



for a greener tomorrow



FACTORY AUTOMATION

FR-F846-E2

Power-saving frequency inverters in IP55



- Ideal for pump, fan and compressor applications
- High savings potential to reduce TCO
- Build in Ethernet interface
- Predictive maintenance support
- 3 year warranty

The ideal drive solution for pumps and fans



Pump applications, e.g. for building automation operate energy-saving with frequency inverters

This is done without the troublesome adjustment of parameters (acceleration/ deceleration time, torque boost, etc.).

Powerful features and intelligent functions

Detection of mechanical faults

With the load characteristics measurement function, 5 speed-torque values of the load can be detected and stored automatically. By comparing the present speed/load status with the stored speed/load characteristics, out-of-range warnings can be accurately measured and quickly acted upon, meaning unnecessary alarms/line stops can be avoided.

Our advanced algorithm means mechanical faults such as pump blockage/dirty impeller or broken belt can be accurately detected.

Autotuning of IM and PM motors

To ensure that the motor and drive package are perfectly matched to reach highest performance levels, the F800 features a variety of autotuning methods/algorithms.

Cleaning of fans and pumps

Foreign matter on the impellers of fans or pumps can be removed by repeating forward/reverse rotation and stopping of the motor. This is avoiding expensive removal of the system.

This function can be also automatically started when the result of load characteristics measurement is out of range (overload).

Smooth Restart

After an instantaneous power failure, the drive can automatically detect and match the motor speed. With the advanced flying start function, the operation can be smoothly started from very low speed.



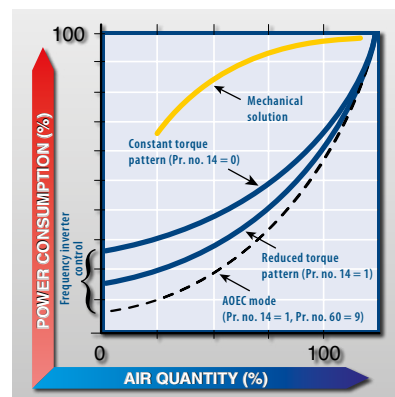
Fan applications benefit from frequency inverter use

controller, these energy consumption and thus energy costs can be reduced very significantly.

The advanced optimum excitation control (AOEC) continuously adjusts the excitation current to an optimum level providing highest motor efficiency. With a small load torque, a substantial energy saving can be achieved. The latest development of the AOEC algorithm provides a large starting torque while maintaining the motor efficiency throughout the speed range.

Reduce Energy Costs

It's a fact that industrial and commercial energy users are in increasingly burdened by rising energy costs. However, there is a proven way to reduce these high electricity prices by utilizing frequency inverter control for pump and fan applications. Thanks to the intelligent functions, like Advanced Optimum Excitation Control or the enhanced PID



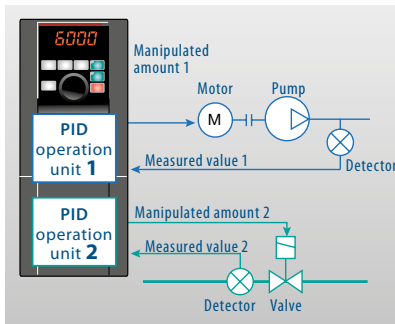
Utilizing the motor capability to the full

Advanced PID control functions

The inverter can perform PID control of the motor operation and control the external equipment at the same time.

During PID control the drive will activate "sleep mode" to avoid energy loss, when deviation is small and output speed is low. As soon deviation becomes bigger again the drive will start up immediately.

- One drive can control multi pumps
- Second PID controller



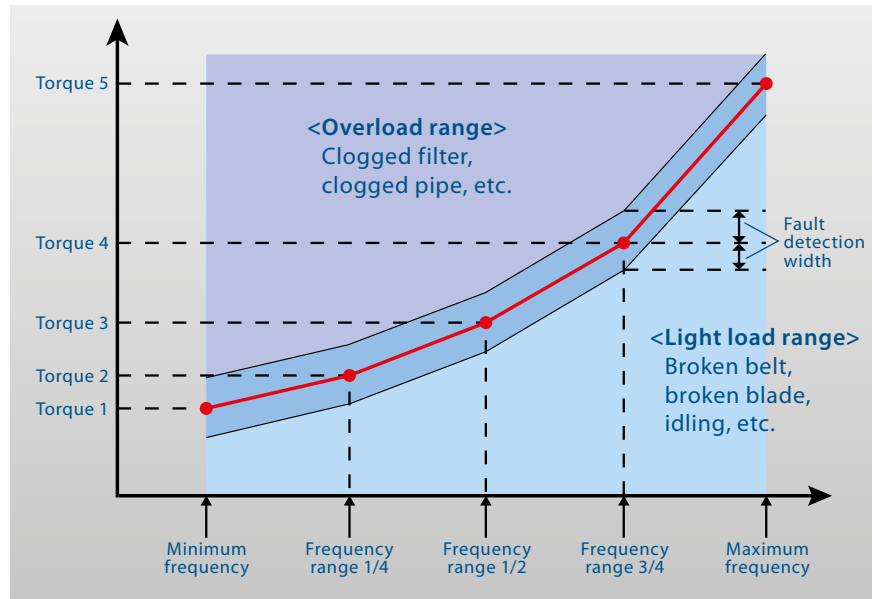
PID multiple loops (two loops)

- Direct access to PID setpoint by Display
- Pump Stir function
- PID output hold (incl. multi pump)
- PID upper/lower limit pre-warning
- Pipe burst detection/Dry run protection
- Digitally selectable PID set points
- Pipe soft fill to prevent water hammer
- PID pre-charge function
- Pre Sleep boost function
- Water Hammer avoidance at stop
- Automatic PID gain tuning
- Fireman mode, by disabling all internal protections

Easy handling

Easy setup

Users can comfortably setup the drives with the Setup-Software FR Configurator2, by direct connection via USB port by or by built-in Ethernet connection. Other major networks are supported by option cards.



Load characteristics measurement function

Easy operation

The multilanguage full-text LCD operation panel with real-time clock and Real and Digital Dial allows direct access to all important parameters.

The operation panel allows the direct setting of the PID setpoint. The setting can be easily changed at hand.



Quick reaction to troubles

Clock setting is available in addition to the cumulative energization time. The time and date at a protective function activation are easily identified. The date and time are also saved with the trace data, which makes the fault analysis easier.

By using the real-time clock function with the optional FR-LU08 operation panel, the time is not reset even when the power supply is turned off.

Trace function

The F800 includes the ability to record or capture 8 of 72 device values.

This recording can be triggered automatically, meaning intermittent errors are easily investigated. These errors can be time stamped by the real-time clock.

PLC Function

The integrated PLC function can be utilized to run e.g. stand-alone compressor systems. This can be further enhanced by the Plug and Play connectable HMI.

Future proof technology

Highest quality guaranteed

Mitsubishi Electric is well known for high reliability, because our Ethos is to use only the highest quality components in our products. This means we are able to provide a 3 year warranty.

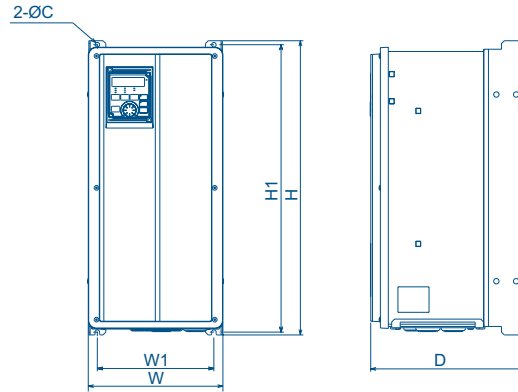
Specifications

TYPE	RATED CURRENT [A]		RATED MOTOR CAPACITY [kW]	
	LD ^①		LD ^①	
400 V CLASS VERSION WITH LU08+C2				
FR-F846-00023-E2-60L2	2.1		0.75	
FR-F846-00038-E2-60L2	3.5		1.5	
FR-F846-00052-E2-60L2	4.8		2.2	
FR-F846-00083-E2-60L2	7.6		3.7	
FR-F846-00126-E2-60L2	11.5		5.5	
FR-F846-00170-E2-60L2	16		7.5	
FR-F846-00250-E2-60L2	23		11	
FR-F846-00310-E2-60L2	29		15	
FR-F846-00380-E2-60L2	35		18.5	
FR-F846-00470-E2-60L2	43		22	
FR-F846-00620-E2-60L2	57		30	
FR-F846-00770-E2-60L2	70		37	
FR-F846-00930-E2-60L2	85		45	
FR-F846-01160-E2-60L2	106		55	
FR-F846-01800-E2-60L2	144		75	
FR-F846-02160-E2-60L2	180		90	
FR-F846-02600-E2-60L2	216		110	
FR-F846-03250-E2-60L2	260		132	
FR-F846-03610-E2-60L2	325		160	

① LD= Light duty (120 % at 60 s, 150 % at 3 s)

OPERATING CONDITIONS	SPECIFICATIONS
Power supply	3-phase, 380–500 V AC (-15 %, +10 %) at 50/60 Hz
Ambient temperature	-10 °C to +40 °C (non-freezing)
Ambient humidity	Compliance to IEC 60721-3-3 class 3C2, maximum 95 % RH (non-condensing)
Altitude	Maximum 1000 m above sea level
Protection rating	IP55
Vibration resistance	Max. 0.6 G

Dimensions



INTERNAL OPTION	DESCRIPTION
FR-ABERS-60	Optioncard to change Ethernet board to serial communication

OPERATING CONDITIONS	W	W1	H	H1	D	C
FR-F846-00023 (0.4K) to 00170 (5.5K)	238	201	520	508	271	8
FR-F846-00250(7.5K) to 00470(18.5K)			650	632.5	285	10
FR-F846-00620(22K) to 01160(45K) ^①	345	300	790	770	357	12
FR-F846-01800(55K) to 02600(90K) ^①	420	350	1360	1334	456.6	15
FR-F846-03250(110K) to 03610(132K) ^①			1510	1482		

All dimensions in mm

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Version check



Art. no. 404135-A

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Printed August 2018