

# What Fuji Motor Control Do I Need?

There are four basic motor control options available: Basic contactors, traditional starters, manual motor starters, or combination starters. Follow these three steps to choose the best fit.

## 1

### What does the application require?

#### Basic Contactors Only



##### Contactor

Typical applications:

- Electronic switching
- Lighting
- Resistive loads
- Non-motor-related inductive loads
- Disconnect switches
- VFD bypass/isolation



#### Traditional Starters



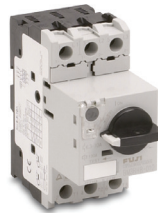
##### Contactor and overload relay

Typical applications:

- Inductive motor starting and control
- NEC 430 and 409 fulfillment
- NEMA starter replacement/retrofit



#### Manual Motor Starters



##### Manual motor starter (MMS)

Typical applications:

- Inductive motor starting and manual control
- NEC 430 fulfillment
- Lockout/tagout
- UL 508, type E
- Not AC-4 rated



#### Combination Starters



##### Manual motor starter, contactor, link module, and base plate

Typical applications:

- Inductive motor starting and control
- NEC 430 and 409 fulfillment
- Lockout/tagout
- UL 508, type F



## 2

### Consider these factors when selecting components:

- Load type: Resistive (AC-1) or inductive (AC-3)
- Duty cycle: One direction, reversing, plugging (AC-4); Refer to IEC Utilization Chart on page tMRC-131
- Horsepower (HP) and full load amperage (FLA); Refer to motor data plate information.

## 3

### Select your components.



#### Duo Series

SC-E Contactor

- 1/2 to 100 hp @ 480 V
- 9-150 A (AC3)

#### Odyssey Series

3N Contactor

- 60 to 300 hp
- 180-361 A (AC3)



#### Duo Series

SC-E Contactor

- TK-E Overload relay
- 1/2 to 100 hp @ 480 V

#### Odyssey Series

3N Contactor

- 3N Overload relay
- 60 to 300 hp



#### Duo Series

BM3 Manual motor starter

- 1/2 to 40 hp @ 480 V



#### Duo Series

BM3 Manual motor starter

- SC-E Contactor
- BZOL link module
- BZOBP base plate
- 1/2 to 40 hp @ 480 V

# Fuji Duo Series SC-E Contactors

## Features

- 5 to 100 hp at 480VAC
- cULus and CSA approval, CE mark, meets JIS and IEC standards.
- Models SC-E02-xxx to SC-E4-xxx have 3-pole main circuits and come in three sizes with widths of 43mm, 54mm, and 67mm.
- Models SC-E1-xxx to SC-E7-xxx employ a box terminal structure; allowing wires to be connected directly to the main circuit.
- Has a finger-protection terminal structure that prevents the exposure of live parts.
- Models SC-E5-xxx to SC-E7-xxx use a SUPERMAGNETTM (AC-input/DC-output operation) for high operating reliability and requires no surge suppressor.

## Small Size

- SC-E02-xxx to E05-xxx: 43mm wide
- SC-E1-xxx to E2S-xxx: 54mm wide
- SC-E3-xxx, E4-xxx: 67mm wide
- SC-E5-xxx: 88mm wide



SC-E2S



SC-E7

## Safety

- Terminals with finger-touch protection (DIN 57106/VDE 0106 Teil100)

## Utility

- Box lug terminal construction
- Long electrical life
- Easy to wire

## Environmental

- Low power consumption
- Recycled thermoplastic resin used for plastic parts.
- The names of materials are indicated on all major parts to facilitate recycling

## Standards & Approvals

- UL listed, file E42419, Standard UL 508
- cUL listed, file E42419, Standard CSA C 22.2 No.14
- VDE 0660
- JIS C 8201-4-1
- IEC 60947-4-1 / EN 60947-4-1
- CE compliant

