



PRODUCT INFORMATION

DIRECTIONAL CONTROL VALVES

27 SERIES



ROSS CONTROLS

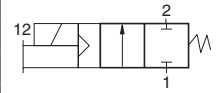
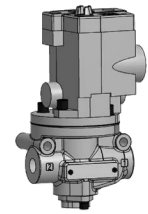
Directional Control Valves

Solenoid Pilot Controlled

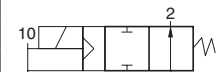
27 Series

2-Way 2-Position Valves, Spring Return

Port Size	Body Size	Normally Closed		Normally Open		C _v		Average Response Constants**		Weight lb (kg)	
		Valve Model Number#		Valve Model Number#		NC	NO	M	F		
		NPT Threads	G Threads	NPT Threads	G Threads				NC		NO
1/4	3/8	2771B2001W	D2771B2001W	2772B2001W	D2772B2001W	2.3	2.3	10	0.91	0.91	2.5 (1.2)
3/8	3/8	2771B3001W	D2771B3001W	2772B3001W	D2772B3001W	3.8	3.3	10	0.70	0.76	2.5 (1.2)
1/2	3/8	2771B4011W	D2771B4011W	2772B4011W	D2772B4011W	4.0	3.5	10	0.64	0.72	2.5 (1.2)
1/2	3/4	2771B4001W	D2771B4001W	2772B4001W	D2772B4001W	7.7	6.5	14	0.37	0.43	3.3 (1.5)
3/4	3/4	2771B5001W	D2771B5001W	2772B5001W	D2772B5001W	9.0	7.3	14	0.34	0.39	3.3 (1.5)
1	3/4	2771B6011W	D2771B6011W	2772B6011W	D2772B6011W	9.0	7.9	14	0.34	0.37	3.3 (1.5)
1	1 1/4	2771B6001W	D2771B6001W	2772B6001W	D2772B6001W	24	21	26	0.17	0.17	7.0 (3.2)
1 1/4	1 1/4	2771B7001W	D2771B7001W	2772B7001W	D2772B7001W	29	20	26	0.15	0.19	7.0 (3.2)
1 1/2	1 1/4	2771B8011W	D2771B8011W	2772B8011W	D2772B8011W	29	21	26	0.15	0.18	7.0 (3.2)
1 1/2	2	2771B8001W	D2771B8001W	2772B8001W	D2772B8001W	49	49	41	0.09	0.09	15.5 (6.9)
2	2	2771B9001W	D2771B9001W	2772B9001W	D2772B9001W	57	57	41	0.07	0.07	15.5 (6.9)
2 1/2	2	2771B9011W	D2771B9011W	2772B9011W	D2772B9011W	64	72	41	0.07	0.06	15.5 (6.9)



Normally Closed

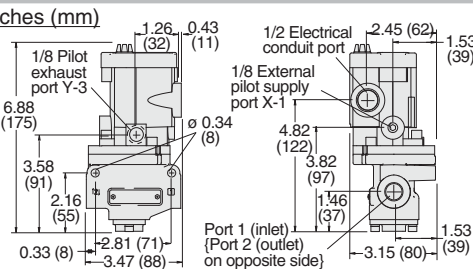


Normally Open

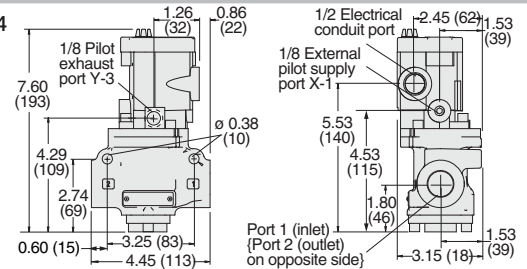
Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 2771B2001Z. For other voltages, consult ROSS.
 ** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

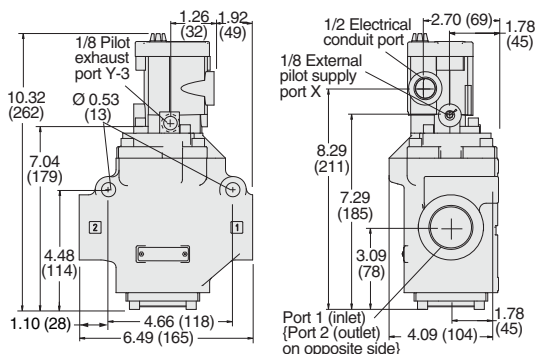
Body Size 3/8



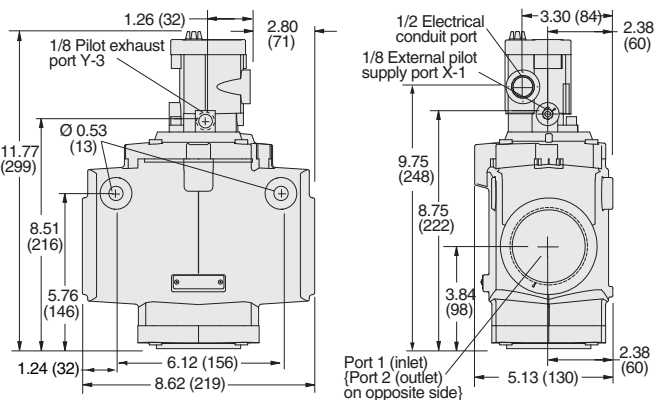
Body Size 3/4



Body Size 1 1/4



Body Size 2



Options: Indicator Light Kits, Manual Override Kits; refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Operating Pressure	Body Size 3/8 & 1 1/2: 15 to 150 psig (1 to 10 bar) Body Size 2: 30 to 150 psig (2 to 10 bar)
Mounting Type	In-line	Pilot Supply	When external pilot supply, pressure must be equal to or greater than inlet pressure.
Solenoids	Rated for continuous duty	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Manual Override	Flush; rubber, non-locking
Power Consumption	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz	Safety Integrity Level (SIL)	Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Pilot Supply	Internal or External		



Valves with EN (DIN) connector available, consult ROSS.
 For ATEX certified valves, consult ROSS. For FM, CSA approved Explosion-Proof valves, see section F.



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



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B2.3

Directional Control Valves

Solenoid Pilot Controlled

27 Series

3-Way 2-Position Valves, Spring Return

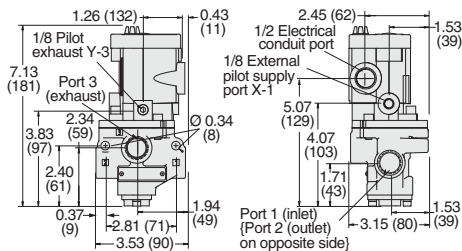
Port Size			Body Size	Normally Closed		Normally Open		C _v				Average Response Constants**				Weight lb (kg)
1, 2	3	Valve Model Number*		Valve Model Number*		NC		NO		M	F		NO			
		NPT Threads		G Threads	NPT Threads	G Threads	1-2	2-3	1-2		2-3	1-2		2-3		
1/4	1/2	3/8	2773B2001W	D2773B2001W	2774B2001W	D2774B2001W	2.5	3.1	2.3	2.7	10	0.90	0.80	0.99	0.88	2.5 (1.2)
3/8	1/2	3/8	2773B3001W	D2773B3001W	2774B3001W	D2774B3001W	3.6	5.3	2.8	3.2	10	0.70	0.50	0.90	0.77	2.5 (1.2)
1/2	1/2	3/8	2773B4011W	D2773B4011W	2774B4011W	D2774B4011W	3.3	5.3	2.8	3.2	10	0.75	0.50	0.90	0.76	2.5 (1.2)
1/2	1	3/4	2773B4001W	D2773B4001W	2774B4001W	D2774B4001W	6.3	9.2	6.3	8.0	11	0.43	0.27	0.46	0.60	3.3 (1.5)
3/4	1	3/4	2773B5001W	D2773B5001W	2774B5001W	D2774B5001W	7.7	11	6.9	7.4	11	0.36	0.26	0.45	0.60	3.3 (1.5)
1	1	3/4	2773B6011W	D2773B6011W	2774B6011W	D2774B6011W	8	12	6.8	7.5	11	0.34	0.25	0.40	0.59	3.3 (1.5)
1	1½	1¼	2773B6001W	D2773B6001W	2774B6001W	D2774B6001W	23	34	17	24	28	0.17	0.14	0.20	0.17	7.0 (3.2)
1¼	1½	1¼	2773B7001W	D2773B7001W	2774B7001W	D2774B7001W	30	32	19	24	28	0.15	0.15	0.19	0.17	7.0 (3.2)
1½	1½	1¼	2773B8011W	D2773B8011W	2774B8011W	D2774B8011W	30	31	19	23	28	0.15	0.15	0.19	0.16	7.0 (3.2)
1½	2½	2	2773B8001W	D2773B8001W	2774B8001W	D2774B8001W	68	70	57	59	76	0.05	0.04	0.07	0.04	16.5 (7.4)
2	2½	2	2773B9001W	D2773B9001W	2774B9001W	D2774B9001W	70	70	58	61	76	0.05	0.04	0.05	0.04	16.5 (7.4)
2½	2½	2	2773B9011W	D2773B9011W	2774B9011W	D2774B9011W	70	71	54	55	76	0.05	0.04	0.50	0.04	16.5 (7.4)

Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 2773B2001Z. For other voltages, consult ROSS.

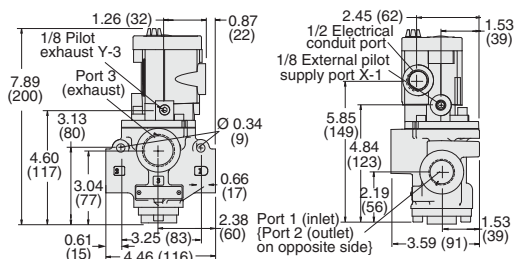
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.



Body Size 3/8

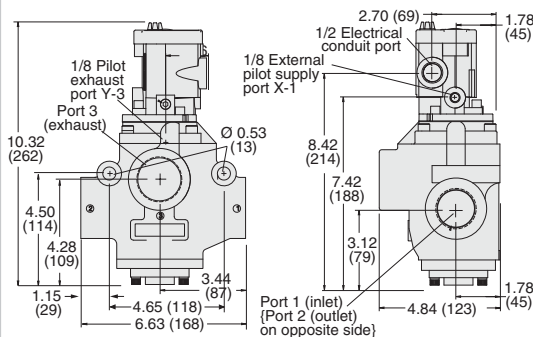


Body Size 3/4

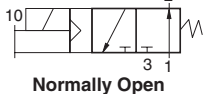
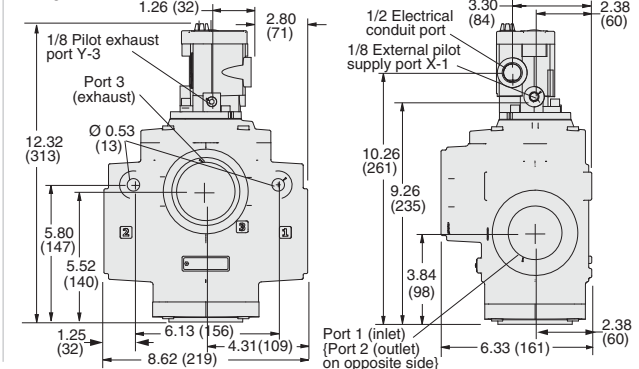


Valve Dimensions – inches (mm)

Body Size 1¼



Body Size 2



Options: Indicator Light Kits, Manual Override Kits; refer to page B2.23. Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Operating Pressure	Body Size 3/8 & 1½: 15 to 150 psig (1 to 10 bar) Body Size 2: 30 to 150 psig (2 to 10 bar)
Mounting Type	In-line	Pilot Supply	When external pilot supply, pressure must be equal to or greater than inlet pressure.
Solenoids	Rated for continuous duty	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Manual Override	Flush; rubber, non-locking
Power Consumption	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz	Safety Integrity Level (SIL)	Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Pilot Supply	Internal or External		



Valves with EN (DIN) connector available, consult ROSS.
For ATEX certified valves, consult ROSS. For FM, CSA approved Explosion-Proof valves, see section F.



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

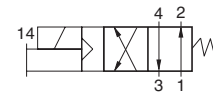


Directional Control Valves

Solenoid Pilot Controlled

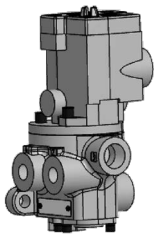
27 Series

4-Way 2-Position Valves, Spring Return											
Port Size		Body Size	Valve Model Number#		C _v		Average Response Constants**			Weight lb (kg)	
1, 2, 4	3		NPT Threads	G Threads	1-2, 1-4	4-3, 2-3	M	F			
								1-2, 1-4	4-3, 2-3		
1/4	1/2	3/8	2776B2001W	D2776B2001W	2.1	2.9	10	0.92	0.92	3.0 (1.4)	
3/8	1/2	3/8	2776B3001W	D2776B3001W	2.9	4.2	10	0.90	0.90	3.0 (1.4)	
1/2	1/2	3/8	2776B4011W	D2776B4011W	3.1	7.3	10	0.89	0.73	3.0 (1.4)	
1/2	1	3/4	2776B4001W	D2776B4001W	5.6	8.1	26	0.50	0.66	5.3 (2.4)	
3/4	1	3/4	2776B5001W	D2776B5001W	7.0	9.3	26	0.36	0.55	5.3 (2.4)	
1	1	3/4	2776B6011W	D2776B6011W	7.8	10	26	0.35	0.50	5.3 (2.4)	
1	1½	1¼	2776B6001W	D2776B6001W	19	26	79	0.17	0.22	11.3 (5.1)	
1¼	1½	1¼	2776B7001W	D2776B7001W	21	27	79	0.16	0.18	11.3 (5.1)	
1½	1½	1¼	2776B8011W	D2776B8011W	22	27	79	0.15	0.15	11.3 (5.1)	



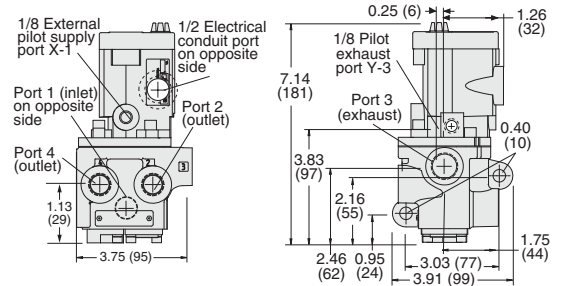
Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 2776B2001Z. For other voltages, consult ROSS.

** 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.

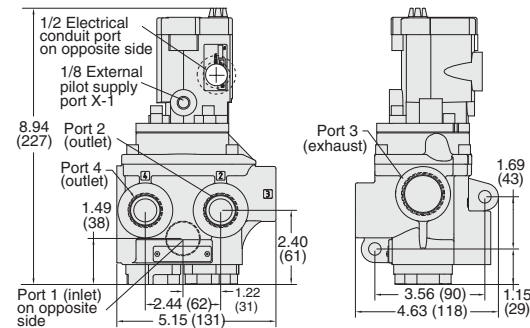


Valve Dimensions – inches (mm)

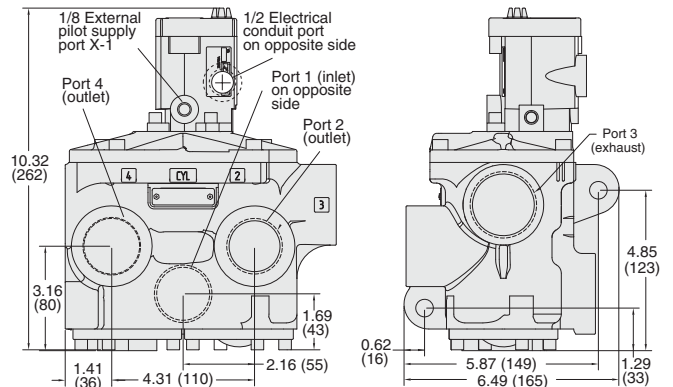
Body Size 3/8



Body Size 3/4



Body Size 1¼



Options: Indicator Light Kits, Manual Override Kits; refer to page B2.23. Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Operating Pressure	15 to 150 psig (1 to 10 bar)
Mounting Type	In-line	Pilot Supply - When external pilot supply, pressure must be equal to or greater than inlet pressure.	
Solenoids	Rated for continuous duty	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Manual Override	Flush; rubber, non-locking
Power Consumption	14 watts on DC; 87 VA inrush, 30 VA holding on 50 or 60 Hz	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.	
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Pilot Supply	Internal or External		



Valves with EN (DIN) connector available, consult ROSS.
For ATEX certified valves, consult ROSS. For FM, CSA approved Explosion-Proof valves, see section F.



