

AVENTICS™ Series 503 Pneumatic Valve System

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



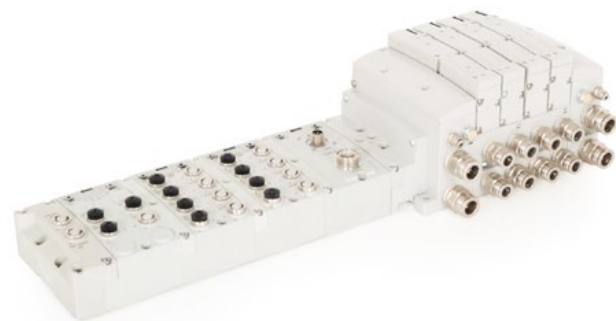
Fieldbus Electronics Compatible

- 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


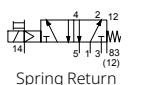
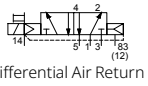
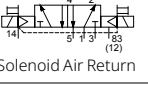

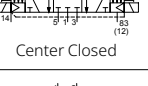
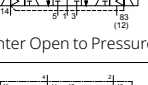

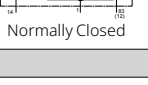
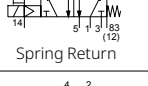
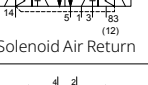
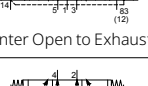
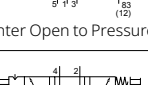
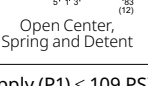


Operating Data

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)

AVENTICS™ Series 503 Pneumatic Valve System

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)		
				at 90 PSI Cv (l/min (ANR))			min.	max.	min.	max.	
				1 → 2 1 → 4	2 → 3 4 → 5	Energize/ De-Energize					Part Number
Rubber Packed Technology, with Manual Override											
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	1.150 (1150)	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	1.150 (1150)	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	1.150 (1150)	1.118 (1100)						
5/3	B5	 Center Open to Exhaust	Proprietary	0.550 (550)	1.220 (1200)	18/45	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2B50MA00F1
			ISO	0.550 (550)	1.000 (1000)						
	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	1.220 (1200)	0.550 (550)	18/45	44 (3)	115 (8)	28 (-0.95)	115 (8)	R503A2B70MA00F1
			ISO	1.118 (1100)	0.550 (550)						
NO 2 x 3/2 NC	BA	 Normally Open	Proprietary	0.950 (950)	0.950 (950)	15/20	51 (3.5)	115 (8)	51* (3.5)	115 (8)	R503A2BA0MA00F1
			ISO	0.850 (850)	0.850 (850)						
NC 2 x 3/2 NO	BD	 Normally Closed	Proprietary	0.950 (950)	0.800 (800)	15/20	51 (3.5)	115 (8)	51* (3.5)	115 (8)	R503A2BD0MA00F1
			ISO	0.850 (850)	0.750 (750)						
Spool and Sleeve Technology, with Manual Override											
5/2	B1	 Spring Return	Proprietary	1.118 (1100)	1.220 (1200)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B10MA00F1
			ISO	1.016 (1000)	0.965 (950)						
	B4	 Solenoid Air Return	Proprietary	1.118 (1100)	1.220 (1200)	15/15	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B40MA00F1
			ISO	1.016 (1000)	0.965 (950)						
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	0.750 (750)	0.700 (700)						
	B7	 Center Open to Pressure	Proprietary	0.915 (900)	0.965 (950)	20/60	29 (2)	115 (8)	28 (-0.95)	115 (8)	R503A1B70MA00F1
			ISO	0.700 (700)	0.750 (750)						
	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	0.750 (750)	0.700 (700)						

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

AVENTICS™ Series 503 Pneumatic Valve System

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

- ¹ 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
- ² N = M12 Connector
Pin 1 = Not Used; Pin 2 = Coil 12;
Pin 3 = Common; Pin 4 = Coil 14

Port Size

0 = No Port Size

¹ Available with Functions 1, 4, 5 & 7

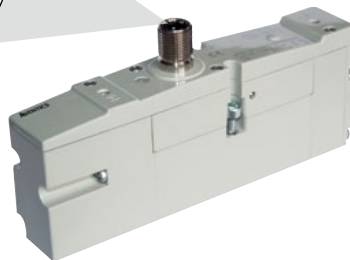
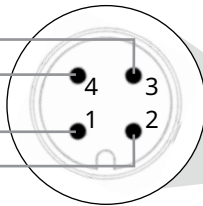
² See diagram:

Pin 3 = Common

Pin 4 = Coil 14

Pin 1 = Not Used

Pin 2 = Coil 12



AVENTICS™ Series 503 Pneumatic Valve System

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

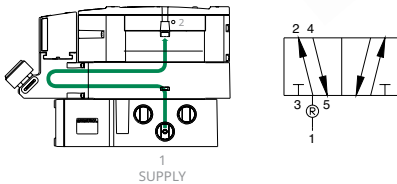


ISO 15407-2/15407-1 Interface



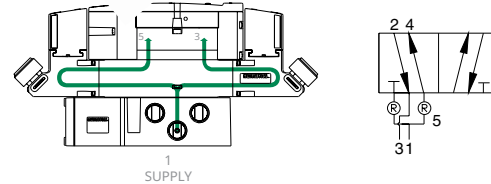
Proprietary Interface

Type RS



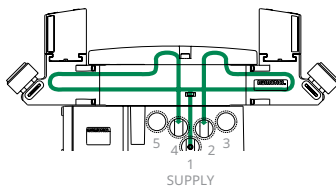
Single pressure from a single supply.

Type RD



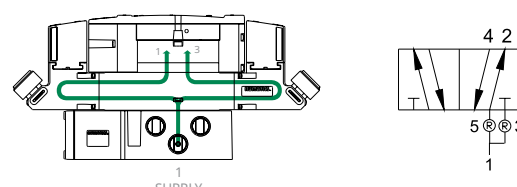
Dual pressure from a single supply.

Type RE



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

Type RT



Two-pressure selector used for multi-pressure applications.

AVENTICS™ Series 503 Pneumatic Valve System

How to Order: Mounting

8 503 A M S2 3 M A00 1 0

Port Type

- ¹ 8 = NPTF
- ¹ 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
- ² Z = Mid-Station Supply
- ³ 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
- ⁴ V2 = Manifold Subbase, 2 Stations, Side Ports
- ⁵ 3A = Individual Subbase, Side Ports, Individual Exhaust
- ³ 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)
- ⁶ 14X = External Pilot Supply from Port #14
- ^{6 & 8} 56Y = 4 Pin Straight M12 Connector in Mounting
Pin 1= Not Used; 2= 12+(B+); 3= COM; 4= 14+(A+)
- ^{6 & 8} 59W = 14X + 56Y

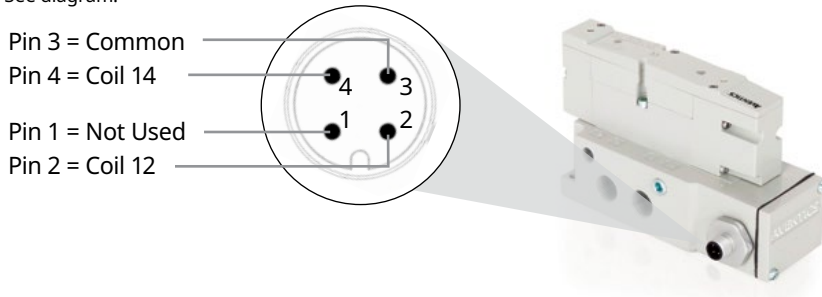
Wiring Option

- ⁴ 0 = Non Plug-in
- ⁷ M = Plug-in, Receptacle Assembly
- ³ 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)

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



AVENTICS™ Series 503 Pneumatic Valve System

How to Order: Manifold Assembly

8 503 A V 3 B 3 0 0 V A00

Port Type
¹8 = NPTF
¹G = 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
²T = 1-32 Pin Terminal Strip Interface
²Z = 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
³H = 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

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

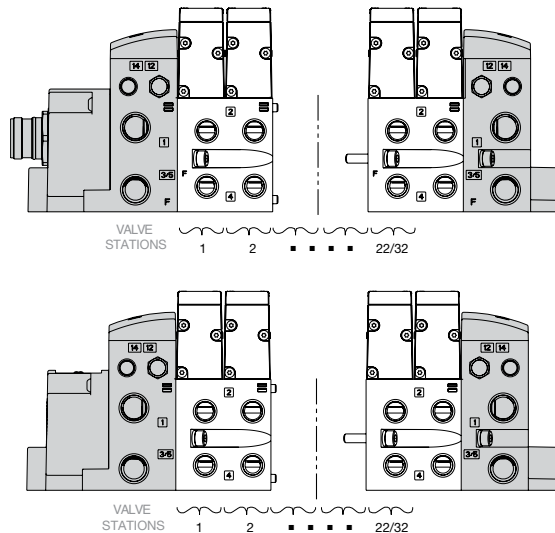
NOTE: See the Multipin Electrical Interface table for Max Solenoid Outputs.

