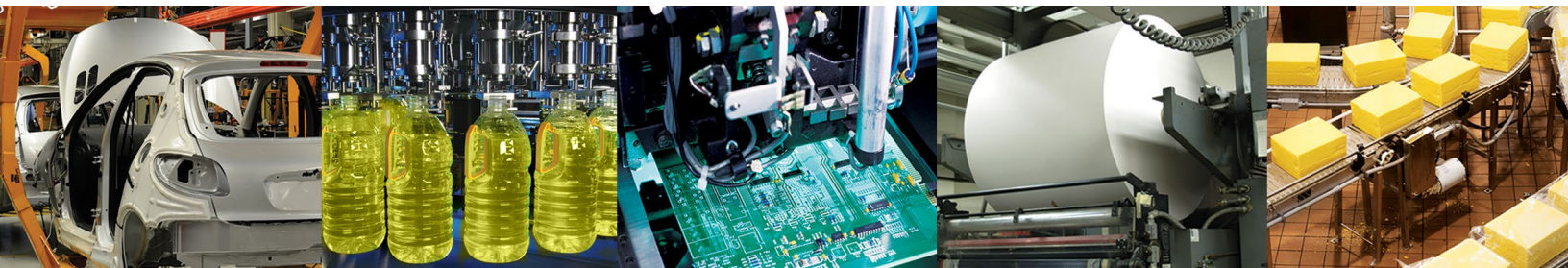


# Solenoid Pilot Actuated Valves

501 Series |  
502 Series | Directional Control Valve  
503 Series |





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## 501 Series – Directional Control Valve Platform Featuring Higher Flow in a Compact Valve Package



### Features

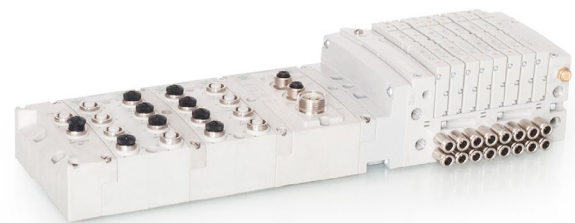
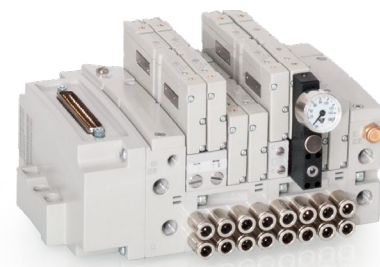
- Solenoid air pilot actuated
- Low wattage 0.8 Watt for DC application
- DC solenoids Polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- IN Fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- IP65 Certified

### Sandwich and Manifold Accessories

- Pressure Regulators for supply pressure control at individual valve
- Speed control to control exhaust flow allows for control of actuator extend or retract speed
- Shut off block for individual valve to be isolated from pressure supply during operation and repair
- Mid Station Supply Manifold block allows for multiple pressure zones (with blocking discs) or additional air supply to a manifold


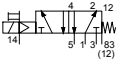


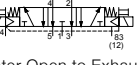
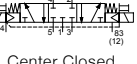
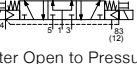

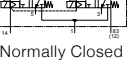
### Fieldbus Electronics Compatible

- G3 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 128 valve solenoids per manifold
  - Easy distribution of additional manifolds through Sub-bus communication
  - One Node supports up to 16 I/O modules
  - Available with Auto Recovery Module (ARM) which allows configuration information to be saved and reloaded to replacement module automatically
- 580 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 128 valve solenoids per manifold





Performance Data

Function Type	Function Code	ISO Symbol Pilot (14) Return (12)	Interface	Rated Flow		Response Time (ms)	Pilot Pressure at 73°F/23°C PSI (bar)		Operating Pressure Port 1 PSI (bar)/inHg (-bar)		 Part Number	
				at 90 PSI Cv (l/min (ANR))			min.	max	min.	max		
				1 → 2 1 → 4	2 → 3 4 → 5	Energize/ De-Energize						
<b>Rubber Packed Technology, with Manual Override</b>												
5/2	B1	 Spring Return	Proprietary	0.460 (460)	0.465 (465)	14/29	29 (2)	115 (8)	28 (-0.95)	115 (8)	R501A2B10MA00F1	
	BN	 Differential Air Return		0.460 (460)	0.465 (465)	25/21	29 (2)	115 (8)	28 (-0.95)	115 (8)	R501A2BN0MA00F1	
	B4	 Solenoid Air Return		0.460 (460)	0.465 (465)	11/11	29 (2)	115 (8)	28 (-0.95)	115 (8)	R501A2B40MA00F1	
5/3	B5	 Center Open to Exhaust		0.420 (420)	0.470 (470)	27/12	29 (2)	115 (8)	28 (-0.95)	115 (8)	R501A2B50MA00F1	
	B6	 Center Closed		0.460 (460)	0.465 (465)	13/12	29 (2)	115 (8)	28 (-0.95)	115 (8)	R501A2B60MA00F1	
	B7	 Center Open to Pressure		0.460 (460)	0.411 (411)	17/38	36 (2.5)	115 (8)	28 (-0.95)	115 (8)	R501A2B70MA00F1	
2 x 3/2 NO	BA	 Normally Open		0.450 (450)	0.450 (450)	18/18	0.3 x Operating Pressure + 13 PSI		115 (8)	30 (2)	115 (8)	R501A2BA0MA00F1
2 x 3/2 NC	BD	 Normally Closed		0.460 (460)	0.470 (470)	18/18	0.09 x Operating Pressure + 33.5 PSI		115 (8)	30 (2)	115 (8)	R501A2BD0MA00F1

Construction

Materials in Contact w/Fluid	
Body	Aluminum, E-Coating treatment
Spool	Aluminum or Stainless Steel
Piston	POM
Spring	Steel
Spool Seals	NBR + PUR
Other Seals	NBR + FKM
Other materials	PAM (Polyarylamide) 50% Glass Fiber Reinforced
Valve to Subbase Gasket	NBR
Subbases	Aluminum, E-Coating treatment

Operating Data

All Solenoids Are Continuous Duty Rated	24 VDC
Power (Watts)	0.8
Holding Current (Amps)	0.025
Ambient Temperature Range Min/Max °F (°C)	-14° F (-10° C)/122° F (50° C)

**How to Order: Valve**

**R 501 A 2 B 4 0 M A00 F1**

**Product Series**

501 = 11mm Valve

**Revision**

A = Initial Release

**Actuation**

2 = Rubber Packed

**Valve Type**

B = Solenoid Pilot w/ Flush Non-Locking Override

**Function**

- 1 = 2 Position 4-Way (5/2), Spring Return
- 4 = 2 Position 4-Way (5/2), Dual Solenoid
- 5 = 3 Position 4-Way (5/3), Open Center, Dual Pressure
- 6 = 3 Position 4-Way (5/3), Blocked Center
- 7 = 3 Position 4-way (5/3), Open to 2 & 4 in Center
- A = Dual 3-Way, 14 Normally Open – 12 Normally Open
- D = Dual 3-Way, 14 Normally Closed – 12 Normally Closed
- N = 2 Position 4-Way (5/2), Differential Air Return w/o Spring

**Voltage**

F1 = 24 DC

**Options**

- A00 = Standard (No Options)
- 11B = Flush Locking Manual Override
- 11M = Without Manual Override

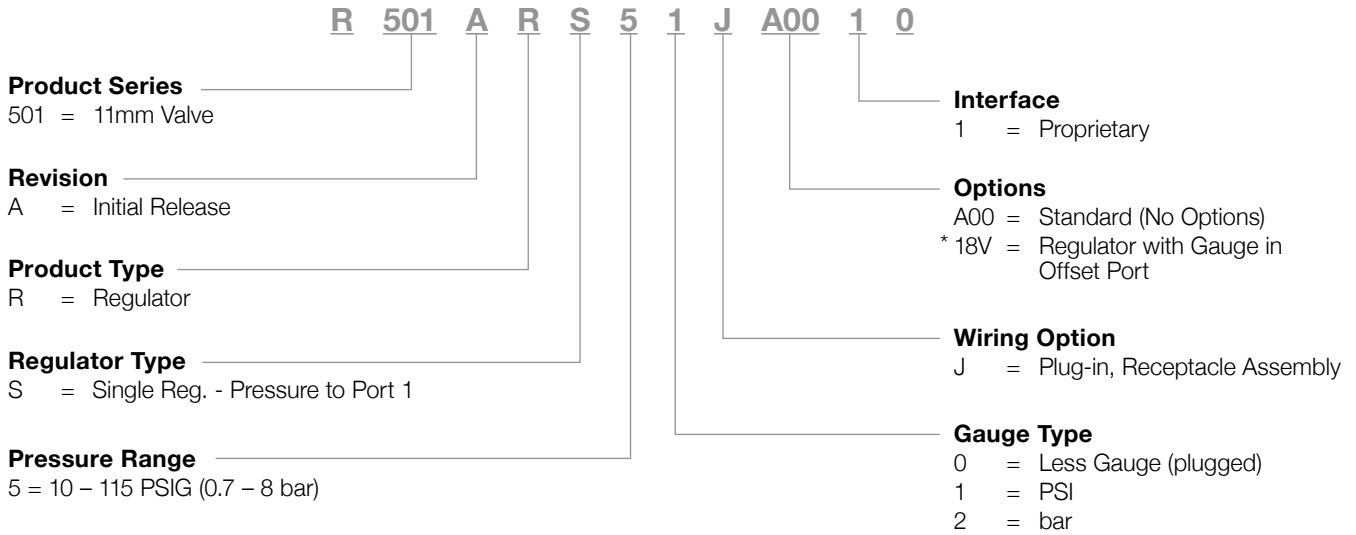
**Electrical**

M = Plug-in, w/ Light, VDC

**Port Size**

0 = No Port Size

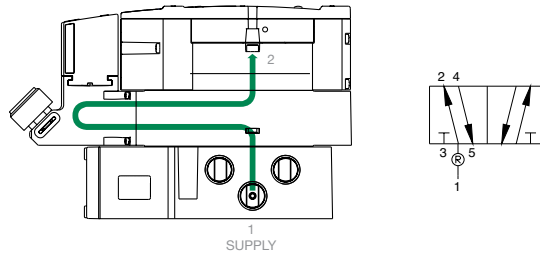
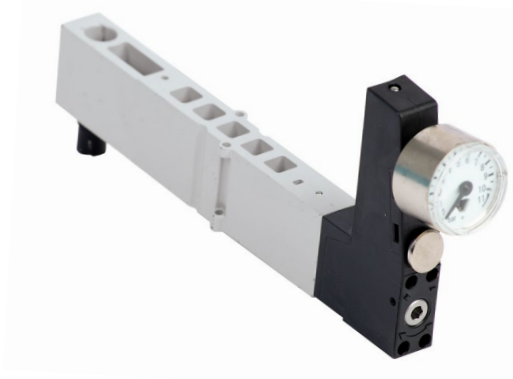
**How to Order: Regulator**



\* Regulator gauges must be offset with 18V option on alternating stations to prevent interference.

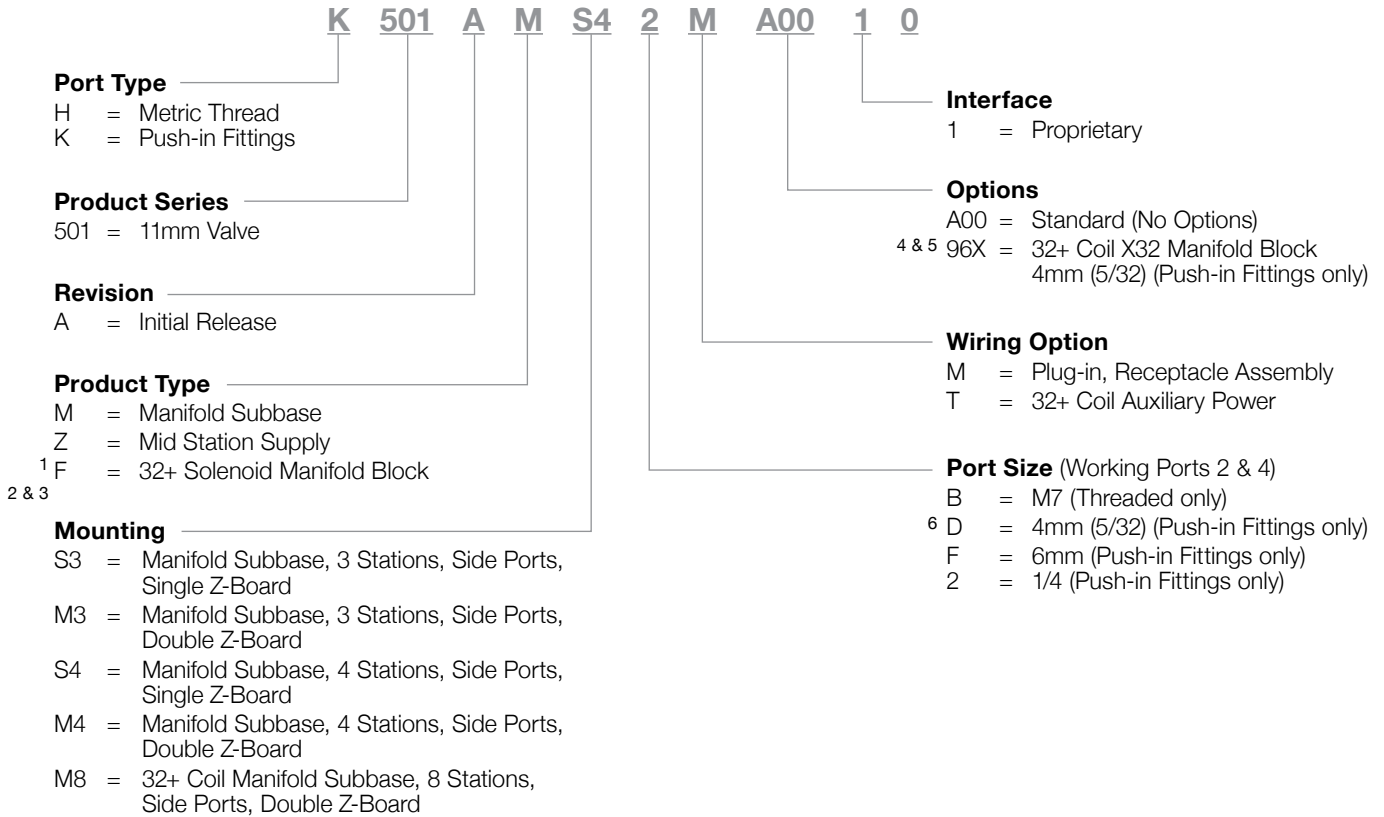
**Sandwich Pressure Regulator Block**

**Type: RS**



Single pressure from a single supply.

**How to Order: Mounting**



<sup>1</sup> Available with M4 mounting only

<sup>2</sup> Product Type F available with Mounting M8 and Wiring Option T for an 8 station manifold block with mid-station supply, auxiliary power, and X32 drivers

<sup>3</sup> Product Type F available with Mounting M4 and Wiring Option M for a 4 station manifold block with X32 drivers

<sup>4</sup> Option 96X is only available when F, M8, and T are selected together

<sup>5</sup> Option 96X overrides the port size for the X32 manifold block only (stations 5-8)

<sup>6</sup> Port Size D is not available when Product Type F, Mounting M8, and Wiring Option T is selected together

How to Order: Manifold Assembly

**K 501 A V 3 H 2 0 0 V A00**

**Port Type**  
<sup>1</sup> 8 = NPTF  
<sup>1</sup> G = ISO228/1-G  
 K = Push-in Fittings

**Product Series**  
 501 = 11mm Valve

**Revision**  
 A = Initial Release

**Product Type**  
 V = Valve Manifold Assembly

**Electrical Interface**  
 3 = G3 Series Fieldbus Interface  
 8 = 580 Series Fieldbus Interface  
 D = CHARMs Interface  
 J = 25 Pin Sub-D Interface  
 M = 37 Pin Sub-D Interface  
 Q = 19 Pin M23 Interface  
 R = 26 Pin M27 Interface  
 T = 1-32 Pin Terminal Strip Interface  
<sup>2</sup> Z = Robot End Effector (EE) Connection Interface

**Number of Valve Stations**

A = NA/33/65/97	L = 12/44/76/108	W = 23/55/87/119
B = NA/34/66/98	M = 13/45/77/109	X = 24/56/88/120
C = 3/35/67/99	N = 14/46/78/110	Y = 25/57/89/121
D = 4/36/68/100	O = 15/47/79/111	Z = 26/58/90/122
E = NA/37/69/101	P = 16/48/80/112	2 = 27/59/91/123
F = 6/38/70/102	Q = 17/49/81/113	3 = 28/60/92/124
G = 7/39/71/103	R = 18/50/82/114	4 = 29/61/93/125
H = 8/40/72/104	S = 19/51/83/115	5 = 30/62/94/126
I = 9/41/73/105	T = 20/52/84/116	6 = 31/63/95/127
J = 10/42/74/106	U = 21/53/85/117	7 = 32/64/96/128
K = 11/43/75/107	V = 22/54/86/118	

**Options**  
 A00 = Standard (No Options)  
 MUF = Muffler in End Plates  
 DRM = DIN Rail Mount  
 DWM = DIN Rail with MUF  
 14X = External Pilot Supply from Port #14  
 D12 = (14X) External Pilot Supply from Port #14 and (MUF) Muffler in End Plates  
 D14 = (14X) External Pilot Supply from Port #14 and (DRM) DIN Rail Mount  
 F06 = (14X) External Pilot Supply from Port #14, (MUF) Muffler in End Plates and (DRM) DIN Rail Mount  
 A27 = FANUC Robot EE Connection Interface  
 D28 = FANUC Robot EE Connection + (MUF) Muffler in End Plates

**End Plate Style**  
 V = Vertical

**Second Valve Series**  
 0 = No Second Valve Series

**Valve Station Adder**  
 0 = No Adder  
 1 = 32+  
 2 = 64+  
 3 = 96+

**End Plate Port Size (Supply Ports 1, 3/5)**  
 1 = 1/8  
 2 = 1/4  
 G = 5/16  
 H = 8mm

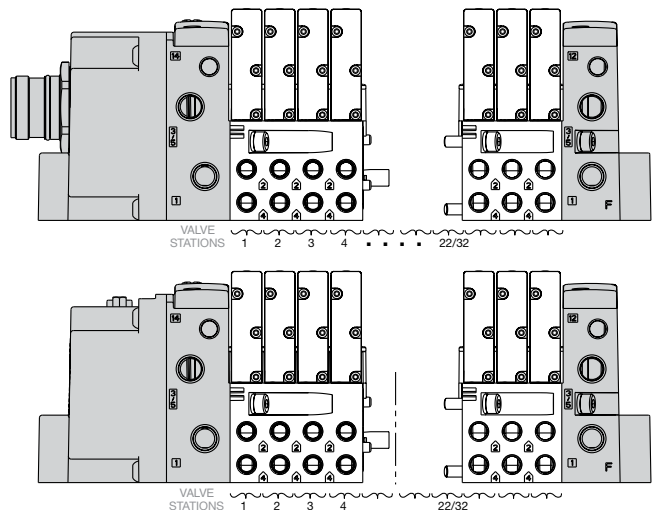
<sup>1</sup> Port Type 8 & G available in Port Size 1/8  
<sup>2</sup> FANUC EE Interface (A27 or D28) must be selected under Options  
 NOTE: See the Multipin Electrical Interface table for Max Solenoid Outputs.

Sub-D, Terminal Strip, Round Interface, and End Effector Interface

- Shaded components described by Assembly Kit model number designation
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated

Example Order - 501 Shown

25 Pin Sub-D	K501AVJGG00VA00
Valve Station #1	R501A2B10MA00F1
Valve Station #2	R501A2B10MA00F1
Valve Station #3	R501A2B10MA00F1
Valve Station #4	R501A2B10MA00F1
Mounting #1	K501AMS42MA0010
Valve Station #5	R501A2B40MA00F1
Valve Station #6	R501A2B40MA00F1
Valve Station #7	R501A2B40MA00F1
Mounting #2	K501AMM32MA0010
	Assembled



NOTE: Example order for Fieldbus electronics see 580 or G3 Fieldbus catalog.

**502 Series – Directional Control Valve Platform  
Featuring Higher Flow in a Compact Valve Package**

**UL US CE**  
ISO 15407-2 (18mm)  
ISO 15407-1 (18mm)

**Features**

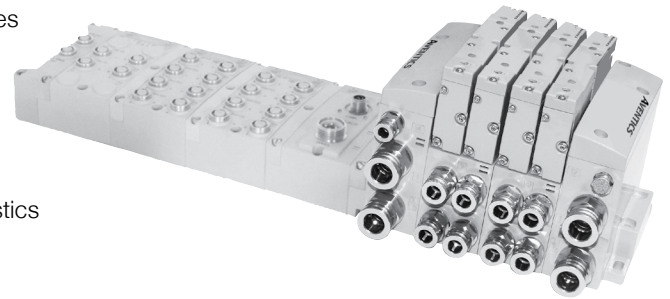
- Solenoid air pilot actuated
- Low wattage 1.3 Watt for DC application
- DC solenoids Polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- IN Fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- IP65 Certified

**Sandwich and Manifold Accessories**

- Pressure Regulators for supply pressure control at individual valve
- Speed control to control exhaust flow allows for control of actuator extend or retract speed
- Shut off block for individual valve to be isolated from pressure supply during operation and repair
- Mid Station Supply Manifold block allows for multiple pressure zones (with blocking discs) or additional air supply to a manifold

**Fieldbus Electronics Compatible**

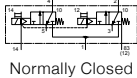
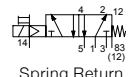
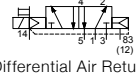
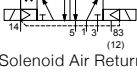
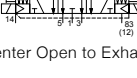
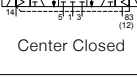
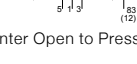
- G3 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 80 valve solenoids per manifold
  - Easy distribution of additional manifolds through Sub-Bus communication
  - One Node supports up to 16 I/O modules
  - Available with Auto Recovery Module (ARM) which allows configuration information to be saved and reloaded to replacement module automatically
- 580 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 80 valve solenoids per manifold



502 PERFORMANCE & HOW TO ORDER



**Performance Data**

Function Type	Function Code	ISO Symbol Pilot (14) Return (12)	Interface	Rated Flow at 90 PSI Cv (l/min (ANR))		Response Time (ms)	Pilot Pressure at 73°F/23°C PSI (bar)		Operating Pressure Port 1 PSI (bar)/inHg (-bar)		Part Number
				1 → 2 1 → 4	2 → 3 4 → 5		min.	max	min.	max	
				Energize/ De-Energize							
<b>Rubber Packed Technology, with Manual Override</b>											
2 x 3/2 NC	BD	 Normally Closed	Proprietary	0.650 (650)	0.600 (600)	36/15	58 (4.0)	115 (8)	36* (2)	115 (8)	R502A2BD0MA00F1
			ISO	0.500 (500)	0.440 (440)						
<b>Spool and Sleeve Technology, with Manual Override</b>											
5/2	B1	 Spring Return	Proprietary	0.470 (470)	0.530 (530)	16/49	29 (2)	115 (8)	28 (-0.95)	115 (8)	R502A1B10MA00F1
			ISO	0.410 (410)	0.390 (390)						
	BN	 Differential Air Return	Proprietary	0.470 (470)	0.530 (530)	11/26	22 (1.5)	115 (8)	28 (-0.95)	115 (8)	R502A1BN0MA00F1
			ISO	0.410 (410)	0.390 (390)						
	B4	 Solenoid Air Return	Proprietary	0.470 (470)	0.530 (530)	12/15	29 (2)	115 (8)	28 (-0.95)	115 (8)	R502A1B40MA00F1
			ISO	0.410 (410)	0.390 (390)						
5/3	B5	 Center Open to Exhaust	Proprietary	0.380 (380)	0.500 (500)	23/13	22 (1.5)	115 (8)	28 (-0.95)	115 (8)	R502A1B50MA00F1
			ISO	0.340 (340)	0.350 (350)						
	B6	 Center Closed	Proprietary	0.420 (420)	0.440 (440)	12/12	22 (1.5)	115 (8)	28 (-0.95)	115 (8)	R502A1B60MA00F1
ISO			0.360 (360)	0.350 (350)							
B7	 Center Open to Pressure	Proprietary	0.420 (420)	0.430 (430)	13/23	22 (1.5)	115 (8)	28 (-0.95)	115 (8)	R502A1B70MA00F1	
		ISO	0.370 (370)	0.350 (350)							

\* Minimum pressure with external piloting

**Construction**

Materials in Contact w/Fluid	
Body	Aluminum, E-Coating treatment
Spool	Aluminum or Stainless Steel
Piston	POM
Spring	Steel
Spool Seals	NBR + PUR
Other Seals	NBR + FKM
Other materials	PAM (Polyarylamide) 50% Glass Fiber Reinforced
Valve to Subbase Gasket	NBR
Subbases	Aluminum, E-Coating treatment

**Operating Data**

All Solenoids Are Continuous Duty Rated	24 VDC
Power (Watts)	1.3
Holding Current (Amps)	0.054
Ambient Temperature Range Min/Max °F (°C)	-14 °F (-10 °C)/122 °F (50 °C)

**How to Order: Valve**

**R 502 A 1 B 4 0 M A00 F1**

**Product Series**  
502 = 18mm Valve

**Revision**  
A = Initial Release

**Actuation**  
<sup>1</sup> 1 = Spool and Sleeve  
<sup>2</sup> 2 = Rubber Packed

**Valve Type**  
B = Solenoid Pilot with Flush Non-Locking Override

**Function**  
1 = 2 Position 4-Way (5/2), Spring Return  
4 = 2 Position 4-Way (5/2), Dual Solenoid  
5 = 3 Position 4-Way (5/3), Open Center, Dual Pressure  
6 = 3 Position 4-Way (5/3), Blocked Center  
7 = 3 Position 4-way (5/3), Open to 2 & 4 in Center  
D = Dual 3-way, 12 Normally Closed - 14 Normally Closed

**Voltage**  
F1 = 24 DC

**Options**  
A00 = Standard (No Options)  
11B = Flush Locking Manual Override  
11M = Without Manual Override

**Electrical**  
M = Plug-in, w/Light, VDC  
<sup>3</sup> N = M12 Connector  
Pin 1 = Not Used; Pin 2 = Coil 12;  
Pin 3 = Common; Pin 4 = Coil 14

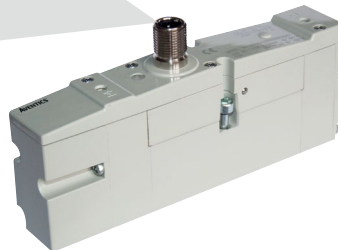
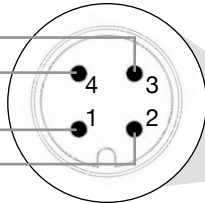
**Port Size**  
0 = No Port Size

<sup>1</sup> Not available with Function D

<sup>2</sup> Available with Function D only

<sup>3</sup> See diagram:

Pin 3 = Common  
Pin 4 = Coil 14  
Pin 1 = Not Used  
Pin 2 = Coil 12



**How to Order: Regulator**

**R 502 A R S 1 1 J A00 1 0**

**Product Series**  
502 = 18mm Valve

**Revision**  
A = Initial Release

**Product Type**  
R = Regulator

**Regulator Type**  
S = Single Reg. - Pressure to Port 1  
D = Double Reg. - Pressure to Ports 5 & 3  
E = Double Reg. - Pressure to Ports 4 & 2, w/o Valve  
T = Double Reg. - Pressure to Ports 1 & 3, 2 Pressure Selector

**Pressure Range**  
1 = 10 - 130 PSIG (0.7 - 9 bar)  
3 = 3 - 30 PSIG (0.2 - 2 bar)  
4 = 5 - 60 PSIG (0.3 - 4.1 bar)

**Interface**  
1 = Proprietary  
2 = ISO 15407-2  
3 = ISO 15407-1

**Options**  
A00 = Standard (No Options)  
14M = Temperproof Needle Cartridge Assembly or Regulator  
16N = Jumper for Supply Pressure to Valve, 14 End  
16P = Jumper for Supply Pressure to Valve, 12 End  
\*61Y = Regulator with Gauge Extension Fitting

**Wiring Option**  
J = Plug-in, Receptacle Assembly  
0 = Non Plug-in

**Gauge Type**  
1 = PSI  
2 = bar  
8 = with 1/8" NPTF adaptor for external gauge  
G = with 1/8" G tap adaptor for external gauge

\* Regulator gauges must be offset with 61Y option on alternating stations to prevent interference.

