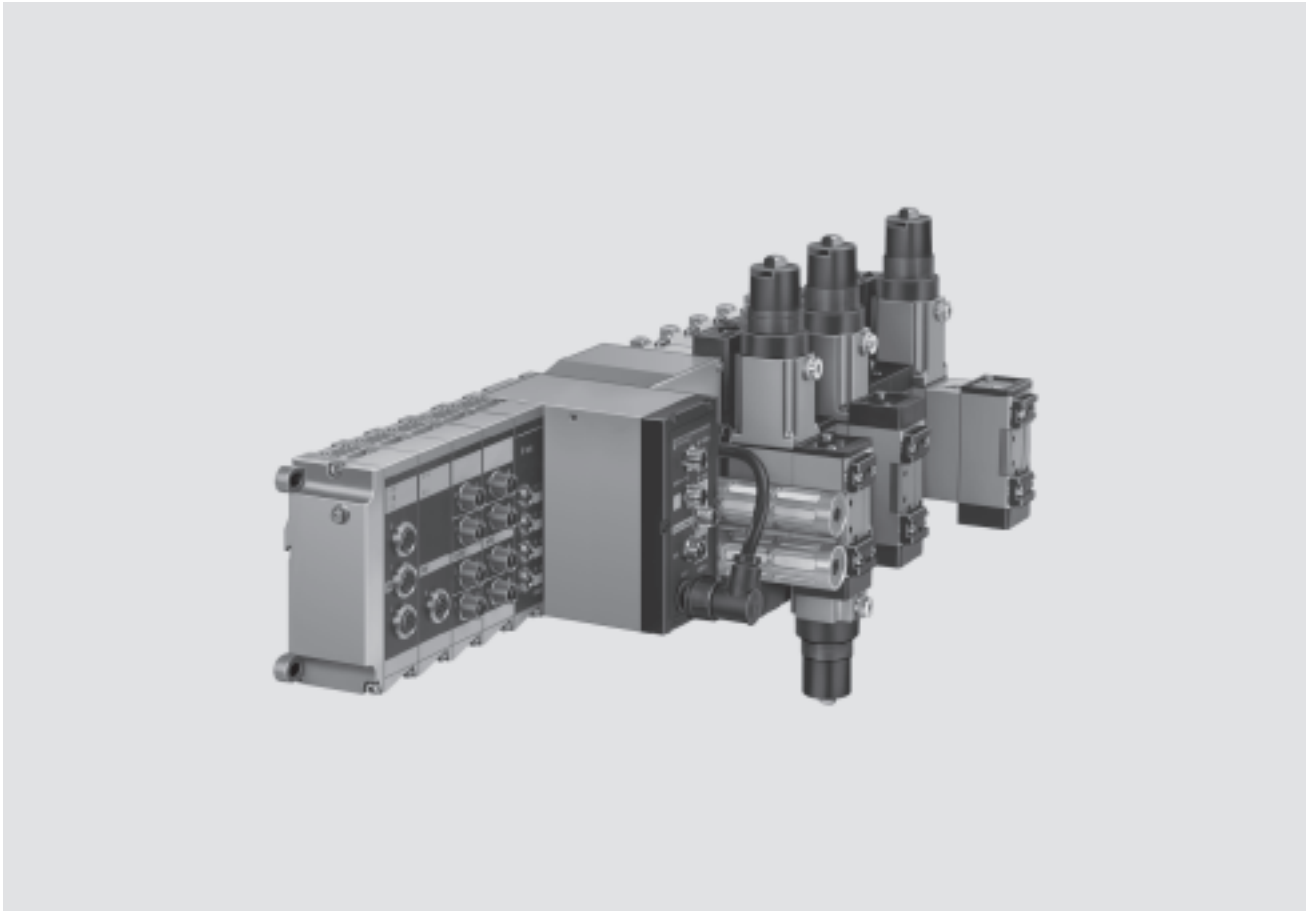


- Standard valve terminal
- Flexible electrical actuation
- High flow rates of up to 4500 l/min
- Vertical stacking at valve level
- Three valve sizes on one valve terminal
- Sturdy metal design
- Modular concept for ease of ordering and customised configurations

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Key features



Modular

- 1 ... 16 standard valves
- 1 ... 12 I/O modules
- High-current outputs
- Analogue I/O modules
- AS-i master interface
- CP interface
- Modular electrical connection system:
 - Multi-pin connection
 - Fieldbus connection
 - Control block with integrated PLC

Flexible

- Festo valve terminals for ISO valves are of sturdy and modular design and can be equipped with 1 to 16 valves as desired.
- Multiple pressure zones (also up to 16 bar) and vacuum operation, as well as integrated flow control valves and regulators (vertical stacking) can also be implemented on a valve terminal.
- Conversions and extensions are possible at any time.
- Wide range of valve functions. A wide variety of pneumatic control technology requirements can thus be fulfilled.

Reliable

- Sturdy and durable components made of high-quality metal/plastic.
- With IP65 protection.
- Fast error diagnosis thanks to LEDs on the valves and diagnosis via fieldbus/control block.
- All valves feature manual override.
- Reliability of service through replaceable valves and electronics modules.
- Additional fuse per solenoid coil.
- Labelling system for valves and electronics.

Easy to assemble

- Fully assembled and tested unit.
- Mounting from the front or from behind.
- Lower costs for selection, ordering, assembly and commissioning.

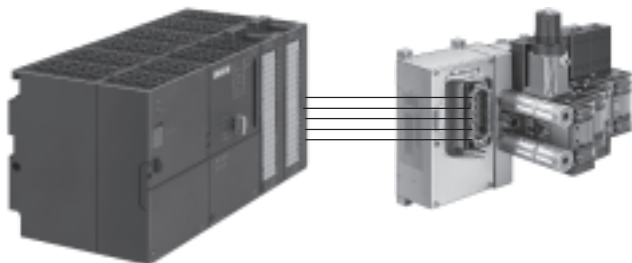
Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Key features

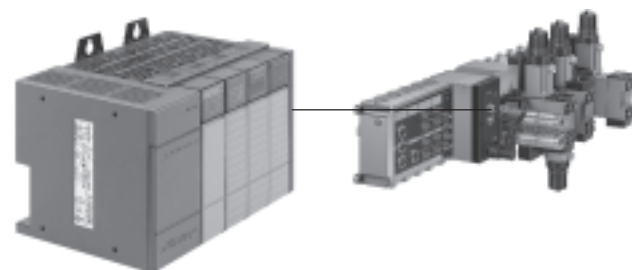
Electrical connection options

Valve terminal with multi-pin connection



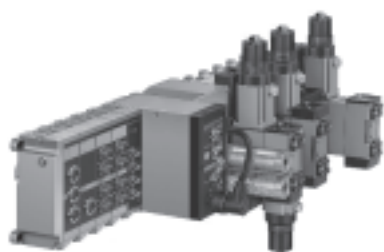
A multi-core cable carries the signal from the controller to the multi-pin node on the valve terminal.

Valve terminal with fieldbus connection



A fieldbus cable carries the signal in serial mode from the controller to the fieldbus node on the valve terminal.

Valve terminal with control block and integrated controller



This valve terminal controls its digital and analogue inputs and outputs itself (autonomously) and is also equipped with communication interfaces for networking with other controllers (decentralised intelligence).

Valve terminal configurator

Online via: → www.festo.com

A valve terminal configurator is available to help you select a suitable valve terminal. This makes it much easier for you to find the right product.

Valve terminals are equipped and assembled according to customer requirements. This results in minimal installation time. They are also fully inspected before shipment.



Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Key features

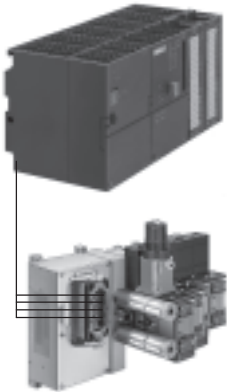
Multi-pin variants type 04A

Valve terminals with multi-pin connections can be normally connected to the I/O cards of all current control systems or industrial PCs. The central control system requires a powerful PLC with a correspondingly high number of I/O cards and must also be connected

to the fieldbus devices with more complex parallel wiring. Festo offers several installation-saving multiple connection nodes and the appropriate multi-pin connecting cables.

The pneumatic components and the multi-pin nodes (MP) are described in this chapter.

Variant with multi-pin connection MP3 – Harting plug



Multi-pin node



Valve manifold sub-base



End plate

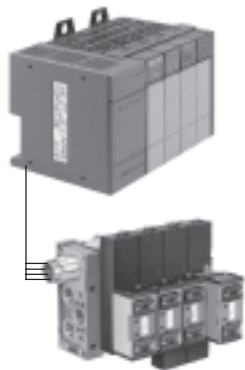
Plug in sturdy industrial design for up to 14 valves/28 solenoid coils.

Activation:

- 24 V DC
- 120 V AC

Pre-assembled cables are available.

Variant with multi-pin connection MP4 – round plug from Electrvert Inc.



Multi-pin node on the end plate



Valve manifold sub-base



End plate

Slim plug on the left-hand end plate for up to 14 valves/ 28 solenoid coils, 11-pin or 31-pin.

Activation:

- 24 V DC
- 120 V AC

Pre-assembled cables are available.



Note

Ordering

Valve terminals are equipped and assembled according to customer requirements. This results in minimal installation time. They are fully inspected before shipment and only need to be mounted with a few screws – ready to go.

A valve terminal type 04A with multi-pin connection always consists of one order code:

41P...

For information about the ordering system for type 04A (pneumatic components incl. accessories) see:

➔ Internet: type 04 iso

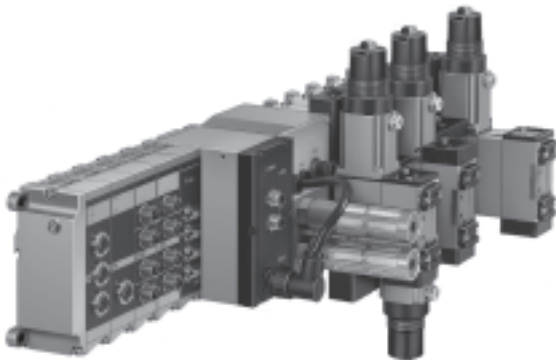
Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features

FESTO

Connection options for fieldbus/control block variants

Fieldbus node with electrical I/O modules



Communication and diagnosis with all common bus systems:

- Up to 26 solenoid coils
- Up to 12 sturdy type 03/04B I/O modules can be mounted
- IP65 connection technology with M12 or Sub-D plugs
- Digital I/O modules
- Analogue I/O modules
- Multi-functional I/O modules
- 2 A outputs for hydraulic valves

The pneumatic components of this valve terminal and the multi-pin nodes (MP) are described in this chapter. The electrical peripherals are described in:

➔ Internet: type 04

Control block



Integrated controller and fieldbus connection. Decentralised intelligence for pre-processing of autonomous subprocesses. Valves and I/O modules as with fieldbus connection, decentralised CP systems and the AS-interface can also be connected.



Note

Ordering

Valve terminals are equipped and assembled according to customer requirements. This results in minimal installation time. They are fully inspected before shipment and only need to be mounted with a few screws – ready to go.

A valve terminal type 04B with fieldbus connection and control block always consists of two order codes:

04P-... (pneumatic components)
04E-... (electrical components)

For information about the ordering system for type 04B see:

Pneumatic components

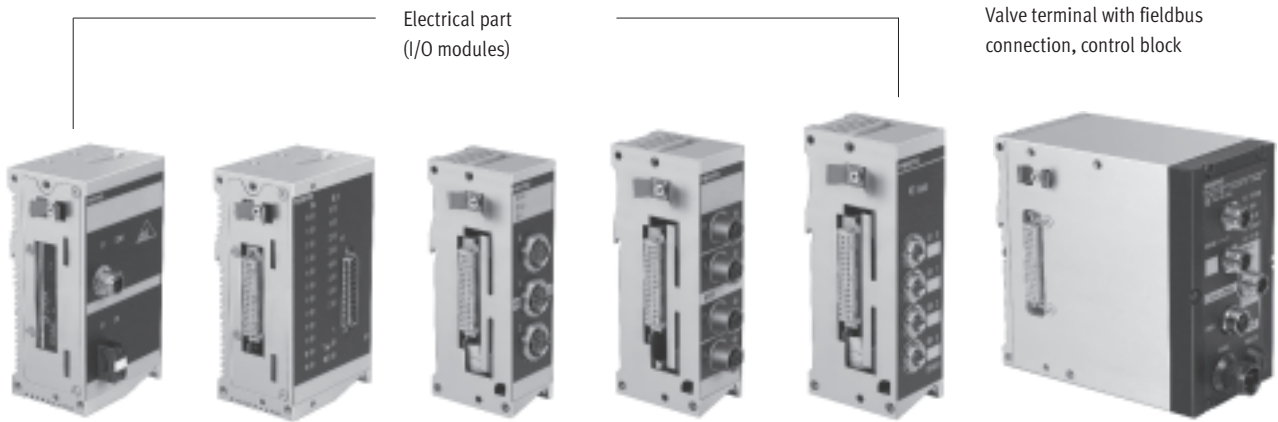
➔ Internet: type 04 iso

Electrical peripherals
➔ Internet: type 04

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Peripherals overview

FESTO



Electrical part (I/O modules)

Flexible for control systems thanks to an extensive range of connection nodes:

- Multi-pin connection
- Fieldbus connection

Stand-alone solutions with integrated PLC (control block)

- from Allen-Bradley

Electrical digital inputs/outputs

- Max. 12 modules in conjunction with suitable nodes (see ordering data)
- Inputs for 24 V DC sensors, PNP or NPN outputs for small-load power consumers 24 V DC
- High-current outputs up to 2 A PNP/NPN, e.g. for hydraulic valves, can be connected directly to the valve terminal

Proportional pneumatics

- Analogue modules optimised for proportional valves, e.g. for Festo MPYE and MPPES for regulating the force of a cylinder
- To detect, control/regulate universal variables (4 ... 20 mA or 0 ... 10 V) within the process – locally to IP65

Optimising and expanding applications

- Modules for installation-saving connection using sturdy Sub-D plugs in IP65
- Low-cost connections to input/output stations and control units

- AS-interface master for connection for distributed inputs/outputs covering an extensive range, e.g. in conveyor systems
- Modules for connecting decentralised CPV and CPA valve terminals
- Extensions and supplements can be added at any time

Easy mounting

- Small number of screws
- On mounting surface
- Wall mounting from rear
- With covers in welding environments

Simple servicing

- LED display
- Manual override

Easy maintenance

- Clip-on inscription labels

Convenient diagnosis via fieldbus connection and integrated PLC:

- Status bits
- Diagnostic bits
- Integrated self-test



Note

Detailed information on electrical peripherals

➔ Internet: type 04

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Peripherals overview

FESTO

ISO 5599/2 size 1, 2 or 3



Adapter plate



Valve with manifold sub-base



Vertical stacking



End plate

Pneumatic components

Pneumatic modules

- Manifold sub-base for ISO valves
- Size 1: (G $\frac{1}{4}$) 1200 l/min
- Size 1: (G $\frac{3}{8}$) 2600 l/min
- Size 2: (G $\frac{3}{8}$) 2300 l/min
- Size 2: (G $\frac{1}{2}$) 4000 l/min
- Size 3: (G $\frac{1}{2}$) 4500 l/min

Adapter plate

- Supply of operating voltages
- Pressure supply connection duct 1
- Exhaust connection duct 3/5
- External pilot air connection (optional)

Pneumatic modules

- Manifold sub-base for one ISO valve
- Pilot control via intermediate solenoid plate
- Size 1 – size 2 – size 3

Combinations for vertical stacking

- Valves
- Throttle plates
- Intermediate pressure regulator plates
- Pressure gauge
- Formation of pressure zones with 16 bar or vacuum (external pilot air only)

Information on valve activation

- All intermediate solenoid plates have push-in manual override
- Valves with internal pilot air: Pressure range limited
- Valves with external pilot air: Pressure zones up to 16 bar or vacuum operation possible. In this case, the pilot air supply must be regulated and supplied externally.

Auxiliary modules

- Throttle plates: One-way flow control valves can be mounted between the manifold sub-base and the valve so that the speed of travel can be set separately for single and double-acting cylinders
- Pressure regulators: Intermediate pressure regulator plates for setting the contact pressure of a cylinder, either separately on line 1, 2 or 4, or shared by 2 and 4
- Pressure gauge on pressure regulator

Proportional pneumatics

- Proportional valves can be connected via the electrical analogue modules

Flexible compressed air supply

- Compressed air supply via the adapter plate or the right-hand end plate
- With large valve terminals, compressed air can be supplied at both sides

Formation of pressure zones:

- Multiple pressure zones, up to 16 bar as well as for vacuum, are possible for all valve sizes. Compressed air supply at both sides is essential in this case.
- External pilot air should be used for pressures > 10 or < 3 bar.

Options

- Spare positions for subsequent extensions
- All connections can also be supplied with an NPT thread

Service

- Multiple valve sizes possible on a single terminal (on request)
- All valves can be replaced quickly and easily
- All intermediate valve plates are supplied with 1 or 2 LEDs
- Online valve terminal configurator available in the electronic catalogue or on the Internet

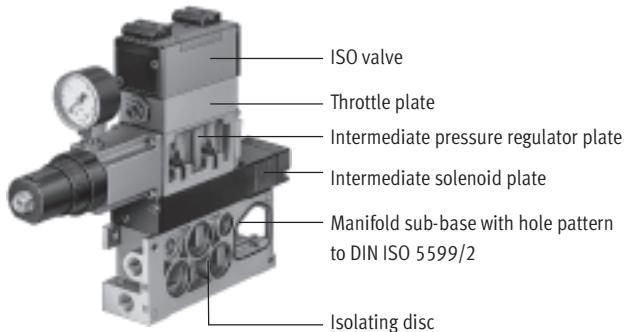
Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Peripherals overview

Valve terminal type 04

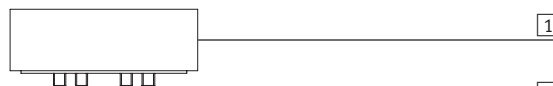
Vertical stacking with additional functions



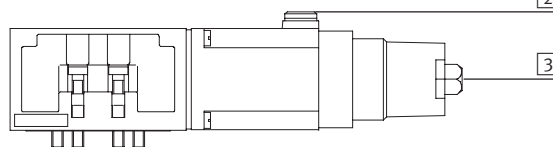
Additional components can be added to each valve position between the sub-base and the valve. These functions, designated as vertical stacking, allow for special functioning or control of the respective individual valve position.

