

Compact direct acting 2-port solenoid valve

# USB2-FP2 Series

- NC (Normally Closed)
- Port size: M5



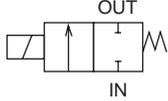
For CE details  
Check our website.



General Purpose Valves  
Catalog No. CB-03-1SA

## JIS symbol

- NC (Normally Closed)



## Specifications

Item	USB2-M5-1	USB2-M5-2
Working fluid	Air/water/dry air/low vacuum (1.33x10 <sup>2</sup> Pa(abs))	
Max. working pressure MPa	0.7	0.3
Working pressure differential MPa	0 to 0.7	0 to 0.3
Proof pressure(water pressure) MPa	1.5	
Fluid temperature °C	-10 to 60(no freezing)	
Ambient temperature °C	-20 to 50	
Valve seat leakage cm <sup>3</sup> /min	0.2 or less (pneumatic pressure)	
Mounting orientation	Unrestricted	
Weight kg	0.07	
Port size	M5	M5
Orifice size mm	1	1.5
Cv	0.03	0.06
C[dm <sup>3</sup> /(sbar)]	0.13	0.28
b	0.57	0.46

### Electrical specifications

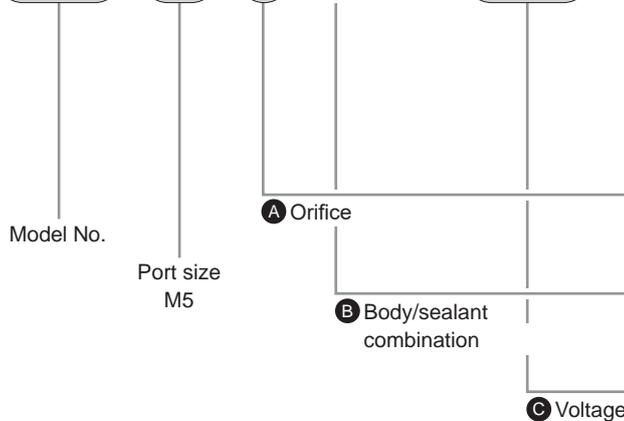
Rated voltage	12 VDC, 24 VDC(Option: 100 VAC50/60Hz, 200 VAC50/60Hz)	
Voltage fluctuation range	±10%	
Power consumption W	DC	3
	AC	4
Thermal class	Class 130 (B)	

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*2: When using at low vacuum, vacuum the OUT port side.

## How to order

USB2 - M5 - 1 - M FP2 - DC24V



Code	Description		
<b>A Orifice</b>			
1		ø1.0	
2		ø1.5	
<b>B Body/sealant combination</b>			
	<b>Body</b>	<b>Seal</b>	<b>Treatment</b>
M	Stainless steel	Fluoro rubber	Oil-prohibited
<b>C Voltage</b>			
DC12V	Standard	12 VDC	
DC24V		24 VDC	
AC100V	Option	100 VAC50/60Hz	
AC200V		200 VAC50/60Hz	

For dimensions, refer to the USB2 Series in "General Purpose Valves (CB-03-1SA)".



General Purpose Valves  
Catalog No. CB-03-1SA

Compact direct acting 2-port solenoid valve

# USB3-FP2 Series

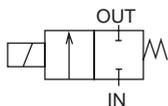
- NC (Normally Closed)
- Port size: Rc1/8



For CE details  
Check our website.

## JIS symbol

- NC (Normally Closed)



## Specifications

Item	USB3-6-1	USB3-6-2	USB3-6-3
Working fluid	Air, Water, Dry air, Low vacuum (1.33 x 10 <sup>2</sup> Pa(abs))		
Max. working pressure MPa	0.9	0.4	0.1
Working pressure differential MPa	0 to 0.9	0 to 0.4	0 to 0.1
Proof pressure (water pressure) MPa	2		
Fluid temperature °C	-10 to 60 (no freezing)		
Ambient temperature °C	-20 to 50		
Valve seat leakage cm <sup>3</sup> /min	0.2 or less (pneumatic pressure)		
Mounting orientation	Unrestricted		
Weight kg	0.13		
Port size	Rc1/8	Rc1/8	Rc1/8
Orifice size mm	1.6	2.3	3.2
Cv	0.09	0.18	0.3
C[dm <sup>3</sup> /(s·bar)]	0.34	0.64	1.2
b	0.56	0.51	0.48

### Electrical specifications

Rated voltage	12 VDC, 24 VDC (Option: 100 VAC50/60Hz, 200 VAC50/60Hz)		
Voltage fluctuation range	±10%		
Power consumption W	DC	4	
	AC	4	
Thermal class	Class 130 (B)		

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*2: When using at low vacuum, vacuum the OUT port side.

## How to order

**USB3 - 6 - 1 - M FP2 - DC24V**

Model No.

