

Solid-state contactors

General use

■ Description

Solid-state contactors (SSC) are required in cases where contacts must have long life because contacts are frequently made and broken, and where contactor noise must be eliminated. Single and 3-pole solid-state contactors incorporate thyristors as making and breaking elements in the main circuit.

■ Features

● Operation indicator provided

An operation indicator LED (red) is provided as a standard feature for all models, so you can easily check whether a control voltage is applied to the SSC.

● Long service life, optimum for highly frequent switching

The solid-state contactor utilizes high-performance semiconductor switch elements to include the functions and features of conventional magnetic contactors. The SSC, featuring long life, low-noise, and high-speed response, is suitable for highly frequent switching of various types of loads, such as motors and heaters.

■ Specifications

Single-pole types

● Main circuit 240V AC, SS101 to SS501

AC control voltage

Type	SS101-5Z-A3 SS101-5Z-A4	SS201-5Z-A3 SS201-5Z-A4	SS301-5Z-A3 SS301-5Z-A4	SS401-5Z-A3 SS401-5Z-A4	SS501-5Z-A3 SS501-5Z-A4
Ordering code	SS101-5ZA3 SS101-5ZA4	SS201-5ZA3 SS201-5ZA4	SS301-5ZA3 SS301-5ZA4	SS401-5ZA3 SS401-5ZA4	SS501-5ZA3 SS501-5ZA4
Main circuit	Rated voltage				
	100 — 240V AC 50/60Hz				
	Rated thermal current (A)*				
	10	20	30	40	50
Control circuit	Max. heater capacity (kW) Single phase 200V AC				
	2	4	6	8	10
	Number of elements				
	Single-pole, 1-element				
Auxiliary circuit	Isolation method				
	Photocoupler				
	Control voltage Vn				
	A3: 100 — 120V AC, A4: 200 — 240V AC				
	Pick-up voltage				
Release time	85% Vn or less				
	35% Vn and over				
Operating time	(at 100% Vn)				
	30ms or less				
Release time	(at 100% Vn)				
	30ms or less				
Auxiliary circuit	—				

Note: * The values are the maximum ratings of type with cooling fin that apply at an ambient temperature not exceeding 40°C.

Single-pole type



SS101



SS1501

3-pole type



SS083



SS803

● Built-in surge suppressor

Varistors and C-R circuits are included so that surge voltage due to SSC switching and lightning can be suppressed to protect the control and main circuits.

● AC and DC operation

The AC and DC operated type SSCs are available, either of which can be selected as required.

● SSC with zero-cross switching function

The SSC is also available with a zero-cross switching function to enable load current switching at the point where the line voltage is near zero to suppress excessive inrush current in the load circuit.

● Built-in auxiliary contact

An auxiliary contact module using semiconductor switches or relay contacts is included. Therefore an auxiliary output signal can easily be obtained without using a separate auxiliary devices.

■ Standards





■ Specifications

Single-pole types

● Main circuit 240V AC, SS701 to SS2001

AC control voltage

Type	SS701-1Z-A3 SS701-1Z-A4	SS1001-1Z-A3 SS1001-1Z-A4	SS1501-1Z-A3 SS1501-1Z-A4	SS2001-1Z-A3 SS2001-1Z-A4
Ordering code	SS701-1ZA3 SS701-1ZA4	SS1A1-1ZA3 SS1A1-1ZA4	SS1F1-1ZA3 SS1F1-1ZA4	SS2A1-1ZA3 SS2A1-1ZA4
Main circuit	Rated voltage 100 — 240V AC 50/60Hz			
	Rated thermal current (A)*	70	100	150
	Max. heater capacity (kW) Single phase 200V AC	14	20	30
	Number of elements	Single-pole, 1-element		
Control circuit	Isolation method	Photocoupler		
	Control voltage Vn	A3: 100 — 120V AC, A4: 200 — 240V AC		
	Pick-up voltage	85% Vn or less		
	Drop-out voltage	35% Vn and over		
	Operating time (at 100% Vn)	30ms or less		
	Release time (at 100% Vn)	30ms or less		
Auxiliary circuit	Output	Thyristor 1NO		
	Rated current and voltage	A3: 50mA, 120V AC A4: 50mA, 240V AC		

Note: * The values are the maximum ratings of type with cooling fin that apply at an ambient temperature not exceeding 40°C.

● Main circuit 240V AC, SS101 to SS2001

DC control voltage

Type		SS101-3Z-D3	SS201-3Z-D3	SS301-3Z-D3	SS401-3Z-D3	SS501-3Z-D3
Ordering code		SS101-3ZD3	SS201-3ZD3	SS301-3ZD3	SS401-3ZD3	SS501-3ZD3
Main circuit	Rated voltage	100 — 240V AC 50/60Hz				
	Rated thermal current (A)*	10	20	30	40	50
	Max. heater capacity (kW) Single phase 200V AC	2	4	6	8	10
	Number of elements	Single-pole, 1-element				
Control circuit	Isolation method	Photocoupler				
	Control voltage Vn	5 — 24V DC				
	Pick-up voltage Drop-out voltage	3.5V or less 1V and over				
	Operating time (at 100% Vn) Release time (at 100% Vn)	15ms or less 15ms or less				
Auxiliary circuit		—				

Type		SS701-3Z-D3	SS1001-3Z-D3	SS1501-3Z-D3	SS2001-3Z-D3
Ordering code		SS701-3ZD3	SS1A1-3ZD3	SS1F1-3ZD3	SS2A1-3ZD3
Main circuit	Rated voltage	100 — 240V AC 50/60Hz			
	Rated thermal current (A)*	70	100	150	200
	Max. heater capacity (kW) Single phase 200V AC	14	20	30	40
	Number of elements	Single-pole, 1-element			
Control circuit	Isolation method	Photocoupler			
	Control voltage Vn	5 — 24V DC			
	Pick-up voltage Drop-out voltage	3.5V or less 1V and over			
	Operating time (at 100% Vn) Release time (at 100% Vn)	15ms or less 15ms or less			
Auxiliary circuit		—			

Note: * The values are the maximum ratings of type with cooling fin that apply at an ambient temperature not exceeding 40°C.

■ Specifications

Single-pole types

- Main circuit 480V AC, SS701H to SS2001H

AC control voltage

Type	SS701H-1Z-A3 SS701H-1Z-A4	SS1001H-1Z-A3 SS1001H-1Z-A4	SS1501H-1Z-A3 SS1501H-1Z-A4	SS2001H-1Z-A3 SS2001H-1Z-A4
Ordering code	SS701H-1ZA3 SS701H-1ZA4	SS1A1H-1ZA3 SS1A1H-1ZA4	SS1F1H-1ZA3 SS1F1H-1ZA4	SS2A1H-1ZA3 SS2A1H-1ZA4
Main circuit	Rated voltage	200 - 480V AC 50/60Hz		
	Rated thermal current (A)*	70	100	150
	Max. heater capacity (kW) Single phase 400V AC	28	40	60
	Number of elements	Single-pole, 1-element		
Control circuit	Isolation method	Photocoupler		
	Control voltage Vn	A3: 100 – 120V AC, A4: 200 – 240V AC		
	Pick-up voltage Drop-out voltage	85% Vn or less 35% Vn and over		
	Operating time (at 100% Vn) Release time (at 100% Vn)	30ms or less 30ms or less		
Auxiliary circuit	Output	Thyristor 1NO		
	Rated current and voltage	A3: 50mA, 120V AC A4: 50mA, 240V AC		

DC control voltage

Type		SS701H-3Z-D3	SS1001H-3Z-D3	SS1501H-3Z-D3	SS2001H-3Z-D3
Ordering code		SS701H-3ZD3	SS1A1H-3ZD3	SS1F1H-3ZD3	SS2A1H-3ZD3
Main circuit	Rated voltage	200 - 480V AC 50/60Hz			
	Rated thermal current (A)*	70	100	150	200
	Max. heater capacity (kW) Single phase 400V AC	28	40	60	80
	Number of elements	Single-pole, 1-element			
Control circuit	Isolation method	Photocoupler			
	Control voltage Vn	5 — 24V DC			
	Pick-up voltage Drop-out voltage	3.5V or less 1V and over			
	Operating time (at 100% Vn) Release time (at 100% Vn)	15ms or less 15ms or less			
Auxiliary circuit		—			

Note: * The values are the maximum ratings of type with cooling fin that apply at an ambient temperature not exceeding 40°C.

3-pole unit type

- Main circuit 240V AC, SS03 to SS120

Type *1	SS □■-1(Z)-A3, A4, D5				SS □■-1(Z)-A1, D2			
Ordering code *1	SS □■-1M(Z)A3, A4, D5				SS □■-1M(Z)A1, D2			
Main circuit	Rated voltage	100 - 240V AC 50/60Hz				100 - 240V AC 50/60Hz		
	Rated thermal current (A)	3	8	20	30	40	50	80
	Max. heater capacity (kW)	1.0	2.5	6.9	10.3	13.8	17.3	27.7
	Max. motor capacity (kW) *2	0.2	0.4	0.75	1.5	2.2	3.7	7.5
	Motor full load current (A)	1.8	3.2	4.8	8	11.1	17.4	34
	Number of elements	3-pole, 2 or 3-element *3						
Control circuit	Isolation method	Photocoupler						
	Control voltage (Vn)	A3: 100–120V AC 50/60Hz A4: 200–240V AC 50/60Hz D5: 12–24V DC				A1: 100–120/200–240V AC 50/60Hz D2: 12/24V DC		
	Pick-up voltage Drop-out voltage	85% Vn or less 8V or less(D5) 30% Vn and over 1V and over(D5)				85% Vn or less 30% Vn and over		
	Operating time (at 100% Vn) Release time (at 100% Vn)	30ms or less 30ms or less						
Auxiliary circuit	Output	AC operated DC operated				Thyristor 1NO Transistor 1NO		
	Rated current and voltage	AC operated DC operated				0.2A, 240V AC 0.2A, 24V DC		

Note: *1, *2, *3 see page 01/104.



■ Specifications

3-pole unit types

● Main circuit 240V AC, SS03 to SS120

Type *1		SS□■-3(Z)-D5, D6		SS□■-3(Z)-D3					
Ordering code *1		SS□■-3M(Z)D5, D6		SS□■-3M(Z)D3					
Main circuit	Rated voltage	100 - 240V AC 50/60Hz							
	Rated thermal current (A)	3	8	20	30	40	50	80	120
	Max. heater capacity (kW)	1.0	2.5	6.9	10.3	13.8	17.3	27.7	41.5
	Max. motor capacity (kW) *2	0.2	0.4	1.5	2.2	3.7	5.5	7.5	7.5
	Motor full load current (A)	1.8	3.2	8	11.1	17.4	26	34	34
	3-phase 200V AC								
	Number of elements	3-pole, 2 or 3-element *3							
Control circuit	Isolation method	Photocoupler							
	Control voltage (Vn)	D5: 12–24V DC D6: 5V DC		D3: 5–24V DC					
	Pick-up voltage	D5: 8V or less D6: 4V or less		D3: 3.5V or less					
	Drop-out voltage	D5, D6: 1V and over		D3: 1.5V and over					
	Operating time (at 100% Vn) Release time (at 100% Vn)	5ms or less (SS□-3Z: 15ms or less) 15ms or less							
Auxiliary circuit	AC operated type	—							
	DC operated type	—							

Notes: ^{*1} Replace the □ mark by rated thermal current code (03 to 200), and the ■ mark by the number of elements (2 or 3). See page 01/123,124.

^{*2} Maximum ratings when SSC is used with cooling fin (SX1-□) at temperature of 40°C or less.

Motor starting current: 6 times full-load current, Motor starting time: 0.25s or less.

^{*3} 2-element types are supplied in 3-pole with current carrying parts omitted from center pole.

● Main circuit 480V AC, SS30H to SS120H

Type *1		SS□■H-1(Z)-A1, D2				SS□■H-3(Z)-D3			
Ordering code *1		SS□■H-1M(Z)A1, D2				SS□■H-3M(Z)D3			
Main circuit	Rated voltage	200 - 480V AC 50/60Hz				200 - 480V AC 50/60Hz			
	Rated thermal current (A)	30	50	80	120	30	50	80	120
	Max. heater capacity (kW)	20.7	34.6	55.4	83.0	20.7	34.6	55.4	83.0
	Max. motor capacity (kW)*2	7.5	11	22	22	7.5	11	22	22
	Motor full load current (A)	17	24	48	48	17	24	48	48
	3-phase 400V AC								
Number of elements		3-pole, 2 or 3-element *3				3-pole, 2 or 3-element *3			
Control circuit	Isolation method	Photocoupler				Photocoupler			
	Control voltage (Vn)	A1: 100–120/200–240V AC 50/60Hz D2: 12/24V DC				5–24V DC			
	Pick-up voltage	85% Vn or less				3.5V or less			
	Drop-out voltage	30% Vn and over				1.5V and over			
	Operating time (at 100% Vn) Release time (at 100% Vn)	30ms or less 30ms or less				5ms or less (SS□H-3Z: 15ms or less) 15ms or less			
Auxiliary circuit	Output	AC operated DC operated	Thyristor 2NO Transistor 2NO			—			
	Rated current and voltage	AC operated DC operated	0.2A, 240V AC 0.2A, 24V DC			—			

Notes: ^{*1} Replace the □ mark by rated thermal current code (03 to 200), and the ■ mark by the number of elements (2 or 3). See page 01/123,124.

^{*2} Maximum ratings when SSC is used with cooling fin (SX1-□) at temperature of 40°C or less.

Motor starting current: 6 times full-load current, Motor starting time: 0.25s or less.

^{*3} 2-element types are supplied in 3-pole with current carrying parts omitted from center pole.



MSA CONTROL - (11) 3961-1171 - comercial@msacontrol.com.br

01

■ Specifications

3-pole independent type

● Main circuit 240V AC, SS03-4 to SS120-4

Type *1		SS□■-4(Z)-A3	SS□■-4(Z)-A4	SS□■-4(Z)-D3	SS□■-4(Z)-D5	SS□■-4(Z)-D6
Ordering code *1		SS□■-4M(Z)A3	SS□■-4M(Z)A4	SS□■-4M(Z)D3	SS□■-4M(Z)D5	SS□■-4M(Z)D6
Main circuit	Rated voltage	100 - 240V AC 50/60Hz			100 - 240V AC 50/60Hz	
	Rated thermal current (A)	20	30	40	50	80
	Max. heater capacity (kW)	4	6	8	10	16
	Single phase 200V AC					
Control circuit	Number of elements	3-pole, 2 or 3-element *3				
	Isolation method	Photocoupler				
	Control voltage (Vn)	100-120V AC		200-240V AC	5-24V DC	12-24V DC
	Pick-up voltage	85% Vn or less		3.5V or less	8V or less	4V or less
	Drop-out voltage	30%Vn and over		1.5V and over	1V and over	1V and over
Auxiliary circuit	Operating time (at 100% Vn)	30ms or less		5ms or less (D3: SS□■-4Z: 15ms or less)		
	Release time (at 100% Vn)	30ms or less		15ms or less		

● Main circuit 480V AC, SS30H-4 to SS120H-4

Type *1		SS□■H-4(Z)-A3	SS□■H-4(Z)-A4	SS□■H-4(Z)-D3
Ordering code *1		SS□■H-4M(Z)A3	SS□■H-4M(Z)A4	SS□■H-4M(Z)D3
Main circuit	Rated voltage	200 - 480V AC 50/60Hz		
	Rated thermal current (A)	30	50	80
	Max. heater capacity (kW)	12	20	32
	Single phase 400V AC			
Control circuit	Number of elements	3-pole, 2 or 3-element *3		
	Isolation method	Photocoupler		
	Control voltage (Vn)	100-120V AC		200-240V AC
	Pick-up voltage	85% Vn or less		3.5V or less
	Drop-out voltage	30% Vn and over		1.5V and over
Auxiliary circuit	Operating time (at 100% Vn)	30ms or less		5ms or less
	Release time (at 100% Vn)	30ms or less		(SS□■H-4Z: 15ms or less)

Notes: *1 Replace the □ mark by rated thermal current code (03 to 200) and the ■ mark by the number of elements (2 or 3). See page 01/123, 124.

*2 Maximum ratings when SSC is used with cooling fin (SX1-□) at temperature of 40°C or less.

*3 2-element types are supplied in 3-pole with current carrying parts omitted from center pole.



● 3-pole AC operated

Type Main circuit 240V AC: Blank 480V AC: H 3-pole 2-element		3-pole 3-element		Control circuit									
				3-pole unit type: 1			3-pole independent type: 4						
				Zero-cross function									
				Provided: Z		Not provided: Blank		Provided: Z		Not provided: Blank			
				Control voltage: 100-120V AC/200-220V AC: A1 , 100-120V AC: A3 , 200-240V AC: A4									
				A1	A3	A4	A1	A3	A4	A3	A4	A3	A4
				With cooling fin: F						With cooling fin: F			
SS032	SS033			●	●			●	●				
SS082	SS083			●	●			●	●				
SS202	SS203			●			●			●	●	●	●
SS302	SS303			●			●			●	●	●	●
SS302H	SS303H			●			●			●	●	●	●
SS402	SS403			●			●			●	●	●	●
SS502	SS503			●			●			●	●	●	●
SS502H	SS503H			●			●			●	●	●	●
SS802	SS803			●			●			●	●	●	●
SS802H	SS803H			●			●			●	●	●	●
SS1202	SS1203			●			●			●	●	●	●
SS1202H	SS1203H			●			●			●	●	●	●

Note: ● Available

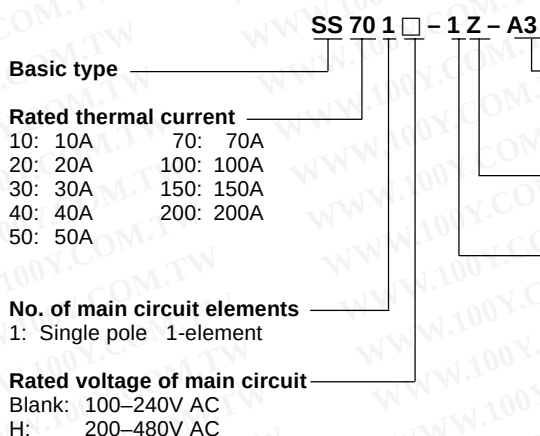
● 3-pole DC operated

Type		Control circuit															
Main circuit		3-pole unit type: 1				3-pole unit type: 3						3-pole independent type: 4					
240V AC: Blank		Zero-cross function				Provided: Z			Not provided: Blank								
480V AC: H		Z		Blank		Z			Blank			Z			Blank		
3-pole 2-element	3-pole 3-element	Control voltage: 12/24V DC: D2 , 5-24V DC: D3 , 12-24V DC: D5 , 5V DC: D6															
		D2	D5	D2	D5	D3	D5	D6	D3	D5	D6	D3	D5	D6	D3	D5	D6
		With cooling fin: F								With cooling fin: F							
SS032	SS033		●		●		●	●		●	●		●	●		●	●
SS082	SS083		●		●		●	●		●	●		●	●		●	●
SS202	SS203	●		●		●			●			●			●		
SS302	SS303	●		●		●			●			●			●		
SS302H	SS303H	●		●		●			●			●			●		
SS402	SS403	●		●		●			●			●			●		
SS502	SS503	●		●		●			●			●			●		
SS502H	SS503H	●		●		●			●			●			●		
SS802	SS803	●		●		●			●			●			●		
SS802H	SS803H	●		●		●			●			●			●		
SS1202	SS1203	●		●		●			●			●			●		
SS1202H	SS1203H	●		●		●			●			●			●		

Note: ● Available

■ Type number nomenclature

● Single-pole type



Control voltage

A3: 100–120V AC

A4: 200–240V AC

D3: 5–24V DC

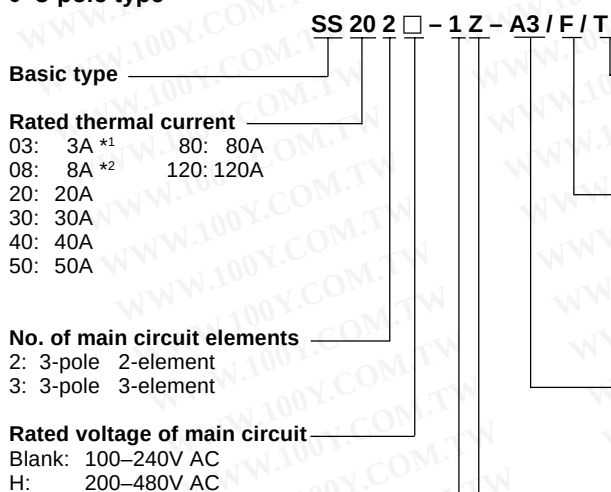
Zero-cross function

Z: Provided

Control circuit

	Isolation method	Voltage detector	Auxiliary contact	Applicable contactor	
1	Photocoupler	Provided	Provided	SS701 to 2001	240V AC
				SS701H to 2001H	480V AC
3	Photocoupler	Not provided	Not provided	SS101 to 2001	240V AC
				SS701H to 2001H	480V AC
5	Photocoupler	Not provided	Not provided	SS101 to 501	240V AC

● 3-pole type



Terminal cover

Blank: Not provided

T: Provided (only for SS202 to SS502, SS203 to SS503 of main circuit voltage 200V)

Shipping form

F: Contactor and cooling fin set

F-A3: Contactor and cooling fin set *3

F-A4: Contactor and cooling fin set *4

F-D5: Contactor and cooling fin set *5

Blank: Contactor only
(Cooling fin sold separately)

Control voltage

A1: 100–120/200–220V AC

A3: 100–120V AC

A4: 200–240V AC

D2: 12/24V DC

D3: 5–24V DC

D5: 12–24V DC

D6: 5V DC

Zero-cross function

Blank: Not provided

Z: Provided

Control circuit

	Control method		Isolation method	Voltage detector	Auxiliary contact
	3-pole unit	3-pole independent			
1	○		Photocoupler	Provided	Provided
3	○		Photocoupler	Not provided	Not provided
4		○	Photocoupler	Not provided	Not provided

Notes: *1 Type SS03□ can carry the rated thermal current even if no cooling fin is fitted.

*2 Type SS08□ is shipped with a cooling fin fitted to the main body even if /F is not suffixed to the type number.

*3 Suffix code applicable only to type SS80□ and type SS120□. Fan rated operating voltage: 100–120V AC, 50/60Hz.

*4 Suffix code applicable only to type SS80□ and type SS120□. Fan rated operating voltage: 200–240V AC, 50/60Hz.

*5 Suffix code applicable only to type SS80□ and type SS120□. Fan rated operating voltage: 24V DC.



■ Ordering code system

S	S	8	0	3	H	—	1	Z	A	1	F	A	3
①	②	③	④	⑤	⑥		⑦	⑧	⑨	⑩	⑪	⑫	⑬

① Product category

Description	Code
Contactors	S

② Series category

Description	Code
Solid-state contactor	S

③④ Framesize

Frame size	Code	
	③	④
03	0	3
08	0	8
10	1	0
20	2	0
30	3	0
40	4	0
50	5	0
70	7	0
80	8	0
100	1	A
120	1	C
150	1	F
200	2	A

⑤ No. of main circuit elements

No. of elements	Code
Single pole, 1-element	1
3-pole, 2-element	2
3-pole, 3-element	3

⑥ Rated voltage of main circuit

Rated voltage	Code
100 - 240V AC	Blank
200 - 480V AC	H

⑦ Control circuit

● 3-pole type

Control method	Insolation method	Voltage detector	Auxiliary contact	Code
3-pole unit	Photocoupler	Provided	Provided	1
3-pole unit	Photocoupler	Not provided	Not provided	3
3-pole independent	Photocoupler	Not provided	Not provided	4

● Single-pole type

Control method	Insolation method	Voltage detector	Auxiliary contact	Code
Single-pole	Photocoupler	Provided	Provided	1
	Photocoupler	Not provided	Not provided	3
	Photocoupler	Not provided	Not provided	5

⑧ Zero-cross function

Zero-cross function	Code	
	Single-pole	3-pole
Not provided	Blank	M
Provided	Z	Z

⑪ Shipping form

Description	Code	
	Single-pole	3-pole
Cooling fin set	Blank	F
Contactors only	Not provided	Blank

⑨⑩ Control voltage

Description	Code	
	⑨	⑩
100-120V/200-240V AC	A	1
100-120V AC	A	3
200-240V AC	A	4
12/24V DC	D	2
5-24 V DC	D	3
12-24V DC	D	5
5V DC	D	6

⑫⑬ Cooling fan voltage

Cooling fan control voltage	Code	
	⑫	⑬
100-120V AC	A	3
200-240V AC	A	4
12-24V DC	D	5

■ Versions

Single-pole type

● Main circuit 240V AC

Control voltage	Voltage detector	Auxiliary contact	Zero-cross function	Rated thermal current				
				10A	20A	30A	40A	50A
100 - 120V AC	—	—	●	SS101-5Z-A3	SS201-5Z-A3	SS301-5Z-A3	SS401-5Z-A3	SS501-5Z-A3
200 - 240V AC	—	—	●	SS101-5Z-A4	SS201-5Z-A4	SS301-5Z-A4	SS401-5Z-A4	SS501-5Z-A4
5 - 24V DC	—	—	●	SS101-3Z-D3	SS201-3Z-D3	SS301-3Z-D3	SS401-3Z-D3	SS501-3Z-D3

Control voltage	Voltage detector	Auxiliary contact	Zero-cross function	Rated thermal current			
				70A	100A	150A	200A
100 - 120V AC	●	●	●	SS701-1Z-A3	SS1A1-1Z-A3	SS1F1-1Z-A3	SS2A1-1Z-A3
200 - 240V AC	●	●	●	SS701-1Z-A4	SS1A1-1Z-A4	SS1F1-1Z-A4	SS2A1-1Z-A4
5 - 24V DC	—	—	●	SS701-3Z-D3	SS1A1-3Z-D3	SS1F1-3Z-D3	SS2A1-3Z-D3

● Main circuit 480V AC

Control voltage	Voltage detector	Auxiliary contact	Zero-cross function	Rated thermal current			
				70A	100A	150A	200A
100 - 120V AC	●	●	●	SS701H-1Z-A3	SS1A1H-1Z-A3	SS1F1H-1Z-A3	SS2A1H-1Z-A3
200 - 240V AC	●	●	●	SS701H-1Z-A4	SS1A1H-1Z-A4	SS1F1H-1Z-A4	SS2A1H-1Z-A4
5 - 24V DC	—	—	●	SS701H-3Z-D3	SS1A1H-3Z-D3	SS1F1H-3Z-D3	SS2A1H-3Z-D3

Note: ● Provided — Not provided

■ Versions
3-pole type
● Main circuit 240V AC

Rated thermal current		3A	8A	20A	30A	40A	50A	80A	120A
AC control voltage *1	2-element	SS032-1M□	SS082-1M□	SS202-1M□F SS202-4M□F	SS302-1M□F SS302-4M□F	SS402-1M□F SS402-4M□F	SS502-1M□F SS502-4M□F	SS802-1M□F SS802-4M□F	SS1C2-1M□F SS1C2-4M□F
	(With zero-cross function)	SS032-1Z□	SS082-1Z□	SS202-1Z□F SS202-4Z□F	SS302-1Z□F SS302-4Z□F	SS402-1Z□F SS402-4Z□F	SS502-1Z□F SS502-4Z□F	SS802-1Z□F SS802-4Z□F	SS1C2-1Z□F SS1C2-4Z□F
	3-element	SS033-1M□	SS083-1M□	SS203-1M□F SS203-4M□F	SS303-1M□F SS303-4M□F	SS403-1M□F SS403-4M□F	SS503-1M□F SS503-4M□F	SS803-1M□F SS803-4M□F	SS1C3-1M□F SS1C3-4M□F
	(With zero-cross function)	SS033-1Z□	SS083-1Z□	SS203-1Z□F SS203-4Z□F	SS303-1Z□F SS303-4Z□F	SS403-1Z□F SS403-4Z□F	SS503-1Z□F SS503-4Z□F	SS803-1Z□F SS803-4Z□F	SS1C3-1Z□F SS1C3-4Z□F
	2-element	SS032-1M□ SS032-3M□ SS032-4M□	SS082-1M□ SS082-3M□ SS082-4M□	SS202-1M□F SS202-3M□F SS202-4M□F	SS302-1M□F SS302-3M□F SS302-4M□F	SS402-1M□F SS402-3M□F SS402-4M□F	SS502-1M□F SS502-3M□F SS502-4M□F	SS802-1M□F SS802-3M□F SS802-4M□F	SS1C2-1M□F SS1C2-3M□F SS1C2-4M□F
	(With zero-cross function)	SS032-1Z□ SS032-3Z□ SS032-4Z□	SS082-1Z□ SS082-3Z□ SS082-4Z□	SS202-1Z□F SS202-3Z□F SS202-4Z□F	SS302-1Z□F SS302-3Z□F SS302-4Z□F	SS402-1Z□F SS402-3Z□F SS402-4Z□F	SS502-1Z□F SS502-3Z□F SS502-4Z□F	SS802-1Z□F SS802-3Z□F SS802-4Z□F	SS1C2-1Z□F SS1C2-3Z□F SS1C2-4Z□F
DC control voltage *2	3-element	SS033-1M□ SS033-3M□ SS033-4M□	SS083-1M□ SS083-3M□ SS083-4M□	SS203-1M□F SS203-3M□F SS203-4M□F	SS303-1M□F SS303-3M□F SS303-4M□F	SS403-1M□F SS403-3M□F SS403-4M□F	SS503-1M□F SS503-3M□F SS503-4M□F	SS803-1M□F SS803-3M□F SS803-4M□F	SS1C3-1M□F SS1C3-3M□F SS1C3-4M□F
	(With zero-cross function)	SS033-1Z□ SS033-3Z□ SS033-4Z□	SS083-1Z□ SS083-3Z□ SS083-4Z□	SS203-1Z□F SS203-3Z□F SS203-4Z□F	SS303-1Z□F SS303-3Z□F SS303-4Z□F	SS403-1Z□F SS403-3Z□F SS403-4Z□F	SS503-1Z□F SS503-3Z□F SS503-4Z□F	SS803-1Z□F SS803-3Z□F SS803-4Z□F	SS1C3-1Z□F SS1C3-3Z□F SS1C3-4Z□F

Note: Enter the cooling fan voltage code in the ■ mark, see page 01/124.

● Main circuit 480V AC

Rated thermal current		30A	50A	80A	120A
AC control voltage *1	2-element	SS302H-1M□F SS302H-4M□F	SS502H-1M□F SS502H-4M□F	SS802H-1M□F SS802H-4M□F	SS1C2H-1M□F SS1C2H-4M□F
	(With zero-cross function)	SS302H-1Z□F SS302H-4Z□F	SS502H-1Z□F SS502H-4Z□F	SS802H-1Z□F SS802H-4Z□F	SS1C2H-1Z□F SS1C2H-4Z□F
	3-element	SS303H-1M□F SS303H-4M□F	SS503H-1M□F SS503H-4M□F	SS803H-1M□F SS803H-4M□F	SS1C3H-1M□F SS1C3H-4M□F
	(With zero-cross function)	SS303H-1Z□F SS303H-4Z□F	SS503H-1Z□F SS503H-4Z□F	SS803H-1Z□F SS803H-4Z□F	SS1C3H-1Z□F SS1C3H-4Z□F
	2-element	SS302H-1M□F SS302H-3M□F SS302H-4M□F	SS502H-1M□F SS502H-3M□F SS502H-4M□F	SS802H-1M□F SS802H-3M□F SS802H-4M□F	SS1C2H-1M□F SS1C2H-3M□F SS1C2H-4M□F
	(With zero-cross function)	SS302H-1Z□F SS302H-3Z□F SS302H-4Z□F	SS502H-1Z□F SS502H-3Z□F SS502H-4Z□F	SS802H-1Z□F SS802H-3Z□F SS802H-4Z□F	SS1C2H-1Z□F SS1C2H-3Z□F SS1C2H-4Z□F
DC control voltage *2	3-element	SS303H-1M□F SS303H-3M□F SS303H-4M□F	SS503H-1M□F SS503H-3M□F SS503H-4M□F	SS803H-1M□F SS803H-3M□F SS803H-4M□F	SS1C3H-1M□F SS1C3H-3M□F SS1C3H-4M□F
	(With zero-cross function)	SS303H-1Z□F SS303H-3Z□F SS303H-4Z□F	SS503H-1Z□F SS503H-3Z□F SS503H-4Z□F	SS803H-1Z□F SS803H-3Z□F SS803H-4Z□F	SS1C3H-1Z□F SS1C3H-3Z□F SS1C3H-4Z□F

Notes:

Control voltage (Refer to page 01/124, 125.)

*1 Replace the □ mark in the order number by the control voltage codes shown below.

A1	100–120/200–240V AC
A3	100–120V AC
A4	200–240V AC

*2 Replace the □ mark in the order number by the control voltage codes shown below.

D2	12/24V DC
D3	5–24V DC
D5	12–24V DC
D6	5V DC

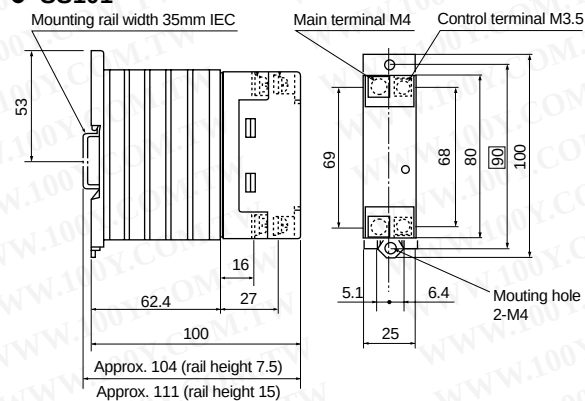
Note: Enter the cooling fan voltage code in the ■ mark, see page 01/124.



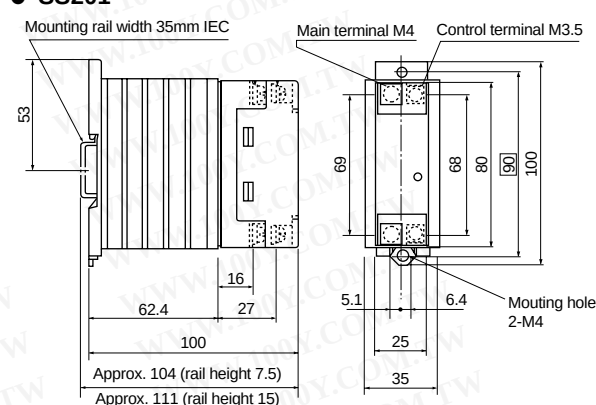
■ Dimensions, mm

Single-pole type

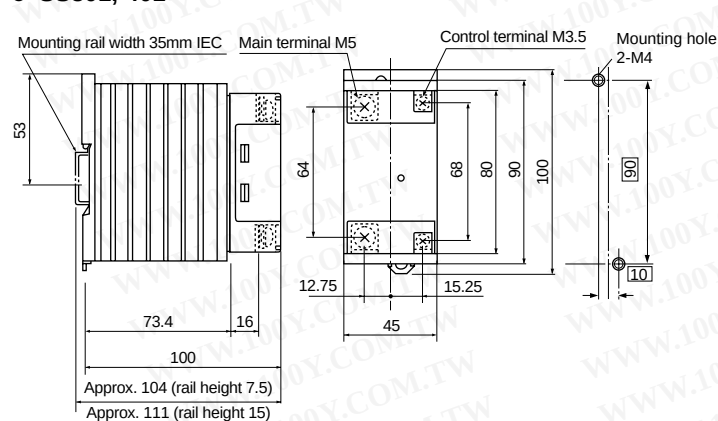
● SS101



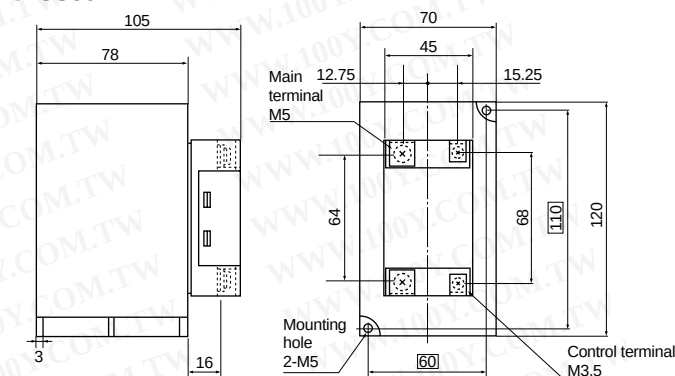
● SS201



● SS301, 401



● SS501



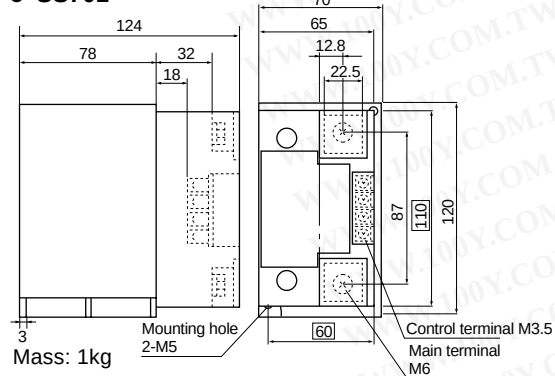
Mass:

SS101: 0.22kg SS401: 0.36kg

SS201: 0.24kg SS501: 0.66kg

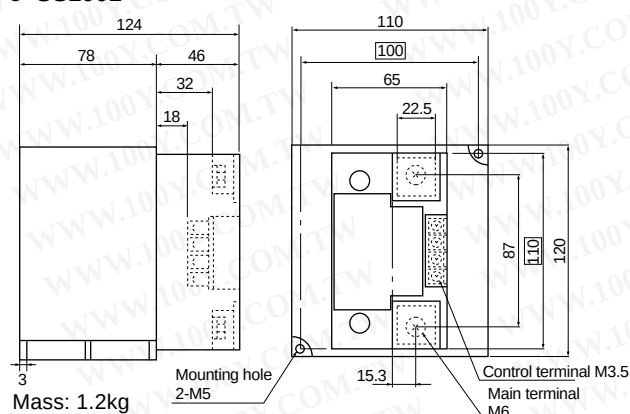
SS301: 0.36kg

● SS701



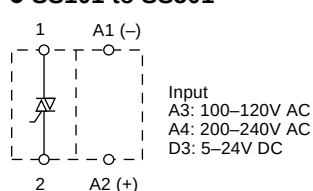
□ Mounting hole dimensions

● SS1001

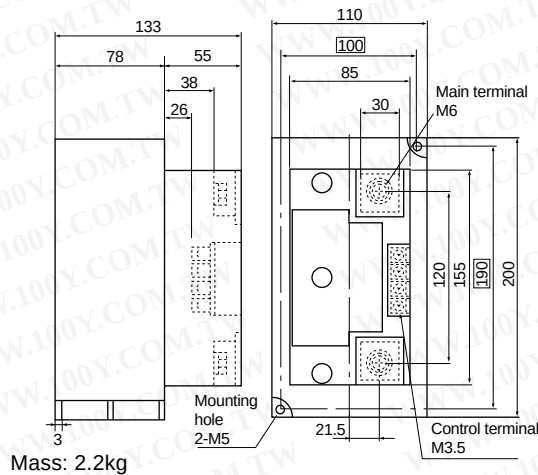


■ Wiring diagram

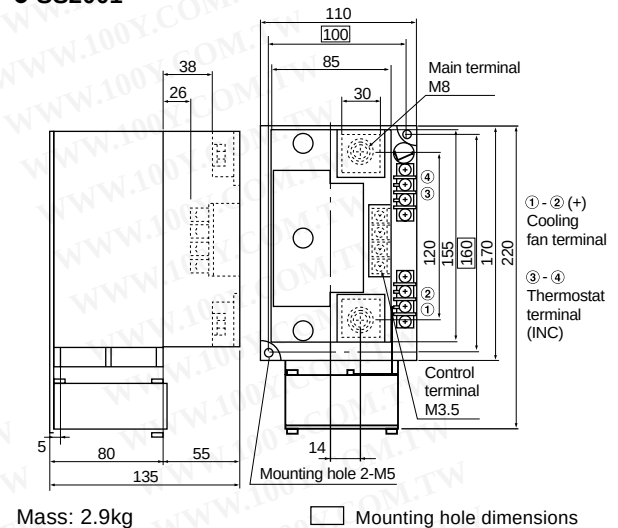
● SS101 to SS501



■ Dimensions, mm
Single-pole type
● SS1501

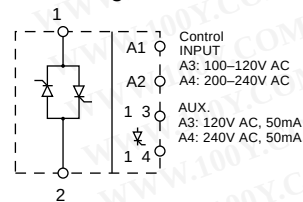


● SS2001

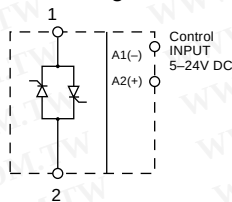


■ Wiring diagrams
● SS701 to SS1501
SS701H to SS1501H

Control input
AC voltage

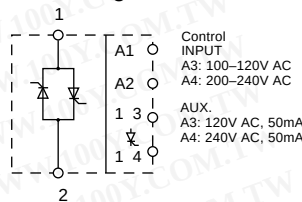


DC voltage

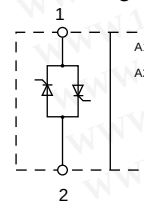


● SS2001, SS2001H

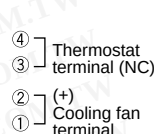
Control input
AC voltage



DC voltage

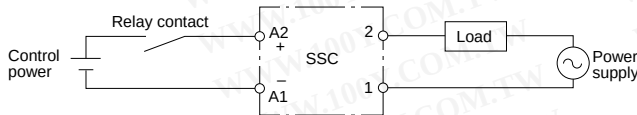


Internal

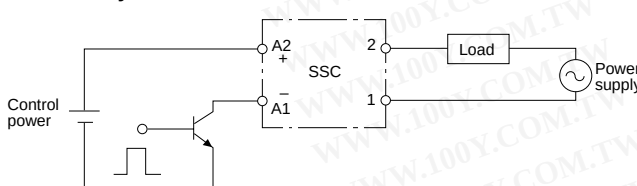


Single pole type solid-state contactor
Application example

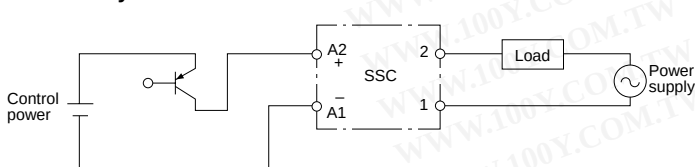
- Drive system
- Driven by relay contact



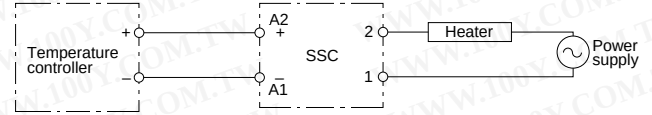
- Driven by NPN transistor



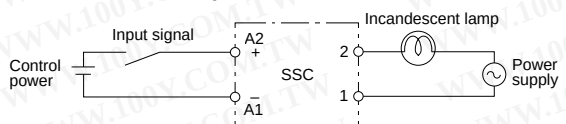
- Driven by PNP transistor



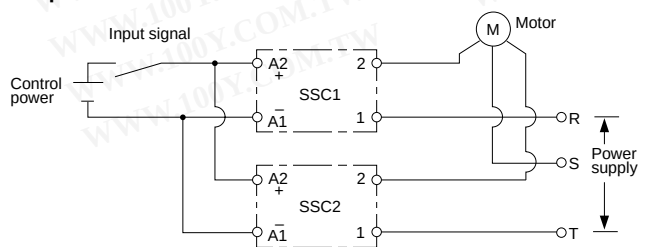
- Connection to load
- Heater control



- Incandescent lamp



- 3-phase motor

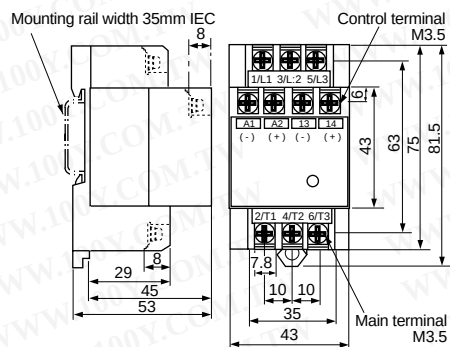




■ Dimensions, mm

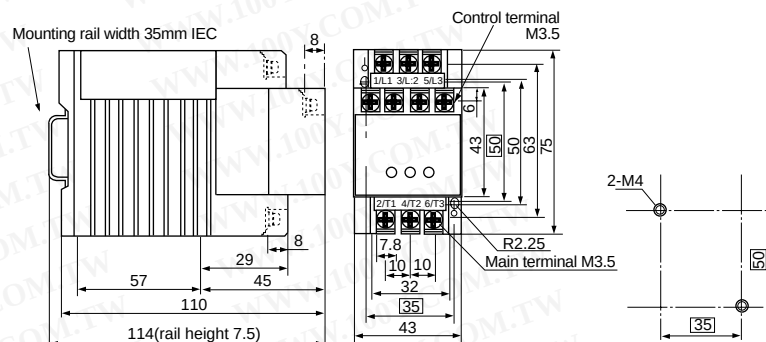
3-pole unit type

● SS03 (Rail mounting only)



