

# Pilot Operated 2-Port Solenoid Valve

## JSXD Series

CE UK  
CA  
Differs depending on the voltage  
and electrical entry. For details,  
refer to table 8 below.



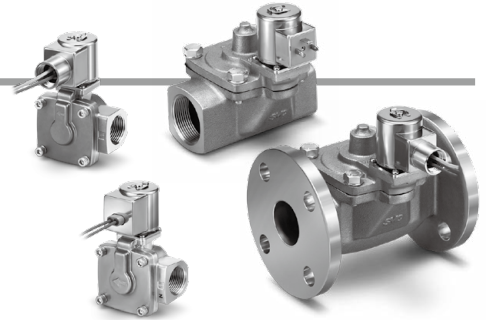
Stainless Steel	Brass	Bronze	Aluminum
Normally Closed (N.C.)			
► p. 41			

Stainless Steel	Brass	Bronze
Normally Open (N.O.)		
► p. 45		

### How to Order

JSXD **3** **1** - **C** **N** **02** **R** - **5** **G** - **D** - **B**

1 2 3 4 5 6 7 8 9 10



#### 1 Size

Symbol	Size
3	30
4	40
5	50
6	60
7	70
8	80
9	90

#### 2 Valve type

Symbol	Valve type
1	N.C.

#### 3 Body material

Symbol	Body material	Size		
		30	40, 50, 60	70, 80, 90
C	Brass	●	●	—
S	Stainless steel	●	●	—
B	Bronze	—	—	●
A	Aluminum	●	—	—

#### 4 Seal material

Symbol	Seal material
N	NBR
F	FKM
E*1	EPDM

\*1 Cannot be used in combination with the aluminum body

#### 5 Port size

Symbol	Connection	Port size	Size						
			30	40	50	60	70	80	90
02	Thread	1/4	●	—	—	—	—	—	—
03		3/8	●	●	—	—	—	—	—
04		1/2	●	●	—	—	—	—	—
06		3/4	—	—	●	—	—	—	—
10		1	—	—	—	●	—	—	—
12		1 1/4	—	—	—	—	●	—	—
14		1 1/2	—	—	—	—	—	●	—
20	Flange	2	—	—	—	—	—	—	●
32		32A	—	—	—	—	●	—	—
40		40A	—	—	—	—	—	●	—
50		50A	—	—	—	—	—	—	●

#### 6 Thread type

Symbol	Thread type	Connection
R	Rc	Thread
N	NPT	
F	G	
Nil	—	Flange

#### 7 Rated voltage

AC				DC	
Symbol	Rated voltage	Symbol	Rated voltage	Symbol	Rated voltage
1	100 VAC	7	240 VAC	5	24 VDC
2	200 VAC	8	48 VAC	6	12 VDC
3	120 (110) VAC	B	24 VAC		
4	220 VAC	J	230 VAC		

#### 9 Oil-free option

Symbol	Option
Nil	None
D	Oil-free

#### 10 Bracket

Symbol	With bracket	Size		
		30	40, 50, 60	70, 80, 90
Nil	None	●	●	●
B	With bracket	●	●	—*1

\*1 Sizes 70 to 90 are not available with a bracket.

#### 8 Electrical entry

Symbol	Electrical entry	CE/UKCA-compliant	UL Standards
G	Grommet*1	12 VDC 24 VDC	Refer to pages 67 to 70.
GS	Grommet with PCB (With surge voltage suppressor)	100 VAC 24 VDC 12 VDC 48 VAC 24 VAC	
CS	Conduit (With surge voltage suppressor)	All voltages	
DS	DIN terminal (With surge voltage suppressor)	All voltages	
DZ	DIN terminal with light (With surge voltage suppressor)	All voltages	
DN	DIN terminal without connector (With surge voltage suppressor)	All voltages	
WN	M12 connector without cable (With surge voltage suppressor)*2	All voltages	

\*1 DC voltage only

\*2 A cable for the M12 connector is not included with the product. Refer to the "Option" on page 71 to order it separately.

## Flow Rate Characteristics

Size	Body material	Port size	Orifice diameter [mmø]	Flow rate characteristics*1						Min. operating pressure differential [MPa]	Max. operating pressure differential [MPa]	Model	Weight*2 [g]
				Air				Water, Oil					
				C [dm³/(s·bar)]	b	Cv	Effective area [mm²]	Kv	Conversion Cv				
30	Aluminum	1/4	10	8.5	0.35	2.0	—	—		0.02	1.0	JSXD31-A□02	410
		3/8		9.2		2.4						JSXD31-A□03	410
		1/2		9.2		2.4						JSXD31-A□04	410
	Brass Stainless steel	1/4		8.5	0.35	2.0		1.6	1.9			JSXD31-S□02	500
		3/8		9.2		2.4		2.0	2.4			JSXD31-S□03	500
		1/2		9.2		2.4		2.0	2.4			JSXD31-S□04	500
40	Brass Stainless steel	3/8	15	18	0.35	5.0		3.9	4.5	0.03	1.0	JSXD41-S□03	720
		1/2		20		5.5		4.6	5.5			JSXD41-S□04	720
50	Brass/Stainless steel	3/4	20	38	0.30	9.5		8.2	9.5	0.03	1.0	JSXD51-S□06	880
60	Brass/Stainless steel	1	25	—			225	11.0	13.0			JSXD61-S□10	1460
70	Bronze	1 1/4, 32A	35				415	19.6	23.0			JSXD71-B□(12, 32)	5500/3000
80	Bronze	1 1/2, 40A	40				560	26.4	31.0			JSXD81-B□(14, 40)	6900/4100
90	Bronze	2, 50A	50				880	42.8	49.0			JSXD91-B□(20, 50)	8500/5500

\*1 The flow rate characteristics of this product vary.

\*2 Indicates case of grommet type

Add 20 g for the grommet type with PCB, 70 g for the conduit type, 50 g for the DIN terminal type, and 15 g for the M12 connector type.

For sizes 70, 80, and 90, the weight on the left is for the flange type, and the weight on the right is for the thread type.

## Applicable Fluid Checklist

Applicable fluid	Seal material		
	NBR	FKM	EPDM
Air	●	●	●
Water	●	●	●
Oil	—	●	—

\* The list shows the compatibility between general fluids and the seal materials. Consider the operating environment and application sufficiently before selecting the seal material. Fluid and component compatibility should be checked before use. If something is not clear, please contact SMC.

## Common Specifications

Size		30		40	50	60	70	80	90
Valve specifications	Body material		Aluminum	Brass, Stainless steel	Brass, Stainless steel			Bronze	
	Valve construction		Pilot operated diaphragm						
	Valve type		Normally closed (N.C.)						
	Fluid and fluid temperature	Air*1	-10 to 60°C						
	Water, Oil	—	Water: 1 to 60°C (No freezing), Oil: -5 to 60°C (Kinematic viscosity: 50 mm²/s or less)						
	Withstand pressure		2 MPa						
	Max. system pressure		1 MPa						
	Ambient temperature		-20 to 60°C						
	Valve leakage*2	Air	15 cm³/min (ANR) or less	2 cm³/min (ANR) or less			10 cm³/min (ANR) or less		
		Water, Oil	—	0.2 cm³/min or less			1 cm³/min or less		
	External leakage*2	Air	15 cm³/min (ANR) or less	1 cm³/min (ANR) or less					
		Water, Oil	—	0.1 cm³/min or less					
	Mounting orientation		Unrestricted						
Enclosure*3		IP67 (IP65 for the DIN terminal)							
Standards*4		CE/UKCA							
Operating environment		Location without the presence of corrosive gases or explosive gases							
Seal material		NBR, FKM, EPDM							
Coil specifications	Rated voltage	AC	24 V, 48 V, 100 V, 110 V, 120 V, 200 V, 220 V, 230 V, 240 V						
		DC	12 V, 24 V						
	Allowable voltage fluctuation		±10% of the rated voltage						
	Allowable leakage voltage	AC	5% or less of the rated voltage						
		DC	2% or less of the rated voltage						
	Apparent power*5, *6	AC	8 VA				9.5 VA		
	Power consumption*5	DC	6 W				8 W		
Temperature rise*7		AC/DC	70/65°C						

\*1 Dew point temperature: -10°C or less

\*2 Leakage: The value at a differential pressure the same as or higher than the min. operating pressure differential, and an ambient temperature of 20°C

\*3 This product has an IP67 enclosure, but if water enters the product, it may result in malfunction or breakage.

Therefore, take appropriate measures to prevent water from entering the product when using outdoors or in an environment where it is constantly exposed to water.

\*4 Standards compliance varies depending on the model. For details, refer to page 41.

\*5 Power consumption/Apparent power: The value at an ambient temperature of 20°C and when the rated voltage is applied (Variation: ±10%)

\*6 There is no difference in the frequency and the inrush and energized apparent power, since a rectifying circuit is used in the AC.

\*7 Temperature rise: The value at an ambient temperature of 20°C and when the rated voltage is applied. Use this value as a reference as the actual value varies depending on the ambient environment.

Be sure to read the "Specific Product Precautions" before handling the product.

# JSXD30, 40, 50, 60, 70, 80, 90 Series

## Table of UL-compliant Products

\* Refer to the table below for UL-compliant products.



Recognized

**G\*1**  
Grommet



\*1 Only applicable to rated voltage symbols "5" and "6"

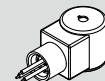
**GS**  
Grommet with PCB



**DN**  
Without DIN connector



**CS\*2**  
Conduit



\*2 Only applicable to the flange type in sizes 70, 80, and 90

**WN**  
M12 connector/  
Without connector cable



### JSXD31

Series/ Valve type	Body material	Seal material	Port size	Thread type	Rated voltage	Electrical entry	Oil-free option	Bracket option
<b>JSXD31</b>	<b>C</b>	<b>N</b>	<b>02</b>	<b>R</b>	<b>1</b>	<b>G</b>	None	None
	<b>S</b>	<b>F</b>	<b>03</b>	<b>N</b>	<b>2</b>	<b>GS</b>	<b>D</b>	<b>B</b>
	<b>A</b>	<b>E*3</b>	<b>04</b>	<b>F</b>	<b>3</b>	<b>DN</b>		
					<b>4</b>	<b>WN</b>		
					<b>5</b>			
					<b>6</b>			
					<b>7</b>			
					<b>8</b>			
					<b>B</b>			
					<b>J</b>			

\*3 Cannot be used in combination with body material symbol "A"

### JSXD41

Series/ Valve type	Body material	Seal material	Port size	Thread type	Rated voltage	Electrical entry	Oil-free option	Bracket option
<b>JSXD41</b>	<b>C</b>	<b>N</b>	<b>03</b>	<b>R</b>	<b>1</b>	<b>G</b>	None	None
	<b>S</b>	<b>F</b>	<b>04</b>	<b>N</b>	<b>2</b>	<b>GS</b>	<b>D</b>	<b>B</b>
		<b>E</b>		<b>F</b>	<b>3</b>	<b>DN</b>		
					<b>4</b>	<b>WN</b>		
					<b>5</b>			
					<b>6</b>			
					<b>7</b>			
					<b>8</b>			
					<b>B</b>			
					<b>J</b>			

### JSXD51

Series/ Valve type	Body material	Seal material	Port size	Thread type	Rated voltage	Electrical entry	Oil-free option	Bracket option
<b>JSXD51</b>	<b>C</b>	<b>N</b>	<b>06</b>	<b>R</b>	<b>1</b>	<b>G</b>	None	None
	<b>S</b>	<b>F</b>		<b>N</b>	<b>2</b>	<b>GS</b>	<b>D</b>	<b>B</b>
		<b>E</b>		<b>F</b>	<b>3</b>	<b>DN</b>		
					<b>4</b>	<b>WN</b>		
					<b>5</b>			
					<b>6</b>			
					<b>7</b>			
					<b>8</b>			
					<b>B</b>			
					<b>J</b>			

### JSXD61

Series/ Valve type	Body material	Seal material	Port size	Thread type	Rated voltage	Electrical entry	Oil-free option	Bracket option
<b>JSXD61</b>	<b>C</b>	<b>N</b>	<b>10</b>	<b>R</b>	<b>1</b>	<b>G</b>	None	None
	<b>S</b>	<b>F</b>		<b>N</b>	<b>2</b>	<b>GS</b>	<b>D</b>	<b>B</b>
		<b>E</b>		<b>F</b>	<b>3</b>	<b>DN</b>		
					<b>4</b>	<b>WN</b>		
					<b>5</b>			
					<b>6</b>			
					<b>7</b>			
					<b>8</b>			
					<b>B</b>			
					<b>J</b>			

### JSXD71

Series/ Valve type	Body material	Seal material	Port size	Thread type	Rated voltage	Electrical entry	Oil-free option
<b>JSXD71</b>	<b>B</b>	<b>N</b>	<b>12</b>	<b>R</b>	<b>1</b>	<b>G</b>	None
		<b>F</b>		<b>N</b>	<b>2</b>	<b>GS</b>	<b>D</b>
		<b>E</b>		<b>F</b>	<b>3</b>	<b>DN</b>	
					<b>4</b>	<b>WN</b>	
					<b>5</b>		
					<b>6</b>		
					<b>7</b>		
					<b>8</b>		
					<b>B</b>		
					<b>J</b>		