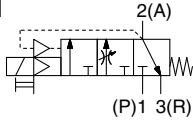


Soft Start-up Valve

AV2000-A/3000-A/4000-A/5000-A Series

Symbol



How to Order



AV **20** **00** - **02** **B** - **1** **D** **B** - **1** - A

1 2 3 4 5 6 7 8 9

* CE/UKCA compliant: ● UL certification: ○

	Electrical entry		
	Grommet	DIN terminal	M12 connector
AC	—	●	—
DC	●○	●○	●

		Symbol	Description	①				
				Body size				
				20	30	40	50	
②	Thread type	Nil	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
+								
③	Port size 1(P), 2(A)	02	1/4	●	—	—	—	
		03	3/8	—	●	—	—	
		04	1/2	—	—	●	—	
		06	3/4	—	—	—	●	
		10	1	—	—	—	●	
+								
④	a	Mounting	Nil	Without mounting option	●	●	●	●
			B	With bracket	●	●	●	●
	+							
	b	Pressure gauge	Nil	Without pressure gauge	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●
	+							
c	Silencer	Nil	Without silencer	●	●	●	●	
		S	Silencer (Built-in)	●	●	●	●	
+								
⑤	Rated coil voltage	AC (50/60 Hz)	1	100 VAC	●	●	●	●
			2	200 VAC	●	●	●	●
			3	110 VAC [115 VAC]*1	●	●	●	●
			4	220 VAC [230 VAC]*1	●	●	●	●
		DC	5	24 VDC	●	●	●	●
			6	12 VDC	●	●	●	●
+								
⑥	Electrical entry	G	Grommet (Lead wire length: 300 mm)	●	●	●	●	
		D	Type D (DIN terminal/With connector)	●	●	●	●	
		Y	Type Y (DIN terminal/With connector)*2	●	●	●	●	
		DO	Type D (DIN terminal/Without connector)	●	●	●	●	
		YO	Type Y (DIN terminal/Without connector)	●	●	●	●	
		KO	M12 connector (Without cable)	○*3	○*3	○*3	○*3	
+								
⑦	Light/surge voltage suppressor	Nil	None	●	●	●	●	
		Z	With light/surge voltage suppressor	○*4	○*4	○*4	○*4	
+								
⑧	Manual override	Nil	Non-locking push type	●	●	●	●	
		B	Push-turn locking slotted type	●	●	●	●	
		C	Push-turn locking lever type	●	●	●	●	
+								
⑨	d	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
	+							
e	Pressure unit	Nil	Unit on product label: MPa, Pressure gauge: MPa	●	●	●	●	
		Z*5	Unit on product label: psi, Pressure gauge: MPa/psi dual scale	○*6	○*6	○*6	○*6	

*1 The 110 VAC and the 115 VAC are interchangeable. The 220 VAC and the 230 VAC are interchangeable as well. The allowable voltage fluctuation is -15% to +5% of the rated voltage for the 115 VAC or the 230 VAC.

*2 Type "Y" is a DIN terminal in compliance with EN-175301-803C (former DIN43650C).

*3 When the electrical entry is "KO," only the DC specifications (5 or 6) can be selected for the rated coil voltage.

*4 When the electrical entry is "DO" or "YO," the light/surge voltage suppressor cannot be selected. When it is "KO," only the "With light/surge voltage suppressor" option can be selected.

*5 For the pipe thread type: NPT

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*6 Pressure unit Z: For the pipe thread type: NPT only

• Select one each for options "a" to "c" and semi-standard options "d" and "e."
• Option/Semi-standard symbol: When more than one specification is required, indicate in alphabetical order.
Example) AV2000-02BGS-1DB-A

Air Operated Type Soft Start-up Valve

RoHS

AVA2000-A/3000-A/4000-A/5000-A Series



How to Order

AV A **20** 00 - **02** **B** - - A

Air operated type • 1 2 3 4 5

		Symbol	Description	1				
				Body size				
				20	30	40	50	
2	Thread type	Nil	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
+								
3	Port size	02	1/4	●	—	—	—	
		03	3/8	—	●	—	—	
		04	1/2	—	—	●	—	
		06	3/4	—	—	—	●	
		10	1	—	—	—	●	
+								
4	a	Mounting	Nil	Without mounting option	●	●	●	●
			B	With bracket	●	●	●	●
	+							
	b	Pressure gauge	Nil	Without pressure gauge	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●
	+							
c	Silencer	Nil	Without silencer	●	●	●	●	
		S	Built-in silencer (EXH port)	●	●	●	●	
+								
5	d	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
	+							
e	Pressure unit	Nil	Unit on product label: MPa, Pressure gauge: MPa	●	●	●	●	
		Z*1	Unit on product label: psi, Pressure gauge: MPa/psi dual scale	○*2	○*2	○*2	○*2	

*1 For the pipe thread type: NPT

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*2 Pressure unit Z: For the pipe thread type: NPT only

· Select one each for options "a" to "c" and semi-standard options "d" and "e."

· Option/Semi-standard symbol: When more than one specification is required, indicate in alphabetical order.

Example) AVA3000-N03BGS-RZ-A

Lockout Type

Soft Start-up Valve

AVL2000-A/3000-A/4000-A/5000-A Series



RoHS

Manual override With solenoid valve



How to Order

Manual override

AV L 20 00 - 02 B - A

With solenoid valve

AV L 20 00 - 02 B - 5 D - A

Lockout type

1

2

3

4

5

6

7

8

		Symbol	Description	1				
				Body size				
				20	30	40	50	
2	Thread type	Nil	Rc	●	●	●	●	
		N	NPT	●	●	●	●	
		F	G	●	●	●	●	
+								
3	Port size	02	1/4	●	—	—	—	
		03	3/8	—	●	—	—	
		04	1/2	—	—	●	—	
		06	3/4	—	—	—	●	
		10	1	—	—	—	●	
+								
4	a	Mounting	Nil	Without mounting option	●	●	●	●
			B	With bracket	●	●	●	●
	+							
	b	Pressure gauge	Nil	Without pressure gauge	●	●	●	●
			G	Round type pressure gauge (with limit indicator)	●	●	●	●
	+							
c	Silencer	Nil	Without silencer	●	●	●	●	
		S	Built-in silencer (EXH port)	●	●	●	●	
+								
5	Rated coil voltage	AC (50/60 Hz)	1	100 VAC	●	●	●	●
			2	200 VAC	●	●	●	●
			3	110 VAC [115 VAC]*1	●	●	●	●
			4	220 VAC [230 VAC]*1	●	●	●	●
		DC	5	24 VDC	●	●	●	●
			6	12 VDC	●	●	●	●
+								
6	Electrical entry	D	Type D (DIN terminal/With connector)	●	●	●	●	
		Y	Type Y (DIN terminal/With connector)*2	●	●	●	●	
		DO	Type D (DIN terminal/Without connector)	●	●	●	●	
		YO	Type Y (DIN terminal/Without connector)	●	●	●	●	
		KO	M12 connector (Without cable)	○*3	○*3	○*3	○*3	
+								
7	Light/surge voltage suppressor	Nil	None	●	●	●	●	
		Z	With light/surge voltage suppressor	○*4	○*4	○*4	○*4	
+								
8	d	Flow direction	Nil	Flow direction: Left to right	●	●	●	●
			R	Flow direction: Right to left	●	●	●	●
	+							
	e	Pressure unit	Nil	Unit on product label: MPa, Pressure gauge: MPa	●	●	●	●
Z*5			Unit on product label: psi, Pressure gauge: MPa/psi dual scale	○*6	○*6	○*6	○*6	

*1 The 110 VAC and the 115 VAC are interchangeable. The 220 VAC and the 230 VAC are interchangeable as well. The allowable voltage fluctuation is -15% to +5% of the rated voltage for the 115 VAC or the 230 VAC.

*2 Type "Y" is a DIN terminal in compliance with EN-175301-803C (former DIN43650C).

*3 When the electrical entry is "KO," only the DC specifications (5 or 6) can be selected for the rated coil voltage.

*4 When the electrical entry is "DO" or "YO," the light/surge voltage suppressor cannot be selected. When it is "KO," only the "With light/surge voltage suppressor" option can be selected.

*5 For the pipe thread type: NPT

This product is for overseas use only according to the New Measurement Act. (The SI unit type is provided for use in Japan.)

*6 Pressure unit Z: For the pipe thread type: NPT only

· Select one each for options "a" to "c" and semi-standard options "d" and "e."

· Option/Semi-standard symbol: When more than one specification is required, indicate in alphabetical order.