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


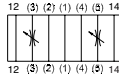

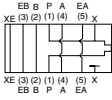

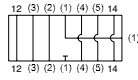

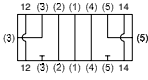
25 Pin Sub-D	8503AVJF300VA00
Valve Station #1	R503A2B40MA00F1
Valve Station #2	R503A2B40MA00F1
Mounting #1	8503AMM22MA0010
Valve Station #5	R503A2B60MA00F1
Valve Station #6	R503A2B60MA00F1
Mounting #2	8503AMM22MA0010
Valve Station #5	R503A2B40MA00F1
Valve Station #6	R503A2B40MA00F1
Mounting #3	8503AMM22MA0010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



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

AVENTICS™ Series 503 Pneumatic Valve System

Sandwich Option Kit

Valve Series	Type	Speed Control Kit	Shut Off Block Kit	Pressure Block Kit		Exhaust Block Kit	
		 <p>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.</p> 	 <p>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.</p> 	 <p>Used to supply a separate pressure to a single valve station without needing blocking discs.</p> 	 <p>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.</p> 		
				1/4 NPTF	1/4 G	1/4 NPTF	1/4 G
503 Series (26mm)	Proprietary	R503AS425575002	R503AY426707002	8503AW428300004	G503AW428300004	8503AX428300002	G503AX428300002
	ISO 15407-2	R503AS425575001	R503AY426707001	8503AW428300003	G503AW428300003	8503AX428300001	G503AX428300001
	ISO 15407-1	R503AS432940001	-	-	-	-	-

AVENTICS™ Series 503 Pneumatic Valve System

End Plate Kit

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



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	12mm	12mm	6 mm
503 Series (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		
	Horizontal	w/o Muffler, w/o DIN	8503AK428304001			G503AK428304004			K503AK428304002			K503AK428304003			K503AK428304005			K503AK428304006		

AVENTICS™ Series 503 Pneumatic Valve System

Multipin Electrical Interface




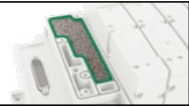


Multipin Electrical Interface	Product Image (Example Only)	Description	Part Number		Notes	Max. # of Coils*
			501, 502 & 503 Valve Series			
25 Pin Sub-D Interface		Housing Kit Assembly w/o DIN Rail Clamps	P599AE428441001		External fusing or output protection recommended.	22
		Housing Kit Assembly w/DIN 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:

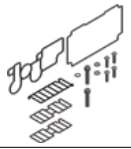


- The electrical connection type.
- The valve type - single solenoid valves up to the maximum solenoid outputs allowed by the electrical connection type (see chart above) or a combination of single and/or double solenoid valves not to exceed the maximum number of solenoid outputs allowed.
- Combination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

AVENTICS™ Series 503 Pneumatic Valve System

Accessories Kit

Accessories Kit	Product Image (Example Only)	Description	Port Number	Part Number	
				503 Series (26mm)	
Blank Station Plate Kit		Used to block off a manifold station for future use.	-	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	P503AD431191001	
			3	P503AD431191002	
			5	P503AD431191003	
			1 + 3	P503AD431191004	
			1 + 5	P503AD431191005	
			3 + 5	P503AD431191006	
Internal Muffler Element		Muffler element	-	426186-001	
			-	239-1561	
External Gauge Adaptor Kit		1/8" NPTF and G adaptor for external gauge	-	239-1561	
		Thread Type	Tube Size	Quantity	503 Series (26mm)
Fittings		M7	4mm	10	See Fittings Catalog
		M7	6mm	10	
		M7	1/4	10	



Replacement Parts Kit

Replacement Parts Kit	Product Image (Example Only)	Description	Parts Included	Part Number
				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		M503AU521773001
Regulator Replacement Kit		3 – 30 PSIG Regulator Kit	Includes regulator assembly, gaskets, screws.	M503AR428759001
		5 – 60 PSIG Regulator Kit		M503AR428759002
		10 – 130 PSIG Regulator Kit		M503AR428759003
		0.2 – 2.0 bar Regulator Kit		M503AR428759004
		0.3 – 4.0 bar Regulator Kit		M503AR428759005
		0.7 – 9.0 bar Regulator Kit		M503AR428759006
Regulator Gauge Replacement Kit		0 – 160 PSIG Regulator Gauge Head Extended	Includes gauge head, o-ring, and hitch-pin.	-
		0 – 160 PSIG Regulator Gauge Head		M503AG521734009
		0 – 60 PSIG Regulator Gauge Head Extended		-
		0 – 60 PSIG Regulator Gauge Head		M503AG521734010
		0 – 11 bar Regulator Gauge Head Extended		-
		0 – 11 bar Regulator Gauge Head		M503AG521734011
		0 – 4 bar Regulator Gauge Head Extended		-
		0 – 4 bar Regulator Gauge Head		M503AG521734012

AVENTICS™ Series 503 Pneumatic Valve System

Adaptor Plate Kit

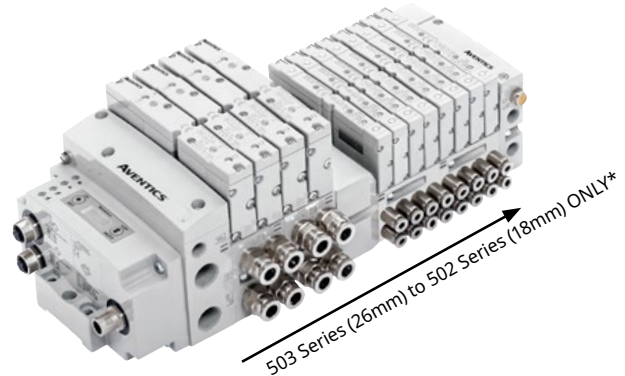
The adaptor plate allows the transition from 503 Series to 502 Series and 502 Series to 501 Series in a single manifold assembly. Includes the adapter plate, transfer board, gasket, screws.

Valve Series	Product Image (Example Only)	Description	Interface	Thread Type	Supply Port 1 Size	Part Number
503 Series (26mm) to 502 Series (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
502 Series (18mm) to 501 Series (11mm)		502 to 501 Adaptor Plate w/PCB	Proprietary	NPTF	3/8"	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.

AVENTICS™ Series 503 Pneumatic Valve System

Mid-Station Supply Manifold Block Kit

Valve Series	Product Image (Example Only)	Description	Interface	Thread Type	Supply Port 1 Size	Part Number
503 Series (26mm)		Add additional supply and exhaust capacity to large manifold assemblies.	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
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
						G Tap	1/4	G503AFM42TA0020
					Proprietary	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
					Proprietary	Push-in Fittings	1/4	K503AFM42TA0010
							3/8	K503AFM43TA0010
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	√	√

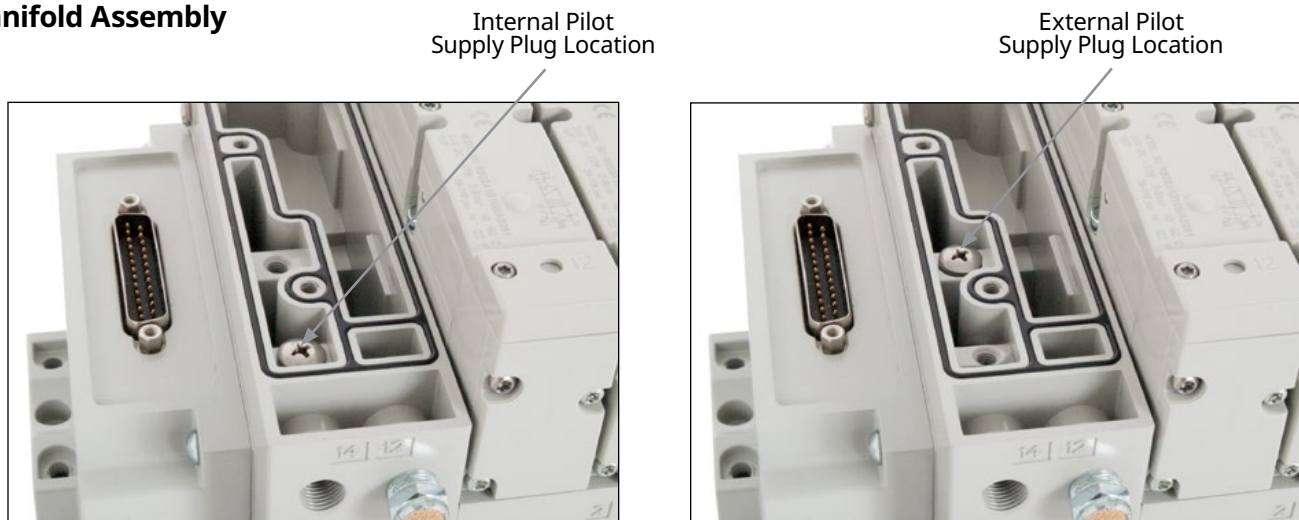
AVENTICS™ Series 503 Pneumatic Valve System

