

Features

- Molded one-piece solenoid with highly efficient solenoid cartridge and special low wattage coil
- Increased ambient temperature capabilities up to 175°F (80°C)
- Designed for use in automation of plant control systems to provide:
 - PLC compatibility
 - Reduced battery drain
 - Reduced heat rise
 - Reduced wiring cost
- Wide selection includes 2/2 normally closed, 3/2 normally closed (including Quick Exhaust), 3/2 universal, 4/2, 5/2, and 5/3
- Air or inert gas only
- Lower-cost alternative to intrinsically safe valves in critical applications not requiring a safety barrier

Construction

Valve Parts in Contact with Fluids			
Body	Aluminum	Brass	Stainless Steel
Seals and Discs	PUR, NBR, FKM, CR, as listed		
Sleeve	304L Stainless Steel		
Core and Plugnut	430F Stainless Steel		
Core Springs	302 Stainless Steel		
Pilot Seat Cartridge (Series 8316 & 8344 only)	CA		
Rider Rings	PTFE		
Spring Retainer	CA		

Electrical (Normal Ambient Version, +60°C)

Coil: Continuous duty Class F. **IMPORTANT:** Leakage current existing in your system above 7 mA will cause improper operation.

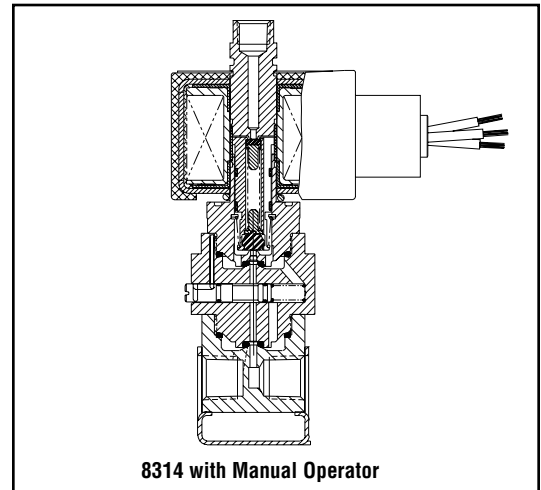
DC Watt Rating and Power Consumption	24 DC Spare Coil Part No.		Maximum Line Resistance vs. Length of Wire		
	General Purpose	Explosionproof	Power Source	Max. Loop Resistance	Max. Wire Run 18AWG 7x26 Stranded (ft)
1.4 at 68°F (20°C)	238710-902-D	238714-902-D	Volts	Ohms	
Low Power Solenoid: Standard voltages 12 and 24 DC Nominal Operating Range +10%, -15% Must be specified when ordering Typical 24 Volts DC System: Min. pull-in: 0.042 amps Min. dropout: 0.007 amps Coil resistance: 410 ohms at 68°F (20°C) ±10% Max. ambient temp: 140°F (60°C)			21	16.5	1120
			22	40.5	2750
			23	64.0	4350
			24	88.0	5980

Electrical (High Ambient Version, +80°C)

Coil: Continuous duty Class F. **IMPORTANT:** Leakage current existing in your system above 8 mA will cause improper operation.

DC Watt Rating and Power Consumption	24 DC Spare Coil Part No.		Maximum Line Resistance vs. Length of Wire		
	General Purpose	Explosionproof	Power Source	Max. Loop Resistance	Max. Wire Run 18 AWG 7x26 Stranded (ft)
1.8 at 68°F (20°C)	238710-908-D	238714-905-D	Volts	Ohms	
Low Power Solenoid: Standard voltages: 12, 24 and 48 VDC Nominal Operating Range: +10%, -15% Must be specified when ordering Typical 24 Volts DC System: Min. pull-in: 0.051 amps Min. dropout: 0.008 amps Coil resistance: 320 ohms at 68°F (20°C) ±10% Max. ambient temp: 175°F (80°C)			21	3.8	260
			22	23.4	1590
			23	43	2920
			24	62.6	4260

Note: The applicable T code for the 1.8 watt construction is T5 (100°C)



SPECIAL SERVICE PILOT

Ordering

Normal Ambient Version

EV8551G322 24VDC

High Ambient Version (always add TPL #23033)

EFX8316G301-23033 24VDC

Solenoid Enclosures

Standard: Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Optional: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

(To order, add prefix "EF" to catalog number. For explosionproof with 316 Stainless Steel hub and trim, specify prefix "EV".) Surge suppression coils also available "MF" prefix.

See *Optional Features Section* for other available options.

Approvals

UL listed General Purpose Valves (Hazardous Location Classified). EV8345G381 solenoid only UL listed. CSA certified; nonincendive for Class I, Division 2 UL E25549. Meets applicable CE directives.

Refer to *Engineering Section* for details.

