

Dispense head VTOE

FESTO



Characteristics

At a glance

[Link](#) [vtoe](#)

The dispense head VTOE is available in two different versions:

- With transparent polycarbonate (PC) manifold duct plate
- With media-resistant manifold duct plate made of polyether ether ketone (PEEK)
- Both variants each offer three different dosing syringes with three different internal diameters as standard.

Benefits:

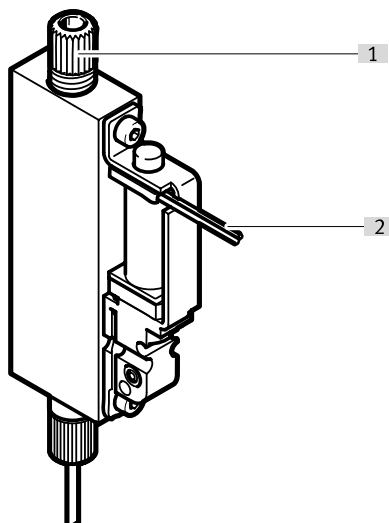
- Ready-to-install dosing solution saves time and costs
- Compact 9 mm grid dimension
- Maximum dosing precision down to the microlitre range
- Ideally suited for contactless dispensing and jetting of liquid media
- Media-separated dosing valve for sensitive and aggressive liquids
- Small internal volume makes it easy to rinse

Range of applications:

- The dispense head VTOE is intended for installation in laboratory devices. It is designed to dispense liquids within the scope of its technical data.
- The chemical resistance of the dispense head materials that come into contact with the media must be checked for each application. It is necessary to verify to what extent the dispense head VTOE is suitable for the intended application.
- The dispense head VTOE is not suitable for aspirating liquids. It is not approved for direct contact with foodstuffs or their ingredients.
- If you are unsure about the product's suitability for the planned application, please contact Festo for advice.

Valve positions

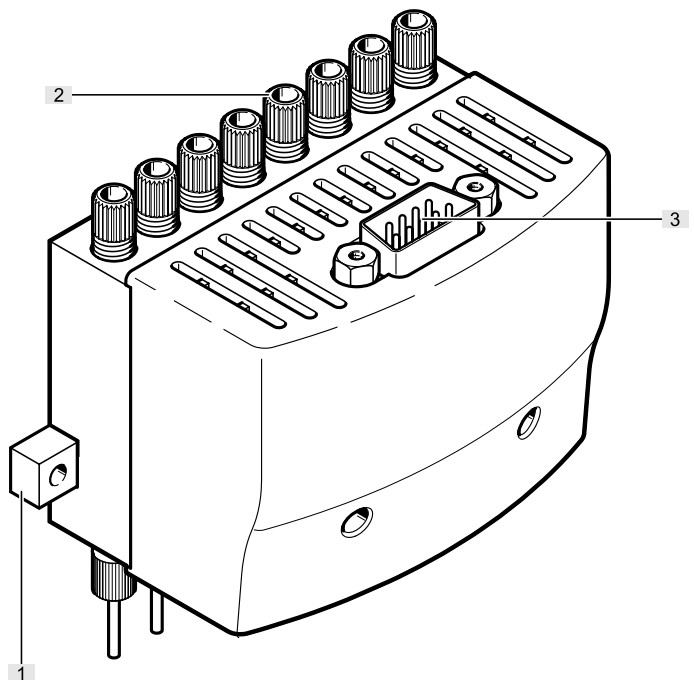
[] 1 valve position



Design VTOE-...-S: Single-channel dispense head enables high-precision dispensing.

- [1] Fluid connection
- [2] Individual electrical connection

[8] 8 valve positions

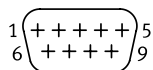


Design VTOE-8-...-M: An 8-channel dispense head enables a very high throughput and can dispense various volumes and liquids in a system specifically designed for microwell plates. By individually controlling the valves, the channels can be coordinated for maximum precision.

- [1] Mounting strip
- [2] Fluid connections
- [3] Electrical multi-pin plug connection

Characteristics

Pin allocation



Pin 1: Valve 1

Pin 2: Valve 2

Pin 3: Valve 3

Pin 4: Valve 4

Pin 5: Valve 5

Pin 6: Valve 6

Pin 7: Valve 7

Pin 8: Valve 8

Pin 9: GND

Type code

001	Series	
VTOE	Dispense head	

002	Valve positions	
8	8 valve positions	
	1 valve position	

003	Output connection	
D7	Nozzle, length 30 mm, nominal size 0.32 mm	
D8	Nozzle, length 30 mm, nominal size 0.6 mm	
D9	Nozzle, length 30 mm, nominal size 1.0 mm	

004	Input connection	
T3	For tubing 3 mm	

005	Valve function	
M22C	2/2-way valve, normally closed	

006	Nominal width	
08	0.8 mm	

007	Diaphragm and sealing material	
F	FFPM	
V	FPM	

008	Housing material	
P	PEEK	
S	PPS	

009	Manifold block material	
P	PEEK	
PC	Polycarbonate	

010	Valve control	
S	Individual connection, electric, with flying leads 0.15 m	
M	Multi-pin electric	

Datasheet

General technical data, dispense head, 8-channel

Valve positions	8 valve positions			1 valve position		
Nominal width of dosing needle	0.32 mm	0.6 mm	1 mm	0.32 mm	0.6 mm	1 mm
Valve function	2/2-way, closed, monostable					
Type of reset	Mechanical spring					
Instructions on use	See application note (available on the Support Portal at festo.com)					
Nominal size	0.8 mm					
Length of dosing needle	30 mm					
Internal volume	113 µl valve with fluid connections					
Water flow rate at max. operating pressure	370 µl/s	1,300 µl/s	2,000 µl/s	370 µl/s	1,300 µl/s	2,000 µl/s
Min. dosing volume	1 µl	3 µl	5 µl	1 µl	3 µl	5 µl
Note on dosing volume	Depends on configuration, environment and application					
Typical dosing precision	<1% CV für Volumina >5 µl <2.5% CV for volumes between 1-5 µl					
Note on dosing precision	Depends on configuration, environment and application					
Max. switching frequency	4 Hz					
Note on switching frequency	Dependent on the ambient temperature and installation state					
Switching time on	7 ms					
Switching time off	2 ms					
Note on switching time on	Depends on configuration, environment and application					
Mounting position	optional					
Grid dimension	9 mm					
Type of actuation	Electric					
Type of piloting	Direct					
Sealing principle	Soft					
Fluid connection	8x UNF1/4-28			UNF1/4-28		
Note on fluid connection	Fitting enclosed for tubing with 3 mm outside diameter					
Type of mounting	Either: Via through-hole for M3 screw, Via female thread and centring sleeve			Via female thread and centring sleeve		
Product weight	220 g			18 g		

Electrical connection, dispense head, 8-channel

Valve positions	8 valve positions		1 valve position	
Electrical connection	9-pin, Plugs, Sub-D		2-wire, Cable, Open end	
Cable length	–		0.15	
Wire ends	–		Sheath removed	
Conductor nominal cross section	–		AWG28	

Electrical data, dispense head, 8-channel

Valve positions	8 valve positions	1 valve position
Nominal operating voltage DC	24 V	
Permissible voltage fluctuations	+/- 10%	
Electrical power consumption	1.8 W	
Information on power consumption	Specification per valve	–
Duty cycle	50% (max. switch-on time 1 s)	100% with individual mounting 50% in case of block mounting (max. switch-on time 1 s)
Degree of protection	IP30	
Note on degree of protection	In assembled state	
Pollution degree	2	

Datasheet

Operating and environmental conditions

Valve positions	8 valve positions	1 valve position
Operating pressure	0 ... 0.05 MPa	
Operating pressure	0 ... 0.5 bar	
Operating pressure	0 ... 7.25 psi	
Medium	Liquid media	
Note on the medium	Observe resistance of materials that come into contact with the media	
Ambient temperature	5 ... 40°C	
Media temperature	5 ... 50°C	
Storage temperature	-20 ... 70°C	
Relative air humidity	0 - 95% Non-condensing	
Nominal altitude of use	<= 2000 m NHN	
Vibration resistance	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6	
Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27	
Corrosion resistance class CRC ¹⁾	0 - No corrosion stress	

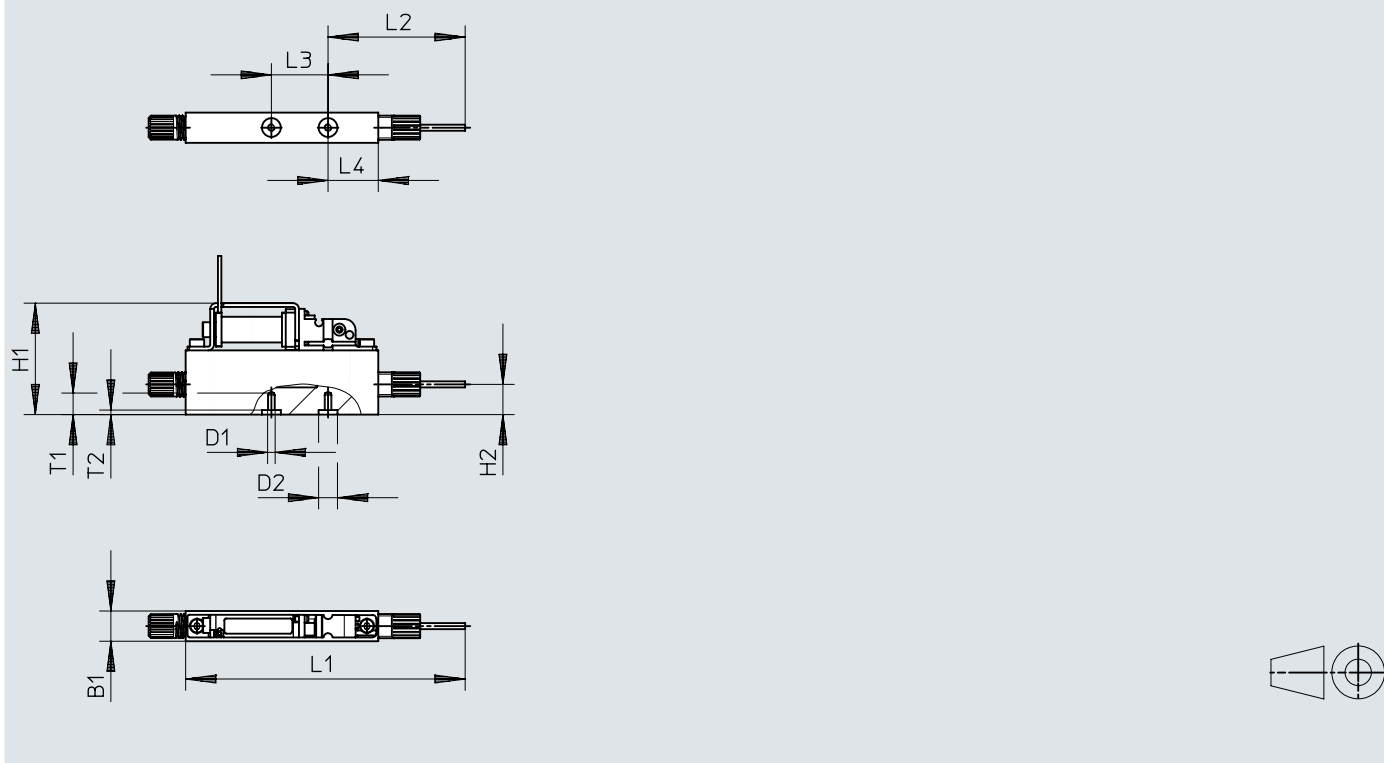
1) More information www.festo.com/x/topic/crc

Materials, dispense head, 8-channel

Valve positions	8 valve positions			1 valve position		
Nominal width of dosing needle	0.32 mm	0.6 mm	1 mm	0.32 mm	0.6 mm	1 mm
Material in contact with the medium	ETFE FFPM FPM PC PEEK PPS High-alloy stainless steel					
Material number of dosing needle	1.4301					
Note on materials	RoHS-compliant					

Dimensions

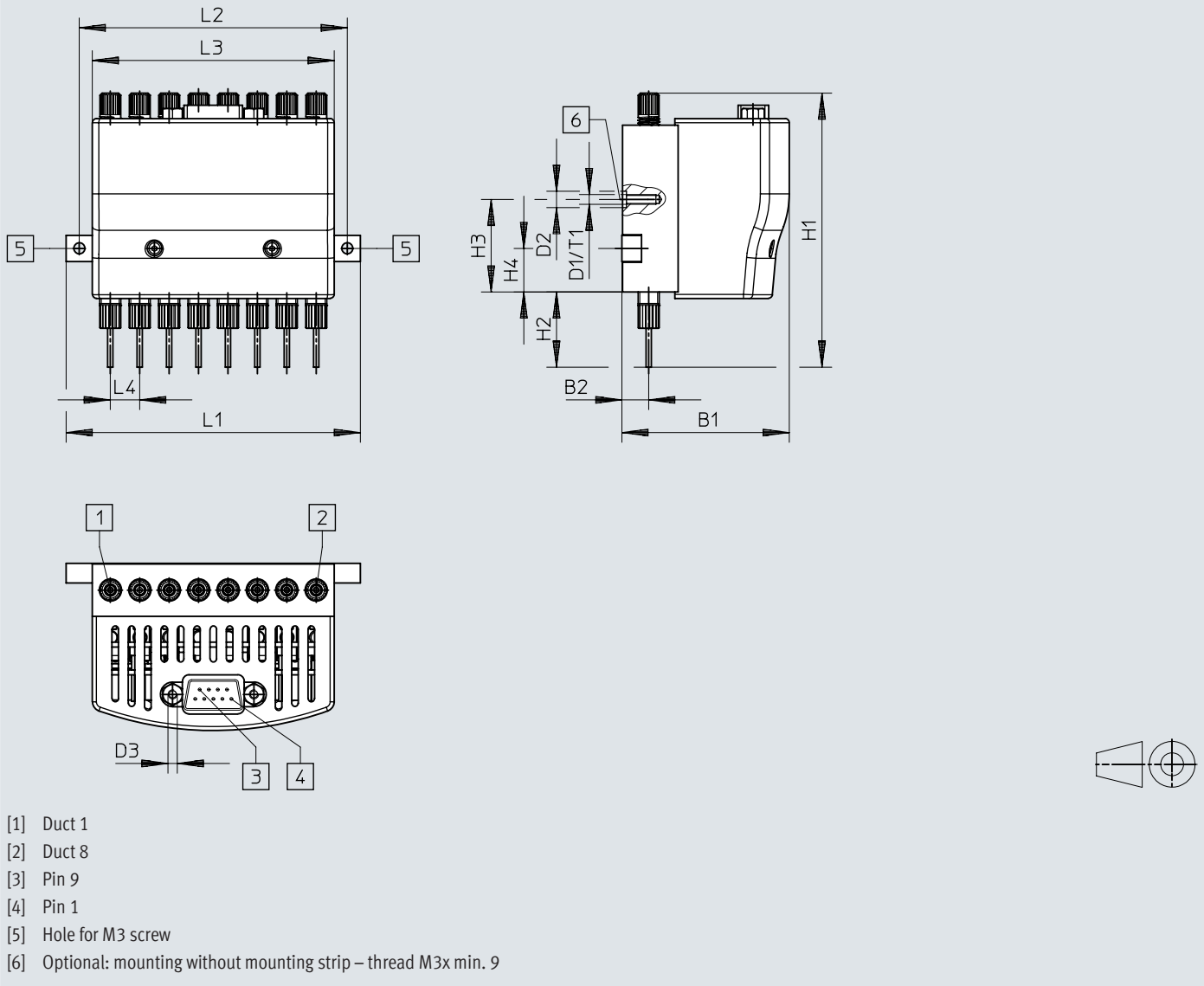
Dimensions – VTOE-...-S

Download CAD data www.festo.com

	B1	D1	D2 ø	H1	H2	L1	L2	L3	L4	T1	T2
VTOE-...-S	8,1	M2	5	30	8	74	36,3	15	13,3	5,2	1,2

Dimensions

Dimensions – VTOE-8-...-M Download CAD data www.festo.com



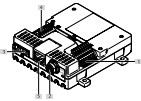
	B1	B2	D1 ø	D2 ø	D3 ø	H1 ±2	H2	H3	H4	L1	L2	L3	L4	T1
VTOE-8-...-M	51,2	8,2	M3	5	UNC 4-40	84	23	28,3	13,3	90	82	74	9	10,2