## Optional accessories

- Auxiliary contact blocks
- Coil surge suppression units

## SC-E Series Contactors Specifications - UL and CSA

| Part Number                    | Price   | Nominal<br>Coil<br>Voltage | Rated Capacity (HP) |                |                |                |                |                | Rated AC-3 Current<br>(A) [note 1] | Rated AC-1 Thermal<br>Current (A) [note 2] | SCCR Ratings<br>(KA) | Rated Insulation<br>Voltage (V) | Frame<br>Width<br>(mm) |
|--------------------------------|---------|----------------------------|---------------------|----------------|----------------|----------------|----------------|----------------|------------------------------------|--------------------------------------------|----------------------|---------------------------------|------------------------|
|                                |         |                            | 3-Phase Motor       |                |                |                | 1-Phase Motor  |                |                                    |                                            |                      |                                 |                        |
|                                |         |                            | 200V                | 220 to<br>240V | 440 to<br>480V | 550 to<br>600V | 100 to<br>120V | 220 to<br>240V |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E02P-24VAC</a>  | \$20.50 | 24VAC                      | 2                   | 2              | 5              | 5              | 1/3            | 1              | 9                                  | 20                                         | 5                    | 690                             | 43                     |
| <a href="#">SC-E02P-110VAC</a> | \$20.50 | 110VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E02P-220VAC</a> | \$20.50 | 220VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E02P-440VAC</a> | \$20.50 | 440-480VAC                 |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E02P-500VAC</a> | \$20.50 | 500-550VAC                 |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E02PG-24VDC</a> | \$23.50 | 24VDC                      | 3                   | 3              | 7.5            | 7.5            | 1/2            | 2              | 12                                 | 20                                         |                      |                                 |                        |
| <a href="#">SC-E03P-24VAC</a>  | \$26.00 | 24VAC                      |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E03P-110VAC</a> | \$26.00 | 110VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E03P-220VAC</a> | \$26.00 | 220VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E03P-440VAC</a> | \$26.00 | 440-480VAC                 |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E03PG-24VDC</a> | \$37.50 | 24VDC                      | 5                   | 5              | 10             | 10             | 1              | 3              | 18                                 | 25                                         |                      |                                 |                        |
| <a href="#">SC-E04P-24VAC</a>  | \$32.50 | 24VAC                      |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E04P-110VAC</a> | \$32.50 | 110VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E04P-220VAC</a> | \$32.50 | 220VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E04P-440VAC</a> | \$32.50 | 440-480VAC                 |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E04P-500VAC</a> | \$32.50 | 500-550VAC                 | 5                   | 7.5            | 15             | 15             | 2              | 3              | 25                                 | 32                                         |                      |                                 |                        |
| <a href="#">SC-E04PG-24VDC</a> | \$45.50 | 24VDC                      |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E05P-24VAC</a>  | \$42.00 | 24VAC                      |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E05P-110VAC</a> | \$42.00 | 110VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E05P-220VAC</a> | \$42.00 | 220VAC                     |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E05P-440VAC</a> | \$42.00 | 440-480VAC                 | 5                   | 7.5            | 15             | 15             | 2              | 3              | 25                                 | 32                                         |                      |                                 |                        |
| <a href="#">SC-E05P-500VAC</a> | \$42.00 | 500-550VAC                 |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |
| <a href="#">SC-E05PG-24VDC</a> | \$54.00 | 24VDC                      |                     |                |                |                |                |                |                                    |                                            |                      |                                 |                        |

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Notes: 1. AC3 type loads consist of squirrel cage three-phase motors; occasional, limited jogging duty.

2. AC1 non-inductive or slightly inductive loads. Typically resistive loads (i.e. furnaces, ovens, etc.)

# Fuji Duo Series SC-E Contactors



| SC-E Series Contactors Specifications - UL and CSA |          |                      |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
|----------------------------------------------------|----------|----------------------|---------------------|----------|----------|----------|---------------|----------|---------------------------------|-----------------------------------------|-------------------|------------------------------|------------------|
| Model                                              | Price    | Nominal Coil Voltage | Rated Capacity (HP) |          |          |          |               |          | Rated AC-3 Current (A) [note 1] | Rated AC-1 Thermal Current (A) [note 2] | SCCR Ratings (KA) | Rated Insulation Voltage (V) | Frame Width (mm) |
|                                                    |          |                      | 3-Phase Motor       |          |          |          | 1-Phase Motor |          |                                 |                                         |                   |                              |                  |
|                                                    |          |                      | 200V                | 220–240V | 440–480V | 550–600V | 100–20V       | 220–240V |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E1-24VAC</a>                        | \$56.00  | 24VAC                | 7.5                 | 10       | 25       | 25       | 2             | 3        | 32                              | 50                                      | 5                 | 690                          | 54               |
| <a href="#">SC-E1-110VAC</a>                       | \$56.00  | 110VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E1-220VAC</a>                       | \$56.00  | 220VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E1-440VAC</a>                       | \$56.00  | 440-480VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E1-500VAC</a>                       | \$56.00  | 500-550VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E1G-24VDC</a>                       | \$66.00  | 24VDC                |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2-24VAC</a>                        | \$79.00  | 24VAC                | 10                  | 15       | 30       | 30       | 3             | 5        | 40                              | 60                                      |                   |                              |                  |
| <a href="#">SC-E2-110VAC</a>                       | \$79.00  | 110VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2-220VAC</a>                       | \$79.00  | 220VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2-440VAC</a>                       | \$79.00  | 440-480VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2G-24VDC</a>                       | \$96.00  | 24VDC                |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2S-24VAC</a>                       | \$96.00  | 24VAC                |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2S-110VAC</a>                      | \$96.00  | 110VAC               | 15                  | 20       | 30       | 30       | 3             | 10       | 50                              | 65                                      |                   |                              |                  |
| <a href="#">SC-E2S-220VAC</a>                      | \$96.00  | 220VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2S-440VAC</a>                      | \$96.00  | 440-480VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2S-500VAC</a>                      | \$96.00  | 500-550VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E2SG-24VDC</a>                      | \$114.00 | 24VDC                |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E3-24VAC</a>                        | \$109.00 | 24VAC                |                     |          |          |          |               |          |                                 |                                         |                   |                              | 20               |
| <a href="#">SC-E3-110VAC</a>                       | \$109.00 | 110VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E3-220VAC</a>                       | \$109.00 | 220VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E3-440VAC</a>                       | \$109.00 | 440-480VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E3G-24VDC</a>                       | \$133.00 | 24VDC                |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E4-24VAC</a>                        | \$111.00 | 24VAC                | 25                  | 30       | 50       | 50       | 5             | 15       | 80                              | 105                                     |                   |                              |                  |
| <a href="#">SC-E4-110VAC</a>                       | \$111.00 | 110VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E4-220VAC</a>                       | \$111.00 | 220VAC               |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E4-440VAC</a>                       | \$111.00 | 440-480VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E4-500VAC</a>                       | \$111.00 | 500-550VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E4G-24VDC</a>                       | \$138.00 | 24VDC                |                     |          |          |          |               |          |                                 |                                         |                   |                              | 30               |
| <a href="#">SC-E5-24V</a>                          | \$277.00 | 24VAC/VDC            |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E5-100V</a>                         | \$277.00 | 110VAC/VDC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E5-200V</a>                         | \$277.00 | 220VAC/VDC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E5-400V</a>                         | \$277.00 | 380-450VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E5-500V</a>                         | \$277.00 | 460-575VAC           | 40                  | 40       | 75       | 100      | 10            | 20       | 125                             | 150                                     |                   |                              |                  |
| <a href="#">SC-E6-24V</a>                          | \$355.00 | 24VAC/VDC            |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E6-100V</a>                         | \$355.00 | 110VAC/VDC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E6-200V</a>                         | \$355.00 | 220VAC/VDC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E6-500V</a>                         | \$355.00 | 460-575VAC           | 50                  | 50       | 100      | 125      | 15            | 25       | 150                             | 200                                     |                   |                              |                  |
| <a href="#">SC-E7-24V</a>                          | \$413.00 | 24VAC/VDC            |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E7-100V</a>                         | \$413.00 | 110VAC/VDC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E7-200V</a>                         | \$413.00 | 220VAC/VDC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E7-400V</a>                         | \$413.00 | 380-450VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |
| <a href="#">SC-E7-500V</a>                         | \$413.00 | 460-575VAC           |                     |          |          |          |               |          |                                 |                                         |                   |                              |                  |

