

Fuji Electric is the world's top class market share manufacturer of general -purpose inverter in the 5HP class or below. Based on our experience and customer's needs, we have now integrated our advanced designs and industry-leading technologies to develop a new inverter series, called FRENIC-Mini.

**Ideal functions to meet various needs**

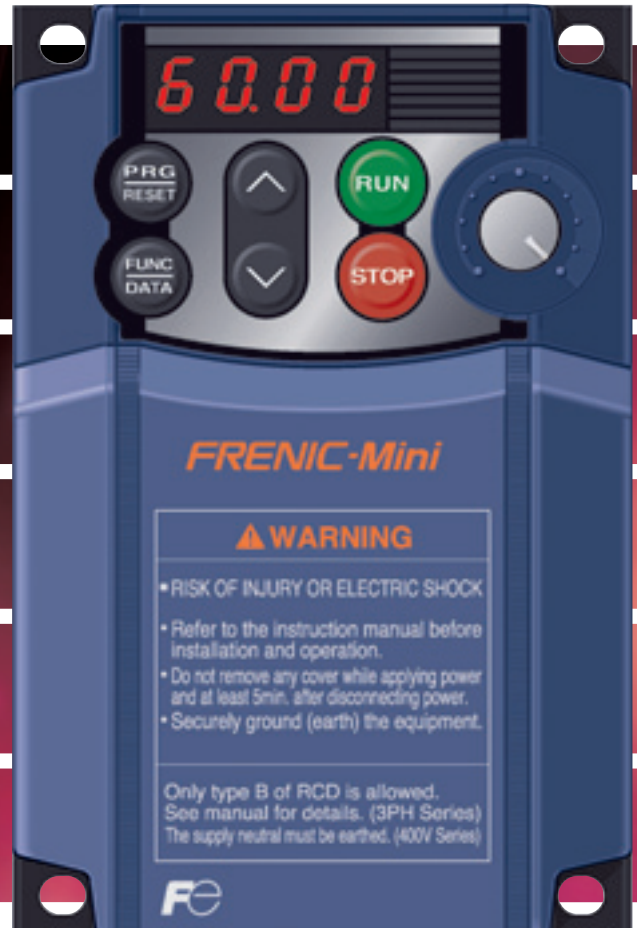
**New, compact design**

**Simple operation**

**Multiple Options**

**A broad range of model variations**

**Global products**



## Variation

### Standard type

| Applicable motor rating(HP) | Three-phase 230V | Three-phase 460V | Single-phase 230V | Single-phase 115V |
|-----------------------------|------------------|------------------|-------------------|-------------------|
| 1/8                         | FRNF12C1S-2U     |                  | FRNF12C1S-7U      | FRNF12C1S-6U      |
| 1/4                         | FRNF25C1S-2U     |                  | FRNF25C1S-7U      | FRNF25C1S-6U      |
| 1/2                         | FRNF50C1S-2U     | FRNF50C1S-4U     | FRNF50C1S-7U      | FRNF50C1S-6U      |
| 1                           | FRN001C1S-2U     | FRN001C1S-4U     | FRN001C1S-7U      | FRN001C1S-6U      |
| 2                           | FRN002C1S-2U     | FRN002C1S-4U     | FRN002C1S-7U      |                   |
| 3                           | FRN003C1S-2U     | FRN003C1S-4U     | FRN003C1S-7U      |                   |
| 5                           | FRN005C1S-2U     | FRN005C1S-4U     |                   |                   |

