

Please be sure to read the following precautions before using this product in order to ensure its safe operation.

⚠ DANGER

Ignoring the precautions below can result in death or serious injury.

1. Please do not touch the terminal or insert the electric wire, metal bar, or any other conductive materials into the punched hole or the case opening of EMI filter during its operation. It may cause electric shock and fire.
2. Make sure that EMI filter is completely discharged after being powered off before starting wiring work or inspection. The electrical charge in the mounted capacitor won't be discharged immediately after EMI filter is powered off, and may cause electric shock.
3. EMI filter must be securely grounded through its ground terminal or metal case body. Failure to do so may cause electric shock or affect the performance of EMI filter. The ground wire should be short with its cross section more than or equal to 3.5 mm².
4. Please do not dismantle, modify or repair EMI filter. It may cause fire, electric shock, and resulting injury.

⚠ WARNING

Ignoring the precautions below can increase the risk of serious injury or fire.

1. Do not use EMI filter under the following conditions. The filter heated by applied overcurrent may result in its damage, deterioration or, fire.

* Applying current and/or voltage over rated value.	* Use of EMI filter for DC in AC circuit design.
* Use of I/O cable below rating.	* Use of AC other than utility frequency (50 Hz or 60 Hz).

2. Alternative current flows in mounted capacitor of EMI filter during its operation. Therefore, insufficient capacitance of circuit breaker or transformer, connected to input side of EMI filter, may result in heating and fire. Please contact us for the specific value of alternative current. In addition, mounted capacitor may fume and burn when high frequency voltage is applied. If peak to peak value of electrical surge and ripple voltage (DC voltage plus AC peak to peak value) exceed the rated voltage of EMI filter, Please consult with us.
3. For installation of EMI filter to output side of inverter etc., please use the filter designed for output side installation. Installation of EMI filter designed for input side to output side of inverter etc. may result in heating of the filter.
4. Please assure the connection of EMI filter with input and output cables using the torque wrench or torque driver to control the torque. Insufficient tightening may result in heating and fire of the filter.

«Screw tightening torque JIS C8201-1:reference value for bolt terminal and terminal block»

Screw size	M3	M4	M5	M6	M8	M10	M12
tightening torque (N·m)	0.5	1.2	2	3	6	10	14
(kgf·cm)	(5.1)	(12.2)	(20.4)	(29.4)	(61.2)	(102)	(143)

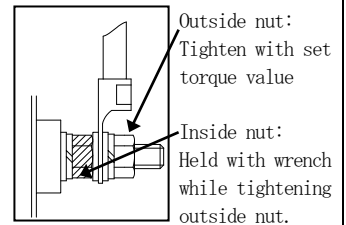


Figure 1: Bolt terminal connection

5. Please do not rotate the inside nut when connecting with the bolt terminal (Figure 1.).
6. EMI filter equipped with terminal block (Figure 2.) should be connected, using crimp terminal (stacking of crimp terminals allowed up to two). For any other mean of connection, please consult with our sales representative.
7. Please do not close the hole on the case with the punching metal structure. Closing the hole will obstruct heat radiation of EMI filter, causing internal temperature rise, degradation, and fire.
8. Please install EMI filter on a metallic board etc. in consideration of heat radiation. Installation on combustible material may causes fire.
9. Operation under the following environmental conditions bellow may cause EMI filter to deteriorate, overheated due to its component failure, and fire.

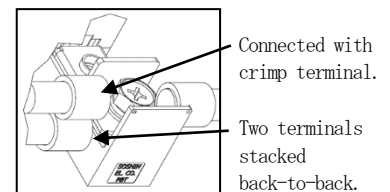


Figure 2: terminal block connection (stacked terminals)

* Corrosive (Cl ₂ , NH ₃ , SO _x , NO _x , etc.), volatile, or flammable gas environment	* Exposed to (salt) water, oil or, fats
* Dusty	* Vacuumed, decompressed, or pressurized environment
* Out of specified temperature range, relative humidity over 90%, condensation	* Outside
	* Nearby some flammable materials
	* Out of specified vibration condition

10. Turn off the power supply of EMI filter immediately upon observing abnormal phenomena, such as "fume", "odor", "unusual sound", and "overheating of enclosure surface". Failure to do so may cause fire.

⚠ CAUTION

Ignoring the precautions below can increase the risk of injury or material damage.

1. Upon placing EMI filter on desk or shelf, take measures to its drop to prevent product damage and injury.
2. For EMI filter weighed over 20kg, carry it with 2 persons to prevent injury. Do not grab on terminal block or bolt terminal to carry EMI filter, or terminal may be broken off.
3. Connect EMI filter's "IN or LINE" terminal to power supply side, "OUT or LOAD" terminal to supplying equipment side. Installation of EMI filter in opposite direction will reduce its noise attenuation ability.
4. Keep EMI filters under the following conditions below.

Temperature	Relative humidity	Environment
-20~60°C	0~60% no condensation or steam	No direct sun light, minor dust and humidity alteration, No corrosive gas

5. Please include fail safe function to circuit design installing EMI filter. For use of EMI filter where failure or malfunction could directly causes loss of life, damage of human or property, please consult with our sales representative beforehand.
6. For specific use of EMI filter such as aviation, aerospace, undersea, power plant control, transportation control, automobile, or any other use that requires extremely high reliability or other special uses, please consult with our sales representative beforehand.
7. We take no responsibility for EMI filter's malfunction or failure from operation under out of spec conditions.
8. Values on product specifications are for reference only. Please contract purchase/delivery specifications.
9. Under Foreign Exchange and Foreign Control Trade Law, upon exporting product (or information) comes under restricted freight (or labor) the permission of Japanese government may be required.

Problem that occurred without obeying 23 articles of safety precautions above, doesn't correspond to the product liability prescribed by Product Liability Law (Act No.85 of July 1, 1994) Article 3.