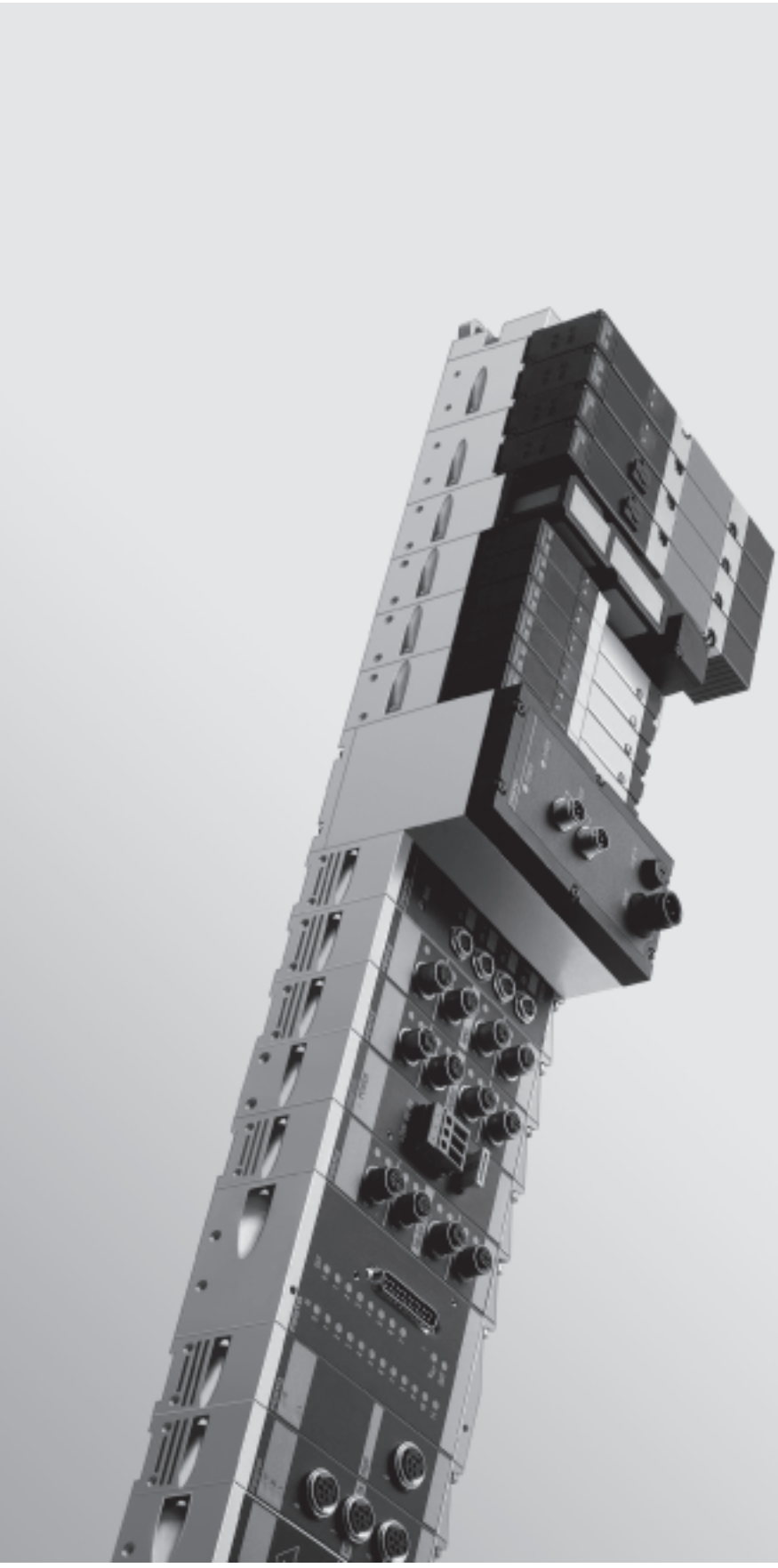


- Sturdy, modular valve terminal
- Two valve sizes on one valve terminal
- Flow rates of up to 1,250 l/min
- Vertical stacking at valve level
- Multi-functional electrical peripherals, choice of sturdy metal version Type 03 or modular terminal CPX
- Comprehensive diagnosis, module and channel oriented

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Key features

Innovative

- Multi-functional valve terminal in robust metal housing
- Flexibly expandable electrical manifold module

Comprehensive selection of electrical connections:

- Multi-pin
- All common fieldbuses
- Integrated controllers for pre-processing

Suitable for electrical peripherals Type 03 and CPX, consequently:

- Diagnosis right down to each individual valve
- Parameterisable error characteristics
- Valves can be supplied with load voltage separate from other outputs
- On the spot diagnosis with LEDs or CPX handheld terminal (MMI)

Flexible

- Versatile, configurable, modular system
- Expandable up to 26 solenoid coils and 12 I/O modules
- Subsequent conversion and expansion possible
- Valves and valve functions can easily be switched
- High pressure range -0.9 ... 10 bar
- Versatile valve functions
- Multiple pressure zones can be implemented

Vertical stacking:

- Pressure regulator
- Throttle plates

Reliable

Sturdy:

- Valve housing made of metal
- I/O module housing made of metal
- Electrical connection technology
- Fast troubleshooting thanks to LED on the valve and diagnosis using fieldbus
- Convenient servicing thanks to replaceable valves
- Manual override non-detenting, detenting or protected against activation
- Flexible labelling system based on inscription labels

In conjunction with CPX:

- Diagnosis module and channel oriented
- Comprehensive on the spot diagnosis without a PC, with CPX-MMI only

Easy to assemble

- Assembled, ready to install and tested unit
- Sturdy mounting and design for harsh environments
- Minimised expenses in the area of selection, ordering, installation and commissioning
- Wall mounting or H-rail mounting

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Key features

Type 03 valve terminals

Valve terminals comprise the most comprehensive system range in intelligent pneumatics.

The multi-functional Festo valve terminals for MIDI/MAXI valves have a sturdy, modular design. It is possible to have mixed types with different valve sizes. A valve terminal can also have multiple pressure zones and vacuum operation as well as integrated pressure regulators and one-way flow control valves. The valve terminals are therefore capable of providing versatile and flexible solutions to a wide variety of pneumatic control technology requirements, and the high-quality metal/plastic design and IP65 protection mean that they can be effective even in the harshest operating environments.

A worldwide service and consultation network complete the performance spectrum.

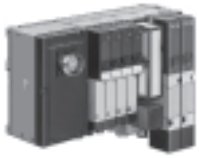
Multi-pin variants

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.

Connection types

Multi-pin

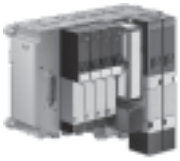


Multi-pin connection, round, sturdy design, for up to 24 coils

Double multi-pin

Double multi-pin connection, round, up to 6 digital input modules can be attached for sensors

Sub-D multi-pin connection



Multi-pin connection, Sub-D, protection class IP65, low-cost and slim, for up to 22 coils

Control block with electrical I/O modules

Integrated controller and fieldbus interface, I/O modules same as fieldbus connection. Decentralised CP systems can also be connected.

Fieldbus node with electrical I/O modules

Communication and diagnostics with all common bus systems:

- Up to 12 sturdy Type 03 I/O modules can be assembled
- 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

Ordering

Note

Valve terminals are equipped and assembled according to customer requirements. This results in minimal installation time.

Valve terminals are fully inspected before shipment and only need to be mounted with a few screws – ready to go.

A valve terminal Type 03 always consists of two order codes:
03P-... (pneumatic components)
03E-... (electrical components)

For information about the ordering system for Type 03 see the following pages:
Pneumatic components
➔ 4 / 2.2-80

Electrical peripherals
➔ 4 / 2.2-80

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Key features

User documentation – GSD, EDS, ...

Device description files and icons are used to explain integration of valve terminal Type 03 in the configuration software of the various controller manufacturers.

These can be downloaded quickly and conveniently from the download area of the Festo Internet home page.
➔ www.festo.com

Valve terminal configurator

Online via: ➔ www.festo.com/en/engineering

A valve terminal configurator is available to help you select the right valve terminal to suit your application. 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 supplied fully tested.

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Peripherals overview

Electrical part

Control system flexibility thanks to an extensive range of connection nodes:
- Multi-pin connection
- Fieldbus connection
- DeviceNet Direct interface

Stand-alone solutions with integrated PLC (control block) from:
- Festo
- 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 to 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:
- On H-rail
- On mounting surface
- With covers in welding environments

Simple servicing:
- LED display
- Manual override

Ease of maintenance thanks to clip-on inscription labels.

