

Features

- Molded one-piece solenoid with highly efficient solenoid cartridge and 0.55 W low wattage coil
- Standard ambient temperature of 149°F (65°C)
- Optional 176°F (80°C) high ambient temperature version
- Designed for use in automation of plant control systems to provide:
 - PLC and DCS[®] compatibility for BUS network and traditional wiring
 - Reduced temperature rise
 - Increase battery life
 - Reduce wiring cost
 - Energy savings
- Wide selection includes 2/2, 3/2 normally closed (including Quick Exhaust), 3/2 universal, 4/2, 5/2, & 5/3

Construction

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

Electrical

Description	Wattage	Max. Ambient Temp.	T Code	Insulation Class	Prefix
Standard Ambient Version	.55 W	149°F (65°C)	T6	F	-
High Ambient Version	.70 W	176°F (80°C)	T6	H	HT
Surge Suppression Version	.75 W	149°F (65°C)	T6	F	MF

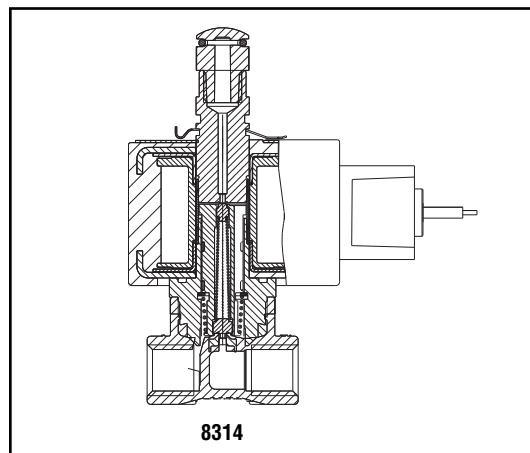
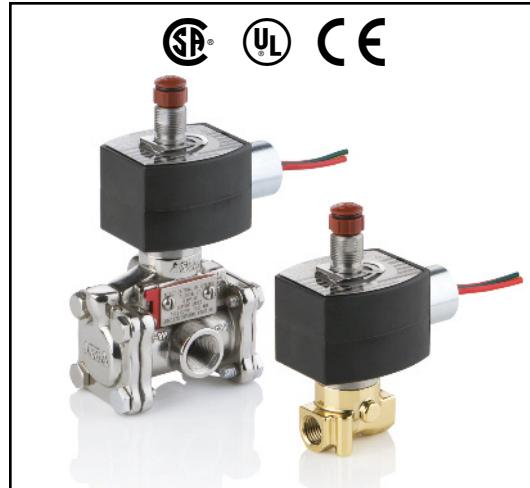
^① **IMPORTANT:** Supervisory and leakage current above the drop out current listed will cause improper operation. Consult your local ASCO sales office for additional assistance.

Description	Wattage	Voltage (DC)	Min. Pull In (mA)	Drop Out (mA) ^①	Coil Resistance @68°F (20°C) (ohms)
Standard Ambient Version	.55W	12V	34	3.63	255
		24V	17	1.80	1025
		48V	8.5	0.91	4080
		125V ^②	3.2	0.34	27,400
High Ambient Version	.70W	12V	37	3.97	206
		24V	19	1.98	830
		48V	9.7	1.03	3185
		125V ^②	3.7	0.39	21150
Surge Suppression Version (Available only in Explosionproof version)	.75W	12V	41	4.41	165 ^③
		24V	19	1.98	830 ^③
		48V	9.7	1.03	3185 ^③
		125V ^②	3.7	0.39	21150 ^③

Note: ^② Not for battery applications. ^③ Surge suppression contains diode bridge.

24VDC Spare Coil P/N	Standard Ambient Temp. Version	High Ambient Temp. Version
General Purpose	238710-913-D*	238910-906-D*
Explosion Proof	238714-914-D*	238914-906-D*
Explosion Proof, Corrosion Resistant	274714-909-D*	274914-906-D*
Explosion Proof, Surge Suppression	276006-206-D*	Not Available
Explosion Proof, Corrosion Resistant, Surge Suppression	276007-206-D*	Not Available

Note: For 12VDC, 48VDC and 125VDC coil PN consult factory


 SPECIAL SERVICE
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Ordering

Normal Ambient Version: EV8551H322 24VDC

High Ambient Version: EF HT 8316H301 24VDC

Surge Suppression Version: EV MF 8314H301 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 & CSA Approved for Class I Div. 1 Locations & Class I Div. 2 Non-Incendive Solenoid for Hazardous Locations.

