CRESSALL

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DBR INSTALLATION & MAINTENANCE INSTRUCTIONS
ES Series

Thank you for purchasing a Cressall Dynamic Braking Resistor (DBR).

Please take time to read these instructions.

If correctly installed and maintained this DBR will work safely and have a long and efficient life.

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169655/ES

Safety Information

- **WARNING:** Prior to use, the purchaser/user must ensure that they have read and understood this document in its entirety.
- Any safety precautions or risk assessments required by local law or site regulations are the responsibility of the personnel using this equipment.
- Disconnect and isolate all electrical connections prior to installation or maintenance.
- No over current protection is provided.

Hazards

- **The DBR contains hazardously high voltages when it is energised.**
- **The surfaces of the DBR may be hazardously hot during operation.**
- **The resistor element(s) may glow in operation. This is not a fault.**

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

Factory Testing

Every DBR satisfies the following requirements:

- Resistor tolerance on nominal value at room temperature is: -0/+5% (measurement uncertainty ±0.1%).
- Voltage withstand capability (between resistor element and enclosure): 3kV for 10 seconds.

Rating Information

- The DBR is fitted with a label specifying its serial number and resistance rating. Please quote the serial number in any correspondence with Cressall.
- Over Temperature Sensor (if fitted). Normally closed contact, opens at approx. 150°C, re-closes at approx. 135°C
- Max Voltage: **ES Series:** 1000V AC/DC
- Maximum unit weight: 11.5kg

Materials

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

Installation Requirements

Free airflow:

- It is essential to allow a free flow of air around the DBR 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.
- The DBR should be mounted as high as possible within the cabinet.

If the DBR 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 DBR power. Forced cooling should be used where there is insufficient natural ventilation.

Positioning Requirements

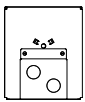
The enclosure must be mounted on a flat surface, ideally horizontally. The cable compartment must be at the bottom when the enclosure is mounted vertically.

Correct

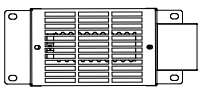
✔ **A (Preferred)**

Solid plate at base

✔ **B**



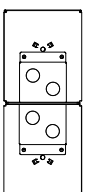
✔ **C**



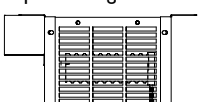
Termination compartment at side or base

Incorrect

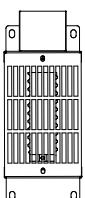
✘ Enclosures stacked, preventing air flow



✘ Solid plate at top preventing air flow



Termination compartment at top ✘



Installation Procedure

- Check the equipment for obvious damage. **Document and report any exterior damage immediately.**
- Preferred installed position is horizontal with base facing down (**A**), installation in alternative positions (**B & C**) may result in an increased element temperature.
- Isolate and check that the electrical supply is not live before beginning.
- Remove the terminal cover (if necessary).
- Fix to mounting surface.
- Cable access is through 2 x Ø20mm holes.
- Connect the resistor using suitably rated cable. The resistor is not polarity sensitive.
- Connect the cable earth to the marked earthing point in the cable enclosure.
- 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.
- Before operation ensure there are no obstructions to prevent proper ventilation.

Note: Over temperature sensor (if fitted) is rated for units mounted horizontally with base facing down (**A**). Sensors used on units installed in alternative positions (**B & C**) may not achieve trip temperatures.

Maintenance

The only maintenance required is to ensure that the DBR is undamaged and reasonably clean.

The frequency of maintenance checks will depend on the working environment and degree of fouling that occurs. 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

DBRs convert electricity into heat to produce an essential braking effect. They have no other environmental impact.

DBRs contain no hazardous materials.

At the end of their useful life all the metallic parts are recyclable and can be reprocessed.

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