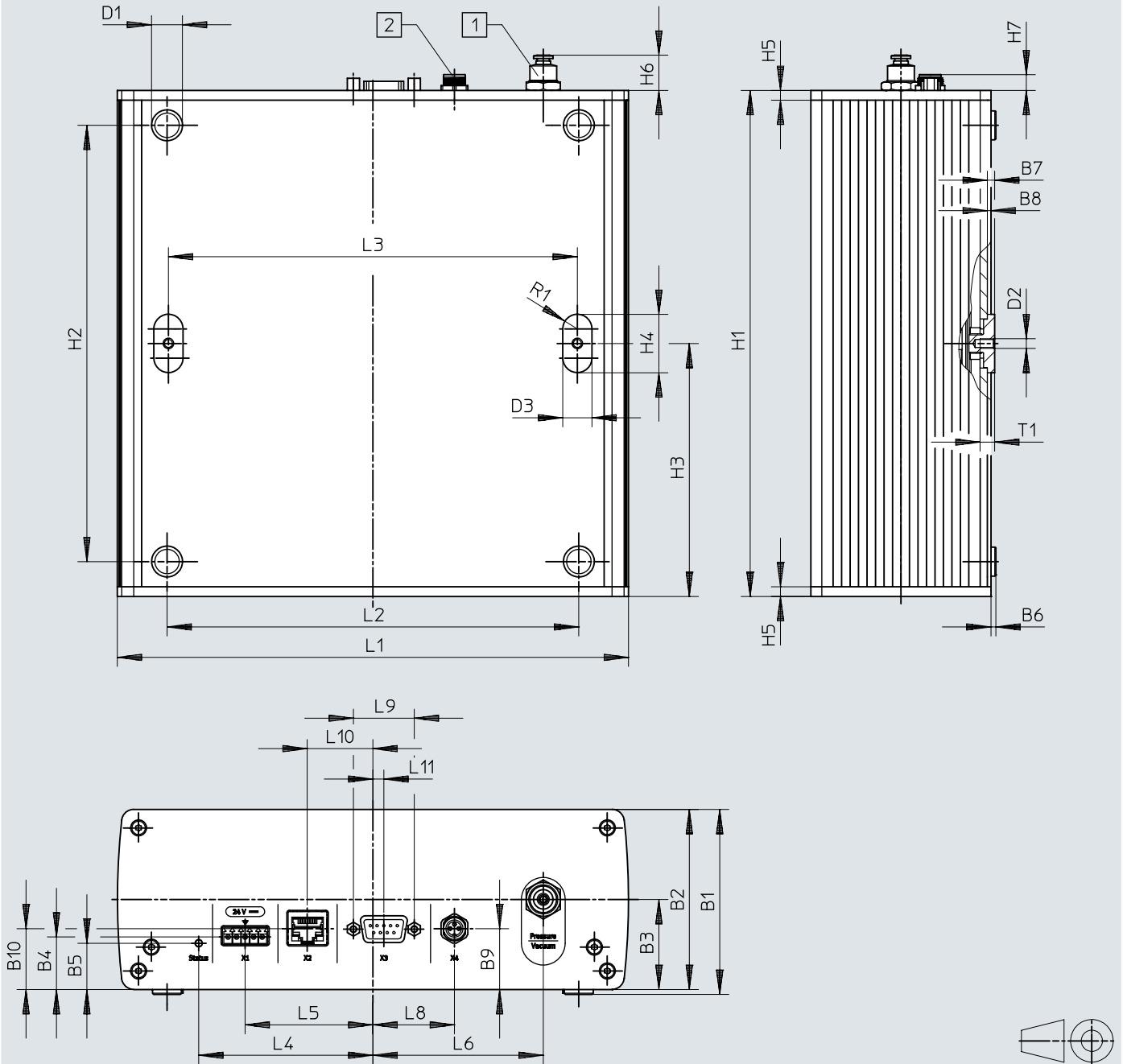
Vacuum pressure range PGVA-2



Dimensions

Dimensions – PGVA-1

Download CAD data → www.festo.com



- [1] QSS-4
- [2] Female thread: M8x1

Dimensions

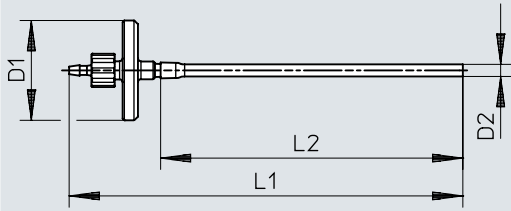
| | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | D1 ∅ | D2 | D3 |
|-------------------|----|----|----|------|----|----|----|-----|----|-----|---------|----|----|
| PGVA-1-P-D30-Q4-A | 76 | 74 | 37 | 21,6 | 19 | 2 | 3 | 1,5 | 25 | 25 | 12,7 | M4 | 12 |