Connection and control elements

Throttle plate



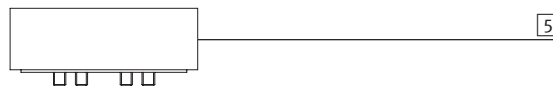
Pressure regulator



Pressure switch



Differential pressure switch



- 1 Adjusting screw for throttle flow
- 2 Port for pressure gauge
- 3 Regulating knob with detenting lock (to adjust: pull out knob from detented position and rotate)
- 4 Adjusting screw for pressure switch
- 5 Adjusting screw for differential pressure switch

- - Note

Certain combinations are not possible due to the design of the individual vertical stacking components. The table below shows all permissible combinations.

Please enquire concerning combinations which consist of more than two vertical stacking parts in addition to the valve. Please enquire concerning combinations of several valve sizes on one valve terminal.

Permissible vertical stacking combinations

	Pressure regulator in				Throttle plate	Any valve
	port 1	port 4	port 2	port 2 and 4		
Pressure regulator in port 1	–	–	■	–	■	■
Pressure regulator in port 4	–	–	■	–	■	■
Pressure regulator in port 2	■	■	–	–	■	■
Pressure regulator in port 2 and 4	–	–	–	–	■	■
Throttle plate	■	■	■	■	–	■
Any valve	■	■	■	■	■	–

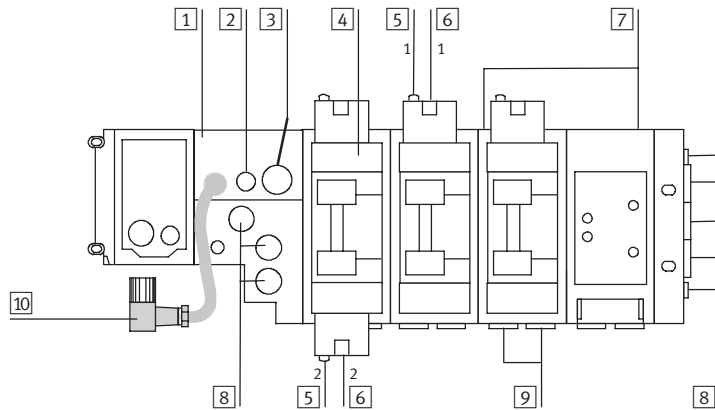
Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Peripherals overview

Type 04-B ISO pneumatic modules

Connection, display and operating elements



- | | | |
|---|---|---|
| 1 Adapter plate | 6 Manual override | 8 Working air |
| 2 Fuse for valves | 1 – per pilot solenoid coil 14, pushing | 9 Working lines (per valve) |
| 3 Connection for voltage supply | 2 – per pilot solenoid coil 12, pushing | 10 Adapter cable for supplying power to the node and the I/O modules |
| 4 Valve position inscription field | 7 Fuse 0.315 A, protected by a cover (per pilot solenoid coil) | |
| 5 Yellow LED | | |
| 1 – per pilot solenoid coil 14 | | |
| 2 – per pilot solenoid coil 12 | | |

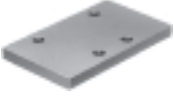
Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Pneumatic components

FESTO

Valve terminal type 04

Blanking plates



Blanking plates are used to close off vacant valve positions.

No intermediate solenoid plate is mounted underneath the blanking

plate. This depends upon the valve utilised and must be ordered with the valve if the terminal is expanded at a later date.

Valves and pilot control



The valves utilised are pneumatically actuated standard valves which are controlled by means of an intermediate solenoid plate.

Valves and flow lines

Different flow classes can be realised for size 1 and 2 valves depending on the manifold sub-base selected. The selection of supply air with auxiliary pilot air is made at the intermediate solenoid plate by

configuring two plugs. Supply air can be taken from the main line, or from a separate air supply. A separate air supply is required in any event if supply pressure is less than 3 bar

(including vacuum) or greater than 10 bar.

In this case it is advisable to restrict pilot air to max. 10 bar with a suitable regulator.

Flow classes which can be realised

Valve	Connection sizes for manifold sub-bases		
	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
Size 1	1200 l/min	2600 l/min	–
Size 2	–	2300 l/min	4000 l/min
Size 3	–	–	4500 l/min

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Pneumatic components

FESTO

Valve function							
Code	Circuit symbol	Description	ISO	Type	Part No.		
					Valves	Intermediate solenoid plates	
						24 V DC	120 V AC
M		5/2-way valve • With intermediate solenoid plate • Pneumatic spring return	1	MUH-5/2-D-1-FR-C-VI	151 014	34 927	34 929
			2	MUH-5/2-D-2-FR-C-VI	151 844	34 931	34 932
			3	MUH-5/2-D-3-FR-C-VI	151 863	34 934	34 936
L		5/2-way valve • With intermediate solenoid plate • Pneumatic spring return	1	MUH-5/2-D-1-L-C-VI	151 009	34 927	34 929
			2	MUH-5/2-D-2-L-C-VI	151 845	34 931	34 932
			3	MUH-5/2-D-3-L-C-VI	151 864	34 934	34 936
		Pneumatic valve, 5/2-way • With intermediate solenoid plate • Pneumatic spring • Separate pilot air	1	MUH-5/2-D-1-L-S-C-VI	151 009	151 713	
			2	MUH-5/2-D-2-L-S-C-VI	151 845	151 714	
			3	MUH-5/2-D-3-L-S-C-VI	151 864	151 715	
J		5/2-way valve, double solenoid • With intermediate solenoid plate	1	JMUH-5/2-D-1-C-VI	151 007	34 928	34 930
			2	JMUH-5/2-D-2-C-VI	151 846	34 437	34 933
			3	JMUH-5/2-D-3-C-VI	151 865	34 935	34 937
D		5/2-way valve, double solenoid • With intermediate solenoid plate • Dominating signal	1	JDMUH-5/2-D-1-C-VI	151 008	34 928	34 930
			2	JDMUH-5/2-D-2-C-VI	151 847	34 437	34 933
			3	JDMUH-5/2-D-3-C-VI	151 866	34 935	34 937
G		5/3-way valve • With intermediate solenoid plate • Mid-position closed	1	MUH-5/3G-D-1-C-VI	151 010	34 928	34 930
			2	MUH-5/3G-D-2-C-VI	151 848	34 437	34 933
			3	MUH-5/3G-D-3-C-VI	151 867	34 935	34 937
E		5/3-way valve • With intermediate solenoid plate • Mid-position exhausted	1	MUH-5/3E-D-1-C-VI	151 011	34 928	34 930
			2	MUH-5/3E-D-2-C-VI	151 849	34 437	34 933
			3	MUH-5/3E-D-3-C-VI	151 868	34 953	34 937
B		5/3-way valve • With intermediate solenoid plate • Mid-position pressurised	1	MUH-5/3B-D-1-C-VI	151 012	34 928	34 930
			2	MUH-5/3B-D-2-C-VI	151 850	34 437	34 933
			3	MUH-5/3B-D-3-C-VI	151 896	34 935	34 937
A		Blanking plate	1	IAP-04-D-1	30 430		
			2	IAP-04-D-2	36 111		
			3	IAP-04-D-3	36 121		



Note

For vacuum operation valves require a filter. This is to avoid that foreign matter is drawn into the valve (e.g. when using a suction cup).

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Pneumatic components

FESTO

Throttle plate



Intermediate plate with integrated exhaust air restrictors at ports 3 and 5 for regulating cylinder speed

Intermediate pressure regulator plate and pressure gauge



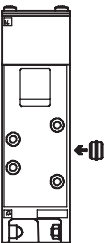
Intermediate plate with integrated pressure regulator for regulating pressure at

- port 2 and 4 (B, A)
- port 4 (A)
- port 2 (B)
- port 1 (P)

Easy pressure adjustment

Pressure gauges can be screwed directly into the intermediate pressure regulator plate to adjust the pressure.

Creating pressure zones



Different supply pressures are made possible within a single valve terminal by installing an isolating disc between two sub-bases. In doing so, the isolating disc must be inserted from the right into the sub-base. Supply and exhaust are accomplished on the left

side via the adapter plate between the sub-base and the fieldbus node, and via the right-hand end plate. Usually, only duct 1 has to be isolated. In special cases an isolating disc can also be inserted into exhaust ducts 3 and 5.