Port size  
Rc1/8

**A** Orifice size

**B** Body/sealant combination

**C** Voltage

Code	Description		
<b>A Orifice size</b>			
1	ø1.6		
2	ø2.3		
3	ø3.2		
<b>B Body/sealant combination</b>			
	<b>Body</b>	<b>Seal</b>	<b>Treatment</b>
M	Stainless steel	Fluoro rubber	Oil-prohibited
<b>C Voltage</b>			
DC12V	Standard	12 VDC	
DC24V		24 VDC	
AC100V	Option	100 VAC50/60Hz	
AC200V		200 VAC50/60Hz	

For dimensions, refer to the USB3 Series in "General Purpose Valves (CB-03-1SA)".



General Purpose Valves  
Catalog No. CB-03-1SA

Compact direct acting 3-port solenoid valve

# USG2-FP2 Series

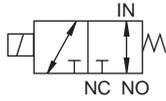
- Universal
- Port size: M5



For CE details  
Check our website.

## JIS symbol

- Universal



## Specifications

Item	USG2-M5-1	USG2-M5-2
Working fluid	Air/water/dry air/low vacuum (1.33 × 10 <sup>2</sup> Pa(abs))	
Max. working pressure MPa	0.7	0.3
Working pressure differential MPa	0 to 0.7 (0 to 0.3 when NO pressurized)	0 to 0.3 (0 to 0.1 when NO pressurized)
Proof pressure (water pressure) MPa	1.5	
Fluid temperature °C	-10 to 60 (no freezing)	
Ambient temperature °C	-20 to 50	
Valve seat leakage cm <sup>3</sup> /min	0.2 or less (pneumatic pressure)	
Mounting orientation	Unrestricted	
Weight kg	0.07	
Port size	M5	M5
Orifice size mm	1	1.5
Cv	0.03	0.06
C[dm <sup>3</sup> /(s·bar)]	0.13	0.28
b	0.57	0.46

### Electrical specifications

Rated voltage	12 VDC, 24 VDC (Option: 100 VAC 50/60 Hz, 200 VAC 50/60 Hz)	
Voltage fluctuation range	±10%	
Power consumption W	DC	3
	AC	4
Thermal class	Class 130 (B)	

\*1: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

## How to order

**USG2 - M5 - 1 - M FP2 - DC24V**

Model No.

Port size  
M5

**A** Orifice size

**B** Body/sealant combination

**C** Voltage

Code	Description		
<b>A Orifice size</b>			
1	ø1.0		
2	ø1.5		
<b>B Body/sealant combination</b>			
	Body	Seal	Treatment
M	Stainless steel	Fluoro rubber	Oil-prohibited
<b>C Voltage</b>			
DC12V	Standard	12 VDC	
DC24V		24 VDC	
AC100V	Option	100 VAC50/60Hz	
AC200V		200 VAC50/60Hz	

For dimensions, refer to the USG2 Series in "General Purpose Valves (CB-03-1SA)".



General Purpose Valves  
Catalog No. CB-03-1SA

Compact direct acting 3-port solenoid valve

# USG3-FP2 Series

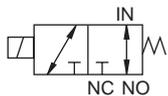
- Universal
- Port size: Rc1/8



For more information about CE, please check our website.

## JIS symbol

- Universal



## Specifications

Item	USG3-6-1	USG3-6-2
Working fluid	Air/water/dry air/low vacuum (1.33 × 10 <sup>2</sup> Pa(abs))	
Max. working pressure MPa	0.7	0.3
Working pressure differential MPa	0 to 0.7 (0 to 0.3 when NO pressurized)	0 to 0.3 (0 to 0.1 when NO pressurized)
Proof pressure (water pressure) MPa	2	
Fluid temperature °C	-10 to 60 (no freezing)	
Ambient temperature °C	-20 to 50	
Valve seat leakage cm <sup>3</sup> /min	0.2 or less (pneumatic pressure)	
Mounting orientation	Unrestricted	
Weight kg	0.14	
Port size	Rc1/8	Rc1/8
Orifice size mm	1.2	1.8
Cv	0.05	0.1
C[dm <sup>3</sup> /(s·bar)]	0.19	0.42
b	0.57	0.5

### Electrical specifications

Rated voltage	12 VDC, 24 VDC (Option: 100 VAC 50/60 Hz, 200 VAC 50/60 Hz)	
Voltage fluctuation range	±10%	
Power consumption W	DC	4
	AC	4
Thermal class	Class 130 (B)	

\*1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.

## How to order

**USG3 - 6 - 1 - M FP2 - DC24V**

Model No.

Port size  
Rc1/8

**A** Orifice size

**B** Body/sealant combination

**C** Voltage

Code	Description		
<b>A Orifice size</b>			
<b>1</b>	ø1.2		
<b>2</b>	ø1.8		
<b>B Body/sealant combination</b>			
	<b>Body</b>	<b>Seal</b>	<b>Treatment</b>
<b>M</b>	Stainless steel	Fluoro rubber	Oil-prohibited
<b>C Voltage</b>			
<b>DC12V</b>	Standard	12 VDC	
<b>DC24V</b>		24 VDC	
<b>AC100V</b>	Option	100 VAC50/60Hz	
<b>AC200V</b>		200 VAC50/60Hz	

For dimensions, refer to the USG3 Series in "General Purpose Valves (CB-03-1SA)".

Compact direct acting 2, 3-port solenoid valve

# US(Resin body)-FP2 Series

- NC, universal
- Port size: M6, barbed fitting (compatible tube size  $\phi 6 \times \phi 4$ )



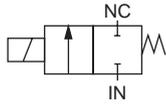
For CE details  
Check our website.



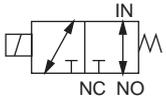
General Purpose Valves  
Catalog No. CB-03-1SA

## JIS symbol

- USB (2-port valve)  
:NC (open when energized)



- USG (3-port valve)  
: Universal



## Common specifications

Item	USB/USG
Working fluid	Refer to the working fluid in individual specifications.
Working pressure differential MPa	0 to 0.7 (refer to max. working pressure differential in individual specifications.)
Proof pressure MPa	1.5 (US*2), 2 (US*3) (water pressure)
Fluid temperature °C	0 to 60 (no freezing)
Ambient temperature °C	0 to 50
Thermal class	Class 130 (B)
Atmosphere	No explosive or corrosive atmospheres
Valve seat leakage cm <sup>3</sup> /min	0.2 or less(in air)
Port size	M6/barbed fitting (compatible tube size $\phi 6 \times \phi 4$ )
Mounting orientation	Unrestricted
Rated voltage	12 VDC 24 VDC
Treatment	Oil-prohibited

## Individual specifications

Item	Working fluid	Orifice size [mm]	Cv	C[dm <sup>3</sup> /(sbar)]	b	Max. working pressure differential [MPa]	Power consumption [W]
<b>2-port valve(①Item Wetted metal material: 2 (equivalent to SUS316))</b>							
USB2- * -1	Water/pure water (*1)	1	0.03	0.13	0.36	0.6	3
		-2	1.5	0.06	0.27	0.28	0.3
USB3- * -1		1.6	0.08	0.32	0.30	0.7	4
		2.3	0.13	0.45	0.30	0.3	4
<b>3-port valve(①Item Wetted metal material: 2 (equivalent to SUS316))</b>							
USG2- * -1	Water/pure water (*1)	1	0.03	0.13	0.36	0.6 (0.2 for NO pressurization)	3
		-2	1.5	0.06	0.27	0.28	0.3 (when NO pressurized 0.1)
USG3- * -1		1.6	0.08	0.32	0.30	0.7	4
		2.3	0.13	0.45	0.30	0.3 (0.08 for NO pressurization)	4
<b>2-port valve(①Item Wetted metal material: 1 (equivalent to SUS405))</b>							
USB2- * -1	Air/water/ dry air/ low vacuum (*1)	1	0.03	0.13	0.36	0.7	3
		-2	1.5	0.06	0.27	0.28	0.3
USB3- * -1		1.6	0.08	0.32	0.30	0.9	4
		2.3	0.13	0.45	0.30	0.3	4
<b>3-port valve(①Item Wetted metal material: 1 (equivalent to SUS405))</b>							
USG2- * -1	Air/water/ dry air/ low vacuum (*1)	1	0.03	0.13	0.36	0.7 (0.3 for NO pressurization)	3
		-2	1.5	0.06	0.27	0.28	0.3 (when NO pressurized 0.1)
USG3- * -1		1.6	0.08	0.32	0.30	0.9	4
		2.3	0.13	0.45	0.30	0.3 (when NO pressurized 0.1)	4

\*1: Check the compliant of the wetted part material and working fluid before using chemical liquid for washing.

\*2: Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*3: When using a 2-port valve at low vacuum, vacuum the NC port side.

How to order

**USB2 - M6 - 1 - S 2 FP2 - DC24V**

**A** Model No.

**B** Port size

**C** Orifice size

**D** Body/sealant

**E** Wetted metal material

**F** Voltage

**A Model No.**

2-port valve		3-port valve	
USB2	USB3	USG2	USG3

Code	Description	USB2	USB3	USG2	USG3
<b>B Port size</b>					
<b>M6</b>	M6	●	●	●(*1)	●
<b>T6</b>	Barbed fitting	●	●	●	●
<b>C Orifice size</b>					
<b>1</b>	Refer to text at right	ø1	ø1.6	ø1	ø1.6
<b>2</b>	Refer to text at right	ø1.5	ø2.3	ø1.5	ø1.6
<b>D Body/sealant</b>					
	Body	Seal			
<b>S</b>	PPS	FKM	●	●	●
<b>E Wetted metal material</b>					
<b>1</b>	SUS405 or equiv.	●	●	●	●
<b>2</b>	SUS316 or equiv.	●	●	●	●
<b>F Voltage</b>					
	12 VDC	●	●	●	●
	24 VDC	●	●	●	●

**⚠ Precautions for model No. selection**

\*1: NO port of USG2 is M5.

Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	FR L Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/bacteria-removing filter	Vacuum components	Fluid control valves

For dimensions, refer to the US Series in "General Purpose Valves (CB-03-1SA)".