Notes: 1. AC3 type loads consist of squirrel cage three-phase motors; occasional, limited jogging duty.

2. AC1 non-inductive or slightly inductive loads. Typically resistive loads (i.e. furnaces, ovens, etc.)

# Fuji Duo Series SC-E Contactors



| SC-E Series Contactors Specifications - IEC |                           |             |           |          |                             |           |          |          |                     |          |                           |                                         |
|---------------------------------------------|---------------------------|-------------|-----------|----------|-----------------------------|-----------|----------|----------|---------------------|----------|---------------------------|-----------------------------------------|
| Contactor Type                              | Rated Capacity (kW)       |             |           |          | Rated Operating Current (A) |           |          |          |                     |          | Rated Thermal Current (A) | Internal Auxilliary Contact Arrangement |
|                                             | 3-Phase Motor AC-3 / AC-4 |             |           |          | 3-Phase Motor AC-3 / AC-4   |           |          |          | Resistive Load AC-1 |          |                           |                                         |
|                                             | 200-240V                  | 380-440V    | 500-550V  | 600-690V | 200-240V                    | 380-440V  | 500-550V | 600-690V | 200-240V            | 380-440V |                           |                                         |
| SC-E02(G)-xxx                               | 2.2 / 2.2                 | 4 / 4       | 4 / NA    | 4 / NA   | 9 / 9                       | 9 / 9     | 7 / NA   | 5 / NA   | 20                  | 20       | 20                        | -                                       |
| SC-E03(G)-xxx                               | 3 / 3                     | 5.5 / 5.5   | 5.5 / NA  | 5.5 / NA | 12 / 12                     | 12 / 12   | 9 / NA   | 7 / NA   | 20                  | 20       | 20                        | -                                       |
| SC-E04(G)-xxx                               | 4 / 4                     | 7.5 / 7.5   | 7.5 / NA  | 7.5 / NA | 18 / 18                     | 18 / 18   | 13 / NA  | 9 / NA   | 25                  | 25       | 25                        | -                                       |
| SC-E05(G)-xxx                               | 5.5 / 4                   | 11 / 7.5    | 11 / NA   | 7.5 / NA | 25 / 18                     | 25 / 18   | 17 / NA  | 9 / NA   | 32                  | 32       | 32                        | -                                       |
| SC-E1(G)-xxx                                | 7.5 / 7.5                 | 15 / 15     | 15 / NA   | 11 / NA  | 32 / 32                     | 32 / 32   | 24 / NA  | 15 / NA  | 50                  | 50       | 50                        | -                                       |
| SC-E2(G)-xxx                                | 11 / 11                   | 18.5 / 18.5 | 18.5 / NA | 15 / NA  | 40 / 40                     | 40 / 40   | 29 / NA  | 19 / NA  | 60                  | 60       | 60                        | -                                       |
| SC-E2S(G)-xxx                               | 15 / 11                   | 22 / 18.5   | 25 / NA   | 22 / NA  | 50 / 40                     | 50 / 40   | 38 / NA  | 26 / NA  | 65                  | 65       | 65                        | -                                       |
| SC-E3(G)-xxx                                | 18.5 / 18.5               | 30 / 30     | 37 / NA   | 30 / NA  | 68 / 68                     | 65 / 65   | 60 / NA  | 38 / NA  | 100                 | 100      | 100                       | -                                       |
| SC-E4(G)-xxx                                | 22 / 18.5                 | 40 / 30     | 37 / NA   | 37 / NA  | 80 / 68                     | 80 / 65   | 60 / NA  | 44 / NA  | 105                 | 105      | 105                       | -                                       |
| SC-E5-xxx                                   | 30 / 30                   | 55 / 55     | 5 5 / NA  | 55 / NA  | 105 / 105                   | 105 / 105 | 85 / NA  | 64 / NA  | 150                 | 150      | 150                       | 2NO+2NC                                 |
| SC-E6-xxx                                   | 37 / 37                   | 60 / 60     | 6 0 / NA  | 60 / NA  | 125 / 125                   | 125 / 125 | 90 / NA  | 72 / NA  | 150                 | 150      | 150                       | 2NO+2NC                                 |
| SC-E7-xxx                                   | 45 / 45                   | 75 / 75     | 75 / NA   | 90 / NA  | 150 / 150                   | 150 / 150 | 120 / NA | 103 / NA | 200                 | 200      | 200                       | 2NO+2NC                                 |