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B2.5

Directional Control Valves

Direct Double Solenoid Controlled

27 Series

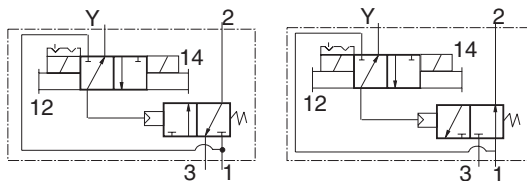
3-Way 2-Position Valves, Detented

Port Size			Body Size	Normally Closed		Normally Open		C _v				Average Response Constants**				Weight lb (kg)
1, 2	3	Valve Model Number#		Valve Model Number#		NC		NO		M	F					
				NPT Threads	G Threads	1-2	2-3	1-2	2-3		1-2	2-3				
1/4	1/2	3/8	2773B2003W	D2773B2003W	2774B2003W	D2774B2003W	2.5	3.1	2.3	2.7	30	0.90	0.80	0.99	0.88	3.5 (1.6)
3/8	1/2	3/8	2773B3003W	D2773B3003W	2774B3003W	D2774B3003W	3.6	5.3	2.8	3.2	30	0.70	0.50	0.90	0.77	3.5 (1.6)
1/2	1/2	3/8	2773B4013W	D2773B4013W	2774B4013W	D2774B4013W	3.3	5.3	2.8	3.2	30	0.75	0.50	0.90	0.76	3.5 (1.6)
1/2	1	3/4	2773B4003W	D2773B4003W	2774B4003W	D2774B4003W	6.3	9.2	6.3	8.0	32	0.43	0.17	0.46	0.60	4.3 (1.9)
3/4	1	3/4	2773B5003W	D2773B5003W	2774B5003W	D2774B5003W	7.7	11	6.9	7.4	32	0.36	0.26	0.45	0.60	4.3 (1.9)
1	1	3/4	2773B6013W	D2773B6013W	2774B6013W	D2774B6013W	8	12	6.8	7.5	32	0.34	0.25	0.40	0.59	4.3 (1.9)
1	1 1/2	1 1/4	2773B6003W	D2773B6003W	2774B6003W	D2774B6003W	23	34	17	24	52	0.17	0.14	0.20	0.17	8.0 (3.6)
1 1/4	1 1/2	1 1/4	2773B7003W	D2773B7003W	2774B7003W	D2774B7003W	30	32	19	24	52	0.15	0.15	0.19	0.17	8.0 (3.6)
1 1/2	1 1/2	1 1/4	2773B8013W	D2773B8013W	2774B8013W	D2774B8013W	30	31	19	23	52	0.15	0.15	0.19	0.16	8.0 (3.6)

Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 2773B2003Z. 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.

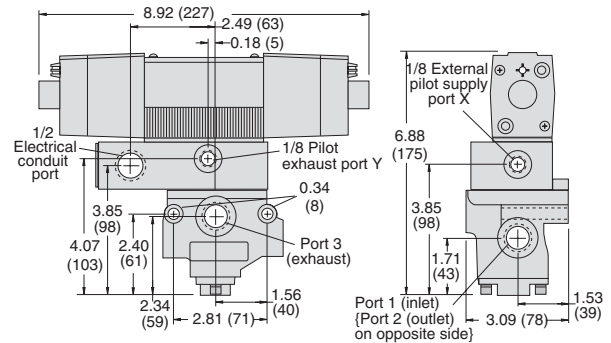
Valve Dimensions – inches (mm)



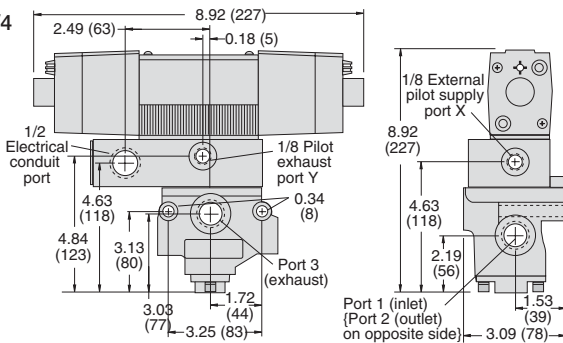
Normally Closed

Normally Open

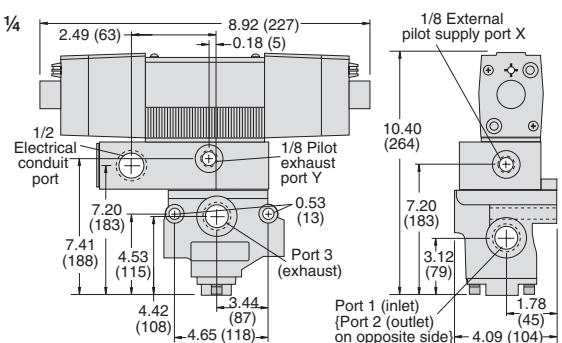
Body Size 3/8



Body Size 3/4



Body Size 1 1/4



Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Pilot Supply	Internal or External
Mounting Type	In-line	Operating Pressure	15 to 150 psig (1 to 10 bar)
Solenoids	Rated for continuous duty		Pilot Supply - When external pilot supply, pressure must be equal to or greater than inlet pressure.
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Power Consumption (each solenoid)	20 watts on DC; 190 VA inrush, 40 VA holding on 50 or 60 Hz	Manual Override	Flush; rubber, non-locking
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.	
Flow Media	Filtered air		



Valves with EN (DIN) connector available, consult ROSS.
For ATEX certified valves, consult ROSS. For FM, CSA approved Explosion-Proof valves, see section F.



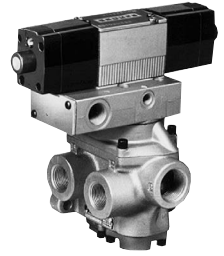
IMPORTANT NOTE: Please read carefully and thoroughly all of the **CAUTIONS, WARNINGS** on the inside back cover.



Directional Control Valves

Direct Double Solenoid Controlled

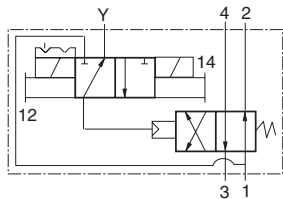
27 Series



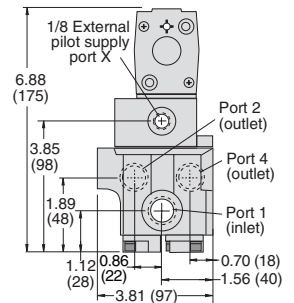
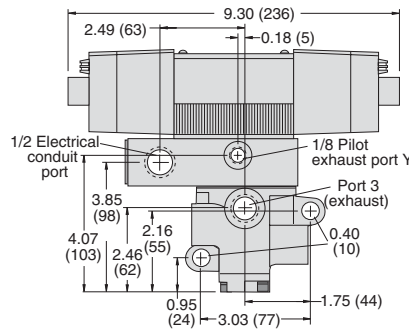
4-Way 2-Position Valves, Detented										
Port Size		Body Size	Valve Model Number#		C _v		Average Response Constants**			Weight lb (kg)
					1-2, 1-4	4-3, 2-3	M	F		
1, 2, 4	3	NPT Threads	G Threads	1-2, 1-4	4-3, 2-3	M	1-2, 1-4	4-3, 2-3		
1/4	1/2	3/8	2776B2003W	D2776B2003W	2.1	2.9	30	0.92	0.92	4.0 (1.8)
3/8	1/2	3/8	2776B3003W	D2776B3003W	2.9	4.2	30	0.90	0.90	4.0 (1.8)
1/2	1/2	3/8	2776B4013W	D2776B4013W	3.1	4.3	30	0.89	0.73	4.0 (1.8)
1/2	1	3/4	2776B4003W	D2776B4003W	5.6	8.1	46	0.50	0.66	6.3 (2.8)
3/4	1	3/4	2776B5003W	D2776B5003W	7.0	9.3	46	0.36	0.55	6.3 (2.8)
1	1	3/4	2776B6013W	D2776B6013W	7.8	10	46	0.35	0.50	6.3 (2.8)
1	1½	1¼	2776B6003W	D2776B6003W	19	26	99	0.17	0.22	12.3 (5.5)
1¼	1½	1¼	2776B7003W	D2776B7003W	21	27	99	0.16	0.18	12.3 (5.5)
1½	1½	1¼	2776B8013W	D2776B8013W	22	27	99	0.15	0.15	12.3 (5.5)

Voltage: W=24 VDC; Z=110-120 VAC, 50/60 Hz, e.g., 2776B2003Z. 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.

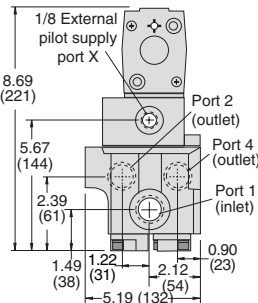
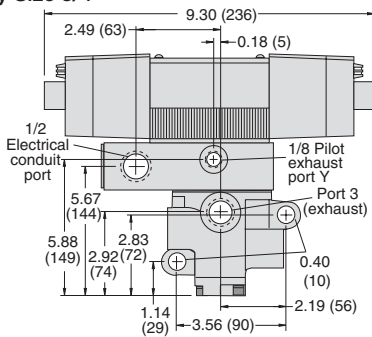
Valve Dimensions – inches (mm)



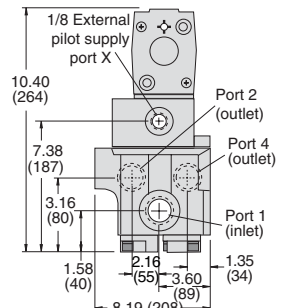
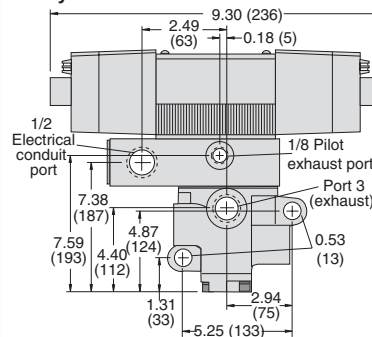
Body Size 3/8



Body Size 3/4



Body Size 1¼



Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Pilot Supply	Internal or External
Mounting Type	In-line	Operating Pressure	15 to 150 psig (1 to 10 bar)
Solenoids	Rated for continuous duty		Pilot Supply - When external pilot supply, pressure must be equal to or greater than inlet pressure.
Voltage	24 volts DC; 110-120 volts AC, 50/60 Hz	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Power Consumption (each solenoid)	20 watts on DC; 190 VA inrush, 40 VA holding on 50 or 60 Hz	Manual Override	Flush; rubber, non-locking
Temperature	Ambient: 40° to 120°F (4° to 50°C) Media: 40° to 175°F (4° to 80°C)	Safety Integrity Level (SIL) - Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.	
Flow Media	Filtered air		



Valves with EN (DIN) connector available, consult ROSS.
 For ATEX certified valves, consult ROSS. For FM, CSA approved Explosion-Proof valves, see section F.



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

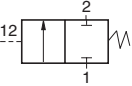


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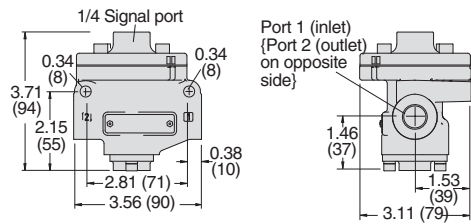
2-Way 2-Position Valves, Spring Return

Port Size	Body Size	Normally Closed		Normally Open		C _v		Average Response Constants**		Weight lb (kg)	 Normally Closed	
		Valve Model Number		Valve Model Number		NC	NO	M	F			
		NPT Threads	G Threads	NPT Threads	G Threads				NC			NO
1/4	3/8	2751A2001	D2751A2001	2752A2001	D2752A2001	2.3	2.3	10	0.91	0.91	1.3 (0.6)	
3/8	3/8	2751A3001	D2751A3001	2752A3001	D2752A3001	3.8	3.3	10	0.70	0.76	1.3 (0.6)	
1/2	3/8	2751A4011	D2751A4011	2752A4011	D2752A4011	4.0	3.5	10	0.64	0.72	1.3 (0.6)	
1/2	3/4	2751A4001	D2751A4001	2752A4001	D2752A4001	7.7	6.5	14	0.37	0.43	2.0 (0.9)	
3/4	3/4	2751A5001	D2751A5001	2752A5001	D2752A5001	9.0	7.3	14	0.34	0.39	2.0 (0.9)	
1	3/4	2751A6011	D2751A6011	2752A6011	D2752A6011	9.0	7.9	14	0.34	0.37	2.0 (0.9)	
1	1 1/4	2751A6001	D2751A6001	2752A6001	D2752A6001	24	21	26	0.17	0.17	8.0 (3.6)	
1 1/4	1 1/4	2751A7001	D2751A7001	2752A7001	D2752A7001	29	20	26	0.15	0.19	8.0 (3.6)	
1 1/2	1 1/4	2751A8011	D2751A8011	2752A8011	D2752A8011	29	21	26	0.15	0.18	8.0 (3.6)	
1 1/2	2	2751A8001	D2751A8001	2752A8001	D2752A8001	49	49	41	0.09	0.09	14.3 (6.4)	
2	2	2751A9001	D2751A9001	2752A9001	D2752A9001	57	57	41	0.07	0.07	14.3 (6.4)	
2 1/2	2	2751A9011	D2751A9011	2752A9011	D2752A9011	64	72	41	0.07	0.06	14.3 (6.4)	

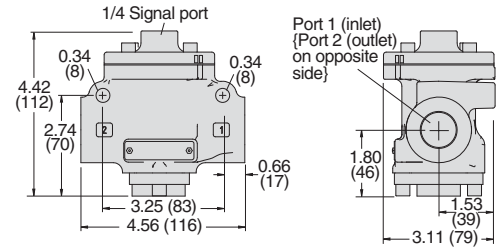
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

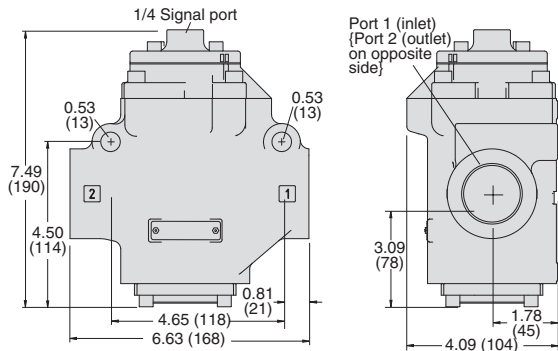
Body Size 3/8



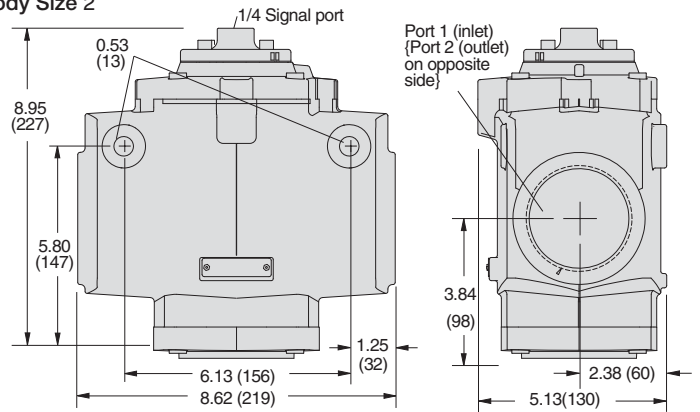
Body Size 3/4



Body Size 1 1/4



Body Size 2



Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Mounting Type	In-line	Safety Integrity Level (SIL)	- Certified by TÜV Rheinland in accordance to IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.
Temperature	Ambient/Media: 40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Pilot Supply	External		
Operating Pressure	Body Size 3/8 & 1 1/2: 15 to 150 psig (1 to 10 bar) Body Size 2: 30 to 150 psig (2 to 10 bar) Pilot Supply - Pilot supply pressure must be equal to or greater than inlet pressure.		



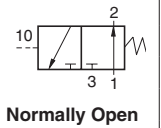
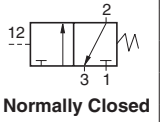
For ATEX certified valves, consult ROSS.

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



3-Way 2-Position Valves, Spring Return

Port Size			Body Size	Normally Closed				Normally Open				C _v				Average Response Constants**				Weight lb (kg)
1, 2	3	Valve Model Number				Valve Model Number				NC		NO		F						
		NPT Threads		G Threads		NPT Threads		G Threads		1-2	2-3	1-2	2-3	M	NC		NO			
		1-2		2-3	1-2	2-3	1-2	2-3	1-2	2-3	1-2	2-3	1-2	2-3	1-2	2-3				
1/4	1/2	3/8	2753A2001	D2753A2001	2754A2001	D2754A2001	2.5	3.1	2.3	2.7	10	0.90	0.80	0.99	0.88	1.3 (0.6)				
3/8	1/2	3/8	2753A3001	D2753A3001	2754A3001	D2754A3001	3.6	5.3	2.8	3.2	10	0.70	0.50	0.90	0.77	1.3 (0.6)				
1/2	1/2	3/8	2753A4011	D2753A4011	2754A4011	D2754A4011	3.3	5.3	2.8	3.2	10	0.75	0.50	0.90	0.76	1.3 (0.6)				
1/2	1	3/4	2753A4001	D2753A4001	2754A4001	D2754A4001	6.3	9.2	6.3	8.0	12	0.43	0.17	0.46	0.60	2.0 (0.9)				
3/4	1	3/4	2753A5001	D2753A5001	2754A5001	D2754A5001	7.7	11	6.9	7.4	12	0.36	0.26	0.45	0.60	2.0 (0.9)				
1	1	3/4	2753A6011	D2753A6011	2754A6011	D2754A6011	8	12	6.8	7.5	12	0.34	0.25	0.40	0.59	2.0 (0.9)				
1	1½	1¼	2753A6001	D2753A6001	2754A6001	D2754A6001	23	34	17	24	32	0.17	0.14	0.20	0.17	6.0 (2.7)				
1¼	1½	1¼	2753A7001	D2753A7001	2754A7001	D2754A7001	30	32	19	24	32	0.15	0.15	0.19	0.17	6.0 (2.7)				
1½	1½	1¼	2753A8011	D2753A8011	2754A8011	D2754A8011	30	31	19	23	32	0.15	0.15	0.19	0.16	6.0 (2.7)				
1½	2½	2	2753A8001	D2753A8001	2754A8001	D2754A8001	68	70	57	59	76	0.05	0.04	0.07	0.04	15.3 (6.9)				
2	2½	2	2753A9001	D2753A9001	2754A9001	D2754A9001	70	70	58	61	76	0.05	0.04	0.05	0.04	15.3 (6.9)				
2½	2½	2	2753A9011	D2753A9011	2754A9011	D2754A9011	70	71	54	55	76	0.05	0.04	0.05	0.04	15.3 (6.9)				



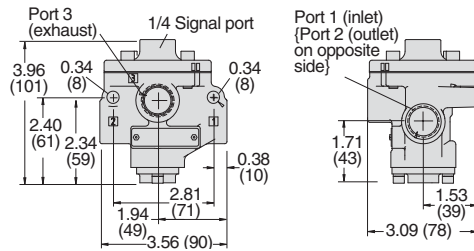
B

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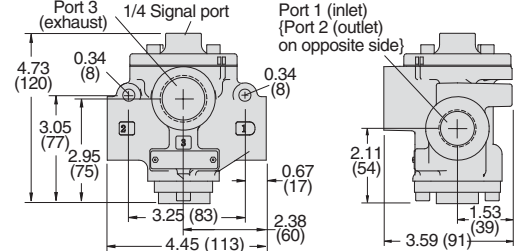
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

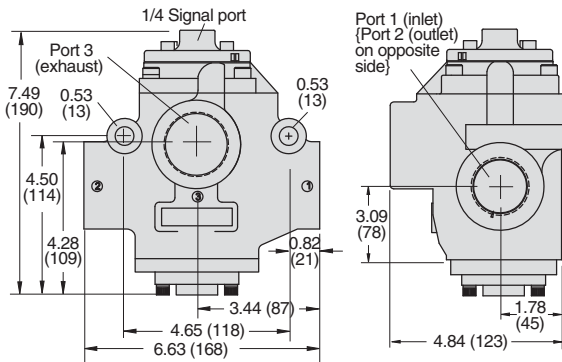
Body Size 3/8



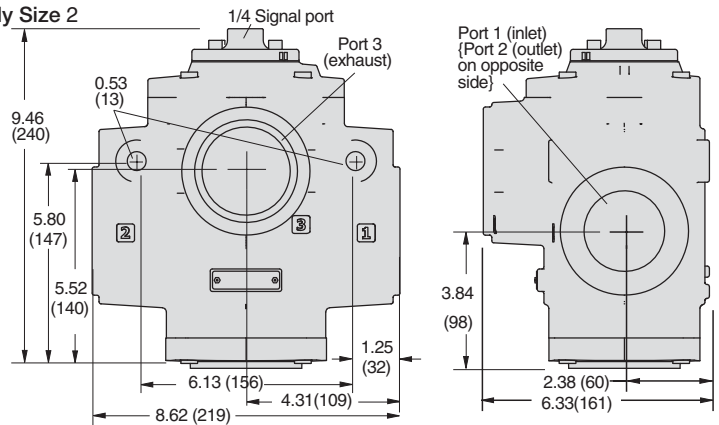
Body Size 3/4



Body Size 1¼



Body Size 2



Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Mounting Type	In-line	Safety Integrity Level (SIL)	- Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.
Temperature	Ambient/Media: 40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Pilot Supply	External		
Operating Pressure	Body Size 3/8 & 1½: 15 to 150 psig (1 to 10 bar) Body Size 2: 30 to 150 psig (2 to 10 bar) Pilot Supply - Pilot supply pressure must be equal to or greater than inlet pressure.		



For ATEX certified valves, consult ROSS.

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



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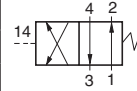
Directional Control Valves

