

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 allows pressure or vacuum-controlled solutions to be pneumatically supplied via a 24 V power supply. The unit is ideal for small-scale or mobile applications, such as the pressure-controlled handling of liquids in automated laboratory systems.

The pressure and vacuum generator PGVA is a complete solution and integrates the compressor including filtration and the buffer tanks into a single unit. Pressure and vacuum supply is either individually controlled or via preset values. The unit is very easy to integrate mechanically and connect electrically using defined 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

- The pressure and vacuum are generated in a closed control loop consisting of integrated compressor, buffer reservoir, pressure sensors and proportional valve. Using a standardised communication interface, the required pressure level can be set manually via the operator panel or automatically by a logic controller. Pressure and vacuum are supplied via the same duct at the output. A hydrophobic filter can be connected to it to prevent the ingress of potentially contaminated or humid air. This external filter is available separately from the spare parts catalogue.

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

Filter design

The external filter module PFEG-33-B2.4-G:SP (part no. 8210756) is available separately from the spare parts catalogue and is not included in the scope of delivery for the PGVA.

Filter module:

- The filter module reduces the ingress of liquids and particles into the pressure vacuum generator. The effectiveness of the filter module depends on the vacuum level, the duration of the aspiration process and the liquid to be aspirated.
- The use of the external filter module is mandatory when using the PGVA for liquid handling applications. Failure to do so may result in avoidable failures of the PGVA due to misuse caused by the user.

Diagrams Link [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 (standardised to DIN 1343)	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
UKCA marking (see declaration of conformity) ³⁾	To UK instructions for EMC To UK RoHS instructions

1) More information www.festo.com/x/topic/kbk2) 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.

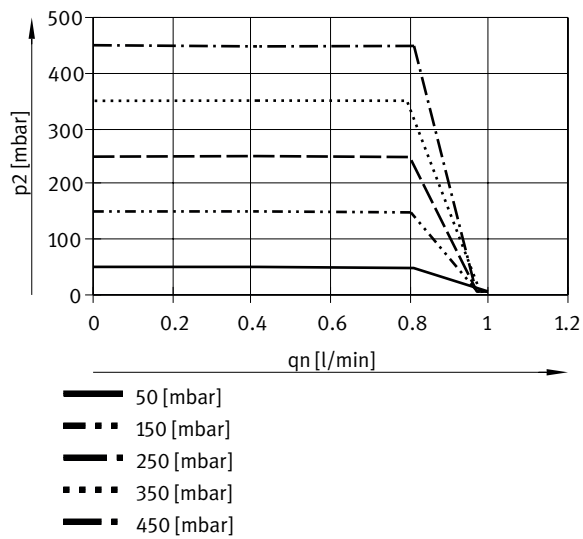
If the devices are subject to usage restrictions in residential, commercial or light-industrial environments, further measures for the reduction of the emitted interference may be necessary.

Materials PGVA-1

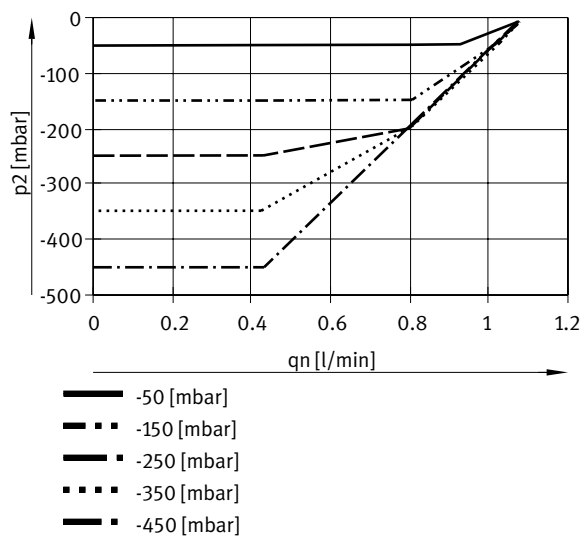
Note on materials	RoHS-compliant
Material housing	Aluminium, powder-coated
Housing colour	grey
LABS (PWIS) conformity	VDMA24364 zone III

