



# FRENIC-Multi Series

FRENIC-Multi series inverters, developed by Fuji Electric FA Components & Systems, are loaded with advanced technologies. The Multi series features class-highest control performance, abundant model variation, limited use of hazardous substances, reduced noise effect on peripheral equipment, and optimal functions for conveyance machines. The other features include easy operation and wiring, various protection functions, improved maintenance methods. The Multi series inverters can be used for a wide range of applications such as conveyance machines, fans, pumps, centrifugal separators, and food processing machines.

**Gentler on the environment**

**Expanded capacity range and abundant model variation**

**The highest standards of control and performance in its class**

**Optimum for the operations specific to vertical and horizontal conveyance**

**Simple and thorough maintenance**

**Simple operation, simple connection**

**Consideration of peripheral equipment, and a full range of protective functions**

**You can use an inverter equipped with functions like these**



## Variation

### Standard type

Applicable motor rating [HP]	Standard type			Applicable motor rating [HP]	Standard type		
	Three-phase 230V	Three-phase 460V	Single-phase 230V		Three-phase 230V	Three-phase 460V	Single-phase 230V
1/8	FRNF12E1S-2U		FRNF12E1S-7U	5	FRN005E1S-2U	FRN005E1S-4U	
1/4	FRNF25E1S-2U		FRNF25E1S-7U	7.5	FRN007E1S-2U	FRN007E1S-4U	
1/2	FRNF50E1S-2U	FRNF50E1S-4U	FRNF50E1S-7U	10	FRN010E1S-2U	FRN010E1S-4U	
1	FRN001E1S-2U	FRN001E1S-4U	FRN001E1S-7U	15	FRN015E1S-2U	FRN015E1S-4U	
2	FRN002E1S-2U	FRN002E1S-4U	FRN002E1S-7U	20	FRN020E1S-2U	FRN020E1S-4U	
3	FRN003E1S-2U	FRN003E1S-4U	FRN003E1S-7U				

## Standard specifications

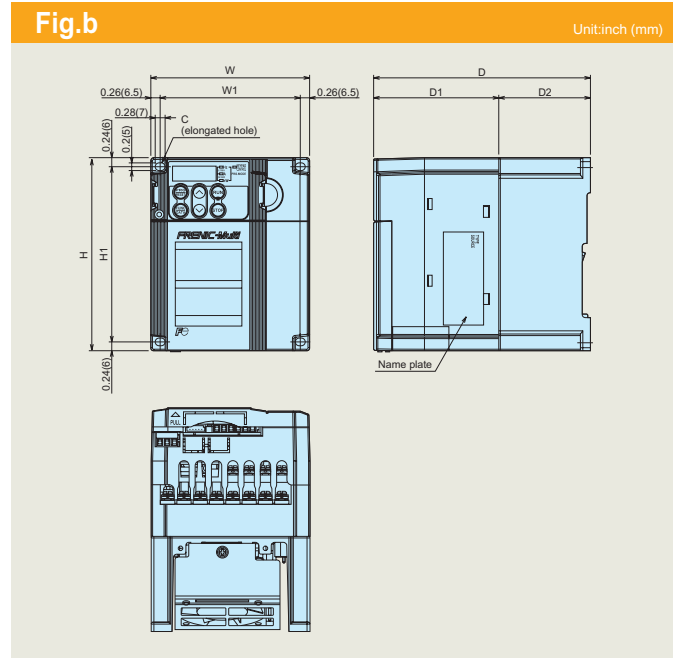
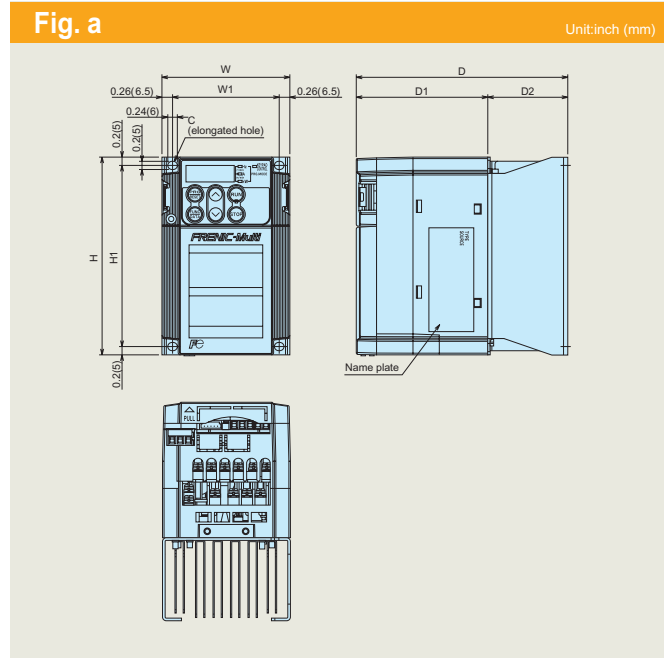
### Three-phase 230V

