

Motor Starting Resistors



MSR Series

Switching Life to
Infinity 

aktif
ELEKTROTEKNIK

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All kind of motors used in the industry draw high current (up to 6-12 times) until the they reach rated speed and rated torque if they are connected to the load. Such overcurrent may damage the engine as well as other system equipment. Motor starting resistors limit overcurrent and help the motor to reach the nominal speed in stages without drawing too high current.

With developing speed drives, motors can be started and controlled as requested. Aktif can design, manufacture and support the suitable motor starting resistor in terms of spare parts and replacements for current systems.

Standards

- IEC 60060-1
- IEC 60071
- IEC 60273
- IEC 60137
- IEC 60529

Applications Areas

- Steel Industry
- Mining
- Cement Plants and Other Heavy Industry
- Rolling, Conveyor, Lifting, Breaking, Mixing and Pumping Applications



Motor starting resistors can be classified in two groups;

Stator Resistor

Serial connected and staged resistors are connected to the motor entry (stator side) of squirrel-cage asynchronous motor and DC motors to reduce the input voltage and resistors are switched off in stages through contactors to decrease the motor input voltage and balance the torque speed.

Rotor Resistor

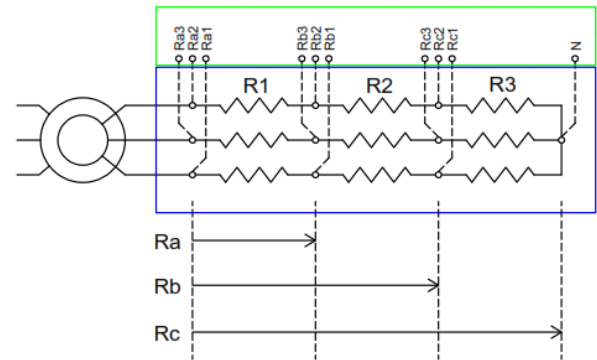
Serial connected and staged resistors are connected to the rotor of a slip ring wound rotor asynchronous motors to increase the motor impedance. Resistors are switched off in stages through contactors to decrease the rotor impedance in stages and balance the torque speed.

Technical Characteristic

- Stainless steel resistor material suitable for extreme conditions and resistant to oxidation (AISI304, AISI310, AISI316, AISI430, CrAl, CrNi)
- Special mechanical and electrical design to withstand high temperature and extreme current values.

Resistor Element

- Spring wound, edge wound or grid resistor elements with a suitable cross-section
- Fully-modular, bended and stainless steel bolt connections in order to ensure electrical continuity at high temperature
- High conductivity for high current with bended and cascaded terminal connectors suitable for serial and/or parallel connections with high cross-section, low contact resistance
- High internal insulation and high mechanical resistance against to shocks and sagging thanks to the use of large surface steatite bushing and M16 shear connectors
- Special designed to dissipate the thermal and mechanical effects of overcurrent to the surface grid resistors



Enclosure

- Standard IP23 protection level suitable for outdoor usage or IP20 suitable for indoor usage and perfect cooling
- Fully-modular, rigid, strong enclosure design with resistor blocks mounted to the frame for safety lifting from the upper or lower side
- Easy access and maintenance to the resistor blocks on site thanks to blocks independently mounted to the frame
- Corrosion-resistant handling rings and connectors
- Stainless steel product and warning label



Options

- Requested protection degree from IP00 to IP55
- Stainless steel, aluminum enclosure
- Painting enclosure in desired color code

The following basic parameters are required for making an offer for a motor starting resistor.

For slip ring wound rotor asynchronous motors;

- Motor power (kW / Hp)
- Rotor voltage (V)
- Rotor current (A)
- Rotor rpm (nr)
- Connection (star/delta)
- Self winding resistance, if known
- Requested number of stages
- Starting time in case of a starting resistor

For DC Motors

- Motor voltage (V)
- Motor current (A)
- Self winding resistance, if known
- Requested number of stages
- Starting time in case of a starting resistor



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