Convenient diagnostics via fieldbus connection and integrated PLC:
- Status bits
- Diagnostic bits
- Integrated self-test

Detailed information on electrical peripherals:
➔Info 222 Modular electrical peripherals Type 03/04B

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Peripherals overview

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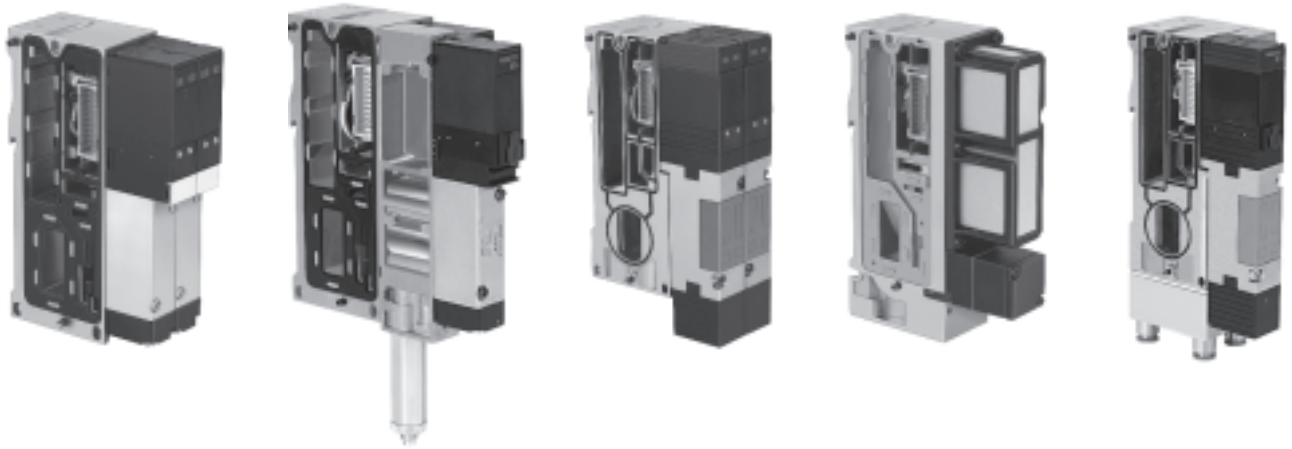
Pneumatic components



Midi modules:
- Manifold for two MIDI valves
- 500 l/min
- Max. cylinder diameter 63 mm

Maxi modules:
- Manifold for two MAXI valves
- 1,250 l/min
- Max. cylinder diameter 80 mm

Valve actuation:
- All valves have external auxiliary pilot air and are therefore suitable for vacuum operation
- If the entire valve terminal is to be operated with a vacuum, the auxiliary pilot air must be regulated and supplied externally
- If the auxiliary pilot air is generated via one of the regulators of the valve terminal, working pressure of > 4 bar must be applied to this compressed-air supply
- All valves with manual override, non-detenting/detenting/protected against activation (on request)

Auxiliary modules:
- One-way flow control valves so that the speed of travel can be set separately for single and double-acting cylinders
- One-way flow control valves and pressure regulators can be fitted in working connections
- Intermediate pressure regulator plates for setting the contact pressure of a cylinder via duct 1 or separately via ducts 2 or 4

Flexible compressed air supply:
- Right-hand end plate with regulator for pilot air and large surface mounted silencer
- Additional compressed air supply with ducted exhaust air or integrated large surface mounted silencer
- Compressed air supply modules without regulator if pilot air is regulated externally
- Multiple pressure zones, including vacuum, are possible for all valve sizes

Options:
- Spare positions for subsequent extensions
- All connections also supplied with pre-fitted QS fittings (on request)
- All connections can also be supplied with an NPT thread

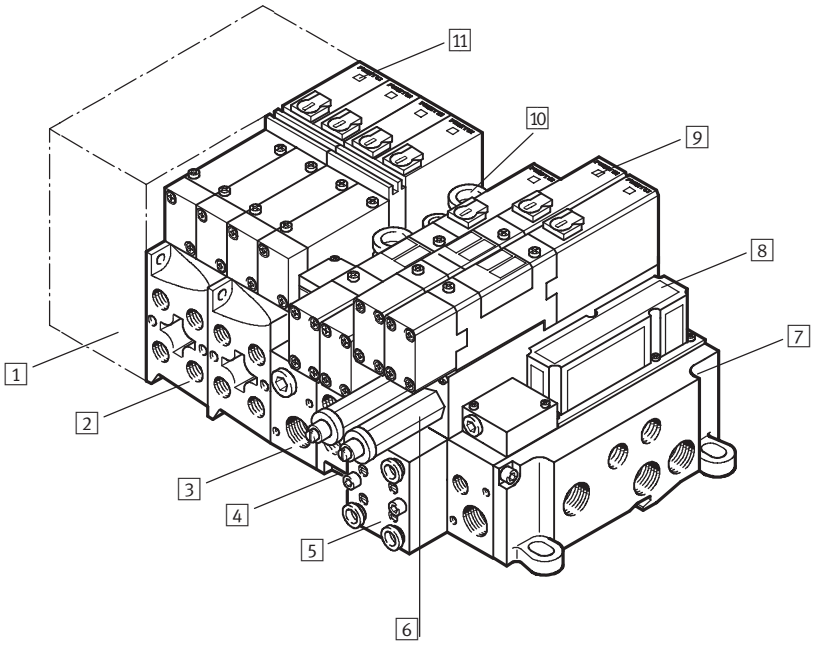
Service:
- Multiple valve sizes can be combined on a single terminal
- All valves can be replaced quickly and easily
- All valves are supplied with 1 or 2 LEDs
- All valves are prepared for identification clips
- Flat construction due to large surface mounted silencer
- Online valve terminal configurator available in the electronic catalogue or on the Internet

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Peripherals overview

Multi-functional valve terminal

Components



1 Multi-pin node/fieldbus node/ control block
2 Manifold size 4.0 (MIDI)
3 Adapter plate sizes from 4.0 to 7.0 with regulator for auxiliary pilot air
4 Manifold size 7.0 (MAXI)
5 One-way flow control valve
6 Pressure regulator
7 End plate, right-hand
8 Additional compressed air supply with integrated silencer
9 Solenoid valve size 7.0, type MTH, JMTH
10 Port for ducted exhaust air
11 Solenoid valve size 4.0, type MT2H, JMT2H

Description

Valve terminals Type 03 permit the combination of multiple valve sizes. This assures optimal adaptation to system requirements. The valves have a nominal diameter of 4.0 mm and 7.0 mm.

The transition from nominal diameter 4.0 mm (MIDI) to nominal diameter 7.0 mm (MAXI) is via an adapter plate. The adapter plate can only be used once in any given system. The MIDI valves must be mounted directly next to the nodes, followed by the MAXI valves.

Sequence:
- Node
- MIDI valves
- Adapter plate
- MAXI valves
- End plate

If no MIDI valve is used, the adapter plate must still be installed between the node and the first sub-base for the MAXI valves.

Only valves with separate pilot air supply are used. Pilot pressure is supplied either via the adapter plate or the right-hand end plate. In either case, the maximum permissible pilot pressure is 5 bar. To limit the control pressure, special pressure regulating valves are fitted on the adapter plate or the right-hand end plate.

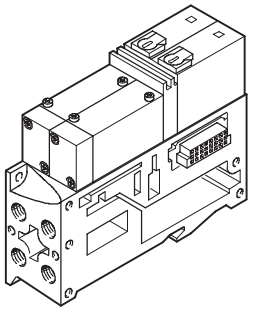
Creating pressure zones

General information

A valve terminal can have multiple pressure zones and vacuum operation as well as integrated pressure regulators and one-way flow control valves.

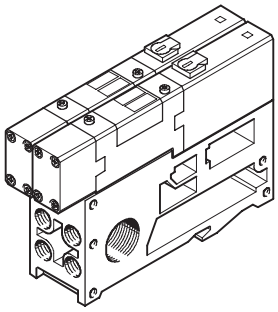
For more than two pressure zones, multiple “compressed air supplies” or isolating discs can be combined. The isolating disc can only be inserted into a normal manifold and not in the supply block.

MIDI



The formation of pressure zones for various pressures, including vacuum, is effected in MIDI valves via a “pressure zone supply”.
The lower pressures should be supplied closest to the node.

MAXI



In MAXI valves, pressure zones are formed via the insertion of an isolating disc. Air is then supplied via the adapter plate.

Additional power supply

- Note

For valve terminals with more than ten valves and large-volume cylinders, at least one additional compressed air supply should be available.