Datasheet

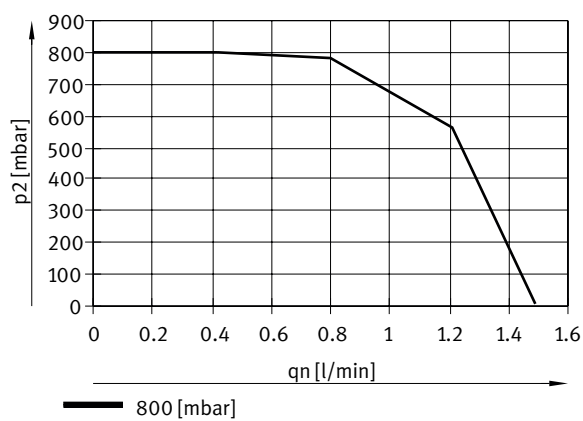
Pressure range PGVA-1



Vacuum pressure range PGVA-1

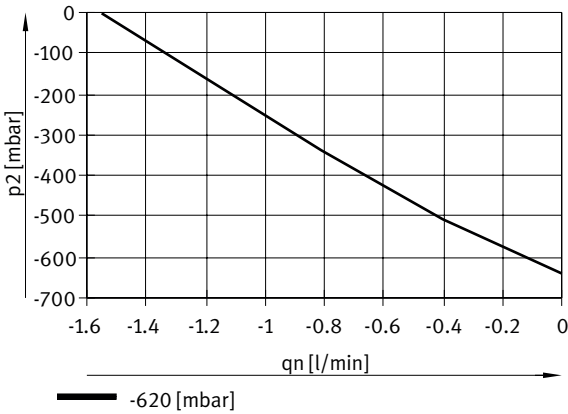


Pressure range PGVA-2



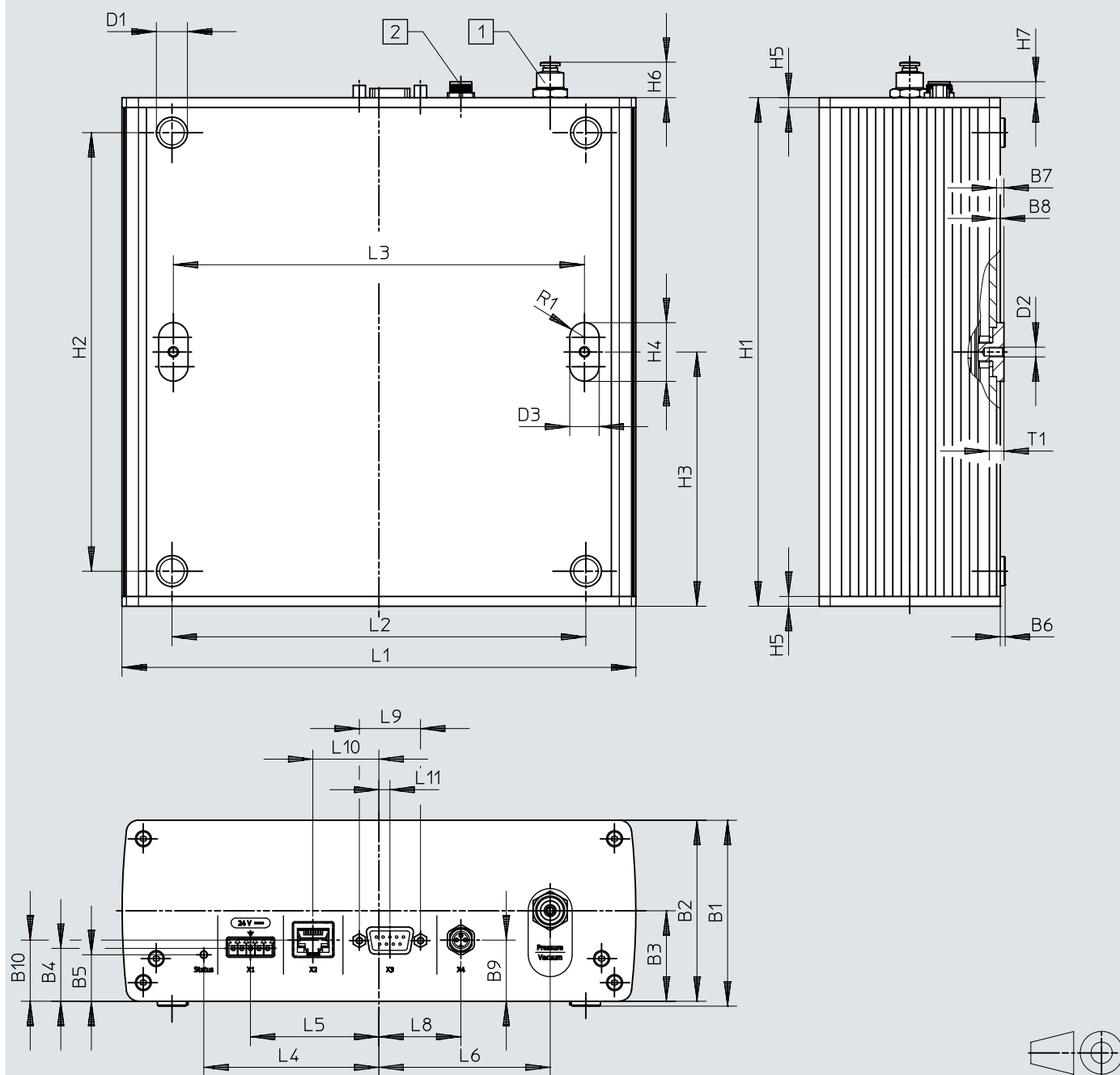
Datasheet

Vacuum pressure range PGVA-2



Dimensions

Dimensions – PGVA-1

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[1] QSS-4

[2] Female thread: M8x1

Dimensions

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

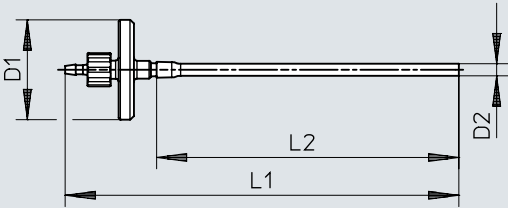
	H1	H2	H3	H4	H5	H6	H7
PGVA-1-P-D30-Q4-A	208	179	104	24	4	14,5	6,5

