

# Motor Control

## Solid-state contactors:SS series /Single-pole



**Long service life with high reliability.**

**Single-phase load ON/OFF controll with the rate of 10-200 Amps.**

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-pole solid-state contactors incorporate thyristors as making and breaking elements in the main circuit.

## Feature

### Operation indicator provided



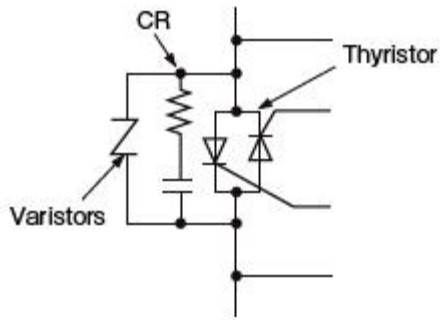
An operation indicator LED (red) is provided as a standard feature for all models, so you can easily check whether a control voltage is applied to the SSC.

### 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 longlife, low-noise, and high-speed response, is suitable for highly frequent switching of various types of loads, such as motors and heaters.

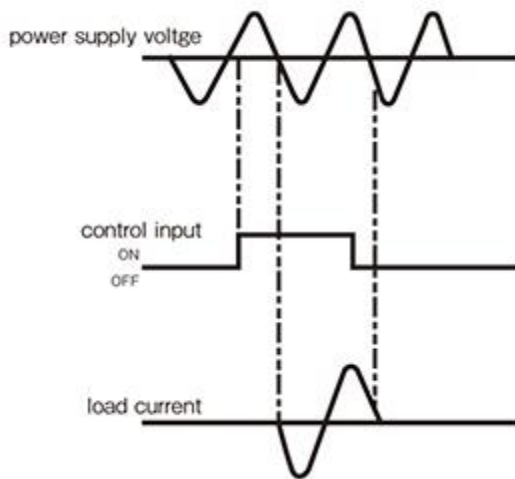
### Built-in surge suppressor



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.

### SSC with zero-cross switching function

(zero-cross switching function)



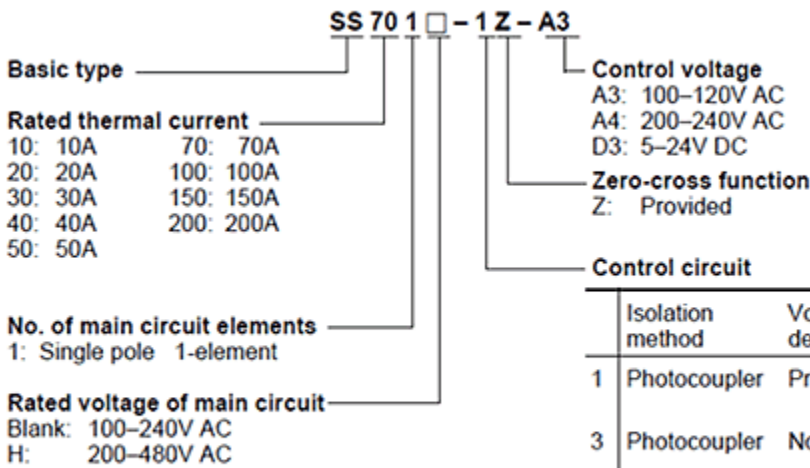
The SSC is also available with a zero-cross switching function to enable load current switching at the point where the line voltage is near zero to suppress excessive inrush current in the load circuit.

### 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.(SS701~SS2001)

# Type number nomenclature

## • Single-pole type



	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

# Types and ratings

## Ratings

### 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
Main circuit	Max. heater capacity (kW)				
	2	4	6	8	10
Control circuit	Single phase 200V AC				
	Number of elements				
	Single-pole, 1-element				
	Isolation method				
	Photocoupler				
Control circuit	Control voltage Vn				
	A3: 100 — 120V AC, A4: 200 — 240V AC				
	Pick-up voltage				
	85% Vn or less				
Control circuit	Drop-out voltage				
	35% Vn and over				
Control circuit	Operating time (at 100% Vn)				
	30ms or less				
Control circuit	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 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	200
	Max. heater capacity (kW) Single phase 200V AC	14	20	30	40
Control circuit	Number of elements				
	Single-pole, 1-element				
	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					

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

#### 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
Control circuit	Number of elements					
	Single-pole, 1-element					
	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
Control circuit	Number of elements				
	Single-pole, 1-element				
	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.