Internal/External Pilot Selection Individual Subbase



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

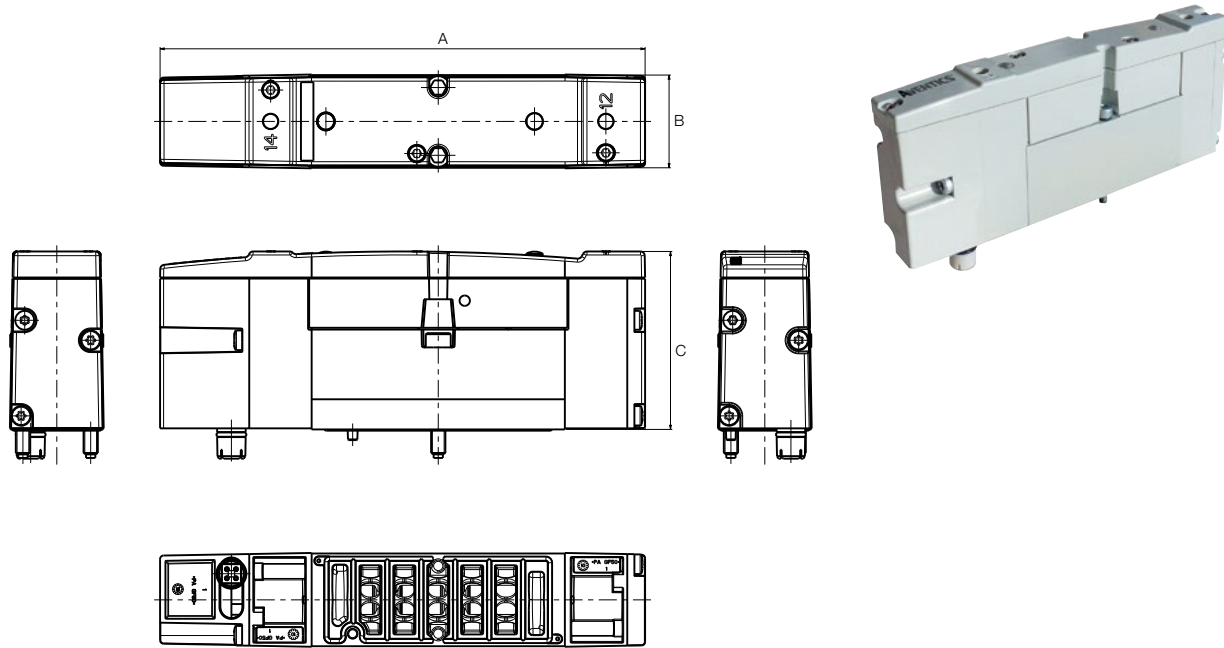


NOTE: Manifold Assemblies are factory set for internal pilot supply. To convert to external pilot supply install pilot supply seal screws 503 Series: 426188-001, as shown in the pictures.

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

503 Series Plug-in Valve



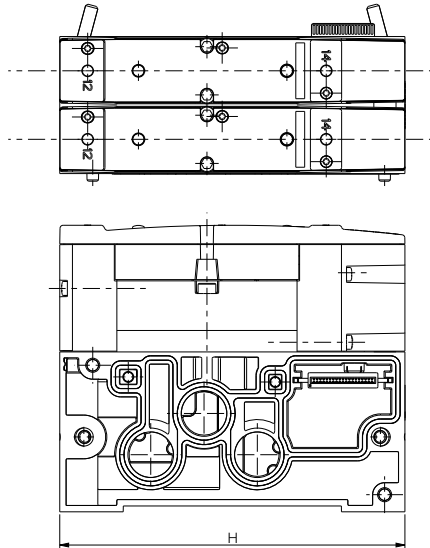
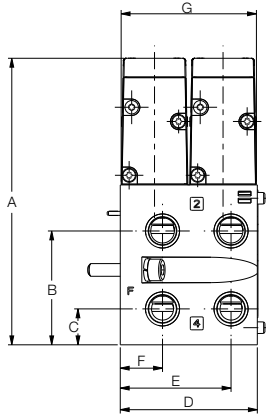
Weight	Valve Body	Manifold Block	End Plates
lbs (kg)	0.520 (0.236)	3.00 (1.36)	1.15 (0.52)

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

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

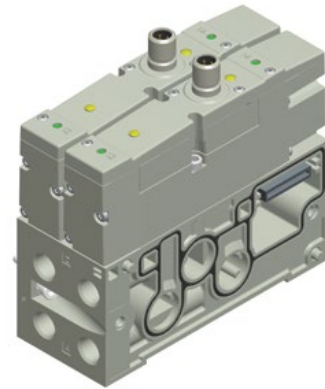
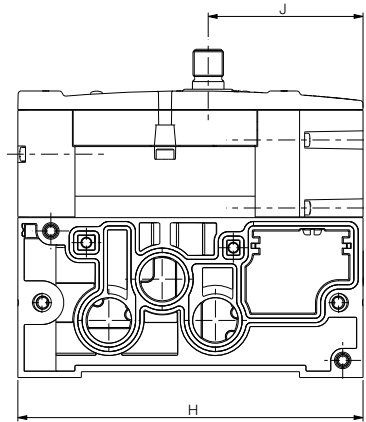
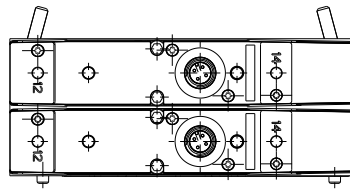
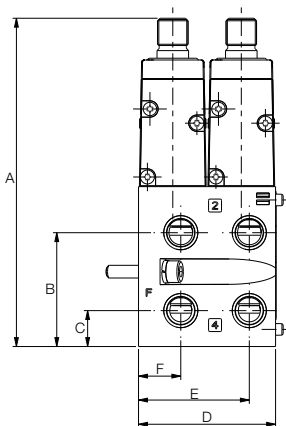
Plug-in Valve Mounted Plug-in Manifold Block



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



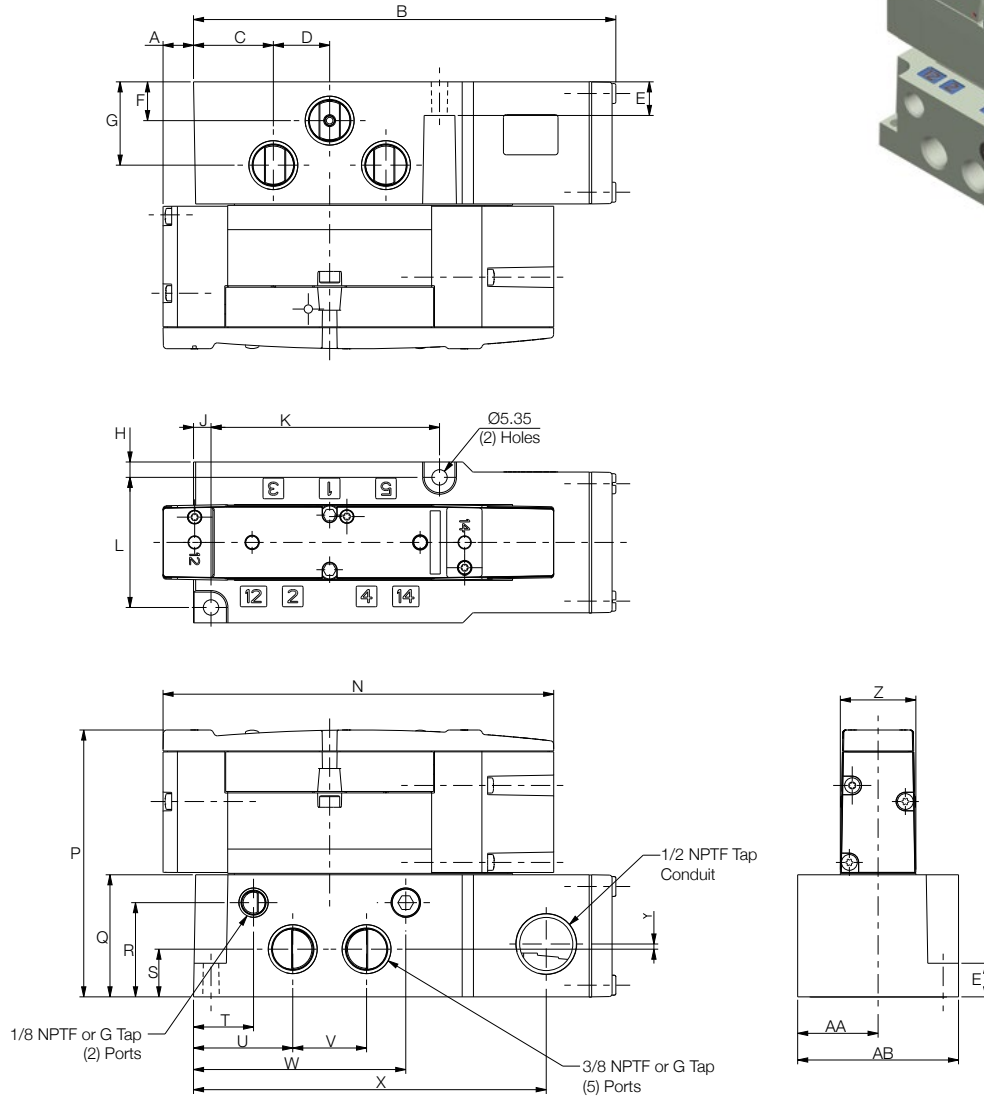
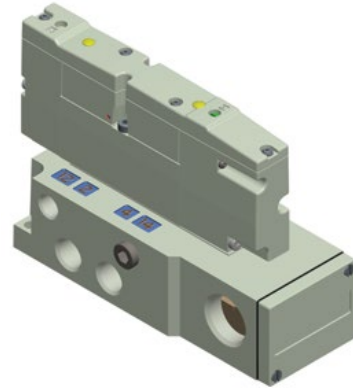
A	B	C	D	E	F	G	H	J
129.4 (5.094)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)	61 (2.4)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Plug-in Valve Mounted on Individual Subbase

Plug-in Individual Subbase



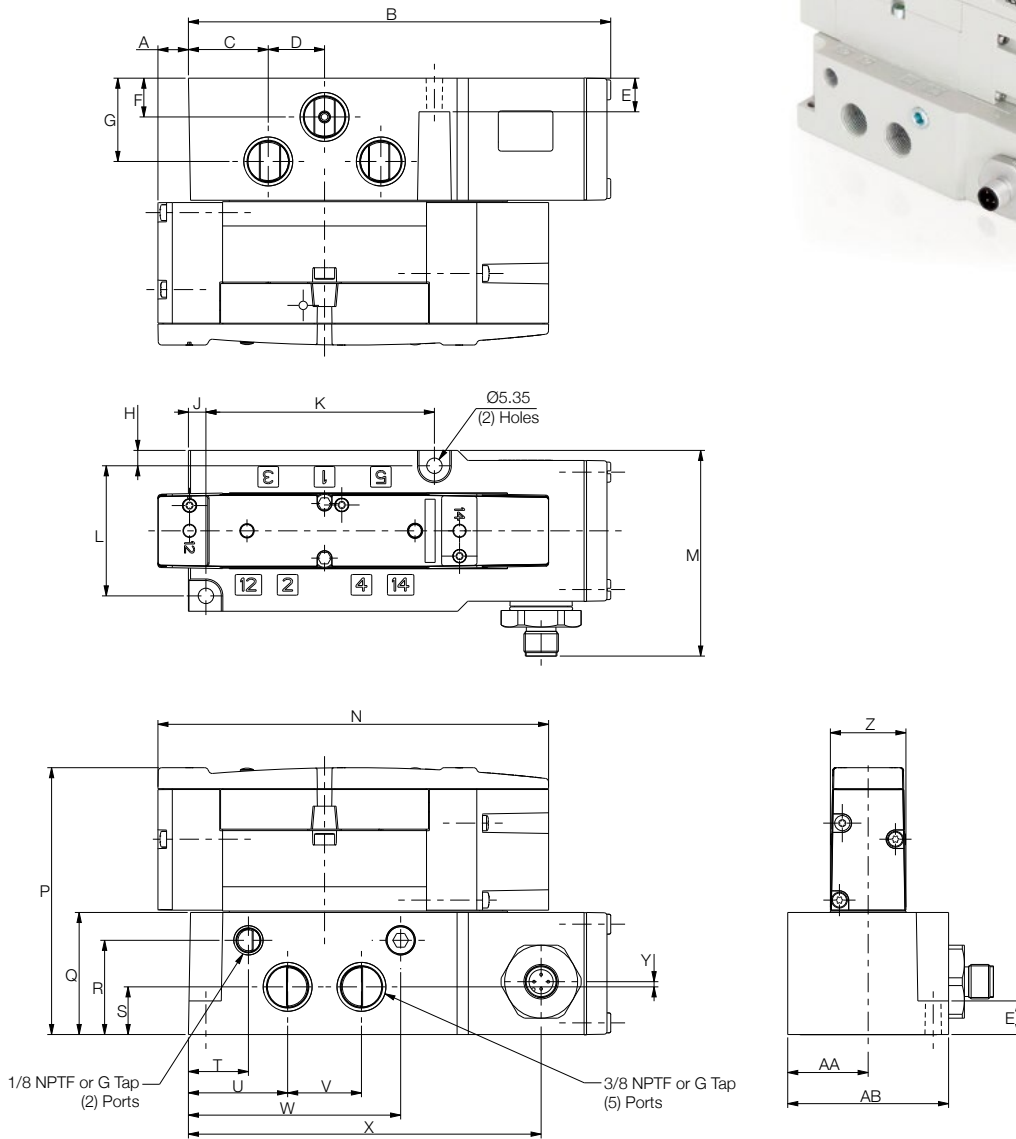
A	B	C	D	E	F	G	H	J	K	L	N	P
10.6 (0.417)	147 (5.787)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	136 (5.35)	92.9 (3.657)
Q	R	S	T	U	V	W	X	Y	Z	AA	AB	
42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	1.8 (0.071)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

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Plug-in Valve Mounted on Individual Subbase

M12 Individual Subbase (ISO 15407-2)



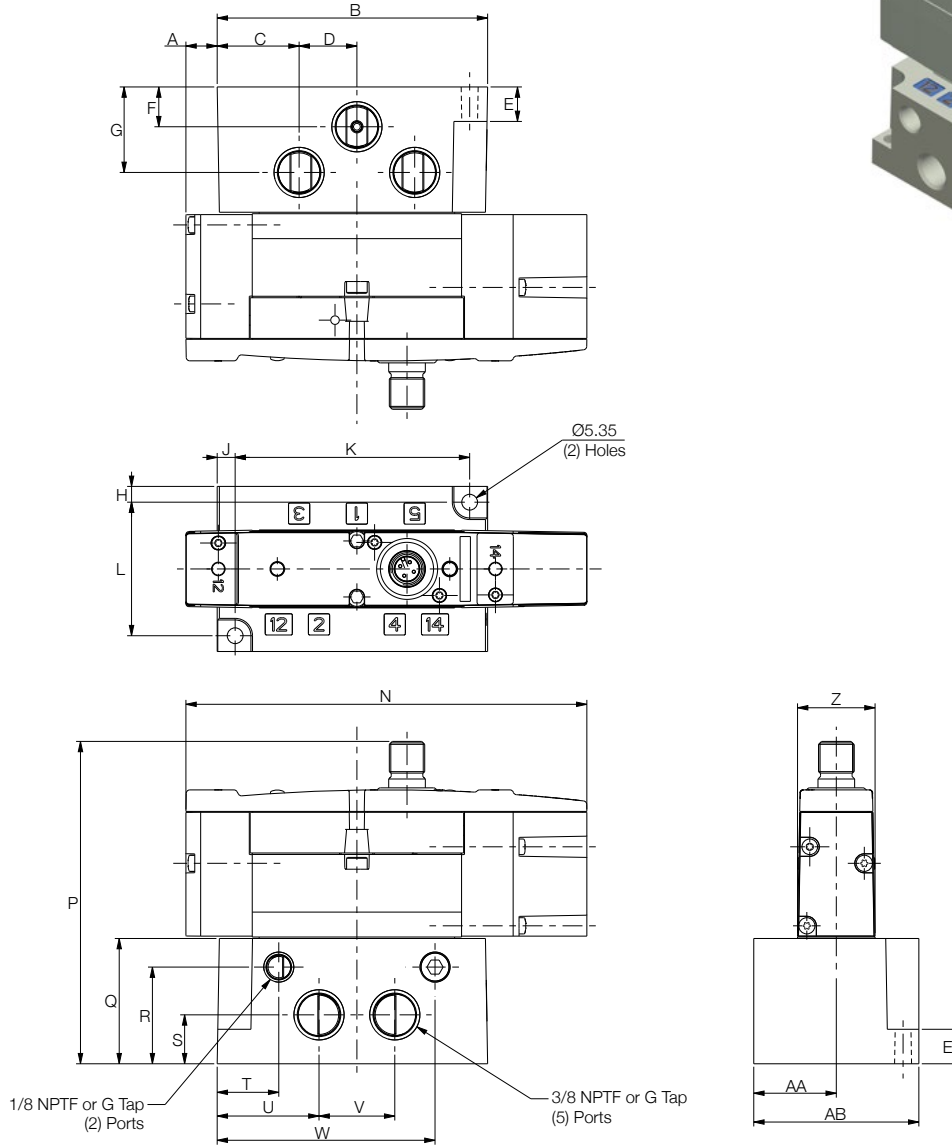
A	B	C	D	E	F	G	H	J	K	L	M	N
10.6 (0.417)	147 (5.787)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	71.6 (2.819)	136 (5.35)
P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB
92.9 (3.657)	42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	122.8 (4.835)	1.8 (0.071)	26.3 (1.04)	28 (1.1)	56 (2.2)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

M12 Valve Mounted on Individual Subbase

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

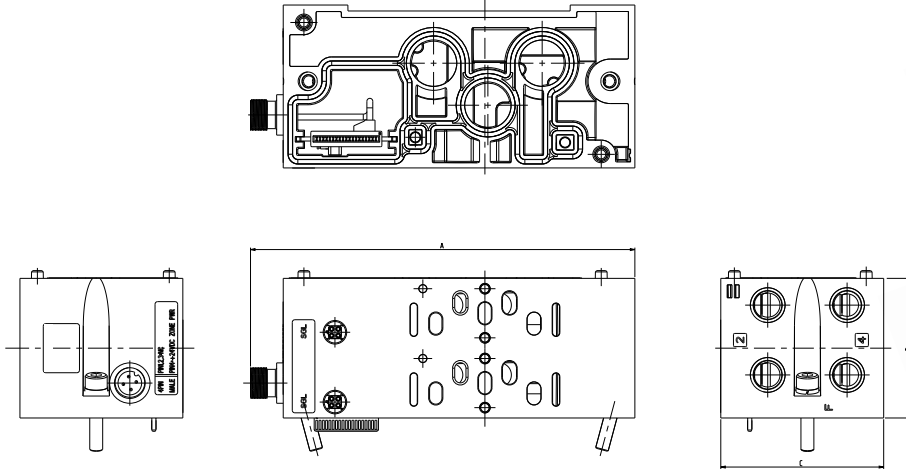


A	B	C	D	E	F	G	H	J	K	L	N	P
10.6 (0.417)	91.7 (3.61)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	136 (5.35)	109.4 (4.307)
Q	R	S	T	U	V	W	X	Y	Z	AA	AB	
42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	26.3 (1.04)	28 (1.1)	56 (2.2)	28 (1.1)	56 (2.2)	

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

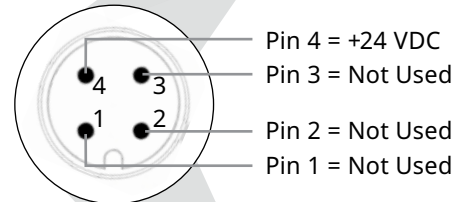
Plug-in V Wiring



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

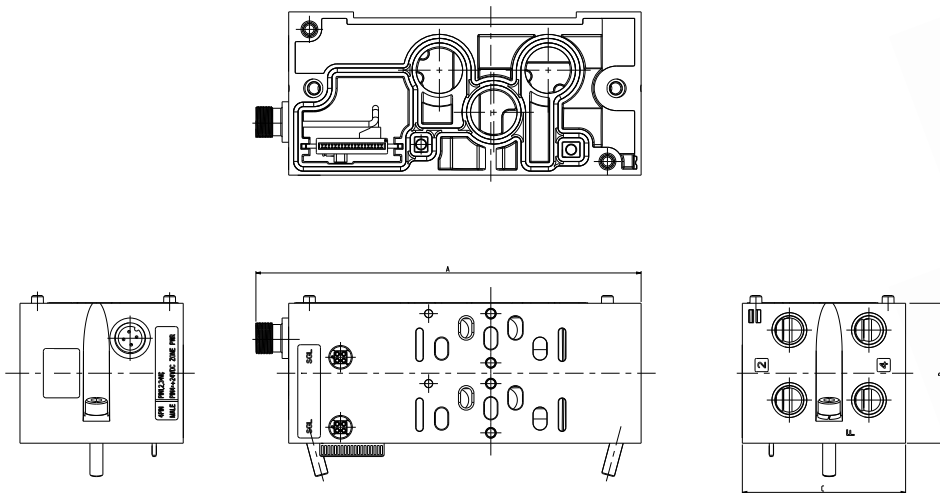


V & W Wiring Options



Dimensions: mm (inches)

Plug-in W Wiring

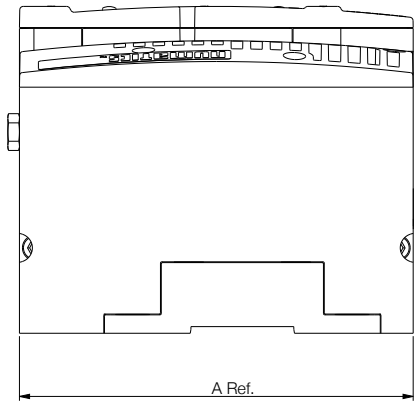
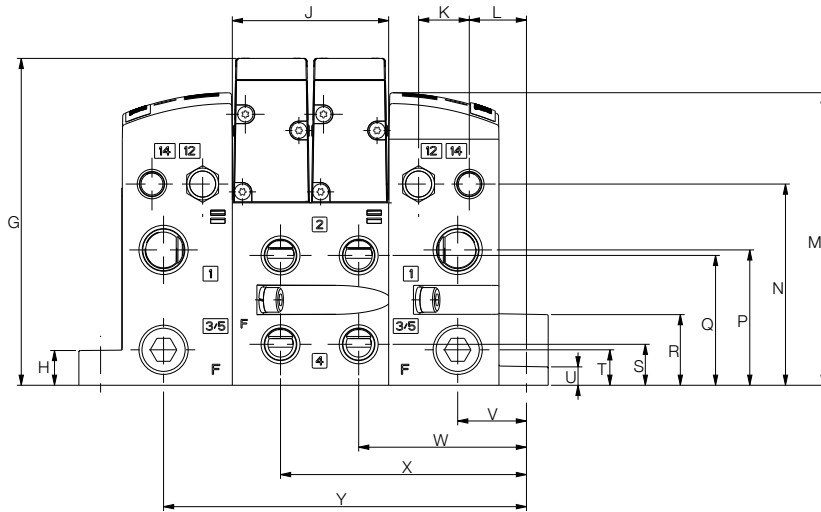
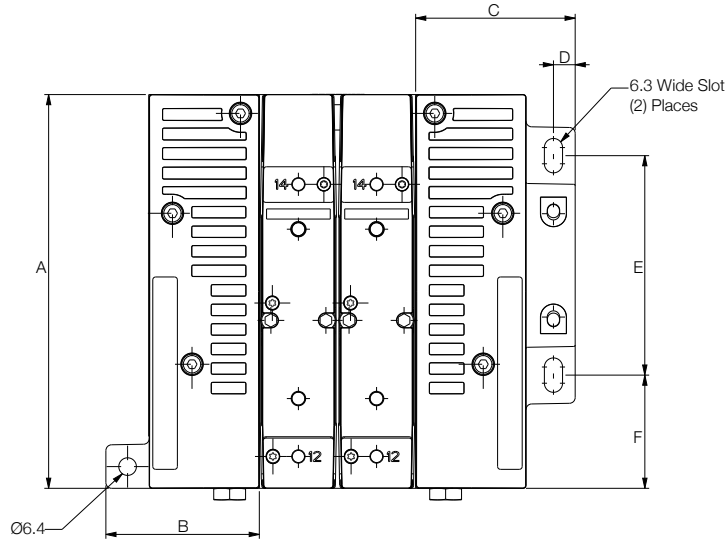


A	B	C
148.7 (5.85)	54 (2.13)	63 (2.48)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Manifold Assembly with Vertical End Plates

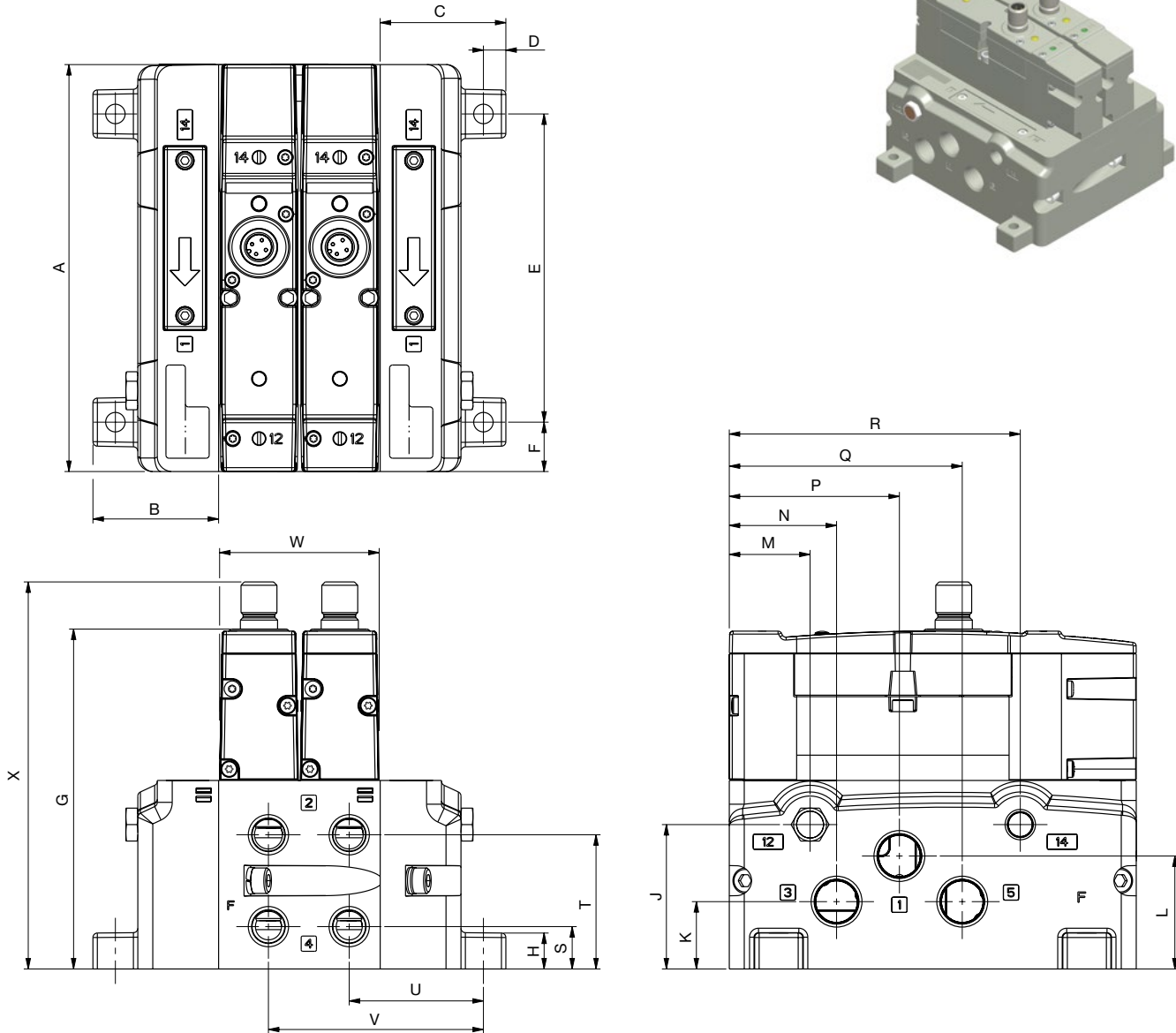
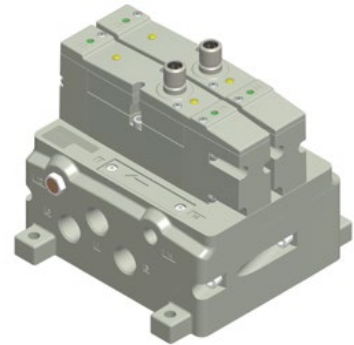


A	B	C	D	E	F	G	H	J	K	L	M
136 (5.354)	53 (2.087)	55.1 (2.17)	7.5 (0.3)	75.8 (2.98)	39.1 (1.54)	112.9 (4.445)	12 (0.47)	54 (2.13)	17.5 (0.69)	19.8 (0.78)	101.1 (3.98)
N	P	Q	R	S	T	U	V	W	X	Y	
69.5 (2.74)	46.8 (1.843)	44.9 (1.77)	24.4 (0.96)	14.2 (0.56)	12.3 (0.48)	6.4 (0.25)	23.8 (0.94)	58 (2.28)	85 (3.346)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

