

## Vacuum generators VADM/VADMI

**FESTO**



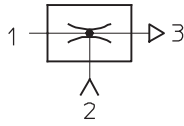
# Vacuum generators

Key features

**FESTO**

## Product overview

**Vacuum generator**



All Festo vacuum generators have a single-stage design and operate according to the venturi principle. The product families 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 specific requirements.

## Standard and inline ejectors

VN-...

Technical data → Internet: vn



- Nominal size 0.45 ... 3 mm
- Max. vacuum 93%
- Temperature range 0 ... +60 °C
- A range of extremely effective generators suitable for use directly in the workplace
- Available as straight or T-shaped housing
- Low space requirement
- Low-cost
- No wearing parts
- Extremely fast evacuation time
- Vacuum switch (optional)
- Optional with additional functions:
  - integrated eject pulse
  - electric control for vacuum ON/OFF
  - combination of eject pulse and control

VAD-.../VAK-...

Technical data → Internet: vad



- Nominal size 0.5 ... 1.5 mm
- Max. vacuum 80%
- Temperature range -20 ... +80 °C
- Range of vacuum generators with sturdy aluminium casing
- VAK-...: Built-in reservoir
- VAD-...: Connection for additional external reservoir
- Maintenance-free
- VAK-...: Reliable setting down of workpieces

# Vacuum generators

Key features

## Compact ejectors

VADM-.../VADMI-...

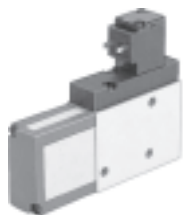
→ 8



- Nominal size  
0.45 ... 3 mm
- Max. vacuum  
84%
- Temperature range  
0 ... +60 °C
- Compact design
- Minimal installation work required
- Short response times
- Built-in solenoid valve (on/off)
- VADMI-...: Additional built-in solenoid valve for ejector pulse
- Filter with display
- Air-saving circuit (optional)
- Vacuum switch (optional)
- Reliable setting down of workpieces

VAD-M-.../VAD-M-I-...

Technical data → Internet: vad-m



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

# Vacuum generators VADM/VADMI

## Features

### At a glance

- Compact and sturdy design
- Components with numerous individual functions form a single unit
- Extremely short switching times thanks to integrated solenoid valves
- No external or additional components required
- Easily fitted thanks to compact dimensions and therefore particularly suitable for handling operations
- Cost effective assembly as the solenoid valve, vacuum generator and silencer are all in a single unit.
- Protection class IP65
- With manual override
- With integrated silencer for reducing exhaust noise
- With integrated filter for the air to be evacuated and a display window which shows the degree of filter contamination
- With or without integrated vacuum switch to monitor the vacuum with PNP or NPN output
- With 2 vacuum ports, optional

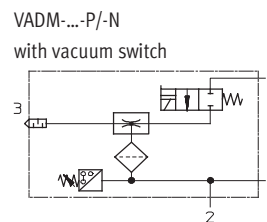
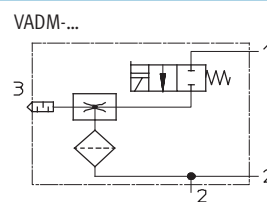
### Vacuum generator VADM-.../-...-P/-N

The compressed air supply of these vacuum generators is controlled by the built-in solenoid valve.

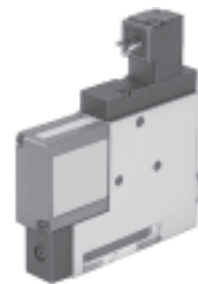
When the electrical power supply is switched on, the valve is actuated and the flow of compressed air from 1 (P) to 3 (R) generates a vacuum at port 2 (V), operating on the ejector principle. Suction stops when the supply power to the valve is switched off.

The integrated silencer reduces exhaust noise to a minimum.

- Built-in solenoid valve for:
    - Vacuum ON/OFF
- With the vacuum generators VADM-...-P/N the vacuum can be monitored by means of a vacuum switch.



1 = Pressure supply port  
2 = Vacuum port  
3 = Exhaust



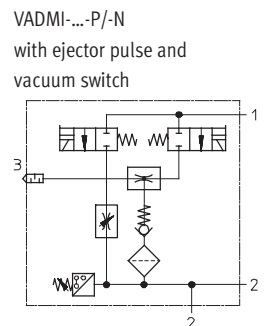
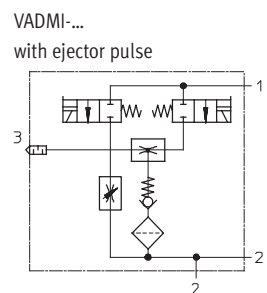
### Vacuum generator VADMI-.../-...-P/-...-N with ejector pulse and vacuum switch

Compressed air enters the vacuum generator following the application of a voltage signal to the integrated solenoid valve, thereby creating a vacuum.

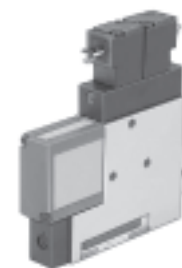
Once the voltage is switched off at the vacuum valve and switched on at the ejector valve, the vacuum is rapidly purged at port 2 as a result of the application of pressure.

The integrated silencer reduces exhaust noise to a minimum.

- Two built-in solenoid valves for:
    - Vacuum ON/OFF
    - Ejector pulse
  - With sensing interface
  - With integrated non-return valve as safety function
- With the vacuum generators VADMI-...-P/-N the vacuum can be monitored by means of a vacuum switch.



1 = Pressure supply port  
2 = Vacuum port  
3 = Exhaust



# Vacuum generators VADM/VADMI

## Features

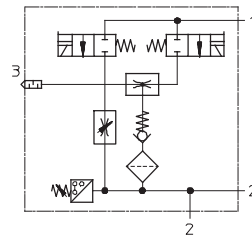
### Vacuum generator VADMI-...-LS-P/N with ejector pulse, vacuum switch and air-saving circuit

This vacuum generator is identically constructed to the other VADMI types. In addition, however, this ejector has a built-in vacuum switch with air-saving circuit:

If the vacuum level falls below the required range, vacuum generation is activated automatically (operating principle of vacuum switch for VADMI-...-LS-P/N → 13).

- Solenoid valve for vacuum generation
- Integrated silencer
- Integrated 40 µm filter with contamination indication
- With sensing interface for vacuum fault signal
- With integrated non-return valve as safety function
- With vacuum switch for pressure monitoring
- With 2 vacuum ports

VADM-...-LS-P/N  
with air-saving circuit  
PNP output



- 1 = Pressure supply port
- 2 = Vacuum port
- 3 = Exhaust



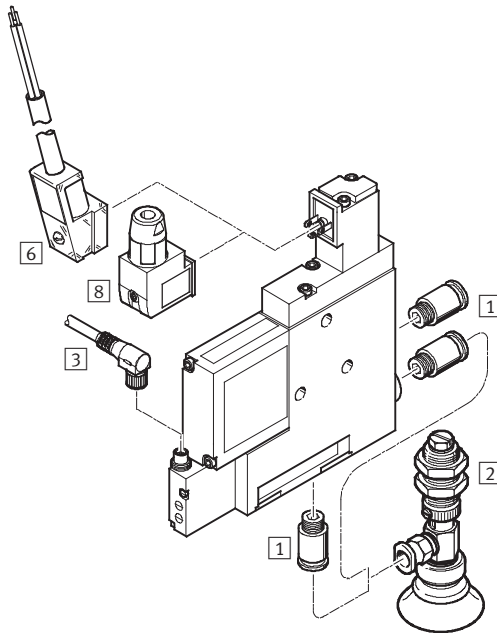
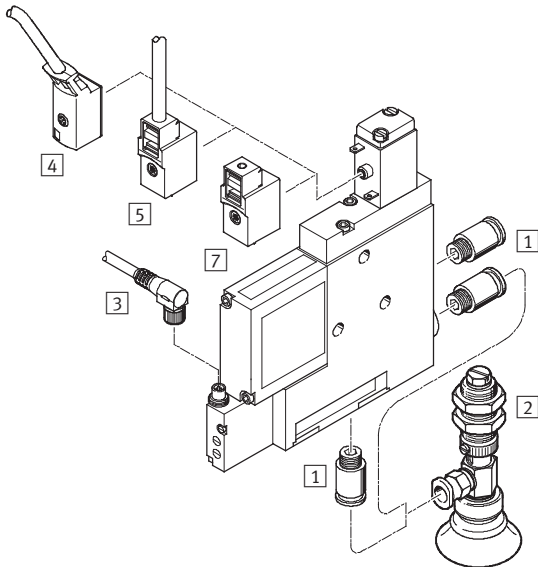
# Vacuum generators VADM/VADMI