| | H1 | H2 | H3 | H4 | H5 | H6 | H7 |
|-------------------|-----|-----|-----|----|----|------|-----|
| PGVA-1-P-D30-Q4-A | 208 | 179 | 104 | 24 | 4 | 14,5 | 6,5 |

| | L1 | L2 | L3 | L4 | L5 | L6 | L8 | L9 | L10 | L11 | R1 | T1 |
|-------------------|-----|-----|-----|------|------|----|------|----|-----|-----|----|----|
| PGVA-1-P-D30-Q4-A | 210 | 169 | 168 | 71,6 | 52,5 | 70 | 33,5 | 25 | 27 | 4,5 | 6 | 6 |

Dimensions

Dimensions – Filter module for PGVA-1

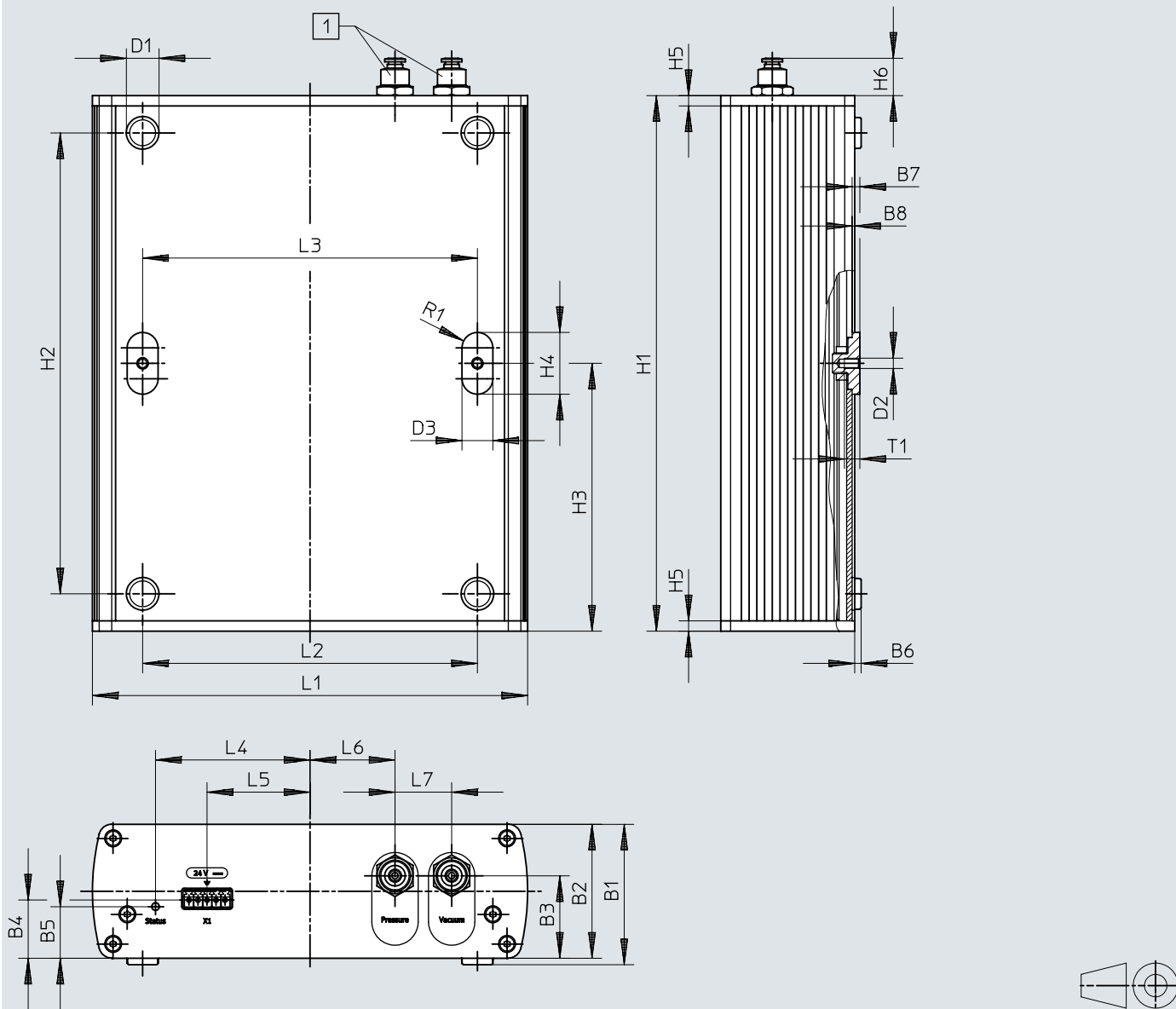
Download CAD data → www.festo.com

| | D1 | D2 | L1 | L2 |
|-------------------|----|----|-----|-----|
| | ∅ | ∅ | | |
| PGVA-1-P-D30-Q4-A | 33 | 4 | 130 | 100 |

Dimensions

Dimensions – PGVA-2


Download CAD data → www.festo.com




[1] QSS-4

| | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | D1 | D2 | D3 | H1 | H2 |
|------------------|------|----|----|------|-----|-----|-----|----|-----------|----|----|-----|------------|
| PGVA-2-P1V1-Q4-A | 54,5 | 52 | 32 | 22,6 | 20 | 2,5 | 3 | 1 | 12,7 ∅ | M4 | 12 | 208 | 179 |
| | H3 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | R1 | T1 min. |
| PGVA-2-P1V1-Q4-A | 104 | 24 | 4 | 14,5 | 169 | 130 | 130 | 60 | 40 | 33 | 22 | 6 | 6 |