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Manifold Assembly with Horizontal End Plates



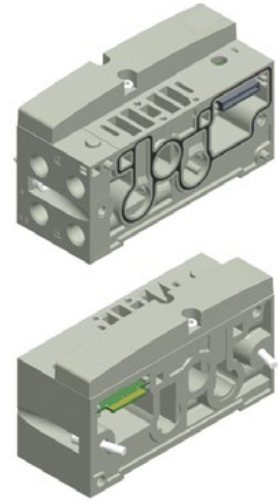
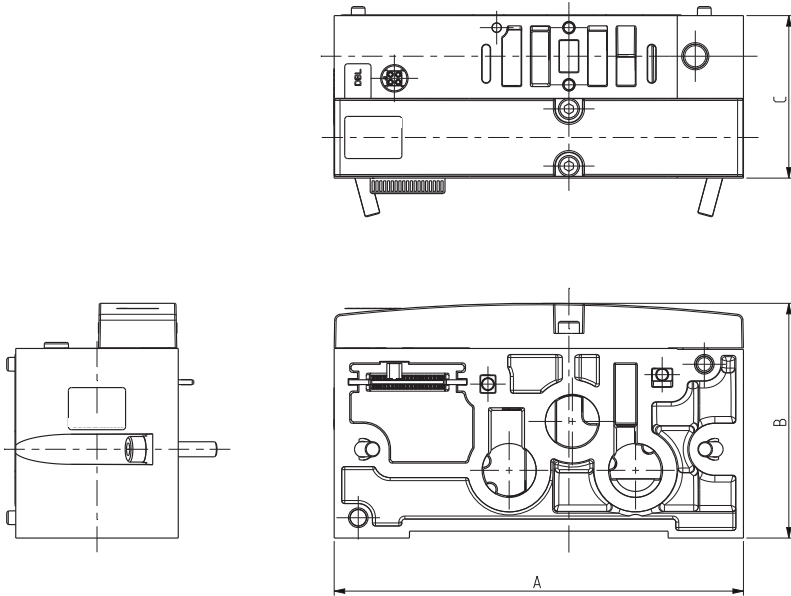
A	B	C	D	E	F	G	H	J	K	L
136.0 (5.35)	42.0 (1.65)	42.0 (1.65)	7.5 (0.30)	103.0 (4.06)	16.5 (0.65)	113.6 (4.47)	12.0 (0.47)	48.3 (1.90)	22.5 (0.89)	37.8 (1.49)

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)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

503 Series Mid-Station Supply Block

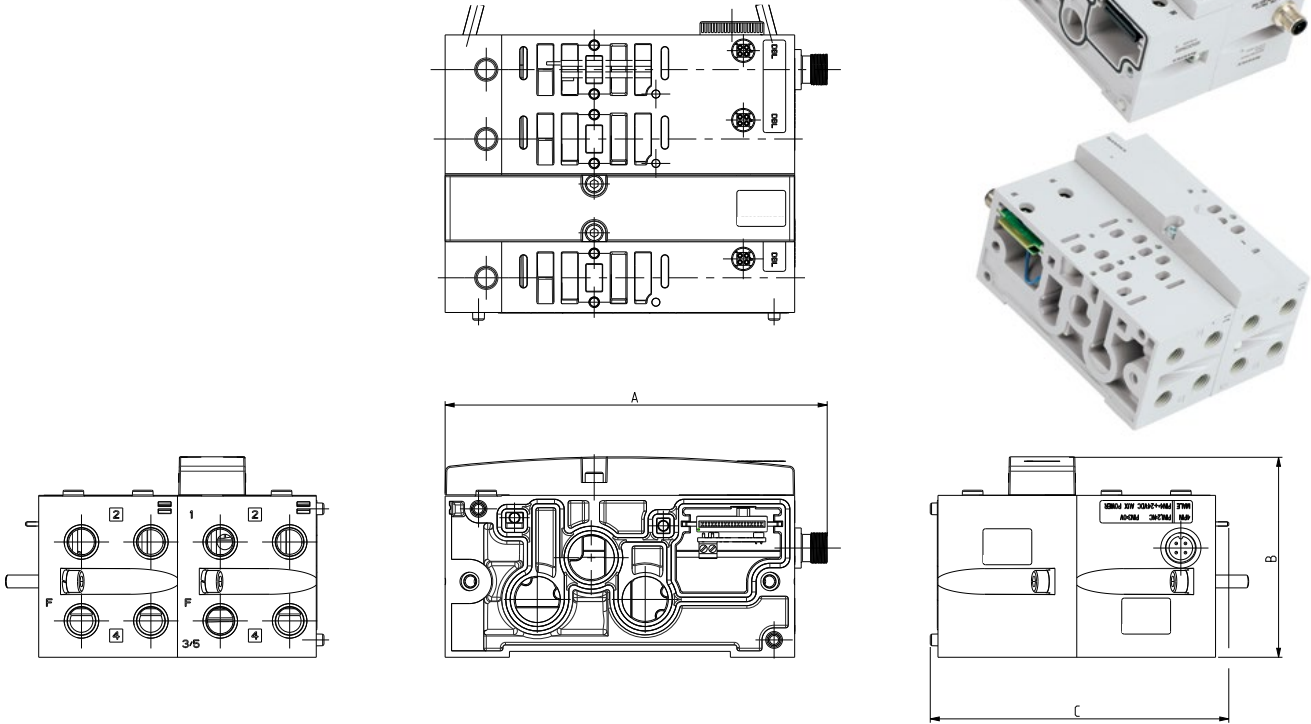


A	B	C
136 (5.35)	78 (3.07)	54 (2.13)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

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



Weight
lbs (kg)
2.60 (1.18)

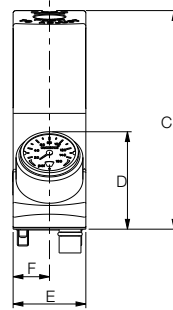
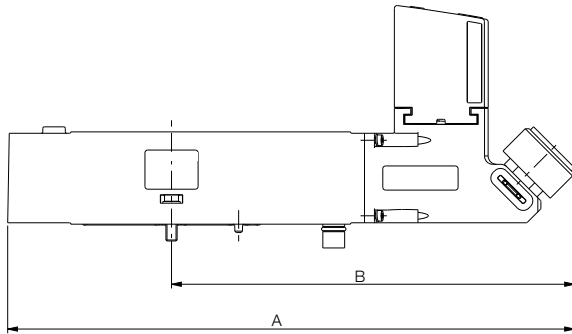
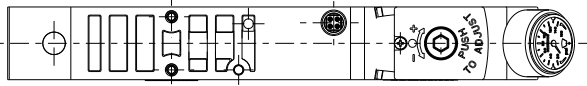
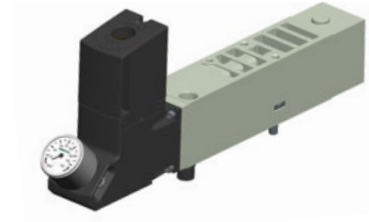
A	B	C
148.6 (5.85)	77.8 (3.06)	116.1 (4.57)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Pressure Regulator

Single Regulator

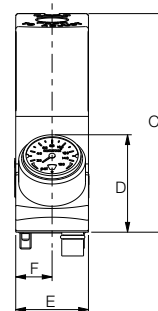
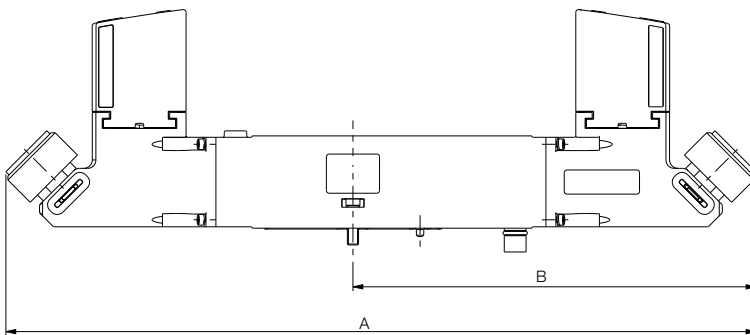
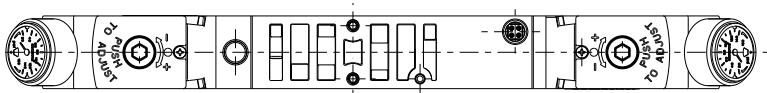


Weight	
lbs	(kg)
0.95	(0.43)

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



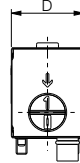
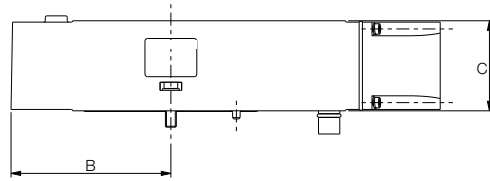
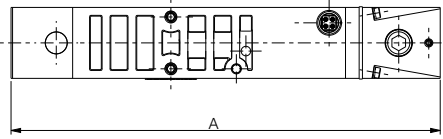
Weight	
lbs	(kg)
1.45	(0.66)

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)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Shut Off Block Kit

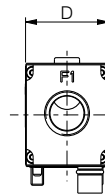
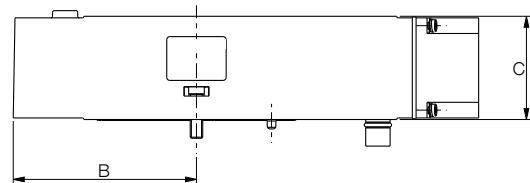
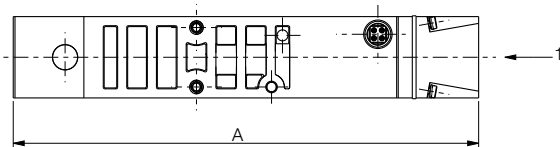


Weight
lbs (kg)
0.45 (0.20)

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



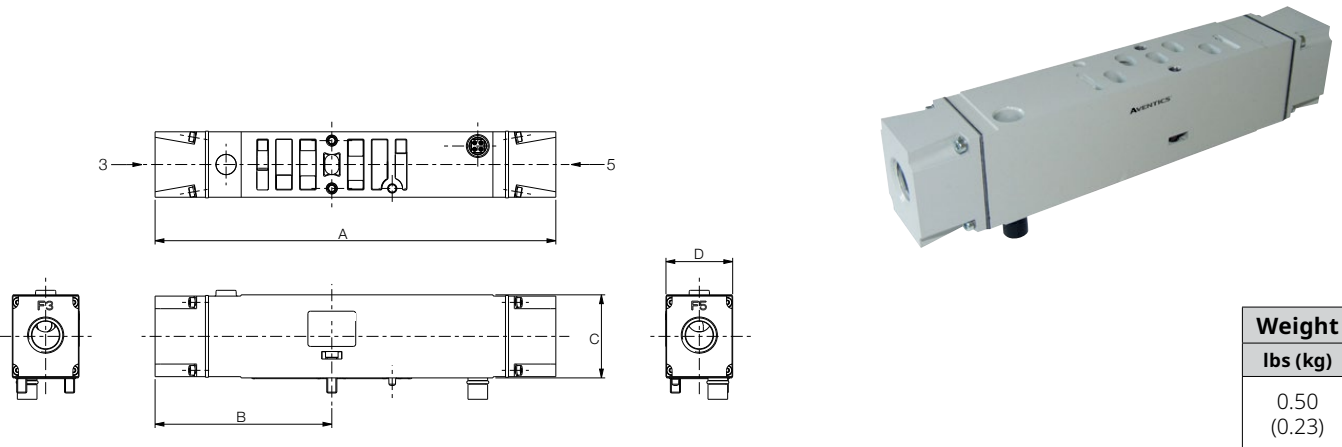
Weight
lbs (kg)
0.45 (0.20)

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

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Sandwich Exhaust Block Kit

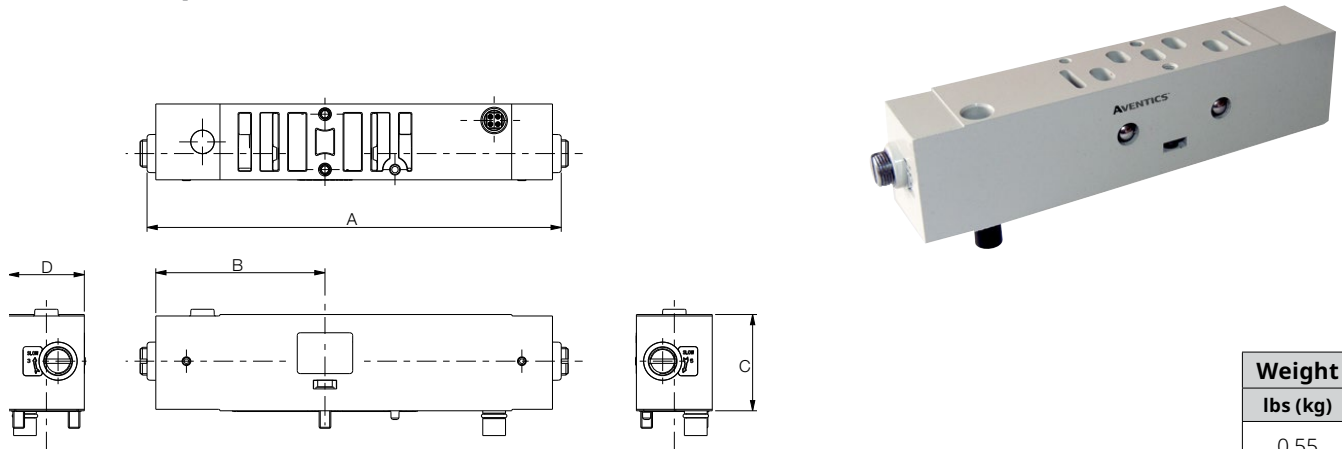


Weight	
lbs	(kg)
0.50	(0.23)

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



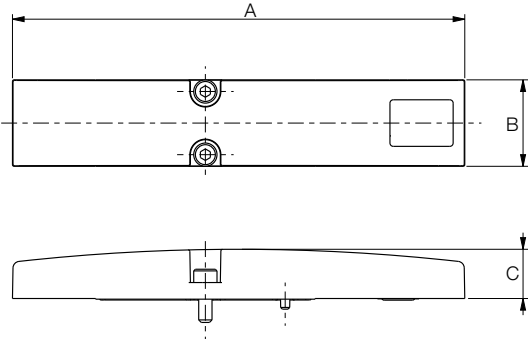
Weight	
lbs	(kg)
0.55	(0.25)

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

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Blank Station Plate Kit



Weight	
lbs (kg)	
0.20 (0.09)	

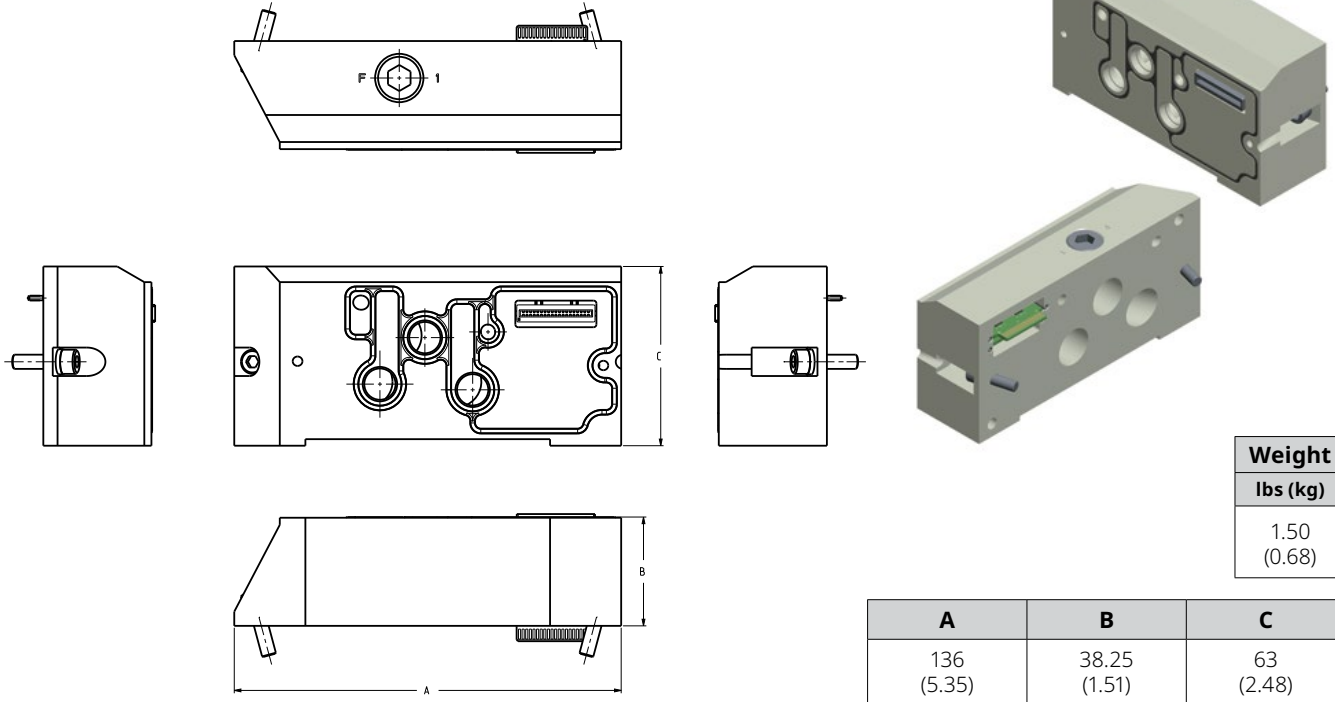
A	B	C
136 (5.354)	26 (1.024)	14.8 (0.58)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

Adaptor Plate Kit

503 Valve Series to 502 Valve Series



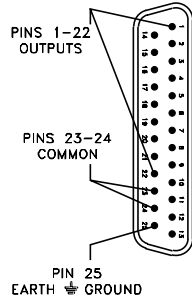
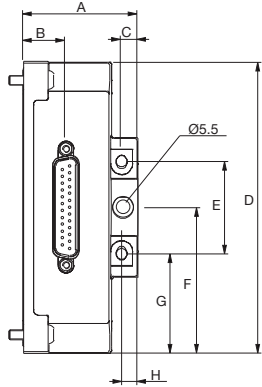
Weight	
lbs (kg)	
1.50	(0.68)

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

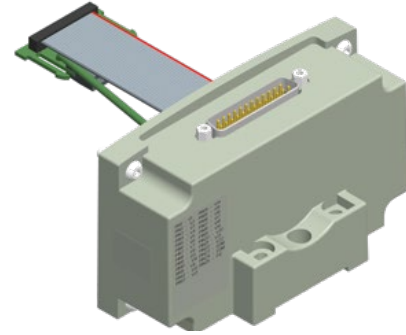
AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

