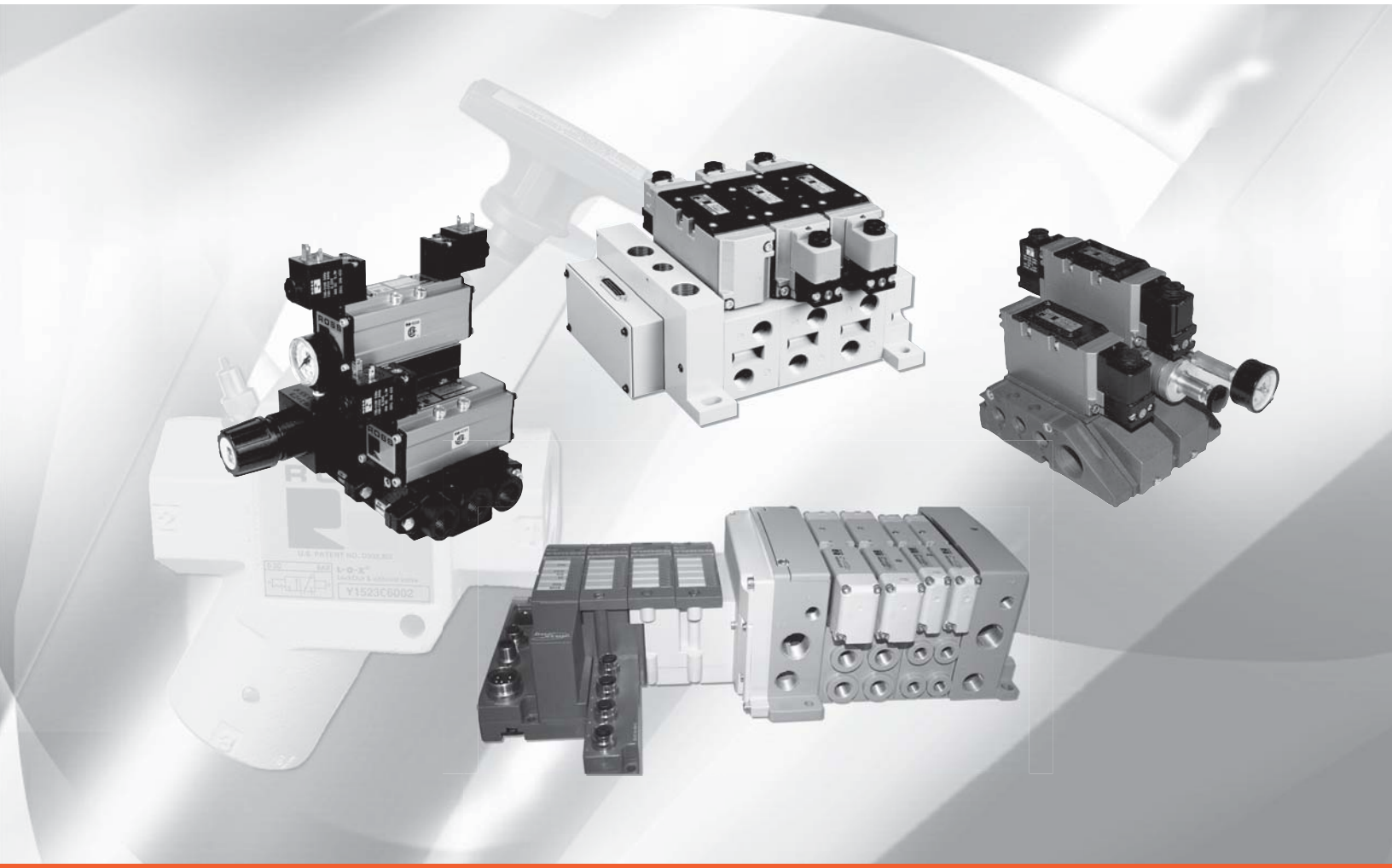
ROSS CONTROLS®

Base Mounted Valves and Serial Bus Communication



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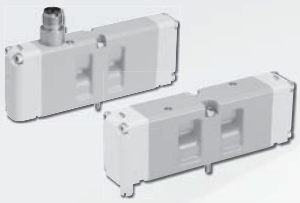
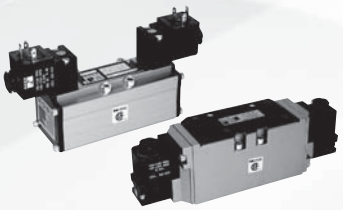
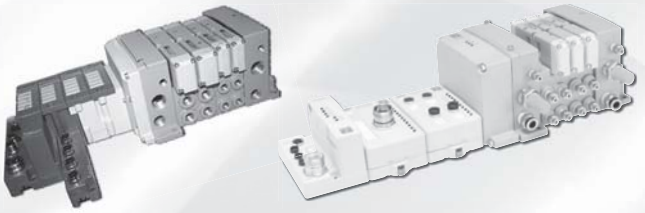


ISO 15407-1 & 2

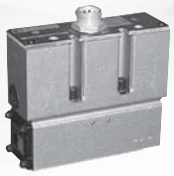


ISO 5599/I & /II



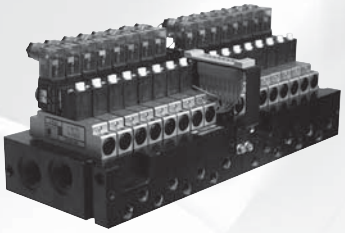
Serial Communications

ANSI



SAE

Miniature 14 Series



Solenoid Pilot Valves Pack

VALVE TYPE	VALVE SERIES	DESCRIPTION			AVAILABLE PORT SIZES								FUNCTIONS										Page
		ISO Size	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	3/2 Single	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center	5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Direct Solenoid Control	Pressure Control	
ISO																							
ISO 15407-1	W66	00 (18mm)	■		■									■	■	■	■	■	0.55	■			A1.3 - A1.6
	W66	0 (26mm)	■			■								■	■	■	■	■	1.1	■			A1.3 - A1.6
ISO 15407-2	W66	00 (18mm)	■		■									■	■	■	■	■	0.55	■			A1.7 - A1.11
	W66	0 (26mm)	■			■								■	■	■	■	■	1.1	■			A1.7 - A1.11
ISO 5599/I	W60 & W64	1	■	■	■	■	■							■	■	■	■	■	0.8	■		■	A2.3 - A2.10
	W60 & W64	2	■	■			■	■						■	■	■	■	■	1.9	■		■	A2.3 - A2.10
	W60 & W64	3	■	■				■	■					■	■	■	■	■	3.8	■		■	A2.3 - A2.10
ISO 5599/II	W65	1	■			■	■							■	■	■	■	■	0.8	■		■	A2.11 - A2.19
	W65	2	■				■	■						■	■	■	■	■	1.9	■		■	A2.11 - A2.19
	W65	3	■					■	■					■	■	■	■	■	3.8	■		■	A2.11 - A2.19
SERIAL BUS COMMUNICATIONS																							
ROSS Serial Bus Communications																							A3.1 – A3.11
ROSS Serial Bus System with TURCK Modular I/O																							A4.1 - A4.10
ANSI																							
	W70 & W74	1	■	■		■	■							■	■	■	■	■	1.0	■	■	■	A5.1 - A5.15
	W70 & W74	2.5	■	■			■	■						■	■	■	■		2.5	■	■	■	A5.1 - A5.15
	W70 & W74	4	■	■			■	■	■					■	■	■	■		4.2	■	■	■	A5.1 - A5.15
	W70 & W74	10	■	■					■	■	■			■	■	■	■	■	10.0	■		■	A5.1 - A5.15
	W70 & W74	20	■	■							■	■		■	■	■	■	■	22.0	■		■	A5.1 - A5.15
SAE																							
	80 & 84	125	■	■	■	■	■							■	■	■	■	■	1.8	■			A6.1 - A6.10
	80 & 84	250	■	■		■	■	■	■					■	■	■	■	■	5.7	■			A6.1 - A6.10
	80 & 84	500	■	■				■	■	■				■	■	■	■		8.0	■			A6.1 - A6.10
MINIATURE																							
	W14			■	■														0.1	■			A7.3
PACK VALVE																							
	PACK			■	■	■							■	■					0.1	■			A7.4 - A7.5

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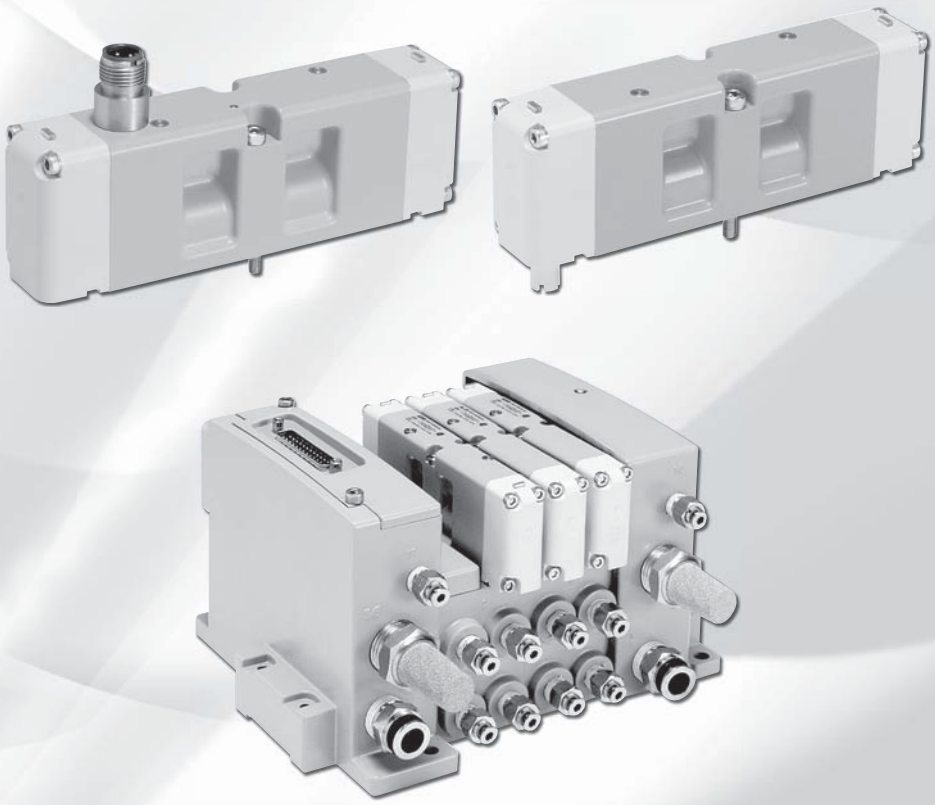
ROSS CONTROLS®

ISO 15407-1 & 15407-2 VALVES
W66 SERIES



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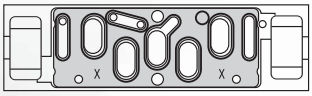
ISO W66 SERIES VALVES – KEY FEATURES

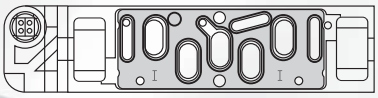
- ISO Sizes 00 (18mm) & 0 (26mm)
- Drop cord (15407-1) & Plug-In (15407-2) options
- 5/2 Single, 5/2 Double, & 5/3 Double Solenoid Pilot Controlled Valves
- Serial Bus Communication compatible
- UL, C-UL, and CE certified

Standard Definitions

15407-1: Drop-cord Standards for Size 0 (26mm) & Size 00 (18mm) Wide Valves

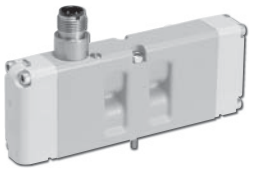


15407-2: Plug-in Standards for Size 0 (26mm) & Size 00 (18mm) Wide Valves



VALVE TYPE	VALVE SERIES	DESCRIPTION			AVAILABLE PORT SIZES								FUNCTIONS										Page
		Size	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	3/2 Single	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center	5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Direct Solenoid Control	Pressure Control	
ISO																							
ISO 15407-1	W66	00 (18mm)	■		■									■	■	■	■	■	0.55	■			A1.3 - A1.4
	W66	0 (26mm)	■			■								■	■	■	■	■	1.1	■			A1.3 - A1.4
Single Sub-Bases, Manifold Bases & End Station Kits																							A1.5-A1.6
Accessories																							A1.6
ISO 15407-2	W66	00 (18mm)	■		■									■	■	■	■	■	0.55	■			A1.7 - A1.8
	W66	0 (26mm)	■			■								■	■	■	■	■	1.1	■			A1.7 - A1.8
Single Sub-Bases & Manifold Bases																							A1.9
End Station Kits & Accessories																							A1.10 - A1.11

5-Way 2-Position Valves, Single Solenoid Pilot Controlled, Spring Return



HOW TO ORDER

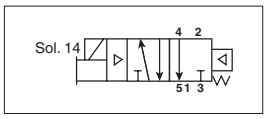
(Choose your options (in red) to configure your valve model number.)

W66	76	A	0	4	61	W

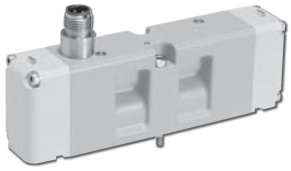
ISO Size	
00 (18mm)	0
0 (26mm)	1

Options		
Non-Locking Overrides	Internal Pilot - 61	
	External Pilot - 81	
Locking Overrides	Internal Pilot - 71	
	External Pilot - 91	

Voltage	
24 VDC	W
120 VAC	Z



5-Way 2-Position Valves, Double Solenoid Pilot



HOW TO ORDER

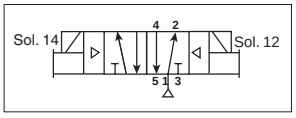
(Choose your options (in red) to configure your valve model number.)

W66	76	A	0	4	67	W

ISO Size	
00 (18mm)	0
0 (26mm)	1

Options		
Non-Locking Overrides	Internal Pilot - 67	
	External Pilot - 87	
Locking Overrides	Internal Pilot - 77	
	External Pilot - 97	

Voltage	
24 VDC	W
120 VAC	Z

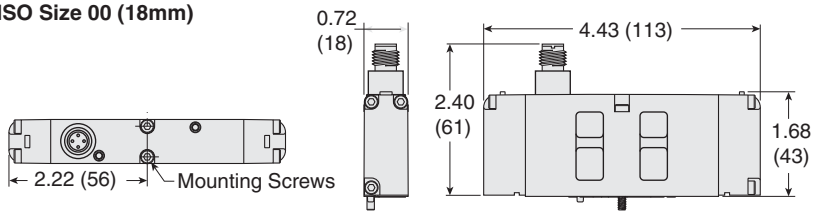


Technical Information

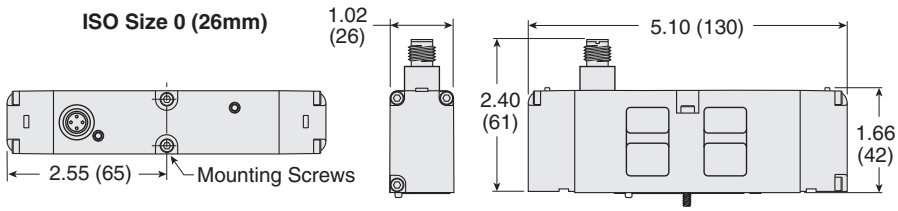
ISO Size	Valve Type	Avg. C_v	Weight lb (kg)
00 (18mm)	5/2 Single	0.55	0.3 (0.15)
00 (18mm)	5/2 Double	0.55	0.4 (0.16)
0 (26mm)	5/2 Single	1.1	0.6 (0.25)
0 (26mm)	5/2 Double	1.1	0.6 (0.25)

Valve Dimensions – inches (mm)

ISO Size 00 (18mm)



ISO Size 0 (26mm)



*** Sub-bases and manifold bases ordered separately, refer to page A1.5-A1.6.**

Accessories ordered separately, refer to page A1.6.

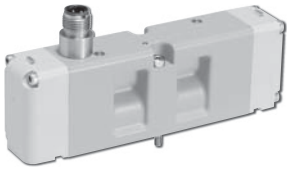
STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Solenoids: Bi-polar, surge suppression (standard), indicator lights.
Standard Voltages: 1.0, 24 volts DC; 2.0 VA, 120 volts AC.
Flow Media: Filtered air; 5-micron recommended.
Operating Pressure: Vacuum to 145 psig (9.9 bar).
Minimum Operating Pressure:
2-position: 20 psig (1.37 bar).
3-position: 30 psig (2.07 bar).

Materials of Construction:
Valve Body: Die Cast Aluminum.
End Caps: Polybutylene Terephthalate (PBT).
Fasteners: Zinc Plated Steel.
Coils: Thermoset Plastic.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

5-Way 3-Position Valves, Double Solenoid Pilot Controlled



HOW TO ORDER

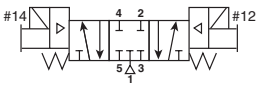
(Choose your options (in red) to configure your valve model number.)

W66	77	A	0	4	61	W

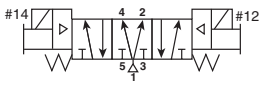
ISO Size	
00 (18mm)	0
0 (26mm)	1

Options		
Closed Center	Non-Locking Overrides	**Internal Pilot - 61**
		External Pilot - 81
	Locking Overrides	Internal Pilot - 71
		External Pilot - 91
Power Center	Non-Locking Overrides	Internal Pilot - 63
		External Pilot - 83
	Locking Overrides	Internal Pilot - 73
		External Pilot - 93
Open Center	Non-Locking Overrides	**Internal Pilot - 67**
		External Pilot - 87
	Locking Overrides	Internal Pilot - 77
		External Pilot - 97

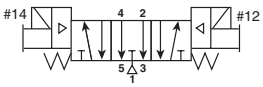
Voltage	
24 VDC	W
120 VAC	Z



Closed Center



Power Center



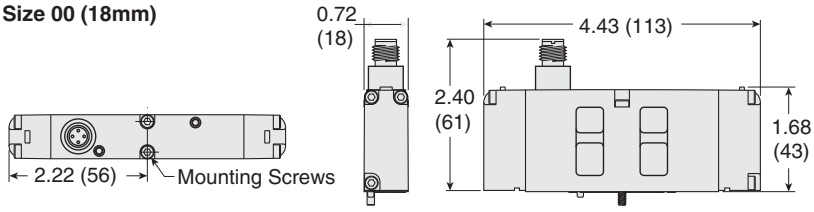
Open Center

Technical Information

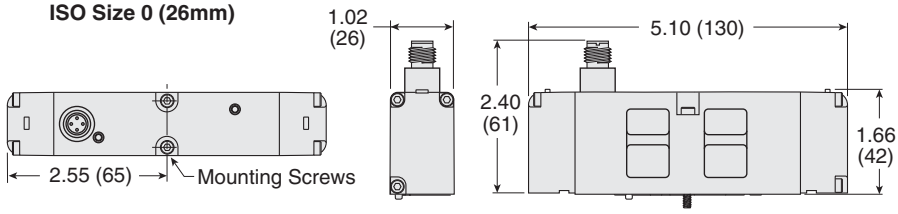
ISO Size	Avg. C_V	Weight lb (kg)
00 (18mm)	0.55	0.4 (0.16)
0 (26mm)	1.1	0.6 (0.25)

Valve Dimensions – inches (mm)

ISO Size 00 (18mm)



ISO Size 0 (26mm)



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Minimum Operating Pressure:
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3-position: 30 psig (2.07 bar).

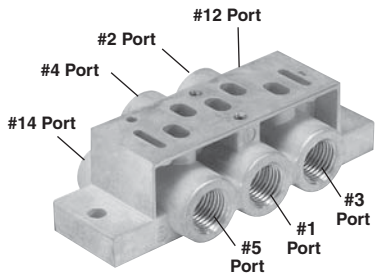
Materials of Construction:
Valve Body: Die Cast Aluminum.
End Caps: Polybutylene Terephthalate (PBT).
Fasteners: Zinc Plated Steel.
Coils: Thermoset Plastic.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Individual Sub-Base with Side Ports

ISO Size	Port Size	Model Number*	
		NPT Threads	BSPP Threads
00 (18mm)	1/8	RPL02-01-80	RPL02-01-70
0 (26mm)	1/4	RPL01-02-80	RPL01-02-70

* Can be used for external, single, or double remote pilot.

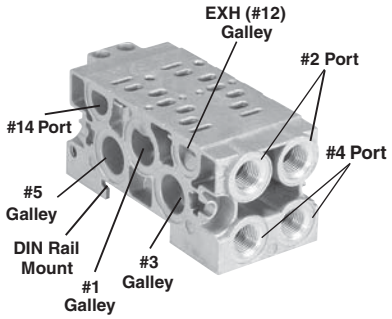


Two Station Manifold Base with Side Ports

ISO Size	Port Size	Model Number*	
		NPT Threads	BSPP Threads
00 (18mm)	1/8	RPJLP02-201-80	RPJLP02-201-70

*Can be used for external pilot supply, cannot be used with pressure controlled valves.
Note: Gaskets and assembly hardware included.

RPJLP02

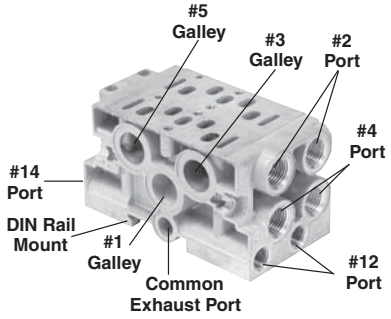


Two Station Manifold Base with Side Ports

ISO Size	Port Size	Model Number*	
		NPT Threads	BSPP Threads
0 (26mm)	1/4	RPJLP01-202-80	RPJLP01-202-70

* Can be used for external pilot supply, or can be used with pressure controlled valves.
Note: Gaskets and assembly hardware included.

RPJLP01

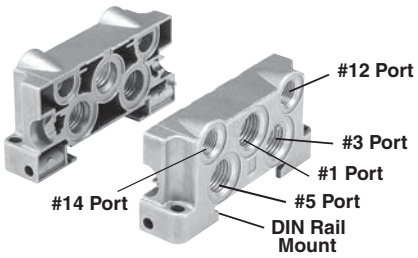


End Station Kit for Side Ported Two Station Manifold Base

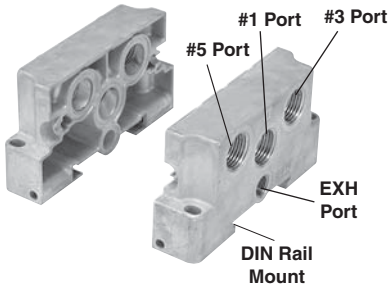
ISO Size	Port Size	End Station Kit Number	
		NPT Threads	BSPP Threads
00 (18mm)	1/4	RPEJ02-02-80*	RPEJ02-02-80*
0 (26mm)	3/8	RPEJ01-03-80†	RPEJ01-03-80†

* Use with RPJLP02.....
† Use with RPJLP01 or RPJL01.....

RPEJ02



RPEJ01



Interposed Pressure Regulators

Remote Air Pilot Operated for hard-to-reach pressure control Unregulated Pilot Pressure to valve for consistent valve shifting regardless of pressure adjustment.

Size 00 - 18mm
(Dual Interposed Regulator Shown)

Size 0 - 26mm
(Single Interposed Regulator Shown)

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R	PS5637	1	6	6	P

Basic Series	
ISO Size 00 (18mm)	PS5637
ISO Size 0 (26mm)	PS5537

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#4 Port Regulator /Gauge*	
2-60 PSIG w/o Gauge	2
5-125 PSIG w/o Gauge	3
2-60 PSIG w/Gauge	5
5-125 PSIG w/Gauge	6

#2 Port Regulator/Gauge*	
2-60 PSIG w/o Gauge	2
5-125 PSIG w/o Gauge	3
2-60 PSIG w/Gauge	5
5-125 PSIG w/Gauge	6

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

Gauge Adapter Kit

Included with all Size 00 Regulators. Both kits are required on all Size 0 & 00 Regulators when the Regulator is on the last Station on the Right (14) End.

Description	Model Number
Gauge Kit	RPS5651160P
1/8" Female to 1/8" Female Coupling	R207P-2*
1/8" Male to 1/8" Male Long Nipple	RVS215PNL-2-15*

* Included in Gauge Kit RPS5651160P.

Interposed Flow Controls

Both adjustment screws are located on the 12 end of the unit. Interposed Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting. Interposed Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.

ISO Size	Model Number
00 (18mm)	RPS5642P
0 (26mm)	RPS5542P

Interposed Supply & Exhaust Modules

ISO Size		Model Number	
		NPT Threads	BSPP Threads
00 (18mm)	Supply	RPS562600P	RPS562601P
00 (18mm)	Exhaust	RPS562700P	RPS562701P
0 (26mm)	Supply	RPS552600P	RPS552601P
0 (26mm)	Exhaust	RPS552700P	RPS552701P

Quantity 1. Used on Size 00 & Size 0 valves to provide a pressure or exhaust path to individual valves.

Intermediate Air Supply Base Kits

ISO Size	Port Size	Kit Number
		NPT Threads
00 (18mm)	1/8"	RD02P-01-80
0 (26mm)	1/4"	RD01P-02-80

Kit includes: Gasket and Mounting Bolts.

Blank Station Kits

ISO Size	Kit Number
00 (18mm)	RDX02BLK
0 (26mm)	RDX01BLK

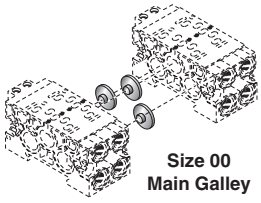
Kit includes: Blank Station Plate, Gasket, and Mounting Bolts.

Manifold Port Isolation Kits

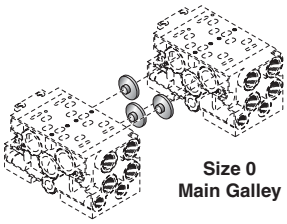
Main Galley (1, 3, 5)

ISO Size	Kit Number
00 (18mm)	RD02BD0
0 (26mm)	RD01BD0

Kit includes: Plugs with O-rings.



Size 00
Main Galley

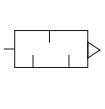


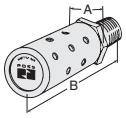
Size 0
Main Galley

Silencers

Port Size	Thread Type	Model Number		Avg. C_V	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
1/8	Male	5500A1003	D5500A1003	1.2	0.9 (21)	2.0 (51)	0.1 (0.1)
1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)

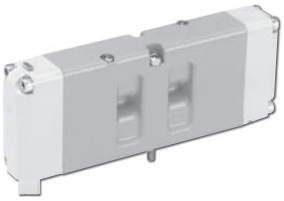
Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.





IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

5-Way 2-Position Valves, Single Solenoid Pilot Controlled, Spring Return



HOW TO ORDER

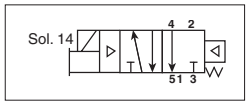
(Choose your options (in red) to configure your valve model number.)

W66	76	A	0	4	01	W

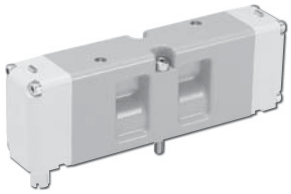
ISO Size	
00 (18mm)	0
0 (26mm)	1

Options		
Non-Locking Overrides	Internal Pilot -	01
	External Pilot -	51
Locking Overrides	Internal Pilot -	11
	External Pilot -	21

Voltage	
24 VDC	W
120 VAC	Z



5-Way 2-Position Valves, Double Solenoid Pilot Controlled



HOW TO ORDER

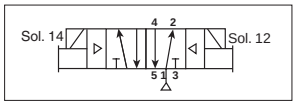
(Choose your options (in red) to configure your valve model number.)

W66	76	A	0	4	07	W

ISO Size	
00 (18mm)	0
0 (26mm)	1

Options		
Non-Locking Overrides	Internal Pilot -	07
	External Pilot -	57
Locking Overrides	Internal Pilot -	17
	External Pilot -	27

Voltage	
24 VDC	W
120 VAC	Z

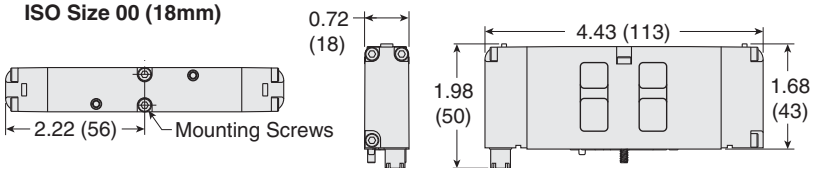


Technical Information

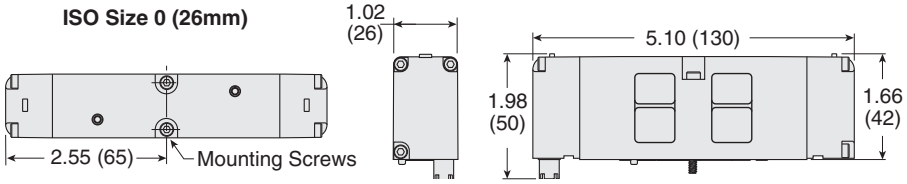
ISO Size	Valve Type	Avg. C_v	Weight lb (kg)
00 (18mm)	5/2 Single	0.55	0.3 (0.15)
00 (18mm)	5/2 Double	0.55	0.4 (0.16)
0 (26mm)	5/2 Single	1.1	0.6 (0.25)
0 (26mm)	5/2 Double	1.1	0.6 (0.25)

Valve Dimensions – inches (mm)

ISO Size 00 (18mm)



ISO Size 0 (26mm)



* **Sub-bases and manifold bases ordered separately, refer to page A1.9.**

Accessories ordered separately, refer to page A1.10-A1.11.

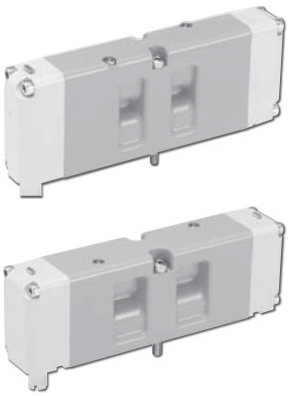
STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
For other voltages, consult ROSS.
Power Consumption (each solenoid): 11 VA inrush, 8.5 VA holding on 50 or 60 Hz; 6 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.

Flow Media: Filtered air.
Inlet Pressure: Vacuum to 145 psig (10 bar).
Pilot Pressure: At least 25 psig (1.7 bar).
Pilot Supply: Internal or external pilot supply.
Manual Override: Flush; metal, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

5-Way 3-Position Valves, Double Solenoid Pilot Controlled



HOW TO ORDER

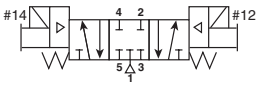
(Choose your options (in red) to configure your valve model number.)

W66 **77** **A** **0** **4** **01** **W**

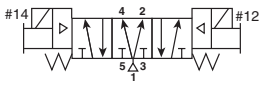
ISO Size	
00 (18mm)	0
0 (26mm)	1

Options		
Closed Center	Non-Locking Overrides	Internal Pilot - 01
		External Pilot - 51
	Locking Overrides	Internal Pilot - 11
		External Pilot - 21
Power Center	Non-Locking Overrides	Internal Pilot - 03
		External Pilot - 53
	Locking Overrides	Internal Pilot - 13
		External Pilot - 23
Open Center	Non-Locking Overrides	Internal Pilot - 07
		External Pilot - 57
	Locking Overrides	Internal Pilot - 17
		External Pilot - 27

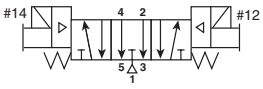
Voltage	
24 VDC	W
120 VAC	Z



Closed Center



Power Center



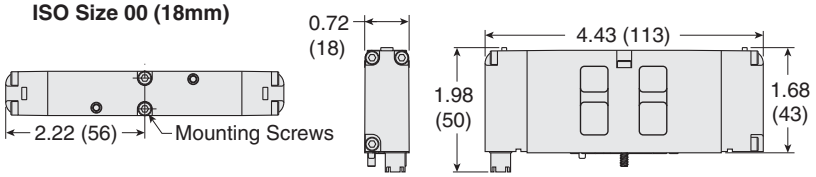
Open Center

Technical Information

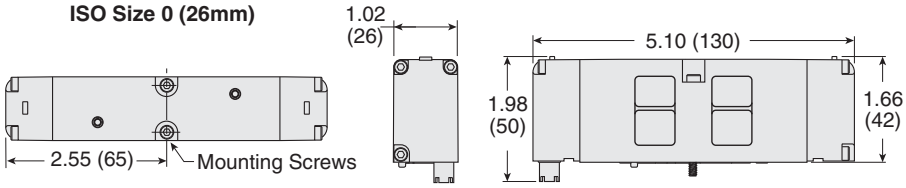
ISO Size	Avg. C_V	Weight lb (kg)
00 (18mm)	0.55	0.4 (0.16)
0 (26mm)	1.1	0.6 (0.25)

Valve Dimensions – inches (mm)

ISO Size 00 (18mm)



ISO Size 0 (26mm)



*** Sub-bases and manifold bases ordered separately, refer to page A1.9.**

Accessories ordered separately, refer to page A1.10-A1.11.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
For other voltages, consult ROSS.
Power Consumption (each solenoid): 11 VA inrush, 8.5 VA holding on 50 or 60 Hz; 6 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.

Flow Media: Filtered air.
Inlet Pressure: Vacuum to 145 psig (10 bar).
Pilot Pressure: At least 30 psig (2 bar).
Pilot Supply: Internal or external pilot supply.
Manual Override: Flush; metal, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Single Sub-Bases & Manifold Bases

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R	PS5511	5	4	C	P

Basic Series	
ISO Size 00 (18mm)	**PS5611**
ISO Size 0 (26mm)	PS5511

Mounting Style	
Sub-Base - Side Ported	1
Sub-Base - Side & Bottom Ported	2
Manifold Base - Front Ported	**5**
Manifold Base - Front & Bottom Ported	6

Port Size	
ISO Size 00 (18mm)	
1/8 NPT	1
1/8 BSPP	2
ISO Size 0 (26mm)	
1/4 NPT	3
1/4 BSPP	**4**

Enclosures / Lead Length	
C†	**Terminal Strip**
J*	Circuit Board, Single Address
M*	**Circuit Board, Double Address**
N*§	Single Address Circuit Board with 32 Output Expansion ***(Not for Turck Serial Bus Communication Module)***
P*‡	Double Address Circuit Board with 32 Output Expansion ***(Not for Turck Serial Bus Communication Module)***

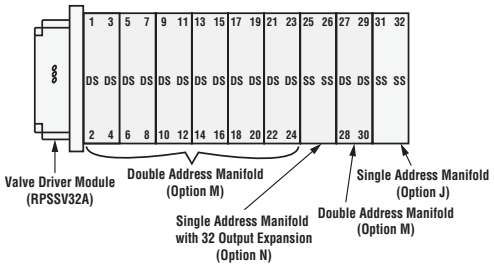
* Manifolds Only.

† Available with Series W66, Size 0 (26mm).

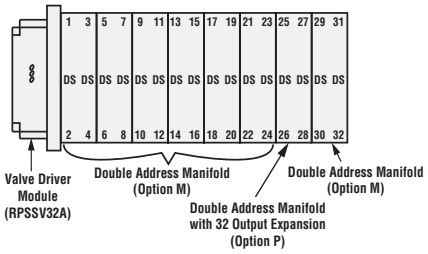
§ When using an Series W66, Size 0 or Series W66, Size 00 manifold base with the "N" Enclosure / Lead Length option:
- Outputs 1 – 24 can be single or double address bases. Use a base with "J" or "M" Enclosure / Lead Length option.
- Outputs 25 – 26 are a single address base. Use a base with "N" Enclosure / Lead Length option (this is a single address board with a ribbon connection from the valve driver module, RPSSV32A).
- Outputs 27 – 32 can be single or double. Use a base with "J" or "M" Enclosure / Lead Length option.

‡ When using an Series W66, Size 0 or Series W66, Size 00 manifold base with the "P" Enclosure / Lead Length option:
- Outputs 1 – 24 can be single or double address bases. Use a base with "J" or "M" Enclosure / Lead Length option.
- Outputs 25 – 28 are a double address base. Use a base with "P" Enclosure / Lead Length option (this is a double address board with a ribbon connection from the valve driver module, RPSSV32A).
- Outputs 29 – 32 can be single or double. Use a base with "J" or "M" Enclosure / Lead Length option.

Option "N"



Option "P"



Sub-Base

Series W66
ISO Size 0 (26mm)
Sub-Base

Manifold Kits

Series W66
ISO Size 00 (18mm)
2-Station Manifold

Series W66
ISO Size 0 (26mm)
2-Station Manifold

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

End Station Kits

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R	PS56	20	L5	0	P

Basic Series	
ISO Size 00 (18mm) ISO Size 0 (26mm)	PS56

End Station Kit Type	
End Station, Collective Wiring	20

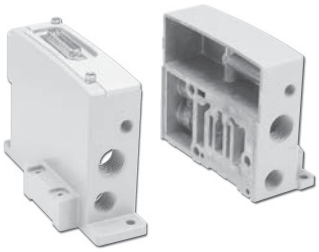
Multiwiring Connection#	
16 Point Terminal Strip	**L5**
25-Pin-D-Sub	L2*
12-Pin-M23	L4
19-Pin-M23	M2
19-Pin-Round, Brad Harrison	L3
Serial Bus	L6**
Industrial Communication	
Turck BL67 Valve Driver Module - For 16 Outputs	T1
Turck BL67 Valve Driver Module - For 32 Outputs	T2

Thread Type	
0	NPT
1	BSPP "G"

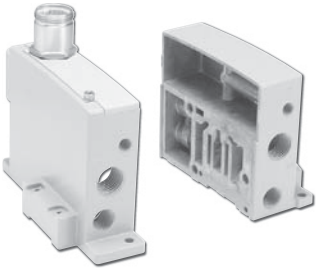
Must order Bases with Circuit Boards.
*120 Volta AC is not CSA rated.
**Valve Driver Module and 24 Output Cable Installed.

16-Point Terminal Strip End Stations

25-Pin End Stations



19-Pin End Stations



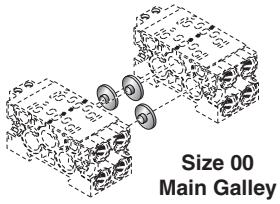
Blank Station Kits

ISO Size	Kit Number
00 (18mm)	RPS5634P
0 (26mm)	RPS5534P
Kit includes: Blank Station Plate, Gasket, and Mounting Bolts.	

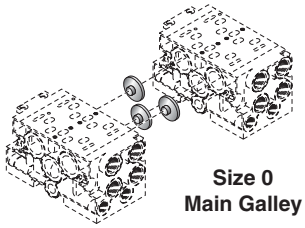
Manifold Port Isolation Kits

Main Galley (1, 3, 5)

ISO Size	Kit Number
00 (18mm)	RD02BD0
0 (26mm)	RD01BD0
Kit includes: Plugs with O-rings.	



Size 00 Main Galley



Size 0 Main Galley

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Online Version
Rev. 10/02/17

Interposed Pressure Regulators

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R | PS5638 | 1 | 6 | 6 | P

Basic Series

ISO Size 00 (18mm)	**PS5638**
ISO Size 0 (26mm)	PS5538

Regulator Function

Common Pressure Regulator	**1**
Independent Pressure Regulator	**2**

#4 Port Regulator / Gauge*

2-60 PSIG w/o Gauge	2
5-125 PSIG w/o Gauge	3
2-60 PSIG w/Gauge	5
5-125 PSIG w/Gauge	**6**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

#2 Port Regulator / Gauge*

2-60 PSIG w/o Gauge	2
5-125 PSIG w/o Gauge	3
2-60 PSIG w/Gauge	5
5-125 PSIG w/Gauge	**6**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

ISO Size 00 (18mm)
(Dual Interposed Regulator Shown)

ISO Size 0 (26mm)
(Single Interposed Regulator Shown)

Remote Air Pilot Operated for hard-to-reach pressure control, Unregulated Pilot Pressure to valve for consistent valve shifting regardless of pressure adjustment.