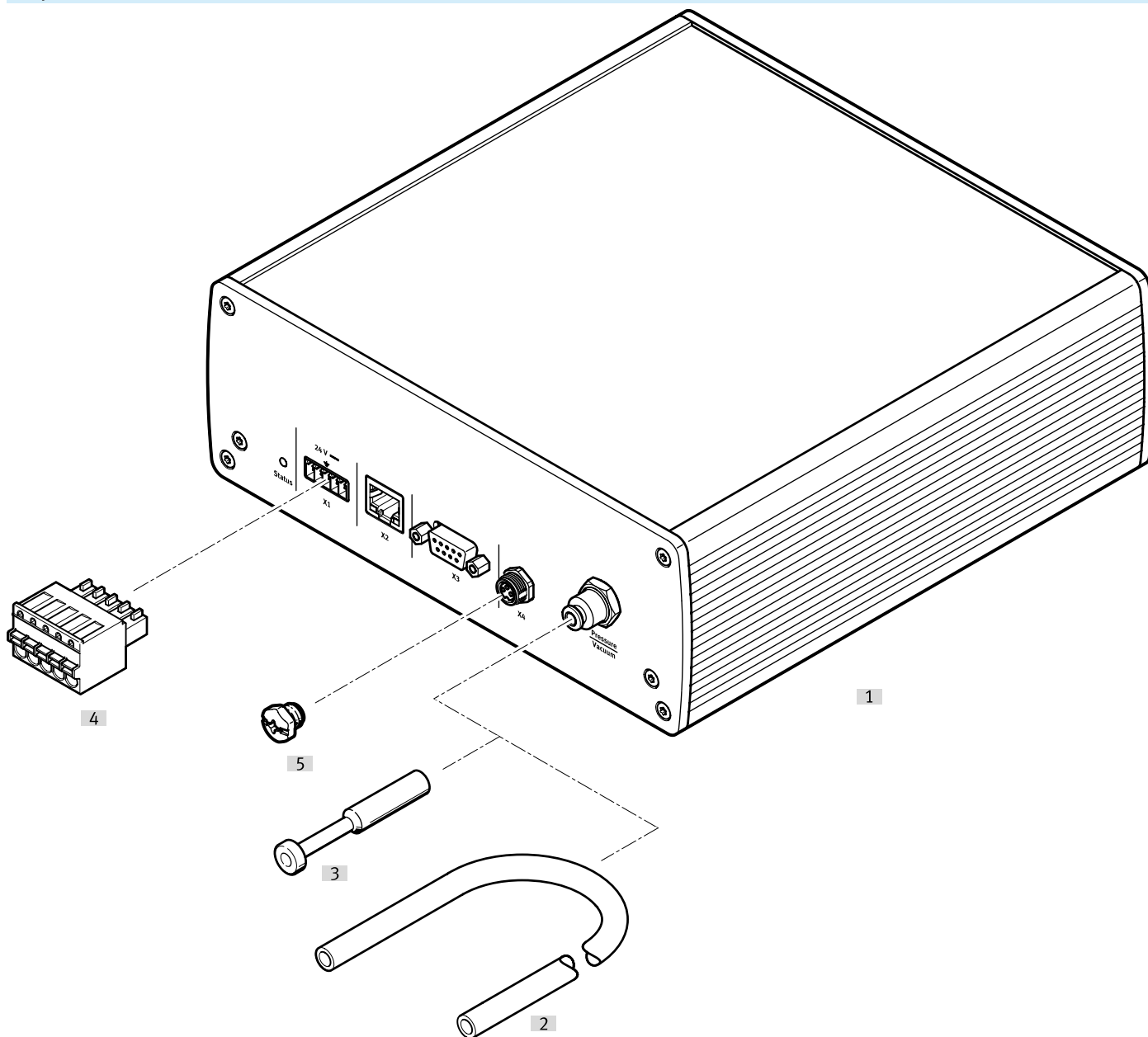
Ordering data

| Pressure vacuum generator PGVA-1 | | | | |
|---|---|----------------|----------------|--------------------------|
| | Electrical control | Product weight | Part no. | Type |
|  | COM port, Ethernet, Integrated controller | 3.2 kg | 8165129 | PGVA-1-P-D30-Q4-A |

| Pressure vacuum generator PGVA-2 | | | | |
|---|-----------------------|----------------|----------------|-------------------------|
| | Electrical control | Product weight | Part no. | Type |
|  | Integrated controller | 1.8 kg | 8163214 | PGVA-2-P1V1-Q4-A |

