



Single valve sub-plate piping
Pilot operated 5-port pneumatic valve

4KB1/2/3/4 Series

● Cylinder bore size: $\varnothing 20$ to $\varnothing 160$

Refer to the Ending for details.



- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/
LMF0
- MN3S0
MN4S0
- 4SA/B0
- 4KA/B**
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G
GMF
- PV5
GMF
- PV5S-0
- 3QR
3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/
NVP
- 4F*0EX
- 4F*0E
- HMV
HSV
- 2QV
3QV
- SKH
- PCD
- Silencer
- TotAirSys
(Total Air)
- TotAirSys
(Gamma)
- Ending

JIS symbol

- 5-port valve
2-position single
- 5-port valve
2-position double
- 5-port valve
3-position all ports closed
- 5-port valve
3-position A/B/R connection
- 5-port valve
3-position P/A/B connection
- External pilot

(2-position single)

Common specifications

Descriptions	Content
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working press. MPa	0.70 (≈ 100 psi, 7 bar)
Min. working press. MPa	Refer to individual specifications listed below
Proof pressure MPa	1.05 (≈ 150 psi, 10.5 bar)
Ambient temperature $^{\circ}\text{C}$	-5 (23°F) to 50 (122°F) (no freezing)
Fluid temperature $^{\circ}\text{C}$	5 (41°F) to 50 (122°F)
Lubrication	Not required
Degree of protection	Dust-proof
Vibration resistance m/s^2	50 or less
Shock resistance m/s^2	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

*1: The working pressure when the external pilot (option code: K) has been selected is 0 to 0.7 MPa.
In addition, use the pilot with a pressure of 0.2 to 0.7 MPa.

Electrical specifications

Descriptions		4KB1/2	4KB3/4
Rated voltage	AC	100,200 (50 / 60 Hz)	
	DC	24	
Voltage fluctuation range		$\pm 10\%$	
Starting current	AC 100 V	0.056/0.044	0.046/0.042
	AC 200 V	0.028/0.022	0.023/0.021
Holding current	AC 100 V	0.028/0.022	0.023/0.021
	AC 200 V	0.014/0.011	
	DC 24 V	0.075	
Power consumption	AC 100 V	1.8 / 1.4 (1.8 / 1.5)	1.6 / 1.3 (1.8 / 1.5)
	AC 200 V	1.8 / 1.4 (1.8 / 1.5)	1.6 / 1.3 (1.8 / 1.5)
	DC 24 V	1.8(2.0)	
Thermal class		B (molded coil)	
Temperature rise $^{\circ}\text{C}$		43	30

Reference: 100 VAC 50/60 Hz can be used with a rated voltage of 110 VAC 60 Hz and 200 VAC 50/60 Hz can be used with 220 VAC 60 Hz.

Individual specifications

1 MPa \approx 145.0 psi, 1 MPa = 10 bar

Descriptions		4KB1	4KB2	4KB3	4KB4	
Min. working pressure	2-position Single	0.15	0.15	0.15	0.15	
	2-position Double		0.10	0.10	0.10	
	3-position	0.20	0.20	0.20	0.20	
Port size	P/A/B port	Rc1/8	Rc1/8, Rc1/4	Rc1/4, Rc3/8	Rc3/8, Rc1/2	
	*1 R1/R2 port	Rc1/8	Rc1/4	Rc1/4, Rc3/8	Rc3/8, Rc1/2	
Response time	2-position	30 or less	30 or less	30 or less	30 or less	
	*2 3-position	60 or less	60 or less	60 or less	60 or less	
Weight	2-position	Single	70	115	214	325
		Double	110	155	315	435
	3-position	120	170	354	505	

*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

*2: The response time is the value at 0.5 MPa working pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

Flow characteristics

Model No.	Solenoid position	C[dm ³ /(s·bar)]	b	
4KB1	2-position	0.89	0.44	
	3-position	All ports closed	0.63	0.50
		A/B/R connection	1.2	0.29
		P/A/B connection	0.75	0.39
4KB2	2-position	2.7	0.24	
	3-position	All ports closed	2.4	0.29
		A/B/R connection	3.0	0.27
		P/A/B connection	2.4	0.34
4KB3	2-position	6.3	0.26	
	3-position	All ports closed	5.6	0.27
		A/B/R connection	6.6	0.20
		P/A/B connection	5.9	0.27
4KB4	2-position	12	0.24	
	3-position	All ports closed	11	0.27
		A/B/R connection	13	0.21
		P/A/B connection	10	0.22

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

Ozone-proof specifications (Ending Page 5)

** - Voltage - **P11**

Coolant proof specifications (Catalog No.CC-N-375A)

- Special structure with outstanding oil and water resistance

** - **A** - Voltage

Copper and PTFE free specifications

- Copper- and PTFE-based materials are not used in the flow path.

** - Voltage - **P6**

4GA/B
M4GA/B
MN4GA/B
4GA/B (mastr)
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
4TB
4L2-4/ LMFO
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (mastr)
4F
4F (mastr)
PV5G
GMF
PV5
GMF
PV5S-0
3QR
3QB
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4KB1 to 4 Series

Single valve; sub-plate piping

How to order

4KB2 **1** **0** - **06** - **M1** **B** - **AC100V**

● Single solenoid valve for manifold

4KB1 **1** **9** - **00** - **M1** **B** - **AC100V**

* Gasket/mounting screw attached

A Model No.

B Solenoid position

C Port size

D Manual override

E Electrical connections
* Refer to page 1237 for the circuit diagram with surge suppressor/lamp.

F Other options

G Voltage

A Model No.

	4KB1	4KB2	4KB3	4KB4
4KB1	●	●	●	●
4KB2	●	●	●	●
4KB3	●	●	●	●
4KB4	●	●	●	●

Code	Content	4KB1	4KB2	4KB3	4KB4
B Solenoid position	1 2-position single	●	●	●	●
	2 2-position double	●	●	●	●
	3 3-position all ports closed	●	●	●	●
	4 3-position A/B/R connection	●	●	●	●
	5 3-position P/A/B connection	●	●	●	●

Port size	Port	P/A/B port	R1/R2 port			
			(1) = Rc1/8	(2) = Rc1/4	(3) = Rc3/8	(4) = Rc1/2
C	06	Rc1/8	(1)	(2)		
	08	Rc1/4		(2)	(2)	
	10	Rc3/8			(3)	(3)
	15	Rc1/2				(4)

D	Blank	Non-locking manual override	●	●	●	●
	M1	Locking manual override	●	●	●	●

E Electrical connections	Grommet lead wire					
	Blank	Grommet lead wire (300 mm)	●	●	●	●
Compact terminal box						

E Electrical connections	B	Without lead wire	●	●	●	●
	L	Without lead wire	Refer to [Table 1] at left for			
	LS	No lead wire, with surge suppressor/lamp	details.			
						*1

E Electrical connections	C type connector (lead wire lateral direction)						
	C	Lead wire length (300 mm)	●	●	●	●	
	C00	Lead wire length (500 mm)	●	●	●	●	
	C01	Lead wire length (1000 mm)	●	●	●	●	
	C02	Lead wire length (2000 mm)	●	●	●	●	
	C03	Lead wire length (3000 mm)	●	●	●	●	
	C1	Without lead wire	●	●	●	●	
	C2	Lead wire length (300 mm) with surge suppressor/lamp	●	●	●	●	
	C20	Lead wire length (500 mm) with surge suppressor/lamp	●	●	●	●	
	C21	Lead wire length (1000 mm) with surge suppressor/lamp	●	●	●	●	
	C22	Lead wire length (2000 mm) with surge suppressor/lamp	●	●	●	●	
	C23	Lead wire length (3000 mm) with surge suppressor/lamp	●	●	●	●	
	C3	Without lead wire, with surge suppressor/lamp	●	●	●	●	
	D type connector (lead wire upward direction)						
	D	Lead wire length (300 mm)	●	●	●	●	
	D00	Lead wire length (500 mm)	●	●	●	●	
	D01	Lead wire length (1000 mm)	●	●	●	●	
	D02	Lead wire length (2000 mm)	●	●	●	●	
	D03	Lead wire length (3000 mm)	●	●	●	●	
	D1	Without lead wire	●	●	●	●	
	D2	Lead wire length (300 mm) with surge suppressor/lamp	●	●	●	●	
	D20	Lead wire length (500 mm) with surge suppressor/lamp	●	●	●	●	
	D21	Lead wire length (1000 mm) with surge suppressor/lamp	●	●	●	●	
	D22	Lead wire length (2000 mm) with surge suppressor/lamp	●	●	●	●	
D23	Lead wire length (3000 mm) with surge suppressor/lamp	●	●	●	●		
D3	Without lead wire, with surge suppressor/lamp	●	●	●	●		

F Other options	Blank	No option	●	●	●	●
	K	External pilot *2	●	●	●	●
	S	Surge suppressor attached *3 *4	●	●	●	●

Voltage	Code	Content	Standard			
			4KB1	4KB2	4KB3	4KB4
G	AC100V	100 VAC 50/60 Hz	●	●	●	●
	AC200V	200 VAC 50/60 Hz	●	●	●	●
	DC24V	24 VDC	●	●	●	●
	DC12V	12 VDC	●	●	●	●
	AC110V	110 VAC 50/60 Hz	●	●	●	●
	AC220V	220 VAC 50/60 Hz	●	●	●	●

* Other custom order products					
AC24V	●	●	●	●	●
AC115V	●	●	●	●	●
AC120V	●	●	●	●	●

[Table 1] Compact terminal box L/LS compatibility table

Code	Content		4KB1	4KB2	4KB3	4KB4	Surge suppressor	
L	Without lead wire	With indicator lamp	AC	●	●	●	●	
		DC			●	●		
		with surge suppressor/indicator lamp	AC					
			DC	●	●			Integrated
LS	Without lead wire	with surge suppressor/indicator lamp	AC	●	●	●	Integrated	
		DC			●	●	Integrated	

⚠ Precautions for model No. selection

- *1 : The DC voltage models of the compact terminal box "L" of 4KB1, 4KB2 are equipped with a surge suppressor.
- *2 : Consult with CKD when using a vacuum with the external pilot (K).
- *3 : The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less. (Refer to page 1236)
- *4 : The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.

[Example of model No.]

4KB210-06-M1BK-AC100V

- A** Model : 4KB2
- B** Solenoid position : 2-position single
- C** Port size : Rc1/8
- D** Manual override : Locking manual override
- E** Electrical connections : Compact terminal box/without lead wire
- F** Other options : External pilot
- G** Voltage : 100 VAC 50/60 Hz

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (mastr)
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- 4TB
- 4L2-4/LMF0
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B**
- 4KA/B (mastr)
- 4F
- 4F (mastr)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3QR
- 3QB
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/INAP/NVP
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending