

# Media separated valves VYKA/VYKB/VYKC/VZDB

FESTO



## Maximum flexibility!

### Highlights

- FDA-listed materials
- Developed in line with ISO 13485
- Reliable media separation for aggressive gases and liquids
- Optimised rinsability
- Minimised heat generation
- Flexible in use thanks to 3/2 and 2/2 (NC/NO)
- Various nominal widths (1.2 mm, 1.6 mm and 2.0 mm) for dosing, aspirating and for continuous flow applications

Dispensing, aspirating or continuous flow? With media-separated valves from Festo, you can choose between three operating modes! These compact, powerful valves dispense and aspirate any quantity, right from the very smallest, with great precision. Their uniquely impressive pressure and nominal width specifications also make them perfect for flow control, for example in manifold duct plates.

### Maximum performance density

The valves easily handle a pressure range of -0.75 ... 3 bar and flow rates up to 2.070 ml/min. Their small grid dimensions also make them suitable for a wide range of applications, such as VYKA with microwell plates.

### Media separation for reliability and safety

The high-performance polymers EPDM, FKM and FFKM used for the separating diaphragms can withstand even aggressive media, protect the interior of the valves and simultaneously prevent corrosion. Their low internal volume makes the valves very easy to clean, which is ideal especially for sensitive applications.

### Very flexible control options

VYKA and VYKC offer a flexible control range between 12 and 26 V DC. With VYKA, the necessary holding current reduction can be realised using the plug-in E-box VAVE or the valve control module VAEM. With VYKC, on the other hand, it is up to you whether you operate the valve with the optionally integrated holding current reduction or if you use an external valve controller (e.g. VAEM). With VYKB, the E-box is integrated and can be controlled using 12 V or 24 V. The VZDB, however, is controlled with compressed air.

# Media separated valves VYKA/VYKB/VYKC/VZDB

## VYKA

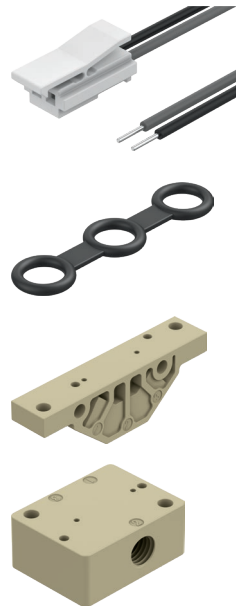


- Kv value: 0.35 l/min
- For dispensing, aspiration (vacuum-capable) and continuous flow applications such as filling microwell plates
- Compact width of 7 mm
- FDA-listed materials
- FKM variant with materials suitable for oxygen (BAM-tested)
- Extremely flexible in use thanks to 3/2 and 2/2 variants (NC/NO) and 12 ... 26 V DC actuation with plug-in E-box VAVE-K1

### Product-specific accessories and spare parts

- Various connection options
  - E-box VAVE-K1 with holding current reduction
  - Connecting cables NEBV-Q7
- PEEK connection module VABS-K1
  - M5
  - UNF1/4-28
- Electrical connecting cable NEBV-Q7
  - 0.1 m
  - 0.5 m
- Precise valve control with holding current reduction
  - 1-way (VAVE-K1)
  - 8-way (8x NEBV + VAEM)

## VYKB



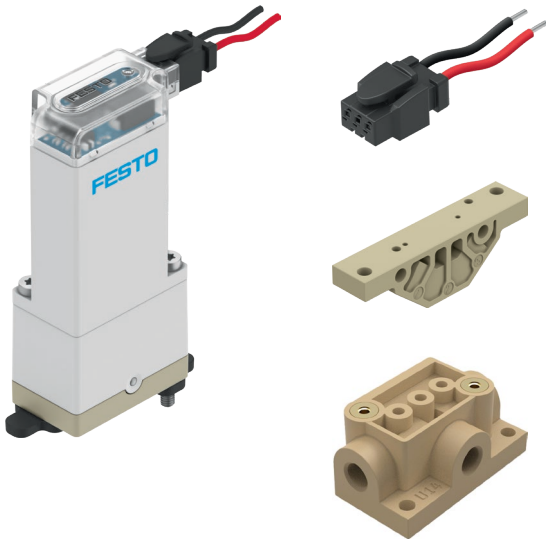
- Kv value: 0.57 l/min (VYKB-F10) and 0.97 l/min (VYKB-F12)
- For dispensing, aspiration (vacuum-capable) and continuous flow applications
- Compact width of 10 mm and 12 mm
- Extremely flexible in use thanks to 3/2 and 2/2 variants (NC) and 12 or 24 V DC control

