

Constructions Suitable for -40°C to -50°C Ambient 2, 3 and 4 Way Constructions Available Brass and Stainless Steel Bodies Air and Inert Gas Service





# **AIR/INERT GAS QUALITY STATEMENT FOR LOW AMBIENT VALVES**

- **DEWPOINT** To prevent freezing of condensed water vapour in the valve, the air/inert gas must have a dewpoint at least 10°F (8°C) below the minimum temperature to which any point of the system will be exposed.
- LUBRICATION The use of lubricators upstream of valves is NOT recommended. Likewise, air containing compressor carry over lubricants requires cleaning with suitable filters upstream of the valve. Hydrocarbon oil, with its characteristic viscosity increase at low temperatures, may cause the valve to operate erratically or to fail to operate.

#### NOTE:

For Engineering/Principle of Operation information refer to Cat. 33C.

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8344	Low Power	1/4" – 1"	Brass	28
8344	Intrinsically Safe	1/4" - 1"	Brass	32



# **FEATURES**

- Lightweight, low-cost valves for air service.
- Ideal for low pressure applications.
- Provides high flow, Cv up to 9.5.
- Air service.





# **CONSTRUCTION**

Valve Parts in Contact with Fluids							
Body	Aluminum						
Seals, Diaphragms, Disc	Buna "N"						
Core Guide	Acetal						
Rider Rings	Teflon						
Core and Plugnut	430F Stainless Steel						
Springs	302 Stainless Steel						
Shading Coil	Copper						

# **ELECTRICAI**

Standard Coil and Class of Insulation	Watt R	Watt Rating and Power Consumption AC						
	Watts	VA Holding	VA Inrush					
F	6.1	16	40					
F	10.1	25	70					

**Standard Voltages:** 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Must be specified when ordering. Other voltages available when required.

# **APPROVALS**

CSA certified. UL listed. FM approved. Red-Hat II meets applicable CE directives. *Refer to Engineering Section of Cat. 102C for details.* 

# SOLENOID ENCLOSURES

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalogue number.)

See Optional Features Section in Cat. 102C for other available options.

# NOMINAL AMBIENT TEMPERATURE RANGES

 Red-Hat II
 AC: -40°F to 125°F (-40°C to 52°C)

 Refer to Engineering Section of Cat. 102C for details.



# DIRECT ACTING ALUMINUM BODY SOLENOID VALVES

3/8" to  $3/4"\ \rm NPT$ 

# **SPECIFICATIONS**

			Operating Pressure Differential (psi)		Max. Fluid	Aluminum	Watt Rating/ Class of Coil Insulation ① AC					
Pipe Size (ins.)	Orifice Cv Flow Max. AC Size (ins.) Factor Min. Air-Inert Gas		Temp. °F AC	Catalogue Number	Constr. Ref. No.							
NORMALLY CLOSED (Closed when de-energized)												
1/8	3/8	1.0	0	15	125	8040H6	7	6.1/F				
1/4	3/8	1.1	0	15	125	8040H7	7	6.1/F				
3/8	3/8	1.2	0	15	125	8040H8	7	6.1/F				
1/2	3/4	5.4	0	2	125	8040G22	43	10.1/F				
3/4	3/4	9.5	0	2	125	8040G23	44	10.1/F				

# **NOTES:**

On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.



Constr Ref.	н	L	Р	T	W
7	<b>2</b> <sup>3</sup> /4	2	<b>2</b> <sup>5</sup> /16	111/16	11/16
43	4	<b>2</b> ³/4	37/16	115/16	<b>2</b> ³/8
44	47/16	35/16	35/8	115/16	<b>2</b> <sup>5</sup> /16



# PILOT OPERATED HIGH PRESSURE SOLENOID VALVES Citationers Statel Dedice of 1 /2" to 2 /4" NDT

Stainless Steel Bodies • 1/2" to 3/4" NPT

# FEATURES

- Rugged piston construction built to withstand pressure ratings of 750 to 1500 psi. Ideal for high pressure applications.
- Angle body design for high flows.
- Mountable in any position.



# CONSTRUCTION

Valve Parts in Contact with Fluids							
Body	304 Stainless Steel						
Seals and Disc	Teflon, Buna "N"						
Core Tube	305 Stainless Steel						
Core and Plugnut	430F Stainless Steel						
Core Spring	302 Stainless Steel						
Shading Coil	Silver						

# ELECTRICAL

Standard Coil and Class of Insulation	Watt	Rating and Power	Consumption				
	DC	AC					
	Watts	Watts	VA Holding	VA Inrush			
F	22.6	17.1	40	70			

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

# **APPROVALS**

CSA certified. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 

# SOLENOID ENCLOSURES

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalogue number.) See Optional Features Section of Cat. 33C for other available options.

# NOMINAL AMBIENT TEMPERATURE RANGES

AC: -40°F to 125°F (-40°C to 52°C) DC: -40°F to 104°F (-40°C to 40°C) Refer to Engineering Section of Cat. 33C for details.



# PILOT OPERATED **HIGH PRESSURE SOLENOID VALVES**

Stainless Steel Bodies • 1/2" to 3/4" NPT

SPECI	FICATIO	IS																																																	
			Operating Pressure Differential (psi)		Max. Fluid		Stainless Steel Body		Watt Rating/ Class of Coil																																										
Pipe	Orifice	Cv Flow		Max. AC	Max. DC	Temp. °F AC DC		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Temp. °F		Catalogue	Constr.	Insu	ation
Size (ins.)	Size (ins.)	Factor	Min.	Air-Inert Gas	Air-Inert Gas			Number	Ref. No.	AC	DC																																								
NORMALLY	CLOSED (Close	ed when de-e	nergized	1)																																															
1/2	3/8	3.2	25	1500	500	200	150	8223G10	4	17.1/F	22.6/F																																								
3/4	3/4	7.8	25	750	450	200	150	8223G12	5	17.1/F	22.6/F																																								

DIMENSIONS: inches (mm)										
Constr. Ref. No.		H	K	L	P	W				
4	ins.	4.34	2.15	2.50	3.13	1.95				
	mm	110	55	64	80	50				
5	ins.	5.03	2.53	3.53	3.50	3.50				
	mm	128	64	90	89	89				





# FEATURES

- Reliable, proven design with high flows.
- Small poppet valves for tight shutoff.
- Mountable in any position.
- Brass body construction for general atmospheres; Stainless Steel for corrosive atmospheres.



DIRECT ACTING





CE





#### **SOLENOID ENCLOSURES**

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

(To order, add prefix "EF" to catalogue number.) See Optional Features Section of Cat. 33C for other available options.

# NOMINAL AMBIENT TEMPERATURE RANGES

AC: -40°F to 125°F (-40°C to 52°C) DC: -40°F to 104°F (-40°C to 40°C) Refer to Engineering Section of Cat. 33C for details.

# CONSTRUCTION

	Valve Parts in Contact with Fluids						
Body	Brass 303/304/316 Stainless Steel						
Seals and Discs	Buna	Buna "N" or Cast Urethane					
Core Tube	3(	305 Stainless Steel					
Core and Plugnut	43	OF Stainless Steel					
Springs	3(	)2 Stainless Steel					
Shading Coil	Copper	Silver					
Stem	Nylon (Normally Open)						

GENERAL SERVICE SOLENOID VALVES

Brass or Stainless Steel Bodies • 1/8" to 3/8" NPT

Note: All 1/8" NPT Normally Open valves contain Acetal.

All 1/4" NPT Normally Open valves contain Nylon.

# **ELECTRICAL**

Standard Coil and Class of Insulation	Watt Rating and Power Consumption									
	DC		AC							
	Watts	Watts	VA Holding	VA Inrush						
F	10.6	6.1	16	30						
F	11.6	10.1	25	50						
F	22.6	17.1	40	70						

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages available when required.

# **APPROVALS**

CSA certified. UL listed. Normally Closed Valves FM approved. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 



Brass or Stainless Steel Bodies  $\bullet$  1/8" to 3/8" NPT

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JELI	FIGAII	JNO	Operating Differen	g Pressure tial (nsi)	Ma	id.	Rrace	Rody	Stainless S	teel Rody	Watt R	ating/
Pipe	Orifice	Cv Flow	Max. AC	Max. DC	Tem	p. °F	Catalogue	Constr.	Cataloaue	Constr.	Insul	ation <sup>2</sup>
Size (ins.)	Size (ins.)	Factor	Air-Inert Gas	Air-Inert Gas	AC	DC	Number	Ref. No.	Number	Ref. No. <sup>3</sup>	AC	DC
NORMALLY CLOSED (Closed when de-energized), Buna "N" Disc												
1/8	3/64	.06	750	650	180	120	8262G1	1	8262G12	1	6.1/F	10.6/F
1/8	3/32	.20	275	150	180	120	8262G14	1	8262G15	1	6.1/F	10.6/F
1/8	1/8	.34	155	80	180	120	8262G2	1	8262G6	1	6.1/F	10.6/F
1/4	3/64	.06	750	500	180	120	8262G19	16	8262G80	11	6.1/F	10.6/F
1/4	3/64	.06	1500	475	140	140	8262G200	17	-	-	10.1/F	11.6/F
1/4	3/64	.06	2200	-	140	140	-	-	8262G214	12	10.1/F	-
1/4	3/32	.17	360	150	180	120	8262G20	16	8262G86	11	6.1/F	10.6/F
1/4	1/8	.35	140	65	180	120	8262G22	16	8262G7	11	6.1/F	10.6/F
1/4	1/8	.35	300	75	180	150	8262G232	17	-	-	10.1/F	11.6/F
1/4	5/32	.50	180	40	180	150	8262G2O2	4	8262G220	12	10.1/F	11.6/F
1/4	7/32	.72	90	25	180	150	8262G208	4	8262G226	12	10.1/F	11.6/F
1/4	7/32	.85	40	17	180	120	8262G13	2	8262G36	11	6.1/F	10.6/F
1/4	9/32	.88	60	18	180	150	8262G210	4	-	-	10.1/F	11.6/F
1/4	9/32	.88	90	25	180	150	8262G212	6	8262G230	13	17.1/F	22.6/F
1/4	9/32	.96	27	15	180	120	8262G90	2	8262G38	11	6.1/F	10.6/F
3/8	1/8	.35	160	65	180	120	8263G2	3	8263G330	3	6.1/F	10.6/F
3/8	5/32	.52	100	35	180	150	8263G200	5	8263G331	5	10.1/F	11.6/F
3/8	7/32	.72	100	25	180	150	8263G206	5	8263G332	5	17.1/F	11.6/F
3/8	9/32	.85	100	-	180	-	8263G210	7	8263G333	7	17.1/F	-
NORMALLY	′ OPEN (Ope	n when de-e	energized), Bu	na "N" Disc (e	xcept v	where n	oted)					
1/8	1/16	.09	500	400	180	120	8262G91	8	8262G92	8	6.1/F	10.6/F
1/8	3/32	.15	275	190	180	120	8262G93	8	8262G94	8	6.1/F	10.6/F
1/8	1/8	.21	125	80	180	120	8262G31	8	8262G35	8	6.1/F	10.6/F
1/4	3/64	.06	750	500	140	140	8262G260	9	8262G130	14	10.1/F	11.6/F
1/4	3/32	.17	300	200	140	140	8262G261 <sup>(1</sup>	9	8262G134 <sup>1</sup>	14	10.1/F	11.6/F
1/4	1/8	.35	130	80	180	150	8262G262 <sup>(1</sup>	9	$8262G138^{ extsf{1}}$	14	10.1/F	11.6/F
1/4	5/32	.49	85	45	180	150	8262G263	4	8262G142	14	10.1/F	11.6/F
1/4	7/32	.83	45	25	180	150	8262G264	4	8262G148	14	10.1/F	11.6/F
1/4	9/32	.96	30	15	180	150	8262G265	4	8262G152	14	10.1/F	11.6/F

#### **NOTES:**

① Cast urethane disc supplied as standard.

