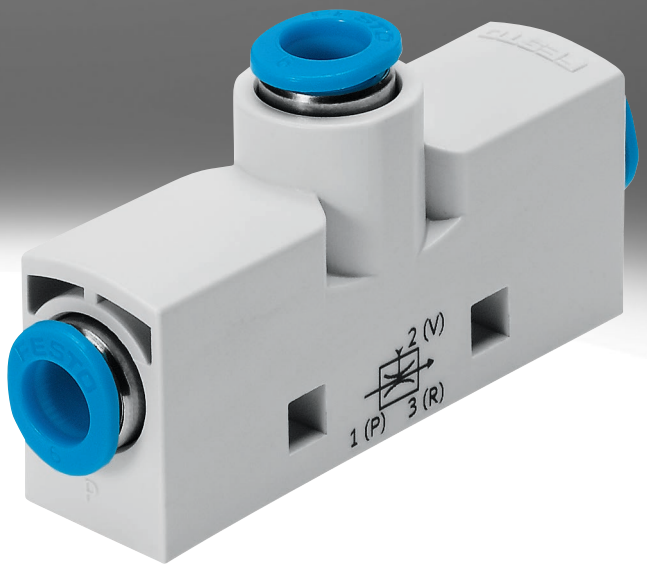
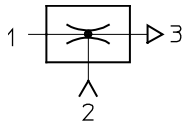
Vacuum generators VN



Key features

Product overview

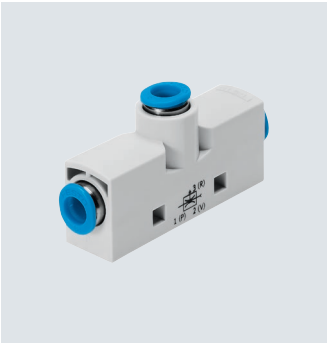
Vacuum generator



All vacuum generators from Festo have a single-stage design and operate according to the Venturi principle.
The product series described below have been designed for a wide range of applications. The different performance classes of the individual product series make it possible to select vacuum generators that are optimally tailored to the specific requirements of each application.

Standard and inline ejectors

VN-... → Page 14



- Nominal width 0.45 ... 3 mm
- Max. vacuum 93%
- Temperature range 0 ... +60°C
- A range of extremely effective generators suitable for use directly in the working area
- Available in straight or T-shaped design
- Small footprint
- Cost effective
- No wearing parts
- Extremely fast evacuation time
- Optional vacuum switch
- Optional additional functions:
  - Integrated ejector pulse
  - Electrical control for vacuum ON/OFF
  - Combination of ejector pulse and actuation

VAD-.../VAK-... Datasheets → Internet: vad



- Nominal width 0.5 ... 1.5 mm
- Max. vacuum 80%
- Temperature range –20 ... +80°C
- Range of vacuum generators with sturdy aluminium housing
- VAK-...: integrated volume, VAD-...: connection for external volume
- Maintenance-free
- VAK-...: reliable setting down of workpieces

Key features

Compact ejectors

VADM-.../VADMI-... Datasheets → Internet: vadm



- Nominal width
  0.45 ... 3 mm
- Max. vacuum
  84%
- Temperature range
  0 ... +60°C
- Compact design
- Minimal installation effort
- Short switching times
- Built-in solenoid valve
  (on/off)
- VADMI-...: additional integrated solenoid valve for ejector pulse
- Filter with display
- Optional air-saving function
- Optional vacuum switch
- Reliable setting down of workpieces

VAD-M-.../VAD-M...-I-... Datasheets → Internet: vad-m



- Nominal width
  0.7 ... 2 mm
- Max. vacuum
  85%
- Temperature range
  0 ... +40°C
- Compact design
- Minimal installation effort
- Short switching times
- Built-in solenoid valve
  (on/off)
- VAD-M-I-...: additional integrated solenoid valve for ejector pulse
- Reliable setting down of workpieces

Key features

At a glance

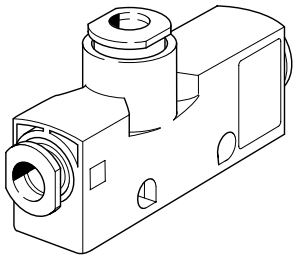
- Vacuum generators for high vacuum up to 93%
- Laval nozzles in six nominal widths:
  - 0.45 mm
  - 0.70 mm
  - 0.95 mm
  - 1.4 mm
  - 2.0 mm
  - 3.0 mm
- Vacuum generators for high suction rates and thus particularly short evacuation times
- Small footprint
- Compact and sturdy design
- Wear- and maintenance-free
- Modular principle: large selection of different types
- Can be used directly in the work space, making them very effective
- Plastic housing
- Flexible connection options:
  - Push-in connector QS
  - Screw-in thread
  - Push-in sleeve
  - Screw-in silencer
- Easy to mount thanks to the double-sided latching function of the mounting plate
- With or without integrated vacuum switch for monitoring the vacuum with PNP output

Two housing types

T-shape

Connection options:
- Push-in connectors QS
- Female thread
- Male thread
- Silencer

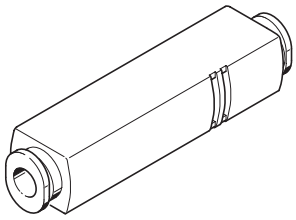
Mounting options:
- Direct mounting using screws
- Indirect mounting by snapping it onto a mounting plate. This plate is suitable for H-rail 35x7.5 to DIN EN 50022.



Straight shape

Connection options:
- Push-in connectors QS
- Push-in sleeve

Mounting options:
Particularly compact housing with compressed air and vacuum connection in one line and unducted exhaust air. This means this design can be installed directly in the tubing line.

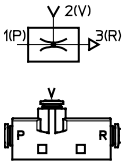


Two operating principles

Standard

- T-shaped housing

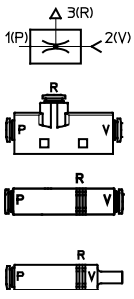
Design:
Compressed air and vacuum connection offset by 90°. The extracted volumetric flow rate is deflected by 90° from front to back.



Inline

- T-shaped housing
- Straight housing without exhaust port for space-saving installation in a tubing line or directly in the suction cup holder

Design:
Compressed air and vacuum connection arranged in one line.



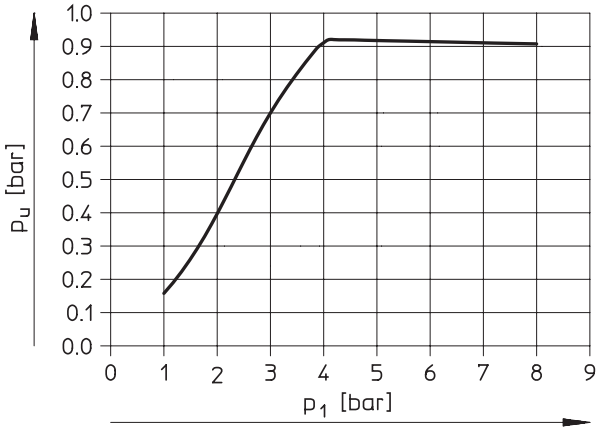
Key features

Two versions

High vacuum

up to 93%

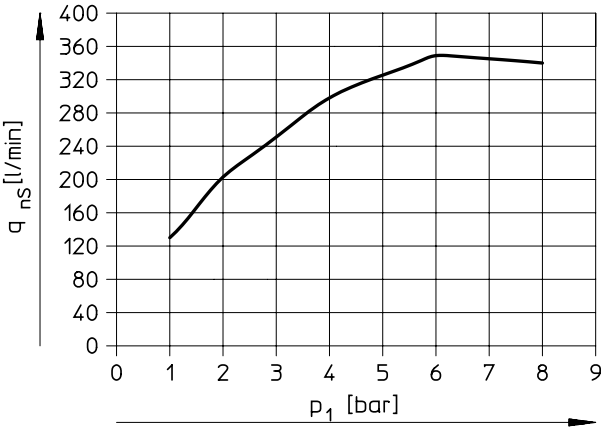
Vacuum p_u as a function of operating pressure p_1



High suction rate

up to 339 l/min, enabling particularly short evacuation times.

Suction rate q_{ns} as a function of operating pressure p_1

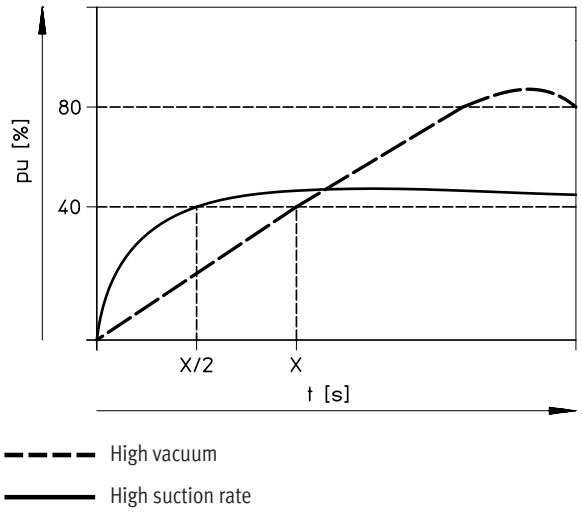


System comparison

High vacuum – high suction rate

Generators of the first type are optimised for generating a high vacuum at comparatively low suction rates.

In contrast, the second type of generator can achieve very short evacuation times because of the high suction rate at relatively low vacuum.



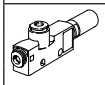
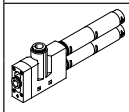
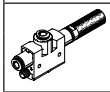
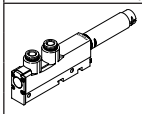
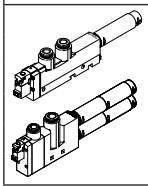
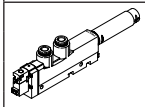
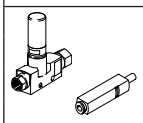
Custom material properties

[F1A] Recommended for production facilities for manufacturing lithium-ion batteries

Metals with copper, zinc or nickel as the main constituent are excluded from use.

Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

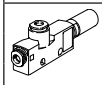
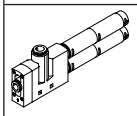
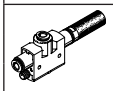
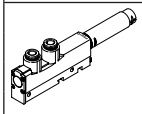
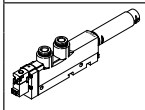
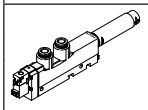
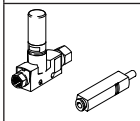
Product range overview

Function	Version	Type	Nominal width of Laval nozzle	Grid dimension								Pneumatic connection 1	
				T-shape					Straight shape			Push-in fitting PQ	Female thread PI
				10	14	16	18	24	10	13	14.5		
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
High vacuum	**Standard H**												
		VN-05-H	0.45	■	–	–	–	–	–	–	–	■	■
				–	■								
		VN-07-H	0.7	■	–	–	–	–	–	–	–	■	■
				–	■								
		VN-10-H	0.95	–	■	–	–	–	–	–	–	■	■
					–		■						–
		VN-14-H	1.4	–	–	–	■	–	–	–	–	■	■
		VN-20-H	2.0	–	–	–	–	■	–	–	–	■	■
		VN-30-H	3.0	–	–	–	–	■	–	–	–	■	■
	Standard H with integrated vacuum switch												
		VN-05-H-...-P	0.45	–	–	■	–	–	–	–	–	■	–
		VN-07-H-...-P	0.7										
		VN-10-H-...-P	0.95										
	Standard H with pneumatic ejector pulse												
		VN-05-H-...-A	0.45	–	■	–	–	–	–	–	–	■	■
		VN-07-H-...-A	0.7										
		VN-10-H-...-A	0.95										
		VN-14-H-...-A	1.4	–	–	–	■	–	–	–	–	■	■
	Standard H with electric on/off valve												
		VN-05-H-...-M	0.45	–	■	–	–	–	–	–	–	■	–
		VN-07-H-...-M	0.7										
		VN-10-H-...-M	0.95										
		VN-14-H-...-M	1.4	–	–	–	■	–	–	–	–	■	–
		VN-20-H-...-M	2.0	–	–	–	–	■	–	–	–	■	–
		VN-30-H-...-M	3.0										
	Standard H with electric on/off valve and pneumatic ejector pulse												
		VN-05-H-...-B	0.45	–	■		–	–	–	–	–	■	–
		VN-07-H-...-B	0.7										
		VN-10-H-...-B	0.95										
		VN-14-H-...-B	1.4	–	–		■	–	–	–	–	■	–
	Inline M												
		VN-05-M	0.45	■	–	–	–	–	–	–	–	■	■
				–	■								
				–	–	–	–	–	■	–	–	■	–
									–	■			
		VN-07-M	0.7	■	–	–	–	–	–	–	–	■	■
				–	■								
				–	–	–	–	–	■	–	–	■	–
									–	■			
		VN-10-M	0.95	–	–	–	–	–	–	■	–	■	–
	Inline M with ejector pulse, pneumatic												
		VN-05-M-...-A	0.45	–	–		–	–	–	–	■	■	–
		VN-07-M-...-A	0.7										

Product range overview

Type	Vacuum connection				Pneumatic connection 3			Switching function		→ Page/ Internet
	Push-in fitting VQ	Female thread VI	Male thread VA	Push-in sleeve VT	Push-in fitting RQ	Female thread RI	Silencer RO	Fixed hysteresis O1	Variable hysteresis O2	
Standard H										
VN-05-H	■	■	– ■	–	■	■	■	–	–	11
VN-07-H	■	■	– ■	–	■	■	■	–	–	
VN-10-H	■	■ –	■	–	■	■ –	■	–	–	
VN-14-H	■	■	■	–	■	■	■	–	–	
VN-20-H	■	■	■	–	–	–	■	–	–	
VN-30-H	■	■	■	–	–	–	■	–	–	
Standard H with integrated vacuum switch										
VN-05-H-...-P VN-07-H-...-P VN-10-H-...-P	■	–	–	–	–	–	–	■	■	29
Standard H with pneumatic ejector pulse										
VN-05-H-...-A VN-07-H-...-A VN-10-H-...-A VN-14-H-...-A	■	■	–	–	–	–	■	–	–	35
Standard H with electric on/off valve										
VN-05-H-...-M VN-07-H-...-M VN-10-H-...-M VN-14-H-...-M VN-20-H-...-M VN-30-H-...-M	■	–	–	–	–	–	■	–	–	35
Standard H with electric on/off valve and pneumatic ejector pulse										
VN-05-H-...-B VN-07-H-...-B VN-10-H-...-B VN-14-H-...-B	■	–	–	–	–	–	■	–	–	35
Inline M										
VN-05-M	■	■	–	–	■	■	■	–	–	11
	■	–	–	■	–	–	–	–	– –	
VN-07-M	■	■	–	–	■	■	■	–	–	
	■	–	–	■	–	–	–	–	– –	
VN-10-M	■	–	–	–	–	–	–	–	–	
Inline M with ejector pulse, pneumatic										
VN-05-M-...-A VN-07-M-...-A	■	–	–	–	–	–	–	–	–	35

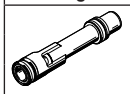
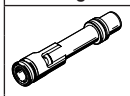
Product range overview

Function	Version	Type	Nominal width of Laval nozzle	Grid dimension								Pneumatic connection 1	
				T-shape					Straight shape			Push-in fitting PQ	Female thread PI
				10	14	16	18	24	10	13	14.5		
			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
High suction rate	**Standard L**												
		VN-05-L	0.45	■	–	–	–	–	–	–	–	■	■
				–	■								
		VN-07-L	0.7	–	■	–	–	–	–	–	–	■	■
		VN-10-L	0.95	–	■	–	–	–	–	–	–	■	■
					–		■						–
		VN-14-L	1.4	–	–	–	■	–	–	–	–	■	■
		VN-20-L	2.0	–	–	–	–	■	–	–	–	■	■
		VN-30-L	3.0	–	–	–	–	■	–	–	–	■	■
	Standard L with integrated vacuum switch												
		VN-05-L-...-P	0.45	–	–	■	–	–	–	–	–	■	–
		VN-07-L-...-P	0.7										
		VN-10-L-...-P	0.95										
	Standard L with pneumatic ejector pulse												
		VN-05-L-...-A	0.45	–	■	–	–	–	–	–	–	■	■
		VN-07-L-...-A	0.7										
		VN-10-L-...-A	0.95										
		VN-14-L-...-A	1.4	–	–	–	■	–	–	–	–	■	■
	Standard L with electric on/off valve												
		VN-05-L-...-M	0.45	–	■	–	–	–	–	–	–	■	–
		VN-07-L-...-M	0.7										
		VN-10-L-...-M	0.95										
		VN-14-L-...-M	1.4	–	–	–	■	–	–	–	–	■	–
	Standard L with electric on/off valve and pneumatic ejector pulse												
		VN-05-L-...-B	0.45	–	■		–	–	–	–	–	■	–
		VN-07-L-...-B	0.7										
		VN-10-L-...-B	0.95										
		VN-14-L-...-B	1.4	–	–		■	–	–	–	–	■	–
	Inline N												
		VN-05-N	0.45	–	■	–	–	–	–	–	–	■	■
				–	–	–	–	–	–	■	–	■	–
	Inline N with ejector pulse, pneumatic												
		VN-05-N-...-A	0.45	–	–		–	–	–	–	■	■	–
		VN-07-N-...-A	0.7										

Product range overview

Type	Vacuum connection				Pneumatic connection 3			Switching function		→ Page/ Internet
	Push-in fitting VQ	Female thread VI	Male thread VA	Push-in sleeve VT	Push-in fitting RQ	Female thread RI	Silencer RO	Fixed hysteresis O1	Variable hysteresis O2	
Standard L										
VN-05-L	■	■	– ■	–	■	■	■	–	–	11
VN-07-L	■	■	■	–	■	■	■	–	–	
VN-10-L	■	■ –	■	–	■	■ –	■	–	–	
VN-14-L	■	■	■	–	■	■	–	–	–	
VN-20-L	■	■	■	–	–	–	■	–	–	
VN-30-L	–	■	■	–	–	–	■	–	–	
Standard L with integrated vacuum switch										
VN-05-L-...-P VN-07-L-...-P VN-10-L-...-P	■	–	–	–	–	–	–	■	■	29
Standard L with pneumatic ejector pulse										
VN-05-L-...-A VN-07-L-...-A VN-10-L-...-A VN-14-L-...-A	■	■	–	–	–	–	■	–	–	35
Standard L with electric on/off valve										
VN-05-L-...-M VN-07-L-...-M VN-10-L-...-M VN-14-L-...-M	■	–	–	–	–	–	■	–	–	35
Standard L with electric on/off valve and pneumatic ejector pulse										
VN-05-L-...-B VN-07-L-...-B VN-10-L-...-B VN-14-L-...-B	■	–	–	–	–	–	■	–	–	35
Inline N										
VN-05-N	■	■	–	–	■	■	■	–	–	11
	■	–	–	■	–	–	–	–	–	
Inline N with ejector pulse, pneumatic										
VN-05-N-...-A VN-07-N-...-A	■	–	–	–	–	–	–	–	–	35