Gauge Adapter Kit

Description	Model Number
Gauge Kit	RPS5651160P
1/8" Female to 1/8" Female Coupling	R207P-2*
1/8" Male to 1/8" Male Long Nipple	RVS215PNL-2-15*
*Included in Gauge Kit RPS5651160P.	

Included with all Size 00 Regulators. Both kits are required on all Size 0 & 00 Regulators when the Regulator is on the last Station on the Right (14) End.

Interposed Supply & Exhaust Modules

ISO Size		Model Number	
		NPT Threads	BSPP Threads
00 (18mm)	Supply	RPS561600P	RPS561601P
	Exhaust	RPS561700P	RPS561701P
0 (26mm)	Supply	RPS551600P	RPS551601P
	Exhaust	RPS551700P	RPS551701P
Quantity 1. Used on Size 00 & Size 0 valves to provide a pressure or exhaust path to individual valves.			

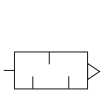
Interposed Flow Controls

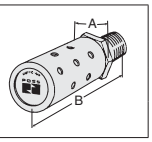
ISO Size	Model Number
00 (18mm)	RPS5635P
0 (26mm)	RPS5535P

Both adjustment screws are located on the 12 end of the unit.
Interposed Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting.
Interposed Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.

Silencers

Port Size	Thread Type	Model Number		Avg. C_v	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
1/4	Male	5500A2003	D5500A2003	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.							



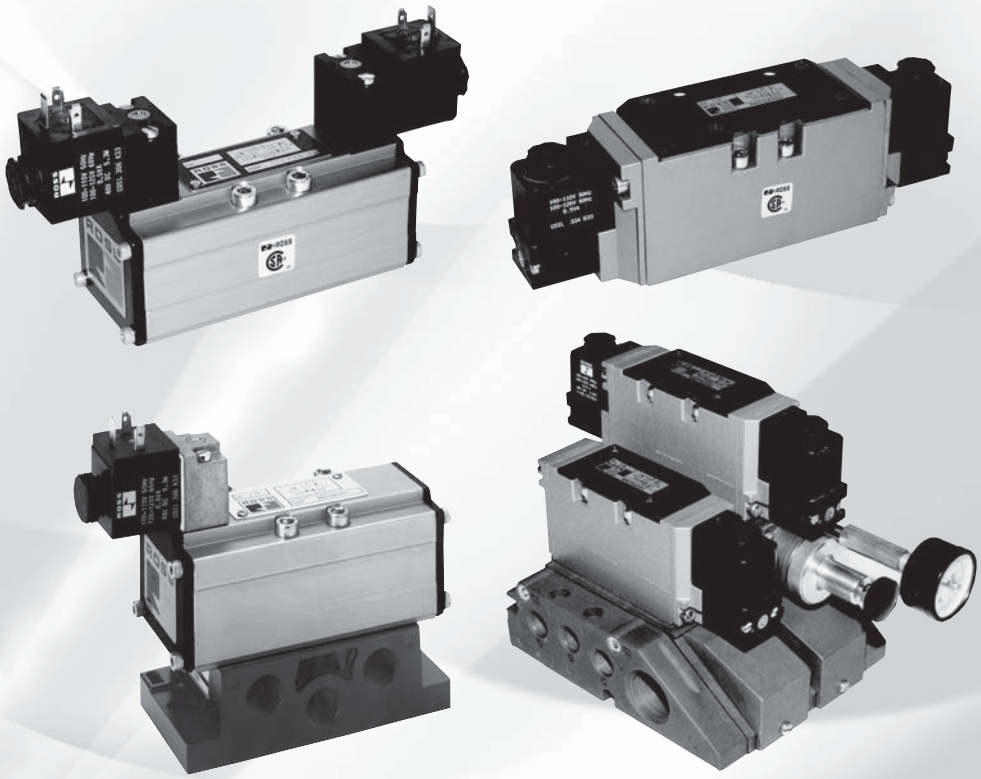


IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

A

ROSS CONTROLS®

ISO 5599/I & ISO 5599/II VALVES
W60 & W64, W65 SERIES



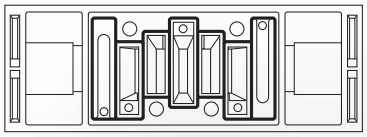
www.rosscontrols.com

ISO W60, W64, & W65 SERIES VALVES – KEY FEATURES

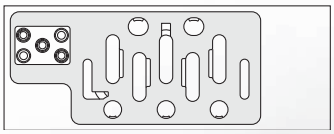
- ISO Sizes 1, 2, & 3
- 5/2 Single, 5/2 Double, & 5/3 Double Solenoid Pilot & Pressure Controlled Valves
- Available with Buna-N and Flouroelastomer seals for a wide temperature and resistance range
- W60 Series - Precision Finish Stainless Steel Spool & Sleeve internals that provide high shifting speed, long life, non-lube service, and easy maintenance
- W64 Series - Poppet construction is highly tolerant to dirty air
- W65 Series - Precision Finish Stainless Steel Spool & Sleeve internals that provide high shifting speed, long life, non-lube service, and easy maintenance
  - Serial Bus Communication compatible
  - Plug-In valve to base electrical connector eliminates need to disconnect wires to remove valve

Standard Definitions

5599/I: Drop-cord Standards for Sizes 1, 2, 3



5599/II: Plug-in Standards for Size 1, 2, 3

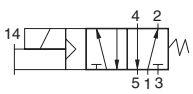


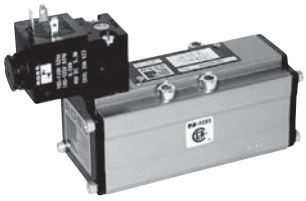
VALVE TYPE	VALVE SERIES	DESCRIPTION			AVAILABLE PORT SIZES								FUNCTIONS										Page
		ISO Size	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	3/2 Single	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center	5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Direct Solenoid Control	Pressure Control	
ISO 5599/I	W60	1	■		■	■	■							■	■	■	■	■	0.8	■		■	A2.3 - A2.7
	W60	2	■				■	■						■	■	■	■	■	1.9	■		■	A2.3 - A2.7
	W60	3	■					■	■					■	■	■	■	■	3.8	■		■	A2.3 - A2.7
	W64	1		■	■	■	■							■	■				1.0	■		■	A2.3 - A2.7
	W64	2		■			■	■						■	■				2.0	■		■	A2.3 - A2.7
	W64	3		■				■	■					■	■				4.0	■		■	A2.3 - A2.7
Single Sub-Bases & Manifold Bases																							A2.8-A2.9
Manifold Kits & Accessories																							A2.9 - A2.11
ISO 5599/II	W65	1	■			■	■							■	■	■	■	■	0.8	■		■	A2.12 - A2.14
	W65	2	■				■	■						■	■	■	■	■	1.9	■		■	A2.12 - A2.14
	W65	3	■					■	■					■	■	■	■	■	3.8	■		■	A2.12 - A2.14
Sub-Bases & Modular Manifold Bases																							A2.15
Accessories for Sub-Bases & Modular Manifold Bases																							A2.16
Single Sub-Bases & Modular Manifold Bases																							A2.17
End Station Kits & Accessories																							A2.18 - A2.19

Solenoid Controlled Valves

5-Way 2-Position Valves, Single Solenoid Pilot Controlled, Spring Return

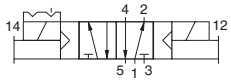
ISO Size	Port Size	Valve Model Number*	Avg. C_V	Average Response Constants# M	Average Response Constants# F In-Out	Average Response Constants# F Out-Exh.	Weight lb (kg)
1	1/8 - 3/8	W6076B2401**	0.8	29	3.5	4.9	1.5 (0.7)
2	3/8 - 1/2	W6076B3401**	1.9	41	1.5	2.4	2.3 (1.1)
3	1/2 - 3/4	W6076B4401**	3.8	51	0.8	1.1	3.5 (1.6)

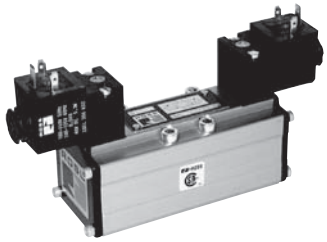




5-Way 2-Position Valves, Double Solenoid Pilot Controlled, Detented

ISO Size	Port Size	Valve Model Number*	Avg. C_V	Average Response Constants# M	Average Response Constants# F In-Out	Average Response Constants# F Out-Exh.	Weight lb (kg)
1	1/8 - 3/8	W6076B2407**	0.8	17	3.5	4.9	1.8 (0.9)
2	3/8 - 1/2	W6076B3407**	1.9	20	1.5	2.5	2.7 (1.2)
3	1/2 - 3/4	W6076E4407**	3.8	20	0.8	1.1	3.9 (1.8)

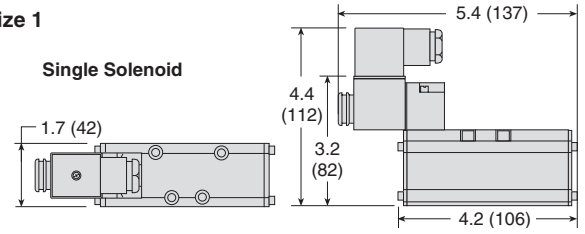


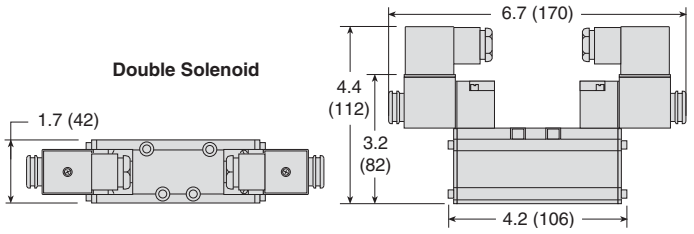


* **Sub-bases and manifold bases ordered separately, refer to page A2.8-9.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W6076B2401W. For other voltages, consult ROSS.
\# **Valve Response Time –** Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

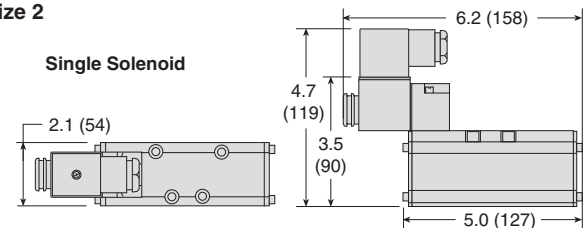
Valve Dimensions – inches (mm)

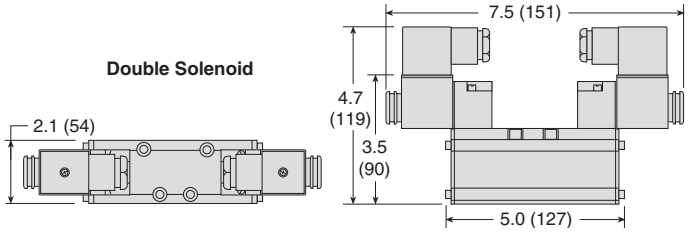
ISO Size 1



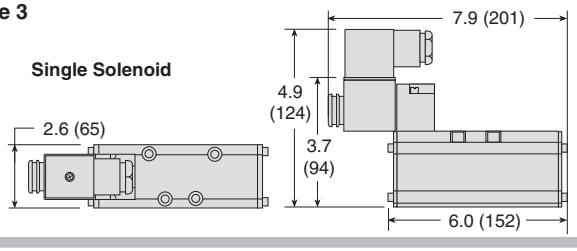


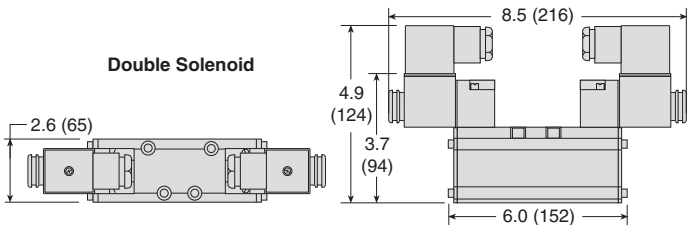
ISO Size 2





ISO Size 3





Options: Indicator Light (in electrical connectors), refer to page A2.11. Accessories ordered separately, refer to page A2.10-11.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid): 11 VA inrush, 8.5 VA holding on 50 or 60 Hz; 6 watts on DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A connector.

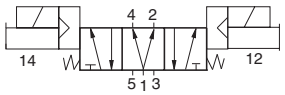
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air; 5-micron recommended.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure: *ISO size 1 models:* At least 30 psig (2 bar).
ISO Size 2 & 3 models: At least 15 psig (1 bar).
Internal/External Supply: Selected automatically.
Manual Override: Flush; metal, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

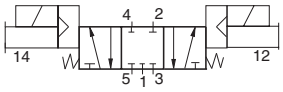
Solenoid Pilot Controlled Valves

5-Way 3-Position Valves, Double Solenoid Pilot Controlled

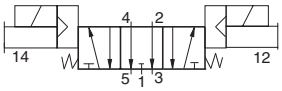
ISO Size	Port Size	Valve Model Number*			Avg. C_v	Average Response Constants#			Weight lb (kg)
		Power Center	Closed Center	Open Center		M	F		
							In-Out	Out-Exh.	
1	1/8 - 3/8	W6077A2951**	W6077B2401**	W6077B2407**	0.8	30	3.5	5.0	1.8 (0.9)
2	3/8 - 1/2	W6077A3945**	W6077B3401**	W6077B3407**	1.9	40	1.5	2.5	2.8 (1.3)
3	1/2 - 3/4	W6077B4934**	W6077B4401**	W6077B4407**	3.8	50	0.8	1.1	4.0 (1.8)



Power Center



Closed Center

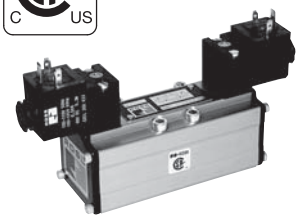


Open Center

* **Sub-bases and manifold bases ordered separately, refer to page A2.8-9.**

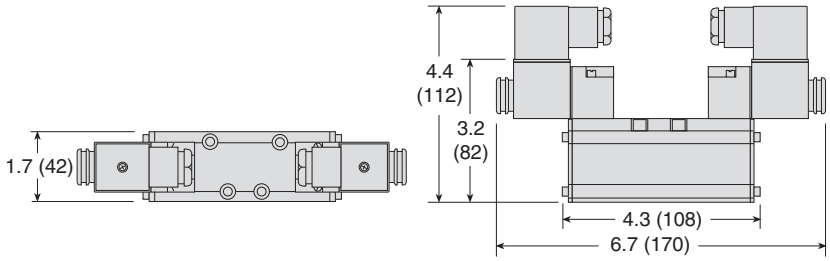
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W6077A2951W.
For other voltages, consult ROSS.

Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

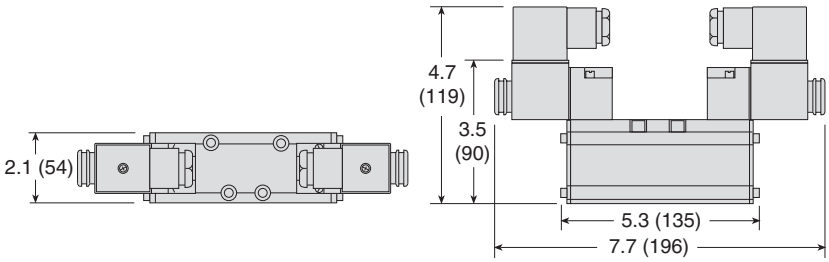


Valve Dimensions – inches (mm)

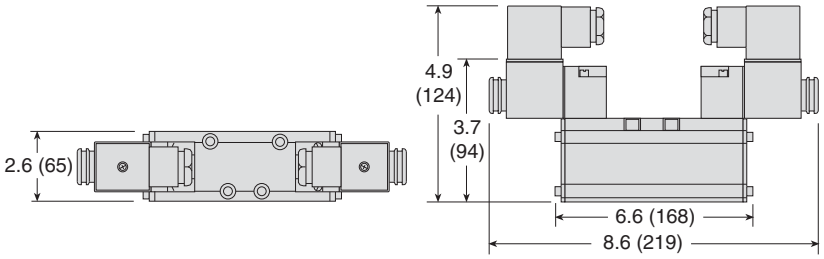
ISO Size 1



ISO Size 2



ISO Size 3



Options: Indicator Light (in electrical connectors), refer to page A2.11. Accessories ordered separately, refer to page A2.10-11.

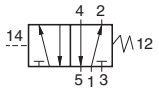
STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid): 11 VA inrush, 8.5 VA holding on 50 or 60 Hz; 6 watts on DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A connector.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
Size 1 models: At least 30 psig (2 bar).
Size 2 & 3 models: At least 15 psig (1 bar).
Internal/External Supply: Selected automatically.
Manual Override: Flush; metal, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

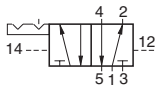
5-Way 2-Position Valves, Single Pressure Controlled, Spring Return

ISO Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/8 - 3/8	W6056B2411	0.8	29	3.5	4.9	0.8 (0.4)
2	3/8 - 1/2	W6056B3411	1.9	41	1.5	2.4	1.5 (0.7)
3	1/2 - 3/4	W6056B4411	3.8	51	0.8	1.1	3.0 (1.4)



5-Way 2-Position Valves, Double Pressure Controlled, Detented

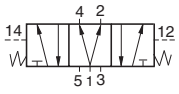
ISO Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/8 - 3/8	W6056B2417	0.8	17	3.5	5.0	0.8 (0.4)
2	3/8 - 1/2	W6056B3417	1.9	20	1.5	2.5	1.5 (0.7)
3	1/2 - 3/4	W6056E4417	3.8	20	0.8	1.1	3.0 (1.4)



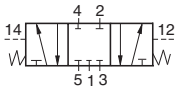
5-Way 3-Position Valves, Double Pressure Controlled

ISO Size	Port Size	Valve Model Number*			Avg. C_v	Average Response Constants#			Weight lb (kg)
		Power Center	Closed Center	Open Center		M	F		
							In-Out	Out-Exh.	
1	1/8 - 3/8	W6057A2934	W6057B2411	W6057B2417	0.8	30	3.5	5.0	1.0 (0.5)
2	3/8 - 1/2	W6057A3933	W6057B3411	W6057B3417	1.9	40	1.5	2.5	1.5 (0.7)
3	1/2 - 3/4	W6057A4937	W6057B4411	W6057B4417	3.8	50	0.8	1.1	3.0 (1.4)

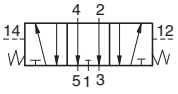
Power Center



Closed Center



Open Center



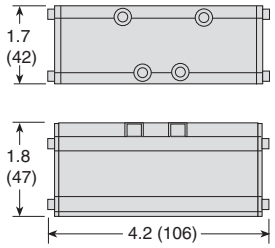
* **Sub-bases and manifold bases ordered separately, refer to page A2.8-9.**

\# **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

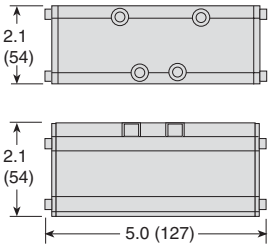
Valve Dimensions – inches (mm)

5/2 Valves

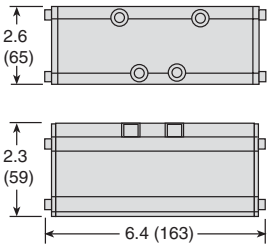
ISO Size 1



ISO Size 2

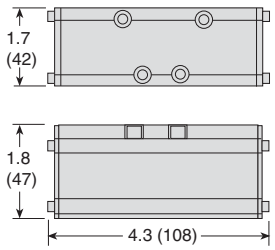


ISO Size 3

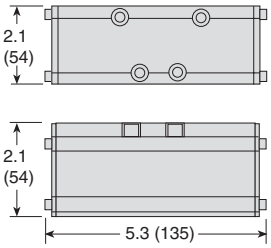


5/3 Valves

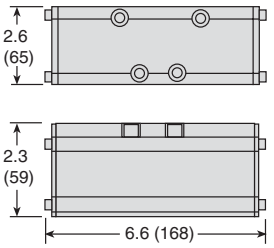
ISO Size 1



ISO Size 2



ISO Size 3



Accessories ordered separately, refer to page A2.10-11.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
Size 1 models: At least 30 psig (2 bar).
Size 2 & 3 models: At least 15 psig (1 bar).

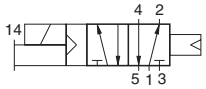
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

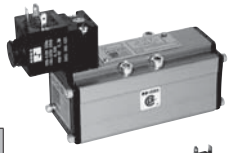
Solenoid Pilot Controlled Valves

A

5-Way 2-Position Valves, Single Solenoid Pilot Controlled, Air Return

ISO Size	Port Size	Valve Model Number* Std. Temp.	Valve Model Number* High Temp.	Avg. C_v	Average Response Constants# M	Average Response Constants# F In-Out	Average Response Constants# F Out-Exh.	Weight lb (kg)
1	1/8 - 3/8	W6476B2401**	W6476B2402**	1.0	33	2.9	5.9	1.3 (0.6)
2	3/8 - 1/2	W6476B3401**	W6476B3402**	2.0	33	1.2	2.3	1.8 (0.8)
3	1/2 - 3/4	W6476B4401**	W6476B4402**	4.0	50	0.7	1.2	2.8 (1.3)

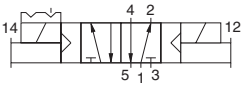


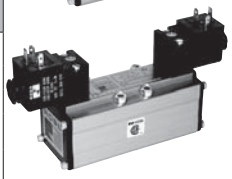


A2

5-Way 2-Position Valves, Double Solenoid Pilot Controlled, Detented

ISO Size	Port Size	Valve Model Number* Std. Temp.	Valve Model Number* High Temp.	Avg. C_v	Average Response Constants# M	Average Response Constants# F In-Out	Average Response Constants# F Out-Exh.	Weight lb (kg)
1	1/8 - 3/8	W6476B2407**	W6476B2408**	1.0	16	2.9	5.6	1.8 (0.8)
2	3/8 - 1/2	W6476B3407**	W6476B3408**	2.0	16	1.2	2.3	2.3 (1.0)
3	1/2 - 3/4	W6476B4407**	W6476B4408**	4.0	16	0.7	1.1	3.3 (1.5)





*** Sub-bases and manifold bases ordered separately, refer to page A2.8-9.**

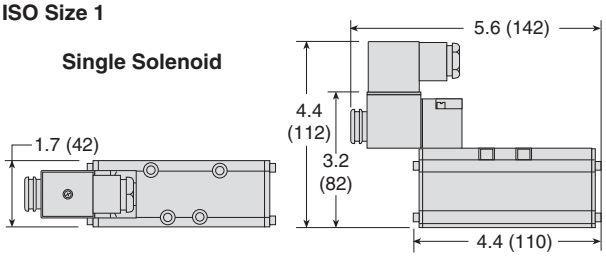
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W6476B2401W. For other voltages, consult ROSS.

Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

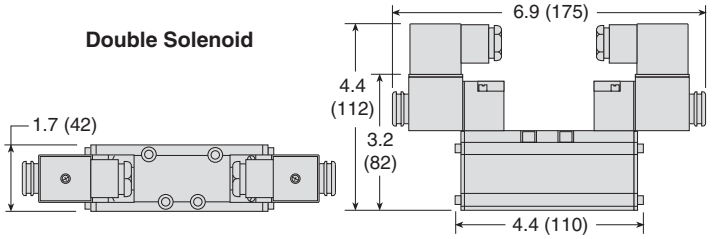
Valve Dimensions – inches (mm)

ISO Size 1

Single Solenoid

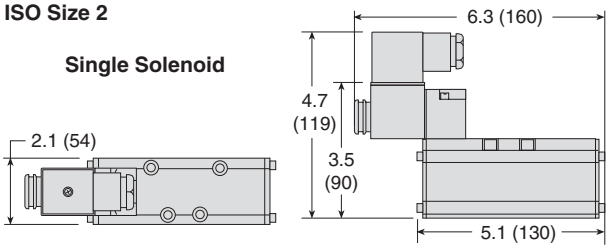


Double Solenoid

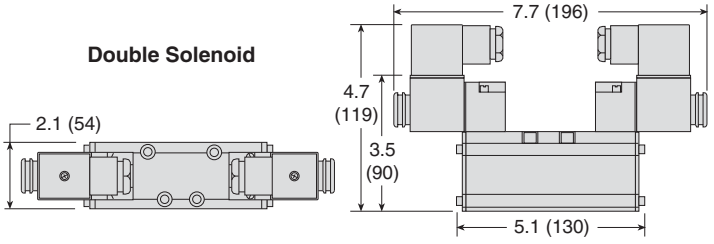


ISO Size 2

Single Solenoid

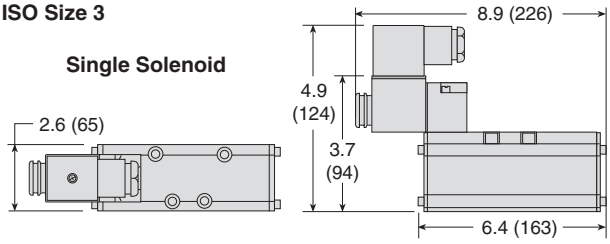


Double Solenoid

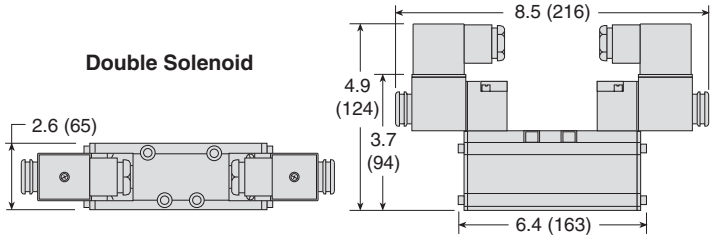


ISO Size 3

Single Solenoid



Double Solenoid



Options: Indicator Light (in electrical connectors); refer to page A2.11. Accessories ordered separately, refer to page A2.10-11.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid): 11 VA inrush, 8.5 VA holding on 50 or 60 Hz; 6 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C); extended to 175°F (80°C) for High Temperature models.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A or Form C connector.
Media Temperature: 40° to 175°F (4° to 80°C); extended to 220°F (105°C) for High Temperature models.
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.
Internal/External Supply: Selected automatically.
Manual Override: Flush; metal non-locking.

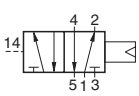
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Online Version
Rev. 10/02/17

Pressure Controlled Valves

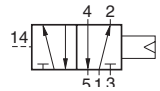
5-Way 2-Position Valves, Single Pressure Controlled, Air Return

ISO Size	Port Size	Valve Model Number*		Avg. C_v	Average Response Constants#			Weight lb (kg)
		Std. Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/8 - 3/8	W6456B2411	W6456B2412	1.0	33	2.9	5.9	0.8 (0.4)
2	3/8 - 1/2	W6456B3411	W6456B3412	2.0	33	1.2	2.3	1.3 (0.6)
3	1/2 - 3/4	W6456B4411	W6456B4412	4.0	50	0.7	1.2	2.3 (1.1)



5-Way 2-Position Valves, Double Pressure Controlled, Detented

ISO Size	Port Size	Valve Model Number*		Avg. C_v	Average Response Constants#			Weight lb (kg)
		Std. Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/8 - 3/8	W6456B2417	W6456B2418	1.0	16	2.9	5.6	1.8 (0.8)
2	3/8 - 1/2	W6456B3417	W6456B3418	2.0	16	1.2	2.3	2.3 (1.0)
3	1/2 - 3/4	W6456B4417	W6456B4418	4.0	18	0.7	1.1	3.3 (1.5)

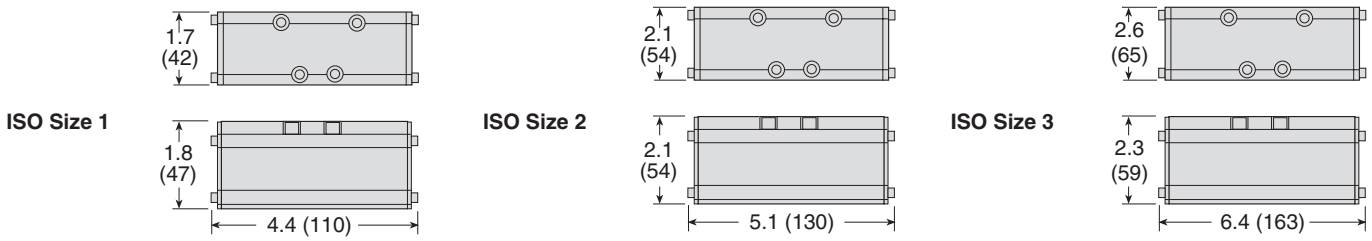


*** Sub-bases and manifold bases ordered separately, refer to page A2.8-9.**

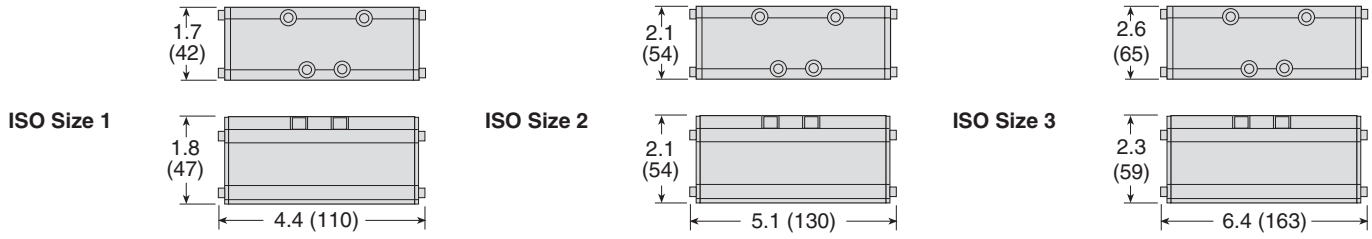
 # Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

Single Pressure Controlled



Double Pressure Controlled



Accessories ordered separately, refer to page A2.10-11.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
Size 1 models: At least 30 psig (2 bar).
Size 2 & 3 models: At least 15 psig (1 bar).

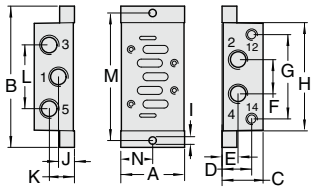
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

ISO 5599/I Single Bases, Side Ports

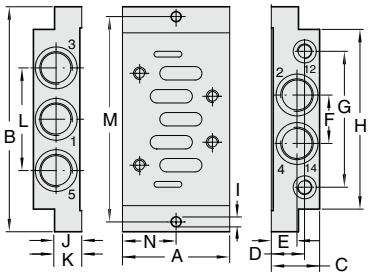
ISO Size	Port Size			Model Number*
	2, 4	1, 3, 5	12, 14	
1	1/4	1/4	1/8	2076C01
2	3/8	3/8	1/8	2078C01
3	1/2	1/2	1/8	2080C01

* NPT port threads. For BSPP threads add a "D" prefix to the model number e.g., D2076C01.

ISO Size 1 & 2



ISO Size 3

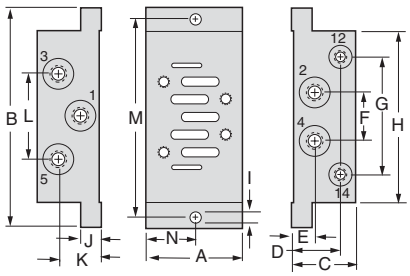


Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	1.81 (46)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.88 (124)	5.87 (149)
C	1.18 (30)	1.42 (36)	1.26 (32)
D	0.85 (21.5)	1.02 (26)	0.87 (22)
E	0.39 (10)	0.55 (14)	0.67 (17)
F	0.94 (24)	1.18 (30)	1.26 (32)
G	2.38 (60.5)	3.91 (74)	3.54 (90)
H	3.27 (83)	3.74 (95)	2.69 (119)
I	0.22 (5.5)	2.56 (6.5)	0.26 (6.6)
J	0.41 (10.5)	0.41 (10.5)	0.67 (17)
K	0.77 (19.5)	0.87 (22)	0.67 (17)
L	1.69 (43)	2.20 (56)	2.67 (68)
M	3.86 (98)	4.41 (112)	5.35 (136)
N	0.90 (23)	1.10 (28)	1.40 (35.5)

ISO Size	Port Size			Model Number*
	2, 4	1, 3, 5	12, 14	
1	1/8	1/4	1/8	654K91
	3/8	3/8	1/8	642K91
2	1/2	1/2	1/8	643K91
3	3/4	3/4	1/2	644K91

* NPT port threads only.

ISO Size 1, 2, & 3



Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	1.89 (48)	2.24 (57)	2.80 (71
B	4.33 (110)	4.88 (124)	5.87 (149)
C	1.26 (32)	1.57 (40)	1.26 (32)*
D	0.93 (24)	1.518(30)	0.87 (22)
E	0.41 (38)	0.55 (14)	0.67 (17)
F	0.94 (24)	1.18 (30)	1.26 (32)
G	2.28 (58)	2.92 (74)	3.54 (90)
H	3.27 (83)	3.74 (95)	2.69 (119)
I	0.22 (6)	0.26 (7)	0.26 (7)
J	0.41 (38)	0.55 (14)	0.67 (17)
K	0.85 (22)	1.02 (26)	0.59 (15)
L	1.70 (43)	2.20 (56)	2.68 (68)
M	3.86 (22)	4.41 (112)	5.35 (136

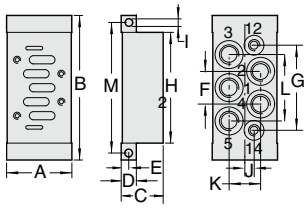
* 1.77 (45) on sub-base 644K91.

ISO 5599/I Single Bases, Bottom Ports

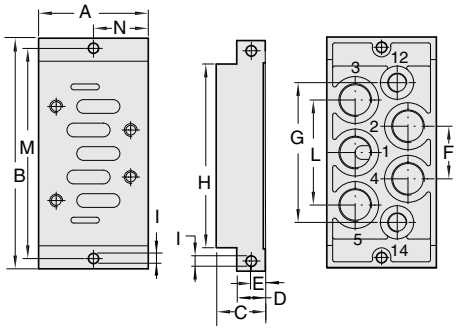
ISO Size	Port Size			Model Number*
	2, 4	1, 3, 5	12, 14	
1	1/4	1/4	1/8	2077C01
2	3/8	3/8	1/8	2079C01
3	1/2	1/2	1/8	2081C01

* NPT port threads. For BSPP threads add a "D" prefix to the model number e.g., D2077C01.

ISO Size 1 & 2



ISO Size 3



Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	1.81 (46)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.88 (124)	5.87 (149)
C	1.18 (30)	1.42 (36)	1.26 (32)
D	0.39 (10)	0.51 (13)	0.71 (18)
E	0.20 (5)	0.26 (6.5)	0.35 (9)
F	0.94 (24)	1.18 (30)	1.26 (32)
G	2.36 (60)	2.87 (73)	3.54 (90)
H	3.27 (83)	3.74 (95)	2.69 (119)
I	0.22 (5.5)	2.56 (6.5)	0.26 (6.6)
J	0.41 (10.5)	0.41 (10.5)	–
K	0.91 (23)	1.06 (27)	–
L	1.81 (46)	2.24 (57)	–
M	3.86 (98)	4.41 (112)	5.35 (136)
N	–	–	1.40 (35.5)

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

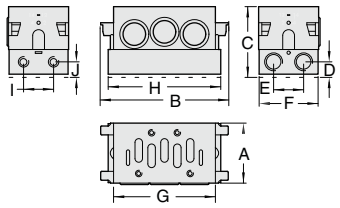
ISO 5599/I Manifold Bases, Side Ports

ISO Size	Port Size		Model Number*
	2, 4	12, 14	
1	1/4	1/8	2002K91
2	3/8	1/8	2003K91
3	1/2	1/8	2004K91

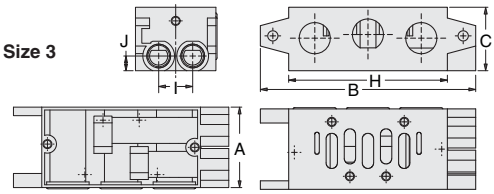
* NPT port threads. For BSPP threads add a "D" prefix to the model number e.g., D2002K91.

In addition to the manifold stations, an end station kit must be ordered for each manifold installation.

ISO Size 1 & 2



ISO Size 3



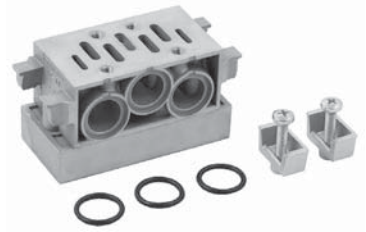
Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	1.69 (43)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.72 (120)	7.48 (190)
C	2.05 (52)	2.60 (66)	2.20 (56)
D	0.39 (10)	0.57 (14.5)	–
E	0.87 (22)	1.10 (28)	–
F	1.65 (42)	2.17 (55)	–
G	2.95 (75)	3.74 (95)	–
H	3.50 (89)	4.13 (105)	5.51 (140)
I	0.87 (22)	1.10 (28)	1.18 (30)
J	0.39 (10)	0.57 (14.5)	0.51 (13)

Connectors and gaskets are included with each manifold base.
The ISO Size 1 & 2 manifold bases contain 3 O-rings and 2 connector brackets.

ISO 5599/I Manifold Bases, Bottom Ports

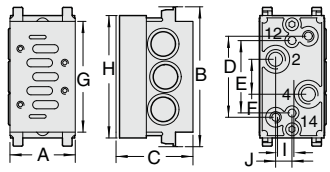
ISO Size	Port Size		Model Number*
	2, 4	12, 14	
1	1/4	1/8	1997K91
2	3/8	1/8	1998K91
3	1/2	1/8	1999K91

* NPT port threads. For BSPP threads add a "D" prefix to the model number e.g., D1997K91.

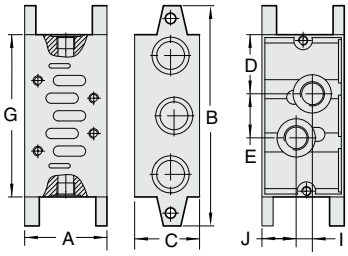


In addition to the manifold stations, an end station kit must be ordered for each manifold installation.

ISO Size 1 & 2



ISO Size 3



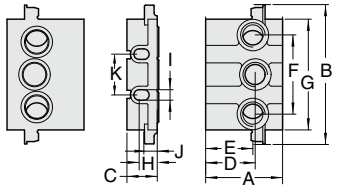
Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	1.69 (43)	2.20 (56)	2.80 (71)
B	4.33 (110)	4.72 (120)	7.48 (190)
C	2.05 (52)	2.60 (66)	2.20 (56)
D	2.28 (58)	2.73 (69.5)	2.01 (51)
E	1.57 (40)	2.44 (62)	1.50 (38)
F	0.79 (20)	1.18 (30)	–
G	2.28 (58)	2.73 (69.5)	5.51 (140)
H	3.50 (89)	4.13 (105)	–
I	0.35 (9)	0.55 (14)	0.55 (14)
J	0.43 (11)	0.55 (14)	0.16 (29.5)

End Station Kits - ISO Size 1, 2, & 3

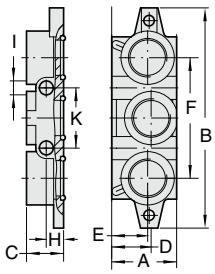
ISO Size	Port Size	Model Number*
	1, 3, 5	
1	3/8	723K86
2	1/2	724K86
3	1	731K86

* NPT port threads. For BSPP threads add a "D" prefix to the model number e.g., D723K86.

