

Motor Starting & Control Resistors



1. Stator Connected Resistors

Motor Starting Resistors are used to reduce the voltage at the motor terminals and also decrease the starting current.

Motor Starting Resistors are necessary because the self resistance of a motor armature is very low. When the voltage is first applied, excessive current will flow. For limiting this current, since there will be no resisting back electromotive force (emf), some series resistance can be added to the armature windings.

As the motor accelerates, the current through the resistor decreases, because the back emf will build up by speed. Also, the voltage drop on the resistor reduces and hence, the voltage across the terminals increases. With the gradually increasing torque and voltage, the acceleration becomes smooth. The resistance is disconnected when the motor reaches a certain speed. Then, the motor runs with full line voltage.

2. Rotor Connected Resistors

Rotor connected resistors are mainly used for the motor starting applications requiring high-starting torque like loaded belt conveyors in mining industry. By external resistors, it is possible to shift the motor maximum (break-down) torque up to starting torque point for motors under heavy loads during startup. The resistors are splitted into some steps and controlled via contactors by motor starting control system. As the motor speed increases, the external rotor resistors are eliminated by shorting contactors until all external resistors are shorted out.

Features

- Designed and tested to applicable IEC and IEEE Standards
- Designed for all squirrel cage and slip-ring induction motors and synchronous motors
- Durable construction
- Stainless steel grid or alloy resistance elements
- High performance in heavily polluted areas

Types

- AC Squirrel Cage Induction
- Motor Resistors
- AC Slip-ring Induction
- Motor Resistors
- Crane control resistors
- Starting Resistors
- Speed Control Resistors
- Synchronous Motor Resistors

Area of Usage

- Large motors
- Overhead cranes
- Lift trucks
- Machine tools
- Conveyors
- Cement plants
- Industrial controls
- Steel mills
- Ships and submarines
- On load starting motors



Selection Details

- Large motors
- Application area
- Motor rated power
- Rotor current
- Rotor voltage
- Starting Torque
- Desired starting time (seconds)
- Duty Cycle
- Number of starting steps