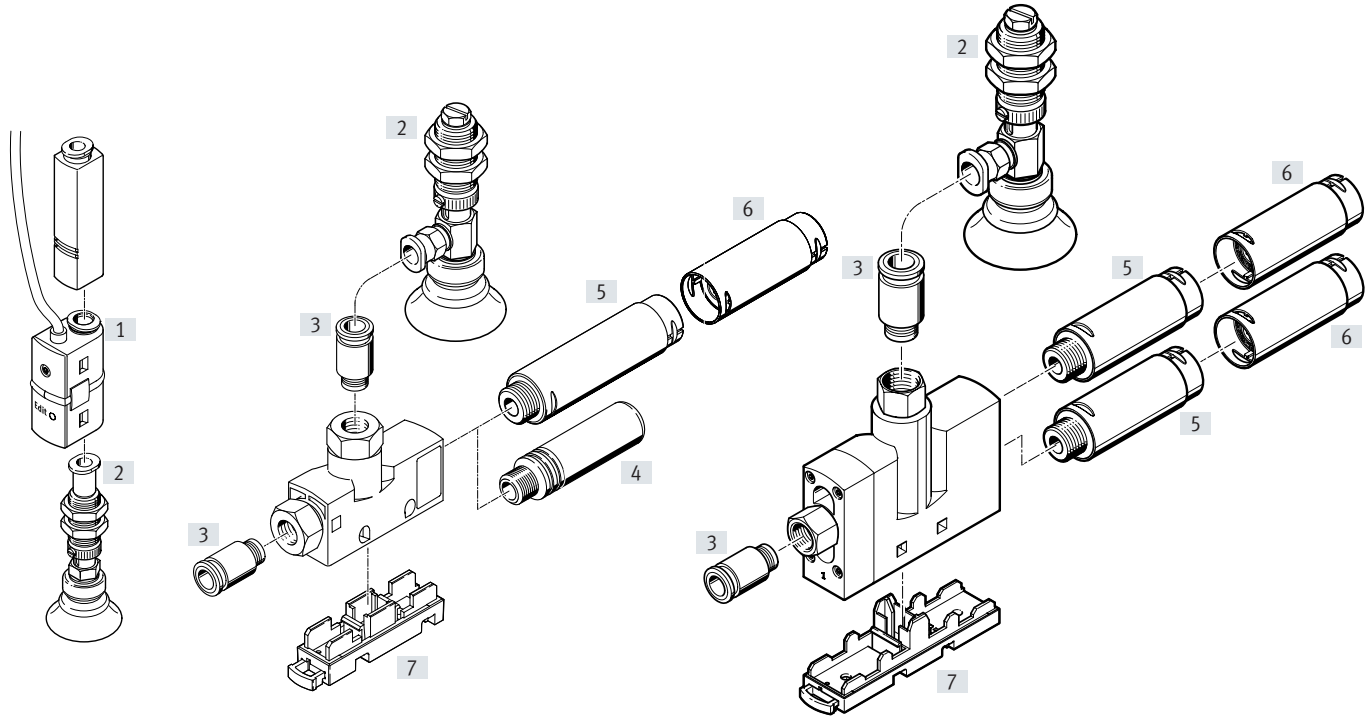
Product range overview

Function	Version	Type	Nominal width of Laval nozzle [mm]	→ Page/ Internet
High vacuum	**Vacuum generator cartridge, standard H**			
		VN-05-H	0.45	45
		VN-07-H	0.7	
		VN-10-H	0.95	
		VN-14-H	1.4	
		VN-20-H	2.0	
High suction rate	**Vacuum generator cartridge, standard L**			
		VN-05-L	0.45	45
		VN-07-L	0.7	
		VN-10-L	0.95	
		VN-14-L	1.4	
		VN-20-L	2.0	

Peripherals overview

VN-05/07/10/14 — Straight shape | T-shape

VN-20/30



Mounting attachments and accessories

		VN-05/07/10/14					VN-20/30	→ Page/ Internet
		Straight shape		T-shape			T-shape	
		10 mm	13 mm	10 mm	14 mm	18 mm	24 mm	
[1]	Pressure switch SDE5	■		■			■	sde5
[2]	Suction gripper ESG	■		■			■	esg
[3]	Push-in fitting QS	–		■			■	qs
[4]	Silencer UO	–		■	■	■	–	49
	Silencer AMTE	–		■	■	■	–	49
[5]	Silencer UOM	–		–	–	■	■	49
[6]	Silencer extension UOMS	–		–	–	■	■	49
[7]	Mounting plate VN-...-BP-NRH	–		■			■	48
–	Suction cup holder ESH	■		■			■	esh
–	Suction cup ESS	■		■			■	ess

Type codes

VN, pneumatic

001	Series	
VN	Vacuum generator	

002	Nominal width of Laval nozzle	
05	0.45 mm	
07	0.70 mm	
10	0.95 mm	
14	1.4 mm	
20	2.0 mm	
30	3.0 mm	

003	Ejector characteristics	
H	High vacuum/standard	
L	High suction rate/standard	
M	High vacuum/inline	
N	High suction rate/inline	

004	Housing type	
I2	Straight shape, pitch 10 mm	
I3	Straight shape, pitch 13 mm	
T2	T-shape, pitch 10 mm	
T3	T-shape, pitch 14 mm	
T4	T-shape, pitch 18 mm	
T6	T-shape, pitch 24 mm	

005	Compressed air connection	
PQ1	Push-in connector 4 mm	
PQ2	Push-in connector 6 mm	
PQ3	Push-in connector 8 mm	
PQ4	Push-in connector 10 mm	
PI2	Female thread M5	
PI4	Female thread G1/8	
PI5	Female thread G1/4	

006	Vacuum connection	
VQ1	Push-in fitting QS-4	
VQ2	Push-in fitting QS-6	
VQ3	Push-in fitting QS-8	
VQ5	Push-in fitting QS-12	
VI2	Female thread M5	
VI4	Female thread G1/8	
VI5	Female thread G1/4	
VI6	Female thread G3/8	
VA4	Male thread G1/8	
VA5	Male thread G1/4	
VT1	Push-in sleeve 4 mm	
VT2	Push-in sleeve 6 mm	

007	Switching function	
O1	Threshold value with fixed hysteresis, 2 teach-in points, N/O contact	
O2	Threshold value with variable hysteresis, N/O contact	

008	Electrical output	
	None	
P	Switching output PNP	

009	Exhaust port	
RQ1	Push-in fitting QS-4	
RQ2	Push-in fitting QS-6	
RQ3	Push-in fitting QS-8	
RI2	Female thread M5	
RI4	Female thread G1/8	
RI5	Female thread G1/4	
RO1	Silencer UO	
RO2	Silencer UOM	

010	Integrated function	
	None	
A	Ejector pulse, pneumatic	

011	Special material properties	
F1A	Recommended for production facilities for the manufacture of lithium-ion batteries	

Type codes

VN, electropneumatic

001	Series	
VN	Vacuum generator	

002	Nominal width of Laval nozzle	
05	0.45 mm	
07	0.70 mm	
10	0.95 mm	
14	1.4 mm	
20	2.0 mm	
30	3.0 mm	

003	Ejector characteristics	
H	High vacuum/standard	
L	High suction rate/standard	

004	Housing type	
T3	T-shape, pitch 14 mm	
T4	T-shape, pitch 18 mm	
T6	T-shape, pitch 24 mm	

005	Compressed air connection	
PQ2	Push-in connector 6 mm	
PQ3	Push-in connector 8 mm	
PQ4	Push-in connector 10 mm	

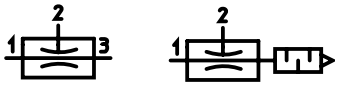
006	Vacuum connection	
VQ2	Push-in fitting QS-6	
VQ3	Push-in fitting QS-8	
VQ5	Push-in fitting QS-12	

007	Exhaust port	
RO1	Silencer UO	
RO2	Silencer UOM	

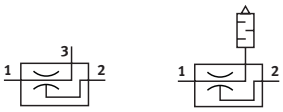
008	Integrated function	
B	Electric on/off valve and pneumatic ejector pulse	
M	Electric on/off valve	

Datasheet

Function
standard

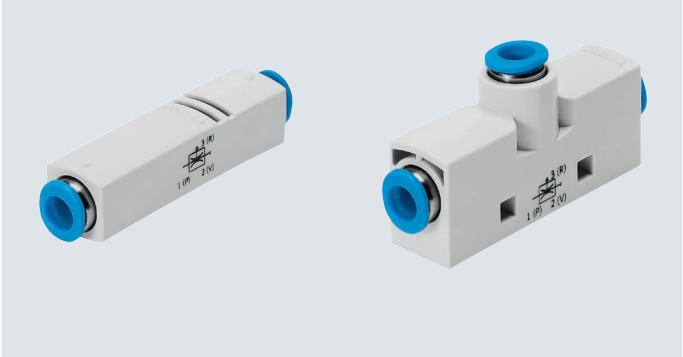


Inline



Temperature range
0 ... +60°C

Operating pressure
1 ... 8 bar



General technical data – Standard										
Design		T-shape								
Type		VN-05		VN-07		VN-10		VN-14	VN-20	VN-30
Grid dimension	[mm]	10	14	10	14	14	18	18	24	24
Nominal width of Laval nozzle	[mm]	0.45		0.7		0.95		1.4	2.0	3.0
Ejector characteristic		High vacuum H								
		High suction rate L		–		High suction rate L				
Pneumatic connection 1	Push-in fitting	QS-4	QS-6	QS-4	QS-6	QS-6	QS-6	QS-6	QS-10	QS-10
	Female thread	M5	G1/8	M5	G1/8	G1/8	–	G1/8	G1/4	G1/4
Vacuum connection	Push-in fitting	QS-4	QS-6	QS-4	QS-6	QS-6	QS-8	QS-8	QS-12	QS-12
	Male thread	–	G1/8	–	G1/8	G1/8	G1/4	G1/4	G1/4	G1/4
	Female thread	M5	G1/8	M5	G1/8	G1/8	–	G1/4	G3/8	G3/8
Pneumatic connection 3	Push-in fitting	QS-4	QS-6	QS-4	QS-6	QS-6	QS-8	QS-8	–	–
	Female thread	M5	G1/8	M5	G1/8	G1/8	–	G1/4	–	–
	Silencer	Open	Open	Open	Open	Open	Open	Open	Open	Open
Type of mounting (max. tightening torque)		With through-hole (0.5 Nm)							With through-hole (0.8 Nm)	
		With accessories								
Mounting position		Any								

General technical data – Inline										
Design		T-shape				Straight shape				
Type		VN-05		VN-07		VN-05		VN-07		VN-10
Grid dimension	[mm]	10	14	10	14	10	13	10	13	13
Nominal width of Laval nozzle	[mm]	0.45		0.7		0.45		0.7		0.95
Ejector characteristic		High vacuum M								
		–	High suction rate N	–		–	High suction rate N	–		–
Pneumatic connection 1	Push-in fitting	QS-4	QS-6	QS-4	QS-6	QS-4	QS-6	QS-4	QS-6	QS-6
	Female thread	M5	G1/8	M5	G1/8	–				
Vacuum connection	Push-in fitting	QS-4	QS-6	QS-4	QS-6	QS-4	QS-6	QS-4	QS-6	QS-6
	Female thread	M5	G1/8	M5	G1/8	–				
	Push-in sleeve	–				QS-4	QS-6	QS-4	QS-6	–
Pneumatic connection 3	Push-in fitting	QS-4	QS-6	QS-4	QS-6	Not ducted				
	Female thread	M5	G1/8	M5	G1/8					
	Silencer	Open	Open	Open	Open					
Type of mounting (max. tightening torque)		With through-hole (0.5 Nm)				In-line installation				
		With accessories								
Mounting position		Any								

Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet

Operating and environmental conditions		
Operating pressure	[bar]	1 ... 8
Nominal operating pressure	[bar]	6
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium		Lubricated operation not possible
Ambient temperature	[°C]	0 ... +60
Temperature of medium	[°C]	0 ... +60
Corrosion resistance class CRC[1)]		1 - Low corrosion stress (with push-in fitting)
		2 - Moderate corrosion stress (without push-in fitting, with the exception of VN-...-T3-...-RO1 ➔ CRC [1)]

1) More information: www.festo.com/x/topic/crc

Performance data – High vacuum										
Ejector characteristic		Standard H						Inline M		
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95	1.4	2.0	3.0	0.45	0.7	0.95
Max. vacuum	[%]	88	88	89	88	92	93	86	86	86
Operating pressure for max. vacuum	[bar]	4.5	4.7	4.5	5.0	3.5	3.7	6.0	5.8	5.8
Max. suction rate with respect to atmosphere	[l/min]	6.2	16	25	51.6	98	186	6.1	13.5	28
Operating pressure for max. suction rate	[bar]	2.1	2.1	3.1	5.1	2.0	3.0	6.3	7.0	5.0
Pressurisation time at nominal operating pressure 6 bar (for 1 l volume)[1)]	[s]	4.8	1.9	1.1	0.5	0.2	0.1	4.7	2.1	0.96
Noise level at nominal operating pressure 6 bar	[dB (A)]	53	64	74 (RO1) 71 (RO2)	69	63	78	53	59	–

1) Time required to reduce the vacuum to a residual vacuum of –0.05 bar after switching off the operating pressure.

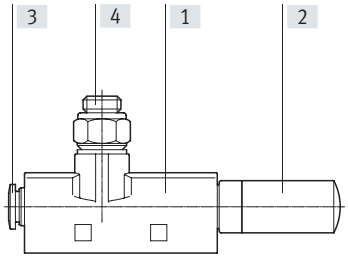
Performance data – High suction rate								
Ejector characteristic		Standard L						Inline N
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95	1.4	2.0	3.0	0.45
Max. suction rate with respect to atmosphere	[l/min]	15.7	38.8	62.7	90.0	188.0	339.0	12.0
Operating pressure for max. suction rate	[bar]	5.0	6.2	4.0	8.0	3.0	6.0	6.0
Pressurisation time at nominal operating pressure 6 bar (for 1 l volume)[1)]	[s]	1.7	0.5	0.46	0.25	0.15	0.1	1.57
Noise level at nominal operating pressure 6 bar	[dB (A)]	53	66	73 (RO1) 72 (RO2)	77	60	70	48

1) Time required to reduce the vacuum to a residual vacuum of –0.05 bar after switching off the operating pressure.

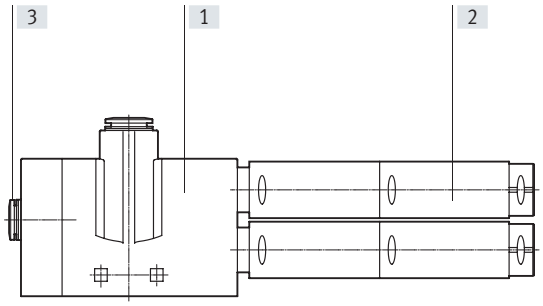
Datasheet

Materials

Sectional view



Vacuum generator VN-05/07/10/14			
[1]	Housing		Reinforced POM
[2]	Silencer	RO1	PE
		RO2	Die-cast aluminium, POM, PU foam
[3]	Push-in fitting		Nickel-plated brass
[4]	Connecting thread	VA	Wrought aluminium alloy
		PI, VI, RI	Anodised wrought aluminium alloy
		T3-RO1	Nickel-plated brass
–	Jet nozzle		Wrought aluminium alloy
–	Female nozzle		POM
–	Seals		NBR
Note on materials			RoHS-compliant
LABS (PWIS) conformity			VDMA24364-B1/B2-L
		RO2	VDMA24364 zone III



Vacuum generator VN-20/30			
[1]	Housing		Reinforced POM
[2]	Silencer		Die-cast aluminium, POM, PU foam
[3]	Push-in fitting		Nickel-plated brass
–	Connecting thread	VA	Wrought aluminium alloy
		PI, VI	Anodised wrought aluminium alloy
–	Jet nozzle		Wrought aluminium alloy
–	Female nozzle		POM
–	Seals		NBR
Note on materials			RoHS-compliant
LABS (PWIS) conformity			VDMA24364-B1/B2-L
		RO2	VDMA24364 zone III

Additional material specifications – products for battery production (F1A) [1)]

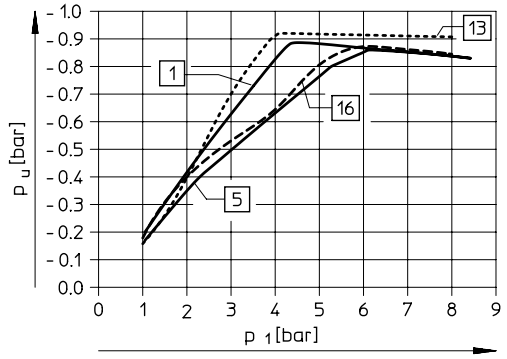
Suitable for the production of Li-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils.

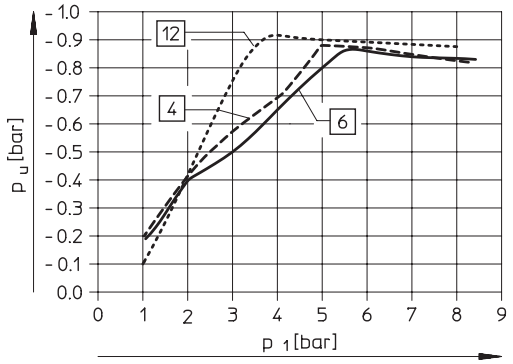
1) More information: www.festo.com/catalogue/vn → Support/Downloads.

Datasheet

Vacuum p_u as a function of operating pressure p_1

High vacuum

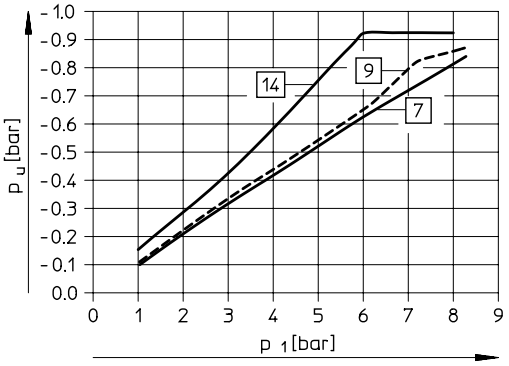


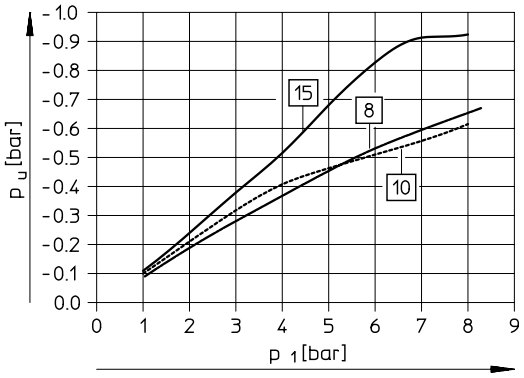


Standard:
- [1] VN-05-H-...
  VN-07-H-...
  VN-10-H-...
- [4] VN-14-H-...
- [12] VN-20-H-...
- [13] VN-30-H-...

