

Resistors

Stationary

Starting Braking Discharge



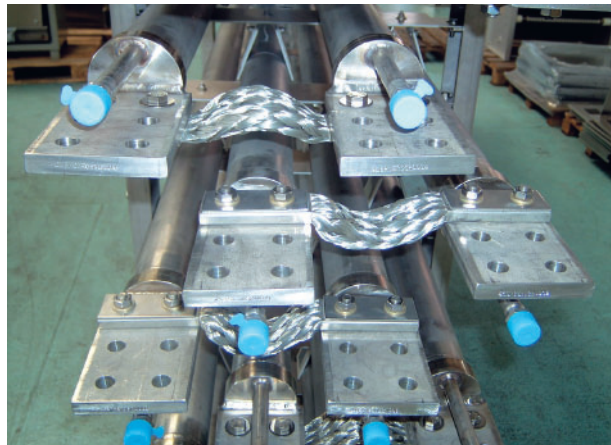
Starting and Braking Resistors are widely employed for controlling motors during start and/or stop.

Starting Resistors may be used for wound rotor induction motor and DC wound motor (this last type of motor is less and less common): adding a series resistor to each rotor phase reduces the current and improves the starting torque. Starting Resistors may also be employed for squirrel cage induction motors, where series resistors added to the stator, limit initial current to three times its nominal value. Starting Resistors for squirrel cage motors are also known as Ballast Resistor.

The essential pieces of information needed to design a Starting Resistor are:

- Horsepower
- Rotor/Stator Voltage
- Rotor/Stator Current
- RPM
- Application; different applications require different solutions

Crane control is a quite common application for **Braking Resistors**: during descent the load, especially if heavy, may cause the motor to generate power as if it were lifting. Resistors are thus used to avoid unwanted and uncontrolled acceleration.



Microelettrica Scientifica

Resistors

Stationary: Starting/Braking/Discharge



Applications

Industry

Braking Resistors for large motors are customised to best comply with any requirement: we have developed special Braking Resistors for important research institutes (among them Max Planck Institute) and for energies in excess of 3400MJ.

Disexcitation of large capacitors and inductors must be carried out with care to avoid impulsive currents that could damage them permanently. **Discharge Resistors** limit the peak current and protect the capacitive/inductive device.

The essential pieces of information needed to design a Discharge Resistors are:

- Nominal Voltage
- Discharge Current
- Discharge Duration

Discharge Resistors are often connected with research institutes and they require a very high level of customisation, sometimes also leading to the development of new technologies for resistive elements. Microelettrica has cooperated with Universities all over the world and with the most prestigious research centers (among them, CERN in Geneve).



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