

# AVENTICS™ Series 501 Panel Mount

## 501 Series – Panel Mount Solution

CE

### 501 Series Valve

- Solenoid air pilot actuated
- Low wattage 0.8 wall for DC application
- DC solenoids Polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- Push-In Fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- IP66 Certified
- Environmental Type Rating: NEMA 1, 4, 4X



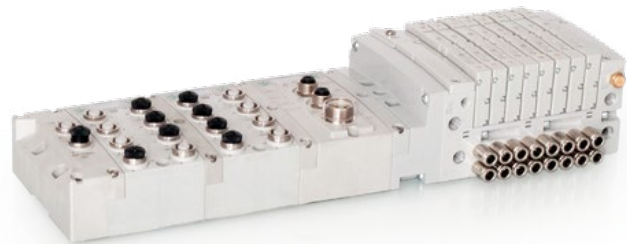
### Panel Mount Options

- Elimination of tubing and connections
- Adapter plate for direct mounting to cabinet walls
- Stainless steel or aluminum plate for 8, 12, 16, or 24 station manifolds
- Shut Off block for individual valve to be isolated from pressure supply during operation and repair



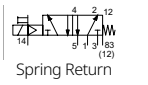
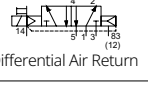
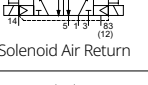
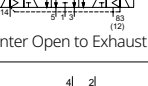
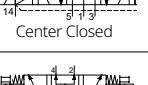
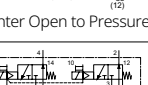

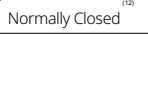
### Fieldbus Electronics Compatible

- G3 Fieldbus Electronics
  - Graphic Display for easy commissioning, visual status & diagnostics
  - 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
- 580 CHARM Electronics
  - Provides single connection from the field to DeltaV™ with Electronic Marshalling
  - Connects directly to the CHARM I/O baseplate via 2 cables which attach to CHARM column extender
  - Configures the same as any other CHARM on DeltaV™
  - Uses native capabilities of DeltaV™ for diagnostics of pneumatic valves
  - Brings CIOC (CHARM I/O Card) redundant communication and power connections to pneumatic valve manifolds



# AVENTICS™ Series 501 Panel Mount

## Performance Data

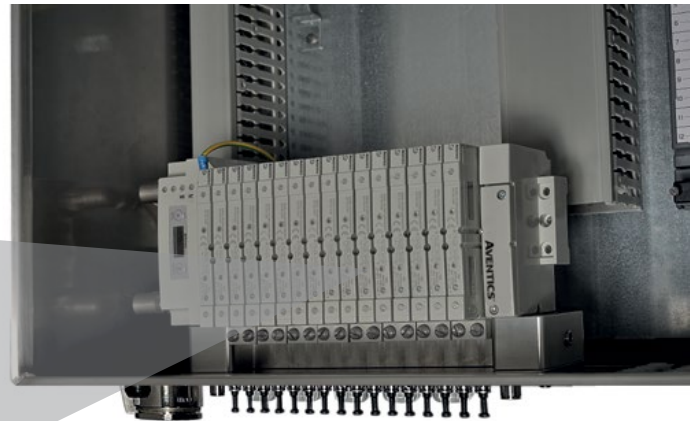
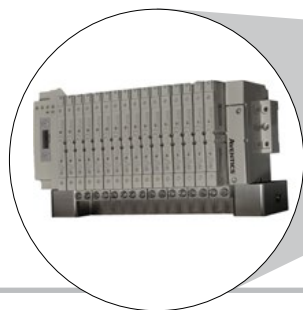
Function Type	Function Code	ISO Symbol  Pilot (14) Return (12)	Interface	Rated Flow		Response Time (ms)	Pilot Pressure at 73 °F/23 °C PSI (bar)		Operating Pressure Port 1 PSI (bar)/InHg (-bar)		Part Number
				at 90 PSI Cv (l/min (ANR))			min (Internal)	max (External)	min	max	
				1 → 2 1 → 4	2 → 3 4 → 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	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)

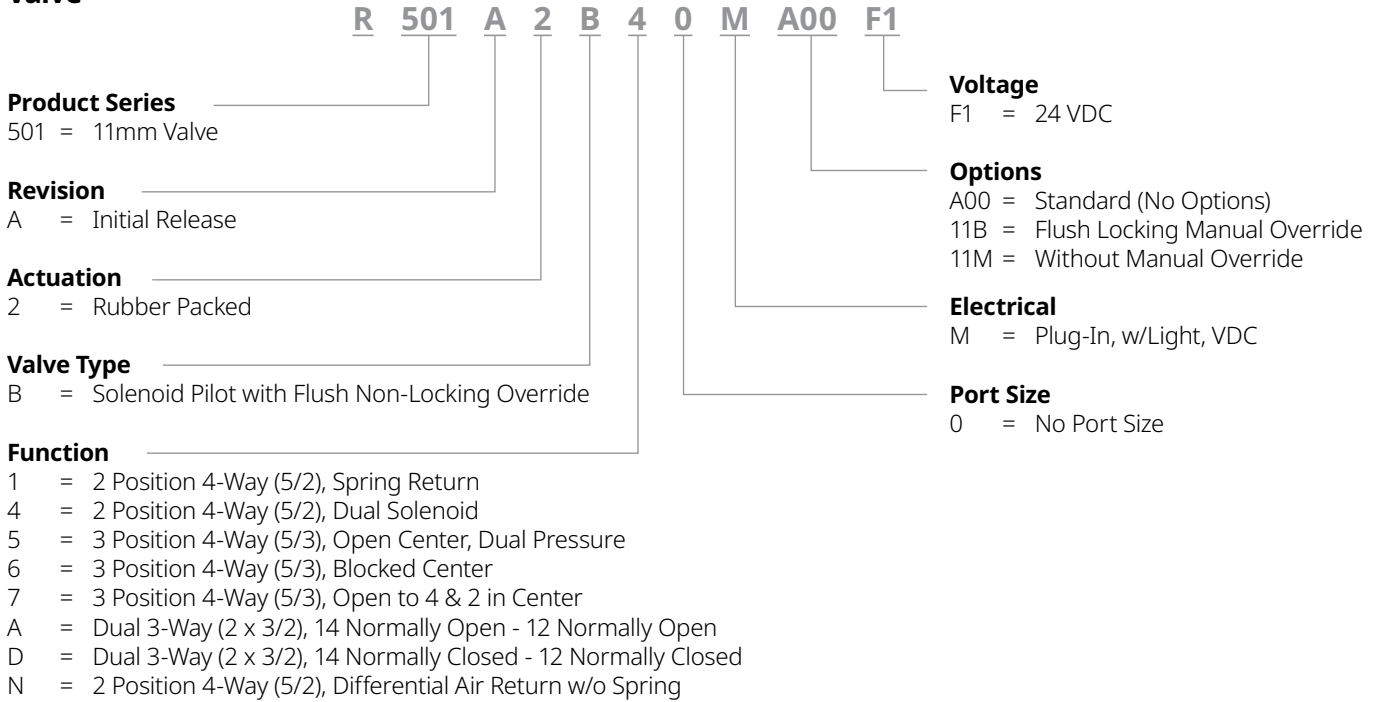


NOTE: The 501 Series Panel Mount achieves NEMA/UL type 1, 4, 4X, and IP 66 protection class when mounted in a NEMA/UL rated enclosure.

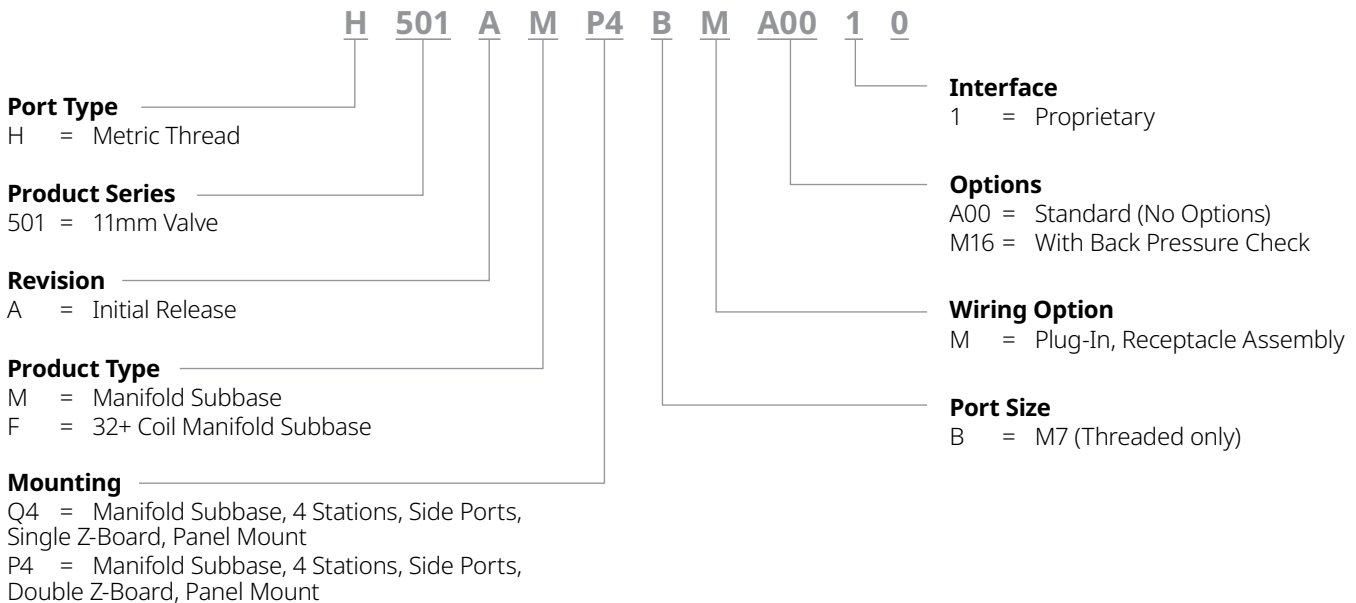
# AVENTICS™ Series 501 Panel Mount

## How to Order

### Valve



## Mounting



# AVENTICS™ Series 501 Panel Mount

## How to Order

### Panel Mount Kit

K 501 A C S H 2 F S 0 A00

#### Port Type

- 8 = NPTF
- G = ISO 228/1-G
- K = Push-In Fittings

#### Product Series

- 501 = 11mm Valve

#### Revision

- A = Initial Release

#### Product Type

- C = Panel Mount Assembly

#### Plate Style

- A = Aluminum
- <sup>1</sup>S = 316 Stainless Steel
- <sup>1 & 2</sup>V = 316 Stainless Steel w/Vertical Shut Off