**Sandwich Pressure Regulator Block**

**Types: RS / RD / RE / RT**

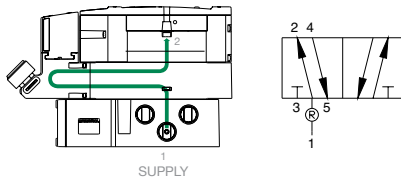


ISO 15407-2/15407-1 Interface



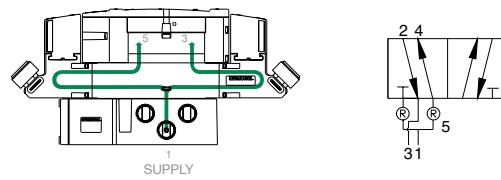
Proprietary Interface

**Type RS**



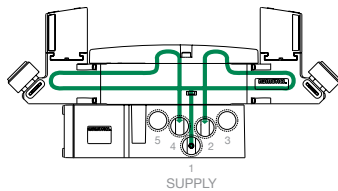
Single pressure from a single supply.

**Type RD**



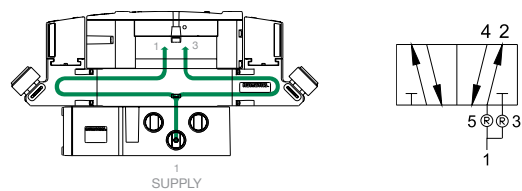
Dual pressure from a single supply.

**Type RE**



External outlet regulator used with jumper plate for single or dual pressure.

**Type RT**



Two-pressure selector used for multi-pressure applications.

**How to Order: Mounting**

**8 502 A M S2 1 M A00 1 0**

**Port Type**

- <sup>1</sup> 8 = NPTF
- <sup>1</sup> G = ISO228/1-G
- K = Push-in Fittings

**Product Series**

502 = 18mm Valve

**Revision**

A = Initial Release

**Product Type**

- M = Manifold Subbase
- <sup>2</sup> A = Individual Subbase
- <sup>3</sup> Z = Mid Station Supply
- <sup>4</sup> F = 32+ Solenoid Manifold Block

**Mounting**

- S2 = Manifold Subbase, 2 Stations, Side Ports, Single Z-Board
- M2 = Manifold Subbase, 2 Stations, Side Ports, Double Z-Board
- <sup>5</sup> V2 = Manifold Subbase, 2 Stations, Side Ports
- <sup>2</sup> 3A = Individual Subbase, Side Ports, Individual Exhaust

**Interface**

- 1 = Proprietary
- 2 = ISO 15407-2
- 3 = ISO 15407-1

**Options**

- A00 = Standard (No Options)
- <sup>6</sup> 14X = External Pilot Supply from Port # 14
- <sup>6 & 8</sup> 56Y = 4-Pin Straight M12 Connector in Mounting Pin 1 = Not Used; Pin 2 = 12+ (B+); Pin 3 = COM; Pin 4 = 14+ (A+)

**Wiring Option**

- <sup>5</sup> 0 = Non Plug-in
- <sup>7</sup> M = Plug-in, Receptacle Assembly
- <sup>4</sup> T = 32+ Coil Auxiliary Power with X16 Drivers
- V = +24 VDC Separation at First Station
- W = +24 VDC Separation at Second Station

**Port Size (Working Ports 2 & 4 Size)**

- 1 = 1/8
- 2 = 1/4
- G = 5/16 (Push-in Fittings Only)
- F = 6mm (Push-in Fittings Only)
- H = 8mm (Push-in Fittings Only)

<sup>1</sup> Port Type 8 & G available in 1/8 size for Product Type F, M and Z or 1/4 for Product Type A

<sup>2</sup> Not available with proprietary interface, only available with 1/4 port size

<sup>3</sup> Only available with M2 and V2 mountings

<sup>4</sup> 32+ Coil Rule: Product Type F, Mounting M4, and Wiring Option T must all be selected together

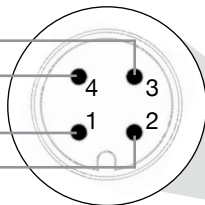
<sup>5</sup> Only available with ISO 15407-1 Interface

<sup>6</sup> Available with 3A mounting only

<sup>7</sup> Not available with V2 Mounting

<sup>8</sup> See diagram:

- Pin 3 = Common
- Pin 4 = Coil 14
- Pin 1 = Not Used
- Pin 2 = Coil 12



**How to Order: Manifold Assembly**

**8 502 A V 3 B 3 0 0 V A00**

**Port Type**

<sup>1</sup> 8 = NPTF  
<sup>1</sup> G = ISO228/1-G  
 K = Push-in Fittings

**Product Series**

502 = 18mm Valve

**Revision**

A = Initial Release

**Product Type**

V = Valve Manifold Assembly

**Electrical Interface**

3 = G3 Series Fieldbus Interface  
 8 = 580 Series Fieldbus Interface  
 D = CHARMS Interface  
 J = 25 Pin Sub-D Interface  
 M = 37 Pin Sub-D Interface  
 Q = 19 Pin M23 Interface  
 R = 26 Pin M27 Interface  
 T = 1-32 Pin Terminal Strip Interface  
<sup>2</sup> Z = Robot End Effector (EE) Connection Interface  
 0 = No Electrical Interface

**Number of Valve Stations**

B = 2/34/66	N = 14/46/78	Z = 26/58
D = 4/36/68	P = 16/48/80	3 = 28/60
F = 6/38/70	R = 18/50	5 = 30/62
H = 8/40/72	T = 20/52	7 = 32/64
J = 10/42/74	V = 22/54	
L = 12/44/76	X = 24/56	

**Options**

A00 = Standard (No Options)  
 MUF = Muffler in End Plates  
 DRM = DIN Rail Mount  
 DWM = DIN Rail with (MUF) Muffler in End Plates  
 14X = External Pilot Supply from Port # 14  
 D12 = (14X) External Pilot Supply from Port #14 and (MUF) Muffler in End Plates  
 D14 = (14X) External Pilot Supply from Port #14 and (DRM) DIN Rail Mount  
 F06 = (14X) External Pilot Supply from Port # 14, (MUF) Muffler in End Plates, and (DRM) DIN Rail Mount  
 A27 = FANUC Robot EE Connection Interface  
 D28 = FANUC Robot EE Connection + (MUF) Muffler in End Plates

**End Plate Style**

V = Vertical  
<sup>3</sup> H = Horizontal

**Second Valve Series**

0 = No Second Valve Series  
<sup>4</sup> 1 = 501 Valve Series (11mm)

**Valve Station Adder**

0 = No Adder  
 1 = 32+  
 2 = 64+

**End Plate Port Size** (Supply Ports 1, 3/5)

3 = 3/8  
 4 = 1/2  
 K = 10mm  
 M = 12mm

<sup>1</sup> Port Type 8 & G available in Port Size 3/8  
<sup>2</sup> FANUC EE Interface (A27 or D28) must be selected under Options  
<sup>3</sup> Horizontal End Plates available with 0 = No Electrical Interface option  
<sup>4</sup> End Plate is NPTF 1/8 or Push-in 8mm  
 NOTE: See the Multipin Electrical Interface table for Max Solenoid Outputs.

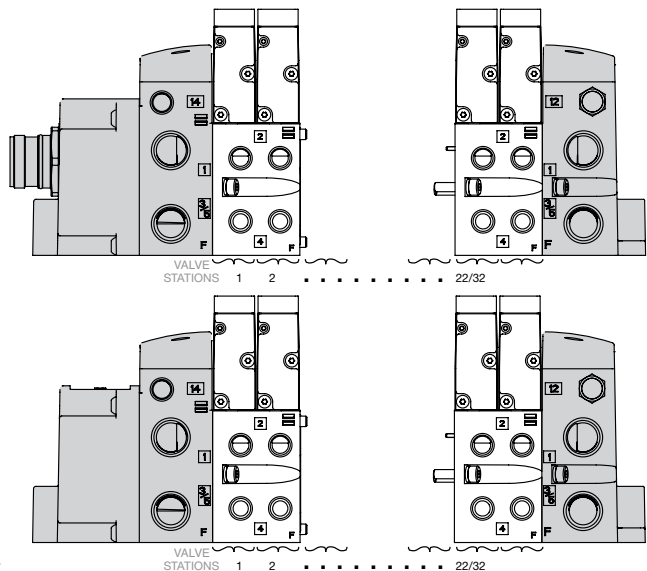
**Sub-D, Terminal Strip, Round Interface, and End Effector Interface**

- Shaded components described by Assembly Kit model number designation
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated

**Example Order - 502 Shown**

25 Pin Sub-D	8502AVJF300VA00
Valve Station #1	R502A2B40MA00F1
Valve Station #2	R502A2B40MA00F1
Mounting #1	8502AMM21MA0010
Valve Station #3	R502A2B60MA00F1
Valve Station #4	R502A2B60MA00F1
Mounting #2	8502AMM21MA0010
Valve Station #5	R502A2B40MA00F1
Valve Station #6	R502A2B40MA00F1
Mounting #3	8502AMM21MA0010
	Assembled

NOTE: Example order for Fieldbus electronics see 580 or G3 Fieldbus catalog.



**503 Series – Directional Control Valve Platform**

**Featuring Higher Flow in a Compact Valve Package**

**Features**

- 5 Ported, 2 and 3 position, 4-way, Spool & Sleeve and Rubber Seal, Cv: 1.2 - 1.4
- Solenoid air pilot actuated
- Low wattage 1.7 Watt for DC application
- DC solenoids Polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- IN Fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- G3 Fieldbus Electronics
- IP65 Certified

**Sandwich and Manifold Accessories**

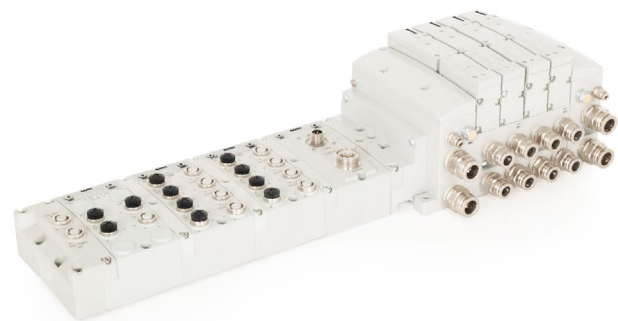
- Pressure Regulators for supply pressure control at individual valve
- Speed control to control exhaust flow allows for control of actuator extend or retract speed
- Shut off block for individual valve to be isolated from pressure supply during operation and repair
- Mid Station Supply Manifold block allows for multiple pressure zones (with blocking discs) or additional air supply to a manifold

**Fieldbus Electronics Compatible**

- G3 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 80 valve solenoids per manifold
  - Easy distribution of additional manifolds through Sub-Bus communication
  - One Node supports up to 16 I/O modules
  - Available with Auto Recovery Module (ARM) which allows configuration information to be saved and reloaded to replacement module automatically
- 580 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 80 valve solenoids per manifold

**Construction**

Materials in Contact w/Fluid	
Body	Aluminum, E-Coating treatment
Spool	Aluminum or Stainless Steel
Piston	POM
Spring	Steel
Spool Seals	NBR + PUR
Other Seals	NBR + FKM
Other materials	PAM (Polyarylamide) 50% Glass Fiber Reinforced
Valve to Subbase Gasket	NBR
Subbases	Aluminum, E-Coating treatment




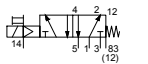
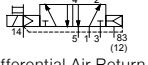
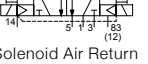
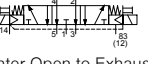
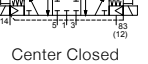
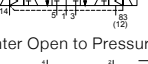


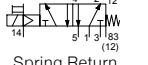
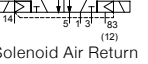
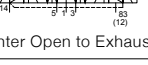
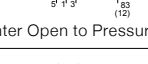
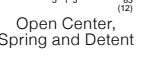
**Operating Data**

All Solenoids Are Continuous Duty Rated	24 VDC
Power (Watts)	1.7
Holding Current (Amps)	0.071
Ambient Temperature Range Min/Max °F (°C)	-14° F (-10° C)/122° F (50° C)

503 PERFORMANCE & HOW TO ORDER



Performance Data

Function Type	Function Code	ISO Symbol Pilot (14) Return (12)	Interface	Rated Flow		Response Time (ms)	Pilot Pressure at 73°F/23°C PSI (bar)		Operating Pressure Port 1 PSI (bar)/inHg (-bar)		 Part Number
				at 90 PSI Cv (l/min (ANR))			min.	max	min.	max	
				1 → 2 1 → 4	2 → 3 4 → 5	Energize/ De-Energize					
<b>Rubber Packed Technology, with Manual Override</b>											
5/2	B1	 Spring Return	Proprietary	1.422 (1400)	1.321 (1300)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A2B10MA00F1
			ISO	1.220 (1200)	1.118 (1100)						
	BN	 Differential Air Return	Proprietary	1.422 (1400)	1.321 (1300)	28/40	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2BN0MA00F1
			ISO	1.220 (1200)	1.118 (1100)						
	B4	 Solenoid Air Return	Proprietary	1.422 (1400)	1.321 (1300)	20/20	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A2B40MA00F1
			ISO	1.220 (1200)	1.118 (1100)						
5/3	B5	 Center Open to Exhaust	Proprietary	0.610 (600)	1.321 (1300)	18/45	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2B50MA00F1
			ISO	0.610 (600)	1.118 (1100)						
	B6	 Center Closed	Proprietary	1.422 (1400)	1.321 (1300)	15/20	58 (4)	115 (8)	28 (-0.95)	115 (8)	R503A2B60MA00F1
			ISO	1.220 (1200)	1.118 (1100)						
	B7	 Center Open to Pressure	Proprietary	1.321 (1300)	0.610 (600)	18/45	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2B70MA00F1
			ISO	1.118 (1100)	0.610 (600)						
$\begin{matrix} \text{NO} \\ \text{NC} \end{matrix}$	BA	 Normally Open Normally Closed	Proprietary	0.965 (950)	0.965 (950)	15/20	51 (3.5)	115 (8)	51* (3.5)	115 (8)	R503A2BA0MA00F1
			ISO	0.915 (900)	0.915 (900)						
$\begin{matrix} \text{NC} \\ \text{NO} \end{matrix}$	BD	 Normally Closed Normally Open	Proprietary	1.016 (1000)	0.813 (800)	15/20	51 (3.5)	115 (8)	51* (3.5)	115 (8)	R503A2BD0MA00F1
			ISO	0.915 (900)	0.813 (800)						
<b>Spool and Sleeve Technology, with Manual Override</b>											
5/2	B1	 Spring Return	Proprietary	1.220 (1200)	1.220 (1200)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B10MA00F1
			ISO	1.118 (1100)	1.016 (1000)						
	B4	 Solenoid Air Return	Proprietary	1.220 (1200)	1.220 (1200)	15/15	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B40MA00F1
			ISO	1.118 (1100)	1.016 (1000)						
5/3	B5	 Center Open to Exhaust	Proprietary	1.016 (1000)	1.016 (1000)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B50MA00F1
			ISO	0.813 (800)	0.813 (800)						
	B7	 Center Open to Pressure	Proprietary	1.016 (1000)	1.016 (1000)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B70MA00F1
			ISO	0.813 (800)	0.813 (800)						
	BT	 Open Center, Spring and Detent	Proprietary	1.016 (1000)	1.016 (1000)	Spring: 20/60 Detent: 15/NA	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1BT0MA00F1
			ISO	0.813 (800)	0.813 (800)						

\* 51 PSI for a pressure supply (P1) ≤ 109 PSI (if > 109 PSI, Pmin. = P1-58 PSI)

**How to Order: Valve**

**R 503 A 2 B 4 0 M A00 F1**

**Product Series**

503 = 26mm Valve

**Revision**

A = Initial Release

**Valve Type**

- <sup>1</sup> 1 = Spool and Sleeve
- 2 = Rubber Packed

**Actuation**

B = Solenoid Pilot w/ Flush Non-Locking Override

**Function**

- 1 = 2 Position 4-Way (5/2), Spring Return
- 4 = 2 Position 4-Way (5/2), Dual Solenoid
- 5 = 3 Position 4-Way (5/3), Open Center, Dual Pressure
- 6 = 3 Position 4-Way (5/3), Blocked Center
- 7 = 3 Position 4-way (5/3), Open to 4 & 2 in Center
- A = Dual 3-way (2 x 3/2), 14 Normally Open - 12 Normally Open
- D = Dual 3-way (2 x 3/2), 14 Normally Closed - 12 Normally Closed
- N = 2 Position 4-Way (5/2), Differential Air Return w/o Spring
- T = 5/3 Open to Exhaust, Spring vs Detent,  
14 Momentary - 12 Maintain (Operator Shared Station Valve)

**Voltage**

F1 = 24 VDC

**Options**

- A00 = Standard (No Options)
- 11B = Flush Locking Manual Override
- 11M = Without Manual Override

**Electrical**

- M = Plug-in, w/ Light, VDC
- <sup>2</sup> N = M12 Connector  
Pin 1 = Not Used; Pin 2 = Coil 12;  
Pin 3 = Common; Pin 4 = Coil 14

**Port Size**

0 = No Port Size

<sup>1</sup> Available with Functions 1, 4, 5 & 7

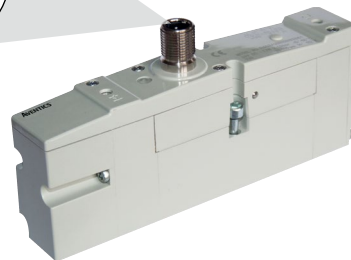
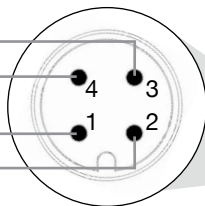
<sup>2</sup> See diagram:

Pin 3 = Common

Pin 4 = Coil 14

Pin 1 = Not Used

Pin 2 = Coil 12



**How to Order: Regulator**

**R 503 A R S 1 1 J A00 1 0**

**Product Series**

503 = 26mm Valve

**Revision**

A = Initial Release

**Product Type**

R = Regulator

**Regulator Type**

- S = Single Reg. - Pressure to Port 1
- D = Double Reg. - Pressure to Ports 5 & 3
- \* E = Double Reg. - Pressure to Ports 4 & 2, w/o Valve
- T = Double Reg. - Pressure to Ports 1 & 3, 2 Pressure Selector

**Pressure Range**

- 1 = 10 - 130 PSIG (0.7 – 9 bar)
- 3 = 3 - 30 PSIG (0.2 – 2 bar)
- 4 = 5 - 60 PSIG (0.3 – 4.1 bar)

\* For Regulator Type E must select 0 Wiring Option and 0 Interface  
 \*\* Key lock device not included - M699AY438663001 sold separately

**Interface**

- \* 0 = No Valve Interface
- 1 = Proprietary
- 2 = ISO 15407-2
- 3 = ISO 15407-1

**Options**

- A00 = Standard (No Options)
- 16N = Jumper for Supply Pressure to Valve, 14 End
- 16P = Jumper for Supply Pressure to Valve, 12 End
- \*\* 14M = Tamperproof Needle Cartridge Assembly or Regulator

**Wiring Option**

- J = Plug-in, Receptacle Assembly
- \* 0 = Non Plug-in

**Gauge Type**

- 1 = PSI
- 2 = bar
- 8 = with 1/8" NPTF adaptor for external gauge
- G = with 1/8" G tap adaptor for external gauge

**Sandwich Pressure Regulator Block**

**Types: RS / RD / RE / RT**

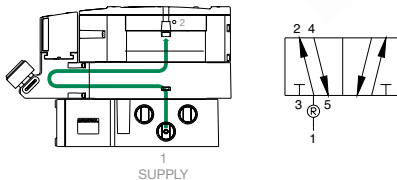


ISO 15407-2/15407-1 Interface



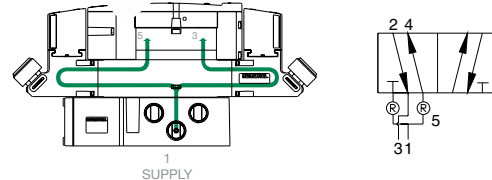
Proprietary Interface

**Type RS**



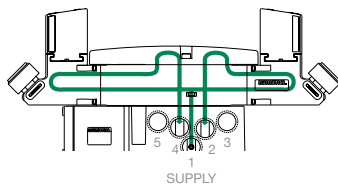
Single pressure from a single supply.

**Type RD**



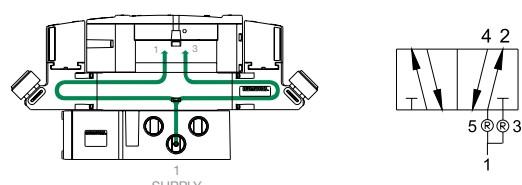
Dual pressure from a single supply.

**Type RE**



External outlet regulator used with jumper plate for single or dual pressure.

**Type RT**



Two-pressure selector used for multi-pressure applications.