Peripherals

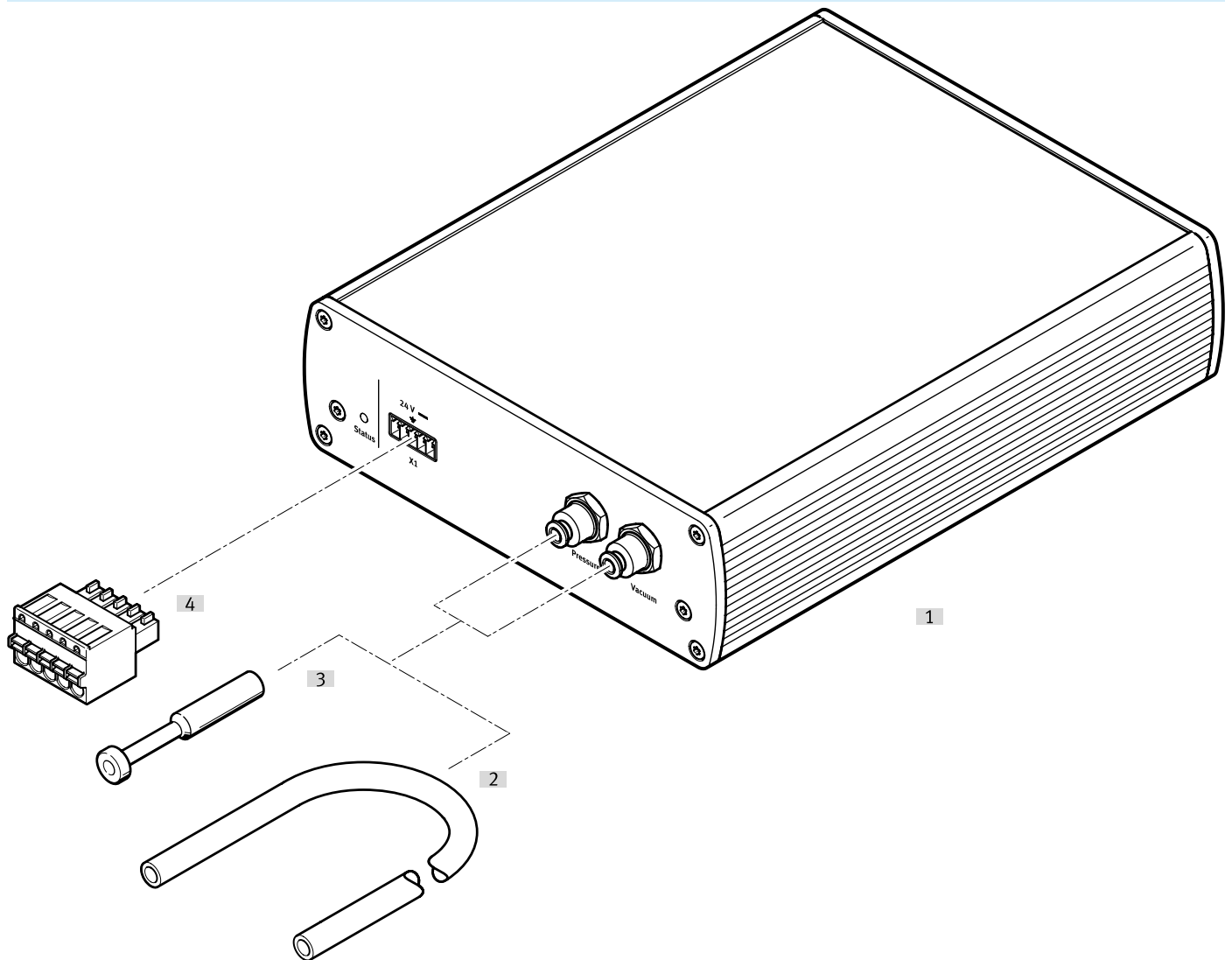
Peripherals overview



| Accessories | | → Page/Internet |
|--------------------|--|-----------------|
| Type/order code | Description | |
| [1] PGVA-1 | Regulated pressure/vacuum generation with one output channel | PGVA-1 |
| [2] Plastic tubing | - | 14 |
| [3] Blanking plug | - | 14 |
| [4] Terminal strip | - | 14 |
| [5] Cover cap | - | 14 |

Peripherals

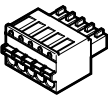
Peripherals overview




| Accessories | | → Page/Internet |
|--------------------|--|-----------------|
| Type/order code | Description | |
| [1] PGVA-2 | Constant pressure/vacuum generation with two output channels | PGVA-2 |
| [2] Plastic tubing | - | 14 |
| [3] Blanking plug | - | 14 |
| [4] Terminal strip | - | 14 |

Accessories

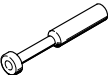
PGVA-1 and PGVA-2, terminal strip

| | Electrical connection 1, number of connections/ cores | Electrical connection 2, connector system | Product weight | Size of pack | Part no. | Type |
|--|--|---|----------------|--------------|----------|--------------|
|  | 5 | Spring-loaded terminal | 3.8 g | 1 | 8106756 | NECC-L8G5-C1 |


PGVA-1 and PGVA-2, plastic tubing

| | Outside diameter | Inside diameter | Min. bending radius | Flow-relevant bending radius | Part no. | Type |
|--|---------------------|-----------------|---------------------|------------------------------|-----------|----------------------|