#### Number of Valve Stations

- H = 8
- L = 12
- P = 16
- X = 24

#### Options

- A00 = Standard (No Options)
- 83F = External Mounting Flange

#### Fitting Type

- 0 = No Fittings
- F = Nickel Plated Brass Fitting w/FKM O-Ring
- N = Nickel Plated Brass Fitting w/NBR O-Ring
- S = Stainless Steel Fitting w/FKM O-Ring

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

- B = M7 (Threaded only)
- <sup>3</sup>D = 4mm (Push-In Fittings only)
- F = 6mm (Push-In Fittings only)
- 2 = 1/4 (Push-In Fittings only)

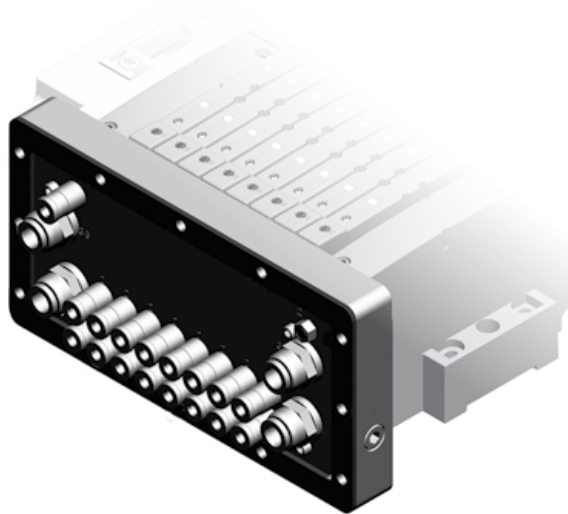
#### Supply and Exhaust Port Size (Ports 1, 3/5)

- 1 = 1/8 (Threaded only)
- 2 = 1/4 (Push-In Fittings)
- G = 5/16 (Push-In Fittings)
- H = 8mm (Push-In Fittings)

<sup>1</sup> Plate Styles S and V available with Fitting Type 0 or S only

<sup>2</sup> Plate Style V and Option 83F must be selected together

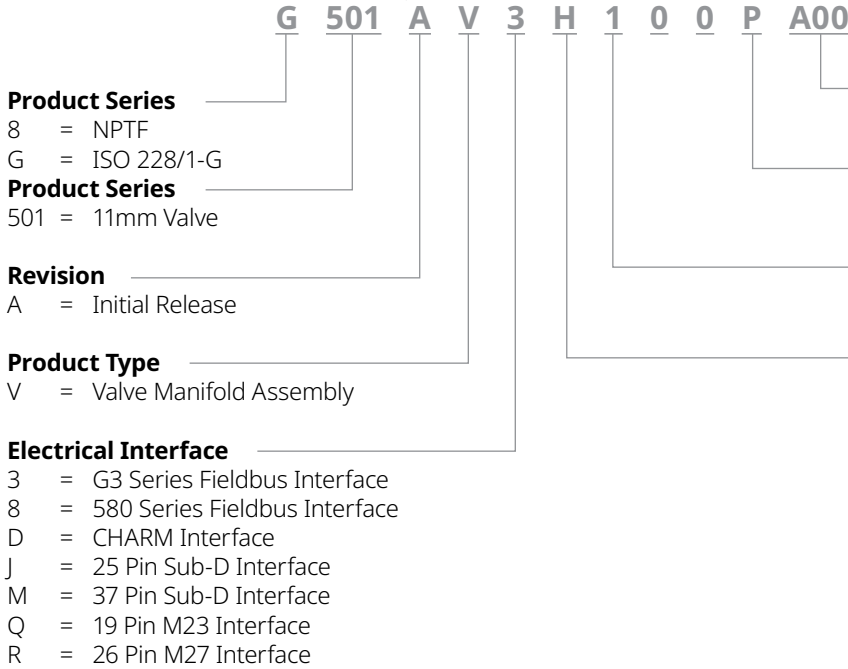
<sup>3</sup> Working Port Size D available with Plate Style A only



