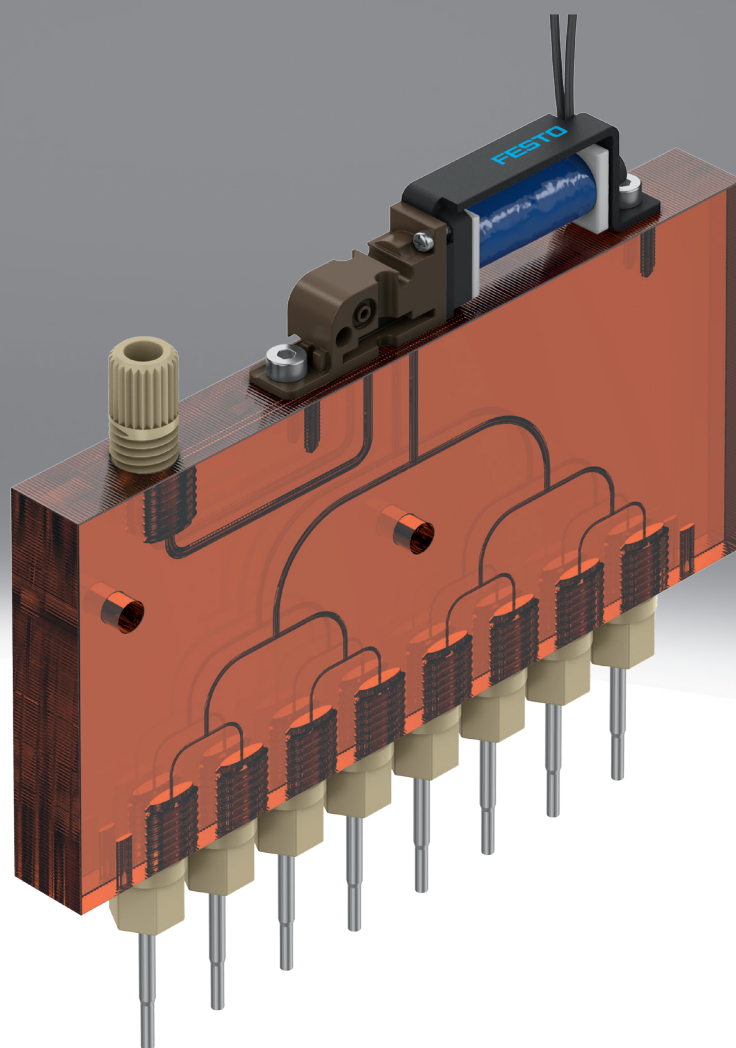


Dispense head VTOI

FESTO



Characteristics

At a glance

[Link](#) [vtoi](#)

Description:

- Thanks to a grid dimension of 9 mm and a valve with 8 outputs, the VTOI can be easily connected in series to form an 8-channel dispense head, precisely matching the microwell plate. A 96-channel dispense head can now be realised with only 12 valves.
- With just a few other components, you can have a complete dispensing system with a pressure-over-liquid setup.
- As only high-performance materials such as PEI (ULTEM), PPS, FKM, ETFE and high-alloy stainless steel come into contact with the media, it can also be used to dispense and aspirate aggressive media.

Benefits:

- Extremely precise
- Grid dimension 9 mm ideal for microwell plates
- Simple design with side-by-side mounting for increased throughput
- Just a few components are needed for a complete system
- 1 valve for 8 channels

Type code

001	Series	
VTOI	Distributor	
002	Dosing function	
	Dispensing	
A	Dispensing and aspirating	
003	Valve positions	
	1 valve position	
004	Distributor	
V8	8 outputs per valve position	
005	Output connection	
30D3	With metering nozzle, length 30 mm, tapered, nominal width 0.3 mm	

006	Input connection	
U14	Thread 1/4-28 UNF	
007	Nominal width	
08	0.8 mm	
008	Diaphragm and sealing material	
V	FPM	
009	Valve control	
S015	Individual connection, electric, with flying leads 0.15 m	
010	Nominal operating voltage	
1	24 V DC	

Datasheet

General technical data

Suitability for vacuum	yes	no
Valve function	2/2-way, closed, monostable	
Type of reset	Mechanical spring	
Nominal size	0.8 mm	
Nominal width of dosing needle	0.3 mm	
Internal volume	10 µl fluid space valve 178 µl distributor block with valve, needle and fittings	
Min. dosing volume	1 µl	
Typical dosing precision	≤ 5% Tip-to-Tip CV ≤ 3% Intra-Run CV	
Switching time on	–	7
Switching time off	–	2
Operating pressure	-0.02 ... 0.065 MPa	0 ... 0.1 MPa
Operating pressure	-0.2 ... 0.65 bar	0 ... 1 bar
Grid dimension	9 mm	
Fluid connection	Female thread 1/4-28 UNF-2B	
Note on fluid connection	Fitting enclosed for tubing with 3 mm outside diameter	
Type of actuation	Electric	
Type of piloting	Direct	
Sealing principle	Soft	
Type of mounting	Via through-hole for M3 screw	
Mounting position	Vertical	
Product weight	55 g	52 g
Electrical connection	2-wire 2x single wires Open end	
Cable length	0.15 m	
Wire ends	Sheath removed	

Safety characteristics

Shock resistance	Shock test with severity level 2 to FN 942017-5 and EN 60068-2-27	
Vibration resistance	Transport application test with severity level 2 to FN 942017-4 and EN 60068-2-6	

Electrical data

Electrical power consumption	1.8	2
Max. switching frequency	4	–
Nominal operating voltage DC	24 V	
Permissible voltage fluctuations	± 10%	
Duty cycle	100%	
Degree of protection	IP30	

Operating and environmental conditions

LABS (PWIS) conformity	VDMA24364-B2-L	
Storage temperature	5 ... 40°C	
Ambient temperature	5 ... 40°C	
Media temperature	5 ... 50°C	
Corrosion resistance class CRC ¹⁾	0 - No corrosion stress	

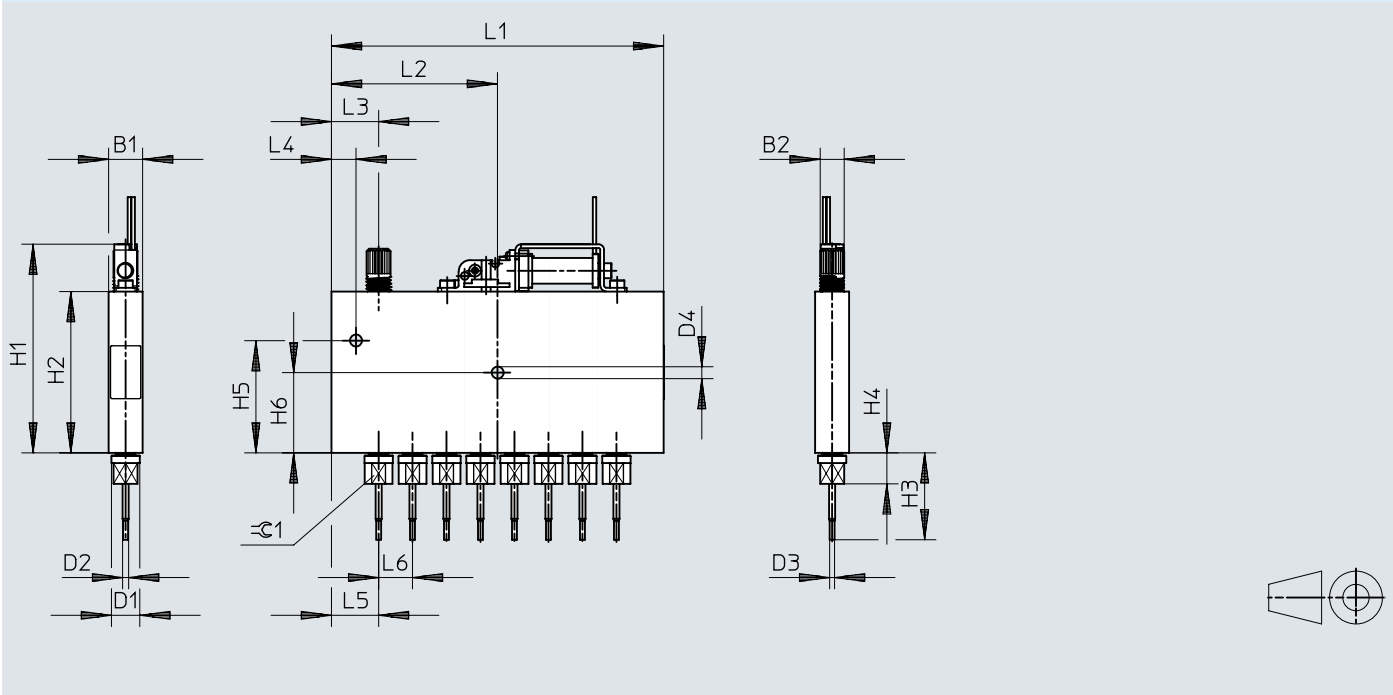
1) More information www.festo.com/x/topic/crc

