



Metal-free 2-port solenoid valve

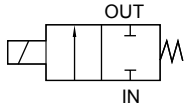
# EMB21 Series

- NC
- Working fluid: Water/pure water/chemical liquids
- Port size: Rc1/4



## JIS symbol

- NC



## Specifications

Descriptions	EMB21	
Working fluid	Water/pure water/chemical liquids (fluids that do not corrode wetted part materials)	
Working pressure MPa	-0.05 (≈-7.3 psi, -0.5 bar) to 0.3 (≈44 psi, 3 bar)	
Back pressure MPa	0 (≈0 psi, 0 bar) to 0.1 (≈15 psi, 1 bar)	
Proof pressure MPa	0.6 (≈87 psi, 6 bar) (water pressure)	
Fluid temperature °C	5 (41°F) to 80 (176°F)	
Ambient temperature °C	0 (32°F) to 60 (140°F) (no freezing)	
Valve seat leakage cm <sup>3</sup> /min	0 (water pressure)	
Port size	Rc1/4(*5)	
Orifice size mm	3	
Cv	0.18	
Mounting orientation	Unrestricted	
Weight kg	0.32 (0.43 for SUS316 body)	
Frequency Cycle/min.	60 or less	
Electrical specifications		
Rated voltage	100 VAC(50/60 Hz), 200 VAC(50/60 Hz), 24 VDC	
Voltage fluctuation range	-10 to +10% of rated voltage	
Power consumption	100 VAC	4.6
	200 VAC	5.4
	24 VDC	4.5
Leakage current mA	2 or less	
Thermal class	Class 130 (B)	

\*1 : Read the safety precautions for EMB21 (page 929).

\*2 : Check the compatibility of product component materials and working fluids.  
Do not allow fluid to come into contact with the product body.

\*3 : Foreign matter, etc., inside the piping may cause malfunction and valve seat leakage. Always flush the piping before installing the valve.

\*4 : Do not use for hydrochloric acid, hydrofluoric acid, nitric acid or sodium hypochlorite (soda).

\*5 : Do not use metal fittings on the PTFE body because they could damage the port.

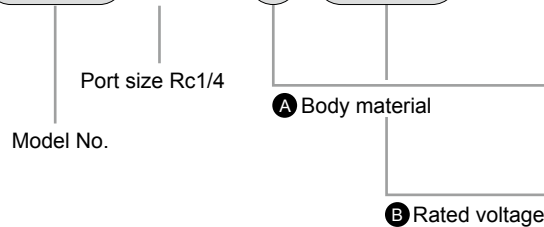
Wrap PTFE sealing tape two or three times around a fitting which is compatible with the JIS B 0203 pipe taper screw.  
Refer to the recommended fitting tightening torque below.

Recommended tightening torque: 0.7 to 1.0 N·m (PTFE), 1.0 to 1.5 N·m (SUS316)

\*6 : Do not disassemble the product.

## How to order

**EMB21 - 8 - 5 - D - AC100V**



Code	Content
<b>A Body material</b>	
Blank	PTFE
D	SUS316
<b>B Rated voltage</b>	
AC100V	100 VAC(50/60 Hz)
AC200V	200 VAC(50/60 Hz)
DC24V	24 VDC

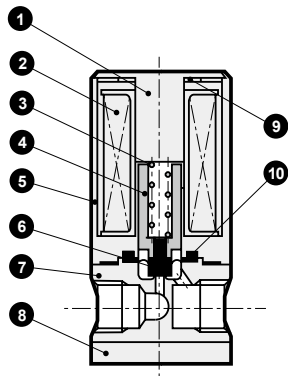
EXA  
FWD  
HNB/G  
USB/G  
FAB/G  
FGB/G  
FVB  
FWB/G  
FHB  
FLB  
AB  
AG  
AP/  
AD  
APK/  
ADK  
DryAir  
EX-  
XPLNprf  
XPLNprf  
HVB/  
HVL  
SAB/  
NAB  
LAD/  
NAD  
Water-  
Rela  
NP/NAP/  
NVP  
SNP  
CHB/G  
MXB/G  
Other  
valves  
SWD/  
MWD  
DustColl  
CVE/  
CVSE  
CCH /  
CPE/D  
LifeSci  
Gas-  
Combus  
Auto-  
Water  
SpecFld  
Custom  
Ending

# EMB21 Series

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- S $\Delta$ B/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH /  
CPE/D
- LifeSci
- Gas-  
Combus
- Auto-  
Water
- SpecFld
- Custom
- Ending

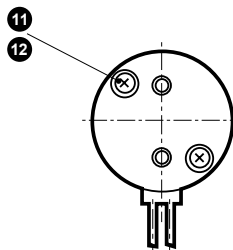
## Internal structure and parts list

### ● EMB21 Series



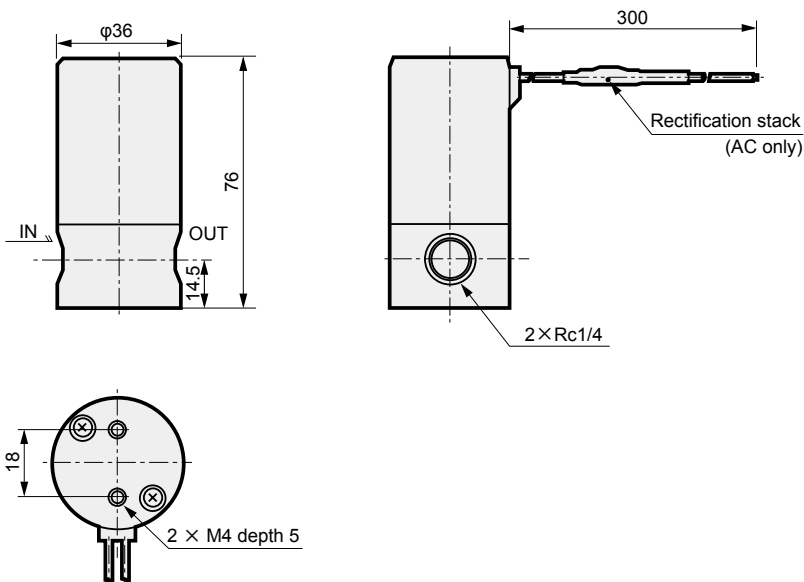
**Cannot be disassembled**

No.	Part name	Material
1	Core A	SUM22 : Steel
2	Coil assembly	-
3	Cylindrical spring	SUS304 : Stainless steel
4	Plunger	SUS405 : Stainless steel
5	Core B	SUM22 : Steel
6	Diaphragm	PTFE : Tetrafluoroethylene resin
7	Body	PTFE : Tetrafluoroethylene resin
8	Mounting plate	SUS303 : Stainless steel
9	Gasket	FKM : Fluoro rubber
10	Gasket	FKM : Fluoro rubber
11	Phillips pan head machine	SUS304 : Stainless steel
12	Spring washer	SUS304 : Stainless steel



## Dimensions

### ● EMB21-8-5-\*





Metal-free 2-port solenoid valve

# EMB41/51 Series

- NC
- Working fluid: Water/pure water/chemical liquids
- Port size: Rc3/8, Rc1/2, φ10 x φ8 PFA tube connection

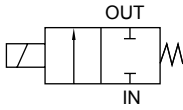
**Export controlled items**

\* Subject: Port size 15

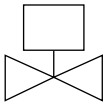


## JIS symbol

- NC



## Mounting orientation



## Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	EMB41/51
Working fluid	Water/pure water/chemical liquids (fluids that do not corrode wetted part materials)
Working pressure MPa	0 to 0.25 (refer to the working pressure in the individual specifications.) (*1)
Proof pressure MPa	0.4 (≈58 psi, 4 bar) (water pressure)
Fluid temperature °C	5 (41°F) to 60 (140°F)
Valve seat leakage cm <sup>3</sup> /min	0 (water pressure)
Mounting orientation	Vertical direction with the coil on top
Frequency Cycle/min.	60 or less
Electrical specifications	
Rated voltage	100 VAC(50/60 Hz), 200 VAC(50/60 Hz), 24 VDC
Voltage fluctuation range	-10 to +10% of rated voltage
Leakage current mA	2 or less
Mounting wire	VCTF-0.75 (2-conductor)

\*1 : Read the safety precautions for EMB41/51 (page 929).

\*2 : Check the compatibility of product component materials and working fluids.  
Do not allow fluid to come into contact with the product body.

\*3 : Foreign matter, etc., inside the piping may cause malfunction and valve seat leakage. Always flush the piping before installing the valve.

\*4 : Do not use for hydrochloric acid, hydrofluoric acid, nitric acid or sodium hypochlorite (soda).

\*5 : Do not use metal fittings because they could damage the port.

Wrap PTFE sealing tape two or three times around a fitting which is compatible with the JIS B 0203 pipe taper screw.  
Refer to the recommended fitting tightening torque below.

Recommended tightening torque: Rc 3/8: 1.0 to 1.5 N·m, Rc 1/2: 1.5 to 2.0 N·m

\*6 : Do not disassemble the product.

## Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size	Cv	Working pressure (MPa)	Back pressure (MPa)	Ambient temperature (°C)	Power consumption (W)	Weight (kg)
Model No.	(*5)	(mm)						
EMB41-10-3	Rc3/8	6	0.68	0 to 0.25	0.1	0 (32°F) to 50 (122°F)	11	0.86
EMB41-10-5		8	0.83	0 to 0.2	0.07			
EMB51-10-3	Rc3/8	10	2.05	0 to 0.15	0.06	0 (32°F) to 55 (131°F)	16	2.05
EMB51-15-4	Rc1/2	12	2.7	0 to 0.12				
EMB51-15-5		15	3.6	0 to 0.05	0.03			

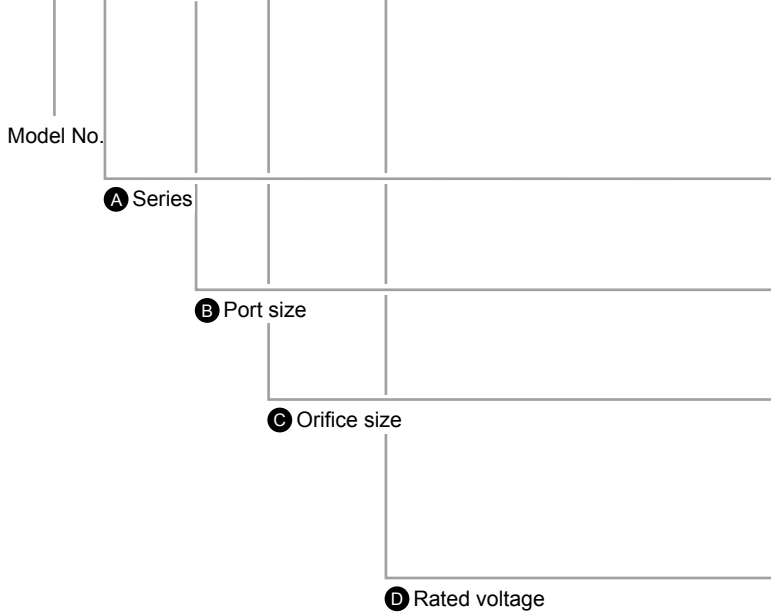
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- SpecFld
- Custom
- Ending

# EMB41/51 Series

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/  
AD
- APK/  
ADK
- DryAir
- EX-  
XPLNprf
- XPLNprf
- HVB/  
HVL
- S $\updownarrow$ B/  
NAB
- LAD/  
NAD
- Water-  
Rela
- NP/NAP/  
NVP
- SNP
- CHB/G
- MXB/G
- Other  
valves
- SWD/  
MWD
- DustColl
- CVE/  
CVSE
- CCH /  
CPE/D
- LifeSci**
- Gas-  
Combus
- Auto-  
Water
- SpecFld
- Custom
- Ending

## How to order

EMB 4 1 - 10 - 3 - AC100V



Model No.

Model No.	EMB41	EMB51
4	●	
5		●

Code	Content	EMB41	EMB51
<b>A Series</b>			
4	Small	●	
5	Large		●
<b>B Port size</b>			
10	Rc3/8	●	●
15	Rc1/2		●
<b>C Orifice size</b>			
		<b>EMB41</b>	<b>EMB51</b>
3	φ6	φ10	●
4	-	φ12	●
5	φ8	φ15	●
<b>D Rated voltage</b>			
AC100V	100 VAC(50/60 Hz)	●	●
AC200V	200 VAC(50/60 Hz)	●	●
DC24V	24 VDC	●	●

The combinations indicated with ● above are available.

[Example of model No.]