Inline:
- [5] VN-05-M-...
- [6] VN-07-M-...
- [16] VN-10-M-...

High suction rate





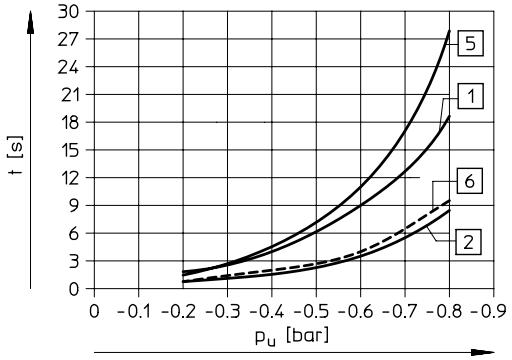
Standard:
- [7] VN-05-L-...
- [8] VN-07-L-...
- [9] VN-10-L-...
- [10] VN-14-L-...
- [14] VN-20-L-...
- [15] VN-30-L-...

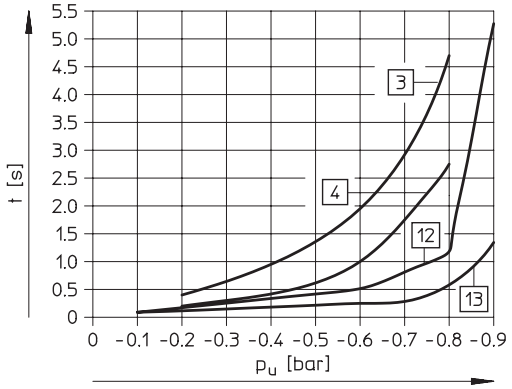
Inline:
- [8] VN-05-N-...

Datasheet

Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure

High vacuum

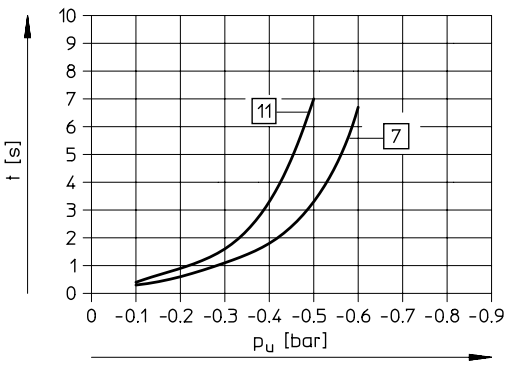


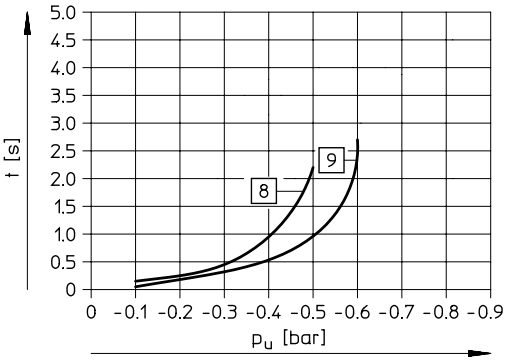


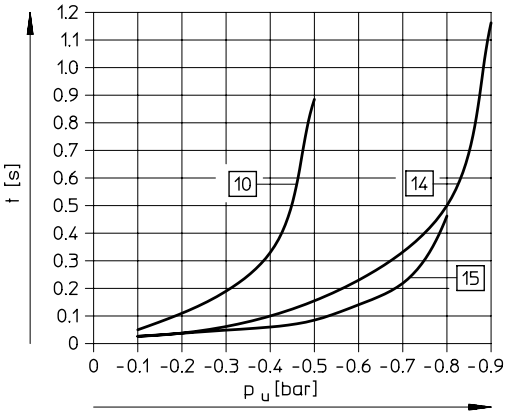
Standard:
[1] VN-05-H-...
[2] VN-07-H-...
[3] VN-10-H-...
[4] VN-14-H-...
[12] VN-20-H-...
[13] VN-30-H-...

Inline:
[5] VN-05-M-...
[6] VN-07-M-...
[3] VN-10-M-...

High suction rate







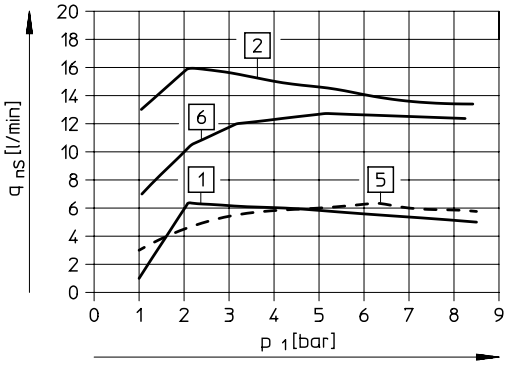
Standard:
[7] VN-05-L-...
[8] VN-07-L-...
[9] VN-10-L-...
[10] VN-14-L-...
[14] VN-20-L-...
[15] VN-30-L-...

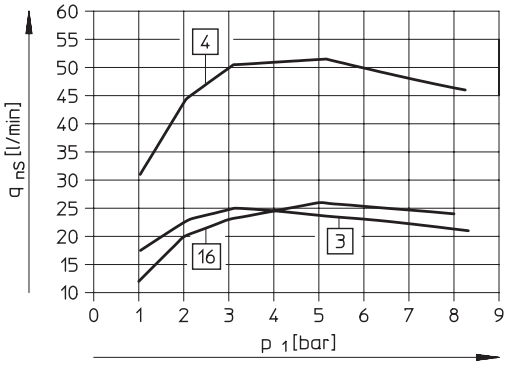
Inline:
[11] VN-05-N-...

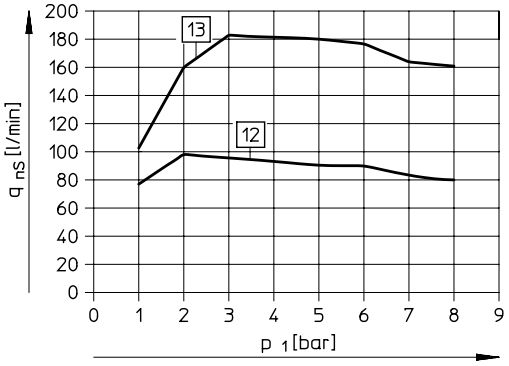
Datasheet

Suction rate q_{ns} (with respect to atmosphere) as a function of operating pressure p_1

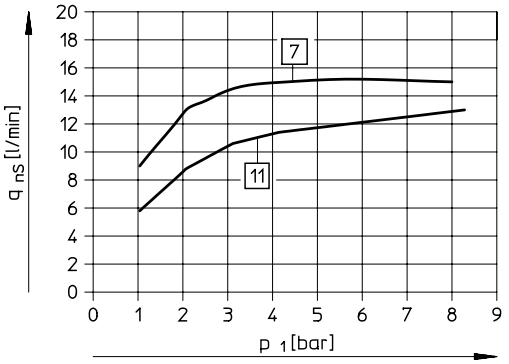
High vacuum

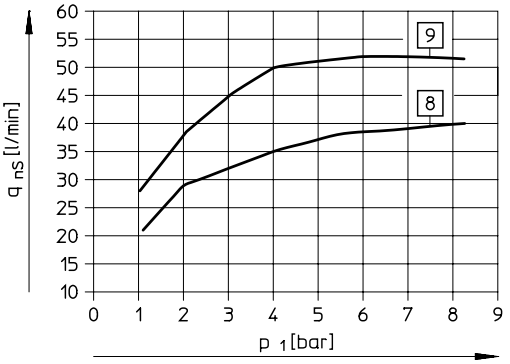


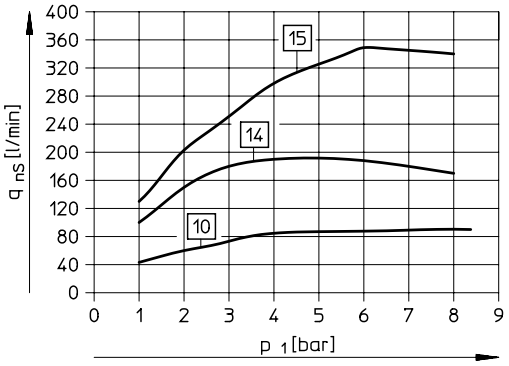




High suction rate







Standard:
[1] VN-05-H-...
[2] VN-07-H-...
[3] VN-10-H-...
[4] VN-14-H-...
[12] VN-20-H-...
[13] VN-30-H-...

Inline:
[5] VN-05-M-...
[6] VN-07-M-...
[16] VN-10-M-...

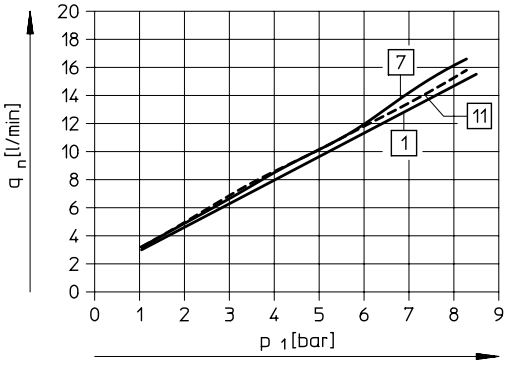
Standard:
[7] VN-05-L-...
[8] VN-07-L-...
[9] VN-10-L-...
[10] VN-14-L-...
[14] VN-20-L-...
[15] VN-30-L-...

Inline:
[11] VN-05-N-...

Datasheet

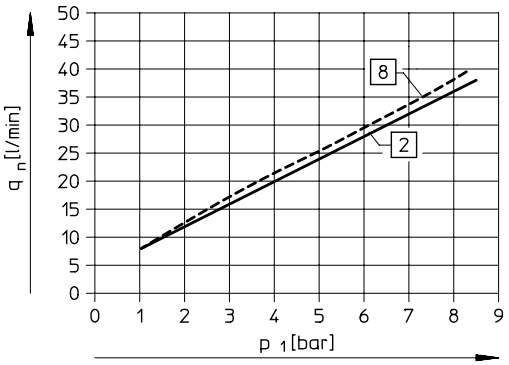
Air consumption q_n as a function of operating pressure p_1

High vacuum/high suction rate



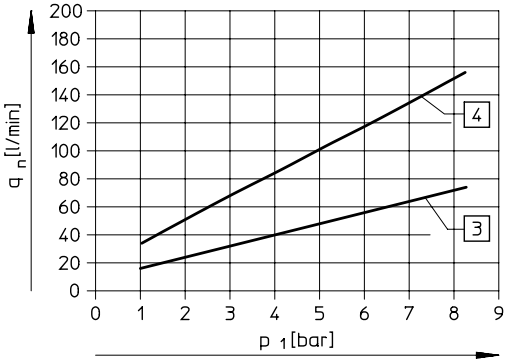
Standard:
[1] VN-05-H-...
[7] VN-05-L-...

Inline:
[1] VN-05-M-...
[11] VN-05-N-...



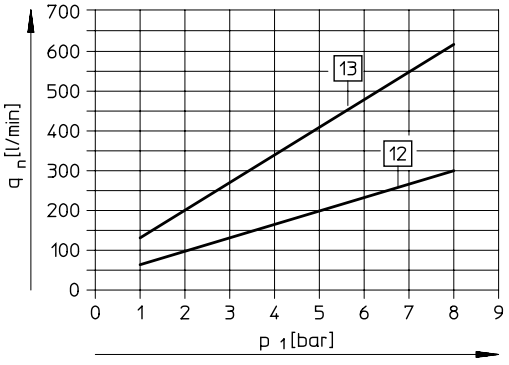
Standard:
[2] VN-07-H-...
[8] VN-07-L-...

Inline:
[2] VN-07-M-...



Standard:
[3] VN-10-H-...
VN-10-L-...
[4] VN-14-H-...
VN-14-L-...

Inline:
[3] VN-10-M-...



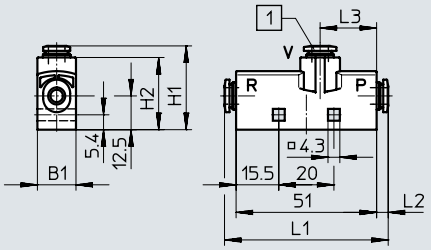
Standard:
[12] VN-20-H-...
VN-20-L-...
[13] VN-30-H-...
VN-30-L-...

Datasheet

Dimensions – T-shape/standard, VN-05/07/10/14

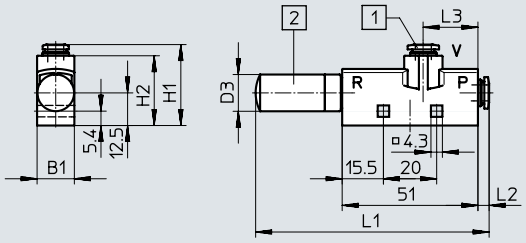
Download CAD data ➔ www.festo.com

VN-...-T...-PQ...-VQ...-RQ...



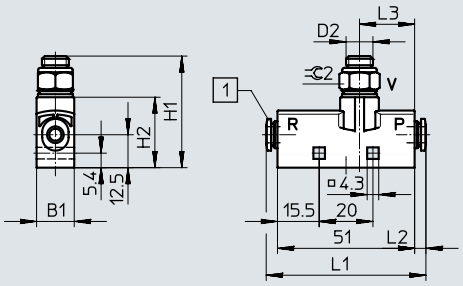
[1] Push-in fitting

VN-...-T...-PQ...-VQ...-RO...



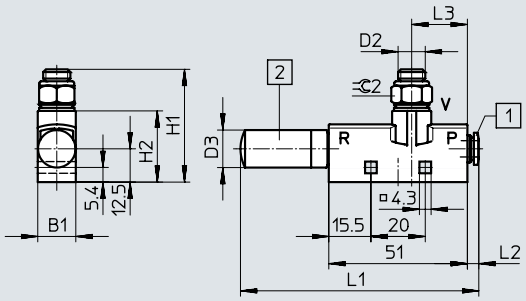
[1] Push-in fitting [2] Silencer

VN-...-T...-PQ...-VA...-RQ...



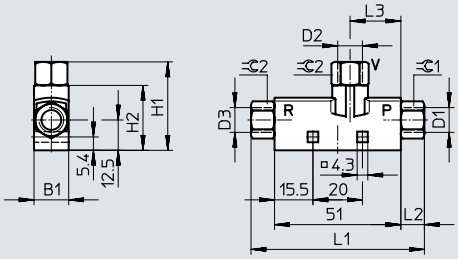
[1] Push-in fitting

VN-...-T...-PQ...-VA...-RO...

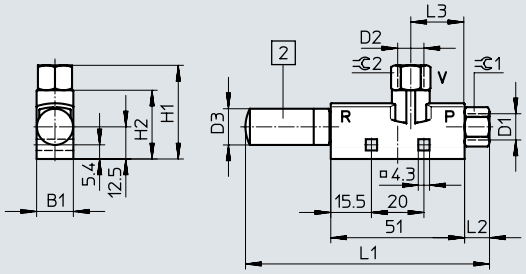


[1] Push-in fitting [2] Silencer

VN-...-T...-PI...-VI...-RI...



VN-...-T...-PI...-VI...-RO...



[2] Silencer

Type	B1	Connections			H1	H2	L1	L2	L3	⇄C1	⇄C2
		P D1	V D2	R D3							
VN-...-T2-PQ1-VQ1-RQ1	10	QS-4	QS-4	QS-4	31.3	27.7	58.2	3.6	24.3	–	–
VN-...-T2-PQ1-VQ1-RO1				9.8[1]			86.8				
VN-...-T2-PI2-VI2-RI2		M5	M5	M5	32.7		61	5		9	9
VN-...-T2-PI2-VI2-RO1				9.8[1]			88.2				
VN-...-T3-PQ2-VQ2-RQ2	14	QS-6	QS-6	QS-6	30.4	26.2	59.4	4.2	25.5	–	–
VN-...-T3-PQ2-VQ2-RO1				13.8[1]			97.6				
VN-...-T3-PQ2-VA4-RQ2			G1/8	QS-6	41.5		59.4				13
VN-...-T3-PQ2-VA4-RO1				13.8[1]			97.6				
VN-...-T3-PI4-VI4-RI4		G1/8		G1/8	35.7		70	9.5		13	
VN-...-T3-PI4-VI4-RO1				13.8[1]			102.9				
VN-...-T4-PQ2-VQ3-RQ3	18	QS-6	QS-8	QS-8	35.9	30.7	63.8	4.2	25.5	–	–
VN-...-T4-PQ2-VQ3-RO2				17.8[1]			125.5				
VN-...-T4-PQ2-VA5-RQ3			G1/4	QS-8	50.5		63.8				17
VN-...-T4-PQ2-VA5-RO2				17.8[1]			125.5				
VN-...-T4-PI4-VI5-RI5		G1/8		G1/4	48.15		81.4	9.5		13	
VN-...-T4-PI4-VI5-RO2				17.8[1]			128.8				

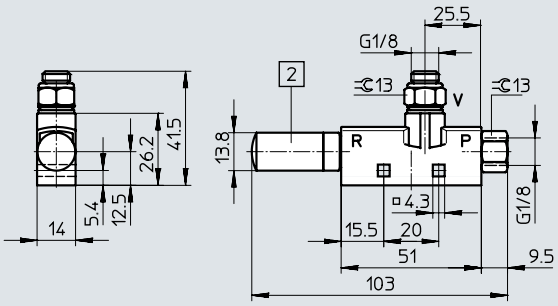
1) Diameter of silencer

Note: This product corresponds to ISO 1179-1 and ISO 228-1.

Datasheet

Dimensions – T-shape/standard, VN-10 Download CAD data ➔ www.festo.com

VN-10-L-T3-PI4-VA4-RO1



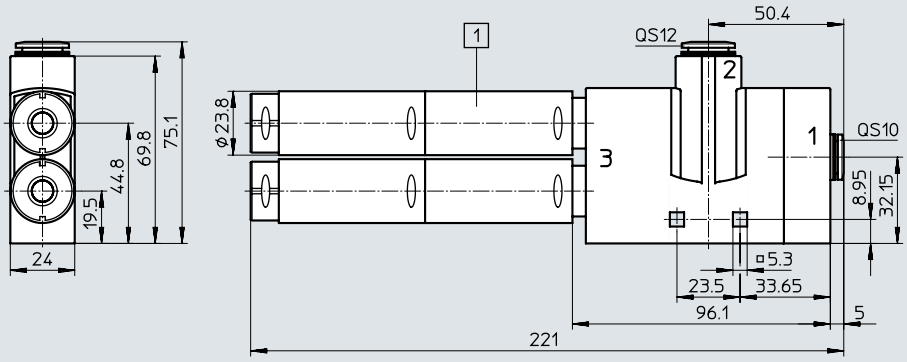
[2] Silencer

- - **Note:**

This product conforms to ISO 1179-1 and ISO 228-1.

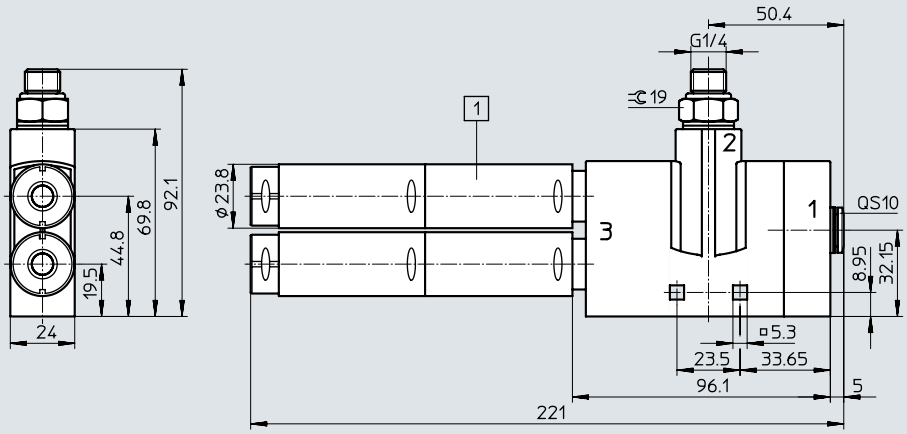
Dimensions – T-shape/standard, VN-20/30 Download CAD data ➔ www.festo.com

VN-...-T6-PQ4-VQ5-RO2



[1] Silencer

VN-...-T6-PQ4-VA5-RO2

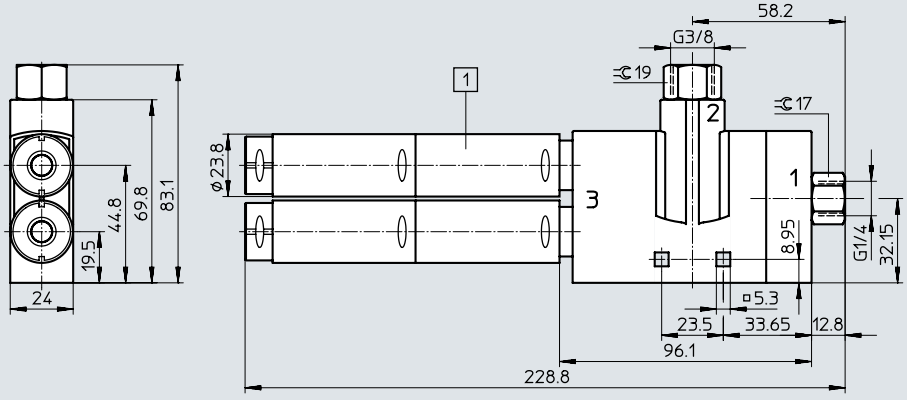


[1] Silencer

- - **Note:**

This product conforms to ISO 1179-1 and ISO 228-1.

VN-...-T6-PI5-VI6-RO2



[1] Silencer

- - **Note:**

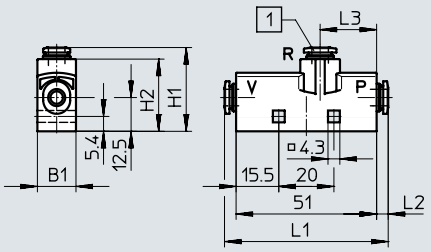
This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet

Dimensions – T-shape/inline, VN-05/07

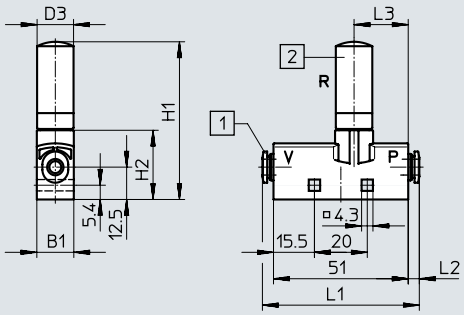
Download CAD data ➔ www.festo.com

VN-...-T...-PQ...-VQ...-RQ...



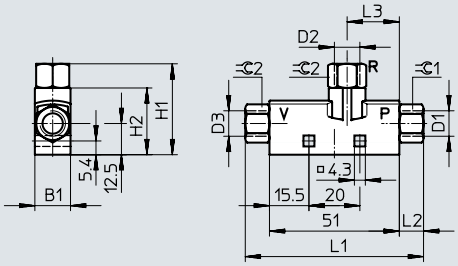
[1] Push-in fitting

VN-...-T...-PQ...-VQ...-RO1

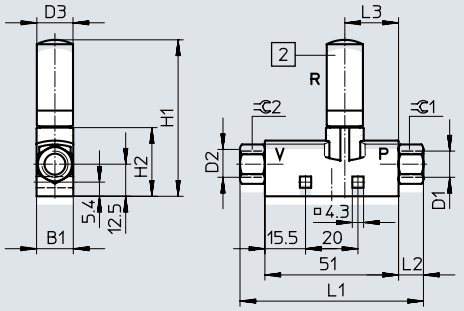


[1] Push-in fitting [2] Silencer

VN-...-T...-PI...-VI...-RI...



VN-...-T...-PI...-VI...-RO1



[2] Silencer

Type	B1	Connections			H1	H2	L1	L2	L3	⊂1	⊂2
		P D1	V D2	R D3							
VN-...-T2-PQ1-VQ1-RQ1	10	QS-4	QS-4	QS-4	31.3	27.7	58.2	3.6	24.3	–	–
VN-...-T2-PQ1-VQ1-RO1				9.8[1]	59.9						
VN-...-T2-PI2-VI2-RI2		M5	M5	M5	32.7		61	5		9	9
VN-...-T2-PI2-VI2-RO1				9.8[1]	59.9						
VN-...-T3-PQ2-VQ2-RQ2	14	QS-6	QS-6	QS-6	30.4	26.2	59.4	4.2	25.5	–	–
VN-...-T3-PQ2-VQ2-RO1				13.8[1]	68.6						
VN-...-T3-PI4-VI4-RI4		G1/8	G1/8	G1/8	35.7		70	9.5		13	13
VN-...-T3-PI4-VI4-RO1				13.8[1]	68.6						

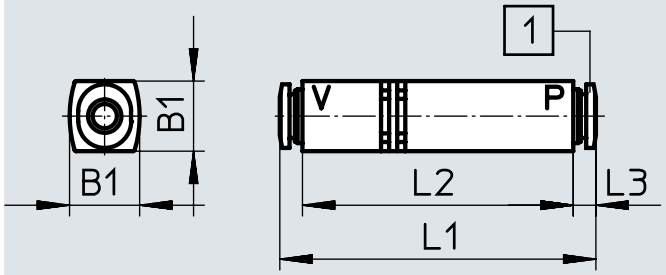
1) Diameter of silencer

Note: This product corresponds to ISO 1179-1 and ISO 228-1.

Datasheet

Dimensions – Straight shape/inline, VN-05/07 Download CAD-Daten ➔ www.festo.com

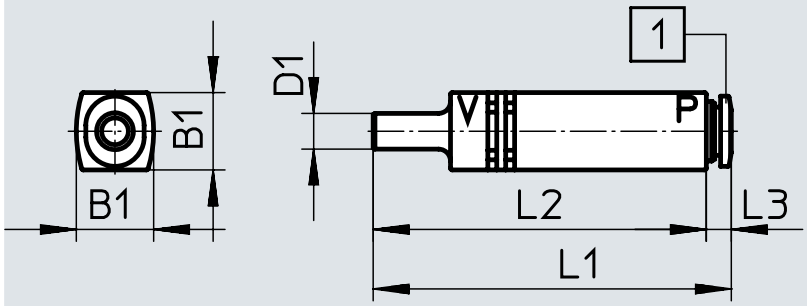
VN-05/07-...-I...-PQ...-VQ2



[1] Push-in fitting

Type	B1	B2	Connections		L1	L2	L3
			P	V			
VN-05-M-I3-PQ2-VQ2	13	13	BMS-TQ-6-B	BMS-TQ-6-B	56.2	50.3	3
VN-07-M-I3-PQ2-VQ2	13	13	BMS-TQ-6-B	BMS-TQ-6-B	56.2	50.3	3
VN-05-N-I3-PQ2-VQ2	13	13	BMS-TQ-6-B	BMS-TQ-6-B	56.2	50.3	3
VN-05-M-I2-PQ1-VQ2	10	10	BMS-TQ-4-B	BMS-TQ-4-B	55.4	50.2	2.6
VN-07-M-I2-PQ1-VQ2	10	10	BMS-TQ-4-B	BMS-TQ-4-B	55.4	50.2	2.6

VN-...-...-I3-PQ2-VQ2-...



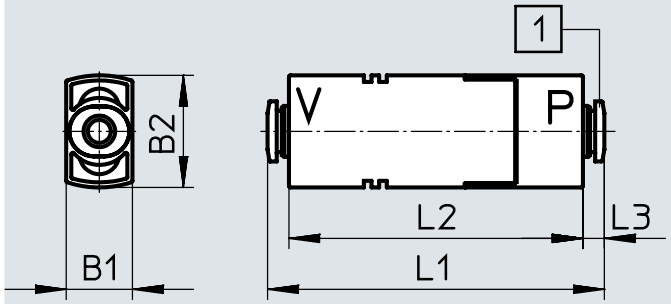
[1] Push-in fitting

Type	B1	B2	Connections		D1	L1	L2	L3
			P	V	ø			
VN-05-M-I3-PQ2-VT2	13	13	BMS-TQ-6-B	–	6	59	56	13
VN-07-M-I3-PQ2-VT2	13	13	BMS-TQ-6-B	–	6	59	56	13
VN-05-N-I3-PQ2-VT2	13	13	BMS-TQ-6-B	–	6	59	56	13
VN-05-M-I2-PQ1-VT1	10	10	BMS-TQ-4-B	–	4	60.6	58	15
VN-07-M-I2-PQ1-VT1	10	10	BMS-TQ-4-B	–	4	60.6	58	15

Datasheet

Dimensions – Straight shape/inline, VN-05/07/10 Download CAD-Daten ➔ www.festo.com

VN-...-...-I3-PQ2-VQ2-...



[1] Push-in fitting

Type	B1	B2	Connections		L1	L2	L3
			P	V			
VN-05-M-I3-PQ2-VQ2-A	14.5	33.1	BMS-TQ-6-B	BMS-TQ-6-B	80.6	73	3.8
VN-05-N-I3-PQ2-VQ2-A	14.5	33.1	BMS-TQ-6-B	BMS-TQ-6-B	80.6	73	3.8
VN-07-M-I3-PQ2-VQ2-A	14.5	33.1	BMS-TQ-6-B	BMS-TQ-6-B	96.6	89	3.8
VN-07-N-I3-PQ2-VQ2-A	14.5	33.1	BMS-TQ-6-B	BMS-TQ-6-B	96.6	89	3.8
VN-10-M-I3-PQ2-VQ2	13	22	QS-6	QS-6	66.1	57.7	4.2

Datasheet

Ordering data and weights – Standard
T-shape

Grid dimension	Nominal width of Laval nozzle	Weight	High vacuum H			Weight	High suction rate L	
[mm]	[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With push-in fitting								
14	0.95	22	**193480**	**VN-10-H-T3-PQ2-VQ2-RQ2**		–	**–**	**–**
18	1.4	–	**–**	**–**		27	**193565**	**VN-14-L-T4-PQ2-VQ3-RQ3**
With female thread								
14	0.95	22	**193500**	**VN-10-H-T3-PI4-VI4-RI4**		–	**–**	**–**
18	1.4	36	**193502**	**VN-14-H-T4-PI4-VI5-RI5**		–	**–**	**–**

Ordering data and weights – Inline
Straight shape

Grid dimension	Nominal width of Laval nozzle	Weight	High vacuum M			Weight	High suction rate N	
[mm]	[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With push-in fitting								
13	0.7	16	**193553**	**VN-07-M-I3-PQ2-VQ2**		–	**–**	**–**
With push-in fitting and push-in sleeve								
13	0.7	12	**193556**	**VN-07-M-I3-PQ2-VT2**		–	**–**	**–**

Ordering data and weights – Standard
T-shape

Grid dimension	Nominal width of Laval nozzle	Weight	High vacuum H			Weight	High suction rate L	
[mm]	[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With push-in fitting								
10	0.45	15	**526100**	**VN-05-H-T2-PQ1-VQ1-RQ1**		15	**526114**	**VN-05-L-T2-PQ1-VQ1-RQ1**
	0.7	15	**526101**	**VN-07-H-T2-PQ1-VQ1-RQ1**		–	**–**	**–**
14	0.45	22	**193478**	**VN-05-H-T3-PQ2-VQ2-RQ2**		22	**193561**	**VN-05-L-T3-PQ2-VQ2-RQ2**
	0.7	22	**193479**	**VN-07-H-T3-PQ2-VQ2-RQ2**		22	**193562**	**VN-07-L-T3-PQ2-VQ2-RQ2**
	0.95	–	**–**	**–**		22	**193563**	**VN-10-L-T3-PQ2-VQ2-RQ2**
18	0.95	27	**526147**	**VN-10-H-T4-PQ2-VQ3-RQ3**		27	**526157**	**VN-10-L-T4-PQ2-VQ3-RQ3**
	1.4	27	**193482**	**VN-14-H-T4-PQ2-VQ3-RQ3**		–	**–**	**–**
With push-in fitting and silencer								
10	0.45	15	**193569**	**VN-05-H-T2-PQ1-VQ1-RO1**		15	**193595**	**VN-05-L-T2-PQ1-VQ1-RO1**
	0.7	15	**193570**	**VN-07-H-T2-PQ1-VQ1-RO1**		–	**–**	**–**
14	0.45	24	**193488**	**VN-05-H-T3-PQ2-VQ2-RO1**		24	**193571**	**VN-05-L-T3-PQ2-VQ2-RO1**
	0.45	24	**8187682**	**VN-05-H-T3-PQ2-VQ2-RO1-F1A**[1)]		–	**–**	**–**
	0.7	24	**193489**	**VN-07-H-T3-PQ2-VQ2-RO1**		24	**193572**	**VN-07-L-T3-PQ2-VQ2-RO1**
	0.7	24	**8187683**	**VN-07-H-T3-PQ2-VQ2-RO1-F1A**[1)]		–	**–**	**–**
	0.95	24	**193490**	**VN-10-H-T3-PQ2-VQ2-RO1**		24	**193573**	**VN-10-L-T3-PQ2-VQ2-RO1**
	0.95	24	**8187684**	**VN-10-H-T3-PQ2-VQ2-RO1-F1A**[1)]		–	**–**	**–**
18	0.95	36	**549251**	**VN-10-H-T4-PQ2-VQ3-RO2**		36	**549253**	**VN-10-L-T4-PQ2-VQ3-RO2**
	1.4	36	**547707**	**VN-14-H-T4-PQ2-VQ3-RO2**		36	**547710**	**VN-14-L-T4-PQ2-VQ3-RO2**
	1.4	36	**8187685**	**VN-14-H-T4-PQ2-VQ3-RO2-F1A**[1)]		–	**–**	**–**
24	2.0	182	**193495**	**VN-20-H-T6-PQ4-VQ5-RO2**		182	**193578**	**VN-20-L-T6-PQ4-VQ5-RO2**
	3.0	182	**193497**	**VN-30-H-T6-PQ4-VQ5-RO2**		–	**–**	**–**

1) F1A: Products for battery production

Datasheet

Ordering data and weights – Standard

T-shape

Grid dimension	Nominal width of Laval nozzle	Weight	High vacuum H			Weight	High suction rate L	
[mm]	[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With push-in fitting, vacuum port, male thread								
14	0.45	24	**193516**	**VN-05-H-T3-PQ2-VA4-RQ2**		24	**193599**	**VN-05-L-T3-PQ2-VA4-RQ2**
	0.7	24	**193517**	**VN-07-H-T3-PQ2-VA4-RQ2**		24	**193600**	**VN-07-L-T3-PQ2-VA4-RQ2**
	0.95	24	**193518**	**VN-10-H-T3-PQ2-VA4-RQ2**		24	**193601**	**VN-10-L-T3-PQ2-VA4-RQ2**
18	0.95	33	**526153**	**VN-10-H-T4-PQ2-VA5-RQ3**		33	**526163**	**VN-10-L-T4-PQ2-VA5-RQ3**
	1.4	33	**193520**	**VN-14-H-T4-PQ2-VA5-RQ3**		33	**193603**	**VN-14-L-T4-PQ2-VA5-RQ3**
With push-in fitting, vacuum port, male thread and silencer								
14	0.45	26	**193526**	**VN-05-H-T3-PQ2-VA4-RO1**		26	**193609**	**VN-05-L-T3-PQ2-VA4-RO1**
	0.7	26	**193527**	**VN-07-H-T3-PQ2-VA4-RO1**		26	**193610**	**VN-07-L-T3-PQ2-VA4-RO1**
	0.95	26	**193528**	**VN-10-H-T3-PQ2-VA4-RO1**		26	**193611**	**VN-10-L-T3-PQ2-VA4-RO1**
18	0.95	42	**549252**	**VN-10-H-T4-PQ2-VA5-RO2**		42	**549254**	**VN-10-L-T4-PQ2-VA5-RO2**
	1.4	42	**547706**	**VN-14-H-T4-PQ2-VA5-RO2**		42	**547709**	**VN-14-L-T4-PQ2-VA5-RO2**
24	2.0	189	**526145**	**VN-20-H-T6-PQ4-VA5-RO2**		189	**526135**	**VN-20-L-T6-PQ4-VA5-RO2**
	3.0	189	**526146**	**VN-30-H-T6-PQ4-VA5-RO2**		189	**526136**	**VN-30-L-T6-PQ4-VA5-RO2**
With female thread								
10	0.45	13	**526102**	**VN-05-H-T2-PI2-VI2-RI2**		13	**526116**	**VN-05-L-T2-PI2-VI2-RI2**
	0.7	13	**526103**	**VN-07-H-T2-PI2-VI2-RI2**		–	**–**	**–**
14	0.45	22	**193498**	**VN-05-H-T3-PI4-VI4-RI4**		22	**193581**	**VN-05-L-T3-PI4-VI4-RI4**
	0.7	22	**193499**	**VN-07-H-T3-PI4-VI4-RI4**		22	**193582**	**VN-07-L-T3-PI4-VI4-RI4**
	0.95	–	**–**	**–**		22	**193583**	**VN-10-L-T3-PI4-VI4-RI4**
18	1.4	–	**–**	**–**		36	**193585**	**VN-14-L-T4-PI4-VI5-RI5**
With female thread and silencer								
10	0.45	13	**526104**	**VN-05-H-T2-PI2-VI2-RO1**		13	**526118**	**VN-05-L-T2-PI2-VI2-RO1**
	0.7	13	**526105**	**VN-07-H-T2-PI2-VI2-RO1**		–	**–**	**–**
14	0.45	24	**193507**	**VN-05-H-T3-PI4-VI4-RO1**		24	**193590**	**VN-05-L-T3-PI4-VI4-RO1**
	0.7	24	**193508**	**VN-07-H-T3-PI4-VI4-RO1**		24	**193591**	**VN-07-L-T3-PI4-VI4-RO1**
	0.95	24	**193509**	**VN-10-H-T3-PI4-VI4-RO1**		24	**193592**	**VN-10-L-T3-PI4-VI4-RO1**
18	1.4	40	**547705**	**VN-14-H-T4-PI4-VI5-RO2**		40	**547708**	**VN-14-L-T4-PI4-VI5-RO2**
24	2.0	183	**526141**	**VN-20-H-T6-PI5-VI6-RO2**		183	**526131**	**VN-20-L-T6-PI5-VI6-RO2**
	3.0	183	**526142**	**VN-30-H-T6-PI5-VI6-RO2**		183	**526132**	**VN-30-L-T6-PI5-VI6-RO2**
With female thread, vacuum port, male thread and silencer								
14	0.95	–	**–**	**–**		26	**543315**	**VN-10-L-T3-PI4-VA4-RO1**