|  | 4 mm | 2.6 mm | 8 mm | 16 mm | ★ 558278 | PUN-H-4X0,75-SI |
| | | | | | 8048675 | PUN-H-4X0,75-TRT |
| | | | | | 8048676 | PUN-H-4X0,75-TRT-500 |
| | | | | | 8048677 | PUN-H-4X0,75-TGN |
| | | | | | ★ 8048672 | PUN-H-4X0,75-TBL-500 |
| | | | | | 558292 | PUN-H-4X0,75-GN |
| | | | | | 8048678 | PUN-H-4X0,75-TGN-500 |
| | | | | | ★ 8048671 | PUN-H-4X0,75-TBL |
| | | | | | 558299 | PUN-H-4X0,75-GE |
| | | | | | ★ 558285 | PUN-H-4X0,75-RT |
| | | | | | ★ 558250 | PUN-H-4X0,75-SW-500 |
| | | | | | ★ 197390 | PUN-H-4X0,75-SW |
| | | | | | 8048673 | PUN-H-4X0,75-TSW |
| | | | | | ★ 197383 | PUN-H-4X0,75-BL |
| | | | | | ★ 197376 | PUN-H-4X0,75-NT |
| | | | | | 8048680 | PUN-H-4X0,75-TGE-500 |
| | | | | | ★ 558264 | PUN-H-4X0,75-NT-500 |
| | | | | | 8048674 | PUN-H-4X0,75-TSW-500 |
| ★ 558271 | PUN-H-4X0,75-SI-500 | | | | | |
| 8048679 | PUN-H-4X0,75-TGE | | | | | |
| ★ 558257 | PUN-H-4X0,75-BL-500 | | | | | |

PGVA-1 and PGVA-2, blanking plugs

| | Pneumatic connection, port 1 | Product weight | Size of pack | Part no. | Type |
|--|------------------------------|----------------|--------------|----------|--------|
|  | Push-in sleeve Ø 4 mm | 0.5 g | 10 | ★ 153267 | QSC-4H |

PGVA-1, cover cap

| | Product weight | Size of pack | Part no. | Type |
|--|----------------|--------------|----------|--------|
|  | 5 g | 10 | 177672 | ISK-M8 |