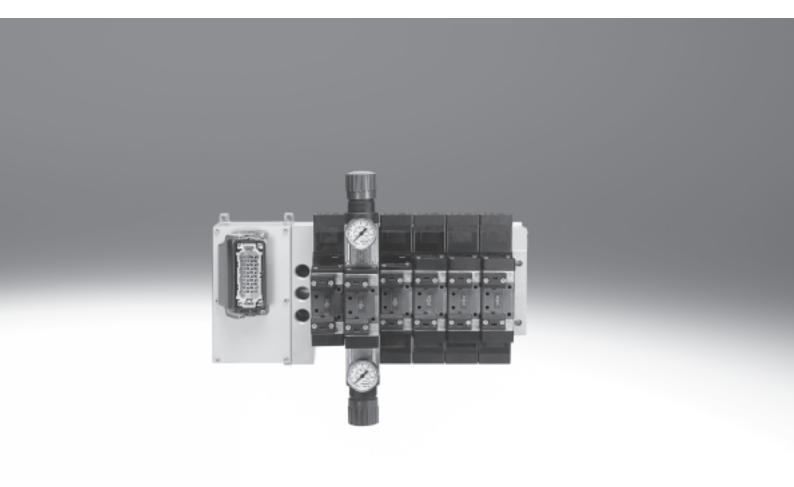
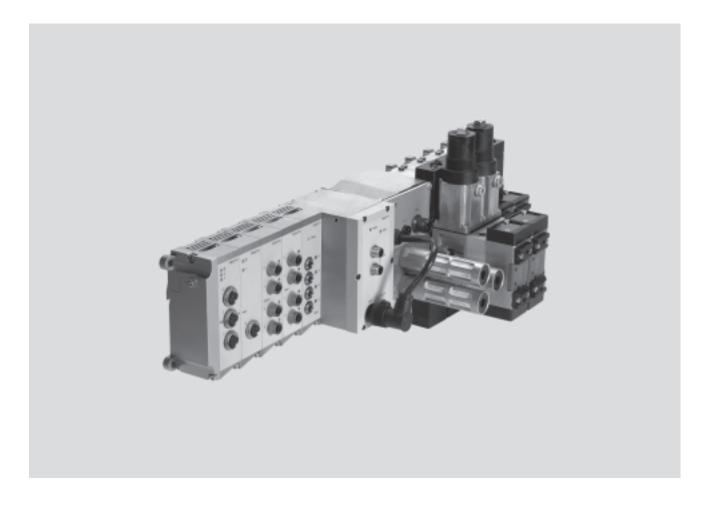
## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2



### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

Kev features

**FESTO** 



#### Modular

- 1 ... 16 standard valves
- 1 ... 12 I/O modules
- Analogue I/O modules
- CP interface
- Modular electrical connection system:
  - Multi-pin plug connection
  - Fieldbus connection
  - Control block with integrated PLC

#### Versatile

- 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 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.
- Versatile valve functions that fulfil a wide variety of pneumatic control technology requirements.
- Wide pressure range −0.9 ... 16 bar.
- Valves 24 V DC or 120 V AC.

#### Reliable

- Sturdy and durable components made of high-quality metal/plastic.
- With IP65 protection.
- Fast error diagnostics thanks to LEDs on the valves and diagnostics 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.
- 100% duty cycle.

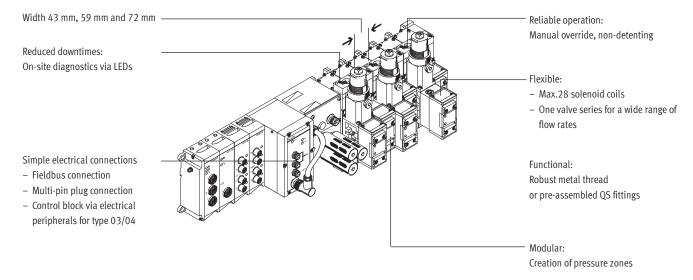
#### Easy to mount

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

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Kev feature



#### **Equipment options**

#### Valve functions

- 5/2-way valve
  - Single solenoid, pneumatic spring/mechanical spring
  - Double solenoid
  - Double solenoid with dominant signal
- 5/3-way valve
  - Mid-position pressurised
  - Mid-position closed
  - Mid-position exhausted

#### Special features

#### Multi-pin plug terminal

- Max. 14 valve positions/ max. 28 solenoid coils
- Parallel modular valve linking
- Any number of pressure zones

#### Fieldbus terminal/control block

- Max. 16 valve positions/ max. 26 solenoid coils
- Any number of pressure zones

#### Flow rate

- Width 43 mm: valve flow rate up to 1,200 l/min
- Width 59 mm: valve flow rate up to 2,300 l/min
- Width 72 mm: valve flow rate up to 4,500 l/min



Note

Valve terminal type 04 conforms to ISO 5599-2

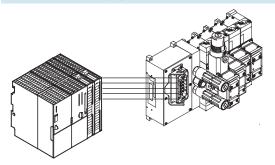
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features

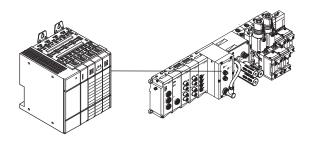
#### **Electrical connection options**

Valve terminal with multi-pin plug connection



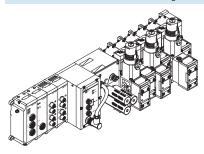
A multi-core cable carries the signal from the controller to the multi-pin node on the valve terminal.

#### 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).



Note

Valve terminals can be ordered quickly and easily online. The convenient product configurator is available on:

→ Internet: type 04 iso

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

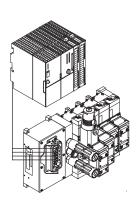
Key features

#### Multi-pin variants type 04A

Valve terminals with multi-pin plug connections can be connected in the normal way to the I/O cards of all current control systems or industrial PCs.

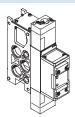
The central control system requires a powerful PLC with a correspondingly high number of I/O cards and must also be connected to the fieldbus devices with complex parallel wiring. Festo offers several installation-saving multi-pin nodes and the appropriate multi-pin cables. The pneumatic components and the multi-pin nodes (MP) are described in this chapter.

#### Variant with multi-pin plug connection MP3 – Harting plug





Multi-pin node



Valve manifold sub-base



End plate

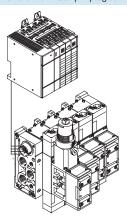
Plug in sturdy industrial design for up to 14 valves/28 solenoid coils.

Activation:

- 24 V DC
- 120 V AC

Pre-assembled cables are available.

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





Multi-pin node on the end plate



Va Su



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.

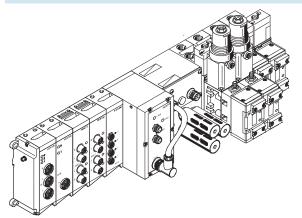
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features

#### Connection options for fieldbus/control block variants

Fieldbus node with electrical I/O modules



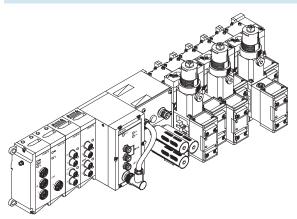
Communication and diagnostics with all common bus systems:

- 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

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

→ 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 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)

Ordering system for type 04B Pneumatic components

→ Internet: type 04 iso

Electrical peripherals

→ Internet: type 04

Technical data

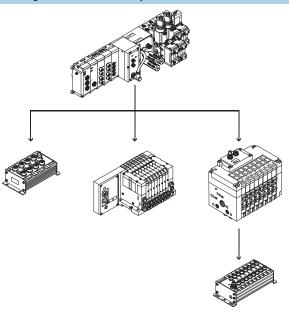
→ Internet: type 04 iso

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features

#### CP string extension from the CPX system



The optional string extension enables additional valve terminals and I/O modules to be connected to the fieldbus node of the CPX terminal. Different input and output modules as well as CPV-SC, CPV and CPA valve terminals can be connected. The maximum length of the CP string extension is 10 metres, which means that the extension modules can be mounted directly on-site. All of the required electrical signals are transmitted via the CP cable, which in turn means that no further installation is needed on the extension module.

The CP string interface offers:

- 16 input signals
- 16 output signals for output modules 24 V DC or solenoid coils
- Logic and sensor supply for the input modules
- Load voltage supply for the valve terminals
- Logic supply for the output modules
- → Internet: ctec

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

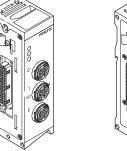
Peripherals overview

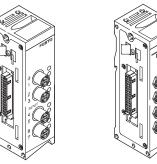
#### Complete overview of modules





Electrical components





Control block, valve terminal with fieldbus connection



#### Electrical components (I/O modules)

Flexible connection to the controller thanks to an extensive range of connection nodes:

- Multi-pin plug connection
- · Fieldbus connection

Stand-alone solutions with integrated PLC (control block)

Electrical digital inputs/outputs

- Max. 12 modules in combination with suitable nodes (see ordering data)
- Inputs for 24 V DC sensors, PNP or NPN outputs for small consuming devices 24 V DC

Proportional pneumatic components

- Analogue modules optimised for proportional valves, e.g. for Festo MPYE and MPPES for regulating the force of a cylinder
- To detect and control/regulate universal analogue 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 operator units

• 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 for welding environments

Simple servicing

- LED indicator
- Manual override

Easy maintenance

• Clip-on inscription labels

Convenient diagnostics via fieldbus connection and integrated PLC:

- Status bits
- Diagnostic bits
- · Integrated self-test

**≜** -

Note

Detailed information on electrical peripherals

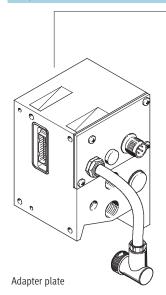
→ Internet: type 04

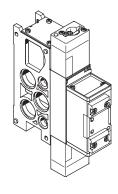
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

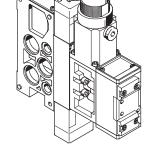
Peripherals overview

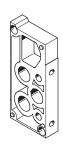
#### Complete overview of modules





ISO 5599/2 size 1, 2 or 3





Valve with manifold sub-base

Vertical stacking module

End plate

#### Pneumatic components

Pneumatic modules

- Manifold sub-base for ISO valves
- Size 1: (G1/4) 1,200 l/min
- Size 2: (G3/8) 2,300 l/min
- Size 3: (G½) 4,500 l/min

#### Adapter plate

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

- Valve
- · Flow control plates
- Intermediate pressure regulator plates
- Pressure gauges
- Creation of pressure zones with 16 bar or vacuum (with external pilot air supply only)

#### Information on valve activation

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

#### Additional modules

- Flow control 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 duct 1, 2 or 4, or shared by 2 and 4
- Pressure gauge on pressure regulator

#### Proportional pneumatic components

 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

- Creation 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
- Regulated external pilot air supply should be used for pressures
   > 10 or < 3 bar.</li>

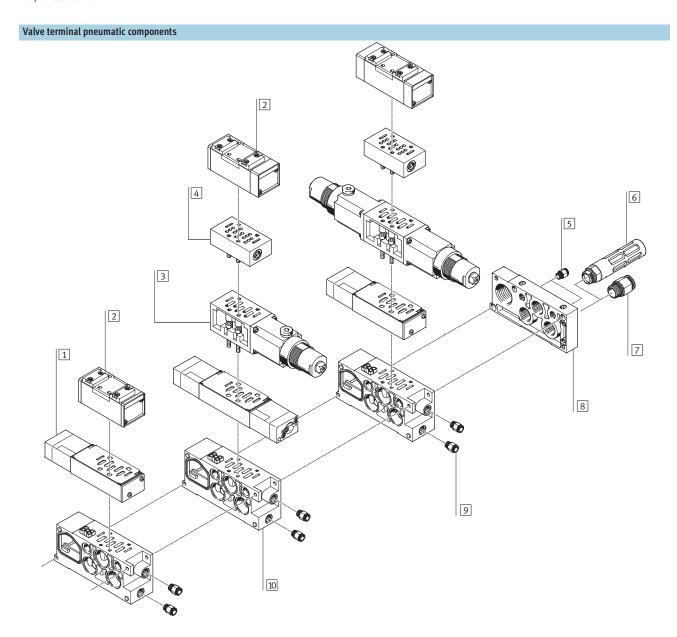
#### Options

- 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 terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Peripherals overview



		Brief description	→ Page/Internet
1	Intermediate solenoid plate	For pneumatically actuated standard valves	35
2	Valve	Pneumatically actuated standard valve	35
3	Intermediate pressure regulator plate	-	36
4	Flow control plate	For exhaust air flow control	36
5	Fitting	For pilot air	qs
6	Silencer	For exhaust air	u
7	Fitting	For compressed air supply	qs
8	End plate	Right-hand end plate	type 04 iso
9	Fitting	For supply air	qs
10	Manifold sub-base	For linking the valve terminal	36

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

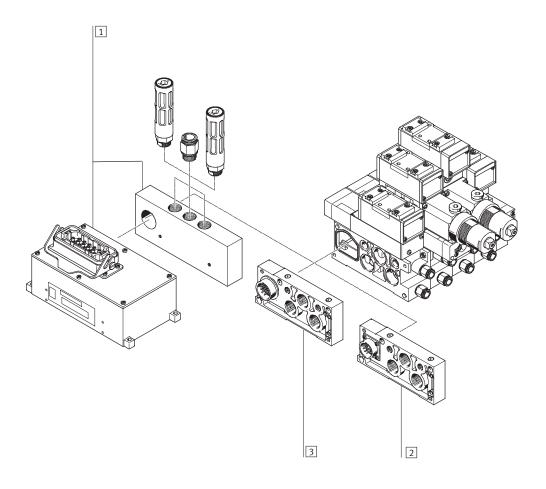
Peripherals overview

#### Valve terminal with multi-pin plug connection

Order code:
• 41P

Valve terminals with multi-pin plug connection can be expanded by up to 14 valves with max. 28 solenoid coils. The following multi-pin plug connections to IP65 are available:

- 40-pin Harting plug
- 11-pin or 31-pin round plug



	Brief description	→ Page/Internet
Multi-pin plug connection	40-pin with Harting plug	type 04 iso
2 Multi-pin plug connection	11-pin with round plug	type 04 iso
3 Multi-pin plug connection	31-pin with round plug	type 04 iso

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Peripherals overview

#### Valve terminal with fieldbus connection, electrical peripherals type 04

Order code:

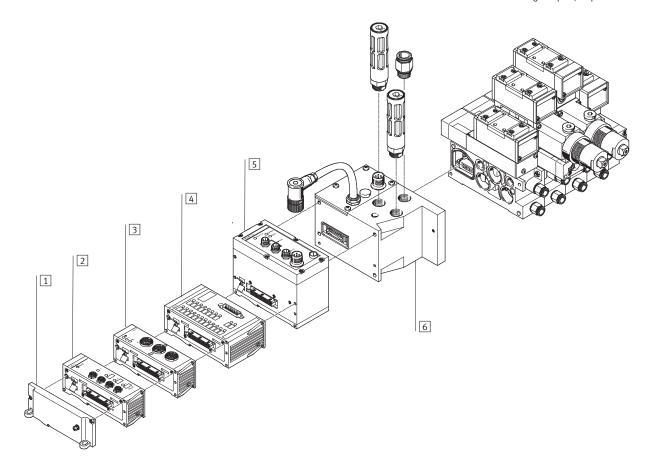
- 04E for the electrical peripherals
- 04P for the pneumatic components

Valve terminals with fieldbus interface can be expanded by max. 26 solenoid coils.

