

## Model: SR-HL / 190607

### Three-phase solid state relay heat sink industrial aluminum heatsink 150x80x80x100 air cooling

Most type of heatsinks are required for solid state relays or modules?

In fact, there is no exact correspondence between the two, because the heat generated by the solid state relay or module is mainly related to the actual current of the driven load, but has little to do with its own current level.

Calorific value calculation formula:

1. Calorific value = actual load current (ampere)  $\times$  1.5 watts / ampere

The above formula is suitable for single-phase solid state relays, single-phase AC voltage regulator modules, R series solid-state voltage regulators, and for three-phase solid state relays, three-phase AC voltage regulator modules, and the actual load current should be the sum of three-phase actual load currents.

2. Calorific value = actual load current (ampere)  $\times$  3.0 watts / ampere

The above formula is suitable for a single-phase fully controlled rectifier module.

The role of the heat sink is to dissipate the heat generated by the solid state relay or module, but in fact (taking into account the price factor), the size of the heat sink can be determined with one word, because the heat dissipation effect is not only the size of the heat sink. Related factors are also related to ambient temperature (seasonal), ventilation conditions (natural cooling or forced cooling and air volume), and installation density. Reference standard for heat dissipation: The temperature of the bottom plate (contact surface with the heat sink) of the solid state relay or module must not exceed 80 °C. Therefore, in practical applications, a 75°C temperature switch (with a pair of normally closed contacts) can be installed on the heat sink mounting surface near the edge of the solid state relay or module (within 20mm), and the control signals of the solid state relay or module can be serialized. The pair of normally closed contacts, such that when the temperature of the detection point exceeds 75 °C, the normally closed contact trips, the control signal is cut off, and the output of the solid state relay or module is forcibly turned off to be protected. Generally, in the place where the actual current per phase exceeds 50A, the installation density is high, and the ambient temperature is high, it is better to use temperature switch protection.

In addition to considering the above factors, the choice of the heat sink should also consider whether the solid state relay or the module itself can match the size of the heat sink and the installation space of the heat sink in the cabinet. But ultimately, ensure that the temperature of the base plate of the solid state relay or module must not exceed 80 °C in the worst case.

