

ELECTROMECHANICAL DEVICES

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After more than Sixty years experience as leaders in the field, the EMC Traction can offer a complete range of high quality products.

The EMC Traction sells above all to the large plant sector, to the manufacturing industry in general and to the component production sector for traction applications.

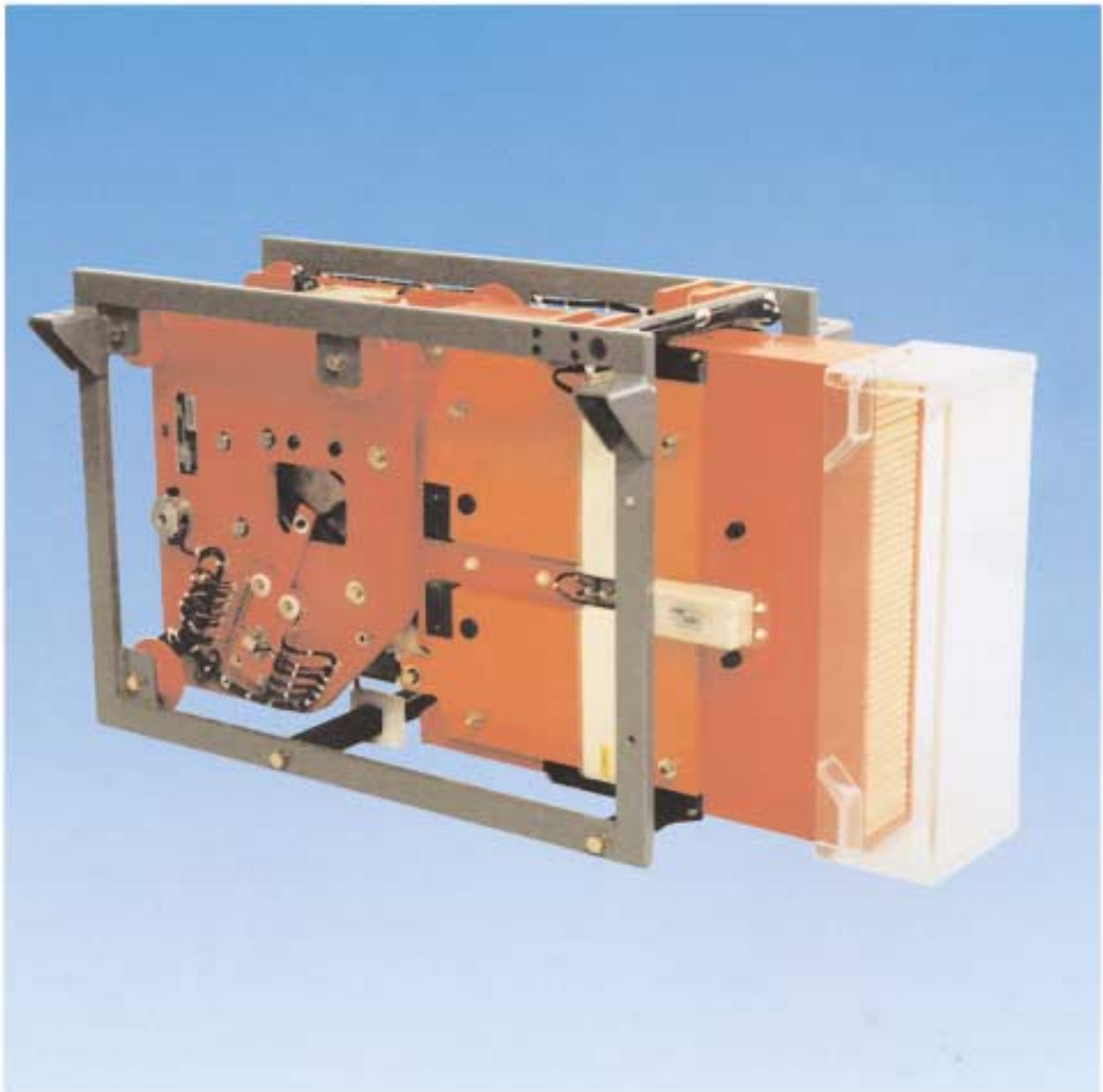
EMC products are widely used both as individual components and assembled in functional blocks employed in sophisticated systems.

Traditional markets include:

- the iron & steel, paper and cement industries
- the chemicals, petrochemicals and plastics industries
- lifting and transportation equipment
- power generation
- experimental plant for research purposes.

This document presents the main products designed and constructed by the EMC Traction:

- high speed and semi-high speed circuit breakers
- direct current contactors
- controllers and switches
- brakes
- compressors
- relays
- power resistors.



High speed circuit breaker IR6000 SV, 4000A - 1500/3000Vdc

HIGH SPEED AND SEMI-HIGH SPEED CIRCUIT BREAKERS

EMC's direct current circuit breakers are single-pole air magnetic blow-out type and employ asbestos free materials. They are available in both fixed and draw-out versions, and have been designed using advanced state-of-the-art operating criteria to solve direct current plant protection problems efficiently and completely.

