

INVERTER

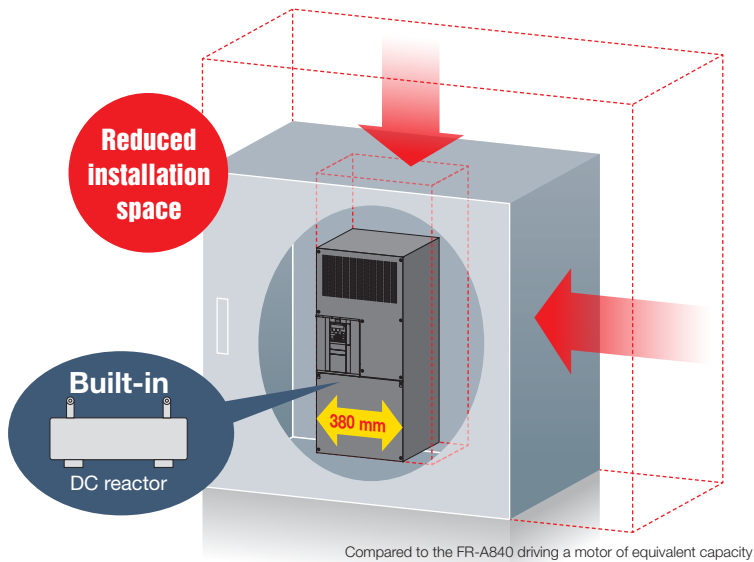
**New Product RELEASE** No.18-3E

# New Class Added to the FR-A800 Series with High Functionality and High Performance

Two 690 V class models (FR-A870) are available as new addition to the FR-A800 series inverter lineup.

**Features**

- Enclosure cost reduction**  
 The 380-mm-wide slim design saves enclosure space.  
 Reduced enclosure size helps keep the cost down.
- Wire and Space Saving**  
 The inverter has a built-in DC reactor and EMC filter (class C3), requiring less wiring of peripheral devices.



**Lineup**

**FR - A 870 - 02300 - E 1 - 60**

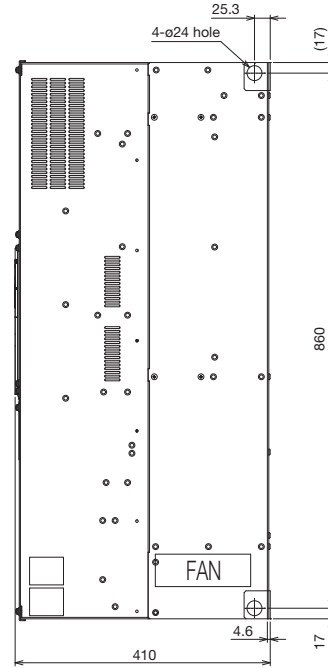
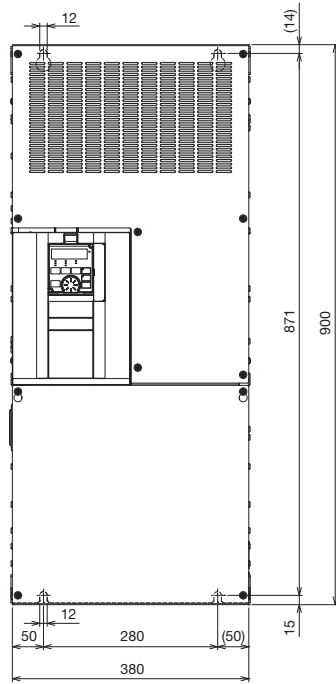
Symbol	Voltage class	Symbol	Description	Symbol	Type	Communication type	Symbol	Circuit board coating	Plated conductor
7	690 V class*	02300/02860	Inverter SLD rated current (A)	E1	FM	Ethernet	60	With	Without
				E2	CA		06	With	With

\* The insulation distance conforms to IEC 61800.

## Outline dimensions

(Unit: mm)

### • FR-A870-02300/02860



## Specifications

### • 690 VAC power input

### • 575 VAC power input

Model FR-A870-[ ]		02300	02860	02300	02860	
Applicable motor capacity (kW) <sup>*1</sup>	SLD	200	250	132	160	
	ND (initial setting)	160	200	110	132	
Output	Rated capacity (kVA) <sup>*2</sup>	275	342	229	285	
	Rated current (A) <sup>*3</sup>	230	286	184	229	
	Overload current rating <sup>*4</sup>	185	230	230	286	
	Rated voltage <sup>*5</sup>	110% 60 s, 120% 3 s (inverse-time characteristics) at surrounding air temperature 40°C	150% 60 s, 200% 3 s (inverse-time characteristics) at surrounding air temperature 40°C	185	230	
Power supply	Rated input AC voltage/frequency	Three-phase 600 to 690 V		Three-phase 525 to 600 V		
	Permissible AC voltage fluctuation	Three-phase 600 to 690 V 50 Hz/60 Hz		Three-phase 525 to 600 V 50 Hz/60 Hz		
	Permissible frequency fluctuation	540 to 759 V 50 Hz/60 Hz		472 to 660 V 50 Hz/60 Hz		
	Permissible frequency fluctuation	±5%		±5%		
	Rated input current (A) <sup>*6</sup>	SLD	230	286	230	286
		ND (initial setting)	185	230	185	230
	Power supply capacity (kVA) <sup>*7</sup>	SLD	275	342	229	285
ND (initial setting)		221	275	184	229	
Protective structure (IEC 60529) <sup>*8</sup>	Enclose type (IP20)		Enclose type (IP20)			
Cooling system	Forced air		Forced air			
Approx. mass (kg)	120		122			

<sup>\*1</sup> Values in the "690 VAC power input" table indicate the maximum applicable motor capacity at a power input of 690 V. Values in the "600 VAC power input" table indicate the one at a power input of 575 V.

<sup>\*2</sup> Values in the "690 VAC power input" table indicate the maximum capacity at an inverter output of 690 V. Values in the "600 VAC power input" table indicate the one at an inverter output of 575 V.

<sup>\*3</sup> Possible output currents during continuous operation under Real sensorless vector control or Vector control are shown in the table below.

PWM carrier frequency	02300		02860	
	SLD	ND	SLD	ND
2 kHz	191 A	159 A	237 A	198 A
4 kHz	115 A	107 A	143 A	133 A

The PWM carrier frequency is automatically decreased to 2 kHz for heavy duty applications when operating the motor under Real sensorless vector control or Vector control with a PWM carrier frequency of more than 6 kHz (Pr.72 ≥ 6). The carrier frequency stays at 4 kHz in fast-response operation.

<sup>\*4</sup> The % value of the overload current rating indicated is the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below the temperatures under 100% load.

<sup>\*5</sup> The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. However, the maximum point of the voltage waveform at the inverter output side is the power supply voltage multiplied by about  $\sqrt{2}$ .

<sup>\*6</sup> The rated input current indicates a value at a rated output voltage. The impedance at the power supply side (including those of the input reactor and cables) affects the rated input current.

<sup>\*7</sup> The power supply capacity is the value when at the rated output current. It varies by the impedance at the power supply side (including those of the input reactor and cables).

<sup>\*8</sup> FR-DU08: IP40 (except for the PU connector section)

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