UL Listed General Purpose Valves.

Meets applicable CE directives.

SIL 3 capable per IEC 61508 on 8314, 8316, 8551, and 8553 const. Third party certification provided by EXIDA. Refer to *Engineering Section* for details.

ATEX/IECEx certified with prefix "EV" as listed. Refer to *Optional Features Electrical Section* for details.

Nominal Ambient Temp. Ranges

Series	Body Material	Normal Temperature Range	High Ambient Temp Version
8553	Stainless Steel	-40°F to 140°F (-40°C to 60°C)	
8551	Brass		
8553	Aluminum	-13°F to 140°F (-25°C to 60°C)	
8551		5°F to 140°F (-15°C to 60°C)	
8551	Stainless Steel		
8262			
8314			
8317			
8316*			
8223			
8344			
8316H334	Brass only	-4°F to 149°F (-20°C to 65°C)	

*Does not include 8316H334; Includes 8316J374. Note: 8553 not available in brass

Important

These solenoid valves are intended for use on clean dry air or inert gas, filtered to 40 micrometres or better. The dew point of the media should be at least 10°C (18°F) below the minimum temperature to which any portion of the clean air/inert gas system could be exposed to prevent freezing. If lubricated air is used, the lubricants must be compatible with Nitrile elastomers. Diester oils may cause operational problems. Instrument air in compliance with ANSI/ISA Standard 7.0.01-1996 exceeds the above requirements and is, therefore, an acceptable media for these valves.

Specifications (English units)

Pipe Size (in)	Orifice Size (in)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Brass Body		Stainless Steel Body				
				Air-Inert Gas									
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.								
2/2 VALVES, NORMALLY CLOSED, with NBR Disc													
1/4	1/16	.06		0	130	149	8262H320 ††	1	8262H386 ††✓	1			
3/8	5/16	1.5		10	130	149	8223H323	2	-	-			
1/2	3/8	3.2		25	130	149	8223H303	3	8223H310 ⑥	3			
3/2 VALVES, UNIVERSAL OPERATION (Normally Closed or Normally Open) with NBR Disc – SIL 3 Capable, Certified by Exida ⑨ ⑩													
1/4	1/20	.06	.06	0	130/105 ⑦	149	8314H300 ††	4	8314H301 ††✓	5			
3/2 VALVES, NORMALLY CLOSED (Closed when de-energized) with NBR Disc – SIL 3 Capable, Certified by Exida ⑨													
1/4	5/16	1.5	1.5	⑤	130	149	8316H301 ③✓	6	EV8316H381 ⑥✓	6			
3/8	5/16	1.8	1.8	⑤	130	149	8316H302 ③✓	6	EV8316H382 ⑥✓	6			
3/8	5/8	4	4	⑤	130	149	8316H303 ③✓	6	-	-			
1/2	5/8	4	4	⑤	130	149	8316H304 ③✓	6	EV8316H384 ⑥✓	6			
3/4	11/16	5.5	5.5	10	130	149	8316J374 ③	7	-	-			
1	1	13	13	10	130	149	8316H334 ③⑧	8	-	-			
3/2 VALVES, UNIVERSAL (Normally Closed or Normally Open) "Quick Exhaust" with NBR Diaphragm and NBR Disc													
1/4	②	.06	.73	5	130	149	8317H307 ①	9	8317H308 ①⑥✓	10			
4/2 VALVES, Brass Body with NBR Disc													
Pipe Size (in)	Orifice Size (in)	Cv Flow Factor		Operating Pressure Differential (psi)		Max. Fluid and Ambient Temp. °F	Single Solenoid		Dual Solenoid				
				Air-Inert Gas									
		Pressure to Cylinder	Cylinder to Exhaust	Min.	Max.	Catalog Number	Const. Ref.	Catalog Number	Const. Ref.				
1/4	1/4	.80	1	10	130	149	8344H370 ①③	11	8344H344 ③†	12			
3/8	3/8	1.5	2.2	10	130	149	8344H372 ①③✓	13	8344H380 ③†	14			
1/2	3/8	1.5	2.2	10	130	149	8344H374 ①③	13	8344H382 ③†	14			
3/4	3/4	5.2	5.6	10	130	149	8344H376 ①③	15	8344H354 ③†	16			
1	3/4	5.2	5.6	10	130	149	8344H378 ①③	15	8344H356 ③†	16			
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 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.													
⑤ Can be used for dry natural gas service (no agency approvals) with the EF or EV prefix without manual operator.													
⑥ Normally closed = 130 psi. Normally open = 105 psi.													
⑦ Solenoid only approvals with EF or EV prefix, no approvals with general purpose coil (no prefix).													
⑧ Safety manual and FMEDA (Failure Modes Effects and Diagnostic Analysis) report available.													
⑨ SIL 3 Capable, Certified by Exida, only valid when used as Normally Closed.													
⑩ Dual solenoid 8344 requires minimum pressure of 20 psi. Single solenoid version has 10 psi minimum pressure requirement.													
†† UL/CSA approved for use with dry natural gas or propane gas with EF or EV prefix without manual operator.													
✓ ATEX/IECEx certified with prefix "EV".													



Specifications (English units)

Body Material	Pipe Size (in)	Orifice Size (in)	Cv Flow Factor	Single Solenoid – SIL 3 Capable, Certified by Exida ⑨						Dual Solenoid										
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.							
				Air-Inert Gas					Air-Inert Gas											
				Min.	Max.				Min.	Max.										
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals																				
Aluminum 3/2	1/4	1/4	.86	35	130	149	8551H305 ⑧	17	30	130	149	8551H306 ⑧	17							
Aluminum 5/2							8551H317 ⑧	18				8551H318 ⑧	18							
Aluminum 5/3 Center Closed							-	18				8551H367 ⑧	18							
Aluminum 5/3 Center Open							-	18				8551H368 ⑧	18							
Brass 3/2							EF8551H307 ②⑧ ✓	17				EF8551H308 ②⑧ ✓	17							
Brass 5/2							EF8551H319 ②⑧	18				EF8551H320 ②⑧	18							
316L Stainless Steel 3/2							EV8551H313 ③⑥⑧ ✓	17				EV8551H314 ③⑥⑧ ✓	17							
316L Stainless Steel 5/2							EV8551H321 ③⑥ ✓	18				EV8551H322 ③⑥ ✓	18							
Aluminum 3/2	1/2	1/2	3.7				8553H305 ⑧	17				8553H306 ⑧	17							
Aluminum 5/2							8553H317 ⑧	18				8553H318 ⑧	18							
316L Stainless Steel 3/2							EV8553H313 ③⑥⑧ ✓	17				EV8553H314 ③⑥⑧ ✓	17							
316L Stainless Steel 5/2							EV8553H321 ③⑥⑧ ✓	18				EV8553H322 ③⑥⑧ ✓	18							
② Brass construction supplied standard with EF solenoid.							③ Stainless steel construction supplied standard with EV solenoid.					④ Can be used for dry natural gas service (no agency approvals) with the EF or EV prefix without manual operator.								
⑤ Solenoid only approvals with EF or EV prefix, no approvals with (no prefix) general purpose coil.							⑥ Safety manual and FMEDA (Failure Modes Effects and Diagnostic Analysis) report available.					⑦ ATEX/IECEx certified with prefix "EV".								

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Body Material	Pipe Size (in)	Orifice Size (in)	Cv Flow Factor	Single Solenoid – SIL 3 Capable, Certified by Exida ⑨						Dual Solenoid										
				Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.	Operating Pressure Differential (psi)		Max. Fluid Temp. °F	Catalog Number	Const. Ref.							
				Air-Inert Gas					Air-Inert Gas											
				Min.	Max.				Min.	Max.										
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount																				
Aluminum 3/2, 5/2	1/4	1/4	.86	35	130	149	8551H301 ①	19	30	130	149	8551H302 ①	19							
Aluminum 5/3 Center Closed							-	-				8551H365 ⑧	20							
Aluminum 5/3 Center Open							-	-				8551H366 ⑧	20							
Brass 3/2, 5/2							EF8551H303 ①②⑧	19				EF8551H304 ①②⑧	19							
316L Stainless Steel 3/2, 5/2							EV8551H309 ③⑥ ✓	20				EV8551H310 ③⑥ ✓	20							
Aluminum 3/2, 5/2	1/2	1/2	3.7				8553H301 ⑧	20				8553H302 ⑧	20							
316L Stainless Steel 3/2, 5/2							EV8553H309 ③⑥⑧ ✓	20				EV8553H310 ③⑥⑧ ✓	20							
① 1/8" NPT exhaust for 1/4" aluminum and brass.							② Brass construction supplied standard with EF solenoid.					③ Stainless steel construction supplied standard with EV solenoid.								
④ Can be used for dry natural gas service (no agency approvals) with the EF or EV prefix without manual operator.							⑤ Solenoid only approvals with EF or EV prefix, no approvals with (no prefix) general purpose coil.					⑥ Safety manual and FMEDA (Failure Modes Effects and Diagnostic Analysis) report available.								
⑦ ATEX/IECEx certified with prefix "EV".																				

Specifications (Metric units)

Body Material	Pipe Size (in)	Orifice Size (mm)	Kv Flow Factor (m³/h)	Single Solenoid – SIL 3 Capable, Certified by Exida ⑨					Dual Solenoid												
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.								
				Air-Inert Gas					Air-Inert Gas												
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals																					
Aluminum 3/2	1/4	6	.74	2.4	9	65	8551H305 ⑧	17	2	9	65	8551H306 ⑧	17								
Aluminum 5/2							8551H318 ⑧	18				8551H318 ⑧	18								
Aluminum 5/3 Center Closed							-	18				8551H367 ⑧	18								
Aluminum 5/3 Center Open							-	18				8551H368 ⑧	18								
Brass 3/2							EF8551H307 ②⑧	17				EF8551H308 ②⑧	17								
Brass 5/2		13	3.2	2.4	9	65	EF8551H319 ②⑧	18				EF8551H320 ②⑧	18								
316L Stainless Steel 3/2							EV8551H313 ③⑥⑧	17				EV8551H314 ③⑥⑧	17								
316L Stainless Steel 5/2							EV8551H321 ③⑥	18				EV8551H322 ③⑥	18								
Aluminum 3/2							8553H305 ⑧	17				8553H306 ⑧	17								
Aluminum 5/2							8553H317 ⑧	18				8553H318 ⑧	18								
316L Stainless Steel 3/2							EV8553H313 ③⑥⑧	17				EV8553H314 ③⑥⑧	17								
316L Stainless Steel 5/2							EV8553H321 ③⑥⑧	18				EV8553H322 ③⑥⑧	18								
② Brass construction supplied standard with EF solenoid.																					
③ Stainless steel construction supplied standard with EV solenoid.																					
⑥ Can be used for <i>dry</i> natural gas service (no agency approvals) with the EF or EV prefix without manual operator.																					
⑧ Solenoid only approvals with EF or EV prefix, no approvals with general purpose coil (no prefix).																					
⑨ Safety manual and FMEDA (Failure Modes Effects and Diagnostic Analysis) report available.																					

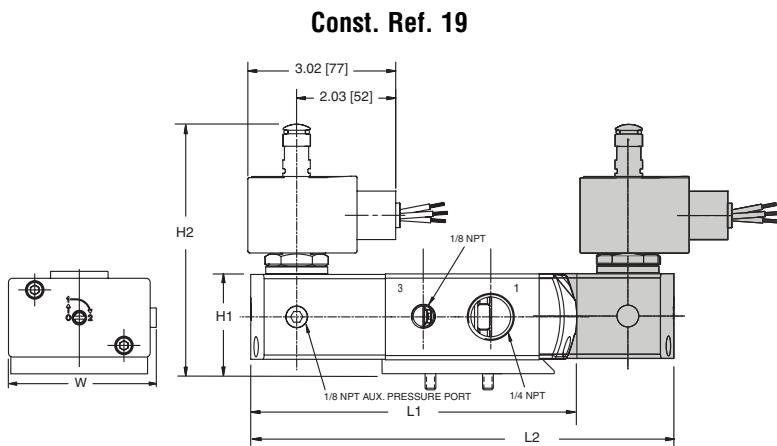
Body Material	Pipe Size (in)	Orifice Size (mm)	Kv Flow Factor (m³/h)	Single Solenoid – SIL 3 Capable, Certified by Exida ⑨					Dual Solenoid												
				Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.	Operating Pressure Differential (bar)		Max. Fluid Temp. °C	Catalog Number	Const. Ref.								
				Air-Inert Gas					Air-Inert Gas												
3/2, 5/2, 5/3 VALVES, with NBR and PUR Seals, NAMUR Mount																					
Aluminum 3/2, 5/2	1/4 ①	6	.74	2.4	9	65	8551H301 ①	19	2	9	65	8551H302 ①	19								
Aluminum 5/3 Center Closed							-	-				8551H365 ⑧	20								
Aluminum 5/3 Center Open							-	-				8551H366 ⑧	20								
Brass 3/2, 5/2							EF8551H303 ①②⑧	19				EF8551H304 ①②⑧	19								
316L Stainless Steel 3/2, 5/2							EV8551H309 ③⑥	20				EV8551H310 ③⑥	20								
Aluminum 3/2, 5/2		13	3.2	2.4	9	65	8553H301 ⑧	20				8553H302 ⑧	20								
316L Stainless Steel 3/2, 5/2							EV8553H309 ③⑥⑧	20				EV8553H310 ③⑥⑧	20								
① 1/8" NPT exhaust for 1/4" aluminum and brass.																					
② Brass construction supplied standard with EF solenoid.																					
③ Stainless steel construction supplied standard with EV solenoid.																					
⑥ Can be used for <i>dry</i> natural gas service (no agency approvals) with the EF or EV prefix without manual operator.																					
⑧ Solenoid only approvals with EF or EV prefix, no approvals with general purpose coil (no prefix).																					
⑨ Safety manual and FMEDA (Failure Modes Effects and Diagnostic Analysis) report available.																					

Dimensions: inches (mm)

Series	8551 (Aluminum, Brass)
NPT	1/4
L1 ①	4.96 (126)
L2 ①	6.49 (165)
H2	4.38 (111)
H1	1.57 (40)
W	1.77 (45)

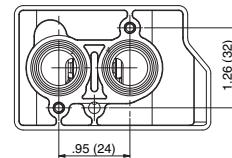
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand



Const. Ref. 19

8551 NAMUR Footprint

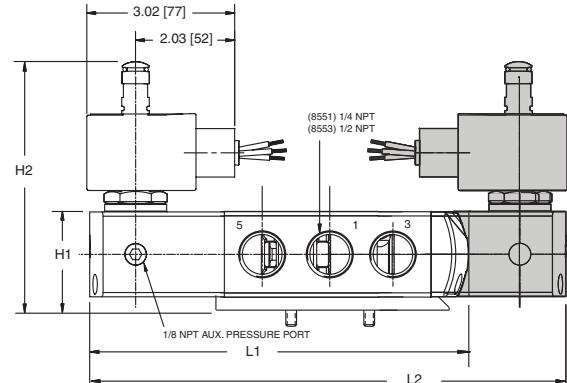


Series	8551 (316L SS)	8551 (5/3)	8553
NPT	1/4	1/4	1/2
L1 ①	5.20 (132)	-	7.08 (180)
L2 ①	6.73 (171)	7.44 (189)	8.85 (225)
H2	4.38 (111)	4.38 (111)	4.77 (121)
H1	1.57 (40)	1.57 (40)	2.08 (53)
W	1.77 (45)	1.77 (45)	2.87 (73)

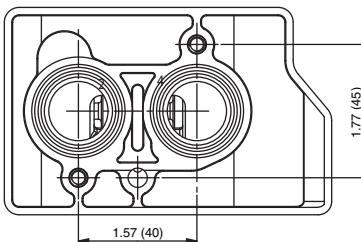
① Manual override option MH adds .250" (6.4),
MS option adds .468" (11.9) to each solenoid endcap.

Optional Manual Operators		
Add Suffix		Description
MO		Push and turn to lock with flat head screwdriver slot
MI		Momentary push in with flat head screwdriver slot
MH		Momentary push in by hand
MS		Push and turn to lock by hand

Const. Ref. 20



8553 NAMUR Footprint



8551 NAMUR Footprint