Datasheet

Ordering data and weights – Inline
T-shape

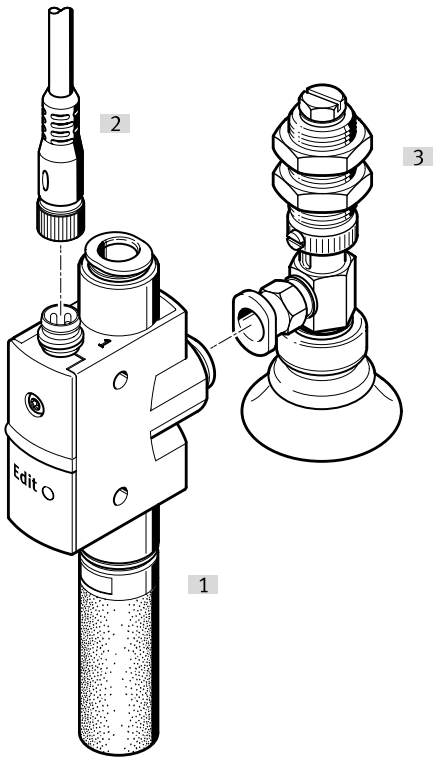
Grid dimension	Nominal width of Laval nozzle	Weight	High vacuum M			Weight	High suction rate N	
[mm]	[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With push-in fitting								
10	0.45	15	**526106**	**VN-05-M-T2-PQ1-VQ1-RQ1**		–	**–**	**–**
	0.7	15	**526107**	**VN-07-M-T2-PQ1-VQ1-RQ1**				
14	0.45	22	**193536**	**VN-05-M-T3-PQ2-VQ2-RQ2**		22	**193619**	**VN-05-N-T3-PQ2-VQ2-RQ2**
	0.7	22	**193537**	**VN-07-M-T3-PQ2-VQ2-RQ2**		–	**–**	**–**
With push-in fitting and silencer								
10	0.45	15	**526108**	**VN-05-M-T2-PQ1-VQ1-RO1**		–	**–**	**–**
	0.7	15	**526109**	**VN-07-M-T2-PQ1-VQ1-RO1**				
14	0.45	24	**193540**	**VN-05-M-T3-PQ2-VQ2-RO1**		24	**193623**	**VN-05-N-T3-PQ2-VQ2-RO1**
	0.7	24	**193541**	**VN-07-M-T3-PQ2-VQ2-RO1**		–	**–**	**–**
With female thread								
10	0.45	13	**526110**	**VN-05-M-T2-PI2-VI2-RI2**		–	**–**	**–**
	0.7	13	**526111**	**VN-07-M-T2-PI2-VI2-RI2**				
14	0.45	22	**193544**	**VN-05-M-T3-PI4-VI4-RI4**		22	**193627**	**VN-05-N-T3-PI4-VI4-RI4**
	0.7	22	**193545**	**VN-07-M-T3-PI4-VI4-RI4**		–	**–**	**–**
With female thread and silencer								
10	0.45	13	**526112**	**VN-05-M-T2-PI2-VI2-RO1**		–	**–**	**–**
	0.7	13	**526113**	**VN-07-M-T2-PI2-VI2-RO1**				
14	0.45	24	**193548**	**VN-05-M-T3-PI4-VI4-RO1**		24	**193631**	**VN-05-N-T3-PI4-VI4-RO1**
	0.7	24	**193549**	**VN-07-M-T3-PI4-VI4-RO1**		–	**–**	**–**

Ordering data and weights – Inline
Straight shape

Grid dimension	Nominal width of Laval nozzle	Weight	High vacuum M			Weight	High suction rate N	
[mm]	[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With push-in fitting								
10	0.45	11	**193580**	**VN-05-M-I2-PQ1-VQ1**		–	**–**	**–**
	0.7	11	**193586**	**VN-07-M-I2-PQ1-VQ1**				
13	0.45	16	**193552**	**VN-05-M-I3-PQ2-VQ2**		16	**193635**	**VN-05-N-I3-PQ2-VQ2**
	0.95	23	**193554**	**VN-10-M-I3-PQ2-VQ2**		–	**–**	**–**
With push-in fitting and push-in sleeve								
10	0.45	8	**193587**	**VN-05-M-I2-PQ1-VT1**		–	**–**	**–**
	0.7	8	**193588**	**VN-07-M-I2-PQ1-VT1**				
13	0.45	12	**193555**	**VN-05-M-I3-PQ2-VT2**		12	**193637**	**VN-05-N-I3-PQ2-VT2**

Peripherals overview

Peripherals overview

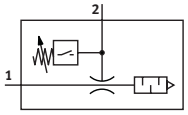


Mounting attachments and accessories

		→ Page/ Internet
[1]	Vacuum generators VN-P	29
[2]	Plug socket with cable, 3-pin NEBA-M8	50
[3]	Suction gripper ESG	esg
–	Suction cup holder ESH	esh
–	Suction cup ESS	ess

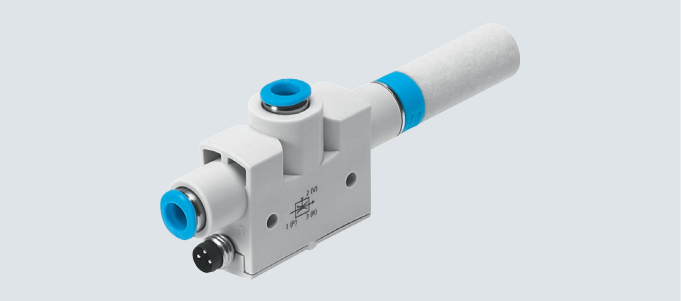
Datasheet

Function
Standard



Temperature range
0 ... +60°C

Operating pressure
0.1 ... 0.8 MPa



- Threshold value comparator with fixed or variable hysteresis
- Teach-in setting option for threshold value and hysteresis

General technical data				
Design		T-shape		
Type		VN-05	VN-07	VN-10
Grid dimension	[mm]	16	16	16
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95
Ejector characteristic		High vacuum/standard H		
		High suction rate/standard L		
Integrated function		Pressure sensor Open silencer		
Pneumatic connection 1		QS-6		
Vacuum connection		QS-6		
Pneumatic connection 3		Open silencer		
Measured variable		Relative pressure		
Measuring principle		Piezoresistive		
Pressure measuring range	[kPa]	–100 ... 0		
	[bar]	–1 ... 0		
	[psi]	–14.5 ... 0		
Type of mounting (max. tightening torque)		With through-hole (0.6 Nm)		
Mounting position		Any[1]		
Cleaning recommendation		Soapy water		
Product weight	[g]	33	36	36

1) It should not be possible for condensed water to collect in the sensor.

Operating and environmental conditions		
Operating pressure	[MPa]	0.1 ... 0.8
	[bar]	1 ... 8
	[psi]	14.5 ... 116
Nominal operating pressure	[MPa]	0.6
	[bar]	6
	[psi]	87
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium		Lubricated operation not possible
Ambient temperature	[°C]	0 ... +50
Temperature of medium	[°C]	0 ... +60
Corrosion resistance class CRC[1]		1 - Low corrosion stress
CE marking (see declaration of conformity)[2]		To EU EMC Directive
UKCA marking (see declaration of conformity)[2]		To UK EMC regulations
Certification		RCM Mark
KC marking		KC EMC

1) More information: www.festo.com/x/topic/crc
2) www.festo.com/catalogue/vn → 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.

Datasheet

Performance data							
Ejector characteristic		High vacuum/standard H			High suction rate/standard L		
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95	0.45	0.7	0.95
Max. vacuum	[%]	92	92	93	–	–	–
Operating pressure for max. vacuum	[MPa]	0.49	0.44	0.35	–	–	–
	[bar]	4.9	4.4	3.5	–	–	–
	[psi]	71.05	63.8	50.75	–	–	–
Max. suction rate with respect to atmosphere	[l/min]	7.2	16.2	21.8	13.6	30.9	41.5
Operating pressure for max. suction rate	[MPa]	0.3	0.3	0.3	0.5	0.4	0.5
	[bar]	3	3	3	5	4	5
	[psi]	43.5	43.5	43.5	72.5	58	72.5
Noise level at nominal operating pressure 6 bar	[dB (A)]	62	66	70	54	63	66

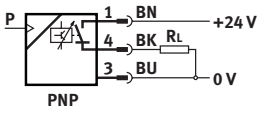
Electrical data		
Operating voltage range	[V DC]	15 ... 30
Residual ripple	[%]	10
Electrical connection		M8x1, 3-pin
Switch-on/switch-off time	[ms]	≤ 4
Switching output		PNP
Max. output current	[mA]	100
Residual current	[mA]	≤ 0.3
Voltage drop	[V]	≤ 1.5
Switching element function		N/O
Setting options		Teach-in
Switching function		Threshold value comparator with fixed hysteresis
		Threshold value comparator with variable hysteresis
Threshold-value setting range	[kPa]	–100 ... 0
	[bar]	–1 ... 0
	[psi]	–14.5 ... 0
Accuracy	[% FS][1)]	±1.5
Hysteresis	[% FS][1)]	±2 (threshold value comparator with fixed hysteresis)
Long-term drift	[% FS][1)]	max. ±0.5
Temperature coefficient of switching point	[%/K]	0.05
Display type/switching status indication		LED
Inductive protective circuit		Adapted to MZ, MY, ME coils
Short circuit current rating		Clocked
Reverse polarity protection		For all electrical connections
Overload protection		Available
Degree of protection		IP40 (to EN 60529)

1) % FS = % of measuring range end value (full scale)

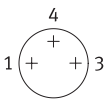
Electrical outputs[1)] — **Pin allocations**

1 switching output PNP

M8x1 plug



1 = +24 V
3 = 0 V
4 = Output A

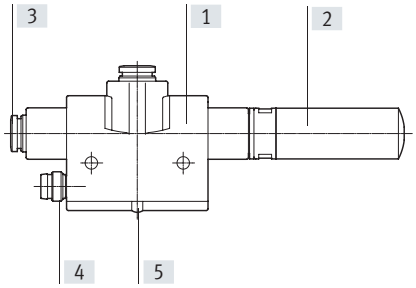


1) Wire colours as indicated apply when using plug sockets with cable NEBA-M8, 3-pin; datasheet → Internet: neba-m8*3

Datasheet

Materials

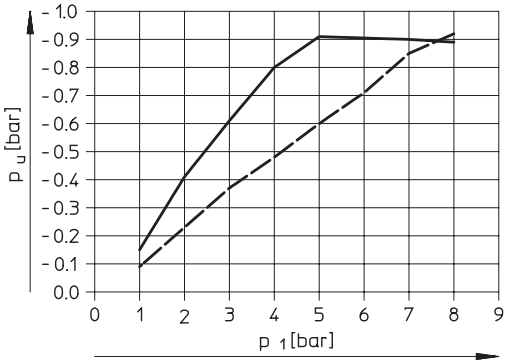
Sectional view



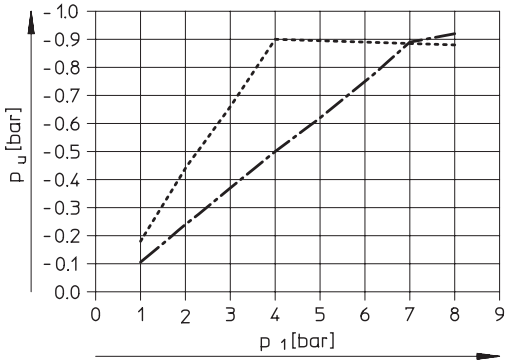
Vacuum generator		
[1]	Housing material	Reinforced POM
[2]	Silencer material	PE
[3]	Push-in fitting material	Nickel-plated brass
[4]	Plug housing material	PA, chrome- and nickel-plated brass
[5]	Fibre-optic cable material	PC
–	Jet nozzle material	Wrought aluminium alloy
–	Female nozzle material	POM
–	Keypad material	POM
–	Sealing material	NBR
LABS (PWIS) conformity		VDMA24364-B1/B2-L

Vacuum p_u as a function of operating pressure p_1

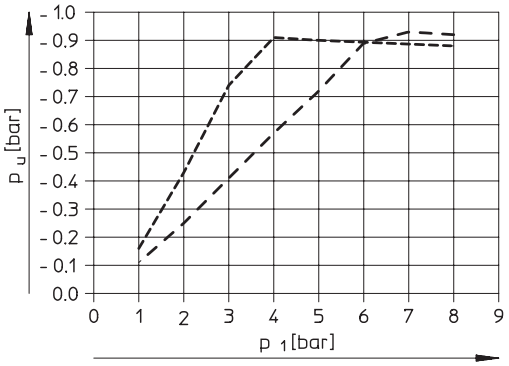
High vacuum/high suction rate



VN-05-H
VN-05-L



VN-07-H
VN-07-L

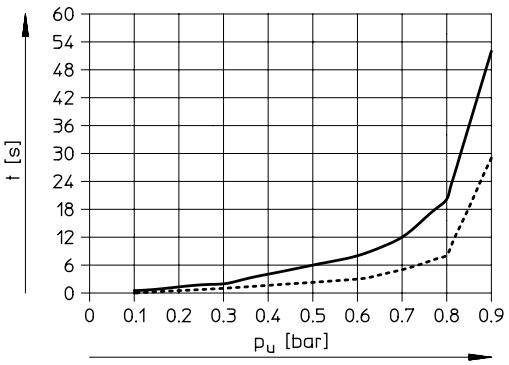


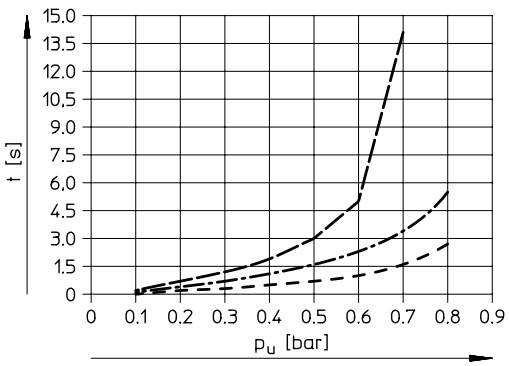
VN-10-H
VN-10-L

Datasheet

Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure

High vacuum/high suction rate



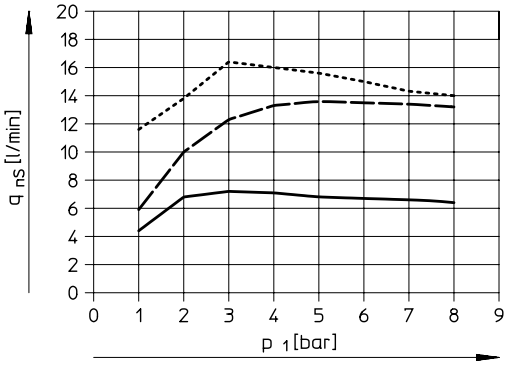


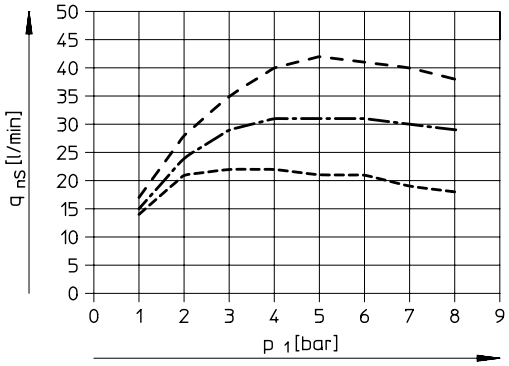
VN-05-H
VN-07-H
VN-05-L
VN-07-L
VN-10-H
VN-10-L

p_u = Negative pressure

Suction rate q_{ns} (with respect to atmosphere) as a function of operating pressure p_1

High vacuum/high suction rate

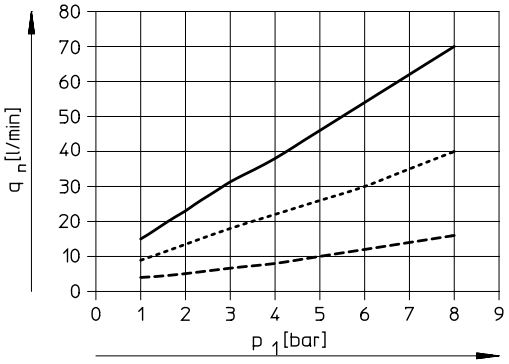




VN-05-H
VN-05-L
VN-07-H
VN-07-L
VN-10-H
VN-10-L

Air consumption q_n as a function of operating pressure p_1

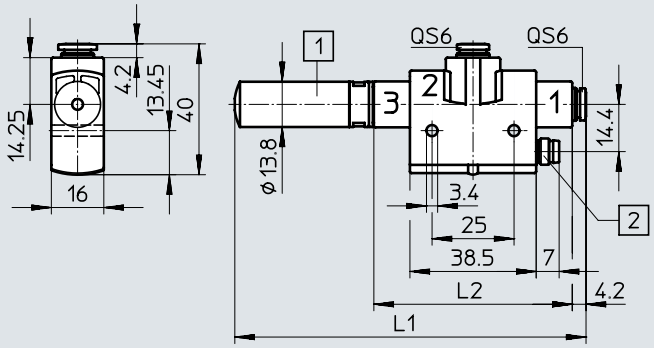
High vacuum/high suction rate



VN-05
VN-07
VN-10

Datasheet

Dimensions Download CAD data ➔ www.festo.com



[1] Silencer
[2] M8x1, 3-pin

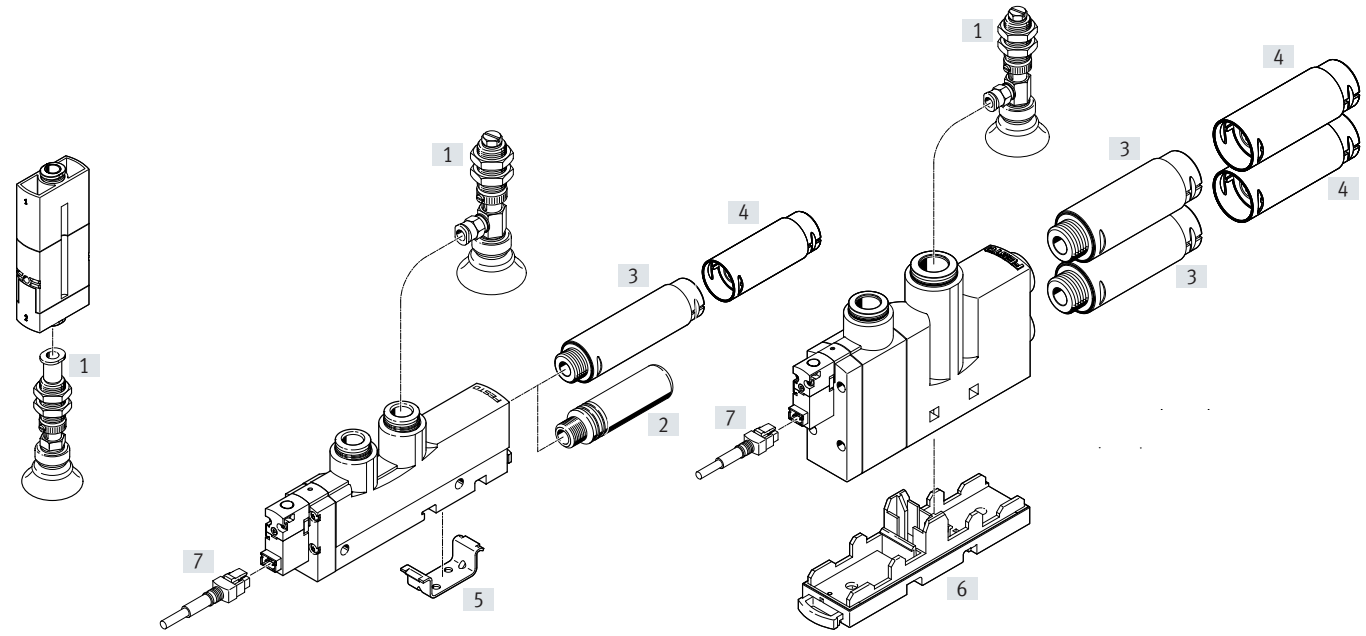
Type	L1	L2
VN-05	93.6	44.2
VN-07	107	60.5
VN-10		

Ordering data
With push-in fitting and silencer

Nominal width of Laval nozzle [mm]	Switching function		High vacuum/standard H			High suction rate/standard L	
	Threshold value with fixed hysteresis	Threshold value with variable hysteresis	Part no.	Type		Part no.	Type
0.45	■	–	**536796**	**VN-05-H-T4-PQ2-VQ2-O1-P**		**536798**	**VN-05-L-T4-PQ2-VQ2-O1-P**
	–	■	**536797**	**VN-05-H-T4-PQ2-VQ2-O2-P**		**536799**	**VN-05-L-T4-PQ2-VQ2-O2-P**
0.7	■	–	**536800**	**VN-07-H-T4-PQ2-VQ2-O1-P**		**536802**	**VN-07-L-T4-PQ2-VQ2-O1-P**
	–	■	**536801**	**VN-07-H-T4-PQ2-VQ2-O2-P**		**536803**	**VN-07-L-T4-PQ2-VQ2-O2-P**
0.95	■	–	**536804**	**VN-10-H-T4-PQ2-VQ2-O1-P**		**536806**	**VN-10-L-T4-PQ2-VQ2-O1-P**
	–	■	**536805**	**VN-10-H-T4-PQ2-VQ2-O2-P**		**536807**	**VN-10-L-T4-PQ2-VQ2-O2-P**

Peripherals overview

Straight shape	T-shape	
VN-05/07-...-A	VN-05/07/10/14-...-A/M/B	VN-20/30-...-M

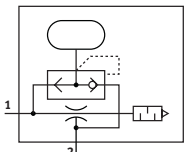


Mounting attachments and accessories

		Straight shape	T-shape							→ Page/Internet
		VN-05/07	VN-05/07/10			VN-14			VN-20/30	
		A	A	M	B	A	M	B	M	
[1]	Suction gripper ESG	■	■			■			■	esg
[2]	Silencer UO	–	■			–			–	49
[3]	Silencer UOM	–	–			■			■	49
[4]	Silencer extension UOMS	–	–			■			■	49
[5]	Mounting plate VN-T3/T4-BP	–	■			■			–	48
[6]	Mounting plate VN-T6-BP-NRH	–	–			–			■	48
[7]	Plug socket with cable, 2-pin NEBV	–	–	■	■	–	■	■	■	50
–	Suction cup holder ESH	■	■			■			■	esh
–	Suction cup ESS	■	■			■			■	ess

Datasheet

Function
VN-A – Standard/inline
Ejector pulse, pneumatic

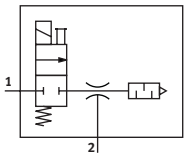


VN-A

Temperature range
0 ... +60°C

Operating pressure
1 ... 8 bar

VN-M – Standard
On/off valve, electric

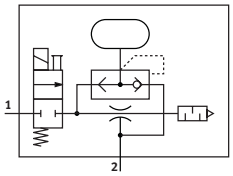


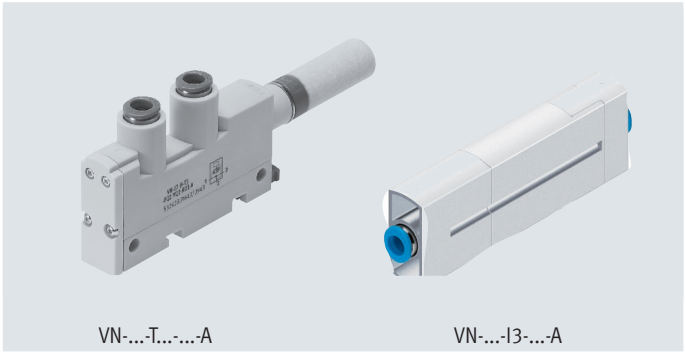
VN-M / VN-B

Temperature range
0 ... +50°C

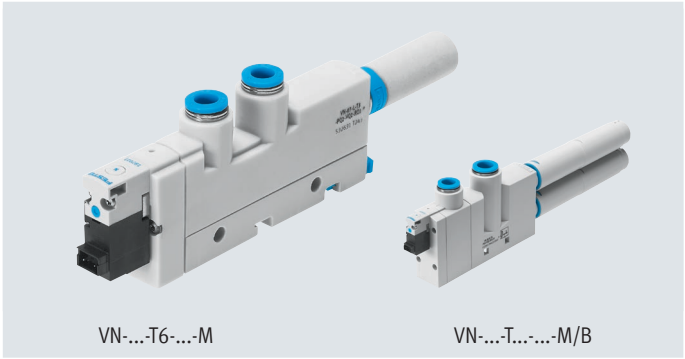
Operating pressure
2 ... 8 bar

VN-B – Standard
On/off valve, electric,
ejector pulse, pneumatic





VN-...-T...-...-A VN-...-I3-...-A



VN-...-T6-...-M VN-...-T...-...-M/B

General technical data – Standard															
Design		T-shape													
Type		VN-05			VN-07			VN-10			VN-14			VN-20	VN-30
Grid dimension	[mm]	14			14			14			18			24	24
Integrated function		**A**	**M**	**B**	**A**	**M**	**B**	**A**	**M**	**B**	**A**	**M**	**B**	**M**	**M**
Nominal width of Laval nozzle	[mm]	0.45			0.7			0.95			1.4			2.0	3.0
Ejector characteristic		High vacuum/standard H													
		High suction rate/standard L												–	
Pneumatic connection 1	Push-in fitting	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-8	QS-8	QS-8	QS-10	QS-10
	Female thread	G1/8	–	–	G1/8	–	–	G1/8	–	–	G1/4	–	–	–	–
Vacuum connection	Push-in fitting	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-6	QS-8	QS-8	QS-8	QS-12	QS-12
	Female thread	G1/8	–	–	G1/8	–	–	G1/8	–	–	G1/4	–	–	–	–
Pneumatic connection 3		Open silencer													
Type of mounting (max. tightening torque)		With through-hole (0.5 Nm)												With through-hole (0.8 Nm)	
		With H-rail												–	
		With accessories													
Mounting position		Any													
Cleaning recommendation		Soapy water													

Note: This product conforms to ISO 1179-1 and ISO 228-1.

Datasheet

General technical data – Inline			
Design		Straight shape	
Type		VN-05	VN-07
Grid dimension	[mm]	14.5	14.5
Integrated function		**A**	**A**
Nominal width of Laval nozzle	[mm]	0.45	0.7
Ejector characteristic		High vacuum/inline M	
		High suction rate/inline N	
Pneumatic connection 1		QS-6	
Vacuum connection		QS-6	
Type of mounting		In-line installation	
Mounting position		Any	
Cleaning recommendation		Soapy water	

Operating and environmental conditions					
Pneumatic connection		With push-in fitting			With female thread
Integrated function		**A**	**M**	**B**	**A**
Operating pressure	[bar]	1 ... 8	2 ... 8		1 ... 8
Nominal operating pressure	[bar]	6			
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on the operating/pilot medium		Lubricated operation not possible			
Ambient temperature	[°C]	0 ... +60	0 ... +50		0 ... +60
Temperature of medium	[°C]	0 ... +60	0 ... +50		0 ... +60
Corrosion resistance class CRC[1)]		1 - Low corrosion stress			2 - Moderate corrosion stress

1) More information: www.festo.com/x/topic/crc

Performance data – High vacuum																	
Ejector characteristic		Standard H														Inline M	
Nominal width of Laval nozzle	[mm]	0.45			0.7			0.95			1.4			2.0	3.0	0.45	0.7
Integrated function		**A**	**M**	**B**	**A**	**M**	**B**	**A**	**M**	**B**	**A**	**M**	**B**	**M**	**M**	**A**	**A**
Max. vacuum	[%]	92			92			93			92			92	93	93	93
Operating pressure for max. vacuum	[bar]	4.9			4.4			3.5			3.5			3.5	3.7	4.3	4.3
Max. suction rate with respect to atmosphere	[l/min]	7.2			16.2			21.8			48.8			98	186	7.2	16.6
Operating pressure for max. suction rate	[bar]	3			3			3			4			2	3	2	2
Pressurisation time at nominal operating pressure 6 bar (for 1 l volume)[1)]	[s]	3.63	3.9		1.5	1.69		0.96	1.06		0.43	0.5		0.24	0.13	4.1	1.69
Noise level at nominal operating pressure 6 bar	[dB (A)]	56			65			71			69			63	78	66	75

1) Time required to reduce the vacuum to a residual vacuum of –0.05 bar after switching off the operating pressure.

Datasheet

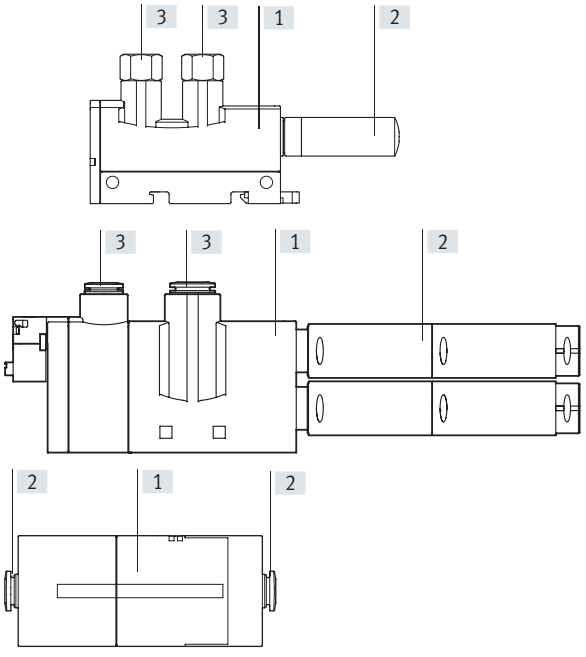
Performance data – High suction rate															
Ejector characteristic		Standard L												Inline N	
Nominal width of Laval nozzle	[mm]	0.45			0.7			0.95			1.4			0.45	0.7
Integrated function		**A**	**M**	**B**	**A**	**M**	**B**	**A**	**M**	**B**	**A**	**M**	**B**	**A**	**A**
Max. suction rate with respect to atmosphere	[l/min]	13.6			30.9			40.5			92.6			13.3	32.6
Operating pressure for max. suction rate	[bar]	5			4			5			5			5	4
Pressurisation time at nominal operating pressure 6 bar (for 1 l volume)[1]	[s]	1.93	1.97		0.79	0.83		0.62	0.67		0.28	0.32		2.24	0.89
Noise level at nominal operating pressure 6 bar	[dB (A)]	52			64			72			69			68	78

1) Time required to reduce the vacuum to a residual vacuum of –0.05 bar after switching off the operating pressure.

Technical data – On/off valve		
Operating voltage range	[V DC]	21.6 ... 26.4
Duty cycle	[%]	100
Degree of protection		IP40 (to EN 60529)
Valve function		2/2-way valve
Manual override		Non-detenting

Materials

Sectional view



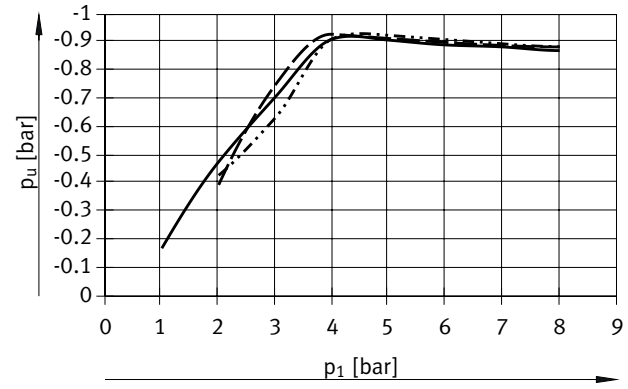
Vacuum generator VN – Standard			
[1]	Housing		Reinforced PA, reinforced POM
[2]	Silencer	RO1	PE
		RO2	Wrought aluminium alloy, POM, PU foam
[3]	Push-in fitting		Nickel-plated brass
–	Connecting thread		Anodised wrought aluminium alloy
–	Jet nozzle		Wrought aluminium alloy
–	Female nozzle		POM
–	Screws		Steel
–	Seals		NBR
Note on materials			RoHS-compliant
LABS (PWIS) conformity			VDMA24364-B1/B2-L
		RO2	VDMA24364 zone III

Vacuum generator VN – Inline		
[1]	Housing	Reinforced PA, reinforced POM
[2]	Push-in fitting	Nickel-plated brass
–	Jet nozzle	Wrought aluminium alloy
–	Female nozzle	POM
–	Seals	NBR
Note on materials		RoHS-compliant
LABS (PWIS) conformity		VDMA24364-B1/B2-L

Datasheet

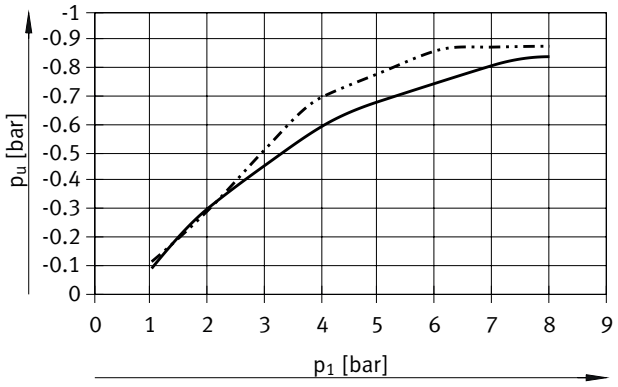
Vacuum p_u as a function of operating pressure p_1