Peripherals overview

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VADM/VADMI-45/70

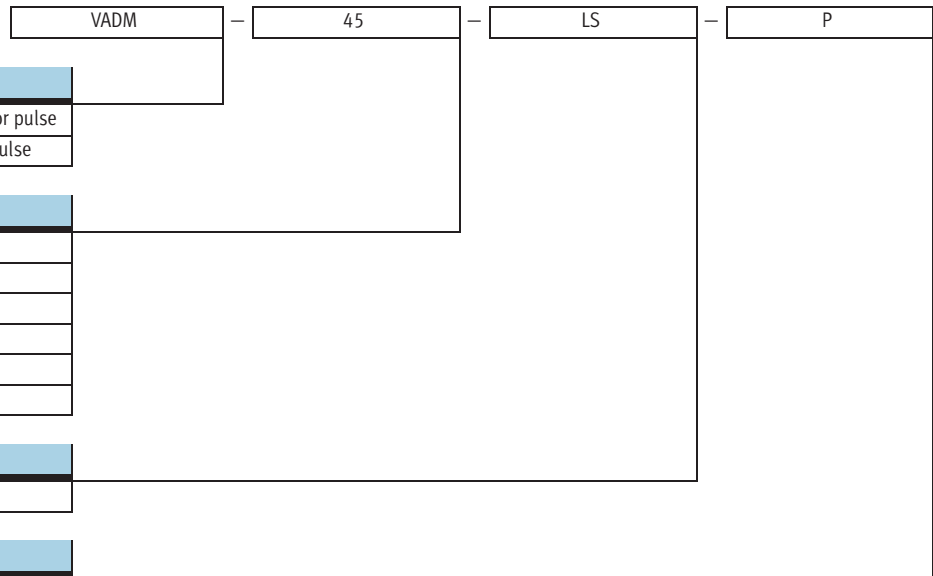
VADM/VADMI-95/140/200/300




| Mounting attachments and accessories |                  |                           |                 |
|--------------------------------------|------------------|---------------------------|-----------------|
|                                      | VADM/VADMI-45/70 | VADM/VADMI-95/140/200/300 | → Page/Internet |
| 1 Push-in fitting<br>QS              | ■                | ■                         | quick star      |
| 2 Suction gripper<br>ESG             | ■                | ■                         | esg             |
| 3 Connecting cable<br>NEBU-M8        | ■                | ■                         | nebu-m8         |
| 4 Plug socket with cable<br>KMYZ-2   | ■                | -                         | kmyz-2          |
| 5 Plug socket with cable<br>KMYZ-4   | ■                | -                         | kmyz-4          |
| 6 Plug socket with cable<br>KMEB-2   | -                | ■                         | kmeb-2          |
| 7 Plug socket<br>MSSD-ZBZC           | ■                | -                         | mssd-zbzc       |
| 8 Plug socket<br>MSSD-E              | -                | ■                         | mssd-e          |
| - Suction cup holder<br>ESH          | ■                | ■                         | esh             |
| - Suction cup<br>ESS                 | ■                | ■                         | ess             |
| - Illuminating seal<br>ME-LD         | -                | ■                         | me-ld           |

# Vacuum generators VADM/VADMI

Type codes



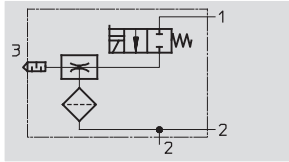
 Note  
Possible combinations can be found in the ordering data.

# Vacuum generators VADM/VADMI


## Technical data

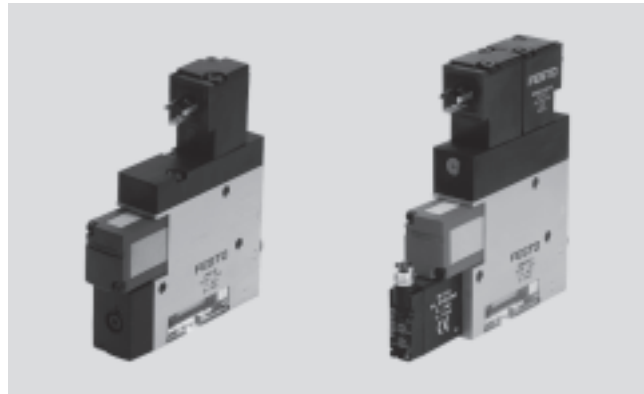
### Function

#### VADM-...

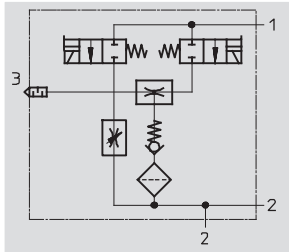


-  - Temperature range  
-0 ... +60 °C


-  - Operating pressure  
1.5 ... 8 bar



#### VADMI-...



| General technical data            |  |         |             |           |           |           |
|-----------------------------------|--|---------|-------------|-----------|-----------|-----------|
| Nominal size                      | 45   | 70      | 95          | 140       | 200       | 300       |
| Design                            | Slim rectangular   |         |             |           |           |           |
| Operating medium                  | Compressed air, unlubricated, grade of filtration to 40 µm |         |             |           |           |           |
| Mounting position                 | Any  |         |             |           |           |           |
| Ejector features                  | High vacuum  |         |             |           |           |           |
| Type of mounting                  | Either: Via female thread, via through-holes               |         |             |           |           |           |
| Pneumatic connection 1/2          | M5/M5  | M5/G1/8 | G1/8/G1/8   | G1/8/G1/4 | G1/4/G3/8 | G1/4/G3/8 |
| Nominal size of laval nozzle [mm] | 0.45   | 0.7     | 0.95        | 1.4       | 2.0       | 3.0       |
| Operating pressure [bar]          | 1.5 ... 8  |         | 2 ... 8     |           |           |           |
| Duty cycle [%]                    | 100  |         |             |           |           |           |
| Power consumption [W]             | 1.4  |         | 1.5 piloted |           |           |           |
| Protection class                  | IP65   |         |             |           |           |           |

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

| Ambient conditions       |                                   |    |    |     |     |     |
|--------------------------|-----------------------------------|----|----|-----|-----|-----|
| Nominal size             | 45                                | 70 | 95 | 140 | 200 | 300 |
| Ambient temperature [°C] | -0 ... +60                        |    |    |     |     |     |
| Note on material         | Free of copper, PTFE and silicone |    |    |     |     |     |
| Authorisation            | c UL us - Recognized (OL)         |    |    |     |     |     |

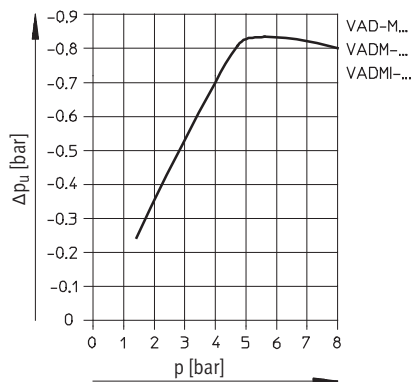
| Weights [g]          |    |     |     |     |     |     |
|----------------------|----|-----|-----|-----|-----|-----|
| Nominal size         | 45 | 70  | 95  | 140 | 200 | 300 |
| VADM-...             | 60 | 140 | 210 | 290 | 320 | 340 |
| VADM-...-P/-N        | 65 | 145 | 220 | 300 | 330 | 350 |
| VADMI-...            | 85 | 170 | 240 | 320 | 350 | 370 |
| VADMI-...-P/-N/-LS-P | 90 | 180 | 250 | 330 | 360 | 380 |



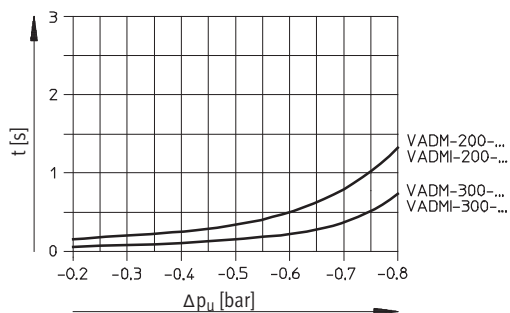
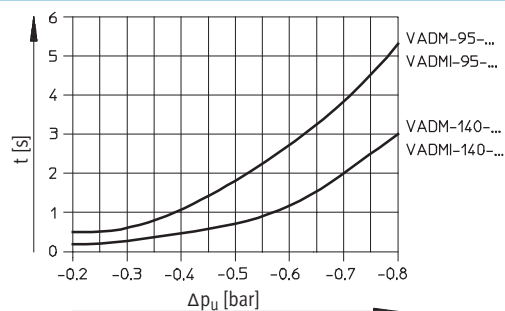
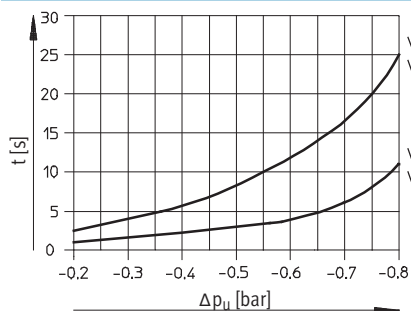
# Vacuum generators VADM/VADMI

Technical data

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



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



## Air supply time for 1 litre volume at 6 bar operating pressure<sup>1)</sup>

| Type          | With ejector pulse [s] | Without ejector pulse [s] | Max. flow rate [l/min] |
|---------------|------------------------|---------------------------|------------------------|
| VADM-45-...   | -                      | 5.9                       | -                      |
| VADMI-45-...  | 1.9                    | -                         | 21                     |
| VADM-70-...   | -                      | 2.2                       | -                      |
| VADMI-70-...  | 0.59                   | -                         | 48                     |
| VADM-95-...   | -                      | 1.18                      | -                      |
| VADMI-95-...  | 0.24                   | -                         | 104                    |
| VADM-140-...  | -                      | 0.69                      | -                      |
| VADMI-140-... | 0.19                   | -                         | 265                    |
| VADM-200-...  | -                      | 0.29                      | -                      |
| VADMI-200-... | 0.15                   | -                         | 260                    |
| VADM-300-...  | -                      | 0.26                      | -                      |
| VADMI-300-... | 0.2                    | -                         | 250                    |

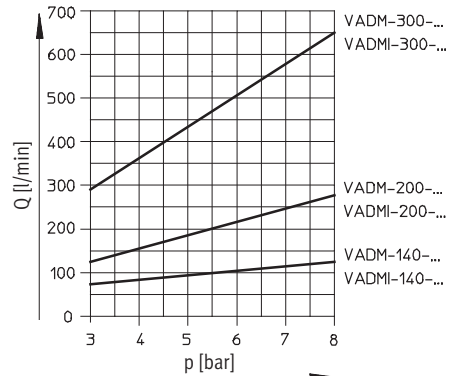
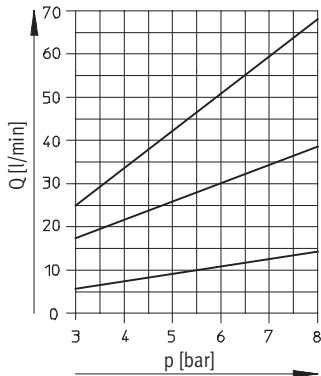
1) Time required to build up vacuum from -0.75 to -0.05 bar.

# Vacuum generators VADM/VADMI

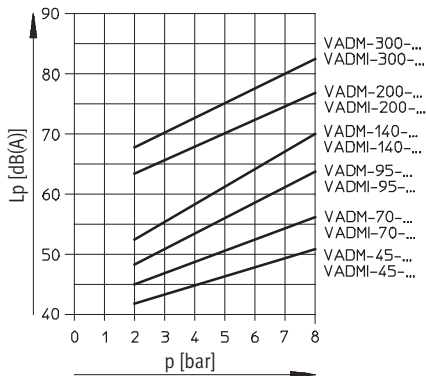
Technical data

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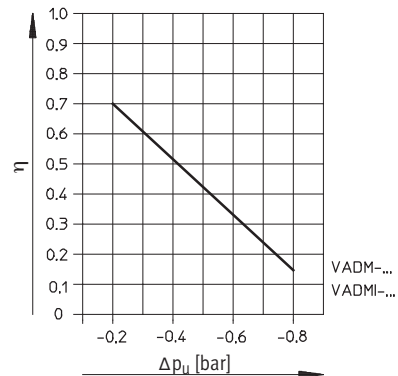
## Air consumption Q as a function of operating pressure p



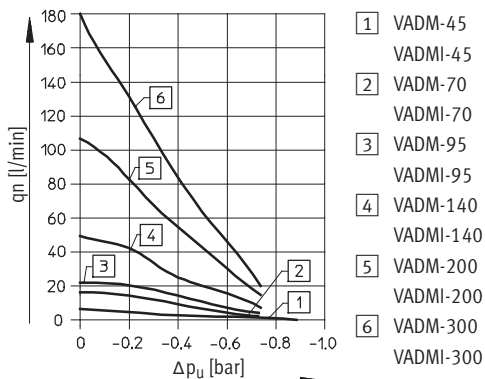
## Noise level Lp as a function of operating pressure p (without suction flow)



## Efficiency $\eta$ as a function of vacuum $\Delta p_U$ at P<sub>nom</sub> 6 bar



## Suction rate qn as a function of vacuum $\Delta p_U$

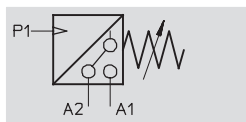
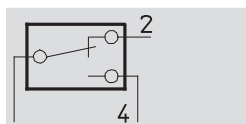


# Vacuum generators VADM/VADMI

Technical data

Vacuum switch for vacuum generators  
VADM...-...-P/N

Circuit diagram



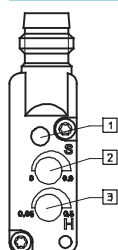
- Piezo-resistive vacuum switch with adjustable switching point and adjustable hysteresis
- Switching status display, yellow LED
- Electrical connection, polarity safe



| General technical data             |        |  |
|------------------------------------|--------|--|
| Pneumatic data                     |        |  |
| Max. operating pressure            | [bar]  | 0 ... -0.95  |
| Switching point                    | [bar]  | 0 ... -0.9 (adjustable)  |
| Hysteresis                         | [bar]  | 0.05 ... 0.5 (adjustable)  |
| Temperature influence              |        | ≤ ±5 mbar/10K (on switching point)   |
| Electrical data                    |        |  |
| Operating voltage                  | [V DC] | 24 (15 ... 30)   |
| Voltage drop                       | [V]    | 1.2 (at switch output)   |
| Switch output current              | [mA]   | 130  |
| Max. intrinsic current consumption | [mA]   | 25   |
| Max. switching delay               | [ms]   | 5  |
| Connection                         |        | Reverse polarity protected   |
| Mechanical data                    |        |  |
| Design                             |        | Piezo-resistive vacuum switch with adjustable switching point and hysteresis |
| Ambient conditions                 |        |  |
| Protection class                   |        | IP65   |

| Ambient conditions                             |      |                                     |
|--|------|-------------------------------------|
| Ambient temperature                            | [°C] | -0 ... +60                          |
| Note on material                               |      | Free of copper, PTFE and silicone   |
| CE marking symbol (see conformity declaration) |      | As per EU EMC directive             |
| Authorisation                                  |      | c UL us - Recognized (OL)<br>C-Tick |

## Vacuum switch control panel



- 1 Switching status display, yellow LED
- 2 Switching point adjustment
- 3 Hysteresis adjustment

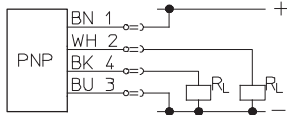
# Vacuum generators VADM/VADMI

Technical data

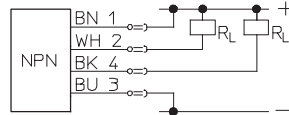
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## Terminal allocation

PNP output

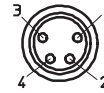


NPN output



BN = Brown  
WH = White  
BK = Black  
BU = Blue  
RL = Load

Pin allocation



1 Brown: Positive terminal  
2 White: NC contact  
3 Blue: Negative terminal  
4 Black: NO contact

## Energy-saving function with VADMI...-P/N

The conventional vacuum switch → A cost-effective energy-saving measure

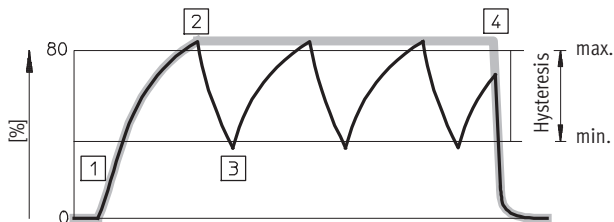
With the vacuum generators VADMI a maximum value is first set and then the hysteresis is regulated (reliable operating range). The lower limit defines the minimum value.

Once the vacuum level is within this range, reliable workpiece transport is guaranteed.

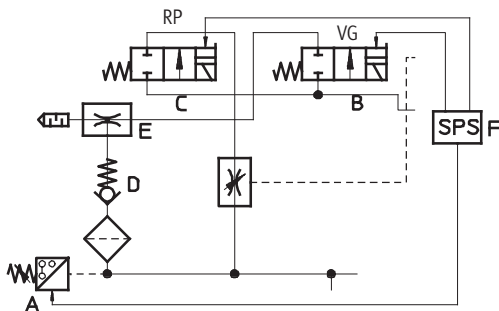
The vacuum generator VADMI is only activated by the external controller if the level drops below the minimum value and is deactivated again once that minimum value is regained.

A non-return valve prevents the vacuum level from being purged during the inactive phase of vacuum generation.

## The functional sequence



— Optimum vacuum curve  
— Actual vacuum curve



RP Ejector pulse  
VG Vacuum on/off  
E Vacuum generator  
D Non-return valve  
A Vacuum switch

## Vacuum on

- External controller F switches on the VG solenoid
  - Valve for compressed air supply B is opened
  - Vacuum generation E is activated

## Vacuum stop

- The specified maximum level is achieved:
  - Pressure sensor A sends a signal to the external controller
  - Controller switches the VG solenoid off
  - Vacuum generation is interrupted
  - Non-return valve D prevents the vacuum level from being purged

## Vacuum on

- Leakage causes the vacuum level to drop to the minimum value
  - Pressure sensor A sends a signal to the external controller F
  - Controller F switches the VG solenoid B back on
  - Vacuum generation E is active again
  - Constant repetition of points 2 and 3

## Cycle ended: Vacuum off

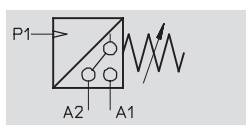
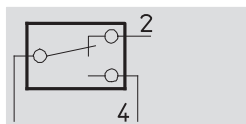
- Transport process ended
  - External controller (PLC) F deactivates VG solenoid B
  - Vacuum generation E is ended
  - External controller switches on ejector RP solenoid C
  - Vacuum level at 0
  - Workpiece is released

# Vacuum generators VADM/VADMI

Technical data

Vacuum switch and cable set for vacuum generators with air-saving circuit VADMI-...-LS-P/N

Circuit diagram



- Piezo-resistive vacuum switch with adjustable switching point and adjustable hysteresis
- Air-saving circuit only in conjunction with supplied cable
- Switching status display, yellow LED
- Electrical connection, polarity safe



| General technical data             |        |  |
|------------------------------------|--------|--|
| Pneumatic data                     |        |  |
| Max. operating pressure            | [bar]  | 0 ... 1  |
| Max. overload pressure             | [bar]  | 5 (for t < 1 min)  |
| Switching point                    | [bar]  | 0 ... -0.9 (adjustable)  |
| Hysteresis                         | [bar]  | 0.1 ... 0.6 (adjustable)   |
| Temperature influence              |        | ≤ ±10 mbar/10K (on switching point)                              |
| Electrical data                    |        |  |
| Operating voltage                  | [V DC] | 24 V (±10%, at VADMI-70-LS-P +10%-5%)                            |
| Voltage drop                       | [V]    | 1.2 (at switch output)   |
| Switch output current              | [mA]   | 130  |
| Max. intrinsic current consumption | [mA]   | 25   |
| Max. switching delay               | [ms]   | 2 (with NPN cable distribution: 20 ms)                           |
| Connection                         |        | Reverse polarity protected                                       |
| Mechanical data                    |        |  |
| Design                             |        | Piezo-resistive vacuum switch with integrated air-saving circuit |
| Ambient conditions                 |        |  |
| Protection class                   |        | IP65   |

| Ambient conditions                             |      |                                     |
|--|------|-------------------------------------|
| Ambient temperature                            | [°C] | -0 ... +60                          |
| Note on material                               |      | Free of copper, PTFE and silicone   |
| CE marking symbol (see conformity declaration) |      | As per EU EMC directive             |
| Authorisation                                  |      | c UL us - Recognized (OL)<br>C-Tick |

# Vacuum generators VADM/VADMI

Technical data

## Function principle

In conjunction with the supplied cable set, the vacuum generator VADMI-...-LS-P/N contains an air-saving circuit. The vacuum range to be used to hold the workpiece is set on the switch using both potentiometers. The switch generates a pulsating signal A2 which only actuates the solenoid for vacuum ON/OFF in the vacuum generator when the vacuum pressure has fallen below the selected upper limit value due to leakage etc.

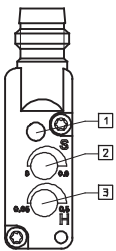
At all other times, the vacuum is maintained with the help of the non-return valve, even when the vacuum generator is not switched on. In addition to this, status signal A1 can be interrogated which is connected to +24 V during normal operation, but which is switched to 0 whenever vacuum pressure falls below the critical value by 150 mbar due to a malfunction.

This is the case, for example, if the workpiece has dropped off from the suction cup and it is no longer possible to generate the selected vacuum.

Accessories (included in scope of delivery):

- Connecting cable  
The switch may only be operated with the included cable set. Connections 1, 2 and 4 can nevertheless be interchanged with one another without damaging the device.

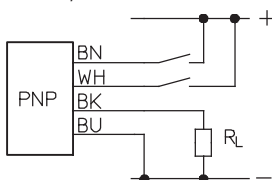
## Vacuum switch control panel



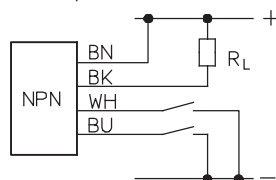
- 1 Switching status display, yellow LED
- 2 Switching point adjustment
- 3 Hysteresis adjustment

## Terminal allocation

PNP output

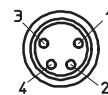


NPN output



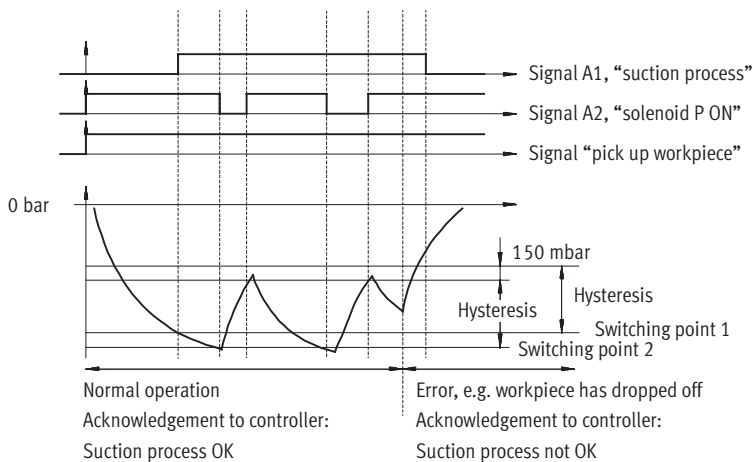
- BN = Brown
- WH = White
- BK = Black
- BU = Blue
- RL = Load

Pin allocation



- 1 Brown: Positive terminal
- 2 White: NC contact
- 3 Blue: Negative terminal
- 4 Black: NO contact

## Switching points/hysteresis



# Vacuum generators VADM/VADMI

Technical data

FESTO

## Energy-saving function and error reporting with VADMI-...-LS-P/N

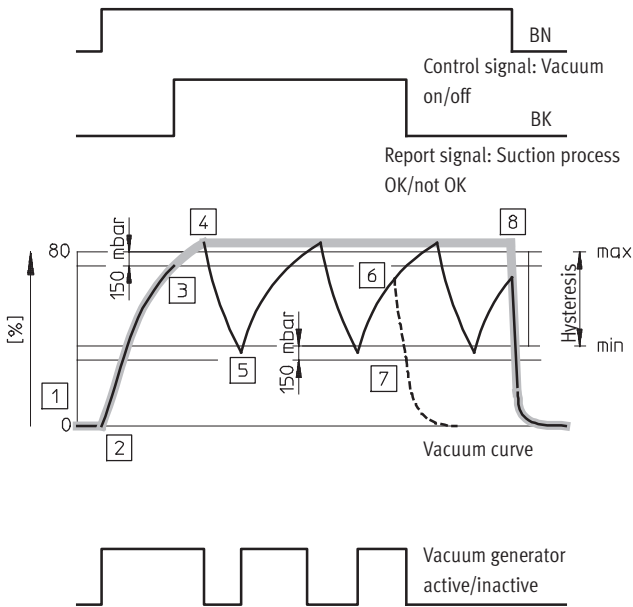
The further development of the vacuum switch

In addition to the described functions, error reporting is also used as an additional energy-saving measure. This like the vacuum circuit is controlled via the vacuum switch.

