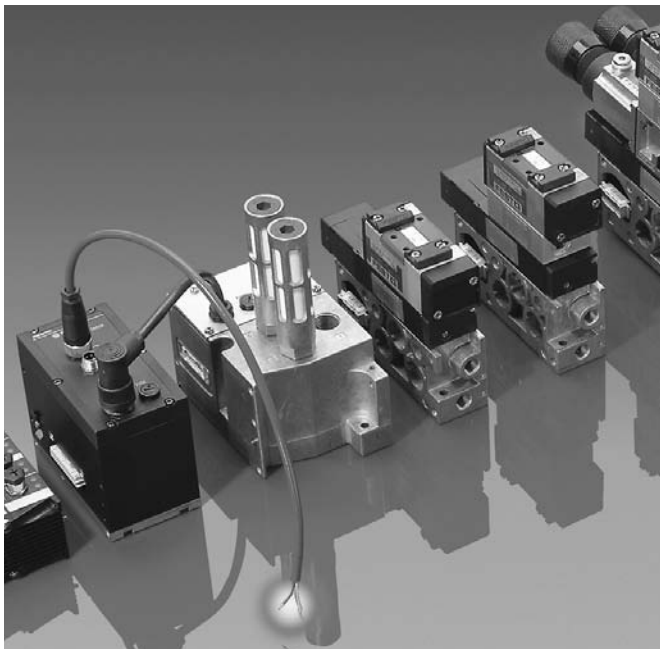
Contents



Modular ISO 5599/II Pneumatic Valve Manifolds Offer “Plug and Play” Versatility

A totally modular series of ISO standard pneumatic valve manifolds feature plug-in valves and plug-in sub-base manifolds.

Each manifold can be configured with up to 26 solenoid coils and 128 I/O.

Festo Smart Valve/Sensor Manifolds incorporate an embedded microprocessor providing intelligent programmable control capability for stand-alone machine control or fieldbus networked automated systems.

Inexpensive Options that Perform

Of course, Festo offers conventional pre-wired single sub-bases and manifold sub-bases as well, and there are two inexpensive versions that can boost your productivity.

Our single sub-bases with 4 Pin Micro connector, and our Multi-pin Manifolds offer superb performance like our larger manifolds, but at a lower cost.

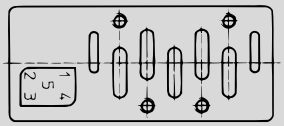
You Control the Configuration

Manifolds can be configured for single and/or double solenoid 5/2 or 5/3-way valves. The valves feature a static seal design which offers 20% higher flow rates (1.2 to 4.6 Cv) and long-life dependability. Festo Manifolds are pre-assembled to customer specification.

ISO 5599/II Plug-in Electronic/Pneumatic Control

Festo ISO 5599/II Modular valve series with fully integrated electronics provides an easy, economical, space-saving solution for your automation applications.

ISO 5599/II Connection, Top View



ISO 5599/II standardizes the integration of electrical connections in ISO 5599/II standard sub-bases, sizes 1, 2, and 3.

Electronic/Pneumatic control is further enhanced by Festo's plug-in connection between sub-bases, control block, and I/O blocks. This eliminates any pre-wiring hassles, and enables quick, and easy installation.

The Innovative "Solenoid Sandwich"

Festo's innovative "solenoid sandwiches" take the concept one step further by integrating the solenoid actuator itself into an intermediate plate.

Easily inserted between standard ISO 5599/I pneumatically actuated valves (5/2-way or 5/3-way) and ISO 5599/II sub-base manifolds, Type MUH-... solenoid sandwiches effectively eliminate the need for traditional solenoid valves.

Simplified Installation and Maintenance

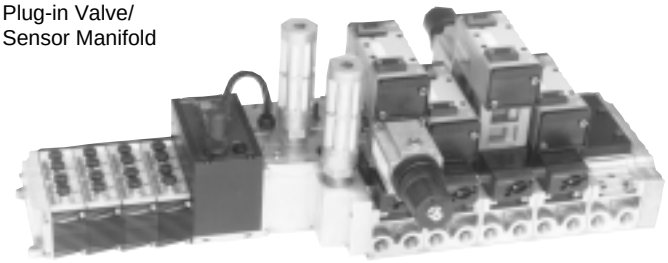
Festo solenoid sandwiches with built-in manual override and LED simplify installation and maintenance. There are no LED gaskets to install, and manual actuation is easily accomplished.

The modular configuration sets up quickly, and plug in mounting eliminates the need for any wiring.

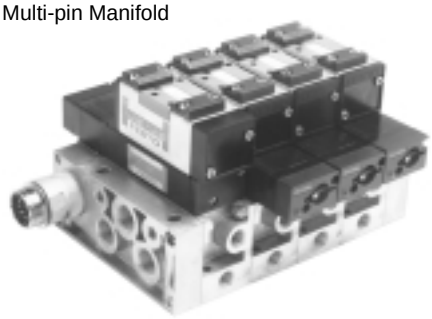
Should a valve need to be replaced, there's no wiring to disconnect. Simply replace the air piloted valve mounted on top of the sandwich.

Solenoid sandwiches can be used together with all ISO 5599/I flow control and pressure regulator sandwiches.

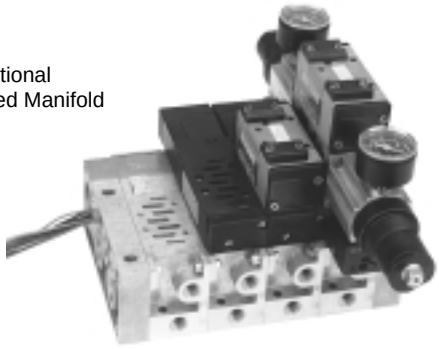
Plug-in Valve/
Sensor Manifold



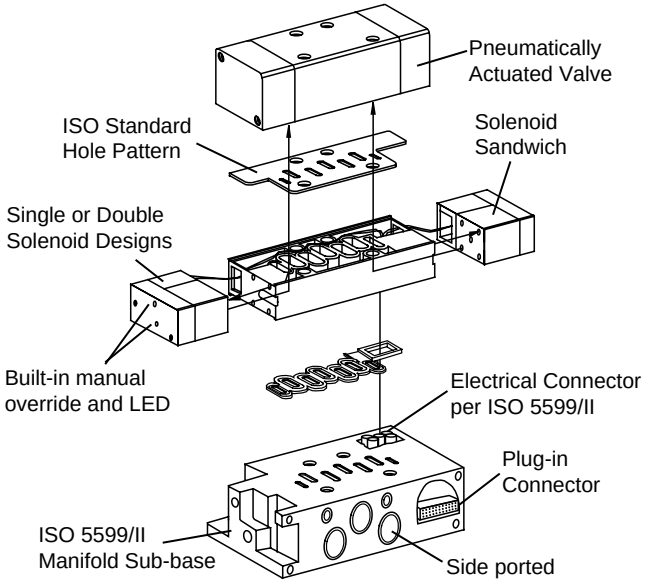
Multi-pin Manifold



Conventional
Pre-wired Manifold

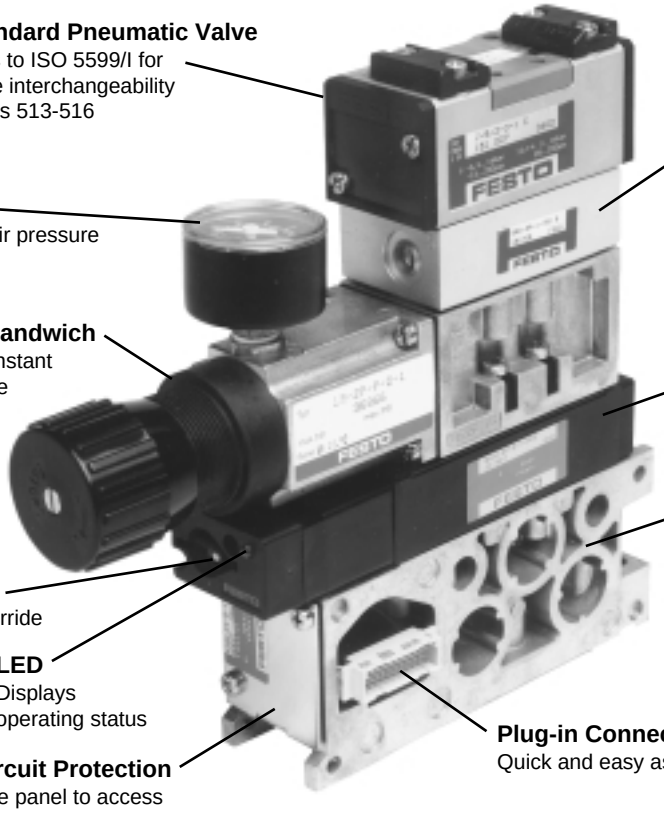


Factory Pre-assembled Manifolds Replace Solenoid Valves and Completely Eliminate Wiring



Modular Design Flexibility Featuring "Sandwich" Control Options

Save up to 80% on Installation Time, Labor and Costs



ISO Standard Pneumatic Valve
Conforms to ISO 5599/I for worldwide interchangeability
See pages 513-516

Pressure Gauge
Precise monitoring of air pressure

Pressure Regulator Sandwich
Adjustable to maintain constant operating pressure despite fluctuations in the line pressure and the air consumed.
See page 568

Push Button
For manual override

LED
Displays operating status

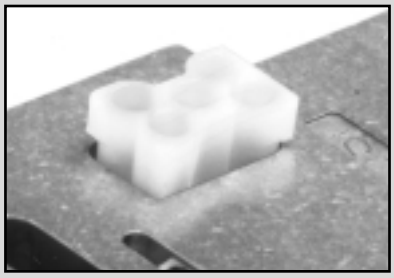
Short Circuit Protection
Removable panel to access fast acting solenoid fuse

Flow Control Sandwich
Intermediate plates with built-in exhaust air flow control at exhaust ports 5 (R) and 3 (S).
See page 570

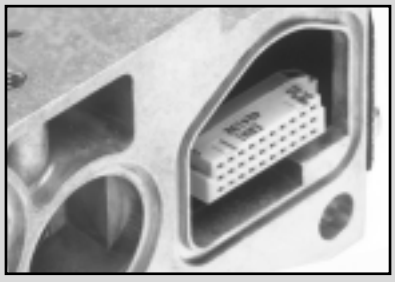
Solenoid Sandwich
Eliminates the need for traditional solenoid valves.
See page 566

Manifold Mounting in Accordance with ISO 5599/II
Insures worldwide acceptance and complete compatibility

Plug-in Connector
Quick and easy assembly, with no wiring hassles



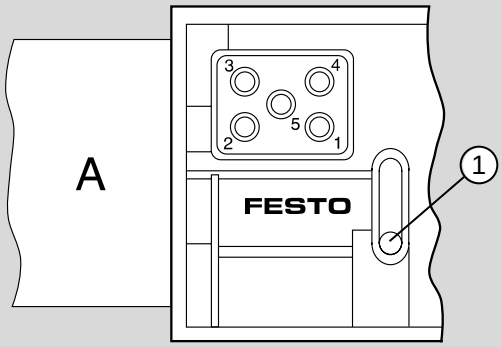
ISO 5599/II electrical connector as seen from top of sub-base.



Festo's Plug-in connection completely eliminates all wiring.

ISO Standard Pin Assignment

Bottom view of MUH-... solenoid sandwich.



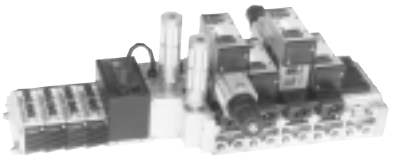
Contacts Number 1 and 3 are used for single solenoid sandwiches (supply voltage coil A).

Contacts Number 2 and 4 are used for second solenoid of a double solenoid sandwich (supply voltage coil B).

Contact Number 5 is used for ground.

(1) Auxiliary pilot air possible by changing seal pins from 12 or 14 to 1.

ISO 5599/II Fieldbus and Smart Valve Manifolds



Festo Type 04 Valve Manifolds feature a totally modular design and can be custom configured for up to 13 double solenoid valves, or up to 26 solenoid coils per manifold.

Manifold Configurations

- **Type FB-...**, Fieldbus interface module, available for most major bus protocols.
- **Type SB-...**, programmable "smart" node which incorporates a built-in microprocessor and eliminates the need for an external PLC.
- **Type SF-...**, a smart node with fieldbus networking capability for multi-station systems.

Electrical I/O Modules
See pages 243-247.

The manifolds with bus interface can also be configured to include digital and/or analog I/O modules*.

For controlling ASi actuator/sensor networks, an ASi Master* is available.

* For select Protocols.

Order Forms (See Pages 598-601)

How to Order:

Fieldbus and Smart Valve Manifolds

Fieldbus and Smart Valve Manifolds consist of electrical and pneumatic components.

Electrical (left side) - Included in the electrical part of the manifold are the I/O modules, control block and electrical accessories.

Pneumatic (right side) - Included in the pneumatic part are valves, flow control sandwiches, pressure regulator sandwiches, gauges, isolating disks (if you want separate pressure zones), and intermediate plates (to combine manifolds of different sizes on one assembly).

Use the order forms on on pages 598-601 to configure your valve manifold.

Ordering Example:

A Fieldbus Valve/Sensor Manifold with 3 input blocks, 1 output block, a Festo Fieldbus control block, with 6 valve positions (4 single solenoid, air piloted valves with spring return and 2 double solenoid air piloted valves), plus desired accessories, is configured in this manner:

Electrical: 04E - 3FA - F11 - N2S

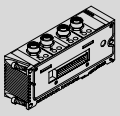
Pneumatic: 04P - 1 - 06 - QY Z : 4MXPT, 2JXQT

See example below for complete order code.

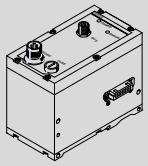
Note: Consecutive positions having the same configuration are prefixed with the number.

04E - 3FA - F11 - N2S 04P - 1 - 06 - QY Z : 4MXPT, 2JXQT

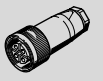
Manifold Type
04E = ISO 5599/II Electrical Code

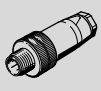


Electrical I/O Modules
3F = Three 4 Input Blocks
A = One 4 Output Block



Control Block
F11 = DeviceNet





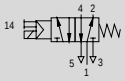
Accessories
N = Power Supply Socket
2S = Two I/O Straight Connectors

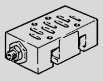
Manifold Type
04P = ISO 5599/II Pneumatic Code

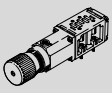
ISO Size
1 = ISO Size 1

No. of valve positions
Six Positions

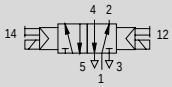
Pilots and Ports
QY = Internal Pilot
Z = BSP Ports

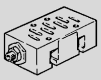


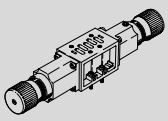




Position Configuration (First 4 Positions)
M = Four Single Solenoid Air Piloted Spring Return Valves
X = Four Flow Control Sandwiches
P = Four Single Supply Pressure Regulators
T = Four Pressure Gauges (0 to 10 bar)

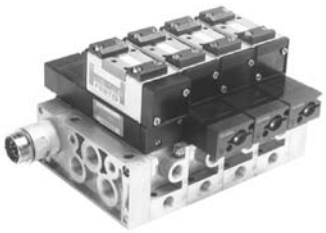






Position Configuration (Positions 5 and 6)
J = Two Double Solenoid Air Piloted Valves
X = Two Flow Control Sandwiches
Q = Two Dual Pressure Regulators
T = Four Pressure Gauges (0 to 10 bar)

Multi-pin Valve Manifolds with 11 Pin and 31 Pin Connectors



Festo's Multi-pin Valve Manifolds provide an economical, easy to install solution.

Multi-pin Manifold Configurations

Two versions are available, configured with NPT or BSP connections.

- Manifolds with a maximum of 4 stations and 11 pin connector.
- Manifolds with a maximum of 12 stations and a 31 pin connector.

Multi-pin Versatility

Multi-pin manifolds are available in ISO sizes 1, 2 and 3. Type VIGK-... pre-wired sub-bases are used with these manifolds.

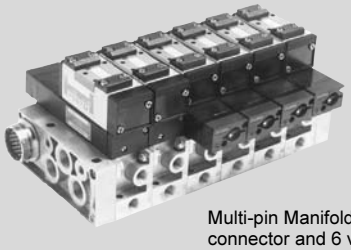
All manifolds are pre-assembled to customer specification. See pages 583-587 for complete information and dimensions.

Order Form (See Page 602)

How to Order:

Multi-pin Valve Manifolds

Manifolds consist of a pneumatic manifold assembly with integral multi-pin connector. The left end plate houses the 11 or 31 pin connector.



Multi-pin Manifold with 31 pin connector and 6 valve positions.

Ordering Example

To order a Multi-pin ISO Size 1 Manifold with a 31 pin connector, 24 volt solenoids, BSP connections and 12 valve positions you will use the order form on page 602. The order number consists of all the components that make up the manifold. The example below shows how the manifold is assembled.

41P - 1 - 12 - P - Y - Z - MP4 : 8(MPU), 4(JXPU)

- **41P** — **Manifold Type**
- **1** — **Size**
- **12** — **Valve Qty.** 1 to 4 = 11 Pin; 5 to 13 = 31 Pin
- **P** — **Voltage** P = 24 VDC; Q = 110 VAC
- **Y** — **Piloting** Y = Internal; E = External
- **Z** — **Ports** Z = BSP; N = NPT
- **MP4** — **Round multi-pin connector**
- **8(MPU)** — **Number of positions having same configuration**
- **4(JXPU)** — **Position configuration**
- **Additional position configuration**

Single Sub-bases with 4 pin Micro Connector

Festo's single sub-bases with 4 pin micro connector offer inexpensive electronic integration in a compact design.

Single Sub-base Configurations

Two versions are available, configured with NPT or BSP connections.

- Single sub-bases with 4 pin micro connector are available in ISO sizes 1, 2 and 3.
- Type NASE-... side ported single sub-bases are used with this connector.

4 Pin Micro Connectors

See pages 574-576 for complete information and dimensions. All single sub-bases with 4 pin micro connector are pre-assembled to customer specification.

How to Order:

Single Sub-base with 4 Pin Micro Connector

To order, just specify the part number and the type.

Metric Version (BSP)		Inch Version (NPT)	
Part No.	**Type**	**Part No.**	**Type**
154690	NASE-1/4-1-ISO-SA	13000315	NASE-1/4-NPT-1-ISO-SA
13016903	NASE-3/8-2-ISO-B-SA	13017024	NASE-3/8-NPT-2-ISO-B-SA
		13017025	NASE-1/2-NPT-2-ISO-B-SA
		13017026	NASE-1/2-NPT-3-ISO-B-SA
		13017027	NASE-3/4-NPT-3-ISO-B-SA

Description	ISO Size 1 Type	ISO Size 2 Type	ISO Size 3 Type
Pneumatic Air-Piloted Valves			
Single-Pilot 5/2-way Valves			
With Pneumatic Reset	VL-5/2-D-1-C	VL-5/2-D-2-C	VL-5/2-D-3-C
With Spring Return	VL-5/2-D-1-FR-C	VL-5/2-D-2-FR-C	VL-5/2-D-3-FR-C
Double-Pilot 5/2-way Valves	J-5/2-D-1-C	J-5/2-D-2-C	J-5/2-D-3-C
With Dominating Position	JD-5/2-D-1-C	JD-5/2-D-2-C	JD-5/2-D-3-C
Double-Pilot 5/3-way Valves			
With Closed Center	VL-5/3G-D-1-C	VL-5/3G-D-2-C	VL-5/3G-D-3-C
With Exhausted Center	VL-5/3E-D-1-C	VL-5/3E-D-2-C	VL-5/3E-D-3-C
With Pressurized Center	VL-5/3B-D-1-C	VL-5/3B-D-2-C	VL-5/3B-D-3-C
Solenoid Sandwiches			
Single Solenoid Sandwiches	MUH-ZP-D-1-24G MUH-ZP-D-1-120W	MUH-ZP-D-2-24G MUH-ZP-D-2-120W	MUH-ZP-D-3-24G MUH-ZP-D-3-120W
Double Solenoid Sandwiches (G = DC, W = AC)	MUHx2-ZP-D-1-24G MUHx2-ZP-D-1-120W	MUHx2-ZP-D-2-24G MUHx2-ZP-D-2-120W	MUHx2-ZP-D-3-24G MUHx2-ZP-D-3-120W
Pressure Regulator Sandwiches			
Output 4 (A) Regulator	LR-ZP-A-D-1	LR-ZP-A-D-2	LR-ZP-A-D-3
Output 2 (B) Regulator	LR-ZP-B-D-1	LR-ZP-B-D-2	LR-ZP-B-D-3
Supply 1 (P) Regulator	LR-ZP-P-D-1	LR-ZP-P-D-2	LR-ZP-P-D-3
Output 4 & 2, (A & B) Regulator	LR-ZP-A/B-D-1	LR-ZP-A/B-D-2	LR-ZP-A/B-D-3
Flow Control Sandwiches	GRO-ZP-1-ISO-B	GRO-ZP-2-ISO-B	GRO-ZP-3-ISO-B
Single Sub-bases			
Pre-wired Single Sub-bases Side Ported	NASE-1/4-1-ISO NASE-1/4-NPT-1-ISO	NASE-3/8-2-ISO-B NASE-3/8-NPT-2-ISO-B NASE-1/2-2-ISO-B NASE-1/2-NPT-2-ISO-B	NASE-1/2-3-ISO-B NASE-1/2-NPT-3-ISO-B NASE-3/4-3-ISO-B NASE-3/4-NPT-3-ISO-B
Single Sub-bases with 4 Pin Connector Side Ported	NASE-1/4-1-ISO-SA NASE-1/4-NPT-1-ISO-SA	NASE-3/8-2-ISO-B-SA NASE-3/8-NPT-2-ISO-B-SA NASE-1/2-NPT-2-ISO-B-SA	NASE-1/2-NPT-3-ISO-B-SA NASE-3/4-NPT-3-ISO-B-SA
Manifold Sub-bases			
Pre-wired for Multi-pin	VIGK-04-D-1 VIGK-04-D-1-NPT	VIGK-04-D-2 VIGK-04-D-2-NPT	VIGK-04-D-3 VIGK-04-D-3-NPT
With Plug-in Connector for Fieldbus and Smart Valve/Sensor Manifolds	VIGI-04-D-1 VIGI-04-D-1-NPT	VIGI-04-D-2 VIGI-04-D-2-NPT	VIGI-04-D-3 VIGI-04-D-3-NPT
Manifold Sub-base End Plates Right and left end plates for pre-wired manifolds	IEPL-04-D-1 IEPR-04-D-1 IEPL-04-D-1-NPT IEPR-04-D-1-NPT	IEPL-04-D-2 IEPR-04-D-2 IEPL-04-D-2-NPT IEPR-04-D-2-NPT	IEPL-04-D-3 IEPR-04-D-3 IEPL-04-D-3-NPT IEPR-04-D-3-NPT
Isolating Disks For pre-wired and plug-in manifolds	NSC-04-D-1	NSC-04-D-2	NSC-04-D-3
Blanking Plates For pre-wired and plug-in manifolds	IAP-04-D-1	IAP-04-D-2	IAP-04-D-3
Intermediate Plates A connector between plug-in manifold sub-bases sizes 1 and 2 or 2 and 3	NZVE-D1-D2-SA For manifold sub-bases sizes 1 and 2.		NZVE-D2-D3-SA For manifold sub-bases sizes 2 and 3.

Electrical I/O Modules - Digital*				Electrical I/O Modules - Analog*	
Digital I/O Blocks				**Analog I/O Blocks**	
4 Input Module (PNP)	VIGE-03-FB-4	4 Input Module (NPN)	VIGE-03-FB-4N	Analog Module 1 I, 1 O For proportional valves	VIAP-03-FB
8 Input Module (PNP)	VIGE-03-FB-8	8 Input Module (NPN)	VIGE-03-FB-8N		
4 Output Module (PNP)	VIGA-03-FB-4			Analog Module 3 I, 1 O 0 to 10 V	VIAU-03-FB-U
High Current 4 Output Module with Power Supply		VIGA-03-FB-4-PH, VIGV-03-FB-24V-25A			
ASi Master I/O Block				Analog Module 3 I, 1 O 4 to 20 mA	VIAU-03-FB-I
ASi Interface Master	(For use with FB6, FB9, and SB2)	VIASI-03-M			

* See pages 244 to 245.

Solenoid Sandwiches

Solenoid sandwiches mount between standard ISO 5599/I pneumatic valve and ISO 5599/II sub-base.

With mounting pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

Operating status is indicated with a yellow LED and manual override is achieved with a non-locking pushbutton.