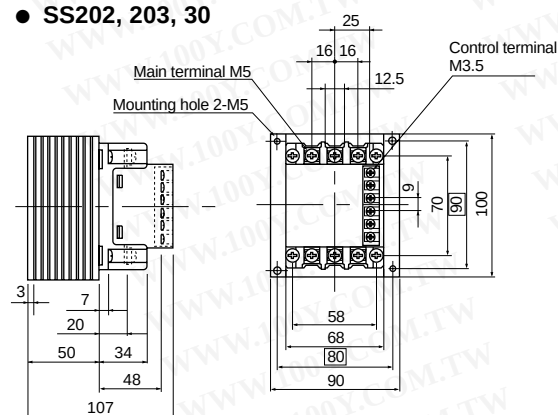
Mass: Approx. 0.18kg

● SS08



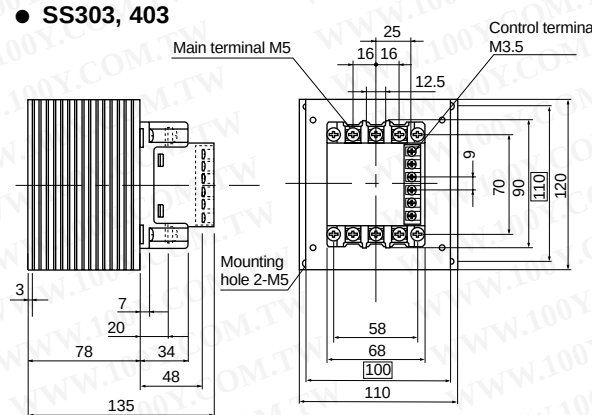
Mass: Approx. 0.3kg

● SS202, 203, 30



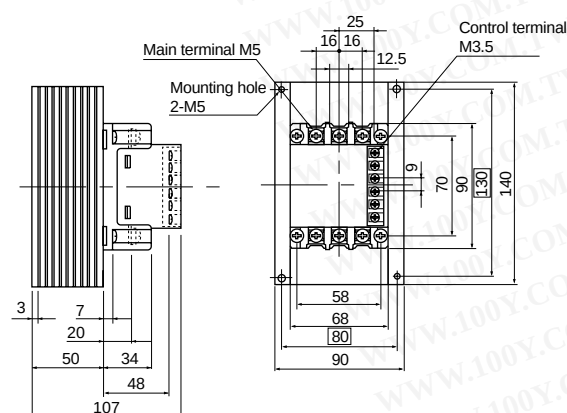
Mass: Approx. 0.77kg

● SS303, 403



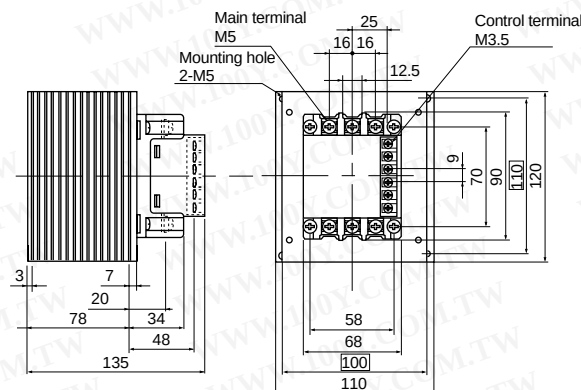
Mass: Approx. 1.1kg

● SS402



Mass: Approx. 0.99kg

● SS502



Mass: Approx. 1.1kg

□ Mounting hole dimensions

- SS503



Main terminal M6

Control terminal M3.5

Cooling fan input terminal M4

Thermostat terminal (NC)

Mass: Approx. 2.6kg

Main terminal M8

Control terminal M3.5

Cooling fan input terminal M4

1-2(+) Cooling fan input terminal

3-4 Thermostat terminal (NC)

Cooling fan

Mass: Approx. 2.9kg

[illegible][illegible]

SS503H

Technical drawing of the SS503H terminal block, showing side and front views with dimensions and labels.

Labels:

- Main terminal M6
- Control terminal M3.5
- Mounting hole 2-M5
- Mounting hole 2- $\phi 5.5$

Dimensions (mm):

- Overall width: 153
- Overall height: 170
- Terminal pitch: 41
- Mounting hole pitch: 90
- Terminal pitch (control): 9
- Terminal pitch (main): 111
- Terminal pitch (main): 137
- Terminal pitch (main): 160
- Terminal pitch (main): 170
- Terminal pitch (main): 90
- Terminal pitch (main): 110
- Terminal pitch (main): 100
- Terminal pitch (main): 25
- Terminal pitch (main): 25
- Terminal pitch (main): 17
- Terminal pitch (main): 78
- Terminal pitch (main): 66
- Terminal pitch (main): 75
- Terminal pitch (main): 27
- Terminal pitch (main): 3

Mass: Approx. 2.2kg

01/113

Solid-state Contactors

SS series

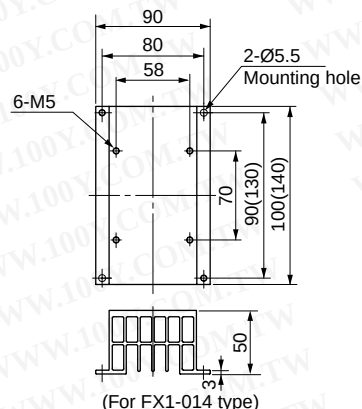
General use



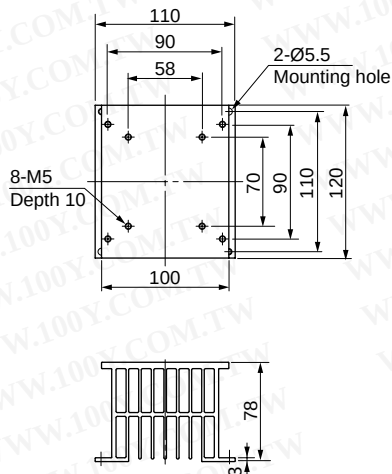
MSA CONTROL - (11) 3961-1171 - comercial@msacontrol.com.br

■ Dimensions, mm/Cooling fins

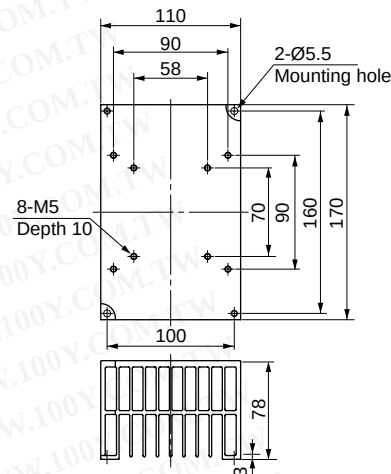
● SX1-D10, SX1-D14



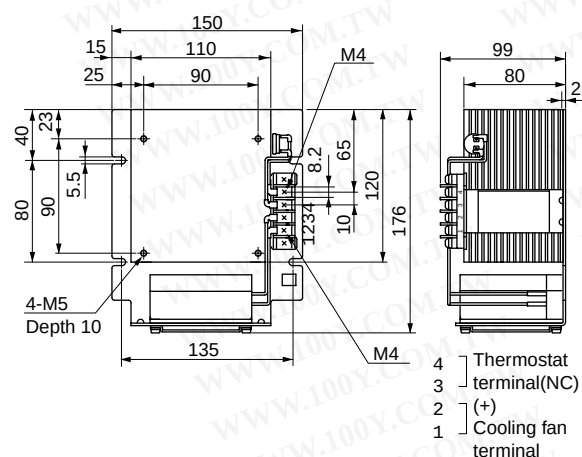
● SX1-E12



● SX1-E17



● SX1-C12

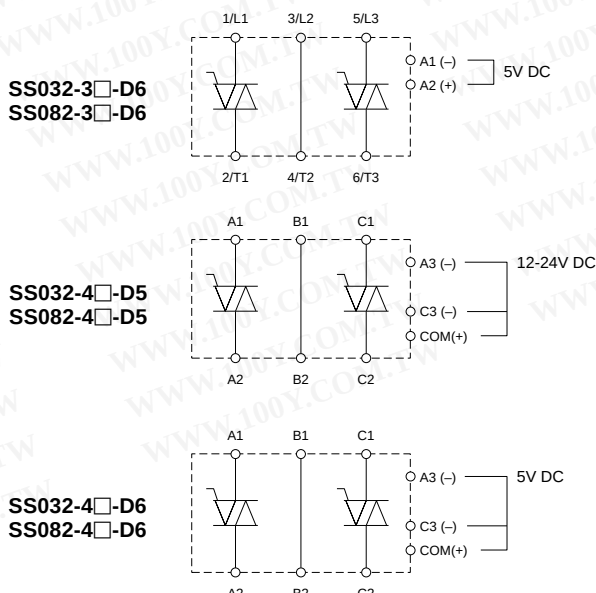
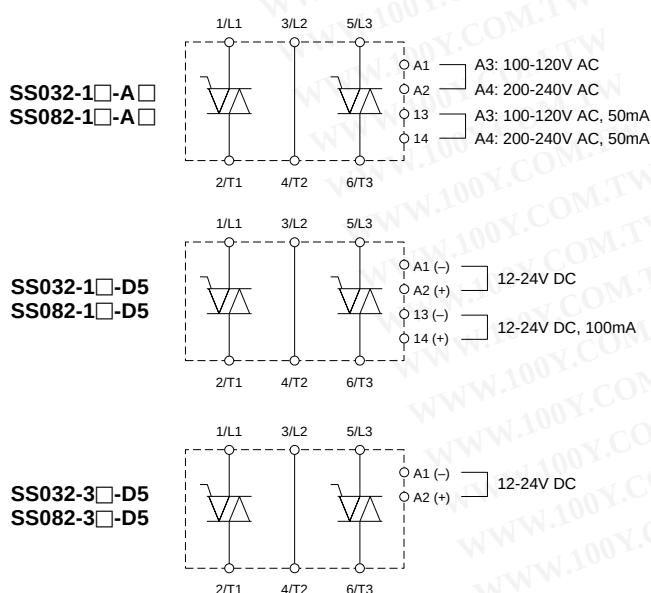


