



ORIENT

ORIENT ELECTRONICS

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TMS-S Series Noise Filter



● FEATURE

- High attenuation characteristics (150KHz ~ 10MHz)
- Three Phase
- 2 stage filter
- Steel case / Safety cover
- Easy push-down terminal block



ORDERING INFORMATION

TMS-5010-□

Series Name

Rated voltage

Rated current

Mode (Common Mode)

Remark

Product.	Noise Filter	Date.
Model.	TMS-S	Rev.
Customer.	Standard	Page.

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TMS-S Series

Specifications

SN-P, M, E, SUP SPECIFICATIONS 10



MODEL	RATED VOLTAGE (AC/DC)	RATED CURRENT	LEAKAGE CURRENT (60Hz)	TEMPERATURE RISE	OPERATING TEMPERATURE RANGE	APPROVAL
TMS-2006	250V Max	6A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-2010	250V Max	10A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-2020	250V Max	20A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-2030	250V Max	30A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-2040	250V Max	40A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-2050	250V Max	50A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-2060	250V Max	60A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5006	500V Max	6A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5010	500V Max	10A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5020	500V Max	20A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5030	500V Max	30A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5040	500V Max	40A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5050	500V Max	50A	5.0mA Max	50°C Max	-25 ~ +85°C	UL,C-UL,CE
TMS-5060	500V Max	60A	5.0mA Max	40°C Max	-25 ~ +85°C	UL,C-UL,CE

Product.	Noise Filter	Date.	2012.09.19
Model.	TMS-S	Rev.	A
Customer.	Standard	Page.	1 / 4

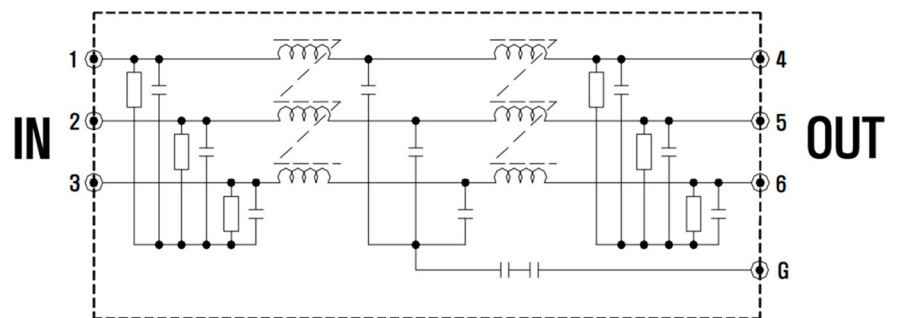
MODEL		Unit.	TMS-2006	TMS-2010	TMS-2020	TMS-2030
INPUT	Voltage	[V]	3Φ, AC 250 or DC 250			
	Frequency	[Hz]	50 / 60			
	Rated Current *1)	[A]	6	10	20	30
Voltage Drop		[V]	0.3V Max			
Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)			
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)			
Leakage Current (60Hz)	250V	[mA]	2.5mA Max			
DC Resistance (Max)		[mΩ]	290	120	50	26
Temperature Rise		[°C]	50°C Max			
Environment	Operating temp. & Humidity	-	-25 ~ +85°C, 20 ~ 95% RH (Refer to Derating Curve)			
	Storage temp. & Humidity	-	-40 ~ +85°C, 20 ~ 95% RH (Non Condensing)			
	Vibration	-	10~55Hz at 2G 3minutes period, 1hour each X,Y and Z			
Dimension	Size(WxHxD)	[mm]	210*55*95		240*60*105	
	Weight(Typ)	[g]	910g		1,400g	
Safety Standards		-	Approved by standard UL1283, CSA C22.2 No.8(C-UL), IEC/EN60939-2			

TMS-S Series

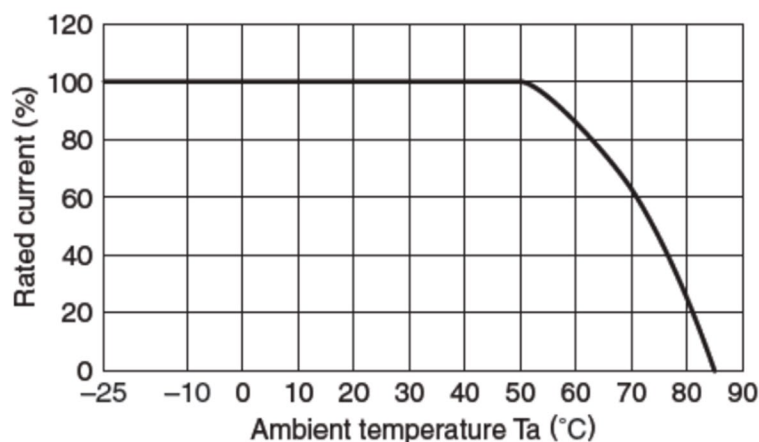
Specifications

MODEL		Unit.	TMS-2040	TMS-2050	TMS-2060
INPUT	Voltage	[V]	3Φ, AC 250 or DC 250		
	Frequency	[Hz]	50 / 60		
	Rated Current *1)	[A]	40	50	60
Voltage Drop		[V]	0.3V Max		
Test voltage		[V]	2.500VAC (at cut off current 100mA / 1Min)		
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)		
Leakage Current (60Hz)	250V	[mA]	2.5mA Max		
DC Resistance (Max)		[mΩ]	20	14	10
Temperature Rise		[°C]	50°C Max		
Environment	Operating temp. & Humidity	-	-25 ~ +85°C, 20 ~ 95% RH (Refer to Derating Curve)		
	Storage temp. & Humidity	-	-40 ~ +85°C, 20 ~ 95% RH (Non Condensing)		
	Vibration	-	10~55Hz at 2G 3minutes period, 1hour each X,Y and Z		
Dimension	Size(WxHxD)	[mm]	278 * 70 * 128		
	Weight(Typ)	[g]	2,800g		
Safety Standards		-	Approved by standard UL1283, CSA C22.2 No.8(C-UL), IEC/EN60939-2		

- Circuit Diagram



- Derating Curve



= NOTES =

- *1. Value for Ta less than 50°C
- For Ta more than 50°C, According to the derating curve as above

TMS-S Series

■ Specifications

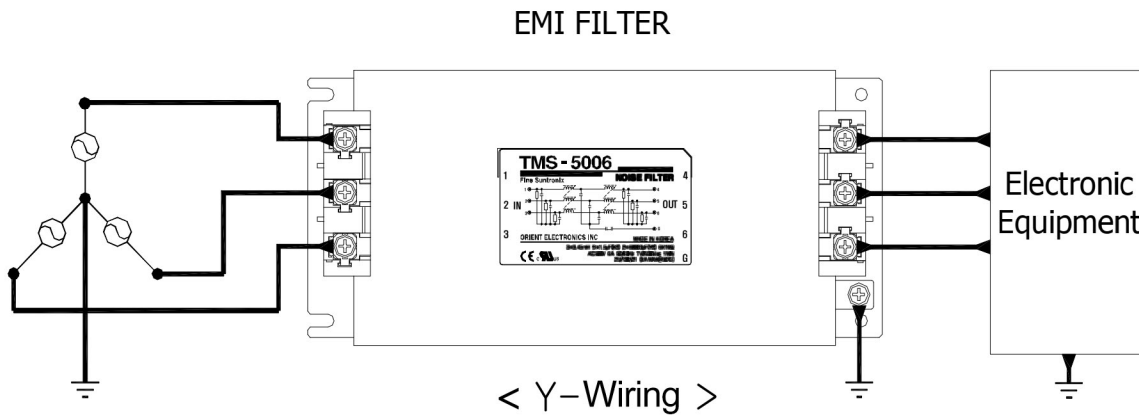
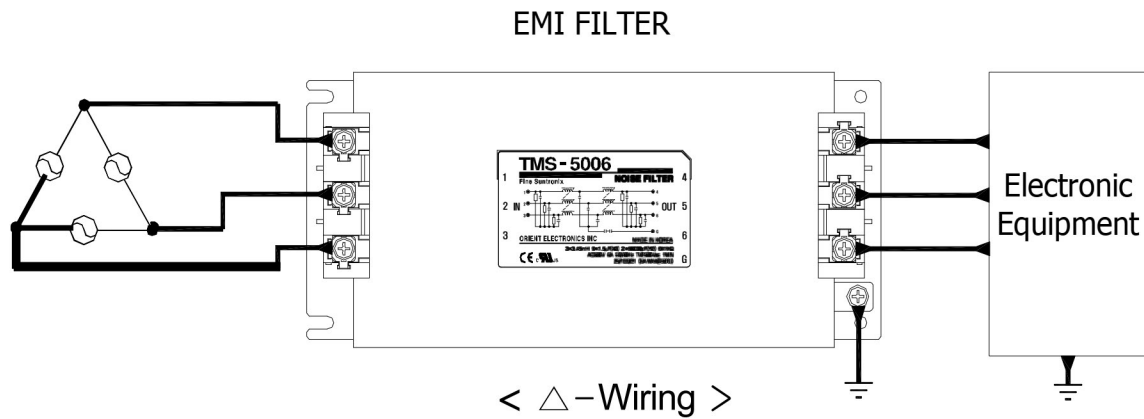
MODEL		Unit.	TMS-5006	TMS-5010	TMS-5020	TMS-5030
INPUT	Voltage	[V]	3Φ, AC 500 or DC 500			
	Frequency	[Hz]	50 / 60			
	Rated Current *1)	[A]	6	10	20	30
Voltage Drop		[V]	0.3V Max			
Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)			
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)			
Leakage Current (60Hz)	250V	[mA]	2.5mA Max			
	500V	[mA]	5.0mA Max			
DC Resistance (Max)		[mΩ]	290	120	50	26
Temperature Rise		[°C]	50°C Max			
Environment	Operating temp. & Humidity	-	-25 ~ +85°C, 20 ~ 95% RH (Refer to Derating Curve)			
	Storage temp. & Humidity	-	-40 ~ +85°C, 20 ~ 95% RH (Non Condensing)			
	Vibration	-	10~55Hz at 2G 3minutes period, 1hour each X,Y and Z			
Dimension	Size(WxHxD)	[mm]	210*55*95		240*60*105	
Weight(Typ)		[g]	910g		1,400g	
Safety Standards		-	Approved by standard UL1283, CSA C22.2 No.8(C-UL), IEC/EN60939-2			

MODEL		Unit.	TMS-5040	TMS-5050	TMS-5060
INPUT	Voltage	[V]	3Φ, AC 500 or DC 500		
	Frequency	[Hz]	50 / 60		
	Rated Current *1)	[A]	40	50	60
Voltage Drop		[V]	0.3V Max		
Test voltage		[V]	2,500VAC (at cut off current 100mA / 1Min)		
Isolation Resistance		[MΩ]	100MΩ Min (500VDC / 1Min)		
Leakage Current (60Hz)	250V	[mA]	2.5mA Max		
	500V	[mA]	5.0mA Max		
DC Resistance (Max)		[mΩ]	20	14	10
Temperature Rise		[°C]	50°C Max		
Environment	Operating temp. & Humidity	-	-25 ~ +85°C, 20 ~ 95% RH (Refer to Derating Curve)		
	Storage temp. & Humidity	-	-40 ~ +85°C, 20 ~ 95% RH (Non Condensing)		
	Vibration	-	10~55Hz at 2G 3minutes period, 1hour each X,Y and Z		
Dimension	Size(WxHxD)	[mm]	278 * 70 * 128		
Weight(Typ)		[g]	2,800g		
Safety Standards		-	Approved by standard UL1283, CSA C22.2 No.8(C-UL), IEC/EN60939-2		

TMS-S Series

■ INSTALLATION CONDITION

1. Noise Filter

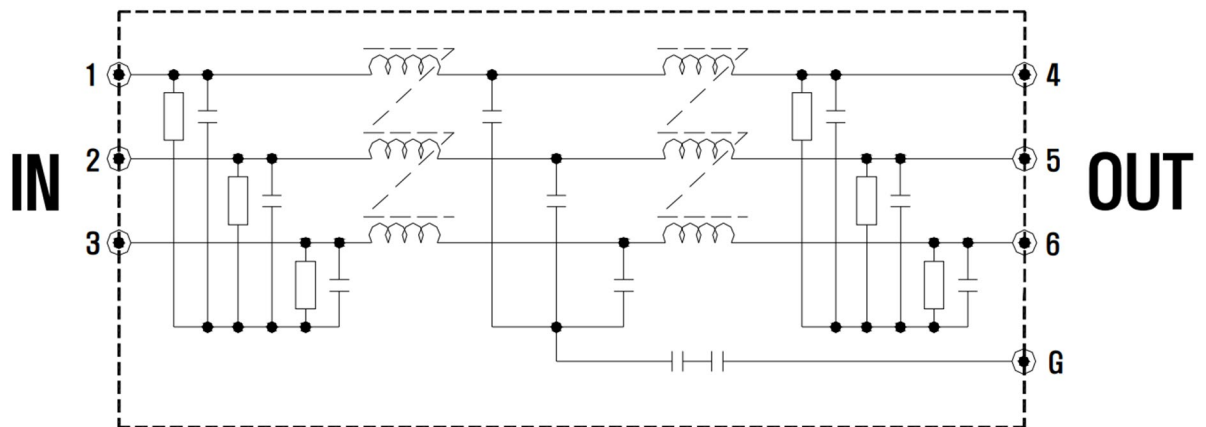


2. Terminal Connection

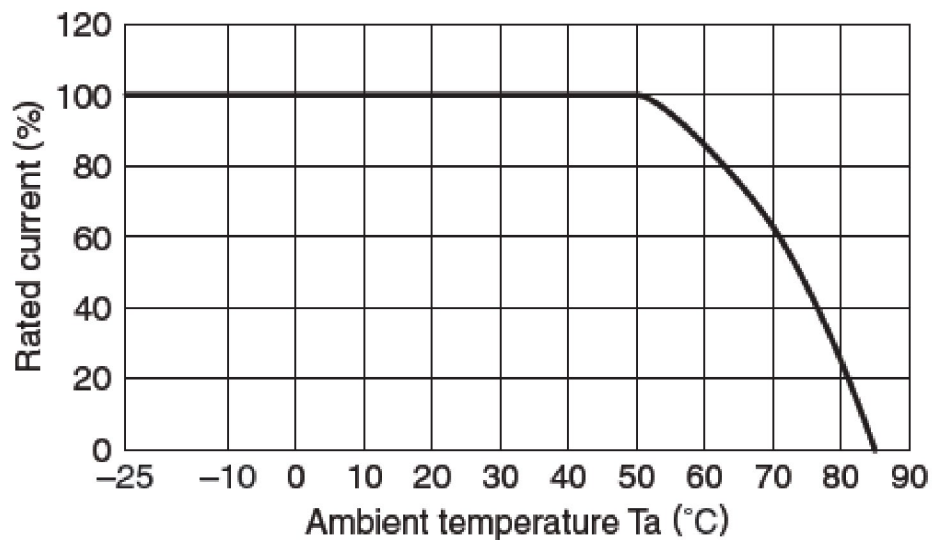
Marking	Pin Connection		Function
1	INPUT	AC R Phase	Noise Filter AC input Terminal
2		AC S Phase	
3		AC T Phase	
4	OUTPUT	AC R Phase	Noise Filter AC output Terminal
5		AC S Phase	
6		AC T Phase	
G	Flame ground		CASE ground

TMS-S Series

■ Circuit Diagram



■ Derating Curve



= NOTES =

- *1. Value for T_a less than 50°C
For T_a more than 50°C, According to the derating curve as above

TMS-S Series

3. Applicable Electric Cable

Permissible current (A)	Minimum wire diameter	
	Cross-sectional area	AWG SIZE
6	0.75	18
10	1.0	16
16	1.5	14
20	2.5	12
30	4.0	10
40	6.0	8
50	10.0	6
60	10.0	6

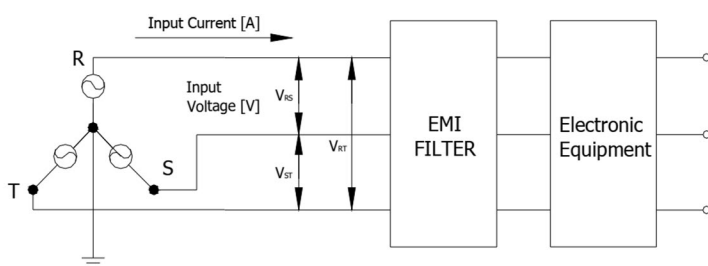
4. Recommended Clamping Torque

Screw	Torque	Remarks
M4	1.27N·m	
M5	2.50N·m	

■ ELECTRICAL CHARACTERISTICS

* Rated Voltage : 3 phase, 250VAC or 500VAC

* Rated Current :



$$\text{Input Current [A]} = \frac{\text{Input Capacity of the Equipment [VA]}}{\text{Input Voltage [V]} \times \sqrt{3}}$$

$$\text{Rated Current [A]} \geq \text{Input Current [A]}$$

* Withstand Voltage Test :

The insulation voltage between AC input, output and ground is less than 100mA for 1 minute at AC 2500V

* Isolation Resistance Test :

The insulation resistance between AC input, output and ground is more than 100MΩ for 1 minute at DC 500V.

* Isolation Resistance Test :

Input Voltage	Leakage Current	Note
0 ~ 250VAC	2.5mA Max	When input voltage is applied Maximum leakage current between LINE-GND
251 ~ 500VAC	5.0mA Max	

TMS-S Series

■ ENVIRONMENT CONDITION

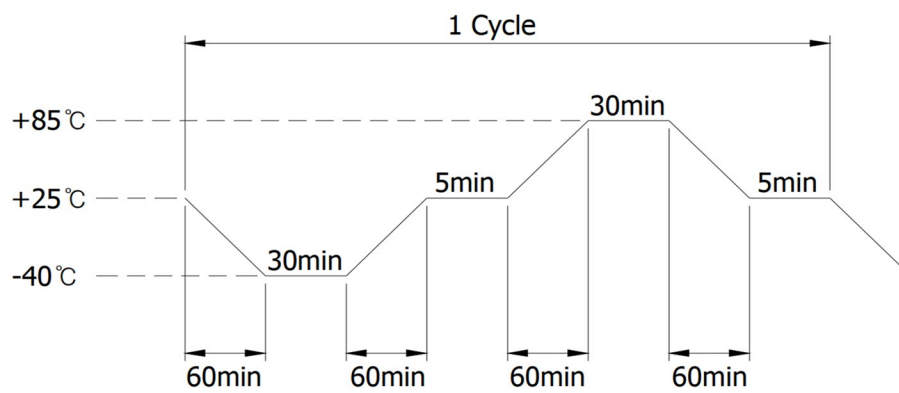
1. Operating Temperature Test

All electrical and mechanical characteristics must be satisfied in an 8-hour operation test under rated input/output conditions at the temperature and humidity below.

- (1) Ambient Temperature : $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
- (2) Humidity : 20 ~ 90% RH

2. Heat Cycle Test

All electrical and mechanical characteristics must be satisfied after 50 cycles based on the cycle below at an ambient temperature of -40°C to $+85^{\circ}\text{C}$.



3. Vibration Test

After a 1-hour vibration test under the vibration conditions below, all electrical and mechanical characteristics must be satisfied.

- (1) Vibration Frequency : 10 ~ 55 Hz, 2G
- (2) Vibration Period : 3 minutes

■ PRECAUTIONS FOR USE

- Use according to the allowable voltage, allowable current, and operating temperature conditions specified on the product.
- Use terminals and cables that connect to the noise filter that exceed the product's allowable voltage/current.
- When grounding, use cables that are as thick and short as possible.
- Be careful not to damage the product's input/output terminals by applying excessive force.
- Be careful not to cause short circuits when installing and using the product.
- Be careful not to let your hands or other body parts touch the terminals while the current is being passed.

4. Warranty

- The contractor may test and inspect all performances and characteristics specified in this specification that are not separately stipulated in the contract using the inspection facilities of its own or an authorized testing agency.
- In addition to the confirmation inspection for the necessary conditions stipulated in this specification, the contractor may conduct inspections necessary to confirm the quality of the product.

4. Note

- Matters not specified in this specification are permitted only to the extent that they do not affect the reliability, compatibility, and performance of this product.

■ PRECAUTIONS FOR USE

1. Method of measuring Attenuation

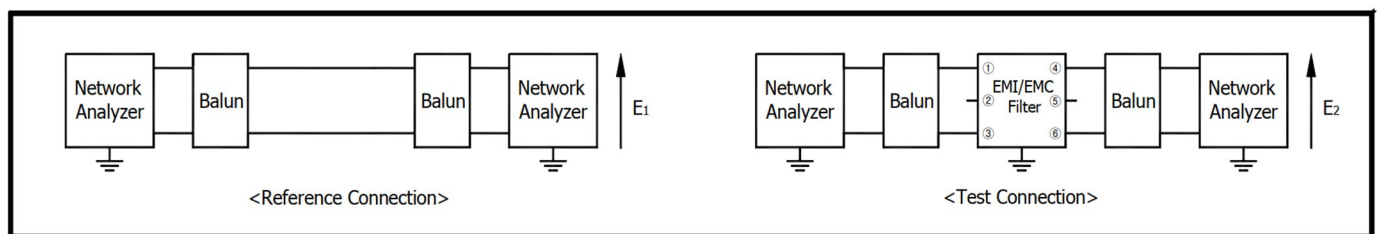
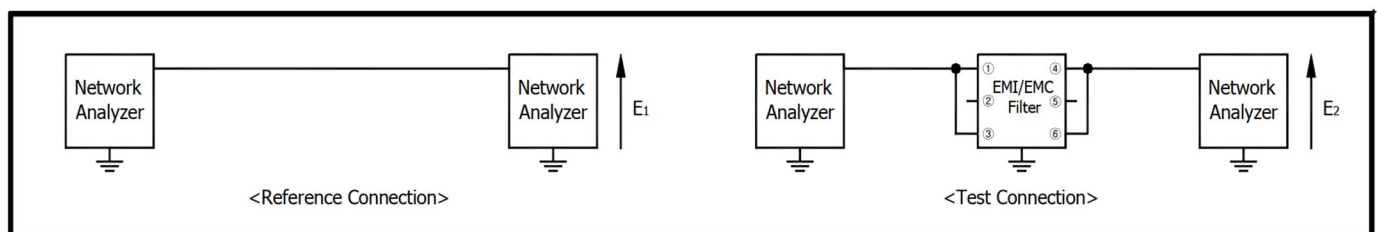


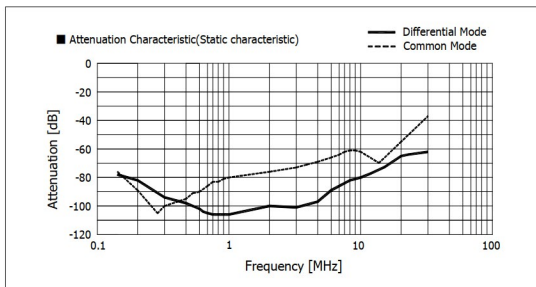
Fig.3.1 Differential Mode Attenuation Measurement Diagram



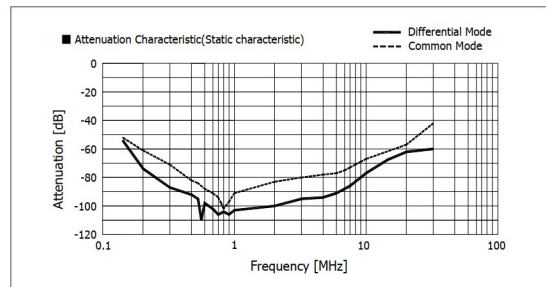
2. Attenuation Characteristics

* TMS-Series (Rated Current : 6 ~ 30A)

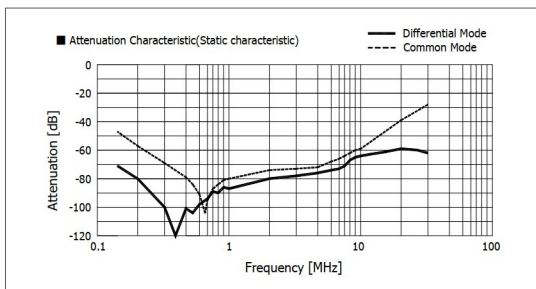
TMS-5006



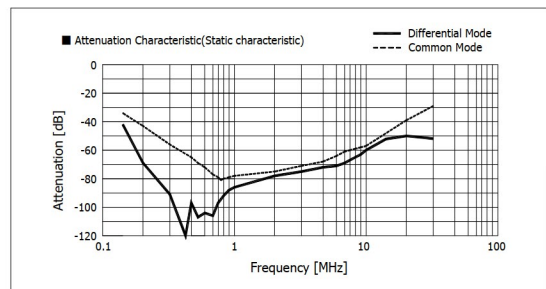
TMS-5010



TMS-5020

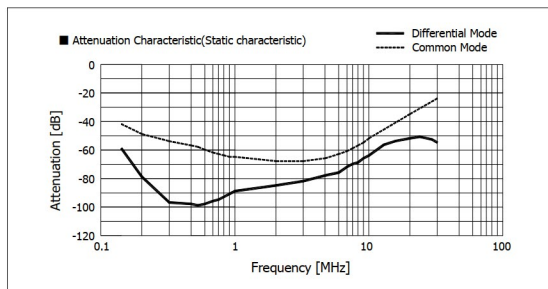


TMS-5030

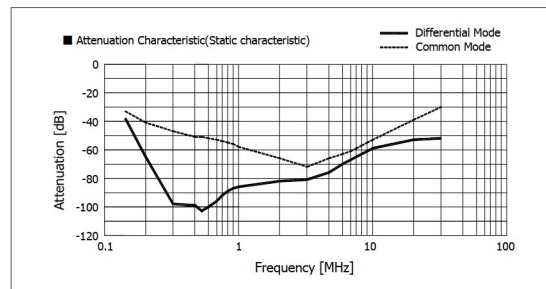


* TMS-Series (Rated Current : 40 ~ 60A)

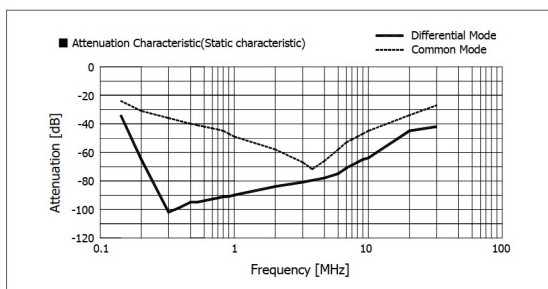
TMS-5040



TMS-5050



TMS-5060



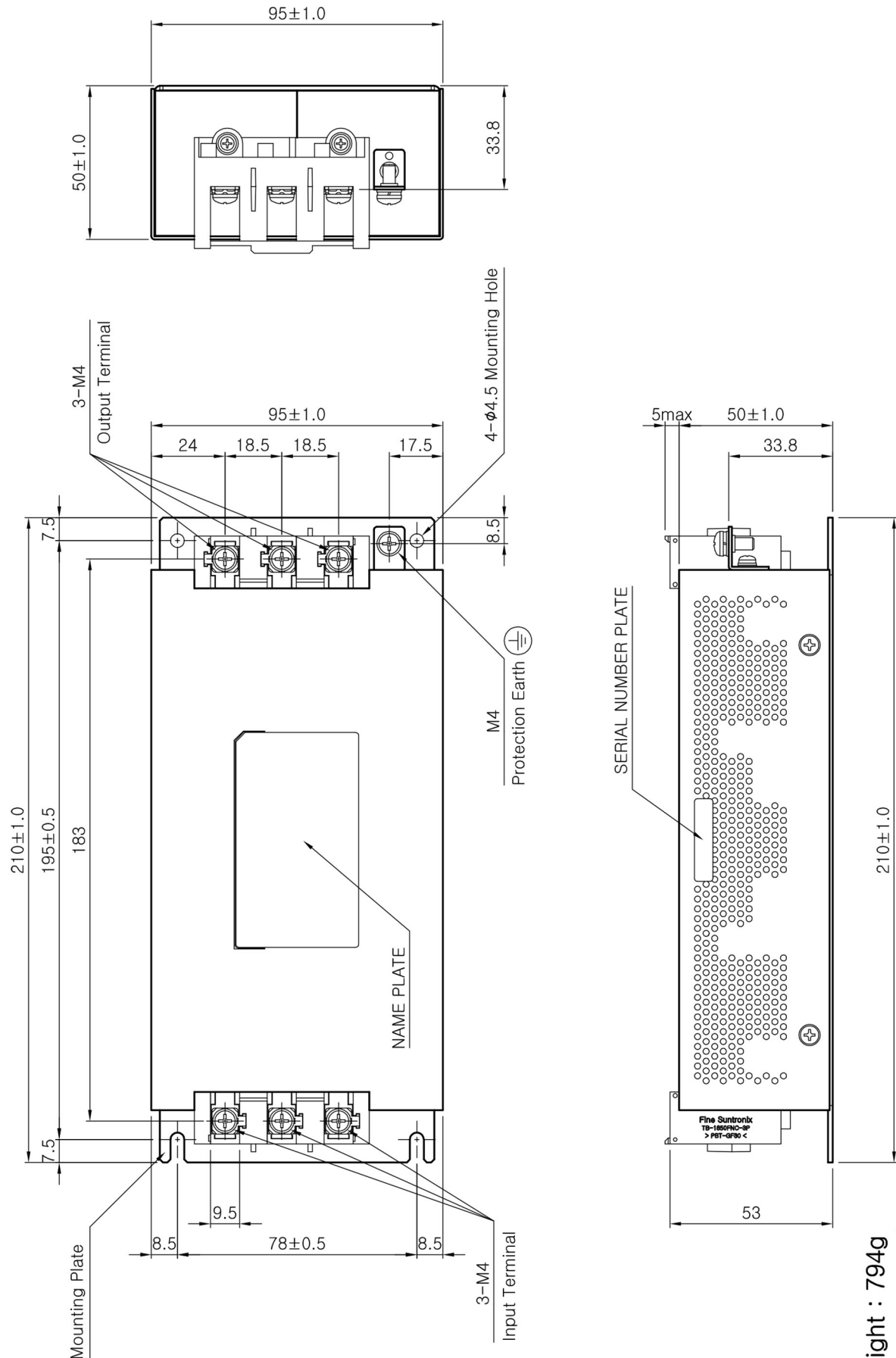
■ Attenuation[dB] = $-20\log(E_1/E_2)$

E_1 = Voltage in state without filter
 E_2 = Voltage in state with filters

TMS-Series

DIMENSION (A Type)

TMS-2006/2010

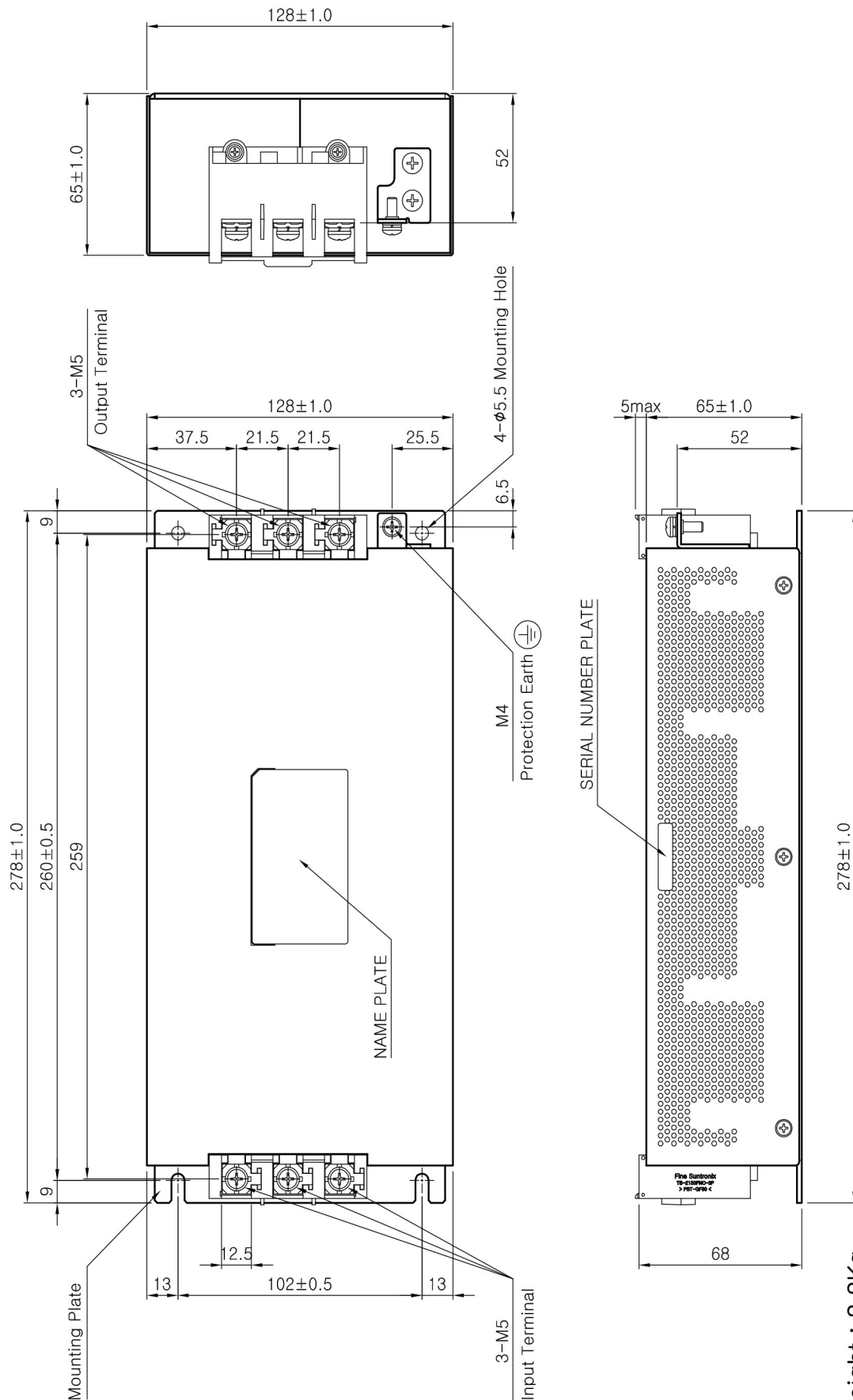


- * Weight : 794g
- * Tolerance : ± 1
- * Dimensions in mm

TMS-Series

DIMENSION (C Type)

