
**TMEIC Develops 6-Pole Large Synchronous Motor Achieving
World-Class Efficiency of 99.0%**

**— Contributing to CO₂ Emission Reduction and Lower Operating and Maintenance Costs
through Energy Efficiency Improvements in Factories and Plants —**

TMEIC Corporation (President & CEO: Akira Kawaguchi; hereinafter, “TMEIC” or “the Company”) has developed and started shipping a 6-pole large synchronous motor (Output: 48.4 MW), achieving a world-class efficiency of 99.0%*¹. By enhancing the efficiency of large motors, which serve as the primary power sources in factories and plants, the motor contributes to energy savings, CO₂ emission reductions, and lower operating and maintenance costs. The first unit was shipped to a major industrial gas manufacturer in July 2024 and has been operating stably ever since.

The 6-pole large synchronous motor is used in various factories and plants, including those in the steel, pulp and paper, chemical, oil and gas, and mining industries, primarily for driving raw material air compressors. Recently, due to the growing demand for large-scale factories and plants, as well as the replacement of turbine-driven systems, there has been a global increase in the need for high-capacity, high-efficiency motors. The key features of this product are as follows.

1. Achieves world-class efficiency of 99.0% in large synchronous motors, contributing to energy savings in factories and plants

Using TMEIC’s proprietary 3D model for highly accurate analysis, efficiency was improved by 0.4 percentage points from the previous 98.6%*² through measures such as material and shape changes to reduce losses, achieving a world-class efficiency of 99.0%.

2. Contributes to CO₂ emission reductions in factories and plants

Improving the efficiency of the motor, the primary power source in factories and plants, reduces the electricity required for operation, leading to lower energy consumption and CO₂ emissions.

3. Reduces operating and maintenance costs in factories and plants

Enhancing motor efficiency reduces electricity consumption, significantly lowering overall operating costs in factories and plants*³. Additionally, high-efficiency motors generate less heat, minimizing component degradation. This results in lower failure rates, extended product lifespans, and reduced part replacement frequency, ultimately contributing to lower maintenance costs for customers.



6-pole large synchronous motor developed by TMEIC (Output: 48.4 MW)

Comments by TMEIC Vice President Hideki Iwanaga, Rotating Machinery Systems Division:
“We have developed a product that adapts to the increasing scale of our customers’ facilities by leveraging our high technical expertise and extensive experience, supported by the operational track record of large synchronous motors built over the years, achieving a world-class efficiency. Moving forward, we will continue to enhance our high-efficiency technologies and provide high-performance products, contributing to the reduction of operating and maintenance costs in our customers’ factories and plants, while also supporting the realization of a carbon-neutral society.”

Available countries/regions: Worldwide

*1. As of January 2025, according to TMEIC research.

*2. A 0.4 percentage point increase in efficiency from 98.6% has a significant impact over the entire product lifecycle. This improvement results in a maximum electricity savings of 21,000 MWh over 15 years of operation. Additionally, CO₂ emissions will be reduced by approximately 760 tons per year (calculated by TMEIC).

*3. The electricity savings in *2 can reduce electricity costs by approximately ¥360 million over 15 years (based on electricity rates in Japan from Tokyo Electric Power Company as of October 2024).

Media inquiries:

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In order to respond to the needs of manufacturing sites that serve as a foundation for supporting society, TMEIC always sets its eyes on the future of industry, society and the environment as an industrial systems integrator striking a balance between the development of society and a beautiful global environment. TMEIC will contribute to manufacturing and environmental management through leading-edge technologies based on its core technologies of rotating machinery, power electronics and engineering.