

Series variation

Multi-fluid control pilot operated 2-port solenoid valve General purpose

* Refer to page 328 for the dry air (-Z).

No. of ports	Model		Structure	Actuation	Working fluid							
					Air	Low vacuum [1.33 x 10 ³ Pa (abs)]	Water	Kerosene	Oil [50 mm ² /s or less]	Hot water	Steam	
2-port		AP11	Pilot operated	NC (open when energized)	●		●	●	●		●	
		AP12	(Piston drive)	NO (closed when energized)	●		●	●	●		●	
		AP21		NC (open when energized)	●		●	●	●		●	
		AP22		NO (closed when energized)	●		●	●	●		●	
		AD11	Pilot operated	NC (open when energized)	●		●	●	●			
		AD12	(Diaphragm	NO (closed when energized)	●		●	●	●			
		AD21	drive)	NC (open when energized)	●		●	●	●			
		AD22		NO (closed when energized)	●		●	●	●			
		APK11	Pilot kick	NC (open when energized)	●	●	●	●	●*1		●	
		APK21	(Piston kick structure)	NC (open when energized)	●	●	●	●	●*1		●	
		ADK11	Pilot kick	NC (open when energized)	●	●	●	●	●	●		
		ADK12	(Diaphragm	NO (closed when energized)	●	●	●	●	●	●		
		ADK21	drive)	NC (open when energized)	●	●	●	●	●			

*1: 20 mm²/s or less for APK11/21 Series.

	Port size											Page
	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 ^{1/4}	32 flange	Rc1 ^{1/2}	40 flange	Rc2	50 flange	
	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}							252
	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}							252
						●	●	●	●	●	●	262
						●	●	●	●	●	●	262
	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}							272
			● ^{*2}	● ^{*2}	● ^{*2}							272
						●	●	●	●	●	●	282
						●	●	●	●	●	●	282
	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}							292
						●	●	●	●	●	●	300
	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}	● ^{*2}							306
			● ^{*2}	● ^{*2}	● ^{*2}							306
						●	●	●	●	●	●	318

*2: Refer to each How to order column for the thread.

Refer to page 248 for details on the coil system.

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

Coil selection guide











● Coil housing types and selection guide

Various types are available according to the application.

Refer to the structure and features to select the optimum model.

For AP/AD*

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
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
Outdoor
SpecFld
Custom
Ending












For AP/AD*			Appearance					
Coil system	Mold	Thermal class 130 (B)	<ul style="list-style-type: none">● AC dedicated (50/60 Hz common)● Degree of protection: IP61 or equivalent● Cannot be used outdoors	Grommet lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm		2C 6C	
		Thermal class 130 (B)	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP61 or equivalent● Cannot be used outdoors	DIN terminal box	<ul style="list-style-type: none">● Easy wiring and maintenance● Enhanced electrical safety (by grounding the ground terminal)● Indicator lamp available (Optional - 100 VAC, 200 VAC and 24 VDC)		2E 2G 2H 6E 6G 6H	
		Thermal class 130 (B)	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP65 or equivalent● Cannot be used outdoors	Lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm● Conduit (CTC19) for direct piping can be attached.		3A	
		Thermal class 130 (B)	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP21 or equivalent● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC)		3M 3N	
		Thermal class 130 (B)	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP65 or equivalent● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC)		3I 3J	
	Taped	Thermal class 180 (H)	<ul style="list-style-type: none">● AC dedicated (50/60 Hz common)● High temperature fluids and high ambient temperatures usable● Cannot be used outdoors● Degree of protection: IP00	Lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm● Conduit (CTC19) for direct piping can be attached.		4A	
		with diode	Thermal class 130 (B)	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP65 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	Lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm● Conduit (CTC19) for direct piping can be attached.		5A
			Thermal class 130 (B)	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP21 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC)		5M 5N
			Thermal class 130 (B)	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP65 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC)		5I 5J
			Conduit		<ul style="list-style-type: none">● Use a conduit (CTC19 or G1/2) when using direct conduit wiring for the open frame lead wire.		G H	
Open frame								

Coil selection guide

● Coil housing types and selection guide

Various types are available according to the application.








Refer to the structure and features to select the optimum model.

