

High Performance Inverter

FRENIC-Ace

Please read the following pages of the instruction manual (INR-SI47-1733g
) as described in this manual.

Target page

G.3 Compliance with UL Standards and Canadian Standards (cUL certification)
Appendix-16~20

ACAUTION

Thank you for purchasing our FRENIC-Ace series of inverters.

- This product is designed to drive a three-phase induction motor. Read through this supplement in conjunction with the instruction manual (INR-SI47-1733g-\(\sigma\)) to become familiar with proper handling and correct use.
- Improper handling might result in incorrect operation, a short life, or even a failure of this product as well as the motor.
- Deliver this supplement to the end user of this product.
- Keep this supplement in a safe place until this product is discarded.
- For instructions on how to use an optional device, refer to the instruction and installation manuals for that optional device

Copyright © 2017 Fuji Electric Co., Ltd. All rights reserved. No part of this publication may be reproduced or copied without prior written permission from Fuji Electric Systems Co., Ltd. All products and company names mentioned in this manual are trademarks or registered trademarks of their respective holders. The information contained herein is subject to change without prior notice for improvement.

7. Environmental Requirements

7.1 Type FRN0001E2**■**-2□/FRN0002E2**■**-4□ or above,

Other than FRN0012E2=-2□/FRN0020E2=-2□/FRN0007E2=-4□/FRN0012E2=-4□

Maximum Surrounding Air Temperature / Maximum ambient temperature
 The temperatures shall be equal or lower than the values in the table below.

| Enclosure Type | ND/HD | HND/HHD |
|----------------|----------|----------|
| Open Type | 40 deg C | 50 deg C |
| Enclosed Type | 30 deg C | 40 deg C |

· Atmosphere

For use in pollution degree 2 environments.

7.2 Type FRN0012E2**=**-2□/FRN0020E2**=**-2□/FRN0007E2**=**-4□/FRN0012E2**=**-4□

Maximum Surrounding Air Temperature / Maximum ambient temperature
 The temperatures shall be equal or lower than the values in the table below.

| Enclosure Type | ND/HD | HND/HHD |
|----------------|----------|----------------------------------|
| Open Type | 40 deg C | 50 deg C (HHD) 40 deg C (HND) |
| Enclosed Type | 30 deg C | 40 deg C (HHD) 30 deg C (HND) |

Atmosphere

For use in pollution degree 2 environments.

8. UL Enclosure Type

UL Enclosed Type formats are shown in the table below.

| Variation | Enclosed Type1 |
|------------|-----------------------|
| Standard | FRN0001 to 0115E2U-2□ |
| | FRN0002 to 0590E2U-4□ |
| EMC Filter | FRN0088 to 0115E2F-2□ |
| | FRN0059 to 0590E2F-4□ |

The other models of above table are excluded.

9. Functional Description of Control Circuit Terminals

A power source for connection to the Integrated alarm output (30A, 30B, 30C) should be limited to overvoltage category II such as control circuit or secondary winding of power transformer.

| Classification | Terminal Symbol | Terminal Name | Functional description |
|----------------|-----------------|-------------------------|---|
| Contact output | [30A/B/C] | Integrated alarm output | When the inverter stops with an alarm, output is generated on the relay contact (1C). Contact capacity: AC250 V 0.3A $cos\phi$ =1, DC30 V 0.5 A |

- 10. All models rated 380-480 V input voltage ratings shall be connected to TN-C system power source, i.e. 3-phase, 4-wire, wye (480Y/277V), so that the phase-to-ground rated system voltage is limited to 300V maximum.
- 11. Install UL certified fuses or circuit breaker between the power supply and the inverter, referring to the table below.

| | [HP] | | *5 | | equired b-in (N | | е | | | ٧ | Vire siz | e AWG | (mn | n²) | | | | | |
|----------------------|-------------------------------|--------------------------------|--------------------|-----------------------------------|-------------------------------|---------------|----------------------|---|-----------------------|-----------------------|---------------|---------|--------------|--------------|---------|-------------------------|---------------------------|-----------------------|--|
| tage | ľ(kW | | mod | *4 | e (A) | | 0 | pply | oly | Main terminal Cu Wire | | | | | | | oply | ķ | |
| y vol | noton | | J/ND | lass A) | p siz | <u>a</u> | nding | er sup | ddns | L1/R | R,L2/S,L | .3/T | U, V, W | | | ⊕ G | er su | ddns | |
| Iddn | ied n | Inverter type | H | or C ize (| er tri | Main terminal | Inverter's grounding | inverter's grounding Aux. control power supply | wer | υ υ | Φ | | | | | | оме | wer | |
| Power supply voltage | Nominal applied motor(kW)[HP] | 7 7 1 | HHD/HD/HND/ND mode | Class J or Class fuse size (A) | Circuit breaker trip size (A) | | | | Aux. Fan power supply | 60°C Cu wire | 75°C Cu wire | Remarks | 60°C Cu wire | 75°C Cu wire | Remarks | Inverter's grounding | Aux. control power supply | Aux. fan power supply | |
| | Nom | | _ | | Circ | | 드 | Aux. | Aux | · 09 | 75° | æ | · 09 | 75°1 | æ | n g | Aux. | An | |
| | 0.1 [1/8] | FRN0001E2 ■ -2□ | HHD | 3 | | | | , | | | | | | | | | , | | |
| | 0.2 | FRN0001E2 ■ -2□ | HND | 3 | | | | | | | | | | | | | | | |
| | [1/4] | FRN0002E2 ■ -2□ | HHD | | 5 | | | | | | | | | | | | | | |
| | 0.4 | FRN0002E2 ■ -2□ | HND | 6 | | 7.1 | 10.6 | | | | | | | | | 14 | | | |
| | [1/2] | FRN0004E2 ■ -2□ | HHD | 40 | | (8.0) | (1.2) | | | | | | | | | (2.1) | | | |
| | 0.75 | FRN0004E2 ■ -2□ | HND | 10 | | | | | | | 14 | | | | | | | | |
| | [1] | FRN0006E2 ■ -2□ | HHD | | 10 | | | | | | (2.1) | | | 14 (2.1) | | | | | |
| | 1.1 [1.5] | FRN0006E2 ■ -2□ | HND | 15 | | | | | | | | | | (2.1) | | | | | |
| | 1.5 [2] | FRN0010E2 ■ -2□ | HHD | 20 | *7 | | | | | | | | | | | 12 (3.3) | | | |
| | 2.2 | FRN0010E2 ■ -2□ | HND | | | | | | | | | | | | | | | | |
| | [3] | FRN0012E2 ■ -2□ | HHD | | *7 | 10.0 | 15.9 (1.8) | | | | | *6 | *6 | , | *6 | | _ | | |
| | 3.0 [4] | FRN0012E2■-2□ | ND | 30 | *7 | 10.6 (1.2) | | | | (| 12 (3.3) | | | | | 10 (5.3) | | | |
| | 3.7 [5] | FRN0020E2 ■ -2□ | HHD | 40 | , | | | | | | 10 (5.3) | | | 12 | | | | | |
| | 5.5 | FRN0020E2 ■ -2□ | ND | 50 | *7 | | | | | | | | | (3.3) | | | | | |
| Three-phase 200V | [7.5] | FRN0030E2 ■ -2□ | HHD | 60 | 50 | | | | | | | 8 | | | 10 | | 8 | | |
| se 2 | 7.5 | FRN0030E2 ■ -2□ | HND | 75 | 75 | 27 (3.0) | 27 | | | | (8.4) | | | (5.3) | _ | (8.4) | | | |
| pha | [10] | FRN0040E2 ■ -2□ | HHD | 7.0 | 73 | | (3.0) | _ | _ | _ | | | _ | | | | | _ | |
| -ee- | 11 | FRN0040E2 ■ -2□ | HND | 100 | 100 | | | | | | 6 | | | 8 (8.4) | | | | | |
| 투 | [15] | FRN0056E2 ■ -2□ | HHD | | | | | | | | (13.3) | | 6 (13.1 | | | | | | |
| | 15 | FRN0056E2 ■ -2□ | HND | 150 | 125 | | | | | | 4 (21.2) | | | 6 (13.3) | | | | | |
| | [20] | FRN0069E2■-2□ | HHD | | | | | | | | (21.2) | | | (13.3) | | 6 (13.3) | | | |
| | 18.5 [25] | FRN0069E2■-2□ | HND | 175 | 150 | 51.3 | 51.3 | | | | 3 (26.7) | _ | | 4 (21.2) | | (10.0) | | | |
| | | FRN0088E2■-2□ FRN0088E2■-2□ | HND | | | (5.8) | (5.8) | | | | | | | · | | | 14 | | |
| | 22 [30] | FRN0115E2 ■ -2□ | HHD | 200 | 175 | | | | | | 2 (33.6) | *3 | | 3 (26.7) | _ | | (2.1) | | |
| | 30 [40] | FRN0115E2■-2□ | HND | 250 | 200 | | | | | | 2/0 (67.4) | | | 2 (33.6) | | 3 (26.7) | *2 | | |
| | 5.5 [7.5] | FRN0030E2 ■ -2□ | HHD | 60 | 50 | input | | | | | | | | 10 | | | | | |
| | 7.5 | FRN0030E2 ■ -2□ | HND | | | 15.9 (1.8) | 27 | | | | 8 (8.4) | | | (5.3) | | 8 (8.4) | | | |
| | [10] | FRN0040E2 ■ -2□ | HHD | 75 | 75 | other 27 | (3.0) | | | | | | | | | | | | |
| | 11 | FRN0040E2 ■ -2□ | HND | 100 | 100 | (3.0) | | | | | 6 | *6 | | 8 (8.4) | *6 | | | | |
| | [15] | FRN0056E2 ■ -2□ | HHD | 100 | 100 | input | | | | | (13.3) | | | (8.4) | | | _ | | |
| | 15 | FRN0056E2 ■ -2□ | HND | 150 | 125 | 71.7 | 51.3 | | | | 4 | | | 6 | | 6 | | | |
| | [20] | FRN0069E2 ■ -2□ | HHD | 130 | 120 | (8.1) other | (5.8) | | | | (21.2) | | | (13.3) | | (13.3) | | | |
| | 18.5 [25] | FRN0069E2 ■ -2□ | HND | 175 | 150 | 51.3 (5.8) | | | | | 3 (26.7) | _ | | 4 (21.2) | _ | | | | |

