

## Vacuum generators VADM/VADMI

**FESTO**



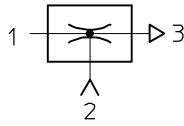
# Vacuum generators VADM/VADMI

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Key features

## Product overview

**Vacuum generators**



All Festo vacuum generators 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 families make it possible to select

vacuum generators tailored to suit the specific requirements of each application.

## Standard and inline ejectors

VN

Technical data → Internet: vn



- 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 with straight or T-shaped housing
- Minimal space required
- Cost-effective
- No wearing parts
- Extremely fast evacuation time
- Vacuum switch (optional)
- Optional additional functions:
  - Integrated ejector pulse
  - Electrical control for vacuum ON/OFF
  - Combination of ejector pulse and actuation

VAD/VAK

Technical data → 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

# Vacuum generators VADM/VADMI

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Key features

## Compact ejectors

OVEM

Technical data → Internet: ovom



- Nominal width 0.45 ... 2 mm
- Max. vacuum 93%
- Temperature range 0 ... +50 °C
- Compact design
- Minimal installation work required
- Short switching times
- Integrated solenoid valves for vacuum ON/OFF and ejector pulse
- Filter with display
- Vacuum sensor with LCD display for continuous monitoring of the entire vacuum system
- Optional air saving function
- Reliable setting down of workpieces
- Blocking of multiple vacuum generators on a common supply manifold

## VADM/VADMI

→ 9



- Nominal width 0.45 ... 3 mm
- Max. vacuum 85%
- Temperature range 0 ... +60 °C
- Compact design
- Minimal installation work required
- Short switching times
- Integrated solenoid valve (on/off)
- VADMI: additional integrated solenoid valve for ejector pulse
- Filter with display
- Optional air saving function
- Vacuum switch (optional)
- Reliable setting down of workpieces

## VAD-M

Technical data → Internet: vad-m



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

# Vacuum generators VADM/VADMI

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Type codes

		VADMI	—	45	—	LS	—	P
<b>Type</b>								
VADM	Vacuum generator without ejector pulse							
VADMI	Vacuum generator with ejector pulse							
<b>Nominal width of Laval nozzle [mm]</b>								
45	0.45							
70	0.70							
95	0.95							
140	1.40							
200	2.00							
300	3.00							
<b>Functions</b>								
LS	With air saving function							
<b>Switching output, vacuum switch</b>								
P	PNP							
N	NPN							

-  - Note

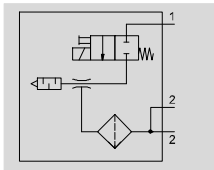
Possible combinations can be found in the ordering data.

# Vacuum generators VADM/VADMI

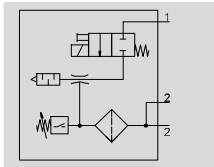
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Technical data

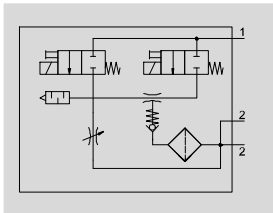
VADM without vacuum switch






VADM with vacuum switch

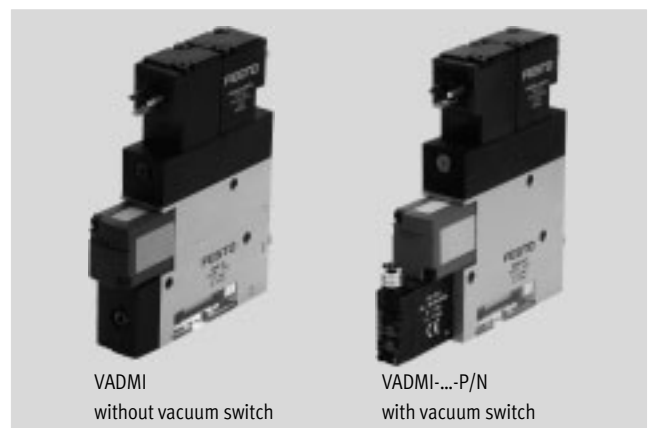
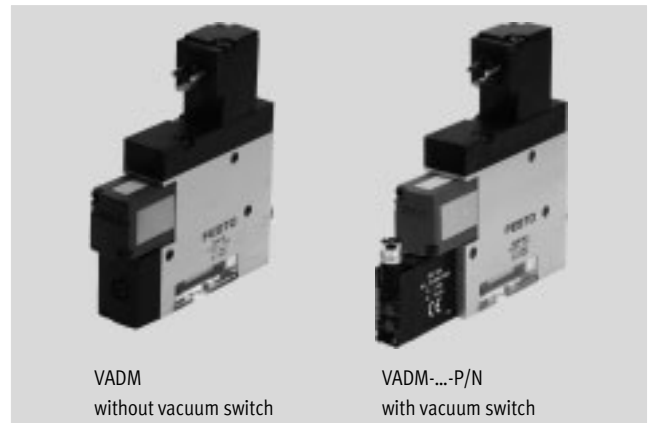
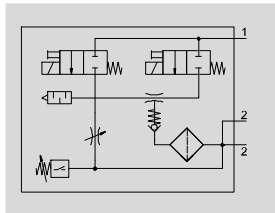