O On 50 hertz service, the rating for the 6.1/F solenoid is 8.1 watts.

③ See Cat. 33C for dimensions.



Brass or Stainless Steel Bodies • 1/8" to 1/2" NPT

# FEATURES

- Designed for high flow and high pressure service.
- Direct acting, requires no minimum operating pressure.
- Metal seating materials to handle aggressive fluids.
- Ideal for power plants and similar applications.



# CONSTRUCTION

	Valve Parts in Contact with Fluids							
Body	Brass	304 Stainless Steel						
Disc	303 Stain	303 Stainless Steel						
Seats	Phosphor Bronze 303 Stainless Ste							
Core Tube	305 Stainless Steel							
Core and Plugnut	430F Stair	nless Steel						
Springs	302 Stainless Stee	el, 17-7PH or Iconel						
Shading Coil	hading Coil Copper							
Gaskets	Buna "N"	Teflon						

# ELECTRICAL

Standard Coil and Class of Insulation	Watt Rating and Power Consumption								
		AC							
	DC Watts	Watts	VA Holding	VA Inrush					
F	-	20.1	43	240					
H	36.2	28	60	330					

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering.

**Note:** 125 and 250 volts DC are battery voltages applied in power plants. Special AC and DC constructions are available to pilot power plant control valves. Consult your local ASCO sales office for details.

# **APPROVALS**

CSA certified. Meets applicable CE directives. Refer to Engineering Section of Cat. 33C for details.

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# SOLENOID ENCLOSURES

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X; Red-Hat - Type 1.

Red-Hat II Valves are identified by the change letter "G" in their catalogue numbers. (eg. 8300<u>6</u>55)

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, Groups A, B, C, and 9, Groups E & F; Red-Hat - Explosionproof and Watertight, Types 3, 4, 4X, 7, and 9. See footnote on next page. (To order, add prefix "EF" to catalogue number.) See Optional Features Section of Cat. 33C for other available options.

# NOMINAL AMBIENT TEMPERATURE RANGES

Class F Coils AC: -40°F to 125°F (-40°C to 52°C) Class H Coils AC: -40°F to 140°F (-40°C to 59°C) Class H Coils DC: -40°F to 77°F (-40°C to 25°C) (104°F/40°C occasionally) Refer to Engineering Section of Cat. 33C for details.



Brass or Stainless Steel Bodies • 1/8" to 1/2" NPT

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<u> 2LEP</u>	IFIGAL	INU2	1											]	
			Operating	g Pressur	e Differer	ntial (psi)	Мо	IX.	Brass B	ody	Stainless St	eel Body	Watt F	Watt Rating/	
Pipe	Orifice	Cv		Air-In	ert Gas		_ Flu	id	<sup>(1)</sup> Add Suffix	"F" for NC,	"G" for NO, "U	″ for Univ.	Class	of Coil	
Size	Size	Flow	Max	. AC	Max.	DC	Temp.	.°F	Catalogue	Constr.	Catalogue	Constr.	Insu	ation	
(ins.)	(ins.)	Factor	NC/NU	Univ.	NC/NU	Univ.	AC	DC	Number	Ket. No.	Number	Ket. No.	AC	DC	
METAL SE/	ATS AND D	ISCS													
1/8	1/8	.13	-		250	125	-	180	8300D55	1	•	-	-	36.2/H	
1/8	1/8	.13	550	300	-	-	200	-	8300G55	1	-	-	20.1/F	-	
1/8	3/16	.35	-	-	125	60	-	180	8300D3	1	-	-	-	36.2/H	
1/8	3/16	.35	250	150	-	-	200	-	8300G3	1	-	-	20.1/F	-	
1/4	3/16	.35	-	-	125	60	-	180	8300D58	1	-	-	-	36.2/H	
1/4	3/16	.35	250	150	-	-	200	-	8300G58	1	-	-	20.1/F	-	
1/4	1/4	.45	-	-	75	35	-	180	8300A81	1	-	-	-	36.2/H	
1/4	1/4	.45	190	90	-	-	200	-	8300G81	1	-	-	20.1/F	-	
1/4	1/4	.45	250	120	-	-	200	-	8300D61 <sup>2</sup>	1	-	-	28/H	-	
3/8	1/4	.45	-		50	25	-	180	-	-	8300B410	2	-	36.2/H	
3/8	1/4	.45	150	75	-	-	200	-	-	-	8300G410	2	20.1/F	-	
3/8	1/4	.45	-		75	35	-	180	8300A82	1	-	-	-	36.2/H	
3/8	1/4	.45	190	90	-	-	200	-	8300G82	1	-	-	20.1/F	-	
3/8	1/4	.45	250	120	-	-	200	-	8300D9 <sup>②</sup>	1	-	-	28/H	-	
3/8	1/4	.45	175	85	-	-	200	-	-	-	8300B411 <sup>2</sup>	2	28/H	-	
3/8	5/16	.75	-		40	20	-	180	8300D64	2	8300B412	2	-	36.2/H	
3/8	5/16	.75	120	60	-	-	200	-	8300G64	2	8300G412	2	20.1/F	-	
3/8	3/8	1.00	-		30	15	-	180	8300D72	2	8300B413	2	-	36.2/H	
3/8	3/8	1.00	75	35	-	-	200	-	8300G72	2	8300G413	2	20.1/F	-	
1/2	5/16	.75	-	-	40	20	-	180	8300D68	2	8300B403	3	-	36.2/H	
1/2	5/16	.75	120	60	-	-	200	-	8300G68	2	8300G403	3	20.1/F	-	
1/2	3/8	1.00	-		30	15	-	180	8300D76	2	8300B404	3	-	36.2/H	
1/2	3/8	1.00	75	35	-	-	200	-	8300G76	2	8300G404	3	20.1/F	-	

#### **NOTES:**

① NC = Normally Closed: Exhaust pressure when de-energized. NO = Normally Open: Applies pressure when de-energized. Univ. = Universal: Pressure at any port. (2) "EF" Prefix variations are suitable for enclosures Types 3, 4, 7 (C&D), and 9 (E) only and have a temperature range code T3A. Refer to Engineering Section of Cat. 33C for details. ③ See Cat. 33C for dimensions.



Brass or Stainless Steel Bodies • 1/8" and 1/4" NPT

# **3/2 SERIES 8314**

# **FEATURES**

- No minimum operating pressure required.
- The original 3 way valve design.
- High-speed general service.
- Simplest valve for basic 3 way piloting operation, only a spring and two moving parts.
- Moderate flow pilots, smaller control valves and actuators.
- Can also be used for low-volume fluid diversion.



# CONSTRUCTION

	Valve Parts in Contact with Fluids							
Body	Brass	303 Stainless Steel						
Seals and Disc	Buna "N	Buna "N", Nylon						
Core Tube	305 Stainless Steel							
Core and Plugnut	430F Stai	nless Steel						
Core Springs	302 Stainless Stee	el and 17-7PH Stainless Steel						
Shading Coil	Copper	Silver						
Core Guide	Acetal (All AC valves and 1/8"	Acetal (All AC valves and 1/8" orifice Normally Open DC valves)						

# ELECTRICAL

Standard Coil and Class of Insulation	Watt Rating and Power Consumption								
	DC	AC							
	Watts	Watts	VA Holding	VA Inrush					
F	11.6	10.1	25	50					

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

# **APPROVALS**

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 



# SOLENOID ENCLOSURES

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalogue number.) See Optional Features Section of Cat. 33C for other available options.

#### NOMINAL AMBIENT TEMPERATURE RANGES

**AC:** -40°F to 125°F (-40°C to 52°C) **DC:** -40°F to 104°F (-40°C to 40°C) *Refer to Engineering Section of Cat. 33C for details.* 



Brass or Stainless Steel Bodies • 1/8" and 1/4" NPT

**SPECIFICATIONS** 

JEL		<u> </u>											
			Operating Differen	g Pressure tial (psi)	Max. Fluid		Brass Body		Stainless S	teel Body	Watt Rating/ Class of Coil		
Pipe	Orifice	Cv Flow	Max. AC	Max. DC	Tem	p. °F	Catalogue Constr.		Cataloaue Constr.		Insulation		
Size (ins.)	Size (ins.)	Factor	Air-Inert Gas	Air-Inert Gas	AC	DC	Number	Ref. No.	Number	Ref. No.	AC	DC	
UNIVERSAL OPERATION (Pressure at any port)													
1/8	3/64	.04	160	70	200	104	8314G41	1	-	-	10.1/F	11.6/F	
1/4	3/64	.04	160	70	200	104	8314G6	2	-	-	10.1/F	11.6/F	
1/4	3/32	.15	80	35	200	104	8314G7	2	8314G120	4	10.1/F	11.6/F	
1/4	1/8	.25	45	20	200	104	8314G8	2	-	-	10.1/F	11.6/F	
NORMALLY	NORMALLY CLOSED (Closed when de-energized)												
1/8	3/64	.04	230	120	200	104	8314G31	1	-	-	10.1/F	11.6/F	
1/4	3/64	.04	230	120	200	104	8314G34	2	-	-	10.1/F	11.6/F	
1/4	3/32	.15	150	60	200	104	8314G35	2	8314G121	4	10.1/F	11.6/F	
1/4	1/8	.25	75	30	200	104	8314G36	2	-	-	10.1/F	11.6/F	
NORMALLY	CLOSED (C	osed when c	le-energized) ·	- Exhausts to	Atmosp	ohere							
1/4	3/64	.04	230	120	200	104	8314G22	3	-	-	10.1/F	11.6/F	
1/4	3/32	.15	150	60	200	104	8314G23	3	-	-	10.1/F	11.6/F	
NORMALLY	OPEN (Ope	n when de-e	energized)										
1/8	3/64	.04	300	200	200	104	8314G49	1	-	-	10.1/F	11.6/F	
1/4	3/32	.15	175	70	200	104	8314G53	2	8314G122	4	10.1/F	11.6/F	
1/4	1/8	.25	90	40	200	104	8314G54	2	-	-	10.1/F	11.6/F	

## **NOTES:**

See Cat. 33C for dimensions.



**3/2 SERIES 8314** 



# Air Piloted • Spring Return • Shutdown System ZERO MINIMUM SOLENOID VALVES

Brass or Stainless Steel Bodies • Air and Inert Gas • 1/4" to 1/2" NPT

# **FEATURES**

- Brass body construction for general atmospheres; Stainless Steel for corrosive atmospheres.
- Can be internally piloted, or externally piloted to convert valve to zero minimum operation by flipping a gasket.
- When externally piloted, loss of electrical power or auxiliary air exhausts air from the actuator and shifts process valve to its original position.
- When internally piloted, loss of electric power returns the valve to its original position.



# SOLENOID ENCLOSURES

#### BRASS BODY VALVES: Red-Hat II

STANDARD: Watertight, Types 1, 2, 3, 3S, 4, and 4X. OPTIONAL: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (Add prefix "EF" to catalogue number.)

STAINLESS STEEL VALVES: Red-Hat II

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

See Optional Features Section of Cat. 33C for other available options.

# NOMINAL AMBIENT TEMPERATURE RANGES

## STANDARD CONSTRUCTION:

**AC:** -40°F to 125°F (-40°C to 52°C) **DC:** -40°F to 104°F (-40°C to 40°C)

Zero minimum 8316 valves with the standard elastomer low temperature buna diaphragm will operate down to -40 degrees F and zero main line pressure when **externally** piloted at a minimum pressure of 15 psi. The valve will operate down to -40 degrees F when **internally** piloted at a minimum main line pressure of 40 psi.



# CONSTRUCTION

	Valve Parts in Contact with Fluids							
Body	Brass	316 Stainless Steel						
End Plate	304 Stainless Steel 316 Stainless Steel							
Seals and Discs	Buna "N"							
Core Tube	305 Stair	nless Steel						
Core Guide	Acetal							
Shading Coil	Copper	Silver						

# ELECTRICAL

Standard Coil and Class of Insulation	Watt Rating and Power Consumption								
		AC							
	DC Watts	Watts	VA Holding	VA Inrush					
F	11.6	10.1	25	50					

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts, AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

## INSTALLATION

All valves may be mounted in any position. 316 Stainless Steel mounting brackets available from ASCO. Add suffix "MB".

# **APPROVALS**

Brass General Purpose – UL approved and CSA certified. Meets applicable CE directives. Brass & Stainless Steel Explosionproof – UL approved and CSA certified solenoid. Meets CE directives.



Air Piloted • Spring Return • Shutdown System

# ZERO MINIMUM SOLENOID VALVES

Brass or Stainless Steel Bodies  $\bullet$  Air and Inert Gas  $\bullet$  1/4" to 1/2" NPT

SPE	HECH	ATON	5											
Pipe Size	Orifice Size	Cv Flow Factor	М:-	Max. Air Press. (psi)		Catalogue Number		Catalogue Number		Constr.	Ma Flui Temp	x. d ). °F	Watt R Class o Insulo	ating/ of Coil ation
(INS.)	(Ins.)	Factor	Min.	AC	DC	Brass	Stainless Steel	Ket. No.	AC	DC	AC	DC		
NORMAI	LY CLOSE	D (Closed	l when de	-energize	d)									
1/4	5/16	1.5	1	150	120	8316G1	EVX8316G81MF/15444	1	180	120	10.1/F	11.6/F		
3/8	5/16	1.8	1	150	120	8316G2	EVX8316G82MF/15444	1	180	120	10.1/F	11.6/F		
3/8	5/8	4	1	150	120	8316G3	-	3	180	120	10.1/F	11.6/F		
1/2	5/8	4	1	150	120	8316G4	EVX8316G84MF/15444	3	180	120	10.1/F	11.6/F		

## **NOTES:**

① Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph below for pilot line pressure vs. mainline pressure. Minimum 40 psi operating pressure differential when selection gasket is in the internal position for ambient temperatures below 32°F. IMPORTANT: Internal mode Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area and unrestricted. ASCO flow controls and similar components must be installed in the cylinder lines only.

## **DIMENSIONS: INCHES (MM)**

asbo

(36) 2.72 (69)



NPT 3 PLACES

4.04 (103

EXTERNAL PILOTING MODE FLOW DIAGRAMS





# PILOT OPERATED QUICK EXHAUST SOLENOID VALVES

Brass or Stainless Steel Bodies • 1/4" NPT

# FEATURES

- Designed for quick venting to 0 psi through the exhaust orifice.
- Resilient seated poppets for tight shutoff.
- Air is exhausted to quickly shift control valves.
- Multi-industry applications.
- Mountable in any position.



# CONSTRUCTION

	Valve Parts in Contact with Fluids						
Body	Brass	304 Stainless Steel					
Seals and Disc	Buna "N" (Nylon upper disc)						
Diaphragm	Neoprene						
Core Tube	305 Stainless Steel						
Core and Plugnut	430F Stainl	ess Steel					
Core Springs	302 and 17-7 PH Stainless Steel						
Shading Coil	Copper	Silver					

# ELECTRICAL

Sundard Cail	Watt Rating and Power Consumption								
and Class of	AC								
Insulation	Watts	VA Holding	VA Inrush						
F	10.1	25	50						

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). Must be specified when ordering. Other voltages are available when required.

# **APPROVALS**

CSA certified solenoid. UL listed General Purpose Valves. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 

# **3/2 SERIES 8317**

# SOLENOID ENCLOSURES

#### STANDARD:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

# NOMINAL AMBIENT TEMPERATURE RANGES

**AC:** -40°F to 125°F (-40°C to 52°C) **DC:** -40°F to 104°F (-40°C to 40°C)

Refer to Engineering Section of Cat. 33C for details.

# **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.



# PILOT OPERATED **QUICK EXHAUST SOLENOID VALVES**

Brass or Stainless Steel Bodies • 1/4" NPT

SPE	<u>eific</u>	ATION	S		1			1		1		
Pine	Orifice Size		C Flo	Cv Flow		Operating Pressure Differential (psi)		Brass Boo	łv	Stainless S Body	teel	Watt Rating/ Class of Coil
Size	(in	s.)	Fac	tor		Air-Inert	ionip. i	Catalogue	Constr.	Catalogue	Constr.	Insulation
(ins.)	Press.	Exh.	Press.	Exh.	Min.	Gas	AC	Number	Ref. No.	Number	Ref. No.	AC
NORMA	LLY CLOSE	D (Closed	d when de	-energizo	ed)	1			1		1	
1/4	3/32	1/4	.20	.73	5	150	180	EFX8317G35MF/18830	2	EFX8317G36MF/18830	5	10.1/F
NORMA	NORMALLY OPEN (Open when de-energized)											
1/4	3/32	1/4	.15	.73	5	160	180	EFX8317G53MF/18830	2	-	-	10.1/F

# **DIMENSIONS:** inches (mm)





Brass or Stainless Steel Bodies • 1/8" to 1/4" NPT

# **FEATURES**

- All NPT connections are in the valve body to allow in-line piping.
- No Minimum Operating Pressure Differential required.
- Sturdy design for long years of reliable service.
- Broadest range of applications.
- Mountable in any position.



# CONSTRUCTION

	Valve Parts in Contact with Fluids					
Body	Brass 303 Stainless Steel					
Seals and Discs	Buna "N"					
Core Tube	305 Stainless Steel					
Core and Plugnut	430F Stainless Steel					
Core Springs	302 S	tainless Steel				
Shading Coil	Copper	Silver				
Disc Holder	Acetal					
Core Guide	Acetal (10.1 and 17.1 Watt only)					

# ELECTRICAL

Standard Coil and Class of	Watt Rating and Power Consumption						
	DC	AC					
Insulation	Watts	Watts	VA Holding	VA Inrush			
F	11.6	10.1	25	50			
F	22.6	17.1	40	70			

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

## **APPROVALS**

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 

SOLENOID ENCLOSURES

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

8320 1/4" NPT

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

(To order, add prefix "EF" to the catalogue number.) See Optional Features Section of Cat. 33C for other available options.

#### NOMINAL AMBIENT TEMPERATURE RANGES

**AC:** -40°F to 125°F (-40°C to 52°C)

**DC:** -40°F to 104°F (-40°C to 40°C) Refer to Engineering Section of Cat. 33C for details.



Brass or Stainless Steel Bodies • 1/8" to 1/4" NPT

**SPECIFICATIONS** 

		DNO	Operating Differen	g Pressure tial (psi)	Max. Brass Body S Fluid		Stainless S	teel Body	Watt Ra Class of	ıting/ f Coil		
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Max. AC Air-Inert Gas	Max. DC Air-Inert Gas	Tem AC	p. °F DC	Catalogue Number	Constr. Ref. No.	Catalogue Number	Constr. Ref. No.	Insul AC	ation DC
UNIVERSA	L OPERATION	I (Pressure o	at any port)									
1/8	1/16	.09	175	125	180	120	8320G212	1	8320G221	1	17.1/F	22.6/F
1/8	3/32	.12	100	60	180	120	8320G213	1	8320G222	1	17.1/F	11.6/F
1/8	1/8	.21	50	25	180	120	8320G214	1	8320G223	1	17.1/F	11.6/F
1/4	1/16	.09	125	75	200	150	8320G172	4	-	-	10.1/F	11.6/F
1/4	1/16	.09	175	125	200	150	-	-	8320G230	5	17.1/F	22.6/F
1/4	3/32	.12	100	60	200	150	8320G174	4	8320G200	5	17.1/F	11.6/F
1/4	1/8	.25	50	25	200	150	8320G176	4	8320G201	5	17.1/F	11.6/F
1/4	11/64	.35	20	12	200	150	8320G178	4	-		10.1/F	11.6/F
NORMALLY	' CLOSED (Cl	osed when a	le-energized)									
1/8	1/16	.09	210	160	180	120	8320G215	1	8320G224	1	17.1/F	11.6/F
1/8	3/32	.12	150	115	180	120	8320G216	1	8320G225	1	10.1/F	11.6/F
1/8	1/8	.21	85	60	180	120	8320G217	1	8320G226	1	10.1/F	11.6/F
1/4	1/16	.09	210	160	200	150	8320G182	4	8320G231	5	17.1/F	11.6/F
1/4	3/32	.12	150	115	200	150	8320G184	4	8320G202	5	10.1/F	11.6/F
1/4	1/8	.25	85	60	200	150	8320G186	4	8320G203	5	10.1/F	11.6/F
1/4	11/64	.35	45	25	200	150	8320G188	4	-	-	10.1/F	11.6/F
NORMALLY	′ OPEN (Ope	n when de-e	energized)									
1/8	1/16	.09	235	160	180	120	8320G218	1	8320G227	1	17.1/F	11.6/F
1/8	3/32	.12	150	100	180	120	8320G219	1	8320G228	1	10.1/F	11.6/F
1/8	1/8	.21	70	55	180	120	8320G220	1	8320G229	1	10.1/F	11.6/F
1/4	1/16	.09	250	160	200	150	8320G192	4	8320G232	5	17.1/F	11.6/F
1/4	3/32	.12	150	100	200	150	8320G194	4	8320G204	5	10.1/F	11.6/F
1/4	1/8	.25	70	55	200	150	8320G196	4	8320G205	5	10.1/F	11.6/F
1/4	11/64	.35	40	30	200	150	8320G198	4	-		10.1/F	11.6/F

#### **NOTES:**

① See Cat. 33C for dimensions.



# DIRECT ACTING DIRECT MOUNT PILOT VALVES Duran of Statistics Starl Badias of 1 (411 NDT)

Brass or Stainless Steel Bodies • 1/4" NPT

# **FEATURES**

- Mount directly to spring return actuators with NAMUR interface.
- Same poppet valve performance as in standard 8320 valves.
- Integral breather block prevents ingestion of contaminates or corrosives.
- Variety of flow and pressure ratings.
- Mountable in any position.

**SOLENOID ENCLOSURES** 

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

Red-Hat II - Explosionproof and Watertight, Types 3,

(To order, add prefix "EF" to catalogue number.) See Optional Features Section of Cat. 33C for other

STANDARD:

**OPTIONAL:** 

3S, 4, 4X, 6, 6P, 7 and 9.

NOMINAL AMBIENT TEMPERATURE RANGES

AC: -40°F to 125°F (-40°C to 52°C)

DC: -40°F to 104°F (-40°C to 40°C)

available options.



# CONSTRUCTION

	Valve Parts in Contact with Fluids					
Body	Brass	303 Stainless Steel				
Seals and Disc	Buna "N"					
Core Tube	305 Stainless Steel					
Core and Plugnut	430F Stain	less Steel				
Core Springs	302 Stain	ess Steel				
Shading Coil	Copper	Silver				
Disc Holder	Acetal					
Core Guide	Acetal (10.1 and 17.1 watts only)					

# ELECTRICAL

Standard Coil and Class of Insulation	Watt Rating and Power Consumption							
	DC	AC						
	Watts	Watts	VA Holding	VA Inrush				
F	10.6	6.1	16	30				
F	11.6	10.1	25	50				
F	22.6	17.1	40	70				

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Special Construction: Dual solenoid construction for redundant controls and dribble control available. *Consult* your local ASCO sales office for details.

# **APPROVALS**

UL component and CSA certified. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 



# **DIRECT ACTING DIRECT MOUNT PILOT VALVES**

Brass or Stainless Steel Bodies • 1/4" NPT

Pipe Size (ins.)	Orifice Size (ins.)	DNS Cv Flow Factor	Maximum Pressure Diffe Air-Ine Max. AC	Operating erential (psi) ert Gas Max. DC	Ma Flu Tem AC	ix. id p. °F DC	Brass Body Catalogue Number	Stainless Steel Body Catalogue Number	Constr. Ref. No.	Watt R Class o Insulo AC	ating/ of Coil ation DC
NORMALLY	CLOSED (C	osed when a	le-energized)								
1/4	1/16	.09	150	125	180	120	8320G701	8320G711	1	6.1/F	10.6/F
1/4	3/32	.12	100	100	180	120	8320G702	8320G712	1	6.1/F	10.6/F
1/4	1/16	.09	210	160	200	150	8320G703	8320G713	2	17.1/F	11.6/F
1/4	3/32	.12	150	150	200	150	8320G704	8320G714	2	10.1/F	22.6/F
1/4	1/8	.21	100		200	—	8320G705	8320G715	2	17.1/F	—

# **DIMENSIONS: INCHES (MM)**





# BALANCED POPPET TYPE HIGH FLOW DIRECT ACTING VALVES

Brass, Aluminum and 316 Stainless Steel Bodies • 1/4" NPT

# FEATURES

- Designed for high flow piloting with no minimum operating pressure required; e.g., power plants, refineries, chemical processing
- Balanced Poppet construction for high flow at minimum power levels.
- PTFE rider rings and graphite-filled seals reduce friction and eliminate sticking to provide exceptional service life.
- 316 Stainless Steel construction for highly corrosive atmospheres.
- Available with manual reset.
- NAMUR direct mount construction available - See specification chart.



## **SOLENOID ENCLOSURES**

#### STANDARD:

Red-Hat II - For Brass Valves: Standard Solenoid enclosure is Types 1, 2, 3, 3S, 4, and 4X. For 316 Stainless Steel valves: Standard Solenoid enclosure is Explosionproof and Watertight Types 3, 3S, 4, 4X, 6, and 6P.

#### **OPTIONAL:**

For Brass Valves: Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF".) See Optional Features Section of Cat. 33C for other available options.

# NOMINAL AMBIENT TEMPERATURE RANGES

AC and DC: -40°F to 131°F (-40°C to 55°C) Refer to Engineering Section of Cat. 33C for details.



# CONSTRUCTION

	Valve Parts in Contact with Fluids						
Body	Brass 316 Stainless Steel Aluminum						
Core Tube	305 Stainless Steel						
Stem and Insert	303 Stainless Steel						
Core and Plugnut	430F Stainless Steel						
O-ring Holder		430F Stainless Steel					
Springs	302 Stainless Steel						
Seals and Discs	VMQ (Silicone)						
Rider Ring	PTFE						

# ELECTRICAL

Standard Call	Watt Rating and Power Consumption						
and Class of	DC	AC					
Insulation	Watts	Watts	VA Holding	VA Inrush			
F	11.6	12	12	12			

Standard Voltages: 24/50-60, 120/50-60, 240/50-60, and 480/50-60, or 6, 12, 24, 120, and 240 DC.

# APPROVALS

CSA certified. UL listed General Purpose Valves. Meets applicable CE directives. *Refer to Engineering Section of Cat. 33C for details.* 



# BALANCED POPPET TYPE **HIGH FLOW DIRECT ACTING VALVES**

Brass, Aluminum and 316 Stainless Steel Bodies • 1/4" NPT

## 

SPEU	IFICALI	UNS		1					1	
Pipe	Orifice	CV Flow Ports	v Factor Ports	AC and DC Maximum Operating Pressure Differential (psi)	Max. Fluid	Brass Body Catalogue	316 Stainless Steel Body Catalogue	Constr.	Watt R Class c Insul	ating/ of Coil ation
Size (ins.)	Size (ins.)	1-2	2-3	Air-Inert Gas	Temp. °F	Number	Number	Ref. No.	AC	DC
UNIVERSA	JNIVERSAL LOW-TEMPERATURE OPERATION (Pressure at any port)									
1/4	1/4	.49	.56	150	104	8327651	-	1	12.0/F	11.6/F
1/4	1/4	.49	.56	150	104	•	EV8327G52	1	12.0/F	11.6/F

Pipe Sine (inc.)	Orifice	CV Flov Ports	/ Factor Ports	AC and DC Maximum Operating Pressure Differential (psi)	Max. Fluid	Aluminum Body Catalogue	316 Stainless Steel Body Catalogue	Constr.	Watt R Class c Insul	ating/ of Coil ation
Size (ins.)	Size (Ins.)	1-2	Z-3	Air-Inert Gas	iemp. <sup>-</sup> F	NUMber	NUMber	Ket. No.	AC	DC
NORMALL	NORMALLY CLOSED — Low-Temperature Operation — NAMUR Direct Mount									
1/4	1/4	.52	.53	150	104	8327G53	EV8327G55	2	12.0/F	11.6/F



IMPORTANT: Valves may be mounted in any position.



# PILOT OPERATED PISTON/POPPET SOLENOID VALVES

Brass Body  $\bullet$  1/4" to 1" NPT

# **FEATURES**

- Sturdy, solid construction.
- Piston-operated poppet design provides high flow.
- Wide range of sizes and flow rates.
- Single or dual solenoid construction.
- Dual solenoid can be shifted with a momentary signal and remain in position even if electrical power is lost.
- Mountable in any position.

SOLENOID ENCLOSURES

Red-Hat II - Explosionproof and Watertight, Types 3,

STANDARD:

3S, 4, 4X, 6, 6P, 7, and 9.

**NOMINAL AMBIENT TEMPERATURE RANGES AC:** -40°F to 125°F (-40°C to 52°C) **DC:** -40°F to 104°F (-40°C to 40°C) *Refer to Engineering Section of Cat. 33C for details.* 



# CONSTRUCTION

	Valve Parts in Contact with Fluids
Body	Brass
Seals and Disc	Buna "N"
Core Tube	305 Stainless Steel
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel and 17-7PH Stainless Steel
Shading Coil	Copper
Pilot Seat Cartridge and Disc Holder	Acetal
Shaft Gasket	Lead/Copper

# **ELECTRICAL**

Standard Coil and Class of Insulation	Watt Rating and Power Consumption						
	DC	AC					
	Watts	Watts	VA Holding	VA Inrush			
F	10.6	6.1	16	30			
F	11.6	10.1	25	50			
F	22.6	17.1	40	70			

Dual Solenoid Operation: Minimum coil on-time for dual solenoid valves is 0.3 seconds on air service.
 Caution: Do not energize both solenoids simultaneously. *Refer to Engineering Section of Cat. 33C for details.* Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz (or 110, 220 volts AC, 50 Hz). 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

# **APPROVALS**

CSA certified solenoid. UL listed General Purpose Valves. Meets applicable CE directives.

#### 22

# **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.



# PILOT OPERATED **PISTON/POPPET SOLENOID VALVES**

Brass Body • 1/4" to 1" NPT

SPECI	HUAIIU	15											
		Cv F Fac	low tor		Operating Pro Differential	essure Max. (psi) Fluid		x. id	Brass Body	,	Watt Rating/ Class of Coil		
Pipe	Orifice				Max. AC	Max. DC	Temp	.°F	Catalogue	Constr.	Insu	lation	
Size (ins.)	Size (ins.)	Press.	Exh.	Min.	Air-Inert Gas	Air-Inert Gas	AC	DC	Number	Ref. No.	AC	DC	
SINGLE SOL	ENOID												
1/4	1/4	.80	1.0	30	150	125	180	150	EFX8344G70MF/18897	1	10.1/F	11.6/F	
3/8	3/8	1.4	2.2	20	150	125	180	150	EFX8344G72MF/18897	2	10.1/F	11.6/F	
1/2	3/8	1.4	2.2	20	150	125	180	150	EFX8344G74MF/18897	2	10.1/F	11.6/F	
3/4	3/4	5.2	5.6	20	150	125	180	150	EFX8344G76MF/18897	3	10.1/F	11.6/F	
1	3/4	5.2	5.6	20	150	125	180	150	EFX8344G78MF/18897	3	10.1/F	11.6/F	
DUAL SOLE	NOID ①												
1/4	1/4	.80	1.0	30	250	125	180	120	EFX8344G44MF/18897	4	6.1/F	10.6/F	
3/8	3/8	1.4	2.2	20	250	125	180	120	EFX8344G80MF/18897	6	6.1/F	10.6/F	
1/2	3/8	1.4	2.2	20	250	125	180	120	EFX8344G82MF/18897	6	6.1/F	10.6/F	

## **NOTES:**

1 On 50 hertz service, the watt rating for the 6.1/F solenoid is 8.1 watts.

DIMENSIONS: INCHES (MM)																
Const Ref. N	r. 0.	ØD	E	F	G	H	J	K	L	N	Р	W	Х	Y	Z	Exhaust Pipe Size
1	ins.	Ø.28	.56	2.41	1.88	4.08	1.03	2.15	3.13	.72	3.12	4.75	1.41	1.56	.81	3/8
	mm	Ø7.1	14	61	48	104	26	55	80	18	79	121	36	40	21	3/8
2	ins.	Ø.34	.75	3.12	2.63	4.06	1.50	1.97	3.18	.83	2.94	6.06	1.88	1.90	.84	1/2
	mm	Ø8.6	19	79	67	103	38	50	81	21	75	154	47	48	21	1/2
3	ins.	Ø.34	1.34	3.81	3.88	4.86	2.09	2.34	4.56	1.56	3.31	8.25	2.12	2.63	1.16	1
	mm	Ø8.6	34	97	99	123	53	59	116	39	84	210	54	67	30	1
4	ins.	Ø.28	.56	2.41	1.88	4.34	1.03	2.52	3.13	.72	3.38	4.81	1.41	1.56	.81	3/8
	mm	Ø7.1	14	61	48	110	26	64	80	18	86	122	36	40	21	3/8
6	ins.	Ø.34	.75	3.12	2.63	4.50	1.50	2.52	3.18	.83	3.38	6.06	1.88	1.90	.84	1/2
	mm	Ø8.6	19	79	67	114	38	64	81	21	86	154	47	48	21	1/2

Constr. Ref 1 - 3



Constr. Ref 1 - 6



Constr. Ref. 4 - 6





# DIRECT ACTING • PILOT OPERATED **CRYOGENIC AND LIQUID CO2 VALVES** Brass Body • 1/8" to 1 1/2" NPT

# FEATURES

- "LT" suffix valves are built to control cryogenic fluids, including liquid oxygen (-297°F/-181°C), liquid argon (-303°F/-184°C), and liquid nitrogen (-320°F/-194°C).
- All suffix "LT" valves are degreased, cleaned, tested free of moisture, and black light tested for hydrocarbons.
- Liquid CO<sub>2</sub> valves are suitable for remote mounting or for direct mounting to the refrigerated component by using four-hole bracket, provided.



## **SOLENOID ENCLOSURES**

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X. OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9.

(To order, add prefix "EF" to catalogue number.) See Optional Features Section of Cat. 33C for other available options.

#### NOMINAL FLUID TEMPERATURE RANGES

AC Cryogenic Valves: -320°F to 150°F (-196°C to 66°C) DC Cryogenic Valves: -320°F to 120°F (-196°C to 49°C) All Liquid CO2 Valves: -75°F to 120°F (-59°C to 49°C) Refer to Engineering Section of Cat. 33C for details.

# NOMINAL AMBIENT TEMPERATURE RANGES

AC Construction: -40°F to 125°F (-40°C to 52°C) DC Construction: -40°F to 104°F (-40°C to 40°C) Refer to Engineering Section of Cat. 33C for details.



# CONSTRUCTION

Valve Parts in Cont	act with Fluids
Body: Cryogenic Valves	Brass
Body: LCO2 Valves	Nickel-Plated Brass
Seals	Teflon and/or Lead-Free Copper/Urethane
Disc	Teflon/Urethane (8264 only)
Core and Plugnut	430F Stainless Steel or 49 FM Alloy
Core Spring	302 Stainless Steel
Shading Coil	Copper
Seats	Stainless Steel (8264 Series)

# ELECTRICAL

Standard Coil	Wat	t Rating and Power	Consumption								
and Class of	DC	AC									
Insulation	Watts	Watts	VA Holding	VA Inrush							
F	11.6	12.1	23	47							
F	18.6	13.8	27	43							
F	_	17.1	34	64							
Н	40.6	17.1	34	64							

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

# **APPROVALS**

CSA certified. Meets applicable CE directives. Refer to Engineering Section of Cat. 33C for details.



# DIRECT ACTING • PILOT OPERATED CRYOGENIC AND LIQUID CO2 VALVES

Brass Body • 1/8" to 1 1/2" NPT

**SPECIFICATIONS** 

<u>FIGALU</u>								
		0 <sub>1</sub>	perating Pressure Differential (psi)		2	Watt F	Rating/ of Coil	
Orifice	Cv Flow		Ma	IX.	Catalogue	Insulation		
Size (ins.)	Factor	Min.	AC	DC	Number	AC	DC	
SERVICE — N	ORMALLY CLO	SED (Closed when	ı de-energized)					
1/8	.35	0	130	75	8263G240LT	12.1/F	11.6/F	
1/8	.35	0	130	_	8262G22LT	12.1/F	_	
7/32	.56	0	100	30	8263G205LT	17.1/F	11.6/F	
9/32	.70	0	40	18	8263G209LT	12.1/F	11.6/F	
1/8	.35	0	130	75	8263G232LT	17.1/F	11.6/F	
7/32	.56	0	100	30	8263G206LT	17.1/F	11.6/F	
9/32	.70	0	40	18	8263G210LT	12.1/F	11.6/F	
5/8	3.8	0	90	50	8222G2LT	17.1/H	40.6/H	
3/4	5.8	0	90	50	8222G3LT	17.1/H	40.6/H	
1	13.5	5	200	100	8210G78LT	17.1/F	40.6/H	
1 1/8	15	5	200	100	8210G80LT	17.1/F	40.6/H	
1 1/4	22.5	5	200	100	8210G82LT	17.1/F	40.6/H	
SERVICE — N	ORMALLY CLO	SED (Closed when	n de-energized)					
3/64	.06	0	1000	1000	8264G9 ①	13.8/F	18.6/F	
3/32	.20	0	300	300	8264G10 ①	13.8/F	18.6/F	
	Orifice Size (ins.) SERVICE — N 1/8 1/8 7/32 9/32 1/8 7/32 9/32 5/8 3/4 1 1 1/8 1 1/4 SERVICE — N 3/64 3/32	Orifice Size (ins.)         Cv Flow Factor           SERVICE – NORMALLY CLO           1/8         .35           1/8         .35           1/8         .35           1/8         .35           7/32         .56           9/32         .70           1/8         .35           7/32         .56           9/32         .70           1/8         .35           7/32         .56           9/32         .70           5/8         3.8           3/4         5.8           1         13.5           1 1/8         15           1 1/4         22.5           SERVICE – NORMALLY CLO         3/64           3/32         .20	Cv Flow         Min.           Size (ins.)         Factor         Min.           1/8         .35         0           1/8         .35         0           1/8         .35         0           1/8         .35         0           7/32         .56         0           9/32         .70         0           1/8         .35         0           9/32         .70         0           1/8         .35         0           9/32         .70         0           7/32         .56         0           9/32         .70         0           3/4         .35         0           3/4         5.8         0           1         13.5         5           1 1/8         15         5           1 1/4         22.5         5           SERVICE - NORMALLY CLOSED (Closed where         3/64           .06         0         3/32	Cv Flow         Cv Flow         Operating Pressure Differential (psi)           Orifice Size (ins.)         Cv Flow         Min.         AC           SERVICE – NORMALLY CLOSED (Closed when de-energized)         1/8         .35         0         130           1/8         .35         0         130         1           1/8         .35         0         130           1/8         .35         0         130           1/8         .35         0         130           1/8         .35         0         130           1/8         .35         0         100           9/32         .70         0         40           1/8         .35         0         130           7/32         .56         0         100           9/32         .70         0         40           1/8         .35         0         100           9/32         .70         0         40           1/8         .35         .00         90           3/4         5.8         0         90           11/8         15         5         200           11/4         .22.5         5         200 <td>Orifice Size (ins.)         Cv Flow Factor         Operating Pressure Differential (psi)           Min.         AC         DC           SERVICE - NUMALLY CLOSED (Closed when de-energized)         DC           1/8         .35         0         130         75           1/8         .35         0         130         -           7/32         .56         0         100         30           9/32         .70         0         40         18           1/8         .35         0         130         -           7/32         .56         0         100         30           9/32         .70         0         40         18           1/8         .35         0         130         75           7/32         .56         0         100         30           9/32         .70         0         40         18           1/8         .35         0         90         50           3/4         5.8         0         90         50           3/4         5.5         200         100         10           11/8         15         5         200         100</td> <td>Cv Flow Size (ins.)         Cv Flow Factor         Coperating Pressure Min.         Max.         Catalogue Catalogue Number           SERVICE – NEWALLY CLOSED (Closed when de-energized)         Number         Number           1/8         .35         0         130         75         82636240LI           1/8         .35         0         130         -         82636240LI           1/8         .35         0         130         -         82636240LI           1/8         .35         0         130         -         82636220LI           7/32         .56         0         100         30         82636205LI           9/32         .70         0         40         18         82636209LI           1/8         .35         0         130         75         82636232LI           1/8         .35         0         100         30         82636210LI           1/8         .35         0         100         82063021LI           9/32         .70         0         40         18         82636210LI           1/8         .35         0         90         50         822262LI           3/4         5.8         0         90</td> <td>Orifice Size (ins.)         Cv Flow Factor         Operating Pressure Differential (psi)         @ Catalogue Number         Wath F Class Catalogue Number           1/8          AC         DC         Number         AC           1/8           82636240LT         12.1/F           1/8           82636240LT         12.1/F           1/8            82636240LT         12.1/F           1/8                1/8                1/8                 1/8                  1/8                   1/8                  1/8               </td>	Orifice Size (ins.)         Cv Flow Factor         Operating Pressure Differential (psi)           Min.         AC         DC           SERVICE - NUMALLY CLOSED (Closed when de-energized)         DC           1/8         .35         0         130         75           1/8         .35         0         130         -           7/32         .56         0         100         30           9/32         .70         0         40         18           1/8         .35         0         130         -           7/32         .56         0         100         30           9/32         .70         0         40         18           1/8         .35         0         130         75           7/32         .56         0         100         30           9/32         .70         0         40         18           1/8         .35         0         90         50           3/4         5.8         0         90         50           3/4         5.5         200         100         10           11/8         15         5         200         100	Cv Flow Size (ins.)         Cv Flow Factor         Coperating Pressure Min.         Max.         Catalogue Catalogue Number           SERVICE – NEWALLY CLOSED (Closed when de-energized)         Number         Number           1/8         .35         0         130         75         82636240LI           1/8         .35         0         130         -         82636240LI           1/8         .35         0         130         -         82636240LI           1/8         .35         0         130         -         82636220LI           7/32         .56         0         100         30         82636205LI           9/32         .70         0         40         18         82636209LI           1/8         .35         0         130         75         82636232LI           1/8         .35         0         100         30         82636210LI           1/8         .35         0         100         82063021LI           9/32         .70         0         40         18         82636210LI           1/8         .35         0         90         50         822262LI           3/4         5.8         0         90	Orifice Size (ins.)         Cv Flow Factor         Operating Pressure Differential (psi)         @ Catalogue Number         Wath F Class Catalogue Number           1/8          AC         DC         Number         AC           1/8           82636240LT         12.1/F           1/8           82636240LT         12.1/F           1/8            82636240LT         12.1/F           1/8                1/8                1/8                 1/8                  1/8                   1/8                  1/8	

# **NOTES:**

① Must use tubing with an I.D. no larger than the outlet port orifice to locate the refrigeration point downstream and to prevent freezing of the CO<sub>2</sub> inside the valve. ② For dimensions, consult factory.



# UNIVERSAL OPERATION MANUAL RESET SOLENOID VALVES

Brass or Stainless Steel Bodies • 1/4" to 1/2" NPT

# FEATURES

- High flow/high-pressure bodies with manual operators to prevent inadvertent valve start-up in their designed failure modes.
- Once tripped, can only be manually reset to automatic operation.
- Electrically Tripped (trips when energized), No Voltage Release (trips when de-energized), or Free Handle constructions.
- Available for Latched Open or Latched Closed operation.
- Ideal for controlling critical processes.



## **SOLENOID ENCLOSURES**

#### STANDARD:

Red-Hat I - Explosion proof and Watertight, Types 3, 7 (C and D), and 9.

# NOMINAL AMBIENT TEMPERATURE RANGES

AC: -40°F to 104°F (-40°C to 40°C)

DC: -40°F to 77°F (-40°C to 25°C)

Refer to Engineering Section of Cat. 33C for details.

#### **APPROVALS**

CSA certified solenoid. Some constructions meet shock and vibration ISA S71.03C2. *Refer to Engineering Section of Cat. 33C for details.* 



# CONSTRUCTION

	Valve Parts in Con	tact with Fluids						
Body	Brass Stainless Steel							
Stem	303 Stainle	ess Steel						
Springs	302 Stainle	ess Steel						
Pilot Seat Cartridge	Acetal (whe	n listed)						
Disc, Diaphragm, Seat	Buna "N", Nylon, Teflon or	Stainless Steel, as listed						

# **ELECTRICAL**

Standard Col	Watt Rating and Power Consumption										
and Class of	DC	AC									
Insulation	Watts	Watts	VA Holding	VA Inrush							
F	_	20	45	96							
Н	36.2	-	-	_							

Standard Voltages: 24, 120, 240, 480 volts AC, 60 Hz. 6, 12, 24, 120, 240 volts DC. Must be specified when ordering. Other voltages are available when required.

Note: 125 and 250 volts DC are battery voltages applied in power plants. Special valves are available to pilot control valves in power plants.

Consult your local ASCO sales office for a listing.

# **OPERATION ALTERNATIVES:**

**Electrically Tripped** – Valves move to latched position when the solenoid is de-energized, trips when they receive a continuous or momentary (at least 0.3 seconds) electrical signal. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been de-energized.

**No Voltage Release** — Valves move to latched position when the solenoid is energized, trips when de-energized. When tripped, they can be manually cycled open/closed, but must be reset when the solenoid has once again been energized.

**Free Handle** – Valves move to latched position when the solenoid is energized, trips when de-energized. They cannot be manually cycled open/closed when de-energized. They can be manually cycled open/closed or reset only when energized.



# UNIVERSAL OPERATION **MANUAL RESET SOLENOID VALVES**

Brass or Stainless Steel Bodies • 1/4" to 1/2" NPT

#### ODFOILIO ATIONO

<b>JLE</b>	JITU	: UI	Ь										
Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure v Differential or Min. Max. AC Max. DC		Max. Fluid Temp. °F AC DC		No Voltage Release Catalogue Number	Electrically Tripped Catalogue Number	3 Constr. Ref. No.	Flow Diagram	Watt Rating/ Class of Coil Insulation AC DC		
UNIVERS	SAL OPER	ATION (E	kcept as N	oted (1) Bras	s Body with Bu	una "N" I	Disc/Diap	ohragm (Acetal Pilot Cartridge) fo	or Air-Inert Gas. This group of va	lves meets sh	ock and vibra	tion ISA S7	71.03C2.
1/4	11/64	.38	0	125	125	180	180	EFX8308B40MF/17687	EFX8310B40MF/17687	1	В	20/F	36.2/H
1/2	5/8	4	04	150	150	180	180	EFX8308C42MF/17687 $\stackrel{(1)}{(2)}$	EFX8310C42MF/17687 $\stackrel{(1)}{_{(2)}}$	2	С	20/F	36.2/H
UNIVERS	SAL OPER	ATION Bro	ass Body v	with Stainless	Steel Seats an	d Discs	or Air-In	iert Gas.					
1/4	1/4	.45	0	125	125	200	200	EFX8308 44MF/17687	EFX8310 44MF/17687	4	A	20/F	36.2/H
UNIVERS	SAL OPER	ATION Sto	iinless Ste	el Body with I	Buna "N" Discs	for Air-	Inert Ga	S					
1/4	1/8	.21	0	125	125	180	180	EFX8308A11MF/17687	EFX8310 A11MF/17687	1	В	20/F	36.2/H
UNIVERS	SAL OPER	ATION Sto	iinless Ste	el Body with S	Stainless Steel	Seats a	nd Discs	for Corrosive Service					
1/2	5/16	.75	0	125	125	200	200	EFX8308 47MF/17687	EFX8310 47MF/17687	5	A	20/F	36.2/H
								Free Handle	e Construction				
UNIVERS	SAL OPER	ATION Bro	ass Body v	with Buna "N"	Discs for Air-I	nert Ga	;						
1/4	11/64	.38	0	125	125	180	180	EFX8037 14	MF/17687	6	D	20/F	36.2/H
UNIVERS	SAL OPER	ATION Sto	iinless Ste	el Body with I	Buna "N" Discs	for Air-	Inert Ga	S					
1/4	1/8	.21	0	125	125	180	180	EFX8037 12	MF/17687	6	D	20/F	36.2/H

#### **NOTES:**

① When ordering, specify suffix "F" for Normally Closed construction or Suffix "G" for Normally Open construction.

<sup>(2)</sup> Supplied with Acetal pilot cartridge.

3 Consult Factory for dimensions.

# **FLOW DIAGRAMS:**



#### **Electrically Tripped and No Voltage Release Constructions**





Latch



Position

④ 0-150 main line pressure. Valve is externally piloted and requires a minimum pilot/auxiliary pressure of 15-120 psi. See graph below for main line vs. pilot line pressure requirements.



Brass or Stainless Steel Bodies • 1/4" to 1" NPT

#### FEATURES

Molded one-piece solenoid with highly efficient solenoid cartridge and special low wattage coil.

Designed for use in automation of plant control systems to provide: PLC compatibility Reduced battery drain Reduced wiring cost Reduced heat rise.

- Wide selection includes 2/2 Normally Closed, 3/2 Normally Closed (including Quick Exhaust), 3/2 Universal, and 4/2 with single or dual solenoid.
- Air or inert gas only.
- Lower-cost alternative to intrinsically safe valves in critical applications not requiring a safety barrier.



## **SOLENOID ENCLOSURES**

#### STANDARD:

Red-Hat II - Watertight, Types 1, 2, 3, 3S, 4, and 4X.

#### OPTIONAL:

Red-Hat II - Explosionproof and Watertight, Types 3, 3S, 4, 4X, 6, 6P, 7, and 9. (To order, add prefix "EF" to catalogue number. For explosionproof with 316 Stainless Steel hub and trim, specify prefix "EV".) See Optional Features Section of Cat. 33C.

#### NOMINAL AMBIENT TEMPERATURE RANGES

8223, 8262, 8314, 8317 & 8344: -40°F to 140°F (-40°C to 60°C)

**8316**: -40°F to 140°F (-40°C to 60°C) **HV278477**: -59°F to 140°F (-50°C to 60°C)

Zero minimum 8316 valves with the standard elastomer low temperature buna diaphragm will operate down to -40 degrees F and zero main line pressure when **externally** piloted at a minimum pressure of 15 psi. The valve will operate down to -40 degrees F when **internal**ly piloted at a minimum main line pressure of 40 psi.



# CONSTRUCTION

	Valve Parts in Cont	tact with Fluids
Body	Brass	Stainless Steel
Seals and Discs	Buna "	N"
Sleeve	304L Stainle	ess Steel
Core and Plugnut	430F Stainle	ess Steel
Core Springs	302 Stainle	ss Steel
Pilot Seat Cartridge (Series 8316 & 8344 only)	Aceta	l
Rider Rings	Teflor	1
Spring Retainer	Aceta	l

# ELECTRICAL

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

	• •		
DC Watt Rating	Maximur	n Line Resistance vs. Le	ngth of Wire
and Power Consumption	Power Source	Max. Loop Resistance	Max. Wire Run 18
1.4 at 68°F (20°C)	Volts	Ohms	AWG 7x26 Stranded
Low Power Solenoid: Standard voltages 12 and 24 DC	21	16.5	1120
Nominal Operating Range +10%, -15% Must be specified when ordering	22	40.5	2750
Typical 24 Volts DC System: Min. pull-in: 0.042 amps Min. dropout: 0.007 amps	23	64.0	4350
Coil resistance: 410 ohms at $68^{\circ}F$ (20°C) ±10% Max. ambient temp: 140°F (60°C)	24	88	5980

# **APPROVALS**

EFX & EVX Prefix Valves — UL listed General Purpose valves (Hazardous Location Classified). CSA certified solenoid; nonincendive for Class I, Division 2 UL E25549. Meets applicable CE directives. All others — UL listed General Purpose valves (Hazardous Location Classified). CSA certified; nonincendive for Class I, Division 2 UL E25549. Meets applicable CE directives.



Brass or Stainless Steel Bodies • 1/4" to 1" NPT

<u>SPEUI</u>	HGAII	<b>NN2</b>								
				Operating Differen	g Pressure tial (psi)	Max. Fluid and	Brass Body		Stainless Steel B	ody
Pipe	Orifice	Cv F	low	Air-Ine	rt Gas	Ambient	Catalogue	Constr.	Catalogue	Constr.
Size (ins.)	Size (ins.)	Fac	tor	Min.	Max.	Temp. °F	Number	Ref. No.	Number	Ref. No.
2/2 VALVE	S, NORMALI	LY CLOSED, w	vith Buna "N'	′ Disc						
1/4	1/16	.0	8	0	150	140	8262G320	18	8262G386	18
1/2	3/8	3.	2	25	150	140	-	-	8223G310	20
		Cv F Fac	low tor	Operating Pressure Differential (psi)		Max. Fluid and	Brass Body		Stainless Steel B	ody
Pipe	Orifice	Pressure to	Cylinder to	Air-Ine	rt Gas	Ambient	Catalogue	Constr.	Catalogue	Constr.
Size (ins.)	Size (ins.)	Cylinder	Exhaust	Min.	Max.	Temp. °F	Number	Ref. No.	Number	Ref. No.
3/2 VALVE	S, UNIVERS	AL OPERATIO	N (Pressure o	at any port	) with Bun	a "N" Disc				
1/4	1/16	.08	.08	0	150	140	8314G300	1	8314G301	2
3/2 VALVE	S, NORMALI	LY CLOSED (C	losed when c	le-energize	ed) with Bu	na "N" Disc				
1/4	5/16	1.5	1.5	4	150	140	83166301 3	3	EVX8316G381MF/15444	3
1/4	5/16	1.5	1.5	15	110	140	HV278477-1 35	3	-	-
1/4	5/16	1.5	1.5	0	110	140	HV278477-3 35	3	-	-
3/8	5/16	1.8	1.8	4	150	140	83166302 3	3	EVX8316G382MF/15444	3
3/8	5/16	1.8	1.8	15	110	140	HV278477-2 35	3	-	-
3/8	5/16	1.8	1.8	0	110	140	HV278477-4 35	3	-	-
3/8	5/8	4	4	4	150	140	83166303 3	3A	-	-
1/2	5/8	4	4	4	150	140	8316G304 3	3A	EVX8316G384MF/15444	3A
3/2 VALVE	S, UNIVERSA	AL (Normally	Closed or No	ormally Op	en) "Quick	Exhaust" wit	h Buna "N" Diaphra	gm and B	Buna "N" Disc	
1/4	2	.08	.73	5	150	140	8317G307 ①	6	8317G308 ①	7
		Cv F Fac	low tor	Operating Different	Pressure ial (psi)	Max. Fluid and	Single Solend	bid	Dual Solenoid	
Pipe	Orifice	Pressure to	Cylinder to	Air-Ine	rt Gas	Ambient	Catalogue	Constr.	Catalogue	Constr.
Size (ins.)	Size (ins.)	Cylinder	Exhaust	Min.	Max.	Temp. °F	Number	Ref. No.	Number	Ref. No.
4/2 VALVE	S, Brass Boo	ly with Buna	"N" Disc							
1/4	1/4	.80	1	30	150	140	$\frac{1}{3} \text{EFX8344G370MF} / 18897 \overset{\text{(1)}}{3}$	9	$\mathrm{EFX8344G344MF}/\mathrm{18897}_{\textcircled{3}}$	12
3/8	3/8	1.4	2.2	20	150	140	$\frac{1}{3} \text{EFX8344G372MF} / 18897 \overset{\textcircled{1}}{3}$	11	$\mathrm{EFX8344G380MF}/\mathrm{18897}_{\textcircled{3}}$	10
1/2	3/8	1.4	2.2	20	150	140	$\overline{EFX8344G374MF/18897^{(1)}_{3}}$	11	${\rm EFX8344G382MF}/{\rm 18897}_{\textcircled{3}}$	10
3/4	3/4	5.2	5.6	20	150	140	$\overline{EFX8344G376MF/18897^{(1)}_{\mathfrak{A}}}$	13	-	-
1	3/4	5.2	5.6	20	150	140	$\frac{[\text{EFX8344G378MF}/18897\overset{(1)}{3}]}{3}$	13	-	-

## **NOTES:**

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.

<sup>(2)</sup> 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.

 Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. Minimum 40 psi Operating Pressure Differential when selection gasket is in the internal position for ambient temperature below 32°F.

```
⑤ Valves have nickel plated brass bodies.
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Brass or Stainless Steel Bodies • 1/4" to 1" NPT

# **DIMENSIONS** INCHES (MM)



2/2 • 3/2 • 4/2 SERIES Low Power



Brass or Stainless Steel Bodies • 1/4" to 1" NPT

# **DIMENSIONS** INCHES (MM)

#### Constr. Ref. 6. 7

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.45 [11]

3.61 [92]

3.12 [79]

> 1,70 [43]

> > 2

. 2.05 [52]

1.95 [50]

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2.00 [51]

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Constr. Ref. No.		Dia "D"	E	F	G	H	J	K	L	N	Р	W	X	Y	Z	Exhaust Pipe Size
9	ins.	Ø.28	.56	2.41	1.88	4.67	1.03	2.30	3.12	.72	3.72	4.75	1.41	1.56	.81	2/0
	mm	7	14	61	48	119	26	58	79	18	95	121	36	40	21	3/0
10	ins.	Ø.34	.78	3.12	2.62	4.66	1.50	2.74	3.19	.84	3.53	6.06	1.88	1.91	.84	1/0
	mm	9	16	79	67	118	38	70	81	21	90	154	48	49	21	1/2
11	ins.	Ø.34	1.38	3.81	3.88	5.45	2.09	2.11	4.56	1.56	3.91	8.25	2.12	2.62	1.16	4
	mm	9	35	97	99	138	53	54	116	40	99	210	54	67	30	I
12	ins.	Ø.28	.56	2.41	1.88	5.06	1.03	2.71	3.12	.72	4.12	4.81	1.41	1.56	.81	2/0
	mm	7	14	61	48	129	26	69	79	18	105	122	36	40	21	3/0
13	ins.	Ø.34	.78	3.12	2.62	5.27	1.50	2.49	3.19	.84	4.16	6.06	1.88	1.91	.84	1/0
	mm	9	16	79	67	134	38	63	81	21	106	154	48	49	21	1/2

Constr. Ref. 9, 10, 11, 12, 13





# **FEATURES**

- Intrinsically safe solenoid enclosures to provide corrosion resistance in harsh environments.
- Designed solely for installation in intrinsically safe areas, with properly approved and sized current and voltage-limiting safety barriers.
- Acceptable for use in hazardous locations, as classified by the National Electrical Code: Classes I, II, and III, Division 1, including Groups A through G.
- Electronically enhanced solenoids have efficient cartridge operators and nonpolarized coils.
- Triple redundant diodes prevent electrical pulse from flowing back into the hazardous area.
- Mountable in any position.

# SOLENOID OPERATORS

WBIS: Watertight, Type 3, 3S, 4, 4X, IP-67 Liquid Crystal Polymer (LCP) overmolded with 1/2"NPT conduit connection and screw terminals for simple wiring. The terminal block will accommodate 18 gauge (AWG) wire and grounding screw is located inside the enclosure. ISSC: DIN 43650/ISO 4400, IP-67 Epoxy overmolded with Din Connector supplied, suitable to accept wiring cable diameters of 0.310 to 0.400 inches.

#### **NOMINAL AMBIENT** TEMPERATIIRE RANGES

8223, 8262, 8314, 8317 & 8344: -40°F to 140°F (-40°C to 60°C) 8316: -40°F to 140°F (-40°C to 60°C) 8316 TPL21105 & 21106: -59°F to 140°F

(-50°C to 60°C)

Zero minimum 8316 valves with the standard elastomer low temperature buna diaphragm will operate down to -40 degrees F and zero main line pressure when externally piloted at a minimum pressure of 15 psi. The valve will operate down to -40 degrees F when internally piloted at a minimum main line pressure of 40 psi.

#### **APPROVALS**

FM approved under J.I.3W8A8. AX (3610). CSA certified under File LR-13976-116C. Meets applicable CE directives. Refer to Engineering Section of Cat. 33C for details.

#### **ORDERING INFORMATION**

The LCP Intrinsically Safe solenoid enclosure is designated by the prefix, "WBIS". The Epoxy Din Connector is ordered by prefix, "ISSC". Example:

WBIS8314A300 Spare Coil P/Ns **ISSC**8314A300

WBIS: 274445-001 ISSC: 268976-001

# AIR AND INERT GAS INTRINSICALLY SAFE VALVES

Brass or Stainless Steel Bodies • 1/4" to 1" NPT



# SOLENOID CONSTRUCTION

Gasket Cover	Buna "N"
Cover Screw	18-8 Stainless Steel
Cover Screw Gasket	Buna "N"
Sleeve	430F Stainless Steel
Nameplate	Stainless Steel
Burp Cap Assembly	Nylon/Neoprene

## VALVE CONSTRUCTION

	Valve Parts in Contact with Fluids							
Body	Brass Steel							
Seals and Discs	Buna "N"							
Sleeve	304L Stainless Steel							
Core and Plugnut	430F Stainless Steel							
Springs	302 Stain	ess Steel						
Rider Rings	Tefl	DN						
Spring Retainer	Ace	tal						
Piston Assembly 8223	SS/Bur	ia "N"						
Piston Assembly 8345	Nylon/Buna "N"							
8344 Internals	Brass/300 Stainless Steel							
8316 Internals	Buna "N"/Stainless Steel	Buna "N"/Stainless Steel						

## **ELECTRICAL**

Nominal Wattage is 0.35 @ 24 VDC Maximum Allowable "Off" State Current to the Valves must be less than 1 mA.

#### Electronically Enhanced "IS" Solenoid:

Maximum Capacitor Charge Time — 1 second Minimum Time between Cycles - 1 second Minimum Drop Current to Reset Electronic Coil – 2 mA Nominal Temperature Rise at 24 VDC and 300 Ohms - 2°C (36°F) Maximum Recommended Wire Run (#18 Wire) - 1.5 miles from barrier to valve

Important: Minimum series resistance of 200 ohms required in wiring circuit if a safety barrier is not used for non-"IS" system.

#### **MAXIMUM ENTITY PARAMETERS**

Entity	Groups A-D	Groups C-D
Parameters	V max - 30 VDC	V max - 34 VDC
	I max - 100 mA	I max - 125 mA
	Capacitance = 0	Capacitance = 0
	Inductance = 0	Inductance = 0

#### **STANDARD VOLTAGE**

24 VDC only (±10%)

MINIMUM OPERATING CURRENT 0.028 amps



Brass or Stainless Steel Bodies • 1/4" to 1" NPT

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SPEC	IFICATI	UNS									
					Operating Pressure Differential (psi)		Brass Body		Stainless Steel Body		
Pipe	Orifice	Cv F	ow	Air-Ine	ert Gas	Ambient	Catalogue	Constr.	Catalogue	Constr.	
Size (ins.)	Size (ins.)	Fac	tor	Min.	Max.	Temp. °F	Number	Ref. No.	Number	Ref. No.	
2/2 VALVE	S, NORMALI	LY CLOSED, w	vith Buna "N'	′ Disc							
1/4	1/16	.0	8	0	150	140	WBIS8262A320	1	WBIS8262A386	1A	
1/2	3/8	3.	2	25	150	140	-	-	WBIS8223A310	3	
Pine	Orifice	Cv F Fac Pressure to	low tor Cylinder to	Operating Pressure Differential (psi)		Max. Fluid and Ambient	Brass Body		Stainless Steel Body		
Size (ins.)	Size (ins.)	Cylinder	Exhaust	Min.	Max.	Temp. °F	Number	Ref. No.	Number	Ref. No.	
ס /ס <i>א</i> וועב			N /Droccuro /	any north	1)ith D	"N" Dice					
3/ Z VALVE	3, UNIVERSI					140			WDIC02144201	4.4	
1/4	1/10	.00	.00	0	150	140	WDI30314A300	4	WDI30314A301	4A	
3/2 VALVE	S, NORMALI	LY CLOSED (C	losed when a	le-energize	ed) with Bur	1a "N" Diaphr	agm				
1/4	5/16	1.5	1.5	4	150	140	WBIS8316A301 ③	5	WBIS8316A381MF	8	
1/4	5/16	1.5	1.5	15	110	140	-	-	WBISX8316A381/21105⑤	8	
1/4	5/16	1.5	1.5	0	110	140	-	-	WBISX8316A381/21106@	8	
3/8	5/16	1.8	1.8	4	150	140	WBIS8316A302 ③	5	WBIS8316A382MF	8	
3/8	5/16	1.8	1.8	15	110	140	-	-	WBISX8316A382/21105©	8	
3/8	5/16	1.8	1.8	0	110	140	-	-	WBISX8316A382/21106@	8	
3/8	5/8	4	4	4	150	140	WBIS8316A303 ③	6	-	-	
1/2	5/8	4	4	(4)	150	140	WBIS8316A304 ③	6	WBIS8316A384MF	9	
3/2 VALVE	S, UNIVERS	AL OPERAIIO	N (Normally	Closed or	Normally Op	oen) "Quick E	xhaust" with Buna "	N" Diaphi	ragm and Buna "N" D	lisc	
1/4	2	.08	.73	5	150	140	WBIS8317A307 ①	10	WBIS8317A308 ①	11	
		Cv Flo	w Factor	Operating Differer	g Pressure ntial (psi)	Max. Fluid and	Single Soler	noid	Dual Solenoi	d	
Pipe	Orifice	Pressure to	Cylinder to	Air-In	ert Gas	Ambient	Catalogue	Constr.	Catalogue	Constr.	
Size (ins.)	Size (ins.)	Cylinder	Exhaust	Min.	Max.	Temp. °F	Number	Ret. No.	Number	Ret. No.	
4/2 VALVE	S, Brass Boo	dy with Buna	"N" Disc								
1/4	1/4	.80	1	30	150	140	WBIS8344A370MF (1)	13	WBIS8344A344MF③	16	
3/8	3/8	1.4	2.2	20	150	140	WBIS8344A372MF 🗍	14	WBIS8344A380MF ③	17	
1/2	3/8	1.4	2.2	20	150	140	WBIS8344A374MF $\overset{0}{(3)}$	14	WBIS8344A382MF ③	17	
3/4	3/4	5.2	5.6	20	150	140	WBIS8344A376MF $\stackrel{(1)}{(3)}$	15	-	-	
1	3/4	5.2	5.6	20	150	140	WBIS8344A378MF $\stackrel{(1)}{(3)}$	15	-	-	
NOTE							®				

#### NUIES:

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.

exhausted to atmosphere.
For "Quick Exhaust" valves, pressure port is 1/16", exhaust port is 1/4".
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.
Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph with dimensional drawings for auxiliary pressure vs. mainline pressure. Minimum 40 psi Operating Pressure Differential when selection gasket is in the internal position for ambient temperature below 32°F.
IMPORTANT: Internal Pilot Construction: A minimum operating pressure differential must be maintained between the pressure and exhaust ports. Supply and exhaust ports. Supply and exhaust ports are and exhaust pressure auxiliary are and the ciping must be added by a supplementation of the pressure and the ciping must be maintained between the pressure and exhaust ports. Supply and exhaust ports are and the ciping must be full area unrestricted ASCO flow controls and other ciping components must be installed in the cylinder lines only.

exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

(6) External Pilot Construction: Zero minimum when valve selection gasket is in external position and proper auxiliary air pressure is applied. See graph on pg. 13 for pilot line pressure vs. mainline pressure



Brass or Stainless Steel Bodies • 1/4" to 1" NPT

# **DIMENSIONS: INCHES (MM)**



.86 [22]





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.88 [22] CONSTR. 1A MTG BRACKET FOR ST ST. ø.266 [ø6.8]

.68 [17]

– R.13 [R3] 4 PLACES



2 MOUNTING HOLES 0,147 [03,7] ,31 (8) DEEP FOR ,164 [4] THREAD CUTTING SCREW .86 [22] 66[17] MOUNTING HOLES



.96 [50]

3.73 [95] 2.33 [59] 4.92 [125]

4.15 [105]

Constr. Ref. 3

1/2 NPT

















4.89 [124] -4.05 [103]



Brass or Stainless Steel Bodies • 1/4" to 1" NPT

# **DIMENSIONS: INCHES (MM)**









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4,15 [105]



Constr. Ref. 9



1,96 [50]





Brass or Stainless Steel Bodies  $\bullet$  1/4" to 1" NPT

# **DIMENSIONS:** INCHES (MM)

#### Constr. Ref. 10





Constr. Ref. 13-17









13-15

m

3,04 [77]

16-17

								BOTTOM VIE	W OF VALVE							
CATALOGUE NUMBER	øC	E	F	G	н	J	к	L	М	N	Р	w	x	Y	Z	EXHAUST PIPE SIZE
WBIS8344A370	¢,28 [¢7,1]	,56 [14]	2,41 [61]	1,88 [48]	5,12 [130]	1,03 [26]	2,33 [59]	3,13 [80]	2.08 [53]	.72 [18]	4,16 [106]	4,75 [121]	1.41 [36]	1,56 [40]	,81 [21]	3/8
WBIS8344A380,382	ø,34 [ø8,6]	.77 [20]	3.12 [79]	2.62 [67]	5.72 [145]	1,50 [38]	2.77 [70]	3,18 [81]	2.06 [52]	.83 [21]	4,60 [117]	6.06 [154]	1.86 [47]	1.90 [48]	.84 [21]	1/2
WBIS8344A372,374	ø,34 [ø8.6]	.77 [20]	3.12 [79]	2,62 [67]	5,10 [120]	1,50 [38]	2,14 [54]	3,18 [81]	2.06 [52]	.83 [21]	3,98 [101]	6.06 [154]	1,86 [47]	1,90 [48]	.84 [21]	1/2
WBIS8344A344	Ø.28 [Ø7,1]	.56 [14]	2.41 [61]	1.88 [48]	5,12 [1 <i>3</i> 0]	1,03 [26]	2,74 [70]	3,13 [80]	2,08 [53]	.72 [18]	4,16 [106]	4,75 [121]	1.41 [36]	1,56 [40]	.81 [21]	3/8
WBIS8344A376,378	ø,34 [ø8,6]	1,37 [35]	3.81 [97]	3.88 [99]	5.90 [150]	2.09 [53]	2,52 [64]	4.56 [116]	2,86 [73]	1.55 [39]	4.35 [110]	8.25 [210]	2.12 [54]	2.63 [67]	1,16 [30]	1
WBIS8344A354,356	ø.34 [ø8.6]	1.37 [35]	3.81 [97]	3.88 [99]	6.54 [168]	2.09 [53]	3.21 [81]	4.56 [116]	2.81 [71]	1.55 [ <i>3</i> 9]	4.35 [110]	8.25 [210]	2.12 [54]	2.63 [67]	1,16 [30]	1
IMPORTA	NT: VALV	ES CAN	BE MOU	NTED IN	ANY POS	SITION.					×	_INCHES	>			

CYL B-

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- 1

RESS

2 MTG, HOLES

- CYL A

1/2 NPT



# NO VOLTAGE RELEASE MANUAL RESET "IS" VALVES

Air and Inert Gas • Brass or Stainless Steel Bodies • 1/4" to 1/2" NPT

#### FEATURES

- Intrinsically safe solenoid when energized, holds the manual reset mechanism in the latched position.
- Normally Closed, Normally Open, or Universal constructions.
- Valve operates when the solenoid has been energized and the lever latched while holding in the yellow button.
- Valve trips when power is interrupted. Valve can be manually cycled, but must be manually reset for automatic operation.
- Designed solely for installation in intrinsically safe areas, with properly approved and sized current and voltage-limiting safety barriers.
- Acceptable for use in hazardous locations as classified by the National Electrical Code: Classes I, II, and III, Division I, including Groups A through G.



## **ENCLOSURE**

#### STANDARD:

Red-Hat I - Red-Hat Type 4, Watertight Splice Box enclosure. OPTIONAL: No standard options are available.

Consult local sales office for your needs.

# NOMINAL AMBIENT TEMPERATURE RANGES

-40°F to 200°F (-40°C to 93°C). Refer to Engineering Section of Cat. 33C for details.



# CONSTRUCTION

	Valve Parts in Contact with Fluids						
Body	Brass Stainless Steel						
Seals and Disc	Buna "N"						
Core and Plugnut	430F Stainless Steel						
Core Springs	302 Stainless Steel						
Core Tube	305 Stainless Steel						
Pilot Seat Cartridge	Acetal (Series V	VPIS8308B42)					
Rider Rings	Teflon						
Spring Retainer	Ace	tal					

## **ELECTRICAL**

Standard Voltages: 24 volts DC Coil: Continuous duty molded Class A. Minimum Operating Current: 0 024 amos

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Parameters	Groups A-D	Groups C-D
Entity	V max - 28 VDC	V max - 34 VDC
	I max - 92 mA	I max - 125 mA
	Capacitance = 0	Capacitance = 0
	Inductance = 0	Inductance = 0

IMPORTANT: Electrical parameters are unique to the manual reset line and will differ from Series 300 electrical data.

APPROVALS

FM approved under J. I. 3W2A7.AX (3610). CSA certified under File LR-13976-114C. FM Nonincendive approved for Class 1, Division 2. *Refer to Engineering Section of Cat. 33C for details.* 



# NO VOLTAGE RELEASE MANUAL RESET "IS" VALVES

Air and Inert Gas  $\bullet$  Brass or Stainless Steel Bodies  $\bullet$  1/4" to 1/2" NPT

## SPECIFICATIONS

Pipe Size (ins.)	Orifice Size (ins.)	Cv Flow Factor	Operating Pressure Differential (psi) Air-Inert Gas Min. Max.		Operating Pressure Differential (psi) Max. Fluid and Air-Inert Gas Ambient Min. Max. Temp.°F		Catalogue Number	3 Constr. Ref. No.	
3/2 UNIVERSAL OPERATION, Brass Body with Buna "N" Disc or Stainless Steel Seats and Discs @									
1/4	11/64	.38	0	125	180	WPIS8308B40MF	4		
1/4	1/4	.45	0	125	180	WPIS8308 44MF ②	1		
3/2 NORM	ALLY CLOSED (	OR NORMALLY	OPEN, Brass Bod	y with Buna "N" I	Disc				
1/2	5/8	4	10	250	180	WPIS8308C42MF ①	5		
3/2 UNIVE	RSAL OPERATI	ON, Stainless	Steel Body with B	una "N" Discs					
3/8	1/8	.21	0	125	180	WPIS8308A11MF	4		
3/2 UNIVE	RSAL OPERATI	ON, Stainless	Steel Body with St	tainless Steel Seat	s and Discs				
1/2	5/16	.75	0	125	200	WPIS8308 47MF	3		

## **NOTES:**

① For Normally Closed operation, add suffix "F" to catalogue number; for Normally Open operation, add suffix "G" to catalogue number.

O Supplied with stainless steel seats and discs.

③ See Catalogue 33C for dimensions.

④ Consult Factory for dimensions.



# **FEATURES**

- 3 Way constructions.
- $\blacksquare$  -59° F (-50° C) constructions available.
- Standard AC, Low Power or "IS" with Limit Switch.
- 316SS (CF-8M) Stainless Steel externals with Viton elastomers.
- Wide range of Cv flow rates 1.5, 1.8 and 4.
- Solenoid operator CSA certified, UL Listed for Hazardous Locations.
- Used by numerous refineries as emergency shut down.

# **TAMPER PROOF MANUAL RESET VALVES**

Stainless Steel Bodies • 1/4", 3/8" and 1/2" NPT



# **GENERAL DESCRIPTION**

This unique tamper proof manual reset valve has the special ability that once tripped the latching handle, if moved will not change the position of the valve. Conversely, if the handle is held in the up position and the control room de-energizes the solenoid, the valve will go to the shut-off position. It will also automatically trip to the closed position if the auxiliary instrument air pressure drops below 25 psi.



# VALVE MONITORING SYSTEMS

ASCO'S Valve Monitoring Systems (VMS) have revolutionized the concept of position indication and network communications. All products are available in corrosion resistant low copper aluminum and resin constructions for hazardous environments and provide highly visible 360° indication. Patented Viper proximity switch uses internal magnet and switching elements resulting in improved set point accuracy and simplifies maintenance. NR & VR Series position indicators have been tested to -59° F (-50° C). For more information regarding these products refer to the Valve Monitoring Systems catalogue, our website www.ascovalve.ca or consult factory.



# **NR1 Series**

- Eliminates bracketry for all NAMUR type actuators.
- Modular Design for ease of field service.
- Realview<sup>™</sup> indicator for 100% colour change visible from long distances.



# **VR7** Series

- No seal fittings required in Division 1 areas with Viper™ hermetically sealed switches.
- Heavy duty industrial design approved for Division 1 Group B areas.
- Realview™ indicator for 100% colour change visible from long distances.

Main Office, Manufacturing, Marketing and Ontario District Sales Office ASCO Valve Canada

17 Airport Road, P.O. Box 160 Brantford ON N3T 5M8 Phone: (519) 758-2700 • Fax: (519) 758-5540 Website: www.ascovalve.ca

#### **District Sales Offices:**

Alberta, Saskatchewan, Manitoba, British Columbia ASCO Valve Canada 809 Manning Road, N.E., Suite 104 Calgary AB T2E 7M9 Phone: (403) 207-8571 Fax: (403) 207-8581

> From British Columbia Phone: (604) 294-1767 Fax: (604) 294-9935

Quebec, Ottawa Valley, Atlantic Provinces ASCO Valve Canada 1405 Rte Trans-Canada, Suite 235 Dorval QC H9P 2V9 Phone: (514) 684-8886 Fax: (514) 684-8507

> For Atlantic Provinces Phone: (902) 829-2504 Fax: (902) 829-2417



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