## 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	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	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 Rated current and voltage	Thyristor 1NO 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		-			

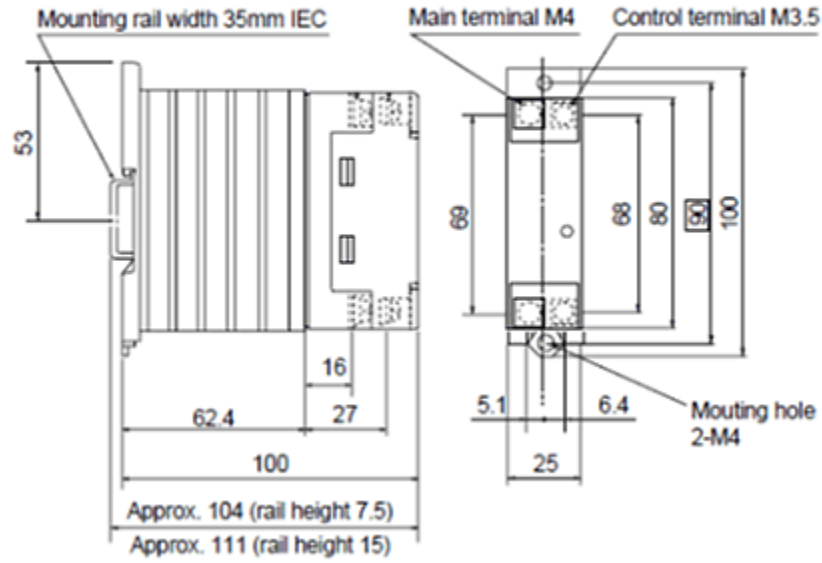
Note: \* The values are the maximum ratings of type with cooling fin that apply at an ambient temperature not exceeding 40°C.

## Dimensions

### SS series General use single-pole type SS101

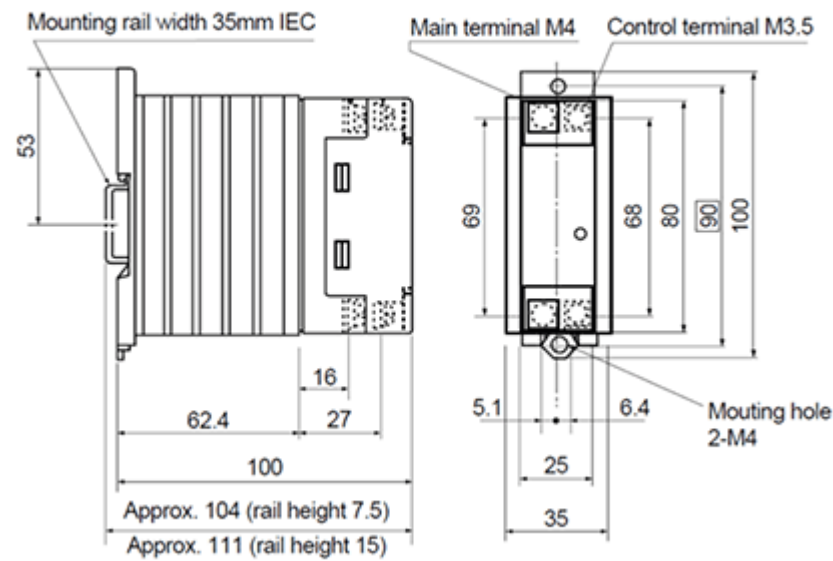
## Single-pole type

### ● SS101



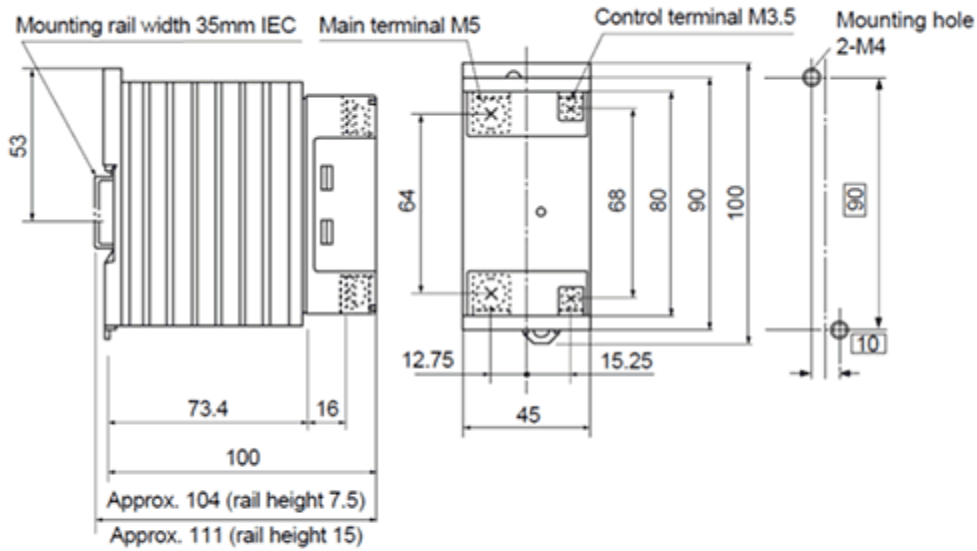
## SS series General use single-pole type SS201

### ● SS201



## SS series General use single-pole type SS301,401

● SS301, 401



Mass:

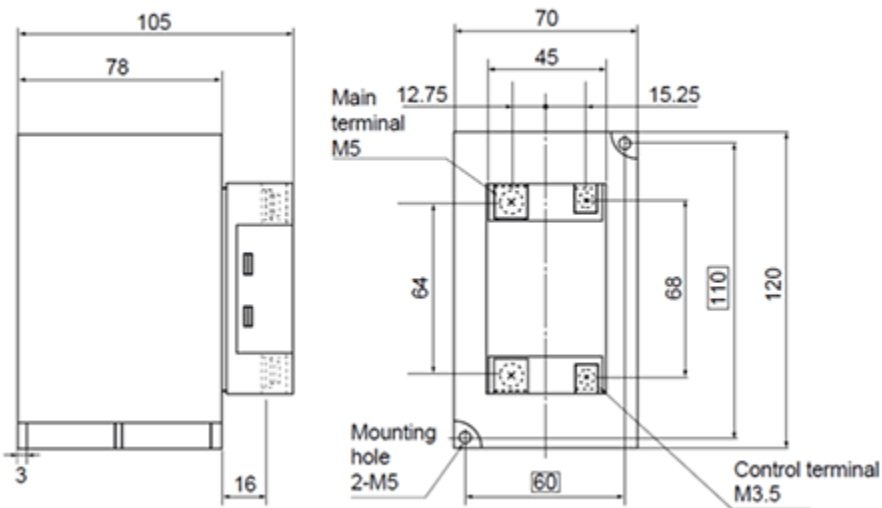
SS101: 0.22kg SS401: 0.36kg

SS201: 0.24kg SS501: 0.66kg

SS301: 0.36kg

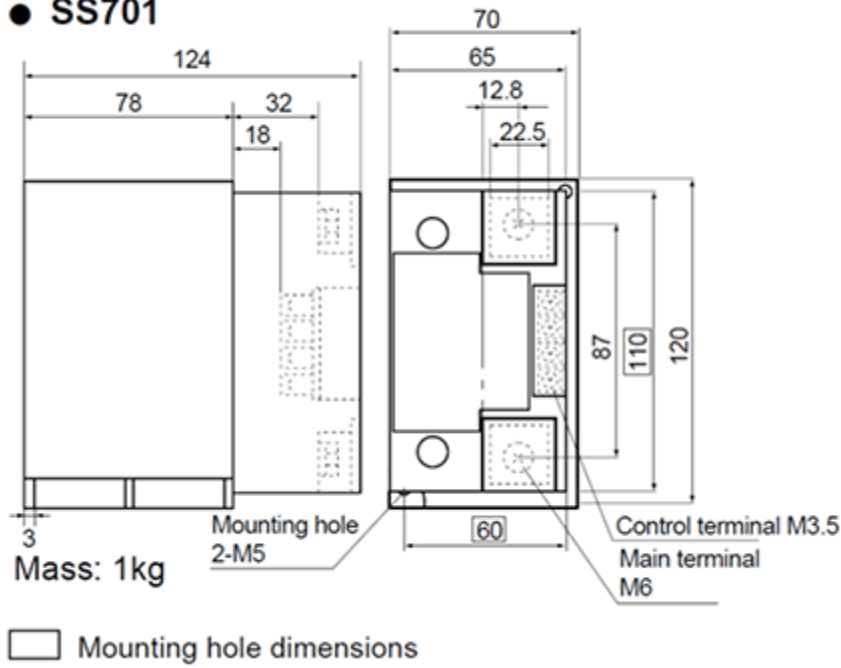
SS series General use single-pole type SS501

● SS501



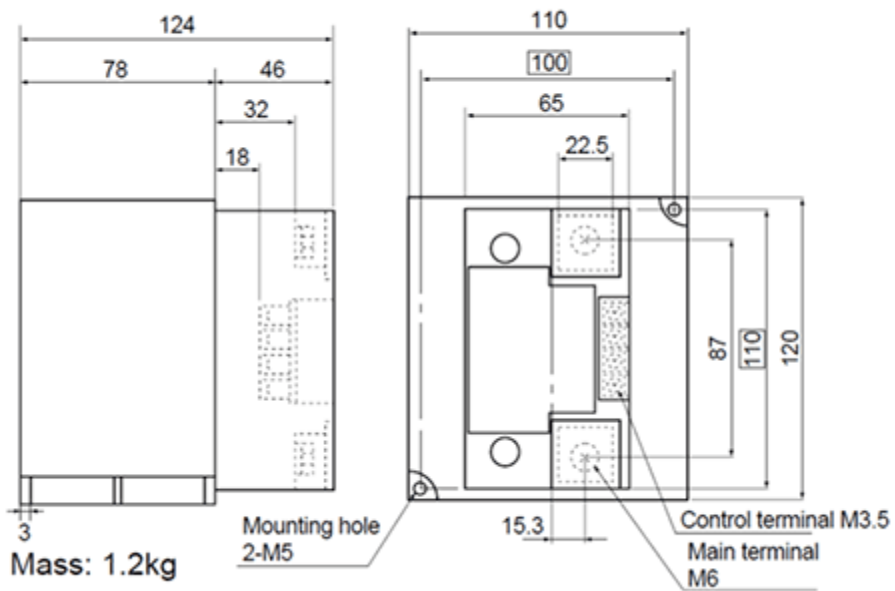
SS series General use single-pole type SS701