Pressure Controlled

27 Series

4-Way 2-Position Valves, Spring Return

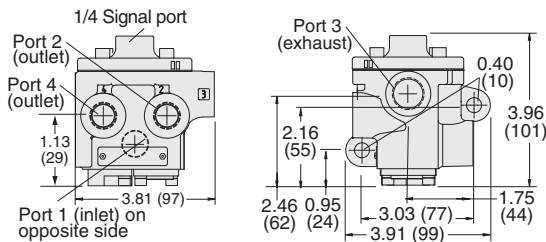
Port Size		Body Size	Valve Model Number		C _v		Average Response Constants**			Weight lb (kg)
1, 2, 4	3		NPT Threads	G Threads	1-2, 1-4	4-3, 2-3	M	1-2, 1-4	4-3, 2-3	
1/4	1/2	3/8	2756A2001	D2756A2001	2.1	2.9	10	0.92	0.92	1.8 (0.8)
3/8	1/2	3/8	2756A3001	D2756A3001	2.9	4.2	10	0.90	0.90	1.8 (0.8)
1/2	1/2	3/8	2756A4011	D2756A4011	3.1	4.3	10	0.89	0.73	1.8 (0.8)
1/2	1	3/4	2756A4001	D2756A4001	5.6	8.1	26	0.50	0.66	4.3 (1.9)
3/4	1	3/4	2756A5001	D2756A5001	7.0	9.3	26	0.36	0.55	4.3 (1.9)
1	1	3/4	2756A6011	D2756A6011	7.8	10	26	0.35	0.50	4.3 (1.9)
1	1½	1¼	2756A6001	D2756A6001	19	26	79	0.22	0.22	10.3 (4.6)
1¼	1½	1¼	2756A7001	D2756A7001	21	27	79	0.18	0.18	10.3 (4.6)
1½	1½	1¼	2756A8011	D2756A8011	22	27	79	0.15	0.15	10.3 (4.6)



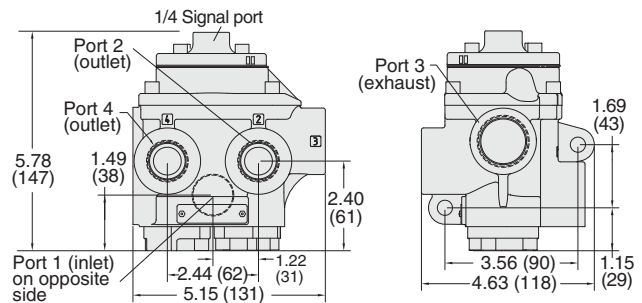
** Valve Response Time – Response Time (msec) = M + (F • V). This is the average time required to fill a volume V (cubic inches) to 90% of supply pressure or to exhaust it to 10% of supply pressure. M and F values are shown above.

Valve Dimensions – inches (mm)

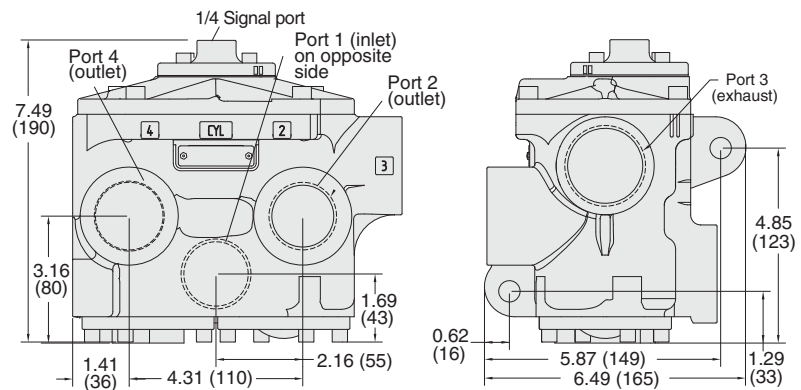
Body Size 3/8



Body Size 3/4



Body Size 1¼



Silencers ordered separately, refer to page B2.23.

STANDARD SPECIFICATIONS (for valves on this page):

Construction Design	Poppet	Construction Material	Valve Body: Cast Aluminum Poppet: Acetal and Stainless Steel Seals: Buna-N
Mounting Type	In-line	Safety Integrity Level (SIL)	- Certified by TÜV Rheinland in accordance with IEC 61508 and IEC 61511 safety integrity level 2 (SIL 2) and EN ISO 13849-1, PL c (with application specific diagnosis) in singular application with HFT = 0 and SIL 3 and PL e in redundant application with HFT ≥ 1, for details see certificate.
Temperature	Ambient/Media: 40° to 175°F (4° to 80°C)		
Flow Media	Filtered air		
Pilot Supply	External		
Operating Pressure	15 to 150 psig (1 to 10 bar) Pilot Supply - Pilot supply pressure must be equal to or greater than inlet pressure.		



For ATEX certified valves, consult ROSS.

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



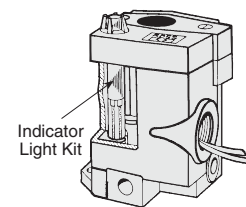
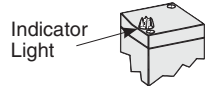
B

B2

Indicator Light Kits

To visually verify valve operation indicator lights are available in kit form. The indicator light extends through the solenoid or pilot cover and is illuminated when the solenoid is energized. Such lights are standard on double solenoid valves. Indicator light kits are available for single solenoid models.

Kit Number		
24 volts DC	110-120 volts AC 50-60 Hz	220 volts 50-60 Hz
862K87-W	862K87-Z	862K87-Y



Manual Override Kits

Flush flexible manual overrides are standard on single solenoid models. Double solenoid models have flush metal-button overrides. Both types are non-locking. Each of the buttons in the override kits below 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



Electrical Connector

Valves available with installed prewired connectors, consult ROSS.

System 8 Solenoid Pilot

Models available with preinstalled System 8 solenoid pilot, consult ROSS.

Silencers

Port Size	Thread Type	Model Number		Avg. C _v	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	R Threads		Width	Length	
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)
1½	Female	5500A8001	D5500A8001	29.9	2.5 (64)	5.7 (144)	1.0 (0.5)
2½	Female	5500A9002	D5500A9002	103.7	4.0 (102)	5.7 (145)	2.9 (1.4)

Pressure Range: 0 to 290 psig (0 to 20 bar) maximum.
Flow Media: Filtered air.



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 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 supersedes 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 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

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.

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





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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 systems.

Other literature is available for engineering, maintenance, and service requirements.

If you need products or specifications not shown in this catalog, please visit ROSS' website, contact ROSS or your ROSS distributor. The ROSS Support Team 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' at rosscontrols.com.