EMC has been operating in this sector for many years, and its circuit breakers can be employed both as control and protection devices for static converters used in industrial and traction applications.

EMC's high speed circuit breakers for traction plants are approved in Italy, France, Belgium, Spain, South Africa, Australia, Brasil and Chile.

Applications in the industrial field have followed Ansaldo's plant construction activities throughout the world (Argentina, Brasil, Iran, Mexico, USSR, Venezuela).

These circuit breakers are produced in three series:

IR 6000 Series

This series is motor controlled with built-in uni- or bidirectional tripping devices.

IRB Series

This series is controlled electropneumatically, and has been designed specifically for installation under metropolitan railway electric locomotives.

All three series have been designed to withstand more than 50,000 mechanical operations, and can be fitted with shunt electronic tripping device panels.

Rated voltage up to 3,000 Vdc

Rated current up to 8,000 A

Breaking capacity up to 120 kA

Semi-high speed circuit breakers are fitted with electropneumatically or electromagnetically controlled direct bidirectional tripping devices, and are typically used in applications with limited failure current and a high number of mechanical operations (more than a million).

IGL Series

Rated voltage up to 3,000 Vdc

Rated current up to 1,000 A

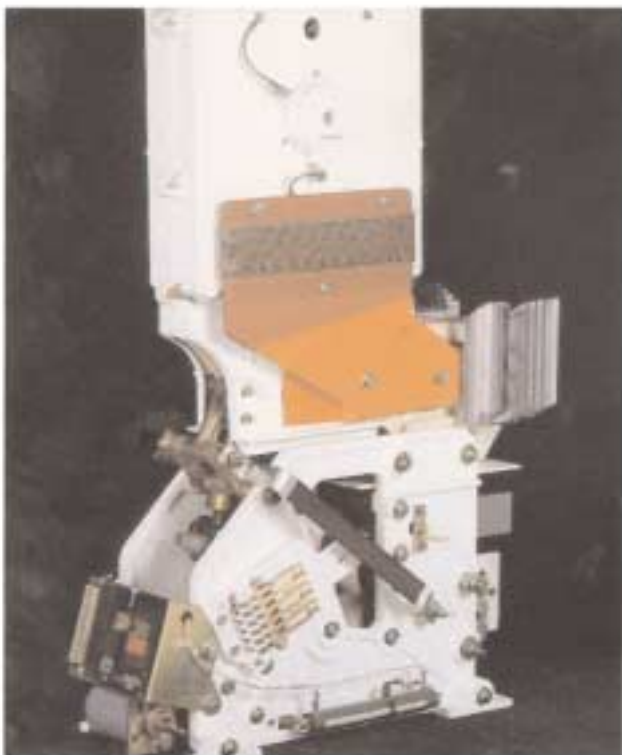
Tripping bidirectional direct



IGL 750V-1,000A semi-high speed circuit breaker



IRB 1,500V-700A high speed circuit breaker



IR 6,000, 1,500V-3,150A high speed circuit breaker



DIACLAD DC switchgear

CONTROLLERS AND SWITCHES

The EMC controller line is a wide range of components that can be used as cam controllers-switches in both power and auxiliary circuits.

The power circuit controller series is aimed mainly at the on-board metropolitan railway and trolley bus locomotive market. The series includes electropneumatic, electromagnetic and DC motor operated equipment. EMC's controllers are used in: serial-parallel connection of motors and resistors, field inversion, voltage change, motor drive rheostat exclusion, etc.

2CP Series

Rated voltage up to 3,000 Vdc
 Rated current up to 400 A
 Control motor or electromagnetic

KM 49 Series

Rated voltage up to 3,000 Vdc
 Rated current up to 200 A
 Control motor

PM Series

Rated voltage up to 750 Vdc
 Rated current up to 300 A
 Control electropneumatic

The series of lever-operated switches for auxiliary circuits has been designed and constructed to guarantee long mechanical and electrical life in severe industrial environments and in applications requiring a high number of mechanical operations. The versatility of these switches makes them ideal for use in railway and industrial applications, such as:

- crane control
- conveyors, rolling mills and other heavy material handling applications
- control logic applications, etc.

CCA3 Series

Rated voltage up to 600 Vdc
 Rated current up to 15 A

CMn Series

Rated voltage up to 30 Vdc
 Rated current up to 10 A



CCA3 master switch



CMn 176 controller



KM 49 controller



2CP 100 controller

BRAKES

EMC's electromagnetic shoe brakes are manufactured in compliance with AISE standards and are widely used in rolling mill auxiliary drives, in crane, hoist and movable bridge controls, and in all applications in which motors must be stopped quickly and safely.

One of the main features of EMC's brake series is the self-centering capability offered by the shoes. This means the brakes can absorb considerable misalignment to the wheel, keeping shoe wear constant.

The ruggedness of these brakes makes them particularly suited for use in heavy-duty applications requiring high performance and length of service. The brake is opened by applying a DC or AC voltage to the coil of an electromagnet.

IC Series

Continuous service torque
Excitation

up to 485 kgm
series or shunt



IC 102 brake

COMPRESSORS

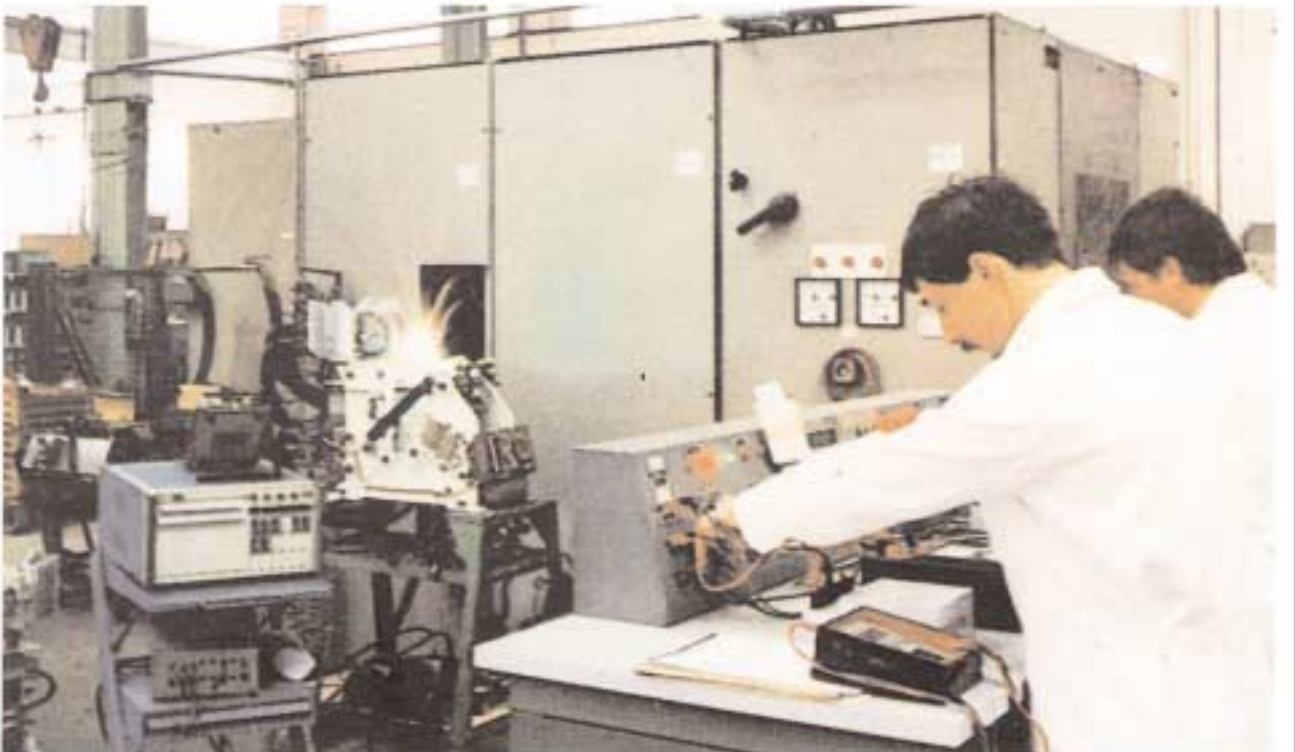
EMC's compressors have a single block structure and are reciprocating type with disc valves. They are fitted with anti-vibration supports for installation under electric rail cars to produce compressed air for controlling doors and other services.

CP Series

Rated voltage	up to 1,500 Vdc
Absorbed power	6 kW
Theoretical rated flow of air intake	up to 1,100 l/min
Working pressure	up to 0.8 Mpa
Permitted intermittent work	80 %



CP 29 compressor



High speed circuit breaker test bench

RELAYS

The simplicity and ruggedness of EMC's electromagnetic relays for direct current applications, EVL and LVM series voltage relays, and current relays in the ECL and ECI series, make them particularly suited for use in heavy duty industrial drive equipment and traction applications. Both instantaneous and time-delay versions are available.

LVM, EVL Series

Rated insulation voltage up to 600 Vdc
 Rated auxiliary contact current up to 10 A

ECL, ECI Series

Rated insulation voltage up to 600 Vdc
 Rated current 1 through 2,000 A
 Rated auxiliary contact current up to 10 A

POWER RESISTOR

The current production versions of EMC's power resistors are the result of research and experimentation performed on traction vehicles. This know-how was then transferred to power resistors for the industrial sector. The power resistors are wire or ribbonwound units, mounted in boxes suitable for stackable racks. Different types of units can be mounted in the same box extremely simply to adapt the resistor for various applications. Special antiinductive resistors are also available for use in electronic power circuitry. Typical applications for EMC's power resistors are:

- motor start-up
- dynamic braking
- RC filters
- buffers
- neutral grounding of transformers, generators, etc.



LVM 66 relay



ECI relay



ECL relay



Dynamic braking power resistor



Power resistor for superconductor magnet



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