ISO Size 1 & 2



ISO Size 3



Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	2.05 (52)	2.60 (66)	2.20 (56)
B	3.94 (100)	4.72 (120)	7.48 (190)
C	0.87 (22)	1.02 (26)	1.26 (32)
D	1.53 (39)	1.67 (42.5)	1.34 (34)
E	1.22 (31)	1.59 (40.5)	1.22 (31)
F	2.17 (55)	2.68 (68)	4.09 (104)
G	2.95 (75)	3.74 (95)	–
H	0.55 (14)	0.61 (15.5)	0.59 (15)
I	0.28 (7)	0.35 (9)	0.47 (12)
J	0.39 (10)	0.45 (11.5)	–
K	1.10 (28)	1.38 (35)	2.05 (52)

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

A

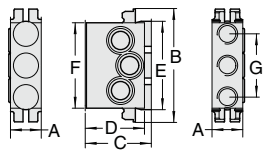
A2

Air Supply Module Top & Bottom Ports - ISO Size 1 & 2

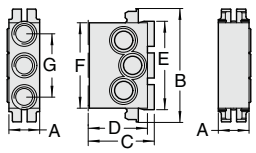
ISO Size	Ports* Size	Model Number*	
		Top Ports	Bottom Ports
1	3/8	725K86	727K86
2	1/2	726K86	728K86

* NPT port threads. For BSPP threads add a "D" prefix to the model number e.g., D725K86.

Top Ports ISO Size 1 & 2

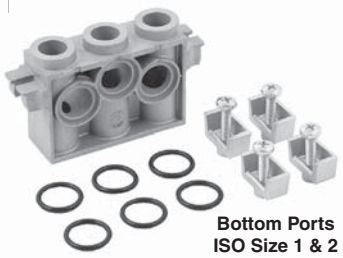


Bottom Ports ISO Size 1 & 2



Dimensions inches (mm)		
	ISO 1	ISO 2
A	1.06 (27)	1.06 (27)
B	3.94 (100)	4.72 (120)
C	2.28 (58)	2.71 (69)
D	2.05 (52)	2.60 (66)
E	3.07 (78)	3.74 (95)
F	2.95 (75)	3.74 (95)
G	2.20 (56)	2.20 (56)

Top Ports
ISO Size 1 & 2

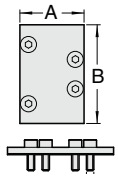


Bottom Ports
ISO Size 1 & 2

Blanking Plate Kits - ISO Size 1, 2, & 3

ISO Size	Model Number
1	2602H77
2	2603H77
3	2604H77

A blanking plate is used to cover the top of a manifold station that is not in use. A kit consists of a metal plate, a gasket, and mounting bolts.



Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	1.57 (40)	2.04 (52)	3.03 (77)
B	2.60 (66)	3.15 (80)	4.17 (106)
Plate Thickness	0.16 (4)	0.24 (6.2)	0.41 (12)

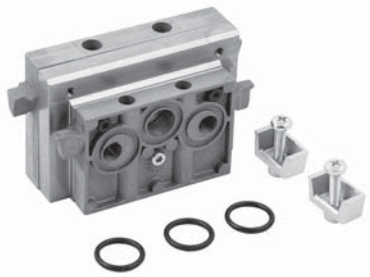
Assembly Kit - ISO Size 1 & 2

ISO Size	Model Number
1	732K86
2	733K86

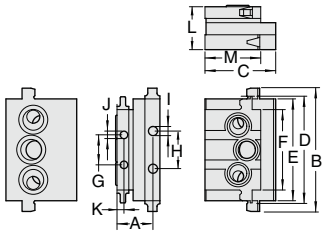
Transition Module - ISO Size 1, 2 & 3

ISO Size	Model Number
1 to 2	729K86
2 to 3	730K86

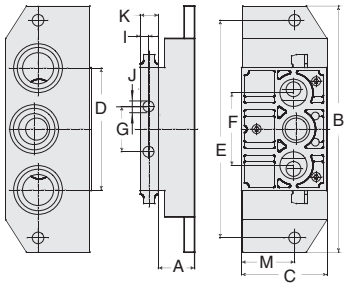
Different size ISO valves can be used in the same manifold installation by means of transition module. The inlet and exhaust ports of two different size manifold stations are connected by means of a transition module installed between the two stations.



ISO Size 1 to 2



ISO Size 2 to 3



Dimensions inches (mm)		
	ISO 1 & 2	ISO 2 to 3
A	1.32 (33.5)	1.10 (28)
B	4.72 (120)	7.48 (190)
C	2.60 (66)	2.60 (66)
D	3.94 (100)	3.94 (100)
E	3.74 (95)	6.61 (168)
F	2.95 (75)	2.20 (56)
G	1.10 (28)	1.38 (35)
H	1.38 (35)	–
I	0.34 (8.5)	2.56 (6.5)
J	0.28 (7)	0.34 (8.5)
K	2.56 (6.5)	0.56 (14)
L	1.58 (40)	–
M	2.05 (52)	1.61 (41)

Blocking Disk - ISO Size 1 & 2

Ports between manifold stations can be closed by means of blocking disks.

ISO Size	Model Number
1	319A40
2	320A40
3	321A40

Independent Pressure Plates

When a valve in a manifold installation must work at a different pressure than that supplied to the manifold, an independent supply can be provided via an independent pressure plate. The pressure plate mounts between valve and base and isolates the valve from the manifold inlet pressure. The independent supply is connected to an inlet port in the end of the pressure plate.

ISO Size	Inlet Port	Part Number
1	1/4	703K77
2	3/8	692K77
3	1/2	715K77

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

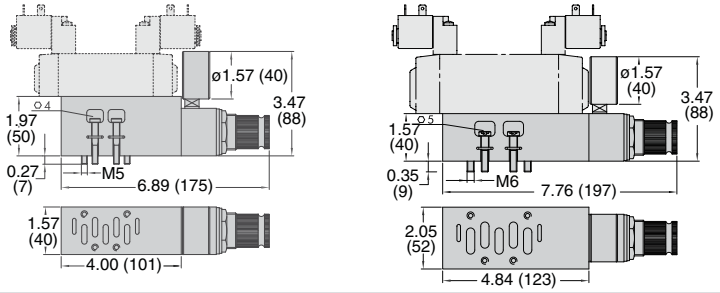
Interposed Pressure Regulators

Single pressure regulators available.

Downstream pressure must always be set to increasing values. Max upstream pressure 190 psig (13 bar). Pressure can be regulated from 0 to 175 psig (0 to 12 bar). Requires no new piping.

ISO Size	Model Number	Weight lb (kg)
1	2000K91	1.68 (0.76)
2	2001K91	1.99 (0.9)

ISO Size 1 **Dimensions** – inches (mm) **ISO Size 2**



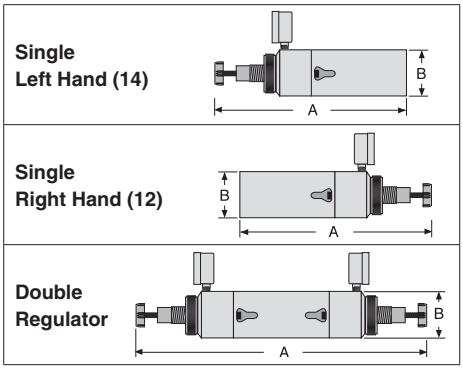
Single and double pressure regulators are available.

Single left hand (14) and single right hand (12) regulators are available. Single pressure regulators provide the same regulated pressure at both outlet ports.

Double pressure regulators allow the pressure at each outlet port to be set independently. Pressure can be regulated from 0 to 150 psig (0 to 10 bar). Requires no new piping.

ISO Size	Regulator Model Number		
	Single		Double
	Left Hand (14)	Right Hand (12)	
1	1300K91	1301K91	1302K91
2	1303K91	1304K91	1305K91
3	1306K91	1307K91	1308K91

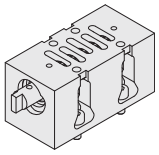
ISO Size	Regulator Dimensions – inches (mm)		
	A (Single)	B (Double)	B (Single/Double)
1	7.3 (186)	13.2 (336)	1.5 (39)
2	8.3 (211)	14.8 (376)	2.0 (51)
3	10.5 (267)	18.3 (465)	2.5 (64)



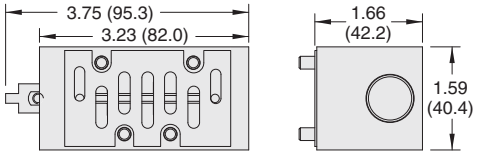
Interposed Shut-Off

Manually actuated with a 1/4 turn, the interposed shut-off isolates all ports, including the pilot.

ISO Size	Part Number
1	1871B91
2 & 3	Please contact ROSS.



ISO Size 1 **Dimensions** - inches (mm)



Interposed Flow Controls (for W60 Series valves only)

An interposed flow control unit regulates the exhaust flow of air from a pneumatic cylinder, thereby controlling the extension and retraction speeds. Separate controls regulate the air flow from each end of the cylinder. Being located between the valve and base, the unit requires no additional piping.

ISO Size	Model Number
1	701B77
2	702B77
3	722B77

Electrical Connectors

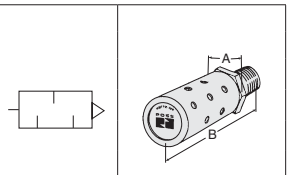
Electrical Connector	Electrical Connector Type	Cord Length meters (feet)	Cord Diameter	Electrical Connector Model Number		
				Without Light	Lighted Connector*	
					24 Volts DC	120 Volts AC
EN 175301-803 Form A	Prewired Connector (18 gauge)	2 (6½)	6-mm	721K77	720K77-W	720K77-Z
	Prewired Connector (18 gauge)	2 (6½)	10-mm	371K77	383K77-W	383K77-Z
	Connector for threaded conduit (1/2 inch electrical conduit fittings)	–	–	723K77	724K77-W	724K77-Z
	Connector Only	–	–	937K87	936K87-W	936K87-Z

*Lights in connectors with a translucent housing can be used as indicator lights to show when solenoids are energized.

Silencers

Port Size	Thread Type	Model Number		Avg. C_v	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
1/2	Male	5500A4003	D5500A4003	4.7	1.3 (32)	3.6 (91)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (91)	0.2 (0.1)

Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.

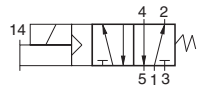


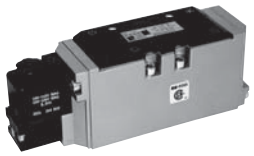
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Solenoid Pilot Controlled Valves

5-Way 2-Position Valves, Single Solenoid Pilot Controlled, Spring Return

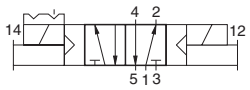
ISO Size	Port Size	Valve Model Number*	Avg. C_V	Weight lb (kg)
1	1/4 - 3/8	W6576A2401**	1.0	1.5 (0.7)
2	3/8 - 1/2	W6576A3401**	2.3	2.0 (1.0)
3	1/2 - 3/4	W6576A4401**	3.4	3.5 (1.6)





5-Way 2-Position Valves, Double Solenoid Pilot Controlled, Detented

ISO Size	Port Size	Valve Model Number*	Avg. C_V	Weight lb (kg)
1	1/4 - 3/8	W6576A2407**	1.0	2.0 (1.0)
2	3/8 - 1/2	W6576A3407**	2.3	2.5 (1.2)
3	1/2 - 3/4	W6576A4407**	3.4	4.0 (1.9



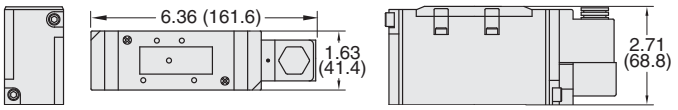
*** Sub-bases and manifold bases ordered separately, refer to page A2.15 or page A2.17 when used with serial bus system.**

** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W6576A2401W. For other voltages, consult ROSS.

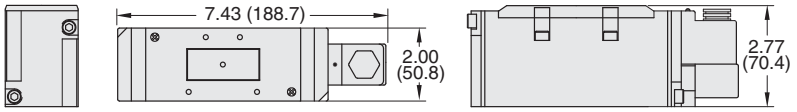
Valve Dimensions – inches (mm)

Single Solenoid

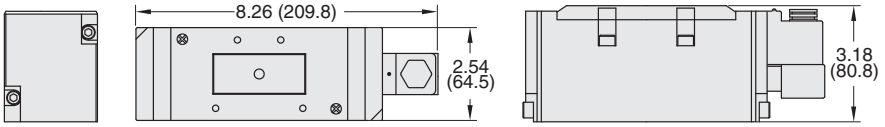
ISO Size 1



ISO Size 2

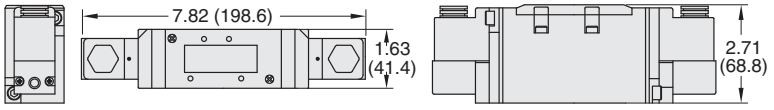


ISO Size 3



Double Solenoid

ISO Size 1



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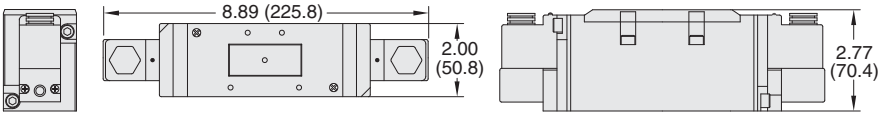
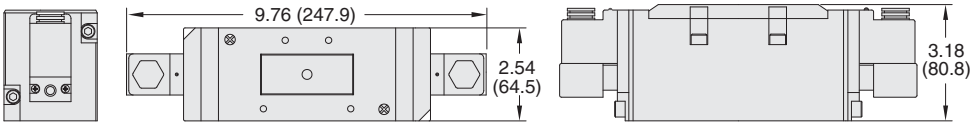


ISO Size 3



Accessories ordered separately, refer to page A2.16 or page A2.18-19 when used with serial bus system.

The W65 Series has a base electrical connector which eliminates the need to disconnect wires to remove the valve. This eliminates drop cords, simplifies maintenance and connection to Serial Data Communication systems.

STANDARD SPECIFICATIONS (for valves on this page):

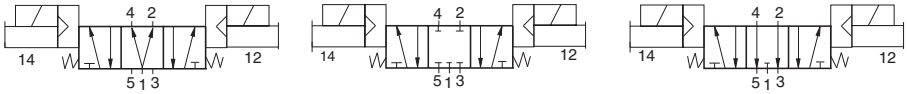
Construction: Spool and sleeve.
Mounting Type: Base.
Solenoids: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid): 6.5 VA holding on 50 or 60 Hz; 3.5 watts on DC (at 10 bar).
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.

Flow Media: Filtered air.
Inlet Pressure:
Size 1 models: 30 to 150 psig (2 to 10 bar);
Size 2 & 3 models: 15 to 150 psig (1 to 10 bar).
All sizes also available up to 232 psig (16 bar).
Pilot Supply: Internal/external supply selected automatically. Required pressure at least 30 psig (2 bar).
Indicator Light: Included, one per solenoid.
Manual Override: Flush; metal, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Solenoid Pilot Controlled Valves

5-Way 3-Position Valves, Double Solenoid Pilot Controlled						
ISO Size	Port Size	Valve Model Number*			Avg. C_v	Weight lb (kg)
		Power Center	Closed Center	Open Center		
1	1/4 - 3/8	W6577A2902**	W6577A2401**	W6577A2407**	1.0	2.0 (1.0)
2	3/8 - 1/2	W6577A3901**	W6577A3401**	W6577A3407**	2.3	2.5 (1.2)
3	1/2 - 3/4	W6577A4900**	W6577A4401**	W6577A4407**	3.4	4.0 (1.9)



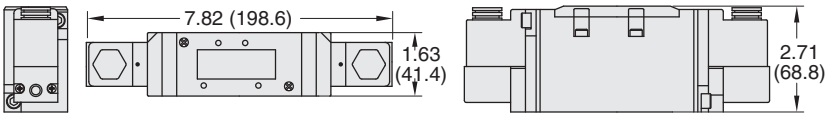
Power Center | Closed Center | Open Center

* **Sub-bases and manifold bases ordered separately, refer to page A2.15 or page A2.17 when used with serial bus system.**

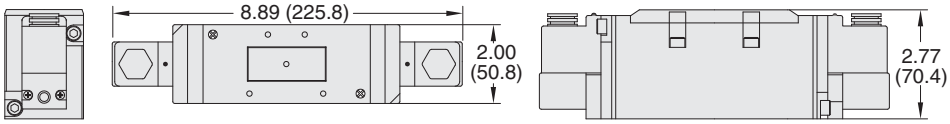
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W6577A2902W. For other voltages, consult ROSS.

Valve Dimensions – inches (mm)

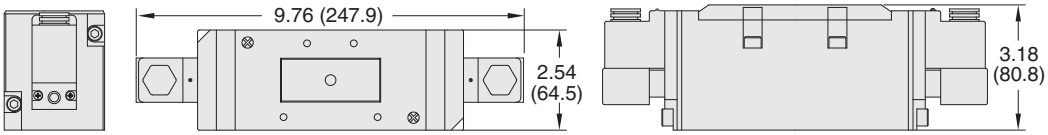
ISO Size 1



ISO Size 2



ISO Size 3



Accessories ordered separately, refer to page A2.16 or page A2.18-19 when used with serial bus system.

The W65 Series has a base electrical connector which eliminates the need to disconnect wires to remove the valve. This eliminates drop cords, simplifies maintenance and connection to Serial Data Communication systems.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoids: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid): 6.5 VA holding on 50 or 60 Hz; 3.5 watts on DC (at 10 bar).
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.

Inlet Pressure:
Size 1 models: 30 to 150 psig (2 to 10 bar);
Size 2 & 3 models: 15 to 150 psig (1 to 10 bar).
All sizes also available up to 232 psig (16 bar).
Pilot Supply: Internal/external supply selected automatically. Required pressure at least 30 psig (2 bar).
Indicator Light: Included, one per solenoid.
Manual Override: Flush; metal, non-locking.

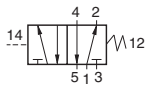
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

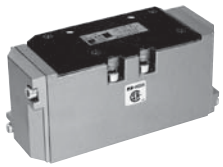
Pressure Controlled Valves

ISO 5599/II
W65 Series

5-Way 2-Position Valves, Single Pressure Controlled, Spring Return

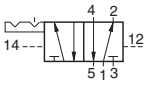
ISO Size	Port Size	Valve Model Number*	Avg. C_v	Weight lb (kg)
1	1/4 - 3/8	W6556A2411	1.0	0.8 (0.4)
2	3/8 - 1/2	W6556A3411	2.3	1.5 (0.7)
3	1/2 - 3/4	W6556A4411	3.4	3.0 (1.4)

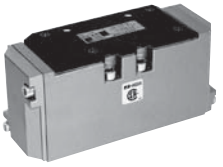




5-Way 2-Position Valves, Double Pressure Controlled, Detented

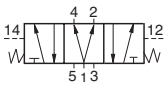
ISO Size	Port Size	Valve Model Number*	Avg. C_v	Weight lb (kg)
1	1/4 - 3/8	W6556A2417	1.0	0.8 (0.4)
2	3/8 - 1/2	W6556A3417	2.3	1.5 (0.7)
3	1/2 - 3/4	W6556A4417	3.4	3.0 (1.4)



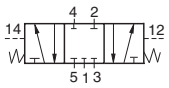


5-Way 3-Position Valves, Double Pressure Controlled

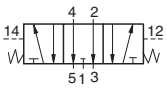
ISO Size	Port Size	Valve Model Number*			Avg C_v	Weight lb (kg)
		Power Center	Closed Center	Open Center		
1	1/4 - 3/8	–	W6557A2411	W6557A2417	1.0	0.8 (0.4)
2	3/8 - 1/2	W6557A3901	W6557A3411	W6557A3417	2.3	1.5 (0.7)
3	1/2 - 3/4	W6557A4900	W6557A4411	W6557A4417	3.4	3.0 (1.4)



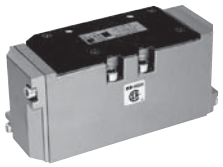
Power Center



Closed Center



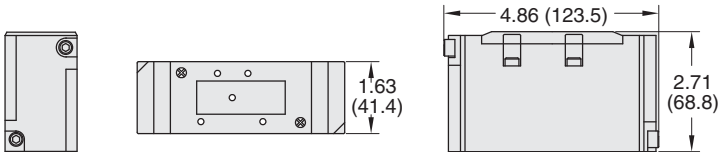
Open Center



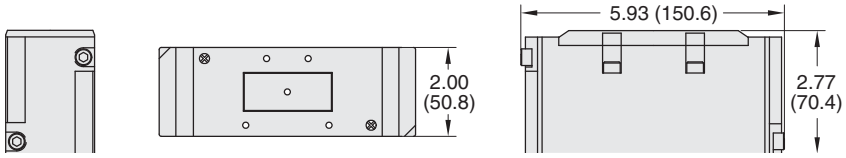
*** Sub-bases and manifold bases ordered separately, refer to page A2.15 or page A2.17 when used with serial bus system.**

Valve Dimensions – inches (mm)

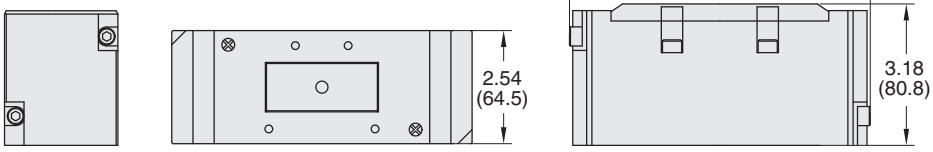
ISO Size 1



ISO Size 2



ISO Size 3



Accessories ordered separately, refer to page A2.16 or page A2.18-19 when used with serial bus system.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.

Inlet Pressure:
Size 1 models: 30 to 150 psig (2 to 10 bar);
Size 2 & 3 models: 15 to 150 psig (1 to 10 bar).
All sizes also available up to 232 psig (16 bar).
Pilot Supply: Internal/external supply selected automatically.
Required pressure at least 30 psig (2 bar).

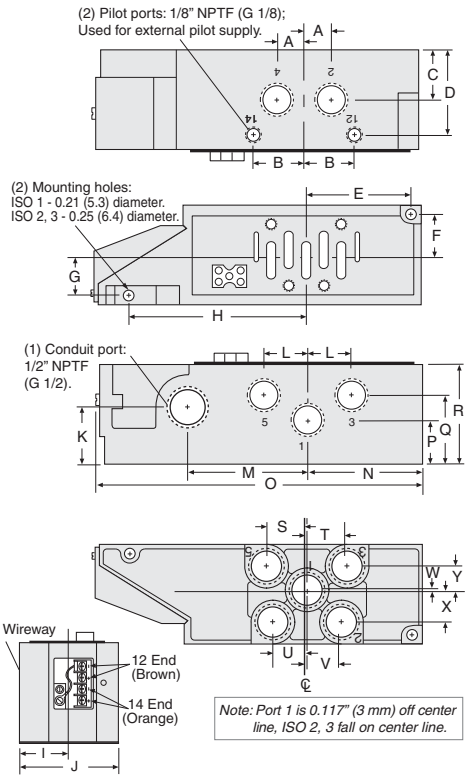
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Sub-Bases & Modular Manifold Bases

Side and Bottom-Ported Sub-Bases

ISO Size	Port Threads	Port Size	Sub-Base Model Number
1	NPT	1/4Side	949N91
	NPT	1/4 Side/Bottom	971N91
	NPT	3/8 Side	950N91
	NPT	3/8 Side/Bottom	972N91
	G	1/4 Side	D949N91
	G	3/8 Side	D950N91
2	NPT	3/8 Side	951N91
	NPT	3/8 Side/Bottom	952N91
	NPT	1/2 Side	953N91
	NPT	1/2 Side/Bottom	954N91
	G	1/2 Side	D953N91
3	NPT	1/2" Side	955N91
	NPT	1/2" Side/Bottom	956N91
	NPT	3/4" Side	957N91
	NPT	3/4" Side/Bottom	958N91
	G	1/2 Side	D955N91
	G	1/2 Side/Bottom	D956N91
	G	3/4 Side	D957N91
	G	3/4 Side/Bottom	D958N91

Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	0.5 (13)	0.6 (16)	0.8 (21)
B	1.0 (26)	1.3 (33)	1.8 (45)
C	0.8 (21)	1.2 (31)	1.3 (34)
D	1.5 (38)	1.9 (49)	2.7 (70)
E	1.6 (39)	2.3 (57)	2.5 (63)
F	0.9 (23)	1.1 (29)	1.5 (39)
G	0.9 (23)	1.1 (29)	1.4 (36)
H	3.6 (92)	4.3 (108)	5.4 (137)
I	1.1 (29)	1.4 (35)	1.8 (45)
J	2.3 (58)	2.8 (70)	3.5 (90)
K	0.9 (24)	1.5 (37)	1.8 (47)
L	0.9 (22)	1.1 (27)	1.5 (38)
M	2.4 (60)	3.0 (75)	4.1 (104)
N	1.8 (46)	2.5 (64)	2.7 (69)
O	6.5 (164)	7.8 (197)	9.3 (235)
P	0.8 (21)	1.1 (28)	1.3 (34)
Q	1.3 (34)	1.7 (44)	2.0 (51)
R	1.9 (47)	2.4 (60)	3.3 (85)
S	0.8 (21)	1.1 (27)	1.6 (42)
T	1.1 (27)	1.1 (27)	1.6 (42)
U	0.5 (13)	0.9 (22)	1.1 (27)
V	0.6 (15)	0.9 (22)	1.1 (27)
W	0.3 (8)	0.1 (3)	0.8 (20)
X	0.7 (17)	0.8 (20)	0.8 (20)
Y	0.6 (16)	0.9 (20)	0.8 (20)



Bottom and End-Ported Manifold Bases

Each manifold station assembly includes a manifold assembly, socket head screws, nuts and seals.
Each end station kit includes left and right end plates, socket head screws, nuts and seals.

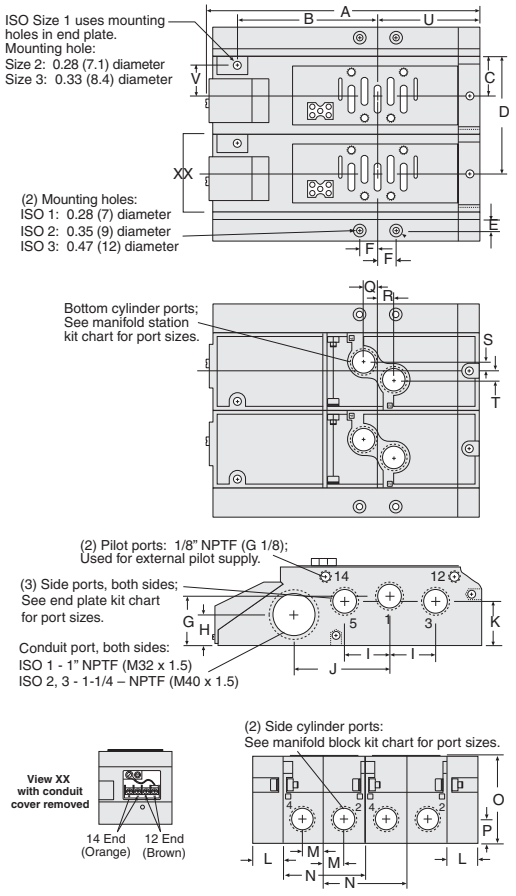
Manifold Station Assembly		
ISO Size	Port Size	Model Number*
1	1/4" End/Bottom	959N91
	3/8" End/Bottom	960N91
2	3/8" End/Bottom	961N91
	1/2" End/Bottom	962N91
3	1/2" End/Bottom	963N91
	3/4" End/Bottom	964N91

*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D959N91.

End Station Kit		
ISO Size	Port Size	Model Number*
1	3/8"	493N86
2	1/2"	494N86
3	1"	495N86

*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D493N86.

Dimensions inches (mm)			
	ISO 1	ISO 2	ISO 3
A	7.2 (183)	9.0 (229)	10.6 (270)
B	4.9 (125)	6.0 (152)	7.1 (180)
C	1.0 (26)	1.3 (33)	1.7 (43)
D	3.1 (79)	3.9 (100)	5.1 (128)
E	0.6 (14)	0.6 (16)	0.6 (15)
F	0.6 (14)	0.7 (17)	1.0 (26)
G	1.3 (34)	1.7 (42)	1.8 (46)
H	1.0 (25)	1.2 (30)	1.2 (31)
I	1.1 (28)	1.4 (35)	2.1 (52)
J	2.5 (64)	3.1 (79)	4.1 (104)
K	1.2 (31)	1.6 (40)	1.7 (42)
L	0.9 (22)	1.0 (25)	1.2 (30)
M	0.5 (13)	0.6 (16)	0.8 (21)
N	2.1 (53)	2.6 (67)	3.4 (86)
O	2.2 (55)	2.6 (66)	3.1 (78)
P	0.6 (16)	0.9 (22)	0.8 (20)
Q	0.5 (13)	0.6 (15)	0.7 (18)
R	0.5 (13)	0.6 (15)	0.8 (21)
S	0.3 (7)	0.3 (8)	0.5 (13)
T	0.3 (7)	0.3 (8)	0.5 (12)
U	2.0 (51)	2.8 (67)	3.1 (79)
V	----------	1.0 (26)	1.3 (31)



Assembled manifolds also available, consult ROSS.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

A

A2

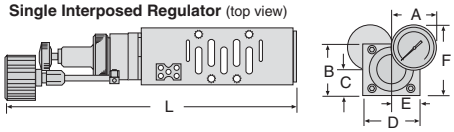
NOTE: Accessories from this page are to be used only with sub-bases and manifolds on page A2.14-15.

Interposed Regulators

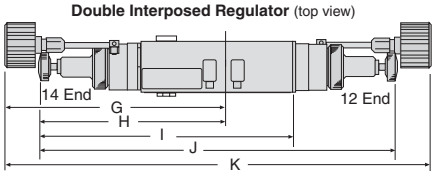
The interposed regulator controls the pressure through the base-mounted valve. These interposed devices are "sandwich" style, mounting between a valve and base or manifold. When using a dual interposed regulator for a W65 Series solenoid valve, the valve **must be externally piloted (port 14)**.

WARNING: Double interposed regulators will reverse output ports, the 12 solenoid will pressurize the 4 port, the 14 solenoid will pressurize the 2 port which may cause unexpected, potentially dangerous cylinder movement at valve pressurization.

Single Interposed Regulator (top view)



Double Interposed Regulator (top view)

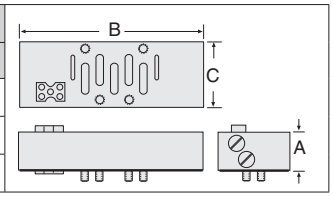


ISO Size	Model Number	Dimensions inches (mm)											
		A	B	C	D	E	F	G	H	I	J	K	L
1 (Sgl.)	965N91	1.6 (39)	1.8 (45)	0.9 (23)	1.7 (43)	0.9 (22)	2.5 (63)	6.2 (157)	7.2 (182)	8.0 (204)	11.6 (295)	13.6 (345)	9.0 (229)
1 (Dbl.)	966N91	1.6 (39)	1.8 (45)	0.9 (23)	1.7 (43)	0.9 (22)	2.5 (63)	6.2 (157)	7.2 (182)	8.0 (204)	11.6 (295)	13.6 (345)	9.0 (229)
2 (Sgl.)	967N91	1.6 (39)	1.8 (45)	0.9 (23)	2.0 (51)	1.0 (26)	2.5 (63)	6.5 (166)	7.5 (191)	9.0 (229)	12.6 (320)	14.6 (370)	10.0 (254)
2 (Dbl.)	968N91	1.6 (39)	1.8 (45)	0.9 (23)	2.0 (51)	1.0 (26)	2.5 (63)	6.5 (166)	7.5 (191)	9.0 (229)	12.6 (320)	14.6 (370)	10.0 (254)
3 (Sgl.)	969N91	2.1 (52)	2.7 (67)	1.3 (34)	2.6 (66)	1.3 (33)	3.4 (85)	9.5 (242)	8.0 (203)	10.6 (270)	18.2 (463)	15.2 (386)	13.0 (330)
3 (Dbl.)	970N91	2.1 (52)	2.7 (67)	1.3 (34)	2.6 (66)	1.3 (33)	3.4 (85)	9.5 (242)	8.0 (203)	10.6 (270)	18.2 (463)	15.2 (386)	13.0 (330)

Flow Control Kits

The interposed flow control independently adjusts the speed of a cylinder's extend and retract motions. This action is achieved by throttling the flow of exhaust air through ports 3 and 5 by means of a separate needle valve across each of these ports. These interposed devices are "sandwich" style, mounting between a valve and a base or manifold.

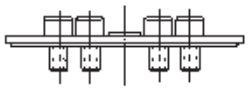
ISO Size	Model Number	Dimensions inches (mm)		
		A	B	C
1	1371N77	0.9 (24)	3.8 (97)	1.7 (43)
2	1372N77	1.3 (33)	5.1 (130)	2.0 (51)
3	1373N77	1.6 (41)	5.6 (142)	2.6 (66)



Blank Station Kits

A blank station plate is used to cover the top of a manifold station not in use.

ISO Size	1	2	3
Kit Number	1381N77	1382N77	1383N77



Blocking Disk Kits

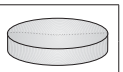
A blocking disk closes the ports between manifold stations.

ISO Size	1	2	3
Kit Number	1376N77	1378N77	1380N77

Pilot Port Blocking Plug

The pilot blocking plug blocks the pilot ports between manifold stations.

ISO Size	1	2	3
Kit Number	1375N77	1377N77	1379N77



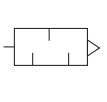
Transition Plates

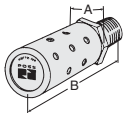
To bank different manifold sizes together.

Left Manifold ISO Size	Right Manifold ISO Size	Model Number
1	2	1387N77
2	1	1388N77
2	3	1389N77
3	2	1390N77

Silencers

Port Size	Thread Type	Model Number		Avg. C_v	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
1/4	Male	5500A2003	D5500A2003	1.2	0.9 (21)	2.2 (55)	0.1 (0.1)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
1/2	Male	5500A4003	D5500A4003	4.7	1.3 (32)	3.6 (91)	0.2 (0.1)
1	Male	5500A6003	D5500A6003	14.6	2.0 (51)	5.4 (138)	0.6 (0.3)





Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Online Version
Rev. 10/02/17

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R | PS4011 | 55 | M | C | P

Basic Series	
Size 1	PS4011
Size 2	PS4111
Size 3	PS4211

Enclosures / Lead Length	
J†	Circuit Board, Single Address
M†	**Circuit Board, Double Address**

† Not Available with Sub-Base Kits.

Note: When using the Enclosure / Lead Length "J" or "M" option:
12 volts DC - Maximum number of coils is 13
24 volts DC - Maximum number of coils is 21
120 volts AC - Coils limited by the number of pins available in the connector (25-Pin D-Sub = 24 coils, 19-Pin Brad Harrison = 16, 12-Pin M23 = 8)
240 volts AC - Must use "A" or "C" Option, Lead Wires or Terminal Blocks

Mounting Base Style / Port Size		
ISO Size 1	**Sub-base: 3/8 NPT Side Ports**	15
	Sub-base: 3/8 BSPP Side Ports	16*
	Manifold Base: 3/8 NPT End Ports	55
	Manifold Base: 3/8 BSPP End Ports	56*
	Manifold Base: 3/8 NPT Bottom / End Port	65†
	Manifold Base: 3/8 BSPP Bottom / End Port	66*†

*BSPP ISO 1179 Specifications.
† #1 Bottom Port - 1/4".

Mounting Base Style / Port Size		
ISO Size 2	**Sub-base: 1/2 NPT Side Ports**	17
	Sub-base: 1/2 BSPP Side Ports	18*
	Sub-base: 1/2 NPT Bottom / End Port	27
	Sub-base: 1/2 BSPP Bottom / End Port	28*
	Manifold Base: 1/2 NPT Bottom / End Port	67
	Manifold Base: 1/2 BSPP Bottom / End Port	68*

*BSPP ISO 1179 Specifications.

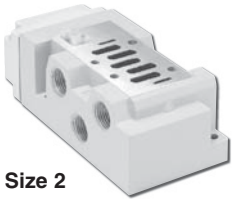
Mounting Base Style / Port Size		
ISO Size 3	**Sub-base: 3/4 NPT Side Ports**	19
	Sub-base: 3/4 BSPP Side Port	10*
	Sub-base: 3/4 NPT Bottom / End Port	29
	Sub-base: 3/4 BSPP Bottom / End Port	20*
	Manifold Base: 3/4 NPT Bottom / End Port	69
	Manifold Base: 3/4 BSPP Bottom / End Port	60*

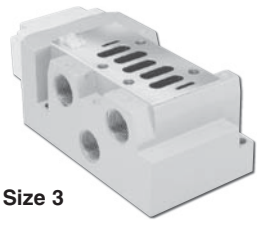
*BSPP ISO 1179 Specifications.

Sub-Base Kits

Automotive Connectors
Mounted in 1/2" Conduit Port
- 3-Pin - Wired for Single Solenoid
- 4-Pin / 5-Pin - Wired for Double Solenoid


Size 1


Size 2


Size 3

Manifold Base Kits

Automotive Connectors
Mounted in Individual Manifold Conduit Cover
- 3-Pin - Wired for Single Solenoid
- 4-Pin / 5-Pin - Wired for Double Solenoid


Size 1


Size 2


Size 3

End Station Kits & Accessories

End Station Kits

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R | PS40 | 20 | L2 | 0 | C | P

Basic Series

ISO Size 1	**5599**	**PS40**
ISO Size 2	5599	PS41
ISO Size 3	5599	PS42

End Station Kit Type

End Station, Collective Wiring	**20**
End Station, Non-Collective Wiring	31

Options	
Non-Collective Wiring	01*
Collective Wiring End Station, Top Ported	L1†¤**
25-Pin, D-Sub	**L2†#+**
19-Pin, Round, Brad Harrison	L3†+
12-Pin, M23	L4†+
Serial Bus	L6^+
16 Outputs *(For Turck Serial Bus Communication Module)*	T1
32 Outputs *(For Turck Serial Bus Communication Module)*	T2

* Only Available with End Station Kit Type "31".
** For PS41 and PS42 Kits Only.
† Only Available with End Station Kit Type "20".
¤ Must Order Collective Wiring Module Separately.
120 VAC is Not CSA Rated.
^ Valve Driver Module and 24 Output Cable Installed. Must order communication modules separately.
+ Must Order Bases with Circuit Boards.

Engineering Level

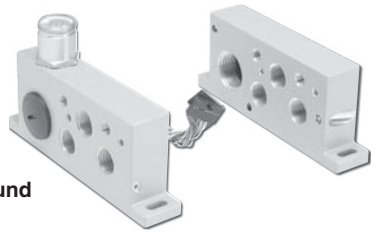
C	Current

Thread Type

0	NPT
1	BSPP "G"

Size 1 25-Pin D-Sub End Stations

Size 1 Non-Collective Wiring End Stations

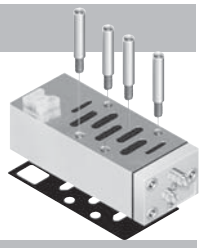


Size 1 19-Pin Round End Stations

Remote Pilot Access Plate Kits

ISO Size	Port Size	Kit Number	
		NPT Threads	BSPP Threads
1	1/8"	RPS401500CP	RPS401501CP
2	1/8"	RPS411500CP	RPS411501CP
3	1/8"	RPS421500CP	RPS421501CP

Kit includes: Pilot Port Access Plate, Gasket and Mounting Studs.



Auxiliary Access Plate Kits

ISO Size	Port Size	Kit Number	
		NPT Threads	BSPP Threads
1	1/4" & 3/8"	RPS403000CP	RPS403001CP

Kit includes:
Pilot Port Access Plate, Gasket and Mounting Screws.
• Used on Size 1 Manifolds to provide auxiliary access to Ports 1, 3 & 5.
• Port 1: 1/4", Ports 3 & 5: 3/8". Height: .72 Inch

Blank Station Kits

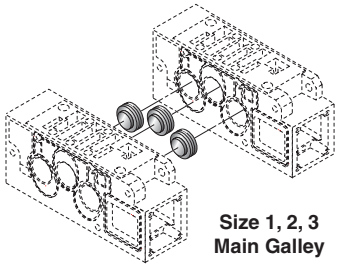
ISO Size	Kit Number
1	RPS4034CP
2	RPS4134CP
3	RPS4234CP

Kit includes: Blank Station Plate, Gasket, and Mounting Bolts.

Manifold Port Isolation Kits

Main Galley (1, 3, 5)

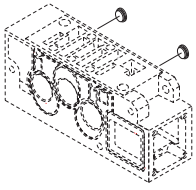
ISO Size	Kit Number
1	RPS4032CP
2	RPS4132CP
3	RPS4232CP
Kit includes: Plugs with O-rings.	



Size 1, 2, 3 Main Galley

Pilot Galley

ISO Size	Kit Number
1, 2, & 3	RPS4033CP
Kit includes: Plugs with O-rings.	



Size 1, 2, 3 Pilot Galley

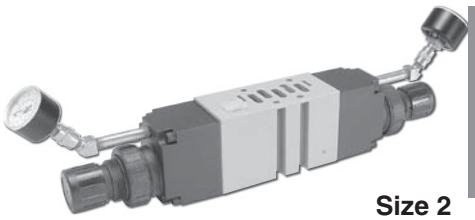
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

A

A2

Interposed Pressure Regulators

Size 1
(Dual Interposed Regulator Shown)



Size 2
(Dual Interposed Regulator Shown)

HOW TO ORDER

(Choose your options (in red) to configure your valve model number.)

R	PS4038	1	6	6	C	P

Basic Series

ISO Size 1	5599-2	PS4038
ISO Size 2	55992	PS4138
ISO Size 3	5599-2	PS4238

Regulator Function

Common Pressure Regulator	1
Independent Pressure Regulator	2
Selector Regulator	3

#4 Port Regulator / Gauge*

0**	Line By-Pass Plate
1	1-30 PSIG w/o Gauge
2	2-60 PSIG w/o Gauge
3	5-125 PSIG w/o Gauge
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
C	Air Pilot w/60 PSIG Gauge
D	Air Pilot w/160 PSIG Gauge

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

** Pressure Line By-Pass Option can only be used with Independent and Selector Regulators (Option 2 & 3 in Interposed Block Function).

#2 Port Regulator / Gauge*

0**	Line By-Pass Plate
1	1-30 PSIG w/o Gauge
2	2-60 PSIG w/o Gauge
3	5-125 PSIG w/o Gauge
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
C	Air Pilot w/60 PSIG Gauge
D	Air Pilot w/160 PSIG Gauge

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

** Pressure Line By-Pass Option can only be used with Independent and Selector Regulators (Option 2 & 3 in Interposed Block Function).

Ordering Components

- *Manifold Base or Sub-Base Kit required*
- *Interposed Regulator Kit configured for Internal Pilot as standard*
- *Order valve as External Pilot*

How to Configure Interposed Regulator / Valve Combinations

Internal Pilot Configuration - Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration - Size 1, Size 2, Size 3

An External Pilot pressure in Port 12 or 14 of the base feeds thru the Interposed Regulator 12 or 14 galley directly to the 12/14 pilot of the valve.

This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

WARNING: Double interposed regulators will reverse output ports, the 12 solenoid will pressurize the 4 port, the 14 solenoid will pressurize the 2 port which may cause unexpected, potentially dangerous cylinder movement at valve pressurization.

Gauge Adapter Kit

Description	Model Number
Gauge Kit	RPS5651160P
1/8" Female to 1/8" Female Coupling	R207P-2*
1/8" Male to 1/8" Male Long Nipple	RVS215PNL-2-15*

* Included in Gauge Kit RPS5651160P.

Included with all Size 00 Regulators. Both kits are required on all Size 0 & 00 Regulators when the Regulator is on the last Station on the Right (14) End.

Interposed Flow Controls

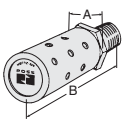
ISO Size	Model Number
1	RPS4035CP
2	RPS4135CP
3	RPS4235CP

Both adjustment screws are located on the 12 end of the unit.
Interposed Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting.
Interposed Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.

A Interposed Flow Control and Common Port Interposed Regulator may be sandwiched together on a Manifold or Sub-Base. The Interposed Flow Control MUST be located between the manifold/Sub-Base and the Common Port Interposed Regulator.

Silencers

Port Size	Thread Type	Model Number NPT Threads	Model Number BSPT Threads	Avg. C_v	Dimensions inches (mm) A	Dimensions inches (mm) B	Weight lb (kg)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
1/2	Male	5500A4003	D5500A4003	4.7	1.3 (32)	3.6 (91)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (91)	0.2 (0.1)



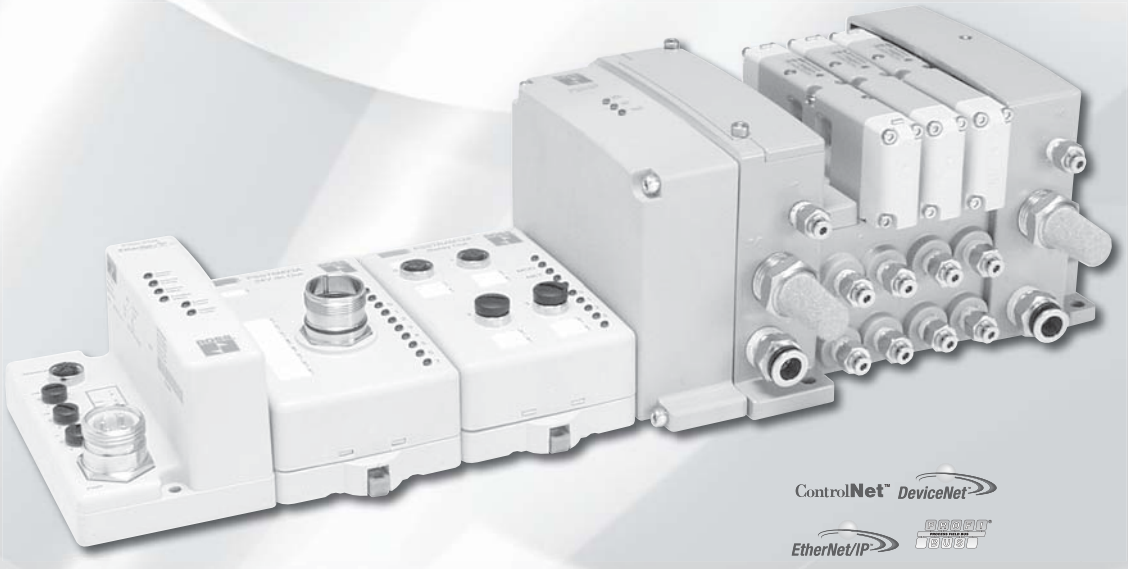
Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

A

ROSS CONTROLS®

ROSS SERIAL BUS COMMUNICATIONS



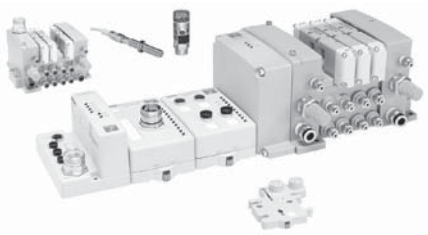
www.rosscontrols.com

ROSS SERIAL BUS COMMUNICATIONS – KEY FEATURES

- A complete Serial Bus communication offering for all ISO valves
- Centralized and decentralized pneumatics and I/O configurations
- Communication module supports up to 63 I/O modules, 264 Inputs, and 264 Outputs
- Input modules accept signals from sensors, photo eyes, limits and other field input devices
- Output modules provide signals to remote solenoid valves and other field output devices
- UL, C-UL, and CE certified

I/O - Centralized Configuration

A complete Serial Bus communication offering for all ISO valves.
UL, C-UL and CE certifications (as marked)
Centralized Serial Bus system.
Pneumatics and I/O are in close proximity to one another.
I/O density per module = 8.

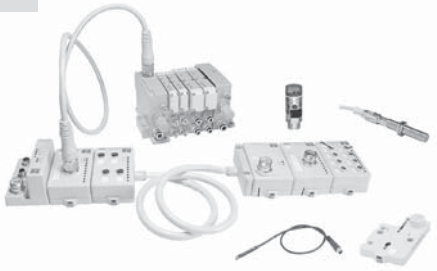


I/O - Remote Configuration

A complete Serial Bus communication offering for all ISO valves.
UL, C-UL and CE certifications (as marked)
Centralized Serial Bus system.
Pneumatics and I/O are in close proximity to one another.
M23, 12-Pin output extension to remote valve island.
I/O density per module = 8.

I/O - Compartmentalized Remote Configuration

A complete Serial Bus communication offering for all ISO valves.
UL, C-UL and CE certifications (as marked).



Components Selection Steps

1. Select Communication Interface Module
2. Select I/O Modules
3. Select Valve Driver Module
4. Select Terminating Base Module
5. Select Optional Power Component
6. Select Accessories

Serial Bus Product Compatibility

	DeviceNet™ Adapter RPSSCDM	ControlNet Adapter RPSSCCNA	EtherNet Adapter RPSSCENA	PROFIBUS Adapter RPSSCPBA
PLC-5™ with Network Port	IOD	NS	NS	NA
SLC 500™ with Network Port	IOD	NS	NS	NA
PLC-5 Processor via Network Module	IOD	NS	NS	3
1756 Logix™ Communication Interface	IOD	IOD	IOD	3
PanelView™ Terminal	NA	NA	NA	NA
RSLinx™ Software	NA	NA	NA	NA
1769-L20, -L30 Controller with 1761- NET Interface	NA	NS	NS	NA
1769-L32E, -35E	NA	NA	IOD	NA
1769-L32C, -35CR	NA	IOD	NA	NA
1769 CompactLogix™ Communication Interface	IOD	NA	NA	3*
SoftLogix5800™ Communication Interface	IOD	IOD	IOD	3*
PC with RSLinx Only	NS	NS	NS	NA
FlexLogic™ Communication Interface	IOD	IOD	IOD	3

IOD = I/O Data, NS = Not Supported, NA = Not Applicable
3 = Requires third party scanner module
* Hilscher North America

Communication Considerations

Serial Bus features are impacted by your network choice.

Network	Impact
DeviceNet™ RPSSCDM12A and RPSSCDM18PA	The RPSSCDM12A and RPSSCDM18PA provide two means of connecting a node of I/O to DeviceNet™. A total of 63 Serial Bus modules can be assembled on a single DeviceNet™ node. Expansion power supplies may be used to provide additional PointBus backplane current.
ControlNet™ RPSSCCNA	A total of 63 Serial Bus modules can be assembled on a single ControlNet™ node. Expansion power supplies may be used to provide additional PointBus backplane current. Up to 25 direct connections and 5 rack connections are allowed.
EtherNet/IP™ RPSSCENA	A total of 63 Serial Bus modules can be assembled on a single EtherNet / IP node. Expansion power supplies may be used to provide additional PointBus backplane current. Refer to the User Manual, Bulletin 601 (form #A10311) to determine the ratings for direct and rack connections allowed.
PROFIBUS DP™ RPSSCPBA	A total of 63 Serial Bus modules can be assembled on a single PROFIBUS node. Expansion power supplies may be used to provide additional PointBus backplane current.

Communication Modules*

Network	Model Number	Voltage
†§ DeviceNet™ (M18 or M12)	RPSSCDM18PA (M18) or RPSSCDM12A (M12)	10 to 28.8 volts DC
†§ ControlNet™	RPSSCCNA	10 to 28.8 volts DC
†§ Ethernet I/P™	RPSSCENA	10 to 28.8 volts DC
†§ Profibus-DP®	RPSSCPBA	10 to 28.8 volts DC

* IP67 Certified.
† Reference the following Documents for Installation Instructions.
DeviceNet™ - A10313, A10311; ControlNet™ - A10315.
Ethernet I/P - A10316; Profibus-DP - A10314.
§ Requires a RPSST8M23A or RPSSV32A in all manifold assemblies.
RPSSV32A is included in factory assembled manifolds and Serial Bus End Station Kits.

EDS and GSD files located at www.rosscontrols.com

RPSSCENA

RPSSCCNA

I/O Modules*

Network		Model Number	Voltage
†	8 Digital Inputs M12 (NPN Sinking - Requires PNP Sourcing Input Device)	RPSSN8M12A	10 to 28.8 volts DC
†	8 Digital Inputs M12 (PNP Sourcing - Requires NPN Sinking Input Device)	RPSSP8M12A	10 to 28.8 volts DC
†	8 Digital Inputs M8 (NPN Sinking - Requires PNP Sourcing Input Device)	RPSSN8M8A	10 to 28.8 volts DC
†	8 Digital Inputs M8 (PNP Sourcing - Requires NPN Sinking Input Device)	RPSSP8M8A	10 to 28.8 volts DC
†	8 Digital Inputs M23 12-Pin (PNP Sourcing - Requires NPN Sinking Input Device)	RPSSP8M23A	10 to 28.8 volts DC
†	8 Digital Inputs M23 12-Pin (NPN Sinking - Requires PNP Sourcing Input Device)	RPSSN8M23A	10 to 28.8 volts DC
+	8 Digital Outputs M12 (PNP Sourcing)	RPSST8M12A	10 to 28.8 volts DC
+	8 Digital Outputs M8 (PNP Sourcing)	RPSST8M8A	10 to 28.8 volts DC
§	4 Digital Output, High Watt Relay M12 (PNP Sourcing) (2 Amp)	RPSTR4M12A	24 volts DC
+#	8 Digital Outputs M23 (PNP Sourcing)	RPSST8M23A	10 to 28.8 volts DC
‡	2 Analog Inputs Voltage (M12)	RPSSNAVM12A	0 to 10V ± 10V
‡	2 Analog Inputs Current (M12)	RPSSNACM12A	4 to 20mA or 0 to 20mA
¨	2 Analog Outputs Voltage (M12)	RPSSTAVM12A	0 to 10V ± 10V
¨	2 Analog Outputs Current (M12)	RPSSTACM12A	4 to 20mA or 0 to 20mA

* IP67 Certified.
Reference the following Documents for Installation Instructions.
† A10318, +A10319, §A10320, ‡A10321, ¨A10322.
# Can be used with RPSSTERM.
See www.rosscontrols.com

RPSST8M12A

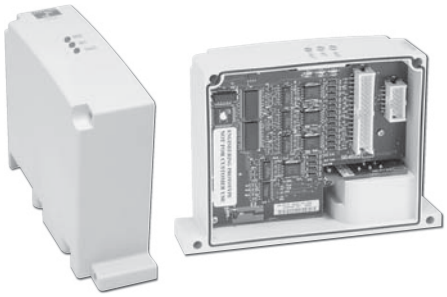
RPSSP8M23A

RPSSNACM12A

RPSSTACM12A

RPSSN8M8A

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



RPSSV32A

Valve Driver Module

Description	ISO Size	Model Number
32 Point Module	00, 0, 1, 2, & 3	RPSSV32A*†
24 Output Cable	00 & 0	RPS5624P†
25 - 32 Output Cable	00 & 0	RPS5632P†
24 Output Cable	1, 2, & 3	RPS4024P†

* Reference Document A10312 for Installation Instructions.
See www.rosscontrols.com
† Serial Bus Manifold assemblies and end station kits include a valve driver module (RPSSV32A) and cable.
Series W66, Size 00 / Series W66, Size 0 24 output manifolds require a RPS5624P.
Series W66, Size 00 / Series W66, Size 0 32 output manifolds require a RPS5624P + RPS5632P.
Size 1, 2, & 3 manifolds require a RPS4024P, allowing 21 outputs.

RPSSTERM

Terminating Base Module

Description	Model Number
Terminating Module	RPSSTERM

Used as the last Terminating Module for a Stand Alone Serial Bus Assembly.
A RPSST8M23A must be located in the Serial Bus assembly.

RPSSSE24A

Power Extender Module

Description	Voltage	Model Number
Field Power Module	24 volts DC	RPSSSE24A

A Power Extender Module must be used on every 12th Module in an Serial Bus assembly. See www.rosscontrols.com
Reference Document A10317 and A10311 for configuration instructions.
See www.rosscontrols.com

RPSSEXT1

Bus Extender Cable

Description	Voltage	Model Number
1 Meter Cable*	24 volts DC	RPSSEXT1
3 Meter Cable*	24 volts DC	RPSSEXT2

* Requires a RPSSSE24A Power Extender Module.
IP67 Certified.
See www.rosscontrols.com

RP8BPA00MA

Devicebus Terminating Resistor

Description	Model Number
DeviceNet™ M12 Type A	RP8BPA00MA
Profibus-DP M12 Type B	RP8BPA00MB

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Communication Modules*

Network	Model Number	Voltage
†§ DeviceNet™ (M18 or M12)	RPSSCDM18PA (M18) or RPSSCDM12A (M12)	10 to 28.8 volts DC
†§ ControlNet™	RPSSCCNA	10 to 28.8 volts DC
†§ Ethernet I/P™	RPSSCENA	10 to 28.8 volts DC
†§ Profibus-DP®	RPSSCPBA	10 to 28.8 volts DC

* IP67 Certified.
† Reference the following Documents for Installation Instructions.
DeviceNet™ - A10313, A10311; ControlNet™ - A10315.
Ethernet I/P - A10316; Profibus-DP - A10314.
§ Requires a RPSST8M23A or RPSSV32A in all manifold assemblies.
RPSSV32A is included in factory assembled manifolds and Serial Bus End Station kits.

EDS and GSD files located at www.rosscontrols.com

RPSSCCNA

RPSSCENA

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General Environmental	
Operating Temperature	-4° to 140° F
Storage Temperature	-40° to 185° F
Relative Humidity	5 to 95% non-condensing
Vibration	5g @ 10 to 500Hz
Protection Class	Operating 30g; Non-operating 50g
Shock	IP 65/66/67
Approvals	UL, C-UL, CE

Maximum Size Layout

Model Number	PointBus Current (mA)	Maximum I/O Modules with 24VDC Backplane Current at 75 mA each	Maximum I/O Modules with Expansion Power Supplies	Maximum Number of I/O Module Connections
RPSSCDM12A on DeviceNet™	1000	Up to 13	63	
RPSSCDM18PA on DeviceNet™				
RPSSCCNA on ControlNet™				5 rack and 20 direct
RPSSCENA on EtherNet/IP™				20 total connections including rack and direct
RPSSCPBA on PROFIBUS				
RPSSSE24A Expansion Power	Horizontal mounting: 1A@5V DC for 10...19.2V input; 1.3A @ 5V DC for 19.2...28.8V input Vertical mounting: 1A @ 5V DC for 10...28.8V input			Not to exceed scanner capacity

Power Supply Distance Rating

Modules are placed to the right of the power supply. Each Serial Bus module can be placed in any of the slots to the right of the power supply until the usable backplane current of that supply has been exhausted. An adapter provides 1 A current to the PointBus. The RPSSSE24A provides up to 1.3 A and I/O modules require from 75 mA (typical for the digital and analog I/O modules) up to 90 mA or more.

PointBus Current Requirements

Model Number	PointBus Current Requirements
RPSSN8xxx	75 mA
RPSSP8xxx	
RPSST8xxx	
RPSSTR4MRA	90 mA
RPSSNACM12A	75 mA
RPSSTACM12A	
RPSSNAVM12A	
RPSSTAVM12A	
RPSSV32A	

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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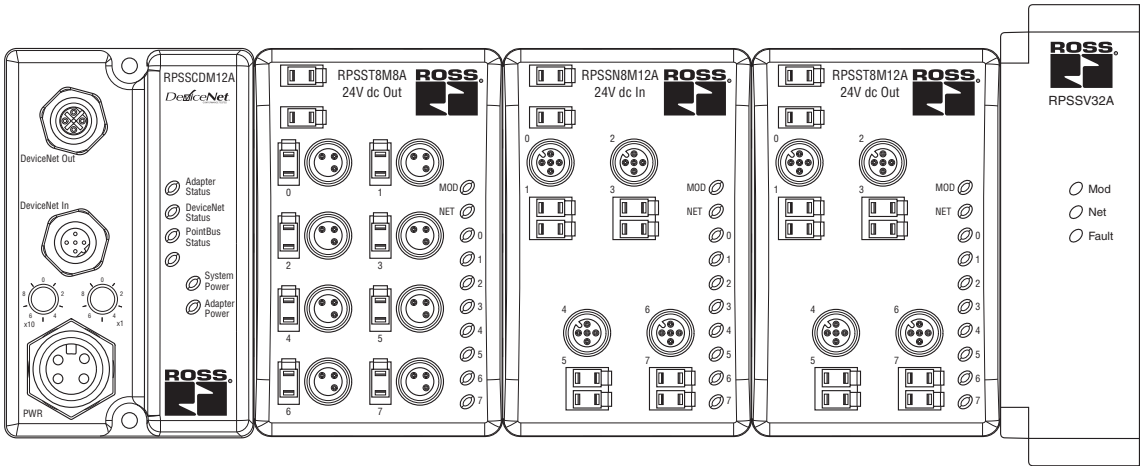
The Serial Bus family of I/O modules includes:

- Digital I/O Modules
- Analog I/O Modules
- Valve Driver Module



Digital DC Input Modules

	RPSSN8M8A RPSSN8M12A RPSSN8M23A	RPSSP8M8A RPSSP8M12A RPSSP8M23A
Number of Inputs	8 Sinking	8 Sourcing
Keyswitch Position	1	1
Voltage, On-State Input, Nom.	24 volts DC	24 volts DC
Voltage, On-State Input, Min.	10 volts DC	10 volts DC
Voltage, On-State Input, Max.	28.8 volts DC	28.8 volts DC
Input Delay Time, ON to OFF	0.5 ms Hardware + (0…65 ms selectable)*	0.5 ms Hardware + (0…65 ms selectable)*
Current, On-State Input, Min.	2 mA	2 mA
Current, On-State Input, Max.	5 mA	5 mA
Current, Off-State Input, Max.	1.5 mA	1.5 mA
PointBus Current (mA)	75	75
Power Dissipation, Max.	1.0 W @ 28.8 volts DC	1.0 W @ 28.8 volts DC

* Input ON-to-OFF delay time is the time from a valid input signal to recognition by the module.

Digital DC Output Modules

	RPSST8M8A RPSST8M12A RPSST8M23A
Number of Outputs	8 sourcing
Keyswitch Position	1
Voltage, On-State Output, Nom.	24 volts DC
Voltage, On-State Output, Min.	10 volts DC
Voltage, On-State Output, Max.	28.8 volts DC
Output Current Rating, Max.	3.0 A per module, 1.0 A per channel
PointBus Current (mA)	75
Power Dissipation, Max.	1.2 W @ 28.8 volts DC

Relay Output Module

	RPSSTR4M12A
Number of Outputs	4 Form A (N.O.) relays, isolated
Keyswitch Position	7
Output Delay Time, ON to OFF, Max.	26 ms*
Contact Resistance, Initial	30 mΩ
Current Leakage, Off-State Output, Max.	1.2 mA and bleed resistor thru snubber circuit @ 240 volts AC
PointBus Current (mA)	90
Power Dissipation, Max.	0.5 W

*Time from valid output off signal to relay de-energization by module.

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Analog Input Modules

Model Number	RPSSNACM12A	RPSSNAVM12A
Number of Inputs	2	2
Keyswitch Position	3	3
Input Signal Range	4…20 mA 0…20 mA	0…10V ±10V
Input Resolution, Bits	16 bits - over 21 mA 0.32 µA/cnt	15 bits plus sign 320 µV/cnt in unipolar or bipolar mode
Absolute Accuracy, Current Input	0.1% Full Scale @ 25°C*†	—
Absolute Accuracy, Voltage Input	—	0.1% Full Scale @ 25°C*†
Input Step Response, per Channel	70 ms @ Notch = 60 Hz (default) 80 ms @ Notch = 50 Hz 16 ms @ Notch = 250 Hz 8 ms @ Notch = 500 Hz	70 ms @ Notch = 60 Hz (default) 80 ms @ Notch = 50 Hz 16 ms @ Notch = 250 Hz 8 ms @ Notch = 500 Hz
Input Conversion Type	Delta Sigma	Delta Sigma
PointBus Current (mA)	75	75
Power Dissipation, Max.	0.6 W @ 28.8 volts DC	0.6 W @ 28.8 volts DC

* Includes offset, gain, non-linearity and repeatability error terms.

† Analog input modules support these configurable parameters and diagnostics: open-wire with LED and electronic reporting; four-alarm and annunciation set-points; calibration mode and electronic reporting; under- and over-range and electronic reporting; channel signal range and update rate and on-board scaling; filter-type; channel update rate.

Analog Output Modules

Model Number	RPSSTACM12A	RPSSTAVM12A
Number of Outputs	2	2
Keyswitch Position	4	4
Output Signal Range	4…20 mA 0…20 mA	0…10V ±10V
Output Resolution, Bits	13 bits - over 21 mA 2.5 µA/cnt	14 bits (13 plus sign) 1.28 mV/cnt in unipolar or bipolar mode
Absolute Accuracy, Current Output	0.1% Full Scale @ 25°C*†	—
Absolute Accuracy, Voltage Output	—	0.1% Full Scale @ 25°C*†
Step Response to 63% of FS,	24 µs	— Current Output
Step Response to 63% of FS,	—	20 µs Voltage Output
Output Conversion Rate	16 µs	20 µs
PointBus Current (mA)	75	75
Power Dissipation, Max.	1.0 W @ 28.8 volts DC	1.0 W @ 28.8 volts DC

* Includes offset, gain, non-linearity and repeatability error terms.

† Analog output modules support these configurable parameters and diagnostics: open-wire with LED and electronic reporting (RPSSTACM12A only); fault mode; idle mode; alarms; channel signal range and on-board scaling.

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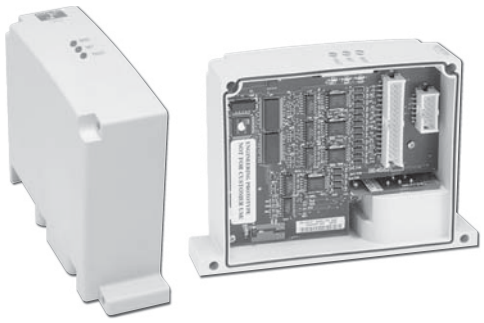
Step 3
Select Valve Driver Module for ROSS Bus System

Valve Driver Module Specifications

Model Number	RPSSV32A
Outputs per Module	32, sourcing
Voltage Drop, On-State Output, Maximum	0.2 volts DC
Voltage, Off-State Output, Maximum	28.8 volts DC
Voltage, On-State Output, Maximum Minimum Nominal	 28.8 volts DC 10 volts DC 24 volts DC
Output Current Rating	200 mA per channel, not to exceed 6.0 A per module
Output Surge Current, Maximum	0.5 A for 10 ms, repeatable every 3 seconds
Current Leakage, Off-State Output, Maximum	0.1 mA
Current, On-State Output Minimum	200 mA per channel
Output Delay Time OFF to ON, Maximum[1]	0.1 ms
Output Delay Time, ON to OFF, Maximum[1]	0.1 ms
External DC Power Supply Voltage Range	10 to 28.8 volts DC
External DC Power Supply Voltage Nominal	24 volts DC

1. OFF to ON or ON to OFF delay is time from a valid output “on” or “off” signal to output energization or de-energization.



The RPSSV32A valve driver module provides an interface between the Serial Bus system and the valve assembly. This module will always be the last module on the Serial Bus. It controls 32 digital outputs at 24 volts DC. Depending on the valve selection, it can control up to 32 single solenoid valves or 16 double solenoid valves.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Select the Appropriate Power Supply Unit

Serial Bus adapters have built-in PointBus power supplies. All Serial Bus modules are powered from the PointBus by either an adapter or expansion power supply.

Power Specifications

Model Number	Power Supply Input Voltage, Nom.	Operating Voltage Range	Field Side Power Requirements, Max.	Power Supply Inrush Current, Max.	Input Overvoltage Protection	Power Supply Interruption Protection
RPSSCDM12A	24 volts DC	10...28.8 volts DC	24 volts DC (+20% = 28.8VDC) @ 400 mA	6 A for 10 ms	Reverse polarity protected	Output voltage will stay within specifications when input drops out for max. load.
RPSSCDM18PA						
RPSSCCNA						
RPSSCENA						
RPSSCPBA						
RPSSSE24A						

Power units are divided into two categories:
- Communication adapters with built-in power supply (DC-DC)
- Expansion power supply

Expansion Power Unit

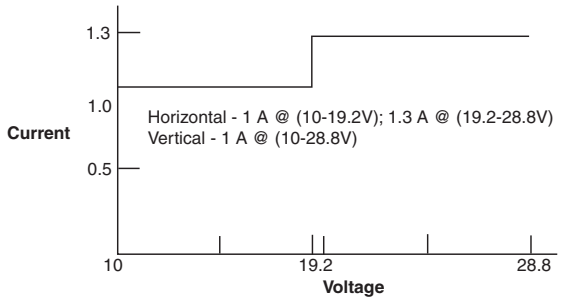
The RPSSSE24A expansion power unit passes 24 volts DC field power to the I/O modules to the right of it. This unit extends the backplane bus power and creates a new field voltage partition segment for driving field devices for up to 13 I/O modules. The expansion power unit separates field power from I/O modules to the left of the unit, effectively providing functional and logical partitioning for:

- Separating field power between input and output modules
- Separating field power to the analog and digital modules
- Grouping modules to perform a specific task or function

You can use multiple expansion power units with any of the communication adapters to assemble a full system. If you are using the RPSSCDM12A adapter, you may use a RPSSSE24A expansion power unit to add additional modules. For example, if you had a 36 module system with a RPSSCDM12A adapter, you would have at least two or more RPSSSE24A expansion power units to provide more PointBus current for modules to the right of the supply.

- 24 volts DC to 5 volts DC converter
- 1.3A, 5 volts DC output (extend backplane power)
- Starts new voltage distribution
- Partitioning

RPSSSE24A Current Derating for Mounting



Power Distribution General Specifications

Model Number	RPSSSE24A
Power Supply Requirements	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter
Field Side Power Requirements	24 volts DC (+20% = 28.8 volts DC max.) @ 400 mA
Inrush Current, Max.	6 A for 10 ms
Input Overvoltage Protection	Reverse polarity protected
Power Supply Interruption Protection	Output voltage will stay within specifications when input drops out for 10 ms at 10V with max. load
Power Supply Input Voltage, Nom.	24 volts DC
Operating Voltage Range	10…28.8 volts DC
Power Consumption, Max.	9.8 W @ 28.8 volts DC
Power Dissipation, Max.	3.0 W @ 28.8 volts DC
Thermal Dissipation, Max.	10.0 BTU/hr @ 28.8 volts DC
Isolation Voltage	1250 V rms
Field Power Bus Supply Voltage, Nom.	12 volts DC or 24 volts DC
Field Power Bus Supply Current, Max.	10 A

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Serial Bus Digital Input Module Cables

Model Number	For Using:	Recommended Rockwell Automation Patchcord (double-ended)	Recommended Rockwell Automation Male Cordset (single-ended)
RPSSN8M12A	2 inputs per connector	879D-F4ACDM-x	879-C3AEDM4-5
RPSSP8M12A	1 input per connector	889D-F4ACDM-x	889D-M4AC-y
RPSSN8M8A	3-Pin Pico connectors	889P-F3ABPM-x	889P-M3AB-y
RPSSP8M8A	4-Pin Pico connectors	889P-F4ABPM3-x	
RPSSN8M23A	M23, 12-Pin	889M-F12AHMU-z	—
RPSSP8M23A			
RPSST8M23A			

x = length in meters (1, 2, 3, 5, and 10 standard)
y = length in meters (2, 5, and 10 standard)
z = length in meters (1, 2, and 3 standard)

For more cables and cordsets, please refer to www.connector.com

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Serial Bus Analog Inputs and Outputs

Model Number	For Using:	Recommended Cable
RPSSNAVM12A	1 input per connector	804507P20M020 (Shielded)*
RPSSNACM12A		
RPSSTAVM12A	1 output per connector	
RPSSTACM12A		

* Refer to www.connector.com

Serial Bus Digital Output Module Cables

Model Number	For Using:	Recommended Rockwell Automation Patchcord (double-ended)	Recommended Rockwell Automation Male Cordset (single-ended)
RPSST8M12A	2 inputs per connector	879D-F4ACDM-x	879-C3AEDM4-5
	1 input per connector	889D-F4ACDM-x	889D-M4AC-y
RPSST8M8A	3-Pin Pico connectors	889P-F3ABPM-x	889P-M3AB-y
	4-Pin Pico connectors	889P-F4ABPM3-x	

x = length in meters (1, 2, 3, 5, and 10 standard)
y = length in meters (2, 5, and 10 standard)

For more cables and cordsets, please refer to www.connector.com

Serial Bus Relay Output Module Cables

Model Number	Recommended Rockwell Automation Patchcord (double-ended)	Recommended Rockwell Automation Male Cordset (single-ended)
RPSSTR4M12A	889D-F4ACDM-x	889D-M4AC-y

x = length in meters (1, 2, 3, 5, and 10 standard)
y = length in meters (2, 5, and 10 standard)
For more cables and cordsets, please refer to www.connector.com

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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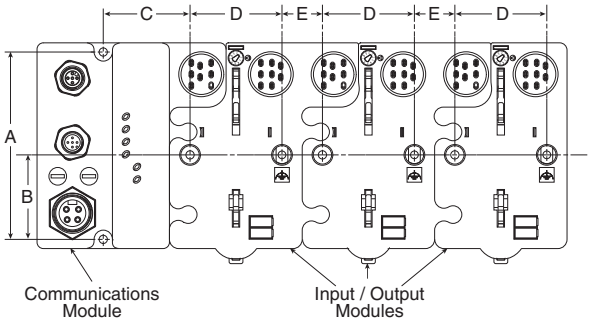
Serial Bus DeviceNet™ and Auxiliary Power Cables

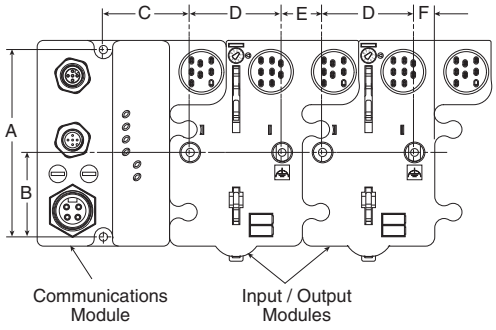
Model Number	Network	Recommended Rockwell Automation Network Cable	Recommended Rockwell Automation Auxiliary Power Cables
RPSSCDM12A RPSSCDM18PA	DeviceNet™	KwikLink Flat Media system standard drop cable: 1485K-PzF5-R5 Thin Round system standard drop cable: 1485R-PzN5-M5 Thick Round system standard drop cable: 1485C-PzN5-M5	Standard Cordset (single-ended): 889N-F5AFC-y Standard Patchcord (double-ended): 889N-F4AFNC-x
RPSSCCNA	ControlNet™	BNC to TNC Connector is required when using BNC Cordsets. See **www.amphenolrf.com** 	
RPSSCENA	EtherNet/IP™	—	
RPSSCPBA	PROFIBUS DP	—	Standard Cordset (single-ended): 889N-F5AFC-y

x = length in meters (1, 2, 3, and 6 standard)
y = length in feet (6, 12, and 20 standard)
z = length in feet (1, 2, 3, 4, 5, and 6 standard)
For more cables and cordsets, please refer to **www.connector.com**

Serial Bus Valve Driver Module Harness Assemblies

ISO Size	Model Number	
	1 to 24 Outputs	25 to 32 Outputs
0 and Size 00	RPS5624P	RPS5632P
1, 2, & 3	RPS4024P	RPS4032P





Dimensions - inches (mm)					
A	B	C	D	E	F
4.0 (102)	1.8 (46)	1.9 (48)	2.0 (50)	0.87 (22)	0.43 (11)

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ROSS CONTROLS®

ROSS SERIAL BUS SYSTEM WITH TURCK MODULAR I/O

www.rosscontrols.com

ROSS Serial Bus System with TURCK Modular I/O – KEY FEATURES

- A complete Centralized Serial Bus communication offering for ISO valves W65 and W66 Series
- I/O system based on the TURCK Modular Industrial I/0 System BL 67
- Communication module supports up to 32 station modules each supporting up to 8 I/O modules
- Input modules accept signals from sensors, photo eyes, limits and other field input devices
- Output modules provide signals to remote solenoid valves and other field output devices
- UL, C-UL, and CE certified

The BL67 Solution

BL67 combines all the flexibility of an in-the-cabinet PLC I/O system with modularity, ruggedness and connectorization.

BL67 complements the AIM™, BL20 and piconet® product families to meet the needs of unique applications, such as small machine or conveyor systems requiring IP 67 protection.

The BL67 Concept

The BL67 modular concept is a very flexible approach to connectorized I/O. The gateway, base and electronic modules provide many benefits to the user.

- The gateway provides communication between the fieldbus and I/O modules; modules are not dependent on the fieldbus protocol.
- DIN-rail or frame mountable base modules are available with eurofast® (M12), minifast® (7/8-16UN), M23 and picofast® (M8) connectors.
- Electronic modules are hot swappable.
- Power distribution module (24 volts DC) supplies the connected I/O signals.

BL67's openness, flexibility, connectorization, compact housing and ruggedness provide a viable alternative to in-the-cabinet I/O.

Environmental Conditions

Intended Application Environments

- BL67 does not need an enclosure
- Mount directly on machine or conveyor
- Rugged design provides protection against dirt, dust and liquids

Not intended for These Environments

- Continuous submersion
- 100 percent humidity
- High pressure washdown

Note: *For higher levels of protection consider fully potted AIM stations.*

General Environmental	
Potential isolation	Via optocoupler
Operating temperature	32° to +131°F (0° to +55°C)
Storage temperature	-13° to +185°F (-25° to +85°C)
Relative humidity	5 to 95% (indoor), noncondensing
Vibration	1.0 g 5-10 Hz
Shock	15 g
Protection class	IP 67, NEMA 1, 3, 4, 12, 13
Electromagnetic compatibility (EMC)	According to EN 61131-2
Housing material	PC-V0 (Lexan), Nickel plated brass
Approvals	CE
	UL
	CSA

Maximum Size of a BL67 Station

BL67 stations consist of a gateway and a maximum of 32 modules (equivalent to 1 m station length). Some high-tech and analog I/O modules may consume or produce large amounts of data, and therefore may limit the number of modules that may be used per system. It is highly recommended that the I/O assistant software is used when planning and commissioning BL67 systems. This program allows you to build the BL67 node on your computer and verify that all restrictions with regard to power and size are met. The free I/O assistant software is available for download from www.turck.com.

Addressing

As a node on a network, BL67 stations are addressed dependent on the network system being used. Each network gateway has a set of rotary switches used to set the address for the node. DeviceNet™ and CANopen gateways may be addressed between 0 and 63 via two switches (one for the 10's digit and one for the 1's digit). For example, to set the address to 37 you would set the 10's switch to 3 and the 1's switch to 7. The third switch on the gateway may be used to set the communication rate of the network interface. PROFIBUS®-DP gateways may be set from 1 to 125 by using three switches (one for the 100's, one for the 10's and one for the 1's).

Ethernet gateways allow different addressing schemes depending on the Ethernet addressing method being used in the overall system. Dynamic addressing schemes include BootP and DHCP, while hard-coding a static address is also allowed.

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BL67 Power Distribution

Power Overview

The power supply for a BL67 station is fed via the power connector on the PROFIBUS® gateway or directly from the network on the DeviceNet™ gateway. Power feeder modules can be added to the system at any point to provide a fresh isolated supply of power to all I/O connected to its right.

A4

Internal Power Consumption via Module Bus

The amount of BL67 modules that may be supplied via the internal module bus depends on the respective nominal current IMB of the individual modules on the module bus. The sum of the nominal current inputs of the connected BL67 module must not exceed 1.5 A. If the I/O assistant software is used, an error message is generated automatically via the <Station - Verify> as soon as the system supply via the module bus is no longer sufficiently guaranteed.

To calculate current draw on DeviceNet: Add IMB(24) for all modules. Then add VI and VO for electronic modules to the left of the first power feed module. Next, add the current draw of the I/O devices.

To calculate current draw on PROFIBUS gateway power connector for VI: Add IMB for all modules. Then add VI current for all modules to the left of the first power feed module. Next, add the current draw of the input devices.

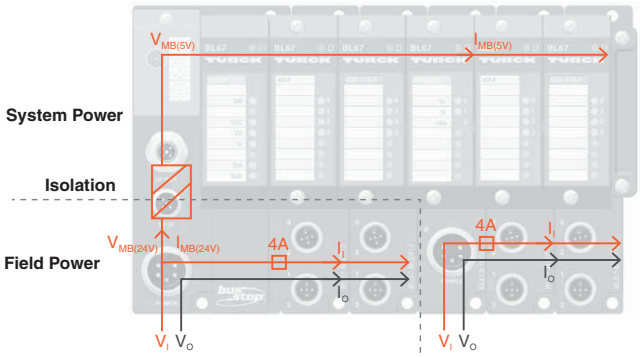
For VO, add the VO current for all modules to the left of the first power feed module. Next, add the current draw of the output devices.

VMB = Module bus power
VI = Input power
VO = Output power
IMB = Module bus current
IMB(24) = Effective current draw from gateway at 24 volts DC supply.

Module	Nominal 1 Current at 5 V I_{MB}	Effective Draw 2 from Gateway at 24 VDC $I_{MB(24)}$	Nominal 3 Current from V_I	Nominal 4 Current from V_O
BL67-GW-DPV1	–	≤150 mA		
BL67-GW-DN	–	≤100 mA		
BL67-PF-24VDC	≤30 mA	≤9 mA		
BL67-4DI-P	≤30 mA	≤9 mA	≤40 mA	
BL67-8DI-P	≤30 mA	≤9 mA	≤40 mA	
BL67-4DO-0.5A-P	≤30 mA	≤9 mA		≤100 mA
BL67-4DO-2A-P	≤30 mA	≤9 mA		≤100 mA
BL67-8DO-0.5A-P	≤30 mA	≤9 mA		≤100 mA
BL67-2AI-V	≤35 mA	≤10 mA	≤12 mA	
BL67-2AI-I	≤35 mA	≤10 mA	≤12 mA	
BL67-2AI-TC	≤35 mA	≤10 mA	≤30 mA	
BL67-2AI-PT	≤45 mA	≤13 mA	≤45 mA	
BL67-2AO-I	≤40 mA	≤12 mA		≤50 mA
BL67-2AO-V	≤60 mA	≤17 mA		≤50 mA
BL67-1RS232	≤100 mA	≤28 mA	≤50 mA	
BL67-8XSG-PD	≤30 mA	≤9 mA		≤100 mA
BL67-1SSI	≤50 mA	≤15 mA	≤50 mA	
BL67-4DI-PD	≤30 mA	≤9 mA		≤100 mA
BL67-8DI-PD	≤30 mA	≤9 mA		v100 mA

Applying Power to BL67

PROFIBUS® , Ethernet and CANopen System
DeviceNet™ System



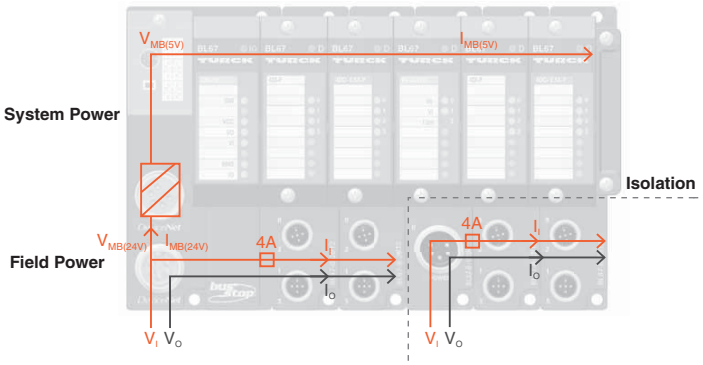
V_I, V_O, V_{MB} from Power on Gateway

$I_{MB(5V)}$ < 1.5A
I_I < 4A (protected)
I_O < 8A

V_{MB} = Module Bus Power
V_I = Input Power
V_O = Output Power

Isolation of Field Power V_I, V_O

A power feeder module provides a new isolated segment for all modules to its right.



V_I, V_O, V_{MB} from DeviceNet™

$I_{MB(5V)}$ < 1.5A
I_I < 4A (protected)
I_O < 8A

V_{MB} = Module Bus Power
V_I = Input Power
V_O = Output Power

Isolation of Field Power V_I V_O

A power feeder module provides a new isolated segment for all modules to its right.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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General Environmental	
DeviceNet Gateway	BL67-GW-DN
ModBus TCP/IP, Ethernet Gateways	BL67-GW-EN BL67-PG-EN (programmable)
Ethernet IP, Ethernet Gateways	BL67-GW-EN-IP BL67-PG-EN-IP (programmable)
Profinet, Ethernet Gateways	BL67-GW-EN-PN
PROFIBUS-DP Gateway	BL67-GW-DPV1 BL67-PG-DP (programmable)
CANopen Gateway	BL67-GW-CO
IP67 Certified. Reference the following Document for installation instructions: AXXXXX See www.rosscontrols.com	

Electrical:

- Operating Current: <600 mA from V_{MB}
- Input Supply Current: <4 A (from V_I)
- Output Supply Current: <8 A (from V_O)
- Backplane Current: <1.5 A (from V_{MB})

Mechanical:

- Operating Temperature: -12 to +55°C (-13 to +131°F)
- Protection: IP 67
- Vibration: 5 g @ 10-500 Hz

Material:

- Housing: PC-V0 (Lexan)

Diagnostics (Logical)

- Diagnostic information available through the DeviceNet I/O map

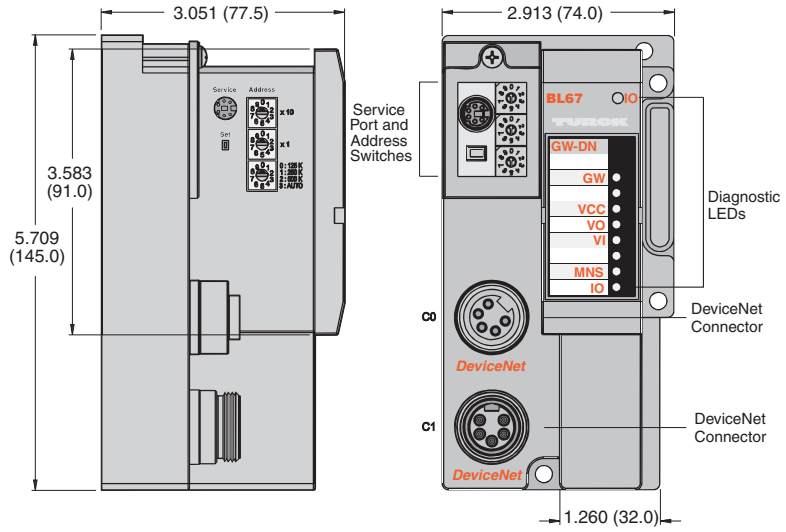
Diagnostics (Physical)

- LEDs to indicate status of DeviceNet and Module Bus communication

Programmability

- PG in model number designates a programmable gateway
- Progammable according to IEC 61131.3 using CodeSys (includes ladder logic)
- Use CodeSys to create logic programs to control local I/O

Dimensions – inches (mm)



IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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Power Distribution
Inputs: V_1
Outputs: V_0
Logic: V_{MB}

Mechanical:
Operating Temperature: +32 to +131°F (0 to +55°C)
Protection: NEMA 1,3,4,12,13 / IEC IP 67
Vibration: 5 g @ 10 – 500 Hz

Material:
Connectors: Nickel-plated brass
Housing PC-VO (Lexan)

Diagnostics (Logical)
Diagnostic information available through the fieldbus gateway

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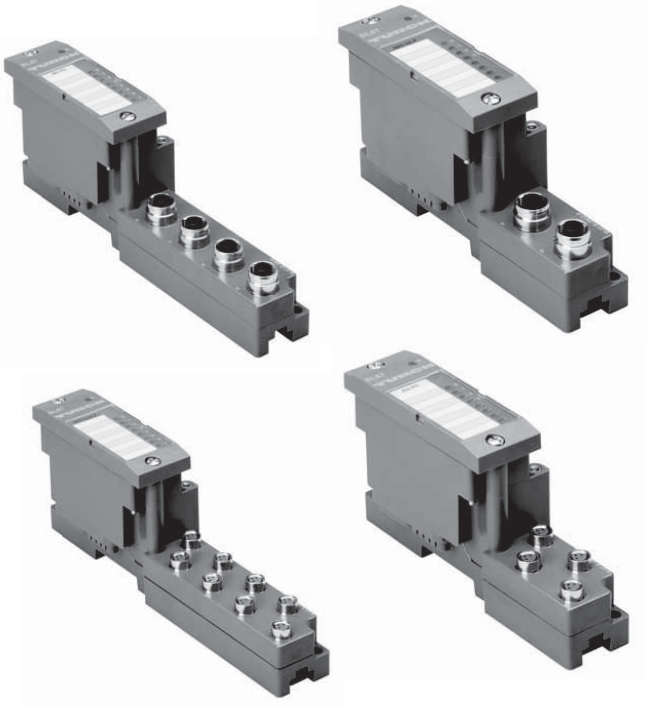
Diagnostics (Physical)
LEDs to indicate status of DeviceNet and Module Bus communication
LEDs for each I/O point to indicate on/off status



Model Description	Inputs	Outputs	Model Number	Operating Current			Output Current from V_O	Type
				from V_{MB}	from V_1	from V_O		
Inputs								
Discrete Inputs	4		BL67-4DI-P	<30 mA	<40 mA			PNP
Discrete Inputs	4		BL67-4DI-N	<30 mA	<1 mA			NPN
Discrete Inputs	8		BL67-8DI-P	<30 mA	<40 mA			PNP
Discrete Inputs	8		BL67-8DI-N	<30 mA	<1 mA			NPN
Discrete Inputs	4		BL67-4DI-PD	<30 mA	<100 mA			PNP
Discrete Inputs	8		BL67-8DI-PD	<30 mA	<100 mA			PNP
Analog Inputs	2		BL67-2AI-V	<35 mA	<12 mA			-10/0 to 10V
Analog Inputs	2		BL67-4DI-I	<35 mA	<12 mA			0/4 to 20mA
Analog Inputs	2		BL67-4DI-V/I	<35 mA	<12 mA			-10/0 to 10V, 0/4 to 20mA
Temperature Inputs	2		BL67-2AI-TC	<35 mA	<30 mA			Thermocouple
Temperature Inputs	2		BL67-2AI-PT	<45 mA	<30 mA			RTD
Outputs								
Discrete Outputs		4	BL67-4DO-0.5A-P	<30 mA		<100 mA	<0.5 A	PNP
Discrete Outputs		4	BL67-4DO-2A-P	<30 mA		<100 mA	<2 A	PNP
Discrete Outputs		4	BL67-4DO-2A-N	<30 mA		<100 mA	<2 A	NPN
Discrete Outputs		8	BL67-8DO-0.5A-P	<30 mA		<100 mA	<0.5 A	PNP
Discrete Outputs		16	BL67-16DO-0.5A-P	<30 mA		<100 mA	<0.5 A	PNP
Analog Outputs		2	BL67-2AO-V	<60 mA	<50 mA			-10/0 to 10V
Analog Outputs		2	BL67-2AO-I	<40 mA	<50 mA			0/4 to 20mA
Inputs / Outputs								
Discrete Inputs /Outputs	8	8	BL67-8XSG-P	<30 mA		<100 mA	<0.5 A	PNP
Discrete Inputs /Outputs	8	8	BL67-8XSG-PD	<30 mA		<100 mA	<0.5 A	PNP
Discrete Inputs /Outputs	4	4	BL67-4DI4DO-PD	<30 mA		<100 mA	<0.5 A	PNP

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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Select Optional CANopen Interface / Serial Communication Modules

Power Distribution
Inputs: V_1
Outputs: V_0
Logic: V_{MB}

Mechanical:
Operating Temperature: +32 to +131°F (0 to +55°C)
Protection: NEMA 1,3,4,12,13 / IEC IP 67
Vibration: 5 g @ 10 – 500 Hz

Material:
- Connectors: Nickel-plated brass
- Housing: PC-VO (Lexan)

Diagnostics (Logical):
- Diagnostic information available through the fieldbus gateway

Diagnostics (Physical):
- LED to indicate module bus communication status as well as I/O diagnostics
- LEDs for each I/O point to indicate on/off status

Functional Description:
- Connect up to 8 CANopen slaves to this module
- Map the slaves into any available fieldbus

Shown with BL67-B-4M12 base

Model Description	Model Number	Operating Current		
		from V_{MB}	from V	from V Supply
Inputs				
Discrete Inputs	BL67-4DI-P	<30 mA	<50 mA	<100 mA
Outputs				
Discrete Outputs	BL67-1RS485/422	<140 mA	<50 mA	
Discrete Outputs	BL67-1RS232	<60 mA	<50 mA	
Discrete Outputs	BL67-1SSI	<50 mA	<50 mA	

Select Optional CANopen Interface / Serial Communication Modules

Electrical:
Operating CurrentInputs: V1
Outputs: V0
Logic: VMB
Power Distribution:
Accepts 24 volts DC supply to provide V1 and V0 for downstream modules
Material:
Connectors: Nickel-plated brass
Housing PC-VO (Lexan)
Diagnostics (Logical)
Diagnostic information available through the fieldbus gateway
Diagnostics (Physical)
LEDs to indicate status of DeviceNet and Module Bus communication
LEDs for each I/O point to indicate on/off status

Model Description	Model Number	Operating Current	
		from V_{MB}	for downstream I/O
Power Feeding Module	BL67-PF-24 volts DC	<30 mA	<10 mA

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eurofast®


picofast®

M23

minifast®

Connector Type	Number of Connectors	Number of Pins	Model Number	Description
eurofast®	2	2 (ea)	BL67-B-2M12	When used with 4 input or 4 output modules, each connector has 2 I/O points.
eurofast®	2	2 (ea)	BL67-B-2M12-P	Each connector has 2 I/O points, paired so consecutive points are on the same connector.
eurofast®	4	2 (ea)	BL67-B-2M12	When used with 8 input or 8 output modules, each connector has 2 I/O points.
eurofast®	4	2 (ea)	BL67-B-2M12-P	Each connector has 2 I/O points, paired so consecutive points are on the same connector.
eurofast®	1	5	BL67-B-1M12	Typically used with serial I/O modules.
eurofast®	1	8	BL67-B-1M12-8	Typically used with serial I/O modules.
picofast®	4		BL67-B-4M8	Typically used with 4-input or 4-output modules.
picofast®	8		BL67-B-8M8	Typically used 8-input or 8-output modules with.
M23	1	12	BL67-B-1M23	Typically used with 8-output or SSI Modules.
M23	1	12	BL67-B-1M23-VI	Base module that allows full 4 A available from V+ pins.
M23	1	19	BL67-B-1M23-19	For use with 16-output module.
minifast®	1	5	BL67-B-1RSM	For use with the power feeding module, five wire power scheme.
minifast®	1	4	BL67-B-1RSM-4	For use with the power feeding module, four wire power scheme.

Labels for labeling electronic modules
BL67-Label/DIN-A4-50-PCS

DIN A4 sheet size

Programming Cable -
For connecting the BL20/BL67 system to the I/O Assistant software
XN-PS2-CABLE

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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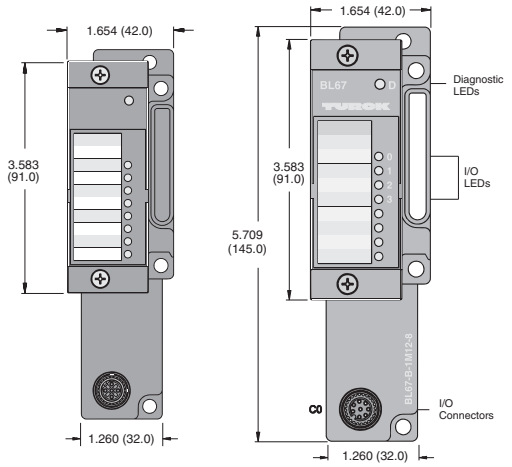
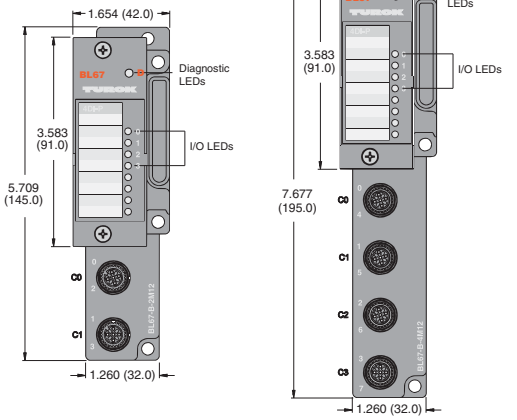
Dimensions – inches (mm)

eurofast®





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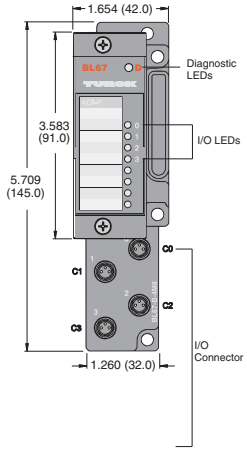

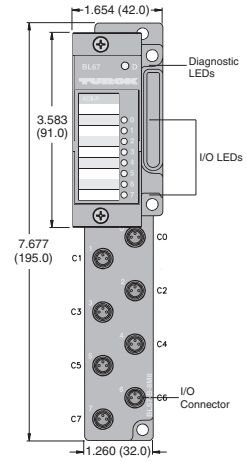

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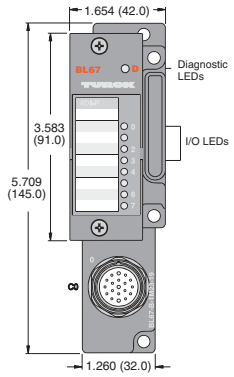
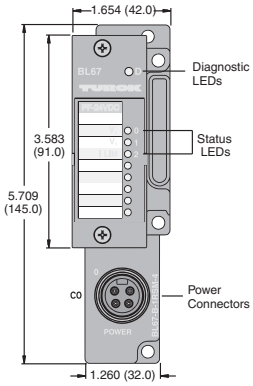
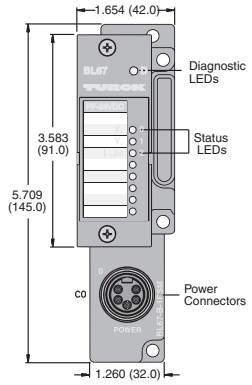


minifast®





RISK OF LOSS

Delivery of the equipment to a common carrier shall constitute delivery to the Purchaser and the risk of loss shall transfer at that time to Purchaser. Should delivery be delayed due to an act or omission on the part of the Purchaser, risk of loss shall transfer to the Purchaser upon notification by TURCK Inc. that the order is complete and ready for shipment.

WARRANTIES

TURCK INC. (hereinafter "TURCK") offers five (5) WARRANTIES to cover all products sold. They are as follows:

1) The **12-MONTH WARRANTY** is available for the products listed - generally those not covered by LIFETIME, 5-YEAR, 24-MONTH or 18-MONTH warranty. No registration required.

2) The **18-MONTH WARRANTY** is available for the products listed - generally those not covered by LIFETIME or 5-YEAR WARRANTY.

No registration is required.

3) The **24-MONTH WARRANTY** is available for the products listed - generally those not covered by LIFETIME, 5-YEAR or 18-MONTH.

No registration is required.

4) The **5-YEAR WARRANTY** is available generally for the products listed. No registration is required.

5) A LIFETIME WARRANTY is available for the products listed. It becomes effective when the accompanying TURCK LIFETIME WARRANTY REGISTRATION is completed and returned to TURCK.

GENERAL TERMS AND CONDITIONS FOR ALL WARRANTIES

- **12-MONTH STANDARD WARRANTY**
- **18-MONTH STANDARD WARRANTY**
- **24-MONTH STANDARD WARRANTY**
- **5-YEAR WARRANTY**
- **LIFETIME WARRANTY**

TURCK warrants the Products covered by the respective WARRANTY AGREEMENTS to be free from defects in material and workmanship under normal and proper usage for the respective time periods listed above from the date of shipment from **TURCK**. In addition, certain specific terms apply to the various WARRANTIES.

THESE EXPRESS WARRANTIES ARE IN LIEU OF AND EXCLUDE ALL OTHER REPRESENTATIONS MADE - BOTH EXPRESSED AND IMPLIED.

THERE ARE NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE FOR PRODUCTS COVERED BY THESE TERMS AND CONDITIONS.

TURCK warrants that the goods sold are as described, but no promise, description, affirmation of fact, sample model or representation, oral or written shall be part of an order, unless set forth in these terms and conditions, or are in writing and signed by an authorized representative of TURCK. These WARRANTIES do not apply to any Product which has been subject to misuse, negligence, or accident -or to any Product which has been modified or repaired, improperly installed, altered, or disassembled -except according to TURCK's written instructions.

These WARRANTIES are subject to the following conditions:

1) These WARRANTIES are limited to the electronic and mechanical performance only, as expressly detailed in the Product specifications and NOT to cosmetic performance.

2) These WARRANTIES shall not apply to any cables attached to, or integrated with the Product. However, the 18-MONTH WARRANTY shall apply to cables sold separately by TURCK.

3) These WARRANTIES shall not apply to any Products which are stored, or utilized, in harsh environmental or electrical conditions outside TURCK's written specifications.

4) The WARRANTIES are applicable only to Products shipped from TURCK subsequent to January 1, 1988.

ADDITIONAL SPECIFIC TERMS FOR - (12-MONTH STANDARD WARRANTY) for Linear Displacement Transducers and RFID products.

(18-MONTH STANDARD WARRANTY) FOR ULTRASONIC SENSORS, CABLES AND ALL NON-SENSING PRODUCTS SOLD BY TURCK INC. INCLUDING MULTI-SAFE, MULTI-MODUL, MULTI-CART AND RELATED AMPLIFIER PRODUCTS, RELAYS AND TIMERS.

(24-MONTH STANDARD WARRANTY) FOR ENCODERS.

5-YEAR WARRANTY FOR INDUCTIVE AND CAPACITIVE PROXIMITY SENSORS: The periods covered for the above WARRANTIES and Products shall be 12 MONTHS, 18-MONTHS, 24-MONTHS and 5-YEARS, respectively, from the date of shipment from TURCK.

LIFETIME WARRANTY (OPTIONAL - REGISTRATION REQUIRED) FOR INDUCTIVE, INDUCTIVE MAGNET OPERATED AND CAPACITIVE PROXIMITY SENSORS SOLD TO THE ORIGINAL PURCHASER FOR THE LIFETIME OF THE ORIGINAL APPLICATION.

The following terms apply to the LIFETIME WARRANTY in addition to the General Terms:

1) This WARRANTY shall be effective only when the LIFETIME WARRANTY REGISTRATION has been completed, signed by the End User and an authorized TURCK Representative or Distributor and has been received by TURCK no later than six (6) months after installation in the End User's Plant, or two (2) years from the date product was shipped from TURCK, whichever is sooner.

2) This warranty is available only to TURCK's authorized Representatives, Distributors and to the Original User. (The term "Original User" means that person, firm, or corporation which first uses the Product on a continuous basis in connection with the operation of a production line, piece of machinery, equipment, or similar device.) In the event the ownership of the product is transferred to a person, firm or corporation other than the Original User, this WARRANTY shall terminate.

3) This WARRANTY is applicable only to the Original Application. In the event the machinery, equipment, or production line to which the Product is connected, or on which it is installed, is substituted, changed, moved or replaced, the WARRANTY shall terminate.

4) This WARRANTY shall be valid only if the Product was purchased by the Original User from TURCK, or from an authorized TURCK Distributor, or was an integral part of a piece of machinery and equipment obtained by the Original user from an Original Equipment Manufacturer, which itself, was purchased directly from TURCK or from an authorized Distributor.

PURCHASER'S REMEDIES

This Remedy shall apply to all WARRANTIES. If a TURCK Distributor desires to make a WARRANTY Claim, the Distributor shall, if requested by TURCK, ship the Product to TURCK's factory in Minneapolis, Minnesota, postage or freight prepaid. If the User desires to make a WARRANTY Claim, they shall notify the authorized TURCK Distributor from whom it was purchased or, if such Distributor is unknown, shall notify TURCK. TURCK shall, at its option, take any of the following two courses of action for any products which TURCK determines are defective in materials or workmanship.

1) Repair or replace the Product and ship the Product to the Original Purchaser or to the authorized TURCK Distributor, postage or freight prepaid; or

2) Repay to the Original Purchaser that price paid by the Original Purchaser; provided that if the claim is made under the LIFETIME WARRANTY, and such Product is not then being manufactured by TURCK, then the amount to be repaid by TURCK to the Original Purchaser shall be reduced according to the following schedule:

Number of Years Since Date of Purchase by Original Purchaser	Percent of Original Purchase Price To Be Paid by TURCK
10	50%
15	25%
20	10%
More than 20	5%

PURCHASER'S REMEDIES SHALL BE LIMITED EXCLUSIVELY TO THE RIGHT OF REPLACEMENT, REPAIR OR REPAYMENT AS PROVIDED AND DOES NOT INCLUDE ANY LABOR COST OR REPLACEMENT AT ORIGINAL PURCHASER'S SITE. TURCK SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF ANY WARRANTY, EXPRESSED OR IMPLIED, APPLICABLE TO THE PRODUCT, INCLUDING WITHOUT LIMITATION, ANY DAMAGES RESULTING FROM PROPERTY DAMAGE, PERSONAL INJURY OR BUSINESS INTERRUPTION.

CONSIDER SAFETY AND PROTECTION PRECAUTIONS

TURCK takes great care to design and build reliable and dependable products, however, some products can fail eventually. You must take precautions to design your equipment to prevent property damage and personal injury in the unlikely event of failure. As a matter of policy, TURCK does NOT recommend the installation of electronic controls as the sole device FOR THE PROTECTION OF PERSONNEL in connection with power driven presses, brakes, shears and similar equipment and, therefore, the customer should build in redundancy or dual control using approved safety devices for these applications.

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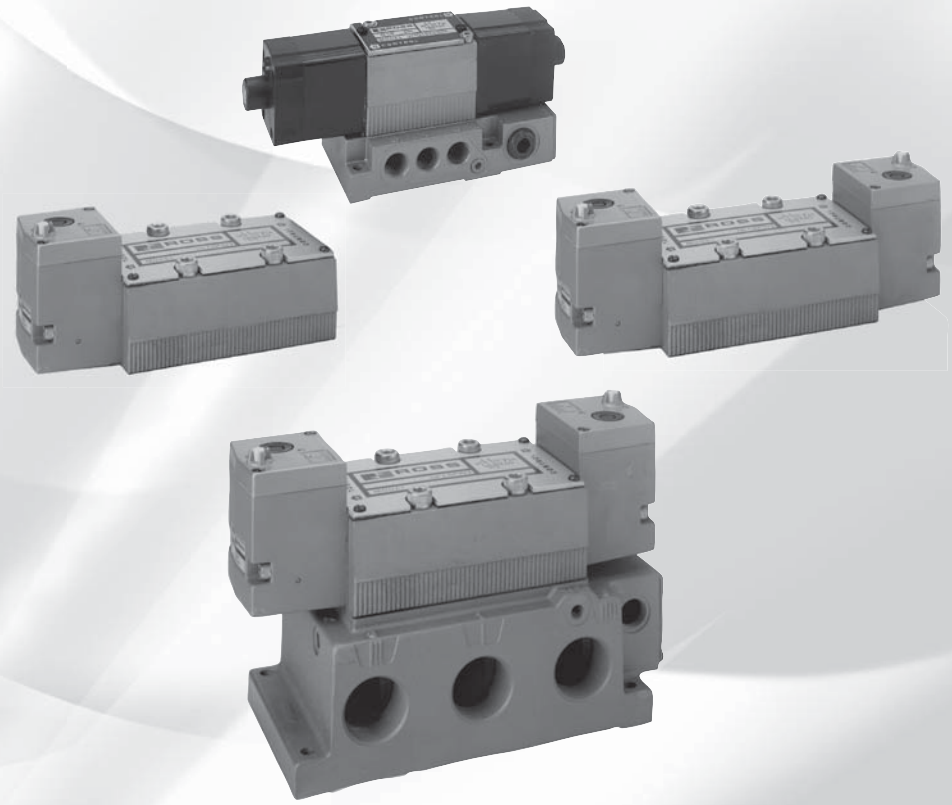
ROSS CONTROLS®

ANSI VALVES
W70 & W74 SERIES



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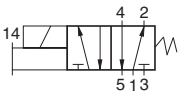
ANSI SERIES VALVES – KEY FEATURES

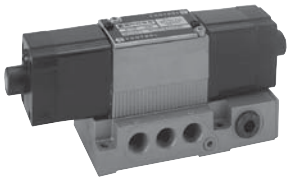
- ANSI Sizes 1, 2.5, 4, 10 and 20
- 5/2- and 5/3 way direct and pilot solenoid options
- Spool & Sleeve or Poppet construction
- 24 volts DC or 110 volts AC solenoid control
- Available with 1/4 – 1½ ports
- Lube or non-lube service
- Manual overrides
- Interpose pressure regulators
- Single sub-base mounting
- Micro-thin air bearing between spool and sleeve assures quick valve response
- W70 Series - Suitable for vacuum service with or without external pilot supply
- W74 Series - Suitable for vacuum service (with external pilot supply)

VALVE TYPE	VALVE SERIES	DESCRIPTION			AVAILABLE PORT SIZES								FUNCTIONS										Page
		ANSI Size	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	3/2 Single	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center	5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Direct Solenoid Control	Pressure Control	
ANSI	W70	1	■			■	■							■	■	■	■	■	1.0	■	■	■	A5.3 - A5.9
ANSI	W70	2.5	■				■	■						■	■	■	■		2.5	■	■	■	A5.3 - A5.9
ANSI	W70	4	■				■	■	■					■	■	■	■		4.2	■	■	■	A5.3 - A5.9
ANSI	W70	10	■						■	■	■			■	■	■	■	■	10.0	■		■	A5.3 - A5.9
ANSI	W70	20	■								■	■		■	■	■	■	■	22.0	■		■	A5.3 - A5.9
ANSI	W74	1		■		■	■							■	■	■	■	■	1.0	■		■	A5.11 - A5.13
ANSI	W74	2.5		■			■	■						■	■	■	■		2.5	■		■	A5.11 - A5.13
ANSI	W74	4		■				■	■					■	■	■	■		4.2	■		■	A5.11 - A5.13
ANSI	W74	10		■					■	■	■			■	■				10.0	■		■	A5.11 - A5.13
ANSI	W74	20		■							■	■		■	■				22.0	■		■	A5.11 - A5.13
Sub-Bases & Manifold Bases																							A5.14 - A5.18
Accessories																							A5.19

5-Way 2-Position Valves, Single Direct Solenoid, Spring Return

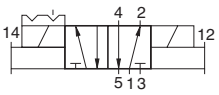
ANSI Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/4 - 3/8	W7016B2331**	1.0	20	3.5	4.9	3.5 (1.6)
2.5	3/8 - 1/2	W7016A3331**	2.5	17	1.6	2.7	3.3 (1.5)
4	3/8 - 3/4	W7016C4331**	4.2	–	–	–	4.3 (1.9)





5-Way 2-Position Valves, Double Direct Solenoid, Detented

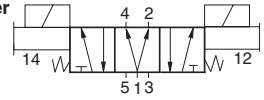
ANSI Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/4 - 3/8	W7016B2332**	1.0	20	3.5	4.9	3.5 (1.6)
2.5	3/8 - 1/2	W7016A3332**	2.5	10	1.3	1.8	3.3 (1.5)
4	3/8 - 3/4	W7016C4332**	4.2	–	–	–	4.3 (1.9)



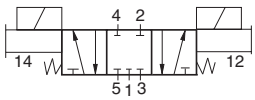
5-Way 3-Position Valves, Double Direct Solenoid

ANSI Size	Port Size	Valve Model Number*			Avg. C_v	Average Response Constants#			Weight lb (kg)
		Power Center	Closed Center	Open Center		M	F		
							In-Out	Out-Exh.	
1	1/8 - 3/8	W7017B2905**	W7017B2331**	W7017B2332**	1.0	20	3.5	4.9	4.5 (2.0)
2.5	3/8 - 1/2	–	W7017A3331**	W7017A3332**	1.9	10	1.3	1.8	5.0 (2.3)
4	1/2 - 3/4	–	W7017C4331**	W7017C4332**	3.8	–	–	–	5.8 (2.6)

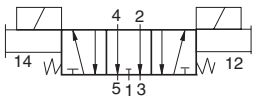
Power Center



Closed Center



Open Center



* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**

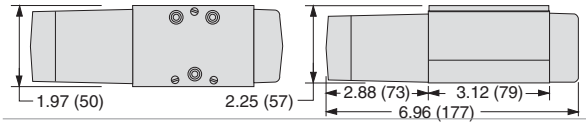
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W7016B2331W. For other voltages, consult ROSS.

\# **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

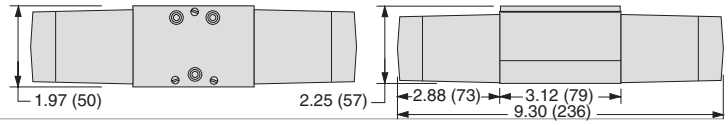
ANSI Size 1

Valve Dimensions – inches (mm)

Single Solenoid

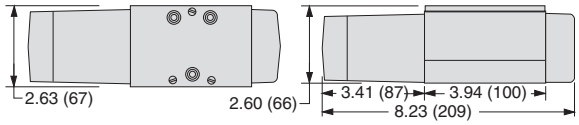


Double Solenoid

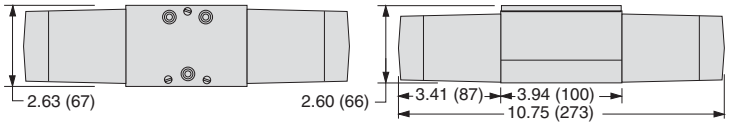


ANSI Size 2.5

Single Solenoid

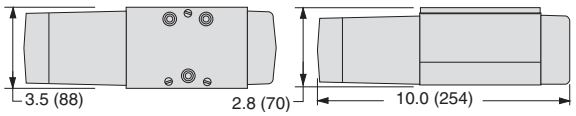


Double Solenoid

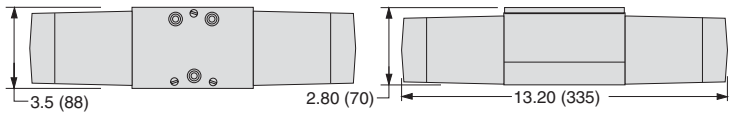


ANSI Size 4

Single Solenoid



Double Solenoid



Options: Indicator Light (in Base/Manifold), refer to page A5.17-A5.18. Accessories ordered separately, refer to page A5.19.

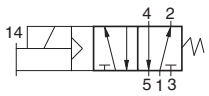
STANDARD SPECIFICATIONS (for valves on this page):

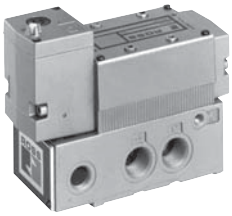
Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Solenoids: AC power; *DC for ANSI size 1 models only.*
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid**):**
ANSI Size 1: 140 VA inrush, 30 VA holding on 50 or 60 Hz; 20 watts on DC.
ANSI Size 2.5 and 4: 380 VA inrush, 79 VA holding.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Manual Override: Flush; rubber non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

5-Way 2-Position Valves, Spring Return

ANSI Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/4 - 3/8	W7076B2331**	1.0	20	3.6	4.9	3.0 (1.4)
2.5	3/8 - 1/2	W7076A3331**	2.5	17	1.6	2.7	3.0 (1.4)
4	3/8 - 3/4	W7076D4331**	4.2	20	0.6	0.6	5.3 (2.4)
10	3/4 - 1¼	W7076C6331**	10	30	0.3	0.3	7.3 (3.3)
20	1¼ - 1½	W7076C8331**	22	50	0.1	0.2	14.5 (6.5)

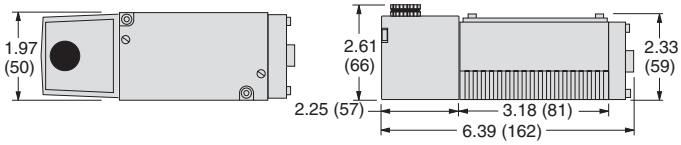




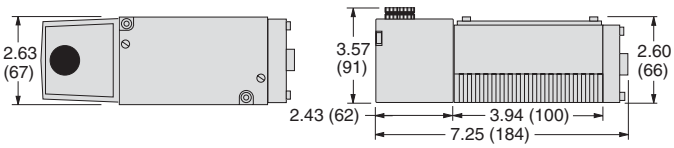
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 100-110/50, 100-130/60 volts AC/Hz; e.g., W7076B2331W.
For other voltages, consult ROSS.
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

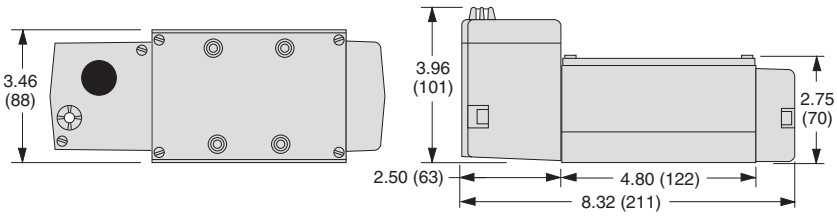
ANSI Size 1



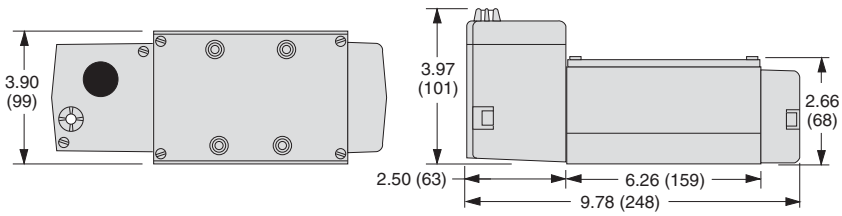
ANSI Size 2.5



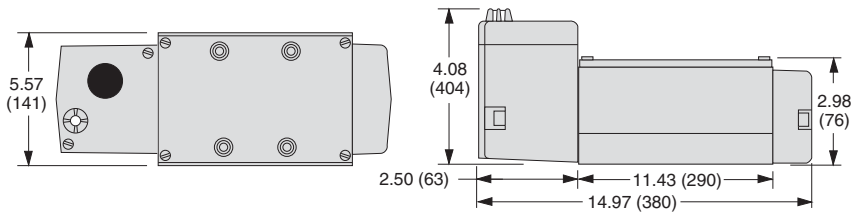
ANSI Size 4



ANSI Size 10



ANSI Size 20



Options: Indicator Light (in Base/Manifold), refer to page A5.17-A5.18. Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

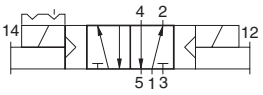
Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 100-110/50, 100-130/60 volts AC/Hz.
Power Consumption (each solenoid**):**
ANSI Size 1: 10 VA inrush, 24 VA holding on 50 or 60 Hz; 5 watts on DC.
ANSI Size 2.5, 4, 10 & 20: 87 VA inrush, 55 VA holding on 50 or 60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4°C to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C). For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
ANSI Size 1 & 20: At least 30 psig (2 bar).
ANSI Size 2.5, 4 &10: At least 15 psig (1 bar).
Indicator Light: Size 4, 10 & 20 models only.
Manual Override: Flush; rubber, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Solenoid Pilot Controlled Valves

5-Way 2-Position Valves, Detented

ANSI Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/4 - 3/8	W7076B2332**	1.0	20	3.5	4.9	4.0 (1.8)
2.5	3/8 - 1/2	W7076A3332**	2.5	10	1.3	1.8	4.0 (1.8)
4	3/8 - 3/4	W7076D4332**	4.2	12	0.6	0.7	6.5 (2.9)
10	3/4 - 1¼	W7076C6332**	10	20	0.3	0.3	9.0 (4.1)
20	1¼ - 1½	W7076C8332**	22	30	0.1	0.2	15.8 (6.8)



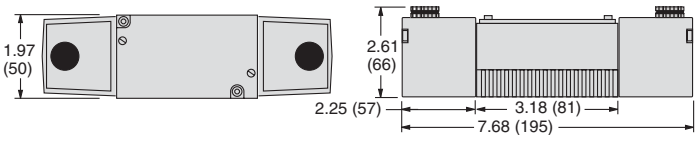
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**

** Insert voltage code: "W" = 24 volts DC; "Z" = 100-110/50, 100-130/60 volts AC/Hz; e.g., W7076B2332W. For other voltages, consult ROSS.

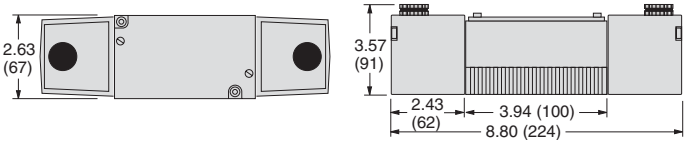
\# **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

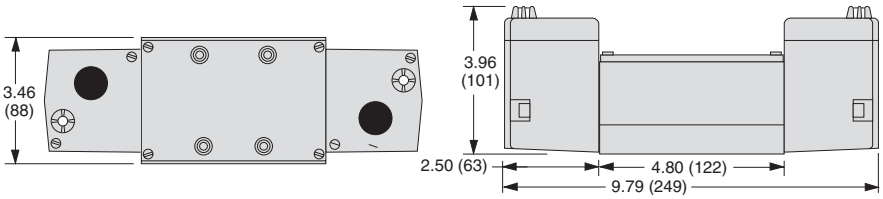
ANSI Size 1



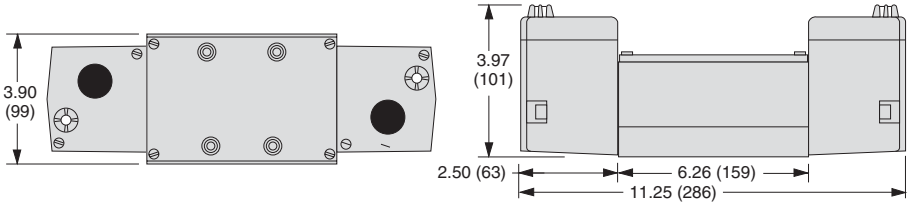
ANSI Size 2.5



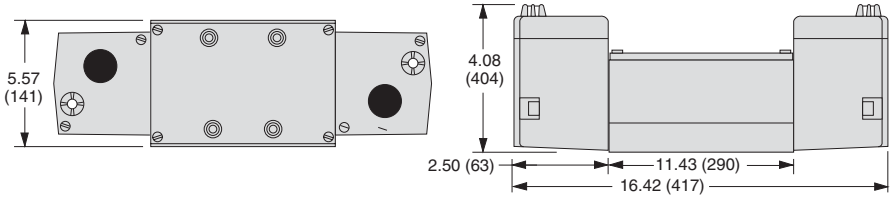
ANSI Size 4



ANSI Size 10



ANSI Size 20



Options: Indicator Light (in Base/Manifold), refer to page A5.17-A5.18. Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 100-110/50, 100-130/60 volts AC/Hz.
Power Consumption (each solenoid**):**
ANSI Size 1: 10 VA inrush, 24 VA holding on 50 or 60 Hz; 5 watts on DC.
ANSI Size 2.5, 4, 10 & 20: 87 VA inrush, 55 VA holding on 50 or 60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4°C to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C). For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
ANSI Size 1 & 20: At least 30 psig (2 bar).
ANSI Size 2.5, 4 &10: At least 15 psig (1 bar).
Indicator Light: Size 4, 10 & 20 models only.
Manual Override: Flush; rubber, non-locking.

A5

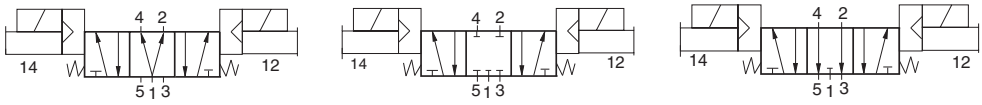
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Solenoid Pilot Controlled Valves

ANSI W70 Series

5-Way 3-Position Valves

ANSI Size	Port Size	Valve Model Number*			Avg. C_v	Average Response Constants#			Weight lb (kg)
		Power Center	Closed Center	Open Center		M	F		
							In-Out	Out-Exh.	
1	1/8 - 3/8	W7077B2906**	W7077B2331**	W7077B2332**	1.0	20	3.5	4.9	4.0 (1.8)
2.5	3/8 - 1/2	W7077A3904**	W7077A3331**	W7077A3332**	2.5	10	1.6	2.6	4.0 (1.8)
4	1/2 - 3/4	W7077C4939**	W7077D4331**	W7077D4332**	4.2	12	0.6	0.7	6.5 (2.9)
10	3/4 - 1¼	W7077A6920**	W7077C6331**	W7077C6332**	10	20	0.3	0.3	8.5 (3.8)
20	1¼ - 1½	W7077A8901**	W7077C8331**	W7077C8332**	22	30	0.1	0.2	15.3 (6.9)

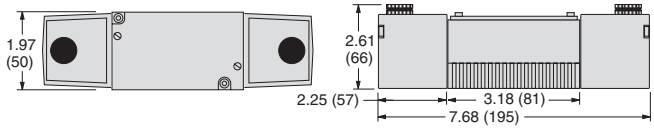


Power Center | Closed Center | Open Center

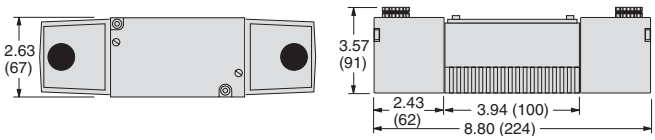
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 100-110/50, 100-130/60 volts AC/Hz; e.g., W7077B2906W.
For other voltages, consult ROSS.
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

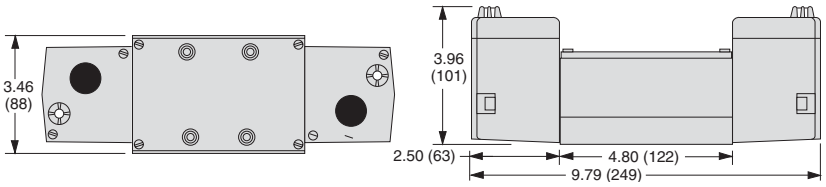
ANSI Size 1



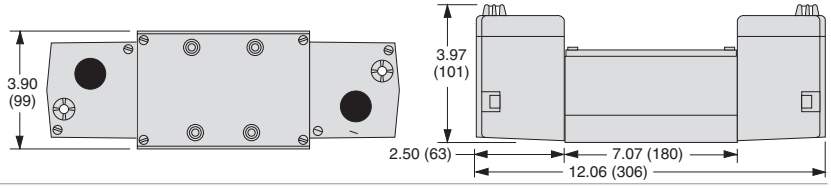
ANSI Size 2.5



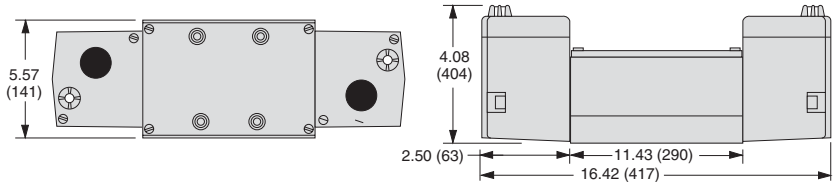
ANSI Size 4



ANSI Size 10



ANSI Size 20



Options: Indicator Light (in Base/Manifold), refer to page A5.17-A5.18. Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 100-110/50, 100-130/60 volts AC/Hz.
Power Consumption (each solenoid)**:**
ANSI Size 1: 10 VA inrush, 24 VA holding on 50 or 60 Hz; 5 watts on DC.
ANSI Size 2.5, 4, 10 & 20: 87 VA inrush, 55 VA holding on 50 or 60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4°C to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
ANSI Size 1 & 20: At least 30 psig (2 bar).
ANSI Size 2.5, 4 &10: At least 15 psig (1 bar).
Indicator Light: ANSI Size 4, 10 & 20 models only.
Manual Override: Flush; rubber, non-locking.

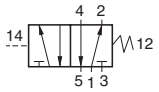
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Online Version
Rev. 10/02/17

Single Pressure Controlled Valves

5-Way 2-Position Valves, Spring Return

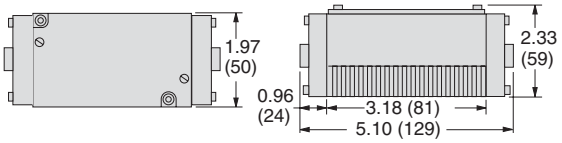
ANSI Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/4 - 3/8	W7056B2331	1.0	20	3.6	4.9	2.5 (1.1)
2.5	3/8 - 1/2	W7056A3331	2.5	17	1.5	2.6	2.0 (0.9)
4	3/8 - 3/4	W7056B4331	4.2	12	0.6	0.7	4.3 (1.9)
10	3/4 - 1¼	W7056A6331	10	20	0.3	0.3	6.3 (2.8)
20	1¼ - 1½	W7056A8331	22	30	0.1	0.2	13.0 (5.9)



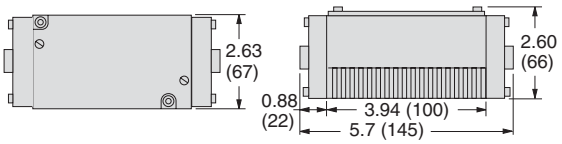
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
\# **Valve Response Time –** Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

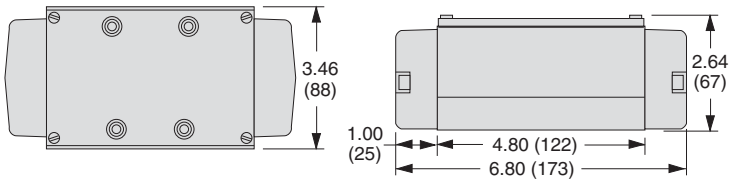
ANSI Size 1



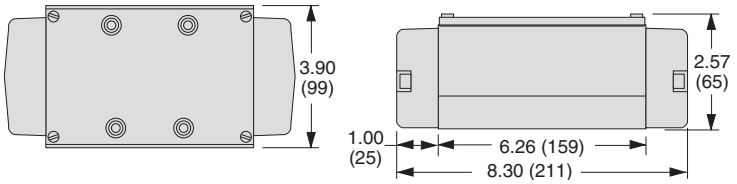
ANSI Size 2.5



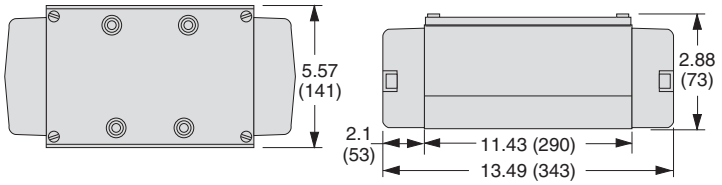
ANSI Size 4



ANSI Size 10



ANSI Size 20



Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.

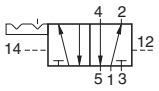
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
ANSI Size 1 & 20: At least 30 psig (2 bar).
ANSI Size 2.5, 4 & 10: At least 15 psig (1 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Pressure Controlled Valves

5-Way 2-Position Valves, Detented

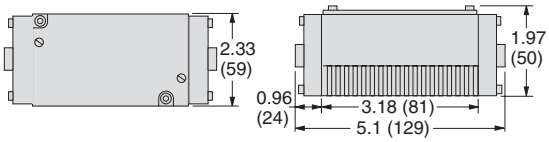
ANSI Size	Port Size	Valve Model Number*	Avg. C_v	Average Response Constants#			Weight lb (kg)
				M	F		
					In-Out	Out-Exh.	
1	1/4 - 3/8	W7056B2332	1.0	20	3.5	4.9	2.5 (1.1)
2.5	3/8 - 1/2	W7056A3332	2.5	17	1.5	2.6	2.0 (0.9)
4	3/8 - 3/4	W7056B4332	4.2	12	0.6	0.7	4.3 (1.9)
10	3/4 - 1¼	W705A6332	10	20	0.3	0.3	6.3 (2.8)
20	1¼ - 1½	W7056A8332	22	30	0.1	0.2	13.8 (6.2)



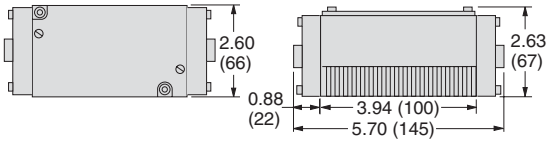
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
\# **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

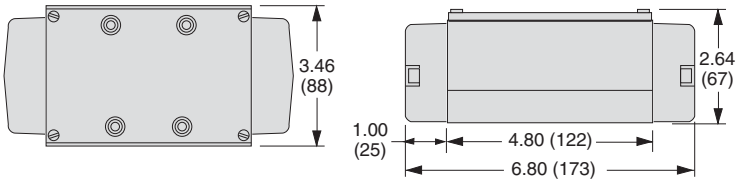
ANSI Size 1



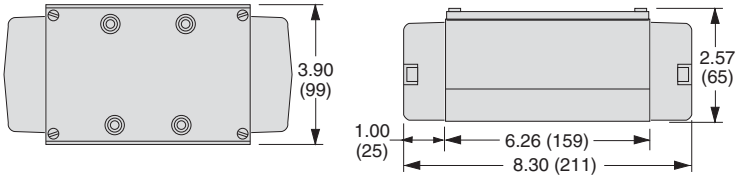
ANSI Size 2.5



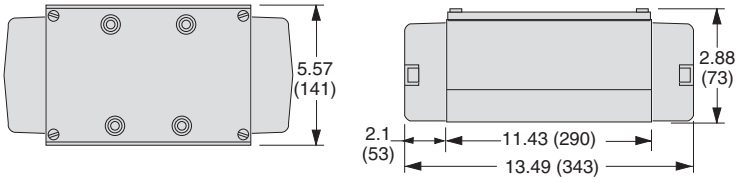
ANSI Size 4



ANSI Size 10



ANSI Size 20



Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Ambient/Media Temperature:: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.

Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
ANSI Size 1 & 20: At least 30 psig (2 bar).
ANSI Size 2.5, 4 & 10: At least 15 psig (1 bar).

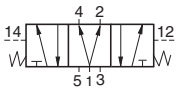
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Pressure Controlled Valves

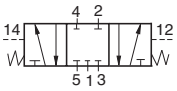
5-Way 3-Position Valves

ANSI Size	Port Size	Valve Model Number*			Avg. C_v	Average Response Constants#			Weight lb (kg)
		Power Center	Closed Center	Open Center		M	F		
							In-Out	Out-Exh.	
1	1/8 - 3/8	–	W7057B2331	W7057B2332	1.0	20	3.5	4.9	2.5 (1.1)
2.5	3/8 - 1/2	–	W7057A3331	W7057A3332	2.5	17	1.5	2.6	2.0 (0.9)
4	1/2 - 3/4	–	W7057B4331	W7057B4332	4.2	12	0.6	0.7	4.3 (1.9)
10	3/4 - 1¼	W7057A6902	W7057A6331	W7057A6332	10	20	0.3	0.3	6.3 (2.8)
20	1¼ - 1½	–	W7057A8331	W7057A8332	22	30	0.1	0.2	13.8 (6.2)

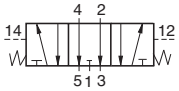
Power Center



Closed Center



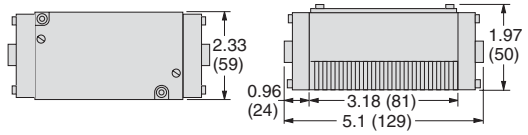
Open Center



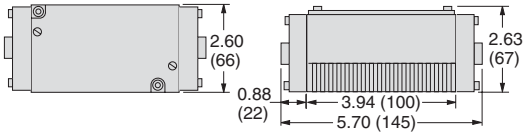
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
\# **Valve Response Time –** Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

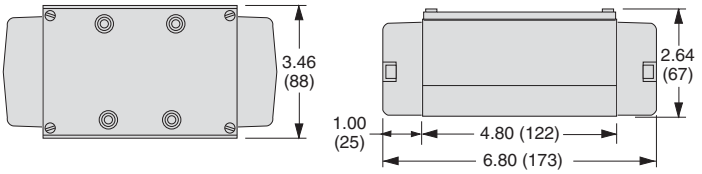
ANSI Size 1



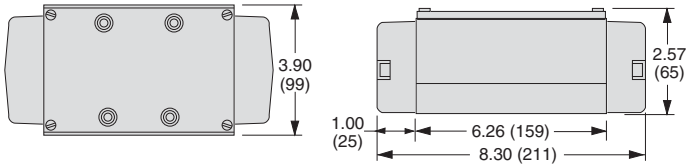
ANSI Size 2.5



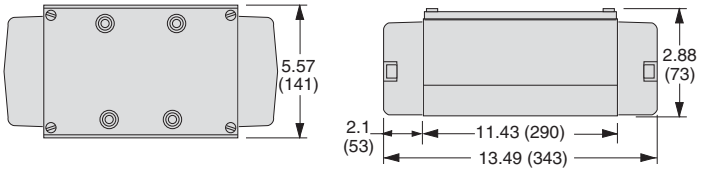
ANSI Size 4



ANSI Size 10



ANSI Size 20



Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Ambient/Media Temperature: 40° to 175°F (4° to 80°C).
For other temperature ranges, consult ROSS.
Flow Media: Filtered air.

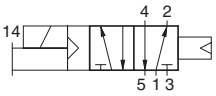
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure:
ANSI Size 1 & 20: At least 30 psig (2 bar).
ANSI Size 2.5, 4 & 10: At least 15 psig (1 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Single Solenoid Pilot Controlled Valves

5-Way 2-Position Valves, Air Return

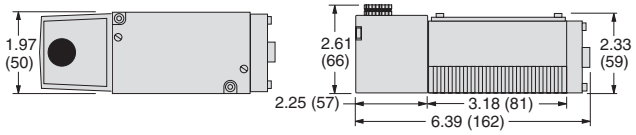
ANSI Size	Port Size	Valve Model Number*		Avg. C_v	Average Response Constants#			Weight lb (kg)
		Standard Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/4 - 3/8	W7476B2331**	W7476B2336**	0.9	30	2.7	5.6	3.0 (1.4)
2.5	3/8 - 1/2	W7476A3331**	W7476A3336**	2.0	25	1.5	2.9	3.0 (1.4)
4	1/2 - 3/4	W7476C4331**	W7476C4336**	4.2	27	0.6	1.0	5.0 (2.3)
10	3/4 - 1¼	W7476A6331**	W7476A6336**	11	30	0.3	0.5	6.1 (2.8)
20	1¼ - 1½	W7476A8331**	W7476A8336**	22	50	0.1	0.2	18.5 (8.3)



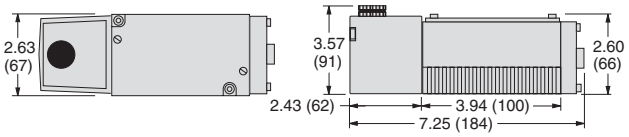
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 100-110/50, 100-130/60 volts AC/Hz; e.g., W7476B2331W.
For other voltages, consult ROSS.
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

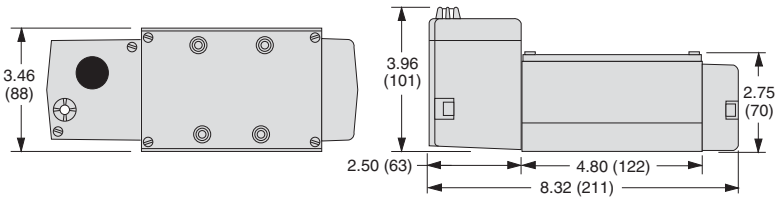
ANSI Size 1



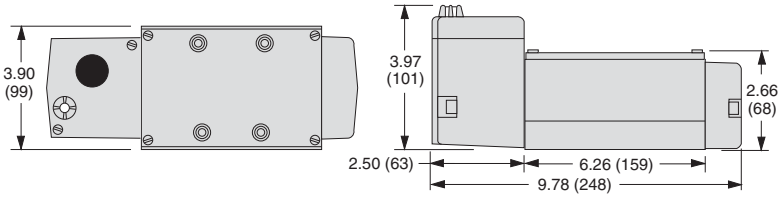
ANSI Size 2.5



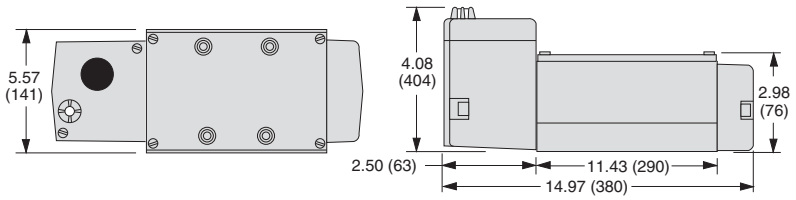
ANSI Size 4



ANSI Size 10



ANSI Size 20



Options: Indicator Light (in Base/Manifold), refer to page A5.17-A5.18. Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

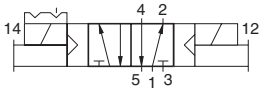
Construction: Poppet.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110/50, 110-120/60 volts AC/Hz.
Power Consumption (each solenoid):
ANSI Size 1: 10 VA inrush, 24 VA holding on 50 or 60 Hz; 5 watts on DC.
ANSI Size 2.5, 4, 10 & 20: 87 VA inrush, 55 VA holding on 50 or 60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C); extended to 175°F (80°C) for High Temperature models.
Media Temperature: 40° to 175°F (4° to 80°C); extended to 220°F (105°C) for High Temperature models.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.
Indicator Light: *ANSI Size 4, 10 & 20 models only:* Included, one per solenoid.
Manual Override: Flush; rubber, non-locking.

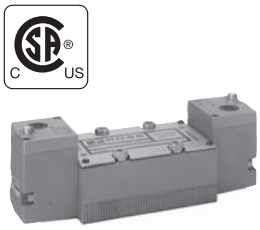
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Solenoid Pilot Controlled Valves

5-Way 2-Position Valves, Double Solenoid Pilot Controlled, Detented

ANSI Size	Port Size	Valve Model Number*		Avg. C_v	Average Response Constants#			Weight lb (kg)
		Standard Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/4 - 3/8	W7476B2332**	W7476B2337**	0.9	30	2.7	5.6	3.0 (1.4)
2.5	3/8 - 1/2	W7476A3332**	W7476A3337**	2.0	25	1.5	2.9	3.0 (1.4)
4	1/2 - 3/4	W7476C4332**	W7476C4337**	4.2	27	0.6	1.0	5.0 (2.3)
10	3/4 - 1¼	W7476A6332**	W7476A6337**	11	30	0.3	0.5	6.1 (2.8)
20	1¼ - 1½	W7476A8332**	W7476A8337**	22	50	0.1	0.2	18.5 (8.3)

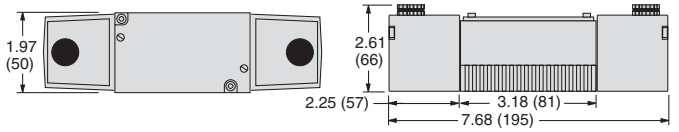




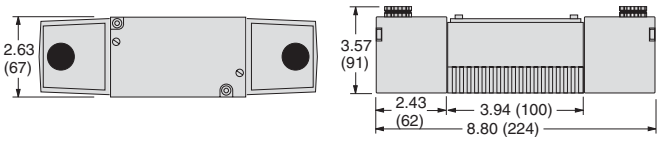
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 100-110/50, 100-130/60 volts AC/Hz; e.g., W7476B2332W.
For other voltages, consult ROSS.
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

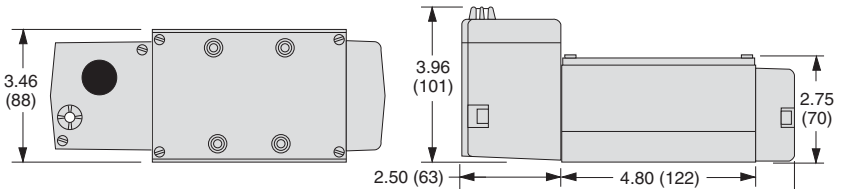
ANSI Size 1



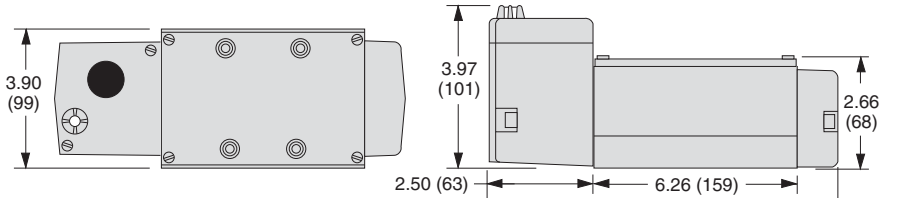
ANSI Size 2.5



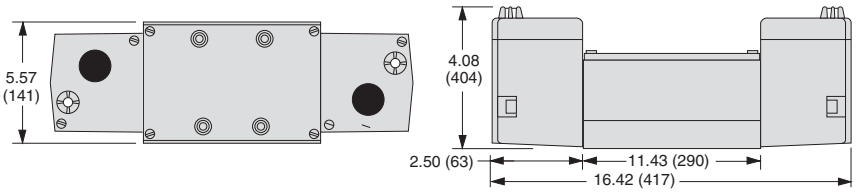
ANSI Size 4



ANSI Size 10



ANSI Size 20



A5

Options: Indicator Light (in Base/Manifold), refer to page A5.17-A5.18. Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

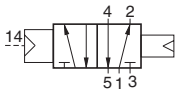
Construction: Poppet.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110/50, 110-120/60 volts AC/Hz.
Power Consumption (each solenoid):
ANSI Size 1: 10 VA inrush, 24 VA holding on 50 or 60 Hz; 5 watts on DC.
ANSI Size 2.5, 4, 10 & 20: 87 VA inrush, 55 VA holding on 50 or 60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C); extended to 175°F (80°C) for High Temperature models.
Media Temperature: 40° to 175°F (4° to 80°C); extended to 220°F (105°C) for High Temperature models.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.
Indicator Light: *ANSI Size 4, 10 & 20 models only:* Included, one per solenoid.
Manual Override: Flush; rubber, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Single Pressure Controlled Valves

5-Way 2-Position Valves, Air Return

ANSI Size	Port Size	Valve Model Number*		Avg. C_v	Average Response Constants#			Weight lb (kg)
		Standard Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/4 - 3/8	W7456B2331	W7456B2336	0.9	30	2.7	5.6	2.5 (1.1)
2.5	3/8 - 1/2	W7456A3331	W7456A3336	2.0	25	1.4	2.9	2.0 (0.9)
4	1/2 - 3/4	W7456C4331	W7456C4336	4.2	16	0.5	1.1	3.3 (1.5)
10	3/4 - 1¼	W7456A6331	W7456A6336	11	14	0.3	0.5	7.3 (3.3)
20	1¼ - 1½	W7456A8331	W7456A8336	22	32	0.1	0.2	17.5 (7.9)

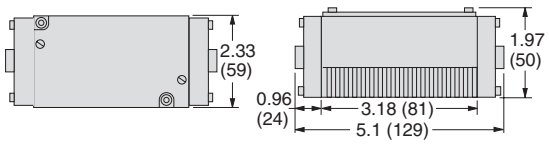


*** Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**

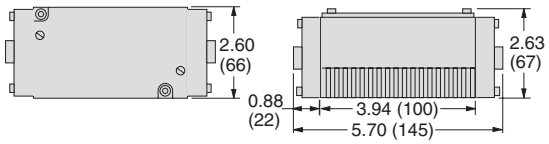
 # Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

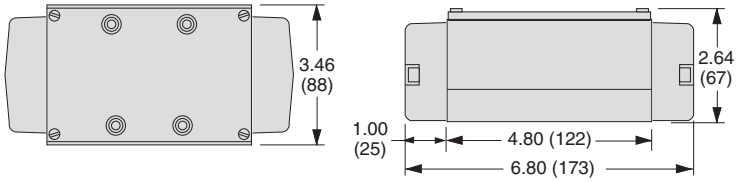
ANSI Size 1



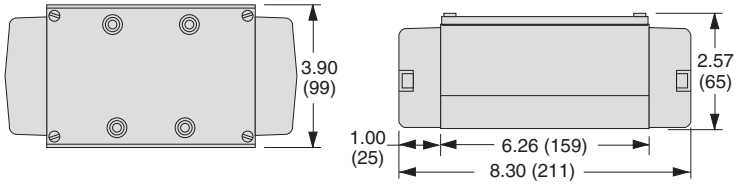
ANSI Size 2.5



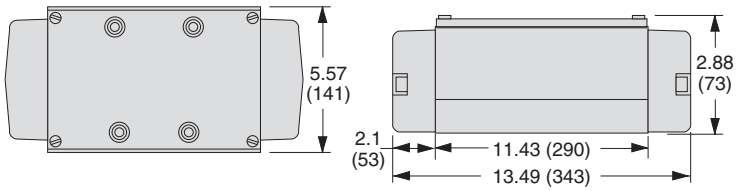
ANSI Size 4



ANSI Size 10



ANSI Size 20



Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

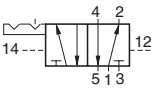
Construction: Poppet.
Mounting Type: Base.
Ambient Temperature: 40° to 175°F (4° to 80°C).
Media Temperature: 40° to 175°F (4° to 80°C); extended to 220°F (105°C) for High Temperature models.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Pressure Controlled Valves

5-Way 2-Position Valves, Detented

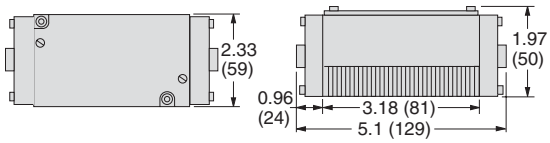
ANSI Size	Port Size	Valve Model Number*		Avg. C_v	Average Response Constants#			Weight lb (kg)
		Standard Temp.	High Temp.		M	F		
						In-Out	Out-Exh.	
1	1/4 - 3/8	W7456B2332	W7456B2337	0.9	30	2.7	5.6	2.5 (1.1)
2.5	3/8 - 1/2	W7456A3332	W7456A3337	2.0	25	1.4	2.9	2.0 (0.9)
4	1/2 - 3/4	W7456C4332	W7456C4337	4.2	16	0.5	1.1	3.3 (1.5)
10	3/4 - 1¼	W7456A6332	W7456A6337	11	14	0.3	0.5	7.3 (3.3)
20	1¼ - 1½	W7456A8332	W7456A8337	22	32	0.1	0.2	17.5 (7.9)



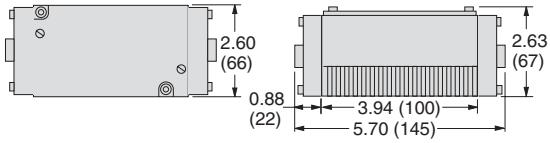
* **Sub-bases and manifold bases ordered separately, refer to page A5.14-A5.18.**
\# **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

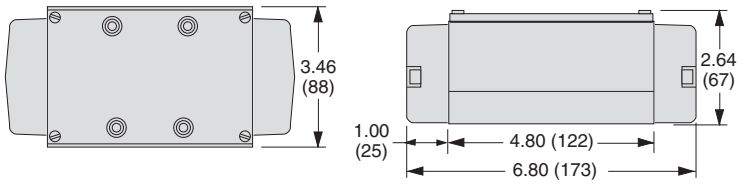
ANSI Size 1



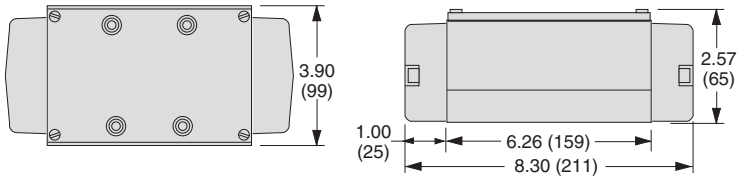
ANSI Size 2.5



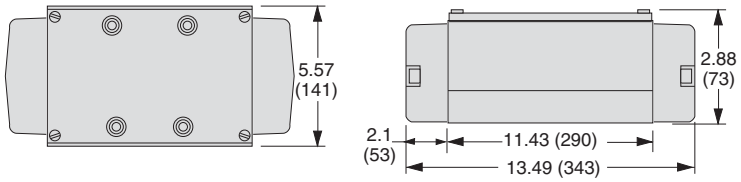
ANSI Size 4



ANSI Size 10



ANSI Size 20



Accessories ordered separately, refer to page A5.19.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Ambient Temperature: 40° to 175°F (4° to 80°C).
Media Temperature: 40° to 175°F (4° to 80°C); extended to 220°F (105°C) for High Temperature models.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: Must be equal to or greater than inlet pressure.

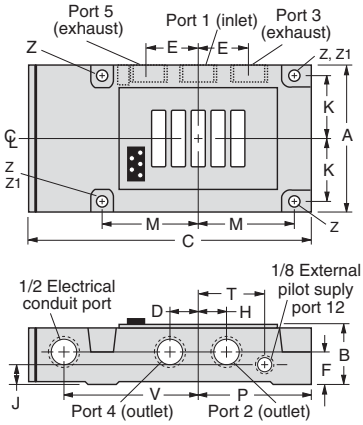
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Sub-base for ANSI Size 4 valve illustrated

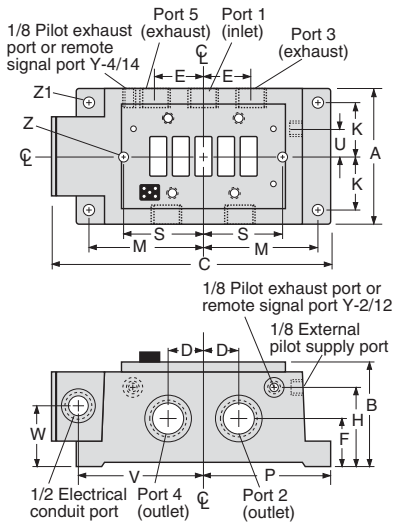
ANSI Size	Outlet Port	Indicator Lights in Base*			Avg. C_v
		None	One	Two	
		Model Number			
1	1/4	500B91	525K91**	526K91**	0.9 to 1.0
	3/8	501B91	527K91**	528K91**	0.9 to 1.0
2.5	3/8	474K91	482K91**	484K91**	2.0 to 2.5
	1/2	475K91	483K91**	485K91**	2.0 to 2.5
4	3/8	361B91	—	—	4.2
	1/2	362B91	—	—	4.2
	3/4	363B91	—	—	4.2
10	3/4	364B91	—	—	10 to 11
	1	365B91	—	—	10 to 11
	1¼	366B91	—	—	10 to 11
20	1¼	367B91	—	—	22
	1½	368B91	—	—	22

*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D502B91.
** Insert voltage code: "–W" = 24 volts DC; "–Z" = 110-120 volts AC, 50/60 Hz; e.g., 525K91–W. For other voltages, consult ROSS.

ANSI Size 1 & 2.5



ANSI Size 4, 10 & 20



Sub-Base Dimensions inches (mm)					
	ANSI 1	ANSI 2.5	ANSI 4	ANSI 10	ANSI 20
A	2.80 (71)	3.56 (90)	3.36 (85)	5.08 (129)	6.64 (169)
B	1.44 (37)	1.61 (41)	2.64 (67)	3.78 (96)	3.70 (94)
C	6.15 (156)	7.09 (180)	7.21 (183)	10.45 (266)	12.34 (313)
D	0.51 (13)	0.63 (16)	0.75 (19)	1.38 (35)	1.38 (35)
E	0.88 (22)	1.25 (32)	1.50 (38)	2.76 (70)	2.76 (70)
F	0.78 (20)	0.93 (23)	1.23 (31)	1.75 (44)	1.59 (40)
H	0.58 (15)	0.63 (16)	2.21 (56)	3.01 (76)	2.85 (72)
J	0.38 (10)	0.50 (13)	–	–	–
K	1.13 (29)	1.50 (38)	–	2.05 (52)	2.38 (60)
M	1.88 (48)	2.31 (59)	–	4.33 (110)	5.35 (136)
P	2.43 (62)	2.97 (75)	2.86 (73)	4.76 (121)	5.86 (149)
S	–	–	2.36 (60)	–	–
T	1.35 (34)	1.78 (45)	–	–	–
U	–	–	0.83 (21)	1.97 (50)	1.54 (39)
V	2.75 (70)	3.29 (83)	3.07 (78)	4.65 (118)	5.60 (142)
W	–	–	1.23 (31)	2.50 (64)	2.15 (55)
Z	0.27 (7)	–	0.30 (7)	–	–
Z1	–	0.28 (7)	–	0.34 (9)	0.37 (9)

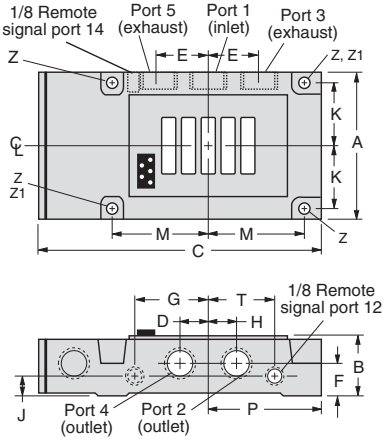
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Sub-base for ANSI Size 4 valve illustrated

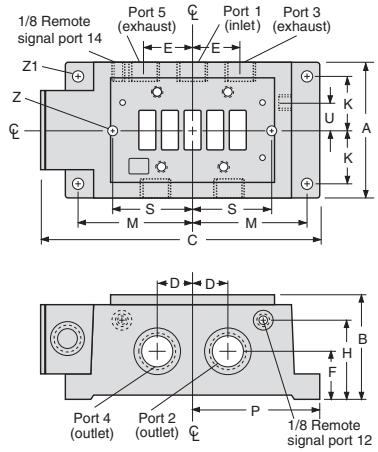
ANSI Size	Outlet Port	Model Number	Avg. C_v
1	1/4	500B91	0.9 to 1.0
	3/8	501B91	0.9 to 1.0
2.5	3/8	474K91	2.0 to 2.5
	1/2	475K91	2.0 to 2.5
4	3/8	361B91	4.2
	1/2	362B91	4.2
	3/4	363B91	4.2
10	3/4	364B91	10 to 11
	1	365B91	10 to 11
	1¼	366B91	10 to 11
20	1¼	367B91	22
	1½	368B91	22

*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D502B91.