Each valve position can be equipped with any valve or a blanking plate.

In general:

- Max. 12 electrical modules
- Digital inputs/outputs
- Analogue inputs/outputs



		Brief description	→ Page/Internet
1 Le	eft-hand end plate	-	type 04 iso
2 Ir	nput or output module	-	type 04 iso
3 Ir	nput or output module	-	type 04 iso
4 Ir	nput/output module	-	type 04 iso
5 B	us node	-	type 04 iso
6 A	dapter plate	-	type 04 iso

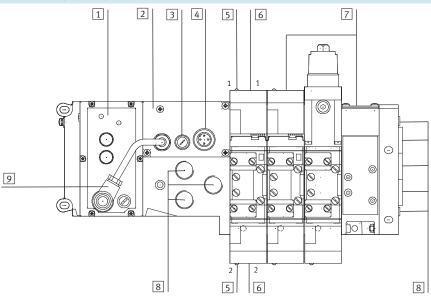
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Peripherals overview

#### Type 04-B ISO pneumatic modules

Connecting, display and operating elements



- 1 Control block
- 2 Adapter plate
- 3 Fuse for valves
- 4 Power supply connection
- 5 Yellow LED
  - 1 per pilot solenoid coil 14
  - 2 per pilot solenoid coil 12
- 6 Manual override
  - 1 per pilot solenoid coil 14,non-detenting
  - 2 per pilot solenoid coil 12, non-detenting
- 7 Fuse 0.315 A, protected by a cover (per pilot solenoid coil)
- 8 Pneumatic connections on righthand end plate/adapter plate
- Adapter cable for supplying power to the node and the I/O modules

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Pneumatic components

Valve	termina	l type 04
Rlank	ing plate	oc .



Blanking plates are used to close off vacant valve positions.

No intermediate solenoid plate is

mounted underneath the blanking plate. This depends on the valve used and must be ordered with the valve if the terminal is expanded at a later

date.

#### Valves and pilot control



The valves used are pneumatically actuated standard valves that are controlled by means of an intermediate solenoid plate.

#### Valves and flow lines

The selection of pilot air supply is made at the intermediate solenoid plate by configuring two plugs. Air can be taken from the supply air, or from

a separate air supply. A separate pilot air supply is required in principle if supply pressure is less than 3 bar (including vacuum) or greater than 10 bar. In this case it is advisable to restrict the pilot air supply to max. 10 bar

with a suitable regulator.

Flow classes that can be realised						
Valve	Connection sizes for manifold sub-bases  G1/4  G3/8  G1/2					
Size 1	1,200 l/min	-	-			
Size 2	-	2,300 l/min	-			
Size 3			4,500 l/min			

## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Key features – Pneumatic components

**FESTO** 

Valve fu	nction							
Code	Circuit symbol	Description	IS0	Туре	Part No.			
					Valves	Intermediate solenoid plates		
						24 V DC	120 V AC	
M	4   2	5/2-way valve	1	MUH-5/2-D-1-FR-C-VI	151014	34927	34929	
		With intermediate solenoid plate	2	MUH-5/2-D-2-FR-C-VI	151844	34931	34932	
	14 5V V3	Mechanical spring	3	MUH-5/2-D-3-FR-C-VI	151863	34934	34936	
L	4    2	5/2-way valve	1	MUH-5/2-D-1-L-C-VI	151009	34927	34929	
		With intermediate solenoid plate	2	MUH-5/2-D-2-L-C-VI	151845	34931	34932	
	12	<ul> <li>Pneumatic spring</li> </ul>	3	MUH-5/2-D-3-L-C-VI	151864	34934	34936	
	14 5 V V3	5/2-way valve	1	MUH-5/2-D-1-L-S-C-VI	151009	151713	-	
		With intermediate solenoid plate	2	MUH-5/2-D-2-L-S-C-VI	151845	151714	-	
		<ul> <li>Pneumatic spring</li> </ul>	3	MUH-5/2-D-3-L-S-C-VI	151864	151715	-	
		<ul> <li>External pilot air supply</li> </ul>						
	4    2	5/2-way valve, double solenoid	1	JMUH-5/2-D-1-C-VI	151007	34928	34930	
		With intermediate solenoid plate	2	JMUH-5/2-D-2-C-VI	151846	34437	34933	
	14 5 V 3 12		3	JMUH-5/2-D-3-C-VI	151865	34935	34937	
D	4       2	5/2-way valve, double solenoid	1	JDMUH-5/2-D-1-C-VI	151008	34928	34930	
		With intermediate solenoid plate	2	JDMUH-5/2-D-2-C-VI	151847	34437	34933	
	14 12 5 12	Dominant signal	3	JDMUH-5/2-D-3-C-VI	151866	34935	34937	
G	4 <sub>1 1</sub> 2	5/3-way valve	1	MUH-5/3G-D-1-C-VI	151010	34928	34930	
		• With intermediate solenoid plate	2	MUH-5/3G-D-2-C-VI	151848	34437	34933	
	14 5 🗸 3 12	Mid-position closed	3	MUH-5/3G-D-3-C-VI	151867	34935	34937	
E	4 <sub>1 1</sub> 2	5/3-way valve	1	MUH-5/3E-D-1-C-VI	151011	34928	34930	
		With intermediate solenoid plate	2	MUH-5/3E-D-2-C-VI	151849	34437	34933	
	14 5∇√3 1 <sub>2</sub>	Mid-position exhausted	3	MUH-5/3E-D-3-C-VI	151868	34953	34937	
3	4 <sub>1</sub> 2	5/3-way valve	1	MUH-5/3B-D-1-C-VI	151012	34928	34930	
		• With intermediate solenoid plate	2	MUH-5/3B-D-2-C-VI	151850	34437	34933	
	14 5∇ ∇3 12	Mid-position pressurised	3	MUH-5/3B-D-3-C-VI	151869	34935	34937	
A		Blanking plate	1	IAP-04-D-1	30430	-	-	
			2	IAP-04-D-2	36111	-	-	
			3	IAP-04-D-3	36121	-	-	



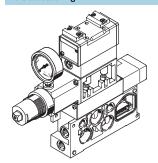
A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup).

## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Pneumatic components

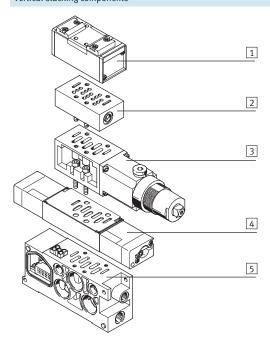
#### Vertical stacking



Additional components can be added to each valve position between the sub-base and the valve. These functions are known as vertical

stacking modules, and enable special functioning or control of an individual valve position.

#### Vertical stacking components



- 1 ISO valve
- 2 Flow control plate
- 3 Intermediate pressure regulator plate
- 4 Intermediate solenoid plate
- Manifold sub-base with port pattern to DIN ISO 5599/2



Note

Certain combinations are not possible due to the design of the individual vertical stacking components.

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

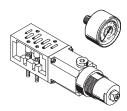
Key features – Pneumatic components

#### Flow control 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.

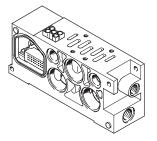
Function	Function							
Code	Circuit symbol	Description	ISO	Туре				
Х	4 2	Flow control plate (with two one-way flow control valves for exhaust air flow control)	1	GRO-ZP-1-ISO-B				
	1/4		2	GRO-ZP-2-ISO-B				
			3	GRO-ZP-3-ISO-B				
P	, , , ,	Pressure regulator intermediate plate, port 1	1	LR-ZP-P-D-1				
			2	LR-ZP-P-D-2				
	14 5 4 1 2 3 12		3	LR-ZP-P-D-3				
R		Pressure regulator intermediate plate, port 4	1	LR-ZP-A-D-1				
			2	LR-ZP-A-D-2				
	45412372		3	LR-ZP-A-D-3				
S	r++++++->	Pressure regulator intermediate plate, port 2	1	LR-ZP-B-D-1				
			2	LR-ZP-B-D-2				
	145 4 1 2 3 12		3	LR-ZP-B-D-3				
Q	s = 111111	Pressure regulator intermediate plate, ports 2 and 4	1	LR-ZP-A/B-D-1				
			2	LR-ZP-A/B-D-2				
	145 4 1 2 312		3	LR-ZP-A/B-D-3				
V		Isolating disc for creating pressure zones	1	NSC-04-D-1				
	<i>(((</i> )		2	NSC-04-D-2				
			3	NSC-04-D-3				
T		Pressure gauge for regulator, max. 10 bar	-	MA-40-10- <sup>1</sup> / <sub>8</sub> -EN				
U		Pressure gauge for regulator, max. 16 bar	-	MA-40-16- <sup>1</sup> / <sub>8</sub> -EN				

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Pneumatic components

#### Manifold sub-base

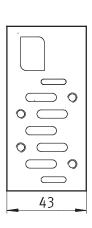


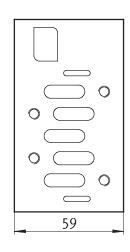
The valve terminal type 04 is based on a modular system which consists of manifold sub-bases and valves. Manifold sub-bases are available for valves of width 43 mm, 59 mm and 72 mm. The manifold sub-bases contain a ducting seal and an electrical interlinking module. The manifold sub-bases are screwed together and thus form the support system for the

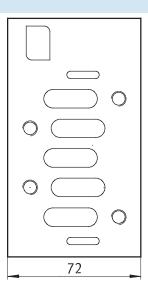
Inside the manifold sub-bases are the connection ducts for supplying compressed air to and venting from the valves on the terminal as well as the working lines for the pneumatic cylinders for each valve.

Each manifold sub-base is connected to the next using two screws. Individual terminal sections can be isolated and further manifold sub-bases inserted by loosening these screws. This ensures that the valve terminal can be rapidly and reliably extended.

#### Port patterns to ISO 5599/2 on the manifold sub-base







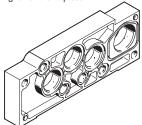
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features - Pneumatic components

#### Compressed air supply and venting





The valve terminal type 04 is supplied with compressed air via the right-hand end plate and/or the adapter plate.

Venting is via silencers or ports for ducted exhaust air

on the adapter plate and/or at the right-hand end plate.

#### Pilot air supply

The port for the compressed air supply is located on the adapter plate or the right-hand end plate.

#### Internal pilot air supply

Internal pilot air supply can be selected if the working pressure is between 3 and 10 bar.
The pilot air supply is then branched from the compressed air supply 1 using an internal connection. Ports 12 and 14 on the right-hand end plate are sealed with a blanking plug.

#### External pilot air supply

If the working pressure is not within the range from 3 to 10 bar, you must operate your valve terminal type 04 using external pilot air supply. The pilot air supply is then supplied via ports 12 and 14 on the right-hand end plate.



If a gradual pressure build-up is required in the system by means of a soft-start valve, then external pilot air should be selected whereby the

pilot pressure is already applied at

the point of switch-on.

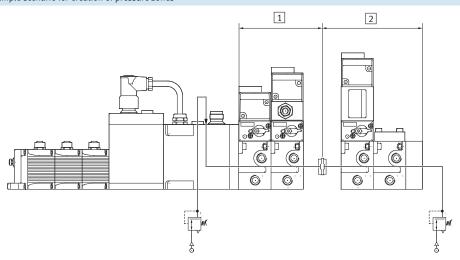
#### **Creating pressure zones**



Different supply pressures are made possible within a single valve terminal by inserting an isolating disc between two manifold sub-bases. In doing so, the isolating disc must be inserted

from the right into the sub-base. Supply and exhaust are effected 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.

#### Sample scenario for creation of 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 supply for the other pressure zones.

Terminal with two different pressure

- 1 Pressure zone 1
- 2 Pressure zone 2

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Electrical components

#### **Electrical connection**

Multi-pin plug 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 plug connection MP4 (round plug from Electrivert)



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

Activation:

24 V DC120 V AC

Pre-assembled cables are available on request.

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

## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Key features – Electrical components

**FESTO** 

21

Pin allocation MP4 –	Round plug from Electrivert			
	Plug view	Pin	Solenoid coil	Valve number
Multi-pin plug connec		<u>_</u>		
<i>→</i>		A	b	1
		В	a	1
			b	2
		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	a	2
		© \\\   E	b	3
			a	3
		/// <b>G</b>	b	4
		/// / Н	a	4
0		/	b	5
4		K	a	5
		L	b	6
		M	a	6
		N	b	7
		Р	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 b	COM	0 V (valves 1 and 2) 0 V (valves 3 and 4)
		С	COM	0 V (valves 5 and 4) 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	Earthing	o v (vaives 11 and 12)
		Plug body	Earthing	
		1 (45 204)	24.69	
Multi-pin plug connec	tion, 11-pin			
^		А	b	1
		В	a	1
		C	b	2
		D	a	2
		E	b	3
		/ F	a	3
		G	b	4
	<u></u>	Н	a	4
8 9		J	COM	0 V (valves 1 and 2)
<b>*</b>		К	COM	0 V (valves 3 and 4)
		L	Earthing	
		Plug body	Earthing	

Function	Function							
Code		Description	Туре					
Υ		Multi-pin plug socket for MP3, Harting plug, 40-pin	IMP1-SD-40					
-		Multi-pin plug socket for MP4, round plug, max. 4 valves	IMP4-SD-11 <sup>1)</sup>					
-		Multi-pin plug socket for MP4, round plug, max. 14 valves	IMP4-SD-31 <sup>1)</sup>					

<sup>1)</sup> 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

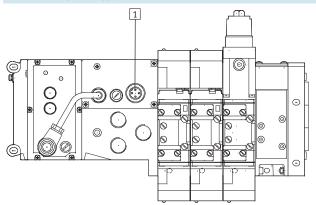
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Electrical components

#### **Electrical installation**

Connecting the power supply



1 Power supply type 04B

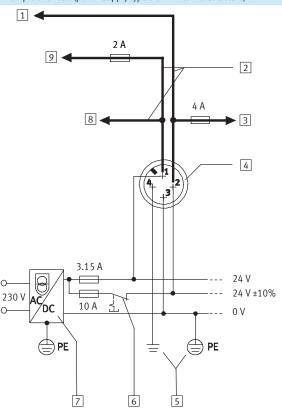
The following valve terminal components are supplied separately with 24 V DC via the power supply connection:

- Operating voltage for internal electronics and the inputs of the input modules (pin 1: 24 V DC, tolerance ±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 ±10%, external fuse max. 10 A (slow-blow) required).