● **SS701**



**SS series General use single-pole type SS1001**

● **SS1001**

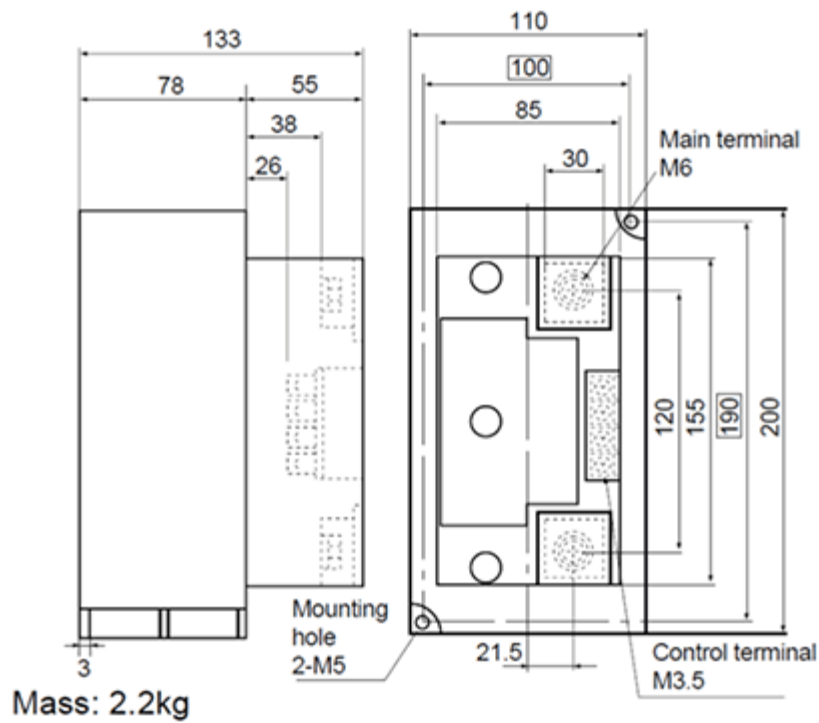


**SS series General use single-pole type SS1501**



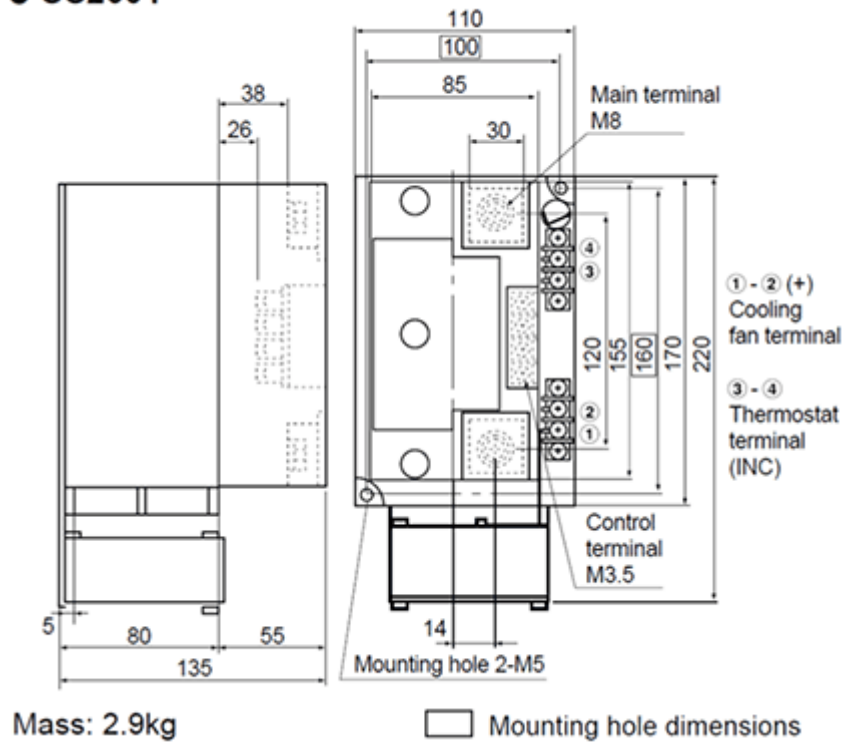
# Single-pole type

## ● SS1501



## SS series General use single-pole type SS2001

### ● SS2001



□ Mounting hole dimensions