

Direct acting 2-port solenoid valve for hot water, single unit
Special purpose

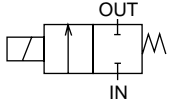
FHB Series

- NC (open when energized)
- Port size: Rc1/8 to Rc1/2



JIS symbol

- NC (open when energized)



Common specifications

Item	FHB
Working fluid	Hot water (90°C (194°F) or less)
Working pressure differential MPa	0 (≈0 psi, 0 bar) to 1.5 (≈220 psi, 15 bar) (refer to the max. working pressure differential in the individual specifications.)
Proof pressure (water pressure) MPa	5.0 (≈730 psi, 50 bar) (3.0 (≈440 psi, 30 bar) for ø7 and ø10 orifice)
Fluid temperature °C	1 (33.8°F) to 90 (194°F) (no freezing)
Ambient temperature °C	-20 (-4°F) to 60 (140°F)
Thermal class	Class 180 (H) or equivalent
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min	0 (water pressure)
Mounting orientation	Unrestricted
Degree of protection	IP65 or equivalent

Individual specifications

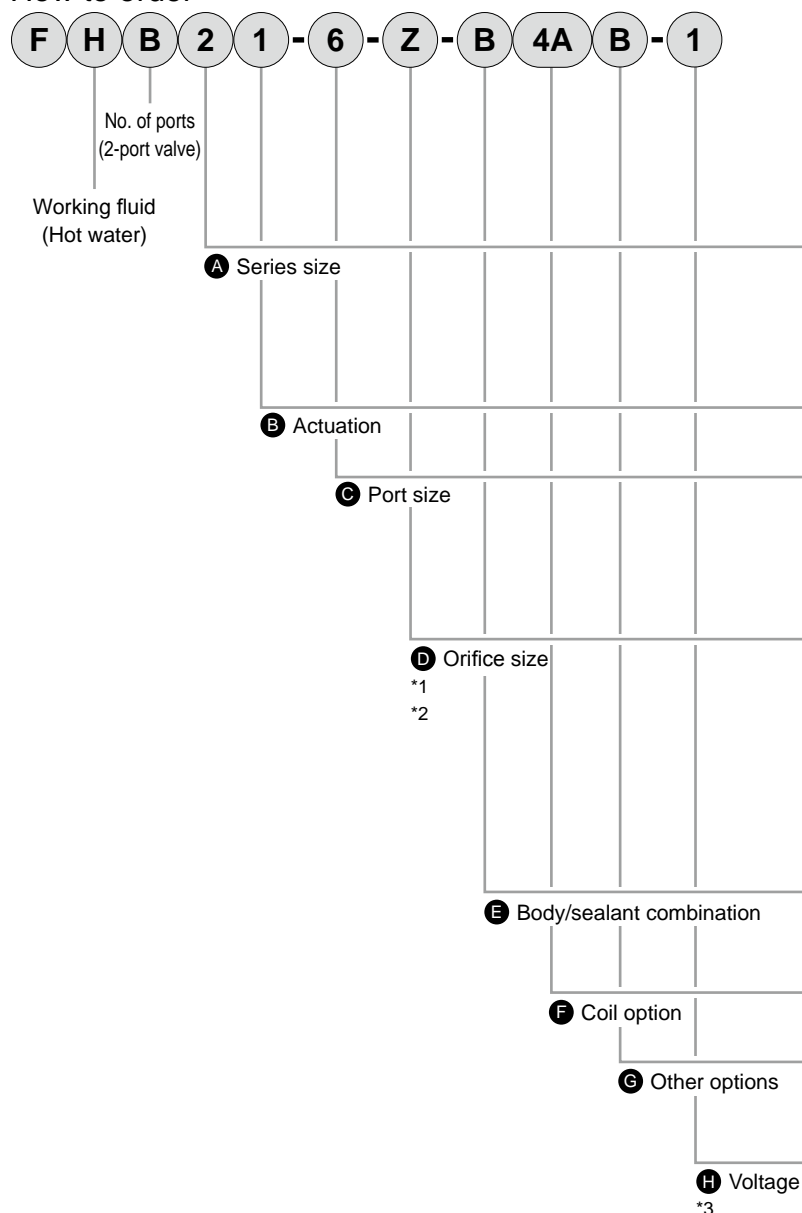
1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item Model No.	Port size	Orifice size (mm)	Cv	Max. working pressure differential MPa	Max. working pressure MPa	Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)										
							When holding		When starting		AC												
							50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz											
NC (open when energized)																							
FHB 21- 6 - Z	Rc1/8	1	0.035	1.5	1.5 (≈220 psi, 15 bar)	100 VAC 50/60 Hz 200 VAC 50/60 Hz	5.5	4	9	8	2.8	2	0.16										
- 2		2	0.15	0.7			10	7	23	20	4.2	3.2											
FHB 31- ⁶ / ₈ - 3	Rc1/8	3	0.31	0.7			0.3 (≈44 psi, 3 bar)	100 VAC 50/60 Hz 200 VAC 50/60 Hz	16	13	40	35	7.5	6.3	0.51								
- 5	4	0.54	0.4	23												20	4.2	3.2					
- 6	Rc1/4	5	0.75																0.25				
FHB 41- ⁸ / ₁₀ - 5	Rc1/4	4	0.54	0.8			0.3 (≈44 psi, 3 bar)		100 VAC 50/60 Hz 200 VAC 50/60 Hz	16	13	40	35	7.5	6.3	0.51							
- 6	5	0.80	0.5	60													50	11.5	10				
- 7	Rc3/8	7	1.10																	0.2			
FHB 41- ¹⁰ / ₁₅ - 8	Rc3/8 Rc1/2	10	1.88	0.1			0.3 (≈44 psi)			100 VAC 50/60 Hz 200 VAC 50/60 Hz	23	19	60	50	11.5	10	0.60						
FHB 51- ⁸ / ₁₀ - 5	Rc1/4	4	0.54	1.1													0.3 (≈44 psi)	100 VAC 50/60 Hz 200 VAC 50/60 Hz	23	19	60	50	11.5
- 6	5	0.80	0.7	60	50	11.5																	
- 7	Rc3/8	7	1.10				0.3																
FHB 51- ¹⁰ / ₁₅ - 8	Rc3/8 Rc1/2	10	1.88	0.12	0.3 (≈44 psi)	100 VAC 50/60 Hz 200 VAC 50/60 Hz	23	19			60	50	11.5	10	0.79								

- *1 : The voltage fluctuation range must be within ±10% of the rated voltage.
 *2 : The leakage current must be less than or equal to the values shown below.
 *3 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz).
 The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz).

Leakage current	Voltage		
	Model No.	100 VAC	200 VAC
	FHB2	3 mA or less	1.5 mA or less
FHB3/4/5	6 mA or less	3 mA or less	

How to order



		Model No.			
		FHB21	FHB31	FHB41	FHB51
Code	Description				
A Series size					
2	22 mm	●			
3	28 mm		●		
4	34 mm			●	
5	40 mm				●
B Actuation					
1	NC (open when energized)	●	●	●	●
C Port size					
6	Rc1/8	●	●		
8	Rc1/4		●	●	●
10	Rc3/8			●	●
15	Rc1/2			●	●
D Orifice size					
Z	ø1	●			
2	ø2	●			
3	ø3		●		
5	ø4		●	●	●
6	ø5		●	●	●
7	ø7			●	●
8	ø10			●	●
E Body/sealant combination					
	Body	Seal			
B	Bronze casting	FKM	●	●	●
F Coil option					
4A	Std. Grommet lead wire	●	●	●	●
G Other options					
Blank	Std. None	●	●	●	●
B	Option Mounting plate	●	●	●	●
H Voltage					
1	100 VAC 50/60 Hz	●	●	●	●
2	200 VAC 50/60 Hz	●	●	●	●
Specify the desired voltage if it is not listed above. (AC only)					

Select from the combinations indicated with ● in the table above.

[Example of model No.]

FHB21-6-Z-B4AB-1

Model: FHB

- A** Series size : 22 mm
- B** Actuation : NC (open when energized)
- C** Port size : Rc1/8
- D** Orifice size : ø1
- E** Body/sealant combination : Body - bronze casting/sealant - FKM
- F** Coil option : Grommet lead wire (thermal class H or equivalent)
- G** Other options : Mounting plate
- H** Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

*1 : For FHB41 and FHB51 with orifice of ø4 mm (Item 5), ø5 mm (Item 6) and ø7 mm (Item 7), available port sizes are Rc1/4 (Item 8) and Rc3/8 (Item 10) only.

*2 : For orifice of ø10 mm (Item 8), available port sizes are Rc3/8 (Item 10) and Rc1/2 (Item 15).

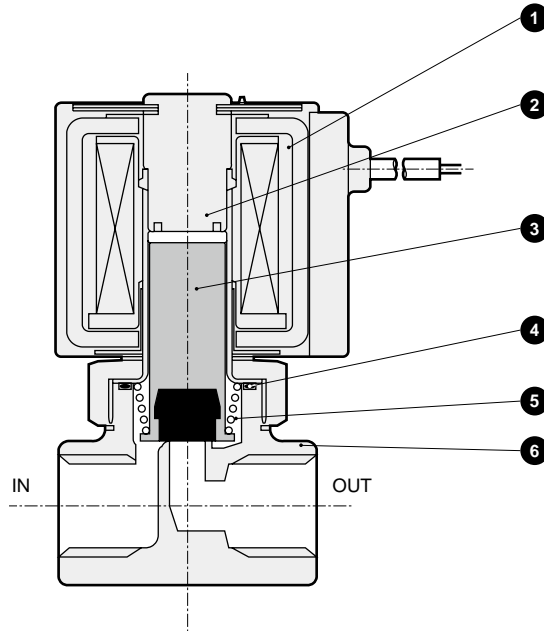
*3 : Other voltages may not be available. Contact CKD for details.

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
SøB/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

● FHB*1 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 \diamond B/
NAB
- LAD/
NAD
- Water-
Rela
- NP/NAP/
NVP
- SNP
- CHB/G
- MXB/G
- Other
valves
- SWD/
MWD
- DustColl
- CVL/
CVSE
- CCH/
CPE/D
- LifeSci
- Gas-
Combus
- Auto-
Water
- Outdoor
- SpecFld
- Custom
- Ending

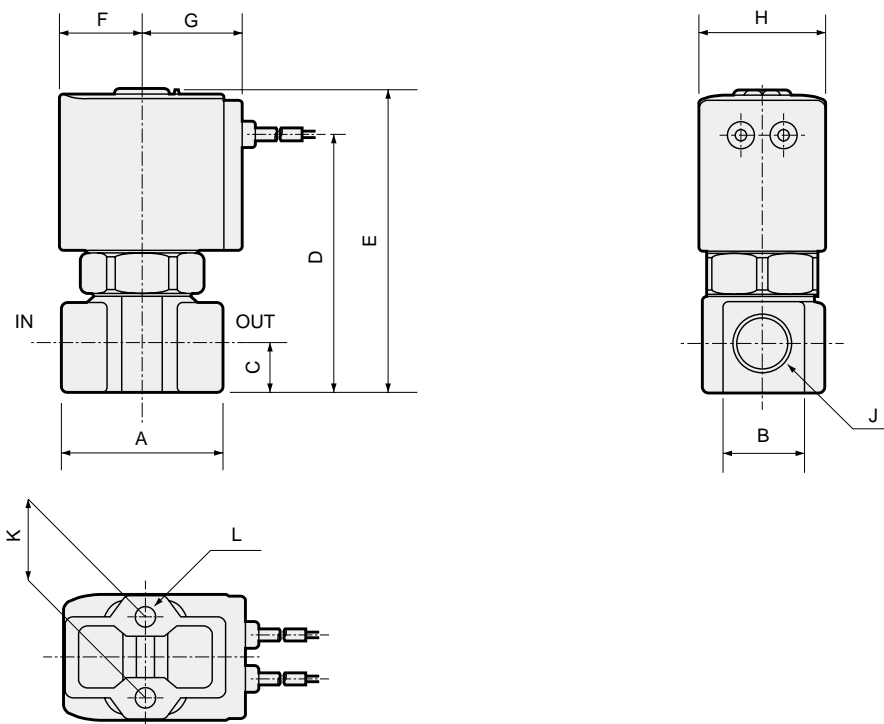


No.	Part name	Material	
1	Coil assembly	-	-
2	Core assembly	SUS, Cu	Stainless steel, copper
3	Plunger assembly	SUS, FKM	Stainless steel, fluoro rubber
4	O-ring	EPDM	Ethylene propylene rubber
5	Spring	SUS	Stainless steel
6	Body	CAC408	Bronze casting

Dimensions



- Grommet lead wire (thermal class H or equivalent)
FHB*1-*-***-B4A**



* Lead wire length 300 mm

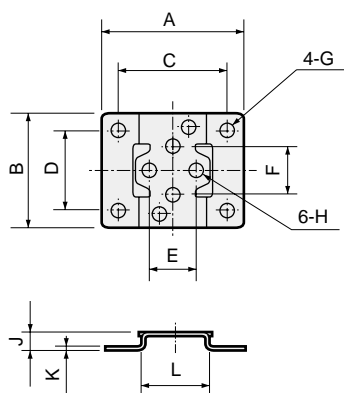
Model No.	A	B	C	D	E	F	G	H	J	K	L
FHB21	32	14	8	45.5	56	15.5	19.5	22	Rc1/8	15	M4 depth 6
FHB31	36	18	11	57.5	68.5	18.5	22.5	28	Rc1/8, Rc1/4	18	M5 depth 6
FHB41	40	23	12	67	81	22.5	26	34	Rc1/4, Rc3/8	18	M5 depth 8
FHB41-10/15-8 (orifice ø10)	50	29	15	76	90				Rc3/8, Rc1/2		
FHB51	40	23	12	73.5	89	26	29.5	40	Rc1/4, Rc3/8	18	M5 depth 8
FHB51-10/15-8 (orifice ø10)	50	29	15	82.5	98				Rc3/8, Rc1/2		

Optional dimensions



- Mounting plate
FHB*1-*-***-B*** [B]

Material: Steel
Zinc plated



Model No.	A	B	C	D	E	F	G	H	J	K	L
FHB21	40	34	30	25	15	15	ø5	ø4.5	6	1.2	20
FHB31	52	42	40	30	18	18	ø6	ø5.5	7	1.6	25
FHB41/51	56	48	44	36	18	18	ø6	ø5.5	7	1.6	30

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
SøB/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