## Internal Auxiliary Contact Ratings

| Internal Auxiliary Contact Ratings - UL and CSA |                              |                                  |           |             |             |                    |
|-------------------------------------------------|------------------------------|----------------------------------|-----------|-------------|-------------|--------------------|
| Frame Size (note 1)                             | Rated Insulation Voltage (V) | NEMA ICS 5-2000 Ratings (note 2) |           |             |             |                    |
|                                                 |                              | AC Ratings                       |           |             | DC Ratings  |                    |
|                                                 |                              | Designation                      | Making VA | Breaking VA | Designation | Making/Breaking VA |
| E5 to E7-xxx                                    | 690                          | A600                             | 7200      | 720         | Q300        | 69                 |

### Notes:

- E02(G) to E4(G) do not have internal auxiliary contact.
- NEMA ICS 5-2000. For more information, refer to Control Circuit Contact Electrical Ratings, see page tMRC-130.

| Internal Auxiliary Contact Ratings - IEC, JIS        |                                 |                              |                                     |      |                               |                      |            |                      |                                                |
|------------------------------------------------------|---------------------------------|------------------------------|-------------------------------------|------|-------------------------------|----------------------|------------|----------------------|------------------------------------------------|
| Based on IEC 60974-4-1, EN 60947-4-1, JIS C 8201-4-1 |                                 |                              |                                     |      |                               |                      |            |                      |                                                |
| Frame Size<br>( note 1 )                             | Rated Insulation<br>Voltage (V) | Rated Thermal<br>Current (A) | Making and Breaking<br>Capacity (A) |      | Rated Operational Current (A) |                      |            |                      | Minimum<br>Operating<br>Voltage and<br>Current |
|                                                      |                                 |                              | AC Voltage                          | Amps | AC Voltage                    | AC-15<br>(Ind. load) | DC Voltage | DC-13<br>(Ind. load) |                                                |
| E5 to E7-xxx                                         | 690                             | 10                           | 120V                                | 60   | 120V                          | 6                    | 24V        | 3                    | 5VDC, 3mA                                      |
|                                                      |                                 |                              | 220V                                | 30   | 220V                          | 3                    | 48V        | 1.5                  |                                                |
|                                                      |                                 |                              | 440V                                | 15   | 440V                          | 1.5                  | 110V       | 0.55                 |                                                |
|                                                      |                                 |                              | 600V                                | 12   | 600V                          | 1.2                  | 220V       | 0.27                 |                                                |

Note 1: E02(G) to E4(G) do not have internal auxiliary contact.

# Fuji Odyssey Series 3N Contactors



## Description

- 180 - 361A rating (AC3)
- Provides higher current and horsepower capabilities than SC-E series. Designed for reliable use in applications requiring constant switching, reduced coil energy consumption, and increased horsepower capabilities.
- Available in 154mm and 169mm frame widths
- SUPERMAGNET™ for high operating reliability.
- Use with Odyssey 3N series overload relays.

## Features

- Equipped with 2 N.O. and 2 N.C. auxiliary contacts
- Chatter-free operation eliminates contact welding and coil burning
- SUPERMAGNET™ coil operates on either AC or DC voltage
- Wire Terminal Connection Type: Crimp ring Terminal

## Agency approvals

- UL listed file E42419, Standard UL508
- cUL listed file E42419, Standard CSA C22.2 No. 14
- CE: Meets LVD EN60947-4-1
- SEMI F47-0200

## Optional accessories

- Terminal covers
- Auxiliary contacts



**3NC4H0122**

## Ecology

- Low power consumption
- Recycled thermoplastic resin used for plastic parts.
- The names of materials are indicated on all major parts to facilitate recycling.