ISO Size 1

Single Solenoid Sandwiches

DC - Type MUH-ZP-D-1-24G
AC - Type MUH-ZP-D-1-120W

Double Solenoid Sandwiches

DC - Type MUHx2-ZP-D-1-24G
AC - Type MUHx2-ZP-D-1-120W

ISO Size 2

Single Solenoid Sandwiches

DC - Type MUH-ZP-D-2-24G
AC - Type MUH-ZP-D-2-120W

Double Solenoid Sandwiches

DC - Type MUHx2-ZP-D-2-24G
AC - Type MUHx2-ZP-D-2-120W

ISO Size 3

Single Solenoid Sandwiches

DC - Type MUH-ZP-D-3-24G
AC - Type MUH-ZP-D-3-120W

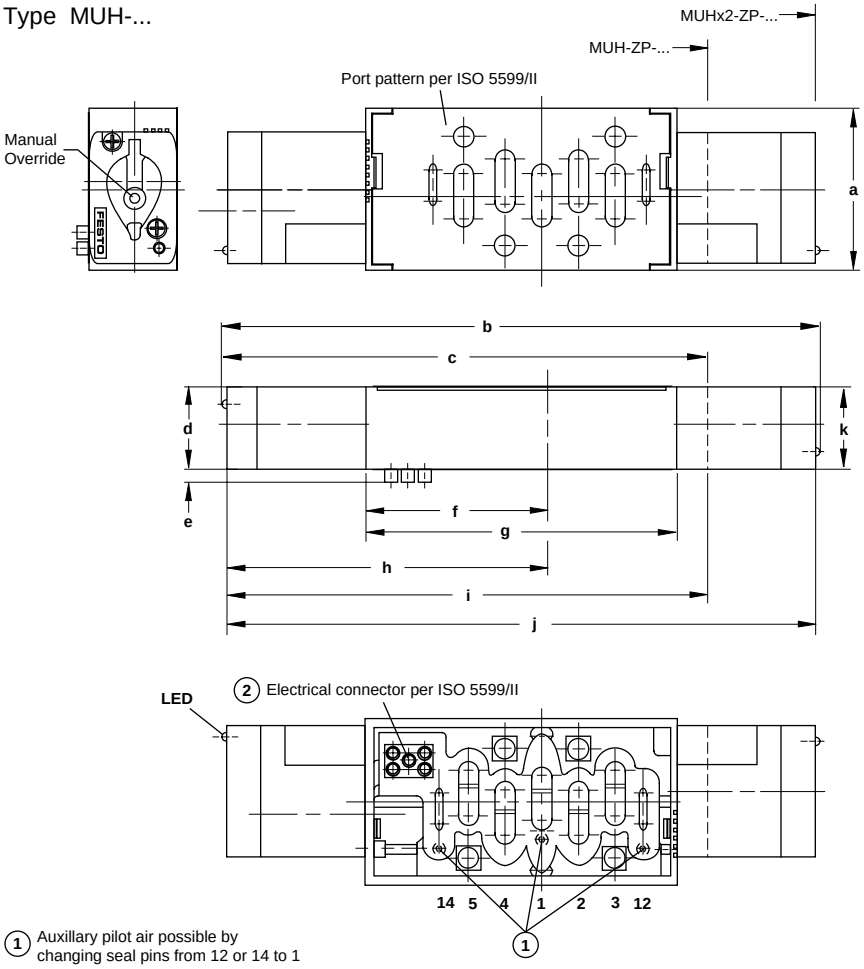
Double Solenoid Sandwiches

DC - Type MUHx2-ZP-D-3-24G
AC - Type MUHx2-ZP-D-3-120W

Note: All 24 Volt DC versions have built-in spike suppression.

Order Number Part No./Type	34927 MUH-ZP-D-1-24G	34931 MUH-ZP-D-2-24G	34934 MUH-ZP-D-3-24G
	34929 MUH-ZP-D-1-120W	34932 MUH-ZP-D-2-120W	34936 MUH-ZP-D-3-120W
	34928 MUHx2-ZP-D-1-24G	34437 MUHx2-ZP-D-2-24G	34935 MUHx2-ZP-D-3-24G
	34930 MUHx2-ZP-D-1-120W	34933 MUHx2-ZP-D-2-120W	34937 MUHx2-ZP-D-3-120W
Medium	Compressed air, filtered (lubricated or unlubricated); vacuum		
Design	Modular plug-in solenoid sandwich with built-in non-locking manual override		
Mounting	Interface port patterns as per ISO 5599/I and ISO 5599/II		
Materials	Acetal Resin, Polyamid, NBT, Steel, Brass, CU, Duroplast		
Coil Voltage	24V DC or 120V AC 50 to 60 Hz	24V DC or 120V AC 50 to 60 Hz	24V DC or 120V AC 50 to 60 Hz
Power Consumption	3.1 W per coil with LED		
Protection	IP 65		
Medium Temperature	23 to 122°F / -5 to +50°C		
Ambient Temperature	23 to 122°F / -5 to +50°C		

Type MUH-...



1 Auxillary pilot air possible by changing seal pins from 12 or 14 to 1

2 For pin assignment, see page 562

A-ISOII7

Dimensions, ISO Size 1

Order Number		a	b	c	d	e	f	g	h	i	j	k
Part No.	Type	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm
34927	MUH-ZP-D-1-24G	1.67 / 42.5	7.97 / 202.5	6.22 / 158	1.06 / 27	0.20 / 5	2.30 / 58.5	3.88 / 98.5	4.27 / 108.5	6.14 / 156	7.81 / 198.5	1.04 / 26.5
34929	MUH-ZP-D-1-120W	1.67 / 42.5	7.97 / 202.5	6.22 / 158	1.06 / 27	0.20 / 5	2.30 / 58.5	3.88 / 98.5	4.27 / 108.5	6.14 / 156	7.81 / 198.5	1.04 / 26.5
34928	MUHx2-ZP-D-1-24G	1.67 / 42.5	7.97 / 202.5	6.22 / 158	1.06 / 27	0.20 / 5	2.30 / 58.5	3.88 / 98.5	4.27 / 108.5	6.14 / 156	7.81 / 198.5	1.04 / 26.5
34930	MUHx2-ZP-D-1-120W	1.67 / 42.5	7.97 / 202.5	6.22 / 158	1.06 / 27	0.20 / 5	2.30 / 58.5	3.88 / 98.5	4.27 / 108.5	6.14 / 156	7.81 / 198.5	1.04 / 26.5

Dimensions, ISO Size 2

Order Number		a	b	c	d	e	f	g	h	i	j	k
Part No.	Type	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm
34931	MUH-ZP-D-2-24G	2.13 / 54	8.58 / 218	6.83 / 173.5	1.06 / 27	0.20 / 5	2.60 / 66	4.49 / 114	4.68 / 116	6.75 / 171.5	8.43 / 214	1.04 / 26.5
34932	MUH-ZP-D-2-120W	2.13 / 54	8.58 / 218	6.83 / 173.5	1.06 / 27	0.20 / 5	2.60 / 66	4.49 / 114	4.68 / 116	6.75 / 171.5	8.43 / 214	1.04 / 26.5
34437	MUHx2-ZP-D-2-24G	2.13 / 54	8.58 / 218	6.83 / 173.5	1.06 / 27	0.20 / 5	2.60 / 66	4.49 / 114	4.68 / 116	6.75 / 171.5	8.43 / 214	1.04 / 26.5
34933	MUHx2-ZP-D-2-120W	2.13 / 54	8.58 / 218	6.83 / 173.5	1.06 / 27	0.20 / 5	2.60 / 66	4.49 / 114	4.68 / 116	6.75 / 171.5	8.43 / 214	1.04 / 26.5

Dimensions, ISO Size 3

Order Number		a	b	c	d	e	f	g	h	i	j	k
Part No.	Type	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm
34934	MUH-ZP-D-3-24G	2.56 / 65	9.67 / 245.5	7.91 / 201	1.06 / 27	0.20 / 5	5.08 / 129	5.57 / 141.5	3.11 / 79	7.83 / 199	9.51 / 241.5	1.04 / 26.5
34936	MUH-ZP-D-3-120W	2.56 / 65	9.67 / 245.5	7.91 / 201	1.06 / 27	0.20 / 5	5.08 / 129	5.57 / 141.5	3.11 / 79	7.83 / 199	9.51 / 241.5	1.04 / 26.5
34935	MUHx2-ZP-D-3-24G	2.56 / 65	9.67 / 245.5	7.91 / 201	1.06 / 27	0.20 / 5	5.08 / 129	5.57 / 141.5	3.11 / 79	7.83 / 199	9.51 / 241.5	1.04 / 26.5
34937	MUHx2-ZP-D-3-120W	2.56 / 65	9.67 / 245.5	7.91 / 201	1.06 / 27	0.20 / 5	5.08 / 129	5.57 / 141.5	3.11 / 79	7.83 / 199	9.51 / 241.5	1.04 / 26.5

ISO 5599/I and 5599/II Pressure Regulator Sandwiches

For ISO Valves, ISO Size 1, 2, 3

Pressure Regulator Sandwiches

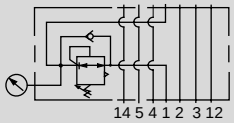
These adjustable pressure regulators maintain constant operating pressure despite fluctuations in the line pressure and the air consumed.

The compact sandwich design fits neatly between valve and sub-base, enabling precise pressure control for individual valve ports, as desired. The flow pattern conforms to ISO standard 5599/I.

Single-Port Pressure Regulators

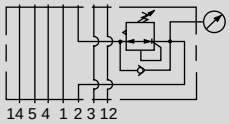
For controlling pressure to Port 1 (P)

Type
LR-ZP-P-D-1
LR-ZP-P-D-2
LR-ZP-P-D-3



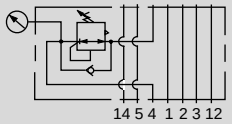
For controlling pressure to Port 2 (B)

Type
LR-ZP-B-D-1
LR-ZP-B-D-2
LR-ZP-B-D-3



For controlling pressure to Port 4 (A)

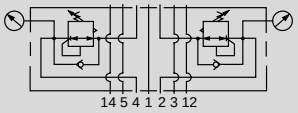
Type
LR-ZP-A-D-1
LR-ZP-A-D-2
LR-ZP-A-D-3



Dual-Port Pressure Regulators

For independent control of pressure to Ports 4 (A) and 2 (B).

Type
LR-ZP-A/B-D-1
LR-ZP-A/B-D-2
LR-ZP-A/B-D-3



Shown here
without adjusting knob.

Pressure regulators can be mounted on all ISO sub-bases.

Pressure regulator kits come with knobs and mounting screws as standard.

Gauges must be ordered separately.

Accessories:

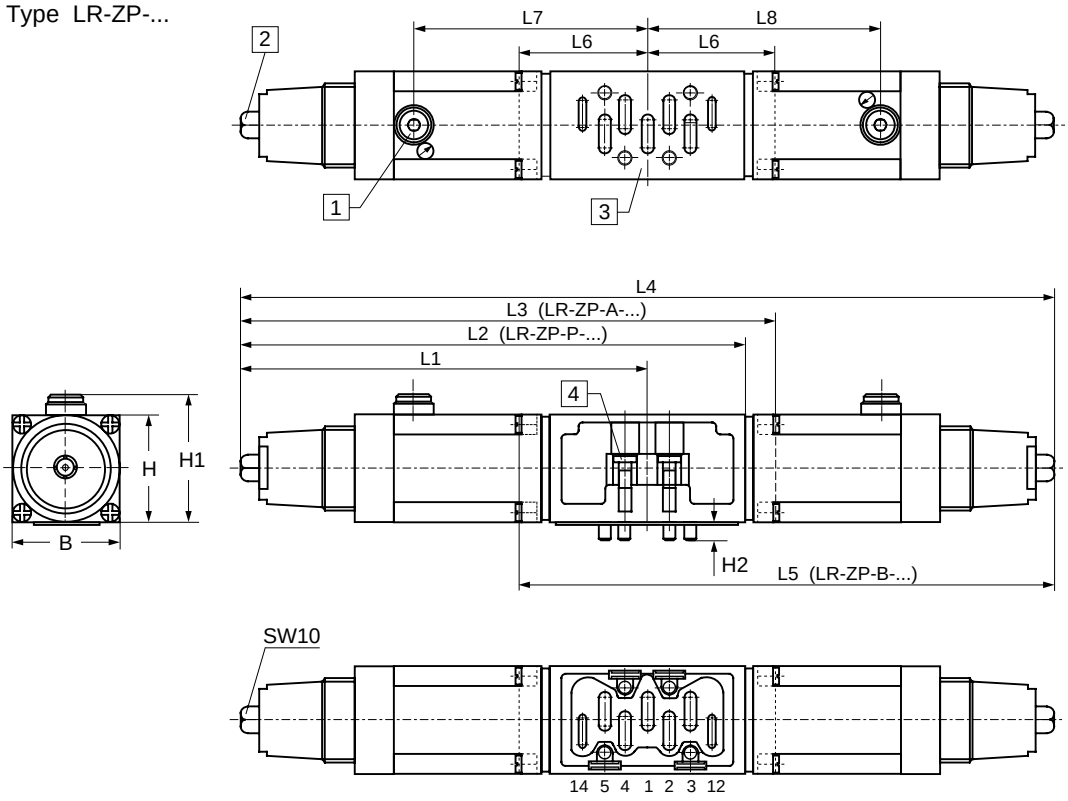
Pressure Gauges:	Type MA-40-16-1/8 (0 to 232 psi)	162836
	Type MA-40-10-1/8 (0 to 150 psi)	162835

For replacement purposes only:

Turning Knobs:	Size 1	13000443
	Size 2 and 3	215496
Knob Mounting Screws:		
	All Sizes	200510

Order Number Part No. / Type		13000434 LR-ZP-P-D-1	13000435 LR-ZP-P-D-2	13000438 LR-ZP-P-D-3
		13000436 LR-ZP-B-D-1	13000437 LR-ZP-B-D-2	13000439 LR-ZP-B-D-3
		13000433 LR-ZP-A-D-1	13000432 LR-ZP-A-D-2	13000431 LR-ZP-A-D-3
		13000440 LR-ZP-A/B-D-1	13000441 LR-ZP-A/B-D-2	13000442 LR-ZP-A/B-D-3
Medium		Compressed air (filtered, lubricated or unlubricated) max. 50 micron		
Design		Single-stage, non-piloted pressure regulator with secondary exhaust		
Mounting	To Sub-base	4 captive screws, M5 x 25 DIN 7984		
	To Valve	4 captive screws, M5 x L DIN 912		
Mounting Position		As desired		
Connection		Connection between sub-base and ISO Valve		
Flow Rate		21.2 scfm / 600 l/min	42.3 scfm / 1200 l/min	56.5 scfm / 1600 l/min
Pressure Range	Control range	0 to 180 psi / 0 to 12 bar		
	Gauge	0 to 240 psi / 0 to 16 bar		
Inlet Pressure Max.		210 psi / 14 bar		
Operating Pressure Max.		180 psi / 12 bar		
Ambient Temperature		14 to 140˚F / -10 to +60˚C		
Materials		Housing: Die-cast AL Si 12 (Cu); Seals: Buna N		
Weight	Type...-P, B, A-...	1.147 lb / 0.520 kg	2.117 lb / 0.960 kg	2.690 lb / 1.220 kg
	Type...-A/B-...	1.852 lb / 0.840 kg	3.286 lb / 1.490 kg	3.902 lb / 1.770 kg

Type LR-ZP-...



Regulator only	Kit
Part Numbers	
35966	13000434
35424	13000436
35969	13000433
35427	13000440
35967	13000435
35425	13000437
35970	13000432
35428	13000441
35968	13000438
35426	13000439
35971	13000431
35429	13000442
Kits configured with knobs and screws. Kits are included with manifolds.	

1 G 1/8 connection for optional pressure gauge
2 Adjustment screw
3 Mounting surface conforms to ISO 5599/I
4 Captive screws

SW = Wrench Size (mm)

Dimensions, ISO Size 1

Order Number		B	H	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
Part No.	Type	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm
13000434	LR-ZP-P-D-1	1.68 / 42.6	1.77 / 45	2.05 / 52	0.14 / 8	6.34 / 161	7.88 / 200	—	—	—	—	3.54 / 90	—
13000436	LR-ZP-B-D-1	1.68 / 42.6	1.77 / 45	2.05 / 52	0.14 / 8	—	—	—	—	8.23 / 209	1.89 / 48	—	3.54 / 90
13000433	LR-ZP-A-D-1	1.68 / 42.6	1.77 / 45	2.05 / 52	0.14 / 8	6.34 / 161	—	8.23 / 209	—	—	1.89 / 48	3.54 / 90	—
13000440	LR-ZP-A/B-D-1	1.68 / 42.6	1.77 / 45	2.05 / 52	0.14 / 8	6.34 / 161	—	—	12.7 / 322	—	—	3.54 / 90	3.54 / 90

Dimensions, ISO Size 2

Order Number		B	H	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
Part No.	Type	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm
13000435	LR-ZP-P-D-2	2.17 / 54	2.28 / 58	2.46 / 62.5	0.39 / 10	7.40 / 188	9.17 / 233	—	—	—	—	4.15 / 105.5	—
13000441	LR-ZP-B-D-2	2.17 / 54	2.28 / 58	2.46 / 62.5	0.39 / 10	—	—	—	—	9.72 / 247	2.32 / 59	—	4.15 / 105.5
13000432	LR-ZP-A-D-2	2.17 / 54	2.28 / 58	2.46 / 62.5	0.39 / 10	7.40 / 188	—	9.72 / 247	—	—	—	4.15 / 105.5	—
13000437	LR-ZP-A/B-D-2	2.17 / 54	2.28 / 58	2.46 / 62.5	0.39 / 10	7.40 / 188	—	—	14.8 / 376	—	—	4.15 / 105.5	4.15 / 105.5

Dimensions, ISO Size 3

Order Number		B	H	H1	H2	L1	L2	L3	L4	L5	L6	L7	L8
Part No.	Type	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm	in / mm
13000438	LR-ZP-P-D-3	2.76 / 70	2.48 / 63	2.56 / 65	0.551 / 14	7.94 / 201.5	10.2 / 260	—	—	—	—	4.69 / 119	—
13000439	LR-ZP-B-D-3	2.76 / 70	2.48 / 63	2.56 / 65	0.551 / 14	7.94 / 201.5	—	—	—	10.8 / 274	2.85 / 72.5	—	4.69 / 119
13000431	LR-ZP-A-D-3	2.76 / 70	2.48 / 63	2.56 / 65	0.551 / 14	7.94 / 201.5	—	10.8 / 274	—	—	—	4.69 / 119	—
13000442	LR-ZP-A/B-D-3	2.76 / 70	2.48 / 63	2.56 / 65	0.551 / 14	7.94 / 201.5	—	—	15.9 / 403	—	—	4.69 / 119	4.69 / 119

ISO 5599/I and 5599/II Flow Control Sandwiches

For ISO Valves, ISO Size 1, 2, 3

Flow Control Sandwich

With mounting pattern to ISO 5599/I

Size 1

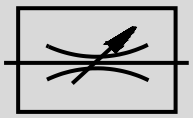
Type GRO-ZP-1-ISO-B

Size 2

Type GRO-ZP-2-ISO-B

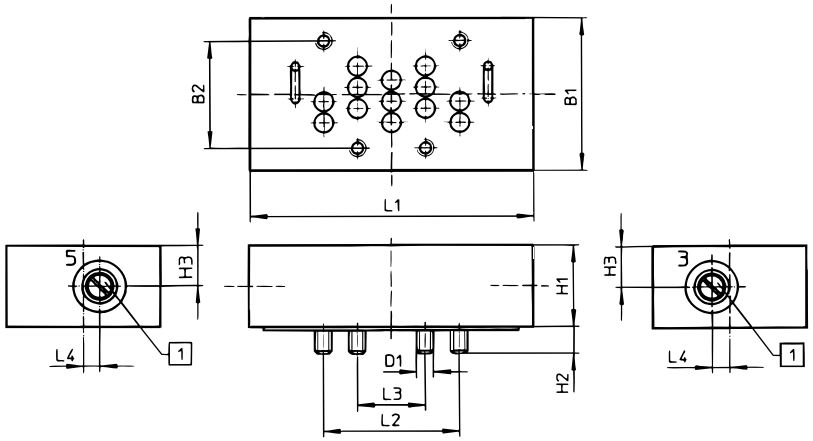
Size 3

Type GRO-ZP-3-ISO-B



Intermediate plates with built-in exhaust air flow control at exhaust ports 5 (R) and 3 (S) for ISO 5599/I valves.

These flow controls are mounted between the valve and sub-bases conforming to VDMA 24345.



1 Flow control adjusting screw

Type	D_1	B_1 in / mm	B_2 in / mm	H_1 in / mm	H_2 in / mm	H_3 in / mm	L_1 in / mm	L_2 in / mm	L_3 in / mm	L_4 in / mm
GRO-ZP-1-ISO-B	M5	1.65 / 42	1.10 / 28	0.98 / 25	0.26 / 6.5	0.49 / 12.5	3.03 / 77	1.42 / 36	0.71 / 18	0.24 / 6
GRO-ZP-2-ISO-B	M6	2.13 / 54	1.50 / 38	1.14 / 29	0.37 / 9.5	0.57 / 14.5	3.94 / 100	1.89 / 48	0.94 / 24	0.25 / 6.3
GRO-ZP-3-ISO-B	M8	2.76 / 70	1.89 / 48	1.30 / 33	0.47 / 12	0.65 / 16.5	5.20 / 132	2.52 / 64	1.26 / 32	0.28 / 7

Order Number / Part No./Type	151705 GRO-ZP-1-ISO-B	151706 GRO-ZP-2-ISO-B	151707 GRO-ZP-3-ISO-B
Mounting	(4) M5 mounting screws	(4) M6 mounting screws	(4) M8 mounting screws
Connection	Connection between sub-base and ISO valve		
Ambient Temperature	-4 to 176°F / -20 to 80°C		
Materials	Diecast Al, anodized		
Weight	0.507 lb / 0.230 kg	0.970 lb / 0.440 kg	1.874 lb / 0.850 kg

Pre-wired Single Sub-bases

With mounting pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

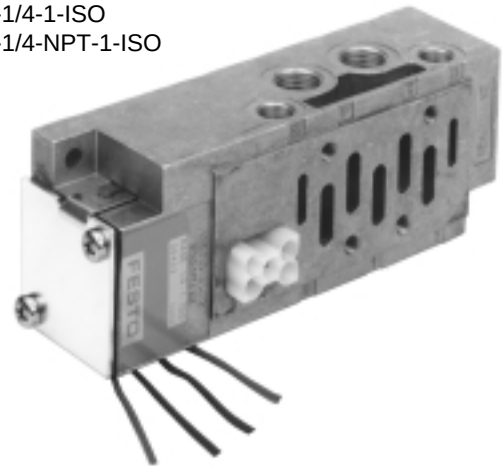
Single Sub-base, Side Ported

ISO Size 1
Type NASE-1/4-1-ISO
NASE-1/4-NPT-1-ISO

ISO Size 2
Type NASE-3/8-2-ISO
NASE-3/8-NPT-2-ISO

ISO Size 3
Type NASE-1/2-3-ISO
NASE-1/2-NPT-3-ISO

Type NASE-1/4-1-ISO
NASE-1/4-NPT-1-ISO



Order Number		30422 NASE-1/4-1-ISO	36103 NASE-3/8-2-ISO	36113 NASE-1/2-3-ISO
Part No. / Type		30426 NASE-1/4-NPT-1-ISO	13002890 NASE-3/8-NPT-2-ISO	13002895 NASE-1/2-NPT-3-ISO
Mounting		2 through-holes in housing		
Orifice Size		0.31 in / 8 mm	0.39 in / 10 mm	0.59 in / 15 mm
Connection	Working Ports	G 1/4 ISO / 1/4 NPT	G 3/8 ISO / 3/8 NPT	G 1/2 ISO / 1/2 NPT
	Pilot Ports	G 1/8 ISO / 1/8 NPT	G 1/8 ISO / 1/8 NPT	G 1/8 ISO / 1/8 NPT
Pressure Range		26.6 in Hg to 240 psi / -0.9 to 16 bar		
Protection		IP 65		
Medium Temperature		14 to 140° F / -10 to +60° C		
Ambient Temperature		14 to 140° F / -10 to +60° C		
Materials		Diecast Aluminum		

ISO 5599/II Sub-bases/Manifolds

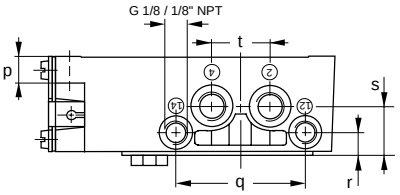
Pre-wired Single Sub-base Dimensions, ISO Size 1 (G 1/4 / **1/4" NPT**)

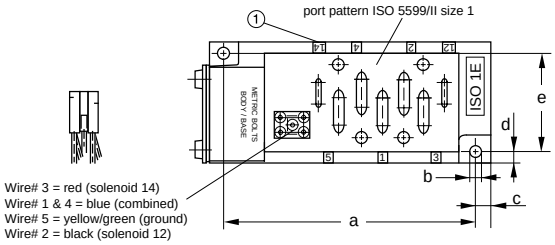
Single Sub-base, Side Ported

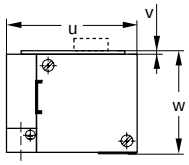
ISO Size 1

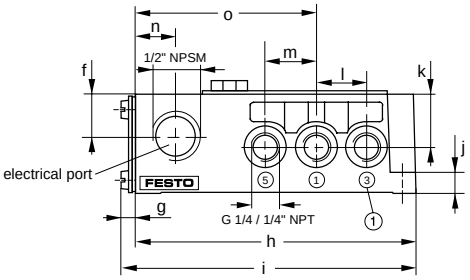
Type NASE-1/4-1-ISO
NASE-1/4-NPT-1-ISO

Type NASE-1/4-1-ISO
NASE-1/4-NPT-1-ISO









(1) Port Descriptions

1	(P)	=	Supply
4, 2	(A,B)	=	Outlets
5, 3	(R,S)	=	Exhaust
12, 14	(Y,Z)	=	Pilot

Dimensions: NASE-...

a	4.61 in / 117 mm	m	0.91 in / 23 mm
b	0.21 in / 5.2 mm	n	0.73 in / 18.5 mm
c	0.24 in / 6 mm	o	3.29 in / 83.5 mm
d	0.24 in / 6 mm	p	0.39 in / 10 mm
e	1.50 in / 38 mm	q	2.21 in / 56 mm
f	0.70 in / 17 mm	r	0.36 in / 9.2 mm
g	0.22 in / 5.6 mm	s	0.79 in / 20 mm
h	5.08 in / 129 mm	t	0.91 in / 23 mm
i	5.29 in / 135 mm	u	1.97 in / 50 mm
j	0.39 in / 10 mm	v	0.039 in / 1 mm
k	0.79 in / 20 mm	w	1.50 in / 38 mm
l	0.91 in / 23 mm		

Single Sub-base, Side Ported

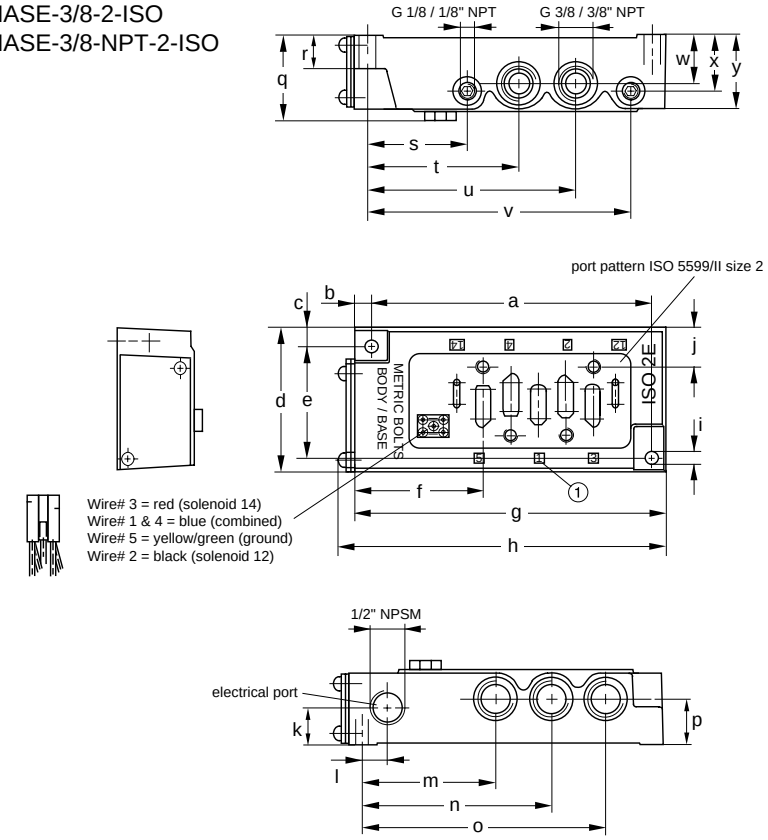
ISO Size 2

Type NASE-3/8-2-ISO
NASE-3/8-NPT-2-ISO

(1) Port Descriptions

1	(P)	=	Supply
4, 2	(A,B)	=	Outlets
5, 3	(R,S)	=	Exhaust
12, 14	(Y,Z)	=	Pilot

Type NASE-3/8-2-ISO
NASE-3/8-NPT-2-ISO



Dimensions: NASE-...

a	5.43 in / 138 mm	m	2.29 in / 58.2 mm
b	0.32 in / 8 mm	n	3.36 in / 85.3 mm
c	0.32 in / 8 mm	o	4.40 in / 112 mm
d	3.14 in / 80 mm	p	1.02 in / 26 mm
e	2.50 in / 63.5 mm	q	1.79 in / 45.5 mm
f	2.72 in / 69 mm	r	0.77 in / 19.5 mm
g	6.07 in / 154 mm	s	1.93 in / 49 mm
h	6.34 in / 161 mm	t	2.82 in / 71.7 mm
i	0.28 in / 7 mm	u	3.87 in / 98.3 mm
j	0.82 in / 21 mm	v	4.76 in / 121 mm
k	0.93 in / 23.5 mm	w	1.02 in / 26 mm
l	0.55 in / 14 mm	x	1.17 in / 29.7 mm
		y	1.59 in / 40.5 mm

ISO 5599/II Sub-bases/Manifolds

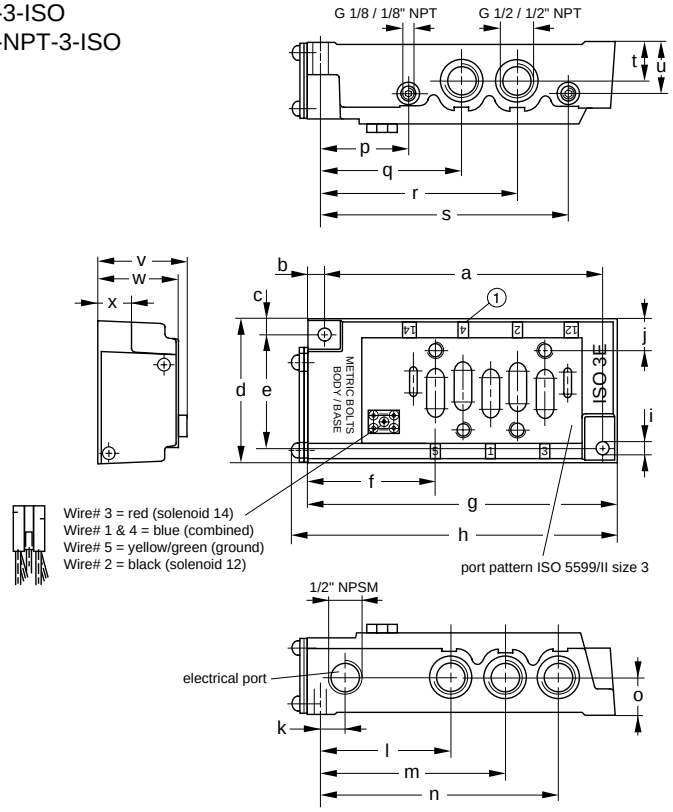
Pre-wired Single Sub-base Dimensions, ISO Size 3 (G 1/2 / **1/2" NPT**)

Single Sub-base, Side Ported

ISO Size 3

Type NASE-1/2-3-ISO
NASE-1/2-NPT-3-ISO

Type NASE-1/2-3-ISO
NASE-1/2-NPT-3-ISO



(1) Port Descriptions

1	(P)	=	Supply
4, 2	(A,B)	=	Outlets
5, 3	(R,S)	=	Exhaust
12, 14	(Y,Z)	=	Pilot

Dimensions: NASE-...

a	6.50 in / 165 mm	m	3.90 in / 99 mm
b	0.32 in / 8 mm	n	5.16 in / 131 mm
c	0.32 in / 8 mm	o	0.91 in / 23 mm
d	3.36 in / 85.3 mm	p	2.06 in / 52.5 mm
e	2.72 in / 69.0 mm	q	3.27 in / 83 mm
f	2.96 in / 75.2 mm	r	4.53 in / 115 mm
g	7.15 in / 181 mm	s	5.74 in / 146 mm
h	7.41 in / 188 mm	t	0.91 in / 23 mm
i	0.28 in / 7.0 mm	u	1.19 in / 30.2 mm
j	0.73 in / 18.5 mm	v	2.08 in / 52.8 mm
k	0.58 in / 14.8 mm	w	1.88 in / 47.8 mm
l	2.64 in / 67 mm	x	0.77 in / 19.5 mm

Single Sub-bases with 4 pin Micro Connector

With mounting pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II, all sub-bases include a 4 Pin Micro Connector.

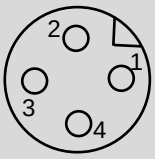
Single Sub-base, Side Ported

ISO Size 1
Type NASE-1/4-1-ISO-SA
NASE-1/4-NPT-1-ISO-SA

ISO Size 2
Type NASE-3/8-2-ISO-SA
NASE-3/8-NPT-2-ISO-SA

ISO Size 3
Type NASE-1/2-3-ISO-SA
NASE-1/2-NPT-3-ISO-SA

Male Pin Designation for 4 Pin Micro DC connector mounted in a single sub-base

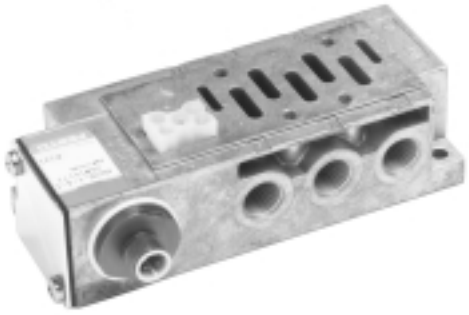


Pin No. 1	-	+	Solenoid A (Brown)
Pin No. 2	-		Not Used (White)
Pin No. 3	-		Common (Blue)
Pin No. 4	-	+	Solenoid B (Black)

Note: Single solenoid valves wired on solenoid "A" Pins.

(1) Port Descriptions

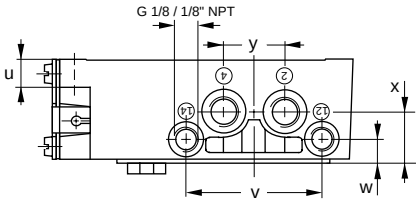
1	(P)	=	Supply
4, 2	(A,B)	=	Outlets
5, 3	(R,S)	=	Exhaust
12, 14	(Y,Z)	=	Pilot

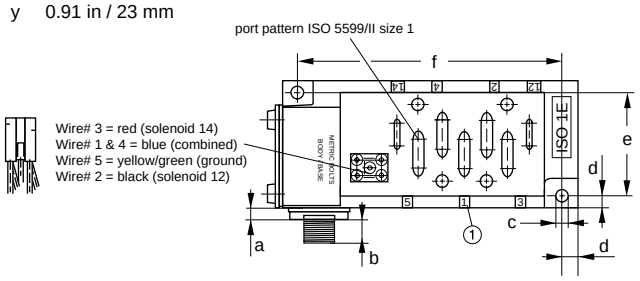


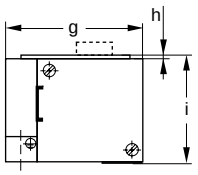
Dimensions: NASE-1/4-1-ISO-SA
NASE-1/4-NPT-1-ISO-SA

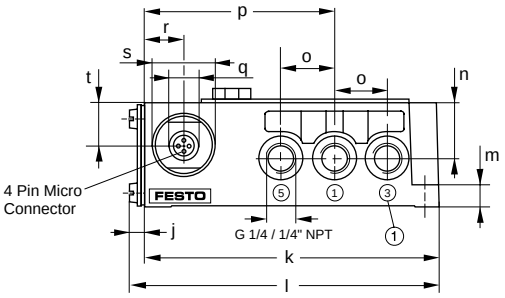
a	0.24 in / 5.5 mm	n	0.79 in / 20 mm
b	0.34 in / 9.5 mm	o	0.91 in / 23 mm
c	0.21 in / 5.2 mm	p	3.29 in / 83.5 mm
d	0.24 in / 6 mm	q	M12
e	1.50 in / 38 mm	r	0.73 in / 18.5 mm
f	4.61 in / 117 mm	s	0.98 in / 25 mm
g	1.97 in / 50 mm	t	0.70 in / 17 mm
h	.039 in / 1 mm	u	0.39 in / 10 mm
i	1.50 in / 38 mm	v	2.21 in / 56 mm
j	0.22 in / 5.6 mm	w	0.36 in / 9.2 mm
k	5.08 in / 129 mm	x	0.79 in / 20 mm
l	5.29 in / 135 mm	y	0.91 in / 23 mm
m	0.39 in / 10 mm		

Dimensions: ISO Size 2 and 3,
see page 576









Order Number		154690 NASE-1/4-1-ISO-SA	154664 NASE-3/8-2-ISO-SA	154665 NASE-1/2-3-ISO-SA
Part No./Type		13000315 NASE-1/4-NPT-1-ISO-SA	13000369 NASE-3/8-NPT-2-ISO-SA	13000370 NASE-1/2-NPT-3-ISO-SA
Mounting		2 through-holes in housing		
Orifice Size		0.31 in / 8 mm	0.39 in / 10 mm	0.59 in / 15 mm
Connection	Working Ports	G 1/4 ISO / 1/4 NPT	G 3/8 ISO / 3/8 NPT	G 1/2 ISO / 1/2 NPT
	Pilot Ports	G 1/8 ISO / 1/8 NPT	G 1/8 ISO / 1/8 NPT	G 1/8 ISO / 1/8 NPT
Pressure Range		26.6 in Hg to 240 psi / -0.9 to 16 bar		
Protection		IP 65		
Medium Temperature		14 to 140° F / -10 to +60° C		
Ambient Temperature		14 to 140° F / -10 to +60° C		
Materials		Diecast Aluminum		

Single Sub-base, Side Ported

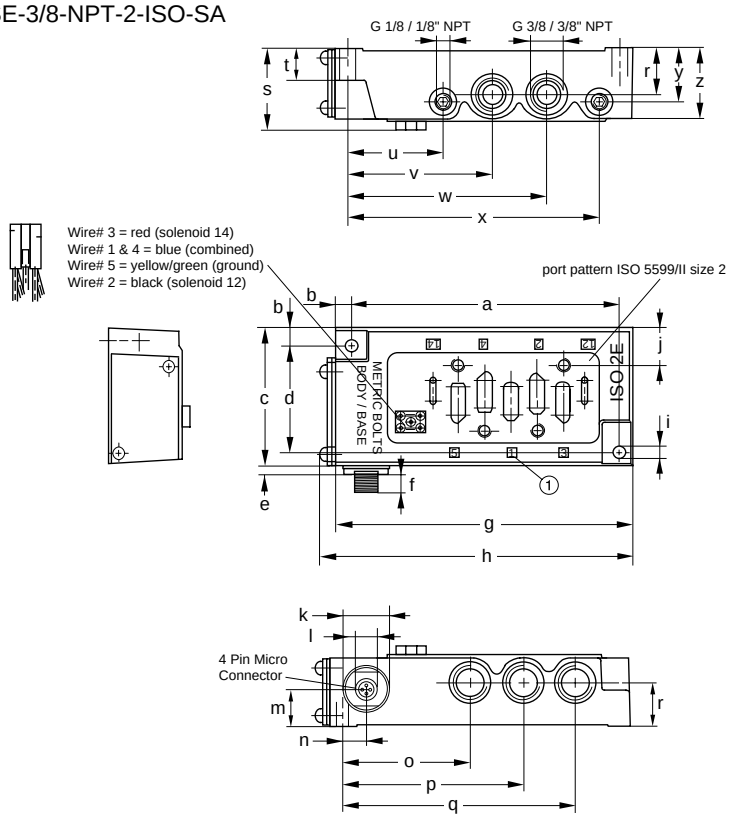
ISO Size 2
Type NASE-3/8-2-ISO-SA
NASE-3/8-NPT-2-ISO-SA

ISO Size 3
Type NASE-1/2-3-ISO-SA
NASE-1/2-NPT-3-ISO-SA

(1) Port Descriptions

1	(P)	=	Supply
4, 2	(A,B)	=	Outlets
5, 3	(R,S)	=	Exhaust
12, 14	(Y,Z)	=	Pilot

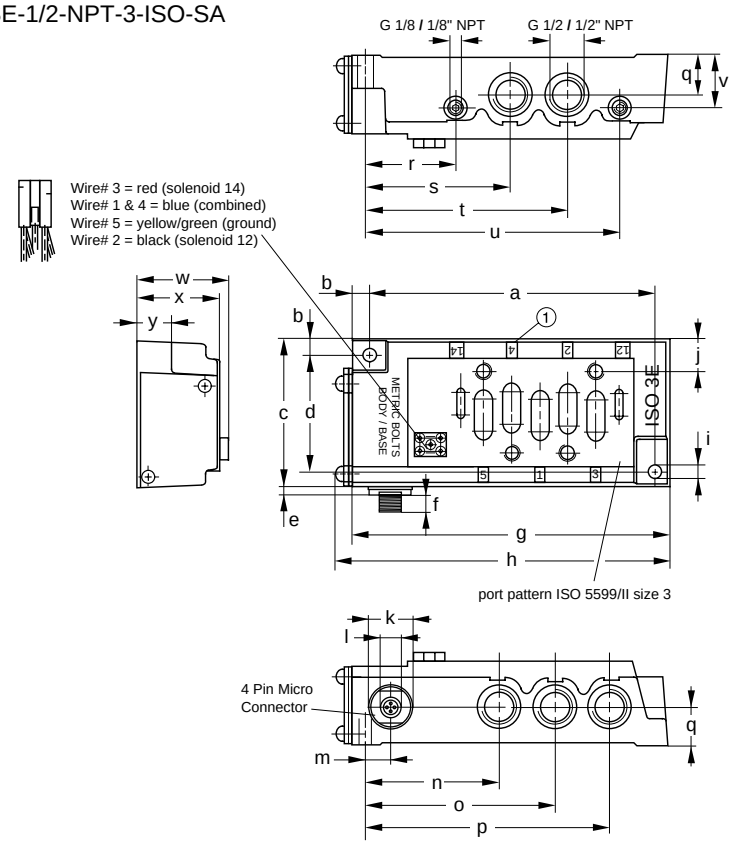
Type NASE-3/8-2-ISO-SA
NASE-3/8-NPT-2-ISO-SA



Dimensions: NASE-3/8-2-ISO-SA
NASE-3/8-NPT-2-ISO-SA

a	5.43 in / 138 mm	n	0.55 in / 14 mm
b	0.32 in / 8 mm	o	2.29 in / 58.2 mm
c	3.14 in / 80 mm	p	3.36 in / 85.3 mm
d	2.50 in / 63.5 mm	q	4.40 in / 112 mm
e	0.24 in / 5.5 mm	r	1.02 in / 26 mm
f	0.34 in / 9.5 mm	s	1.79 in / 45.5 mm
g	6.07 in / 154 mm	t	0.77 in / 19.5 mm
h	6.34 in / 161 mm	u	1.93 in / 49 mm
i	0.28 in / 7 mm	v	2.82 in / 71.7 mm
j	0.82 in / 21 mm	w	3.87 in / 98.3 mm
k	0.98 in / 25 mm	x	4.76 in / 121 mm
l	M12	y	1.17 in / 29.7 mm
m	0.93 in / 23.5 mm	z	1.59 in / 40.5 mm

Type NASE-1/2-3-ISO-SA
NASE-1/2-NPT-3-ISO-SA



Dimensions: NASE-1/2-3-ISO-SA
NASE-1/2-NPT-3-ISO-SA

a	6.50 in / 165 mm	n	2.64 in / 67 mm
b	0.32 in / 8 mm	o	3.90 in / 99 mm
c	3.36 in / 85.3 mm	p	5.16 in / 131 mm
d	2.72 in / 69.0 mm	q	0.91 in / 23 mm
e	0.24 in / 5.5 mm	r	2.06 in / 52.5 mm
f	0.34 in / 9.5 mm	s	3.27 in / 83 mm
g	7.15 in / 181 mm	t	4.53 in / 115 mm
h	7.41 in / 188 mm	u	5.74 in / 146 mm
i	0.28 in / 7 mm	v	1.19 in / 30.2 mm
j	0.73 in / 18.5 mm	w	2.08 in / 52.8 mm
k	0.98 in / 25 mm	x	1.88 in / 47.8 mm
l	M12	y	0.77 in / 19.5 mm
m	0.58 in / 14.8 mm		

Pre-wired Sub-bases for Manifold Mounting

Manifold Sub-base, ISO Size 1

With Mounting Pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

With G 1/4 ISO working ports (2, 4)
Type VIGK-04-D-1 30424

With 1/4 NPT working ports (2, 4)
Type VIGK-04-D-1-NPT 30428

End Plates, ISO Size 1

Includes one end plate, o-rings, mounting screws, washers and hex nuts.

Left and Right End Plates (BSP)
Type IEPL-04-D-1 30425
Type IEPR-04-D-1 18790

Left and Right End Plates (NPT)
Type IEPL-04-D-1-NPT 30429
Type IEPR-04-D-1-NPT 18791

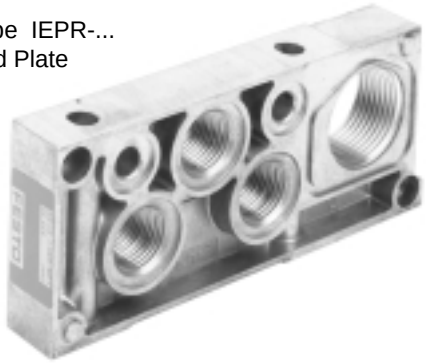
Isolating Disk
Type NSC-04-D-1 30431
To seal the common lines 1, 3, or 5 between the end plate and the manifold, or between 2 sub-bases, e.g. in cases of differences in operating pressure.

Blanking Plate
Type IAP-04-D-1 30430
For unused positions.

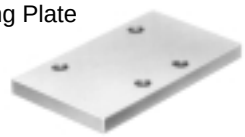
Type VIGK-...
Manifold Sub-base

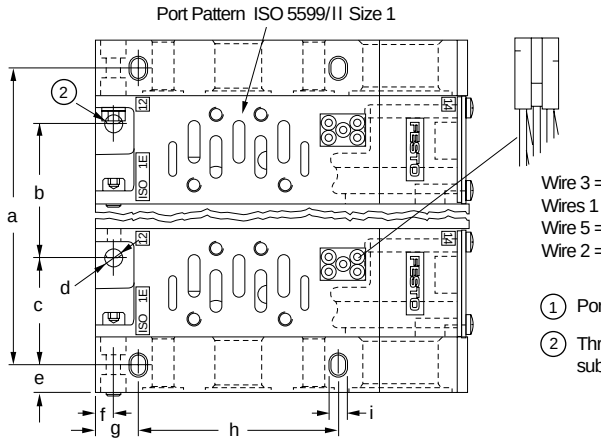
Type NSC-...
Isolating Disk

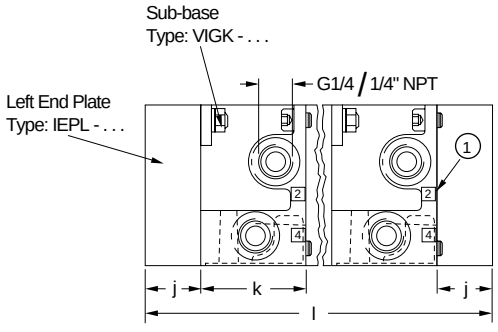
Type IEPR-...
End Plate

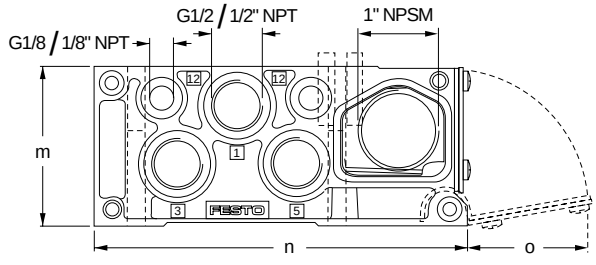


Type IAP-...
Blanking Plate









Dimensions:

a 0.87 in / 22 mm + (1.69 in / 43 mm x N*)
b 1.69 in / 43 mm + (1.69 in / 43 mm x N-1*)
c 1.67 in / 42.5 mm
d 0.28 in / 6.5 mm
e 0.43 in / 11 mm
f 0.28 in / 7 mm
g 0.67 in / 17 mm

* N = Number of sub-bases

h 3.15 in / 80 mm
i 0.26 in / 6.6 mm
j 0.87 in / 22 mm
k 1.69 in / 43 mm
l 1.73 in / 44 mm + (N* x 1.69 in / 43 mm)
m 2.52 in / 64 mm
n 5.87 in / 149 mm
o 1.97 in / 50 mm

Pre-wired Sub-bases for Manifold Mounting

Manifold Sub-base, ISO Size 2

With Mounting Pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

With G 3/8 ISO working ports (2, 4)

Type VIGK-04-D-2	18886

With 3/8 NPT working ports (2, 4)

Type VIGK-04-D-2-NPT	18887

End Plates, ISO Size 2

Includes one end plate, o-rings, mounting screws, washers and hex nuts.

Left End Plates

Type IEPL-04-D-2	18882
Type IEPL-04-D-2-NPT	18883

Right End Plates

Type IEPR-04-D-2	18878
Type IEPR-04-D-2-NPT	18879

Isolating Disk

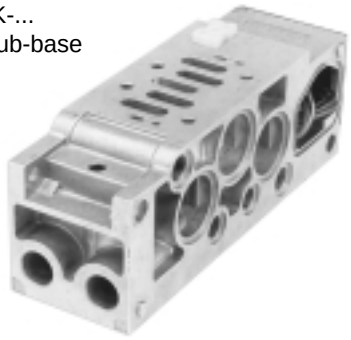
Type NSC-04-D-2	18909

Blanking Plate

Type IAP-04-D-2	36111

For unused positions.

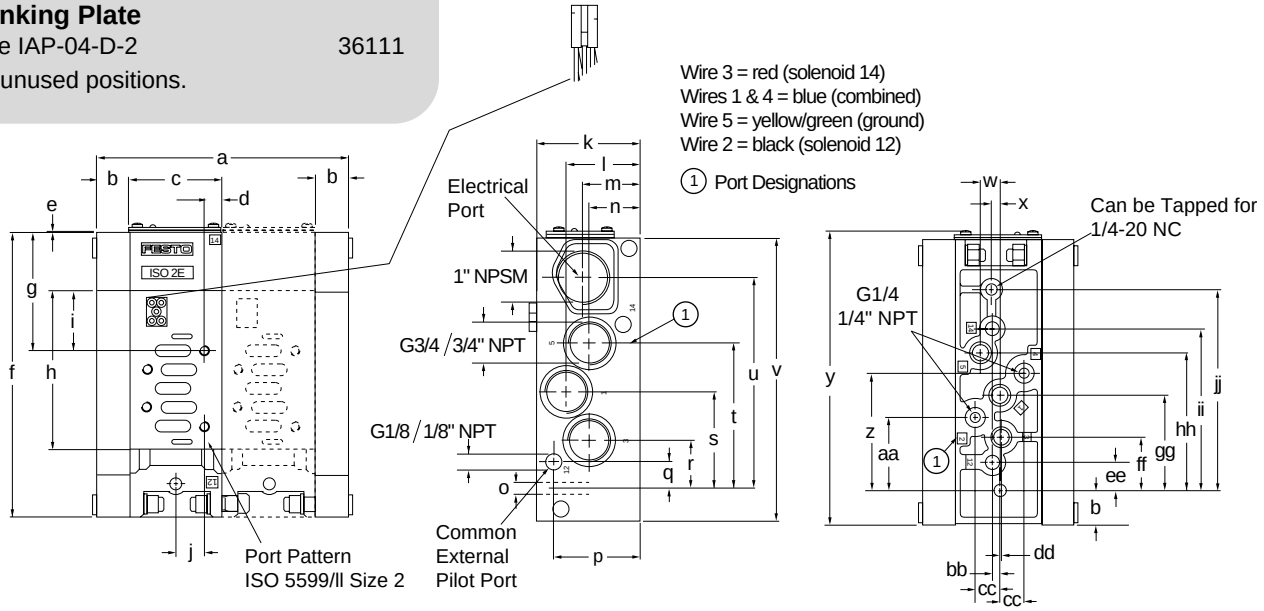
Type VIGK-...
Manifold Sub-base

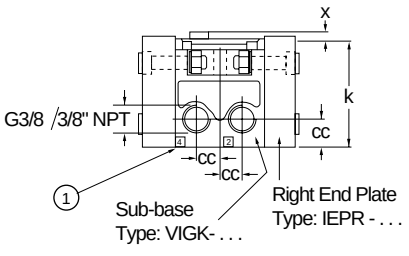


Type NSC-...
Isolating Disk

Type IEPR-...
End Plate

Type IAP-...
Blanking Plate





Dimensions:

a	1.65 in + (2.31 in x N*) 42 mm + (58.7 mm x N*)	j	0.75 in / 19 mm	t	3.69 in / 93.8 mm	dd	0.06 in / 1.5 mm
b	0.83 in / 21 mm	k	2.76 in / 70 mm	u	5.37 in / 136.5 mm	ee	0.73 in / 18.5 mm
c	2.31 in / 58.7 mm	l	1.96 in / 49.8 mm	v	7.26 in / 184.4 mm	ff	1.37 in / 35 mm
d	0.42 in / 10.7 mm	m	1.55 in / 39.4 mm	w	0.50 in / 12.5 mm	gg	2.44 in / 62 mm
e	0.02 in / 0.5 mm	n	1.37 in / 34.8 mm	x	0.20 in / 5 mm	hh	3.54 in / 90 mm
f	7.21 in / 183 mm	o	Ø0.28 in / Ø7 mm	y	7.51 in / 190.7 mm	ii	4.16 in / 105.7 mm
g	2.99 in / 76 mm	p	2.29 in / 58.2 mm	z	3.02 in / 76.7 mm	jj	5.18 in / 131.5 mm
h	4.08 in / 103.5 mm	q	0.68 in / 17.3 mm	aa	1.87 in / 47.5 mm		
i	1.53 in / 39 mm	r	1.21 in / 30.8 mm	bb	0.18 in / 4.5 mm		
		s	2.45 in / 62.3 mm	cc	0.63 in / 16 mm		

* N = Number of sub-bases

Pre-wired Sub-bases for Manifold Mounting

Manifold Sub-base, ISO Size 3

With Mounting Pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

With G 1/2 ISO working ports (2, 4)

Type VIGK-04-D-3	18888

With 1/2 NPT working ports (2, 4)

Type VIGK-04-D-3-NPT	18889

End Plates, ISO Size 3

Includes one end plate, o-rings, mounting screws, washers and hex nuts.

Left End Plates

Type IEPL-04-D-3	18884
Type IEPL-04-D-3-NPT	18885

Right End Plates

Type IEPR-04-D-3	18880
Type IEPR-04-D-3-NPT	18881

Isolating Disk

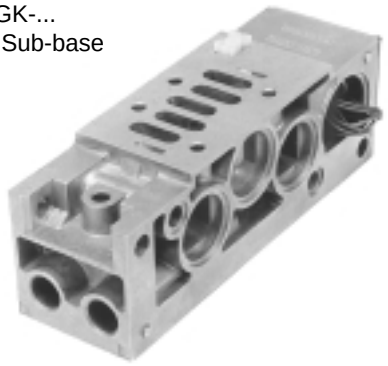
Type NSC-04-D-3	18910

Blanking Plate

Type IAP-04-D-3	36121

For unused positions.

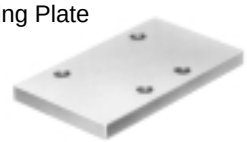
Type VIGK-...
Manifold Sub-base

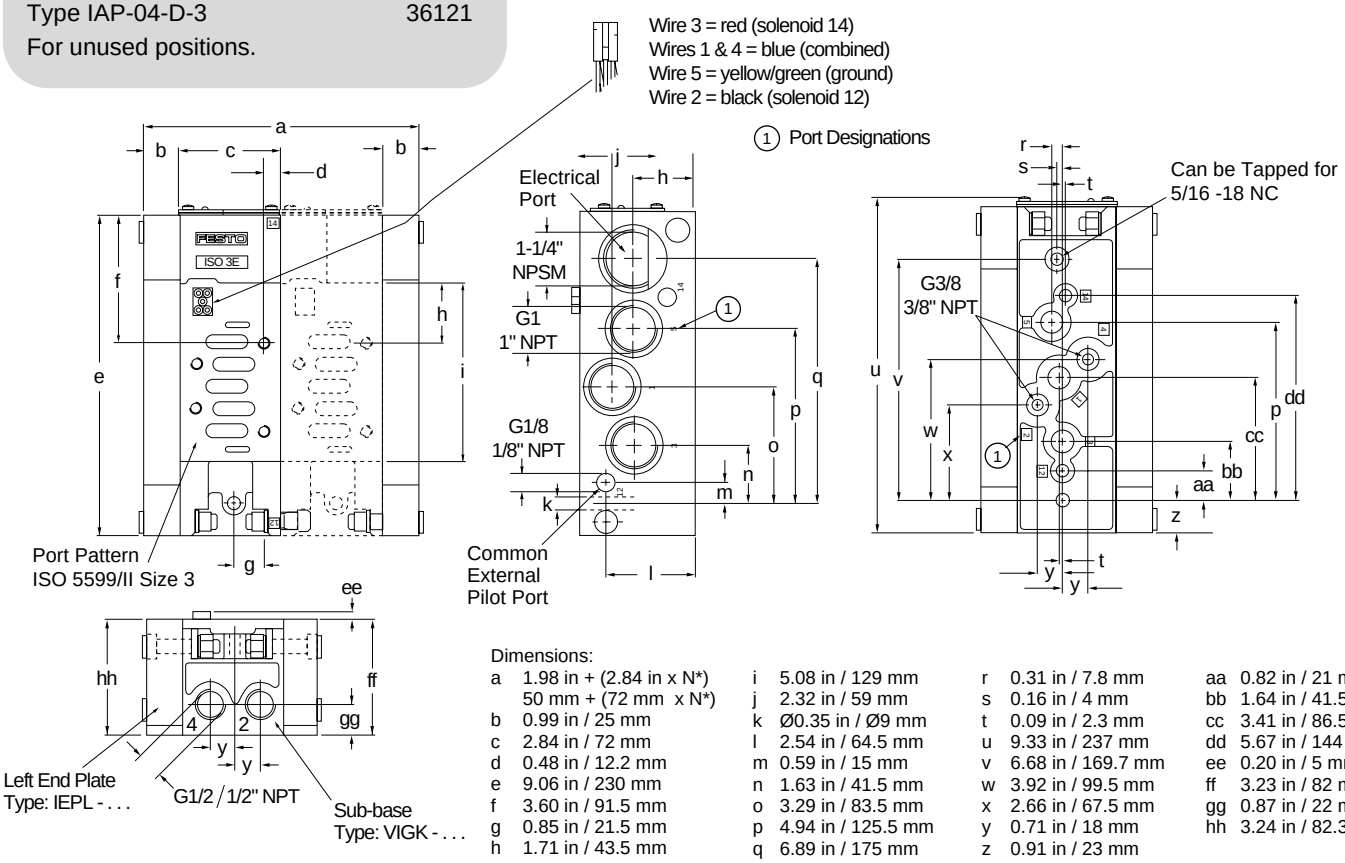


Type NSC-...
Isolating Disk

Type IEPR-...
End Plate

Type IAP-...
Blanking Plate





Dimensions:

a	1.98 in + (2.84 in x N*) 50 mm + (72 mm x N*)	i	5.08 in / 129 mm	r	0.31 in / 7.8 mm	aa	0.82 in / 21 mm
b	0.99 in / 25 mm	j	2.32 in / 59 mm	s	0.16 in / 4 mm	bb	1.64 in / 41.5 mm
c	2.84 in / 72 mm	k	Ø0.35 in / Ø9 mm	t	0.09 in / 2.3 mm	cc	3.41 in / 86.5 mm
d	0.48 in / 12.2 mm	l	2.54 in / 64.5 mm	u	9.33 in / 237 mm	dd	5.67 in / 144 mm
e	9.06 in / 230 mm	m	0.59 in / 15 mm	v	6.68 in / 169.7 mm	ee	0.20 in / 5 mm
f	3.60 in / 91.5 mm	n	1.63 in / 41.5 mm	w	3.92 in / 99.5 mm	ff	3.23 in / 82 mm
g	0.85 in / 21.5 mm	o	3.29 in / 83.5 mm	x	2.66 in / 67.5 mm	gg	0.87 in / 22 mm
h	1.71 in / 43.5 mm	p	4.94 in / 125.5 mm	y	0.71 in / 18 mm	hh	3.24 in / 82.3 mm
		q	6.89 in / 175 mm	z	0.91 in / 23 mm		

* N = Number of sub-bases

Plug-in Sub-bases for Manifold Mounting

Manifold Sub-base, ISO Size 1

With Mounting Pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

With G 1/4 ISO working ports (2, 4)
Type VIGI-04-D-1 18837

With 1/4 NPT working ports (2, 4)
Type VIGI-04-D-1-NPT 18838

Right End Plate, ISO Size 1

Includes one end plate, o-rings, mounting screws, washers and hex nuts.

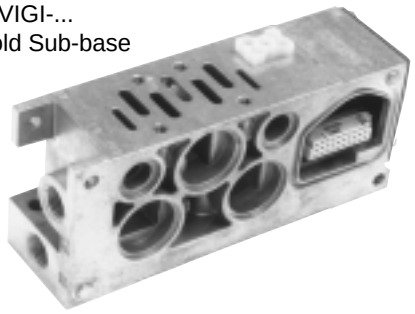
With ISO Connections
Type IEPR-04-D-1 18790

With NPT Connections
Type IEPR-04-D-1-NPT 18791

Isolating Disk
Type NSC-04-D-1 30431
To seal the common lines 1, 3, or 5 between the end plate and the manifold, or between 2 sub-bases, e.g. in cases of differences inoperating pressure.

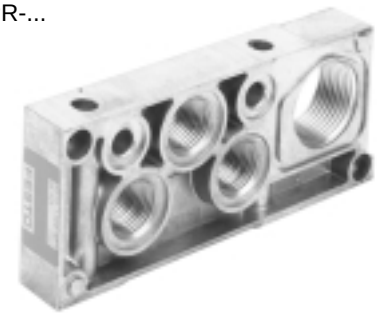
Blanking Plate
Type IAP-04-D-1 30430
For unused positions.

Type VIGI-...
Manifold Sub-base

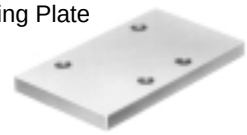


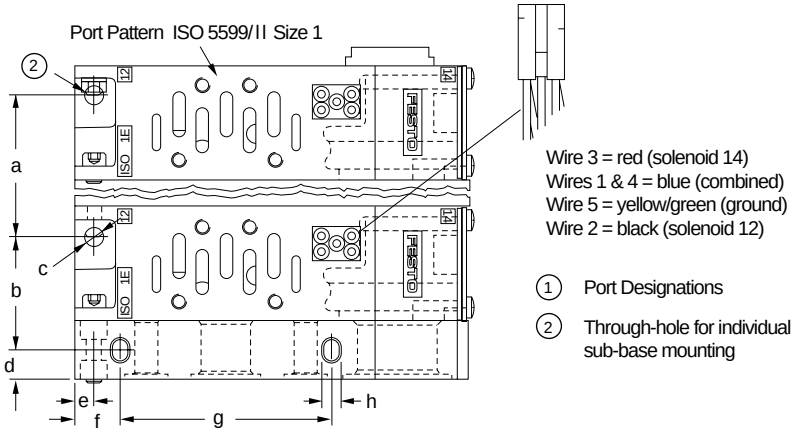
Type NSC-...
Isolating Disk

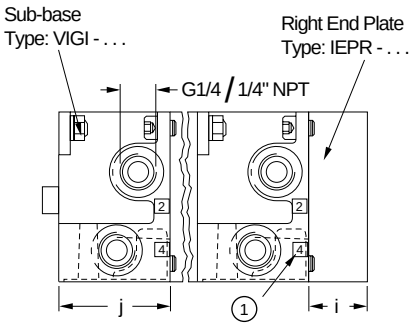
Type IEPR-...
End Plate

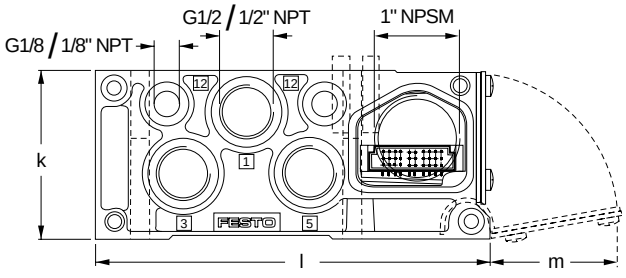


Type IAP-...
Blanking Plate









Dimensions:

a 1.69 in / 43 mm + (1.69 in / 43 mm x N*)
b 1.67 in / 42.5 mm
c 0.28 in / 6.5 mm
d 0.43 in / 11 mm
e 0.28 in / 7 mm
f 0.67 in / 17 mm

* N = Number of sub-bases

g 3.15 in / 80 mm
h 0.26 in / 6.6 mm
i 0.87 in / 22 mm
j 1.69 in / 43 mm
k 2.52 in / 64 mm
l 5.87 in / 149 mm
m 1.97 in / 50 mm

Note: All plug-in sub-bases have integral short circuit protection.

Plug-in Sub-bases for Manifold Mounting

Manifold Sub-base, ISO Size 2

With Mounting Pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

With G 3/8 ISO working ports (2, 4)
Type VIGI-04-D-2 18839

With 3/8 NPT working ports (2, 4)
Type VIGI-04-D-2-NPT 18840

Right End Plate, ISO Size 2

Includes one end plate, o-rings, mounting screws, washers and hex nuts.

With ISO Connections
Type IEPR-04-D-2 18878

With NPT Connections
Type IEPR-04-D-2-NPT 18879

Isolating Disk
Type NSC-04-D-2 18909

To seal the common lines 1, 3, or 5 between the end plate and the manifold, or between 2 sub-bases, e.g. in cases of differences in operating pressures.

Blanking Plate
Type IAP-04-D-2 36111

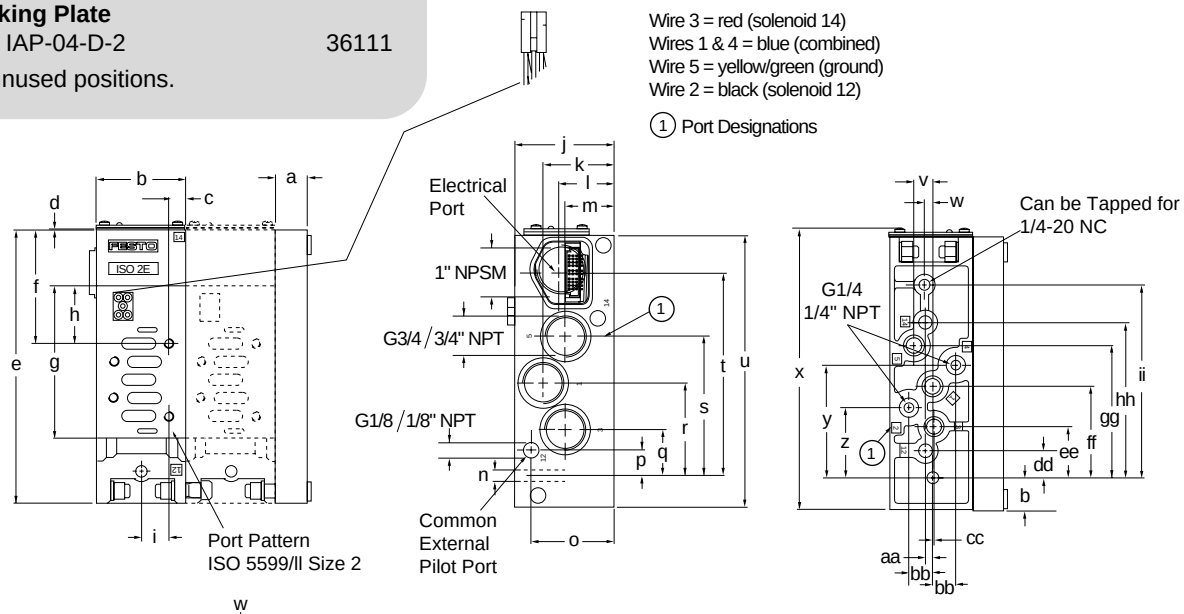
For unused positions.

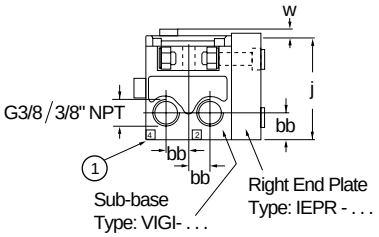
Type VIGI-...
Manifold Sub-base

Type NSC-...
Isolating Disk

Type IEPR-...
End Plate

Type IAP-...
Blanking Plate





Dimensions:

a	0.83 in / 21 mm	j	2.76 in / 70 mm	s	3.69 in / 93.8 mm	bb	0.63 in / 16 mm
b	2.31 in / 58.7 mm	k	1.96 in / 49.8 mm	t	5.37 in / 136.5 mm	cc	0.06 in / 1.5 mm
c	0.42 in / 10.7 mm	l	1.55 in / 39.4 mm	u	7.26 in / 184.4 mm	dd	0.73 in / 18.5 mm
d	0.02 in / 0.5 mm	m	1.37 in / 34.8 mm	v	0.50 in / 12.5 mm	ee	1.37 in / 35 mm
e	7.21 in / 183 mm	n	Ø0.28 in / Ø7 mm	w	0.20 in / 5 mm	ff	2.44 in / 62 mm
f	2.99 in / 76 mm	o	2.29 in / 58.2 mm	x	7.50 in / 190 mm	gg	3.54 in / 90 mm
g	4.08 in / 103.5 mm	p	0.68 in / 17.3 mm	y	3.02 in / 76.7 mm	hh	4.16 in / 105.7 mm
h	1.53 in / 39 mm	q	1.21 in / 30.8 mm	z	1.87 in / 47.5 mm	ii	5.18 in / 131.5 mm
i	0.75 in / 19 mm	r	2.45 in / 62.3 mm	aa	0.18 in / 4.5 mm		

Note: All plug-in sub-bases have integral short circuit protection.

Plug-in Sub-bases for Manifold Mounting

Manifold Sub-base, ISO Size 3

With Mounting Pattern to ISO 5599/I and integrated electrical connection conforming to ISO 5599/II.

With G 1/2 ISO working ports (2, 4)
Type VIGI-04-D-3 18841

With 1/2 NPT working ports (2, 4)
Type VIGI-04-D-3-NPT 18842

Right End Plate, ISO Size 3

Includes one end plate, o-rings, mounting screws, washers and hex nuts.

With ISO Connections
Type IEPR-04-D-3 18880

With NPT Connections
Type IEPR-04-D-3-NPT 18881

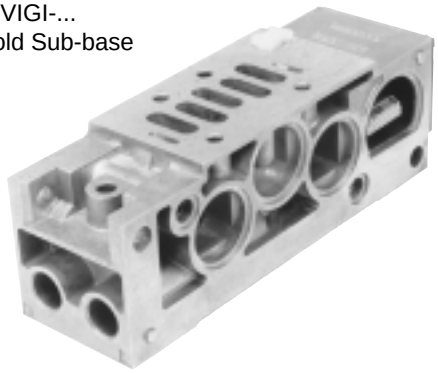
Isolating Disk
Type NSC-04-D-3 18910

To seal the common lines 1, 3, or 5 between the end plate and the manifold, or between 2 sub-bases, e.g. in cases of differences in operating pressures.

Blanking Plate
Type IAP-04-D-3 36121

For unused positions.

