MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

FR-A800 SERIES VFD

PRODUCT OVERVIEW



- High-speed processing and precision torque control
- PM sensorless vector control
- Integrated PLC for adaptive control

The FR-A800 Series is Mitsubishi Electric's flagship variable frequency drive platform, engineered for applications where precision torque control, rapid dynamic response, and long-term reliability are critical. Designed to excel well beyond conventional fan and pump control, the FR-A800 delivers the control authority required for complex motion systems such as cranes and hoists, gantry systems, load-sharing conveyors, winding/unwinding machinery, and coordinated multi-axis applications.

Built on Mitsubishi Electric's proven drive architecture, the FR-A800 combines high-speed processing, advanced motor control algorithms, and robust hardware design to deliver predictable, stable performance under rapidly changing load conditions. Whether deployed as a compact component drive or as part of a large-capacity multi-drive system, the FR-A800 provides the flexibility and performance demanded by the most advanced industrial control systems.

KEY BENEFITS

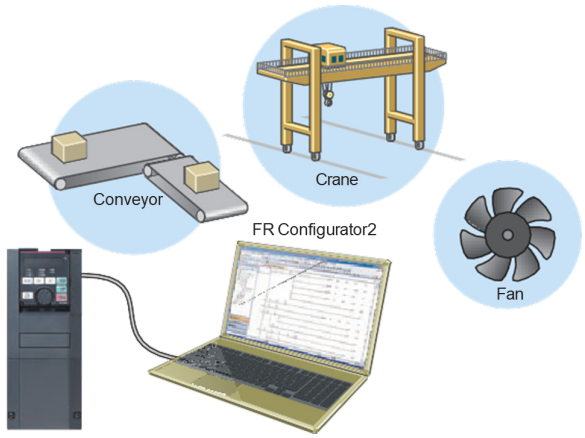
- **High-speed processing and control response** provides rapid torque correction and precise speed regulation during sudden load changes, improving stability and accuracy in high-inertia and dynamic motion applications.
- **Robust hardware architecture** supports demanding torque requirements with overload protection up to 200%, allowing reliable load pickup, acceleration, and shock load absorption without nuisance trips.
- **Advanced motor control algorithms** including Real Sensorless Vector (RSV) control deliver excellent torque performance across a wide speed range without the need for encoders in many applications.
- **Superior AC motor compatibility** optimized for both standard induction motors and interior permanent magnet (IPM) motors, enabling high efficiency and high-performance control across diverse machine designs.
- **Built-in functionality for system flexibility** with embedded features to reduce the need for external components, simplify system design, lower overall system cost, and streamlining inventory management across applications.
- **Wide capacity range** from ½ to 1,500 hp provide scalable solutions for machine builders and facility installations, from compact systems to large-capacity motion platforms.
- **Enhanced optimum excitation** control improves efficiency while not compromising performance.

ADVANCED DRIVE CONFIGURATIONS

- **FR-A800 Standard Series –** A versatile, all-in-one component-style drive suitable for a wide range of industrial applications. This architecture supports flexible installation configurations and is trusted by machine builders and facilities worldwide for reliable, high-performance motor control.
- **FR-A802 Series –** Designed for large-capacity and demanding motion systems, the FR-A802 features an independent converter and inverter architecture. This configuration enables advanced system solutions, including regenerative braking, common DC bus systems, and low-harmonic designs, making it well-suited for a wide range of applications
- **FR-A806 Series –** An enclosed NEMA 12 (IP55) solution for harsh environments. Integrated components such as DC reactors and EMC filters simplify engineering while providing enhanced protection against electrical noise and incoming power disturbances.

PLC CONTROL WITH A VFD

The FR-A800 allows parameters and operating frequency to be dynamically changed within the control program, enabling flexible, machine-specific operation. Inverter control logic – including I/O behavior, status outputs, and monitoring – can be fully customized, allowing the inverter to function as a standalone controller or as part of a distributed control system. Time-based control is supported through an optional real-time clock LCD operation panel, enabling scheduled operations without external controllers. Additionally, the FR-A800-E supports inverter-to-inverter communication over Ethernet, allowing multiple drives to be linked together to form a compact, PLC-like control system.



DRIVES FOR EVERY INDUSTRY

Rating	SLD Super Light Duty	LD Light Duty	ND Normal Duty	HD Heavy Duty
Application	Fan and Pump	Shield Machines, Winding and Unwinding, Printing Machines	Cranes, Press	Conveyor
Pr.570 (E301) Setting	0	1	2 (Initial value)	3
Overload Current Rating (Inverse-Time Characteristics)	110% 60 s, 120% 3 s	120% 60 s, 150% 3 s	150% 60 s, 200% 3 s	200% 60 s, 250% 3 s
Surrounding Air Temperature	40°C	50°C	50°C	50°C

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