Datasheet

Materials	
Material of dosing needle	High-alloy stainless steel
Material number of dosing needle	1.4404
Note on materials	RoHS-compliant
Material in contact with the medium	ETFE FPM PEI PPS High-alloy stainless steel

Dimensions

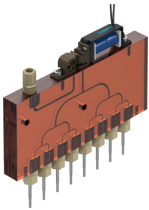
Dimensions – VTOI [Download CAD data](#) www.festo.com



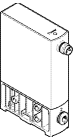
	B1	B2	D1 ø	D2 ø	D3 ø	D4 ø	H1	H2	H3	H4	H5	H6
VTOI	9	6,4	7,5	1,6	1,3	3,2	55,3	42,8	23	8,2	29,8	21,2

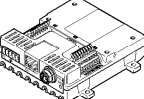
	L1	L2	L3	L4	L5	L6
VTOI	88	44	12,5	6,5	12,5	9

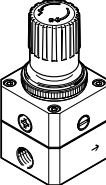
Ordering data

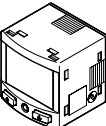
Dispense head						
	Valve function	Electrical connection	Operating pressure	Operating pressure	Part no.	Type
	2/2-way, closed, monostable	2-wire, 2x single wires, Open end	-0.02 ... 0.065 MPa	-0.2 ... 0.65 bar	8114038	VTOI-A-V8-30D3-U14-08-V-S015-1
			0 ... 0.1 MPa	0 ... 1 bar	8114037	VTOI-V8-30D3-U14-08-V-S015-1

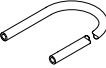
Accessories

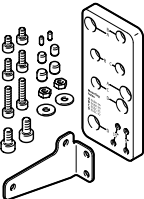
Proportional-pressure regulator					
	Setpoint value	Output pressure 2	Output pressure 2	Part no.	Type
	4 - 20 mA	0.1 ... 20.0000 kPa	0.001 ... 0.2 bar	8046302	VEAB-L-26-D12-Q4-A4-1R1
		0.5 ... 100.0000 kPa	0.005 ... 1 bar	8046304	VEAB-L-26-D7-Q4-A4-1R1
	0 - 10 V	0.1 ... 20.0000 kPa	0.001 ... 0.2 bar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

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

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	Ambient temperature	Part no.	Type
	Blue	TPE-U(PU)	-35 ... 60 °C	197382	PUN-H-3X0,5-BL
	Natural	PFA	-20 ... 150 °C	8061167	PFAN-3X0,5-NT
		TPE-U(PU)	-35 ... 60 °C	197375	PUN-H-3X0,5-NT

Adapter plate, for mounting the dispense head and valve control module VTOI on the electric slides EGSK-20, EGSK-26, EGSC-25 and EGSC-32			
	Design	Part no.	Type
	Mounting kit	8140775	EHAM-MA-E19-25-C14