TMS-2040/2050/2060



* Weight : 2.2Kg

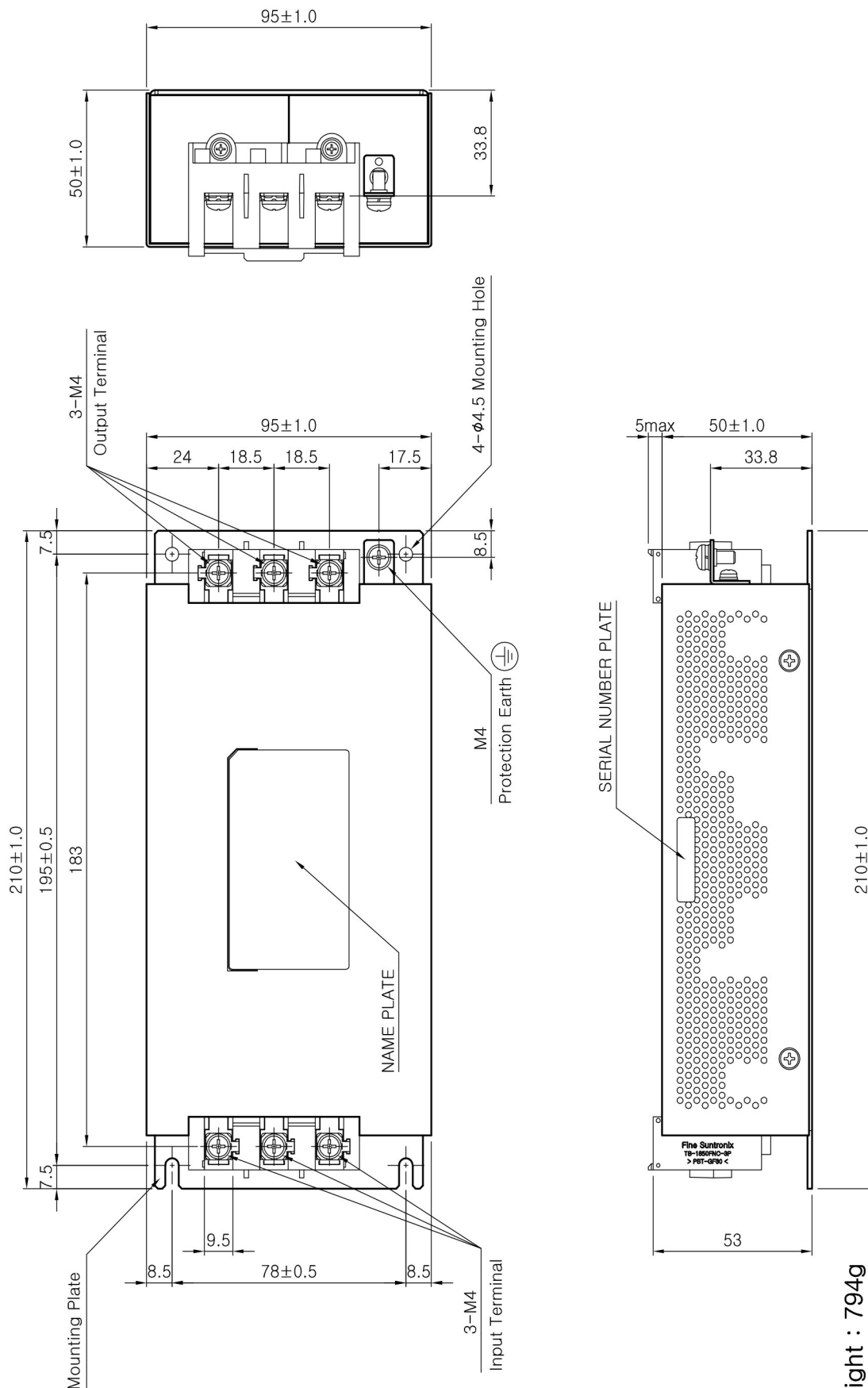
* Tolerance : ± 1

* Dimensions in mm

TMS-Series

DIMENSION (A Type)