For APK11/ADK1*				Appearance	
Coil system	Open frame	Thermal class 130 (B) Mold	<ul style="list-style-type: none">● AC dedicated (50/60 Hz common)● Degree of protection: IP61 or equivalent● Cannot be used outdoors	Grommet lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm  <div>2C</div>
		Thermal class 130 (B) Mold	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP61 or equivalent● Cannot be used outdoors	DIN terminal box	<ul style="list-style-type: none">● Easy wiring and maintenance● Enhanced electrical safety (by grounding the ground terminal)● Indicator lamp available (Optional - 100 VAC, 200 VAC and 24 VDC)  <div>2E 2G 2H</div>
		Thermal class 130 (B) Mold	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP65 or equivalent● Cannot be used outdoors	Lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm● Conduit (CTC19) for direct piping can be attached.  <div>3A</div>
		Thermal class 130 (B) Mold	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP21 or equivalent● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (optional 100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC)  <div>3M 3N</div>
		Thermal class 130 (B) Mold	<ul style="list-style-type: none">● For DC and AC (50/60 Hz common)● Degree of protection: IP65 or equivalent● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (optional 100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC)  <div>3I 3J</div>
		Thermal class 180 (H) Taped	<ul style="list-style-type: none">● AC dedicated (50/60 Hz common)● High temperature fluids and high ambient temperatures usable● Cannot be used outdoors● Degree of protection: IP00	Lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm● Conduit (CTC19) for direct piping can be attached.  <div>4A</div>
		Thermal class 130 (B) mold with diode	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP65 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC)  <div>4M 4N</div>
		Thermal class 130 (B) mold with diode	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP21 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	Lead wire	<ul style="list-style-type: none">● Lead wire length 300 mm● Conduit (CTC19) for direct piping can be attached.  <div>5A</div>
		Thermal class 130 (B) mold with diode	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP65 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC)  <div>5M 5N</div>
		Thermal class 130 (B) mold with diode	<ul style="list-style-type: none">● Diode in the coil converts AC to DC.● AC dedicated (50/60 Hz common)● Degree of protection: IP65 or equivalent● Perfect for places where whirring noise should be prevented.● Cannot be used outdoors	HP terminal box	<ul style="list-style-type: none">● Easy wiring● Indicator lamp available (Optional - 100 VAC, 200 VAC)  <div>5I 5J</div>
			Conduit	<ul style="list-style-type: none">● Use a conduit (CTC19 or G1/2) when using direct conduit wiring for the open frame lead wire.  <div>G H</div>	

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

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

For APK21/ADK21

		Appearance	
Open frame	Thermal class 130 (B) Mold	<ul style="list-style-type: none"> ● For DC and AC ● Degree of protection: IP65 or equivalent ● Cannot be used outdoors 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● With CTC19 thread for direct conduit piping 
	Thermal class 130 (B) Mold	<ul style="list-style-type: none"> ● For DC and AC ● Degree of protection: IP21 or equivalent ● Cannot be used outdoors 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Indicator lamp available (options 100 VAC, 200 VAC, 24 VDC, 100 VDC) 
	Thermal class 180 (H) Taped	<ul style="list-style-type: none"> ● AC dedicated ● High temperature fluids and high ambient temperatures usable ● Degree of protection: IP00 ● Cannot be used outdoors 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● With CTC19 thread for direct conduit piping 
			HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Indicator lamp available (Optional - 100 VAC, 200 VAC) 
	Thermal class 130 (B) mold with diode	<ul style="list-style-type: none"> ● Diode in the coil converts AC to DC. ● AC dedicated (50/60 Hz common) ● Degree of protection: IP65 or equivalent ● Perfect for places where whirring noise should be prevented. ● Cannot be used outdoors 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● With CTC19 thread for direct conduit piping 
	Thermal class 130 (B) mold with diode	<ul style="list-style-type: none"> ● Diode in the coil converts AC to DC. ● AC dedicated (50/60 Hz common) ● Degree of protection: IP21 or equivalent ● Perfect for places where whirring noise should be prevented. ● Cannot be used outdoors 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Indicator lamp available (Optional - 100 VAC, 200 VAC) 
			Conduit <ul style="list-style-type: none"> ● Use a conduit (G1/2) when using direct conduit wiring for the open frame lead wire. 

● Repair parts compatibility table by coil option

Coil option code	Supported voltage	Repair parts			
		Plunger assembly	Core assembly	Coil assembly	Actuator assembly *1
2C	AC	○	○	○	-
6C *2	DC	-	-	-	○
2E 2G 2H	AC	○	○	○	-
2E 2G 2H	DC	○	○	○	-
6E 6G 6H *2	DC	-	-	-	○
3A	AC	○	○	○	-
	DC		○	○	-
3M 3N	AC	○	○	○	-
	DC		○	○	-
3I 3J	AC	○	○	○	-
	DC		○	○	-
4A	AC	○	○	○	-
4M 4N	AC	○	○	○	-
5A	AC	○	○	○	-
5M 5N	AC	○	○	○	-
5I 5J	AC	○	○	○	-

*1 : The actuator assembly includes the coil assembly, core assembly and plunger assembly.

*2 : As 6C, 6E, 6G and 6H are dedicated parts, they are provided as part of the actuator assembly.

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