Note: A box (■) in the above table replaces S (Basic type) or E (EMC filter built-in type) or U (UL Enclosed type of Basic type) or F (UL Enclosed type of EMC filter built-in type) depending on the enclosure. A box (□) in the above table replaces GA, GB, A, E, U, K or C depending on the model.

| | | | | | _ | \C | ΑU | TIC | ИC | l | | | | | | | | |
|----------------------|-------------------------------|--|---------------------|---|----------------------------------|-----------------|-------------------------|---------------------------|-----------------------|--------------|---------------|----------|--------------|----------------------|----------|-------------------------|---------------------------|-----------------------|
| | | | υ | | | | equired lb-in (N | | е | | | V | Vire siz | e AWG | (mn | n²) | | |
| oltage | P] | | рош С | s CC 4 | er *5 | | | | pply | | Main t | ermir | nal Cu Wire | | | ∌ G | ē | yply |
| ply ve | l appl (W)[F | Inverter type | JN/QN | r Clas e (A) | break e (A) | ninal | puno | l pow | er su | | /R,L2/S,L3/T | | U, V, W | | | • | l pow | er sup |
| Power supply voltage | Nominal applied motor(kW)[HP] | 3,1 | HHD/HD/HND/ND mode | Class J or Class CC fuse size (A) *4 | Circuit breaker trip size (A) *5 | Main terminal | Inverter's grounding | Aux. control power supply | Aux. Fan power supply | 60°C Cu wire | 75°C Cu wire | Remarks | 60°C Cu wire | 75°C Cu wire | Remarks | Inverter's grounding | Aux. control power supply | Aux. fan power supply |
| | 0.4 [1/2] | FRN0002E2 ■ -4□ | HHD | 3 | | | | | | | | | | | | | | |
| | 0.75 [1] | FRN0002E2■-4□ FRN0002E2■-4□ FRN0004E2■-4□ | HD/HND ND HHD | 6 | *7 | | | | | | | | | | | 14 | | |
| | 1.1 [1.5] | FRN0004E2 ■ -4□ | | | | | | | | | | | | | | (2.1) | | |
| | 1.5 [2] | FRN0004E2■-4□ FRN0006E2■-4□ FRN0006E2■-4□ | ND HHD | 10 | *7 | 10.6 | 15.9 | | | | 14 (2.1) | | | 14 | | | | |
| | 2.2 [3] | FRN0006E2■-4□ FRN0007E2■-4□ | HD/HND ND HHD | 15 | *7 | (1.2) | (1.8) | | | | | | | (2.1) | | 12 (3.3) | | |
| | 3.0 [4] | FRN0007E2■-4□ FRN0007E2■-4□ | ND | 20 | | | | | | | | | | | | (515) | | |
| | [5] | FRN0012E2■-4□ FRN0012E2■-4□ | HHD HD/HND | | *7 | | | _ | | _ | | *6 | _ | | *6 | | _ | |
| | 5.5 [7.5] | FRN0012E2■-4□ FRN0022E2■-4□ | ND HHD | 30 | *7 | | | | | | 12 (3.3) | | | | | 10 (5.3) | | |
