

## 1. SERIES MAC - QE

### Three-Phase Asynchronous Motors for Frequency Converters, with Forced Ventilation and square frame to IP-54 and up to 140 kW – 700 Nm

#### Basic Characteristics



The MAC-QE Series comprises three –phase 4 pole asynchronous motors with a square frame (of extruded aluminium section in sizes 071 to 132 and fully laminated in size 160 and 200). They are protected to Standard IP54 (optionally to IP55), built in accordance with EN60034 standards and the range is available up to 140 kW –700 Nm at 2040 rpm. Specially designed for supply by Frequency Converters (V/f or Vector), they possess specific features enabling them to operate in a similar way to Direct Current Motors, and under certain conditions like Permanent Magnet Servomotors (d.c.or Brushless), so that they comfortably exceed the technical possibilities of Conventional Asynchronous Motors.

#### Description of Main Technical Characteristics.

- Specific Windings and Insulations (Class H and operating type F) to withstand the high switching frequencies of the Frequency Converters.
- Very low loss magnetic laminations (1.7W) for high electromagnetic performance.
- PTC type thermal probes of variable non-linear resistance to detect overheating or rapid discharges
- Constant cooling IC 416 through incorporation of an independent axial motor-fan which ensures correct operation at low speeds and during hard repetitive duty cycles.
- Double shaft output for possible incorporation of an encoder to guarantee high operating precision.
- Operation at constant Power up to 2.8 times nominal speed.
- Nominal Torque from zero (locked rotor) to nominal speed using vector converters with feedback.
- Low inertia Factor values, enabling high dynamic responses.
- High overload capacity (for short periods only up to 3.5 times Nominal torque).
- Minimum slip values (approx. 1,5 – 2 Hz).

#### IMPORTANT :

Various manufacturing codes are available for each type of Motor, allowing us to offer a wide range of powers and rpm (from 300 to 4000), therefore optimizing the application, eliminating reduction gearing and reducing consumption. It may be possible to couple the application direct to the machine shaft

#### Graph showing operation at constant torque and power.

In the constant nominal power operating zone, situated between nominal frequency and approximately 2.8 times nominal frequency, the motor can work without problems developing a power equal to or less than nominal. The Nominal Torque zone remains constant up to nominal frequency and decreases proportionally as frequency increases. The maximum Torque zone is only applicable to intermittent or momentary operating duties as required.

