

### Features

- Process valve body is serviceable without removing indicator box
- Built-in understroke compensation
- Simple to install and adjust
- Designed for caustic washdown
- One construction accommodates valve strokes up to 2 inches
- Indicator visible from 360°

### Construction

	HS 2	HS 3	HS 4
<b>Area Classifications</b>	Type 4, 4X Indoor Hazardous Location*	IP66 Outdoor Hazardous Location*	Type 4, 4X IP66 Indoor/Outdoor Non-Hazardous Location
<b>Switch Type</b>	Mechanical / Reed		
<b>Body</b>	Valox 364 (Resilient PBT)		
<b>Indicator Cover</b>	Polycarbonate (Makrolon Grade 2607™) UV Stabilized		
<b>Switch Trigger</b>	ABS		
<b>Inner Frame</b>	Zytel Nylon		

① Mechanical SPDT gold plated switch is also available for intrinsically safe (IS) applications. \* See Specifications Chart.

Makrolon 2607 is a registered trademark of Bayer Inc.

### Ambient Temperatures

Reed Switches: -4°F to 150°F (-20°C to 65°C)

ASi, DeviceNet Bus Card: -4°F to 140°F (-20°C to 60°C)

Profibus PA: 32°F to 140°F (0°C to 60°C)

(Contact ASCO for extended temperature range applications.)

### Electrical

#### Mechanical Switches

Gold Contacts

Maximum 100mA@125/250VAC

Minimum 4mA@5VDC

Silver Contacts

Maximum 15A@125/250VAC

Minimum 125mA@125/250VAC

#### Reed Switches

Tungsten: 120VAC@3A or 24VDC@2A

Maximum power allowable is 100 Watts or 100VA

Minimum power required to ensure proper operation is 3W or 3VA

Rhodium: 24VDC@1A

Maximum power allowable is 25 Watts

Minimum current required to ensure proper operation is 10mA@3VDC

Rhodium (IS): 2mA to 1A@24VDC (suitable for IS applications)

“IS”- Class I,II,III, Div. 1,

Groups A,B,C,D,E,F, and G

Class I, Zone 0, AEx ia IIC T6

Class I, Zone 1, AEx ib IIC T6



ATEX category 1G, 2G Intrinsic Safety Only

II 1G EEx i a IIC T6

KEMA 04 ATEX 1025X

Ambient Temperature: -18 to 170°F (-28 to 77°C)

**NOTE: ASCO requires 12VDC valves for DeviceNet Network Cards and 24VDC for AS-interface Network Cards.**

### Approvals

FM approved for: “Hazardous (Classified) locations”;

Class 3600, 3610 & 3611 (HS 2 & 3).

Unclassified Locations (HS 4).

CSA Certified to Standard C22.2 No. 142-M

“Process Control Equipment”; Hazardous Locations,

Class 2258-02, 04, 82 & 84 (HS 2 & 3), and General

Requirements, Class 2252-01 (HS 4), File 013976-0-000.

CE Certified.

### Optional Features

• Attached low power pilot valve or with integrated valve.

• AS-interface, Profibus-PA, DeviceNet communication cards with 2 switches to indicate stem position.

• Up to 2 conduit entries select from: 1/2” or 20mm.

• Plug, cable gland, and network connectors.

See list price schedule for available mounting brackets and adapters.

