



Metal-free 2-port solenoid valve

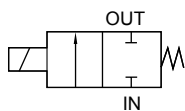
EMB21 Series

- NC (open when energized)
- Working fluid: Water/pure water/chemical liquids
- Port size: Rc1/4



JIS symbol

- NC (open when energized)



Specifications

Item	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 cm³/min	0 (water pressure)	
Port size	Rc1/4(*2)	
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 975).

*2 : 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.

For tightening fluoro resin fittings, refer to the recommended tightening torque below.

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

How to order

EMB21 - 8 - 5 - D - AC100V

Model No.
Port size Rc1/4

A Body material

B Rated voltage

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

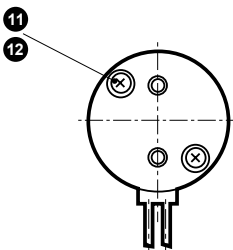
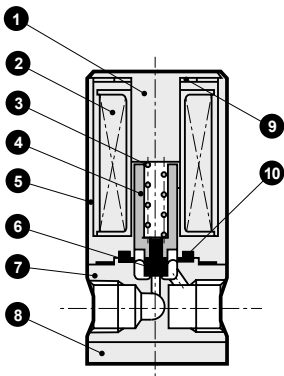
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
DryAir
EX-
XPLNprf
XPLNprf
HVB/
HVL
S ◇ B/
NAB
LAD/
NAD
Water-
Rela
NP/NAP/
NVP
SNP
CHB/G
MXB/G
Other
valves
SWD/
MWD
DustColl
CVE/
CVSE
CCH/
CPE/D
LifeSci
Gas-
Combus
Auto-
Water
Outdoor
SpecFld
Custom
Ending

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◇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
Outdoor
SpecFld
Custom
Ending

Internal structure and parts list

● EMB21 Series

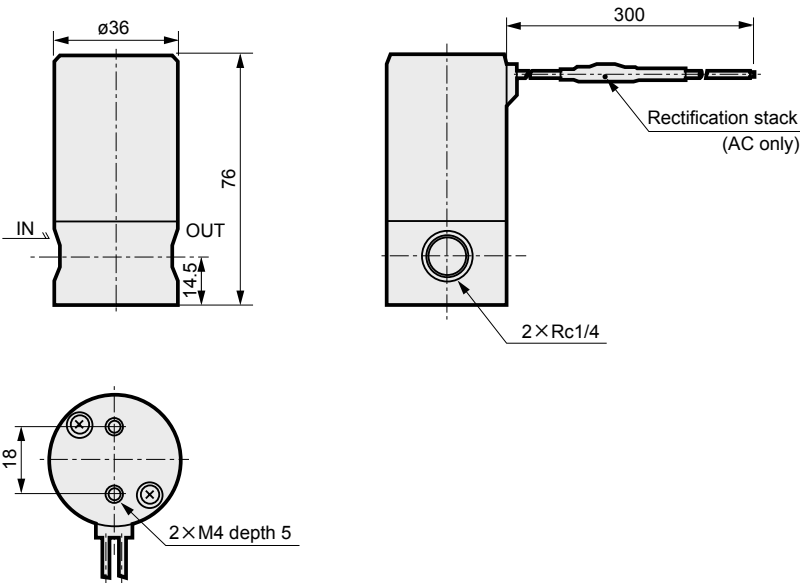


Cannot be disassembled

No.	Part name	Material
1	Core A	SUM22 Steel
2	Coil assembly	-
3	Cylindrical spring	SUS304 Stainless steel
4	Plunger	SUS405 or equiv. 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 (open when energized)
- Working fluid: Water/pure water/chemical liquids
- Port size: Rc3/8, Rc1/2

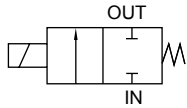
Export controlled items

* Subject: Port size 15

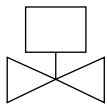
RoHS

JIS symbol

- NC (open when energized)



Mounting orientation



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	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 ³ /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 975).

*2 : 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.

For tightening fluoro resin fittings, refer to the recommended 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

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Port size	Orifice size	Cv	Working pressure (MPa)	Back pressure (MPa)	Ambient temperature (°C)	Power consumption (W)	Weight (kg)
Model No.	(*2)	(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			

EMB41/51 Series

How to order

EMB41 - 10 - 3 - AC100V

Model No.

A Port size

B Orifice size

C Rated voltage

[Example of model No.]

EMB51-15-5-AC200V

Model: EMB51

A Port size : Rc1/2

B Orifice size : ø15

C Rated voltage : 200 VAC (50/60 Hz)

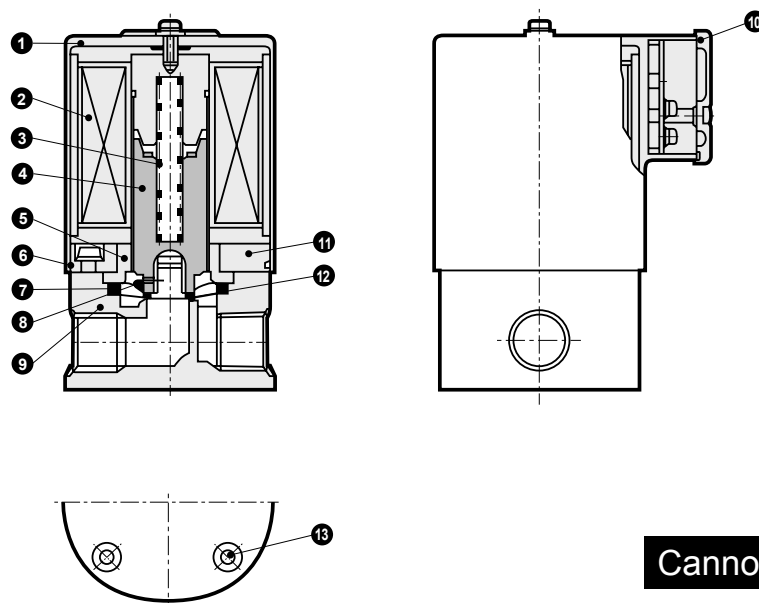
Model No.

Code	Description	EMB41	EMB51	EMB51
A Port size				
10	Rc 3/8	●	●	
15	Rc 1/2			●
B Orifice size				
		EMB41	EMB51	
3	ø6	ø10	●	●
4	-	ø12		●
5	ø8	ø15	●	●
C Rated voltage				
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
S◇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
Outdoor
SpecFld
Custom
Ending

Internal structure and parts list

● EMB41/51 Series



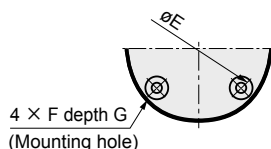
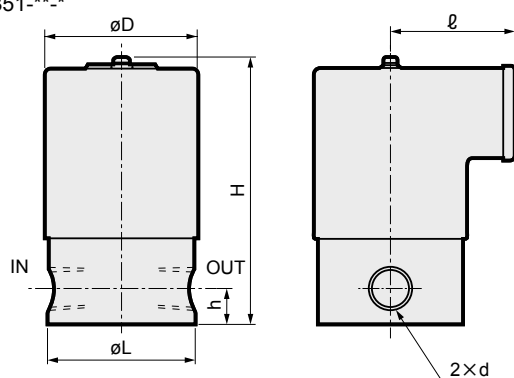
Cannot be disassembled

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 or equiv.	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
		Stainless steel			Fluoro rubber
		Stainless steel			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◇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
Outdoor
SpecFld
Custom
Ending