# AVENTICS™ Series 501 Panel Mount

## How to Order

### 501 Series Manifold Assembly for Panel Mount



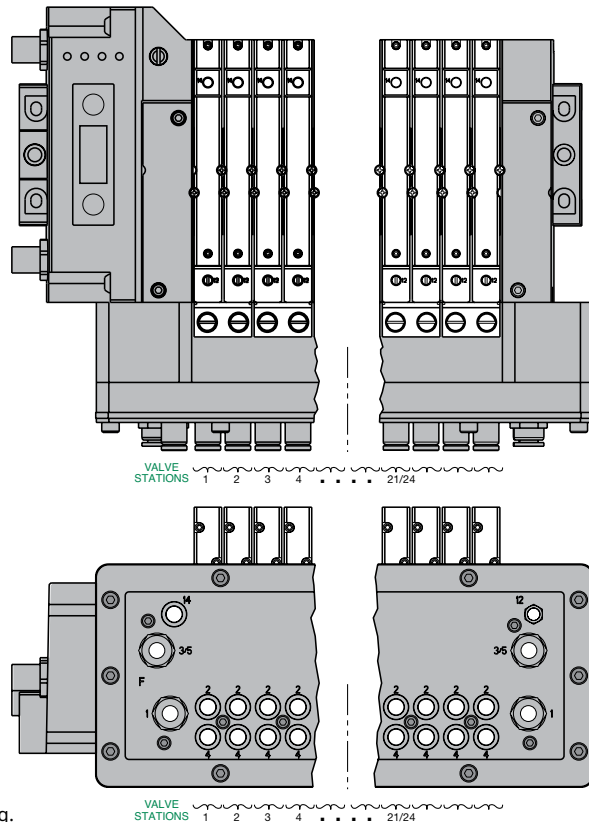
NOTE: See the Multipin Electrical Interface table for Max Solenoid Outputs.

## Sub-D and Round 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 24-Station Panel Assembly Shown

501 Series Assembly Kit	8501AV8X100PA00
Valve Station #1	R501A2B40MA00F1
Valve Station #2	R501A2B40MA00F1
Valve Station #3	R501A2B40MA00F1
Valve Station #4	R501A2B40MA00F1
Mounting #1	H501AMP4BMA0010
Mounting #5 (501 Series 64 Solenoid Manifold Subbase)	H501AFP4BMA0010
Valve Station #21	R501A2B40MA00F1
Valve Station #22	R501A2B40MA00F1
Valve Station #23	R501A2B40MA00F1
Valve Station #24	R501A2B40MA00F1
Mounting #6	H501AMP4BMA0010
580 Fieldbus Electronics	P580AEED1010A00
501 Series 24-Station Panel Mount Kit	8501ACSX1B00A00 Assembled

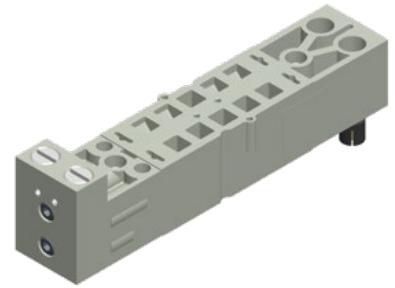
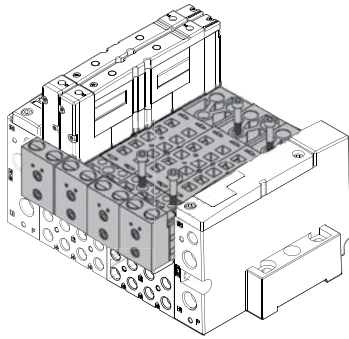
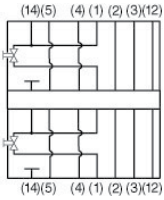


NOTE: For example order for Fieldbus Electronics, see 580 or G3 Fieldbus catalog.

# AVENTICS™ Series 501 Panel Mount

## Vertical Shut Off Block Kit





- Used to shut off pressure when mounted below valve
- Allows easy maintenance without the need to shut off pressure to the entire manifold



Part Number	Description
R501AY503875001	Proprietary Vertical Shut Off Kit

# AVENTICS™ Series 501 Panel Mount

## Multipin Electrical Interface





Multipin Electrical Interface	Product Image (Example Only)	Description	Part Number		Notes	Max # of Coils*
			501, 502 & 503 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		

\* 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 501 Panel Mount

## Accessories Kit


Accessories Kit	Product Image (Example Only)	Description	Port Number	Part Number				
				501 Series (11mm)				
Blank Station Plate Kit		Used to block off a manifold station for future use.	-	P501AB429685001				
Blocking Disc Kit		Used to isolate 1, 3 & 5 galleries of the manifold internally. NOTE: Includes tag to label ports blocked.	1	P501AD431915001				
			3	P501AD431915002				
			5	P501AD431915003				
			1 + 3	P501AD431915004				
			1 + 5	P501AD431915005				
			3 + 5	P501AD431915006				
			1, 3, 5	P501AD431915007				
Internal Muffler Element		Muffler element	-	427991-001				
		Thread Type	Tube Size	Qty.	501 Series (11mm)			
					Stainless Steel		Nickel Plated Brass	
					w/FKM O-Ring	w/NBR O-Ring	w/FKM O-Ring	
Fittings		M7	4mm	10/25*	-	H850A104B004N10	H850A104B004F10	
			6mm	10/25*	H851A104B104F10	H850A104B006N10	H850A104B006F10	
			1/4	10/25*	H851A104B004F10	H850A104B104N10	H850A104B104FN10	

\* Number of fittings per bag is determined by the last two digits in the part number.  
For example, H850A10B104F10 (10 fittings per bag) or H850A10B104F25 (25 fittings per bag).