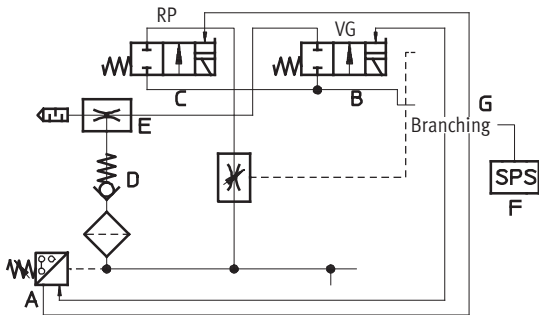
If a suction cup does not pick up a workpiece properly or a tube bursts, the vacuum switch can report such an event to the external control unit (PLC) F so that this or the user can take the necessary steps.

Given the decentrally controlled switching function, external actuation of the vacuum circuit (air-saving circuit) would be superfluous. As a result there is significantly less wiring.

## The functional sequence



- Optimum vacuum curve
- Actual vacuum curve
- - - Curve after fault



- |                    |                 |
|--------------------|-----------------|
| RP Ejector pulse   | C Ejector pulse |
| VG Vacuum on/off   | G Branching     |
| E Vacuum generator | A Vacuum switch |
| D Non-return valve |                 |

### Start signal

- 1 External controller F activates the pressure sensor
  - Pressure sensor A checks the vacuum status
  - No vacuum present

### Vacuum on

- 2 Pressure sensor activates the VG solenoid B
  - Valve for compressed air supply is opened
  - Vacuum generation E is activated
- 3 Vacuum level 150 mbar below the maximum level is exceeded
  - Pressure sensor sends an enable signal to external controller (PLC) F BK
  - Transport process can start

### Vacuum stop

- 4 The specified maximum level is achieved
  - Pressure sensor A switches the VG solenoid off
  - Compressed air supply stopped
  - Vacuum generation E interrupted
  - Non-return valve D prevents the vacuum level from being purged

### Vacuum on

- 5 Leakage causes the vacuum level to drop to the minimum value
  - Pressure sensor A switches the VG solenoid on again
  - Vacuum generation E is active again

### Fault: Transport stopped

- 6 Major leakage causes an overly large drop in the vacuum level
  - Vacuum generator E cannot compensate for the drop in level
- 7 Vacuum level is 150 mbar below the minimum value
  - Pressure sensor A sends an error message to the external controller (PLC) F BK
  - External controller interrupts the transport process
  - Vacuum generation E is ended

### Cycle ended: Vacuum off

- 8 Transport process ended
  - External controller (PLC) F deactivates VG solenoid
  - Vacuum generation E is ended
  - External controller F switches on ejector RP solenoid C WH
  - Ejector pulse activated
  - Workpiece is released

# Vacuum generators VADM/VADMI

Technical data

FESTO

## Connection to PLC

### PNP and NPN switching of the VADMI-...-LS-P/N

The three control and supply cable harnesses are combined in a branching directly via the vacuum generator so that only one cable containing one signal wire and three

voltage supply wires need to be conducted from the branching to the PLC.

In principle there are two different signal characteristics with external control units (PLC) for the vacuum generator VADMI-LS, which differ only

slightly in their mode of operation. As both versions are identical in terms of the vacuum generator and the vacuum switch, the signal flow is only converted in the branching, as this is the only difference between the models.

The labelled plug-in connectors for the wiring harness are connected to the relevant elements of the VADMI-LS. The four-wire cable splice of the branching is connected to the control unit in the manner depicted below.

### VADMI-...



VADMI  
without vacuum circuit

### VADMI-...-P/N



VADMI  
with vacuum switching

### VADMI-...-P/N-LS

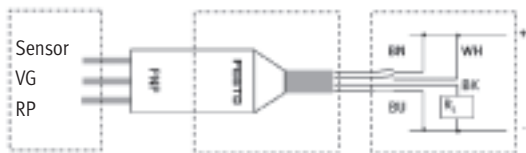


VADMI  
with air-saving circuit

## four-wire cable splice

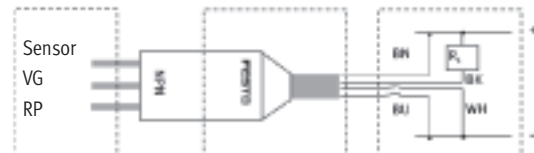


### PNP circuit



Wiring harness to VADMI      Branching      PLC (customer-side)

### NPN circuit



Wiring harness to VADMI      Branching      PLC (customer-side)

- BN = Brown for vacuum generation VG
- WH = White for ejector pulse RP
- BK = Black for consumer  $R_L$  (PLC)
- BU = Blue for ground



# Vacuum generators VADM/VADMI

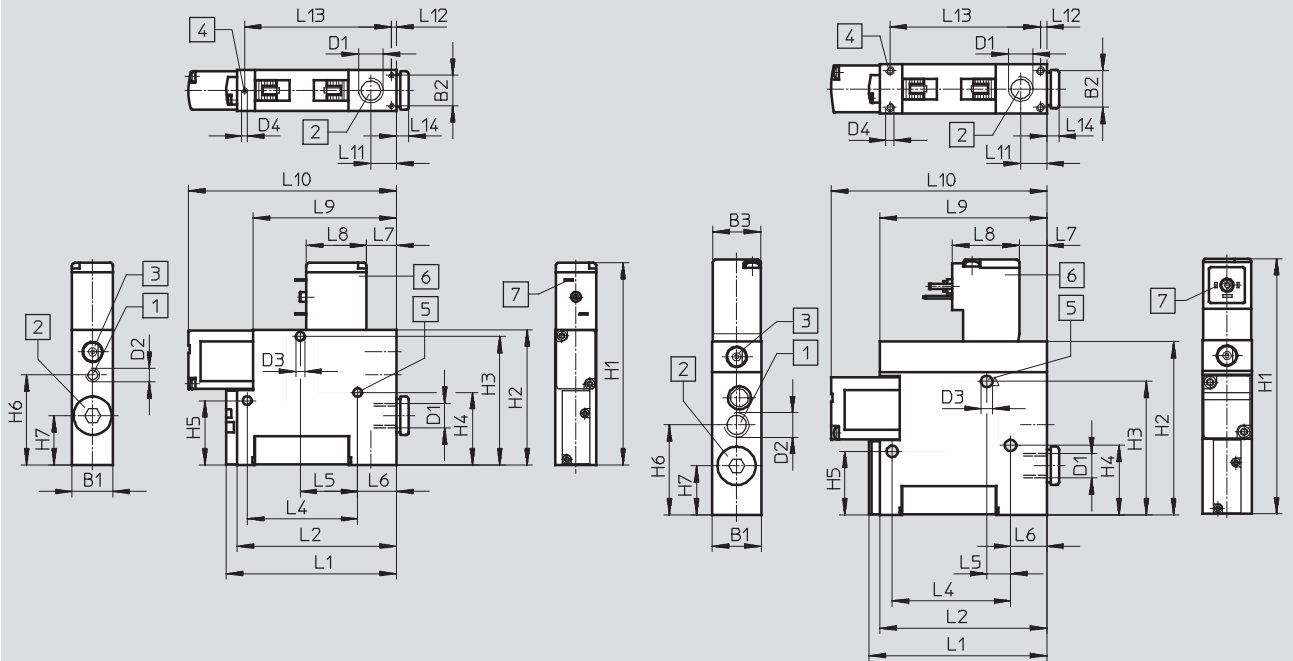
Technical data

FESTO

## Dimensions

VADM-45/-70

VADM-95/-140/-200/-300



- 1 Compressed air port
- 2 Vacuum port
- 3 Manual override facility
- 4 Mounting thread
- 5 Mounting hole
- 6 Solenoid coil can be repositioned by 180°
- 7 Suitable socket for:  
VADM-45/-70  
KMYZ-...  
→ Internet: kmyz  
VADM-95/-.../-300  
KMEB-... and MSSD-EB  
→ Internet: kmeb1  
→ Internet: mssd-eb

