

FR-D800 VFD PAIRED WITH EM-A SERIES MOTORS FOR HVAC APPLICATIONS

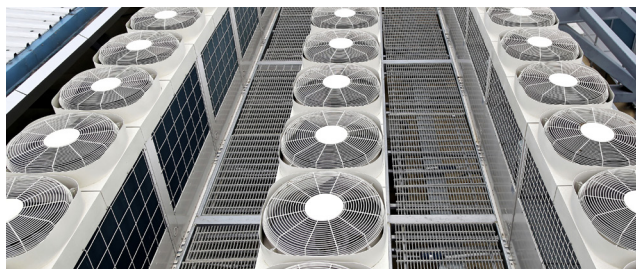
SOLUTION OVERVIEW



- IE5 Ultra-Premium Efficiency motor
- Simple configuration and startup
- Optimized performance and compatibility
- Eco-friendly

The FR-D800 Series VFD paired with an EM-A Series motor delivers a highly efficient, easy to use motion solution designed for applications requiring energy savings and streamlined setup. The EM-A motor's IE5 ultra premium efficiency rating significantly reduces energy losses, while its unique salient pole core design enables accurate sensorless vector control with minimal speed fluctuation under varying loads. This combination allows for stable, high performance operation without the need for encoders, supporting demanding HVAC applications.

Beyond performance, the pairing provides meaningful practical benefits that simplify integration and lower total system cost. EM-A motors are smaller and lighter than induction motors, making installation easier and enabling more compact machine designs. The FR-D800 further enhances usability with simple configuration, quick setup features, and broad compatibility with both PM and induction motors. This drive and motor package is optimized for reliable, long term operation.



KEY BENEFITS:

- **IE5 ultra-premium efficiency** – The EM-A motor's IE5 class cuts energy losses by ~50% versus IE2 and ~20% versus IE4, for operational cost savings.
- **Fast, simple commissioning** – The FR-D800 is designed for quick setup and ease of use, including FR-Configurator2 over USB bus power for quick, easy machine start-up.
- **Proven drive-motor compatibility** – The FR-D800 supports both PM and induction motors, with documented compatibility to the EM-A lineup.
- **Eco-friendly operation** – A built-in CO₂ reduction monitor and eco-minded design features support sustainability goals alongside energy-saving motor control.
- **Streamlined wiring and serviceability** – Spring-clamp control terminals, an integrated flip-type cover, and QR-code access to documentation simplify installation and support.
- **Smaller, lighter machines** – EM-A motors reduce volume by 50–60% and mass by 30–50% compared to induction motors, enabling compact layouts and easier handling.
- **High-accuracy sensorless control** – Mitsubishi Electric's PM sensorless vector control maintains stable speed with as little as $\pm 0.05\%$ variation under load, eliminating the need for an encoder.

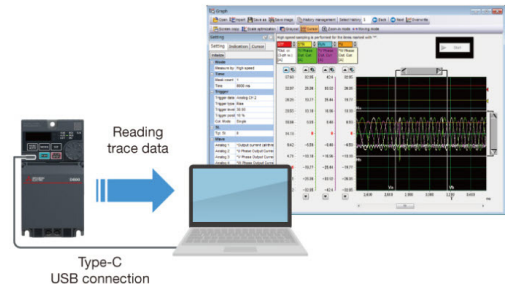
Ease of Use

Pairing an EM-A series motor to an FR-D800 Series VFD is as simple as setting a parameter.



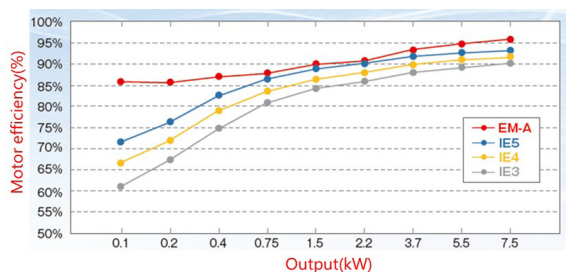
Reduced Downtime

Quickly identify and resolve problems with the graph and trace function integrated into FR Configurator2 support tool software.



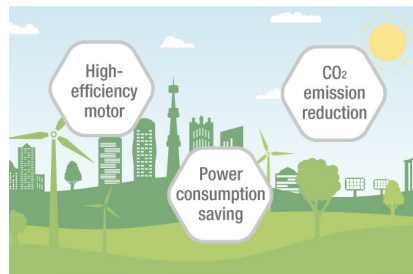
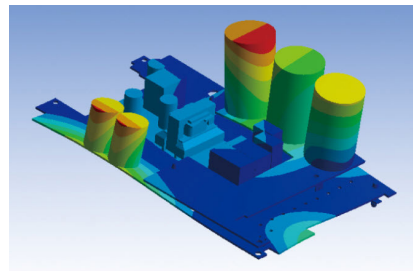
Ultra-Efficient IE5 Motor Technology

Cut energy losses dramatically with IE5-rated EM-A motors that deliver top-tier efficiency and reduced operating costs.



Reliable Quality Built to Last

Engineered with robust components, enhanced protective features, and proven Mitsubishi Electric design standards, the FR-D800 and EM-A motor pairing delivers long-term performance you can trust.



FR-D800 Capacity Range

Output HP	1/8	1/4	1/2	1	2	3	5	7.5	10
Output kW	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5

EM-A Capacity Range

Output HP	1/8	1/4	1/2	1	2	3	5	7.5	10
Output kW	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5

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