MITSUBISHI ELECTRIC
Changes for the Better

Automating the World

POWERGATE ‘E’ ECONOMY HVAC BYPASS CONTROLLER

PRODUCT OVERVIEW

- **‘Slimline’ design**
- **Bypass configuration**
- **Built-in BACnet® MS/TP communications**

PowerGate ‘E’ Series Economy HVAC Controllers offer the simplicity and functionality of an HVAC bypass controller and the high specification, performance, and reliability of the Mitsubishi Electric FR-F800 VFD. The ‘Slimline’ enclosure is ideal for mounting in areas where space is limited. PowerGate ‘E’ is fully compatible with earlier generations of Mitsubishi Electric controllers and offers significant product advantages that allow it to meet the requirements of the most demanding applications.

KEY BENEFITS:

- 2 contactor bypass available in 230V and 480V, ‘Slimline’ and configurations 1 hp through 25 hp
- NEMA 1 enclosure
- 5% impedance AC line reactor
- Selectable standard miniature circuit breaker (230V and 480V up to 10HP)
- Molded case circuit breaker above 10HP, rated at 5kA SCCR
- Selectable standard fused disconnect 100kA SCCR
- Plenum rated
- Manual or automatic bypass control
- Electronic or simple changeover versions
- Dual independent PID control loops
- Real-time clock feature and alphanumeric keypad display
- Touch screen interface for ease of use (enhanced model only)
- Built-in BACnet® MS/TP communications
- Bi-directional coasting motor restart (anti-windmill) capability
- Broken belt / load abnormality detection
- Pump cleaning function to automatically clear clogged pumps
- Upload / download parameters using simple memory stick
- Compatible with IPM motors (auto-tuning)
- Motor flux control system saves energy and reduces motor heat and mechanical noise
- Connects directly to FR-Configurator2 commissioning software

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Touch Screen Interface (Enhanced model only)

The enhanced model includes a touch screen interface that improves system connectivity, simplifies system startups, and provides advanced functionality with the ability to set, store, and backup VFD parameters without connecting to a PC. Also included are several preconfigured screens that provide batch monitoring and machine diagnosis, as well as improved predictive maintenance to reduce downtime.

Real-time Clock Feature (Standard model only)

Using the FR-LU08 alphanumeric display, real-time clock capability allows the time-stamping of trip messages as well as time-based operation using the internal PLC of the drive.

2 Contactor Bypass System

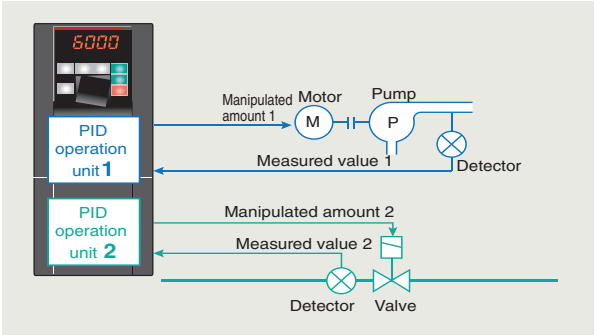
PowerGate ‘E’ uses 2 contactors to switch from VFD to bypass mode to continue motor operation during a fault condition.

5kA Short Circuit Rating

Controllers use coordinated contactors to ensure that they can safely be installed in areas served by large supply transformers (drives have a 100kA withstand rating).

Dual Independent PID Control Loops

The second PID loop means that the motor speed can be controlled to maintain pressure or temperature while the position of a damper vane or valve is adjusted.



Anti-Windmill Feature (Coasting motor restart)

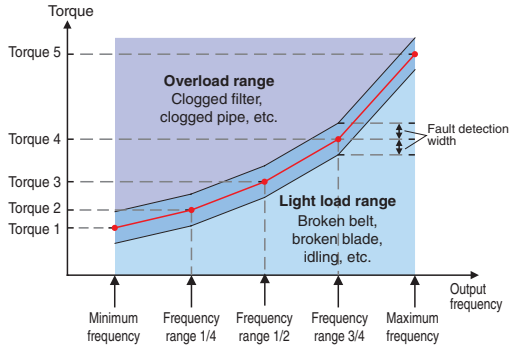
The drive will detect a motor already spinning in either direction on start-up, and ensure a smooth start-up every time.

Plenum Rating

Plenum rating ensures that the controller can be used in HVAC plenums without risks caused by toxic smoke.

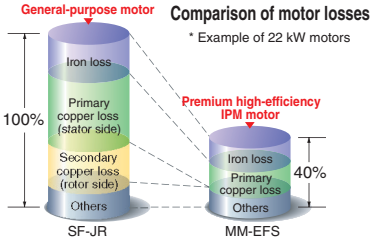
Broken Belt Detection (Load memory system)

The new ‘load memory’ system detects any sudden changes in load, such as a broken belt or a clogged pump.



IPM Motor Compatibility

PowerGate ‘E’ can be used either with conventional induction motors or with the latest generation of IPM (Internal Permanent Magnet) motors. A dedicated set-up routine ensures quick and simple commissioning.



Motor Flux Control System

Motor load is intelligently monitored by the drive and output voltage is adjusted to match, improving efficiency and reducing motor heat and mechanical noise.

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