	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

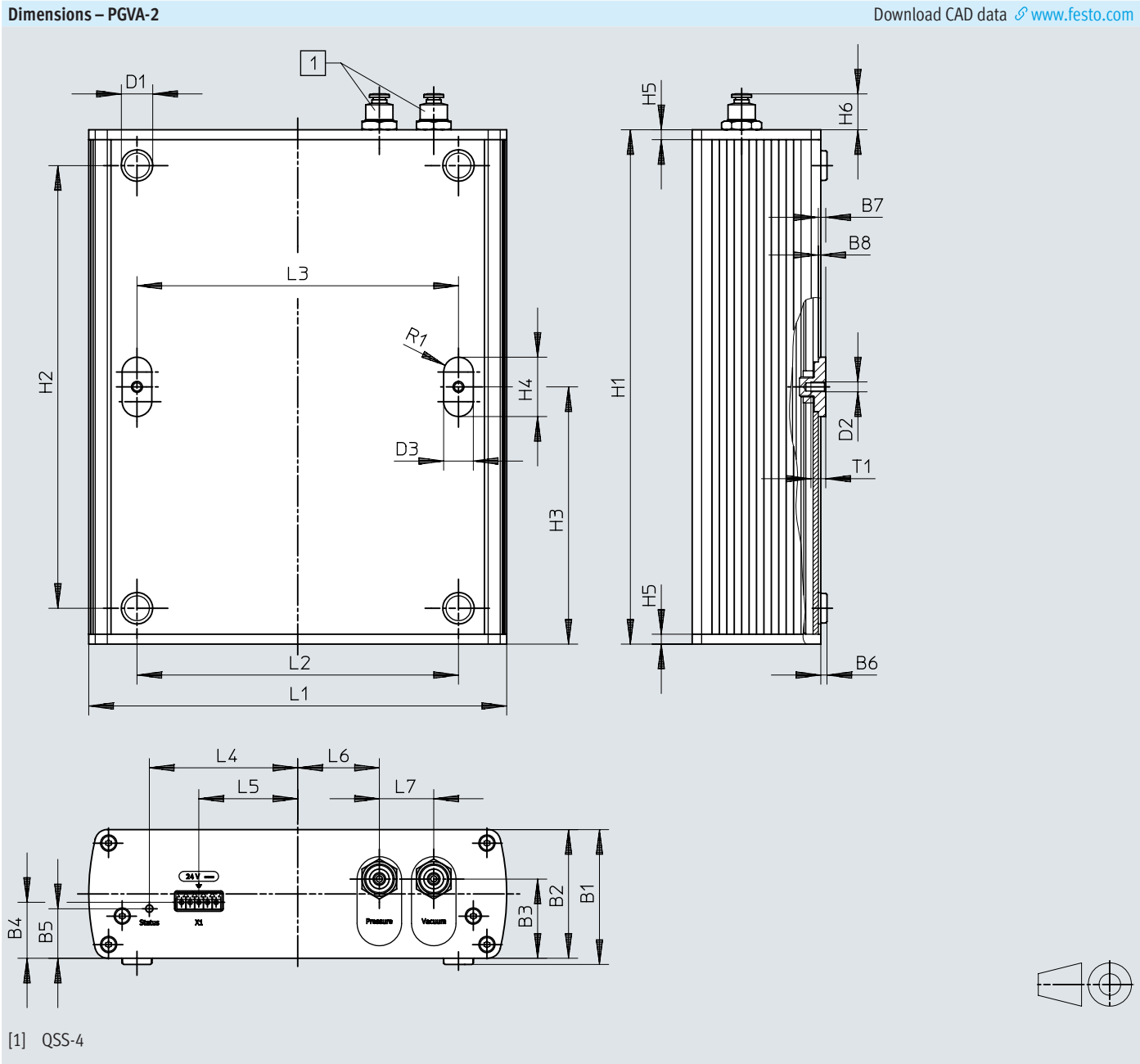
Dimensions – External filter module for PGVA-1 (not included in the scope of delivery)

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	D1 Ø	D2 Ø	L1	L2
PFEG-33-B2.4-G:SP	33	4	130	100

Dimensions



	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	H1	H2
PGVA-2-P1V1-04-A	29	22	22	22	22	22	22	12,7 ø	M4	12	208	179

	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6	L7	R1	T1 min.
PGVA-2-P1V1-04-A	104	24	4	14,5	169	130	130	60	40	33	22	6	6