Nominal Ambient Temp. Ranges

Series	Body Material	Normal Temperature Range	High Ambient Version
8551/8553	Aluminum	5°F to 140°F (-15°C to 60°C)	Not Available
8262	Brass & Stainless Steel	-40°F to 140°F (-40°C to 60°C)	Low Limit is Same, High Limit = 175°F (80°C)
8314			
8317			
8551			
8551/8553			
8316 Suffix V	Misc.	32°F to 140°F (0°C to 60°C)	
All Other		-4°F to 140°F (-20°C to 60°C)	

Important

These solenoids are intended for use on clean, dry air or inert gas filtered to 50 microns or better. To prevent freezing, the dew point of the media should be at least 18°F (-8°C) below the minimum temperature to which any portion of the clean air or gas system could be exposed. Instrument air in compliance with ANSI/ISA Standard S7.3-1975 (R1981) exceeds the above requirements and is, therefore, an acceptable medium for these valves.

Specifications (English units)

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
1/4	1/16	.08		0	150	140	8262G320	18	8262G386 ⑥	18
3/8	5/16	1.5		10	150	140	8223G323	19	-	-
1/2	3/8	3.2		25	150	140	8223G303	20	8223G310 ⑥	20
3/2 VALVES, UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	1/16	.08	.08	0	150	140	8314G300	1	8314G301 ⑥	2
3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc or FPM, as Listed										
1/4	5/16	1.5	1.5	⑤	150	140	8316G301 ③	3	EV8316G381V ④⑥	3
3/8	5/16	1.8	1.8	⑤	150	140	8316G302 ③	3	EV8316G382V ④⑥	3
3/8	5/8	4	4	⑤	150	140	8316G303 ③	3A	-	-
1/2	5/8	4	4	⑤	150	140	8316G304 ③	3A	EV8316G384V ④⑥	3A
3/4	11/16	5.5	5.5	10	150	140	8316H374 ③	4	-	-
1	1	13	13	10	150	140	8316G334 ③	5	-	-
3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.08	.73	5	150	140	8317G307 ①	6	8317G308 ①⑥	7
4/2 VALVES, with NBR Disc and Seals										
1/4	1/16	.08	.08	10	150	140	8345G301 ①③	6	EV8345G381 ①③⑥	8
4/2 VALVES, Brass Body with NBR Disc										
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Single Solenoid		Dual Solenoid	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
1/4	1/4	.80	1	10	150	140	8344G370 ①③	9	8344G344 ③	12
3/8	3/8	1.4	2.2	10	150	140	8344G372 ①③	11	8344G380 ③	10
1/2	3/8	1.4	2.2	10	150	140	8344G374 ①③	11	8344G382 ③	10
3/4	3/4	5.2	5.6	10	150	140	8344G376 ①③	13	8344G354 ③	14
1	3/4	5.2	5.6	10	150	140	8344G378 ①③	13	8344G356 ③	14

① There are two exhaust flows in the exhaust mode (pilot and main). The pilot exhaust must be connected to the main exhaust when the air or inert gas cannot be exhausted to atmosphere.
 ② For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".
 ③ **IMPORTANT:** A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.
 ④ Diaphragm and main disc FKM only (pilot is low-temperature NBR).
 ⑤ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 15 psi Operating Pressure Differential when selection gasket is in the internal position.
 ⑥ Can be used for *dry* natural gas service with the EF or EV prefix.

SPECIAL SERVICE PILOT

Specifications (Metric units)

Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Brass Body		Stainless Steel Body	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
2/2 VALVES, NORMALLY CLOSED, with NBR Disc										
1/4	2	.07		0	10	60	8262G320	18	8262G386 ⑥	18
3/8	8	1.29		0.7	10	60	8223G323	19	-	-
1/2	10	2.74		1.7	10	60	8223G303	20	8223G310 ⑥	20
3/2 VALVES, UNIVERSAL OPERATION (Pressure at any port) with NBR Disc										
1/4	2	.07	.07	0	10	60	8314G300	1	8314G301 ⑥	2
3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc or FPM, as Listed										
1/4	8	1.29	1.29	⑤	10	60	8316G301 ③	3	EV8316G381V ④⑥	3
3/8	8	1.37	1.37	⑤	10	60	8316G302 ③	3	EV8316G382V ④⑥	3
3/8	16	2.57	2.57	⑤	10	60	8316G303 ③	3A	-	-
1/2	16	3.43	3.43	⑤	10	60	8316G304 ③	3A	EV8316G384V ④⑥	3A
3/4	17	4.71	4.71	0.7	10	60	8316H374 ③	4	-	-
1	25	11.14	11.14	0.7	10	60	8316G334 ③	5	-	-
3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with CR Diaphragm and NBR Disc										
1/4	②	.07	.63	0.3	10	60	8317G307 ①	6	8317G308 ①⑥	7
4/2 VALVES, with NBR Disc and Seals										
1/4	2	.07	.07	0.7	10	60	8345G301 ①③	6	EV8345G381 ①③⑥	8
4/2 VALVES, Brass Body with NBR Disc										
Pipe Size (ins.)	Orifice Size (mm)	Kv Flow Factor (m3/h)		Operating Pressure Differential (bar)		Max. Fluid and Ambient Temp. °C	Single Solenoid		Dual Solenoid	
				Air-Inert Gas			Catalog Number	Const. Ref.	Catalog Number	Const. Ref.
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.					
1/4	6	0.69	0.86	0.7	10	60	8344G370 ①③	9	8344G344 ③	12
3/8	10	1.20	1.89	0.7	10	60	8344G372 ①③	11	8344G380 ③	10
1/2	10	1.20	1.89	0.7	10	60	8344G374 ①③	11	8344G382 ③	10
3/4	19	4.46	4.80	0.7	10	60	8344G376 ①③	13	8344G354 ③	14
1	19	4.46	4.80	0.7	10	60	8344G378 ①③	13	8344G356 ③	14

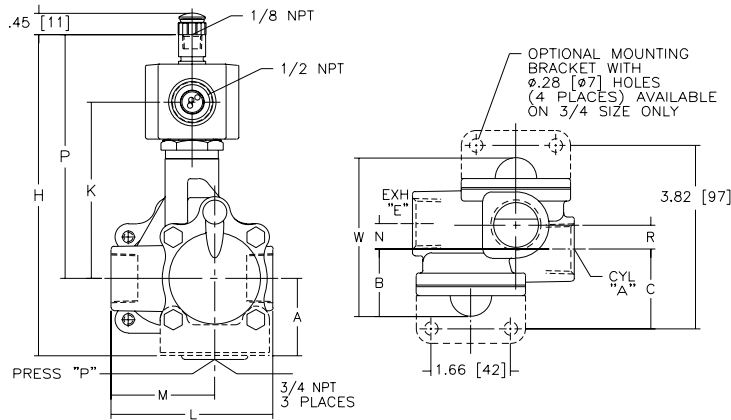
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 ③ **IMPORTANT:** A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.
 ④ Diaphragm and main disc FKM only (pilot is low-temperature NBR).
 ⑤ Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 1.0 bar Operating Pressure Differential when selection gasket is in the internal position.
 ⑥ Can be used for *dry* natural gas service with the EF or EV prefix.

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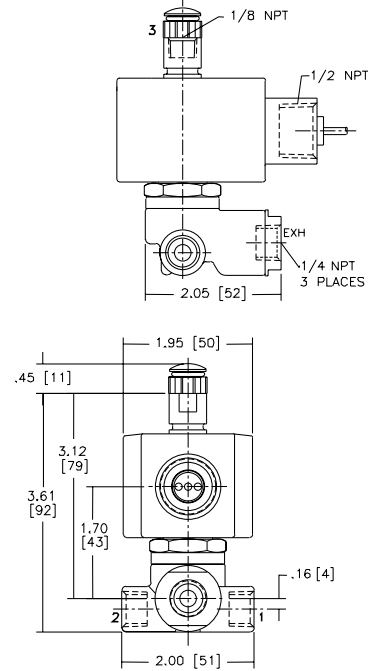
Dimensions: inches (mm)

Const. Ref.		A	B	C	H	K	L	M	N	P	R	W
4	ins.	1.61	1.41	1.66	6.78	3.68	3.38	2.16	.53	5.09	.50	3.31
	mm	41	36	42	172	93	86	55	13	129	13	84
5	ins.	X	1.78	X	7.40	3.93	4.44	2.81	.87	5.34	1.74	5.31
	mm	X	45	X	188	100	113	71	22	136	44	135

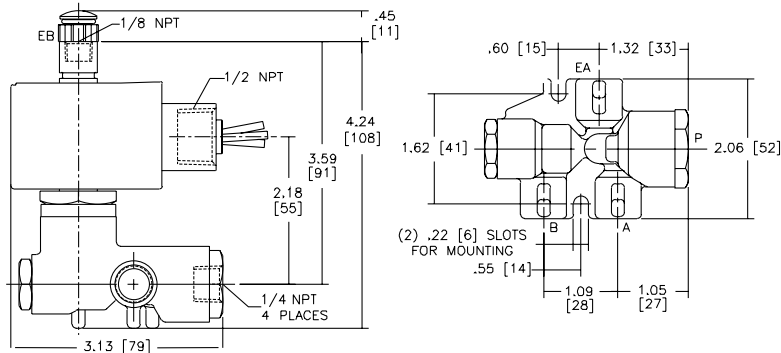
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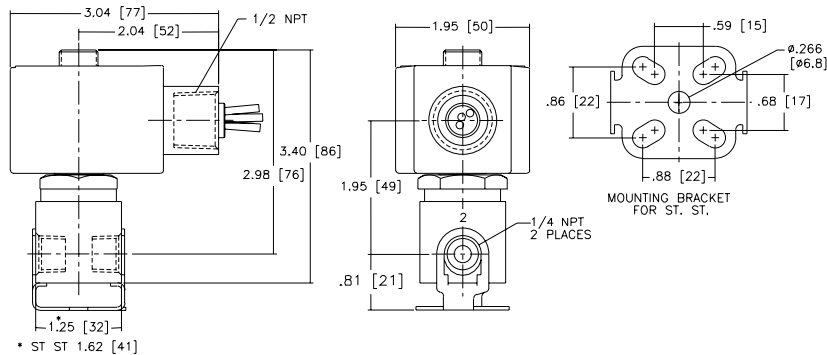
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Const. Ref. 8



Const. Ref. 18



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