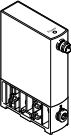
Ordering data

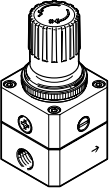
Dispense head, 8-channel				
	Valve function	Nominal width of dosing needle	Part no.	Type
	2/2-way, closed, monostable	0.32 mm	8063634	VTOE-8-D7-T3-M22C-08-V-S-PC-M
			8063637	VTOE-8-D7-T3-M22C-08-F-P-P-M
		0.6 mm	8063638	VTOE-8-D8-T3-M22C-08-F-P-P-M
			8063635	VTOE-8-D8-T3-M22C-08-V-S-PC-M
		1 mm	8063639	VTOE-8-D9-T3-M22C-08-F-P-P-M
			8063636	VTOE-8-D9-T3-M22C-08-V-S-PC-M

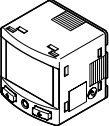
Dispense head, individual connection				
	Valve function	Nominal width of dosing needle	Part no.	Type
	2/2-way, closed, monostable	0.32 mm	8063369	VTOE-D7-T3-M22C-08-V-S-PC-S
			8063372	VTOE-D7-T3-M22C-08-F-P-P-S
		0.6 mm	8063373	VTOE-D8-T3-M22C-08-F-P-P-S
			8063370	VTOE-D8-T3-M22C-08-V-S-PC-S
		1 mm	8063374	VTOE-D9-T3-M22C-08-F-P-P-S
			8063371	VTOE-D9-T3-M22C-08-V-S-PC-S

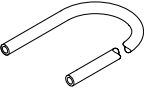
Accessories

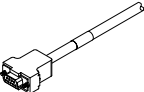
Valve control module, for up to 8 solenoid valves					
	Max. number of outputs	Part no.	Type		
	8	8088772	VAEM-V-S8EPRS2		

Proportional-pressure regulator					
	Setpoint value	Output pressure 2	Output pressure 2	Part no.	Type
	4 - 20 mA	0.1 ... 20.0000 kPa	0.001 ... 0.2 bar	8046302	VEAB-L-26-D12-Q4-A4-1R1
		0.5 ... 100.0000 kPa	0.005 ... 1 bar	8046304	VEAB-L-26-D7-Q4-A4-1R1
	0 - 10 V	0.1 ... 20.0000 kPa	0.001 ... 0.2 bar	8046301	VEAB-L-26-D12-Q4-V1-1R1
		0.5 ... 100.0000 kPa	0.005 ... 1 bar	8046303	VEAB-L-26-D7-Q4-V1-1R1

Precision pressure regulator, for regulating the operating pressure					
	Pressure regulation range	Part no.	Type		
	0.05 ... 0.7 bar	159500	LRP-1/4-0,7		

Pressure sensor, for monitoring compressed air and non-corrosive gases					
	Display type	Part no.	Type		
	Illuminated LCD	8035542	SPAN-B2R-Q4-PNLK-PNVBA-L1		

Plastic tubing						
	Colour	Material tubing	Outside diameter	Ambient temperature	Part no.	Type
	Natural	TPE-U(PU)	3 mm	-35 ... 60 °C	197375	PUN-H-3X0,5-NT

Connecting cable						
	Electrical connection 1, connection type	Electrical connection 1, connector system	Electrical connection 1, number of connections/cores	Cable length	Part no.	Type
	Socket	Sub-D	9	5 m	531185	KMP6-09P-8-5
				10 m	531186	KMP6-09P-8-10

Accessories

Adapter plate, for mounting the dispense head and control front module VTOE on the electric slide EGSC-32			
	Design	Part no.	Type
	Mounting kit	8140774	EHAM-MA-E19-25-C11