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Peripherals overview

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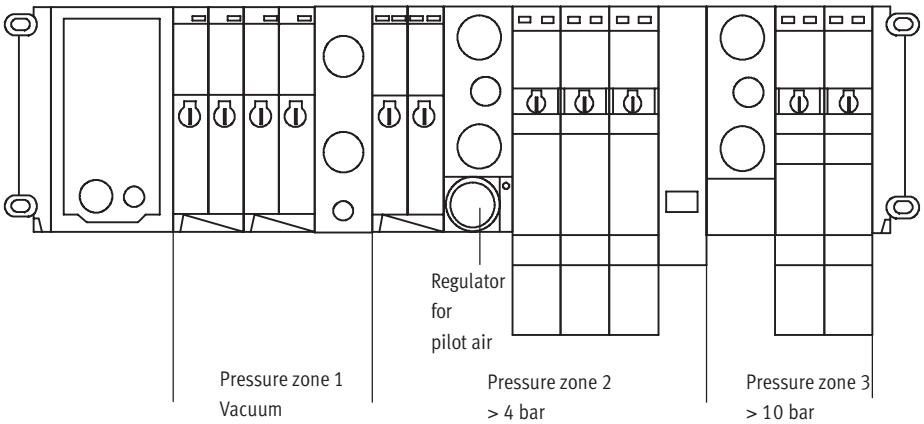
Vacuum operation



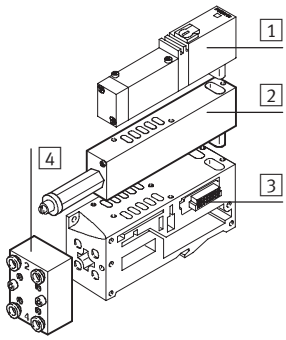
Note

If auxiliary pilot air is generated via one of the regulators of the valve terminal, working pressure of > 4 bar must be applied to this compressed air supply.

If the entire valve terminal is to be operated with a vacuum, the auxiliary pilot air must be regulated and supplied externally

Vertical stacking

General information



1 Solenoid valve
2 Pressure regulator
3 Manifold sub-base
4 One-way flow control block

Pressure regulator

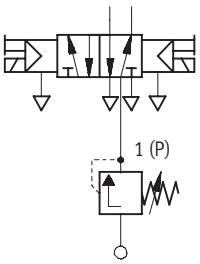
A pressure regulator can be installed between the sub-base and the valve in order to influence the force of the respective cylinder. There are three variations available:

- Regulation at port 1 (P)
- Regulation at port 2 (B)
- Regulation at port 4 (A)

One-way flow control valve

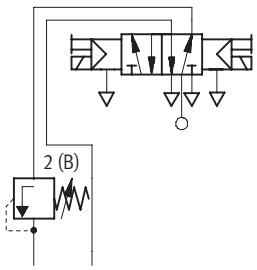
A block with one-way flow control valves can be screwed to the front of the sub-base to control the speed of the respective cylinder.
A block always contains 4 one-way flow control valves.

Pressure regulator port 1 (P)



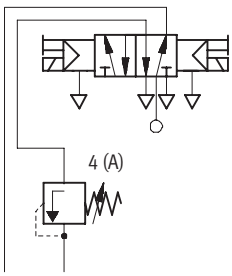
ILR-0,3-ZP-P-4,0
ILR-0,3-ZP-P-7,0

Pressure regulator port 2 (B)



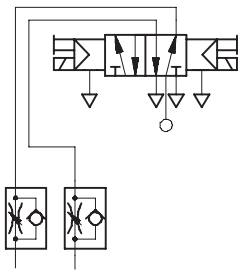
ILR-0,3-ZP-B-4,0
ILR-0,3-ZP-B-7,0

Pressure regulator port 4 (A)



ILR-0,3-ZP-A-4,0
ILR-0,3-ZP-A-7,0

One-way flow control valve



IGR-0,3-AP-A/B-QS-6
IGR-0,3-AP-A/B-QS-8

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 actuators used.

Incorrect additional oil and too high an oil content in the compressed air reduce the service life of a 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/m^3 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/m^3 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.

Welding environment

Valve terminal Type 03 has a high-quality metal/plastic design.

Suitable covers should be used to prevent the terminal being damaged as a result of welding spatter.

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Valve terminal Type 03 MIDI

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- Flow rate
  Type 03 MIDI:
  300 ... 500 l/min
  Type 03 MAXI:
  1,250 l/min

- Valve width
  Type 03 MIDI: 18 mm
  Type 03 MAXI: 25 mm

- Voltage
  24 V DC

General technical data – Type 03 MIDI							
Valve function		5/2-way valve			5/3-way valve		
		With pneumatic spring and pilot air	With spring return	Double solenoid valve with pilot air	Mid-position closed with pilot air	Mid-position exhausted with pilot air	Mid-position pressurised with pilot air
Code		M, Y	L, Z	J	G	E	B
Constructional design		Piston spool valve					
Width	[mm]	18					
Nominal size	[mm]	4.0					
Lubrication		Lubrication for life, silicone-free					
Type of mounting		On MIDI/MAXI valve terminal with 2 combi screws					
Mounting position		Any					
Manual override		Detenting					
Nominal flow rate	[l/min]	500	500	500	500	300	300

Operating pressure [bar]						
Code	M, Y	L, Z	J	G	E	B
Without pilot air supply	4 ... 8					
With pilot air supply	-0.9 ... +10					
Pilot pressure	4 ... 6					

Valve response times [ms]							
Code		M, Y	L, Z	J	G	E	B
Response times	On	12	10	-	12	12	12
	Off	22	26	-	25	25	25
	Change-over	-	-	10	-	-	-
Min. switching impulse		-	-	7	-	-	-

Ambient conditions		
Operating medium		Filtered compressed air, lubricated or unlubricated ➔ 4 / 2.2-63
Grade of filtration	[µm]	40
Storage temperature	[°C]	-20 ... +40
Ambient temperature	[°C]	-5 ... +50
Temperature of medium	[°C]	-5 ... +50
Corrosion resistance class CRC[1)]		2

1) CRC2: Corrosion resistance class to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Electrical data	
Protection against electric shock (protection against direct and indirect contact to EN 60204-1/IEC 204)	Through PELV power supply unit
Operating voltage DC	24 V (+10/–15%)
Electrical power consumption per solenoid coil	1.5 W
Protection class to EN 60 529	IP65 (for all types of signal transmission in assembled state)
Vibration resistance	To DIN/IEC 68/EN 60 068, Parts 2-6 • Severity level 2 in the case of wall mounting • Severity level 1 in the case of H-rail mounting
Shock resistance	To DIN/IEC 68/EN 60 068, Parts 2-27 • Severity level 2 in the case of wall mounting • Severity level 1 in the case of H-rail mounting

1) The maximum signal line length is 10 m

Materials	
Housing	Die-cast aluminium
Cover	Polyacetate, polyetheretherketone (PEEK), polyamide, steel
Seals	Nitrile rubber

Weights [g]	
End plate without connections	120
Input modules	360
Multi-pin node	580
Blanking plate	60
Bus node	Approx. 1000
Output modules	400
Manifold block	300
Valve	140 ... 160
Pressure regulator	100
One-way flow control valve	120

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Valve terminal Type 03 MAXI

General technical data – Type 03 MAXI						
Valve function		5/2-way valve		5/3-way valve		
		With pneumatic spring and pilot air	Double solenoid valve with pilot air	Mid-position closed with pilot air	Mid-position exhausted with pilot air	Mid-position pressurised with pilot air
Code		M, Y	J	G	E	B
Constructional design		Piston spool valve				
Width	[mm]	25				
Nominal size	[mm]	7				
Lubrication		Lubrication for life, silicone-free				
Type of mounting		On MIDI/MAXI valve terminal with 2 combi screws				
Mounting position		Any				
Manual override		Detenting				
Nominal flow rate	[l/min]	1300				

Operating pressure [bar]						
Code		M, Y	J	G	E	B
Without pilot air supply		4 ... 8				
With pilot air supply		-0.9 ... +10				
Pilot pressure		4 ... 6				

Valve response times [ms]						
Code		M, Y	J	G	E	B
Response times	On	25	-	25	25	25
	Off	30	-	55	55	55
	Change-over	-	18	-	-	-
Min. switching impulse		10	10	10	10	10

Ambient conditions		
Operating medium		Filtered compressed air, lubricated or unlubricated ➔ 4 / 2.2-63
Grade of filtration	[µm]	50
Storage temperature	[°C]	-20 ... +40
Ambient temperature	[°C]	-5 ... +50
Temperature of medium	[°C]	-5 ... +50
Corrosion resistance classification	CRC[1)]	2

1) CRC2: Corrosion resistance class to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Valve terminal Type 03 MAXI

Electrical data	
Protection against electric shock (protection against direct and indirect contact to EN 60204-1/IEC 204)	Through PELV power supply unit
Operating voltage DC	24 V (+10/–15%)
Electrical power consumption per solenoid coil	2.2 W
Protection class to EN 60 529	IP65 (for all types of signal transmission in assembled state)
Vibration resistance	To DIN/IEC 68/EN 60 068, Parts 2-6 • Severity level 2 in the case of wall mounting • Severity level 1 in the case of H-rail mounting
Shock resistance	To DIN/IEC 68/EN 60 068, Parts 2-27 • Severity level 2 in the case of wall mounting • Severity level 1 in the case of H-rail mounting

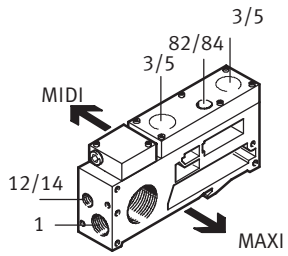
1) The maximum signal line length is 10 m

Materials	
Housing	Die-cast aluminium
Cover	Polyacetate, polyetheretherketone (PEEK), polyamide, steel
Seals	Nitrile rubber

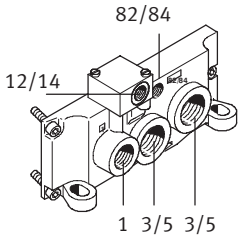
Weights [g]	
End plate without connections	435
Input modules	360
Multi-pin node	580
Blanking plate	63
Bus node	Approx. 1000
Output modules	400
Manifold block	552
Valve	Approx. 313
Pressure regulator	188
One-way flow control valve	237

Connections

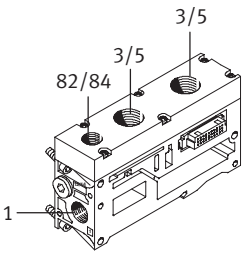
Adapter plate



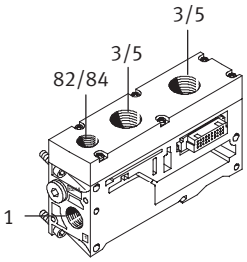
End plate



Compressed air supply plate



Pressure zone supply module



Connection	1	3/5	12/14	82/84	Valves
MIDI	G3/8	G1/2	G1/8	G1/8	G1/8
MAXI	G1/2	G1/2	G1/4	G1/4	G1/4

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

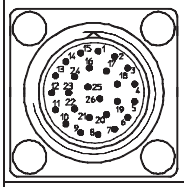
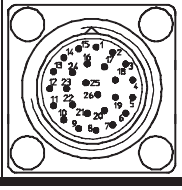
Technical data – Valve terminal Type 03 multi-pin

Pin allocation for multi-pin node with round plug MP 1

View	Pin - Plug	Core - Cable 14 cores	Core - Cable 26 cores	Solenoid coil[1)]			
				Type PNP		Type NPN	
				Coil	Voltage	Coil	Voltage
	1 ... 12	1 ... 12	1 ... 12	0 ... 11	24 V	0 ... 11	0 V
	13 ... 24	-	13 ... 24	12 ...23	24 V	12 ...23	0 V
	25 ...26	13 ... 14	25 ...26	-	0 V (supply voltage)	-	24 V (supply voltage)

1) Counting of solenoid coils: Starting from the multi-pin node from left to right and from top to bottom continuously.

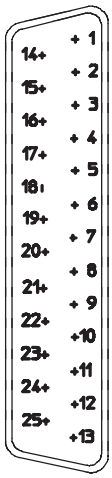
Pin allocation for multi-pin node with round plugs MP 2

View		Pin - Plug	Core - Cable 26 cores	Type PNP		Type NPN	
				Coil	Supply voltage	Coil	Supply voltage
	Plug at top	1 ... 12	1 ... 24	Solenoid coil[1)] 0 ... 23	-	Solenoid coil[1)] 0 ... 23	-
		25 ...26	25 ...26	-	0 V	-	24 V
	Plug at bottom	1 ... 8	1 ... 8	Input[2)] 0 ... 7	-	Input[2)] 0 ... 7	-
		9	9	-	0 V	-	24 V
		10	10	-	24 V	-	0 V
		25 ... 26	25 ... 26	Input[2)] 8 ... 23	-	Input[2)] 8 ... 23	-

1) Counting of solenoid coils: Starting from the multi-pin node from left to right and from top to bottom continuously.

2) Counting of inputs: Starting from the multi-pin node from left to right and from top to bottom continuously.
The input module, 8 fold, has 2 inputs on a terminal socket.

Pin allocation for multi-pin node with Sub-D plug MP4

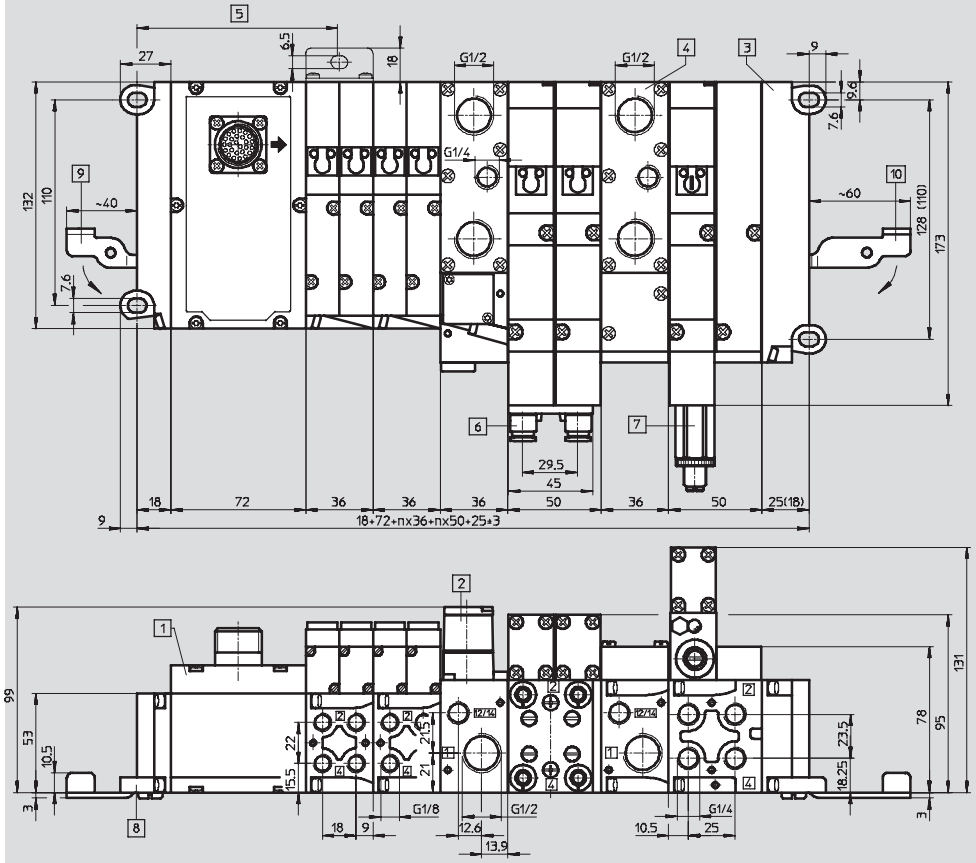
View		Pin - Plug	R/3 - Pin	Signal	
				positive switching	negative switching
		1	A1	VSP0	VSP0
		2	A2	VSP1	VSP1
		3	B1	VSP2	VSP2
		4	B2	VSP3	VSP3
		5	C1	VSP4	VSP4
		6	C2	VSP5	VSP5
		7	A3	VSP6	VSP6
		8	A4	VSP7	VSP7
		9	B3	VSP8	VSP8
		10	B4	VSP9	VSP9
		11	C3	VSP10	VSP10
		12	C4	VSP11	VSP11
		13	A5	VSP12	VSP12
		14	A6	VSP13	VSP13
		15	B5	VSP14	VSP14
		16	B6	VSP15	VSP15
		17	C5	VSP16	VSP16
		18	C6	VSP17	VSP17
		19	A7	VSP18	VSP18
		20	A8	VSP19	VSP19
		21	B7	VSP20	VSP20
		22	B8	VSP21	VSP21
		23	C7	-	-
		24	C10	0 V	24 V
		25	B10	0 V	24 V
		Housing	A10	-	Earthing
		Housing	A9	-	Earthing

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Valve terminal Type 03 MIDI/MAXI

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Valve terminal Type 03 with multi-pin connection MP1



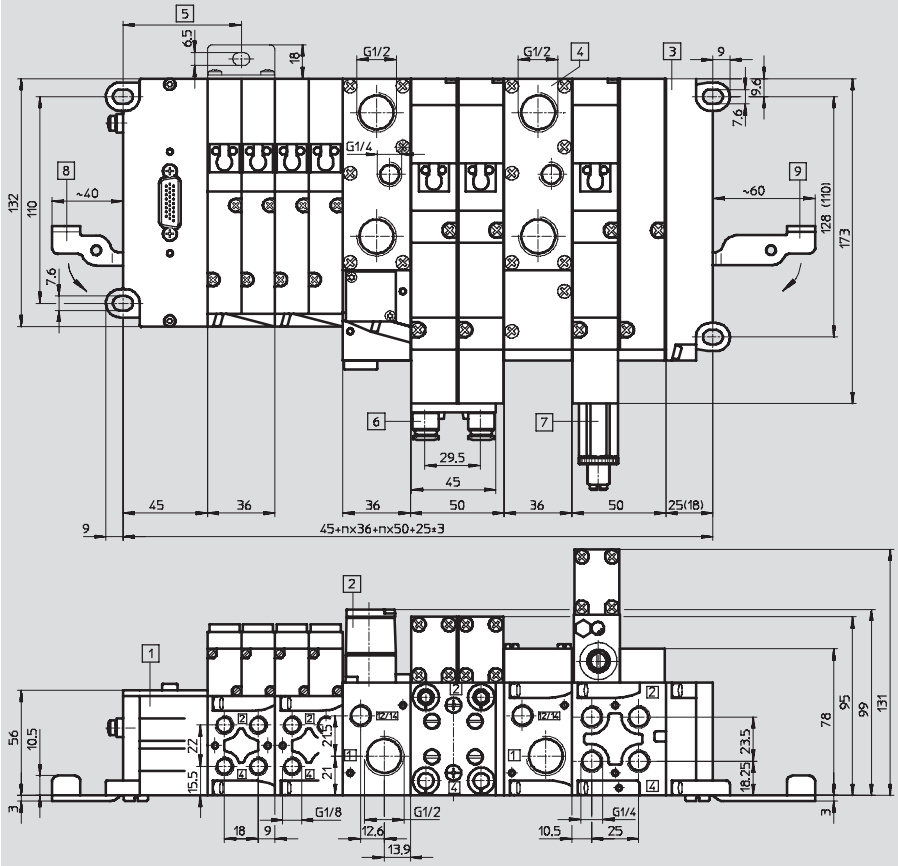
1 Multi-pin node MP1 with round plug
2 Adapter plate MIDI + MAXI with pressure regulating valve for pilot pressure
3 End plate, right-hand
4 Compressed air supply plate
5 Mounting bracket (for wall mounting required every 200 mm)
6 One-way flow control block
7 Pressure regulator
8 End plate, left-hand
9 Swivel lever IBGH-03-4,0 (opened out) for connection to mounting rail
10 Swivel lever IBGH-03-7,0 (opened out) for connection to mounting rail

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Valve terminal Type 03 MIDI/MAXI

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Valve terminal Type 03 with multi-pin connection MP4



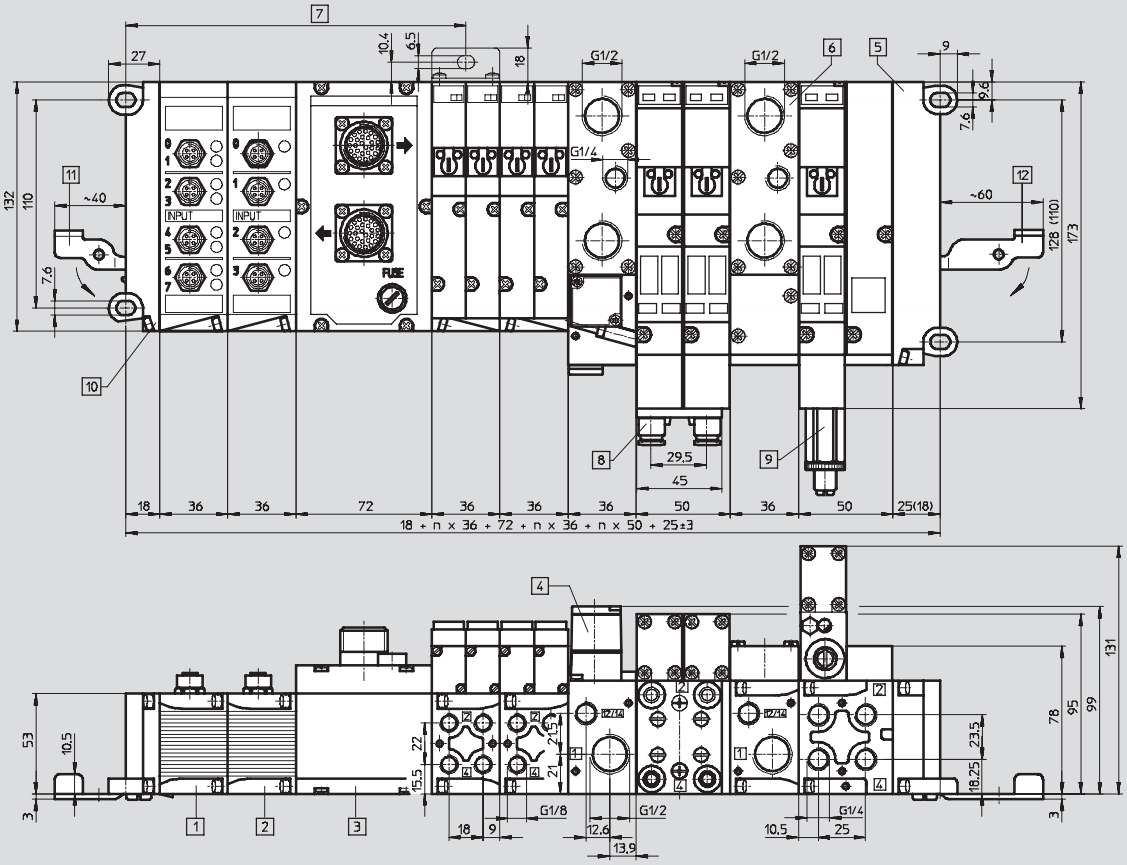
1 Multi-pin node with SUB-D plug
2 Adapter plate MIDI + MAXI with pressure regulator for pilot pressure
3 End plate, right-hand
4 Compressed air supply plate
5 Mounting bracket (for wall mounting required every 200 mm)
6 One-way flow control block
7 Pressure regulator
8 Swivel lever IBGH-03-4,0 (opened out) for connection to mounting rail
9 Swivel lever IBGH-03-7,0 (opened out) for connection to mounting rail

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Valve terminal Type 03 MIDI/MAXI

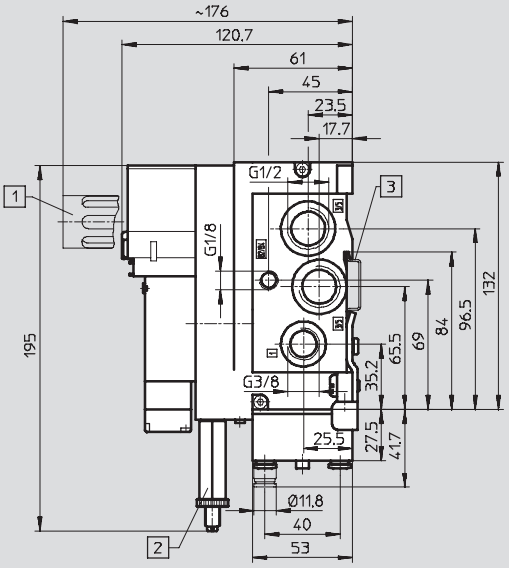
Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

Valve terminal Type 03 with multi-pin connection MP2



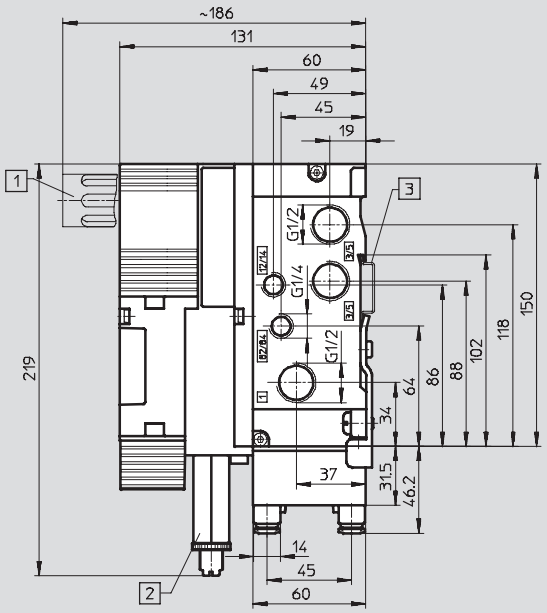
1 8-fold input module
2 4-fold input module
3 Multi-pin node MP2 with round plugs
4 Adapter plate MIDI/MAXI with pressure regulator for pilot pressure
5 End plate, right-hand
6 Compressed air supply plate
7 Mounting bracket (for wall mounting required every 200 mm)
8 One-way flow control block
9 Pressure regulator
10 End plate, left-hand
11 Swivel lever IBGH-03-4,0 (opened out) for connection to mounting rail
12 Swivel lever IBGH-03-7,0 (opened out) for connection to mounting rail

End plate, MIDI valves



1 Silencer
2 Pressure regulator
3 H-rail

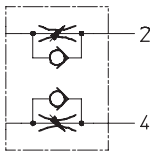
End plate, MAXI valves



1 Silencer
2 Pressure regulator
3 H-rail

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Adjustable four-fold one-way flow control block for MIDI/MAXI valves



- Compact valve module
- Direct attachment to the manifold

These valves are used to regulate air flow, e.g. to control the piston speeds of single or double-acting cylinders. Non-return valves block air flow in one direction. Air is only able to flow via the cross section which is adjusted with the throttle screw. Air flows freely in the other direction through the open non-return valve.

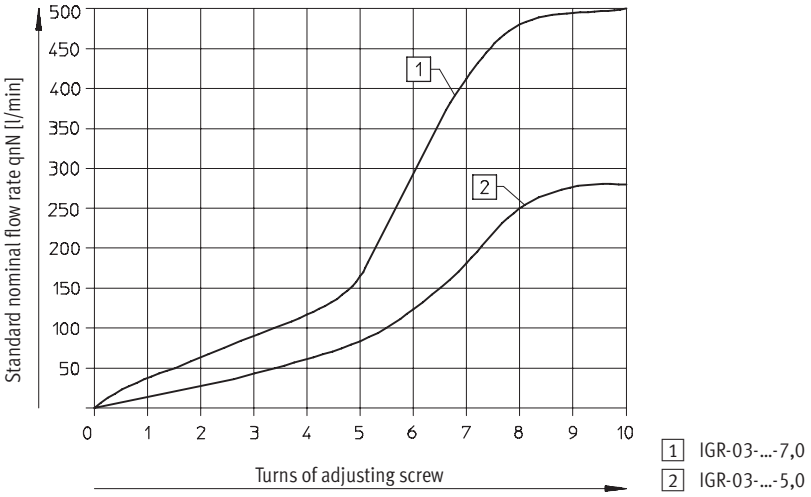
General technical data			
Type		IGR-03-A-P-A/B-QS-6 (MIDI)	IGR-03-A-P-A/B-QS-8 (MAXI)
Part No.		164 947	164 948
Constructional design	Flow control valve	Annular gap	
	Non-return valve	Pressure relief gasket	
Width	[mm]	36	50
Nominal size	[mm]	4.0	7.0
Type of mounting		On MIDI/MAXI valve terminal with 2 combi screws	
Mounting position		Any	
Ambient temperature	[°C]	-10 ... +60	
Temperature of medium	[°C]	-10 ... +60	
Operating medium		Filtered compressed air, lubricated or unlubricated ➔ 4 / 2.2-63	
Operating pressure	[bar]	0.3 ... +10	
Nominal flow rate in flow control direction, flow control valve open[1)]	[l/min]	270	570
Nominal flow rate in non-return direction, flow control valve open[1)]	[l/min]	270	550
Nominal flow rate in non-return direction, flow control valve closed	[l/min]	200	350
Weight	[g]	120	237

1) 10 turns

Materials	
Housing	Aluminium
Regulating screws	Brass
Seals	Nitrile rubber

Control characteristic

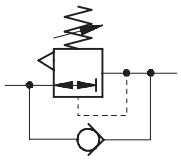
Type IGR-03-...



1 IGR-03-...-7,0
2 IGR-03-...-5,0

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Pressure regulator for MIDI/MAXI valves



An adjustable pressure regulator can be installed between the sub-base and the valve in order to control the force of the respective cylinder. This pressure regulating valve maintains an essentially constant output pressure (secondary side) independent of pressure fluctuations (primary side) and air consumption.

General technical data (MIDI)				
Type		ILR-03-ZP-P-4,0	ILR-03-ZP-A-4,0	ILR-03-ZP-B-4,0
Part No.		164 941	164 943	164 945
Constructional design		Piston regulator		
Width	[mm]	18		
Nominal size	[mm]	4.0		
Type of mounting		On MIDI/MAXI valve terminal with 2 combi screws		
Mounting position		Any		
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Operating medium		Filtered compressed air, lubricated or unlubricated ➔ 4 / 2.2-63		
Input pressure	[bar]	0 ... +10		
Output pressure	[bar]	0 ... +8		
Weight	[g]	100		

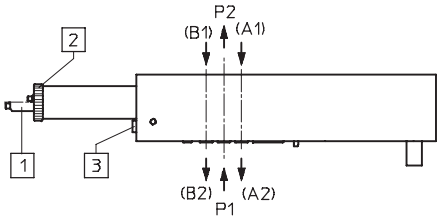
General technical data (MAXI)				
Type		ILR-03-ZP-P-7,0	ILR-03-ZP-A-7,0	ILR-03-ZP-B-7,0
Part No.		164 942	164 944	164 946
Constructional design		Piston regulator		
Width	[mm]	25		
Nominal size	[mm]	7.0		
Type of mounting		On MIDI/MAXI valve terminal with 2 combi screws		
Mounting position		Any		
Ambient temperature	[°C]	-10 ... +60		
Temperature of medium	[°C]	-10 ... +60		
Operating medium		Filtered compressed air, lubricated or unlubricated ➔ 4 / 2.2-63		
Input pressure	[bar]	0 ... +10		
Output pressure	[bar]	0 ... +8		
Weight	[g]	188		

Materials	
Housing	Aluminium
Seals	Nitrile rubber

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Pressure regulator for MIDI/MAXI valves

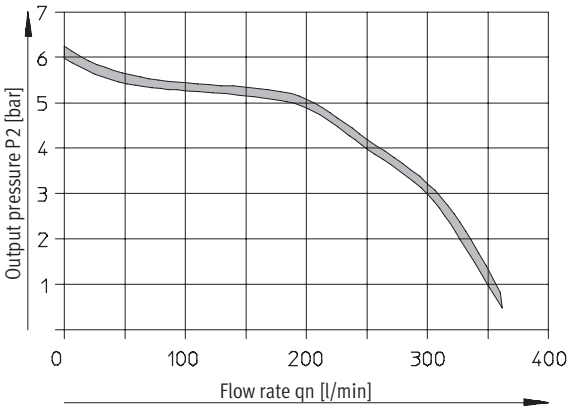
Components



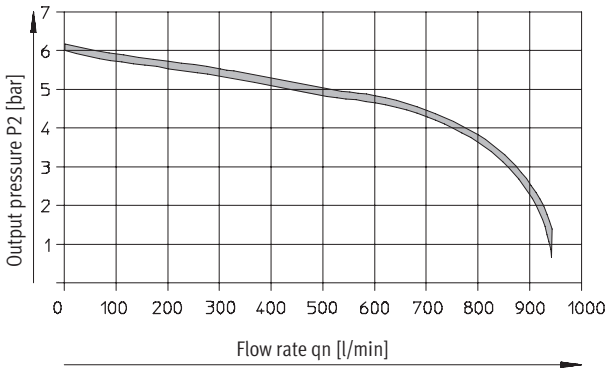
1 Pressure adjustment screw for 0 ... 8 bar range
2 Lock nut
3 Pressure indicator connection:
- M3 (MIDI)
- M5 (MAXI)

Characteristic flow rate curve

MIDI



MAXI



Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Technical data – Input module for multi-pin node

FESTO

- Max. 24 inputs
- Input module for 24 V DC sensor signals
- M12 plug, single allocation connection technology in 4-fold modules, double allocation connection technology in 8-fold modules
- M12 plug, 4-pin
- The input statuses are indicated for each input signal on an assigned LED
- 24 V DC voltage supplied for all connected sensors
- Module width: 36 mm

Note

The input module for multi-pin node MP4/8 can only be used with the multi-pin variant of valve terminal Type 03.
It is not suitable for use with Type VIFB-03.

Application

Applications

Input modules provide for the connection of cylinder sensors or other 24 V DC sensors (inductive, capacitive, etc.).
Plugs with double allocation are separated using a DUO plug or DUO cable.

Overall power requirement

The overall power requirement for all connected sensors on a valve terminal may not exceed 2 A.

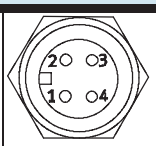
Sensor operation

If negative switching sensors are used, 24 V DC and 0 V DC must be swapped on the multi-pin node, i.e. 24 V DC must be applied to pin 3 on the sensor socket, and 0 V DC must be applied to pin 1.

Pin allocations must therefore be checked before the sensors are connected.
Positive switching sensors and negative switching sensors cannot be used together.

General technical data (MIDI)			
Type		VIGE-03-MP-4	VIGE-03-MP-8
Part No.		18 672	18 657
No. of inputs		4	8
No. of occupied module positions		1	
Sensor connection type		4 x M12, 4-pin, socket with single allocation	Socket with double allocation
Max. power supply per channel	[A]	2	
Max. sensor supply per module	[A]	2	
Fuse protection for sensor supply		Central fuse 2 A, on system supply	
Supply voltage of sensors	[V DC]	24 ± 10%, coming from multi-pin node	
Ambient temperature	[°C]	-5 ... +50	
Storage temperature	[°C]	-20 ... +60	
Material		Aluminium die-cast	
Protection class to EN 60 529		IP65	
Dimensions	[mm]	42 x 70 x 132	
Weight	[g]	360	

Pin allocation of inputs in multi-pin nodes

View		Plug (from top to bottom)	Pin	MP4		MP8	
				Allocation	LED	Allocation	LED
		1	1	24 V	0	24 V	0
			2	Free		Ix +1	
			3	0 V		0 V	1
			4	Ix		Ix	
		2	1	24 V	1	24 V	2
			2	Free		Ix +1	
			3	0 V		0 V	3
			4	Ix +1		Ix +2	
		3	1	24 V	2	24 V	4
			2	Free		Ix +1	
			3	0 V		0 V	5
			4	Ix +2		Ix +4	
		4	1	24 V	3	24 V	6
			2	Free		Ix +1	
			3	0 V		0 V	7
			4	Ix +3		Ix +4	

Valve terminal Type 03B VIMP-/VIFB-03, MIDI/MAXI multi-functional

Ordering data – Modular product system

FESTO

	M	O Options →
Module No.	**Valve terminal, pneumatic part**	**Equipment at valve position 0 ... 37**
18 970 18 980 18 990	03P	**2 Valve functions (MIDI/MAXI) and adapter plate:** M, L, Y, Z, J, B, E, G, DD, UU, HH, VV, C, A, XX, WW, FF, NN **3 Pressure regulator:** P, R, T **4 Flow control block:** Q **5 Isolating disc:** S

	Order example	Valve position																						
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	...	...	36	37
18 980	**03P**	–	**M**	**M**	**G**	**GQ**	**FF**	**J**	**G**	**M**	**M**	**MT**	**MR**										
	1		**2 + 3 + 4 + 5**																				

Ordering table

Module No.			18 970	18 980	18 990	Conditions	Code	Enter code
M	1	Valve terminal, pneumatic part	Multi-functional valve terminal MIDI/MAXI (Type 03B or CPX)				**03P**	03P
O		Equipment at valve position 0 ... 37				1	**-**	-
	2	Valve functions (MIDI/MAXI) and adapter plate Valve position 0, 1, 2 ... 37	5/2-way valve, single solenoid, pneumatic spring			2	**M**	Enter equipment selection for valve positions in order code
			5/2-way valve, single solenoid, mechanical spring			2 3	**L**	
			5/2-way valve, single solenoid, pneumatic spring, double solenoid manifold				**Y**	
			5/2-way valve, single solenoid, mechanical spring, double solenoid manifold			3	**Z**	
			5/2-way valve, double solenoid, separate pilot air				**J**	
			5/3-way valve, mid-position pressurised				**B**	
			5/3-way valve, mid-position exhausted				**E**	
			5/3-way valve, mid-position closed				**G**	
			Compressed air supply, additional, ducted exhaust air			4	**DD**	
			Compressed air supply, zone, ducted exhaust air			4 5	**UU**	
			Compressed air supply, additional, integrated silencer			4	**HH**	
			Compressed air supply, zone, integrated silencer			4 5	**VV**	
			Blanking plate for vacant position (1 coil)			2	**C**	
			Blanking plate for vacant position (2 coils)				**A**	
			Adapter plate MIDI/MAXI with regulator for auxiliary pilot air, ducted exhaust air			3 4 6	**XX**	
			Adapter plate MIDI/MAXI without regulator for auxiliary pilot air, ducted exhaust air			3 4 6	**WW**	
			Adapter plate MIDI/MAXI with regulator for auxiliary pilot air, integrated silencer			3 4 6	**FF**	
			Adapter plate MIDI/MAXI without regulator for auxiliary pilot air, integrated silencer			3 4 6	**NN**	
	3	Pressure regulator Valve position 0, 1, 2 ...37	Pressure regulator, port P				**P**	
			Pressure regulator, port A				**R**	
			Pressure regulator, port B				**D**	
	4	Flow control block Valve position 1, 3, 5 ... 37	One-way flow control valve (4 per block)				**Q**	
↓	5	Isolating disc Valve position 3, 5, 7 ... 37	Isolating disc MAXI, line 1 separate			7	**S**	

Transfer order code

		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	...	...	36	37
	03P	–																					
	1		**2 + 3**	**4 + 5**																			

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Ordering data – Modular product system

[O] Options	[M] Mandatory data
Pneumatic accessories, supplied separately	**Pneumatic accessories, connections**
B ...W	R H E
+ **3W**	**H**
6	**7**

Ordering table

Module No.			18 970	18 980	18 990	Conditions	Code		Enter code
↓ [O]		Pneumatic accessories, connections, supplied separately					+		+
	6	Attachment for H-rail mounting	1			[8]	B		
		Mounting bracket (for long terminals)	1 ... 99				...W		
[M]	7	End plate	Right-hand end plate with regulator for pilot air			[9] [10] [11]	R		
			Right-hand end plate without regulator, with connection			[10] [11] [12]	H		
			Right-hand end plate without connections			[10]	E		

[1] **Equipment at valve position 0 ... 37**
The valve positions must be equipped from right to left without any gaps.
Valve function and adapter plates require the following number of coils/addresses:
0 coils/addresses: DD, UU, HH, VV, XX, WW, FF, NN
1 coil/address: M, L, C
2 coils/addresses: Y, Z, J, B, E, G, A.

[2] **M, L, C**
Exception in the case of coil usage: If this valve is combined with Y, Z, J, B, E, G, A on the same manifold, 2 coils/addresses are used.

[3] **L, Z, XX, WW, FF, NN**
Only available at MIDI valve positions (not after adapter plate).

[4] **DD, UU, HH, VV, XX, WW, FF, NN**
Only permissible at valve position 0, 2, 4 ... 32, 34.

[5] **UU, VV**
May not be selected directly in series.

[6] **XX, WW, FF, NN**
Must be selected before the first MAXI valve.

[7] **S** There may be no pressure-free zones.

[8] **B** Not permissible in combination with CPX.

[9] **R** Not available as MAXI.

[10] **R, H, E**
Not permissible after adapter plate or compressed air supply UU, VV.

[11] **R, H** Not selectable directly after the node.

[12] **H** Must be selected if no compressed air supply was selected after an isolating disc.

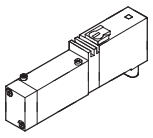
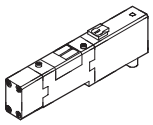
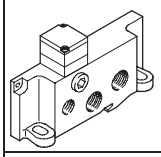
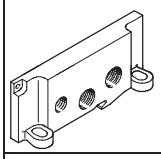
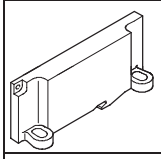
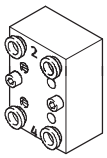
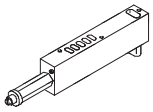
Transfer order code

+		
	6	**7**

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

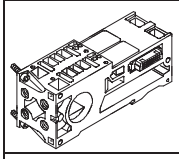
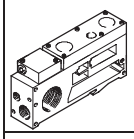
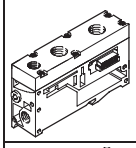
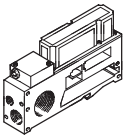
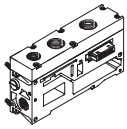
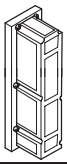
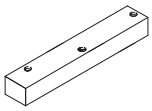
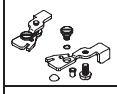
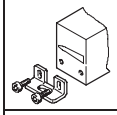
Ordering data – Accessories

FESTO

Ordering data				
	Code	Description	Type	Part No.
Solenoid valves MIDI				
	M/Y	5/2-way valve, single solenoid, pneumatic spring	**MT2H-5/2-5,0-L-S-VI-B**	**159 452**
	L/Z	5/2-way valve, single solenoid, spring	**MT2H-5/2-5,0-S-VI-B**	**159 454**
	J	5/2-way valve, double solenoid, separate pilot air	**JMT2H-5/2-5,0-S-VI-B**	**159 453**
	B	5/3-way valve, mid-position pressurised	**MT2H-5/3B-5,0-S-VI-B**	**159 450**
	E	5/3-way valve, mid-position exhausted	**MT2H-5/3E-5,0-S-VI-B**	**159 449**
	G	5/3-way valve, mid-position closed	**MT2H-5/3G-5,0-S-VI-B**	**159 448**
Solenoid valves MAXI				
	M/Y	5/2-way valve, single solenoid, pneumatic spring	**MTH-5/2-7,0-L-S-VI**	**151 700**
	J	5/2-way valve, double solenoid, separate pilot air	**JMTH-5/2-7,0-S-VI**	**151 701**
	B	5/3-way valve, mid-position pressurised	**MTH-5/3B-7,0-S-VI**	**151 704**
	E	5/3-way valve, mid-position exhausted	**MTH-5/3E-7,0-S-VI**	**151 703**
	G	5/3-way valve, mid-position closed	**MTH-5/3G-7,0-S-VI**	**151 702**
Right-hand end plate				
	R	With regulator MIDI	**IEPR-03-4,0-LR**	**18 781**
	H	Without regulator MIDI	**IEPR-03-4,0-P**	**18 645**
	H	Without regulator MAXI	**IEPR-03-7,0-P**	**18 744**
	E	Without connections MIDI	**IEPR-03-4,0**	**175 205**
	E	Without connections MAXI	**IEPR-03-7,0**	**18 749**
One-way flow control block				
	Q	One-way flow control block MIDI	**IGR-03-AP-A/B-QS-6**	**164 947**
	Q	One-way flow control block MAXI	**IGR-03-AP-A/B-QS-8**	**164 948**
Pressure regulator				
	P	Port P MIDI	**ILR-03-ZP-P-4,0**	**164 941**
	P	Port P MAXI	**ILR-03-ZP-P-7,0**	**164 942**
	R	Port A MIDI	**ILR-03-ZP-A-4,0**	**164 943**
	R	Port A MAXI	**ILR-03-ZP-A-7,0**	**164 944**
	D	Port B MIDI	**ILR-03-ZP-B-4,0**	**164 945**
	D	Port B MAXI	**ILR-03-ZP-B-7,0**	**164 946**

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

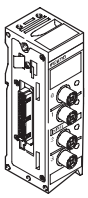
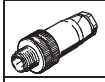
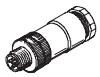
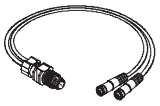
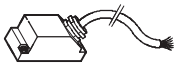
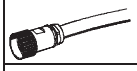
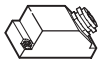
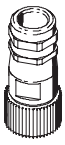
Ordering data – Accessories

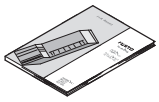
Ordering data				
	Code	Description	Type	Part No.
Manifold sub-base				
		Single solenoid, MIDI	**VIGM-03-4,0**	**18 652**
		Single solenoid, MAXI	**VIGM-03-7,0**	**18 742**
		Double solenoid, MIDI	**VIGI-03-4,0**	**18 653**
		Double solenoid, MAXI	**VIGI-03-7,0**	**18 743**
Adapter plate				
	XX	Midi / Maxi	**VIGP-03-7,0-4,0-LR**	**18 748**
	WW	Without regulator	**VIGP-03-7,0-4,0**	**18 740**
	DD	Compressed air supply, MIDI	**VIGP-03-4,0**	**18 654**
	DD	Compressed air supply, MAXI	**VIGP-03-7,0**	**18 741**
	HH	Compressed air supply with silencer MIDI	**VIGP-03-4,0-U**	**525 433**
	HH	Compressed air supply with silencer MAXI	**VIGP-03-7,0-U**	**525 435**
	NN	MIDI/MAXI with silencer	**VIGP-03-7,0-4,0-U**	**525 436**
	FF	MIDI/MAXI with regulator and silencer	**VIGP-03-7,0-4,0-LR-U**	**525 437**
	UU	Additional pressure zone MIDI	**VIGZ-03-4,0**	**18 638**
	VV	Additional pressure zone MIDI with silencer	**VIGZ-03-4,0-U**	**525 434**
Surface mounted silencer				
		Large surface mounted silencer MIDI	**IU-03-4,0**	**165 635**
		Large surface mounted silencer MAXI	**IU-03-7,0**	**165 636**
Cover				
	C	Blanking plate MIDI	**IAP-03.4,0**	**18 648**
	A	Blanking plate MAXI	**IAP-03-7,0**	**18 745**
Mounting				
	B	For H-rail MIDI	**IBGH-03-4,0**	**18 649**
	B	For H-rail MAXI	**IBGH-03-7,0**	**18 747**
	W	Mounting bracket	**IBGW-03**	**18 678**
Small parts				
	S	Isolating disc, MAXI	**NSC-½-03-7,0**	**18 746**
		Inscription labels, 9x20 in frames (20 pieces)	**IBS-9x20**	**18 182**
		Inscription labels, 10x17 in frames (30 pieces)	**IBS-10x17**	**160 238**

Valve terminal Type 03 VIMP-/VIFB-03, MIDI/MAXI multi-functional

Ordering data – Accessories

FESTO

Ordering data				
	Code	Description	Type	Part No.
Modules				
	F	Input module for multi-pin, 4-fold	**VIGE-03-MP-4**	**18 672**
	E	Input module for multi-pin, 8-fold	**VIGE-03-MP-8**	**18 657**
Plug				
	S	Plug, straight socket, M12, 4-pin, PG7	**SEA-GS-7**	**18 666**
	W	4-pin, 2.5 mm^2 O.D.	**SEA-4GS-7-2,5**	**192 008**
	X	Plug for 2 sensor cables, M12, PG11, 4-pin	**SEA-GS-11-DUO**	**18 779**
Cables				
		DUO cable, 2x straight sockets	**KM12-DUO-M8-GDGD**	**18 685**
		DUO cable, straight/angled socket	**KM12-DUO-M8-GDWD**	**18 688**
		DUO cable, 2x angled sockets	**KM12-DUO-M8-WDWD**	**18 687**
Multi-pin plug connection				
	H	Connecting cable for multi-pin node MP4, with Sub-D connection, 5 m	**KEA-1-25P-5**	**177 413**
	J	Connecting cable for multi-pin node MP4, with Sub-D connection, 10 m	**KEA-1-25P-10**	**177 414**
		Connecting cable for multi-pin node MP4, with Sub-D connection, X length	**KEA-1-25P-X**	**177 415**
		Connecting cable, 26-pin, for inputs, 10 m	**KMP2-03-E-10-26**	**175665**
		Connecting cable, 26-pin, for valves, 10 m	**KMP2-03-V-10-26**	**175667**
	E	Socket for multi-pin node MP2, 25-pin	**SD-SUB-D-BU25**	**18 709**
	Y	Multi-pin plug socket for multi-pin node MP2, for valves	**IMP2-SD-26-V**	**18 664**
	Q	Multi-pin plug socket for multi-pin node MP2, for inputs/outputs	**IMP2-SD-26-EA**	**18 665**

Ordering data					
	Description	Allocation	Language	Type	Part No.
User documentation					
	User documentation valve terminals Type 03	Type 03 Pneumatics MIDI/MAXI	German	**P.BE-MIDI/MAXI-03-DE**	**152 770**
			English	**P.BE-MIDI/MAXI-03-EN**	**152 771**
			Spanish	**P.BE-MIDI/MAXI-03-ES**	**163 917**
			French	**P.BE-MIDI/MAXI-03-FR**	**163 937**
			Italian	**P.BE-MIDI/MAXI-03-IT**	**165 441**
			Swedish	**P.BE-MIDI/MAXI-03-SV**	**165 471**