Braking Resistors

BR Series
BRA | BRS | BRE | BRG
Braking Resistors
BR Series

“Dynamic Braking Resistors” are used in order to ensure fast stopping or reduce the speed of AC and DC electric motors controlled by speed drivers (speed control devices). Braking resistors are manufactured with two types as Aluminum and Frame by using Spring wound, Edge wound and Grid resistor inside.

Aluminium Resistors - BRA

The resistor wires made of stainless steel is placed in an aluminum case with a larger surface which allows perfect heat dissipation. The space between the resistor and the case is filled with a material which have high thermal conductivity and electrical insulation.

Aluminum resistors are manufactured by fiber glass braided silicone cable with 1 meter length as standard production, suitable to rated current and connections resistant to high temperature.

Technical Specifications

• Maximum Operating Voltage : 1000 V
• Maximum Power    : 12 kW
• Resistance Tolerance @ 20°C : ± 5%
• Protection Class   : IP 5X (Indoor)
• Insulation                              : 2 kV, 50 / 60 Hz, 1min

Advantages

• Compact sizing, option to use without a cabinet,
• High protection degree against humidity, dust, solvents and water splash
• Excellent mechanical impact and vibration withstand
• Efficient design to ensure long life time with an internal structure for high heat transmission and external structure facilitating heat transmission

Frame Resistors - BRS, BRE, BRG

Frame Resistors are resistors mounted inside an enclosure where resistor elements are positioned in open space environment. Frame resistors types are defined according to the type of resistor design used in the enclosure. Different series are defined as:

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Application Areas

• Elevators
• Escalators
• Cranes (Tower, Gantry, Travelling Cranes)
• Work Platforms, Construction Hoists, etc.
• Mines (in wagons, for mixing, stone crunching, etc.)
• Automation (cable, wire, and some textile factories)
Resistors Types of Frame Design

Frame type resistors are manufactured by using three type of resistor elements inside

Spring Wound Resistors

Spring wound (wire wound) resistor elements are used inside S series frame resistors. This type is perfectly suitable for short-time overloads due to its spiral form. Heated wire absorbs any expansion thanks to spiral form and gets back to its colder form. With this feature, the spring resistor ensures safety and a long operating life for especially the braking resistors.

Technical Specifications
• Maximum Operating Voltage : 1000 V
• Maximum Power   : 40 kW
• Resistance Tolerance @ 20°C : ± 5%
• Insulation : 3 kV, 50 / 60 Hz, 1 min

Advantages
• To ensure protection degree from all direction, the bottom part of the frame is also closed and ventilated
• Non-corrosive materials used at all connectors

Edge Wound Resistors

Edge wound resistors are used for E-series frame resistors. Edge wound resistor type, the resistor element is in the form of stainless steel stripe plate. This stripe plate is wound on an electro-ceramic frame vertically. Large cross-section and the capability of fast cooling offers an optimal solution for high power - low resistance braking resistors.

Technical Specifications
• Maximum Operating Voltage : 1000 V
• Maximum Power   : 130 kW
• Resistance Tolerance @ 20°C : ± 5%
• Insulation : 3 kV, 50 / 60 Hz, 1 min

Advantages
• Compact and elegant frames with high cooling performance designed for high power loads
• Non-corrosive materials used at all connectors
• Special structure resistant

Grid Resistors

G series braking resistors are manufactured in blocks by connecting in series or in parallel with the desired power and resistance value by the stainless steel grid type resistors specially designed according to the desired current density. They are generally used for high power and low resistance applications.

Technical Specifications
• Maximum Operating Voltage : 1000 V
• Maximum Power   : 660 kW
• Resistance Tolerance @ 20°C : ± 5%
• Insulation : 3 kV, 50 / 60 Hz, 1 min

Advantages
• Compact and elegant frames with high cooling performance designed for high power loads
• All connector elements are manufactured of non-corrosive materials. Special structure resistant

See “Transportation Resistors” leaflets for railway and marine applications.