**How to Order: Mounting**

**8 503 A M S2 3 M A00 1 0**

**Port Type**

- <sup>1</sup> 8 = NPTF
- <sup>1</sup> G = ISO228/1-G
- K = Push-in Fittings

**Product Series**

503 = 26mm Valve

**Revision**

A = Initial Release

**Product Type**

- M = Manifold Subbase
- A = Individual Subbase
- <sup>2</sup> Z = Mid-Station Supply
- <sup>3</sup> F = 32+ Solenoid Manifold Block

**Mounting**

- S2 = Manifold Subbase, 2 Stations, Side Ports, Single Z-Board
- M2 = Manifold Subbase, 2 Stations, Side Ports, Double Z-Board
- <sup>4</sup> V2 = Manifold Subbase, 2 Stations, Side Ports
- <sup>5</sup> 3A = Individual Subbase, Side Ports, Individual Exhaust
- <sup>3</sup> M4 = 32+ Coil Manifold Subbase, 4 Stations, Side Ports, Double Z-Board

**Interface**

- 1 = Proprietary
- 2 = ISO 15407-2
- 3 = ISO 15407-1

**Options**

- A00 = Standard (No Options)
- <sup>6</sup> 14X = External Pilot Supply from Port #14
- <sup>6 & 8</sup> 56Y = 4 Pin Straight M12 Connector in Mounting  
Pin 1= Not Used; 2= 12+(B+); 3= COM; 4= 14+(A+)
- <sup>6 & 8</sup> 59W = 14X + 56Y

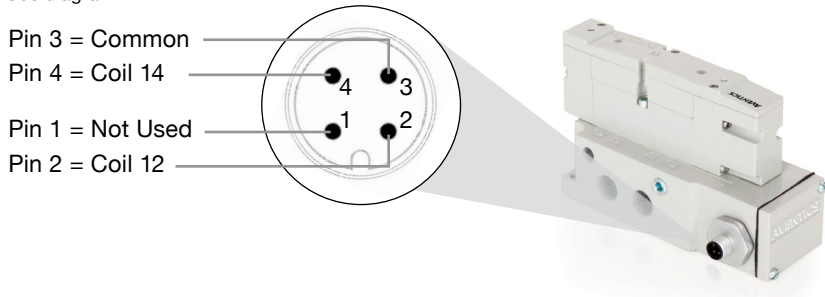
**Wiring Option**

- <sup>4</sup> 0 = Non Plug-in
- <sup>7</sup> M = Plug-in, Receptacle Assembly
- <sup>3</sup> T = 32+ Coil Auxiliary Power with X16 Drivers
- V = +24 VDC Separation at First Station
- W = +24 VDC Separation at Second Station

**Port Size (Working Ports 2, 4)**

- 2 = 1/4
- 3 = 3/8 (Push-in Fittings Only)
- H = 8mm (Push-in Fittings Only)
- K = 10mm (Push-in Fittings Only)

- <sup>1</sup> Port Type 8 & G available in Port Size 1/4 only
- <sup>2</sup> Available with M2 & V2 Mountings only
- <sup>3</sup> 32+ Coil Rule: Product Type F, Mounting M4, and Wiring Option T must all be selected together
- <sup>4</sup> Available with ISO 15407-1 Interface only
- <sup>5</sup> Not available with Proprietary Mounting
- <sup>6</sup> Available with 3A Mounting only
- <sup>7</sup> Not available with V2 Mounting
- <sup>8</sup> See diagram:



**How to Order: Manifold Assembly**

**8 503 A V 3 B 3 0 0 V A00**

**Port Type**  
<sup>1</sup>8 = NPTF  
<sup>1</sup>G = ISO228/1-G  
 K = Push-in Fittings

**Product Series**  
 503 = 26mm Valve

**Revision**  
 A = Initial Release

**Product Type**  
 V = Valve Manifold Assembly

**Electrical Interface**  
 3 = G3 Series Fieldbus Interface  
 8 = 580 Series Fieldbus Interface  
 D = CHARMS Interface  
 J = 25 Pin Sub-D Interface  
 M = 37 Pin Sub-D Interface  
 Q = 19 Pin M23 Interface  
 R = 26 Pin M27 Interface  
 T = 1-32 Pin Terminal Strip Interface  
<sup>2</sup>Z = Robot End Effector (EE) Connection Interface  
 0 = No Electrical Interface

**Number of Valve Stations**  
 B = 2/34/66    J = 10/42/74    R = 18/50    Z = 26/58  
 D = 4/36/68    L = 12/44/76    T = 20/52    3 = 28/60  
 F = 6/38/70    N = 14/46/78    V = 22/54    5 = 30/62  
 H = 8/40/72    P = 16/48/80    X = 24/56    7 = 32/64

**Options**  
 A00 = Standard (No Options)  
 MUF = Muffler in End Plates  
 DRM = DIN Rail Mount  
 DWM = DIN Rail with MUF  
 14X = External Pilot Supply from Port #14  
 D12 = (14X) External Pilot Supply from Port #14 and (MUF) Muffler in End Plates  
 D14 = (14X) External Pilot Supply from Port #14 and (DRM) DIN Rail Mount  
 F06 = (14X) External Pilot Supply from Port #14, (MUF) Muffler in End Plates and (DRM) DIN Rail Mount  
 A27 = FANUC Robot EE Connection Interface  
 D28 = FANUC Robot EE Connection + (MUF) Muffler in End Plates

**End Plate Style**  
 V = Vertical  
<sup>3</sup>H = Horizontal

**Second Valve Series**  
 0 = No Second Valve Series  
 2 = 502 Valve Series (18mm)

**Valve Station Adder**  
 0 = No Adder  
 1 = 32+  
 2 = 64+

**End Plate Port Size (Supply Ports 1, 3/5)**  
 3 = 3/8  
 4 = 1/2  
 K = 10mm  
 M = 12mm

<sup>1</sup> Port Type 8 & G available in Port Size 3/8 only  
<sup>2</sup> FANUC EE Interface (A27 or D28) must be selected under Options  
<sup>3</sup> Horizontal End Plates available with 0 = No Electrical Interface option

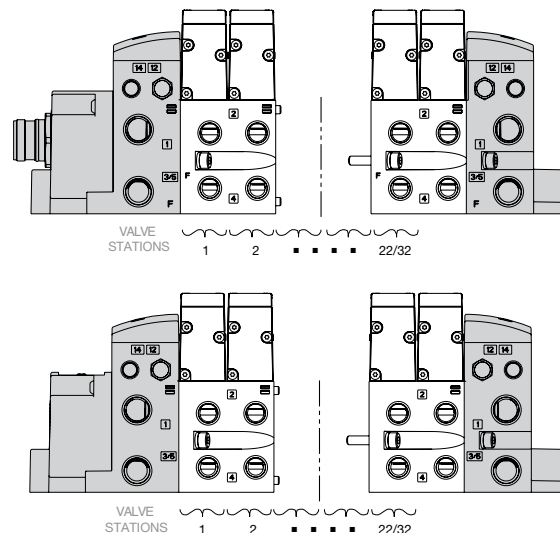
NOTE: See the Multipin Electrical Interface table for Max Solenoid Outputs.

**Sub-D, Terminal Strip, Round Interface, and End Effector Interface**

- Shaded components described by Assembly Kit model number designation
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated

**Example Order - 503 Shown**





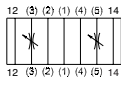
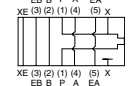
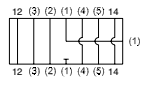
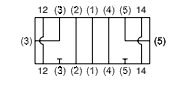
25 Pin Sub-D	8503AVJF300VA00
Valve Station #1	R503A2B40MA00F1
Valve Station #2	R503A2B40MA00F1
Mounting #1	8503AMM22MA0010
Valve Station #5	R503A2B60MA00F1
Valve Station #6	R503A2B60MA00F1
Mounting #2	8503AMM22MA0010
Valve Station #5	R503A2B40MA00F1
Valve Station #6	R503A2B40MA00F1
Mounting #3	8503AMM22MA0010
	Assembled



NOTE: Example order for Fieldbus electronics see 580 or G3 Fieldbus catalog.

**Sandwich Option Kit**

OPTION KITS

Valve Series	Type	Speed Control Kit	Shut Off Block Kit	Pressure Block Kit				Exhaust Block Kit	
									
		Inserted between the valve and the mounting. It allows the user to adjust the flow out of the 3 & 5 ports of the valve. This will allow them to adjust the speed of the extend and retract of the cylinder.	Used to shut-off pressure when mounted below valve. It allows for easy maintenance without the need to shut-off pressure to the entire manifold.	Used to supply a separate pressure to a single valve station without needing blocking discs.				Used to isolate the exhaust of a single valve station from the manifold. It allows for faster exhaust response by re-routing exhaust externally from the manifold.	
									
				<b>4mm Push-in</b>	<b>6mm Push-in</b>	<b>1/4 Push-in</b>	<b>M7</b>		
<b>501 Series</b> (11mm)	Proprietary	R501AS428500001	R501AY428501001	K501AW517220004	K501AW517220003	K501AW517220002	H501AW517220001	-	-
				<b>1/8 NPTF</b>		<b>1/8 G</b>		<b>1/8 NPTF</b>	<b>1/8 G</b>
<b>502 Series</b> (18mm)	Proprietary	R502AS429395002	R502AY429409002	8502AW428685004		G502AW428685004		8502AX428685002	G502AX428685002
	ISO 15407-2	R502AS429395001	R502AY429409001	8502AW428685003		G502AW428685003		8502AX428685001	G502AX428685001
	ISO 15407-1	-	-	-		-		-	-
				<b>1/4 NPTF</b>		<b>1/4 G</b>		<b>1/4 NPTF</b>	<b>1/4 G</b>
<b>503 Series</b> (26mm)	Proprietary	R503AS425575002	R503AY426707002	8503AW428300004		G503AW428300004		8503AX428300002	G503AX428300002
	ISO 15407-2	R503AS425575001	R503AY426707001	8503AW428300003		G503AW428300003		8503AX428300001	G503AX428300001
	ISO 15407-1	R503AS432940001	-	-		-		-	-



**End Plate Kit**

End Plate Kit is used to stack multiple blocks together into a manifold assembly.



Vertical End Plates w/o DIN, w/o Muffler



Vertical End Plates w/o DIN, w/Muffler

Valve Series	Orientation	Port Type	NPTF			G			Push In								
			Port Number			1	3/5	14, 12	1	3/5	14, 12	1	3/5	14, 12	1	3/5	14, 12
			Port Size			1/8	1/8	M7	1/8	1/8	M7	1/4			5/16	5/16	1/4
<b>501 Series</b> (11mm)	Vertical	w/Muffler, w/DIN	8501AK429465006			G501AK429465014			K501AK429465032			K501AK429465008			K501AK429465016		
		w/Muffler, w/o DIN	8501AK429465005			G501AK429465013			K501AK429465031			K501AK429465007			K501AK429465015		
		w/o Muffler, w/DIN	8501AK429465002			G501AK429465010			K501AK429465030			K501AK429465004			K501AK429465012		
		w/o Muffler, w/o DIN	8501AK429465001			G501AK429465009			K501AK429465029			K501AK429465003			K501AK429465011		



Horizontal End Plates w/o DIN





Vertical End Plates w/o DIN, w/o Muffler



Vertical End Plates w/o DIN, w/Muffler

Valve Series	Orientation	Port Type	NPTF			G			Push In											
			Port Number			1	3/5	14, 12	1	3/5	14, 12	1	3/5	14, 12	1	3/5	14, 12	1	3/5	14, 12
			Port Size			3/8	3/8	1/8	3/8	3/8	1/8	3/8	3/8	1/8	1/2	1/2	1/8	10mm	10mm	6 mm
<b>502 Series</b> (18mm)	Vertical	w/Muffler, w/DIN	8502AK431477008			G502AK431477020			K502AK431477012			K502AK431477010			K502AK431477024			K502AK431477022		
		w/Muffler, w/o DIN	8502AK431477007			G502AK431477019			K502AK431477011			K502AK431477009			K502AK431477023			K502AK431477021		
		w/o Muffler, w/DIN	8502AK431477002			G502AK431477014			K502AK431477006			K502AK431477004			K502AK431477018			K502AK431477016		
		w/o Muffler, w/o DIN	8502AK431477001			G502AK431477013			K502AK431477005			K502AK431477003			K502AK431477017			K502AK431477015		
<b>503 Series</b> (26mm)	Vertical	w/Muffler, w/DIN	8503AK428327008			G503AK428327020			K503AK428327010			K503AK428327012			K503AK428327022			K503AK428327024		
		w/Muffler, w/o DIN	8503AK428327007			G503AK428327019			K503AK428327009			K503AK428327011			K503AK428327021			K503AK428327023		
		w/o Muffler, w/DIN	8503AK428327002			G503AK428327014			K503AK428327004			K503AK428327006			K503AK428327016			K503AK428327018		
		w/o Muffler, w/o DIN	8503AK428327001			G503AK428327013			K503AK428327003			K503AK428327005			K503AK428327015			K503AK428327017		
<b>503 Series</b> (26mm)	Horizontal	w/o Muffler, w/o DIN	8503AK428304001			G503AK428304004			K503AK428304002			K503AK428304003			K503AK428304005			K503AK428304006		




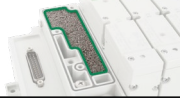


**Multipin Electrical Interface**

Multipin Electrical Interface	Product Image (Example Only)	Description	Part Number		Notes	Max. # of Coils*
			501, 502 & 503 Valve Series			
25 Pin Sub-D Interface		Housing Kit Assembly w/o DIN Rail Clamps	P599AE428441001		External fusing or output protection recommended.	22
		Housing Kit Assembly w/DIN Rail Clamps	P599AE428441002			
		Female Cable 22 AWG – Unshielded, Standard	2m	SC2502MCX0000000	-	
			5m	SC2505MCX0000000		
			10m	SC2510MCX0000000		
		Female Cable 22 AWG - Unshielded IP65	2m	NDB25F22U02MSB4	-	
5m	NDB25F22U05MSB4					
10m	NDB25F22U10MSB4					
37 Pin Sub-D Interface		Housing Kit Assembly w/o DIN Rail Clamps	P599AE428442001		External fusing or output protection recommended.	32
		Housing Kit Assembly w/DIN Rail Clamps	P599AE428442002			
		Female Cable 22 AWG – Unshielded, Standard	2m	SC3702MCX0000000	-	
			5m	SC3705MCX0000000		
			10m	SC3710MCX0000000		
		Female Cable 22 AWG - Unshielded IP65	2m	NDB37F22U02MSB4	-	
5m	NDB37F22U05MSB4					
10m	NDB37F22U10MSB4					
19 Pin M23 Interface		Housing Kit Assembly w/o DIN Rail Clamps	P599AE428436001		External fusing or output protection recommended.	16
		Housing Kit Assembly w/DIN Rail Clamps	P599AE428436002			
		M23 Female Cable	5m	CC1905MI000000000	-	
			10m	CC1910MI000000000		
26 Pin M27 Interface		Housing Kit Assembly w/o DIN Rail Clamps	P599AE502625001		External fusing or output protection recommended.	22
		Housing Kit Assembly w/DIN Rail Clamps	P599AE502625002			
		M27 Female Cable	5m	CC2605MI000000000	-	
			10m	CC2610MI000000000		
1-32 Pin Terminal Strip Interface		Housing Kit Assembly w/o DIN Rail Clamps	P599AE428444001		1) External fusing or output protection recommended. 2) Min. Wire AWG 26, Max. Wire AWG 18.	32
		Housing Kit Assembly w/DIN Rail Clamps	P599AE428444002			
Robot End Effector (EE) Interface		FANUC Housing Kit Assembly for PNP I/O	P599AE509838001		Internal cable available from FANUC.	8

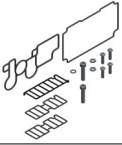


\* Maximum number of valve stations is determined by:

- The electrical connection type.
- The valve type - single solenoid valves up to the maximum solenoid outputs allowed by the electrical connection type (see chart above) or a combination of single and/or double solenoid valves not to exceed the maximum number of solenoid outputs allowed.
- Combination of all stations cannot exceed 32 solenoids.

Accessories Kit

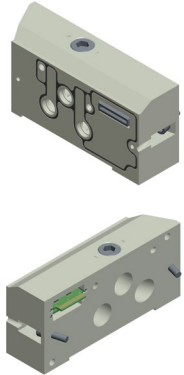
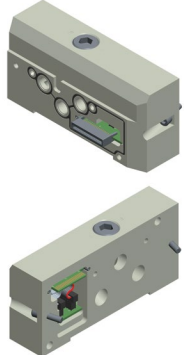
Accessories Kit	Product Image (Example Only)	Description	Port Number	Part Number			
				501 Series (11mm)	502 Series (18mm)	503 Series (26mm)	
Blank Station Plate Kit		Used to block off a manifold station for future use.	-	P501AB429685001	P502AB431813001	P503AB428359001	
DIN Rail Clamp Kit		Used to mount manifold assembly to a machine via DIN Rail. Kit includes hardware for each end of the manifold. NOTE: DIN Rail not included.	-	239-980			
Blocking Disc Kit		Used to isolate 1, 3 & 5 galleries of the manifold internally. NOTE: Includes tag to label ports blocked.	1	P501AD431915001	P502AD431914001	P503AD431191001	
			3	P501AD431915002	P502AD431914002	P503AD431191002	
			5	P501AD431915003	P502AD431914003	P503AD431191003	
			1 + 3	P501AD431915004	P502AD431914004	P503AD431191004	
			1 + 5	P501AD431915005	P502AD431914005	P503AD431191005	
			3 + 5	P501AD431915006	P502AD431914006	P503AD431191006	
Internal Muffler Element		Muffler element	-	427991-001	429372-001	426186-001	
			-	-	-	239-1561	
External Gauge Adaptor Kit		1/8" NPTF and G adaptor for external gauge	-	-	-	-	
Fittings		<b>Thread Type</b>	<b>Tube Size</b>	<b>Quantity</b>	<b>501 Series (11mm)</b>	<b>502 Series (18mm)</b>	<b>503 Series (26mm)</b>
		M7	4mm	10	H850A104B004N10	See Fittings Catalog	See Fittings Catalog
		M7	6mm	10	H850A104B006N10		
M7	1/4	10	H850A104B104N10				

Replacement Parts Kit

Replacement Parts Kit	Product Image (Example Only)	Description	Parts Included	Part Number		
				501 Series (11mm)	502 Series (18mm)	503 Series (26mm)
Interface Mounting Kit		Includes Mounting Gaskets ((1) valve to base, (2) Accessories to valve or base, (1) Manifold block, (1) End-Plate to electrical housing), (1) Body to base O-ring, (2) Manifold block mounting screws and lock washers, (4) Electrical housing mounting screws		M501AU521771001	M502AU521772001	M503AU521773001
Regulator Replacement Kit		3 – 30 PSIG Regulator Kit	Includes regulator assembly, gaskets, screws.	-	M502AR427995001	M503AR428759001
		5 – 60 PSIG Regulator Kit		-	M502AR427995002	M503AR428759002
		10 – 130 PSIG Regulator Kit		-	M502AR427995003	M503AR428759003
		0.2 – 2.0 bar Regulator Kit		-	M502AR427995004	M503AR428759004
		0.3 – 4.0 bar Regulator Kit		-	M502AR427995005	M503AR428759005
		0.7 – 9.0 bar Regulator Kit		-	M502AR427995006	M503AR428759006
Regulator Gauge Replacement Kit		0 – 160 PSIG Regulator Gauge Head Extended	Includes gauge head, o-ring, and hitch-pin.	-	M502AG521734001	-
		0 – 160 PSIG Regulator Gauge Head		M501AG504541001	M502AG521734002	M503AG521734009
		0 – 60 PSIG Regulator Gauge Head Extended		-	M502AG521734003	-
		0 – 60 PSIG Regulator Gauge Head		-	M502AG521734004	M503AG521734010
		0 – 11 bar Regulator Gauge Head Extended		-	M502AG521734005	-
		0 – 11 bar Regulator Gauge Head		M501AG504540001	M502AG521734006	M503AG521734011
		0 – 4 bar Regulator Gauge Head Extended		-	M502AG521734007	-
		0 – 4 bar Regulator Gauge Head		-	M502AG521734008	M503AG521734012

**Adaptor Plate Kit**

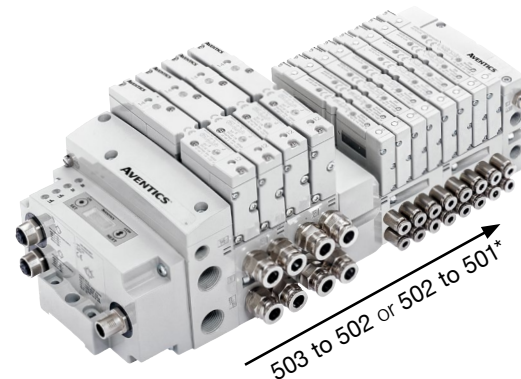
The adaptor plate allows the transition from 503 Series to 502 Series and 502 Series to 501 Series in a single manifold assembly. Includes the adapter plate, transfer board, gasket, screws.

Valve Series	Product Image (Example Only)	Description	Interface	Thread Type	Supply Port 1 Size	Part Number
<b>503 Series</b> (26mm) <b>to</b> <b>502 Series</b> (18mm)		503 to 502 Adaptor Plate w/PCB	Proprietary/ ISO 15407-2	NPTF	3/8"	8503AT429964001
		503 to 502 Adaptor Plate w/o PCB (for ISO 15407-1 Mounting)	ISO 15407-1			8503AT429964002
		503 to 502 Adaptor Plate w/PCB	Proprietary/ ISO 15407-2	G Tap		G503AT429964003
		503 to 502 Adaptor Plate w/o PCB (for ISO 15407-1 Mounting)	ISO 15407-1			G503AT429964004
<b>502 Series</b> (18mm) <b>to</b> <b>501 Series</b> (11mm)		502 to 501 Adaptor Plate w/PCB	Proprietary	NPTF		8502AT429963001
		502 to 501 Adaptor Plate w/PCB	Proprietary	G Tap		G502AT429963002

**Ordering Adaptor Plate Kit**

**Example Order - 502 & 501 Manifold Shown**




- 25 Pin Sub-D 8502AVJH301VA00
  - Valve Station #1 R502A2B40MA00F1
  - Valve Station #2 R502A2B40MA00F1
  - Mounting #1 8502AMM21MA0010
  - Valve Station #3 R502A2B40MA00F1
  - Valve Station #4 R502A2B40MA00F1
  - Mounting #2 8502AMM21MA0010
  - Valve Station #5 R501A2B40MA00F1
  - Valve Station #6 R501A2B40MA00F1
  - Valve Station #7 R501A2B40MA00F1
  - Valve Station #8 R501A2B40MA00F1
  - Mounting #3 H501AMM4BMA0010
- Assembled







\* Example purposes only. 502 Series to 501 Series Manifold shown.

NOTE: When looking at Cylinder Ports, Adaptor Plate can only be used to transition from 503 Series to 502 Series or 502 Series to 501 Series valves starting from the left side of a Manifold Assembly.

**Mid-Station Supply Manifold Block Kit**

Valve Series	Product Image (Example Only)	Description	Interface	Thread Type	Supply Port 1 Size	Part Number
<b>501 Series</b> (11mm)			Proprietary	Metric Thread	M7	H501AZM8BTA0010
					M7	H501AZM4BMA0010
				Push-in Fittings	1/4	K501AZM82TA0010
					6mm	K501AZM8FTA0010
					1/4	K501AZM42MA0010
					6mm	K501AZM4FMA0010
4mm (5/32)	K501AZM4DMA0010					
<b>502 Series</b> (18mm)		Add additional supply and exhaust capacity to large manifold assemblies.	ISO 15407-2	NPTF	1/8	8502AZM21TA0020
				G Tap	1/8	G502AZM21TA0020
			Proprietary	NPTF	1/8	8502AZM21TA0010
				G Tap	1/8	G502AZM21TA0010
			ISO 15407-2	Push-in Fittings	1/4	K502AZM22TA0020
					5/16	K502AZM2GTA0020
					6mm	K502AZM2FTA0020
					8mm	K502AZM2HTA0020
			Proprietary	Push-in Fittings	1/4	K502AZM22TA0010
					5/16	K502AZM2GTA0010
6mm	K502AZM2FTA0010					
8mm	K502AZM2HTA0010					
<b>503 Series</b> (26mm)			ISO 15407-2	NPTF	1/4	8503AZM22TA0020
				G Tap	1/4	G503AZM22TA0020
			Proprietary	NPTF	1/4	8503AZM22TA0010
				G Tap	1/4	G503AZM22TA0010
			ISO 15407-2	Push-in Fittings	1/4	K503AZM22TA0020
					3/8	K503AZM23TA0020
					8mm	K503AZM2HTA0020
					10mm	K503AZM2KTA0020
			Proprietary	Push-in Fittings	1/4	K503AZM22TA0010
					3/8	K503AZM23TA0010
8mm	K503AZM2HTA0010					
10mm	K503AZM2KTA0010					

**Up to 128 Solenoid Coils with 500 Series Manifold Blocks**

Valve Series	Product Image (Example Only)	Description	Maximum Solenoid Capacity	Mid-Station Supply & Auxiliary Power Requirements	Interface	Thread Type	Supply Port 1 Size	Part Number	
501 Series (11mm)		501 32+ Solenoid 4-Station Manifold Block w/ X32 Valve Drivers	64	Not Required	Proprietary	Metric Thread	M7	H501AFM4BMA0010	
						Push-in Fittings	1/4	K501AFM42MA0010	
							6mm	K501AFM4FMA0010	
							4mm (5/32)	K501AFM4DMA0010	
		501 32+ Solenoid Mid-Station Supply & Auxiliary Power 8-Station Manifold Block w/ X32 Valve Drivers	128	32+ Solenoid Manifolds/ Islands	Proprietary	Metric Thread	M7	H501AFM8BTA0010	
						Push-in Fittings	1/4	K501AFM82TA0010	
6mm							K501AFM8FTA0010		
4mm (5/32)	K501AFM8FT96X10*								
502 Series (18mm)		502 32+ Solenoid Mid-Station Supply & Auxiliary Power 4-Station Manifold Block w/ X16 Valve Drivers	80	32+ Solenoid Manifolds/ Islands	ISO 15407-2	NPTF	1/8	8502AFM41TA0020	
						Proprietary	G Tap	1/8	G502AFM41TA0020
							NPTF	1/8	8502AFM41TA0010
						G Tap	1/8	G502AFM41TA0010	
					ISO 15407-2	Push-in Fittings	1/4	K502AFM42TA0020	
							5/16	K502AFM4GTA0020	
							6mm	K502AFM4FTA0020	
							8mm	K502AFM4HTA0020	
					Proprietary	Push-in Fittings	1/4	K502AFM42TA0010	
							5/16	K502AFM4GTA0010	
							6mm	K502AFM4FTA0010	
							8mm	K502AFM4HTA0010	
503 Series (26mm)		503 32+ Solenoid Mid-Station Supply & Auxiliary Power 4-Station Manifold Block w/ X16 Valve Drivers	80	32+ Solenoid Manifolds/ Islands	ISO 15407-2	NPTF	1/4	8503AFM42TA0020	
						Proprietary	G Tap	1/4	G503AFM42TA0020
							NPTF	1/4	8503AFM42TA0010
						G Tap	1/4	G503AFM42TA0010	
					ISO 15407-2	Push-in Fittings	1/4	K503AFM42TA0020	
							3/8	K503AFM43TA0020	
							8mm	K503AFM4HTA0020	
							10mm	K503AFM4KTA0020	
							1/4	K503AFM42TA0010	
							3/8	K503AFM43TA0010	
Proprietary	Push-in Fittings	8mm	K503AFM4HTA0010						
		10mm	K503AFM4KTA0010						

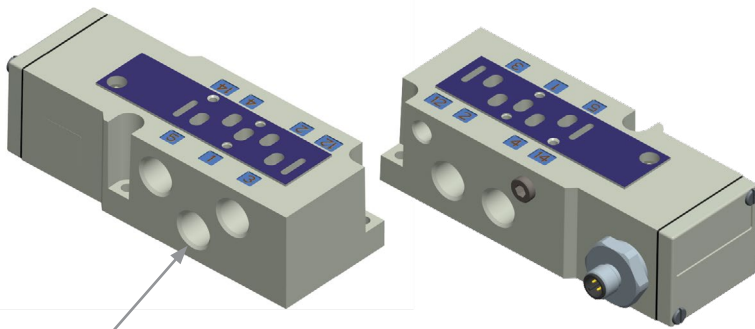
\* Option 96X overrides the port size for stations 5 – 8 of the X32 manifold block with 4mm (5/32) Push-in fittings.