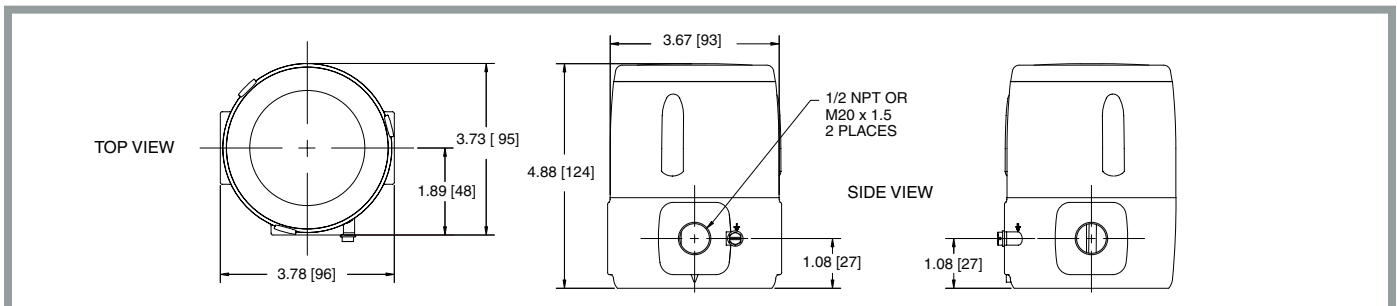
**Specifications**

Series	Hazardous Classified Location	Shaft	Conduit / Connector ①	Indicator	Change Letter	Switches	# of Switches	Network/Bus	Connector
HS2 Series Type 4,4X Indoor	Intrinsically Safe: Class1,2,3/Div.1/A,B,C,D/T6 Class1/Zone 0/AEx ia IIC/T6 Class1/Zone 1/AEx ib IIC/T6 Ambient Temp. = 77°C/170°F Class2/Div.1/A,B,C,D,E,F,G	D=10-24 Thread*	1=(2) 1/2 FNPT 9=(1) 1/2 FNPT + (1) M20 x 1.5	Y=Yel/Black	C	N=None	0=None	NG=None	A=Threaded Conduit
	H=Mech SPDT Gold (IS) G=Reed SPDT Rhodium (IS) T=Reed SPDT Tungsten 3A R=Reed SPDT Rhodium 1A					0=None U=One Open Upper L=One Closed Lower 2=Two			
	W=Network Card					0=None U=One Open Upper L=One Closed Lower 2=Two			
	Non-Incendive: with Reed Switches Class1/Div.2/A,B,C,D/T6 Class2/Div.2/F,G/T6 Except Dust Ambient Temp. = 65°C/150°F Special Protection: Indoor Only							AJ=ASI 2x1, v2.1, Std Address AL=ASI 2x1, v2.1, Ext Address	A=Threaded Conduit B=M12 Pin Connector for Bus Networks
	Non-Incendive: with Bus Card Class1/Div.2/A,B,C,D/T6 Class2/Div.2/F,G/T6 Ambient Temp. = 60°C/140°F Special Protection: Indoor Only						2=Two	DC=DNET2x1 DE=DNET 2x1 Diagnostics PA=Profibus-PA, Non IS	C=Mini (7/8) Pin Connector for Bus Networks
<b>HS2</b>		<b>D</b>	<b>1</b>	<b>Y</b>	<b>C</b>	<b>T</b>	<b>2</b>	<b>NG</b>	<b>A</b>
HS3 Series IP-66 Outdoor	Intrinsically Safe: Class1,2,3/Div.1/A,B,C,D/T6 Class1/Zone 0/AEx ia IIC/T6 Class1/Zone 1/AEx ib IIC/T6 Ambient Temp. = 77°C/170°F Class2/Div.1/A,B,C,D,E,F,G	D=10-24 Thread*	1=(2) 1/2 FNPT 9=(1) 1/2 FNPT + (1) M20 x 1.5	Y=Yel/Black	C	N=None	0=None	NG=None	A=Threaded Conduit
	H=Mech SPDT Gold (IS) G=Reed SPDT Rhodium (IS) T=Reed SPDT Tungsten 3A R=Reed SPDT Rhodium 1A					0=None U=One Open Upper L=One Closed Lower 2=Two			
	W=Network Card					0=None U=One Open Upper L=One Closed Lower 2=Two			
								AJ=ASI 2x1, v2.1, Std Address AL=ASI 2x1, v2.1, Ext Address	A=Threaded Conduit B=M12 Pin Connector for Bus Networks
							2=Two	DC=DNET2x1 DE=DNET 2x1 Diagnostics PA=Profibus-PA, Non IS	C=Mini (7/8) Pin Connector for Bus Networks
<b>HS3</b>		<b>D</b>	<b>1</b>	<b>Y</b>	<b>C</b>	<b>T</b>	<b>2</b>	<b>NG</b>	<b>A</b>
HS4 Series Type 4,4X Indoor IP-66 Indoor/ Outdoor	Non-Hazardous	D=10-24 Thread*	1=(2) 1/2 FNPT 9=(1) 1/2 FNPT + (1) M20 x 1.5	Y=Yel/Black	C	N=None	0=None	NG=None	A=Threaded Conduit B=M12 Pin Connector for Bus Networks C=Mini (7/8) Pin Connector for Bus Networks
						A=Mech SPDT Silver 15A H=Mech SPDT Gold (IS)	U=One Upper (open) L=One Lower (closed) 2=Two		
<b>HS4</b>		<b>D</b>	<b>1</b>	<b>Y</b>	<b>C</b>	<b>A</b>	<b>2</b>	<b>NG</b>	<b>A</b>

① M20 x 1.5 with PIN Connector required for Bus. \* For correct operation, ASCO mousing bracket must be used. See ASCO VMS list price schedule for mounting kits.

**Ordering Example: HS2D1BYCT2NGA**

**Dimensions: Inches (mm)**



**Indicator with Integrated Valve Features**

- Simpler to order
- Available in 0.3 Cv only
- Solenoid valve is environmentally protected inside the housing
- Reliable poppet construction
- Built-in relief valve prevents pressurizing of internal indicator housing
- External manual override

**Solenoid Valve Specifications**

- 1/4" NPT threaded ports
- Cv flow factor of 0.3
- Medium - AIR or INERT GASES only
- Pressure min. & max. - 30 to 120 psi
- Recommended filtration - 50 microns (50um)
- Coil wattage of 0.5 Watt in 24VDC or 1.0 Watt in 12VDC, 120/60 or 240/60



**Optional Features**

- AS-interface, DeviceNet communication cards with 2 switches to indicate stem position.
  - 2 conduit entries select from: 1/2" or 20mm.
- See list price schedule for available mounting brackets and adapters.*

**Integrated Valve Construction**

<b>Body</b>	Anodized Aluminum
<b>Hardware</b>	Stainless Steel
<b>Poppet</b>	Stainless Steel
<b>Sealing Material</b>	NBR

**Indicator Construction**

	HS 2	HS 4
<b>Area Classifications</b>	Type 4, 4X Indoor Hazardous Location*	Type 4, 4X IP66 Indoor/Outdoor Non-Hazardous Location
<b>Switch Type</b>	Mechanical / Reed	
<b>Body</b>	Valox 364 (Resilient PBT)	
<b>Indicator Cover</b>	Polycarbonate (Makrolon Grade 2607™) UV Stabilized	
<b>Switch Trigger</b>	ABS	
<b>Inner Frame</b>	Zytel Nylon	

**Specifications**

Series	Hazardous Classified Location	Shaft	Conduit / Connector ①	Indicator	Change Letter	Switches	# of Switches	Network/Bus	Connector
HS2 Series Type 4,4X Indoor Only	Non-Incendive Class1/Div. 2/A,B,C,D/T4 Class1/Div. 2/F,G/T4 Ambient Temp. = 60°C/140°F Special Protection: Indoor Only	D=#10-24 Thread*	A=(1) 1/2 FNPT C=(1) M20 x 1.5	Y=Ye/Black	C	N=No Switch	0=None	NG=None	A=Threaded Conduit
						T=Reed SPDT Tungsten 3A R=Reed SPDT Rhodium 1A	U=One Open/Upper L=One Closed/Lower 2=Two		
HS4 Series Type 4,4X Indoor IP-66 Indoor/Outdoor	Non-Hazardous	D=#10-24 Thread*	A=(1) 1/2 FNPT C=(1) M20 x 1.5	Y=Ye/Black	C	N=No Switch	0=None	NG=None	A=Threaded Conduit
						A=Mech SPDT Silver 15A H=Mech SPDT Gold (IS) T=Reed SPDT Tungsten 3A R=Reed SPDT Rhodium 1A	U=One Open/Upper L=One Closed/Lower 2=Two		
						W=Network Card	U=One Open/Upper L=One Closed/Lower 2=Two	AJ=ASI 2x1, v2.1, Std Address AL=ASI 2x1, v2.1, Ext Address	A=Threaded Conduit B=M12 pin connector for Bus C=Mini (7/8") pin connector for bus
						G=Reed SPDT Rhodium (IS) H=Mech SPDT Gold (IS)	U=One Open Upper L=One Closed Lower 2=Two	DC=DNET2x1 DE=DNET 2x2 Diagnostics	
<b>HS2</b>		<b>D</b>	<b>C</b>	<b>Y</b>	<b>C</b>	<b>W</b>	<b>2</b>	<b>DE</b>	<b>C</b>

**Ordering Example with valve: HS2DCYCW2DEC15F**

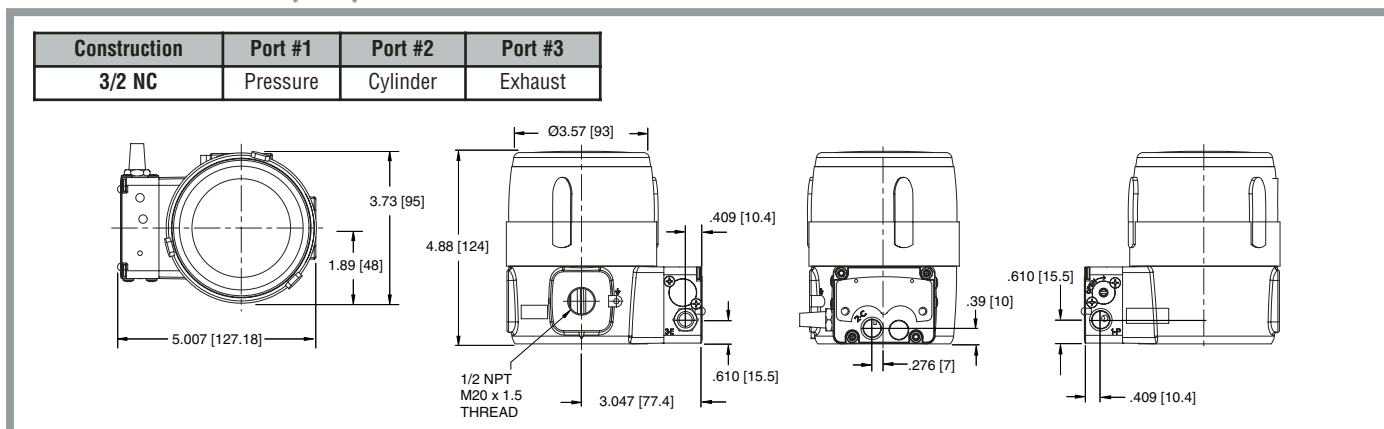
Description: (HS2 Series with #10-24 Shaft thread, (1) M20x1.5 threaded conduit, yellow/black indicator, (2) hall effect sensors, DNet Bus Card with diagnostics, Mini (7/8") pin connector, 3/2 NC 1/4 NPT valve, screw-in manual operator, 12VDC)

\* For correct operation, ASCO mousing bracket must be used. See ASCO VMS list price schedule for mounting kits.

**Integrated Solenoid Valve Ordering**

Valve			Manual Operator			Voltages	
Code	Operation	Pipe	Code	Type	To Operate	Code	Voltage
1	3/2 NC	1/4 NPT	5	Screw In	Screw Driver	A	120/60
						B	240/60
						D	24/DC
						E	IS
						F	12/DC
<b>1</b>			<b>5</b>			<b>F</b>	

**Dimensions: Inches (mm)**



## Features

- Explosion proof, Div. 1 rated aluminum housing for hazardous locations.
- Simple to install and adjust.
- Understroke compensating switch triggers.
- Multiple position mountable (12 possible orientations).
- No seal fittings required with Viper™ switches in Class I, Div. 1, Group A,B,C,D areas.
- One construction accomodates strokes up to 2 inches.

## Construction

Area Classifications	Type 4, 4X Indoor/Outdoor Hazardous Location*
Body	Low Copper Aluminum
Coating	Black Hard Anodized
Switch Triggers	ABS
Inner Frame	Zytel™ Nylon
Zytel - DuPont Co. Trademark	

\* See Specification Chart.

## Ambient Temperatures:

- 20° to 170°F (T6)
- 4° to 140°F with Bus Card

## Electrical

**Mechanical Switches** - 15amp silver contacts SPDT  
- 100mA @ 30VDC gold plated contacts SPDT (IS)

**Viper™ Switches** - Tungsten: 3A/120VAC, 2A/24VDC  
- Rhodium: 1A/24VDC  
- Rhodium (IS): 2mA to 1A@24VDC

Viper - ASCO Valve, Inc. Trademark



## Optional Features

- Low power pilot valve mounted to enclosure
- Network Junction Box for hazardous locations
- **AS**<sub>INMEX</sub>, **DeviceNet**<sup>™</sup> communication cards with 2 switches to indicate stem position
- 2 or 3 conduit entries in 3/4" FNPT

## Approvals

FM approved for "Hazardous (Classified) locations"; Class 3600, 3610, 3611, & 3615.

CSA Certified to Standard C22.2 No. 142-M "Process Control Equipment"; Hazardous Locations, Class 2258-02, 04, 82 & 84.

**Specifications**

Series	Hazardous Classified Location	Shaft	Conduit	Indicator	Change Letter	Switches	# of Switches	Network/Bus	Change Letter
HS1 Series Type 4,4X Indoor/Outdoor	Explosionproof: <b>with Switches</b> Class1/Div.1/A,B,C,D/T6 Dust Ignition Proof: Class2,3/Div.1/E,F,G/T6 Ambient Temp. = 77°C/170°F	F=ITT(<1") G=Saunders(<1") H=ITT(1-1/4" to 2") J=Saunders(1-1/2" to 3") K=ITT Series 47 (3" & 4") Q=ITT Series 33 (3" & 4") L=Gemu D6 (1/2" to 1") M=Gemu D6 (1-1/4" to 1-1/2")	2=(2) 3/4 FNPT 4=(3) 3/4 FNPT	N=None	A	A=Mech SPDT Silver 15A H= Mech SPDT Gold (IS) G=Viper SPDT Rhodium (IS) T=Viper SPDT Tungsten 3A R=Viper SPDT Rhodium 1A	U=One Upper L=One Lower 2=Two	NG=None	A
	Explosionproof: <b>with Bus Card</b> Class1/Div.1/A,B,C,D/T6 Dust Ignition Proof: Class2,3/Div.1/E,F,G/T6 Ambient Temp = 60°C/140°F	W=Network/Bus Card	0=None	AJ=ASI 2x1, v2.1, Std. Address AL=ASI 2x1, v2.1, Ext. Address DC=DNET2x1 DE=DNET 2x1 Diagnostics					
<b>HS1</b>		<b>F</b>	<b>2</b>	<b>N</b>	<b>A</b>	<b>A</b>	<b>2</b>	<b>NG</b>	<b>A</b>

**Ordering Number Example: HS1F2NAA2NGA**

Order appropriate mounting kits as noted below.

**Mounting Kits**

Shaft Code	Actuator	Pipe Size	Stroke	Plate	Mounting Kit Numbers
F	ITT	< 1"	Up to .50"	FLAT	281621-001
G	Saunders	< 1"	Up to .50"	FLAT	281621-001
H	ITT	1-1/4" to 2"	.50" - 1.685"	EXT	281621-002
J	Saunders	1-1/2" to 3"	.65" - 1.685"	EXT	281621-002
K	ITT Series 47	3" & 4"	1.62" - 1.685"	FLAT	281621-001
Q	ITT Series 33	3" & 4"	1.62"	EXT	281621-002
L	Gemu D6	1/2" to 1"	.320" to .533"	FLAT	281621-003
M	Gemu D6	1-1/4" & 1-1/2"	.4" to .745"	FLAT	281621-003

**Dimensions Inches**

