Brake resistor

Safety Information

Only technically qualified and competent persons should install this SI/PR. This resistor must be installed in accordance with these instructions. Disconnect and isolate all electrical connections before installation or maintenance.

Hazards

The SI/PR contains hazardously high voltages when it is connected.
The surfaces of the SI/PR may be hazardously hot during operation.
The resistor element(s) may glow briefly in operation. This is not a fault.

A small quantity of smoke may be produced when the SI/PR is first operated. This is caused by an oil-based coating used to protect the resistor elements during manufacture and is not a fault.

In case of faulty control circuit of brake resistor or faulty brake resistor will cause very high temperature .

Installation Requirements

Free airflow

- It is essential to allow a free flow of air around the SI/PR enclosure because the air leaving the resistor and the enclosure surface temperature can exceed 100°C.
- The minimum recommended clearance to other equipment is 250mm
- Do not obstruct the ventilation holes in the enclosure

If the SI/PR is mounted within a cabinet:

The cabinet must be well ventilated. This means a minimum free air opening at the top and bottom of the cabinet of 30cm^2/kW of SI/PR power. Forced cooling should be used where there is insufficient natural ventilation.

The SI/PR should be mounted as high as possible within the cabinet

Factory Testing

Every SI/PR satisfies the following requirements:

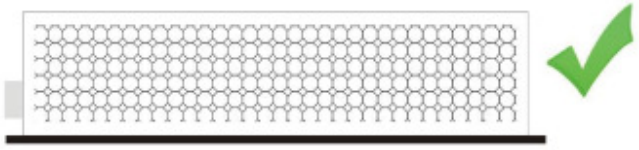
- Resistor tolerance on nominal value at room temperature is: +10%, -0% (measurement uncertainty ±0.1%)
- Voltage withstand capability (between resistor element and enclosure): 3kV for 1 second
- The enclosure gets hot. Do not use it to support any cables
- If required, connect the over temperature sensor (Push-on terminals)
- Ensure that all connections (including the earth) are tight before refitting the cover
- Isolate and check that the electrical supply is disconnected before working on the resistor.

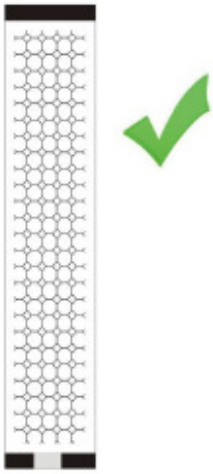
Check the ventilation holes in the enclosure are not obstructed.
The SI/PR is fitted with a printed indication specifying its power rating and ohm value.

POSITIONING REQUIREMENTS

CORRECT POSITIONING

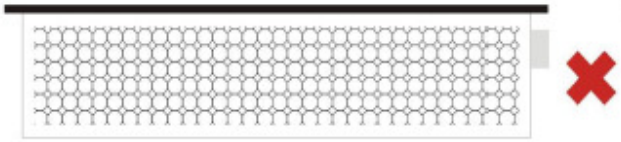
The enclosure must be mounted on a flat surface, ideally horizontally with the solid plate at base .



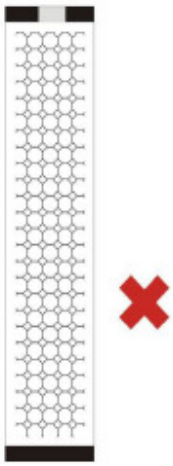


UNCORRECT POSITIONING

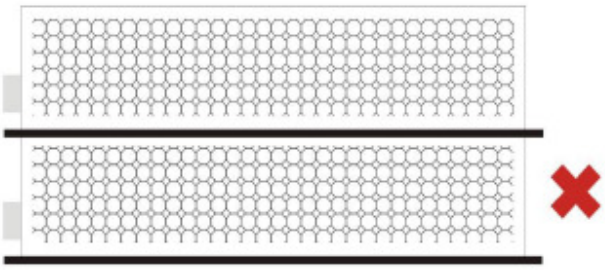
Solid plate at top preventing air flow.



The cable compartment must be at the bottom when the enclosure is mounted vertically



Enclosures stacked, preventing air flow



Materials

Materials that are combustible or that may be affected by the heat must not placed close to the enclosure. This is especially important above the enclosure. Such materials include most plastics and other non-metals.

Installation Procedure

- Isolate and check that the electrical supply is not live before beginning.
- Remove the cover if necessary to reach the mounting holes.
- Fix to mounting surface.
- Cable access is through ceramic connector block.
- Connect the resistor using suitably rated cable. The resistor is not polarity sensitive.
- Connect the cable earth to the earthing point in the enclosure.
- If required, connect the over temperature sensor.
- Ensure that all connections (including the earth) are tight before refitting the cover.
- Before operation ensure there are no obstructions to prevent proper ventilation

