

FACTORY AUTOMATION

**New Product RELEASE**

L-06127ENG-F

# INVERTER

## FR-E800

Addition of the FR-E846 inverters with highly protective structure (IP66/IP67)



FR-E846-0026SCEPA-60C2  
without power ON/OFF rotary switch



FR-E846-0026SCEPA-S6C2  
with power ON/OFF rotary switch

**NEW**



**IP66/IP67 compatible highly protective structure that saves cost  
and time for introduction and enables installation suitable for field use**

**▶ Reducing cost and time for introduction**

Since the inverter is compatible with hostile environments such as high humidity and dusty environments, users can easily install the inverter near the machine or in available spaces. By installing the inverter outside of the enclosure, the enclosure design becomes easier in terms of countermeasures against heat, and the enclosure is downsized as well.



## Components designed for dustproof and waterproof performance

E800-SCE

### ► Installation directly next to machinery

IP66 and IP67 are ratings of the protection level against water and dust, defined by the International Electrotechnical Commission (IEC). The product is also UL Type 4X rated.

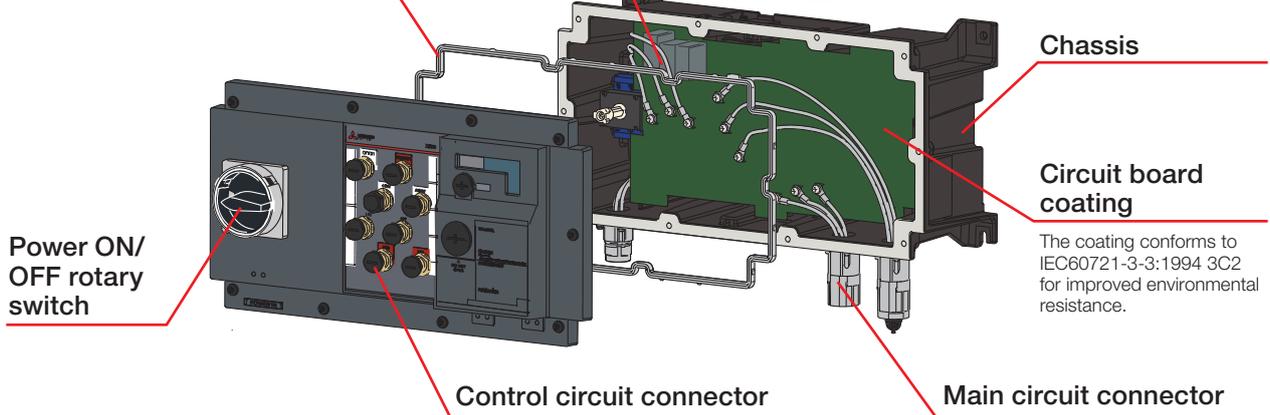
#### Class C2 EMC filter (rear of the circuit board)

The inverter has a built-in filter for residential environments (EN 61800-3 CS2).

#### Sealing, gasket

#### Waterproof fan

The cooling fan is compatible with the IP66/IP67 rating. The fan is removable from the inverter without disconnecting the main circuit wiring.



## Supporting safety communication functions

E800-SCE

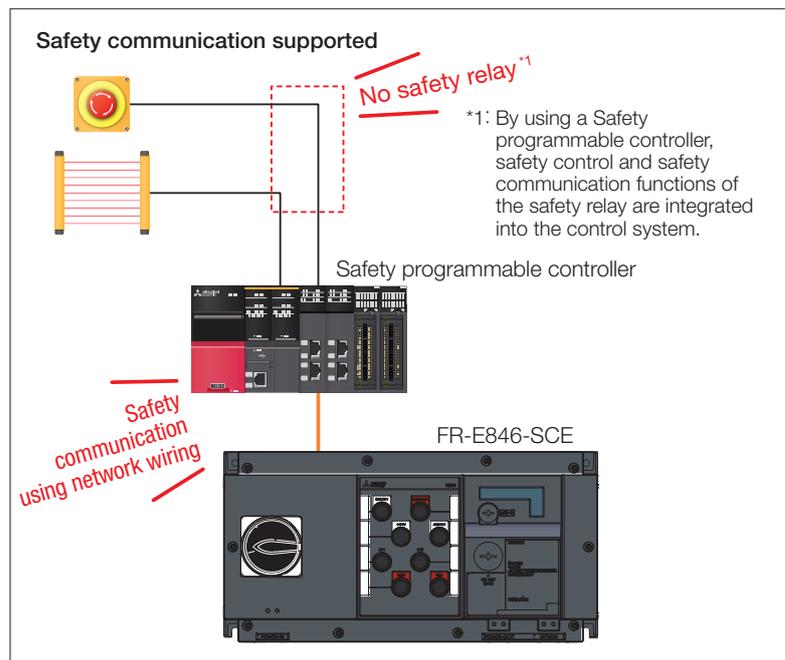
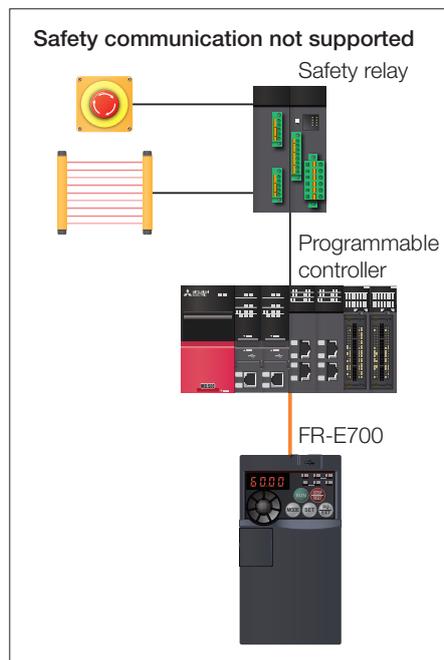
### ► Safety communication model

Safety communication models support Ethernet-based safety communication protocols certified as compliant with international standards.

The safety control system on the existing network can be easily enhanced with less cost.

Model	CC-Link IE TSN Safety Communication	PROFIsafe	CIP Safety
FR-E846-[]SCEPA	●	-	●
FR-E846-[]SCEPB	●	●	-

●: Supported



\*1: By using a Safety programmable controller, safety control and safety communication functions of the safety relay are integrated into the control system.

— Control wiring    — Network wiring

● Lineup IP66/IP67 model

**FR-E8 4 6 - 0026 SCEPA -60 C2**

For the details of the lineup, please contact your sales representative.

Symbol	Voltage class	Symbol	Structure, functionality	Symbol	Description	Symbol	EMC filter
4	400 V	6	Enclosed type (IP66/IP67, UL Type 4X Indoor Use Only)	0026 to 0095	Inverter rated current(ND)(A)	C2	With (Class C2)
		None	Voltage specifications Three-phase	0.75K to 3.7K	Applicable motor capacity (ND)(kW)	-60	With
						-S6	With

Symbol	Communication / functional safety specifications	Monitoring/protocol specifications	Rated frequency (initial setting)	Control logic
SCEPA	Ethernet + SIL3/PLe	Protocol group A* <sup>3</sup>	60 Hz	Source logic* <sup>4</sup>
SCEPB		Protocol group B* <sup>3</sup>	50 Hz	

\*1: Models with circuit board coating (-60/-S6) only.

\*2: Compatible with IEC60721-3-3: 1994 3C2.

\*3: Selectable protocols differ depending on the group.

Protocol group A: CC-Link IE TSN, CC-Link IE Field Network Basic, MODBUS/TCP, EtherNet/IP, BACnet/IP, CC-Link IE TSN Safety Communication, and CIP Safety.

Protocol group B: CC-Link IE TSN, CC-Link IE Field Network Basic, MODBUS/TCP, PROFINET, CC-Link IE TSN Safety Communication, and PROFIsafe.

\*4: The control logic is fixed to the source logic.

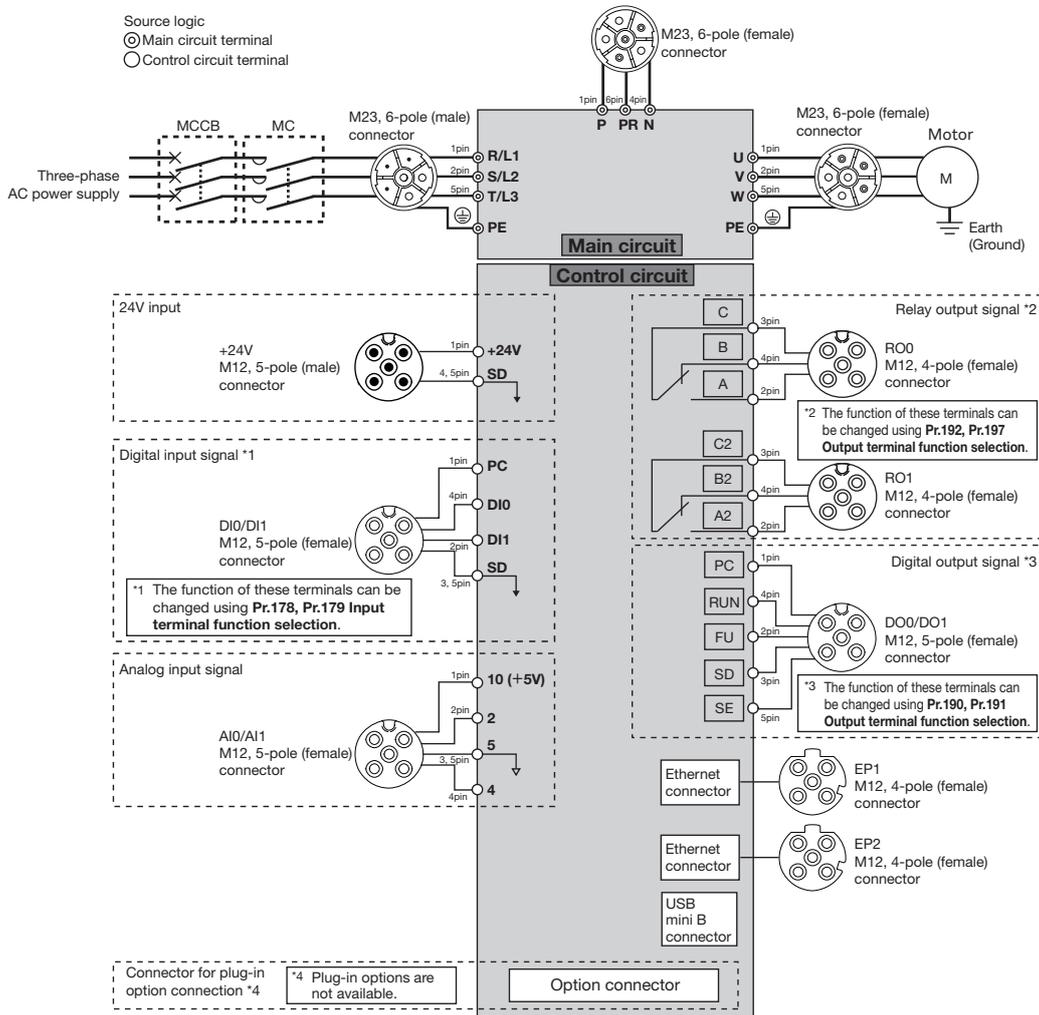
Model	Inverter rated current(ND)(A)			
	0026	0040	0060	0095
Three-phase 400 V FR-E846-□ (SCE)	●	●	●	●

●: Released in September 2023

● FR-E846 dedicated protective cover (option) FR-E8PC

This protective cover is installed to a main circuit connector of the FR-E846 inverter (IP66/IP67 model) to prevent insertion/removal of the connector during power-on.

● IP66/IP67 model (source logic)



## ● Rated specification Three-phase 400 V power supply (IP66/IP67 model)

Model FR-E846-□		0026	0040	0060	0095	
		0.75K	1.5K	2.2K	3.7K	
Applicable motor capacity (kW) <sup>*1</sup>	LD	1.5	2.2	3.0	5.5	
	ND (initial setting)	0.75	1.5	2.2	3.7	
Rated capacity (kVA) <sup>*2</sup>	LD	2.7	4.2	5.3	8.5	
	ND (initial setting)	2.0	3.0	4.6	7.2	
Rated current (A) <sup>*3</sup>	LD	3.5 (3.0)	5.5 (4.7)	6.9 (5.9)	11.1 (9.4)	
	ND (initial setting)	2.6 (2.2)	4.0 (3.8)	6.0 (5.4)	9.5 (8.7)	
Overload current rating <sup>*4</sup>	LD	120% 60 s, 150% 3 s (inverse-time characteristics) at surrounding air temperature of 40°C				
	ND (initial setting)	150% 60 s, 200% 3 s (inverse-time characteristics) at surrounding air temperature of 40°C				
Voltage <sup>*5</sup>		Three-phase 380 to 480 V				
Regenerative braking	Brake transistor	Built-in				
	Maximum brake torque (ND reference) <sup>*6</sup>	100%	50%	20%		
Power supply	Rated input AC (DC) voltage/frequency		Three-phase 380 to 480 V, 50/60 Hz (537 to 679 VDC)			
	Permissible AC (DC) voltage fluctuation		323 to 528 V, 50/60 Hz (457 to 740 VDC)			
	Permissible frequency fluctuation		±5%			
	Rated input current (A) <sup>*7</sup>	LD	6.0	8.9	10.7	16.2
		ND (initial setting)	4.4	6.7	9.5	14.1
Power supply capacity (kVA) <sup>*8</sup>	LD	6.0	8.9	11.0	16.0	
	ND (initial setting)	3.4	5.1	7.2	10.8	
Protective structure (IEC60529/UL50/UL50E)		Enclosed type (IP66/IP67, UL Type 4X Indoor Use Only)				
Cooling system		Forced air				
Approx. mass (kg)	With power ON/OFF rotary switch		5.9	5.9	5.9	5.9
	Without power ON/OFF rotary switch		5.7	5.7	5.7	5.7

\*1: The applicable motor capacity indicated is the maximum capacity applicable for use of the Mitsubishi Electric standard 4-pole motor. To drive a Mitsubishi Electric standard-performance energy-saving motor, use the 2.2K inverter for a 3 kW motor.

\*2: The rated output capacity is the value with respect to 440 V output voltage.

\*3: The value in parentheses is the rated output current when the low acoustic noise operation is performed with the surrounding air temperature exceeding 40°C while 2 kHz or higher value is selected in **Pr.72 PWM frequency selection**.

\*4: The percentage of the overload current rating 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.

\*5: The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. The maximum point of the voltage waveform at the output side of the inverter is approximately the power supply voltage multiplied by  $\sqrt{2}$ .

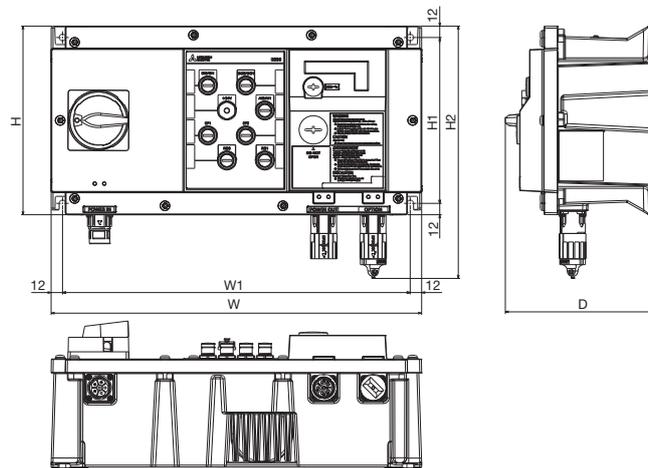
\*6: The amount of braking torque is the average short-term torque (which varies depending on motor loss) that is generated when a motor decelerates in the shortest time by itself from 60 Hz. It is not continuous regenerative torque. The average deceleration torque becomes lower when a motor decelerates from a frequency higher than the base frequency. The inverter is not equipped with a built-in brake resistor. Use an option brake resistor for an operation with large regenerative power. The brake unit (FR-BU2) can be also used.

\*7: The rated input current is the value at a rated output voltage. The input power impedances (including those of the input reactor and cables) affect the value.

\*8: The power supply capacity varies with the value of the input power impedance (including those of the input reactor and cables).

## ● Outline dimension drawings

FR-E846-0026 (0.75K), FR-E846-0040 (1.5K),  
FR-E846-0060 (2.2K), FR-E846-0095 (3.7K)



Inverter model	W	W1	H	H1	H2	D
FR-E846-0026 (0.75K)	390	366	200	176	270	With power ON/OFF rotary switch:156 Without power ON/OFF rotary switch:145
FR-E846-0040 (1.5K)						
FR-E846-0060 (2.2K)						
FR-E846-0095 (3.7K)						

(Unit:mm)

## ● List of options

Using the following options further expands the applications of the inverter.<sup>\*1</sup>

Name	Model
FR-E846 dedicated protective cover	FR-E8PC
AC reactor <sup>*2</sup>	FR-HAL
Brake unit <sup>*2</sup>	FR-BU2
	FR-BR
Brake resistor <sup>*2</sup>	MRS type, MYS type
	FR-ABR
Line noise filter <sup>*2</sup>	FR-BSF01
	FR-BLF
Radio noise filter <sup>*2</sup>	FR-BIF
	FR-ASF
Surge voltage suppression filter <sup>*2</sup>	FR-ASF
	FR-BMF

\*1: Plug-in options and a DC reactor are not available for the IP66/IP67 model.

\*2: When the whole system need to be compliant with IP66/IP67, options must be installed in a compatible enclosure.

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