# Standard specifications

## Three-phase series

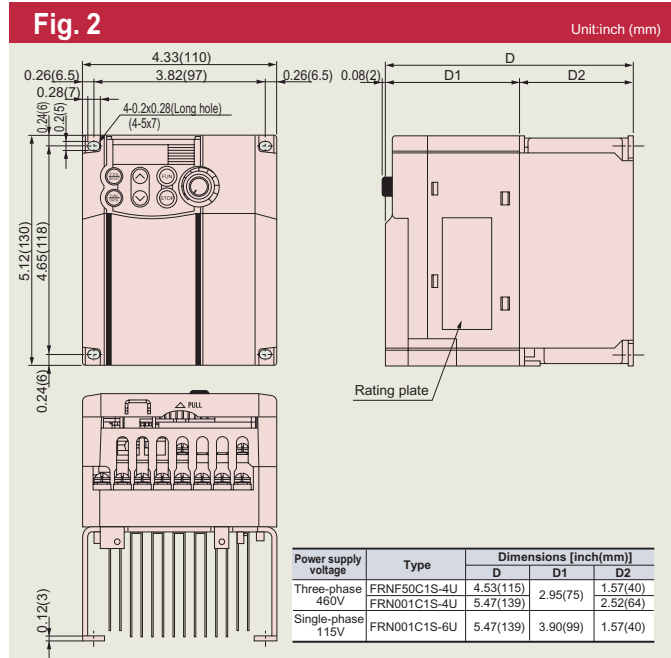
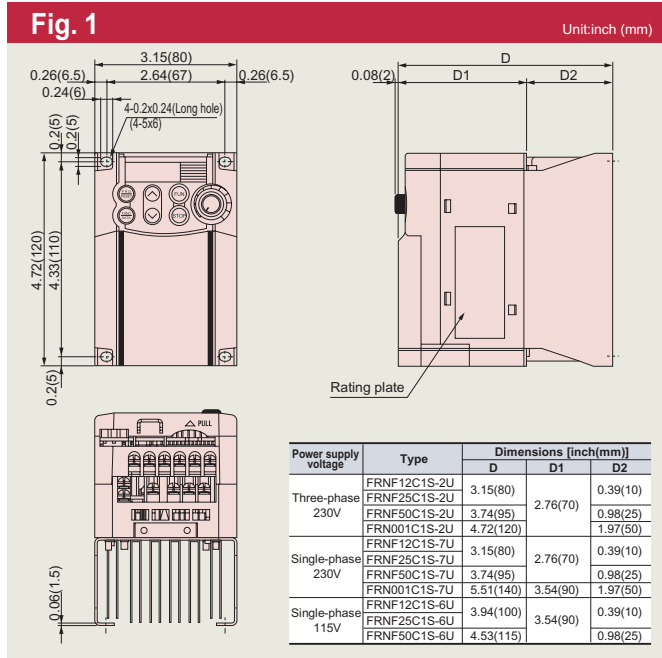
| Item                                 |  | Specifications                                                                                                                    |                                             |              |              |              |              |                |                                                                                                                                   |                                                            |              |              |              |          |      |
|--------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------|--------------|--------------|--------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------|--------------|--------------|----------|------|
| Input power source                   |  | Three-phase 230V                                                                                                                  |                                             |              |              |              |              |                | Three-phase 460V                                                                                                                  |                                                            |              |              |              |          |      |
| Type (FRN___C1S-_U)                  |  | FRNF12C1S-2U                                                                                                                      | FRNF25C1S-2U                                | FRNF50C1S-2U | FRN001C1S-2U | FRN002C1S-2U | FRN003C1S-2U | FRN005C1S-2U   | FRNF50C1S-4U                                                                                                                      | FRN001C1S-4U                                               | FRN002C1S-4U | FRN003C1S-4U | FRN005C1S-4U |          |      |
| Applicable motor rating *1)          |  | HP                                                                                                                                | 1/8                                         | 1/4          | 1/2          | 1            | 2            | 3              | 5                                                                                                                                 | 1/2                                                        | 1            | 2            | 3            | 5        |      |
| Rated capacity *2)                   |  | kVA                                                                                                                               | 0.31                                        | 0.59         | 1.1          | 1.9          | 3.1          | 4.3            | 6.7                                                                                                                               | 1.1                                                        | 1.9          | 2.9          | 4.3          | 7.1      |      |
| Rated voltage *3)                    |  | V                                                                                                                                 | Three-phase, 200V/50Hz, 200, 220, 230V/60Hz |              |              |              |              |                |                                                                                                                                   | Three-phase, 380, 400, 415V/50Hz, 380, 400, 440, 460V/60Hz |              |              |              |          |      |
| Rated current *4)                    |  | A                                                                                                                                 | 0.8<br>(0.7)                                | 1.5<br>(1.4) | 3.0<br>(2.5) | 5.0<br>(4.2) | 8.0<br>(7.0) | 11.0<br>(10.0) | 17.0<br>(16.5)                                                                                                                    | 1.5                                                        | 2.5          | 3.7          | 5.5          | 9.0      |      |
| Overload capability                  |  | 150% of rated current for 1min, 200% of rated current for 0.5s                                                                    |                                             |              |              |              |              |                |                                                                                                                                   |                                                            |              |              |              |          |      |
| Rated frequency                      |  | 50, 60Hz                                                                                                                          |                                             |              |              |              |              |                |                                                                                                                                   |                                                            |              |              |              |          |      |
| Phases, voltage, frequency           |  | Three-phase, 200 to 240V, 50/60Hz                                                                                                 |                                             |              |              |              |              |                | Three-phase, 380 to 480V, 50/60Hz                                                                                                 |                                                            |              |              |              |          |      |
| Voltage/frequency variations         |  | Voltage: +10 to -15% (Voltage unbalance *10) : 2% or less                                                                         |                                             |              |              |              |              |                | Frequency: +5 to -5%                                                                                                              |                                                            |              |              |              |          |      |
| Momentary voltage dip capability *5) |  | When the input voltage is 165V or more, the inverter continues operation. If it drops below 165V, the inverter operates for 15ms. |                                             |              |              |              |              |                | When the input voltage is 300V or more, the inverter continues operation. If it drops below 300V, the inverter operates for 15ms. |                                                            |              |              |              |          |      |
| Rated current *6)                    |  | A                                                                                                                                 | (with DCR)                                  | 0.57         | 0.93         | 1.6          | 3.0          | 5.7            | 8.3                                                                                                                               | 14.0                                                       | 0.85         | 1.6          | 3.0          | 4.4      | 7.3  |
|                                      |  |                                                                                                                                   | (without DCR)                               | 1.1          | 1.8          | 3.1          | 5.3          | 9.5            | 13.2                                                                                                                              | 22.2                                                       | 1.7          | 3.1          | 5.9          | 8.2      | 13.0 |
| Required power supply capacity *7)   |  | kVA                                                                                                                               | 0.2                                         | 0.3          | 0.6          | 1.1          | 2.0          | 2.9            | 4.9                                                                                                                               | 0.6                                                        | 1.1          | 2.0          | 2.9          | 4.9      |      |
| Torque *8)                           |  | %                                                                                                                                 | 150                                         |              |              | 100          |              | 50             | 30                                                                                                                                | 100                                                        |              |              | 50           | 30       |      |
| Torque *9)                           |  | %                                                                                                                                 | —                                           |              |              | 150          |              | 150            |                                                                                                                                   |                                                            |              |              |              |          |      |
| DC injection braking                 |  | Starting frequency: 0.0 to 60.0Hz Braking time: 0.0 to 30.0s Braking level: 0 to 100% of rated current                            |                                             |              |              |              |              |                |                                                                                                                                   |                                                            |              |              |              |          |      |
| Enclosure (IEC 60529)                |  | IP20, UL open type *11)                                                                                                           |                                             |              |              |              |              |                |                                                                                                                                   |                                                            |              |              |              |          |      |
| Cooling method                       |  | Natural cooling                                                                                                                   |                                             |              |              |              | Fan cooling  |                |                                                                                                                                   | Natural cooling                                            |              | Fan cooling  |              |          |      |
| Weight                               |  | lbs.(kg)                                                                                                                          | 1.3(0.6)                                    | 1.3(0.6)     | 1.3(0.6)     | 1.5(0.7)     | 3.7(1.7)     | 3.7(1.7)       | 5.1(2.3)                                                                                                                          | 2.4(1.1)                                                   | 2.6(1.2)     | 3.7(1.7)     | 3.7(1.7)     | 5.1(2.3) |      |

\*1) Fuji's 4-pole standard motor  
 \*2) Rated capacity is calculated by regarding the output rated voltage as 220V for three-phase 230V and single-phase 230V, and as 440V for three-phase 460V.  
 \*3) Output voltage cannot exceed the power supply voltage.  
 \*4) Use the inverter at the current given in ( ) or below when the carrier frequency setting is higher than 4kHz (F25:4 to 15) or the ambient temperature is 40°C(104°F) or higher.  
 \*5) Tested under the standard load condition (85% load for nominal applied motor).  
 \*6) Calculated under Fuji-specified conditions.

\*7) Obtained when a DC REACTOR (option) is used.  
 \*8) Average braking torque obtained with AVR control OFF (Varies with the efficiency of the motor).  
 \*9) Average braking torque obtained by use of external braking resistor (standard type available as option)  
 $\text{*10) Voltage unbalance [\%]} = \frac{\text{Max voltage [V]} - \text{Min voltage [V]}}{\text{Three-phase average voltage [V]}} \times 67$  (IEC 61800-3 (5.2.3))  
 If this value is 2 to 3%, use AC REACTOR (ACR).  
 \*11) NEMA1 kit (option) is required for the enclosure conforming to the UL standard TYPE1 (NEMA1). Use the inverter in the ambient temperature range from -10 to +40°C(14 to 104°F).

# External Dimensions

## Without EMC filter type



Note) The symbols \*\* followed by the inverter type FRN□□□C1S-2U represent the following numeral codes: 21 (Braking resistor built-in type), None (Standard)

**Safety Precautions**

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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