ANSI Size 1 & 2.5



ANSI Size 4, 10 & 20



Sub-Base Dimensions inches (mm)					
	ANSI 1	ANSI 2.5	ANSI 4	ANSI 10	ANSI 20
A	2.80 (71)	3.56 (90)	3.36 (85)	5.08 (129)	6.64 (169)
B	1.44 (37)	1.61 (41)	2.64 (67)	3.78 (96)	3.70 (94)
C	6.15 (156)	7.09 (180)	7.21 (183)	10.45 (266)	12.34 (313)
D	0.51 (13)	0.63 (16)	0.75 (19)	1.38 (35)	1.38 (35)
E	0.88 (22)	1.25 (32)	1.50 (38)	2.76 (70)	2.76 (70)
F	0.78 (20)	0.93 (23)	1.23 (31)	1.75 (44)	1.59 (40)
H	0.58 (15)	0.63 (16)	2.21 (56)	3.01 (76)	2.85 (72)
J	0.38 (10)	0.50 (13)	–	–	–
K	1.13 (29)	1.50 (38)	–	2.05 (52)	2.38 (60)
M	1.88 (48)	2.31 (59)	–	4.33 (110)	5.35 (136)
P	2.43 (62)	2.97 (75)	2.86 (73)	4.76 (121)	5.86 (149)
S	–	–	2.36 (60)	–	–
T	1.35 (34)	1.78 (45)	–	–	–
U	–	–	0.83 (21)	1.97 (50)	1.54 (39)
V	–	–	–	–	–
Z	0.27 (7)	–	0.30 (7)	–	–
Z1	–	0.28 (7)	–	0.34 (9)	0.37 (9)

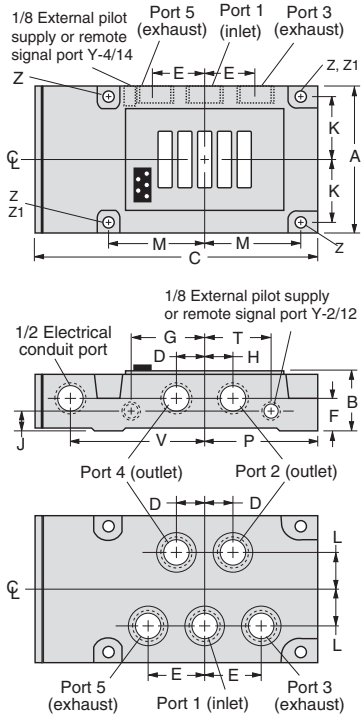
Side & Bottom Ported Sub-Bases

ANSI Size	Outlet Port	Indicator Lights in Base*			Avg. C_v
		None	One	Two	
		Model Number			
1	1/4	499B91	529K91**	530K91**	0.9 to 1.0
2.5	3/8	476K91	477K91**	486K91**	2.0 to 2.5
4	3/8	369B91	—	—	4.2
	1/2	370B91	—	—	4.2
	3/4	371B91	—	—	4.2

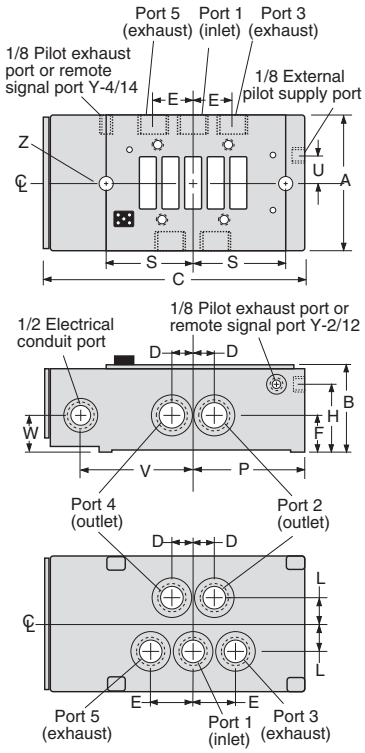
*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D502B91.
** Insert voltage code: "–W" = 24 volts DC; "–Z" = 110-120 volts AC, 50/60 Hz; e.g., 529K91–W.
For other voltages, consult ROSS.

Dimensions inches (mm)			
	ANSI 1	ANSI 2.5	ANSI 4
A	2.80 (71)	3.56 (90)	3.36 (85)
B	1.44 (37)	1.61 (41)	2.64 (67)
C	6.15 (156)	7.09 (180)	7.21 (183)
D	0.51 (13)	0.63 (16)	0.75 (19)
E	0.88 (22)	1.25 (32)	1.50 (38)
F	0.78 (20)	0.93 (23)	1.23 (31)
G	1.46 (37)	2.41 (61)	–
H	0.58 (15)	0.63 (16)	2.21 (56)
J	0.38 (10)	0.50 (13)	–
K	1.13 (29)	1.50 (38)	–
L	0.63 (16)	0.81 (21)	–
M	1.88 (48)	2.31 (59)	–
P	2.43 (62)	2.97 (75)	2.86 (73)
S	–	–	2.36 (60)
T	1.35 (34)	1.78 (45)	–
U	–	–	0.83 (21)
V	2.75 (70)	3.29 (83)	–
Z	0.27 (7)	–	0.30 (7)
Z1	–	0.28 (7)	–

ANSI Size 1 & 2.5



ANSI Size 4



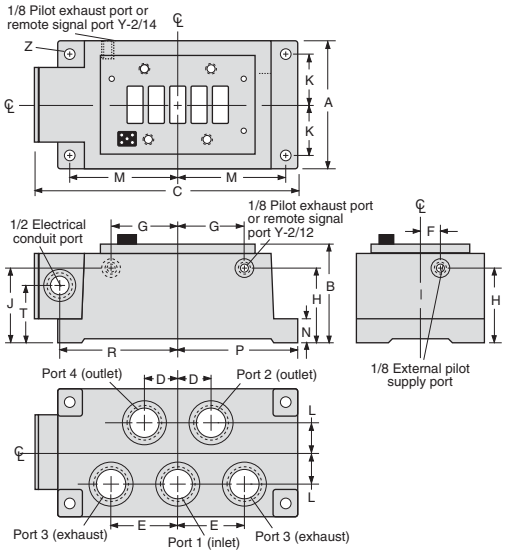
Bottom Ported Sub-Bases

ANSI Size	Outlet Port	Model Number	Avg. C_v
10	3/4	372B91	10 to 11
	1	373B91	10 to 11
	1¼	374B91	10 to 11
20	1¼	375B91	22
	1½	376B91	22

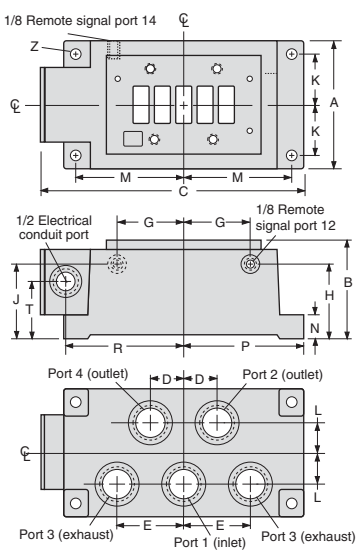
*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D502B91.

Dimensions inches (mm)					
	ANSI 10	ANSI 20		ANSI 10	ANSI 20
A	5.8 (129)	6.64 (169)	K	2.05 (52)	2.38 (60)
B	3.78 (96)	3.70 (94)	L	1.22 (31)	1.22 (31)
C	10.45 (266)	12.34 (313)	M	4.33 (110)	5.36 (136)
D	1.38 (35)	1.38 (35)	N	0.88 (22)	1.00 (25)
E	2.76 (70)	2.76 (76)	P	4.76 (121)	5.82 (148)
F	1.03 (26)	1.54 (39)	R	4.65 (118)	5.60 (142)
G	2.60 (66)	3.90 (99)	T	2.50 (64)	2.15 (55)
H	3.01 (76)	2.85 (72)	Z	0.34 (8)	0.37 (9)
J	3.25 (83)	2.85 (72)			

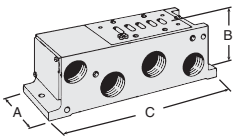
for Solenoid Pilot Controlled Valves



for Predssure Controlled Valves



IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

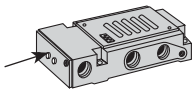


Typical Manifold Station

The numbers of the manifold stations shown in the chart on the right specify pressure ports with NPT threads and electrical openings with 1¼ NPT threads. All necessary hardware and seals for manifold assembly are included with each manifold station.

Indicator Lights: As shown in the chart the smaller sizes of manifolds are available with indicator lights. These lights are located in the end plate covering the electrical cavity.

Lights are mounted in bases, on the valves, or on solenoids, depending on the particular type of valve.



Manifold Note: The port positions of the solenoid controlled and the pressure controlled manifolds are not the same. For this reason these stations cannot be mixed in the same installation. If both types of valves *must* be used in the same installation, *use only manifold stations for solenoid controlled valves.*

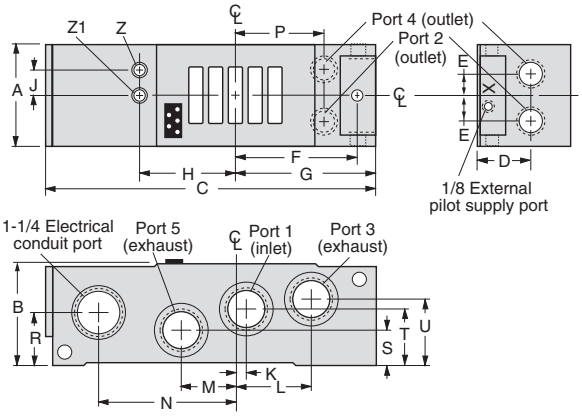
ANSI Size	Outlet Port	Indicator Lights in Manifold*			Avg. C_v
		None	One	Two	
		Model Number			
1	1/4	502B91	531K91**	532K91**	0.9 to 1.0
	3/8	503B91	533K91**	534K91**	0.9 to 1.0
2.5	3/8	472K91	478K91**	480K91**	2.0 to 2.5
	1/2	473K91	479K91**	481K91**	2.0 to 2.5
4	3/8	377B91	—	—	4.2
	1/2	378B91	—	—	4.2
	3/4	379B91	—	—	4.2
10	3/4	380B91	—	—	10 to 11
	1	381B91	—	—	10 to 11
	1¼	382B91	—	—	10 to 11

*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D502B91.
** Insert voltage code: "–W" = 24 volts DC; "–Z" = 110-120 volts AC, 50/60 Hz; e.g., 531K91–W. For other voltages, consult ROSS.

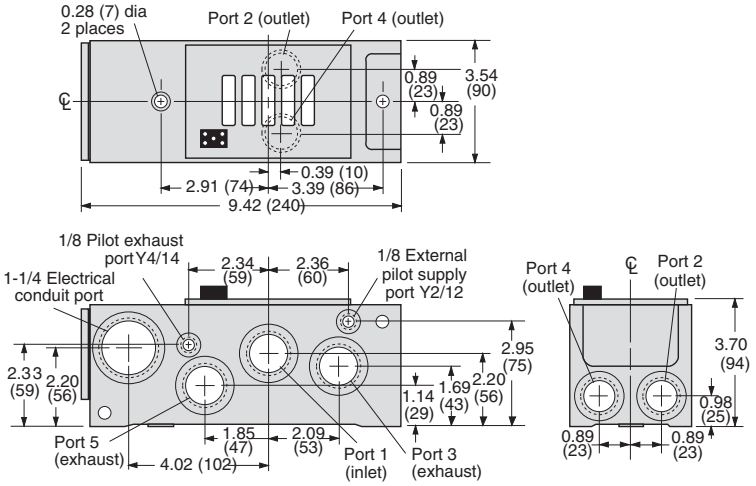
Manifold Dimensions – inches (mm)

ANSI Size 1 & 2.5

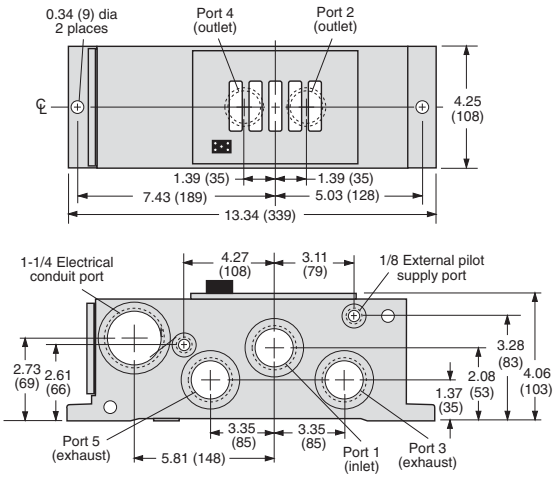
	Dimensions inches (mm)				
	ANSI 1	ANSI 2.5		ANSI 1	ANSI 2.5
A	2.26 (57)	2.80 (71)	L	1.62 (41)	1.81 (46)
B	2.26 (57)	2.66 (68)	M	1.00 (25)	1.46 (37)
C	7.89 (201)	8.50 (216)	N	2.88 (73)	3.46 (88)
D	1.38 (35)	1.48 (38)	P	2.16 (55)	2.21 (56)
E	0.56 (14)	0.70 (18)	R	1.17 (30)	1.36 (35)
F	2.76 (70)	2.99 (76)	S	0.64 (16)	0.78 (20)
G	3.14 (80)	3.43 (87)	T	1.07 (27)	1.40 (36)
H	1.80 (46)	2.24 (87)	U	1.57 (40)	1.76 (45)
J	0.50 (13)	–	Z	0.28 (7)	–
K	0.31 (8)	0.18 (6)	Z1	–	0.28 (7)



ANSI Size 4



ANSI Size 10

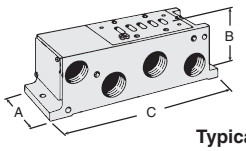


ASSEMBLED MANIFOLDS

Valves and manifold stations can be assembled by ROSS to precise specifications. The assembly is then ready for integration into your system.

For detailed information about such assemblies, consult your ROSS Distributor or call ROSS in the U.S.A. at 1-888-TEK-ROSS (835-7677) or 1-706-356-3708.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



Typical Manifold Station

ANSI Size	Outlet Port	Model Number	Avg. C_v
1	1/4	359B91	0.9 to 1.0
	3/8	360B91	0.9 to 1.0
2.5	3/8	468B91	2.0 to 2.5
	1/2	469B91	2.0 to 2.5
4	3/8	383B91	4.2
	1/2	384B91	4.2
	3/4	385B91	4.2
10	3/4	386B91	10 to 11
	1	387B91	10 to 11
	1¼	388B91	10 to 11

*NPT port threads. For BSPP threads, add a "D" prefix to the model number, e.g., D502B91.

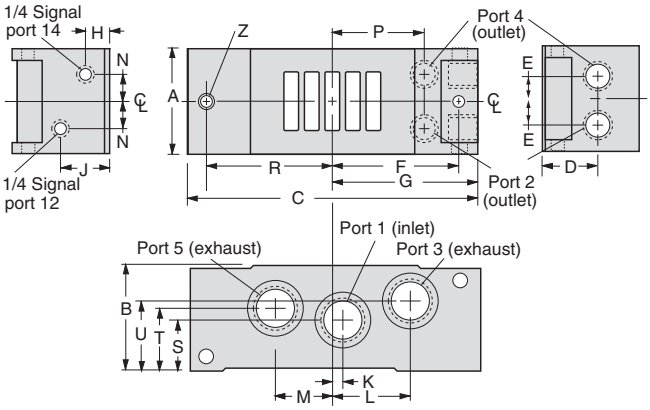
The numbers of the manifold stations shown in the chart on the right specify pressure ports with NPT threads. All necessary hardware and seals for manifold assembly are included with each manifold station.

Manifold Note: The port positions of the solenoid controlled and the pressure controlled manifolds are not the same. For this reason these stations cannot be mixed in the same installation. If both types of valves *must* be used in the same installation, *use only manifold stations for solenoid controlled valves.*

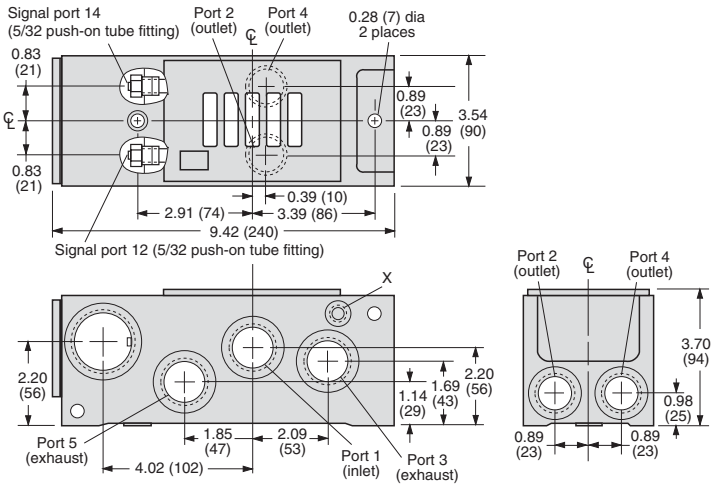
Manifold Dimensions – inches (mm)

ANSI Size 1 & 2.5

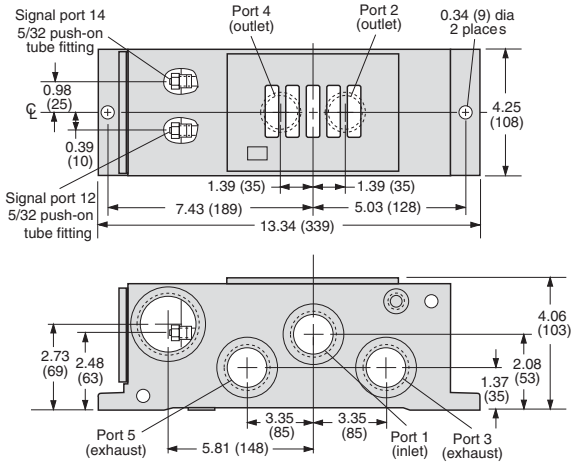
	Dimensions inches (mm)				
	ANSI 1	ANSI 2.5		ANSI 1	ANSI 2.5
A	2.26 (57)	2.80 (71)	L	1.47 (37)	1.80 (46)
B	2.26 (57)	2.66 (68)	M	1.36 (35)	1.46 (37)
C	6.25 (159)	6.86 (174)	N	0.56 (14)	0.70 (18)
D	1.32 (34)	1.48 (38)	P	2.37 (60)	2.21 (56)
E	0.56 (14)	0.70 (18)	R	2.50 (64)	2.99 (76)
F	2.88 (73)	2.99 (76)	S	1.14 (29)	1.40 (36)
G	3.31 (84)	3.40 (86)	T	1.14 (29)	1.76 (45)
H	0.56 (14)	0.74 (19)	U	1.26 (32)	1.76 (45)
J	0.88 (22)	1.26 (32)	Z	0.28 (7)	0.28 (7)
K	0.00 (00)	0.18 (6)			



ANSI Size 4



ANSI Size 10



ASSEMBLED MANIFOLDS

Valves and manifold stations can be assembled by ROSS to precise specifications. The assembly is then ready for integration into your system.

For detailed information about such assemblies, consult your ROSS Distributor or call ROSS in the U.S.A. at 1-888-TEK-ROSS (835-7677) or 1-706-356-3708.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Interposed Pressure Regulators

Both single and double interposed regulators are available for valves with C_v ratings up to 4.2. A regulator is bolted to the valve's sub-base or manifold station, and the valve is then bolted to the regulator. This mounting method allows the valve to be removed and replaced without disturbing the regulator.

Single pressure regulators provide the same regulated pressure at both outlet ports. Double pressure regulators allow the pressure at each outlet port to be set independently.

A locking type knob is used to set the regulated pressure at any point in the range of:

5 to 100 psig (0.3 to 7 bar) for size 1 and 2 models;
5 to 125 psig (0.3 to 8.5 bar) for size = 4.2 models.

Maximum inlet pressure is 150 psig (10 bar).
Pressure gauge(s) included.

ANSI Size	Interposed Regulator – Model Number		
	Single	Double*	
		Solenoid	Remote Air
1	840C91	841C91	713C91
2.5	626C91	627C91	714C91
4	632C91	633C91	715C91

* Double regulator only for W70 spool valves.

WARNING: Double interposed regulators will reverse output ports - the 12 solenoid will pressurize the 4 port, the 14 solenoid will pressurize the 2 port - which may cause unexpected, potentially dangerous cylinder movement at valve pressurization.

Manual Override Kits

Flush flexible manual overrides are standard on solenoid pilot controlled valves with C_v ratings of 2.0 or larger. Both locking and non-locking metal override buttons are also available for these models.

Each of the override buttons in the kits at the right is made of metal and is spring-returned. The locking type button, however, can be kept in the actuated position by turning the slot in the top of the button with a screwdriver.

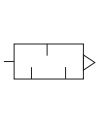
Flush Button	
Locking Type	Kit Number
Non-Locking	790K87
Locking	792K87

Extended Button	
Locking Type	Kit Number
Non-Locking	791K87

Extended Button with Palm	
Locking Type	Kit Number
Non-Locking	984H87

Silencers

Port Size	Thread Type	Model Number		Avg. C_v	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	BSPT Threads		A	B	
1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
		5500A3003	D5500A3003	4.3	1.3 (32)	3.5 (88)	0.2 (0.1)
1/2	Male	5500A4003	D5500A4003	4.7	1.3 (32)	3.6 (91)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (92)	0.2 (0.1)
		5500A5003	D5500A5003	11.5	2.0 (51)	5.3 (135)	0.6 (0.3)
1	Male	5500A6003	D5500A6003	14.6	2.0 (51)	5.4 (138)	0.6 (0.3)
1¼	Male	5500A7013	D5500A7013	16.4	2.0 (51)	5.5 (140)	0.6 (0.3)

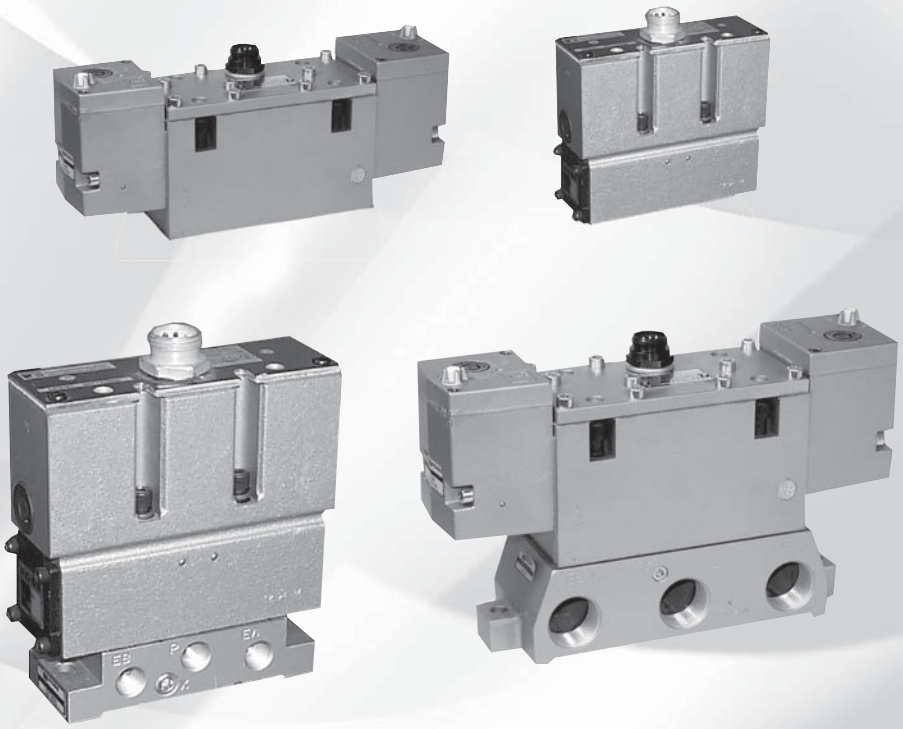


Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.

A

ROSS CONTROLS®

SAE VALVES
80 & 84 SERIES



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SAE 80 & 84 SERIES VALVES – KEY FEATURES

- Spool & Sleeve or Poppet construction
- Micro-thin air bearing between spool and sleeve assures quick valve response
- Designed for high cycle rates and long life
- No seals to wear out
- Easily field-convertible for use with an external pilot supply
- Suitable for vacuum service (with external pilot supply)

VALVE TYPE	VALVE SERIES	DESCRIPTION			AVAILABLE PORT SIZES								FUNCTIONS										Page
		SAE Size	Spool & Sleeve	Poppet	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	3/2 Single	5/2 Single	5/2 Double	5/3 Closed Center	5/3 Open Center	5/3 Pressure Center	Max Flow (Cv)	Solenoid Control	Direct Solenoid Control	Pressure Control	
SAE	80 & 84	125	■	■		■	■							■	■	■	■	■	1.8	■			A6.3 - A6.7
SAE	80 & 84	250	■	■			■	■	■					■	■	■	■	■	5.7	■			A6.3 - A6.7
SAE	80 & 84	500	■	■				■	■	■				■	■	■	■	–	8.0	■			A6.3 - A6.7
Sub-Bases																							A6.8
Manifolds Bases																							A6.9
Accessories																							A6.10

Single Solenoid Pilot Controlled Valves

A

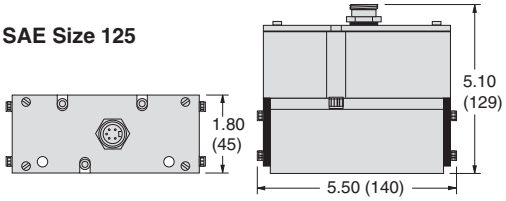
5-Way 2-Position Valves, Spring Return

SAE Size	Valve Model Number* Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 4-pin micro connector (24 volts DC)	Avg. C_v	Average Response Constants# M	Average Response Constants# F In-Out	Average Response Constants# F Out-Exh.	Weight lb (kg)
125	8076C3311	8076C3321	8076C3331**	8076C3341**	8076C3351**	8076C3361	1.4	20	3.5	4.9	3.5 (1.6)
250	8076C4311	8076C4321	8076C4331**	8076C4341**	8076C4351**	8076C4361	4.0	10	1.4	2.6	6.5 (2.9)
500	8076B6311	8076B6321	8076B6331**	8076B6341**	8076B6351**	8076B6361	8.2	22	0.5	0.8	8.3 (3.7)

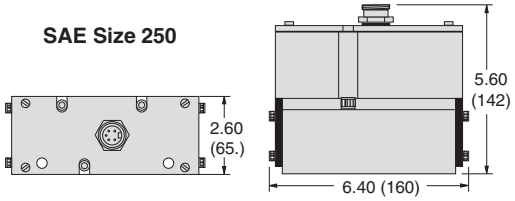
* **Sub-bases and manifold bases ordered separately, refer to page A6.8-9.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g.,8076C3331W. For other voltages, consult ROSS.
# **Valve Response Time** – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

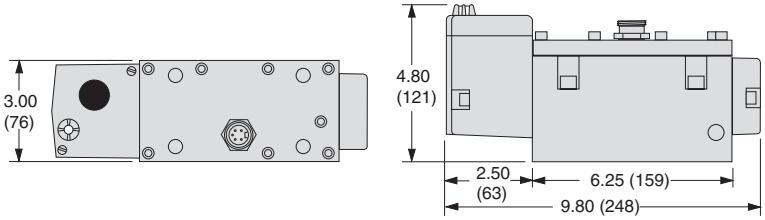
SAE Size 125

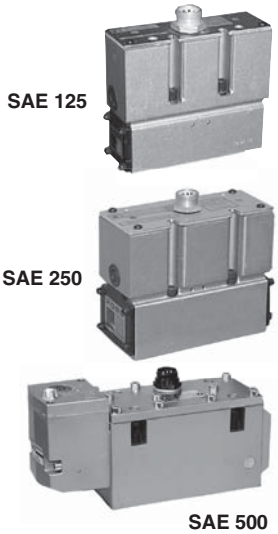


SAE Size 250



SAE Size 500

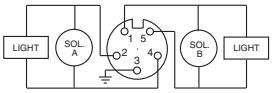




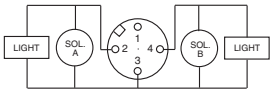
A6

Wiring Diagrams for Available Options

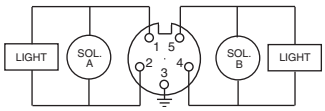
Ford Wired 5-pin mini-connector (all voltages)



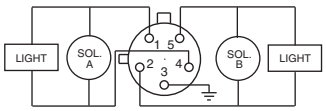
Ford Wired 4-pin micro-connector (24 volts DC)



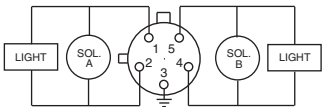
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid):
SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.
SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.

Indicator Light: One for each solenoid.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Manual Override: Flush; rubber, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

5-Way 2-Position Valves, Detented

SAE Size	Valve Model Number* Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 4-pin micro connector (24 volts DC)	Avg. C_v	Average Response Constants# M	F In-Out	F Out-Exh.	Weight lb (kg)
125	8076C3312	8076C3322	8076C3332**	8076C3342**	8076C3352**	8076C3362	1.4	15	3.5	4.9	3.5 (1.6)
250	8076C4312	8076C4322	8076C4332**	8076C4342**	8076C4352**	8076C4362	4.0	17	1.5	2.6	7.0 (3.2)
500	8076B6312	8076B6322	8076B6332**	8076B6342**	8076B6352**	8076B6362	8.0	30	0.4	0.5	9.5 (4.3)

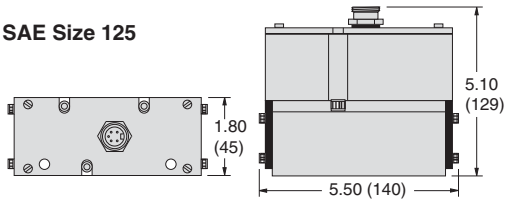
*** Sub-bases and manifold bases ordered separately, refer to page A6.8-9.**

** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g.,8076C3332W. For other voltages, consult ROSS.

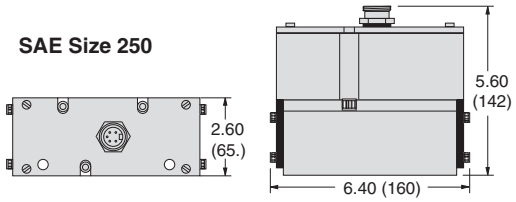
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

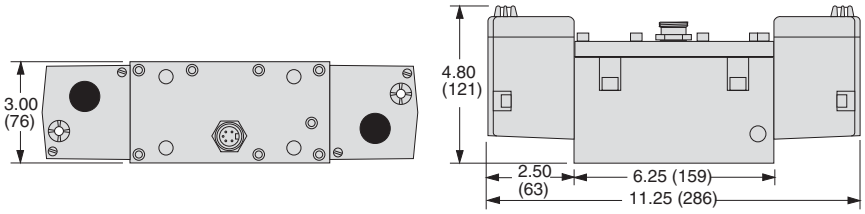
SAE Size 125

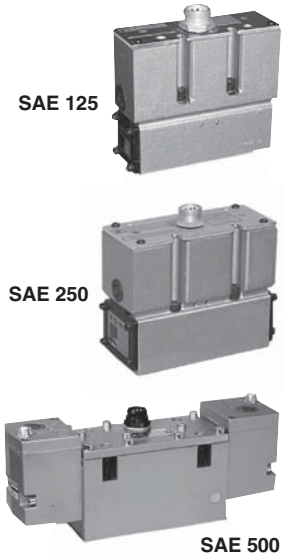


SAE Size 250



SAE Size 500

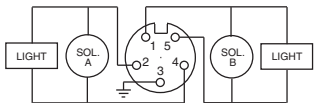




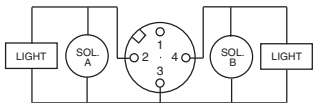
A6

Wiring Diagrams for Available Options

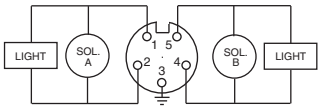
Ford Wired 5-pin mini-connector (all voltages)



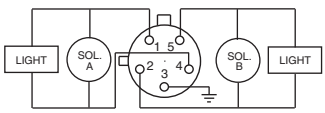
Ford Wired 4-pin micro-connector (24 volts DC)



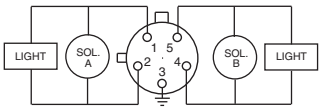
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid):
SAE SIze 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.
SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure: When external supply is used, pressure must be equal to or greater than inlet pressure.
Indicator Light: One for each solenoid.
Manual Override: Flush; rubber, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

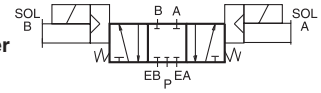
Double Solenoid Pilot Controlled Valves

5-Way 3-Position Valves

	SAE Size	Valve Model Number*						Avg. C_v	Average Response Constants#			Weight lb (kg)
		Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 4-pin micro connector (24 volts DC)		M	In-Out	Out-Exh.	
Power Center	125	–	–	8077B3910**	8077B3904**	–	–	1.4	20	3.5	5.2	3.5 (1.6)
	250	–	–	8077A4907**	8077A4904**	–	–	4.0	10	1.4	2.6	7.0 (3.2)
Closed Center	125	8077C3311	8077C3321	8077C3331**	8077C3341**	8077C3351**	8077C3361	1.4	20	3.5	5.2	3.5 (1.6)
	250	8077C4311	8077C4321	8077C4331**	8077C4341**	8077C4351**	8077C4361	4.0	10	1.4	2.6	7.0 (3.2)
	500	8077B6311	8077B6321	8077B6331**	8077B6341**	8077B6351**	8077B6361	8.0	12	0.5	0.8	9.5 (4.3)
Open Center	125	8077C3312	8077C3322	8077C3332**	8077C3342**	8077C3352**	8077C3362	1.4	20	3.5	5.2	3.5 (1.6)
	250	8077C4312	8077C4322	8077C4332**	8077C4342**	8077C4352**	8077C4362	4.0	10	1.4	2.6	7.0 (3.2)
	500	8077B6312	8077B6322	8077B6332**	8077B6342**	8077B6352**	8077B6362	8.0	12	0.5	0.8	9.5 (4.3)

Power Center

Closed Center



Open Center

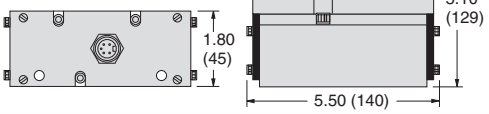
* **Sub-bases and manifold bases ordered separately, refer to page A6.8-9.**

** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 8077B3910W. For other voltages, consult ROSS.

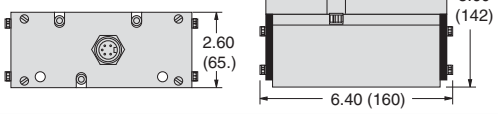
Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

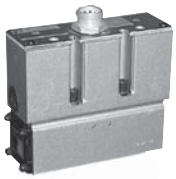
Valve Dimensions – inches (mm)

SAE Size 125



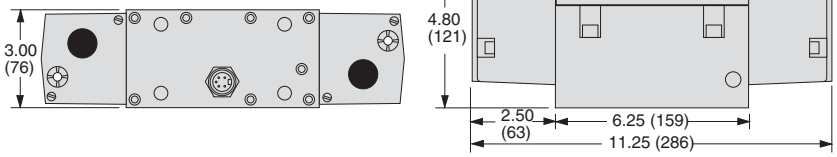
SAE Size 250

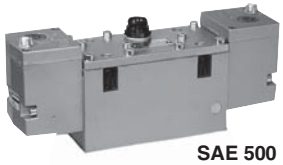




SAE 125 & 250

SAE Size 500

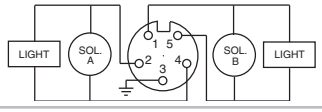




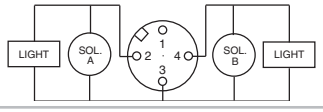
SAE 500
Double Solenoid

Wiring Diagrams for Available Options

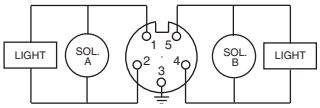
Ford Wired 5-pin mini-connector (all voltages)



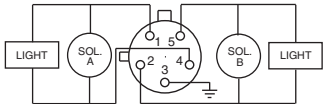
Ford Wired 4-pin micro-connector (24 volts DC)



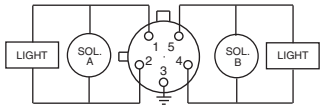
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Spool & Sleeve Valves for SAE available, consult ROSS.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Spool and sleeve.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption (each solenoid):
SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.
SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Pilot Pressure: When external supply is used, pressure must be equal to or greater than inlet pressure.
Indicator Light: One for each solenoid.
Manual Override: Flush; rubber, non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

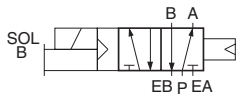
5-Way 2-Position Valves, Air Return

SAE Size	Valve Model Number* Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 4-pin micro connector (24 volts DC)	Avg. C_v	Average Response Constants# M	F In-Out	F Out-Exh.	Weight lb (kg)
125	8476C3311	8476C3321	8476C3331**	8476C3341**	8476C3351**	8476C3361	1.8	47	1.6	3.0	2.8 (1.3)
250	8476C4311	8476C4321	8476C4331**	8476C4341**	8476C4351**	8476C4361	5.5	60	0.6	0.8	5.2 (2.4)
500	8476B6311	8476B6321	8476B6331**	8476B6341**	8476B6351**	8476B6361	7.9	30	0.4	0.5	7.7 (3.5)

*** Sub-bases and manifold bases ordered separately, refer to page A6.8-9.**

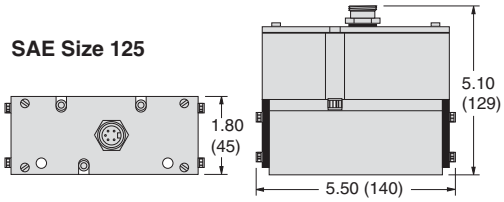
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g.,8476C3331W. For other voltages, consult ROSS.

Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

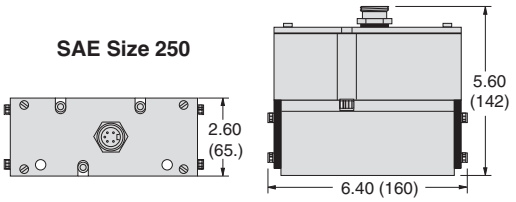


Valve Dimensions – inches (mm)

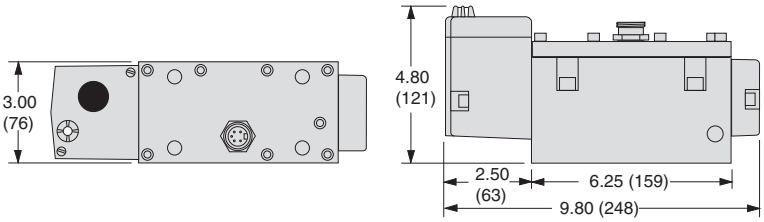
SAE Size 125

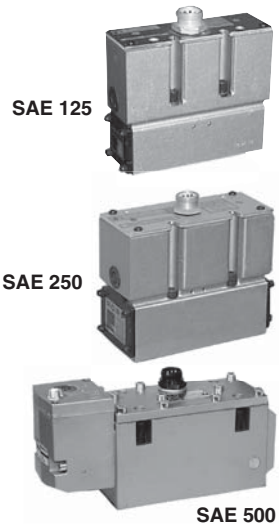


SAE Size 250



SAE Size 500

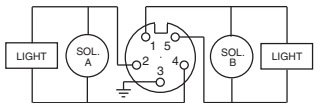




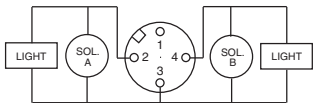
A6

Wiring Diagrams for Available Options

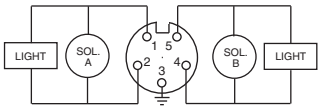
Ford Wired 5-pin mini-connector (all voltages)



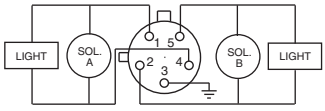
Ford Wired 4-pin micro-connector (24 volts DC)



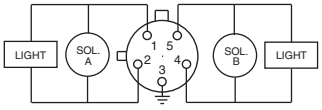
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Poppet Valves for SAE available, consult ROSS.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption: Each solenoid:
SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.
SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: When external supply is used, pressure must be equal to or greater than inlet pressure.
Indicator Light: One for each solenoid.
Manual Override: Flush; rubber non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Double Solenoid Pilot Controlled Valves

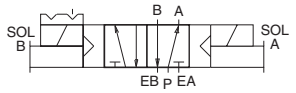
5-Way 2-Position Valves, Detented

SAE Size	Valve Model Number* Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)	Chrysler Wired 5-pin micro-connector (24 volts DC)	Ford Wired 5-pin mini-connector (all voltages)	Chrysler Wired 5-pin mini-connector (all voltages)	Hardwire	Ford Wired 4-pin micro connector (24 volts DC)	Avg. C_v	Average Response Constants# M	F In-Out	F Out-Exh.	Weight lb (kg)
125	8476C3312	8476C3322	8476C3332**	8476C3342**	8476C3352**	8476C3362	1.8	16	1.7	2.4	3.3 (1.5)
250	8476C4312	8476C4322	8476C4332**	8476C4342**	8476C4352**	8476C4362	5.7	20	0.6	0.8	5.7 (2.6)
500	8476B6312	8476B6322	8476B6332**	8476B6342**	8476B6352**	8476B6362	7.6	16	0.2	0.5	8.9 (4.1)

* **Sub-bases and manifold bases ordered separately, refer to page A6.8-9.**

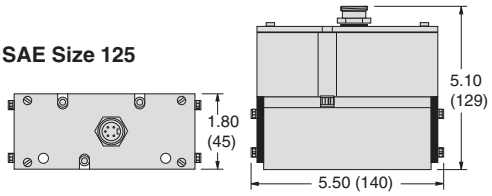
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g.,8476C3332W. For other voltages, consult ROSS.

Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

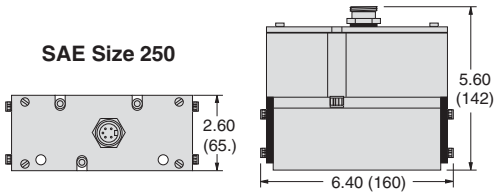


Valve Dimensions – inches (mm)

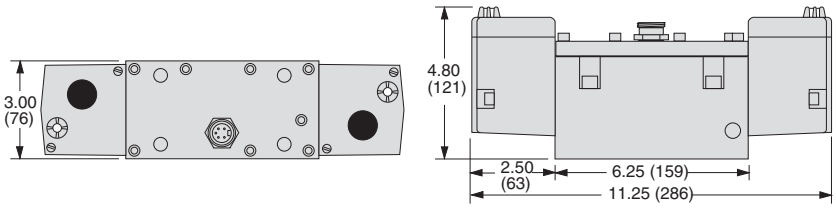
SAE Size 125

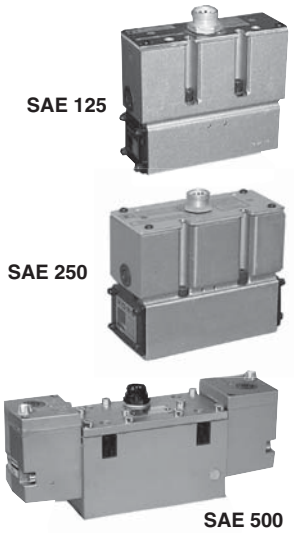


SAE Size 250



SAE Size 500





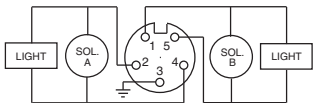
SAE 125

SAE 250

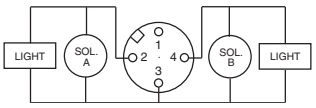
SAE 500
Double Solenoid

Wiring Diagrams for Available Options

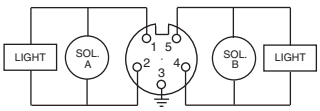
Ford Wired 5-pin mini-connector (all voltages)



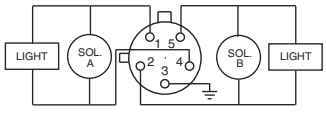
Ford Wired 4-pin micro-connector (24 volts DC)



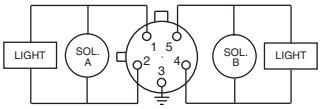
Chrysler Wired 5-pin mini-connector (all voltages)



Chrysler Wired 5-pin micro-connector (24 volts DC)



Chrysler Wired 5-pin micro-connector (120 volts / 60 Hz)



Options: Manual Override (for SAE 500 size only), refer to page A6.10. Accessories ordered separately, refer to page A6.10.

Pressure Controlled Poppet Valves for SAE available, consult ROSS.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption: Each solenoid:
SAE Size 125, 250: 8 VA inrush; 6 VA holding on 50/60 Hz; 8 watts on DC.
SAE Size 500: 87 VA inrush; 30 VA holding on 50/60 Hz; 14 watts on DC.
Ambient Temperature: 40° to 120°F (4° to 50°C).
Media Temperature: 40° to 175°F (4° to 80°C).
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).
Pilot Pressure: When external supply is used, pressure must be equal to or greater than inlet pressure.
Indicator Light: One for each solenoid.
Manual Override: Flush; rubber non-locking.

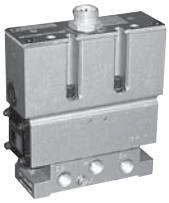
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

A

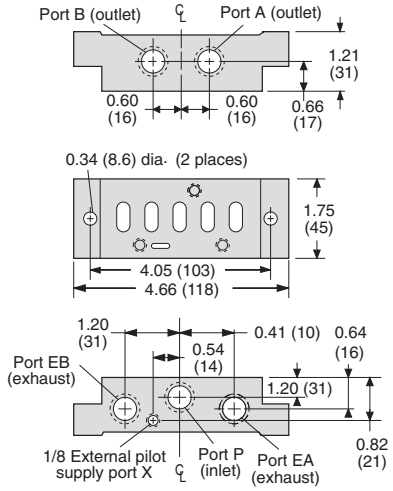
SAE 125

SAE 125 Sub-Base		
Model Number	Port Size*	
	A, B	P, EA, EB
577K91	1/8	1/4
578K91	1/4	3/8
579K91	3/8	3/8

*NPT port threads.
For SAE threads, consult ROSS.



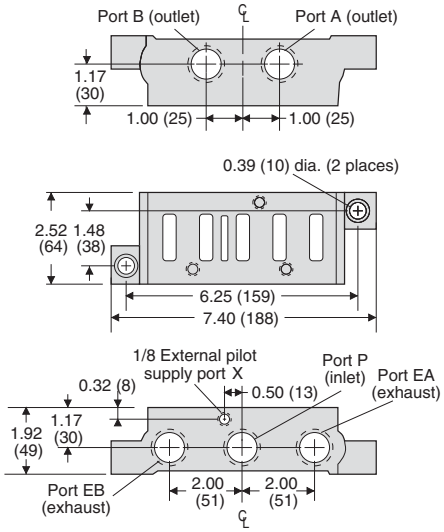
Dimensions – inches (mm)



SAE 250

SAE 250 Sub-Base		
Model Number	Port Size*	
	A, B	P, EA, EB
539K91	1/4	3/8
540K91	3/8	1/2
541K91	1/2	1/2
542K91	3/4	3/4

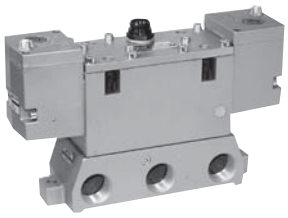
*NPT port threads.
For SAE threads, consult ROSS.



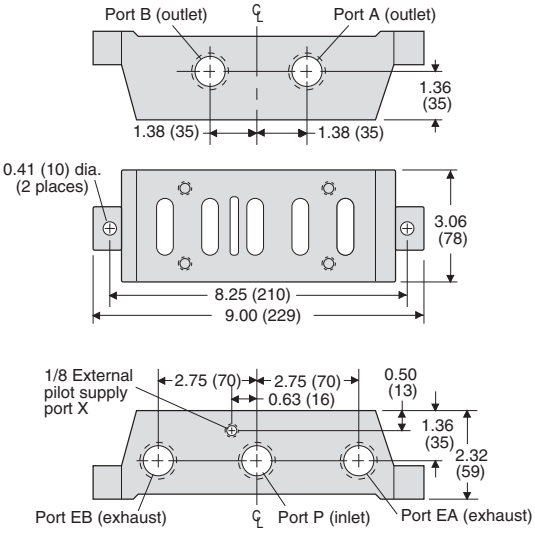
SAE 500

SAE 500 Sub-Base		
Model Number	Port Size*	
	A, B	P, EA, EB
582K91	1/2	3/4
728K91	3/4	3/4
583K91	3/4	1
584K91	1	1

*NPT port threads.
For SAE threads, consult ROSS.



SAE 500
Double Solenoid



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IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

Manifold Stations

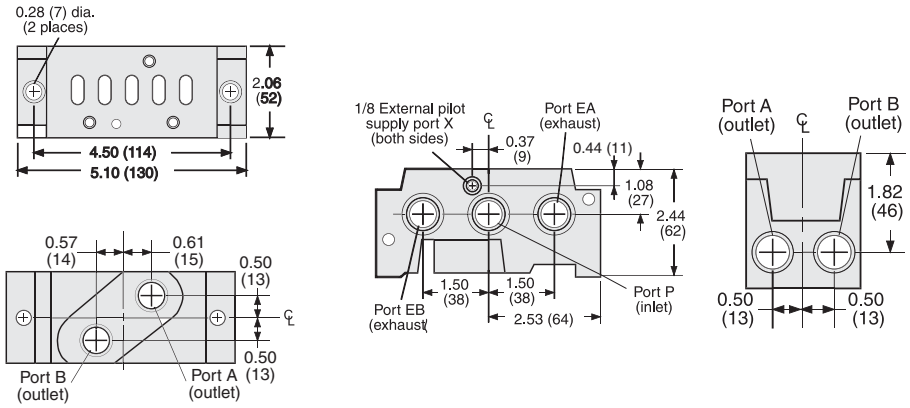
Each manifold station is supplied with all necessary seals and hardware for assembly.
End plates are *not* required with these manifolds.
Each station has all ports threaded to accept piping.

Dimensions – inches (mm)

SAE 125

SAE 125 Manifold Bases		
Model Number	Port Size*	
	A, B	P, EA, EB
580K91	1/4	3/8
581K91	3/8	3/8

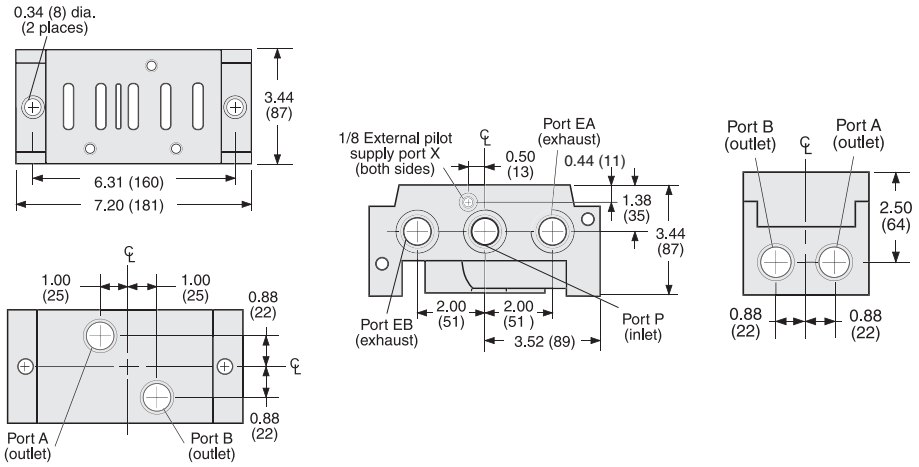
*NPT port threads.
For SAE threads, consult ROSS.



SAE 250

SAE 250 Manifold Bases		
Model Number	Port Size*	
	A, B	P, EA, EB
553K91	3/8	1/2
554K91	1/2	3/4
555K91	3/4	3/4

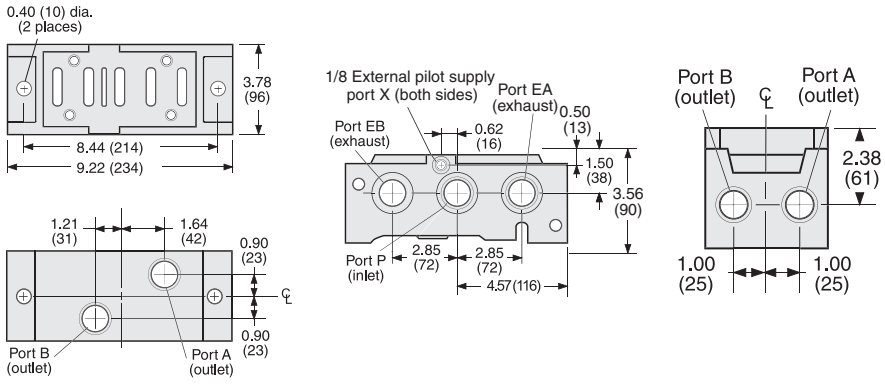
*NPT port threads.
For SAE threads, consult ROSS.



SAE 500

SAE 500 Manifold Bases		
Model Number	Port Size*	
	A, B	P, EA, EB
585K91	1/2	3/4
586K91	3/4	1
587K91	1	1

*NPT port threads.
For SAE threads, consult ROSS.



A

Manual Override Kits for SAE Size 500 Valves

Flush flexible manual override buttons are standard on all SAE 500 solenoid pilot valves. Metal buttons as shown below can be installed in place of the standard flexible buttons. Both locking and non-locking metal buttons are available. Each button has spring-return action. The locking type button, however, can be kept in the actuated position by turning the slot in the top of the button with a screwdriver.

Flush Button	
Locking Type	**Kit Number**
Non-Locking	790K87
Locking	792K87

Extended Button	
Locking Type	**Kit Number**
Non-Locking	791K87

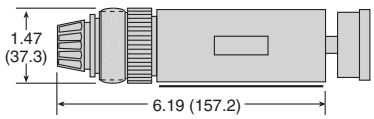
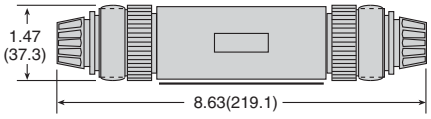
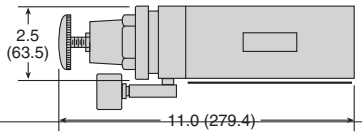
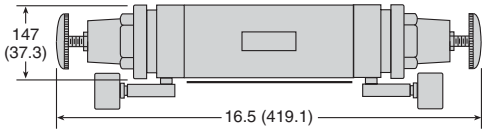
Extended Button with Palm	
Locking Type	**Kit Number**
Non-Locking	984H87

Blanking Plates

For manifold stations not occupied by a valve, blanking plates are available. These plates block the unused air passages.

SAE Size	Model Number
125	820K77
250	821K77
500	822K77

Interposed Regulators

SAE Size & Type	Model Number	Dimensions – inches (mm)
125 Single	593K91	
125 Dual	873H91	
250 Single	595K91	
250 Dual	816H91	

Single and dual interposed regulators are available for SAE sizes 125 and 250.

A regulator is sandwiched between the valve and sub-base or manifold station and the valve is then bolted through the regulator to the sub-base or manifold station with the longer bolts provided.

Single pressure regulators supply the same regulated pressure at both outlet ports.

Dual pressure regulators allow the pressure at each outlet port to be set independently.

Use dual pressure regulators with 80 Series valves only. When using dual pressure regulators, the valve must be externally piloted. For external pilot supply conversion, see below.

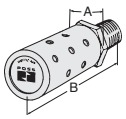
Regulated pressure range: 10 to 130 psig (1 to 9 bar); regulator-to-base gasket included.

EXTERNAL PILOT SUPPLY CONVERSION

ROSS SAE Solenoid pilot valves are designed to use an internal pilot supply. However, they are easily converted for use with an external pilot supply. To make this conversion, remove the pipe plug on the bottom of the valve. The plug is located between the center port and an adjacent port. Install this plug in the threaded port at the end of the center port. This blocks the internal pilot supply. Connect the external pilot supply line to port X in the base. Pressure in the external supply line must not be less than that specified in the valve's Standard Specifications.

Silencers

Port Size	Thread Type	Model Number NPT Threads	Model Number BSPT Threads	Avg. C_v	Dimensions inches (mm) A	Dimensions inches (mm) B	Weight lb (kg)
1/4	Male	5500A2003	D5500A2003	2.1	0.9 (21)	2.2 (55)	0.1 (0.1)
3/8	Male	5500A3013	D5500A3013	2.7	0.9 (21)	2.2 (55)	0.1 (0.1)
		5500A3003	D5500A3003	4.3	1.3 (32)	3.5 (88)	0.2 (0.1)
1/2	Male	5500A4003	D5500A4003	4.7	1.3 (32)	3.6 (91)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (92)	0.2 (0.1)
		5500A5003	D5500A5003	11.5	2.0 (51)	5.3 (135)	0.6 (0.3)
1	Male	5500A6003	D5500A6003	14.6	2.0 (51)	5.4 (138)	0.6 (0.3)



Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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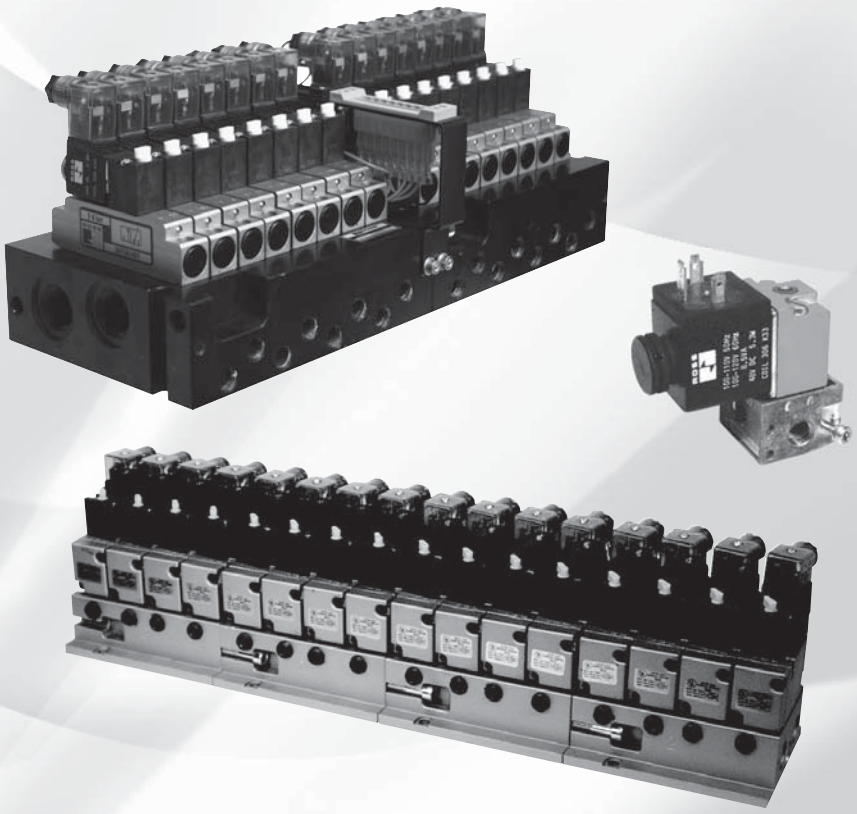
ROSS CONTROLS®

Miniature Valves W14 Series
Solenoid Pilot Pack Valves Series



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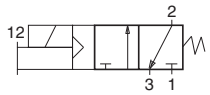
SOLENOID PILOT CONTROLLED PACK VALVES – KEY FEATURES

- Individual Valve Shut-off (automatic): increases uptime for continuous processing
- Sure-Shifting and Self-Cleaning: reliable performance in extreme conditions (dirt tolerant, high humidity, cold, heat, dust, debris returned from the field actuator, etc...)
- Easily Accessible Manual Override (Yellow): turn to actuate, no tools needed
- Positive Sealing and Self-Compensating for Wear: perpendicular poppet face seals
- Quick Electrical Disconnect w/Indicator Light: allows immediate troubleshooting of component/system issues in the field.
- Consistent Actuation over the Life of the Valve: strong shifting forces
- Explosion Proof & Intrinsically Safe - options available, consult ROSS
- 8 & 16 Station Valve/Manifold: flying wire leads or central wiring option

A

3-Way 2-Position Valves, Single Direct Solenoid, Spring Return			
Override Type	**Valve Model Number***	**C_v**	
Locking	W1413A1408**	0.1	 **3/2 Normally Closed**
Non-Locking	W1413A1409**	0.1	

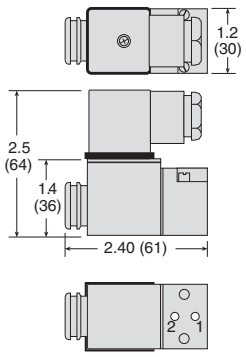
* **Sub-bases and manifold base ordered separately.**
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., W1413A1408W.
For other voltages, consult ROSS.

Sub-Base	Port Threads	Model Number
	1/8 NPT	516B91
	1/8 BSPP	D516B91

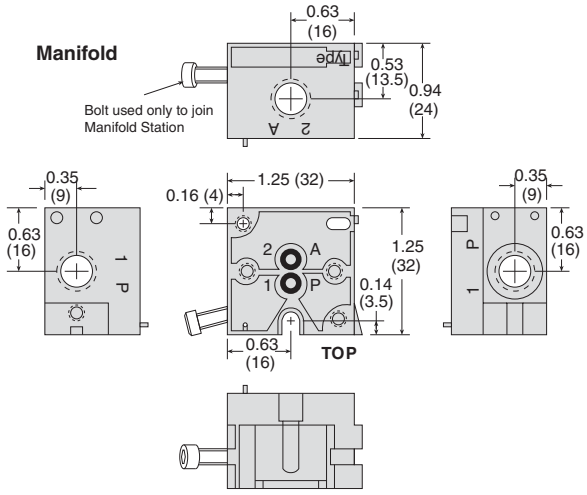
Manifold Base	Model Number
	535K91

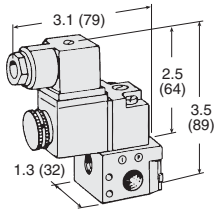
Dimensions – inches (mm)

Valve



Manifold





Valve is shown with electrical connector and on a base. Electrical connector, optional.

Accessories

Electrical Connectors	Electrical Connector Form	Electrical Connector Type	Cord Length meters (feet)	Cord Diameter	Electrical Connector Model Number		
					Without Light	Lighted Connector*	
						24 Volts DC	120 Volts AC
	EN 175301-803 Form A	Prewired Connector (18 gauge)	2 (6½)	6-mm	721K77	720K77-W	720K77-Z
	EN 175301-803 Form A	Prewired Connector (18 gauge)	2 (6½)	10-mm	371K77	383K77-W	383K77-Z
	EN 175301-803 Form A	Connector for threaded conduit (1/2 inch electrical conduit fittings)	–	–	723K77	724K77-W	724K77-Z
	EN 175301-803 Form A	Connector Only	–	–	937K87	936K87-W	936K87-Z
	* Lights in connectors with a translucent housing can be used as indicator lights to show when solenoids are energized.						

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STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Solenoid Pilot: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption: 8 VA inrush, 6 VA holding on 50 or 60 Hz; 6 watts on DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A connector.
Ambient Temperature: 5° to 120°F (-15° to 50°C).
Media Temperature: 5° to 175°F (-15° to 80°C).
For temperatures below 40°F (4°C) air must be free of water vapor to prevent formation of ice.
Flow Media: Filtered air.
Inlet Pressure: Vacuum to 150 psig (10 bar).
Manual Override: Flush; metal, locking and non-locking.

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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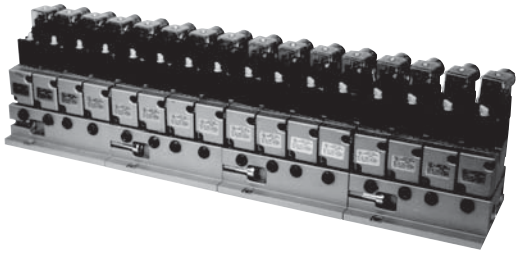
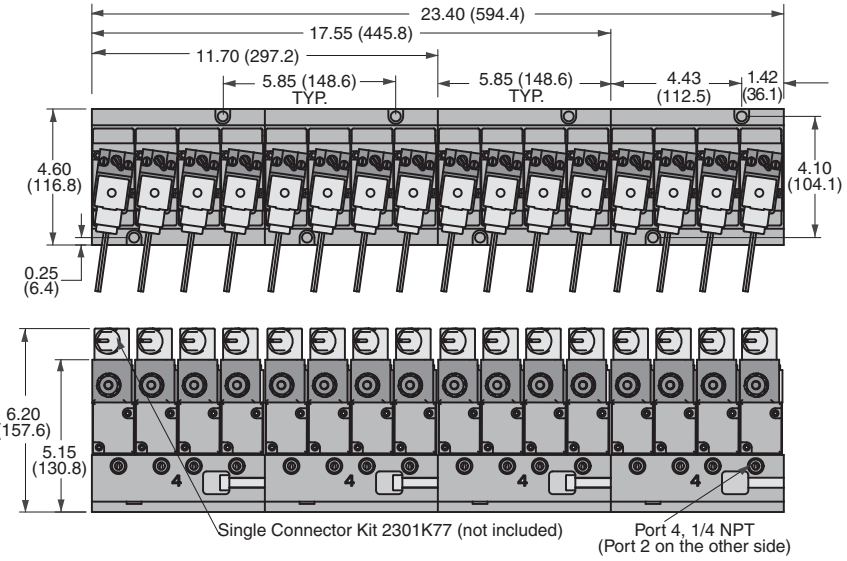
5-Way 2-Position Valves, Single Solenoid Pilot Controlled		
Valve/Manifold Assembly	**Model Number**	**C_v**
4 Station	3900A1052-1**	0.5
8 Station	3900A1052-2**	0.5
12 Statio	3900A1052-3**	0.5
16 Station	3900A1052-4**	0.5
20 Station and over	consult ROSS	0.5

** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 3900A1052-1W. For other voltages, consult ROSS.



Dimensions – inches (mm)



Accessories & Options

Silencers			
Port Size	**Thread Type**	**Model Number**	
		NPT Threads	**BSPT Threads**
3/8	Male	5500A3013	D5500A3013
1/2	Male	5500A4003	D5500A3003
Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.			

Fitting	Fitting Type	Port Threads	Model Number*
	Brass Swivel	1/4	270A27
	*1/4 tube.		

Electrical Connector	Connector Type	Model Number*
	EN 175301-803 Form A	2301K77
	* Electrical Connector w/10' leads.	

For dual or spring return actuators. Field convertible to a 3/2 Valve.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Solenoids: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption: 3.9 VA holding on 50/60 Hz; 2.1 watts on DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form A connector.
Ambient Temperature: 39° to 122°F (4° to 50°F).
Media Temperature: 39° to 175°F (4° to 80°C).
Indicator Light: In connector.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

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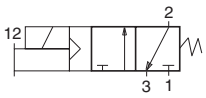
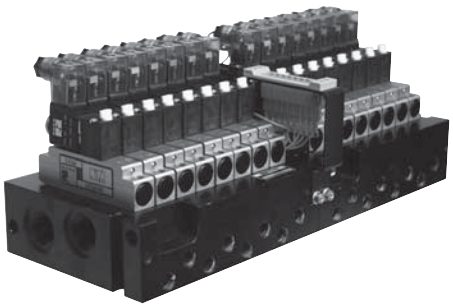
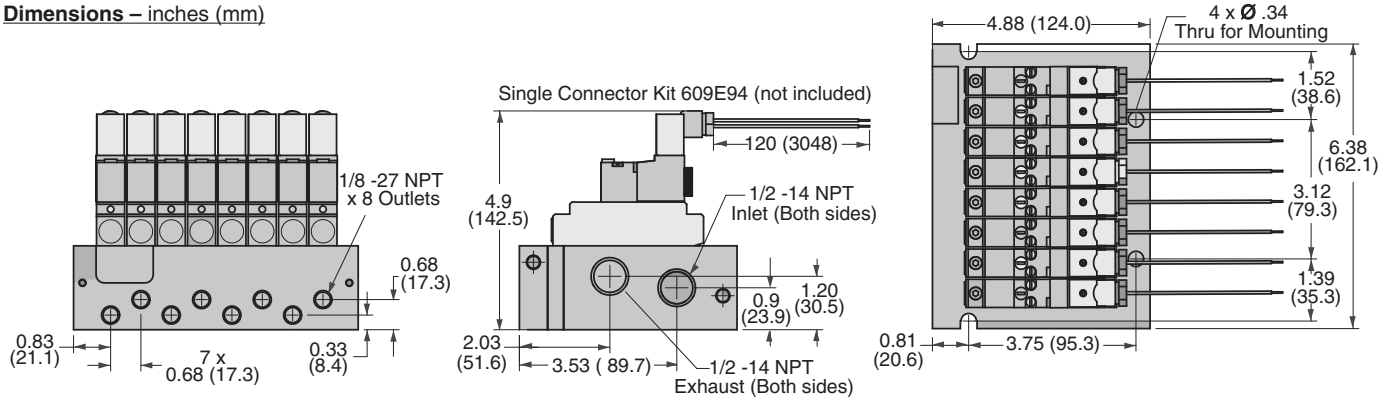
3-Way 2-Position Valves - Extended-Duty, Single Solenoid Pilot Controlled			
Valve/Manifold Assembly	Model Number		C_v
	Flying Leads	Central Wiring	
8 Station	3900A0713-1**	3900A1055-1**	0.5
16 Station	3900A0713-2**	3900A1055-2**	0.5
24 Station and over	consult ROSS	consult ROSS	0.5
** Insert voltage code: "W" = 24 volts DC; "Z" = 110-120 volts AC, 50/60 Hz; e.g., 3900A1052-1W. For other voltages, consult ROSS.			
3/2 Normally Closed 			



Dimensions – inches (mm)



Accessories & Options

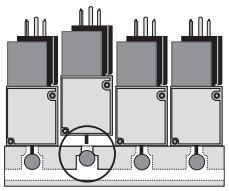
Silencers			
Port Size	Thread Type	Model Number	
		NPT Threads	BSPT Threads
3/8	Male	5500A3013	D5500A3013
1/2	Male	5500A4003	D5500A3003
Pressure Range: 0 to 300 psig (0 to 20.7 bar) maximum. **Flow Media:** Filtered air.			

Fitting	Fitting Type	Port Threads	Model Number*	
			Flying Leads	Central Wiring
	Metal Swivel	1/8	322E27	322E27
	*1/4 tube.			

Electrical Connector	Connector Type	Model Number	
		Flying Leads	Central Wiring
	EN 175301-803 Form C	609E94	consult ROSS
	* Electrical Connector w/10' leads.		

Individual Valve Shut-off (automatic): Individual valves can be removed without shutting off main air supply to the whole manifold or entire solenoid cabinet.

- Simply remove the valve and an internal check-ball automatically blocks inlet air to that station
- Inlet air is automatically restored to the station when the valve is returned



4/2 Low-Power Solenoid Pilot Controlled Valves available, consult ROSS.

STANDARD SPECIFICATIONS (for valves on this page):

Construction: Poppet.
Mounting Type: Base.
Solenoids: Rated for continuous duty.
Standard Voltages: 24 volts DC; 110-120 volts AC, 50/60 Hz.
Power Consumption: 0.03 VA holding on 50/60 Hz; 0.8 watts on DC.
Enclosure Rating: IP65, IEC 60529.
Electrical Connections: EN 175301-803 Form C connector.
Ambient Temperature: 39° to 122°F (4° to 50°F).
Media Temperature: 39° to 175°F (4° to 80°C).
Indicator Light: In connector.
Flow Media: Filtered air.
Inlet Pressure: 30 to 150 psig (2 to 10 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.

General Information

Standard Specifications

The standard specifications for the products on each page of this catalog are given on the same page or referenced. For solenoid pilot valves, models with internal pilot supply are listed. Most models are also available for use with external pilot supply or have a built-in pilot supply selector valve.

The products in this catalog are intended for use in industrial pneumatic systems. Most products are adaptable to other uses and conditions not covered by the standard specifications given in this catalog. Weights shown are approximate and are subject to change. Dimensions given, unless otherwise noted, are envelope dimensions (not for mounting). Consult ROSS for further information.

Port Threads

Ports of valves and bases described in this catalog have NPT (ANSI B2.1) threads. Other thread types can be specified by putting an appropriate prefix letter on the model or part number when ordering.

Thread Types by Model Prefix Letter

Pneumatic Port Threads	Prefix Letter	Threaded Electrical Opening
NPT (ANSI B2.1)	None	NPT
ISO 228 - DIN 259 Parallel, BSPP#	**C***	—
ISO 228 - DIN 259 Parallel, BSPP#	**D**	G
ISO 228 - JIS B0203 Tapered#	**J**	ISO
SAE 1926- ISO 11926	**S**	NPT

* Used only for filters, regulators, lubricators.

ISO 228 threads superseds BSPP, G and JIS thread types.

Flow Ratings

Flow ratings are expressed as C_V where C_V = 1 corresponds to a steady state air flow of approximately 32 scfm under the following conditions:

Inlet pressure = 100 psig (6.7 bar)
Pressure drop = 10 psi (0.69 bar)
Air temperature = 68°F (20°C)
Relative humidity = 36%

Note: *Because widely differing test standards are used to measure C_V values, the figures given in this catalog should not be used to compare ROSS valves with those of other makers. The C_V ratings given here are intended only for use with performance charts published by ROSS. The C_V ratings are averages for the various flow paths through the valve and are for steady flow conditions.*

Approvals and Certifications

ROSS products are designed to meet a number of industrial standards, including the Canadian Standards Association (C.S.A.) guidelines.

For more information on specific product approvals, contact your local distributor or ROSS.

Solenoids

All ROSS standard solenoids are rated for continuous duty (unless noted otherwise) and will operate the valve within the air pressure range specified in this catalog.

Explosion-Proof Solenoid Pilot available, for more information consult ROSS.

Voltage & Hertz

When ordering a solenoid valve, also specify the desired solenoid voltage and hertz.

Voltage Types by Model Suffix Letter

Voltage	Suffix Letter
120 volts AC	**Z**
220 volts AC	**Y**
12 volts DC	**H**
24 volts DC	**W**
48 volts DC	**M**
90 volts DC	**K**
110 volts DC	**P**
125 volts DC	**C**

Recommended Solenoid Voltages: 100-110 volts AC, 50 Hz; 100-120 volts AC, 60 Hz; 24 volts DC; 110 volts DC.

In addition, the following voltages are available:

200, 220 volts AC, 50 Hz
200, 240, 480 volts AC, 60 Hz

24, 48, 220 volts AC, 50 Hz
240 volts AC, 60 Hz

200, 220 volts AC, 50 Hz
200, 240 volts AC, 60 Hz.

For example: Model 2773B5001, 120 volts AC, 60 Hz.
Model W6076B2401, 220 volts AC, 50 Hz.

Please note that not all configurations are available for all models.

For additional information or help with voltage configuration, please contact your local distributor or ROSS.

Port Identification

Valve symbols in this catalog conform to the ISO 1219-1:1991 standard of the International Organization for Standardization (ISO) and the SAE J2051 standard of the Society of Automotive Engineers (SAE) respectively.

Information or Technical Assistance

For additional information or application assistance concerning ROSS products, consult ROSS or your local ROSS distributor (see contact information on the back cover).

Order Placement

For order placement, consult ROSS or your local ROSS distributor.

For a current list of countries and local distributors, visit ROSS' website at www.rosscontrols.com.

CAUTIONS, WARNINGS and STANDARD WARRANTY

PRE-INSTALLATION or SERVICE

1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).

2. All ROSS products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.

3. All applicable instructions should be read and complied with before using any fluid power system in order to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use. If you have any questions, call your nearest ROSS location listed on the cover of this document.

4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products.

WARNING: Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.

FILTRATION and LUBRICATION

5. Dirt, scale, moisture, etc. are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. ROSS recommends a filter with a 5-micron rating for normal applications.

6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do *not* fail to use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.

7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks human injury, and/or damage to property.

AVOID INTAKE/EXHAUST RESTRICTION

8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.

9. Do not restrict a valve's exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

WARNING: ROSS expressly disclaims all warranties and responsibility for any unsatisfactory performance or injuries caused by the use of the wrong type, wrong size, or an inadequately maintained silencer installed with a ROSS product.

POWER PRESSES

10. Mechanical power presses and other potentially hazardous machinery using a pneumatically controlled clutch and brake mechanism must use a press control double valve with a monitoring device. A double valve without a self-contained monitoring device should be used only in conjunction with a control system which assures monitoring of the valve. All double valve installations involving hazardous applications should incorporate a monitoring system which inhibits further operation of the valve and machine in the event of a failure within the valve mechanism.

ENERGY ISOLATION/EMERGENCY STOP

11. Per specifications and regulations, ROSS **L-O-X®** and **L-O-X®** with **EEZ-ON®** operation products are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

STANDARD WARRANTY

All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators ("FRLs") which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS' obligation under this warranty is limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

THE WARRANTY EXPRESSED ABOVE IS IN LIEU OF AND EXCLUSIVE OF ALL OTHER WARRANTIES AND ROSS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES EITHER EXPRESSED OR IMPLIED WITH RESPECT TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ROSS MAKES NO WARRANTY WITH RESPECT TO ITS PRODUCTS MEETING THE PROVISIONS OF ANY GOVERNMENTAL OCCUPATIONAL SAFETY AND/OR HEALTH LAWS OR REGULATIONS. IN NO EVENT IS ROSS LIABLE TO PURCHASER, USER, THEIR EMPLOYEES OR OTHERS FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM A BREACH OF THE WARRANTY DESCRIBED ABOVE OR THE USE OR MISUSE OF THE PRODUCTS. NO STATEMENT OF ANY REPRESENTATIVE OR EMPLOYEE OF ROSS MAY EXTEND THE LIABILITY OF ROSS AS SET FORTH HEREIN.

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Full-Service Global Locations

There are ROSS Distributors Throughout the World

To meet your requirements across the globe, ROSS distributors are located throughout the world. Through ROSS or its distributors, guidance is available for the selection of ROSS products, both for those using pneumatic components for the first time and those designing complex pneumatic systems.

Other literature is available for engineering, maintenance, and service requirements. If you need products or specifications not shown here, please contact ROSS or your ROSS distributor. They will be happy to assist you in selecting the best product for your application.

For a current list of countries and local distributors, visit ROSS' website at www.rosscontrols.com.

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