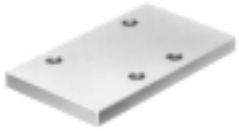
Type VIGI-...
Manifold Sub-base

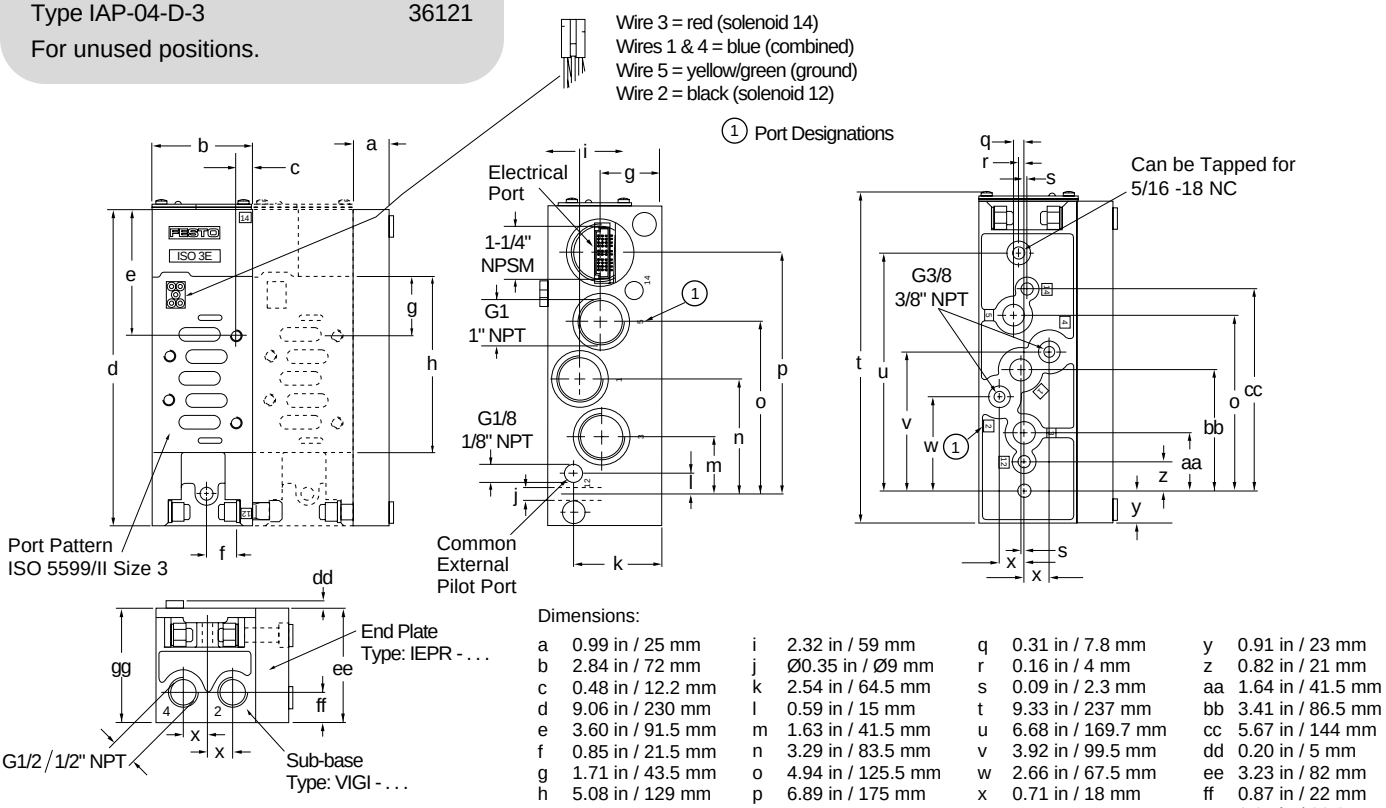


Type NSC-...
Isolating Disk

Type IEPR-...
End Plate

Type IAP-...
Blanking Plate





Dimensions:

a	0.99 in / 25 mm	i	2.32 in / 59 mm	q	0.31 in / 7.8 mm	y	0.91 in / 23 mm
b	2.84 in / 72 mm	j	Ø0.35 in / Ø9 mm	r	0.16 in / 4 mm	z	0.82 in / 21 mm
c	0.48 in / 12.2 mm	k	2.54 in / 64.5 mm	s	0.09 in / 2.3 mm	aa	1.64 in / 41.5 mm
d	9.06 in / 230 mm	l	0.59 in / 15 mm	t	9.33 in / 237 mm	bb	3.41 in / 86.5 mm
e	3.60 in / 91.5 mm	m	1.63 in / 41.5 mm	u	6.68 in / 169.7 mm	cc	5.67 in / 144 mm
f	0.85 in / 21.5 mm	n	3.29 in / 83.5 mm	v	3.92 in / 99.5 mm	dd	0.20 in / 5 mm
g	1.71 in / 43.5 mm	o	4.94 in / 125.5 mm	w	2.66 in / 67.5 mm	ee	3.23 in / 82 mm
h	5.08 in / 129 mm	p	6.89 in / 175 mm	x	0.71 in / 18 mm	ff	0.87 in / 22 mm
						gg	3.24 in / 82.3 mm

Note: All plug-in sub-bases have integral short circuit protection.

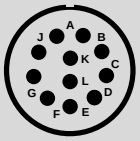
Multi-pin Valve Manifolds

ISO 5599/II Valve Manifolds have a great low cost option - Multi-pin. Two versions are available: manifolds with a maximum of 4 stations and 11 Pin connector, and manifolds with a maximum of 12 stations and 31 Pin connector.

Multi-pin manifolds are available in ISO Sizes 1, 2 and 3, with NPT or BSP connections. 24V DC and 110V AC options are available. Type VIGK-.. pre-wired sub-bases are used with multi-pin manifolds. All manifolds are pre-assembled to customer specification.

Note: Integrated input/output blocks cannot be used with this option.

Manifold with 11 Pin Connector

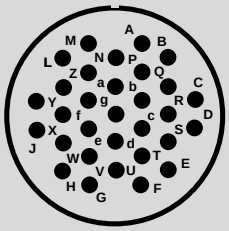


Connector Pin Out (Male pin view)

The 11 pin version should only be used when the following applies:

- The number of valve stations total four or less.
- The number of coils total eight or less (all valve sub-bases are wired for double solenoid operation).

Manifold with 31 Pin Connector

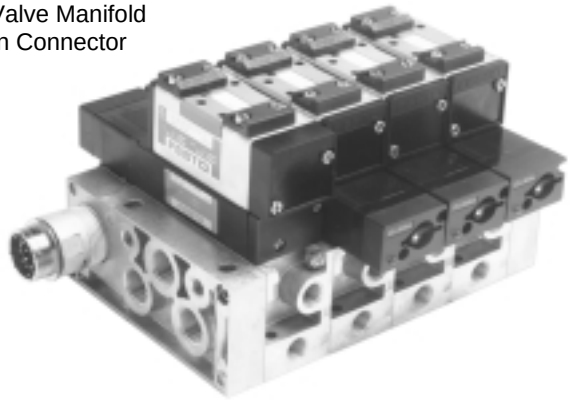


Connector Pin Out (Male pin view)

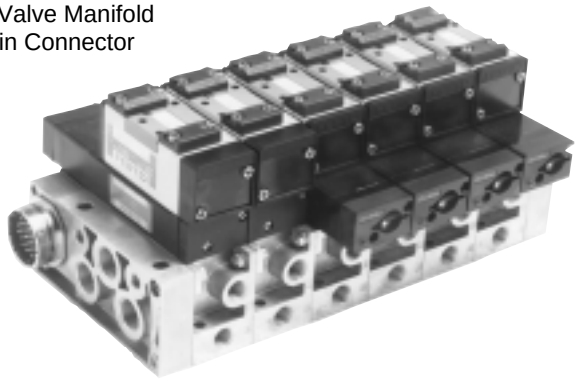
The 31 pin version can be used in all cases but has the following limitations:

- The number of valve stations is limited to a physical maximum of twelve.
- A maximum of 24 coils, in any combination, can be addressed.
- All the valve sub-bases will be wired for double solenoid operation, thus a maximum of 12 single or 12 double solenoid valves is inherent.

Multi-pin Valve Manifold with 11 Pin Connector



Multi-pin Valve Manifold with 31 Pin Connector

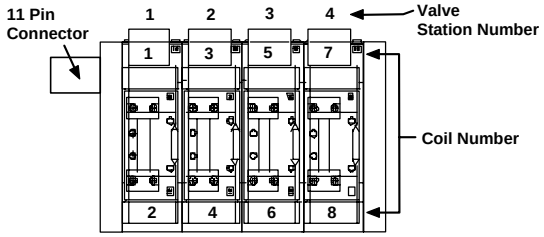


- See next page for diagrams and tables containing the pin connection/configuration with coil location of 11 Pin and 31 Pin Multi-pin Manifolds.
- For sub-base specifications see pages 577-579.
- For ordering, see page 602.

Note: Female mating plugs with cables are available, contact Festo. For plug-in connections, contact Festo.

Multi-pin Valve Manifold with 11 Pin Connector

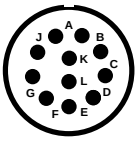
Valve Stations and Coil Designation



11 Pin Multi-pin Connector Pin Outs

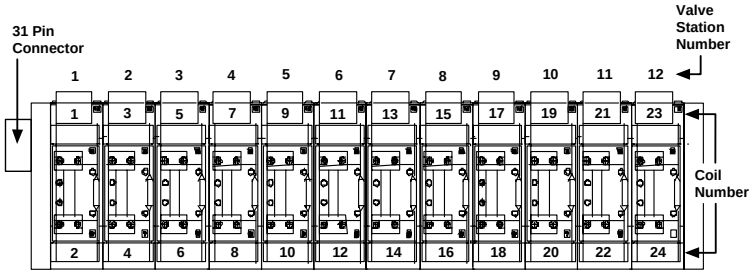
Connector Pins	Manifold Station	Coil Location	Wire Color
A	1	1	Red
B	1	2	Black
C	2	3	Red
D	2	4	Black
E	3	5	Red
F	3	6	Black
G	4	7	Red
H	4	8	Black
J	1 and 2	Common	Blue
K	3 and 4	Common	Blue
L	Protective Earth	Protective Earth	Green/Yellow
Connector Shell	Protective Earth	Protective Earth	Green/Yellow

Connector Pin Out (Male pin view)



Multi-pin Valve Manifold with 31 Pin Connector

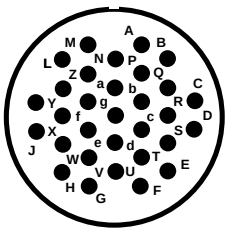
Valve Stations and Coil Designation



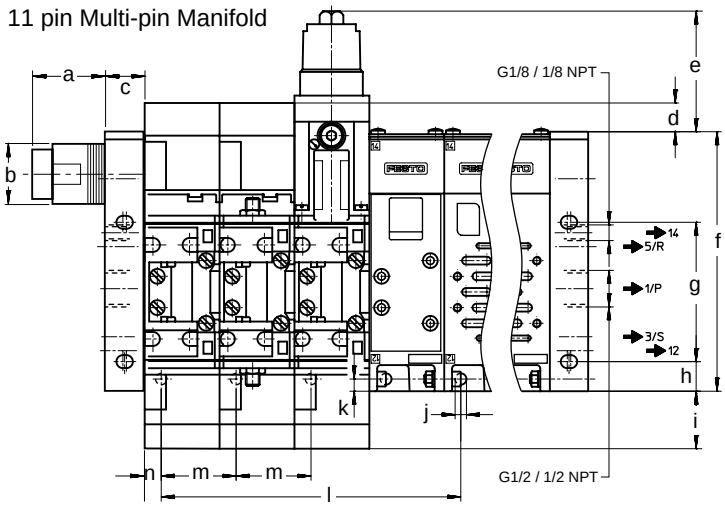
31 Pin Multi-pin Connector Pin Outs

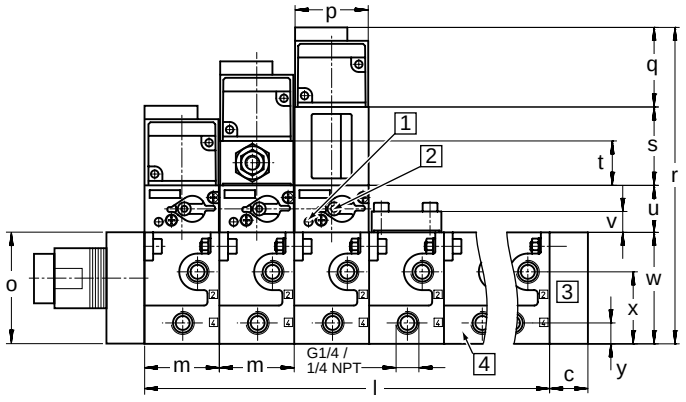
Connector Pins	Manifold Station	Coil Location	Wire Color
A	1	1	Red
B	1	2	Black
C	2	3	Red
D	2	4	Black
E	3	5	Red
F	3	6	Black
G	4	7	Red
H	4	8	Black
J	5	9	Red
K	5	10	Black
L	6	11	Red
M	6	12	Black
N	7	13	Red
P	7	14	Black
Q	8	15	Red
R	8	16	Black
S	9	17	Red
T	9	18	Black
U	10	19	Red
V	10	20	Black
W	11	21	Red
X	11	22	Black
Y	12	23	Red
Z	12	24	Black
a	1 and 2	Common	Blue
b	3 and4	Common	Blue
c	5 and 6	Common	Blue
d	7 and 8	Common	Blue
e	9 and 10	Common	Blue
f	11 and 12	Common	Blue
g	Protective Earth	Protective Earth	Green/Yellow
Plug Chassis	Protective Earth	Protective Earth	Green/Yellow

Connector Pin Out (Male pin view)

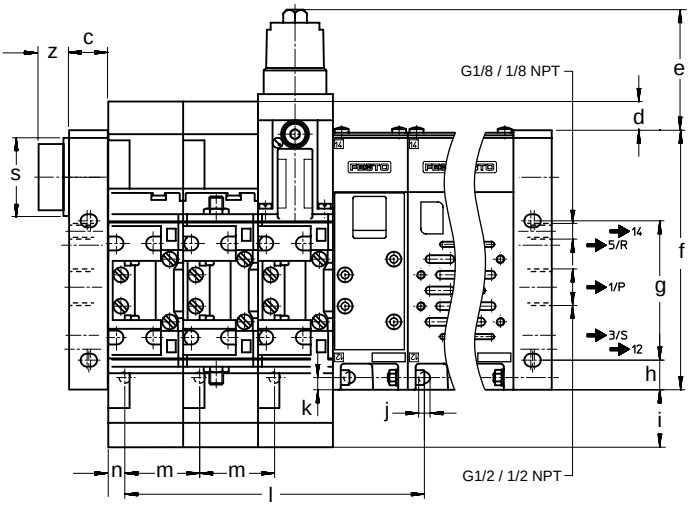


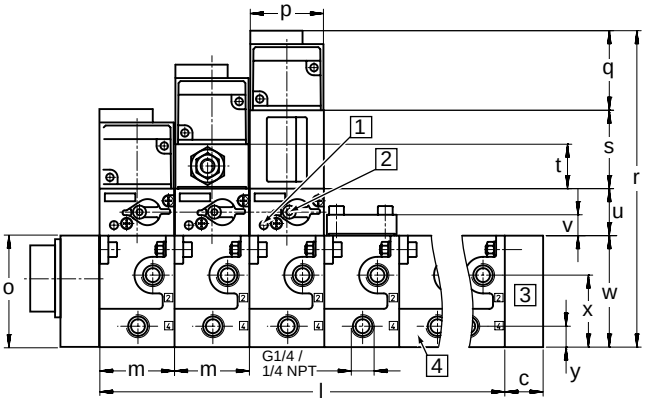
11 pin Multi-pin Manifold





31 pin Multi-pin Manifold





1 LED
2 Manual override
3 Right end-plate
4 Manifold sub-base

Dimensions:

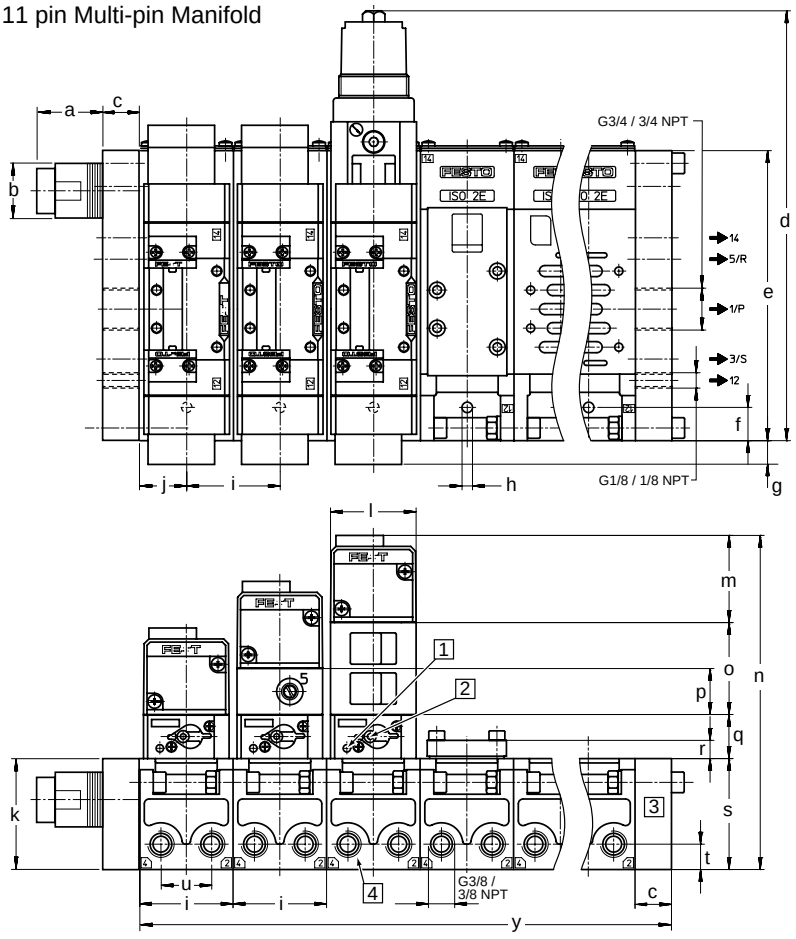
a	1.54 in / 39 mm	n	0.37 in / 9.5 mm
b	1.37 in / 34.8 mm	o	2.52 in / 64 mm
c	0.87 in / 22 mm	p	1.65 in / 42 mm
d	0.65 in / 16.5 mm	q	1.80 in / 45.7 mm
e	2.72 in / 69 mm	r	7.15 in / 181.7 mm
f	5.87 in / 149 mm	s	1.78 in / 45 mm
g	3.15 in / 80 mm	t	1.00 in / 25.5 mm
h	0.67 in / 17 mm	u	1.06 in / 27 mm
i	1.30 in / 33 mm	v	0.47 in / 12 mm
j	0.26 in / 6.6 mm	w	2.52 in / 64 mm
k	0.28 in / 7 mm	x	1.63 in / 41.3 mm
l	N* x 1.69 in / N* x 43 mm	y	0.47 in / 12 mm
m	1.69 in / 43 mm	z	0.69 in / 17.5 mm

N* = Number of sub-bases

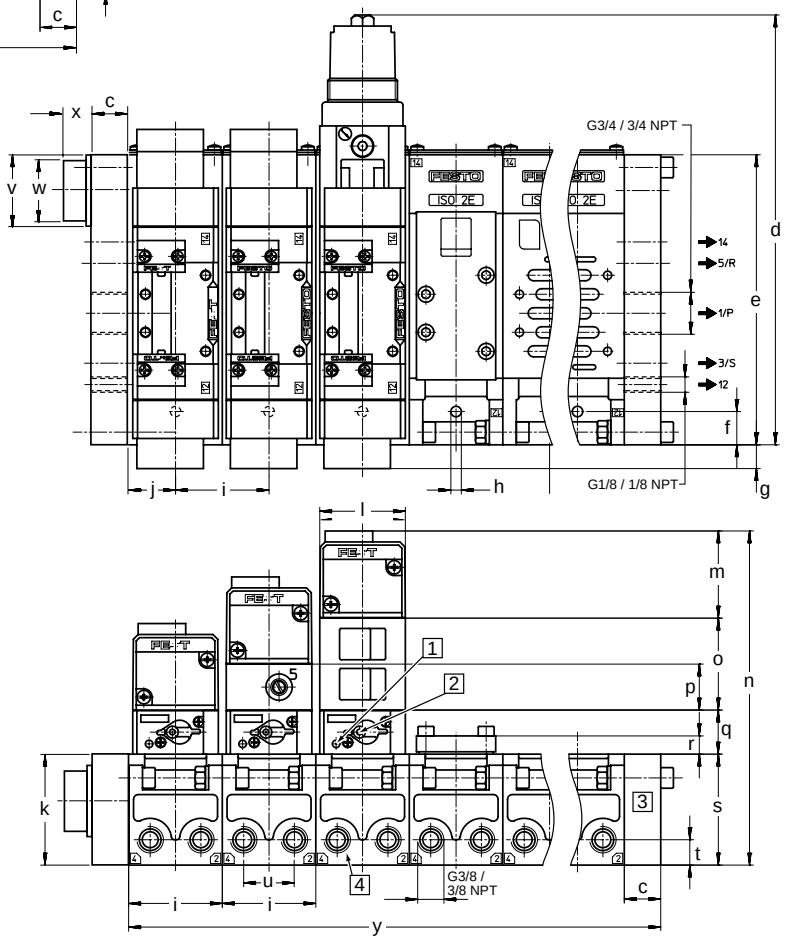
ISO 5599/II Valve Manifolds

Multi-pin Manifold Dimensions, ISO Size 2

11 pin Multi-pin Manifold



31 pin Multi-pin Manifold



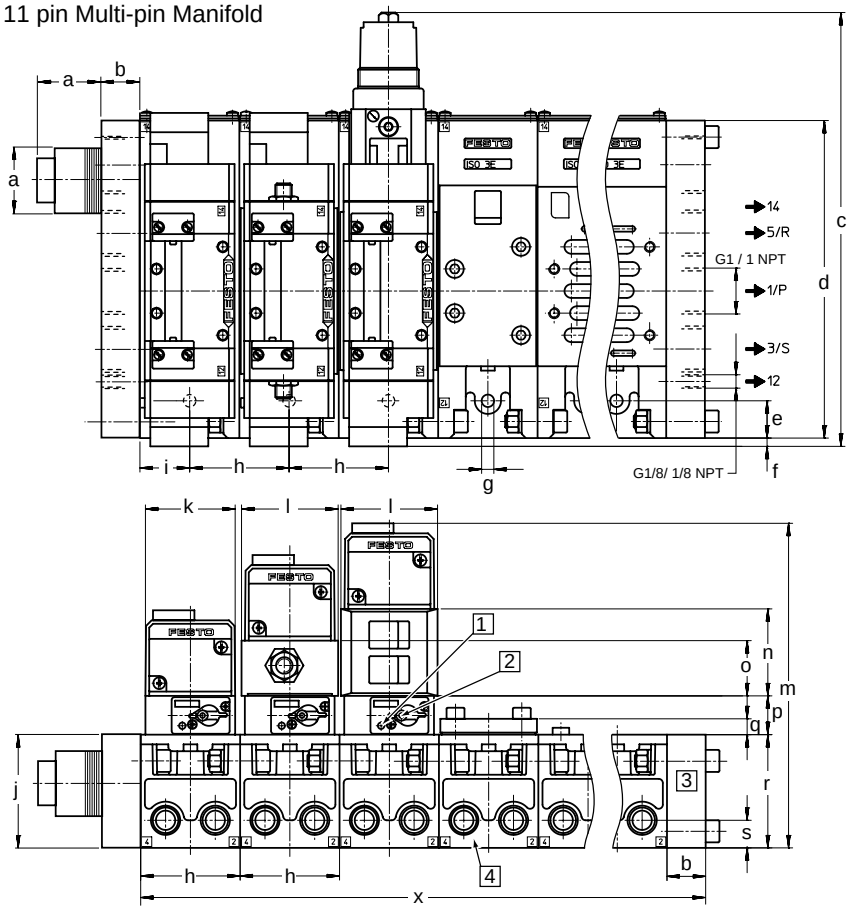
1 LED
2 Manual override
3 Right end-plate
4 Manifold sub-base

Dimensions:

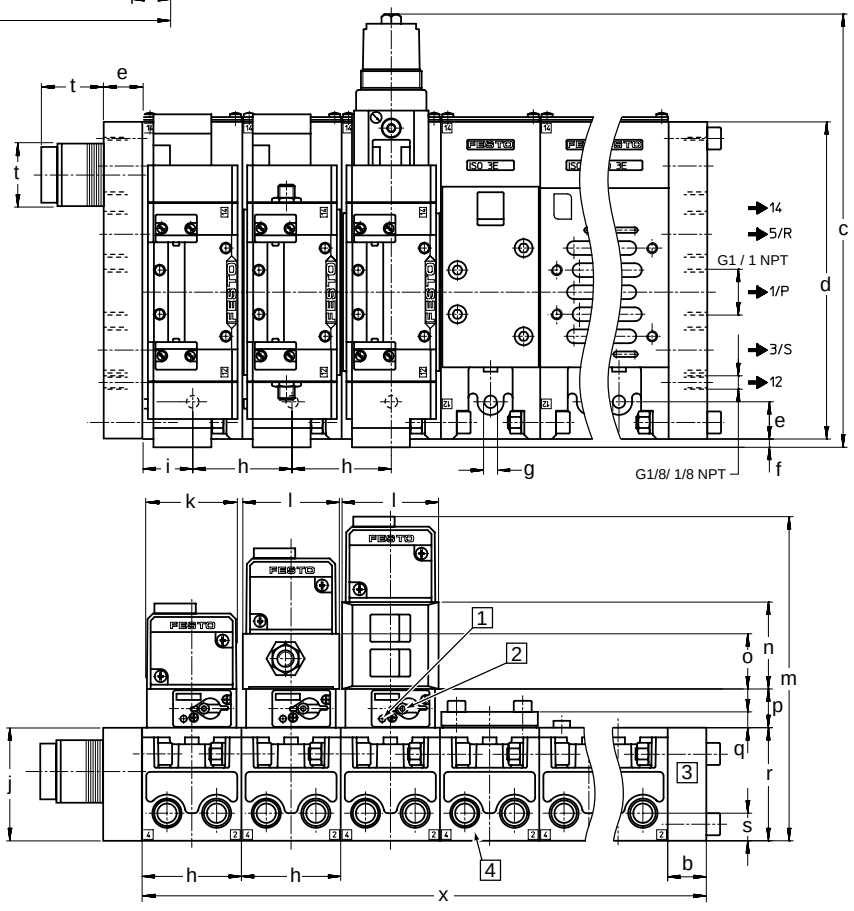
a	1.54 in / 39 mm	n	8.30 in / 210.8 mm
b	1.37 in / 34.8 mm	o	2.28 in / 58 mm
c	0.87 in / 22 mm	p	1.14 in / 29 mm
d	10.71 in / 272 mm	q	1.09 in / 27.8 mm
e	7.20 in / 183 mm	r	0.45 in / 11.5 mm
f	0.83 in / 21 mm	s	2.76 in / 70 mm
g	0.59 in / 15 mm	t	0.63 in / 16 mm
h	0.26 in / 6.6 mm	u	1.26 in / 32 mm
i	2.32 in / 59 mm	v	1.77 in / 45 mm
j	1.16 in / 29.5 mm	w	1.50 in / 38 mm
k	2.76 in / 70 mm	x	0.69 in / 17.5 mm
l	2.13 in / 54 mm	y	N* x 2.32 in / N* x 59 mm
m	2.17 in / 55 mm		

N* = Number of sub-bases

11 pin Multi-pin Manifold



31 pin Multi-pin Manifold



1 LED
2 Manual override
3 Right end-plate
4 Manifold sub-base

Dimensions:

a	1.67 in / 42 mm	m	9.25 in / 235 mm
b	0.98 in / 25 mm	n	2.48 in / 63 mm
c	12.40 in / 315 mm	o	1.57 in / 40 mm
d	9.06 in / 230 mm	p	1.10 in / 28 mm
e	1.06 in / 27 mm	q	0.45 in/ 11.5 mm
f	0.24 in / 6 mm	r	3.23 in / 82 mm
g	0.35 in / 9 mm	s	0.79 in / 20 mm
h	2.83 in / 72 mm	t	1.78 in / 45 mm
i	1.42 in / 36 mm	u	1.50 in / 38 mm
j	3.23 in / 82 mm	v	0.69 in / 17.5 mm
k	2.56 in / 65 mm	w	1.08 in / 27 mm
l	2.76 in / 70 mm	x	N* x 2.83 in / N* x 72 mm

N* = Number of sub-bases

Fieldbus and Smart Valve/Sensor Manifolds save up to 90% on installation time, labor, and costs

New ISO 5599/II Fieldbus Valve/Sensor Manifolds feature electronic integration making designing, installing and troubleshooting your control system a whole lot easier.

Electrical integration plus fieldbus eliminates hard-wiring of valves, sensors, wiring ducts, and terminal strips associated with connecting conventional pneumatic valve manifolds to PLCs. You can even eliminate banks of I/O cards as well as the need for a control cabinet!

ISO Smart Valve/Sensor Manifolds offer stand-alone and fieldbus control

Embedded microprocessor control eliminates the need for a separate PLC control altogether. You get full PLC control flexibility plus fieldbus network capability in a stand alone Valve/Sensor Manifold unit.

They're programmable on any IBM or compatible PC in Ladder Diagram or English-language Statement List.

Fieldbus Valve/Sensor Manifolds CONNECT DIRECTLY INTO your PLC/PC network

By simply mounting the appropriate interface for the selected protocol, Festo Valve/Sensor Manifolds appear as standard remote I/O for the following: *

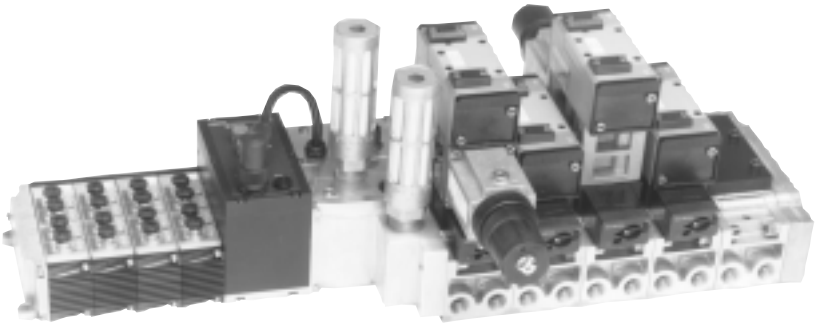
- Festo Fieldbus
- Allen-Bradley 1771 Remote I/O
- DeviceNet
- Phoenix Interbus-S
- GE Fanuc Genius I/O
- VME bus
- IBM PC (via third party interface card)
- Siemens, Sinec L2-DP
- Profibus DP, 12 MB
- Klockner-Moeller Suconet
- Mitsubishi Mini Net
- Westinghouse Series 2000
- Omron Sysmac Bus
- ASi
- SDS
- CAN open
- FIP-IO

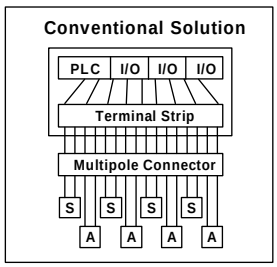
Network up to 93 stations with the Festo FPC 405 PLC as a master controller.

The user-friendly design enables you to network a variety of slave stations to accommodate simple to sophisticated control system application requirements.

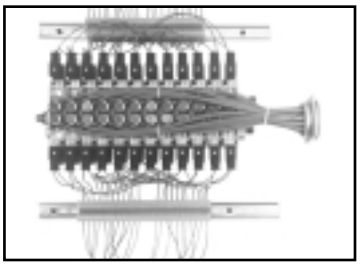
* ALL company and product names are trademarks or registered trademarks of their respective holders.

ISO 5599/II Fieldbus and Smart Valve/Sensor Manifolds with Electrical Integration Eliminates Hardwiring



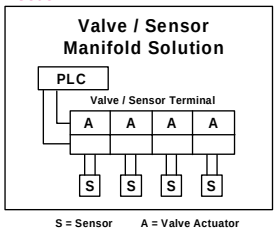


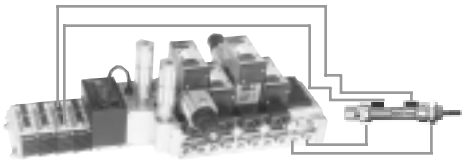
PG36CHRT



No More Conventional Hardwiring Headaches

PG36CHRT





PC/PLC/VME BUS Control

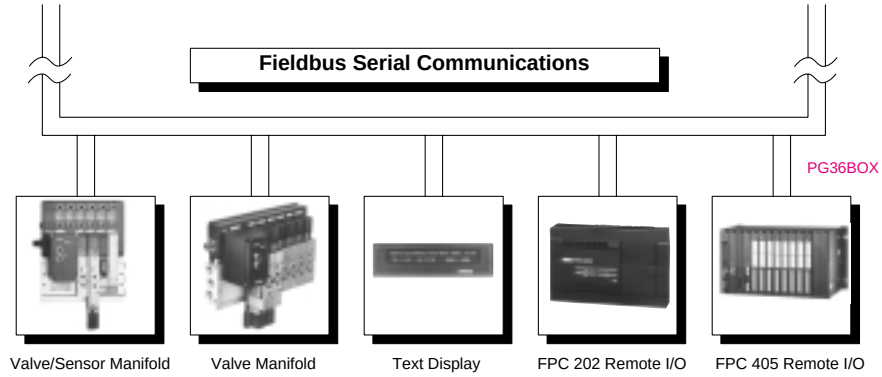
(Festo FPC 405 PLC)

Up to 93 stations 1920 I/O

OR

Smart Valve/Sensor Manifold Control

Up to 4 stations or 320 I/O



PG36BOX

ISO 5599/II Fieldbus and Smart Valve/Sensor Manifolds

Fully pre-assembled, tested and delivered ready to install...
Saving installation time and costs

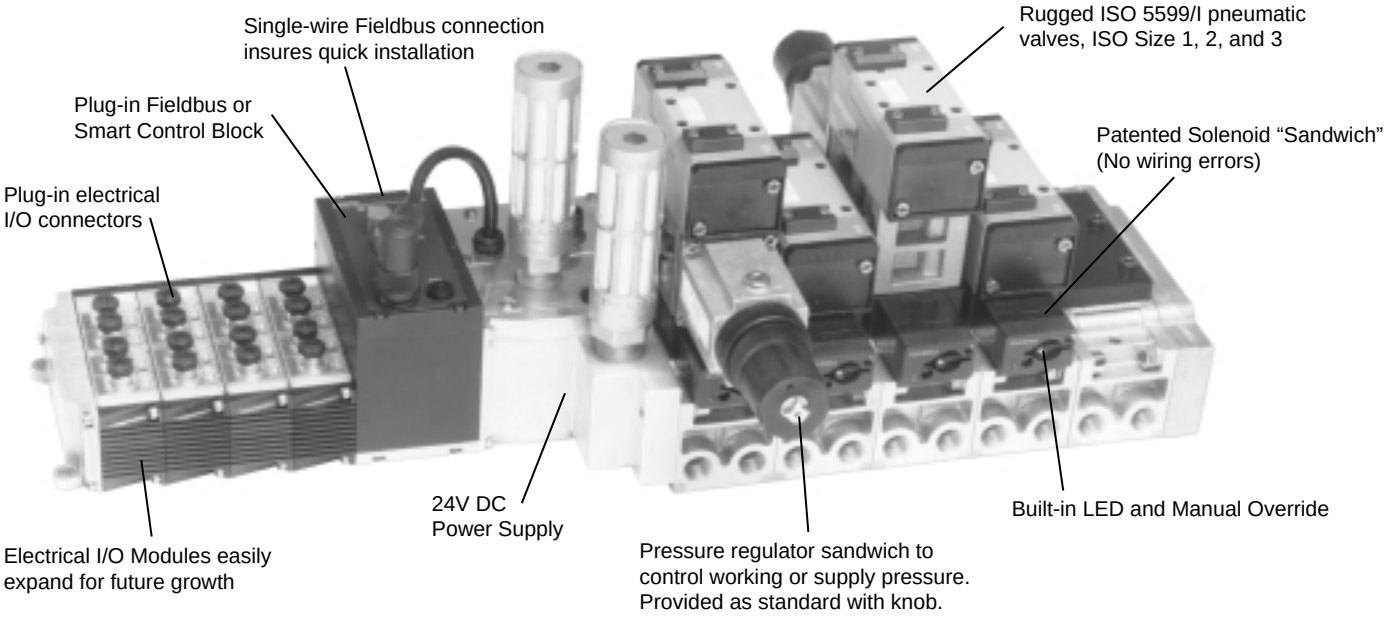
Valve/Sensor Manifolds offer Built-in Features for Optimum Control Flexibility

- High flow rates, up to 4.6 Cv
- High pressure range, up to 240 psi
- Inch and metric ports are available
- Integrated electronics reduces wiring errors
- IP 65 rating

All electronically integrated Fieldbus Manifolds conform to CE guidelines.

Simplified Troubleshooting and Maintenance

- High reliability, heavy duty designs for tough industrial applications
- Integral LEDs and manual overrides
- Built-in diagnostics capability simplifies troubleshooting
- High noise immunity of two wire cables for environments exposed to EMI
- Two separate power circuits enable shut-down of power to valves while maintaining power to sensors and communications during emergency stop conditions.



Custom Configuration

- Control up to 1920 I/O over distances to 4000 meters.*
- Choice of valve positions; create your own manifold configurations (up to 13 valve positions, 26 solenoid coils).
- Select 5/2-way and/or 5/3-way ISO size 1, 2, and 3 (1/4", 3/8" and 1/2") pneumatic valves.
- Up to 60 inputs/up to 64 short-circuit protected electrical outputs
- Optional Operator Interface Cabinet

Fieldbus and Smart Valve/Sensor Manifolds

- Stand-alone and Fieldbus control capability
- Save up to 90% on installation time, labor and costs!
- Embedded microprocessor and integrated electronics eliminate the need for a separate PLC control!

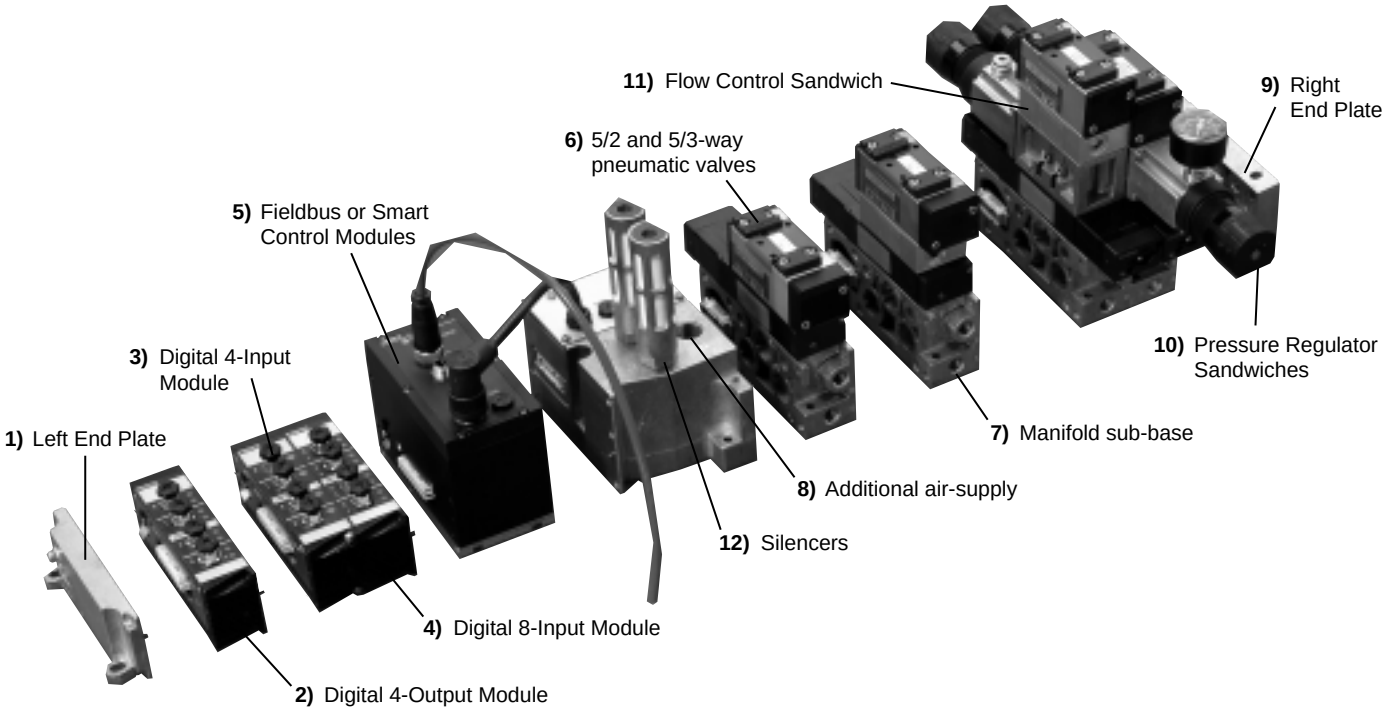
Applications

Fieldbus is ideally suited for applications requiring remote control of multiple stations via a central master PLC up to distances of 4000 meters.* Typical applications include long, multi-station production or packaging operations.

***** With Festo FPC 405 Master Controller.

ISO 5599/II Valve/Sensor Manifolds

Design Flexibility



Electronic Section

1) Left End Plate serves as electrical ground for manifold.

2) 4 Output Module, 4 digital outputs with yellow status and red error LEDs.

3) 4 Input Module, 4 digital inputs with green LEDs.

4) 8 Input Module, 8 digital inputs with dual input sockets, green LEDs.

Note: Maximum of 12 I/O modules, any mix, up to protocol limitation.

5) Fieldbus Module:
With status/error LEDs connects to fieldbus network and controls data transfer to/from network.

Smart Control Module:
With embedded microprocessor

- SF3: With embedded PLC and Festo fieldbus protocol.
- SB60: For stand-alone control.
- SF60: For distributed/decentralized control systems using DeviceNet.

Pneumatic Section

6) Pneumatic Valves
Single and double piloted 5/2- and 5/3-way conforming to ISO 5599/I mount on solenoid “sandwiches” with plug-in ISO 5599/II electrical connection.

7) Manifold Sub-bases
With integral ISO 5599/II electrical connection, individual pilot supply, outlet ports (2 and 4), and common supply and exhaust. Plug-in electrical connectors on the side eliminates wiring between the sub-bases. All plug-in sub-bases feature a (fast acting) fuse for short circuit protection.

8) Additional air supply

9) Right End Plate
With common supply (1), exhaust (3 & 5) and pilot (12 & 14) ports.

10) Pressure Regulator Sandwiches
Output 4 (A) Regulator
Output 2 (B) Regulator
Supply 1 (P) Regulator
Output 2 & 4 (A & B) Regulator

11) Flow Control Sandwiches
Intermediate plates with built-in exhaust air flow control at exhaust ports 5 (R) and 3 (S).

12) Silencer Accessories

See pages 243 to 247 for data on the following Electronic Function Modules:

- Input/Output Modules
- High Current Output Module
- Multi Input/Output Modules
- Analog Modules
- Analog Module for Proportional Valves
- CP-Interface Module
- AS-Interface Module

Stand-alone or Network Control Flexibility

Festo Valve/Sensor Manifolds offer more control options to suit your company's requirements for stand-alone and/or fieldbus network systems.

Type SF3 Smart Valve/Sensor Manifolds features an embedded programmable controller and Festo fieldbus protocol.

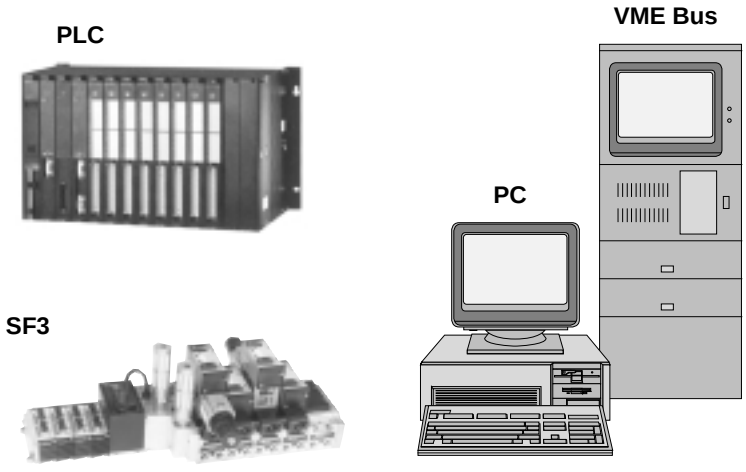
- 128 KB of RAM and EEPROM memory
- 1048 I/Os using Festo Fieldbus (max. 128 inputs and 128 outputs per station)
- 512 flags, 32 timers, 32 counters, 128 registers
- Programmed with Festo FST 200 software
- Comprehensive diagnostics system
- MMI Ready
- Supports Festo Electronic Function Modules:
  - Input/Output Modules
  - Proportional
  - Universal Proportional
  - Multi I/O
  - CP-Interface
  - AS-Interface

Valve/Sensor Manifolds for use as slave stations with your PLC fieldbus control network

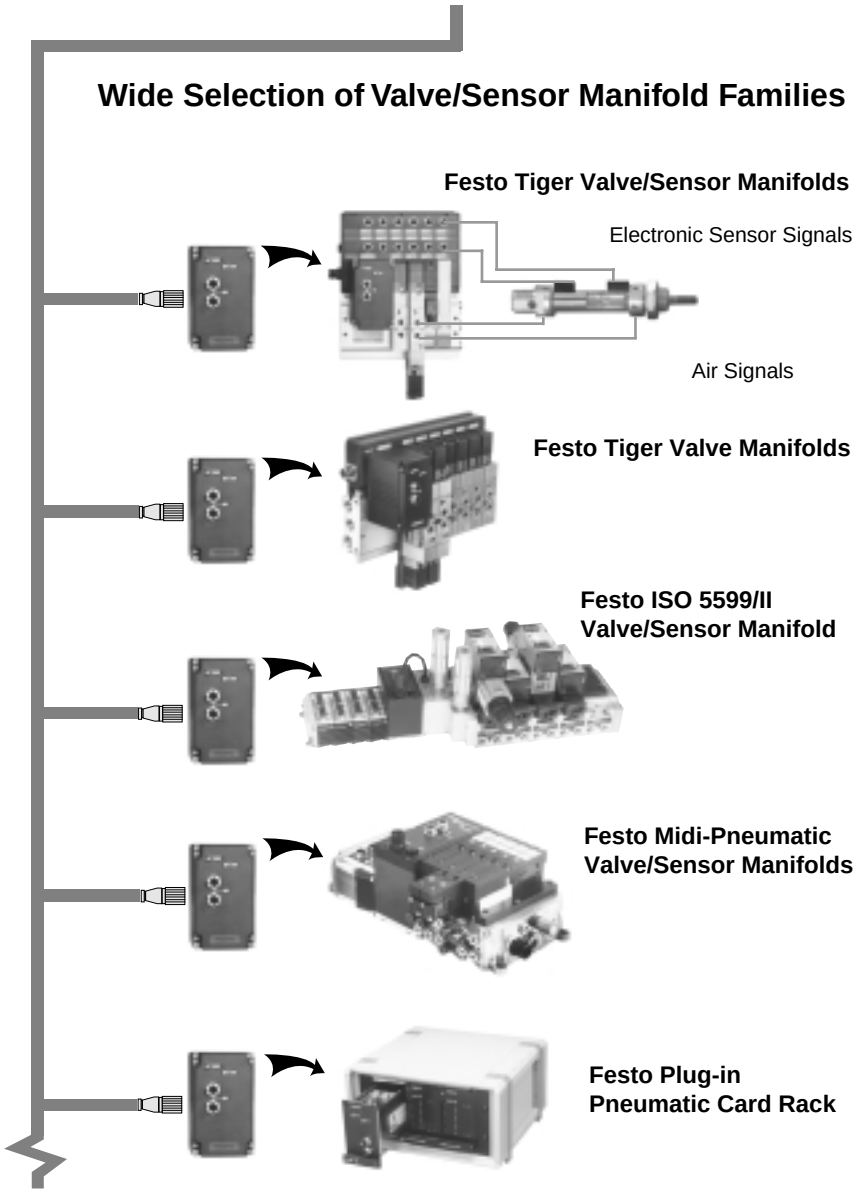
Festo FPC 405 Fieldbus control network

- Control of Up to 93 stations, 1920 I/O
- Programmed in user-friendly English language Statement List, BASIC, or ladder diagram
- Multitask up to 64 programs
- 128K RAM or EPROM memory
- Self-test diagnostics
- Analog I/O (12 bit, 4-20 mA, 0-10 V)
- Digital I/O, 24V DC, 110V AC, Relay

Fieldbus Networking Host Controller Options



Wide Selection of Valve/Sensor Manifold Families



Smart Valve Manifold Specifications

The SF3 Smart Valve Manifold is programmable and is capable of multitasking and can process up to 16 programs in parallel. The SF3 offers comprehensive diagnosis and error handling capability, plus local diagnostics via internal software function modules. The SF3 also includes a built-in scanner supporting Festo fieldbus. Optional ASi and CP master modules are available.

Technical Data

Type SF3 Smart Manifold Embedded Programmable Controller	
Operating Voltage	24 VDC
Programming Interfaces	RS232 for PC and MMI's
Program Memory	128 KB RAM and EEPROM
Processing Time	Approximately 1 ms for 1024 binary commands
Timers	32, with remanent preselects
Counters	32, with remanent preselects and values
Registers	128, 100 remanent
Digital I/O	
■ Local	128 local inputs, 128 local outputs
■ ASi bus	ASi Master with 31 ASi Slaves (max. 124 ASi inputs and 124 ASi outputs)
■ CP bus	64 digital inputs / 64 digital outputs
■ Festo Fieldbus	1048 I/O (max. 128 inputs and 128 outputs per node)
Analog I/O	36 analog inputs and 12 analog outputs
Programming Software	Festo FST 200
Programming Languages	Ladder diagram, Statement List
Communication	
■ Bus System	Festo Fieldbus (Master or Slave) + CPV + ASi
Diagnostics	Extensive diagnostic evaluation with FST 200 as well as program level error detection.

Festo Fieldbus	
Protocol	Festo fieldbus (RS485)
Transmission Rate (Adjustable by software)	31.25 / 62.5 / 187.5 / 375 k baud
Maximum Cable Length	Two conductor cable, max. 1,640 ft to 13,000 ft (500 m to 4,000 m) depending on baud rate
Bus Address SF Master	Fixed mode, Master/Slave adjustable via FST 200
Master Capacity	1 Master (up to 31 slaves)
Diagnostics	Extensive diagnostic evaluation with FST 200 as well as program level error detection.

ABG Keypad Operator Interface

ABG Operator Interfaces with 2-line or 4-line display for input of parameters, status monitoring, and more. Programmable with FST 200 software from ladder diagram or statement list. Commissioning and testing of ABG using PC and FST 200.

ISO Standard Valve Manifolds

Festo Type 04-B Valve Manifolds feature a totally modular design and can be custom configured for up to 13 positions per manifold (up to 26 solenoid coils).

The manifolds with bus interface can also be configured to include digital and/or analog electrical I/O modules. For controlling ASi actuator/sensor networks, an ASi Master is available.

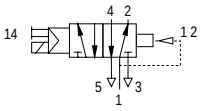
The manifolds are delivered pre-assembled and tested at the factory to customer specified configuration, thereby simplifying installation.

Each manifold has a common pressure supply port and common exhaust ports located either on the manifold end plate and/or on an optional intermediate pressure supply module.

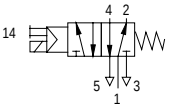
LEDs on the solenoid sandwiches provide a status indication for each valve.

5/2-way pneumatic valves
With Type MUH solenoid sandwich
ISO Sizes 1, 2 and 3

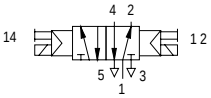
Type VL-5/2-D-...-C



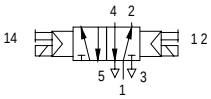
Type VL-5/2-D-...-FR-C



Type J-5/2-D-...-C

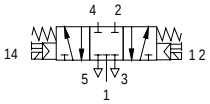


Type JD-5/2-D-...-C

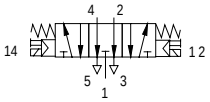


5/3-way pneumatic valves
With Type MUH solenoid sandwich
ISO Sizes 1, 2 and 3

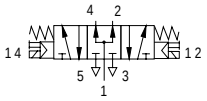
Closed Center VL-5/3G-D-...-C



Open Center VL-5/3E-D-...-C



Pressurized Center VL-5/3B-D-...-C



Manifold Type		**ISO Size 1**		**ISO Size 2**		**ISO Size 3**		
Medium		Compressed air (filtered, lubricated or unlubricated); 2 compressed-air supply lines possible						
Design		Spool valve with sealing rings mounted in housing						
Mounting		On Sub-base conforming to ISO 5599/I						
Port Sizes	Supply, Exhaust	1, 3, 5**: G 1/2 / 1/2 NPT**		1, 3, 5**: G 3/4 / 3/4 NPT**		1, 3, 5**: G 1 / 1 NPT**		
	Outlets	4, 2**: G 1/4 / 1/4 NPT**		4, 2**: G 3/8 / 3/8 NPT**		4, 2**: G 1/2 / 1/2 NPT**		
Medium Temperature		23 to 122°F **/** -5 to + 50°C						
Voltage		24V DC = ±10%						
Power Consumption		3.1 Watts; Fieldbus control: 4.8 Watts						
Protection		IP 65						
Valve Specifications		**VL-5/2-...-FR-C**	**VL-5/2-D-...**	**J-5/2-...-C**	**JD-5/2-...-C**	**VL-5/3G-...-C**	**VL-5/3E-...-C**	**VL-5/3B-...-C**
Orifice	ISO 1	0.31 in **/** 8 mm		0.31 in **/** 8 mm		0.31 in **/** 8 mm		
in **/** mm	ISO 2	0.45 in **/** 11.5 mm		0.45 in **/** 11.5 mm		0.45 in **/** 11.5 mm		
	ISO 3	0.57 in **/** 14.5 mm		0.57 in **/** 14.5 mm		0.57 in **/** 14.5 mm		
Cv factor (1→2, 1→4)	ISO 1	1.2 Cv **/** 1200 l/min		1.2 Cv **/** 1200 l/min		1.2 Cv **/** 1200 l/min		
Cv **/** l/min	ISO 2	2.3 Cv **/** 2300 l/min		2.3 Cv **/** 2300 l/min		2.3 Cv **/** 2300 l/min		
	ISO 3	4.5 Cv **/** 4500 l/min		4.5 Cv **/** 4500 l/min		4.5 Cv **/** 4500 l/min		
Operating Pressure	ISO 1	Without Pilot Air,		Without Pilot Air,				
psi **/** bar	ISO 2	30 to 240 psi **/** 2 to 16 bar		45 to 150 psi **/** 3 to 10 bar				
	ISO 3	With Pilot Air,		With Pilot Air,				
		26.6 in Hg to 240 psi **/** -0.9 to 16 bar		26.6 in Hg to 240 psi **/** -0.9 to 16 bar				
Pilot Pressure	ISO 1	30 to 150 psi **/** 2 to 10 bar		45 to 150 psi **/** 3 to 10 bar		45 to 150 psi **/** 3 to 10 bar		
psi **/** bar	ISO 2	30 to 150 psi **/** 2 to 10 bar		45 to 150 psi **/** 3 to 10 bar		45 to 150 psi **/** 3 to 10 bar		
	ISO 3	45 to 150 psi **/** 3 to 10 bar		45 to 150 psi **/** 3 to 10 bar		45 to 150 psi **/** 3 to 10 bar		
Switching Time	ISO 1	6/23 ms	9/18 ms	6 ms	6 ms	7/44 ms	7/45 ms	7/44 ms
ms	ISO 2	11/39 ms	23/39 ms	8 ms	8 ms	15/56 ms	16/59 ms	15/57 ms
	ISO 3	13/43 ms	29/36 ms	8 ms	8 ms	17/61 ms	18/63 ms	16/60 ms

ISO 5599/II Valve Manifolds, Valve/Sensor Manifolds

The modular design of Festo ISO Valve Manifolds and Valve/Sensor Manifolds lets you configure the manifold to meet your unique application requirements.

Fieldbus Valve Manifolds

Festo Fieldbus Valve Manifolds combines fieldbus and ISO pneumatic valves on a single manifold. They are compatible with a wide selection of protocols.

Fieldbus Valve/Sensor Manifolds

Festo Fieldbus Valve/Sensor Manifolds combine fieldbus, electronic I/O and ISO pneumatic valves on a single manifold. They are also compatible with a wide selection of protocols.

Festo "Smart Valve Manifolds" with Embedded Programmable Controllers

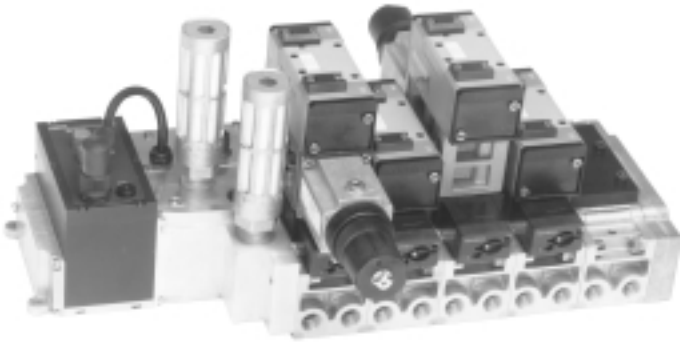
"Smart Manifolds", Type SF3, SB60 and SF60 are ideal for local, stand alone machine control and/or multistation fieldbus control.

OEMs and end-users get the benefits of a multi-function, stand-alone control solution for merging electronic and pneumatic controls. Including, full processing and control functionality of a programmable controller in a pneumatic valve manifold. Best of all, internal and external wiring of valves is completely eliminated.

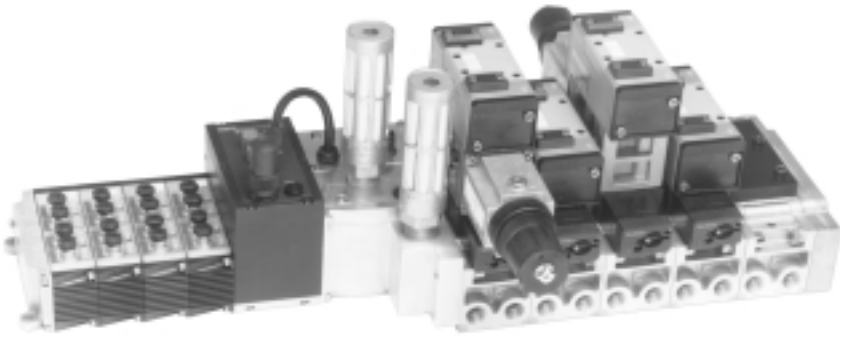
- Type SF3 Valve Manifolds with Festo Fieldbus Protocol.
- Type SB/SF60 Valve Manifolds with Allen Bradley SLC 500™ Technology.

(Type SF3 and SB/SF60 manifolds not shown.)

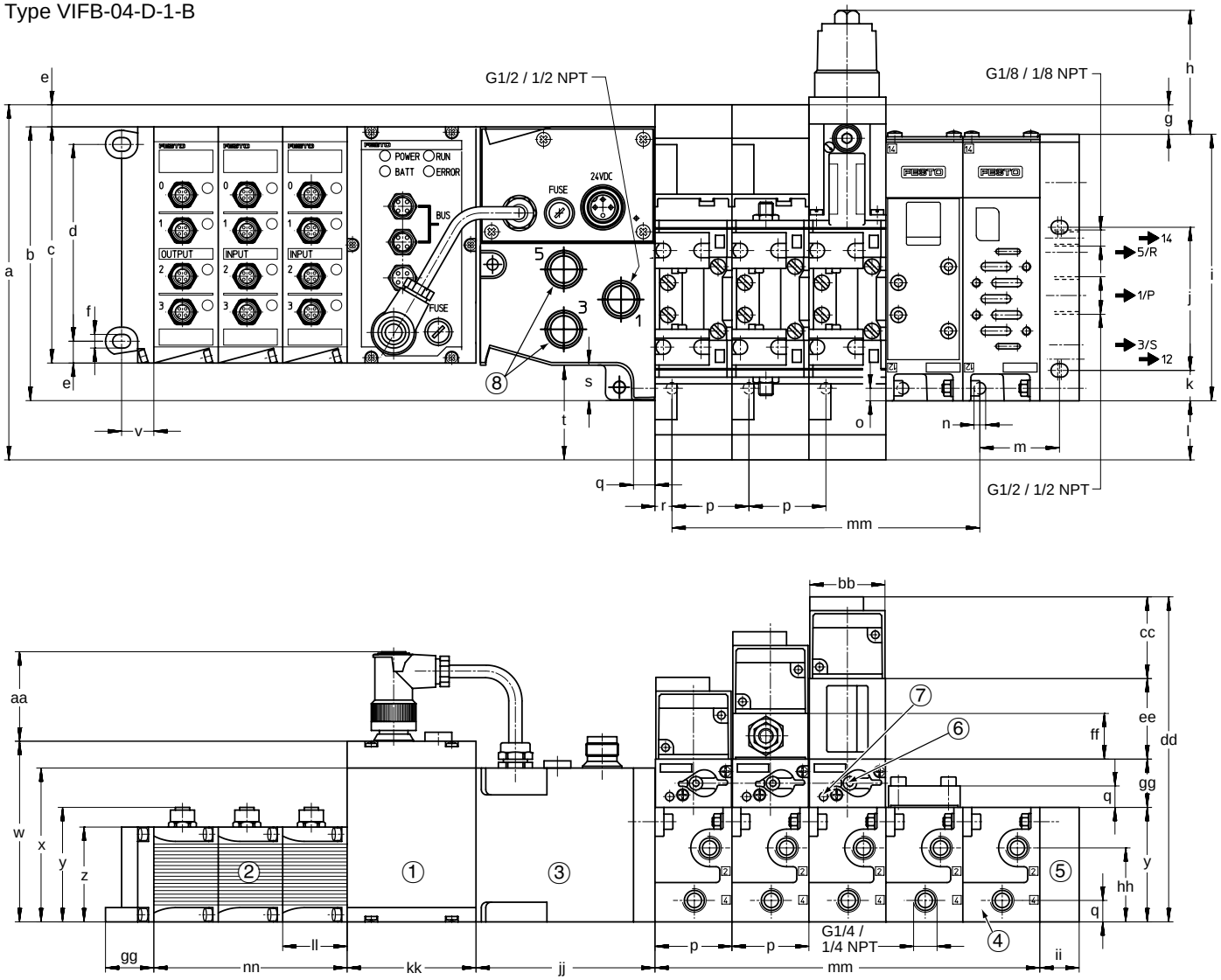
Fieldbus Valve Manifold



Fieldbus Valve/Sensor Manifold



Type VIFB-04-D-1-B



Dimensions:
Type VIFB-04-D-1-B

a	7.81 in / 198.5 mm	k	0.67 in / 17 mm	v	0.71 in / 18 mm	ff	1.00 in / 25.5 mm
b	6.02 in / 153 mm	l	1.30 in / 33 mm	w	3.98 in / 101 mm	gg	1.06 in / 27 mm
c	5.20 in / 132 mm	m	1.75 in. / 44.5 mm	x	3.39 in / 86 mm	hh	1.63 in / 41.3 mm
d	4.33 in / 110 mm	n	0.26 in / 6.6 mm	y	2.52 in / 64 mm	ii	0.87 in / 22 mm
e	0.49 in / 12.4 mm	o	0.28 in / 7 mm	z	2.09 in / 53 mm	jj	3.94 in / 100 mm
f	0.30 in / 7.6 mm	p	1.69 in / 43 mm	aa	1.97 in / 50 mm	kk	2.83 in / 72 mm
g	0.65 in / 16.5 mm	q	0.47 in / 12 mm	bb	1.65 in / 42 mm	ll	1.42 in / 36 mm
h	2.72 in / 69 mm	r	0.37 in / 9.5 mm	cc	1.80 in / 45.7 mm	mm	N* x 1.69 in / N* x 43 mm
i	5.87 in / 149 mm	s	0.83 in / 21 mm	dd	7.15 in / 181.7 mm	nn	N* x 1.42 in / N* x 36 mm
j	3.15 in / 80 mm	t	2.13 in / 54 mm	ee	1.77 in / 45 mm		

N* = Number of sub-bases

Port Designations:

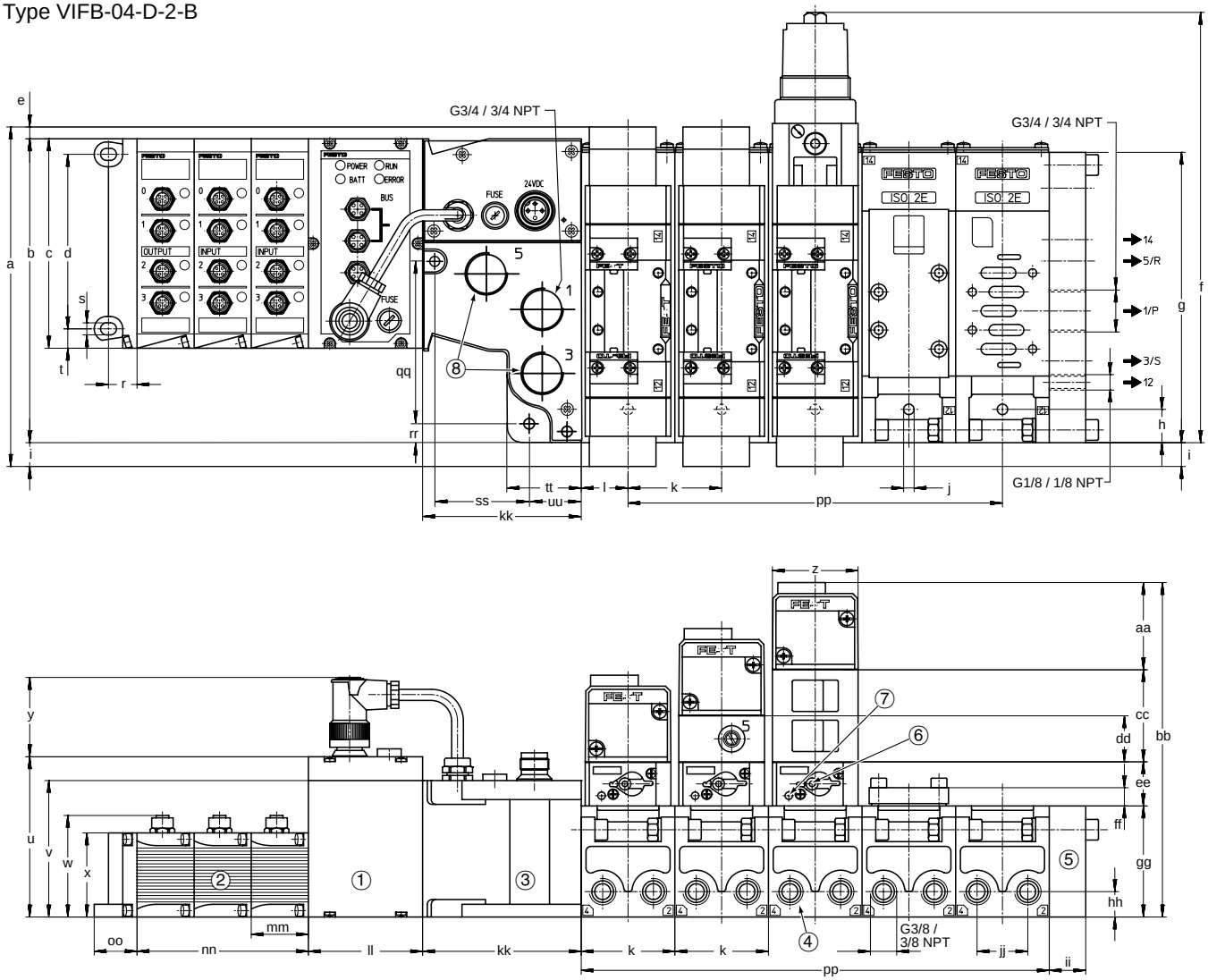
1	(P) = Supply	1 (P) = G 1/2 / 1/2 NPT
4, 2	(A, B) = Outlets	4, 2 (A, B) = G 1/4 / 1/4 NPT
5, 3	(R, S) = Exhaust	5, 3 (R, S) = G 1/2 / 1/2 NPT
12, 14	(Y, Z) = Pilot	12, 14 (Y, Z) = G 1/8 / 1/8 NPT

① Control Block
② Electrical Input/Output Modules
③ Separate or additional air supply
④ Manifold sub-base
⑤ Right end-plate
⑥ Manual override
⑦ LED
⑧ Ports for optional silencers

ISO 5599/II Valve/Sensor Manifolds

Dimensions, ISO Size 2

Type VIFB-04-D-2-B



Dimensions:

Type VIFB-04-D-2-B

a	8.43 in / 214 mm	l	1.16 in / 29.5 mm	bb	8.30 in / 210.8 mm	mm	142 in / 36 mm
b	7.54 in / 191.5 mm	r	0.71 in / 18 mm	cc	2.28 in / 58 mm	nn	N* x 1.42 in / N* x 36 mm
c	5.20 in / 132 mm	s	0.30 in / 7.6 mm	dd	1.14 in / 29 mm	oo	1.06 in / 27 mm
d	4.33 in / 110 mm	t	0.49 in / 12.4 mm	ee	1.09 in / 27.8 mm	pp	N* x 2.32 in / N* x 59 mm
e	0.30 in / 7.5 mm	u	3.98 in / 101 mm	ff	0.45 in / 11.5 mm	qq	4.07 in / 103.4 mm
f	10.71 in / 272 mm	v	3.39 in / 86 mm	gg	2.76 in / 70 mm	rr	0.47 in / 12 mm
g	7.20 in / 183 mm	w	2.52 in / 64 mm	hh	0.63 in / 16 mm	ss	2.36 in / 60 mm
h	0.83 in / 21 mm	x	2.09 in / 53 mm	ii	0.91 in / 23 mm	tt	1.85 in / 47 mm
i	0.59 in / 15 mm	y	1.97 in / 50 mm	jj	1.26 in / 32 mm	uu	1.30 in / 33 mm
j	0.26 in / 6.6 mm	z	2.13 in / 54 mm	kk	3.94 in / 100 mm		
k	2.32 in / 59 mm	aa	2.17 in / 55 mm	ll	2.83 in / 72 mm		

N* = Number of sub-bases

Port Designations:

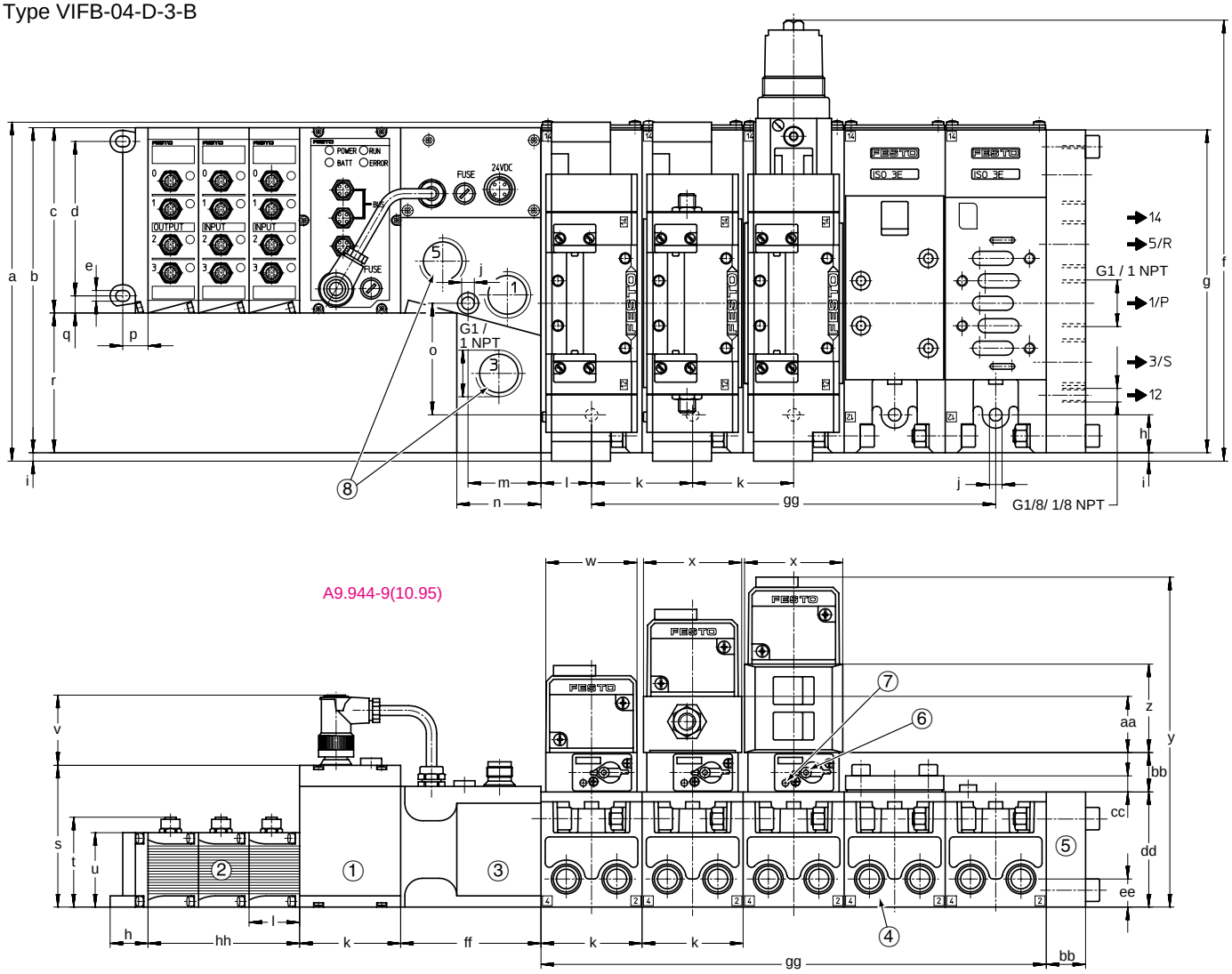
1 (P) = Supply
4, 2 (A, B) = Outlets
5, 3 (R, S) = Exhaust
12, 14 (Y, Z) = Pilot

1 (P) = G 3/4 **/** 3/4 NPT
4, 2 (A, B) = G 3/8 **/** 3/8 NPT
5, 3 (R, S) = G 3/4 **/** 3/4 NPT
12, 14 (Y, Z) = G 1/8 **/** 1/8 NPT

① Control Block
② Electrical Input/Output Modules
③ Separate or additional air supply
④ Manifold sub-base
⑤ Right end-plate
⑥ Manual override
⑦ LED
⑧ Ports for optional silencers

(Ref. 9.944-8) (10.95) Subject to change

Type VIFB-04-D-3-B



Dimensions:
Type VIFB-04-D-3-B

a	9.51 in / 241.5 mm	j	0.35 in / 9 mm	s	3.98 in / 101 mm	aa	1.57 in / 40 mm
b	9.12 in / 231.6 mm	k	2.83 in / 72 mm	t	2.52 in / 64 mm	bb	1.10 in / 28 mm
c	5.20 in / 132 mm	l	1.42 in / 36 mm	u	2.09 in / 53 mm	cc	0.45 in / 11.5 mm
d	4.33 in / 110 mm	m	2.05 in / 52 mm	v	1.97 in / 50 mm	dd	3.23 in / 82 mm
e	0.30 in / 7.6 mm	n	2.36 in / 60 mm	w	2.56 in / 65 mm	ee	0.79 in / 20 mm
f	12.40 in / 315 mm	o	3.13 in / 79.5 mm	x	2.76 in / 70 mm	ff	3.94 in / 100 mm
g	9.06 in / 230 mm	p	0.71 in / 18 mm	y	9.25 in / 235 mm	gg	N* x 2.83 in / N* x 72 mm
h	1.06 in / 27 mm	q	0.49 in / 12.4 mm	z	2.48 in / 63 mm	hh	N* x 1.42 in / N* x 36 mm
i	0.24 in / 6 mm	r	3.92 in / 99.6 mm				

N* = Number of sub-bases

Port Designations:

1 (P) = Supply
4, 2 (A, B) = Outlets
5, 3 (R, S) = Exhaust
12, 14 (Y, Z) = Pilot

1 (P) = G 1/2 / 1/2 NPT
4, 2 (A, B) = G 1/4 / 1/4 NPT
5, 3 (R, S) = G 1/2 / 1/2 NPT
12, 14 (Y, Z) = G 1/8 / 1/8 NPT

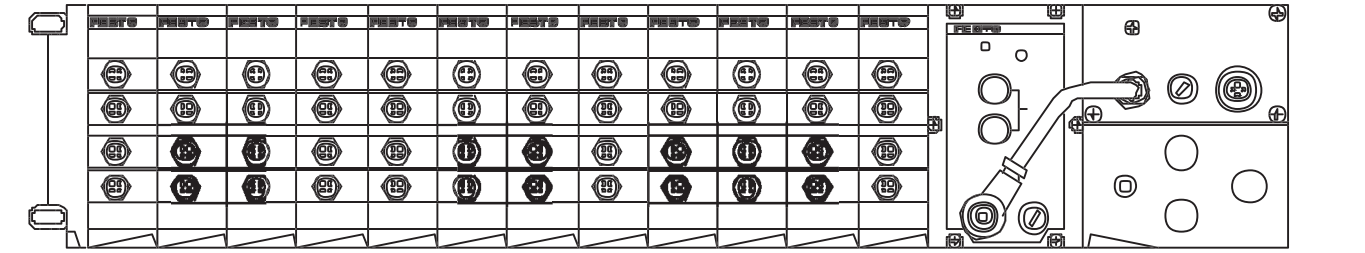
① Control Block
② Electrical Input/Output Modules
③ Separate or additional air supply
④ Manifold sub-base
⑤ Right end-plate
⑥ Manual override
⑦ LED
⑧ Ports for optional silencers

ISO 5599/II Valve/Sensor Manifold Order Form

Electrical Configuration

FB/SB/SF: Max 12 I/O Modules

Adapter Block (Included)



	12	11	10	9	8	7	6	5	4	3	2	1			
04BE-														+	

Electrical I/O Blocks (Each I/O Block has 4 connectors) | **Control Block (Node)** | **Accessories**

ISO 5599/II Electrical Ordering Instructions

Included in the Electrical part of the manifold are the I/O modules, control block and accessories.

1. Specify Electrical I/O block codes, enter in box.
2. Specify control block code, enter in box.
3. Choose desired accessories, enter code in box and specify quantity.

Ordering Example For Electrical Section

04E - MPU2EA - SF3 + N2Z16S...

- 04E: Type of valve manifold, electrical part
- MPU2EA: Electrical I/O
- SF3: Type of node
- N2Z16S...: Accessories

Electrical I/O Block Codes	
Code	**Description**
F	Input Block 4-off (PNP)
E	Input Block 8-off (PNP)
G	Input Block 8-off, with 1 ms response delay
V	4 Inputs (NPN)
N	8 Inputs (NPN)
Y	Multi input output module 12I / 8O (PNP)
Z	Multi input output module 12I / 8O (NPN)
A	Output Block 4-off (PNP)
H	High current output module (PNP)
Q	High current output module (NPN)
P	Analog Module for proportional valves (1I, 1O)*
U	Analog Module (3I, 1O), 0...10 V *
I	Analog Module (3I, 1O), 4...20 mA *
M	ASi - Actuator Sensor Interface Master *
S	Additional power supply, 25 A
C	CP Interface

* Analog modules and ASi can be used with nodes FB6, FB13, SF3, SB50, SL50, SB60, SF60

Control Block Codes			
Fieldbus Type		**Max. Input per manifold**	**Max. Output per manifold** (including Solenoid)
Code	**Description**		
FB1*	Festo Fieldbus	60	64
	Siemens ET 100	60	64
	Klockner Moeller	28	32
FB3*	Profibus FMS	28 (60)	32 (64)
FB5	ABB Procontic, Festo Fieldbus	64	64
FB6	Phoenix Interbus-S	60	64
FB8	Allen Bradley 1771 RIO	60	64
FB9*	Siemens Profibus DP	96+	74+
	Siemens TI505FIM	28 (60)	32 (64)
	Siemens Sinec L2-DP	64	64
FB10	GE-Fanuc Genius I/O	60	64
FB11	DeviceNet	60	64
FB12*	Omron	28	32
FB13	Profibus DP (12 MB)	96+	74+
FB14	SDS	28	32
	Can open	60	64
FB16	ASA (FIPIO)	28	32

Control Block Codes - With Integrated Controller			
Fieldbus Type		**Max. Input per manifold**	**Max. Output per manifold** (including Solenoid)
Code	**Description**		
SB50	Smart Valve Manifold	56	64
SM50	Siemens Smart Valve Manifold with Profibus DP Master	56+	64+
SL50	Siemens Smart Valve Manifold with Profibus DP Slave	56+	64+
SF3	Festo PLC	Approx. 300 I/O	
SB60	Allen Bradley SLC500	268	254
SF60	Allen Bradley SLC500 with DeviceNet	268	254

Values in the ( )'s are valid only if inputs or outputs are used exclusively.

* For replacement applications only.

Manifold Assembly Part Numbers

Assembly with FB1 - FB16	Size 1	P/N 18923
	Size 2	P/N 18924
	Size 3	P/N 18925
Assembly with SB50, SM50, SL50, SF3, SB60, SF60	Size 1	P/N 18926
	Size 2	P/N 18927
	Size 3	P/N 18928

Accessories			
Code	**Quantity**	**Description**	**Type**
N		Power supply socket, straight, PG 9	NTSD-GD-9
M		Power supply socket, straight, PG 13.5	NTSD-GD-13.5
I		Power supply socket, angled, PG 9	NTSD-WD-9
S		Sensor plug, straight, M12, PG 7	SEA-GS-7
X		DUO plug M12 (2 cable entries)	SEA-GS-11-DUO
Z		Fieldbus socket, straight, PG 7	FBSD-GD-7
T		Fieldbus socket, straight, PG 9	FBSD-GD-9
U		Fieldbus socket, straight, PG 13.5	FBSD-GD-13.5
F		Fieldbus socket, angled, PG 9	FBSD-WD-9
G		Fieldbus socket, angled, PG 7	FBSD-WD-7
V		SUB-D fieldbus plug for Profibus DP	FBS-SUB-9-GS-9
D		Fieldbus socket, straight, PG 9, 5 pin	FBSD-GD-9-POL
H		Connection cable, SUB-D, 25 pin, 5 m	KEA-1-25P-5
J		Connection cable, SUB-D, 25 pin, 10 m	KEA-1-25P-10
E		Multi-pin socket SUB-D, 25 pin, IP 65	SD-SUB-D-BU25
B		No manual desired	
Accessories To Be Ordered Separately			
18685		DUO-Cable, 2 x Straight Sockets	KM12-DUO-M8-GDGD
18688		DUO-Cable, 2 x Straight/Angle Sockets	KM12-DUO-M8-GDWD
18687		DUO-Cable, 2 x Angle Sockets	KM12-DUO-M8-WDWD
18684		Extension Cable 4-pin, 2.5 m	KM12-M12-GSGD-2.5
18686		Extension Cable 4-pin, 5 m	KM12-M12-GSGD-5.0
18183		Label holder for I/O modules (5 ea.)	IBT-03-EA
18576		64 Labels (6x10) for I/O modules	IBS 6x10
18182		20 Labels (9x20) for I/O modules	IBS 9x20
18498		Fieldbus Connector with Tee/Straight Sockets*	FB-TA
18499		Fieldbus Connector with Tee Socket/Cable*	FB-TA-1
18786		ASi Flat Cable Distributor (opposite orientation)	ASI-KVT-FK
18797		ASi Flat Cable Distributor (symmetrical orientation)	ASI-KVT-FK-S
18940		ASi Flat Cable (standard cable, yellow)	KASI-1.5-Y-100
18941		ASi Cable (aux. power supply, black)	KASI-1.5-Z-100
18961		ASi Configuration Socket	ASI-SS-CONFIG
18788		ASi Power Supply Connector, M12	ASI-SD-FK-M12
171173		Diagnostics Cable SB/SF60, 3 m	KDI-SB60-3.0-M12
175686		Diagnostics Cable SB/SF60, 6 m	KDI-SB60-6.0-M12
171174		Diagnostics Cable SB/SF60, 10 m	KDI-SB60-10.0-M12
171175		T-Adapter for DH-485	FB-TA-M12-5POL
175380		Socket, 5-pin, M12 for T-Adapter	FBS-M12-5GS-PG9
18577		SB/SF50 Connector Cover	AK-SUB-9/15
18574		SB/SF50 Programming Interface (crimp socket)	S-SUB-15-GS-9
18578		SB/SF50 Programming Interface (soldered socket)	S-SUB-15-GS-9L
18780		I/O Adapter Nipple	SIE-GA
13000366		I/O Connector (right angle)	SIE-WD-PINS

* For use with FB1, FB5, FB8, FB9 and SF3

ISO 5599/II Valve/Sensor Manifolds

Pneumatic Ordering Instructions and Component Summary

ISO 5599/II Pneumatic Ordering Instructions

The pneumatic part of the Valve/Sensor Manifold (right side of adapter block) is configured in the following manner.

The pneumatic part of the manifold includes Valves, Flow Controls, Pressure Regulators, Pressure Gauges and Isolating Disks.

1 **Size:** ISO size 1 (1/4"), 2 (3/8"), or 3 (1/2").

Example: 1

2 **Valves:** Specify number of valve stations. 1 (**"01"**) through 13 (**"13"**).

Example: 08

3 **Pilots and Ports: "QY"** for internal or **"QE"** for external pilots followed by either **"Z"** for BSP or **"N"** for NPT ports

Example: QYZ

4 Configuration: Specify desired **valve code**, **flow control code**, **pressure regulator code,** and/or **pressure gauge code** in desired manifold position.

	1
Example:	G
	X
	Q
	U

For separate pressure zones, indicate the desired location for an **isolating disk** after the last valve.

Example: ...V,

For merging of ISO Size 1 with ISO Size 2 or ISO Size 2 with ISO Size 3 use an **intermediate plate**.

Example: ,W,

Enter the **configuration codes** for each manifold position desired.

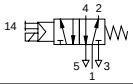
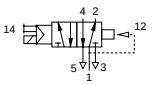
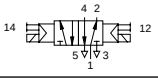
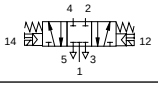
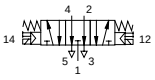
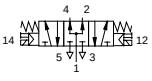
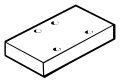
Example: GXQU

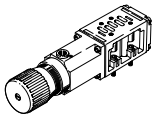
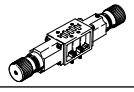
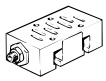
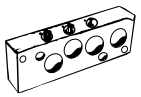
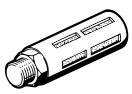
Consecutive positions having the same configuration are summarized as shown in the **ordering example**.

Pneumatic Ordering Example

04P - 1 - 08 - QY Z : 7(GXQU) V, W, JXPT

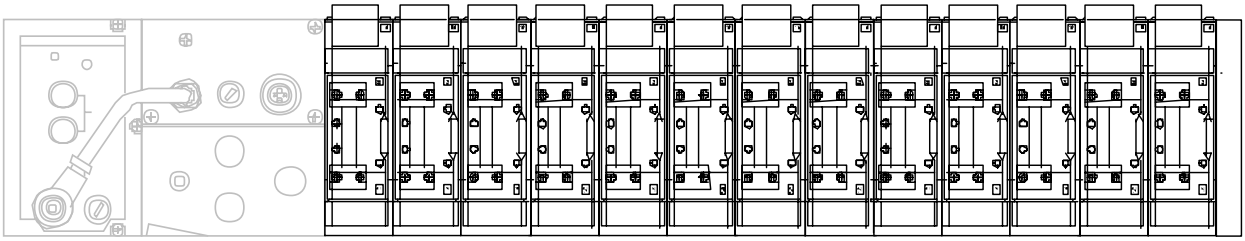
- **04P** — Manifold Type
- **1** — Size
- **08** — No. of valve positions
- **QY** — Factory Standard
- **Z** — Pilot
- **7(GXQU) V, W, J** — Position configuration (Size 1); No. of positions having the same configuration
- **XPT** — Additional position configuration (Size 2); Port Connection (BSP or NPT)

Valves				
Code		**Description**	**ISO Size**	**Type**
M		Single Solenoid air piloted spring return valve	1 2 3	VL-5/2-D-1-FR-C VL-5/2-D-2-FR-C VL-5/2-D-3-FR-C
L		Single Solenoid air piloted pneumatic reset valve	1 2 3	VL-5/2-D-1 VL-5/2-D-2 VL-5/2-D-3
J		Double Solenoid air piloted valve	1 2 3	J-5/2-D-1-C J-5/2-D-2-C J-5/2-D-3-C
G		Double Solenoid air piloted valve, closed center	1 2 3	VL-5/3G-D-1-C VL-5/3G-D-2-C VL-5/3G-D-3-C
E		Double Solenoid air piloted valve, exhausted center	1 2 3	VL-5/3E-D-1-C VL-5/3E-D-2-C VL-5/3E-D-3-C
B		Double Solenoid air piloted valve, pressurized center	1 2 3	VL-5/3B-D-1-C VL-5/3B-D-2-C VL-5/3B-D-3-C
A		Blanking Plate	1 2 3	IAP-04-D-1 IAP-04-D-2 IAP-04-D-3

Components				
Code		**Description**	**ISO Size**	**Type**
P		Single Supply Regulator For Port 1, (P)	1 2 3	LR-ZP-P-D-1 LR-ZP-P-D-2 LR-ZP-P-D-2
R		Single Output Regulator For Port 4, (A)	1 2 3	LR-ZP-A-D-1 LR-ZP-A-D-2 LR-ZP-A-D-3
S		Single Output Regulator For Port 2, (B)	1 2 3	LR-ZP-B-D-1 LR-ZP-B-D-2 LR-ZP-B-D-3
Q		Dual Regulator For Ports 4 & 2, (A & B)	1 2 3	LR-ZP-A/B-D-1 LR-ZP-A/B-D-2 LR-ZP-A/B-D-3
T*		Pressure Gauge	1, 2, 3	MA-40-10-1/8 (0 to 10 bar)
U*		Pressure Gauge	1, 2, 3	MA-40-16-1/8 (0 to 16 bar)
X		Flow Control Sandwich	1 2 3	GRO-ZP-1-ISO GRO-ZP-2-ISO GRO-ZP-3-ISO
V		Isolating Disk (for separate pressure zones)	1 2 3	NSC-04-D-1 NSC-04-D-2 NSC-04-D-3
W		Intermediate Plate	1 to 2	NZVE-D1-D2-SA
		Intermediate Plate	2 to 3	NZVE-D2-D3-SA
6841 12638 6844 12741 6845 151990		Silencers (Diecast Al)		U-1/8-B U-1/8-B-NPT U-1/2-B U-1/2-B-NPT U-3/4-B U-1-B
163941		Pneumatic Manual		

Note: For the **T** or **U code,** 1 gauge will be included with single pressure regulators and 2 gauges with dual pressure regulators.

Manifolds available with up to 13 double solenoid valves (26 solenoid coils)



	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve Code													
Flow Control Code													
Pressure Regulator Code													
Pressure Gauge Code													
Isolating Disk Code													
Intermediate Plate Code													

4

04P- ☐☐☐ : ☐

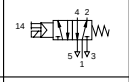
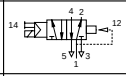
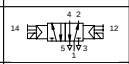
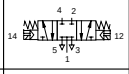
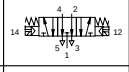
1 2 3 4

* Manifold isolating disks will be assembled in the supply port as standard.

This applies to the multi-pin manifolds as well (see next page).

** Intermediate plates, Type NZVE connect between plug-in manifold sub-bases sizes 1 and 2 or between sizes 2 and 3. This enables the combination of two different manifold sub-bases in one assembly.

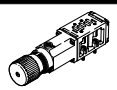
Valve Codes

Code		Description	Type
M		Single Solenoid air piloted spring return valve on double solenoid sub-base	VL-5/2-D-...-FR-C
L		Single Solenoid air piloted pneumatic reset valve on double solenoid sub-base	VL-5/2-D-...-C
J		Double Solenoid air piloted valve	J-5/2-D-...-C
G		Double Solenoid air piloted valve, closed center	VL-5/3G-D-...-C
E		Double Solenoid air piloted valve, exhausted center	VL-5/3E-D-...-C
B		Double Solenoid air piloted valve, pressurized center	VL-5/3B-D-...-C
A		Blanking Plate	IAP-04-D-...

Flow Control Codes

X		Flow Control Sandwich	GRO-ZP-...-ISO

Pressure Regulator Codes

P		Single Supply Regulator for Port 1, (P)	LR-ZP-P-D-...
R		Single Output Regulator for Port 4, (A)	LR-ZP-A-D-...
S		Single Output Regulator for Port 2, (B)	LR-ZP-B-D-...
Q		Dual Regulator For Port 4 & 2, (A & B)	LR-ZP-A/B-D-...

Pressure Gauge Codes

T		Pressure Gauge (0 to 10 bar)	MA-40-10-1/8
U		Pressure Gauge (0 to 16 bar)	MA-40-16-1/8

Intermediate Plate Codes

W**		Intermediate Plate (ISO Size 1 to ISO Size 2)	NZVE-D1-D2-SA
		Intermediate Plate (ISO Size 2 to ISO Size 3)	NZVE-D2-D3-SA

Isolating Disk Code

V*		Isolating Disk	NSC-04-D-...

ISO 5599/II Multi-pin Valve Manifold Order Form

11 Pin and 31 Pin Manifolds

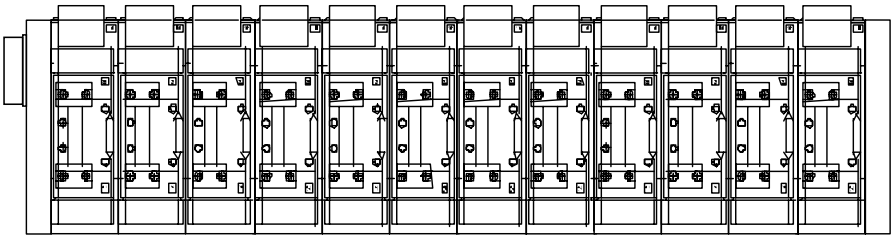
Multi-pin mating plug:

11-pin (MIL-C) = 175843 (w/5m cable = 13000415)

31-pin (MIL-C) = 175844 (w/5m cable = 13000416)

Multi-pin Assembly Part Numbers

Size 1 P/N 18084
Size 2 P/N 18085
Size 3 P/N 18088



1	2	3	4	5	6	7	8	9	10	11	12

6

Valve Code	
Flow Control Code	
Pressure Regulator Code	
Pressure Gauge Code	
Isolating Disk Code	
Intermediate Plate Code	

41P [ ][ ][ ][ ][ ] **MP4** **:** [ ]

1 2 3 4 5 **6**

Manifolds available with up to 12 double solenoid valves (24 solenoid coils)

Ordering Instructions:

1 **Specify Size:** ISO size 1 (1/4") = **1**, ISO size 2 (3/8") = **2,** ISO size 3 (1/2") = **3**

2 **Valves:** Specify number of valve stations.
- Manifolds with 1 to 4 valve stations are 11 Pin.
- Manifolds with 5 to 13 stations are 31 Pin.

3 **Electrical:** Specify electrical voltage. Select **"P"** for 24 VDC or **"Q"** for 110 VAC

4 **Pilot:** Choose **"Y"** for internal pilot or **"E"** for external pilot. Note: Internal piloting (from port 1) is standard.

5 **Ports:** Choose **"Z"** for BSP ports or **"N"** for NPT ports.

6 **Configuration:** Specify desired **valve code**, **flow control code**, **pressure regulator code**, **pressure gauge code** and place codes in desired manifold position above.

For separate pressure zones, indicate the desired location for an **isolating disk**.

Example:

1
M
X
P
U

To merge an ISO Size 1 with an ISO Size 2 or ISO Size 2 with an ISO Size 3 use an **intermediate plate**.

Example:

	V	

Enter the **position configuration codes** in each manifold position. Consecutive positions having the same configuration are summarized as shown in the **ordering example**.

Example:

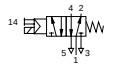
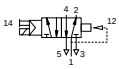
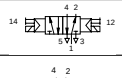
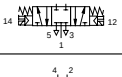
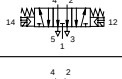
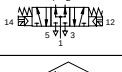
	W	

Multi-pin Ordering Example

41P 1 03 Q Y N MP4 : 2(MPU), JXPU

- 41P — Manifold Type
- 1 — Size
- 03 — Valve Qty.
- Q — Voltage
- Y — Piloting
- N — Ports
- MP4 — Round Multi-pin Connector
- 2 — Number of positions having same configuration
- (MPU) — Position configuration
- JXPU — Additional position configuration

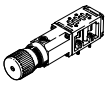
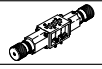
Valve Codes

Code		Description	Type
M		Single Solenoid air piloted spring return valve on double solenoid sub-base	VL-5/2-D-...-FR-C
L		Single Solenoid air piloted pneumatic reset valve on double solenoid sub-base	VL-5/2-D-...-C
J		Double Solenoid air piloted valve	J-5/2-D-...-C
G		Double Solenoid air piloted valve, closed center	VL-5/3G-D-...-C
E		Double Solenoid air piloted valve, exhausted center	VL-5/3E-D-...-C
B		Double Solenoid air piloted valve, pressurized center	VL-5/3B-D-...-C
A		Blanking Plate	IAP-04-D-...

Flow Control Codes

X		Flow Control Sandwich	GRO-ZP-...-ISO

Pressure Regulator Codes

P		Single Supply Regulator for Port 1, (P)	LR-ZP-P-D-...
R		Single Output Regulator for Port 4, (A)	LR-ZP-A-D-...
S		Single Output Regulator for Port 2, (B)	LR-ZP-B-D-...
Q		Dual Regulator For Port 4 & 2, (A & B)	LR-ZP-A/B-D-...

Pressure Gauge Codes

T		Pressure Gauge (0 to 10 bar)	MA-40-10-1/8
U		Pressure Gauge (0 to 16 bar)	MA-40-16-1/8

Intermediate Plate Codes

W*		Intermediate Plate (ISO Size 1 to ISO Size 2)	NZVE-D1-D2-SA
		Intermediate Plate (ISO Size 2 to ISO Size 3)	NZVE-D2-D3-SA

Isolating Disk Code

V*		Isolating Disk (For pressure zones)	NSC-04-D-...

* See page 601 regarding utilization of isolating disks and intermediate plates.

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