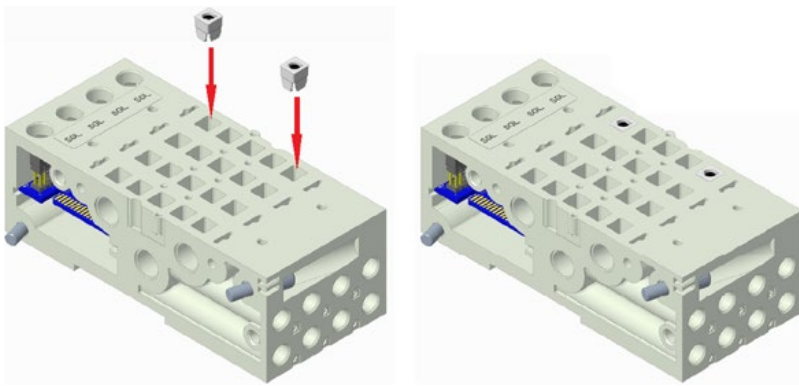


# AVENTICS™ Series 501 Panel Mount

## 501 Back Pressure Check Kit

Replacement Parts Kit	Product Image (Example Only)	Description	Parts Included	Restrictions	Part Number
Back Pressure Checks		Back pressure checks installed in ports 3 and 5 of the manifold blocks. Used to reduce/prevent back pressure into the valve.	2x Check Bodies and 2x Balls	Pressure must come from port 1 and exhaust must leave ports 3 and 5. Not allowed with Dual Pressure setup or Pilot supply from port 14 (no option 14X or combination thereof)	M501AU535182001

## Manifold Assembly



## Internal/External Pilot Selection

### Manifold Assembly

Internal Pilot Supply Plug Location

External Pilot Supply Plug Location



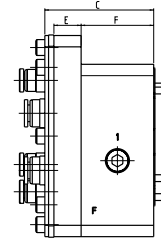
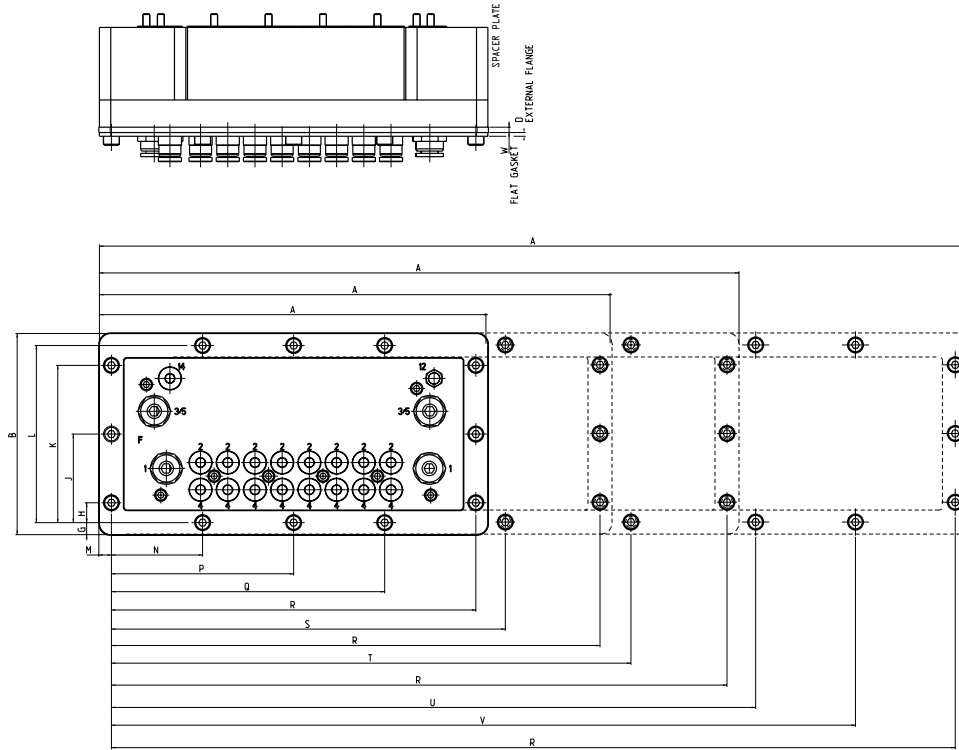
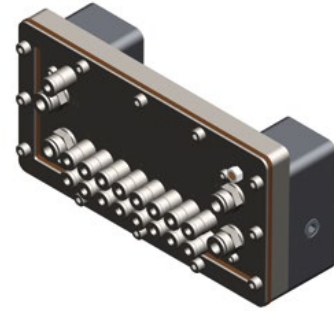
NOTE: Manifold Assemblies are factory set for internal pilot supply. To convert to external pilot supply install pilot supply seal screws 501 Series: 127-803.

