



# LOW INRUSH CURRENT INDUCTION MOTORS

WEG low inrush current induction motors are specifically designed for applications in a weak supply network in order to provide a lower voltage drop without requiring auxiliary starting devices.

Typically, the inrush current in three-phase induction motors varies from five to seven times the rated current. In some applications, this level of inrush current may cause a significant voltage drop in the power supply network affecting the operation of other equipments and also the motor start itself. In extreme cases, the power supply system may even shut down. Using state-of-the-art designing tools, WEG can supply induction motors with inrush current from three to four times the rated current, significantly reducing the possible impacts on the power supply network.



## Applications

WEG supplies motors with low inrush current to the oil and gas, marine, pulp and paper, infrastructure industries, among others. These motors are used to drive a great variety of loads, such as pumps, compressors, fans and propellers/thrusters. Some examples of applications that have power supply limitations are: oil platforms, vessels, installations far from the main supply grid or supplied by a network with low short-circuit capacity.



MGW1000 - 10,500 kW  
4 poles - LRC (pu) = 3.5  
Application: Compressor



## Technical Characteristics

- Power range: up to 50 MW
- Speed: 300 to 3600 rpm
- Frequency: 50 Hz / 60 Hz
- Voltage: 220 V to 13,800 V
- Mounting: horizontal or vertical
- Cooling: open or closed motors cooled by air or water



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## Standards and Certifications

WEG low inrush current motors can be supplied according to IEC, NEMA or ABNT standards, complemented by API, ABS, DNV standards, among others, and also certified for applications in hazardous areas. In order to meet the requirements of the high demanding customers, WEG's quality system is certified by the Bureau Veritas Quality Institute to comply with ISO 9001 and ISO 9001/14001 standards.

## Main Operating Features and Advantages of Low Inrush Current Motors

- Direct start without requiring auxiliary devices (variable speed drives, soft-starter, star-delta starter, transformers and reactors, etc.), reducing costs and installation space
- Lower voltage drop in the power supply network during start
- Reduction in mechanical stresses on the drive train during start
- Greater reliability without requiring auxiliary starting systems
- Simple drive and control system

## Mounting Characteristics

WEG low inrush current motors are designed taking into account the current displacement phenomenon on the upper part of the rotor bars resulting in an increase of the rotor cage effective resistance during motor start.

Aiming at optimizing this effect, the rotor is built with bars of special geometry which provide lower inrush currents without jeopardizing the motor performance during operation. The material used in the rotor bars is generally a high-resistivity copper alloy so as to increase the breakaway torque.

## Examples of Low Inrush Current Induction Motors Manufactured by WEG

In the last years, WEG has supplied several induction motors with inrush current equal to or below four times the rated current. The motors are specially designed to meet the requirements of each application.

LRC (pu)	Model	Power [kW]	Voltage [V]	Pole number	Application
2.5	MGW	1300	11,700	2	Compressor
3.0	MGW	9200	13,800	4	Compressor
3.0	MGW	10,200	13,800	4	Compressor
3.2	MGF	6000	6000	4	Compressor
3.5	MGW	4700	11,000	2	Compressor
3.5	MGW	10,500	11,000	4	Compressor
4.0	MGW	11,000	13,800	4	Compressor
4.0	MGW	8500	11,000	4	Compressor
4.0	MGP	2098	13,800	6	Pump
4.0	MGF	3000	4000	2	Pump