| Type     | B1 | B2   | B3 | D1   | D2   | D3<br>Ø | D4   | H1    | H2   | H3   | H4   | H5   | H6   | H7   |
|----------|----|------|----|------|------|---------|------|-------|------|------|------|------|------|------|
| VADM-45  | 10 | 6.2  | –  | M5   | M5   | 3.2     | M2   | 64.4  | 44.4 | 40.8 | 23.8 | 23.8 | 29.6 | 18   |
| VADM-70  | 15 | 11.2 | –  | G1/8 | M5   | 3.2     | M2   | 73.9  | 49.4 | 47   | 26.5 | 23.5 | 32.9 | 18   |
| VADM-95  | 18 | 13.4 | 18 | G1/8 | G1/8 | 4.2     | M2.5 | 93.4  | 63.4 | 48.9 | 25.5 | 23.3 | 33   | 18   |
| VADM-140 | 22 | 16.6 | 18 | G1/4 | G1/8 | 5.2     | M3   | 107.4 | 77.4 | 61.4 | 41.4 | 41.4 | 36   | 17.5 |
| VADM-200 | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2     | M3   | 113.4 | 83.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |
| VADM-300 | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2     | M3   | 113.4 | 83.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |

| Type     | L1    | L2    | L4   | L5   | L6   | L7  | L8   | L9   | L10   | L11  | L12 | L13   | L14 |
|----------|-------|-------|------|------|------|-----|------|------|-------|------|-----|-------|-----|
| VADM-45  | 45    | 41    | 33.6 | 25   | 3.6  | 11  | 16   | 41   | 56    | 7.9  | 1.9 | 36.3  | 4   |
| VADM-70  | 62.3  | 58.3  | 40.4 | 21   | 14.2 | 11  | 22   | 52.4 | 76.1  | 9.4  | 1.9 | 53.7  | 4.5 |
| VADM-95  | 65    | 61    | 43.3 | 8.7  | 13.2 | 9.7 | 24.5 | 61   | 78.8  | 9.5  | 2.3 | 55    | 4.5 |
| VADM-140 | 88    | 84    | 26   | 12.5 | 28.5 | 9.7 | 24.5 | 61   | 96.8  | 13.8 | 2.3 | 79.4  | 5   |
| VADM-200 | 88    | 84    | 26   | 12.5 | 28.5 | 9.7 | 24.5 | 61   | 101.8 | 12.5 | 2.3 | 79.4  | 5   |
| VADM-300 | 124.4 | 120.4 | 26   | 12.5 | 28.5 | 9.7 | 24.5 | 61   | 137.4 | 12.5 | 2.3 | 115.8 | 5   |

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

# Vacuum generators VADM/VADMI

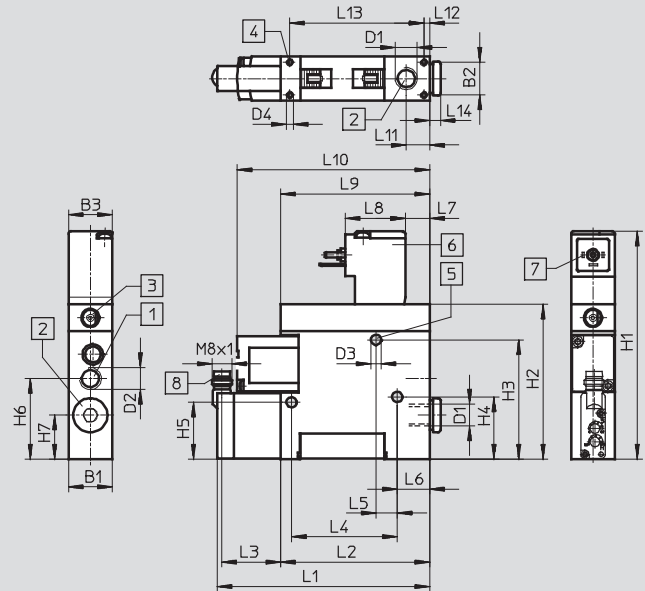
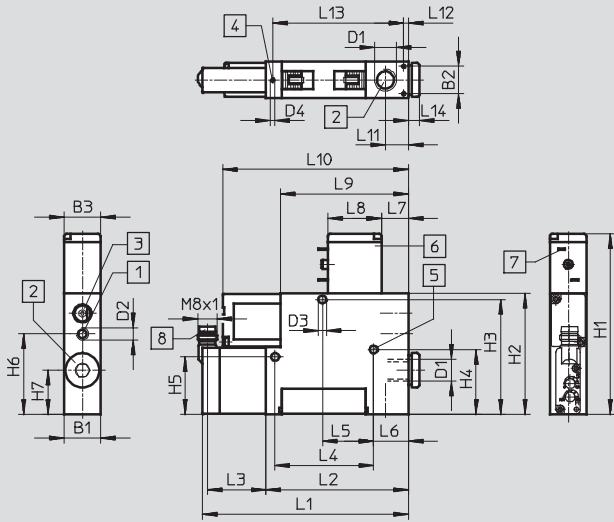
Technical data

FESTO

## Dimensions

VADM-45/-70-P/-N

VADM-95/-140/-200/-300-P/-N



- 1 Compressed air port
- 2 Vacuum port
- 3 Manual override facility
- 4 Mounting thread
- 5 Mounting hole
- 6 Solenoid coil can be repositioned by 180°
- 7 Suitable socket for:  
VADM-45/-70-P/-N  
KMYZ...  
→ Internet: kmyz  
VADM-95/-.../-300-P/-N  
KMEB-... and MSSD-EB  
→ Internet: kmeb1  
→ Internet: mssd-eb
- 8 Connection for connecting cable NEBU-M8  
→ Internet: nebu-m8

| Type          | B1 | B2   | B3 | D1   | D2   | D3  | D4   | H1    | H2   | H3   | H4   | H5   | H6   | H7   |
|---------------|----|------|----|------|------|-----|------|-------|------|------|------|------|------|------|
| VADM-45-P/-N  | 10 | 6.2  | 10 | M5   | M5   | 3.2 | M2   | 64.4  | 44.4 | 40.8 | 23.8 | 23.8 | 29.6 | 18   |
| VADM-70-P/-N  | 15 | 11.2 | 15 | G1/8 | M5   | 3.2 | M2   | 73.9  | 49.4 | 47   | 26.5 | 23.5 | 32.9 | 18   |
| VADM-95-P/-N  | 18 | 13.4 | 18 | G1/8 | G1/8 | 4.2 | M2.5 | 93.4  | 63.4 | 48.9 | 25.5 | 23.3 | 33   | 18   |
| VADM-140-P/-N | 22 | 16.6 | 18 | G1/4 | G1/8 | 5.2 | M3   | 107.4 | 77.4 | 61.4 | 41.4 | 41.4 | 36   | 17.5 |
| VADM-200-P/-N | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2 | M3   | 113.4 | 83.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |
| VADM-300-P/-N | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2 | M3   | 113.4 | 83.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |

| Type          | L1    | L2    | L3   | L4   | L5   | L6   | L7  | L8   | L9   | L10   | L11  | L12 | L13   | L14 |
|---------------|-------|-------|------|------|------|------|-----|------|------|-------|------|-----|-------|-----|
| VADM-45-P/-N  | 71.4  | 41    | 28.4 | 33.6 | 25   | 3.6  | 11  | 16   | 41   | 56    | 7.9  | 1.9 | 36.3  | 4   |
| VADM-70-P/-N  | 88.7  | 58.3  | 28.4 | 40.4 | 21   | 14.2 | 11  | 22   | 52.4 | 76.1  | 9.4  | 1.9 | 53.7  | 4.5 |
| VADM-95-P/-N  | 91.4  | 61    | 28.4 | 43.3 | 8.7  | 13.2 | 9.7 | 24.5 | 61   | 78.8  | 9.5  | 2.3 | 55    | 4.5 |
| VADM-140-P/-N | 114.4 | 84    | 28.4 | 26   | 12.5 | 28.5 | 9.7 | 24.5 | 61   | 96.8  | 13.8 | 2.3 | 79.4  | 5   |
| VADM-200-P/-N | 114.4 | 84    | 28.4 | 26   | 12.5 | 28.5 | 9.7 | 24.5 | 61   | 101.8 | 12.5 | 2.3 | 79.4  | 5   |
| VADM-300-P/-N | 150.8 | 120.4 | 28.4 | 26   | 12.5 | 28.5 | 9.7 | 24.5 | 61   | 137.4 | 12.5 | 2.3 | 115.8 | 5   |