## Odyssey 3N Series Contactors 180–361 Amps

| Part Number               | Fuji Type | Price    | Coil Voltage            | Rated Motor Capacity (HP) |          |          |          |          |          | Rated AC-3 Current (A) [note 1] | Rated AC-1 Thermal Current (A) [note 2] | Quantity of Auxiliary Contacts |    | SCCR Ratings (KA) | Frame Width (mm) |
|---------------------------|-----------|----------|-------------------------|---------------------------|----------|----------|----------|----------|----------|---------------------------------|-----------------------------------------|--------------------------------|----|-------------------|------------------|
|                           |           |          |                         | 3-Phase                   |          |          |          | 1-Phase  |          |                                 |                                         | NO                             | NC |                   |                  |
|                           |           |          |                         | 200–208V                  | 220–240V | 440–480V | 550–600V | 100–120V | 220–240V |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC4Q0E22</a> | SC-N8     | \$543.00 | 24–25VAC / 24VDC        | 60                        | 60       | 150      | 150      | N/A      | 180      | 260                             | 2                                       | 2                              | 10 | 138               |                  |
| <a href="#">3NC4Q0122</a> |           | \$543.00 | 100–127VAC / 100–120VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC4Q0222</a> |           | \$543.00 | 200–250VAC / 200–240VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC4H0E22</a> | SC-N10    | \$643.00 | 24–25VAC / 24VDC        | 75                        | 75       | 150      | 200      | N/A      | 221      | 260                             | 2                                       | 2                              | 10 | 138               |                  |
| <a href="#">3NC4H0122</a> |           | \$643.00 | 100–127VAC / 100–120VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC4H0222</a> |           | \$643.00 | 200–250VAC / 200–240VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC4H0Q22</a> |           | \$643.00 | 380–450VAC              |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC4H0422</a> |           | \$643.00 | 460–575VAC              |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC5F0E22</a> | SC-N11    | \$840.00 | 24–25VAC / 24VDC        | 100                       | 100      | 200      | 250      | N/A      | 285      | 350                             | 2                                       | 2                              | 18 | 148               |                  |
| <a href="#">3NC5F0122</a> |           | \$840.00 | 100–127VAC / 100–120VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC5F0222</a> |           | \$840.00 | 200–250VAC / 200–240VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC5H0E22</a> | SC-N12    | \$919.00 | 24–25VAC / 24VDC        | 125                       | 150      | 300      | 350      | N/A      | 361      | 450                             | 2                                       | 2                              | 18 | 148               |                  |
| <a href="#">3NC5H0122</a> |           | \$919.00 | 100–127VAC / 100–120VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC5H0222</a> |           | \$919.00 | 200–250VAC / 200–240VDC |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC5H0Q22</a> |           | \$919.00 | 380–450VAC              |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |
| <a href="#">3NC5H0422</a> |           | \$919.00 | 460–575VAC              |                           |          |          |          |          |          |                                 |                                         |                                |    |                   |                  |

Notes: 1. AC3 type loads consist of squirrel cage three-phase motors; occasional, limited jogging duty.

2. AC1 non-inductive or slightly inductive loads. Typically resistive loads (i.e. furnaces, ovens, etc.)

## Contactor Coil Characteristics - AC Input

| Part Number                                           | Power Consumption (VA) |        | Pick-up Voltage (V) | Drop-out Voltage (V) | Operating Time (ms)   |                         |
|-------------------------------------------------------|------------------------|--------|---------------------|----------------------|-----------------------|-------------------------|
|                                                       | Inrush                 | Sealed |                     |                      | Coil ON to Contact ON | Coil OFF to Contact OFF |
| <a href="#">3NC4Qxxxx</a> , <a href="#">3NC4Hxxxx</a> | 277                    | 5.4    | 70-80               | 35-50                | 35-41                 | 37-45                   |
| <a href="#">3NC5Fxxxx</a> , <a href="#">3NC5Hxxxx</a> | 265                    | 5.9    | 70-80               | 35-50                | 40-47                 | 36-43                   |

NOTE: This data is based on 100-120V SUPERMAGNET™ coil, tested at 120VAC, 60Hz.

# Fuji Odyssey Series 3N Contactors

## Contactor Coil Characteristics - DC Input - 110VDC

| Part Number          | Power Consumption (watts) |        | Pick-up Voltage (V) | Drop-out Voltage (V) | Operating Time (ms)   |                         |
|----------------------|---------------------------|--------|---------------------|----------------------|-----------------------|-------------------------|
|                      | Inrush                    | Sealed |                     |                      | Coil ON to Contact ON | Coil OFF to Contact OFF |
| 3NC4Qxxxx, 3NC4Hxxxx | 324                       | 4.1    | 77-88               | 28-44                | 35-41                 | 37-45                   |
| 3NC5Fxxxx, 3NC5Hxxxx | 340                       | 4.5    | 77-88               | 28-44                | 40-47                 | 36-43                   |

NOTE: This data is based on 100-120V SUPERMAGNET™ coil, tested at 110VDC.