Function

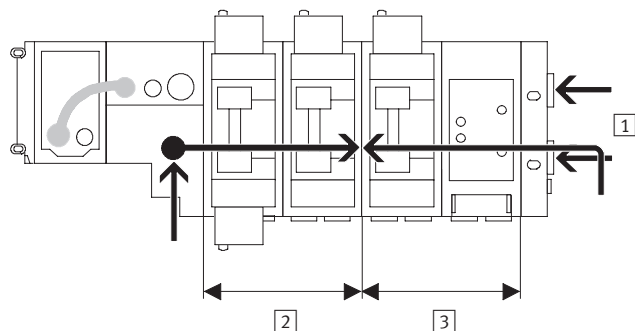
Code	Circuit symbol	Description	ISO	Type	Part No.
X		Throttle plate (with two one-way flow control valves for exhaust air flow control)	1 2 3	GRO-ZP-1-ISO-B GRO-ZP-2-ISO-B GRO-ZP-3-ISO-B	119 673 119 675 119 674
P		Intermediate pressure regulator plate, port 1	1 2 3	LR-ZP-P-D-1 LR-ZP-P-D-2 LR-ZP-P-D-3	119 670 119 671 119 672
R		Intermediate pressure regulator plate, port 4	1 2 3	LR-ZP-A-D-1 LR-ZP-A-D-2 LR-ZP-A-D-3	119 676 119 627 119 630
S		Intermediate pressure regulator plate, port 2	1 2 3	LR-ZP-B-D-1 LR-ZP-B-D-2 LR-ZP-B-D-3	119 677 119 628 119 631
Q		Intermediate pressure regulator plate, port 2 and 4	1 2 3	LR-ZP-A/B-D-1 LR-ZP-A/B-D-2 LR-ZP-A/B-D-3	119 678 119 629 119 632
V		Isolating disc for creating pressure zones	1 2 3	NSC-04-D-1 NSC-04-D-2 NSC-04-D-3	30 431 18 909 18 910
T		Pressure gauge for regulator, max. 10 bar		MA-40-10-1/8-EN	162 835
U		Pressure gauge for regulator, max. 16 bar		MA-40-16-1/8-EN	162 836

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Pneumatic components

FESTO

Sample scenario for creation of pressure zones



Valve terminal with external pilot air supply and two different pressure zones



Note

When exhausting a pressure zone (e.g. in the event of an EMERGENCY-STOP), the external regulator should never be unpressurised, as this would mean that there is no pilot air for the other pressure zones.

- 1 External auxiliary pilot air
- 2 Pressure zone 1
- 3 Pressure zone 2

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Key features – Electrical components

Electrical connection

Multi-pin connection MP3 (Harting plug)



Plug in sturdy industrial design for up to 14 valves/28 coils

Activation:

- 24 V DC
- 120 V AC

Pre-assembled cables are available.

Multi-pin connection MP4 (round plug from Electrivot)




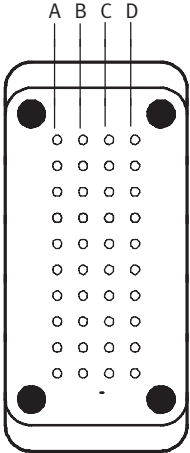
Plug in low-cost industrial design for up to 14 valves/28 coils, 11-pin or 31-pin.

Activation:

- 24 V DC
- 120 V AC

Pre-assembled cables are available.


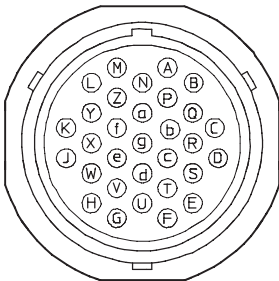

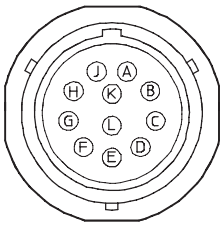
Pin allocation MP3 – Harting plug


	Plug view	Valve number	Pin	Solenoid coil	Valve number	Pin
Multi-pin connection, 40-pin						
		1	A1	b	11	C1
		1	A2	a	11	C2
		2	A3	b	12	C3
		2	A4	a	12	C4
		3	A5	b	13	C5
		3	A6	a	13	C6
		4	A7	b	–	C7
		4	A8	a	–	C8
		5	A9	b	–	C9
		5	A10	a	–	C10
		6	B1	b	–	D1
		6	B2	a	–	D2
		7	B3	b	–	D3
		7	B4	a	–	D4
		8	B5	b	–	D5
		8	B6	a	–	D6
		9	B7	b	–	D7
		9	B8	a	–	D8
		10	B9	b	–	
		10	B10	a	–	
			COM	0 V	D9	
			COM	0 V	D10	
Output (solenoid valve position)						

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Electrical components

FESTO

Pin allocation MP4 – Round plug from Electrivert			
Plug view	Pin	Solenoid coil	Valve number
Multi-pin connection, 31-pin			
 	A	b	1
	B	a	1
	C	b	2
	D	a	2
	E	b	3
	F	a	3
	G	b	4
	H	a	4
	J	b	5
	K	a	5
	L	b	6
	M	a	6
	N	b	7
	P	a	7
	Q	b	8
	R	a	8
	S	b	9
	T	a	9
	U	b	10
	V	a	10
	W	b	11
	X	a	11
	Y	b	12
	Z	a	12
	a	COM	0 V (valves 1 and 2)
	b	COM	0 V (valves 3 and 4)
	c	COM	0 V (valves 5 and 6)
	d	COM	0 V (valves 7 and 8)
	e	COM	0 V (valves 9 and 10)
	f	COM	0 V (valves 11 and 12)
	g	Earth	
	Plug body	Earth	
Multi-pin connection, 11-pin			
 	A	b	1
	B	a	1
	C	b	2
	D	a	2
	E	b	3
	F	a	3
	G	b	4
	H	a	4
	J	COM	0 V (valves 1 and 2)
	K	COM	0 V (valves 3 and 4)
	L	Earth	
	Plug body	Earth	

Function				
Code		Description	Type	Part No.
Y		Multi-pin plug socket for MP3, Harting plug, 40-pin	IMP1-SD-40	18 318
		Multi-pin plug socket for MP4, round plug, max. 4 valves	IMP4-SD-11 ¹⁾	
		Multi-pin plug socket for MP4, round plug, max. 14 valves	IMP4-SD-31 ¹⁾	

1) Multi-pin plug socket and cable for MP4, round plug, IMP4-SD-11 (max. 4 valves) and IMP4-SD-31 (max. 14 valves) on request

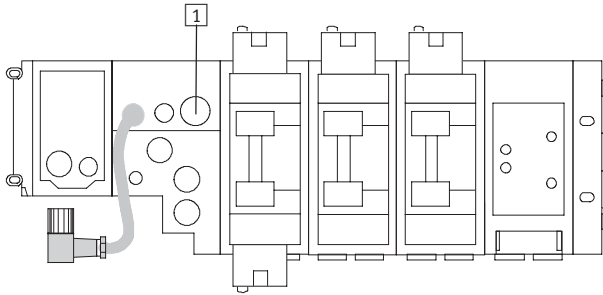
Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Electrical components

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Electrical installation

Connecting the voltage supply



1 Voltage supply type 04B

The following valve terminal components are supplied separately with 24 V DC via the voltage supply connection:

- Operating voltage for internal electronics and the inputs of the input modules (pin 1: 24 V DC, tolerance $\pm 25\%$, external fuse M 3.15 A recommended).

- Load voltage for the outputs of the valves and the output modules (pin 2: 24 V DC, tolerance $\pm 10\%$, external fuse max. 10 A (slow-blow) required).

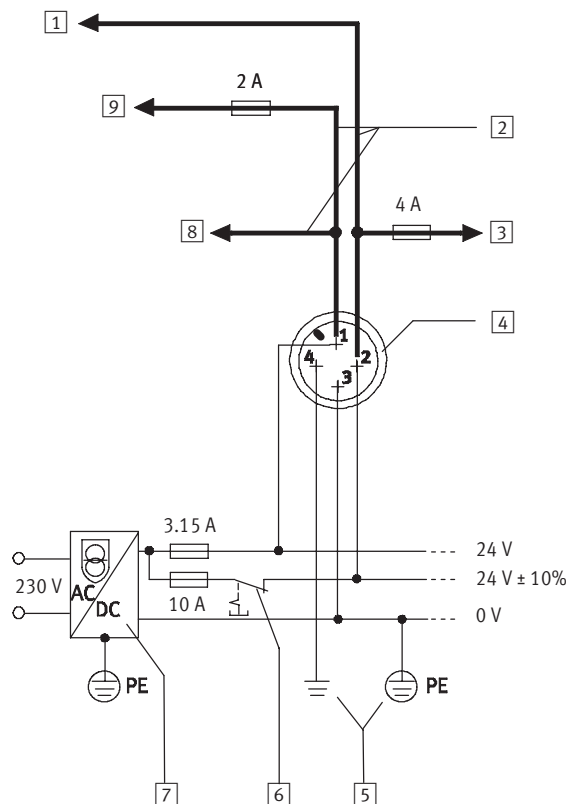


Note

As part of the EMERGENCY-STOP concept, check which measures are required for the machine/system in order to ensure that the system is shut down securely in the event of an

EMERGENCY-STOP (e.g. disconnection of the load voltage from the valves and output modules, pressure shut-off).

Example of circuit (voltage supply type 04B – internal structure)



- 1 Electrical outputs
- 2 Adapter cable
- 3 Valves max. 50% concurrence (internally fused)
- 4 Voltage supply connection adapter plate (type 04-B)
- 5 Potential equalisation
- 6 Load voltage, can be disconnected separately
- 7 Power supply unit (e.g. central voltage supply)
- 8 24 V electronics
- 9 Electrical inputs/sensors (internally fused)

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Electrical components

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Electrical connection concept

Replacing a valve solenoid fuse

Each valve solenoid coil is protected by a (fast-blow) 0.315 A fuse. These fuses are located on the printed circuit board behind the manifold

sub-base cover. Each single solenoid manifold sub-base has one fuse, whereas each double solenoid manifold sub-base has two.

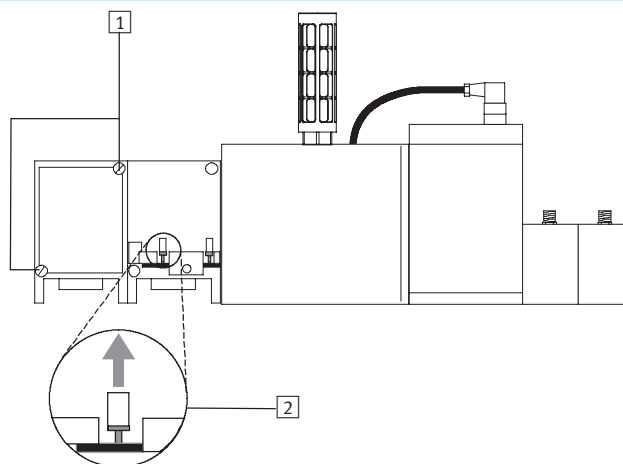


Note

Make sure that there is sufficient clearance for maintenance purposes.

Replacing a valve solenoid fuse

- 1 Loosen the mounting screws on the cover
- 2 Carefully remove the fuse from the socket.
Right fuse for valve solenoid 14.
Left fuse for valve solenoid 12.

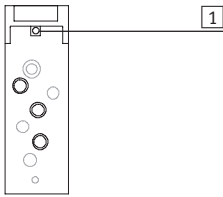


Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Key features – Assembly

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Rear side mounting



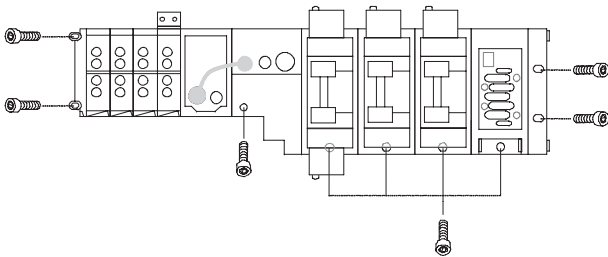
1 Blind hole for rear side mounting

The rear side of the manifold sub-base has holes (blind holes) for mounting the valve terminal on machines or metal racks (rear side mounting).

Threads must be cut for this purpose:

- ISO size 1: M5
- ISO size 2: M6
- ISO size 3: M8

Wall mounting type 04-B



- Two screws M6 at the left-hand end plate
- With screws M6 (size 1 and size 2) or M8 (size 3) at the adapter plate, the manifold sub-bases and the right-hand end plate

The following additional mounting options can be used:

- Holes (blind holes) on the underside of the manifold sub-bases
- The additional mounting bracket for the modules in the case of terminals with multiple I/O modules

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

Instructions for use

FESTO

Equipment

Operate your equipment with unlubricated compressed air if possible. Festo valves and cylinders are designed for operation under normal use without any additional lubrication, yet still have a long service life. The quality of compressed air downstream from the compressor must correspond to that of unlubricated compressed air. If possible, do not operate all of your equipment with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator used.

Incorrect additional oil and too high an oil content in the compressed air reduce the service life of the valve terminal. Use Festo special oil OFSW-32 or the alternatives listed in the Festo catalogue (as specified in DIN 51524-HLP32; basic oil viscosity 32 CST at 40°C).

Bio-oils

When using bio-oils (oils which are based upon synthetic or native ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m³ must not be exceeded (see ISO 8573-1 Class 2).

Mineral oils

When using mineral oils (e.g. HLP oils to DIN 51524, parts 1 through 3) or similar oils based on poly-alpha-olefins (PAO), the maximum residual oil content of 5 mg/m³ must not be exceeded (see ISO 8573-1 Class 4). A higher residual oil content irrespective of the compressor oil cannot be permitted, as the basic lubricant would be washed away over time.

Information on configuration

Manual configuration of valve terminal type 04B
Valve terminal type 04B is supplied ex works with automatic address allocation. This is described in detail in the electronics description (type 03/04B). The setting can be changed subsequently via a DIL switch.

Manual intervention is required in the following cases:

- The calculation for the number of outputs changes.
- The configuration of the terminal on the bus changes accordingly (depending on the protocol).
- Addressing of the output modules begins at a fixed address.
- There is limited address space available for additionally fitted valves in the event of an expansion/conversion.

- Invalid DIL switch settings can trigger error messages. These possible effects are not dealt with in the “electronics description” for type 03/04B. Refer to the additional information contained in the description of “pneumatics type 04B”.




Note

Making manual adjustments to the valve terminal configuration can affect activation of the connected actuators.


Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

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Technical data

-  Flow rate
ISO 1: G $\frac{1}{4}$, 1200 l/min
ISO 1: G $\frac{3}{8}$, 2600 l/min
ISO 2: G $\frac{3}{8}$, 2300 l/min
ISO 2: G $\frac{1}{2}$, 4000 l/min
ISO 3: G $\frac{1}{2}$, 4500 l/min

-  Valve width
ISO 1: 43 mm
ISO 2: 59 mm
ISO 3: 72 mm

-  Voltage
24 V DC
120 V AC



General technical data						
		Size 1		Size 2		Size 3
Constructional design		Piston spool valve Pressure regulating valve with secondary exhaust				
• Valves						
• Intermediate pressure regulator plate						
Width	[mm]	43		59		72
Nominal size	[mm]	8		11.5		14.5
Type of mounting		Through-holes on manifold sub-base Through-holes in throttle plate (connection between sub-base and valve) Through-holes in intermediate pressure regulator plate (connection between sub-base and valve)				
• Valves						
• Throttle plate						
• Pressure regulator						
Mounting position		Any				
Manual override		Pushing (automatic return)				
Pneumatic connections						
work air connection	1	G½		G¾		G1
Exhaust connection	3/5	G½		G¾		G1
Working lines	2/4	G¼	G⅜	G⅜	G½	G½
Pilot air supply connection	12/14	G⅜		G⅜		G⅜

-  Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Valve response times [ms]								
Valve function order code		M	L	J	D	G	E	B
Response times								
• Size 1	on	6	9	–	–	7	7	7
	off	23	18	–	–	44	45	44
	reverse	–	–	6	–	–	–	–
• Size 2	on	11	23	–	–	15	16	15
	off	39	39	–	–	56	59	57
	reverse	–	–	8	–	–	–	–
• Size 3	on	13	29	–	–	17	18	16
	off	43	36	–	–	61	63	60
	reverse	–	–	8	–	–	–	–

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Technical data

Operating and environmental conditions							
Valve function order code	M	L	J	D	G	E	B
Operating medium	Filtered compressed air, lubricated or unlubricated → 19						
Operating pressure [bar]	−0.9 ... +10						
Operating pressure for valve terminal with internal pilot air supply [bar]	3 ... 10						
Pilot pressure [bar]	3 ... 10	2 ... 10			3 ... 10		
Pressure regulation range Intermediate pressure regulator plate	0 ... 12						
Ambient temperature [°C]	−10 ... +60						
Temperature of medium [°C]	−10 ... +60						

Electrical data	
Electromagnetic compatibility	Interference emission tested to EN 61 000-6-4, industry (VIFB-04)
	Interference immunity ¹⁾ tested to EN 61 000-6-2, industry (VIFB-04)
Protection against electric shock (protection against direct and indirect contact to EN 60204-1/IEC 204)	By means of PELV power supply unit (VIFB-04)
Operating voltage [V]	24 DC ±10% / 120 AC +10/-15%
Electrical power consumption per coil [W]	3.1 (130 mA at 24 V DC)
Duty cycle	100% (50% concurrence)
Protection class to EN 60 529	IP65 (in assembled state)
Relative air humidity	90% at 40°C, non-condensing
Vibration resistance	To DIN/IEC 68/EN 60 068, Parts 2-6: 0.35 mm at 25 ... 57 Hz, 5 g at 57 ... 150 Hz, 1 g at 150 ... 200 Hz
Shock resistance	To DIN/IEC 68/EN 60 068, Parts 2-27: +/-30 g at 11 ms duration
Continuous shock resistance	To DIN/IEC 68/EN 60 068, Parts 2-29: +/-15 g at 6 ms, 1000 cycles

Materials	
Valves	Die-cast aluminium, steel
Valve/pressure regulator seal	Nitrile rubber (perbunan)
Throttle plate	Anodised aluminium, brass
Intermediate pressure regulator plate	Die-cast aluminium, steel

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

FESTO

Technical data

Product weight [g]	Approx. weights		
	Size 1	Size 2	Size 3
Total ¹⁾	1200	1600	2400
Left-hand end plate	120		
Input modules	360		
Output modules	400		
Fieldbus node	1000		
Adapter plate	2280	2440	2860
Sub-base	540	640	1120
Right-hand end plate	540	640	1120
Intermediate solenoid plate	370	430	500
Valves			
• Single solenoid, double solenoid	290	550	760
• Mid-position	320	620	840
Blanking plate	100	140	180
Throttle plate	230	440	850
Pressure regulator			
• P, B, A	520	960	1120
• A/B	840	1490	1770

1) Including manifold sub-base, intermediate solenoid plate and valve

Nominal flow rate [l/min]			
	Size 1	Size 2	Size 3
Working lines on manifold sub-base			
G ¹ / ₄	1200	–	–
G ³ / ₈	2600	2300	–
G ¹ / ₂	–	4000	4500
Intermediate pressure regulator plate			
	800	1500	1800

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

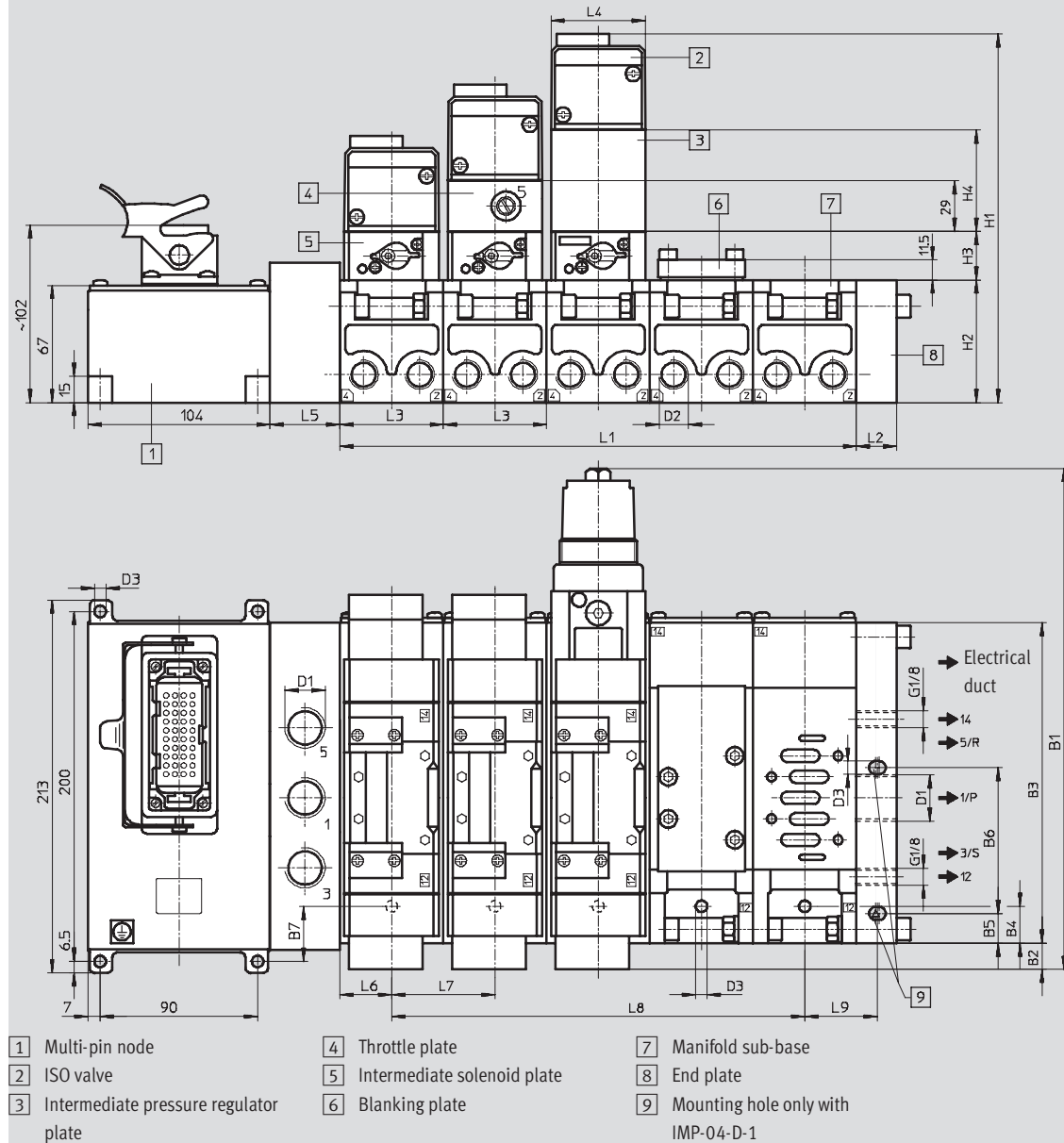
Technical data

FESTO

Dimensions

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Multi-pin – Harting plug



Type	~B1	B2	B3	B4	B5	B6	B7	D1	D2 ¹⁾		D3 Ø
IMP-04-1-D-1	251	33	149	7	17	80	51.5	G $\frac{1}{2}$	G $\frac{1}{4}$	G $\frac{3}{8}$	6.6
IMP-04-1-D-2	287	15	183	21	–	–	31.5	G $\frac{3}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	6.6
IMP-04-1-D-3	315	6	230	27	–	–	9.5	G1	G $\frac{1}{2}$		9

Type	H1	H2	H3	H4	H5	L1 ²⁾	L2	L3	L4	L5	L6	L7	L8 ²⁾	L9
IMP-04-1-D-1	182	64	27	45	25.5	nx43	22	43	42	30	9.5	43	(n-1)x43	80
IMP-04-1-D-2	211	70	27.8	58	29	nx59	23	59	54	40	29.5	59	(n-1)x59	–
IMP-04-1-D-3	235	82	28	63	40	nx72	28	72	70	40	36	72	(n-1)x72	–

1) Size 1 and 2 manifold sub-bases for different flow classes

2) n = number of valves

– Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

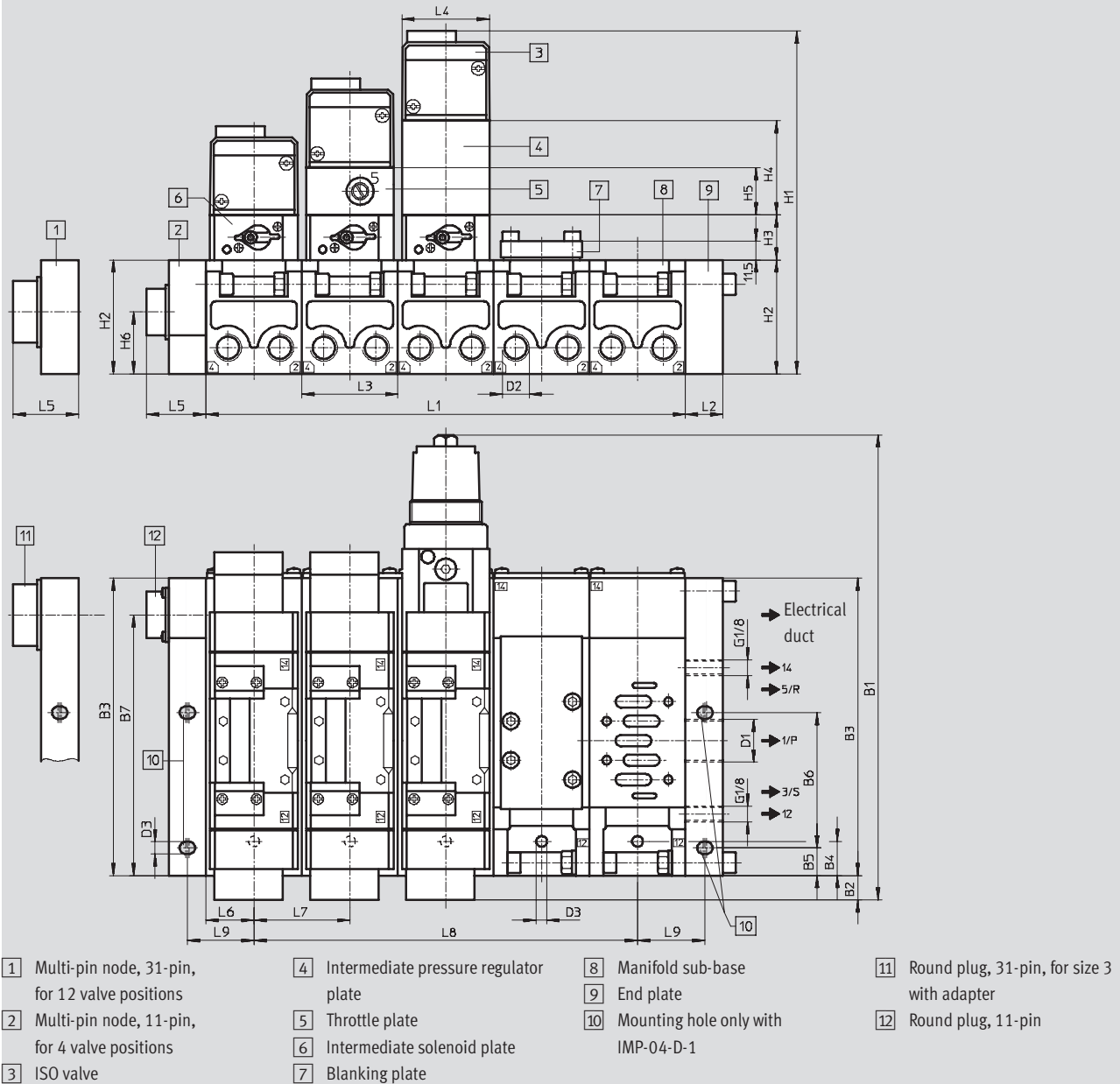
FESTO

Technical data

Dimensions

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Multi-pin – round plug from Electrivert



Type	~B1	B2	B3	B4	B5	B6	B7	D1	D2 ¹⁾		D3 Ø
IMP-04-1-D-1	251	33	149	7	17	80	120	G ¹ / ₂	G ¹ / ₄	G ³ / ₈	6.6
IMP-04-1-D-2	287	15	183	21	–	–	160.5	G ³ / ₄	G ³ / ₈	G ¹ / ₂	6.6
IMP-04-1-D-3	315	6	230	27	–	–	198	G1	G ¹ / ₂		9

Type	H1	H2	H3	H4	H5	L1 ²⁾	L2	L3	L4	L5		L6	L7	L8 ²⁾	L9
										11-pin	31-pin				
IMP-04-1-D-1	182	64	27	45	25.5	nx43	22	43	42	36	40	9.5	43	(n-1)x43	44.5
IMP-04-1-D-2	211	70	27.8	58	29	nx59	23	59	54	37	49	29.5	59	(n-1)x59	–
IMP-04-1-D-3	235	82	28	63	40	nx72	28	72	70	42	74	36	72	(n-1)x72	–

1) Size 1 and 2 manifold sub-bases for different flow classes

2) n = number of valves

– Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

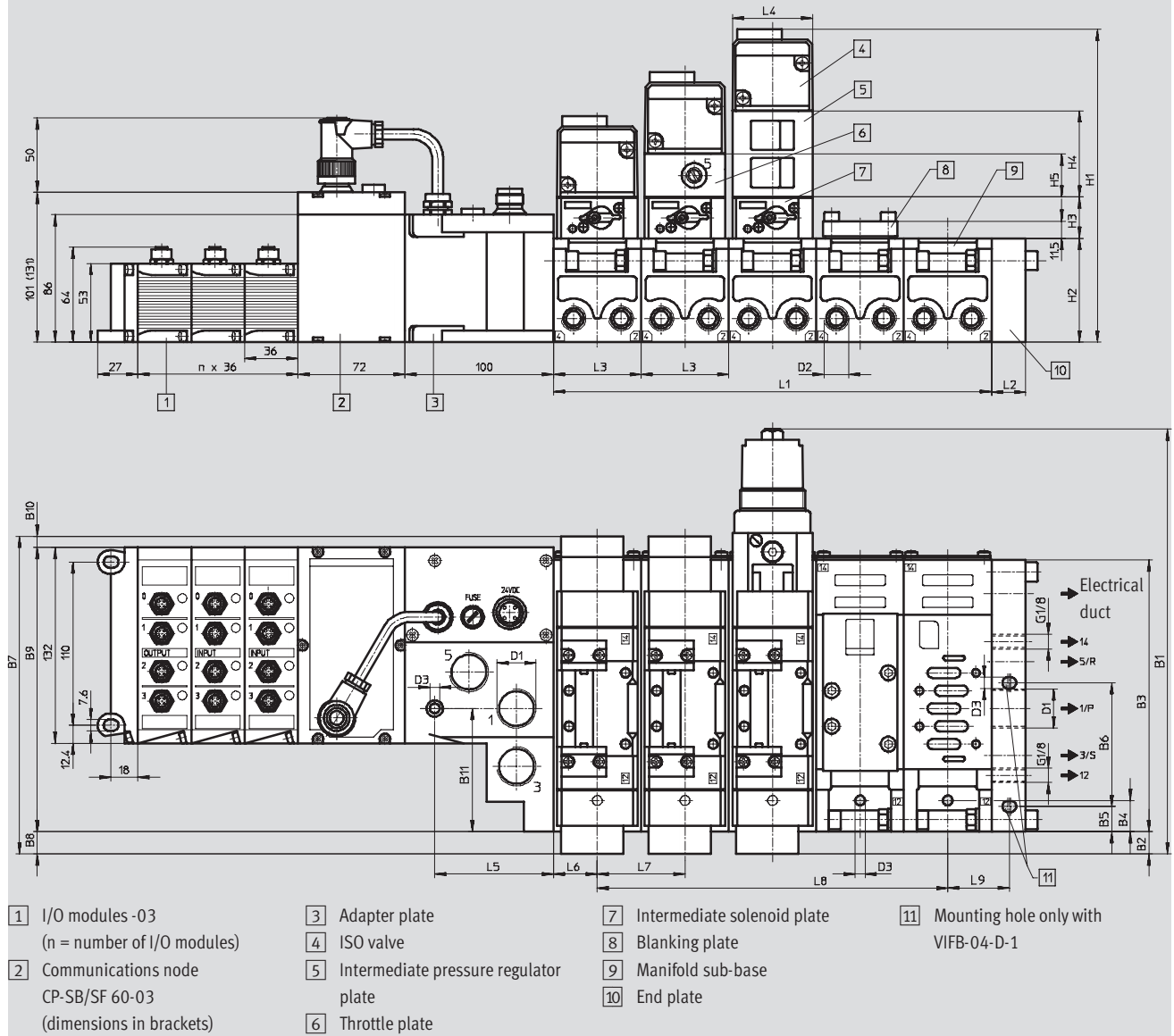
Technical data

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Dimensions

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Fieldbus/control block



Type	~B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	D1	D2 ¹⁾	D3
VIFB-04-1-D-1-B	251	33	149	7	17	80	198.5	33	153	12.4	56.9	G $\frac{1}{2}$	G $\frac{1}{4}$	G $\frac{3}{8}$
VIFB-04-1-D-2-B	287	15	183	21	–	–	214	15	191.5	7.5	83	G $\frac{3}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$
VIFB-04-1-D-3-B	315	6	230	27	–	–	241.5	6	231.6	3.9	79.5	G1	G $\frac{1}{2}$	9

Type	H1	H2	H3	H4	H5	L1 ²⁾	L2	L3	L4	L5	L6	L7	L8 ²⁾	L9
VIFB-04-1-D-1-B	181.7	64	27	45	25.5	mx43	22	43	42	80	9.5	43	(m-1)x43	44.5
VIFB-04-1-D-2-B	210.8	70	27.8	58	29	mx59	23	59	54	80	29.5	59	(m-1)x59	–
VIFB-04-1-D-3-B	235	82	28	63	40	mx72	28	72	70	52	36	72	(m-1)x72	–

1) Size 1 and 2 manifold sub-bases for different flow classes

2) m = number of valves

– † – Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

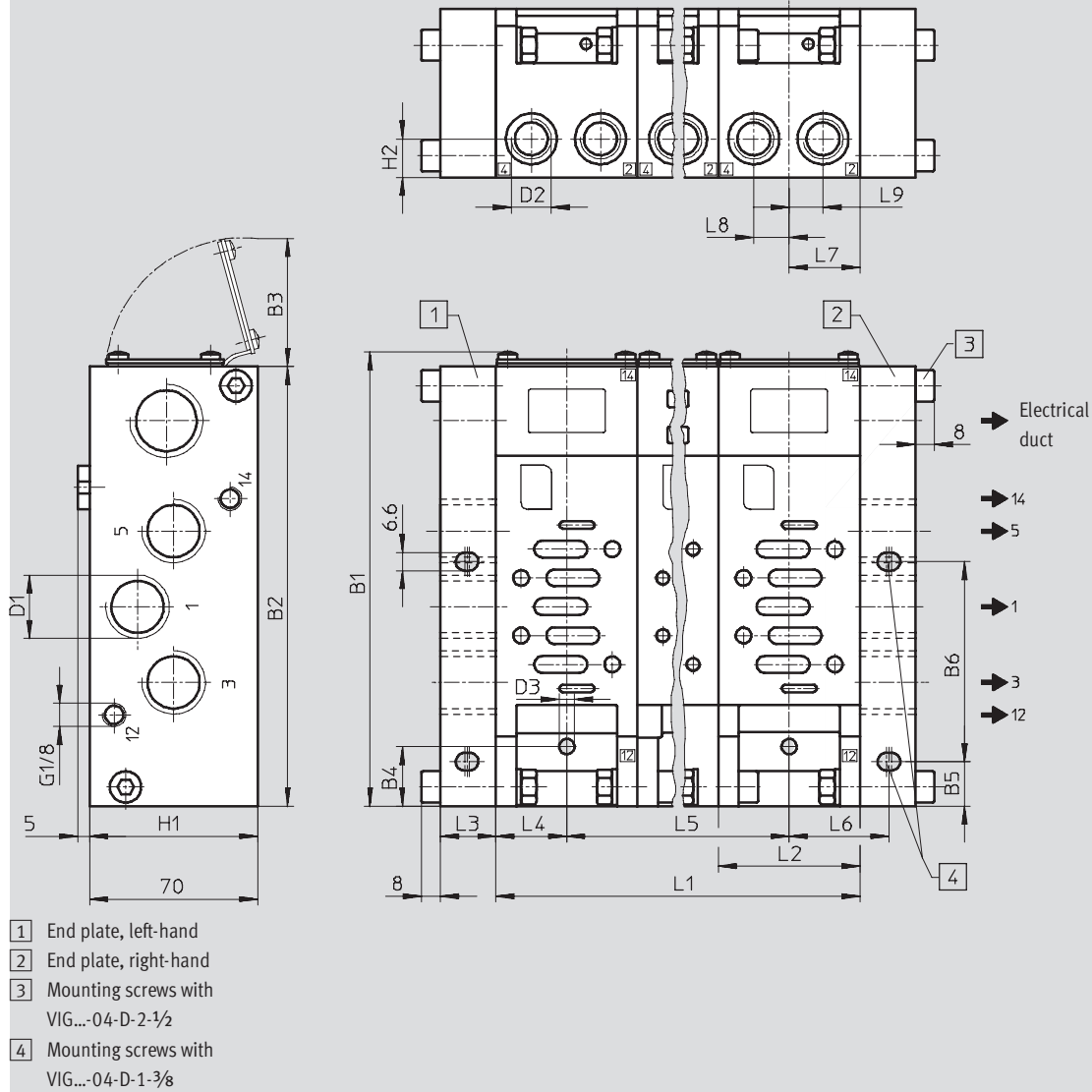
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Technical data

Dimensions

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Size 1 and 2 manifold sub-bases for different flow classes



Type	~B1	B2	B3	B4	B5	B6	D1	D2	D3 Ø	H1	H2
VIGI/VIGK-04-D-1-3/8	149	149	50	7.5	17	80	G1/2	G3/8	5.2	64	14.5
VIGI/VIGK-04-D-2-1/2	149	183	55	25	—	—	G3/4	G1/2	6.6	70	16

Type	L1 ¹⁾	L2	L3	L4	L5 ¹⁾	L6	L7	L8	L9
VIGI/VIGK-04-D-1-3/8	mx52	52	22	26	(m-1)x52	37	26	13	13
VIGI/VIGK-04-D-2-1/2	mx59	59	23	29.5	(m-1)x59	—	29.5	14.75	14.05

1) m = number of valves

— Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

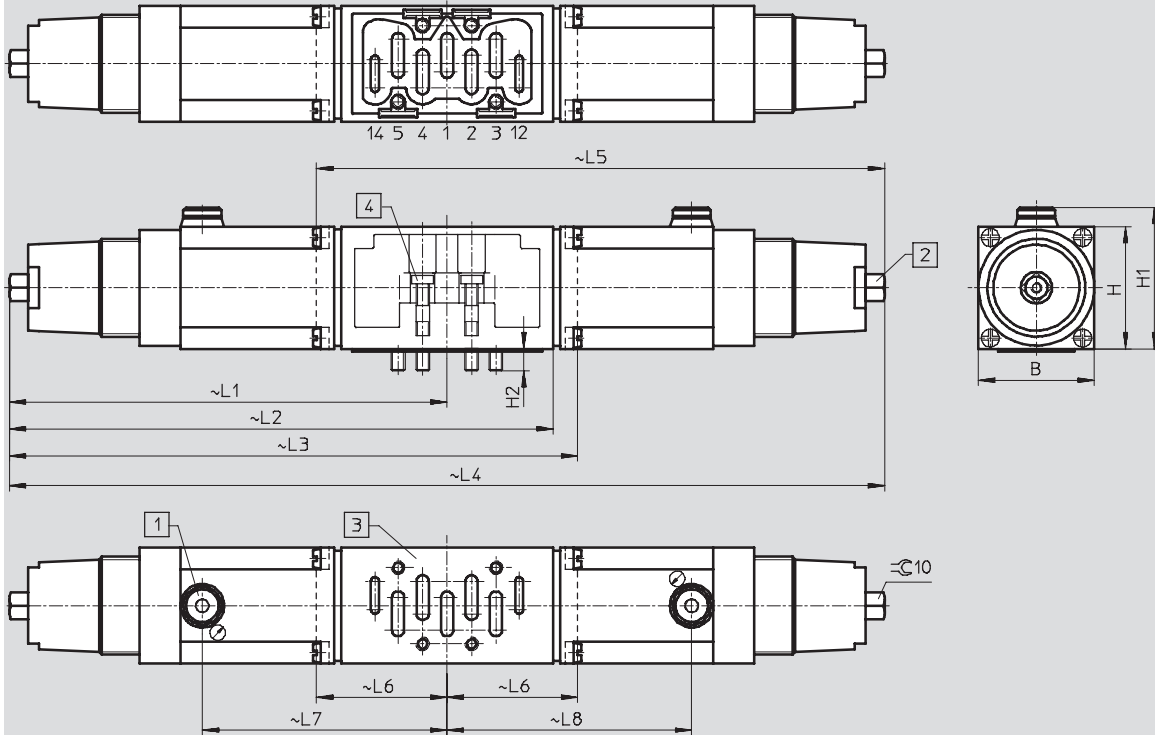
Technical data

FESTO

Dimensions

Download CAD data → www.festo.com

Intermediate pressure regulator plate



- 1 Pressure gauge connection G $\frac{1}{8}$
- 2 Regulating screw
- 3 Port pattern to ISO 5599/2
- 4 Socket head screw, captive

Type	B	H	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
LR-ZP-A-D-1	42.6	45	52	8	161	–	209	–	–	48	90	–
LR-ZP-B-D-1	42.6	45	52	8	–	–	–	–	209	48	–	90
LR-ZP-A/B-D-1	42.6	45	52	8	161	–	–	322	–	–	90	90
LR-ZP-P-D-1	42.6	45	52	8	161	200	–	–	–	–	90	–

Type	B	H	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
LR-ZP-A-D-2	54	58	62.5	10	188	–	247	–	–	–	105.5	–
LR-ZP-B-D-2	54	58	62.5	10	–	–	–	–	247	59	–	105.5
LR-ZP-A/B-D-2	54	58	62.5	10	188	–	–	376	–	–	105.5	105.5
LR-ZP-P-D-2	54	58	62.5	10	188	233	–	–	–	–	105.5	–

Type	B	H	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
LR-ZP-A-D-3	70	63	65	14	201.5	–	274	–	–	–	119	–
LR-ZP-B-D-3	70	63	65	14	201.5	–	–	–	274	72.5	–	119
LR-ZP-A/B-D-3	70	63	65	14	201.5	–	–	403	–	–	119	119
LR-ZP-P-D-3	70	63	65	14	201.5	260	–	–	–	–	119	–

Valve terminal type 04 VIMP-/VIFB-04, ISO 5599/2

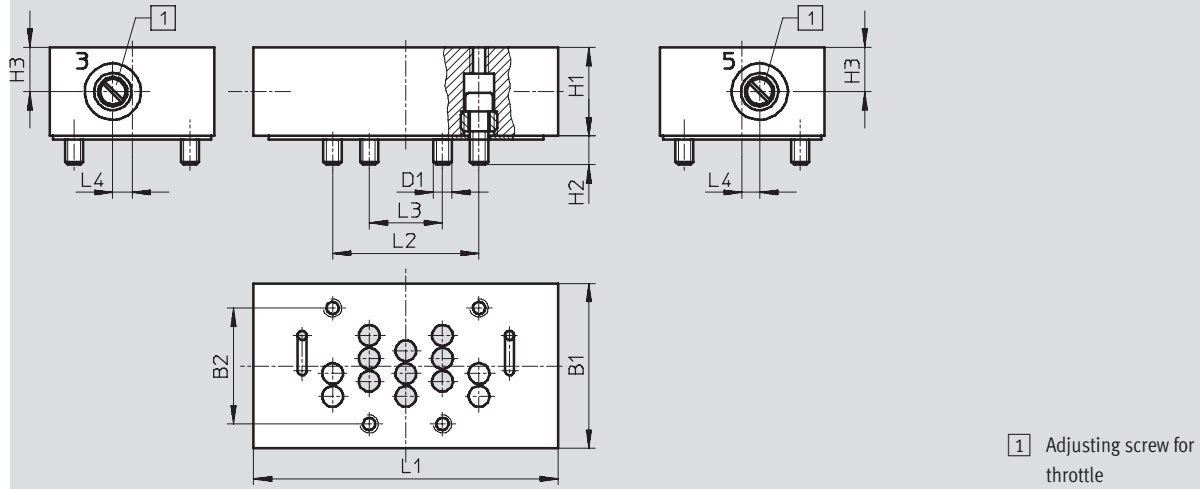
FESTO

Technical data

Dimensions

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Throttle plate



Type	B1	B2	D1	H1	H2	H3	L1	L2	L3	L4
GRO-ZP-1-ISO-B	42	28	M5	25	6.5	12.5	77	36	18	6
GRO-ZP-2-ISO-B	54	38	M6	29	9.5	14.5	100	48	24	6.3
GRO-ZP-3-ISO-B	70	48	M8	33	12	16.5	132	64	32	7