Maintenance

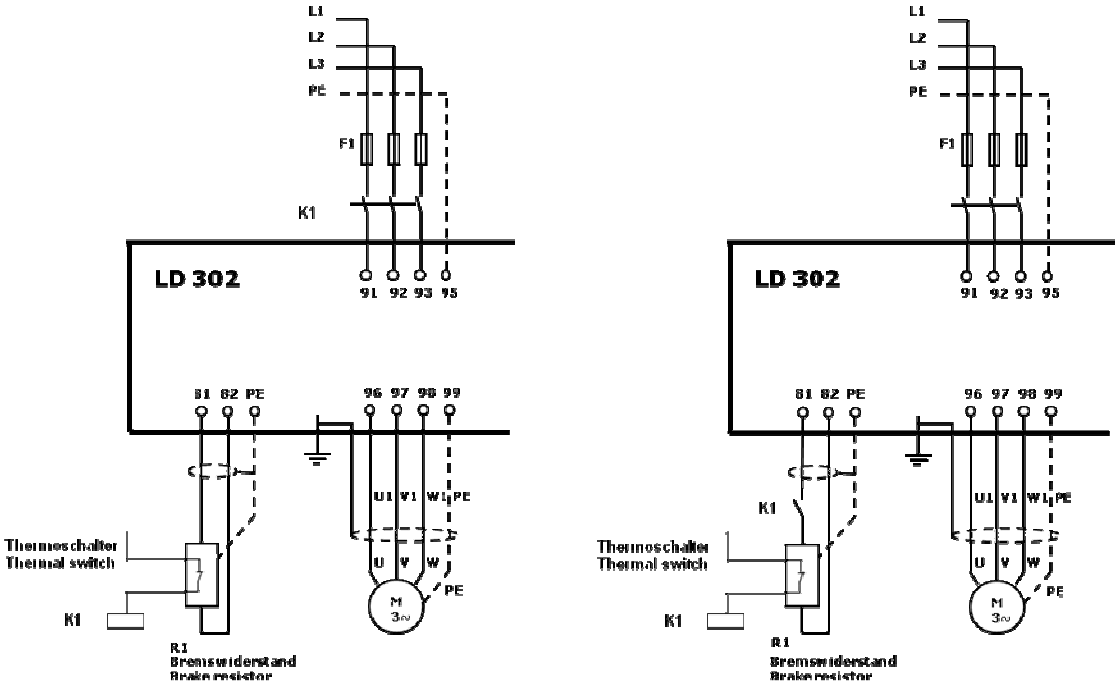
The only maintenance required is to ensure that the SI/PR is undamaged and reasonably clean.
The frequency of maintenance checks will depend on the working environment.
Initially checks should be made at least annually

- Isolate and check that the electrical supply is disconnected before working on the resistor.
- Check the ventilation holes in the enclosure are not obstructed.
- Remove the cover and using a soft brush clean away any build up of dust and dirt.
- Check all connections are tight.
- Check warning labels are clean and undamaged.
- Refit the cover.

Environmental Considerations

SI/PR model convert electricity into heat to produce an essential braking effect. They have no other environmental impact. SI/PR models contain no hazardous materials.
At the end of their useful life all the metallic parts are recyclable and can be reprocessed.

Wiring proposals



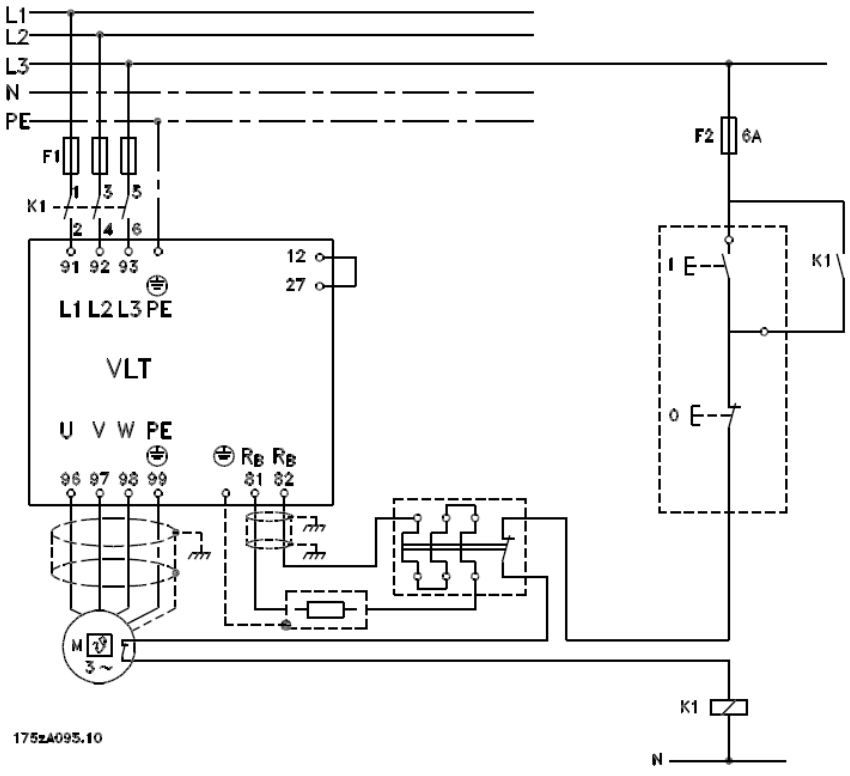


Illustration 8.1: