



**RED**

Electrolytic starters for low and  
medium power cage synchronous  
motors

RED statormatic electrolytic starters for cage motors offer an unrivalled starting capability up to 750 kW.

- Reliable: no moving parts, no current peak during starting process
- Economical: reduced maintenance
- Customizable to specific motor requirements

## Description

RED statormatic starters offer an unrivalled starting capability and have the following advantages:

### Reliability

- They do not have any moving parts other than the short circuit contactor
- There is no current peak at the end of the starting period

### Economy

- Electrical and mechanical maintenance considerably reduced
- Units pre-wired

### Adaptability

- The starting characteristics are "made to measure" and can be altered for a change of motor or machine by simply replacing the electrolyte.

## Description

The starters of this range can be supplied in three formats: RC, RW or RZ. They are made up of two parts:

- The electrolytic starting resistance in a frame with tanks and a thermostat.
- The equipment:
  - An enclosure integrated into the frame which contains a short circuit contactor, a timing relay, eventually a line contactor or further option. The RC and RW units are supplied in this format.
  - A separate WS wall mounting enclosure can be used with RZ frames. The RZ/WS modular assemblies are prewired.

## Operating principle

The decrease in resistance of an electrolyte when heated is used inside an electrode chamber. The resistance is connected in series with the motor windings to reduce terminal volts, starting torque and current drawn from the line.

As the motor runs up to speed, there is an automatic decrease in resistance value with a consequent increase in motor voltage, giving smooth acceleration without torque or current peaks.

At the end of the run-up period a timed contactor closes and short circuits the residual resistance.

Reduction of the starting torque is determined according to the requirements of the driven machine or the current limitation.

# Specifications

## Electrical features:

Reference	Protection	Number of electrode assemblies	Rating	Short circuit contactor (choice)
RC2P/3	IP31	3	30 kW (40 ch.) max	25 A 50 A 125 A
RC2E/3	IP52	3	30 kW (40 ch.) max	
RC5P/3 RW5P/3*	IP31	3	75 kW (100 ch.) max	25 A 45 A 50 A 125 A 200 A 300 A
RC5P/6 RW5P/6*	IP31	6	150 kW (200 ch.) max	
RC5P/9 RW5P/9*	IP31	9	225 kW (300 ch.) max	
RCE5/3 RWE5/3 *	IP52	3	75 kW (100 ch.) max	
RCE5/6 RWE5/6*	IP52	6	150 kW (200 ch.) max	
RCE5/9 RWE5/9*	IP52	9	225 kW (300 ch.) max	
RZ2/3	IP11	3	30 kW (40 ch.) max	
RZ5/3	IP11	3	75 kW (100 ch.) max	
RZ5/6	IP11	6	150 kW (200 ch.) max	
RZ5/9	IP11	9	225 kW (300 ch.) max	
RZ5/12	IP11	12	300 kW (400 ch.) max	
RZ5/15	IP11	15	750 kW (1000 ch.) max	
WSP	IP31	NA		445 A 550 A 800 A 1000 A
WSE	IP52	NA		

Voltage between phases: 690 V

\* In case the starter is made of more than one enclosure, only one has a thermostat.

The RC or RW enclosure consists of the starting electrolytic resistance and the short-circuit start

and run contactor with relay timer.

The resistance frame RZ consists of the resistance only with a thermostat\*, and can be delivered with separate waterproof enclosure WS for chemical industries and for marine environments (see below).

The WS3 enclosure has been designed to accept equipment which cannot be mounted in RC and RW enclosures and when the starter is supplied with RZ type resistance frames.

## Further features

Electrolyte	Composition : In powder or crystal form for mixing with drinking water and anti-evaporation oil Electrolyte temperature is controlled by thermostat 16 A/400 V. Electrolyte level: level is visible through transparency of tanks.
Electrode assembly	The RED “monophase” electrode assembly is a standard component. The value of resistance is factory preset according to the data of the driven machine given by the customer at the order. It is always possible for him to make adjustments on site, either for a change of drive or for a different duty. This is easily carried out by changing the electrolyte and/or the size of the electrode chamber.
Antigel (option)	Protection down to - 20°C It has to be inserted into the electrolyte before commissioning since it alters its resistivity. It can be used throughout the year.

## General specifications

Reference	Average weight with contactor	
	Without electrolyte	With electrolyte
RC2P/3	20 kg	26 kg
RC2E/3	20 kg	26 kg
RC5/3	25 kg	40 kg
RC5/6	45 kg	75 kg
RC5/9	70 kg	115 kg
RW5/3	40 kg	55 kg
RW5/6	60 kg	90 kg
RW5/9	85 kg	130 kg
RZ2/3	7 kg	13 kg
RZ5/3	12 kg	27 kg
RZ5/6	24 kg	54 kg

RZ5/9	35 kg	80 kg
RZ5/12	47 kg	107 kg
RZ5/15	60 kg	135 kg

## Models and accessories

In order for us to quote a starter adapted to your application, please let us know the following information:

About the starter:

- Power
- Speed (rpm)
- Stator voltage
- Required starting torque
- Motor voltage
- Stator current

About the driven machine:

- Type
- Coupling method
- Moment of inertia
- Speed (rpm)
- Number of consecutive starts

About starter options:

- Protection IP31 or IP52
- Tropicalisation
- Antifreeze
- Breathing pipes
- Louvres
- Level lamps
- Ammeters
- Thermostat
- Corrosion proof PVC frames
- WS enclosure in polyester

Particular specifications:

- Control panels

Consumables:

- Electrolyte
- Antifreeze
- Anti-evaporation oil

Starter enclosure protected version RC or RW:

**Ordering code structure: R-Number of chassis-Power-Protection/Number of electrode assemblies-Contactor**

*Please select the required options from tables below to define the right device reference.*

**Number of chassis**

C                      One

W	Several
<b>Power</b>	
2	Low power, 30 kW (40 ch.) max
5	Medium power, from 75 to 225 kW (300 ch.) max
<b>Protection</b>	
P	IP 31
E	IP 52, waterproof
<b>Number of electrode assemblies</b>	
3	3 electrode assemblies
6	6 electrode assemblies
9	9 electrode assemblies
n	n electrode assemblies
<b>Incorporated short circuit contactor</b>	
B25	25 A
B45	45 A (RC5 or RW5 only)
B55	50 A
B125	125 A
B200	200 A (RC5 or RW5 only)
B300	300 A (RC5 or RW5 only)

## Options and accessories:

Tropicalisation  
Antifreeze  
Louvre doors  
Level lamps when tanks are covered with louvres  
Amperemeter with current transformer

## Resistance frame RZ:

### Ordering code structure: RZ-Power/Number of electrode assemblies

*Please select the required options from tables below to define the right device reference.*

<b>Power</b>	
2	Low power, 30 kW (40 ch.) max
5	Medium power, from 75 to 225 kW (300 ch.) max
<b>Number of electrode assemblies</b>	
3	3 electrode assemblies
6	6 electrode assemblies
9	9 electrode assemblies
n	n electrode assemblies

## Options and accessories:

Tropicalisation

## Separate enclosure WS:

### Ordering code structure: WS-Protection- Contactor

*Please select the required options from tables below to define the right device reference.*

<b>Protection</b>	
P	IP 31
E	IP 52, waterproof



### **Incorporated short circuit contactor**

B445                    445 A

B550                    550 A

B800                    800 A

B1000                  1000 A\*

\* Box 1000 x 800 x 400 mm

### **Options and accessories:**

Tropicalisation

Antifreeze

Louvre doors

Level lamps when tanks are covered with louvres

Amperemeter with current transformer

Breathing pipes

Anti-corrosion GRP enclosure