## Contactor Coil Characteristics - DC Input - 24VDC

| Part Number          | Power Consumption (watts) |        | Pick-up Voltage (V) | Drop-out Voltage (V) | Operating Time (ms)   |                         |
|----------------------|---------------------------|--------|---------------------|----------------------|-----------------------|-------------------------|
|                      | Inrush                    | Sealed |                     |                      | Coil ON to Contact ON | Coil OFF to Contact OFF |
| 3NC4Qxxxx, 3NC4Hxxxx | 250                       | 5.9    | 17-19.2             | 6-12                 | 35-41                 | 37-45                   |

NOTE: This data is based on 100-120V SUPERMAGNET™ coil, tested at 110VDC.

## Contactor Auxiliary Contact Ratings

| NEMA ICS 5-2000 Ratings ( note 1 ) |           |             |             |                    |
|------------------------------------|-----------|-------------|-------------|--------------------|
| AC Ratings                         |           |             | DC Ratings  |                    |
| Designation                        | Making VA | Breaking VA | Designation | Making/Breaking VA |
| A600                               | 7200      | 720         | Q300        | 69                 |

Note 1: NEMA ICS 5-2000. For more information, refer to Control Circuit Contact Electrical Ratings, page MRC-tMRC-130.

## Contactor Terminal Tightening Torque Chart

| Part Number            | Terminal Size | Cable Size Maximum | Applicable Max. Width for Ring Terminal | Tightening Torque         |
|------------------------|---------------|--------------------|-----------------------------------------|---------------------------|
| 3NC4Q0xxx              | M10           | 300MCM [152mm²]    | 36.5 mm [1.44 in]                       | 15-20 N·m [133-177 lb·in] |
| 3NC4H0xxx              | M10           | 300MCM [152mm²]    | 36.5 mm [1.44 in]                       | 15-20 N·m [133-177 lb·in] |
| 3NC5F0xxx<br>3NC5H0xxx | M12           | 400MCM [203mm²]    | 44.5 mm [1.75 in]                       | 35-45 N·m [310-399 lb·in] |

## Contactor Life Expectancy Performance Data

| Model                       | Current Capacity Make/Break | Operating Cycles per Hour | Life Expectancy (million operations) |            |
|-----------------------------|-----------------------------|---------------------------|--------------------------------------|------------|
|                             |                             |                           | Electrical                           | Mechanical |
| 3NC4Qxxxx through 3NC5Fxxxx | 12xle/10xle                 | 1200                      | 1                                    | 5          |
| 3NC5Hxxxx                   | 12xle/10xle                 | 1200                      | 0.5                                  | 5          |

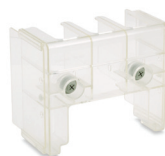
Note: Rated operational current. Electrical life test: Conforming to IEC947-4-1, AC3. The endurance test complies with the requirements of international standard IEC, JIS and JEM.

Note: Super Magnet Coils on 3NC4 and 3NC5 series contactors have internal surge suppression. See diagram below.

## Optional Accessories

### Terminal covers

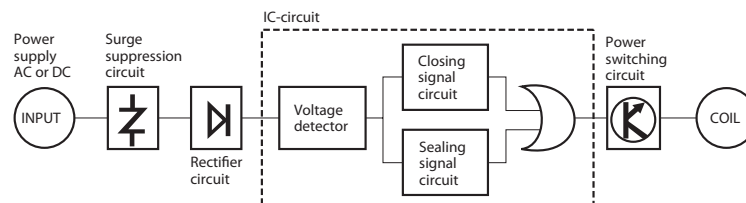
Prevent contact with electrified terminals.



**SZ-N8T**



**SZ-N11T**



## Odyssey Series Contactor Terminal Covers

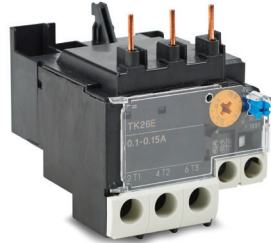
| Part Number    | Price   | Description                                                                                  | Applicable Contactors           |
|----------------|---------|----------------------------------------------------------------------------------------------|---------------------------------|
| <b>SZ-N8T</b>  | \$67.00 | Terminal cover for line or load side. Prevents contact with electrified contactor terminals. | 3NC4Qxxxx, 3NC4Hxxxx contactors |
| <b>SZ-N11T</b> | \$83.00 |                                                                                              | 3NC5Fxxxx, 3NC5Hxxxx contactors |

# Fuji Duo Series TK-E Overload Relays

## TK-E series thermal overload relays with open-phase protective device

### Features

- This relay protects motor windings from burning due to overloads, locked rotor current, or open-phases
- Maintenance and inspection safety has been improved by employing a finger protection mechanism to cover exposed terminals (conforms to DIN 57106, VDE 0106 Teil 100)
- Isolated NO and NC contacts can be used with different potentials
- A high-precision scale for the current adjustment dial enables easy and exact current setting
- The operating status can be visually checked with ease
- The relays can be manually tripped. A trip-free mechanism is also provided
- Base unit can be added to enable separate mounting of the TK26E, E2, and E3-xxx models