Ascertain which measures, in line with your EMERGENCY STOP procedures, are necessary for putting your machine/system into a safe state in the event of an EMERGENCY STOP (e.g. switching off the operating voltage for the valves and output modules, switching off the compressed air).

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



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

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Electrical components

#### **Electrical connection concept**

Replacing the solenoid coil fuse

Each solenoid coil is protected with a (fast-blowing) 0.315 A fuse. These fuses are located on the printed circuit board behind the manifold block cover. Each single solenoid manifold block has one fuse, whereas each double solenoid manifold block has

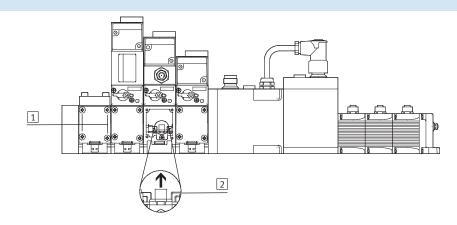


Note

Make sure that there is sufficient clearance for maintenance purposes.

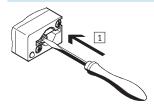
#### Changing the solenoid coil fuse

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

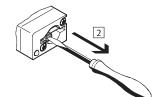


#### Manual override (MO)

Manual override with automatic return (non-detenting)



1 Press in the stem of the manual override using a pin or screwdriver.
Valve is then switched.



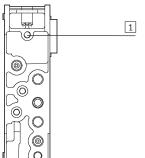
2 Remove the pin or screwdriver.
Spring force pushes the stem
of the manual override back.
Valve returns to its initial position (not with double solenoid valve code J, D).

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Key features – Assembly

### Rear side mounting

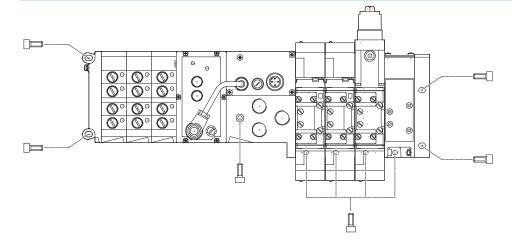


The rear side of the manifold sub-bases has holes (blind holes) for mounting the valve terminal on machines or metal racks (rear side mounting).

Threads must be cut for this purpose:

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

#### Wall mounting type 04-B



1 Blind hole for rear side mounting

- 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 are available:

- 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 terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Instructions for use

#### System equipment

Operate system equipment with unlubricated compressed air if possible. Festo valves and cylinders are designed so that, if used as designated, they will not require additional lubrication and will still achieve 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 system equipment with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator used. Unsuitable additional oil and an excessive 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 51 524 HLP32; basic oil viscosity 32 CST at 40 °C).

#### **Bio-oils**

When using bio-oils (oils which are based on 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 51 524, Parts 1 through 3) or similar oils based on poly-alphaolefins (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 flushed out over time.

## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Technical data

**FESTO** 

Flow rate

ISO 1: G1/4, 1200 l/min ISO 2: G3/8, 2300 l/min ISO 3: G½, 4500 l/min

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								
<ul> <li>Valves</li> </ul>		Piston spool valve						
Intermediate pressure regul	lator plate	Pressure regulating	g valve with secondar	y exhaust				
Width	[mm]	43		59		72		
Nominal size	[mm]	8		11.5		14.5		
Type of mounting				•				
<ul> <li>Valves</li> </ul>		Through-holes on manifold sub-base						
Throttle plate		Through-holes on manifold sub-base						
<ul> <li>Pressure regulator</li> </ul>		Through-holes on manifold sub-base						
Mounting position		Any						
Manual override		Non-detenting						
D								
Pneumatic connections		Last	T	Lagr	Г	1 -		
Work air connection	1	G½		G3/4		G1		
Exhaust connection	3/5	G½		G3/4		G1		
Working lines	2/4	G <sup>1</sup> / <sub>4</sub>	G3/8	G3/8	G <sup>1</sup> / <sub>2</sub>	G½		
Pilot air supply connection	12/14	G <sup>1</sup> /8		G½8		G½		

Valve response times [ms]								
Valve function order code		M	L	J	D	G	Е	В
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 terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Technical data

Operating and environmenta	l conditions							
Valve function order code		M	L	J	D	G	Е	В
Operating medium		Filtered compress	sed air, lubricated	or unlubricated ·	<b>→</b> 25			
Operating pressure	[bar]	-0.9 +10						
Operating pressure for valve	[bar]	3 10						
terminal with internal pilot								
air supply								
Pilot pressure	[bar]	3 10	2 10			3 10		
Pressure regulation range	[bar]	0 12						
Intermediate pressure								
regulator plate								
Ambient temperature	[°C]	-10 +60						
Temperature of medium	[°C]	-10 +60						
CE mark (see declaration of co	onformity)	To EU Low Voltage	e Directive					

Electrical data		
Protection against electric shock	k	By means of PELV power supply unit (VIFB-04)
(protection against direct and ir	ndirect	
contact to EN 60204-1/IEC 204)	)	
Operating voltage [	[V]	24 DC ±10% / 120 AC +10/–15%
Electrical power [	[W]	3.1 (130 mA at 24 V DC)
consumption per coil		
Duty cycle		100% (50% concurrence)
Protection class to EN 60529		IP65 (in assembled state)
Relative air humidity [	[%]	90 at 40°C, non-condensing
Vibration resistance		To DIN/IEC 68/EN 60068, 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 60068, Parts 2-27: +/-30 g at 11 ms duration
Continuous shock resistance		To DIN/IEC 68/EN 60068, Parts 2-29: +/-15 g at 6 ms, 1000 cycles

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

## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Technical data

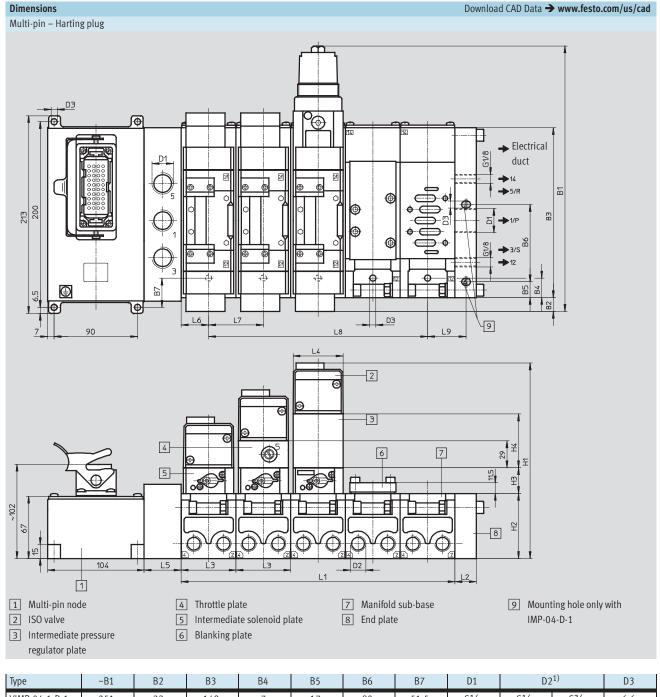
Product weight [g]	Approx. weights		
	Size 1	Size 2	Size 3
Total <sup>1)</sup>	1200	1600	2400
Left-hand end plate	120	•	
Input modules	360		
Output modules	400		
Fieldbus node	1000		
Adapter plate	2280	2440	2860
Sub-base	540	640	1120
Right-hand end plate	540	640	1120
Intermediate solenoid plate	370	430	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

<sup>1)</sup> Including manifold sub-base, intermediate solenoid plate and valve

Nominal flow rate [l/min]			
	Size 1	Size 2	Size 3
Valves			
-	1200	2300	4500
Valves, pneumatically interl	linked		
5/2-way valve	-	-	4000
5/3-way valve	-	-	3800, Mid-position 3500
Intermediate pressure regul	lator plate		
-	800	1500	1800
Manifold sub-base without	valve		
Working lines G1/4	1200	-	-
Working lines G3/8	2600	2300	-
Working lines G½	-	4000	4500

## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 



Туре	~B1	B2	В3	B4	B5	В6	B7	D1	D2	1)	D3
VIMP-04-1-D-1	251	33	149	7	17	80	51.5	G1/2	G1/4	G3/8	6.6
VIMP-04-1-D-2	287	15	183	21	-	-	31.5	G3/4	G3/8	G <sup>1</sup> / <sub>2</sub>	6.6
VIMP-04-1-D-3	315	6	230	27	-	-	9.5	G1	G <sup>1</sup>	/2	9

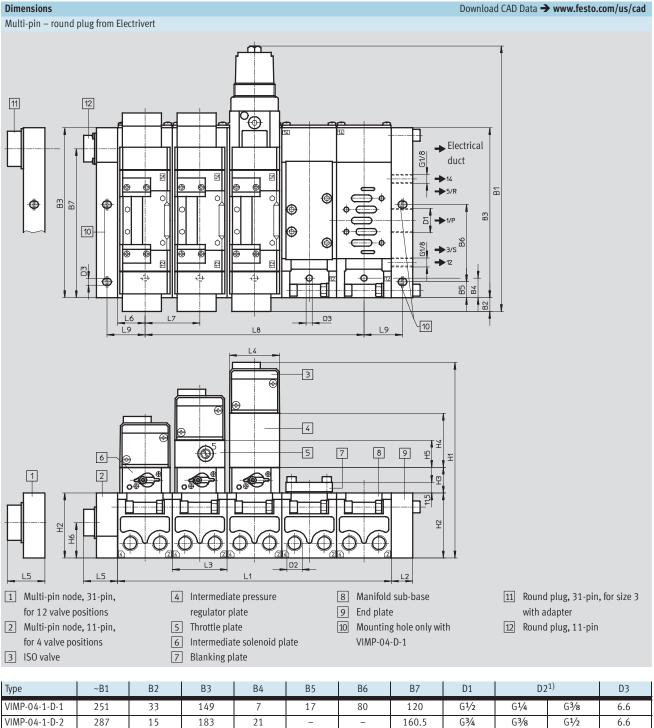
Туре	H1	H2	H3	H4	H5	L1 <sup>2)</sup>	L2	L3	L4	L5	L6	L7	L8 <sup>2)</sup>	L9
VIMP-04-1-D-1	182	64	27	45	25.5	nx43	22	43	42	30	9.5	43	(n-1)x43	80
VIMP-04-1-D-2	211	70	27.8	58	29	nx59	23	59	54	40	29.5	59	(n-1)x59	-
VIMP-04-1-D-3	235	82	28	63	40	nx72	28	72	70	40	36	72	(n-1)x72	-

<sup>1)</sup> Size 1 and 2 manifold sub-bases for different flow classes

<sup>2)</sup> n = number of valves

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 



Туре	~B1	B2	В3	B4	B5	В6	В7	D1	D2	1)	D3
VIMP-04-1-D-1	251	33	149	7	17	80	120	G1/2	G1/4	G3/8	6.6
VIMP-04-1-D-2	287	15	183	21	_	-	160.5	G3/4	G3/8	G1/2	6.6
VIMP-04-1-D-3	315	6	230	27	-	_	198	G1	G <sup>1</sup> / <sub>2</sub>		9

Туре	H1	H2	Н3	H4	H5	L1 <sup>2)</sup>	L2	L3	L4	L	5	L6	L7	L8 <sup>2)</sup>	L9
										11-pin	31-pin				
VIMP-04-1-D-1	182	64	27	45	25.5	nx43	22	43	42	36	40	9.5	43	(n-1)x43	44.5
VIMP-04-1-D-2	211	70	27.8	58	29	nx59	23	59	54	37	49	29.5	59	(n-1)x59	_
VIMP-04-1-D-3	235	82	28	63	40	nx72	28	72	70	42	74	36	72	(n-1)x72	-

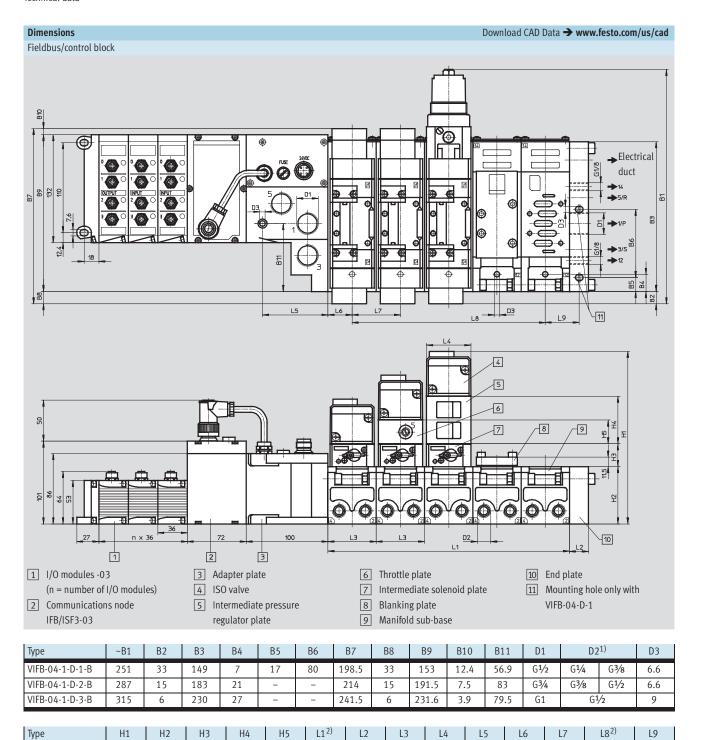
<sup>1)</sup> Size 1 and 2 manifold sub-bases for different flow classes