Example) AVL3000-N03BGS-5DZ-RZ-A

AV□2000-A/3000-A/4000-A/5000-A Series

Specifications

Body size		20	30	40	50	
Port size	1(P), 2(A)	1/4	3/8	1/2	3/4	1
	3(R)	1/4	3/8	1/2	3/4	
Pressure gauge port size		1/8				
Fluid		Air				
Ambient and fluid temperatures		0 to 50°C (With solenoid valve), 0 to 60°C (Without solenoid valve)*1				
Proof pressure		1.5 MPa				
Operating pressure range		0.2 to 1.0 MPa				
Weight [kg]	AV	0.43	0.45	0.80	1.30	1.25
	AVA	0.43	0.45	0.80	1.32	1.27
	AVL	0.62	0.64	0.99	1.51	1.46
	AVL (With solenoid valve)	0.67	0.68	1.03	1.55	1.50
Enclosure		Dust-protected (DIN terminal and M12 connector: IP65)*2				

*1 If the temperature is low, use the product with dry air to prevent it from freezing.

*2 Based on IEC 60529

Solenoid Specifications

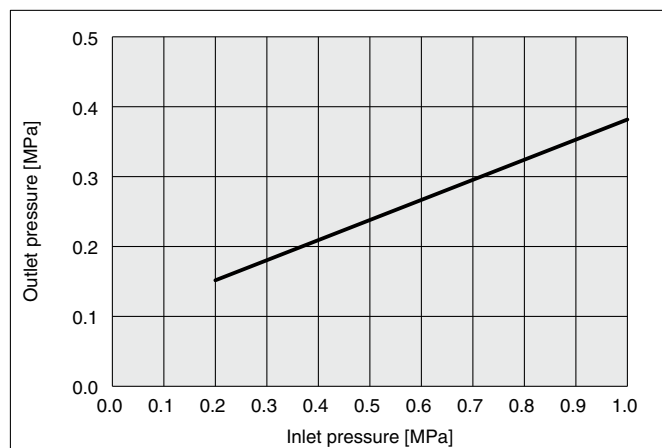
Electrical entry			Grommet	DIN terminal	M12 connector
Rated coil voltage [V]	DC		24, 12 V		
	AC	50/60 Hz	100, 200, 110 [115], 220 [230]*1		
Allowable voltage fluctuation	DC	24 V	±10% of the rated voltage		
		12 V	±10% of the rated voltage		
	AC	100 V	±10% of the rated voltage		
		110 V*1	±10% of the rated voltage		
		[115 V]	[−15% to +5% of the rated voltage]		
		200 V	±10% of the rated voltage		
		220 V*1	±10% of the rated voltage		
[230 V]	[−15% to +5% of the rated voltage]				
Power consumption [W]	DC		0.35 (With light: 0.40)	0.35 (With light: 0.45)	With light: 0.40
Apparent power [VA]	AC	100 V	0.78 (With light: 0.81)	0.78 (With light: 0.86)	
		110 V	0.86 (With light: 0.89)	0.86 (With light: 0.97)	
		[115 V]	[0.94 (With light: 0.97)]	[0.94 (With light: 1.07)]	
		200 V	1.18 (With light: 1.22)	1.15 (With light: 1.30)	
		220 V	1.30 (With light: 1.34)	1.27 (With light: 1.46)	
		[230 V]	[1.42 (With light: 1.46)]	[1.39 (With light: 1.60)]	
Surge voltage suppressor			Refer to the Specific Product Precautions 4 (page 21) and 5 (page 22).		
Indicator light			LED	LED (Neon bulb for AC)	LED

*1 The 110 VAC and the 115 VAC are interchangeable. The 220 VAC and the 230 VAC are interchangeable as well.

Flow Rate Characteristics

Body size		20	30	40	50	
Port size	1(P), 2(A)	1/4	3/8	1/2	3/4	1
	3(R)	1/4	3/8	1/2	3/4	
Flow rate characteristics	1(P) → 2(A)	C[dm ³ /(s·bar)]	9.2	13.1	19.2	34.8
		b	0.36	0.27	0.32	0.66
		Cv	2.4	3.1	5.1	12.6
	2(A) → 3(R)	C[dm ³ /(s·bar)]	8.8	9.2	10.1	23.7
		b	0.46	0.48	0.55	0.67
		Cv	2.5	2.6	3.2	9.2

Pressure for Switching from Low-speed Air Supply to Rapid Air Supply



Needle Flow Characteristics at Low-speed Air Supply * Representative values