TMS-5006/5010

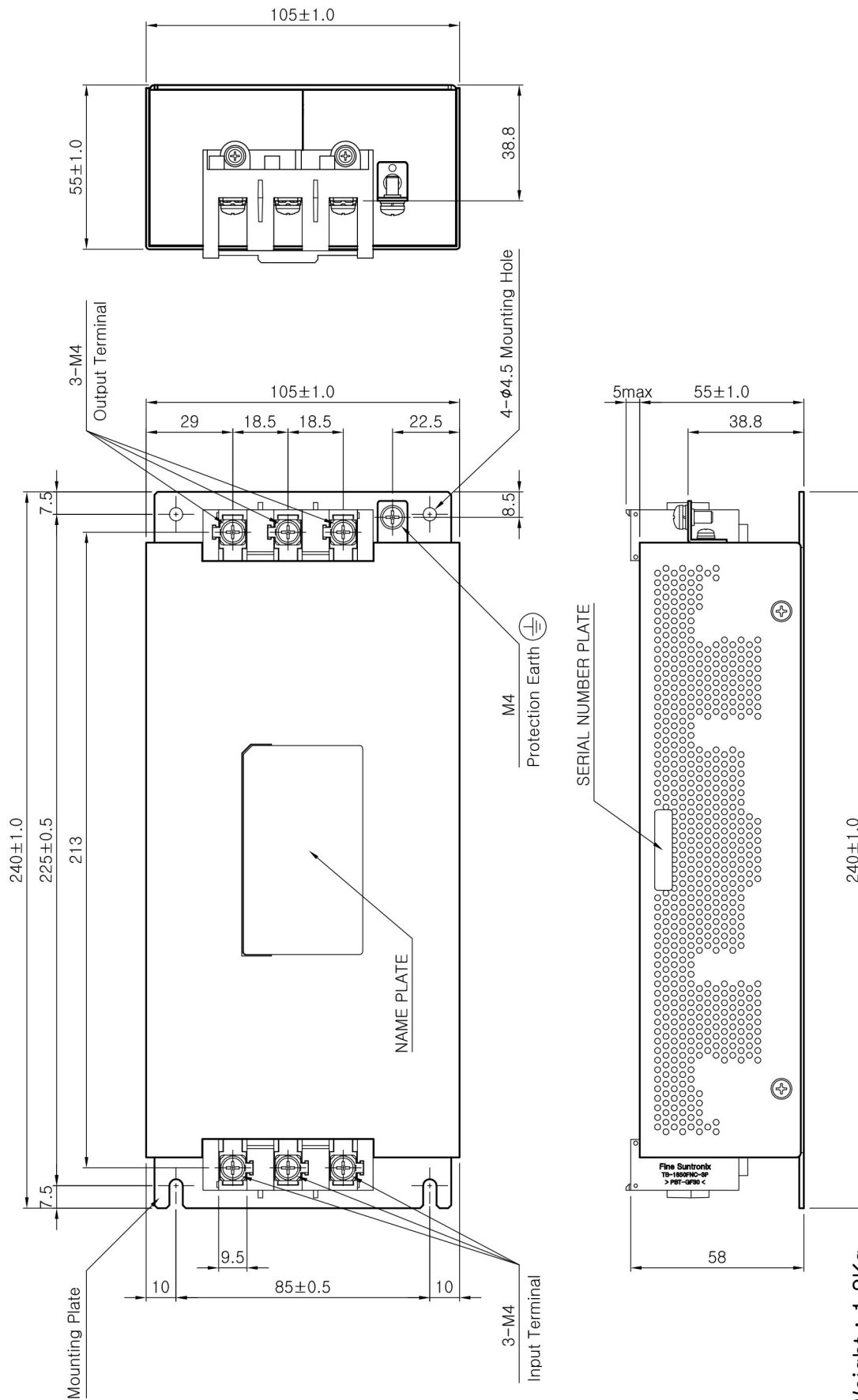


- * Weight : 794g
- * Tolerance : ± 1
- * Dimensions in mm

TMS-Series

DIMENSION (B Type)

TMS-5020/5030



* Weight : 1.3Kg

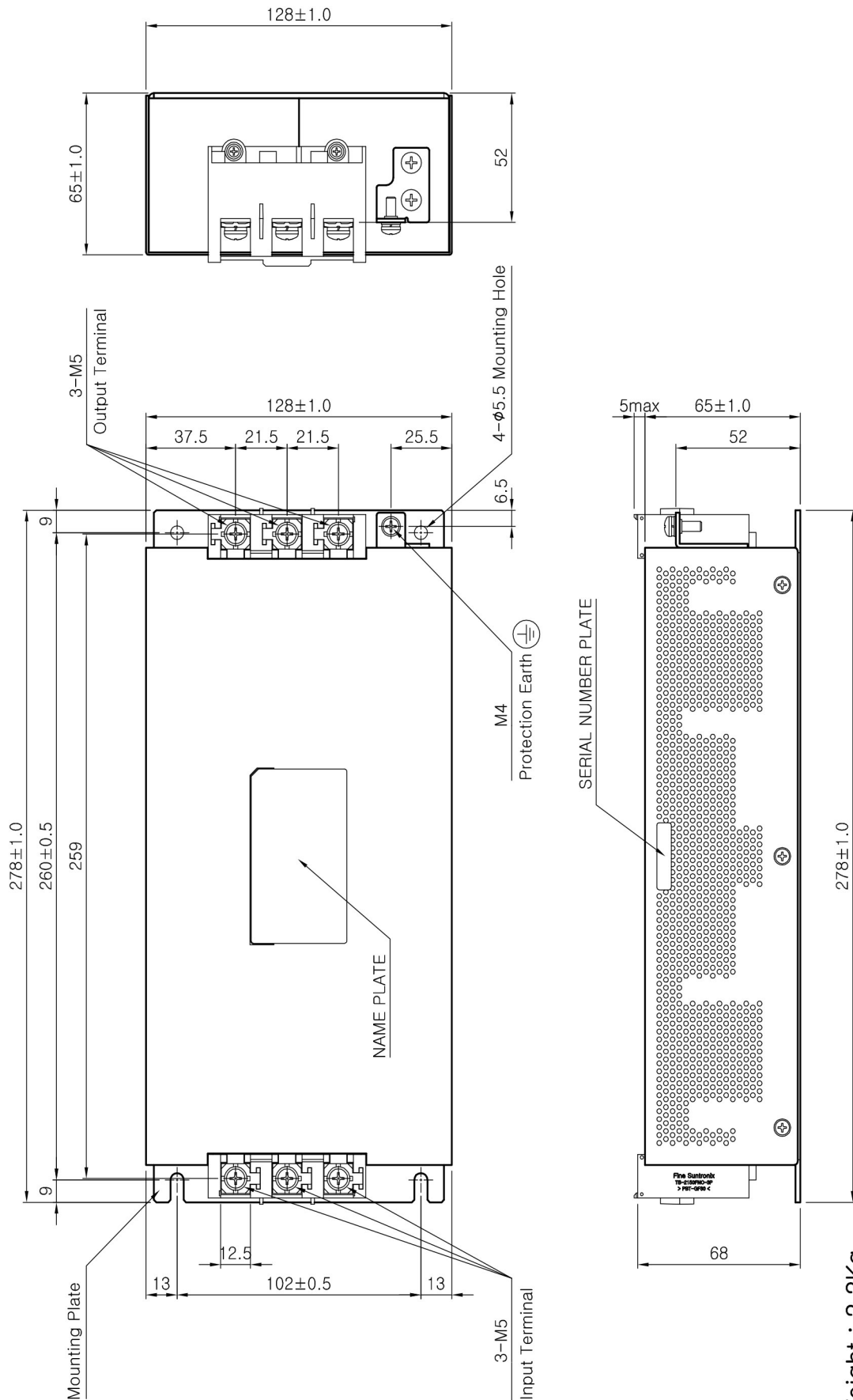
* Tolerance : ± 1

* Dimensions in mm

TMS-Series

DIMENSION (C Type)

TMS-5040/5050/5060



* Weight : 2.2Kg

* Tolerance : ± 1

* Dimensions in mm

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