TK26E-P10



TK-E2-800



TK-E3-5000



TK-E5-4000



### Standards

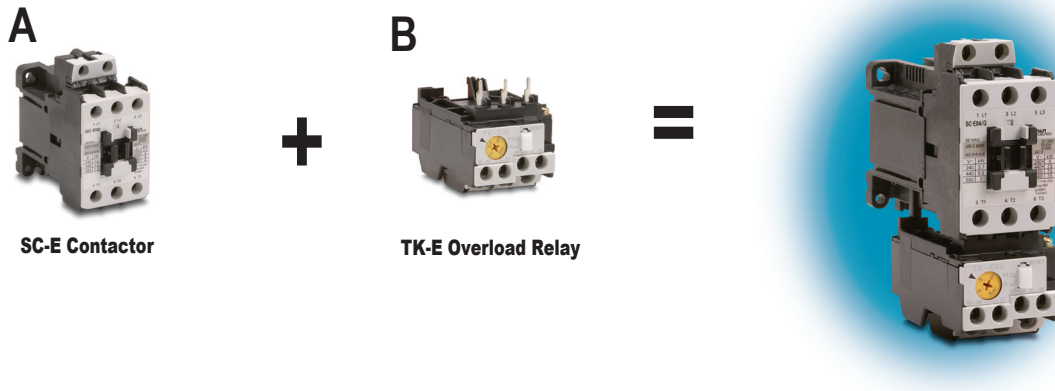
- UL listed, file E44592, Standard UL 508
- cUL listed, file E44592, CSA C22.2 No. 14
- IEC 60947-4-1, EN60947-4-1
- VDE 0660, JIS C 8201-4-1
- CE Compliant



| TK26E Series Overloads    |         |                               |                                                                                                           |
|---------------------------|---------|-------------------------------|-----------------------------------------------------------------------------------------------------------|
| Part Number               | Price   | Amperage Adjustment Range (A) | Frame Width / Contactor                                                                                   |
| <a href="#">TK26E-P10</a> | \$37.00 | 0.1 - 0.15                    | 43mm<br><br>SC-E02(G) through SC-E05(G)<br><br>For separate mounting, use with optional base unit TZ1H26E |
| <a href="#">TK26E-P13</a> | \$37.00 | 0.13 - 0.2                    |                                                                                                           |
| <a href="#">TK26E-P18</a> | \$37.00 | 0.18 - 0.27                   |                                                                                                           |
| <a href="#">TK26E-P24</a> | \$37.00 | 0.24 - 0.36                   |                                                                                                           |
| <a href="#">TK26E-P34</a> | \$37.00 | 0.34 - 0.52                   |                                                                                                           |
| <a href="#">TK26E-P48</a> | \$37.00 | 0.48 - 0.72                   |                                                                                                           |
| <a href="#">TK26E-P64</a> | \$37.00 | 0.64 - 0.96                   |                                                                                                           |
| <a href="#">TK26E-P80</a> | \$37.00 | 0.8 - 1.2                     |                                                                                                           |
| <a href="#">TK26E-P95</a> | \$37.00 | 0.95 - 1.45                   |                                                                                                           |
| <a href="#">TK26E-1P1</a> | \$37.00 | 1.1-1.65                      |                                                                                                           |
| <a href="#">TK26E-1P4</a> | \$37.00 | 1.4 - 2.1                     |                                                                                                           |
| <a href="#">TK26E-1P7</a> | \$37.00 | 1.7 - 2.6                     |                                                                                                           |
| <a href="#">TK26E-2P2</a> | \$37.00 | 2.2 - 3.4                     |                                                                                                           |
| <a href="#">TK26E-2P8</a> | \$37.00 | 2.8 - 4.2                     |                                                                                                           |
| <a href="#">TK26E-004</a> | \$37.00 | 4.0 - 6.0                     |                                                                                                           |
| <a href="#">TK26E-005</a> | \$37.00 | 5.0 - 7.5                     |                                                                                                           |
| <a href="#">TK26E-006</a> | \$37.00 | 6.0 - 9.0                     |                                                                                                           |
| <a href="#">TK26E-007</a> | \$37.00 | 7.0 - 10.5                    |                                                                                                           |
| <a href="#">TK26E-009</a> | \$37.00 | 9.0 - 13.0                    |                                                                                                           |
| <a href="#">TK26E-012</a> | \$37.00 | 12 - 18                       |                                                                                                           |
| <a href="#">TK26E-016</a> | \$37.00 | 16 - 22                       |                                                                                                           |
| <a href="#">TK26E-020</a> | \$37.00 | 20 - 26                       |                                                                                                           |