# AVENTICS™ Series 501 Panel Mount

Dimensions: mm (inches)

## Panel Mount Kit

### 8-Station, 12-Station, 16-Station & 24-Station



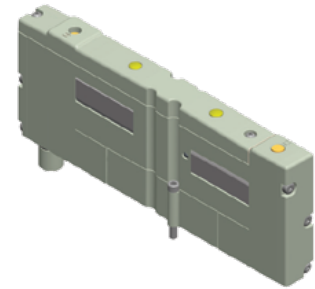
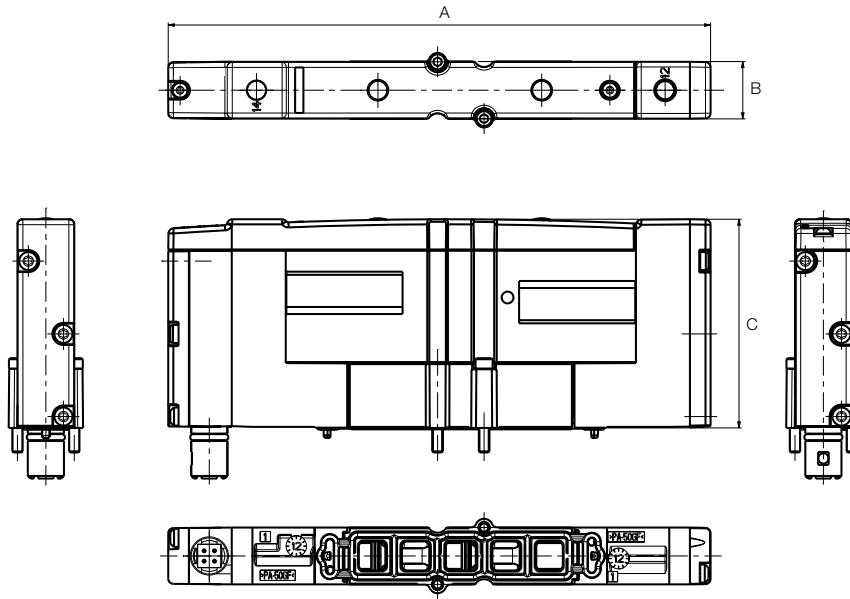
Stations	Weight lbs (kg)					
	Stainless Steel Panel Plate	Stainless Steel Panel Plate for Vertical Shut Off Block	Aluminum Panel Plate	Spacer Plate	External Support Flange	Flat Gasket
8	1.49 (0.68)	2.99 (1.36)	1.49 (0.68)	1.73 (0.79)	0.17 (0.08)	0.05 (0.02)
12	5.66 (2.57)	3.85 (1.75)	1.91 (0.87)	2.12 (0.96)	0.20 (0.09)	0.06 (0.03)
16	6.92 (3.14)	4.69 (2.13)	2.33 (1.06)	2.51 (1.14)	0.24 (0.11)	0.07 (0.03)
24	9.41 (4.27)	6.37 (2.89)	3.17 (1.44)	3.28 (1.49)	0.31 (0.14)	0.09 (0.04)

Stations	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	
8	171.3 (6.74)	88.7 (3.49)	48.0 (1.89)	2.0 (0.08)	12.0 (0.47)	32.0 (1.26)	5.3 (0.21)	8.75 (0.34)	39.05 (1.54)	69.35 (2.73)	78.1 (3.07)	5.3 (0.21)	40.2 (1.58)	80.35 (3.16)	120.5 (4.74)	160.7 (6.33)	-				2.36 (0.09)	
12	219.3 (8.63)	88.7 (3.49)	48.0 (1.89)	2.0 (0.08)	12.0 (0.47)	32.0 (1.26)	5.3 (0.21)	8.75 (0.34)	39.05 (1.54)	69.35 (2.73)	78.1 (3.07)	5.3 (0.21)	41.75 (1.64)	83.5 (3.29)	125.2 (4.93)	208.7 (8.22)	166.95 (6.57)	-				2.36 (0.09)
16	267.3 (10.52)	88.7 (3.49)	48.0 (1.89)	2.0 (0.08)	12.0 (0.47)	32.0 (1.26)	5.3 (0.21)	8.75 (0.34)	39.05 (1.54)	69.35 (2.73)	78.1 (3.07)	5.3 (0.21)	42.35 (1.67)	85.35 (3.36)	128.35 (5.05)	256.7 (10.11)	171.35 (6.75)	214.35 (8.44)	-		2.36 (0.09)	
24	363.3 (14.3)	88.7 (3.49)	48.0 (1.89)	2.0 (0.08)	12.0 (0.47)	32.0 (1.26)	5.3 (0.21)	8.75 (0.34)	39.05 (1.54)	69.35 (2.73)	78.1 (3.07)	5.3 (0.21)	44.0 (1.73)	88.0 (3.46)	132.0 (5.2)	352.0 (13.86)	176.0 (6.93)	220.0 (8.66)	264.0 (10.39)	308.0 (12.13)	2.36 (0.09)	

# AVENTICS™ Series 501 Panel Mount

Dimensions: mm (inches)