### Product-specific accessories and spare parts

- PEEK connection modules VABS-K2
  - M5, M6
  - G1/8
  - NPT1/8, UNF1/4-28
- Electrical connecting cable NEBV-HPG2
  - 0.3 m
- Seals as spare parts VAVC-K2
  - EPDM
  - FKM
  - FFKM
- Plug outlet to the side on request

# Media separated valves VYKA/VYKB/VYKC/VZDB

## VYKC

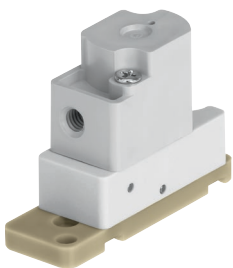


- Kv value:
  - 0.55 l/min (VYKC-....-12),
  - 0.86 l/min (VYKC-....-16),
  - 1.3 l/min (VYKC-....-20)
- For dispensing, aspiration (vacuum-capable) and continuous flow applications
- Compact width of 16 mm
- Extremely flexible in use thanks to 3/2 and 2/2 variants (NC/NO) and 12 or 24 V DC control
- Precise valve control
  - With optional holding current reduction integrated into the valve (NEBV-H1G2)
  - Without holding current reduction with valve control module (NEBV-H1G2 + VAEM)
- Additional second LED for easy commissioning and maintenance thanks to the smart detection of operating errors
- FDA-listed materials

### Product-specific accessories and spare parts

- PEEK connection modules VABS-K3
  - M5, M6
  - G1/8
  - NPT1/8, UNF1/4-28
- Electrical connecting cable NEBV-H1G2
  - 0.5 m, 1 m, 2.5 m, 5 m

## VZDB



- Kv value: 0.57 l/min
- For dispensing, aspiration and continuous flow applications
- Compact width of 10 mm
- No electronic connecting component required, since pneumatically actuated
- Extremely flexible to use thanks to 3/2 and 2/2 variants (NC)

### Product-specific accessories and spare parts

- PEEK connection modules VABS-K2
  - M6
  - UNF1/4-28
- Seals VAVC-K2
  - EPDM
  - FKM
  - FFKM

# Media separated valves VYKA/VYKB/VYKC/VZDB

Technical data				
	VYKA	VYKB	VYKC*	VZDB
Valve type	Solenoid valve	Solenoid valve	Solenoid valve	Pneumatic valve
Valve function	3/2; 2/2 NC; 2/2 NO	3/2; 2/2 NC	3/2, 2/2 NC, 2/2 NO	3/2; 2/2 NC
Width [mm]	7	10 (VYKB-F10); 12 (VYKB-F12)	16	10
Stacking dimension [mm]	7.5	11 (VYKB-F10); 13 (VYKB-F12)	17	11
Pressure [bar]	-0.5 ... 2	-0.75 ... 1 (VYKB-F10) -0.75 ... 3 (VYKB-F12)	0.75 ... 3 (VYKC-12 and VYKC-16) -0.75 ... 2 (VYKC-20)	-0.75 ... 1
Temperature of medium [°C]	0 ... 50 (FKM), 15 ... 50 (FFKM)	0 ... 50	0 ... 50 (FKM, EPDM), 15 ... 50 (FFKM)	0 .. 50
Nominal widths [mm]	1.2	1.6 (VYKB-F10) 2.0 (VYKB-F12)	1.2 (VYKC-12) 1.6 (VYKC-16) 2.0 (VYKC-20)	1.6
Kv value [l/min]	0.35	0.57 (VYKB-F10) 0.97 (VYKB-F12)	0.55 (VYKC-12) 0.86 (VYKC-16) 1.3 (VYKC-20)	0.57
Power consumption (Inrush/holding) [W]	2.19/0.06 3.53/0.23 with E-box VAVE	3.7/1 (VYKB-F10) 4.5/1 (VYKB-F12 / 24 V DC) 5.2/1 (VYKB-F12 / 12 V DC)	4.3 ... 5.7 / 0.4 ... 0.53	4.5/1 with 24 V DC 5.2/1 with 12 V DC
Connection type	Flange	Flange	Flange	Flange
Sub-bases	UNF1/4-28, M5	UNF1/4-28, M6	M5, G1/8 NPT1/8, UNF1/4-28	UNF1/4-28, M6
Operating voltage [V]	12 ... 26 +/-10% with E-box VAVE	12 and 24	10.8 ... 26.4	-
Seals	EPDM, FKM, FFKM	EPDM, FKM, FFKM	EPDM, FKM, FFKM	EPDM, FKM, FFKM
Internal volume [µl] (fluid chamber and fluid channels)	20 (2/2), 22 (3/2)	35 (VYKB-F10) 60 (VYKB-F12)	61 (2/2 directional control valve) 67 (3/2 directional control valve)	35
Reversible	With restrictions	No	Yes	No
Max. switching cycles	10 million	10 million	10 million	10 million
FDA-listed materials	Yes	No	Yes	No

\* The product is still in development; all values are subject to change.

# Media separated valves VYKA/VYKB/VYKC/VZDB

## General accessories

NLFA* fittings for laboratory applications	
Material in contact with media	PP
Pressure [bar]	-0.75 ... 6.0 (NLFA-...-K..) -0.75 ... 4.0 (NLFA-...-B..)
Temperature of medium [°C]	0 – 50 (NLFA-...-K..) 0 – 35 (NLFA-...-B..)
Fluidic connection 1	UNF ¼-28
Fluidic connection 2 [mm]	OD: 1.6; 3.0; 3.2 (NLFA-...-K..) ID: 1.2; 2.1 (NLFA-...-B..)
Variants	Straight
Special features	FDA-listed materials

\* This product is currently in development, but samples are available.

Dosing needles VAVN	
Length [mm]	30, 60
Inside diameter [mm]	0.3; 0.6; 1.2
Special designs:	Tapered, with chamfer

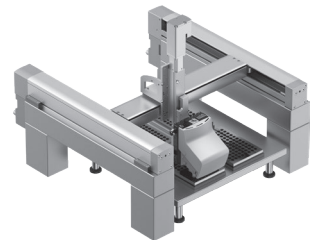
VAEM	
Dimensions W x H x L [mm]	92 x 100 x 28
Parameterisation	Parameter setting per output
Intrinsic current consumption at operating voltage [mA]	27
Trigger level [V]	Level 14 ... 24
Load voltage range DC [V]	8 ... 24
Max. no. of outputs	8
Pickup current, per output [mA]	20 ... 1.000
Holding current, per output [mA]	20 ... 400
Pickup current, total [A]	≤ 4
Holding current, total [A]	≤ 1.8
Pickup time [ms]	≤ 100
Time resolution [ms]	0.2
Nominal operating voltage DC [V]	24
Permissible voltage fluctuations	+/- 15%
Power supply, function	Digital trigger input Power supply
Communication interface, protocol	RS232, Ethernet

# Suitable for a wide range of applications

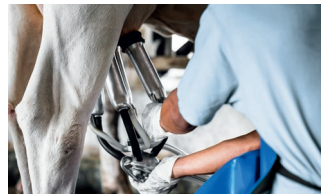
## The choice is yours

### Ideal for the following applications

- Handling liquids, especially in laboratory automation and medical technology
- In vitro diagnostics
- High-precision filling applications with sensitive and aggressive media, e.g. in the perfume and flavours industry or for packaging contact lenses
- Media handling in the semiconductor industry, e.g. for manufacturing wafers
- Printing applications, especially in 3D printing
- Analytical devices for gases (through particle-free switching)



Dosing liquids, e.g. flavourings



Cleaning machines in agriculture, e.g. dairy pumps



Printing of packaging, e.g. pizza boxes



Cleaning processes, e.g. for cuvettes and needles

## General accessories



### Valve control module VAEM

- Control of up to eight solenoid valves
- Parameterisation of 2/2 and 3/2 solenoid valves
- Current control
- Dimensions: 92 x 100 x 28 mm, weight: 98 g
- Resolution: 0.2 ms
- GUI available
- Communication via RS232 and Ethernet
- External 24 V trigger input

### Highlights

- Dispensing precision can be enhanced through:
  - Eight individually controllable channels
  - Extremely fast valve control with a time resolution of 0.2 ms
  - Individual parameterisation of switching times, holding current reduction and delay times per channel

- Easy to use and integrate thanks to:

- Control and diagnostics via GUI, RS232 and Ethernet
- External 24 V trigger input for synchronisation with other systems
- Compact design and light weight



### Fluidic push-in fitting NLFA and dosing nozzles VAVN

- Fittings for liquid media, especially suitable in laboratory applications
- Five different fittings for a range of tubing
- Dosing nozzles for dosing media
- Ten different nozzles with optional tapering and chamfer

### Highlights

- Innovative technology for easy-to-install fluid connections: the two individual parts of the fitting are joined together and do not need to be ordered or installed separately
- Suitable for aggressive liquids
- FDA-listed materials
- Excellent rinsability thanks to connection without dead space
- Large selection of dosing nozzles to optimise dosing performance