| | 7.5 [10] | FRN0022E2■-4□ FRN0029E2■-4□ | HD/HND HHD | 40 | 40 | 27 | 27 | | | | 10 (5.3) | | | 12 (3.3) | - | | | |
| | 11 | FRN0029E2■-4□ FRN0029E2■-4□ | ND HD/HND | 60 | 50 | (3.0) | (3.0) 51.3 (5.8) | | | | (313) | | | | | | | |
| | [15] | FRN0037E2 ■ -4□ | HHD | | | 51.3 (5.8) | | | | | | | | 10 (5.3) | | 8 | | |
| | 45 | FRN0029E2 ■ -4□ | ND | | | 27 (3.0) | 27 (3.0) | | _ | | 8 (8.4) | | | | | (8.4) | | _ |
| 4007 | 15 [20] | FRN0037E2■-4□ | | 70 | 60 | | | | | | | | | 8 (8.4) 10 | | | | |
| Three-phase 400V | 18.5 | FRN0044E2■-4□ FRN0037E2■-4□ | HHD ND | | 7.5 | | | | | 6 | | | 6 | (5.3) | | | | |
| [hree- | [25] | FRN0044E2■-4□ FRN0059E2■-4□ | HHD | 90 | 75 | 51.3 (5.8) | 51.3 (5.8) | | | (13.3) | 6 | | (13.3) | 6 | | 6 | | |
| | 22 [30] | FRN0044E2■-4□ FRN0059E2■-4□ FRN0072E2■-4□ | ND HD/HND HHD | 100 | 100 | | | 10.6 | | 4 (21.2) | (13.3) | | 6 (13.3) | (13.3) | | | 14 (2.1) *1 *2 | |
| | 30 [40] | FRN0059E2■-4□ FRN0072E2■-4□ | ND HD/HND | 125 | | 110.4 | | | | 3 (26.7) | 4 (21.2) | *3 | 4 | 6 (13.3) | | | | |
| | [] | FRN0085E2 ■ -4□ | HHD | | 125 | | 119.4 (13.5) 51.3 | (1.2) | | (====) | (==) | | (21.2) | (1117) | *3 | (13.3) | | |
| | 37 [50] | FRN0072E2■-4□ FRN0085E2■-4□ | ND HD/HND | 175 | | (5.8) | (5.8) | | | 2 (33.6) | 3 (26.7) | | _ | 4 (21.2) | | | | |
| | | FRN0105E2 ■ -4□ FRN0085E2 ■ -4□ | HHD ND | | | | | | | | | | 3 (26.7) | (21.2) | | | | |
| | 45 [60] | FRN0105E2■-4□ FRN0139E2■-4□ | | 200 | 150 | 119.4 | | | | | (33.6) | | 2 (33.6) | 3 (26.7) | | | | |
| | 55 | FRN0105E2 ■ -4□ | ND | | 200 | (13.5) | | | | | | | 1 (42.4) | | | | | |
| | [75] | FRN0139E2■-4□ FRN0168E2■-4□ | HD/HND HHD | | 200 | | 440.4 | | | | 1/0 | | | (33.6) | | 4 | | |
| | 75 | FRN0139E2■-4□ FRN0168E2■-4□ | ND HD/HND | 250 | | | 119.4 (13.5) | | | _ | (53.5) | *2 *3 | | 1/0 | | (21.2) | 14 | |
| | [100] | FRN0203E2■-4□ | HHD | | 175 | 238.9 (27) | | 10.6 (1.2) | 10.6 (1.2) | | | 3 | _ | (53.5) | *2 *3 | | (2.1) *1 *2 | 14 (2.1) *1 *2 |
| | 90 [125] | FRN0168E2■-4□ | ND | 300 | 200 | 119.4 (13.5) | | | _ | | 2/0 (67.4) | | | 2/0 (67.4) 3/0 |] | 3 | | - |
| | 110 | FRN0203E2■-4□ FRN0203E2■-4□ | HD/HND ND | 350 | 250 | 238.9 (27) | | | 10.6 (1.2) | | 4/0 | | | (85) 4/0 | | (26.7) | | 14 (2.1) *1 *2 |
| L | [150] | | | | | <u> </u> | <u> </u> | L | <u> </u> | <u> </u> | (107.2) | | <u> </u> | (107.2) | 1 | <u> </u> | <u> </u> | |

Note: A box (■) in the above table replaces S (Basic type) or E (EMC filter built-in type) or U (UL Enclosed type of Basic type) or F (UL Enclosed type of EMC filter built-in type) depending on the enclosure. A box (□) in the above table replaces GA, GB, A, E, U, K or C depending on the model.

| FRN0361E2 \blacksquare -4 \square ND $\begin{vmatrix} 10.6 & 10.6 & \\ (1.2) & (1.2) & \end{vmatrix}$ $\begin{vmatrix} *2 & & 4/0x2 & & *2 \\ (107.2) & & 3 & & & & & & & & &$ | | (JIHP) | | ē | | * (| R | equired lb-in (N | torqu I • m) | e | | | ٧ | /ire siz | ze AWG | G (mn | n²) | | , |
|--|-----------|-----------------|------------------------|-----------|-------------------------|-----------------|-----------|---------------------|------------------|--------------|--------------|--------------|-------------|--------------|--------------|---------|-------------------------|------------------|---------------|
| 110 | oltage | or(kW | | рош (| s CC | ze (A) | | βι | ƙlddr | pply | | Main t | ermin | al Cu | Wire | | 9 | ƙlddr | ply |
| 110 | ply vc | mote | Inverter type | JD/NE | Clas: | trip si | inal | undir | ver su | er sup | L1/F | R,L2/S,L | 3/T U, V, W | | | | • | ver su | ar sup |
| 11 11 15 17 17 17 17 17 | Power sup | Nominal applied | inventor type | HHD/HD/HN | Class J or fuse size | Circuit breaker | Main term | Inverter's gro | Aux. control pov | Aux. Fan pow | 60°C Cu wire | 75°C Cu wire | Remarks | 60°C Cu wire | 75°C Cu wire | Remarks | Inverter's grounding | Aux. control pov | Aux. fan bowe |
| FRN0290E2 40 HHD 400 300 424.7 238.9 119.4 (27) (13.5) (53.5) (53.5) (53.5) (26.7) (27) (| | 110 [150] | FRN0240E2■-4□ | | 350 | 250 | | | | | | _ | | | 1/0x2 | | | | |
| FRN0290E2 - 40 HD HD HD HD HD HD HD H | | [, | FRN0290E2 ■ -4□ | HHD | | | 238.9 | 119.4 | | | | (107.2) | | | | | | | |
| 132 FRN0290E2 - 4 | | | FRN0240E2 ■ -4□ | ND | | | (27) | (13.5) | | | | | | | | | - | | |
| FRN0361E2 4 HHD | | | FRN0290E2■-4□ | | 400 | 300 | | | | | | | | | | | , | | |
| FRNO290E2 4 | | | FRN0361E2 ■ -4□ | HHD | | | | | | | | | | | (67.4) | | | | |
| Provided | | | FRN0290E2 ■ -4□ | ND | | | 238.9 | 119.4 | | | | | | | | | | | |
| FRN0361E2 -4 ND Alpha FRN0361E2 -4 ND Alpha FRN0520E2 -4 HID FRN0520E2 -4 | | | FRN0361E2 ■ -4□ | | 500 | 350 | | | | | | | | | | | | | |
| FRNO361E2 40 ND 600 350 FRNO415E2 40 HID 600 350 FRNO520E2 40 HID 700 500 FRNO520E2 40 HID 700 500 FRNO590E2 40 HID 700 500 75 FRNO90E2 40 HID 700 60 18.5 FRNO90E2 40 HID 700 70 | | | FRN0415E2 ■ -4□ | HHD | | | | | | | | | *0 | | | | | 14 | 14 |