Ordering data

Pressure vacuum generator PGVA-1

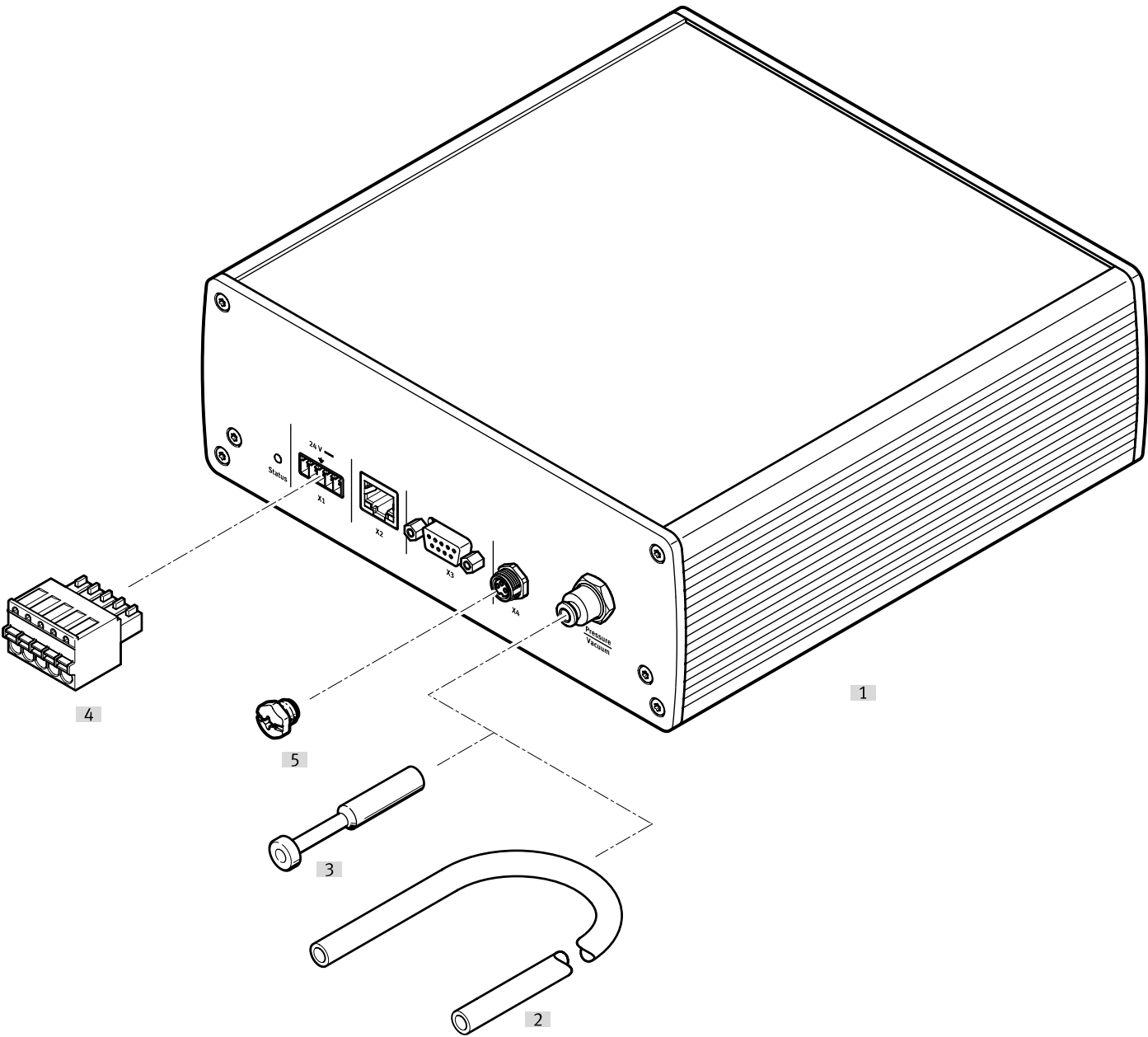
	Electrical control	Product weight	Part no.	Type
	COM port, Ethernet, Integrated controller	3.2 kg	★ 8165129	PGVA-1-P-D30-Q4-A

Pressure vacuum generator PGVA-2

	Electrical control	Product weight	Part no.	Type
	Integrated controller	1.8 kg	★ 8163214	PGVA-2-P1V1-Q4-A