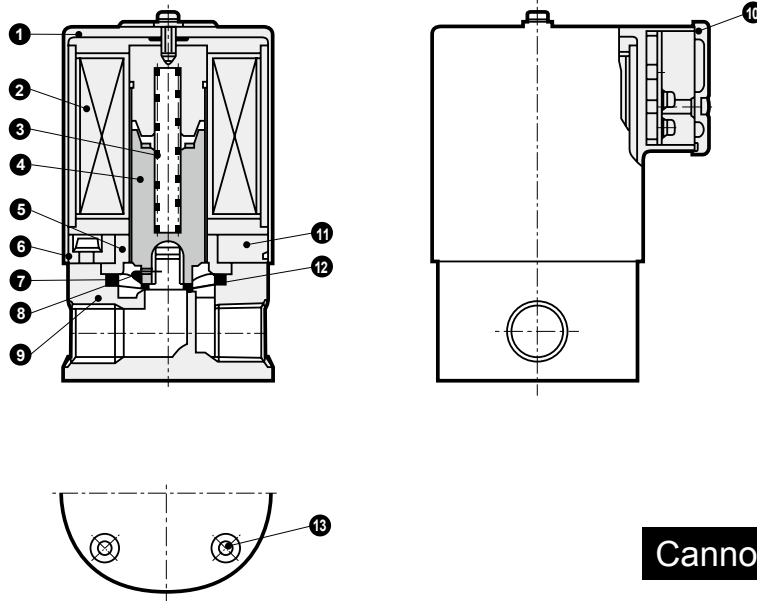
**EMB51-15-5-AC200V**

Model : EMB51

- A** Series : Large
- B** Port size : Rc 1/2
- C** Orifice size : φ15
- D** Rated voltage : 200 VAC (50/60 Hz)

## Internal structure and parts list

● EMB41/51 Series

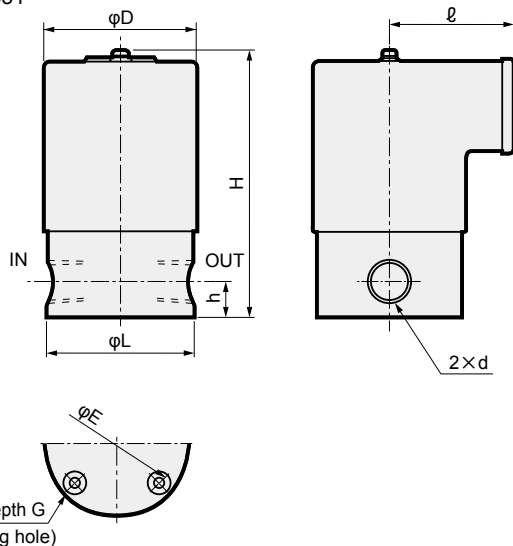


No.	Part name	Material	No.	Part name	Material
1	Cover	PP	9	Body	PTFE
2	Coil assembly	-	10	Gasket	FKM
3	Spring	SUS304	11	Body	A5056
4	Plunger	SUS405	12	Rubber spacer	FKM
5	Core assembly	SUS403/SUS316	13	Embedded nut	SUS303
6	O-ring	FKM			
7	Diaphragm	PTFE			
8	Double diaphragm	PTFE			
		Polypropylene			Tetrafluoroethylene resin
		Stainless steel			Fluoro rubber
		Stainless steel			Aluminum
		Tetrafluoroethylene resin			Fluoro rubber
		Tetrafluoroethylene resin			Stainless steel

## Dimensions

● EMB41-\*\*-\*

EMB51-\*\*-\*



Model No.	D	d	E	F-G	H	h	L	ℓ
EMB41-10-3	54	Rc3/8	41	M4-8	110	14	54	50
EMB41-10-5	54	Rc3/8	41	M4-8	110	14	54	50
EMB51-10-3	74	Rc3/8	56	M5-12	136	22	70	60
EMB51-15-4	74	Rc1/2	56	M5-12	136	22	70	60
EMB51-15-5	74	Rc1/2	56	M5-12	136	22	70	60

EXA  
FWD  
HNB/G  
USB/G  
FAB/G  
FGB/G  
FVB  
FWB/G  
FHB  
FLB  
AB  
AG  
AP/  
AD  
APK/  
ADK  
DryAir  
EX-  
XPLNprf  
XPLNprf  
HVB/  
HVL  
S<sup>◇</sup>B/  
NAB  
LAD/  
NAD  
Water-  
Rela  
NP/NAP/  
NVP  
SNP  
CHB/G  
MXB/G  
Other  
valves  
SWD/  
MWD  
DustColl  
CVE/  
CVSE  
CCH /  
CPE/D  
**LifeSci**  
Gas-  
Combus  
Auto-  
Water  
SpecFld  
Custom  
Ending