| A | | | FRN0361E2 ■ -4□ | ND | | | | | | | - | | * | - | | , | | `*1 [′] | (2. |
| FRN0520E2 - 40 | | | FRN0415E2 ■ -4□ | | 600 | 350 | | | | | | | | | | | | | * |
| FRN0415E2 - 4 ND FRN0520E2 - 4 HD HND FRN0590E2 - 4 HD HND H | | | FRN0520E2 ■ -4□ | HHD | | | | | | | | | | | () | | | | |
| PRN0520E2 40 | _ | | FRN0415E2 ■ -4□ | ND | | | | | | | | | | | | | | | |
| RN0520E2 -4 ND 1000 | | | FRN0520E2 ■ -4□ | | 700 | 500 | | (21) | | | | | | | | | | | |
| RN0520E2 -4 ND 1000 | -phas | | FRN0590E2 ■ -4□ | HHD | | | | | | | | | | | | | | | |
| 10 FRN0029E2E-4 HD | Three | | FRN0590E2 ■ -4□ | HD | 800 | | | | | | | | | | | | | | |
| Solution | | 280 | | | | 600 | | | | | | | | | | | | | |
| Solution FRN00390E2 | | [450] | FRN0590E2 ■ -4□ | HND | 1000 | | | | | | | | | | | | | | |
| T.5 FRN0022E2E-4 HHD 30 30 input 15.9 10 (5.3) 10 (5.3) | | 315 [500] | FRN0590E2 ■ -4□ | ND | | 800 | | | | | | (253) | | | | | | | |
| T.5 FRN0022E2E-4 | | 5.5 [7.5] | FRN0022E2E-4 | HHD | 30 | 30 | input | | | | | | | | | | | | |
| [10] FRN0029E2E-4□ HHD | | 7.5 | FRN0022E2E-4 | | 40 | 40 | 15.9 | | | | | | | | 12 | | | | |
| FRN0022E2E-4□ ND | | [10] | FRN0029E2E-4□ | | 40 | 40 | | | | | | | | | | | | | |
| TRN0029E2E-4 HND | | | FRN0022E2E-4□ | ND | | | 27 | \/ | | | | | | | | | | | |
| FRN003/E2E-4□ HHD FRN0029E2E-4□ ND FRN0037E2E-4□ HHD FRN0037E2E-4□ HHD FRN0037E2E-4□ HHD FRN0037E2E-4□ HHD FRN0037E2E-4□ HD FRN0037E2E-4□ ND FRN0037E2E-4□ ND FRN0037E2E-4□ ND FRN0037E2E-4□ HD FRN003F2E-4□ H | | | FRN0029E2E-4□ | | 60 | 50 | (3.0) | | | | | | | | | | | | |
| TRN0023E2E-4 ND | | | | | | | | | - | _ | _ | | _ | _ | | _ | | _ | - |
| FRN003/E2E-4 HND 70 60 (1.8) 51.3 (5.8) | | | | | | | | | | | | (0.4) | | | Ω | - | | | |
| FRN0044E2E-4□ HHD other 51.3 (5.8) FRN0037E2E-4□ ND 90 75 FRN0044E2E-4□ HD/ 90 75 FRN0044E2E-4□ HD/ 90 75 | | | FRN0037E2E-4 | | 70 | 60 | | 51.3 | | | | | | | (8.4) | | (8.4) | | |
| 18.5 FRN0037E2E-4 ND 90 75 (5.8) 6 6 6 | | | | | | | | | | |] | | | | | | | | |
| $\lfloor \lfloor 25 \rfloor \rfloor$ ERN0044E2E-4 $\Box \rfloor$ HD/ \rfloor | | | FRN0037E2E-4 | | 90 | 75 | | | | | | | | | | 1 | | | |
| | | [25] | FRN0044E2E-4□ | | | | | | | | | 6 (13.3) | | | | | | | |

Note: A box (■) in the above table replaces S (Basic type) or E (EMC filter built-in type) or U (UL Enclosed type of Basic type) or F (UL Enclosed type of EMC filter built-in type) depending on the enclosure.

A box (□) in the above table replaces GA, GB, A, E, U, K or C depending on the model.

| | [HP] | | a) | | *5 | Re | equired lb-in (N | torque | Э | | | ٧ | Vire siz | e AWG | (mn | n²) | | |
|----------------|-------------------------------|------------------------|----------------------|---------------------------|-------------------------------|---------------|----------------------|----------------------|-----------------------|----------------|--------------|---------|--------------|--------------|---------|-------------------------|--------------------|----------------|
| supply voltage | or(kW) | Inverter type | D mode | ss CC *4 | ize (A) | | ng | supply | pply | | Main t | ermin | al Cu | Wire | | ₽ G | supply | supply |
| ply v | mot | | D/N | Class (A) | rip s | inal | Inverter's grounding | Aux. control power s | Aux. Fan power supply | L1/R,L2/S,L3/T | | | U, V, W | | | | /er s | r sup |
| Power supl | Nominal applied motor(kW)[HP] | | HHD/HD/HND/ND | Class J or (fuse size | Circuit breaker trip size (A) | Main terminal | | | | 60°C Cu wire | 75°C Cu wire | Remarks | 60°C Cu wire | 75°C Cu wire | Remarks | Inverter's grounding | Aux. control power | Aux. fan power |
| | 0.1 [1/8] | FRN0001E2 ■ -7□ | HHD | 6 | 5 | 7.1 | | | | | | | | | | | | |
| 2007 | 0.2 [1/4] | FRN0002E2 ■ -7□ | HHD | 6 | 5 | | 10.6 | | | | 14 | | | | | 14 (2.1) | | |
| ase 20 | 0.4 [1/2] | FRN0003E2 ■ -7□ | HHD | 10 | 10 | (8.0) | (1.2) | | | | (2.1) | *6 | _ | 14 | *6 | | | |
| Single-phase | 0.75 [1] | FRN0005E2 ■ -7□ | HHD | 20 | 15 | | | | | | | | | (2.1) | | 12 (3.3) | | |
| Sing | 1.5 [2] | FRN0008E2 ■ -7□ | HHD | 30 | *7 | 10.6 | 15.9 | | | | 12 (3.3) | | | | | 10 | | |
| | 2.2 [3] | FRN0011E2 ■ -7□ | 0011E2■-7□ HHD 50 *7 | (1.2) | (1.8) | | | | 10 (5.3) | | | | | (5.3) | | | | |

Note: Control circuit terminals M2 tightening torque: 1.7 lb-in (0.19 N·m) ±10% Recommended wire size: AWG26 to 18 (0.14 to 1 mm²) M3 tightening torque: 4.4 to 5.3 lb-in (0.5 to 0.6 N·m), recommended wire size: AWG26 to 16 (0.14 to 1.5 mm²)

Note: A box (■) in the above table replaces S (Basic type) or E (EMC filter built-in type) or U (UL Enclosed type of Basic type) or F (UL Enclosed type of EMC filter built-in type) depending on the enclosure. A box (□) in the above table replaces GA, GB, A, E, U, K or C depending on the model.

- *1 No terminal end treatment is required for connection.
- *2 Use 75°C (167°F) Cu wire only.
- *3 The wire size of UL Open Type and Enclosed Type are common. Please contact us if UL Open Type exclusive wire is necessary.
- *4 6 rms Amperes for aux. control power supply. There is no aux. control power supply in FRN0069E2■ -2□ /FRN0044E2■-4□/FRN0011E2■-7□ or below.
- *5 5 rms Amperes for aux. control power supply. There is no aux. control power supply in FRN0069E2■ -2□ /FRN0044E2■-4□/FRN0011E2■-7□ or below.
- *6 Only S (Basic type) or E (EMC filter built-in type) or U (UL Enclosed type of Basic type).
- *7 For this capacity, please install UL certified fuses between the power supply and the inverter.

High Performance Inverter

FRENIC-Ace

Instruction Manual (Supplement)

First Edition, February 2017

Fuji Electric Co., Ltd.

The purpose of this instruction manual is to provide accurate information in handling, setting up and operating of the FRENIC-Ace series of inverters. Please feel free to send your comments regarding any errors or omissions you may have found, or any suggestions you may have for generally improving the manual.