25 Pin Sub-D Connector Kit

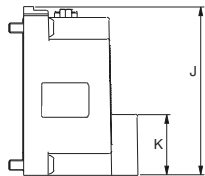


PIN1 = V1	PIN4 = V14
PIN2 = V2	PIN5 = V15
PIN3 = V3	PIN6 = V16
PIN4 = V4	PIN7 = V17
PIN5 = V5	PIN8 = V18
PIN6 = V6	PIN9 = V19
PIN7 = V7	PIN20 = V20
PIN8 = V8	PIN21 = V21
PIN9 = V9	PIN22 = V22
PIN10 = V10	PIN23 = COM
PIN11 = V11	PIN24 = COM
PIN12 = V12	PIN25 = P.E.
PIN13 = V13	



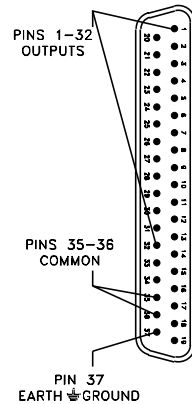
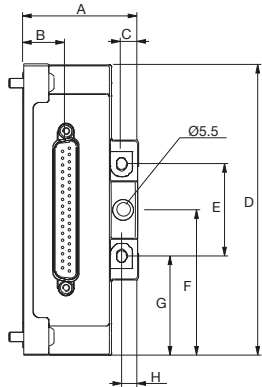
Weight
lbs (kg)
0.70 (0.32)

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)

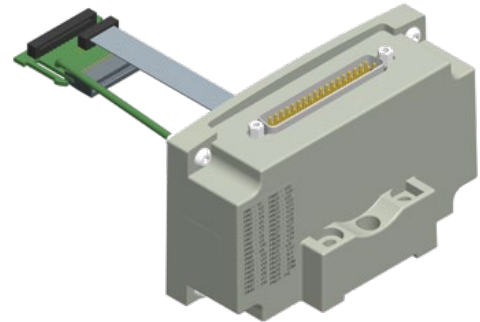


Dimensions: mm (inches)

37 Pin Sub-D Connector Kit

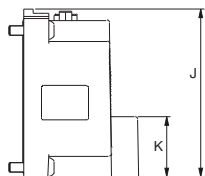


PIN1 = V1	PIN19 = V19
PIN2 = V2	PIN20 = V20
PIN3 = V3	PIN21 = V21
PIN4 = V4	PIN22 = V22
PIN5 = V5	PIN23 = V23
PIN6 = V6	PIN24 = V24
PIN7 = V7	PIN25 = V25
PIN8 = V8	PIN26 = V26
PIN9 = V9	PIN27 = V27
PIN10 = V10	PIN28 = V28
PIN11 = V11	PIN29 = V29
PIN12 = V12	PIN30 = V30
PIN13 = V13	PIN31 = V31
PIN14 = 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)

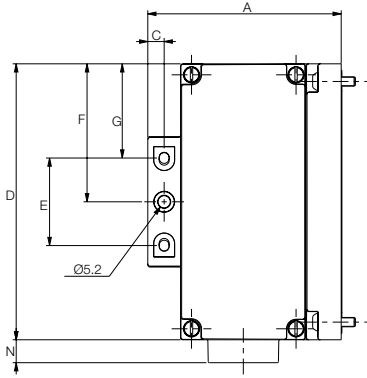
A	B	C	D	E	F	G	H	J	K
46.4 (1.827)	17 (0.669)	6.7 (0.26)	118 (4.65)	37.5 (1.48)	59 (2.32)	40.2 (1.58)	6.7 (0.26)	68.1 (2.68)	24.4 (0.96)



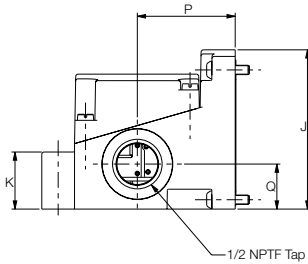
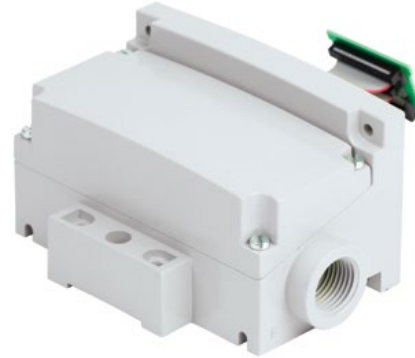
AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

1-32 Terminal Strip Kit



PIN6 = V18	PIN6 = P.E.
PIN7 = V17	PIN7 = COM
PIN8 = V16	PIN8 = COM
PIN5 = V15	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

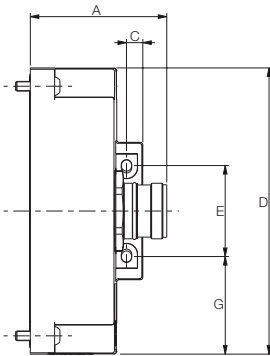
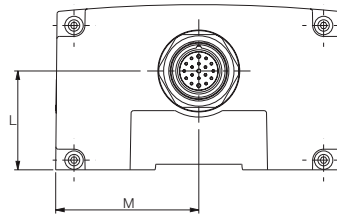
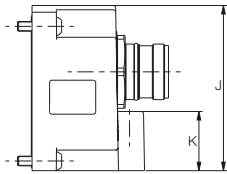


Weight
lbs (kg)
1.20 (0.54)

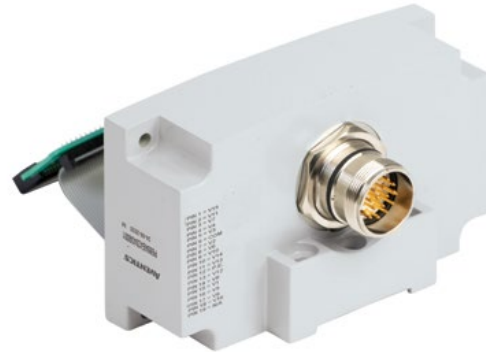
A	C	D	E	F	G	J	K	N	P	Q
82.7 (3.256)	7 (0.28)	118 (4.65)	37.5 (1.48)	59 (2.32)	40.2 (1.583)	68.1 (2.68)	24.4 (0.96)	9.8 (0.39)	41.9 (1.65)	19.3 (0.76)

Dimensions: mm (inches)

19 Pin M23 Connector Kit



PIN1 = V15
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 = V16
PIN19 = N/A



Weight
lbs (kg)
0.70 (0.32)

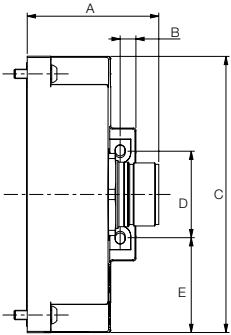
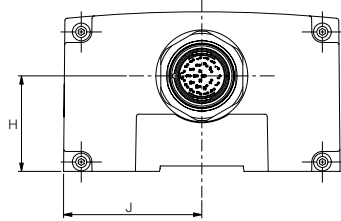
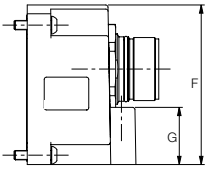
A	C	D	E	G	J	K	L	M
56.3 (2.217)	6.7 (0.26)	118 (4.65)	37.5 (1.48)	40.2 (1.583)	68.1 (2.68)	24.4 (0.96)	40.8 (1.61)	59 (2.323)

AVENTICS™ Series 503 Pneumatic Valve System

Dimensions: mm (inches)

26 Pin M27 Connector Kit

S



PIN8	: V18	PIN9	: P.E.
PIN7	: V17	PIN17	: COM
PIN6	: V16	PIN16	: COM
PIN5	: V15	PIN15	: N/A
PIN4	: V14	PIN14	: V32
PIN3	: V13	PIN13	: V31
PIN2	: 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

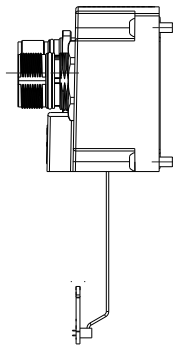
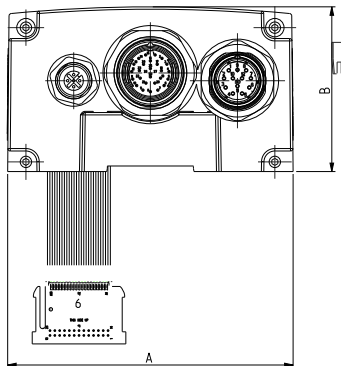
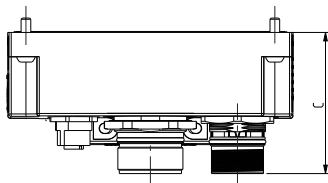
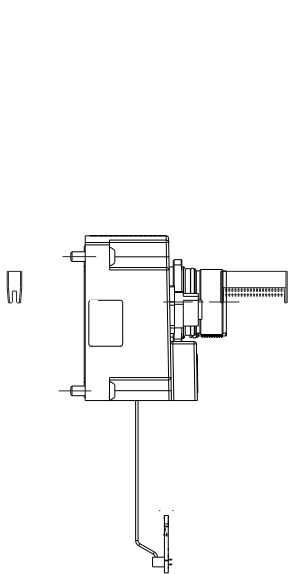


Weight	
lbs (kg)	
0.70	(0.32)

A	B	C	D	E	F	G	H	J
56.1	6.7	118	37.5	40.2	68.1	24.4	40.8	59
(2.209)	(0.264)	(4.65)	(1.48)	(1.58)	(2.68)	(0.961)	(1.61)	(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	: HBKD
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	68.1	58.4
(4.65)	(2.68)	(2.30)