NOTE: The Up to 128 Solenoid Coil blocks are required for valve manifolds/islands with more than 32 solenoid coils. It is highly recommended that the online DPM configurator is used when configuring extended solenoid coil manifolds/islands to eliminate errors and to save time.

Supported Protocols	580 Communication Node	G3 Communication Node and I/O
CC-Link IE Field™	-	√
EtherCAT®	√	√
Ethernet POWERLINK®	√	√
EtherNet/IP™ DLR	√	√
Modbus® TCP/IP	-	√
PROFIBUS® DP	√	√
PROFINET®	√	√
Valve Sub-bus	√	√



**Internal/External Pilot Selection  
Individual Subbase**



**M4 Plug**

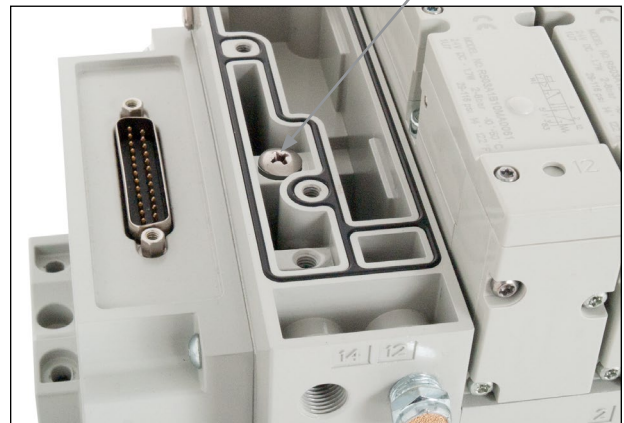
NOTE: Individual Subbases are factory set for internal pilot supply. To convert to external pilot supply install M4 plug P.N. 129-216 (sold separately) down inside in the pressure port (1). Remove the 1/8 pipe plug from port 14 to supply pilot pressure.

**Manifold Assembly**

**Internal Pilot  
Supply Plug Location**



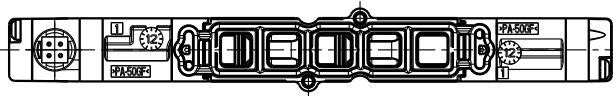
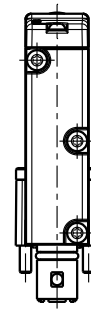
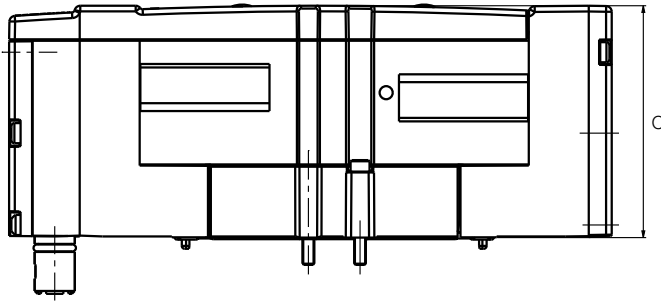
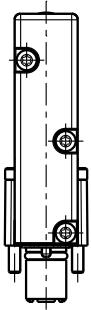
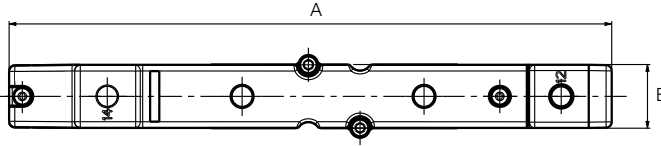
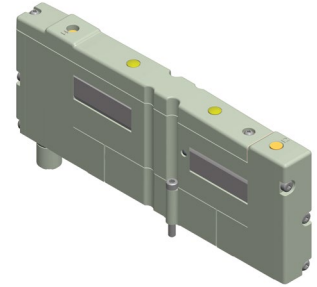
**External Pilot  
Supply Plug Location**



NOTE: Manifold Assemblies are factory set for internal pilot supply. To convert to external pilot supply install pilot supply seal screws 501 Series: 127-803, 502 & 503 Series: 426188-001, as shown in the pictures.

Dimensions: mm (inches)

**501 Series Plug-in Valve**



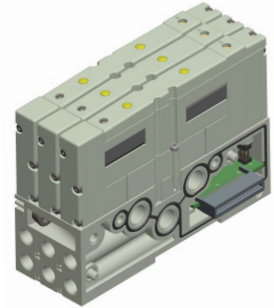
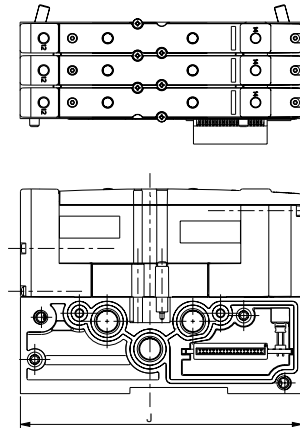
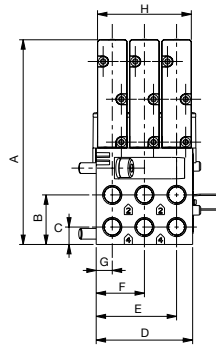
501 SERIES  
DIMENSIONAL DRAWINGS

Weight	Valve Body	Manifold Block		End Plates
		3-Station	4-Station	
lbs (kg)	0.205 (0.093)	0.50 (0.23)	0.60 (0.27)	1.20 (0.54)

A	B	C
105 (4.13)	11 (0.43)	40.4 (1.59)

**Dimensions: mm (inches)**

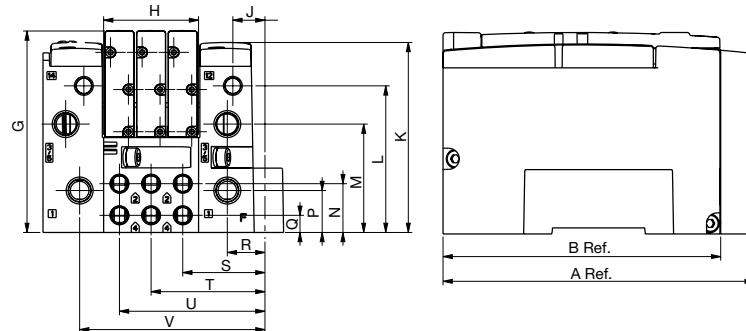
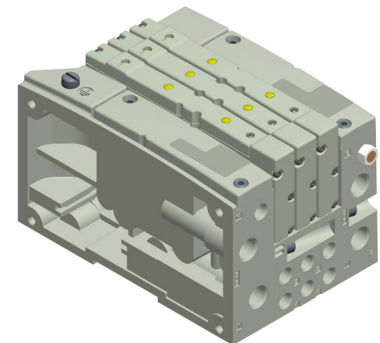
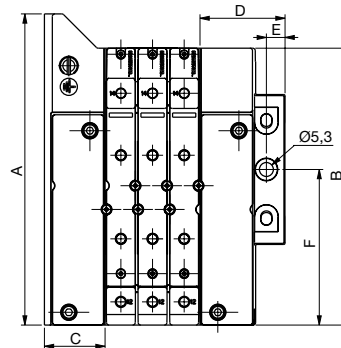
**Plug-in Valve Mounted  
3-Station Manifold Block**



A	B	C	D	E	F	G	H	J
76.4 (3.008)	18.5 (0.728)	6.5 (0.26)	36 (1.42)	30 (1.18)	18 (0.71)	6 (0.236)	35 (1.38)	105 (4.13)

**Dimensions: mm (inches)**

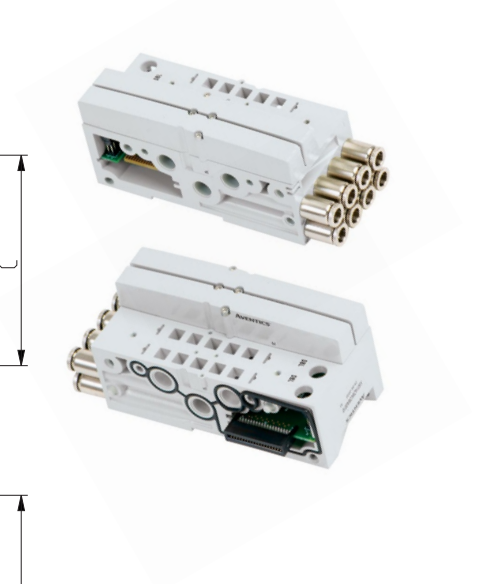
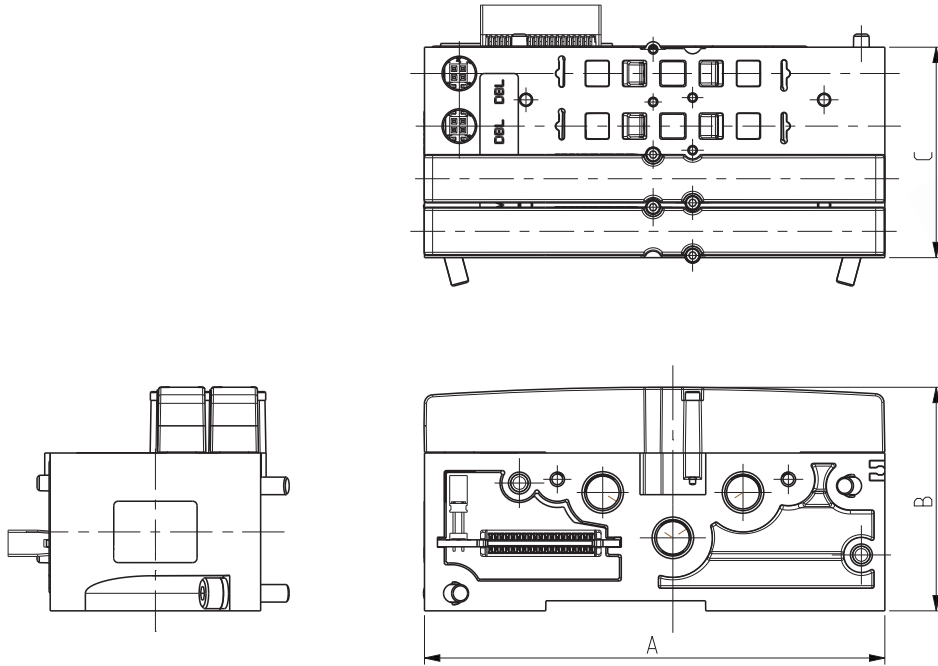
**Plug-in Valve Mounted  
3-Station Manifold Assembly**



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V
118 (4.646)	105 (4.134)	23 (0.91)	32.3 (1.27)	7.1 (0.28)	59 (2.32)	76.4 (3.008)	36 (1.42)	12.2 (0.48)	72 (2.84)	55.6 (2.19)	41.1 (1.618)	18.5 (0.73)	15.9 (0.626)	6.5 (0.26)	14.3 (0.56)	31.2 (1.23)	43.2 (1.7)	55.2 (2.173)	70.3 (2.768)

Dimensions: mm (inches)

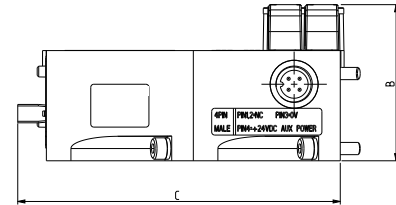
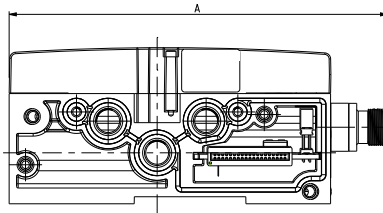
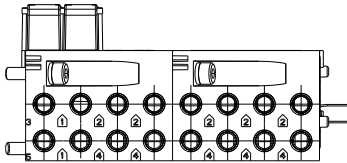
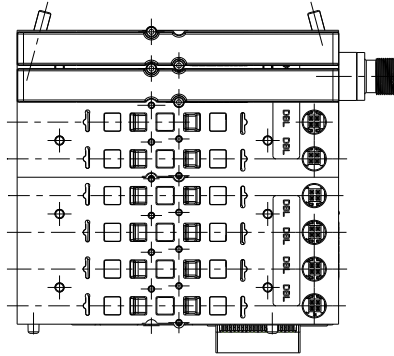
**501 Series Mid-Station Supply Block**



<b>A</b>	<b>B</b>	<b>C</b>
105 (4.13)	51 (2.01)	48 (1.89)

**Dimensions: mm (inches)**

**501 Series 32+ Solenoid Mid-Station & Auxiliary Power  
8-Station Manifold Block with X32 Valve Drivers**

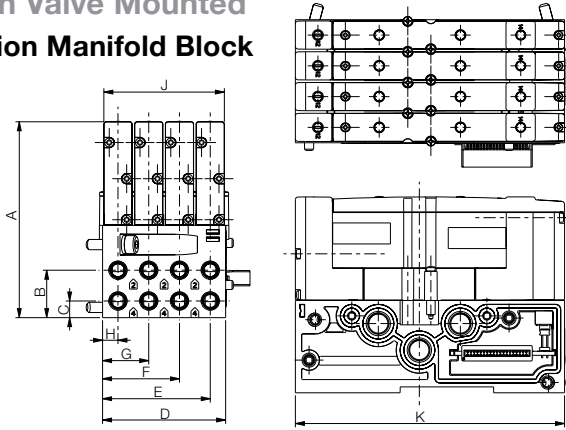


Weight	
lbs (kg)	
1.45	(0.66)

A	B	C
123.6 (4.87)	51 (2.01)	105.3 (4.15)

**Dimensions: mm (inches)**

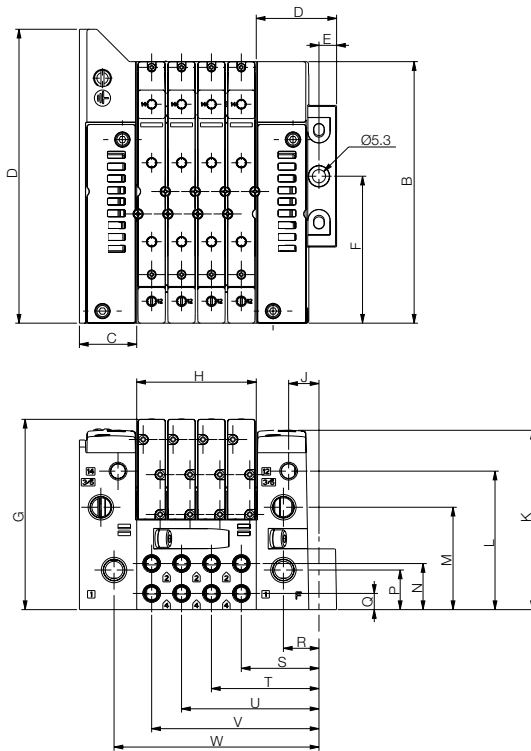
**Plug-in Valve Mounted  
4-Station Manifold Block**



A	B	C	D	E	F	G	H	J	K
76.4 (3.008)	18.5 (0.728)	6.5 (0.256)	48 (1.890)	42 (1.653)	30 (1.181)	18 (0.709)	6 (0.236)	47 (1.850)	105 (4.134)

**Dimensions: mm (inches)**

**Plug-in Valve Mounted  
4-Station Manifold Assembly**

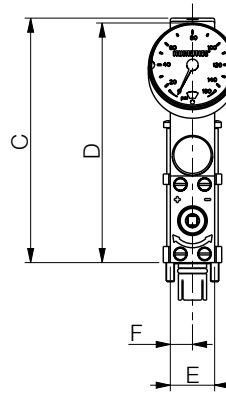
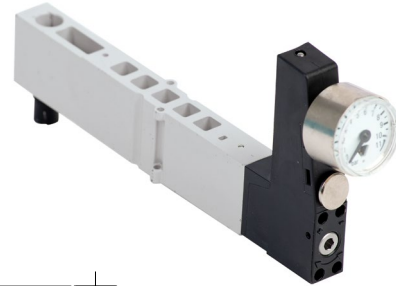
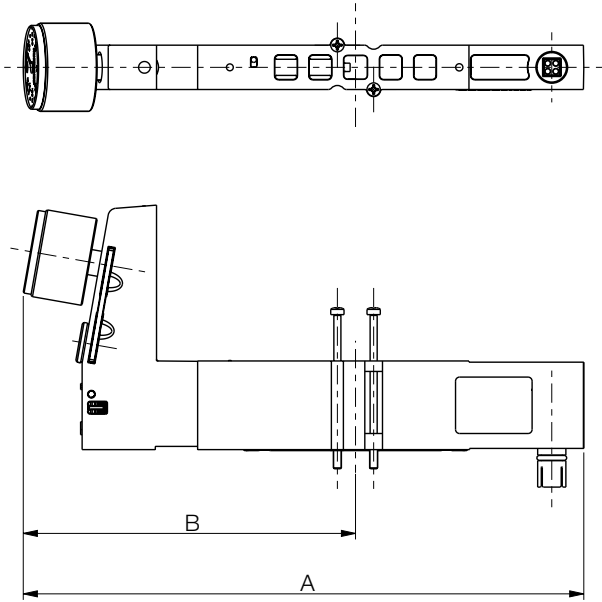


A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
118 (4.65)	105 (4.13)	23 (0.90)	32.3 (1.27)	7.1 (0.28)	59 (2.32)	76.4 (3.01)	48 (1.89)	12.2 (0.48)	72 (2.83)	55.6 (2.19)	41.1 (1.62)	18.5 (0.73)	15.9 (0.63)	6.5 (0.26)	14.3 (0.56)	31.2 (1.23)	43.2 (1.70)	55.2 (2.17)	67.2 (2.65)	82.3 (3.24)



Dimensions: mm (inches)

**Sandwich Pressure Regulator**  
**Single Regulator**

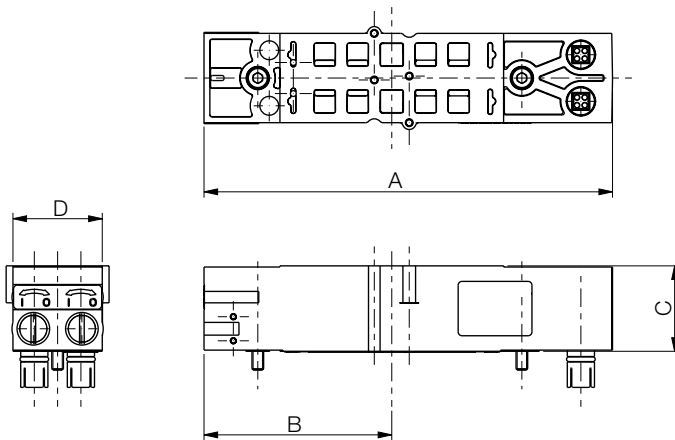


Weight	
lbs	(kg)
0.20	(0.09)

A	B	C	D	E	F
139.1 (5.476)	82.5 (3.248)	60.7 (2.390)	59.5 (2.342)	11 (0.433)	5.5 (0.216)

Dimensions: mm (inches)

**Sandwich Shut Off Block Kit**



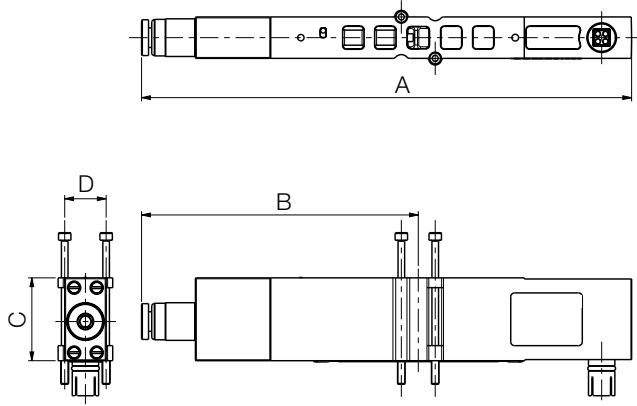
Weight	
lbs	(kg)
0.25	(0.11)

A	B	C	D
105.2 (4.142)	48.4 (1.905)	22 (0.866)	23 (0.905)



**Dimensions: mm (inches)**

**Sandwich Pressure Block Kit**

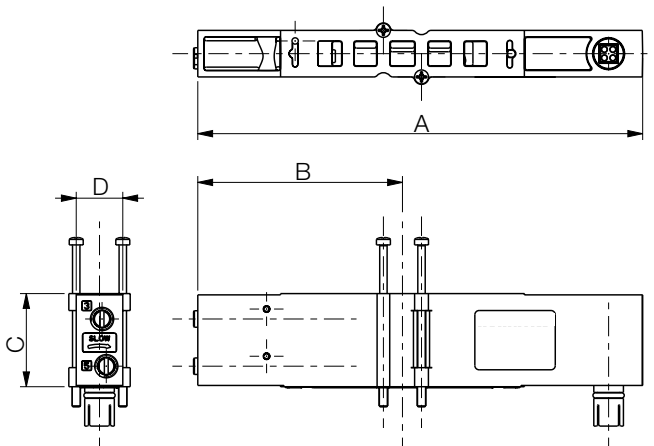


Weight	
lbs	(kg)
0.15	(0.07)

A	B	C	D
130.1 (5.12)	73.5 (2.89)	22.0 (0.87)	11.0 (0.43)

**Dimensions: mm (inches)**

**Sandwich Speed Control Kit**



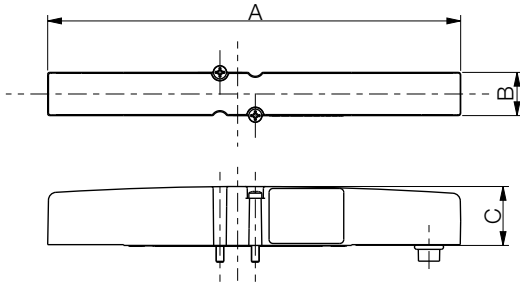
Weight	
lbs	(kg)
0.15	(0.07)

A	B	C	D
105.1 (4.137)	48.4 (1.905)	22 (0.866)	11 (0.433)



Dimensions: mm (inches)

**Blank Station Plate Kit**

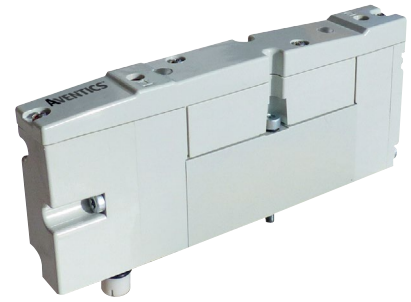
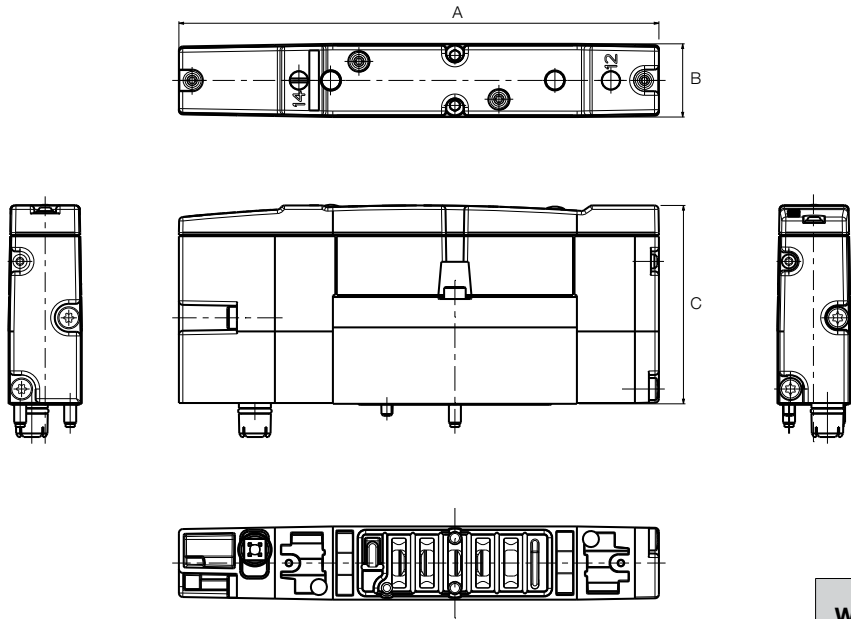


Weight	
lbs (kg)	
0.10	(0.05)

A	B	C
105.1 (4.138)	11 (0.433)	15 (0.591)

Dimensions: mm (inches)