Type	Used with	Mass (kg)
SX1-D10	SS202, SS203, SS302	Approx. 0.36
SX1-D14	SS402	Approx. 0.53
SX1-E12	SS302H, SS303, SS303H SS403, SS502, SS502H	Approx. 0.82
SX1-E17	SS503, SS503H	Approx. 1.16
SX1-C12-A3 100-120V AC 50/60Hz	SS802, SS802H, SS803	Approx. 2.2
SX1-C12-A4 200-240V AC 50/60Hz	SS803H, SS1202, SS1202H	
SX1-C12-D5 24V DC	SS1203, SS1203H	

■ Wiring diagrams

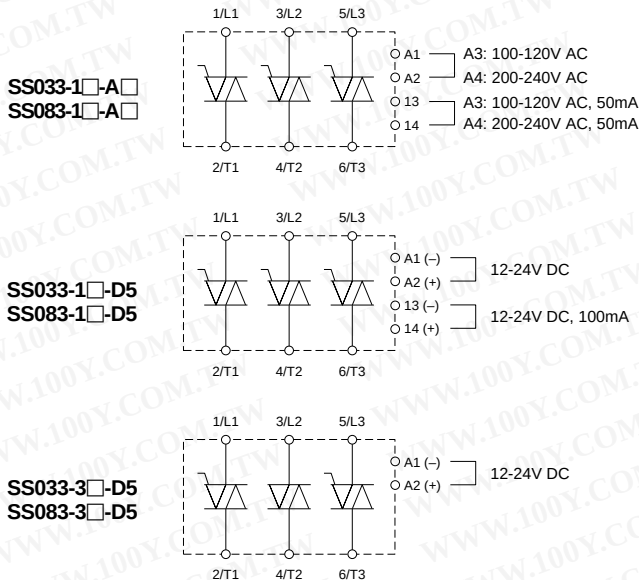
● SS03, SS08/2-element

A1, A2, A3, C3, COM: Control terminals
13, 14: Aux. terminals

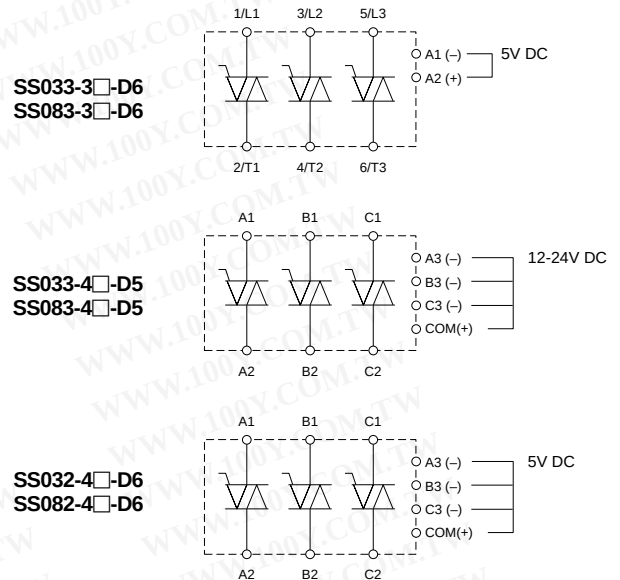


■ Wiring diagrams

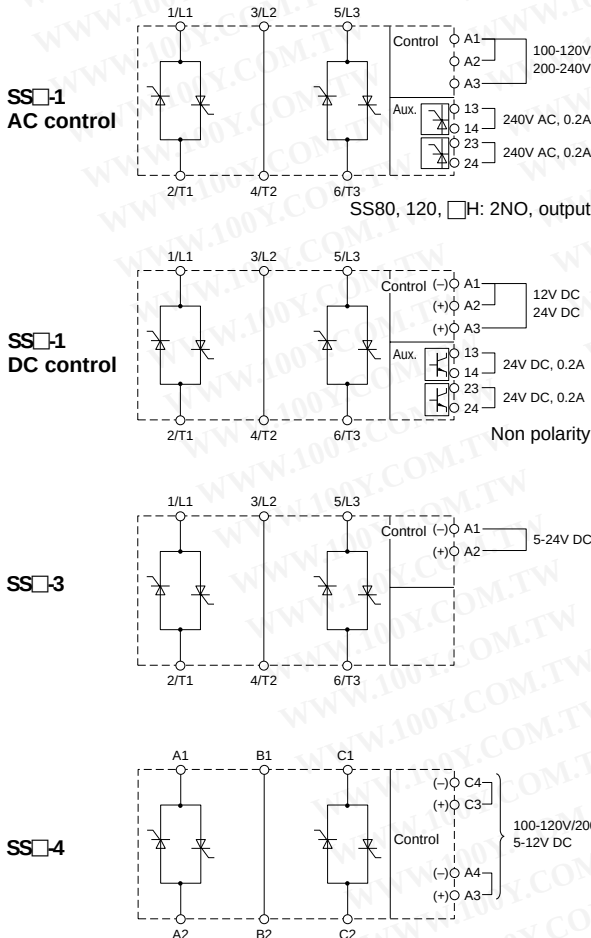
● SS03, SS08/3-element



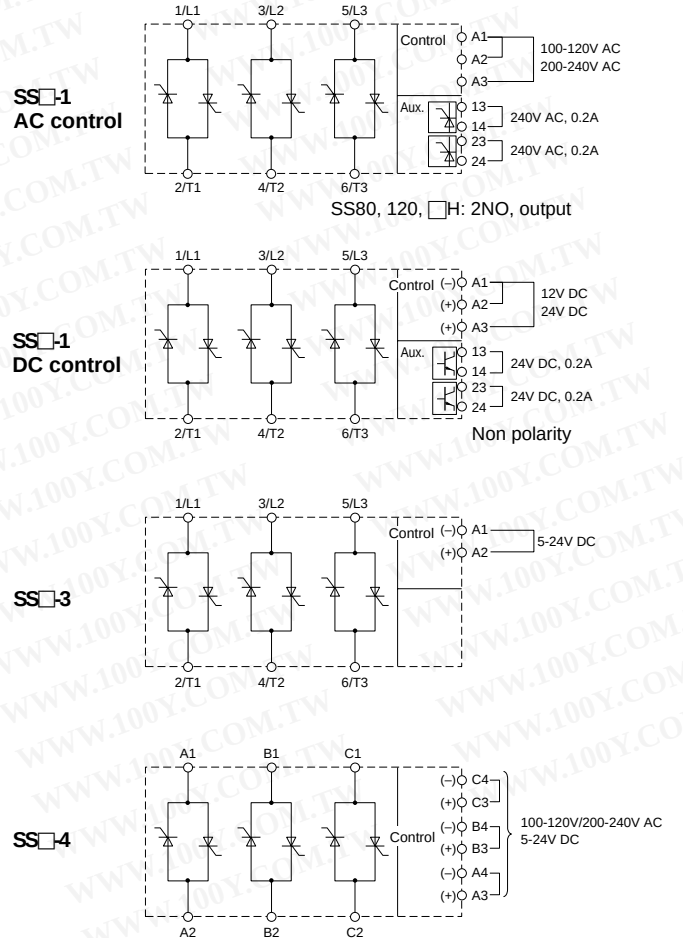
A1, A2, A3, B3, B4, C3, C4: Control terminals
13, 14, 23, 24: Aux. terminals



● SS20, SS30, SS40, SS50, SS80, SS120
2-element



3-element



■ Precautions for use

Be sure to read an Instruction Manual enclosed with the solid state relays before using in order to ensure proper operation.