Item		Specifications											
Type (FRN ___E1S-2U)		F12	F25	F50	001	002	003	005	007	010	015	020	
Applicable motor rating *1)	HP	1/8	1/4	1/2	1	2	3	5	7.5	10	15	20	
Output ratings	Rated capacity *2)	kVA	0.30	0.57	1.1	1.9	3.0	4.1	6.4	9.5	12	17	22
	Rated voltage *3)	V	Three-phase 200V to 240V (with AVR function)										
	Rated current *4)	A	0.8 (0.7)	1.5 (1.4)	3.0 (2.5)	5.0 (4.2)	8.0 (7.0)	11 (10)	17 (16.5)	25 (23.5)	33 (31)	47 (44)	60 (57)
	Overload capability		150% of rated current for 1min, 200% - 0.5s										
	Rated frequency	Hz	50, 60Hz										
Input power	Phases, voltage, frequency		Three-phase, 200 to 240V, 50/60Hz										
	Voltage/frequency variations		Voltage: +10 to -15% (Voltage unbalance *8): 2% or less Frequency: +5 to -5%										
	Rated current *9)	A	(with DCR) 0.57	(with DCR) 0.93	(with DCR) 1.6	(with DCR) 3.0	(with DCR) 5.7	(with DCR) 8.3	(with DCR) 14.0	(with DCR) 21.1	(with DCR) 28.8	(with DCR) 42.2	(with DCR) 57.6
		(without DCR) 1.1	(without DCR) 1.8	(without DCR) 3.1	(without DCR) 5.3	(without DCR) 9.5	(without DCR) 13.2	(without DCR) 22.2	(without DCR) 31.5	(without DCR) 42.7	(without DCR) 60.7	(without DCR) 80	
Required power supply capacity *5)	kVA	0.2	0.3	0.6	1.1	2.0	2.9	4.9	7.4	10	15	20	
Braking	Torque *6)	%	150		100			70		40		20	
	Torque *7)	%	—										
	DC injection braking		Starting frequency: 0.1 to 60.0Hz, Braking time: 0.0 to 30.0s, Braking level: 0 to 100% of rated current										
	Braking transistor		Built-in										
Applicable safety standards		UL508C, C22.2No.14, EN50178:1997											
Enclosure (IEC60529)		IP20, UL open type											
Cooling method		Natural cooling						Fan cooling					
Weight	lbs.(kg)	1.3(0.6)	1.3(0.6)	1.5(0.7)	1.8(0.8)	3.7(1.7)	3.7(1.7)	5.1(2.3)	7.5(3.4)	7.9(3.6)	13(6.1)	16(7.1)	

- \*1) Fuji's 4-pole standard motor
- \*2) Rated capacity is calculated by assuming the output rated voltage as 220V for three-phase 230V series and 440V for three-phase 460V series.
- \*3) Output voltage cannot exceed the power supply voltage.
- \*4) When setting the carrier frequency (F26) to 3 kHz or less. Use the current ( ) or below when the carrier frequency setting is higher than 4kHz and continuously operating at 100%.
- \*5) Obtained when a DC REACTOR is used.
- \*6) Average braking torque obtained when reducing the speed from 60Hz with AVR control OFF (Varies with the efficiency of the motor.)
- \*7) Average braking torque obtained by use of external braking resistor (standard type available as option)
- \*8) Voltage unbalance [%] =  $\frac{\text{Max voltage [V]} - \text{Min voltage [V]}}{\text{Three-phase average voltage [V]}} \times 67$  (IEC 61800-3)  
If this value is 2 to 3%, use AC REACTOR (ACR: option).
- \*9) The value is calculated on assumption that the inverter is connected with a power supply capacity of 500kVA (or 10 times the inverter capacity if the inverter capacity exceeds 50kVA) and %X is 5%.

## External Dimensions

### Inverter main body (Standard type)



Power supply voltage	Inverter type	Fig.	Dimensions [Unit: inch (mm)]							
			W	W1	H	H1	D	D1	D2	C
Three-phase 230V	FRNF12E1S-2U	a	3.15(80)	2.64(67)	4.72(120)	4.33(110)	3.62(92)	3.23(82)	0.39(10)	4-0.20x0.24 (4-5x6) (elongated hole)
	4.21(107)						0.98(25)			
	5.20(132)						1.97(50)			
	FRNF50E1S-2U	b	4.33(110)	3.82(97)	5.12(130)	4.65(118)	5.91(150)	3.39(86)	2.52(64)	4-0.20x0.28 (4-5x7) (elongated hole)
	FRN001E1S-2U									
	FRN002E1S-2U									
	FRN003E1S-2U									

Before using this inverter, carefully read the instruction manual, specifications, etc. or consult us or the shop of purchase to fully understand the correct usage of the inverter.

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