

New inverter brings reliability, intelligence and cost saving to pump, fan and compressor operations

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False alarms and unnecessary service trips due to shut down of pumps and fans are increasingly unacceptable as industry strives for greater operational efficiency and plant availability. The new FR-F800 inverter drive from Mitsubishi Electric provides an intelligent solution to this emerging need and represents the next generation of speed control for general purpose pumps, fans and compressors.

The FR-F800's on-board intelligence virtually eliminates nuisance trips, makes set-up easy and can achieve energy efficiency of 98%. It includes many advanced features for specific industries and applications such as wastewater processing, compressors and HVAC (heating ventilation and air conditioning).

The FR-F800 is designed to provide higher reliability and fewer alarms in tough pumping applications than was previously possible. Unlike most drives, instead of relying on single set-points for trip activation, autotuning in the FR-F800 can effectively detect the torque curve of the attached fan or pump and react appropriately when operational limits are approached.

This means an end to nuisance trips caused by unusual, but not critical load variations. Far fewer false alarms means more uptime, fewer maintenance call outs and faster responses to genuine issues such as jammed pumps, broken impellers, snapped belts, etc.

At the heart of the all new FR-F800 is a bespoke PID (proportional, integral, differential) controller and on-board PLC which provides the drive with stand-alone capabilities, including: a pump-stir function, upper and lower limit pre-warnings, pipe burst detection and dry run protection, water hammer prevention and automatic tuning to reduce vibration from a system. To enhance its capabilities, the F800 is also fitted with a second PID controller so that it can control multiple fans, pumps and compressors directly, without requiring an additional controller.

The F800 can even run pump cleaning cycles automatically, to a schedule or on demand. This capability should be of great interest at wastewater sites, where historically it has been difficult to achieve. In the event of an emergency, the F800's fire override mode will also keep extraction fans and water pumps running to destruction when needed.

A six line LCD display includes an easy start-up and auto-tune wizard function and can show customised text messages. An auto-detect capability means connection to an HMI is straightforward.

As with all new products launched by Mitsubishi Electric, the F800 has been designed for maximum backwards compatibility with earlier generation drives. Existing installations can be upgraded to a new F800 in a simple swap-out.

With network connectivity now of major importance, the F800 has the capability to communicate via CC-Link, CC-Link IE, Profibus DP/V1, Profinet, DeviceNet, EtherNet IP, EtherCat, CanOpen, LonWorks, RS485, Modbus, BacNet etc. as standard. A wide range of I/O connections is complemented by options for input and output reactors, DC link chokes, harmonic filters, regeneration units and braking modules.

In order to meet customer demand there are 17 models covering the

200V-240V range from 0.75kW-110kW and 29 models in the 380V-500V range from 0.75kW-630kW. All have a 3 year warranty.

The F800 is in full compliance with European EMC Directive standards. It meets safety directives, has marine approvals, TÜV, UL, cUL and CE certification.

Note:

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Image caption:



Picture 1: The new FR-F800 inverter is designed to provide higher reliability and significantly reduced alarms for example in tough pumping applications than was previously possible. The end user benefits from more uptime, fewer maintenance call outs and faster responses to genuine issues.

[Source: Mitsubishi Electric Europe B.V.]

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With over 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, water and waste water, transportation and building equipment.

With around 129.000 employees the company recorded consolidated group sales of 36,0 billion US Dollar* in the fiscal year ended March 31, 2015.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Mitsubishi Electric Europe B.V., Factory Automation European Business Group (FA-EBG) has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of FA-EBG is to manage sales, service and support across its network of local branches and distributors throughout the EMEA region.

**Exchange rate 120 Yen = 1 US Dollar, Stand 31.3.2015 (Source: Tokyo Foreign Exchange Market)*

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Press contact:

Mitsubishi Electric Europe B.V.

Factory Automation-European Business Group

Monika Torkel

Expert Marketing Communications

Gothaer Str. 8

40880 Ratingen, Germany

Tel.: +49 (0)2102 486-2150

Fax: +49 (0)2102 486-7170

Monika.Torkel@meg.mee.com

PR agency:

DMA Europa Ltd.

Mr. Roland Renshaw

Europa Building, Arthur Drive, Hoo Farm Industrial Estate, Kidderminster, Worcestershire, UK

Tel.: +44 (0)1562 751436

Fax: +44 (0)1562 748315

roland@dmaeuropa.com

www.dmaeuropa.com