VADMI without vacuum switch



-  - Temperature range  
0 ... +60 °C
-  - Operating pressure  
1.5 ... 8 bar
-  - [www.festo.com](http://www.festo.com)

VADMI with vacuum switch



General technical data						
Type	VADM/VADMI					
	-45	-70	-95	-140	-200	-300
Nominal width of Laval nozzle [mm]	0.45	0.7	0.95	1.4	2.0	3.0
Grid dimension [mm]	10	15	18	22	22	22
Grade of filtration [µm]	≤40					
Mounting position	Any					
Type of mounting	With through-hole					
	Via female thread					
Pneumatic connection 1 (P)	M5	M5	G1/8	G1/8	G1/4	G1/4
Vacuum port (V)	M5	G1/8	G1/8	G1/4	G3/8	G3/8
Pneumatic connection 3 (R)	Integrated silencer					

Technical data – Design		
Type	VADM	VADMI
Ejector characteristic	High vacuum	
Silencer design	Closed	
Integrated function	Electric on-off valve	Electric on-off valve
	Filter	Filter
	–	Flow control valve
	–	Ejector pulse valve, electrical
	–	Check valve
	-P/-N Vacuum switch	Vacuum switch
	-LS-P/-N –	Air saving function, electrical
	–	Vacuum switch
Valve function	Closed	
Manual override	Non-detenting	

# Vacuum generators VADM/VADMI



Technical data

Operating and environmental conditions					
Type		VADM/VADMI			
		Without vacuum switch		With vacuum switch -P/N	
		-45/70	-95/140/200/300	-45/70	-95/140/200/300
Operating pressure	[bar]	1.5 ... 8	2 ... 8	1.5 ... 8	2 ... 8
Nominal operating pressure	[bar]	6			
Max. overload pressure	[bar]	–		5 (VADMI only)	
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]			
Note on operating/pilot medium		Lubricated operation not possible			
Ambient temperature	[°C]	0 ... +60		0 ... +50	
Temperature of medium	[°C]	0 ... +60			
Corrosion resistance class CRC <sup>1)</sup>		2			
CE marking (see declaration of conformity)		–		To EU EMC Directive <sup>2)</sup>	
Certification		c UL us - Recognized (OL)			
		–		RCM compliance mark	

- 1) Corrosion resistance class CRC 2 to Festo standard FN 940070  
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.
- 2) For information about the applicability of the component see the manufacturer's EC declaration of conformity at: [www.festo.com/sp](http://www.festo.com/sp) → Certificates.  
If the component is subject to restrictions on usage in residential, office or commercial environments or small businesses, further measures to reduce the emitted interference may be necessary.

Performance data – High vacuum												
Type	VADM						VADMI					
	-45	-70	-95	-140	-200	-300	-45	-70	-95	-140	-200	-300
Max. vacuum [%]	85						85					
Air supply time <sup>1)</sup> for 1 l volume, at p <sub>1</sub> = 6 bar [s]	5.9	2.2	1.18	0.69	0.29	0.26	1.9	0.59	2.04	0.19	0.15	0.2

- 1) Time required to reduce vacuum to –0.05 bar.

Technical data – Electrical connection	
Electrical connection	Plug
Operating voltage range [V DC]	21.6 ... 26.4
Duty cycle [%]	100
Degree of protection	IP65

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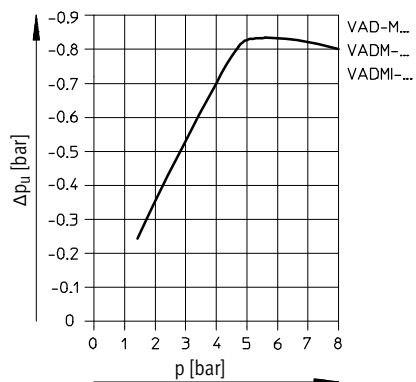
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Technical data

Weight [g]												
Type	VADM						VADMI					
	-45	-70	-95	-140	-200	-300	-45	-70	-95	-140	-200	-300
Without vacuum switch	60	140	210	290	320	340	85	170	240	320	350	370
With vacuum switch -P/-N	65	145	220	300	330	350	90	180	250	330	360	380

Materials	
Housing	Wrought aluminium alloy
Filter housing	PC
Silencer	PE, POM
Piston	POM
Jet nozzle	Nickel-plated brass
Collector nozzle	Nickel-plated brass
Filter	PA
Seals	NBR
Note on materials	Free of copper and PTFE

## Vacuum $\Delta p_u$ as a function of operating pressure p



## Evacuation time t [s] for 1 litre volume at 6 bar operating pressure