## 501 Series Plug-In Valve



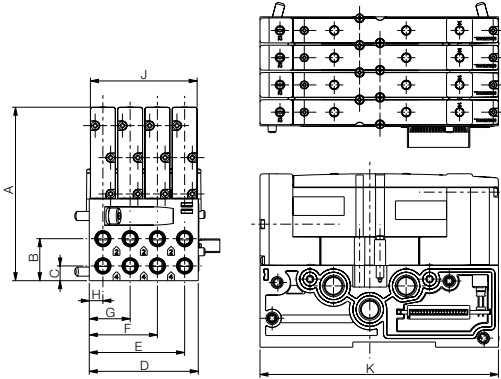
Weight	Valve Body	Manifold Block		End Plates
		3-Station	4-Station	
lbs kg)	0.205 (0.093)	0.50 (0.23)	0.60 (0.27)	1.20 (0.54)

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

# AVENTICS™ Series 501 Panel Mount

Dimensions: mm (inches)

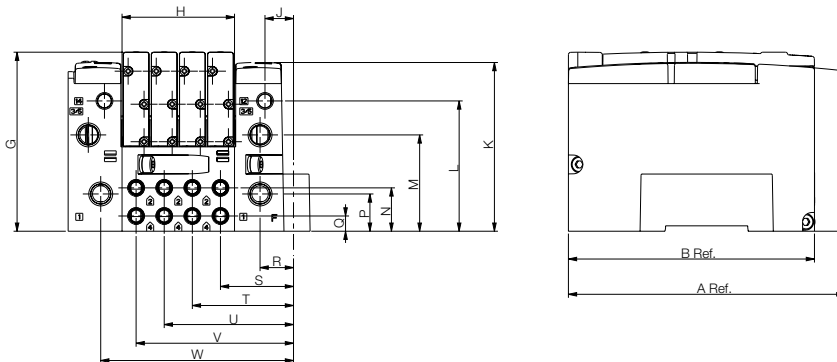
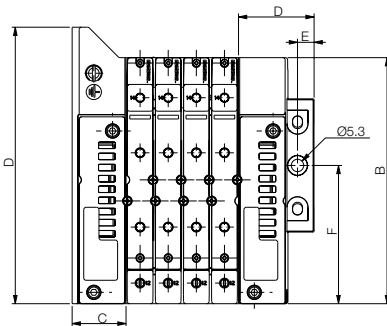
## Plug-In Valve Mounted 4-Station Manifold Block



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

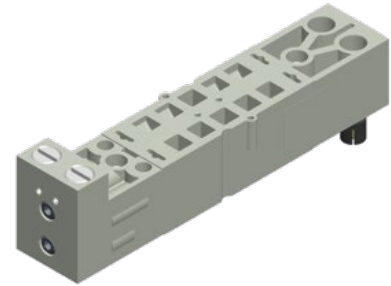
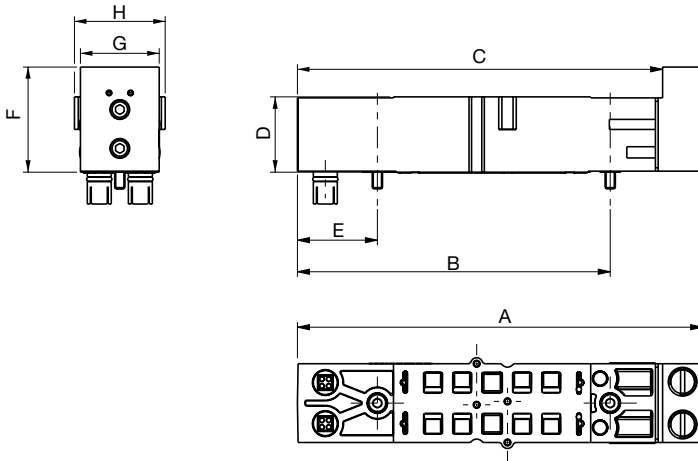


A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
118 (4.65)	105 (4.13)	23 (0.90)	32.3 (1.27)	7.1 (0.28)	59 (2.32)	76.4 (3.01)	48 (1.89)	12.2 (0.48)	72 (2.83)	55.6 (2.19)	41.1 (1.62)	18.5 (0.73)	15.9 (0.63)	6.5 (0.26)	14.3 (0.56)	31.2 (1.23)	43.2 (1.70)	55.2 (2.17)	67.2 (2.65)	82.3 (3.24)

# AVENTICS™ Series 501 Panel Mount

Dimensions: mm (inches)

## Vertical Shut Off Block Kit



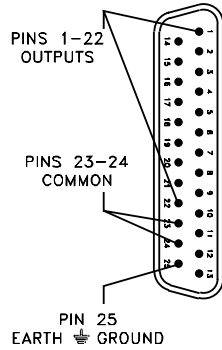
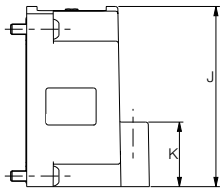
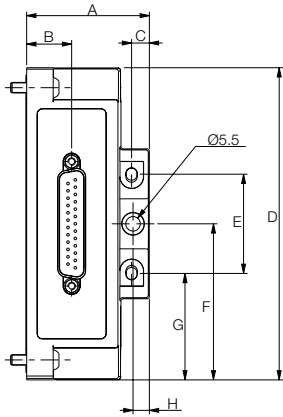
Weight	
lbs (kg)	
0.20	(0.09)

A	B	C	D	E	F	G	H
118.35 (4.659)	91.35 (3.596)	106.65 (4.199)	22 (0.866)	23.35 (0.919)	30.7 (1.209)	23 (0.906)	26.5 (1.043)