**502 Series Plug-in Valve**



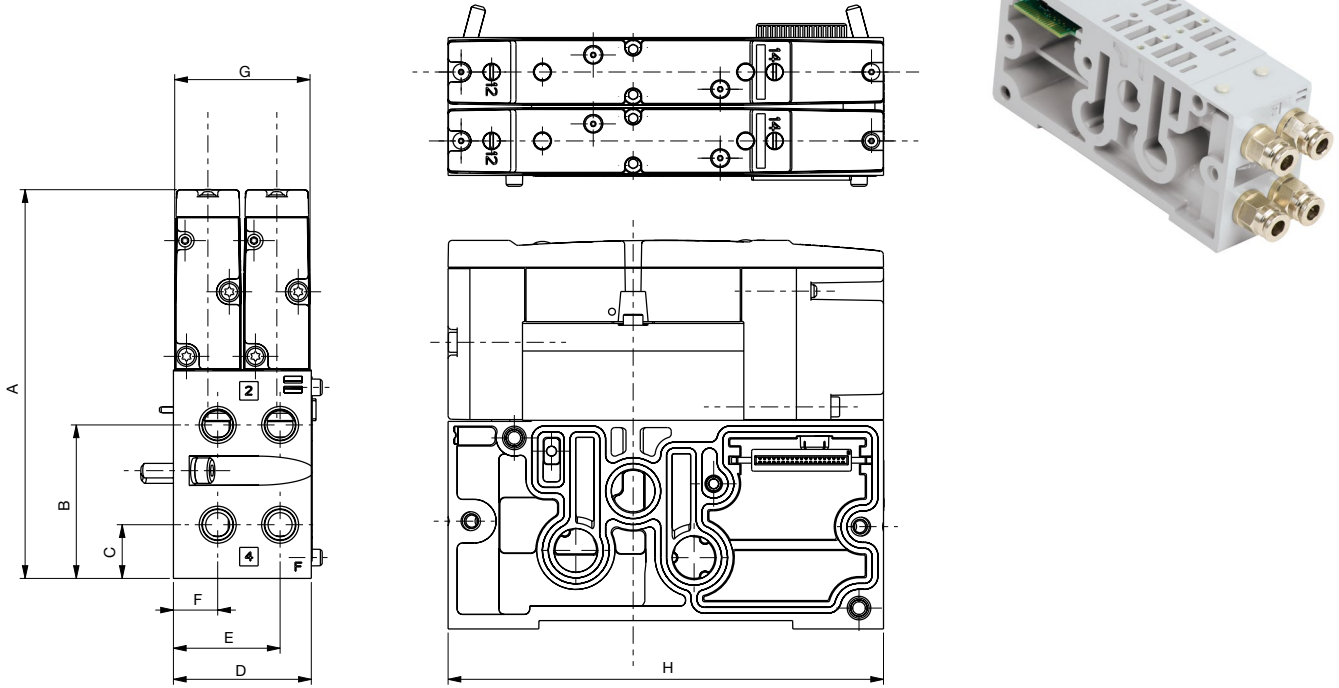
502 SERIES  
DIMENSIONAL DRAWINGS

Weight	Valve Body	Manifold Block	End Plates
lbs (kg)	0.372 (0.169)	0.75 (0.34)	3.30 (0.45)

A	B	C
120 (4.72)	18 (0.71)	49.6 (1.95)

Dimensions: mm (inches)

**Plug-in Valve Mounted  
Plug-in Manifold Block**

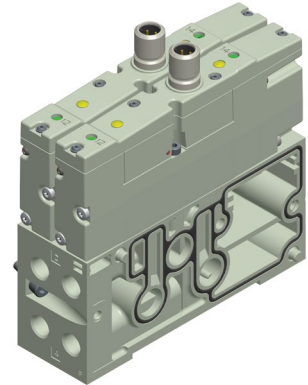
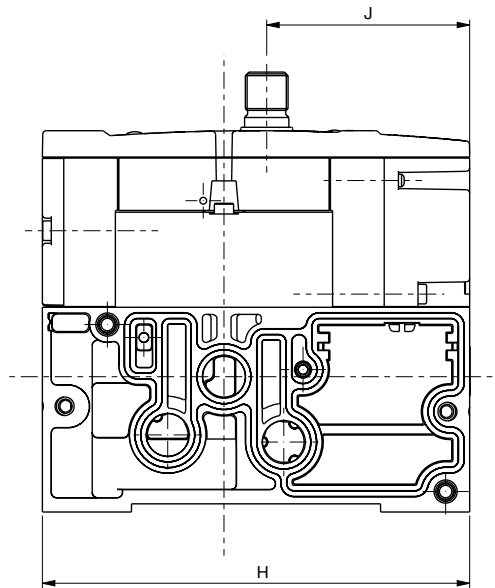
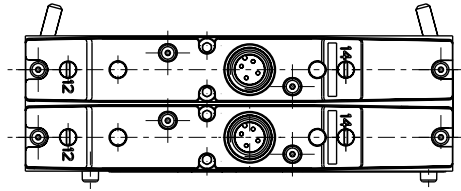
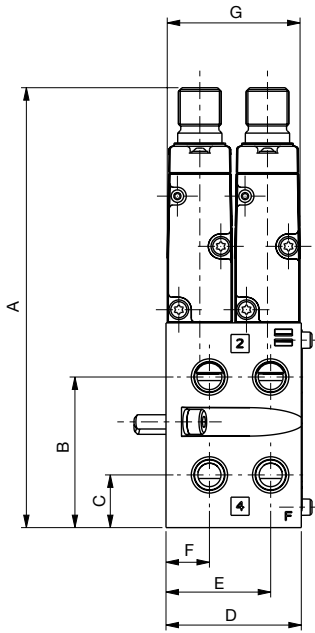


A	B	C	D	E	F	G	H
107.1 (4.217)	42.3 (1.665)	14.8 (0.583)	38 (1.496)	29.4 (1.157)	12.2 (0.48)	37.3 (1.469)	120 (4.724)

Dimensions: mm (inches)

**M12 Valve Mounted**

**Non Plug-in Manifold Block (ISO 15407-1)**



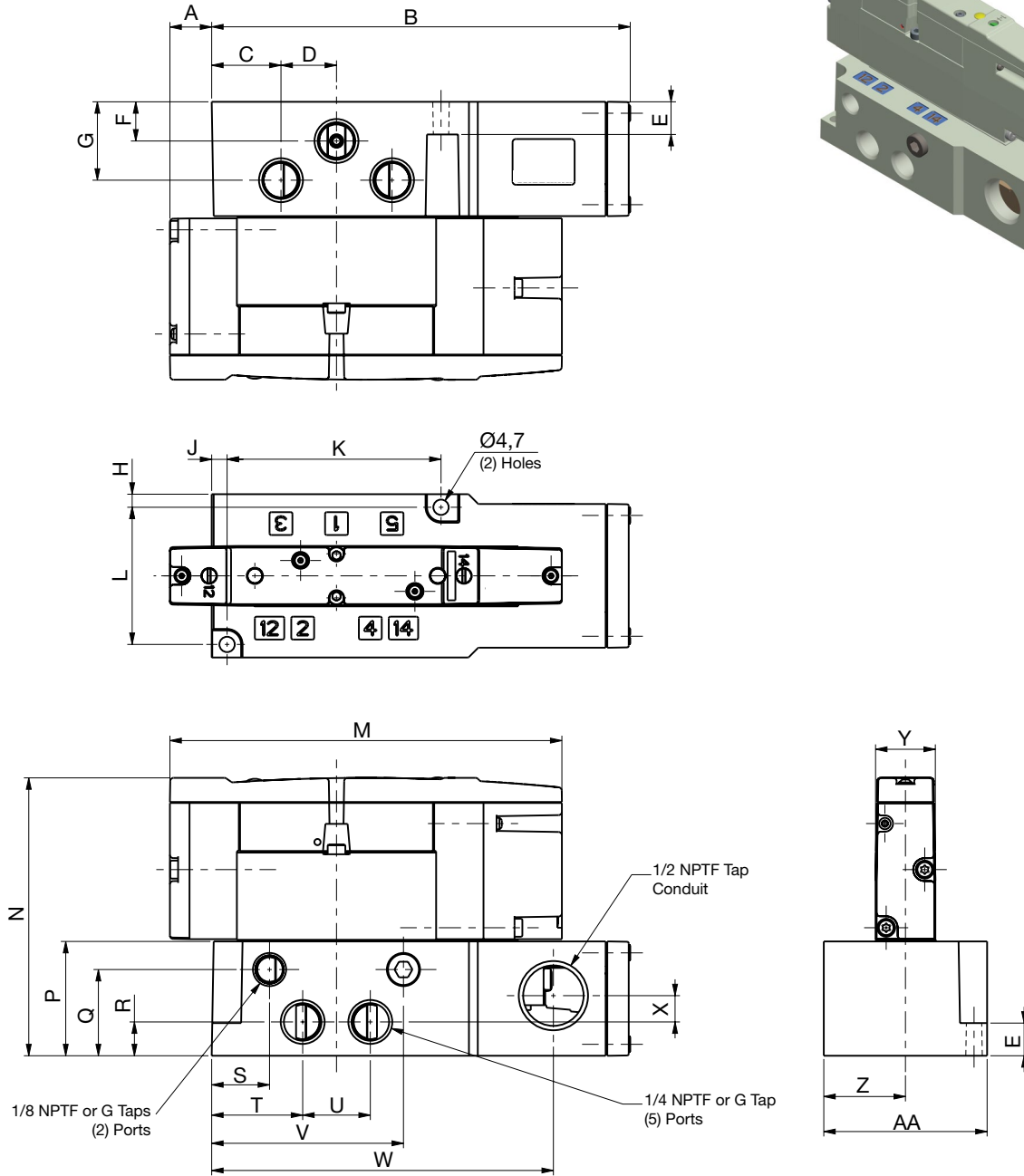
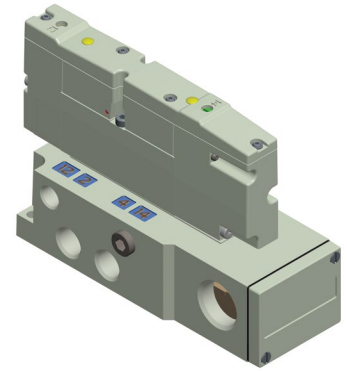
A	B	C	D	E	F	G	H	J
123.6 (4.866)	42.3 (1.665)	14.8 (0.583)	38 (1.496)	29.4 (1.157)	12.2 (0.48)	37.3 (1.469)	120 (4.724)	57 (2.244)



Dimensions: mm (inches)

**Plug-in Valve on Individual Subbase**

**Plug-in Individual Subbase**



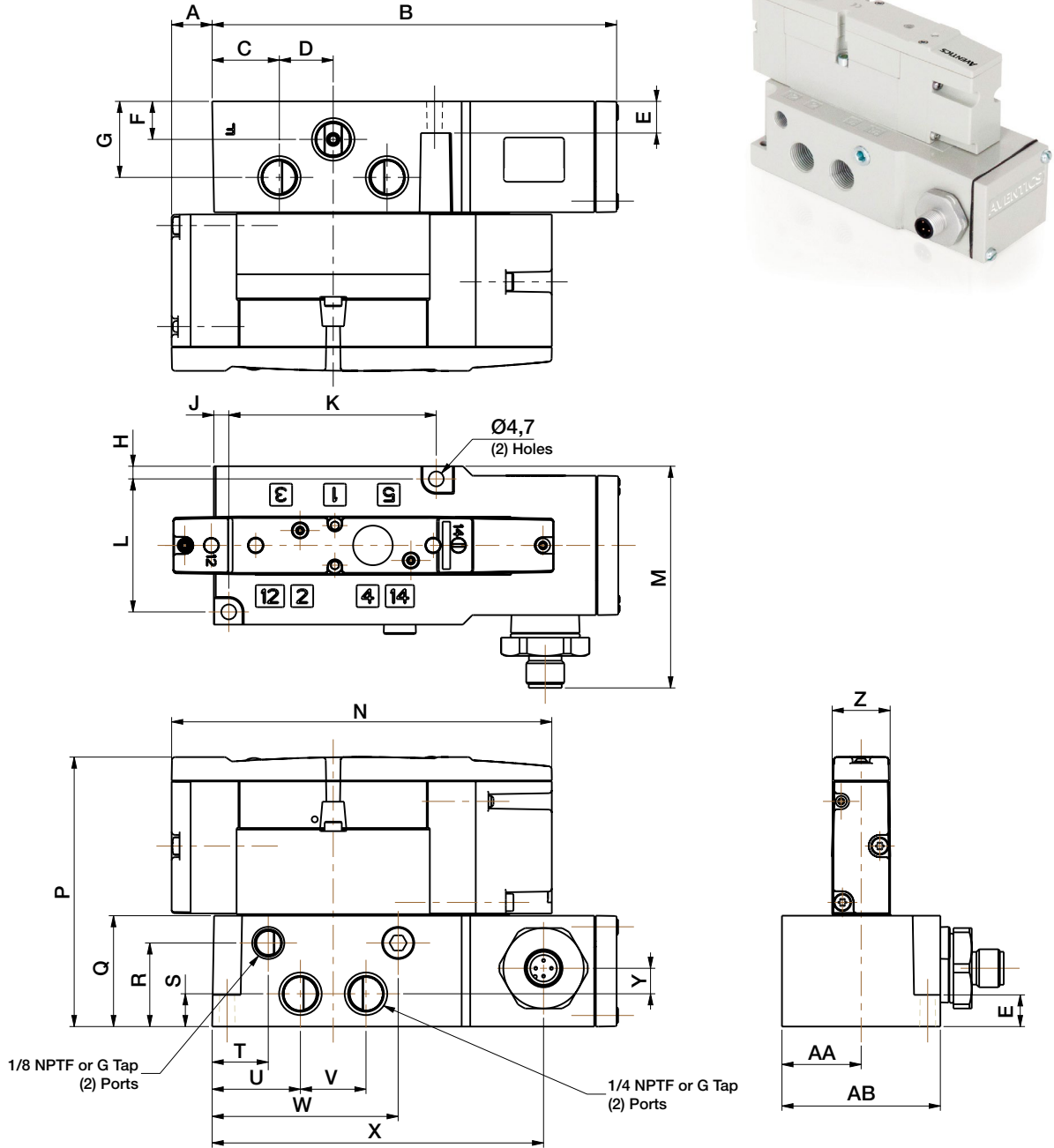
A	B	C	D	E	F	G	H	J	K	L	M	N
12.8 (0.504)	128.1 (5.043)	21.2 (0.835)	17 (0.669)	10 (0.394)	12 (0.472)	24 (0.945)	4 (0.157)	4.7 (0.185)	65.5 (2.579)	42 (1.654)	120 (4.724)	85.1 (3.35)

P	Q	R	S	T	U	V	W	X	Y	Z	AA
35 (1.378)	26.4 (1.039)	10.4 (0.409)	17.7 (0.697)	27.9 (1.098)	20.7 (0.815)	58.7 (2.311)	104.6 (4.118)	8.1 (0.319)	18.3 (0.72)	25 (0.984)	50 (1.969)

Dimensions: mm (inches)

**Plug-in Valve on Individual Subbase**

**M12 Individual Subbase (ISO 15407-2)**



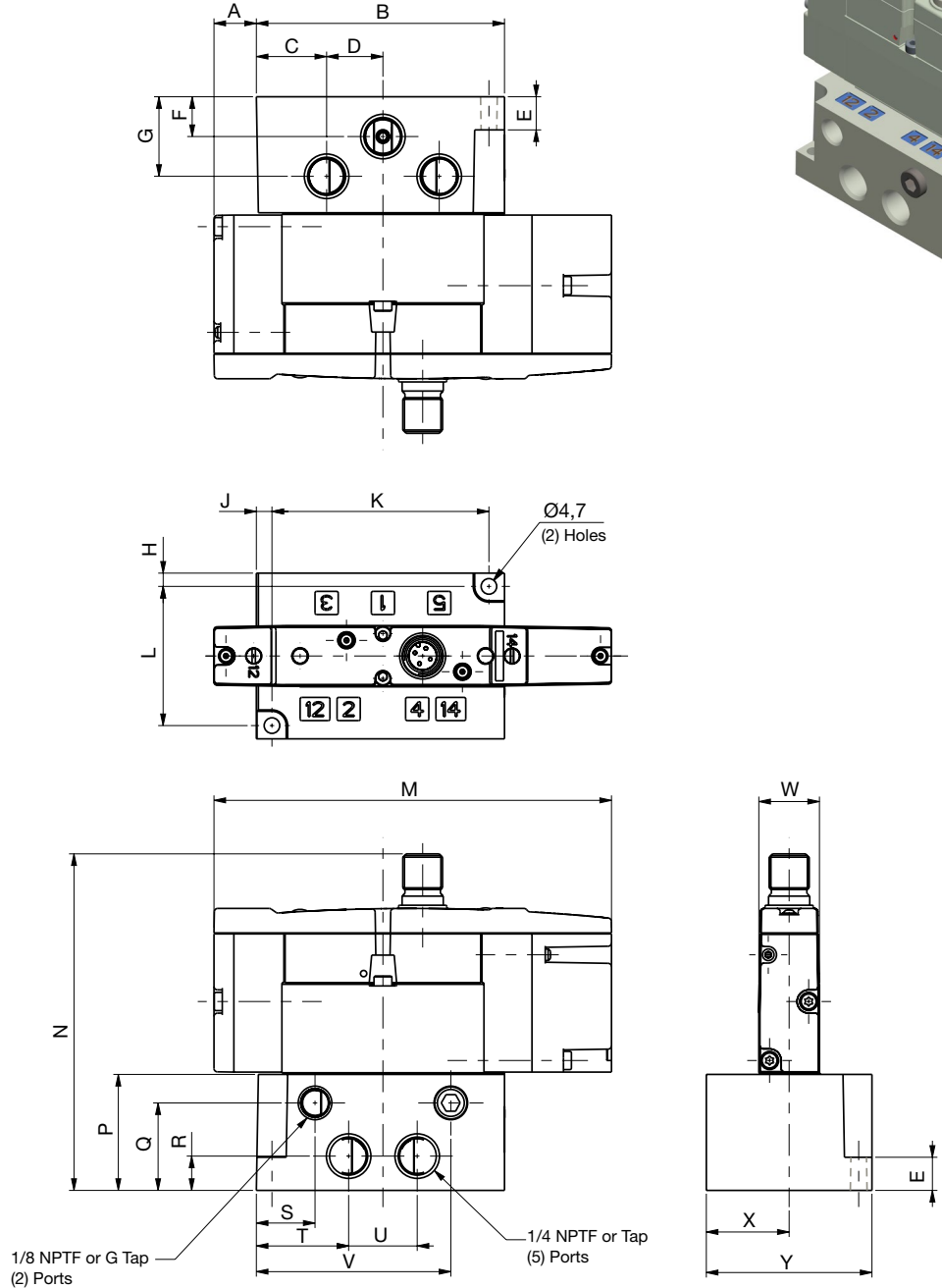
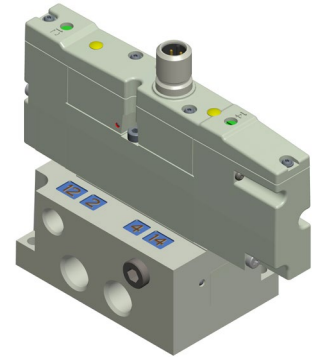
A	B	C	D	E	F	G	H	J	K	L	M	N
12.8 (0.504)	128.1 (5.043)	21.2 (0.835)	17 (0.669)	10 (0.394)	12 (0.472)	24 (0.945)	4 (0.157)	4.7 (0.185)	65.5 (2.579)	42 (1.654)	70 (2.756)	120 (4.724)
P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
85.1 (3.35)	35 (1.378)	26.4 (1.039)	10.4 (0.409)	17.7 (0.697)	27.9 (1.098)	20.7 (0.815)	58.7 (2.311)	104.6 (4.118)	8.1 (0.319)	18.3 (0.72)	25 (0.984)	50 (1.969)



Dimensions: mm (inches)

Non Plug-in Valve on Individual Subbase

Non Plug-in Individual Subbase (ISO 15407-1)

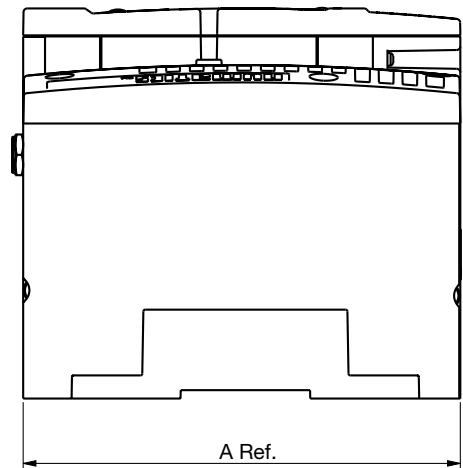
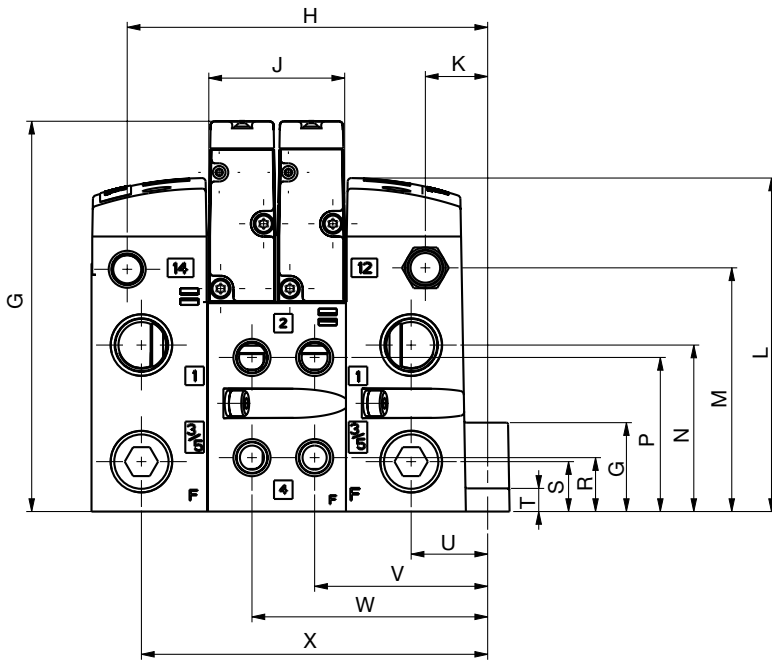
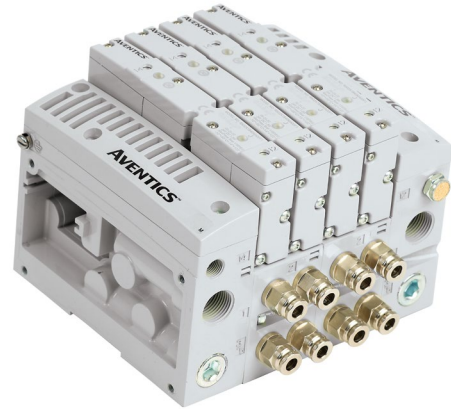
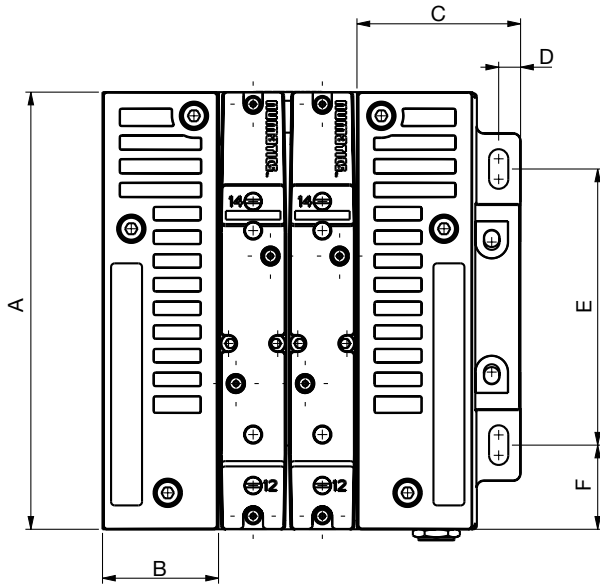


A	B	C	D	E	F	G	H	J	K	L	M	N
12.8 (0.504)	74.9 (2.949)	21.2 (0.835)	17 (0.669)	10 (0.394)	12 (0.472)	24 (0.945)	4 (0.157)	4.7 (0.185)	65.5 (2.579)	42 (1.654)	120 (4.724)	101.6 (4)

P	Q	R	S	T	U	V	W	X	Y
35 (1.378)	26.4 (1.039)	10.4 (0.409)	17.7 (0.697)	27.9 (1.098)	20.7 (0.815)	58.7 (2.311)	18.3 (0.72)	25 (0.984)	50 (1.969)

Dimensions: mm (inches)

**Manifold Assembly with Vertical End Plates**

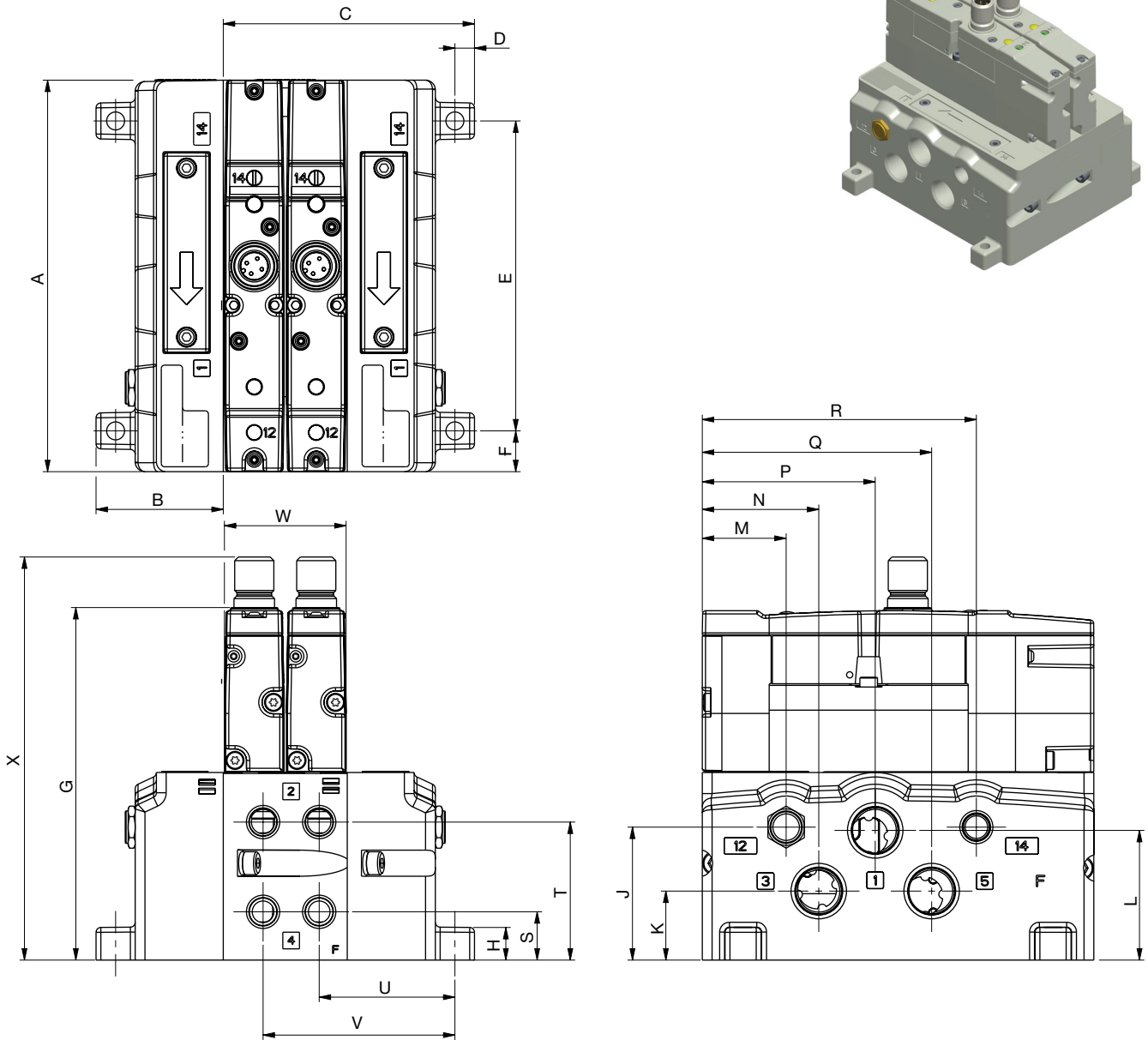
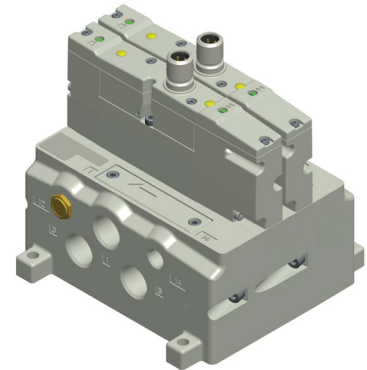


A	B	C	D	E	F	G	H	J	K	L
120 (4.724)	31.9 (1.256)	44.9 (1.768)	6 (0.236)	75.8 (2.984)	23.1 (0.909)	107.1 (4.217)	98.9 (3.894)	37.3 (1.469)	17.1 (0.673)	91.6 (3.606)

M	N	P	Q	R	S	T	U	V	W	X
66.9 (2.634)	45.7 (1.799)	42.3 (1.665)	24.4 (0.961)	14.8 (0.583)	13.7 (0.539)	6.35 (0.25)	21 (0.827)	47.5 (1.87)	64.7 (2.547)	95 (3.74)

Dimensions: mm (inches)

**Manifold Assembly with Horizontal End Plates**

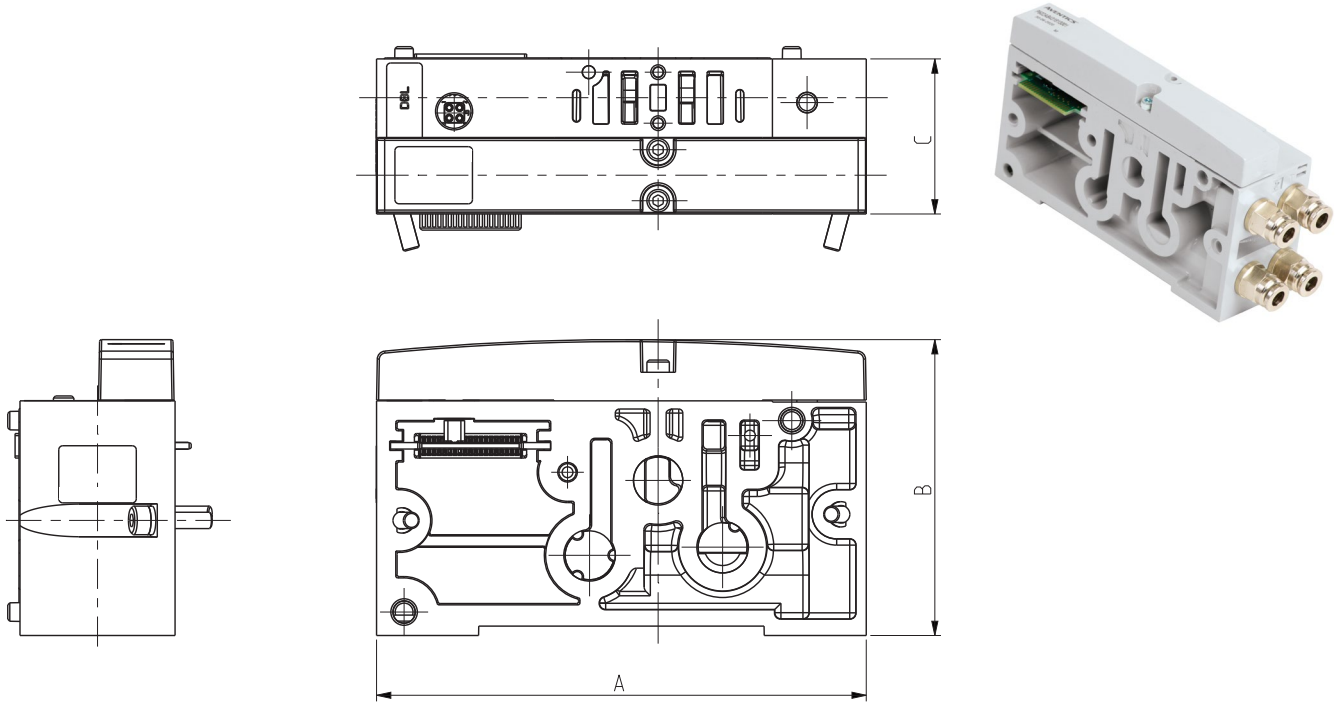


A	B	C	D	E	F	G	H	J	K	L
120.0 (4.72)	39.0 (1.54)	39.0 (1.54)	6.0 (0.24)	95.0 (3.74)	12.5 (0.49)	108.1 (4.26)	10.0 (0.39)	40.8 (1.61)	21.2 (0.83)	39.8 (1.57)

M	N	P	Q	R	S	T	U	V	W	X
25.7 (1.01)	35.7 (1.41)	53.0 (2.09)	70.3 (2.77)	84.0 (3.31)	14.8 (0.58)	42.3 (1.67)	41.6 (1.64)	58.8 (2.31)	37.3 (1.47)	123.6 (4.87)

Dimensions: mm (inches)

**502 Series Mid-Station Supply Block**

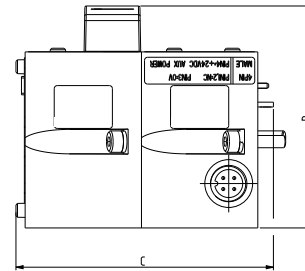
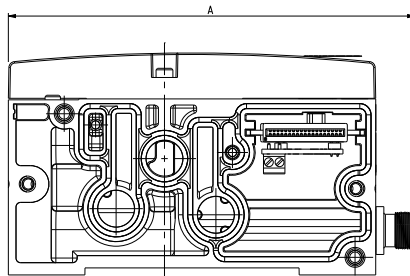
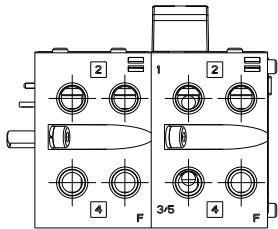
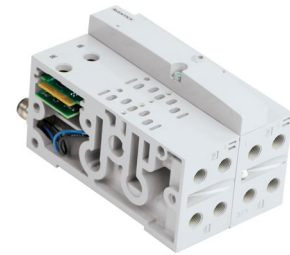
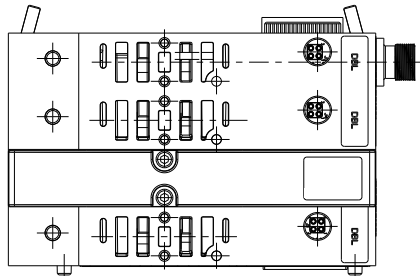


<b>A</b>	<b>B</b>	<b>C</b>
120 (4.72)	72.5 (2.85)	38 (1.50)



Dimensions: mm (inches)

**502 Series Mid-Station Supply/Auxiliary Power Manifold Block with X32 Solenoid Coils Kit**



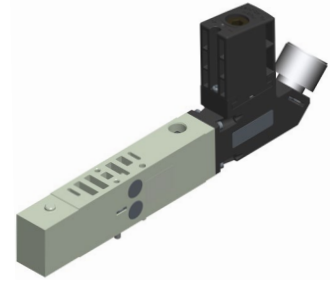
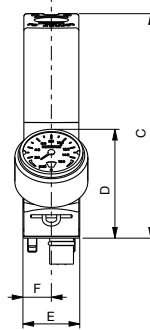
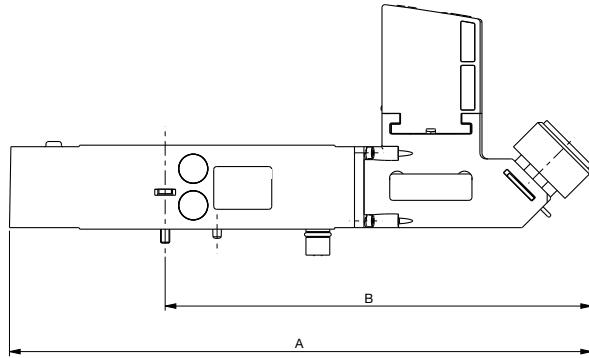
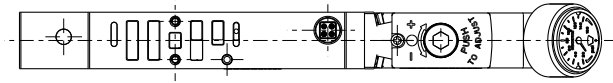
Weight	
lbs (kg)	
1.70	(0.77)

A	B	C
132.7 (5.22)	72.5 (2.85)	84 (3.31)

Dimensions: mm (inches)

**Sandwich Pressure Regulator**

**Single Regulator**

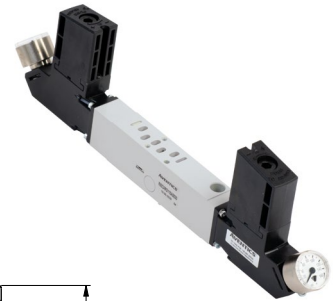
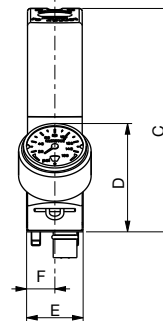
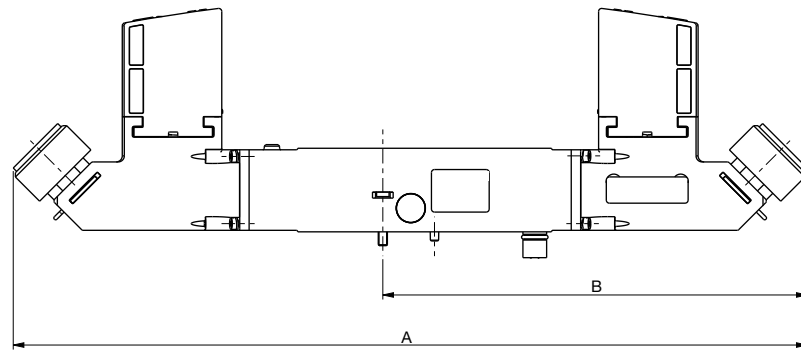
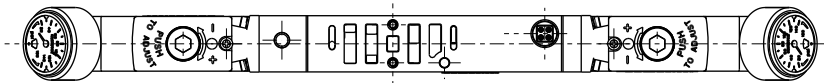


Weight	
lbs	(kg)
0.65	(0.30)

A	B	C	D	E	F
190.6 (7.504)	139.6 (5.496)	73.5 (2.894)	35.6 (1.402)	18.6 (0.732)	9.3 (0.366)

Dimensions: mm (inches)

**Double Regulator**

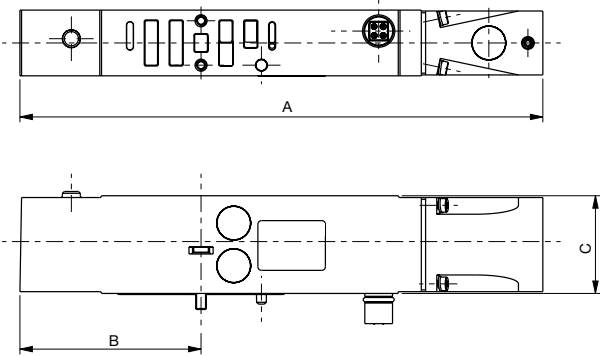


Weight	
lbs	(kg)
1.05	(0.48)

A	B	C	D	E	F
261.2 (10.283)	139.6 (5.496)	73.5 (2.894)	35.6 (1.402)	18.6 (0.732)	9.3 (0.366)

**Dimensions: mm (inches)**

**Sandwich Shut Off Block Kit**

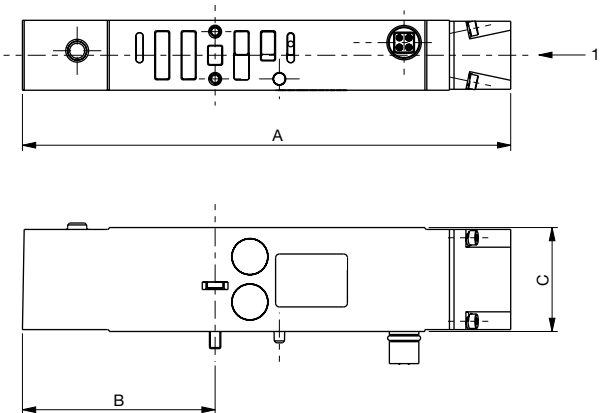


Weight	
lbs	(kg)
0.30	(0.14)

A	B	C	D
147.2 (5.795)	51 (2.008)	27.5 (1.083)	18.5 (0.728)

**Dimensions: mm (inches)**

**Sandwich Pressure Block Kit**



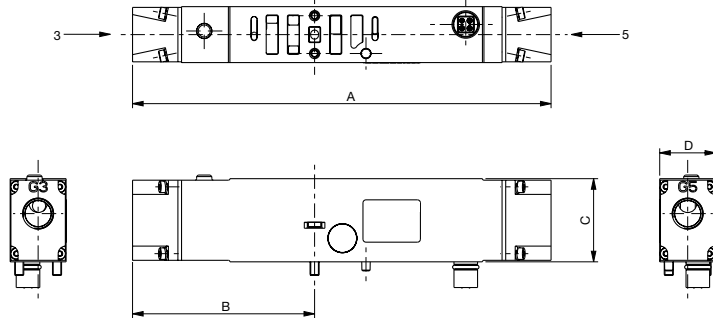
Weight	
lbs	(kg)
0.50	(0.23)

A	B	C	D
129.2 (5.087)	51 (2.008)	27.5 (1.083)	18.5 (0.728)



**Dimensions: mm (inches)**

**Sandwich Exhaust Block Kit**

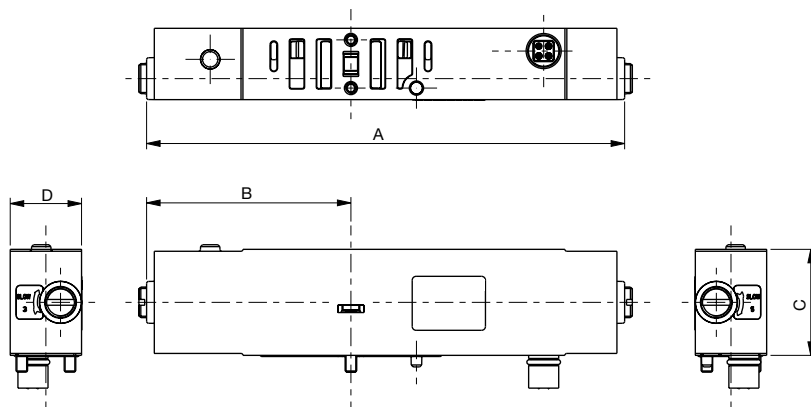


Weight	
lbs	kg
0.30	(0.14)

A	B	C	D
138.4 (5.449)	60.2 (2.37)	27.5 (1.083)	18.5 (0.728)

**Dimensions: mm (inches)**

**Sandwich Speed Control Kit**

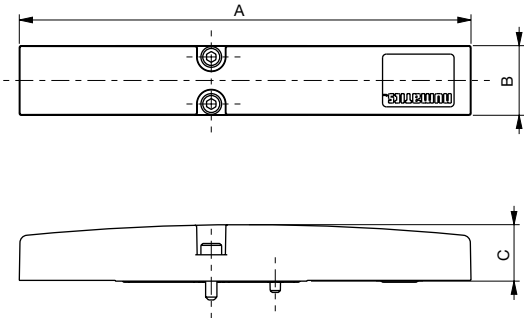


Weight	
lbs	kg
0.30	(0.14)

A	B	C	D
124 (4.882)	53 (2.087)	27.5 (1.083)	18.5 (0.728)

**Dimensions: mm (inches)**

**Blank Station Plate Kit**

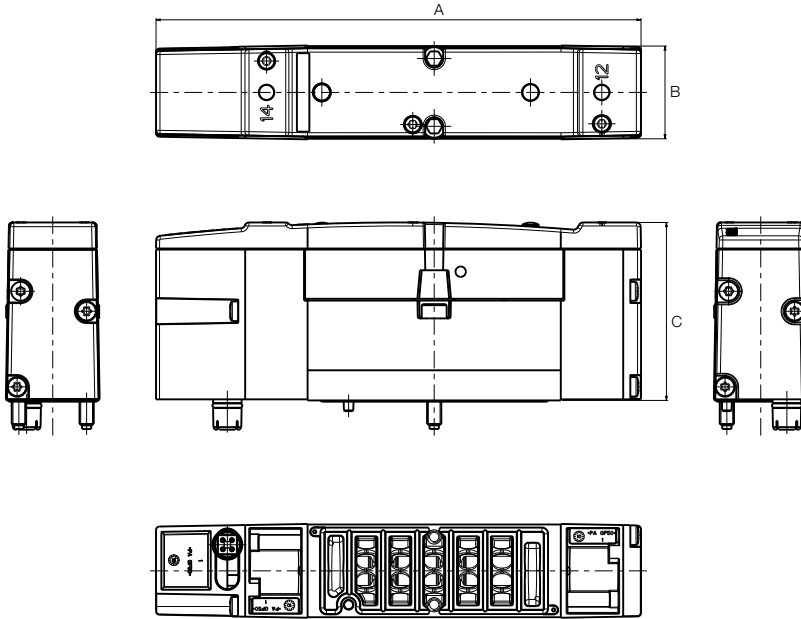


Weight	
lbs (kg)	
0.10 (0.05)	

A	B	C
120 (4.724)	18.5 (0.728)	15 (0.591)

Dimensions: mm (inches)

**503 Series Plug-in Valve**



503 SERIES  
DIMENSIONAL DRAWINGS

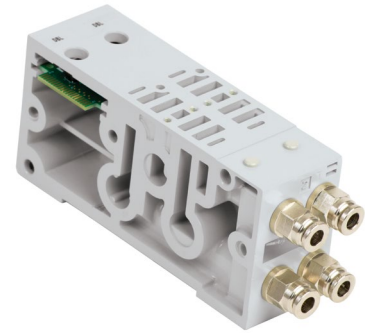
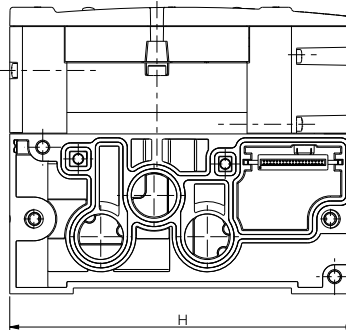
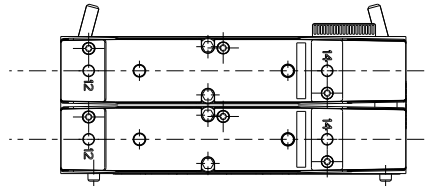
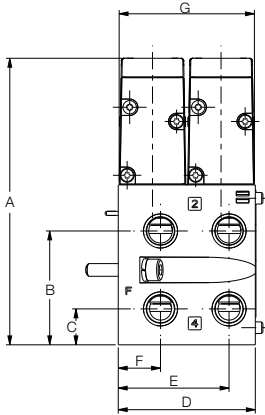
Weight	Valve Body	Manifold Block	End Plates
lbs (kg)	0.520 (0.236)	3.00 (1.36)	1.15 (0.52)

A	B	C
136 (5.35)	26 (1.02)	50 (1.97)



**Dimensions: mm (inches)**

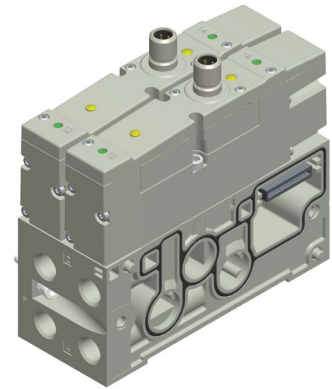
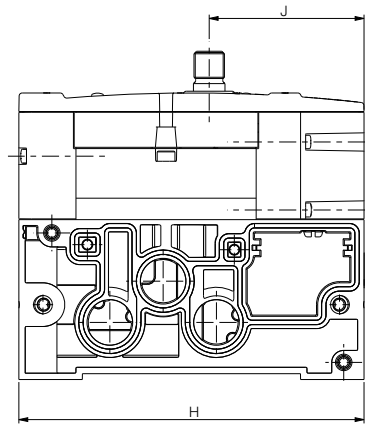
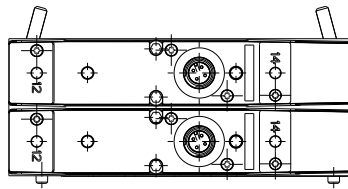
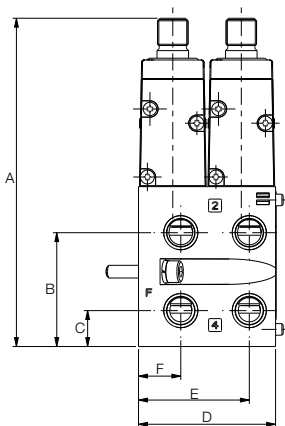
**Plug-in Valve Mounted  
Plug-in Manifold Block**



A	B	C	D	E	F	G	H
112.9 (4.445)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)

**Dimensions: mm (inches)**

**M12 Valve Mounted (ISO 15407-1)  
2-Station Plug-in Manifold Block**

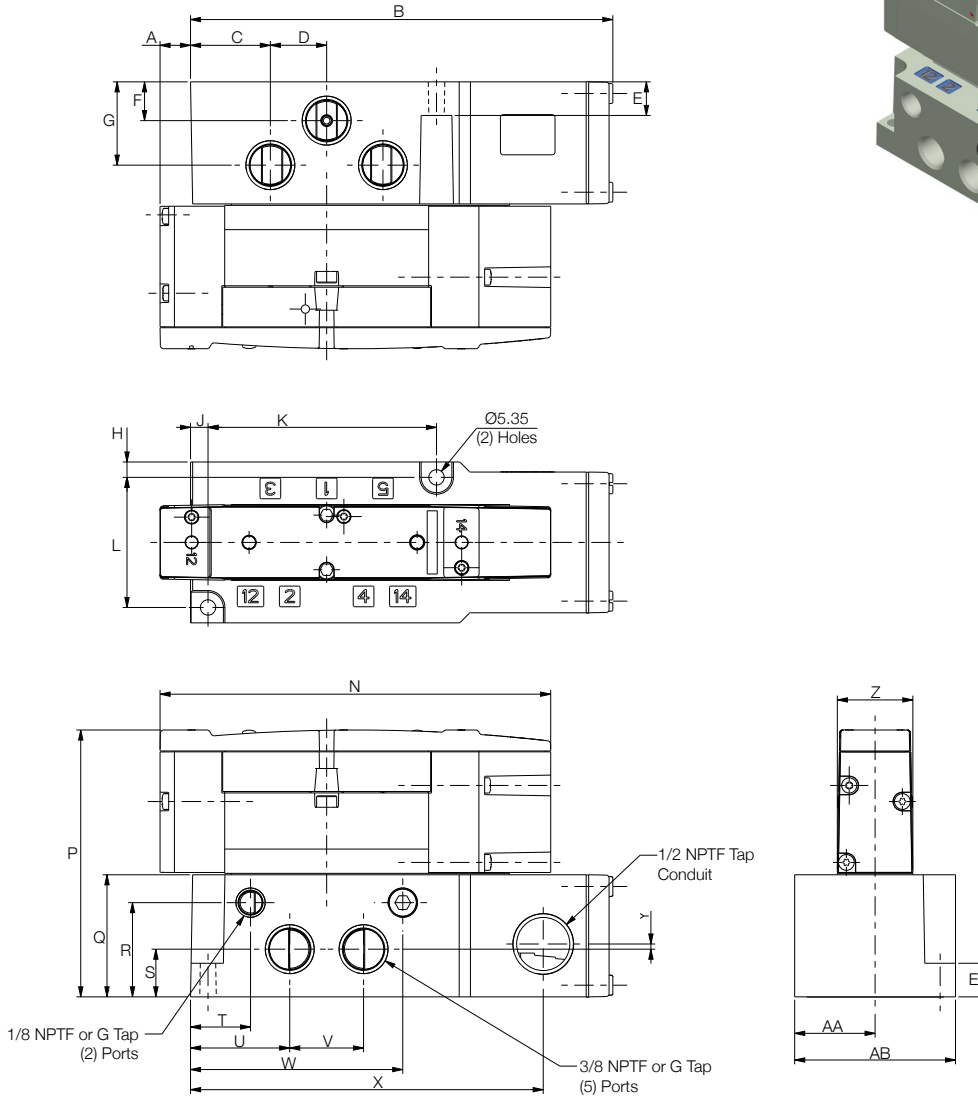
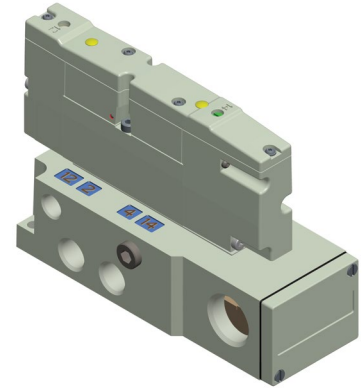


A	B	C	D	E	F	G	H	J
129.4 (5.094)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)	61 (2.4)

Dimensions: mm (inches)

**Plug-in Valve Mounted on Individual Subbase**

**Plug-in Individual Subbase**

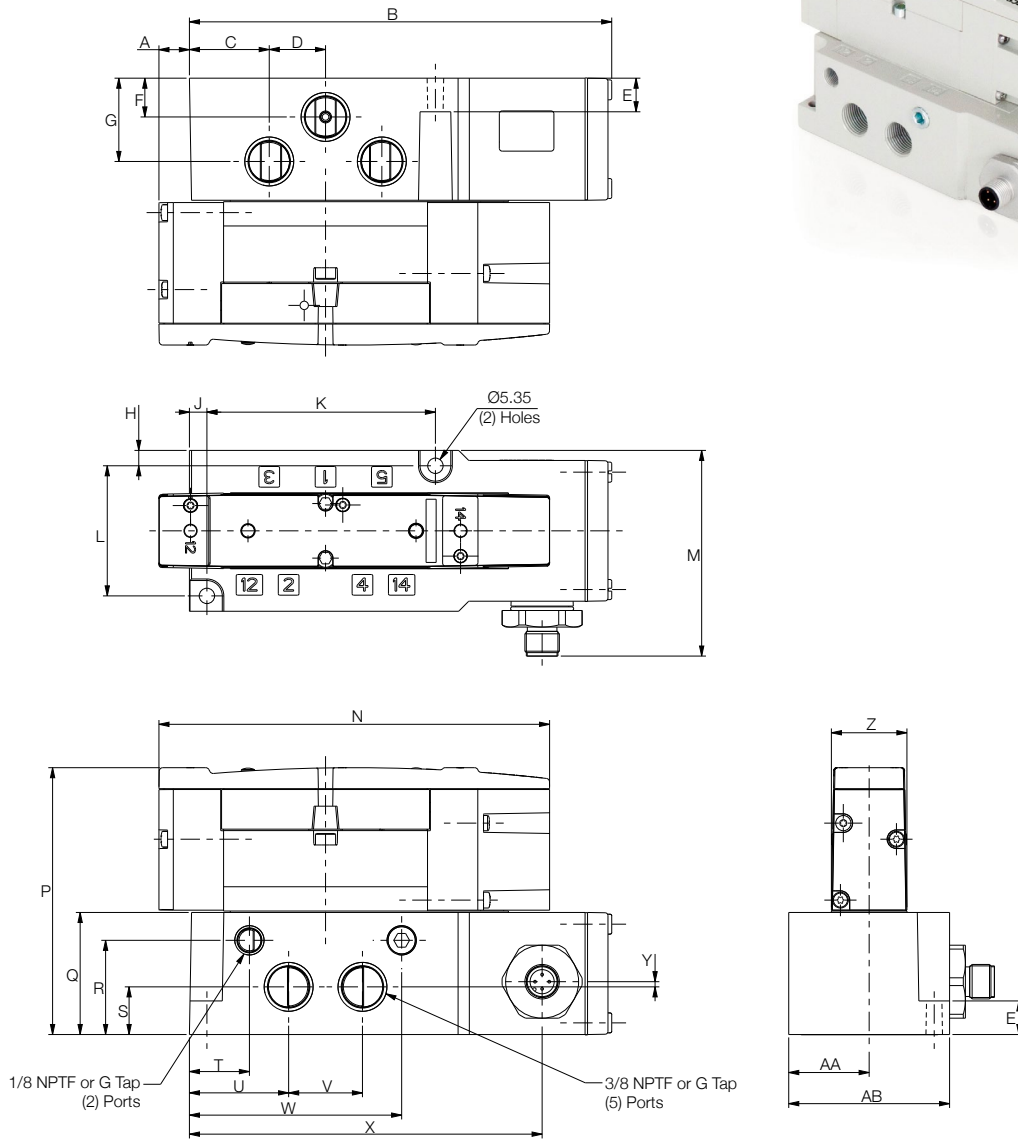


A	B	C	D	E	F	G	H	J	K	L	N	P
10.6 (0.417)	147 (5.787)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	136 (5.35)	92.9 (3.657)
Q	R	S	T	U	V	W	X	Y	Z	AA	AB	
42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	1.8 (0.071)	26.3 (1.04)	28 (1.1)	28 (1.1)	56 (2.2)	

Dimensions: mm (inches)

**Plug-in Valve Mounted on Individual Subbase**

**M12 Individual Subbase (ISO 15407-2)**



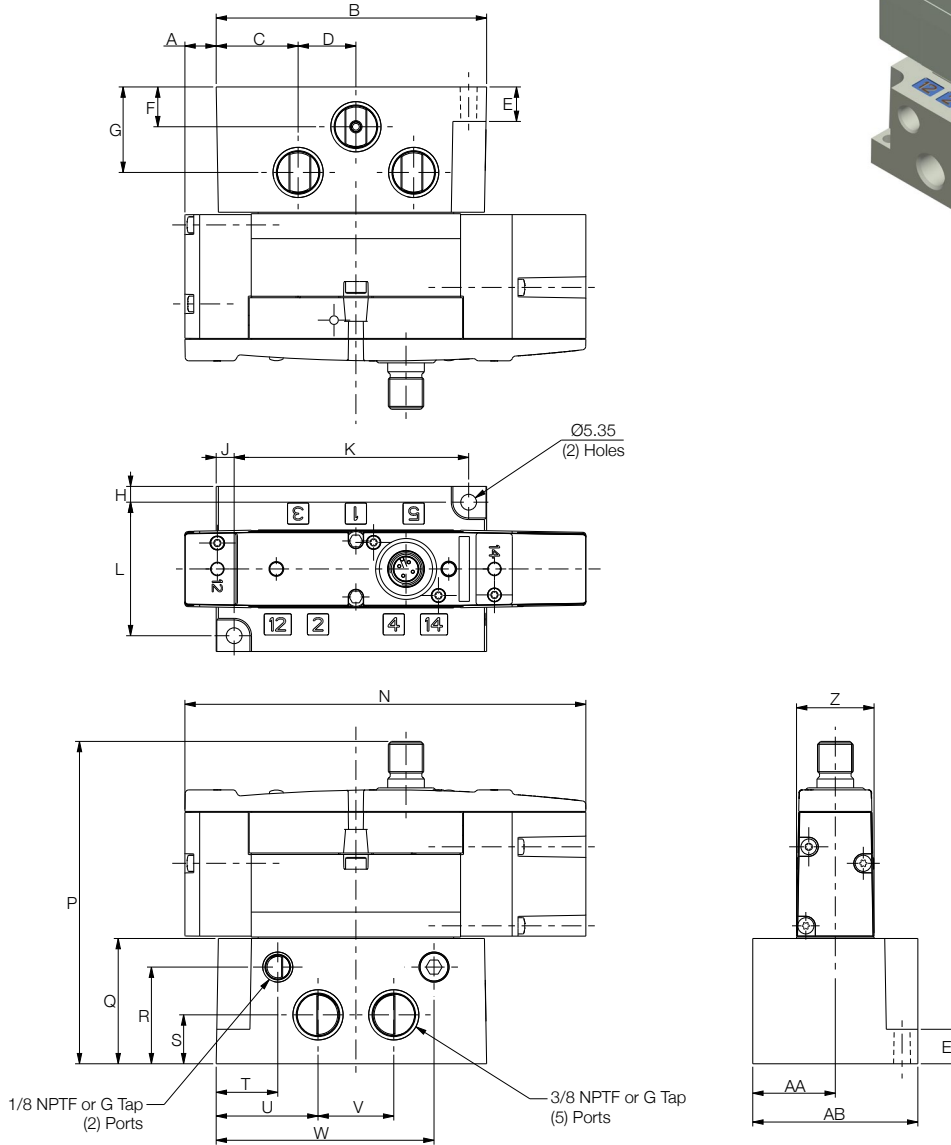
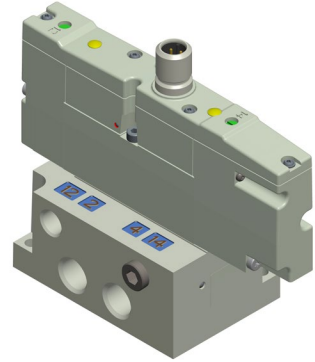
A	B	C	D	E	F	G	H	J	K	L	M	N
10.6 (0.417)	147 (5.787)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	71.6 (2.819)	136 (5.35)

P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
92.9 (3.657)	42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	122.8 (4.835)	1.8 (0.071)	26.3 (1.04)	28 (1.1)	56 (2.2)

Dimensions: mm (inches)

**M12 Valve Mounted on Individual Subbase**

**Non Plug-in Individual Subbase (ISO 15407-1)**



A	B	C	D	E	F	G	H	J	K	L	N	P
10.6 (0.417)	91.7 (3.61)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	136 (5.35)	109.4 (4.307)

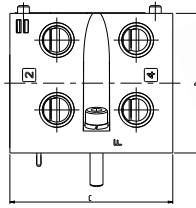
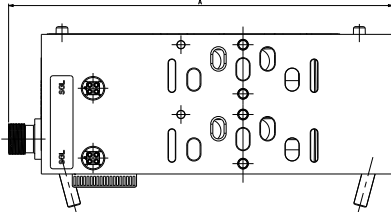
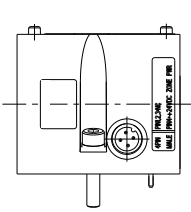
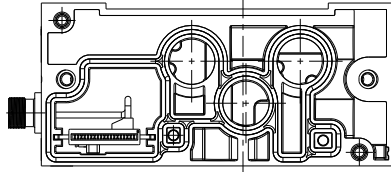
Q	R	S	T	U	V	W	X	Y	Z	AA	AB
42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	26.3 (1.04)	28 (1.1)	56 (2.2)	28 (1.1)	56 (2.2)





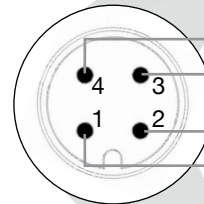
**Dimensions: mm (inches)**

**Plug-in V Wiring**



A	B	C
148.7 (5.85)	54 (2.13)	63 (2.48)

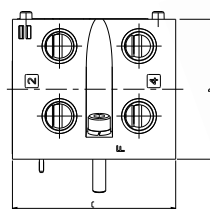
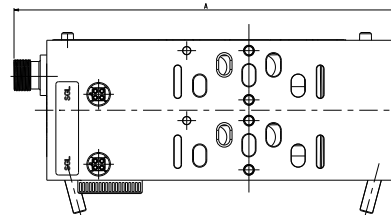
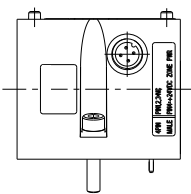
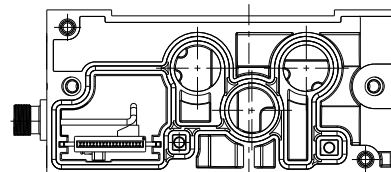
**V & W Wiring Options**



- Pin 4 = +24 VDC
- Pin 3 = Not Used
- Pin 2 = Not Used
- Pin 1 = Not Used

**Dimensions: mm (inches)**

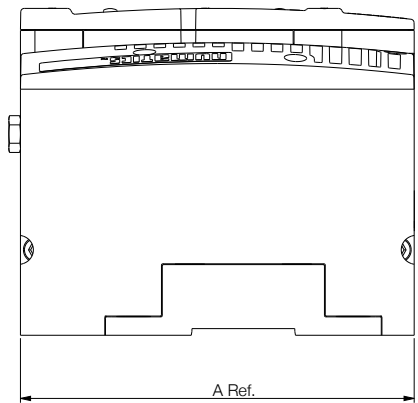
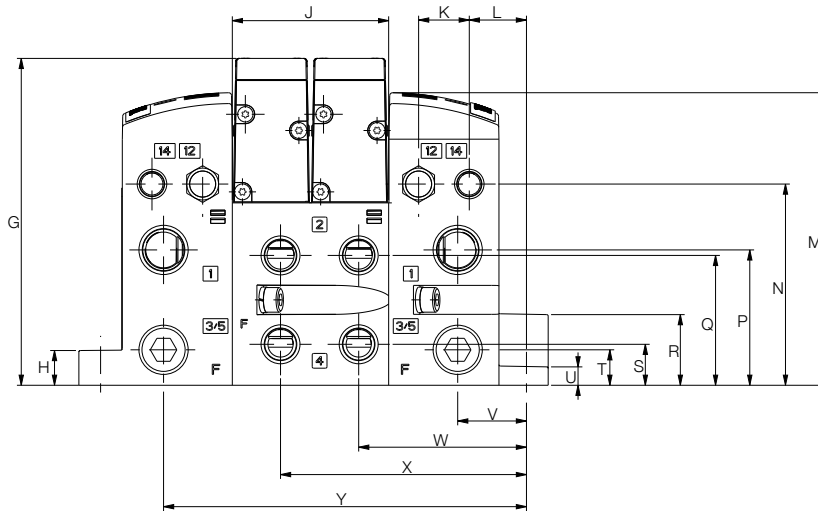
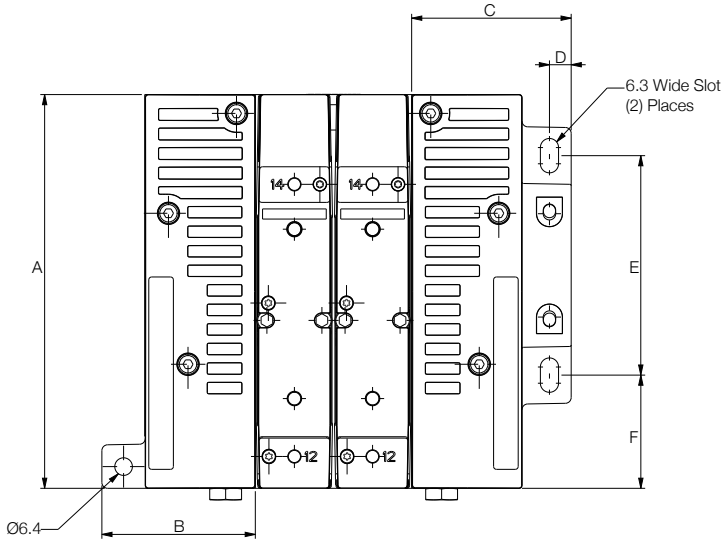
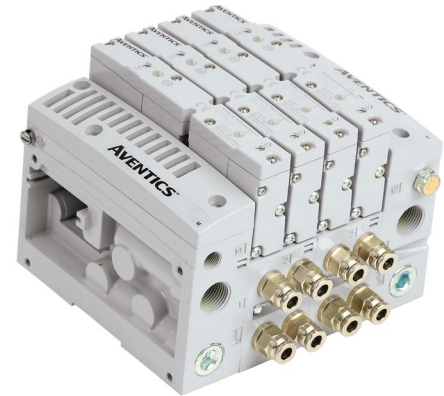
**Plug-in W Wiring**



A	B	C
148.7 (5.85)	54 (2.13)	63 (2.48)

Dimensions: mm (inches)

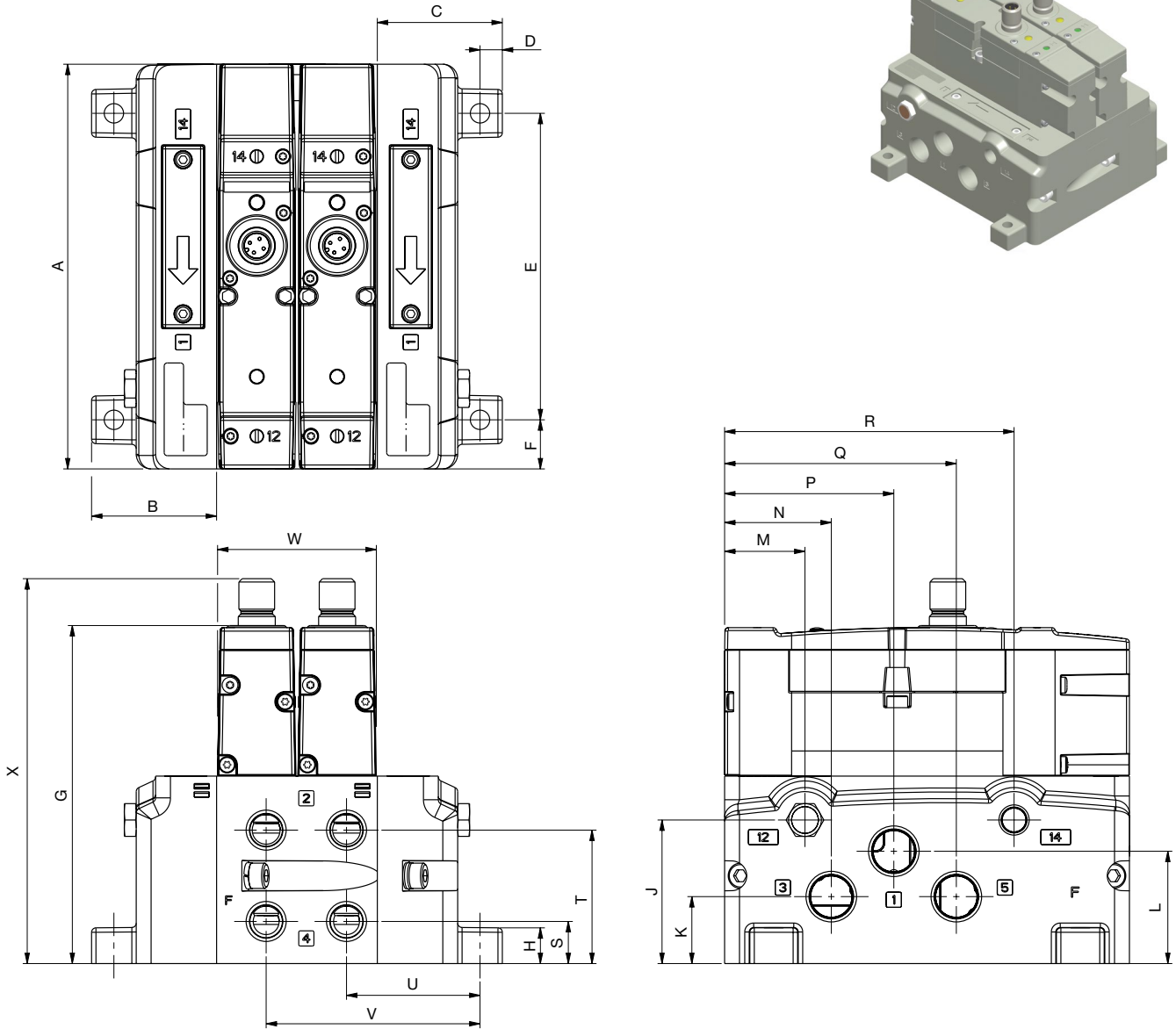
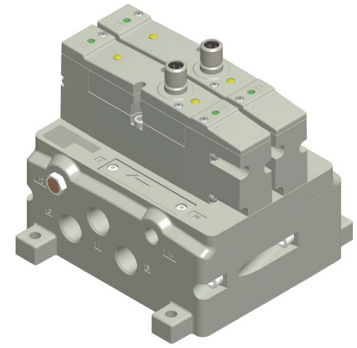
**Manifold Assembly with Vertical End Plates**



A	B	C	D	E	F	G	H	J	K	L	M
136 (5.354)	53 (2.087)	55.1 (2.17)	7.5 (0.3)	75.8 (2.98)	39.1 (1.54)	112.9 (4.445)	12 (0.47)	54 (2.13)	17.5 (0.69)	19.8 (0.78)	101.1 (3.98)
N	P	Q	R	S	T	U	V	W	X	Y	
69.5 (2.74)	46.8 (1.843)	44.9 (1.77)	24.4 (0.96)	14.2 (0.56)	12.3 (0.48)	6.4 (0.25)	23.8 (0.94)	58 (2.28)	85 (3.346)	125.4 (4.937)	

Dimensions: mm (inches)

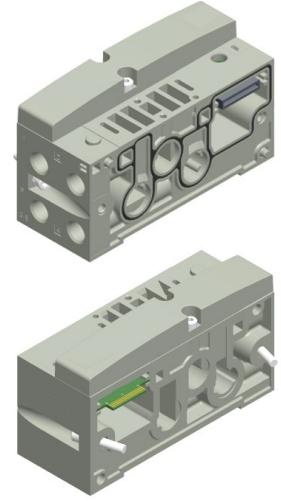
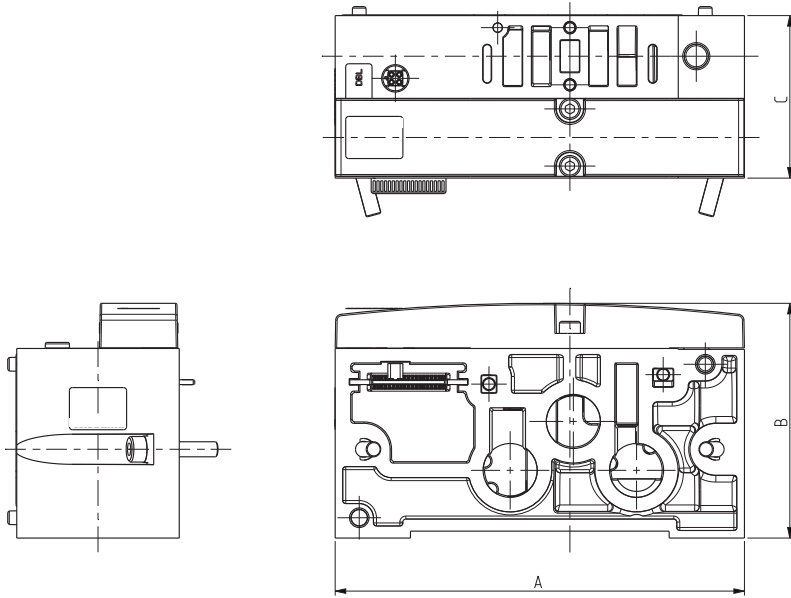
**Manifold Assembly with Horizontal End Plates**



A	B	C	D	E	F	G	H	J	K	L
136.0 (5.35)	42.0 (1.65)	42.0 (1.65)	7.5 (0.30)	103.0 (4.06)	16.5 (0.65)	113.6 (4.47)	12.0 (0.47)	48.3 (1.90)	22.5 (0.89)	37.8 (1.49)
M	N	P	Q	R	S	T	U	V	W	X
27.0 (1.06)	35.9 (1.41)	56.9 (2.24)	77.9 (3.07)	97.3 (3.83)	14.2 (0.56)	44.9 (1.77)	44.9 (1.77)	71.9 (2.83)	53.3 (2.10)	129.4 (5.09)

Dimensions: mm (inches)

**503 Series Mid-Station Supply Block**

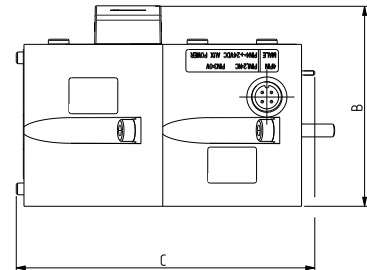
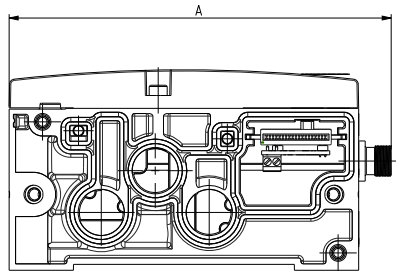
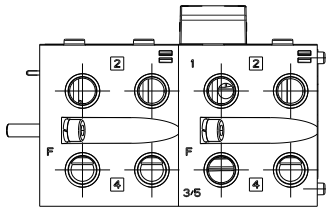
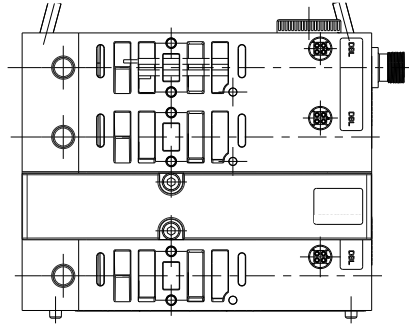
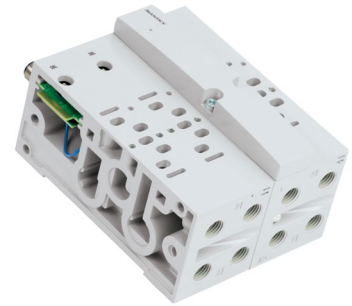


<b>A</b>	<b>B</b>	<b>C</b>
136 (5.35)	78 (3.07)	54 (2.13)



Dimensions: mm (inches)

**503 Series Mid-Station Supply/Auxiliary Power Manifold Block with X32 Solenoid Coils Kit**



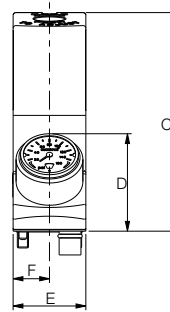
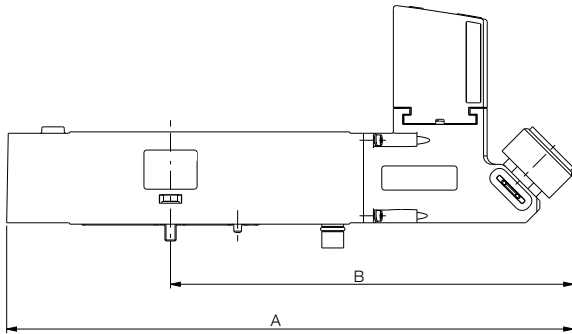
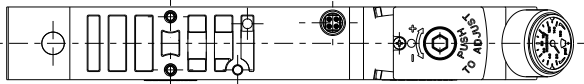
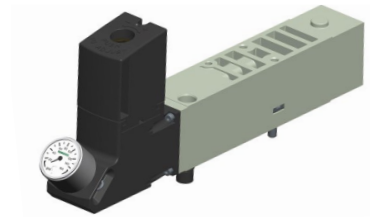
Weight	
lbs (kg)	
2.60	(1.18)

A	B	C
148.6 (5.85)	77.8 (3.06)	116.1 (4.57)

Dimensions: mm (inches)

**Sandwich Pressure Regulator**

**Single Regulator**

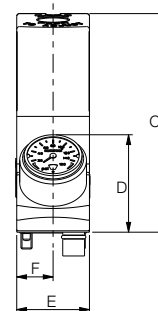
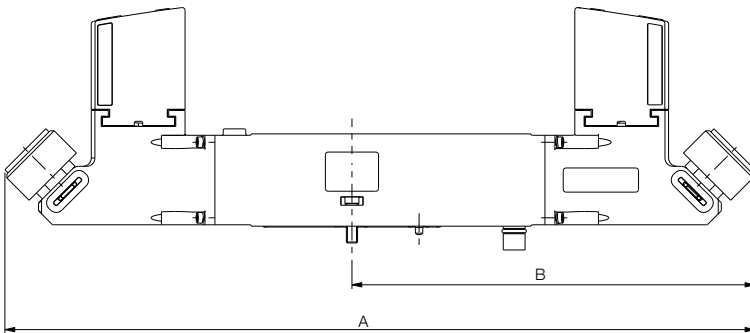
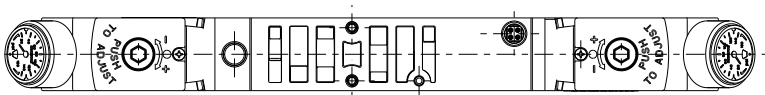


Weight	
lbs	(kg)
0.95	(0.43)

A	B	C	D	E	F
202.7 (7.98)	144.1 (5.673)	78.2 (3.08)	34.8 (1.37)	26 (1.02)	13 (0.51)

Dimensions: mm (inches)

**Double Regulator**

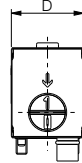
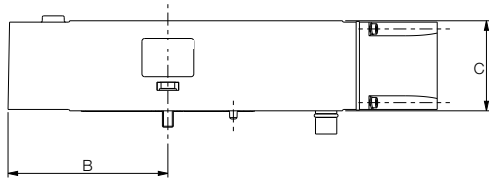
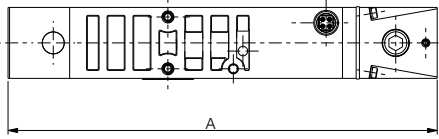


Weight	
lbs	(kg)
1.45	(0.66)

A	B	C	D	E	F
268.2 (10.56)	144.1 (5.673)	78.2 (3.08)	34.8 (1.37)	26 (1.02)	13 (0.51)

**Dimensions: mm (inches)**

**Sandwich Shut Off Block Kit**

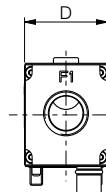
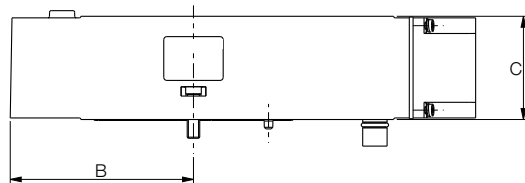
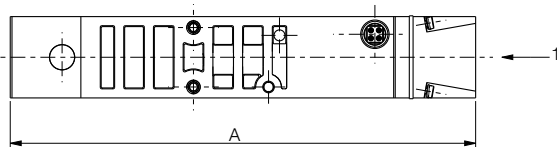


Weight	
lbs	(kg)
0.45	(0.20)

A	B	C	D
157.3 (6.193)	58.6 (2.307)	33 (1.3)	26.5 (1.04)

**Dimensions: mm (inches)**

**Sandwich Pressure Block Kit**

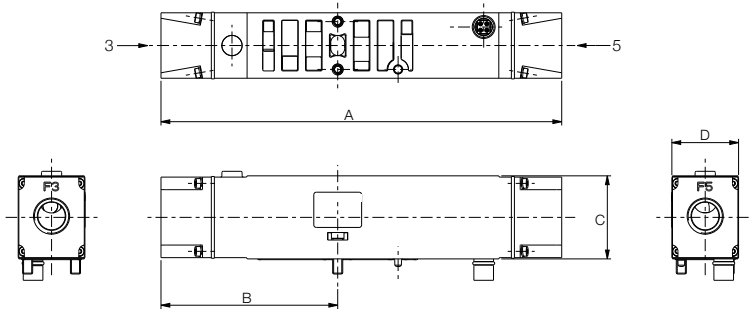


Weight	
lbs	(kg)
0.45	(0.20)

A	B	C	D
148.8 (5.858)	58.6 (2.307)	33 (1.3)	26.5 (1.04)

**Dimensions: mm (inches)**

**Sandwich Exhaust Block Kit**

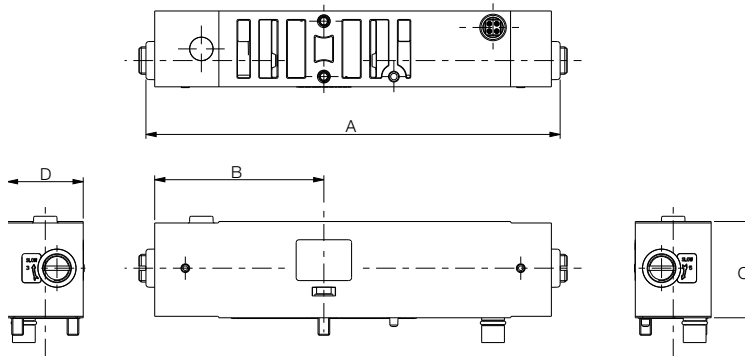


Weight	
lbs	(kg)
0.50	(0.23)

A	B	C	D
159.2 (6.268)	70.2 (2.764)	33 (1.3)	26.5 (1.04)

**Dimensions: mm (inches)**

**Sandwich Speed Control Kit**



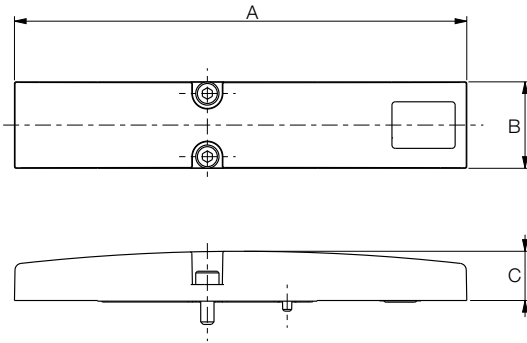
Weight	
lbs	(kg)
0.55	(0.25)

A	B	C	D
142 (5.591)	58 (2.283)	33 (1.3)	26 (1.02)



Dimensions: mm (inches)

**Blank Station Plate Kit**



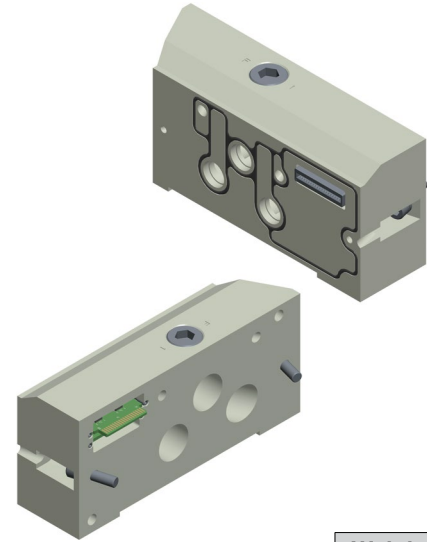
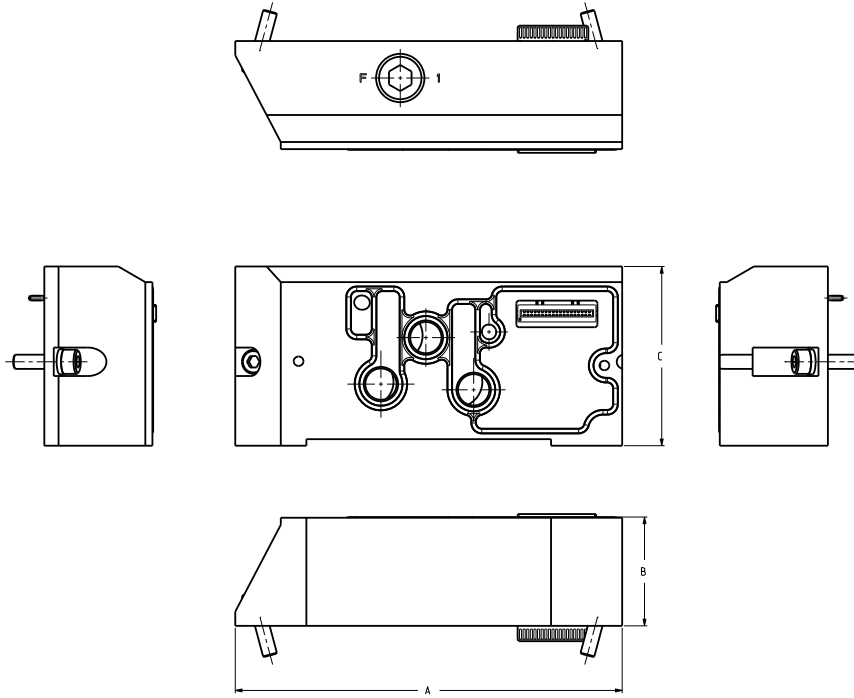
Weight	
lbs (kg)	
0.20	(0.09)

A	B	C
136 (5.354)	26 (1.024)	14.8 (0.58)

Dimensions: mm (inches)

**Adaptor Plate Kit**

**503 Valve Series to 502 Valve Series**



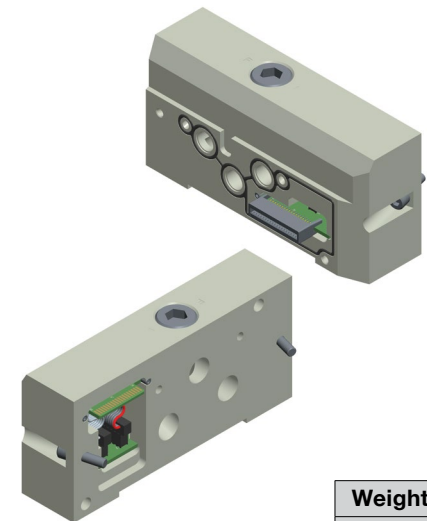
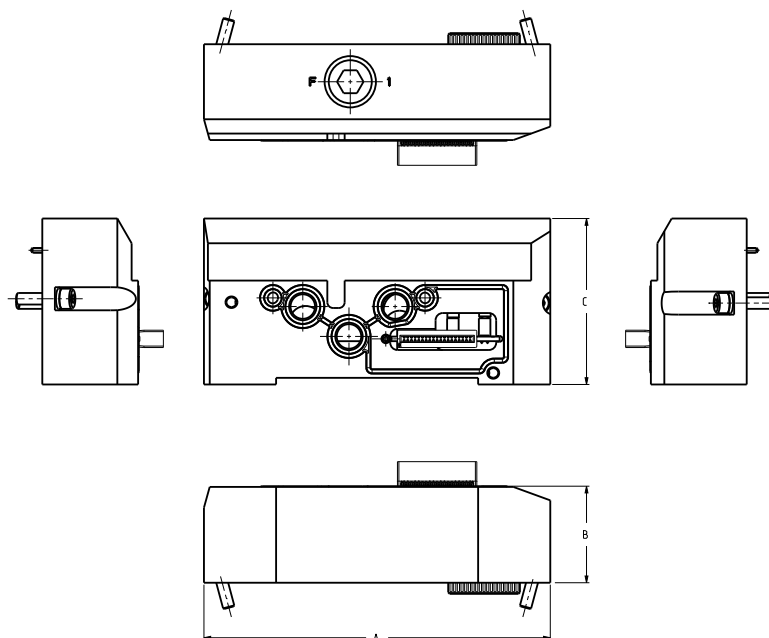
Weight	
lbs	(kg)
1.50	(0.68)

A	B	C
136 (5.35)	38.25 (1.51)	63 (2.48)

Dimensions: mm (inches)

**Adaptor Plate Kit**

**502 Valve Series to 501 Valve Series**



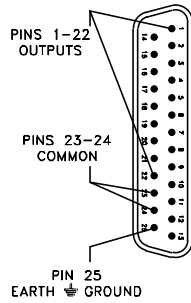
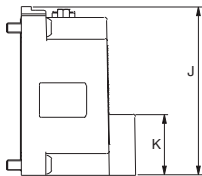
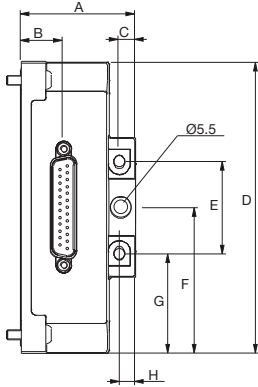
Weight	
lbs	(kg)
1.05	(0.48)

A	B	C
120 (4.72)	33.5 (1.32)	57.5 (2.26)

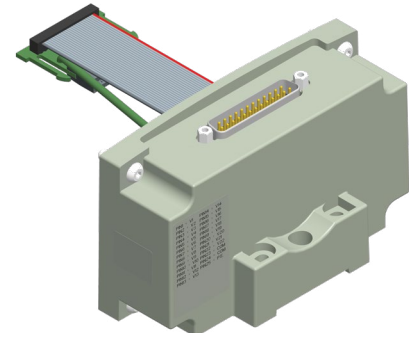
ADAPTOR PLATE  
DIMENSIONAL DRAWINGS

**Dimensions: mm (inches)**

**25 Pin Sub-D Connector Kit**



PIN1	V1	PIN4	V14
PIN2	V2	PIN5	V15
PIN3	V3	PIN6	V16
PIN4	V4	PIN7	V17
PIN5	V5	PIN8	V18
PIN6	V6	PIN9	V19
PIN7	V7	PIN20	V20
PIN8	V8	PIN21	V21
PIN9	V9	PIN22	V22
PIN10	V10	PIN23	COM
PIN11	V11	PIN24	COM
PIN12	V12	PIN25	P.E.
PIN13	V13		

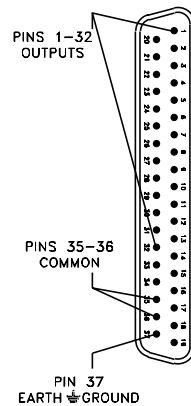
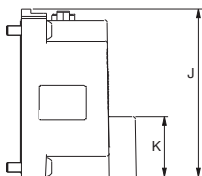
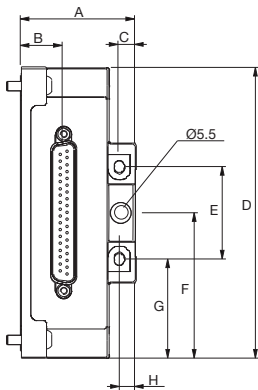


Weight	
lbs	(kg)
0.70	(0.32)

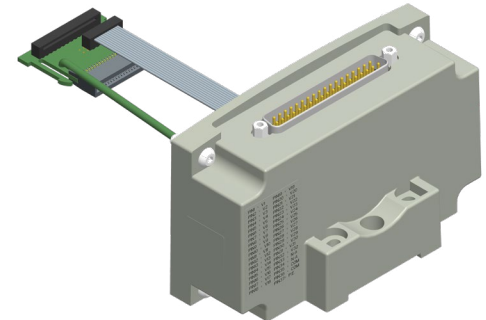
A	B	C	D	E	F	G	H	J	K
46.4 (1.827)	17 (0.669)	6.7 (0.26)	118 (4.65)	37.5 (1.48)	59 (2.32)	40.2 (1.58)	6.7 (0.26)	68.1 (2.68)	24.4 (0.96)

**Dimensions: mm (inches)**

**37 Pin Sub-D Connector Kit**



PIN1	V1	PIN19	V19
PIN2	V2	PIN20	V20
PIN3	V3	PIN21	V21
PIN4	V4	PIN22	V22
PIN5	V5	PIN23	V23
PIN6	V6	PIN24	V24
PIN7	V7	PIN25	V25
PIN8	V8	PIN26	V26
PIN9	V9	PIN27	V27
PIN10	V10	PIN28	V28
PIN11	V11	PIN29	V29
PIN12	V12	PIN30	V30
PIN13	V13	PIN31	V31
PIN14	V14	PIN32	V32
PIN15	V15	PIN33	N/A
PIN16	V16	PIN34	N/A
PIN17	V17	PIN35	COM
PIN18	V18	PIN36	COM
		PIN37	P.E.



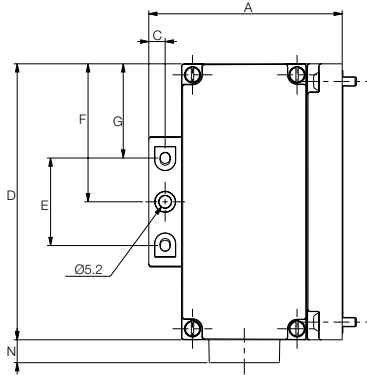
Weight	
lbs	(kg)
0.70	(0.32)

A	B	C	D	E	F	G	H	J	K
46.4 (1.827)	17 (0.669)	6.7 (0.26)	118 (4.65)	37.5 (1.48)	59 (2.32)	40.2 (1.58)	6.7 (0.26)	68.1 (2.68)	24.4 (0.96)

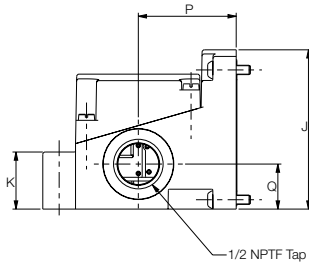
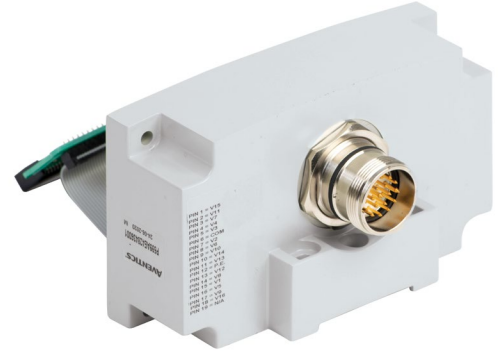
ELECTRICAL INTERFACE  
DIMENSIONAL DRAWINGS

**Dimensions: mm (inches)**

**1-32 Terminal Strip Kit**



PIN8	=	V16	PIN8	=	P.E.
PIN17	=	V17	PIN17	=	COM
PIN6	=	V16	PIN6	=	COM
PIN5	=	V16	PIN5	=	N/A
PIN4	=	V14	PIN4	=	V32
PIN3	=	V13	PIN3	=	V31
PIN2	=	V12	PIN2	=	V30
PIN1	=	V11	PIN1	=	V29
PIN10	=	V10	PIN10	=	V28
PIN9	=	V9	PIN9	=	V27
PIN8	=	V8	PIN8	=	V26
PIN7	=	V7	PIN7	=	V25
PIN6	=	V6	PIN6	=	V24
PIN5	=	V5	PIN5	=	V23
PIN4	=	V4	PIN4	=	V22
PIN3	=	V3	PIN3	=	V21
PIN2	=	V2	PIN2	=	V20
PIN1	=	V1	PIN1	=	V19

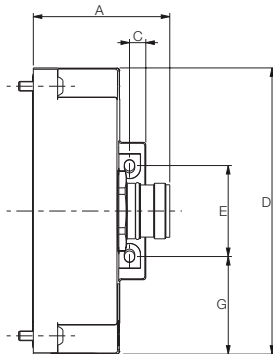
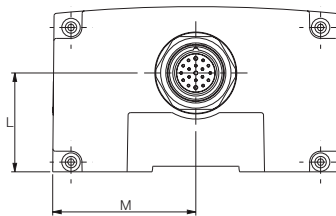
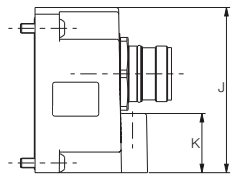


Weight	
lbs	(kg)
1.20	(0.54)

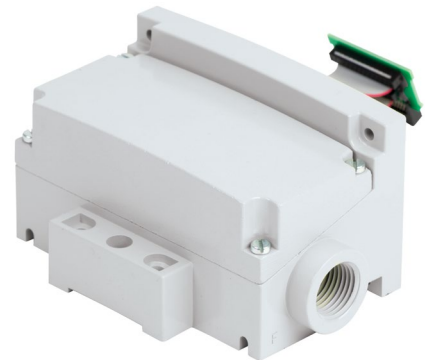
A	C	D	E	F	G	J	K	N	P	Q
82.7	7	118	37.5	59	40.2	68.1	24.4	9.8	41.9	19.3
(3.256)	(0.28)	(4.65)	(1.48)	(2.32)	(1.583)	(2.68)	(0.96)	(0.39)	(1.65)	(0.76)

**Dimensions: mm (inches)**

**19 Pin M23 Connector Kit**



PIN1	=	V16
PIN2	=	V11
PIN3	=	V7
PIN4	=	V4
PIN5	=	V3
PIN6	=	COM
PIN7	=	V2
PIN8	=	V6
PIN9	=	V10
PIN10	=	V14
PIN11	=	V13
PIN12	=	P.E.
PIN13	=	V12
PIN14	=	V8
PIN15	=	V1
PIN16	=	V5
PIN17	=	V9
PIN18	=	V15
PIN19	=	N/A



Weight	
lbs	(kg)
0.70	(0.32)

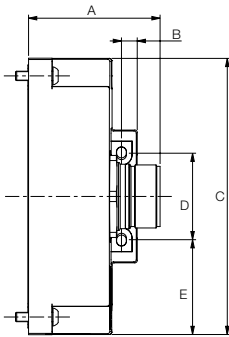
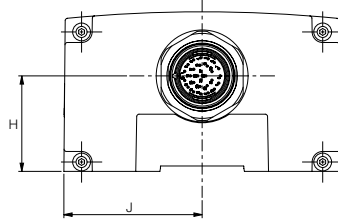
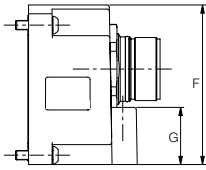
A	C	D	E	G	J	K	L	M
56.3	6.7	118	37.5	40.2	68.1	24.4	40.8	59
(2.217)	(0.26)	(4.65)	(1.48)	(1.583)	(2.68)	(0.96)	(1.61)	(2.323)



**Dimensions: mm (inches)**

**26 Pin M27 Connector Kit**

5



PIN18	V18	PIN19	P.E.
PIN17	V17	PIN17	COM
PIN16	V16	PIN16	COM
PIN15	V15	PIN15	N/A
PIN14	V14	PIN14	V32
PIN13	V13	PIN13	V31
PIN12	V12	PIN12	V30
PIN11	V11	PIN11	V29
PIN10	V10	PIN10	V28
PIN9	V9	PIN9	V27
PIN8	V8	PIN8	V26
PIN7	V7	PIN7	V25
PIN6	V6	PIN6	V24
PIN5	V5	PIN5	V23
PIN4	V4	PIN4	V22
PIN3	V3	PIN3	V21
PIN2	V2	PIN2	V20
PIN1	V1	PIN1	V19

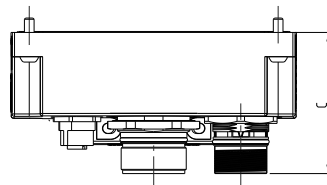
Weight	
lbs	(kg)
0.70	(0.32)

A	B	C	D	E	F	G	H	J
56.1 (2.209)	6.7 (0.264)	118 (4.65)	37.5 (1.48)	40.2 (1.58)	68.1 (2.68)	24.4 (0.961)	40.8 (1.61)	59 (2.32)

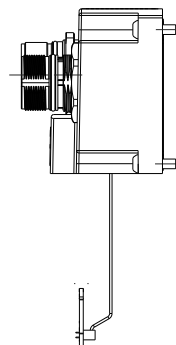
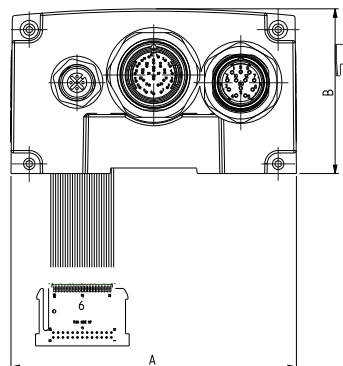
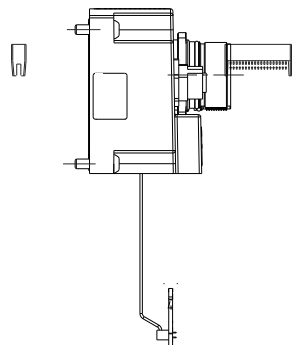
**Dimensions: mm (inches)**

**Robot FANUC End Effector (EE) Interface**

PI - EE INTERFACE			
PIN 1	OUTPUT 1	PIN 14	INPUT 6
PIN 2	OUTPUT 2	PIN 15	INPUT 7
PIN 3	OUTPUT 3	PIN16	INPUT 8
PIN 4	OUTPUT 4	PIN 17	-24VDC
PIN 5	OUTPUT 5	PIN 18	-24VDC
PIN 6	OUTPUT 6	PIN 19	-24VDC
PIN 7	OUTPUT 7	PIN 20	-24VDC
PIN 8	OUTPUT 8	PIN 21	OVDC
PIN 9	INPUT 1	PIN 22	HEKD
PIN 10	INPUT 2	PIN 23	PFABN
PIN 11	INPUT 3	PIN 24	OVDC
PIN 12	INPUT 4	PIN 25	N.C.
PIN 13	INPUT 5	PIN 26	N.C.



Weight	
lbs	(kg)
0.90	(0.41)



A	B	C
118 (4.65)	68.1 (2.68)	58.4 (2.30)





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