<sup>2)</sup> n = number of valves

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 

Technical data



mx43

mx59

mx72

22

23

28

25.5

29

40

	VIF	B-04-1-D-3-B	235	82	28
1	.) :	Size 1 and 2 manifold s	sub-bases for	different flow	classes

181.7

210.8

64

70

27

27.8

45

58

63

VIFB-04-1-D-1-B

VIFB-04-1-D-2-B

VIFB-04-1-D-3-B

42

54

70

43

59

72

80

80

52

9.5

29.5

36

43

59

72

44.5

(m-1)x43

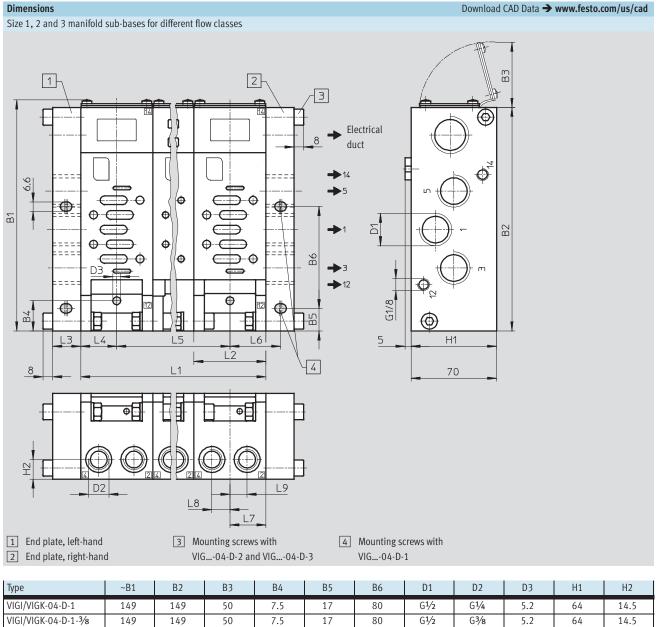
(m-1)x59

(m-1)x72

m = number of valves

### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 



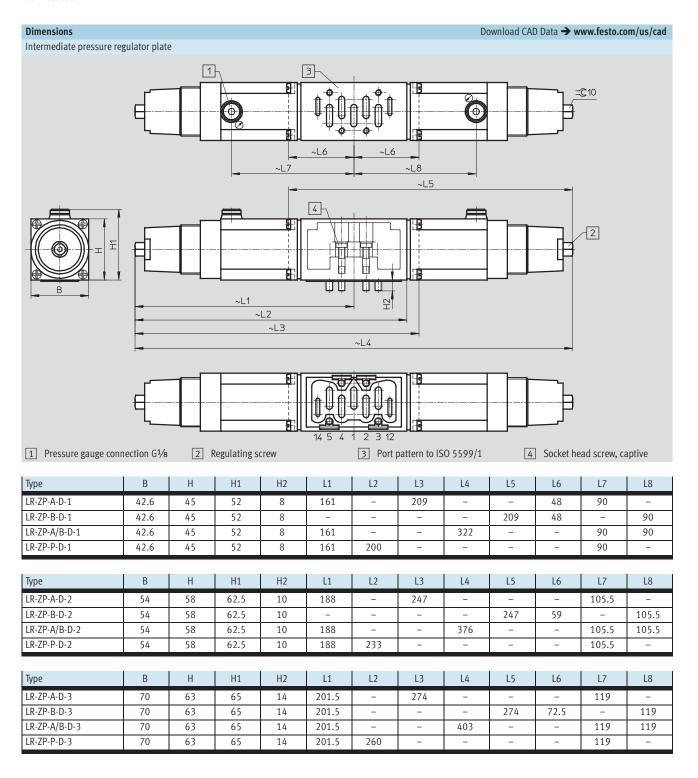
Туре	~B1	B2	В3	B4	B5	В6	D1	D2	D3	H1	H2
VIGI/VIGK-04-D-1	149	149	50	7.5	17	80	G <sup>1</sup> / <sub>2</sub>	G1/4	5.2	64	14.5
VIGI/VIGK-04-D-1-3/8	149	149	50	7.5	17	80	G1/2	G3/8	5.2	64	14.5
VIGI/VIGK-04-D-2	190	183	55	25	-	-	G3/4	G3/8	6.6	70	16
VIGI/VIGK-04-D-2-1/2	190	183	55	25	-	-	G3/4	G1/2	6.6	70	16
VIGI/VIGK-04-D-3	237	230	64	27	-	-	G1	G1	9.0	82	20

Туре	L1 <sup>1)</sup>	L2	L3	L4	L5 <sup>1)</sup>	L6	L7	L8	L9
VIGI/VIGK-04-D-1	mx43	43	22	26	(n-1)x43	37	26	13	13
VIGI/VIGK-04-D-1-3/8	mx43	43	22	26	(n-1)x43	37	26	13	13
VIGI/VIGK-04-D-2	mx59	59	23	29.5	(n-1)x59	-	29.5	14.75	14.05
VIGI/VIGK-04-D-2-1/2	mx59	59	23	29.5	(n-1)x59	-	29.5	14.75	14.05
VIGI/VIGK-04-D-3	mx72	72	28	36	(n-1)x72	-	36	18	18

<sup>1)</sup> n = number of valves

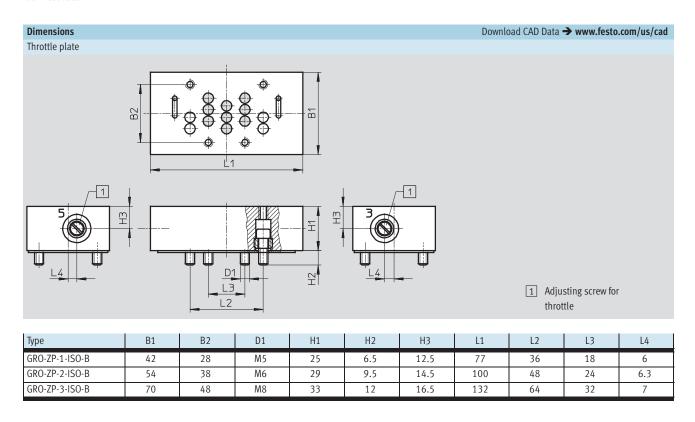
### Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 



## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2

**FESTO** 



## Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Individual valves

	Code	Valve function	ISO	Туре	Part No.		
					Valves	Intermediate solenoid plates	
						24 V DC	120 V AC
1	M	5/2-way valve	1	MUH-5/2-D-1-FR-C-VI	151014	34927	34929
		With intermediate solenoid plate	2	MUH-5/2-D-2-FR-C-VI	151844	34931	34932
1		Mechanical spring	3	MUH-5/2-D-3-FR-C-VI	151863	34934	34936
	L	5/2-way valve	1	MUH-5/2-D-1-L-C-VI	151009	34927	34929
12		With intermediate solenoid plate	2	MUH-5/2-D-2-L-C-VI	151845	34931	34932
		Pneumatic spring	3	MUH-5/2-D-3-L-C-VI	151864	34934	34936
		5/2-way valve	1	MUH-5/2-D-1-L-S-C-VI	151009	151713	-
		<ul><li>With intermediate solenoid plate</li><li>Pneumatic spring</li></ul>	2	MUH-5/2-D-2-L-S-C-VI	151845	151714	-
		External pilot air supply	3	MUH-5/2-D-3-L-S-C-VI	151864	151715	-
	J	5/2-way valve, double solenoid	1	JMUH-5/2-D-1-C-VI	151007	34928	34930
		With intermediate solenoid plate	2	JMUH-5/2-D-2-C-VI	151846	34437	34933
			3	JMUH-5/2-D-3-C-VI	151865	34935	34937
	D	5/2-way valve, double solenoid	1	JDMUH-5/2-D-1-C-VI	151008	34928	34930
		With intermediate solenoid plate	2	JDMUH-5/2-D-2-C-VI	151847	34437	34933
		<ul> <li>Dominating signal</li> </ul>	3	JDMUH-5/2-D-3-C-VI	151866	34935	34937
	G	5/3-way valve	1	MUH-5/3G-D-1-C-VI	151010	34928	34930
		With intermediate solenoid plate	2	MUH-5/3G-D-2-C-VI	151848	34437	34933
		Mid-position closed	3	MUH-5/3G-D-3-C-VI	151867	34935	34937
	F	5/3-way valve	1	MUH-5/3E-D-1-C-VI	151011	34928	34930
		With intermediate solenoid plate	2	MUH-5/3E-D-2-C-VI	151849	34437	34933
		Mid-position exhausted	3	MUH-5/3E-D-3-C-VI	151868	34953	34937
	В	5/3-way valve	1	MUH-5/3B-D-1-C-VI	151012	34928	34930
		With intermediate solenoid plate	2	MUH-5/3B-D-2-C-VI	151850	34437	34933
		Mid-position pressurised	3	MUH-5/3B-D-3-C-VI	151869	34935	34937

# Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Accessories

Ordering data - Acc	essories				
Designation	Code	Description	ISO	Туре	Part No.
Blanking plate	•			•	
	А	Blanking plate for vacant position	1	IAP-04-D-1	30430
			2	IAP-04-D-2	36111
			3	IAP-04-D-3	36121
•				1	
Manifold sub-base					
	-	Manifold sub-base for multi-pin plug connection	1	VIGK-04-D-1	30424
			2	VIGK-04-D-2	18886
			3	VIGK-04-D-3	18888
		Manifold sub-base for multi-pin plug connection	1	VIGK-04-D-1-3/8	525569
		with increased flow rate	2	VIGK-04-D-2-1/2	525570
	-	Manifold sub-base for fieldbus	1	VIGI-04-D-1	18837
2	-	Maillold Sub-base for fieldbus	2	VIGI-04-D-1	18839
Ro Pro			3	VIGI-04-D-3	18841
		Manifold sub-base for fieldbus with increased flow rate	1	VIGI-04-D-1-3/8	525572
		Maimord Sub base for netabas with mercased flow rate	2	VIGI-04-D-1-78	525571
				VIGI-04-D-2-72	323371
Flow control plate					
	Х	Flow control plate (with two one-way flow control valves	1	GRO-ZP-1-ISO-B	119673
		for exhaust air flow control)	2	GRO-ZP-2-ISO-B	119675
		· ·	3	GRO-ZP-3-ISO-B	119674
200			)	GKU-2P-3-13U-B	119074
I					
Intermediate pressu	P regulato	Port 1	1	LR-ZP-P-D-1	119670
riig:		rolt 1	2	LR-ZP-P-D-2	119671
			3	LR-ZP-P-D-3	119672
	R	Port 4	1	LR-ZP-A-D-1	119676
	"	1017	2	LR-ZP-A-D-2	119627
			3	LR-ZP-A-D-3	119630
	S	Port 2	1	LR-ZP-B-D-1	119677
		1.01.2	2	LR-ZP-B-D-2	119628
			3	LR-ZP-B-D-3	119631
	Q	Ports 2 and 4	1	LR-ZP-A/B-D-1	119678
			2	LR-ZP-A/B-D-2	119629
			3	LR-ZP-A/B-D-3	119632
	_ I			, -	
Isolating disc					
	V	For creating pressure zones	1	NSC-04-D-1	30431
			2	NSC-04-D-2	18909
			3	NSC-04-D-3	18910
Pressure gauge for r	egulator		,		
	Т	Max. 10 bar	-	MA-40-10-1/8-EN	162835
	U	Max. 16 bar		MA-40-16-1/8-EN	162836
AA 1/2 1 1					
Multi-pin plug socke		For MP2. Harting along (O min	1	IMP4 CD / C	40040
	Υ	For MP3, Harting plug, 40-pin	[-	IMP1-SD-40	18318
		· ·	•	•	<b>'</b>

# Valve terminals type 04 VIMP-/VIFB-04, ISO 5599/2 Accessories

Ordering data – Accessories							
Designation		Туре	Part No.				
User documentation							
	Valve terminal VIMP-/VIFB-04	German	P.BE-VIISO-04B-DE	163940			
		English	P.BE-VIISO-04B-EN	163941			

#### **Product Range and Company Overview**

#### **A Complete Suite of Automation Services**

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components** Complete custom engineered solutions



**Custom Control Cabinets** Comprehensive engineering support and on-site services



**Complete Systems** Shipment, stocking and storage services

#### The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical Electromechanical actuators, motors, controllers & drives



**Pneumatics** Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices PLC's, operator interfaces, sensors and I/O devices

#### Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

#### Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



### **Festo North America**

#### **Festo Regional Contact Center**

5300 Explorer Drive Mississauga, Ontario L4W 5G4 Canada

#### **USA Customers:**

For ordering assistance,

**Call:** 1.800.99.FESTO (1.800.993.3786) 1.800.96.FESTO (1.800.963.3786) Email: customer.service@us.festo.com

For technical support,

**Call:** 1.866.GO.FESTO (1.866.463.3786) Fax: 1.800.96.FESTO (1.800.963.3786) Email: product.support@us.festo.com

#### Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786) Fax: 1.877.FX.FESTO (1.877.393.3786) Email: festo.canada@ca.festo.com

#### **USA Headquarters**

Festo Corporation 395 Moreland Road P.O. Box 18023 Hauppauge, NY 11788, USA www.festo.com/us

#### **USA Sales Offices**

#### Appleton

North 922 Tower View Drive, Suite N Greenville, WI 54942, USA

#### Boston

120 Presidential Way, Suite 330 Woburn, MA 01801, USA

#### Chicago

1441 East Business Center Drive Mt. Prospect, IL 60056, USA

#### Dallas

1825 Lakeway Drive, Suite 600 Lewisville, TX 75057, USA

**Detroit** – Automotive Engineering Center 2601 Cambridge Court, Suite 320 Auburn Hills, MI 48326, USA

#### **New York**

395 Moreland Road Hauppauge, NY 11788, USA

#### Silicon Valley

4935 Southfront Road, Suite F Livermore, CA 94550, USA

#### **United States**



**USA Headquarters, East**: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788 Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com www.festo.com/us

#### Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4 Phone: 1.905.624.9000; Fax: 1.905.624.9001; Email: festo.canada@ca.festo.com

#### Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquinahuac, 54020 Tlalnepantla, Edo, de México Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65; Email: festo.mexico@mx.festo.com www.festo.com/mx

#### Central USA

Festo Corporation 1441 East Business Center Drive Mt. Prospect, IL 60056, USA Phone: 1.847.759.2600 Fax: 1 847 768 9480



#### Western USA

Festo Corporation 4935 Southfront Road, Livermore, CA 94550. USA

Phone: 1.925.371.1099 Fax: 1.925.245.1286



#### Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela