



# Discrete valve: Body porting 3, 5 port pilot operated valve 3KA1/4KA1/2/3/4 Series

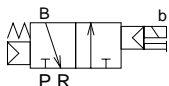
• Applicable cylinder bore size: 20 to 160mm



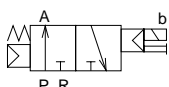
CAD DATA AVAILABLE.

## JIS symbol

- 3 Port valve  
2-position NC type single



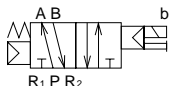
- 3 Port valve  
2-position NO type single



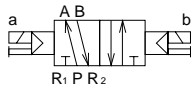
- 3 Port valve  
2-position double



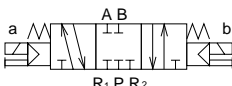
- 5 port valve  
2-position single



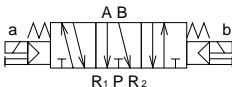
- 5 port valve  
2-position double



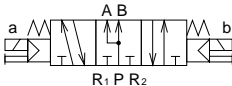
- 5 port valve  
3-position all ports closed



- 5 port valve  
3-position A/B/R connection



- 5 port valve  
3-position P/A/B connection



## Common specifications

Descriptions	
Valve and solenoid type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.70
Min. working pressure MPa	Refer to individual specifications below.
Withstanding pressure MPa	1.05
Ambient temperature °C	-5 to 50
Fluid temperature °C	5 to 50
Lubrication	Not required
Protection structure	Dust proof
Vibration/impact m/s <sup>2</sup>	50 or less/300 or less
Working environment	Not to be subject to corrosive gas

## Other specifications (Consult with CKD.)

Descriptions	Model No.
Ozone proof specifications	**-[Voltage]-P11
Copper and PTFE free	**-[Voltage]-P6

## Electrical specifications

Descriptions		3KA1, 4KA1/2	4KA3/4
Rated voltage V	AC	100, 200 ( 50 /60 Hz )	
	DC	24	
Rated voltage fluctuation range		±10%	
Starting current A	AC 100V	0.056/0.044	0.046/0.042
	AC 200V	0.028/0.022	0.023/0.021
	DC 24V	—	
Holding current A	AC 100V	0.028/0.022	0.023/0.021
	AC 200V	0.014/0.011	
	DC 24V	0.075	
Power consumption W	AC 100V	1.8 / 1.4 (1.8 /1.5)	1.6 / 1.3 (1.8 /1.5)
	AC 200V	1.8 / 1.4 (1.8 /1.5)	1.6 / 1.3 (1.8 /1.5)
	DC 24V	1.8(2.0)	
Heat proof class		B (molded coil)	
Temperature rise °C		43	30

Reference: AC100V coil is available for AC110V 60Hz, while AC200V is available for AC220V 60Hz.

## Individual specifications

Descriptions		3KA1	4KA1	4KA2	4KA3	4KA4
Min. working pressure MPa	2-position Single	0.15	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	Port P/A/B	M5 Push in joint 4, 6 dia.	M5 Push in joint 4, 6 dia.	Rc1/8 Push in joint 6, 8 dia.	Rc1/4 Push in joint 8, 10 dia.	Rc3/8 Push in joint 10, 12 dia.
	Port R1/R2	M5	M5	Rc1/8	Rc1/4	Rc3/8
Effective sectional area •1, •2 mm <sup>2</sup>	2-position	3	3	12.5	25	50
	3-position	-	3	11.0	22	43
Response time • 3 ms	2-position	30 or less	30 or less	30 or less	30 or less	30 or less
	3-position	-	60 or less	60 or less	60 or less	60 or less
Mass g	2-position Single	70	70	115	214	325
	2-position Double	110	110	155	315	435
	3-position	-	120	170	354	505

- 1: Effective sectional area is the value when port size M5 (3KA1/4KA1), Rc1/8 (4KA2), Rc1/4 (4KA3), Rc3/8 (4KA4).
- 2: For 3-position P/A/B connection type of 4KA1 series, effective sectional area is 2.5mm<sup>2</sup>.
- 3: Response time is the value when supply pressure 0.5MPa, pre-lubricated and ON. The value varies depending on supplied pressure and oil quality.

# 3KA1,4KA1 to 4 Series

Discrete valve: Body porting

## How to order

4KA2 1 0 - 06 - M1 B P - AC100V

Model

A Solenoid position  
Code

B Port size

C Manual override

D Electric connection  
• Please refer to Page 485 about  
circuit diagram of surge  
suppressor with indicator light.

E Other options

F Voltage

## Caution for model No. selection

- 1: When attached surge suppressor is DC24V or less, suppression connector type is provided.

## <Example of model No.>

**4KA210-06-M1BP-AC100V**

Model: 4KA2

- A Solenoid position : 2-position single
- B Port size : Rc1/8
- C Manual override : Locking manual override
- D Electric connection : Small terminal box/no lead wire
- E Other options : Mounting plate
- F Voltage : AC100V 50/60Hz

		Model									
		3KA1	4KA1	4KA2	4KA3	4KA4					
Symbol	Descriptions										
A	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									
Solenoid position	1	2-position single solenoid, normally closed									
	11	2-position single solenoid, normally open									
B	Port	Port P/A/B				Port R1/R2					
							①=M5    ②=Rc1/8	③=Rc1/4    ④=Rc3/8			
	M5	M5	①	①							
	06	Rc1/8			②						
	08	Rc1/4				③					
	10	Rc3/8					④				
	GS4	4 mm dia. push in joint	①	①							
	GS6	6 mm dia. push in joint	①	①	②						
	GS8	8 mm dia. push in joint			②	③					
	GS10	10 mm dia. push in joint				③	④				
GS12	12 mm dia. push in joint					④					
C	Blank	Non-locking manual override				●	●	●	●	●	
	M1	Locking manual override				●	●	●	●	●	
D	Grommet lead wire										
	Blank	Grommet lead wire (300mm)				●	●	●	●	●	
	Small terminal box										
	B	No lead wire	No surge suppressor/light	●	●	●	●	●	●		
	L	No lead wire	Indicator light (For DC of 4KA1/2, with surge supp.)	●	●	●	●	●	●		
	L2	Lead wire length (300mm)		●	●	●					
	LS	No lead wire	Surge suppressor/light	●	●	●	●	●	●		
	C-connector (axial lead wire)										
	C	Lead wire length (300mm)	No surge suppressor/ light	●	●	●	●	●	●		
	C00	Lead wire length (500mm)		●	●	●	●	●			
	C01	Lead wire length (1000mm)		●	●	●	●	●			
	C02	Lead wire length (2000mm)		●	●	●	●	●			
	C03	Lead wire length (3000mm)		●	●	●	●	●			
	C1	No lead wire	Surge suppressor/ light	●	●	●	●	●	●		
	C2	Lead wire length (300mm)		●	●	●	●	●			
	C20	Lead wire length (500mm)		●	●	●	●	●			
	C21	Lead wire length (1000mm)		●	●	●	●	●			
	C22	Lead wire length (2000mm)		●	●	●	●	●			
	C23	Lead wire length (3000mm)		●	●	●	●	●			
	C3	No lead wire		●	●	●	●	●			
	D-connector (radial lead wire)										
	D	Lead wire length (300mm)	No surge suppressor/ light	●	●	●	●	●			
	D00	Lead wire length (500mm)		●	●	●	●	●			
	D01	Lead wire length (1000mm)		●	●	●	●	●			
	D02	Lead wire length (2000mm)		●	●	●	●	●			
	D03	Lead wire length (3000mm)		●	●	●	●	●			
	D1	No lead wire	Surge suppressor/ light	●	●	●	●	●			
	D2	Lead wire length (300mm)		●	●	●	●	●			
	D20	Lead wire length (500mm)		●	●	●	●	●			
	D21	Lead wire length (1000mm)		●	●	●	●	●			
	D22	Lead wire length (2000mm)		●	●	●	●	●			
	D23	Lead wire length (3000mm)		●	●	●	●	●			
	D3	No lead wire		●	●	●	●	●			
	E	Blank		No option				●	●	●	●
P		Mounting plate (2-position single only)				●	●	●	●	●	
S		Surge suppressor attached •1 (Grommet lead wire type only)				●	●	●	●	●	
Voltage	AC100V	AC100V 50/60Hz				Standard	●	●	●	●	●
	AC200V	AC200V 50/60Hz					●	●	●	●	●
	DC24V	DC24V					●	●	●	●	●
	AC110V	AC110V 50/60Hz				Option	●	●	●	●	●
	AC220V	AC220V 50/60Hz					●	●	●	●	●
	DC12V	DC12V					●	●	●	●	●
							●	●	●	●	●

4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B  
(master)

MN3S0/  
MN4S0

4TB

4L2-4/  
LMF0

4KA/B

4F

PV5/  
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*\*0E

HMV/  
HSV

Uniwire  
system

SKH

PCD/  
FS/FD

3, 4, 5 port pilot operated valve  
Discrete