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

# Vacuum generators VADM/VADMI

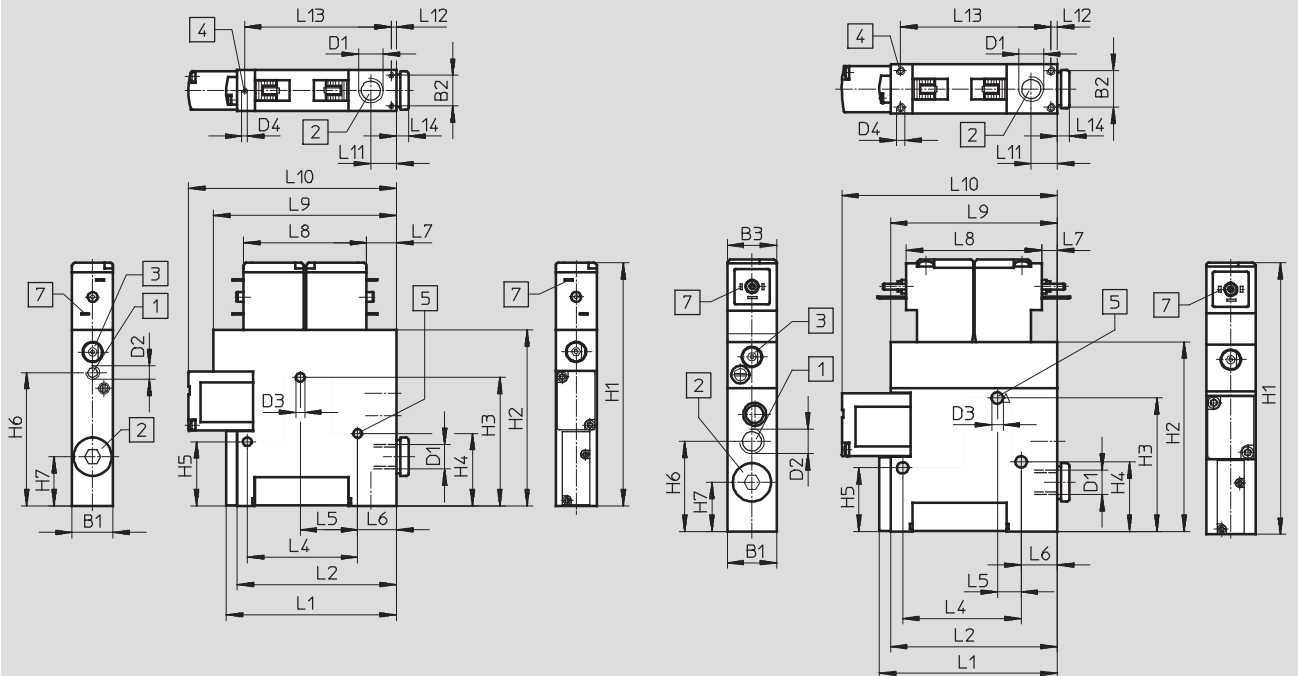
Technical data

FESTO

## Dimensions

VADMI-45/-70

VADMI-95/-140/-200/-300



- 1 Compressed air port
- 2 Vacuum port
- 3 Manual override facility
- 4 Mounting thread
- 5 Mounting hole
- 7 Suitable socket for:  
 VADMI-45/-70  
 KMYZ-...  
 → Internet: kmyz  
 VADMI-95/-.../-300  
 KMEB-... and MSSD-EB  
 → Internet: kmeb1  
 → Internet: mssd-eb

| Type      | B1 | B2   | B3 | D1   | D2   | D3  | D4   | H1    | H2   | H3   | H4   | H5   | H6   | H7   |
|-----------|----|------|----|------|------|-----|------|-------|------|------|------|------|------|------|
| VADMI-45  | 10 | 6.2  | -  | M5   | M5   | 3.2 | M2   | 78.2  | 58.2 | 40.8 | 23.8 | 23.8 | 43.4 | 18   |
| VADMI-70  | 15 | 11.2 | -  | G1/8 | M5   | 3.2 | M2   | 88.9  | 64.4 | 47   | 26.5 | 23.5 | 48.8 | 18   |
| VADMI-95  | 18 | 13.4 | 18 | G1/8 | G1/8 | 4.2 | M2.5 | 99.4  | 69.4 | 48.9 | 25.5 | 23.3 | 33   | 18   |
| VADMI-140 | 22 | 16.6 | 18 | G1/4 | G1/8 | 5.2 | M3   | 113.4 | 83.4 | 61.4 | 41.4 | 41.4 | 36   | 17.5 |
| VADMI-200 | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2 | M3   | 119.4 | 89.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |
| VADMI-300 | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2 | M3   | 119.4 | 89.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |

| Type      | L1    | L2    | L4   | L5   | L6   | L7  | L8   | L9 | L10   | L11  | L12 | L13   | L14 |
|-----------|-------|-------|------|------|------|-----|------|----|-------|------|-----|-------|-----|
| VADMI-45  | 45    | 41    | 33.6 | 25   | 3.6  | 11  | 33   | 55 | 56    | 7.9  | 1.9 | 36.3  | 4   |
| VADMI-70  | 62.3  | 58.3  | 40.4 | 21   | 14.2 | 11  | 45   | 67 | 76.1  | 9.4  | 1.9 | 53.7  | 4.5 |
| VADMI-95  | 65    | 61    | 43.3 | 8.7  | 13.2 | 5.7 | 49.5 | 61 | 78.8  | 9.5  | 2.3 | 55    | 4.5 |
| VADMI-140 | 88    | 84    | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 96.8  | 13.8 | 2.3 | 79.4  | 5   |
| VADMI-200 | 88    | 84    | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 101.8 | 12.5 | 2.3 | 79.4  | 5   |
| VADMI-300 | 124.4 | 120.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 137.4 | 12.5 | 2.3 | 115.8 | 5   |

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

# Vacuum generators VADM/VADMI

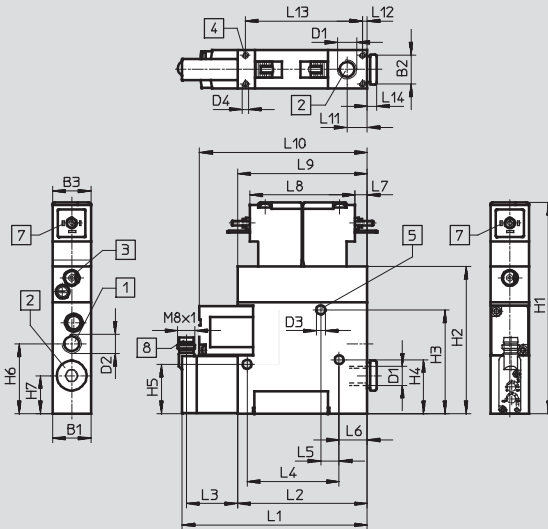
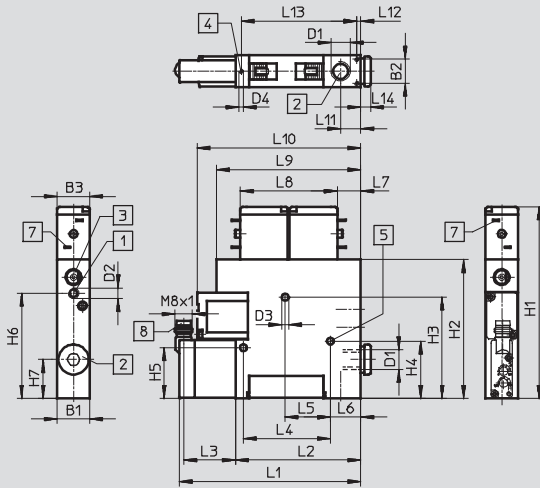
Technical data

FESTO

## Dimensions

VADMI-45/-70-P/-N/-LS-P

VADMI-95/-140/-200/-300-P/-N/-LS-P



- 1 Compressed air port
- 2 Vacuum port
- 3 Manual override facility

- 4 Mounting thread
- 5 Mounting hole
- 7 Suitable socket for:  
VADMI-45/-70 and KMYZ-...

- VADMI-95/-.../-300  
KMEB-... and MSSD-EB
- ➔ Internet: kmeb1
  - ➔ Internet: mssd-eb

- 8 Connection for connecting  
cable NEBU-M8
- ➔ Internet: nebu-m8

| Type           | B1 | B2   | B3 | D1   | D2   | D3<br>Ø | D4   | H1    | H2   | H3   | H4   | H5   | H6   | H7   |
|----------------|----|------|----|------|------|---------|------|-------|------|------|------|------|------|------|
| VADMI-45-P/-N  | 10 | 6.2  | 10 | M5   | M5   | 3.2     | M2   | 78.2  | 58.2 | 40.8 | 23.8 | 23.8 | 43.4 | 18   |
| VADMI-70-P/-N  | 15 | 11.2 | 15 | G1/8 | M5   | 3.2     | M2   | 88.9  | 64.4 | 47   | 26.5 | 23.5 | 48.8 | 18   |
| VADMI-95-P/-N  | 18 | 13.4 | 18 | G1/8 | G1/8 | 4.2     | M2.5 | 99.4  | 69.4 | 48.9 | 25.5 | 23.3 | 33   | 18   |
| VADMI-140-P/-N | 22 | 16.6 | 18 | G1/4 | G1/8 | 5.2     | M3   | 113.4 | 83.4 | 61.4 | 41.4 | 41.4 | 36   | 17.5 |
| VADMI-200-P/-N | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2     | M3   | 119.4 | 89.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |
| VADMI-300-P/-N | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2     | M3   | 119.4 | 89.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |
| VADMI-45-LS-P  | 10 | 6.2  | 10 | M5   | M5   | 3.2     | M2   | 78.2  | 58.2 | 40.8 | 23.8 | 23.8 | 43.4 | 18   |
| VADMI-70-LS-P  | 15 | 11.2 | 15 | G1/8 | M5   | 3.2     | M2   | 88.9  | 64.4 | 47   | 26.5 | 23.5 | 48.8 | 18   |
| VADMI-95-LS-P  | 18 | 13.4 | 18 | G1/8 | G1/8 | 4.2     | M3   | 99.4  | 69.4 | 48.9 | 25.5 | 23.3 | 33   | 18   |
| VADMI-140-LS-P | 22 | 16.6 | 18 | G1/4 | G1/8 | 5.2     | M3   | 113.4 | 83.4 | 61.4 | 41.4 | 41.4 | 36   | 17.5 |
| VADMI-200-LS-P | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2     | M3   | 119.4 | 89.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |
| VADMI-300-LS-P | 22 | 16.6 | 18 | G3/8 | G1/4 | 5.2     | M3   | 119.4 | 89.4 | 67.7 | 41.4 | 41.4 | 40   | 19   |

| Type                        | L1    | L2    | L3   | L4   | L5   | L6   | L7  | L8   | L9 | L10   | L11  | L12 | L13   | L14 |
|-----------------------------|-------|-------|------|------|------|------|-----|------|----|-------|------|-----|-------|-----|
| VADMI-45-P/-N               | 71.4  | 41    | 28.4 | 33.6 | 25   | 3.6  | 11  | 33   | 55 | 56    | 7.9  | 1.9 | 36.3  | 4   |
| VADMI-70-P/-N               | 88.7  | 58.3  | 28.4 | 40.4 | 21   | 14.2 | 11  | 45   | 67 | 76.1  | 9.4  | 1.9 | 53.7  | 4.5 |
| VADMI-95-P/-N               | 91.4  | 61    | 28.4 | 43.3 | 8.7  | 13.2 | 5.7 | 49.5 | 61 | 78.8  | 9.5  | 2.3 | 55    | 4.5 |
| VADMI-140-P/-N              | 114.4 | 84    | 28.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 96.8  | 13.8 | 2.3 | 79.4  | 5   |
| VADMI-200-P/-N              | 114.4 | 84    | 28.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 101.8 | 12.5 | 2.3 | 79.4  | 5   |
| VADMI-300-P/-N              | 150.8 | 120.4 | 28.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 137.4 | 12.5 | 2.3 | 115.8 | 5   |
| VADMI-45-LS-P <sup>1)</sup> | 71.4  | 41    | 28.4 | 33.6 | 25   | 3.6  | 11  | 33   | 55 | 56    | 7.9  | 1.9 | 36.3  | 4   |
| VADMI-70-LS-P               | 88.7  | 58.3  | 28.4 | 40.4 | 21   | 14.2 | 11  | 45   | 67 | 76.1  | 9.4  | 1.9 | 53.7  | 4.5 |
| VADMI-95-LS-P               | 91.4  | 61    | 28.4 | 43.3 | 8.7  | 13.2 | 5.7 | 49.5 | 61 | 78.8  | 9.5  | 2.3 | 55    | 4.5 |
| VADMI-140-LS-P              | 114.4 | 84    | 28.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 96.8  | 13.8 | 2.3 | 79.4  | 5   |
| VADMI-200-LS-P              | 114.4 | 84    | 28.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 101.8 | 12.5 | 2.3 | 79.4  | 5   |
| VADMI-300-LS-P              | 150.8 | 120.4 | 28.4 | 26   | 12.5 | 28.5 | 5.7 | 49.5 | 61 | 137.4 | 12.5 | 2.3 | 115.8 | 5   |

1) Plug sockets are included in the scope of delivery for type ...-LS-....


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

# Vacuum generators VADM/VADMI

Technical data

| Ordering data         |                |                       |           |          |             |                    |             |  |
|-----------------------|----------------|-----------------------|-----------|----------|-------------|--------------------|-------------|--|
| Size                  | Solenoid coils | Without vacuum switch |           |          |             | With vacuum switch |             |  |
|                       |                | Part No.              |           | Type     | PNP output  |                    | NPN output  |  |
|                       |                | Part No.              | Type      | Part No. | Type        | Part No.           | Type        |  |
| Without ejector pulse |                |                       |           |          |             |                    |             |  |
| 45                    | MZB            | 162 500               | VADM-45   | 162 512  | VADM-45-P   | 162 513            | VADM-45-N   |  |
| 70                    | MYB            | 162 501               | VADM-70   | 162 514  | VADM-70-P   | 162 515            | VADM-70-N   |  |
| 95                    | MEB            | 162 502               | VADM-95   | 162 516  | VADM-95-P   | 162 517            | VADM-95-N   |  |
| 140                   | MEB            | 162 503               | VADM-140  | 162 518  | VADM-140-P  | 162 519            | VADM-140-N  |  |
| 200                   | MEB            | 162 504               | VADM-200  | 162 520  | VADM-200-P  | 162 521            | VADM-200-N  |  |
| 300                   | MEB            | 162 505               | VADM-300  | 162 522  | VADM-300-P  | 162 523            | VADM-300-N  |  |
| With ejector pulse    |                |                       |           |          |             |                    |             |  |
| 45                    | MZB            | 162 506               | VADMI-45  | 162 524  | VADMI-45-P  | 162 525            | VADMI-45-N  |  |
| 70                    | MYB            | 162 507               | VADMI-70  | 162 526  | VADMI-70-P  | 162 527            | VADMI-70-N  |  |
| 95                    | MEB            | 162 508               | VADMI-95  | 162 528  | VADMI-95-P  | 162 529            | VADMI-95-N  |  |
| 140                   | MEB            | 162 509               | VADMI-140 | 162 530  | VADMI-140-P | 162 531            | VADMI-140-N |  |
| 200                   | MEB            | 162 510               | VADMI-200 | 162 532  | VADMI-200-P | 162 533            | VADMI-200-N |  |
| 300                   | MEB            | 162 511               | VADMI-300 | 162 534  | VADMI-300-P | 162 535            | VADMI-300-N |  |

| Ordering data                             |                |                    |                |          |                |            |  |
|---|----------------|--------------------|----------------|----------|----------------|------------|--|
| Size                                      | Solenoid coils | With vacuum switch |                |          |                | NPN output |  |
|   |                | PNP output         |                | Part No. |                | Type       |  |
|   |                | Part No.           | Type           | Part No. | Type           |            |  |
| With ejector pulse and air-saving circuit |                |                    |                |          |                |            |  |
| 45  | MZB            | 171 053            | VADMI-45-LS-P  | 171 054  | VADMI-45-LS-N  |            |  |
| 70  | MYB            | 171 055            | VADMI-70-LS-P  | 171 056  | VADMI-70-LS-N  |            |  |
| 95  | MEB            | 171 057            | VADMI-95-LS-P  | 171 058  | VADMI-95-LS-N  |            |  |
| 140                                       | MEB            | 171 059            | VADMI-140-LS-P | 171 060  | VADMI-140-LS-N |            |  |
| 200                                       | MEB            | 171 061            | VADMI-200-LS-P | 171 062  | VADMI-200-LS-N |            |  |
| 300                                       | MEB            | 171 063            | VADMI-300-LS-P | 171 064  | VADMI-300-LS-N |            |  |

-  - Note

With vacuum generators VADMI-...-LS-P/N, the plug sockets with cable for solenoid coils and vacuum switches are included in the scope of supply. These vacuum generators may only be operated with the cable supplied.