Peripherals

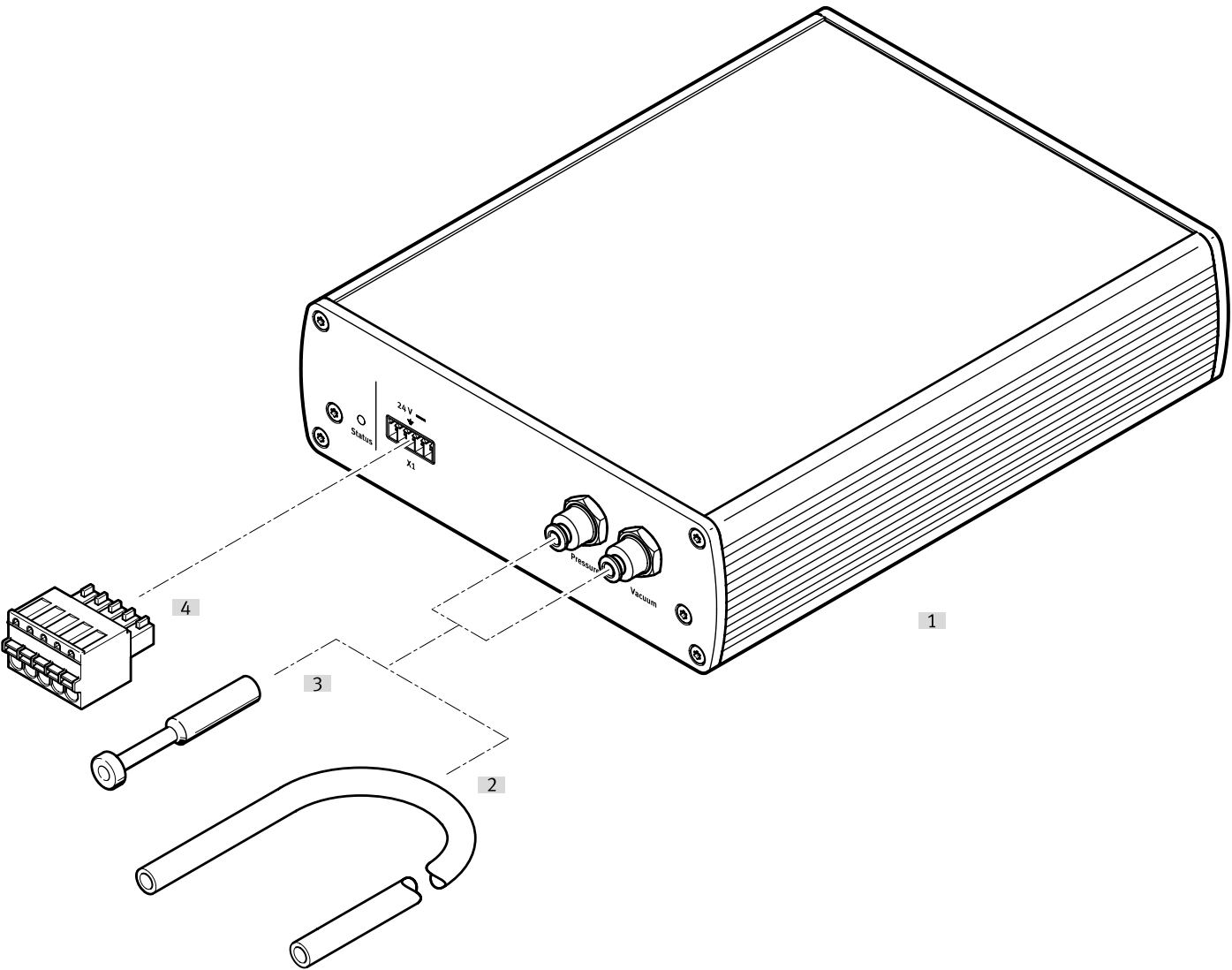
Peripherals overview



Accessories		→ Link
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

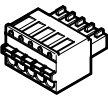
Peripherals overview



Accessories		→ Link
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

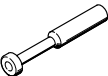
PGVA-1 and PGVA-2, terminal strip

	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