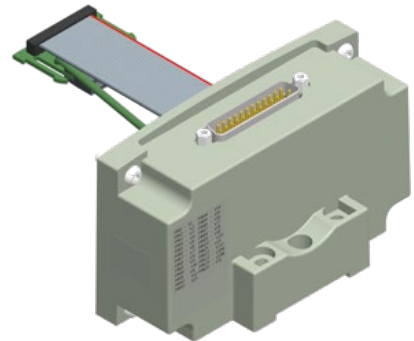
# AVENTICS™ Series 501 Panel Mount

Dimensions: mm (inches)

## 25 Pin Sub-D Connector Kit



PIN1 = V1	PIN4 = V4
PIN2 = V2	PIN5 = V5
PIN3 = V3	PIN6 = V6
PIN4 = V4	PIN7 = V7
PIN5 = V5	PIN8 = V8
PIN6 = V6	PIN9 = V9
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	

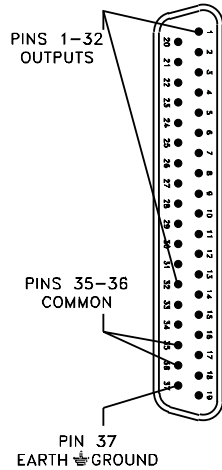
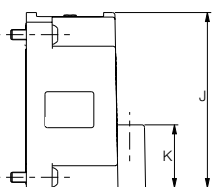
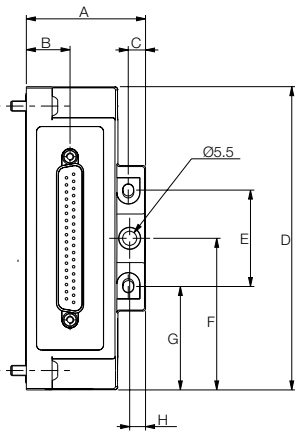


<b>Weight</b>
<b>lbs (kg)</b>
0.70 (0.32)

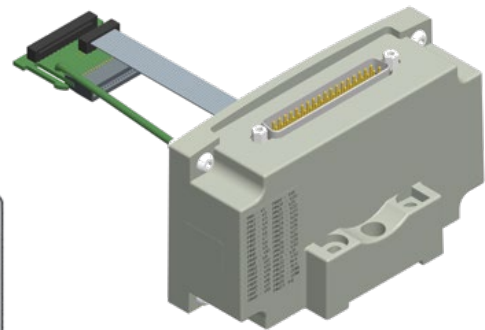
A	B	C	D	E	F	G	H	J	K
46.4 (1.827)	17 (0.669)	6.7 (0.26)	118 (4.65)	37.5 (1.48)	59 (2.32)	40.2 (1.58)	6.7 (0.26)	68.1 (2.68)	24.4 (0.96)

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.



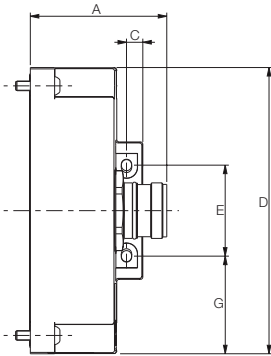
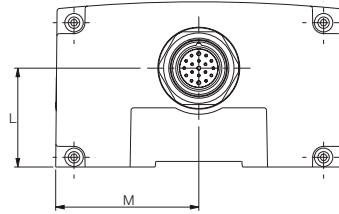
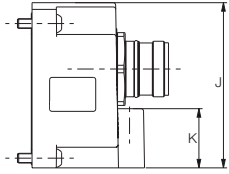
<b>Weight</b>
<b>lbs (kg)</b>
0.70 (0.32)

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 501 Panel Mount

Dimensions: mm (inches)

## 19 Pin M23 Connector Kit



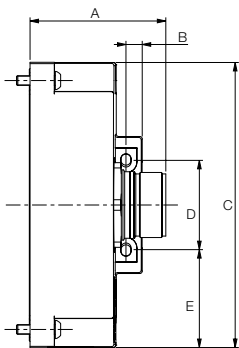
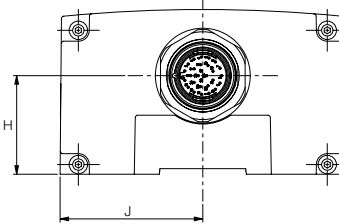
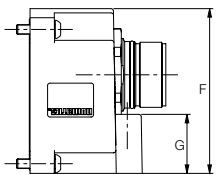
PIN1	=	V15
PIN2	=	V11
PIN3	=	V7
PIN4	=	V4
PIN5	=	V3
PIN6	=	COM
PIN7	=	V2
PIN8	=	V6
PIN9	=	V10
PIN10	=	V14
PIN11	=	V13
PIN12	=	P.E.
PIN13	=	V12
PIN14	=	V8
PIN15	=	V1
PIN16	=	V5
PIN17	=	V9
PIN18	=	V16
PIN19	=	N/A

Weight	
lbs (kg)	
0.70	(0.32)

A	C	D	E	G	J	K	L	M
56.3	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



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	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)