High vacuum – Standard

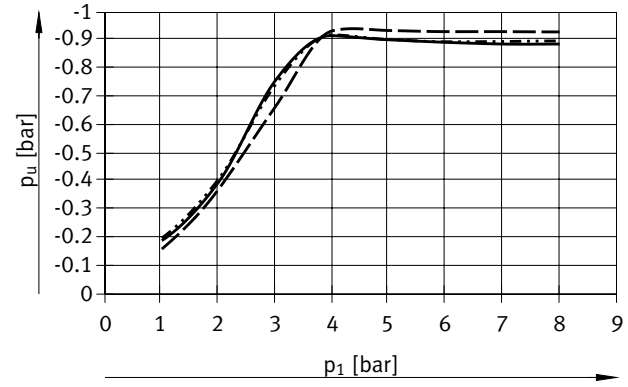


VN-05-H
VN-07-H
VN-10-H

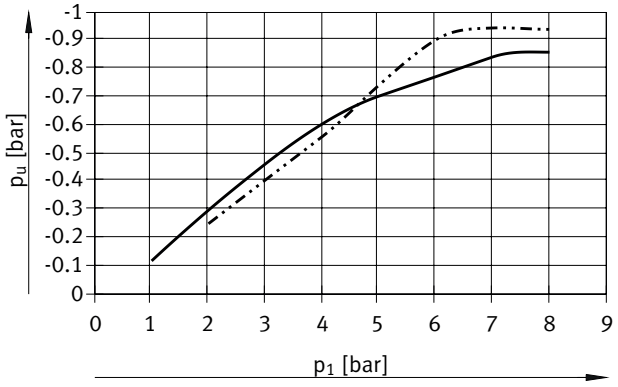
High suction rate – Standard



VN-05-L
VN-10-L

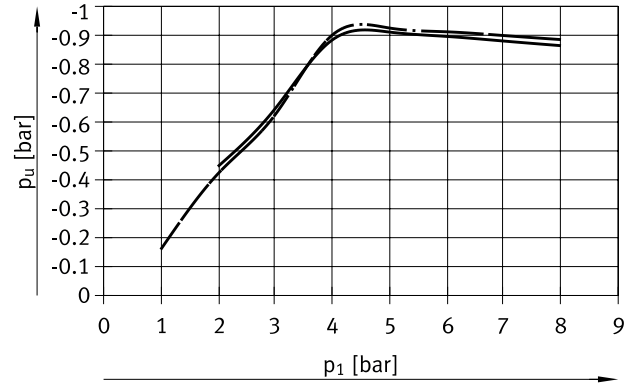


VN-14-H
VN-20-H
VN-30-H



VN-07-L
VN-14-L

High vacuum – Inline



VN-05-M
VN-07-M

High suction rate – Inline

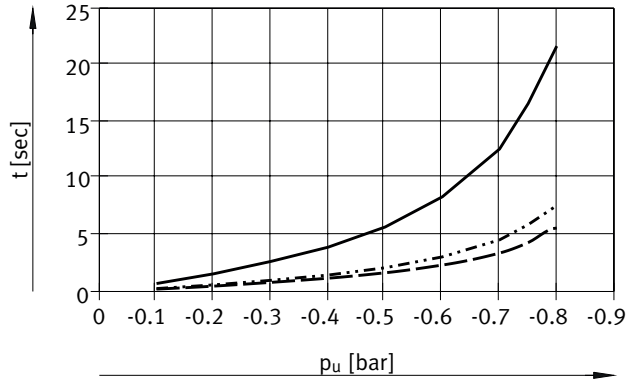


VN-05-N
VN-07-N

Datasheet

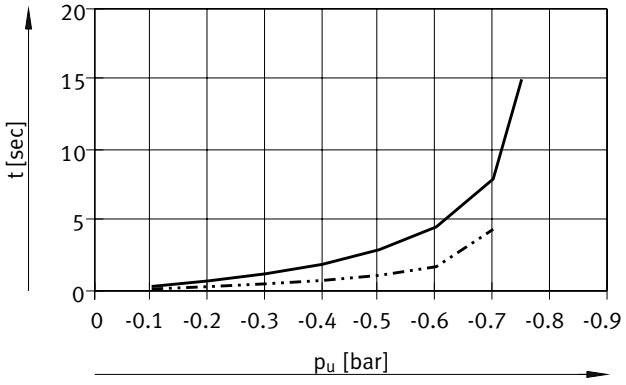
Evacuation time t as a function of vacuum p_u for 1 l volume at 6 bar operating pressure

High vacuum – Standard

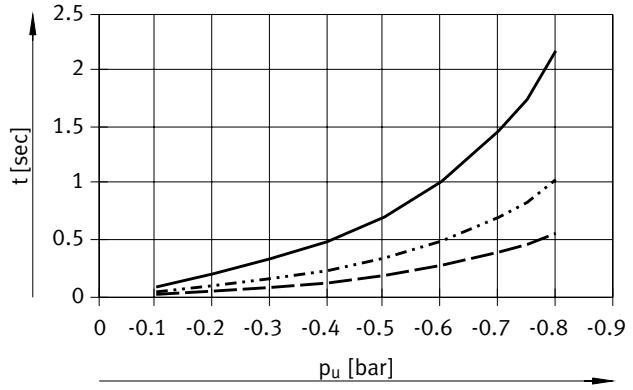


VN-05-H
VN-07-H
VN-10-H

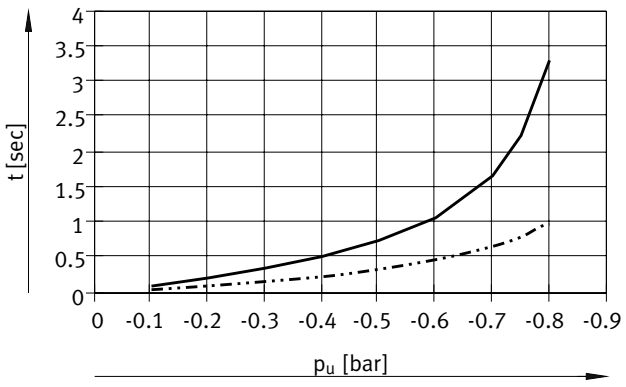
High suction rate – Standard



VN-05-L
VN-07-L

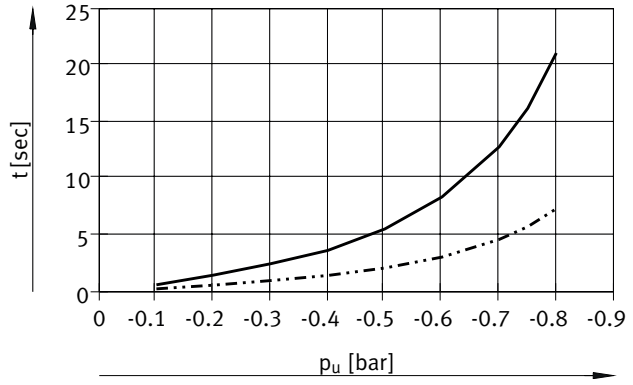


VN-14-H
VN-20-H
VN-30-H



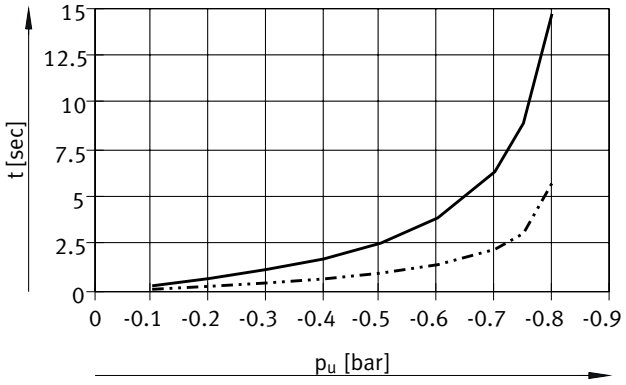
VN-10-L
VN-14-L

High vacuum – Inline



VN-05-M
VN-07-M

High suction rate – Inline

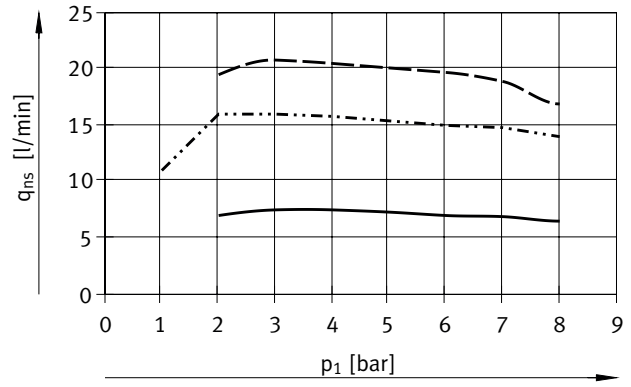


VN-05-N
VN-07-N

Datasheet

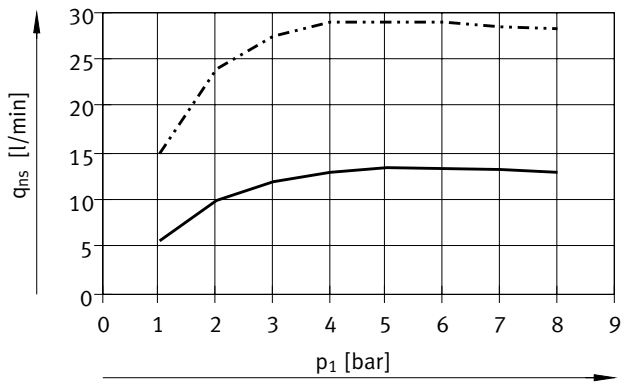
Suction rate q_{ns} (with respect to atmosphere) as a function of operating pressure p_1

High vacuum – Standard

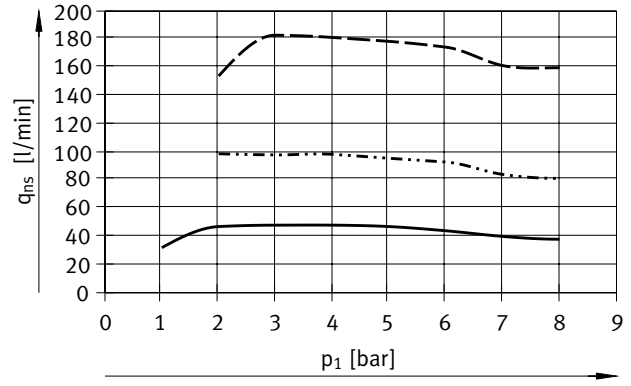


VN-05-H
VN-07-H
VN-10-H

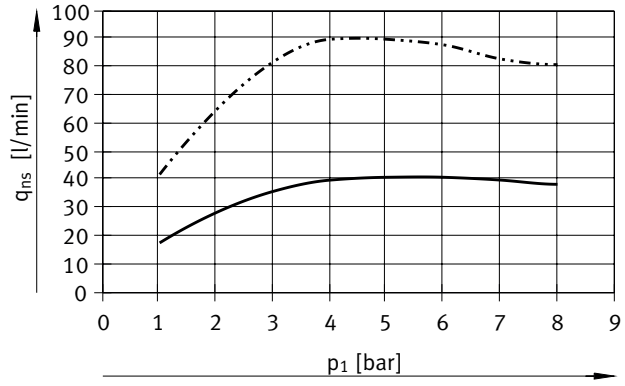
High suction rate – Standard



VN-05-L
VN-07-L

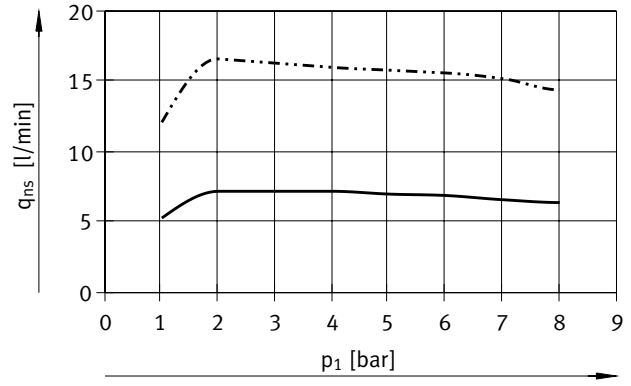


VN-14-H
VN-20-H
VN-30-H



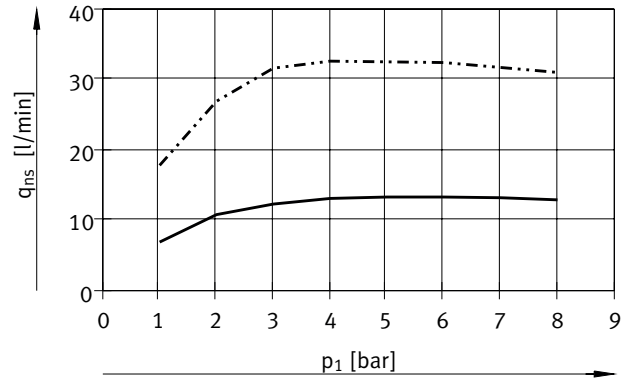
VN-10-L
VN-14-L

High vacuum – Inline



VN-05-M
VN-07-M

High suction rate – Inline

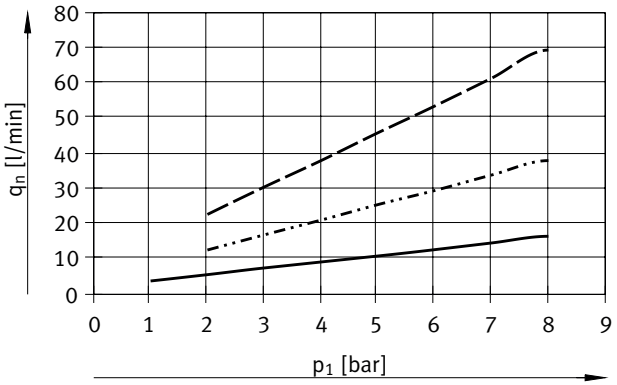


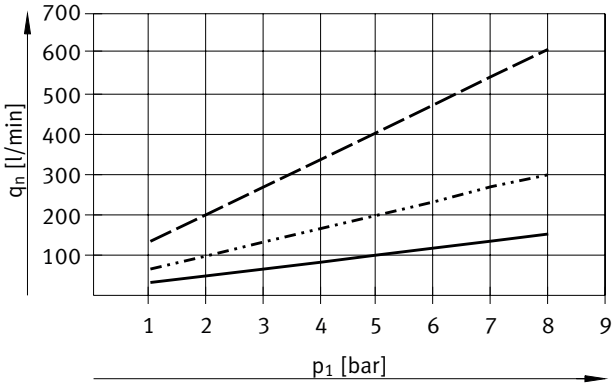
VN-05-N
VN-07-N

Datasheet

Air consumption q_n as a function of operating pressure p_1

High vacuum/high suction rate





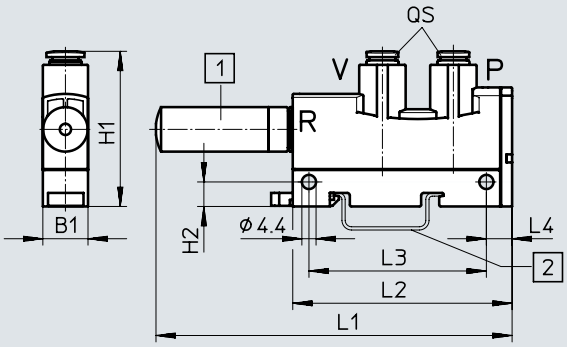
VN-05
VN-07
VN-10

VN-14
VN-20
VN-30

Dimensions – T-shape/standard, VN-05/07/10/14

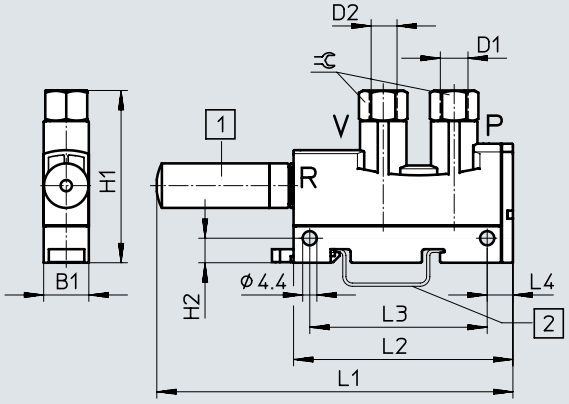
Download CAD data ➔ www.festo.com

VN-...-T...-PQ...-VQ...-RO...-A



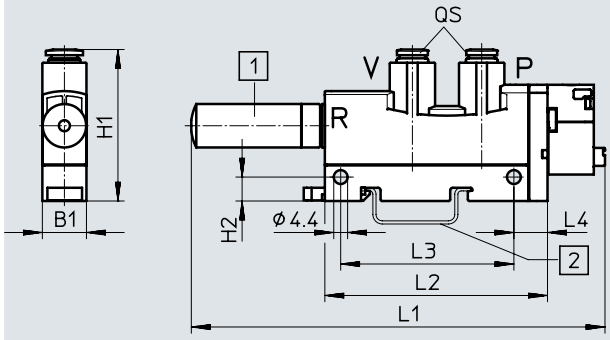
[1] Silencer
[2] Mounting plate

VN-...-T...-PI...-VI...-RO...-A



[1] Silencer
[2] Mounting plate

VN-...-T...-PQ...-VQ...-RO...-M/B



[1] Silencer
[2] Mounting plate

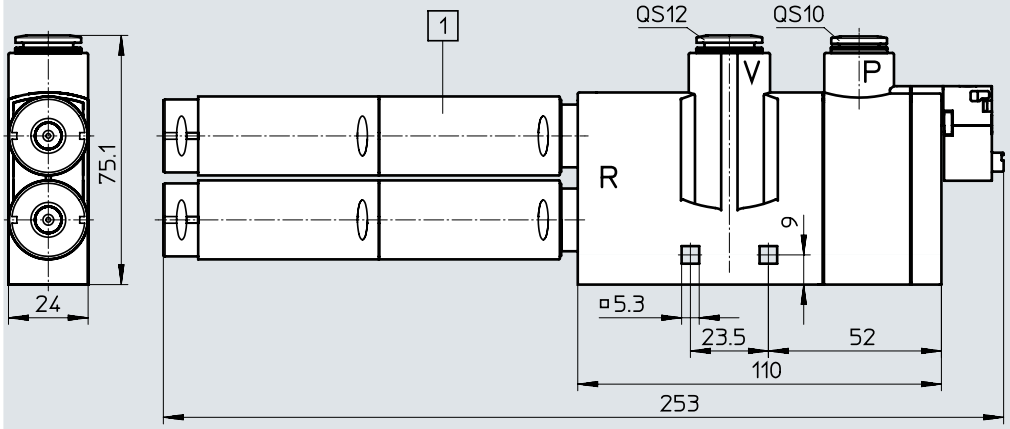
Datasheet

Type	B1	Connections		H1	H2	L1	L2	L3	L4	=⊂
		P D1	V D2							
VN-05-...-T3-PQ2-VQ2-RO1-A	14	QS-6	QS-6	48	7.6	110	68	55	8	–
VN-07-...-T3-PQ2-VQ2-RO1-A						119				
VN-10-...-T3-PQ2-VQ2-RO1-A										
VN-05-...-T3-PI4-VI4-RO1-A		G1/8	G1/8	53		110				13
VN-07-...-T3-PI4-VI4-RO1-A						119				
VN-10-...-T3-PI4-VI4-RO1-A										
VN-14-...-T4-PQ3-VQ3-RO2-A	18	QS-8	QS-8	50	7.5	166	98	63	8.7	–
VN-14-...-T4-PI5-VI5-RO2-A		G1/4	G1/4	62						17
VN-05-...-T3-PQ2-VQ2-RO1-M/B	14	QS-6	QS-6	48	7.6	132	71	55	10.7	–
VN-07-...-T3-PQ2-VQ2-RO1-M/B						141				
VN-10-...-T3-PQ2-VQ2-RO1-M/B										
VN-14-...-T4-PQ3-VQ3-RO2-M/B	18	QS-8	QS-8	50	7.5	192	106	63	16.4	–

Note: This product conforms to ISO 1179-1 and ISO 228-1.

Dimensions – T-shape/standard, VN-20/30 Download CAD data ➔ www.festo.com

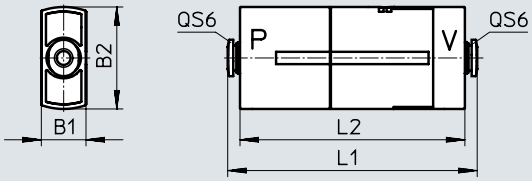
VN-...-T6-PQ4-VQ5-RO2-M



[1] Silencer

Dimensions – Straight shape/inline, VN-05/07 Download CAD data ➔ www.festo.com

VN-05/07-...-I3-PQ2-VQ2-A



Type	B1	Connections		B2	L1	L2
		P	V			
VN-05-...-I3-PQ2-VQ2-A	14.5	QS-6	QS-6	33.1	81	73
VN-07-...-I3-PQ2-VQ2-A					97	89

Datasheet

Ordering data and weights – Standard
T-shape

Nominal width of Laval nozzle	Weight	High vacuum H			Weight	High suction rate L	
[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With electric on/off valve, pneumatic ejector pulse, push-in fitting and silencer							
0.95	–	**–**	**–**		63	**532641**	**VN-10-L-T3-PQ2-VQ2-RO1-B**
1.4	–	**–**	**–**		100	**532649**	**VN-14-L-T4-PQ3-VQ3-RO2-B**

Ordering data and weights – Standard
T-shape

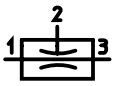
Nominal width of Laval nozzle	Weight	High vacuum H			Weight	High suction rate L	
[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With pneumatic ejector pulse, push-in fitting and silencer							
0.45	49	**532620**	**VN-05-H-T3-PQ2-VQ2-RO1-A**		49	**532621**	**VN-05-L-T3-PQ2-VQ2-RO1-A**
0.7	50	**532628**	**VN-07-H-T3-PQ2-VQ2-RO1-A**		50	**532629**	**VN-07-L-T3-PQ2-VQ2-RO1-A**
0.95	50	**532638**	**VN-10-H-T3-PQ2-VQ2-RO1-A**		50	**532639**	**VN-10-L-T3-PQ2-VQ2-RO1-A**
1.4	85	**532646**	**VN-14-H-T4-PQ3-VQ3-RO2-A**		85	**532647**	**VN-14-L-T4-PQ3-VQ3-RO2-A**
With pneumatic ejector pulse, female thread and silencer							
0.45	49	**537225**	**VN-05-H-T3-PI4-VI4-RO1-A**		49	**537226**	**VN-05-L-T3-PI4-VI4-RO1-A**
0.7	50	**532632**	**VN-07-H-T3-PI4-VI4-RO1-A**		50	**532633**	**VN-07-L-T3-PI4-VI4-RO1-A**
0.95	50	**532642**	**VN-10-H-T3-PI4-VI4-RO1-A**		50	**532643**	**VN-10-L-T3-PI4-VI4-RO1-A**
1.4	94	**532719**	**VN-14-H-T4-PI5-VI5-RO2-A**		94	**532720**	**VN-14-L-T4-PI5-VI5-RO2-A**
With electric on/off valve, push-in fitting and silencer							
0.45	60	**532618**	**VN-05-H-T3-PQ2-VQ2-RO1-M**		60	**532619**	**VN-05-L-T3-PQ2-VQ2-RO1-M**
0.7	61	**532626**	**VN-07-H-T3-PQ2-VQ2-RO1-M**		61	**532627**	**VN-07-L-T3-PQ2-VQ2-RO1-M**
0.95	61	**532636**	**VN-10-H-T3-PQ2-VQ2-RO1-M**		61	**532637**	**VN-10-L-T3-PQ2-VQ2-RO1-M**
1.4	98	**532644**	**VN-14-H-T4-PQ3-VQ3-RO2-M**		98	**532645**	**VN-14-L-T4-PQ3-VQ3-RO2-M**
2.0	215	**532656**	**VN-20-H-T6-PQ4-VQ5-RO2-M**		–	**–**	**–**
3.0	215	**532662**	**VN-30-H-T6-PQ4-VQ5-RO2-M**		–	**–**	**–**
With electric on/off valve, pneumatic ejector pulse, push-in fitting and silencer							
0.45	62	**532622**	**VN-05-H-T3-PQ2-VQ2-RO1-B**		62	**532623**	**VN-05-L-T3-PQ2-VQ2-RO1-B**
0.7	63	**532630**	**VN-07-H-T3-PQ2-VQ2-RO1-B**		63	**532631**	**VN-07-L-T3-PQ2-VQ2-RO1-B**
0.95	63	**532640**	**VN-10-H-T3-PQ2-VQ2-RO1-B**		–	**–**	**–**
1.4	100	**532648**	**VN-14-H-T4-PQ3-VQ3-RO2-B**		–	**–**	**–**

Ordering data and weights – Inline
Straight shape

Nominal width of Laval nozzle	Weight	High vacuum M			Weight	High suction rate N	
[mm]	[g]	Part no.	Type		[g]	Part no.	Type
With pneumatic ejector pulse and push-in connector							
0.45	38	**532624**	**VN-05-M-I3-PQ2-VQ2-A**		38	**532625**	**VN-05-N-I3-PQ2-VQ2-A**
0.7	41	**532634**	**VN-07-M-I3-PQ2-VQ2-A**		41	**532635**	**VN-07-N-I3-PQ2-VQ2-A**

Datasheet

Function



Temperature range
0 ... +60°C

Operating pressure
1 ... 8 bar



General technical data						
Type		VN-05	VN-07	VN-10	VN-14	VN-20
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95	1.4	2.0
Ejector characteristic		High vacuum/standard H				
		High suction rate/standard L				
Mounting position		Any				

Operating and environmental conditions		
Operating pressure	[bar]	1 ... 8
Nominal operating pressure	[bar]	6
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on the operating/pilot medium		Lubricated operation not possible
Ambient temperature	[°C]	0 ... +60
Temperature of medium	[°C]	0 ... +60
Corrosion resistance class CRC[1)]		2 - Moderate corrosion stress

1) More information: www.festo.com/x/topic/crc

Performance data – High vacuum						
Ejector characteristic		Standard H				
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95	1.4	2.0
Max. vacuum	[%]	92	92	93	92	92
Operating pressure for max. vacuum	[bar]	4.9	4.4	3.5	3.5	3.5
Max. suction rate with respect to atmosphere	[l/min]	7.2	16.2	21.8	48.8	98
Operating pressure for max. suction rate	[bar]	3	3	3	2	2
Pressurisation time at nominal operating pressure 6 bar (for 1 l volume)	[s]	4.43	1.67	1.02	0.48	0.23

Datasheet

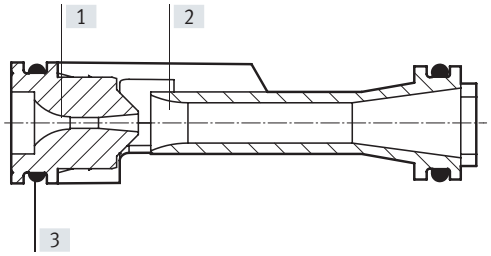
Performance data – High suction rate						
Ejector characteristic		Standard L				
Nominal width of Laval nozzle	[mm]	0.45	0.7	0.95	1.4	2.0
Max. suction rate with respect to atmosphere	[l/min]	13.6	30.9	41.5	92.6	184.4
Operating pressure for max. suction rate	[bar]	5	4	5	5	5
Pressurisation time at nominal operating pressure 6 bar (for 1 l volume)	[s]	2.04	0.82	0.66	0.31	0.17

Note

Connecting two vacuum generator cartridges in parallel doubles the suction rate. This corresponds to the next higher power level.
Example:
2x20-H corresponds to 1x30-H

Materials

Sectional view



Vacuum generator cartridge VN-05/07/10/14/20		
[1]	Jet nozzle	Wrought aluminium alloy
[2]	Female nozzle	POM
[3]	Seals	NBR
LABS (PWIS) conformity		VDMA24364-B1/B2-L

Note

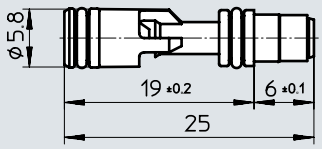
The graphs for the technical data of the vacuum generator cartridge match those for vacuum generator VN-A/B/M.
➔ from page 39.

Datasheet

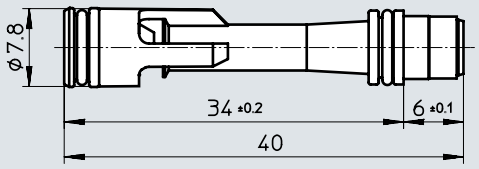
Dimensions

Download CAD data ➔ www.festo.com

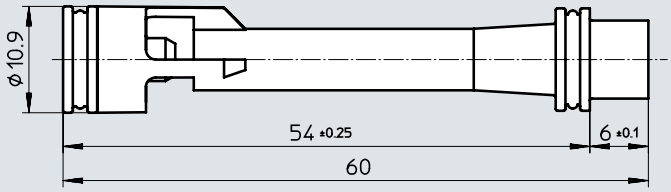
VN-05



VN-07/10

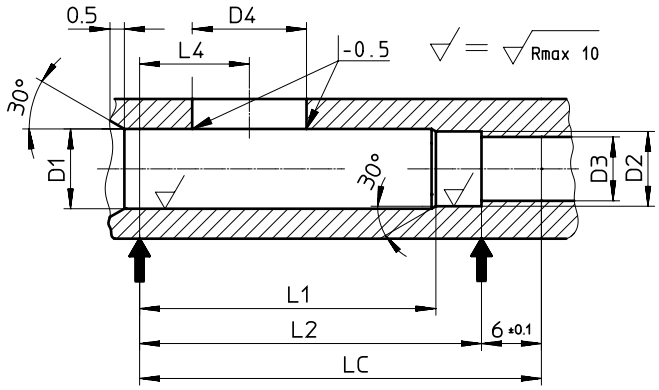


VN-14/20

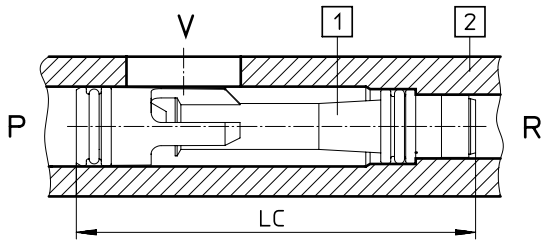


Locating hole for the vacuum generator cartridge

Dimensions



Installing the vacuum generator cartridge



[1] Vacuum generator cartridge
[2] Customer-specific housing

Type	Dimensions of the locating hole						Vacuum connection		
	D1[1] +0.05	D2	D3	L1	L2 ±0.2	LC[2]	L4 ±0.2	D4 min. ø[3]	D4 max. ø
VN-05	6	5.7 $^{+0.05}$	4.9 $^{+0.1}$	14	19	25	9.5	3.0	3.5
VN-07 / VN-10	8	7.5 $^{+0.05}$	6.5 $^{+0.1}$	29	34	40	11	6.0	7.5
VN-14 / VN-20	11.1	10.7 $_{-0.05}$	9.4 ±0.1	49	54	60	13	12.8	15.6

1) For D1 with diameter of 11.1: for a threaded connection G1/4, choose the core diameter 11.8 $^{+0.1}$
2) Length of the vacuum generator cartridge
3) Minimum cross section, Festo recommends the largest cross section possible

Ordering data and weight

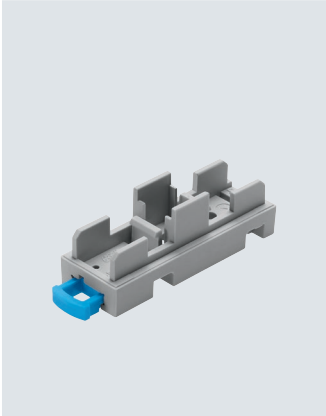
Nominal width of Laval nozzle [mm]	Weight [g]	High vacuum H			Weight [g]	High suction rate L	
		Part no.	Type			Part no.	Type
0.45	0.65	**547693**	**VN-05-H**		0.65	**547694**	**VN-05-L**
0.7	1.65	**547695**	**VN-07-H**		1.65	**547696**	**VN-07-L**
0.95	1.65	**547697**	**VN-10-H**		1.65	**547698**	**VN-10-L**
1.4	3.75	**547699**	**VN-14-H**		3.75	**547700**	**VN-14-L**
2.0	3.75	**547701**	**VN-20-H**		3.75	**547702**	**VN-20-L**

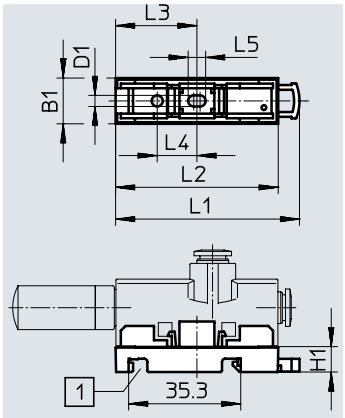
Accessories

Mounting plate VN-...-BP-NRH
For vacuum generator VN
For mounting on H-rail or via through-hole

Ambient temperature: 0°... +60°C

Material:
Plate VN-T2/T3/T4: Reinforced POM
Plate VN-T6: Reinforced PA
Slide: POM
LABS (PWIS) conformity:
VDMA24364-B1/B2-L





Note
Horizontal wall mounting is not permitted with mounting plate VN-T6-BP-NRH.

1) Suitable for H-rail 35x7.5 to DIN EN 50022

Dimensions and ordering data

For grid dimension [mm]	B1	D1	H1	L1	L2	L3	L4	L5	CRC[1]	Weight [g]	Part no.	Type
10	10.4	3.5	8	56.5	51	25.5	12.5	5.5	2	3.5	**196951**	**VN-T2-BP-NRH**
14	14.4	3.5	8	57.9	51.2	25.6	12.5	5.5	2	4.5	**193641**	**VN-T3-BP-NRH**
18	18.4									5.5	**195279**	**VN-T4-BP-NRH**
24	24	4.3	7.3	98	91	45.5	32.5	6.3	2	12.4	**196956**	**VN-T6-BP-NRH**

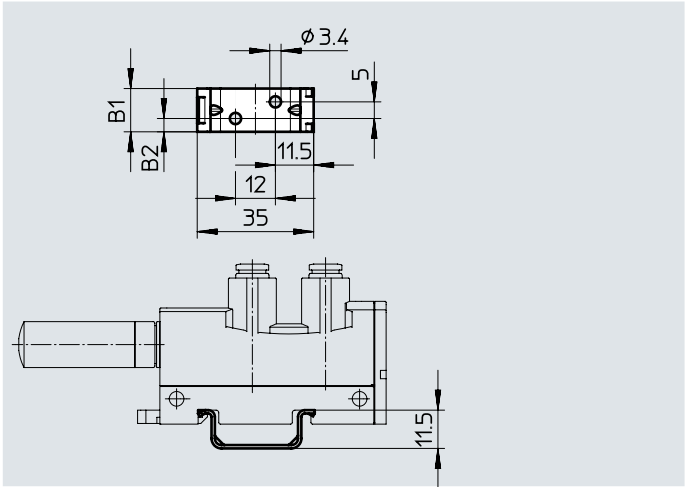
1) More information: www.festo.com/x/topic/crc

Mounting plate VN-...-BP
For vacuum generator VN-A/B/M
For wall mounting via through-hole for housing type T3/T4

Material:
Plate: Galvanised steel
Note on materials: RoHS-compliant
LABS (PWIS) conformity:
VDMA24364-B1/B2-L

Note
Mounting plate VN-T6-BP-NRH should be used for housing type T6.





Dimensions and ordering data

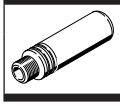
For grid dimension [mm]	B1	B2	CRC[1]	Weight [g]	Part no.	Type
14	13	4	2 - Moderate corrosion stress	4.8	**547436**	**VN-T3-BP**
18	17	6		6.4	**547437**	**VN-T4-BP**

1) More information: www.festo.com/x/topic/crc

Accessories

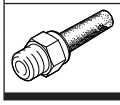
Ordering data – Silencer UO

Datasheets → Internet: uo

	For grid dimension [mm]	Pneumatic connection	Part no.	Type
	10 (VN-...-T2-...-RO1 only)	M7	**197582**	**UO-M7**
	14	G1/8	**197583**	**UO-1/8**
	18	G1/4	**197584**	**UO-1/4**

Ordering data – Silencer AMTE

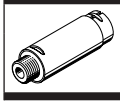
Datasheets → Internet: amte

	For grid dimension [mm]	Pneumatic connection	Part no.	Type	PU[1]
Short version					
	10	M5	**1206621**	**AMTE-M-H-M5**	**20**
	14	G1/8	**1206622**	**AMTE-M-H-G18**	**20**
	18	G1/4	**1206623**	**AMTE-M-H-G14**	**20**
Long version					
	10	M5	**1205858**	**AMTE-M-LH-M5**	**20**
	14	G1/8	**1205860**	**AMTE-M-LH-G18**	**20**
	18	G1/4	**1205861**	**AMTE-M-LH-G14**	**20**

1) Packaging unit

Ordering data – Silencer UOM

Datasheets → Internet: uom

	For grid dimension [mm]	Pneumatic connection	Part no.	Type
	18	G1/4	**538432**	**UOM-1/4**
	24	G3/8	**538433**	**UOM-3/8**

Ordering data – Silencer extension UOMS

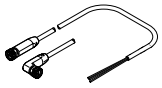
Datasheets → Internet: uoms

	For grid dimension [mm]	Pneumatic connection	Part no.	Type
	18	–	**538436**	**UOMS-1/4**
	24	–	**538437**	**UOMS-3/8**

Accessories

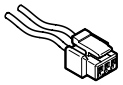
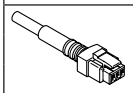
Ordering data – Connecting cable NEBA-M8

Datasheets → Internet: neba

	Electrical connection	Number of wires	Cable length [m]	Part no.	Type
	M8x1, straight socket	3	2.5	**8078223**	**NEBA-M8G3-U-2.5-N-LE3**
			5	**8078224**	**NEBA-M8G3-U-5-N-LE3**
	M8x1, angled socket	3	2.5	**8078230**	**NEBA-M8W3-U-2.5-N-LE3**
			5	**8078231**	**NEBA-M8W3-U-5-N-LE3**

Ordering data – Plug socket with cable NEBV

Datasheets → Internet: nebv

	Cable composition	Product weight [g]	Cable length [m]	Part no.	Type
	2 individual cables	4	0.5	**566654**	**NEBV-H1G2-KN-0.5-N-LE2**
		7	1	**566655**	**NEBV-H1G2-KN-1-N-LE2**
		17	2.5	**566656**	**NEBV-H1G2-KN-2.5-N-LE2**
		31	5	**566657**	**NEBV-H1G2-KN-5-N-LE2**
	Cable, 2-wire	8	0.5	**566658**	**NEBV-H1G2-P-0.5-N-LE2**
		16	1	**566659**	**NEBV-H1G2-P-1-N-LE2**
		35	2.5	**566660**	**NEBV-H1G2-P-2.5-N-LE2**
		70	5	**566661**	**NEBV-H1G2-P-5-N-LE2**