| TK-E Series Overloads       |          |                               |                                                                                                         |
|-----------------------------|----------|-------------------------------|---------------------------------------------------------------------------------------------------------|
| Part Number                 | Price    | Amperage Adjustment Range (A) | Frame Width / Contactor                                                                                 |
| <a href="#">TK-E2-600</a>   | \$61.00  | 4 - 6                         | 54mm<br><br>SC-E1(G) through SC-E2S(G)<br><br>For separate mounting, use with optional base unit SZ-HDE |
| <a href="#">TK-E2-800</a>   | \$61.00  | 5 - 8                         |                                                                                                         |
| <a href="#">TK-E2-900</a>   | \$61.00  | 6 - 9                         |                                                                                                         |
| <a href="#">TK-E2-1100</a>  | \$61.00  | 7 - 11                        |                                                                                                         |
| <a href="#">TK-E2-1300</a>  | \$61.00  | 9 - 13                        |                                                                                                         |
| <a href="#">TK-E2-1800</a>  | \$61.00  | 12 - 18                       |                                                                                                         |
| <a href="#">TK-E2-2600</a>  | \$61.00  | 18 - 26                       |                                                                                                         |
| <a href="#">TK-E2-3600</a>  | \$61.00  | 24 - 36                       |                                                                                                         |
| <a href="#">TK-E2-4200</a>  | \$61.00  | 32 - 42                       |                                                                                                         |
| <a href="#">TK-E2-5000</a>  | \$61.00  | 40 - 50                       |                                                                                                         |
| <a href="#">TK-E2-5400</a>  | \$61.00  | 44 - 54                       |                                                                                                         |
| <a href="#">TK-E3-1800</a>  | \$75.00  | 12 - 18                       | 67mm<br><br>SC-E3(G) through SC-E4(G)<br><br>For separate mounting, use with optional base unit SZ-HEE  |
| <a href="#">TK-E3-2600</a>  | \$75.00  | 18 - 26                       |                                                                                                         |
| <a href="#">TK-E3-3600</a>  | \$75.00  | 24 - 36                       |                                                                                                         |
| <a href="#">TK-E3-4000</a>  | \$75.00  | 28 - 40                       |                                                                                                         |
| <a href="#">TK-E3-5000</a>  | \$75.00  | 34 - 50                       |                                                                                                         |
| <a href="#">TK-E3-6500</a>  | \$75.00  | 45 - 65                       |                                                                                                         |
| <a href="#">TK-E3-6800</a>  | \$75.00  | 48 - 68                       |                                                                                                         |
| <a href="#">TK-E3-8000</a>  | \$75.00  | 64 - 80                       |                                                                                                         |
| <a href="#">TK-E5-5000</a>  | \$83.00  | 34 - 50                       |                                                                                                         |
| <a href="#">TK-E5-6500</a>  | \$83.00  | 45 - 65                       |                                                                                                         |
| <a href="#">TK-E5-9500</a>  | \$83.00  | 65 - 95                       | 88mm<br><br>SC-E5                                                                                       |
| <a href="#">TK-E5-10500</a> | \$83.00  | 85 - 105                      |                                                                                                         |
| <a href="#">TK-E6-8000</a>  | \$143.00 | 53 - 80                       |                                                                                                         |
| <a href="#">TK-E6-9500</a>  | \$143.00 | 65 - 95                       | 100mm/115mm<br><br>SC-E6<br>SC-E7                                                                       |
| <a href="#">TK-E6-12500</a> | \$143.00 | 85 - 125                      |                                                                                                         |
| <a href="#">TK-E6-16000</a> | \$143.00 | 110 - 160                     |                                                                                                         |

# Fuji Duo Series Contactor and Overload Relay Selection Tables



## 100-240V Single Phase Motor (1/3 to 25 hp)

Step 1. Using the "SC-E Series Contactors" table, select a contactor based on motor voltage and horsepower.

Step 2. Using the "TK26E Series Overloads" or "TK-E Series Overloads" table, select an overload relay based on motor full load current.

Check the data plate on the motor for the hp, volts and full-rated amps.



| Motor  |      |       |      |             |    |      |      |
|--------|------|-------|------|-------------|----|------|------|
| HP     | 5    | Volts | 460  | Phase       | 3  | Type | P    |
| RPM    | 1725 | Amps  | 7.6  | Hz          | 60 | SF   | 1.15 |
| Design | B    | AMB   | 40°C | Insul Class | F  |      |      |
| Duty   | Cont | Encl  | TEFC | Code        | K  |      |      |

Motor horsepower      Motor voltage      Motor full-load rated amperage (FLA)

## Three Phase Motors - Refer to tables on following page

Step 1. Select a SC-E contactor from Column A based on motor voltage and horsepower.

Step 2. Select a TK-E overload relay from Column B to work with the SC-E contactor selected in Step 1. The motor full load current (FLA) should be within the adjustable current range of the overload relay.

# Fuji Duo Series Overload Relay Selection Tables

## 220-240V 3-Phase Motor (0.5 to 50hp)<sup>1</sup>

| Overload Relay Selection for 220–240V 3-phase motors |                                             |             |                             |                          |
|------------------------------------------------------|---------------------------------------------|-------------|-----------------------------|--------------------------|
| Motor Rating                                         |                                             | A           | B                           |                          |
| Motor HP                                             | Motor Full Load Amperage (FLA) <sup>2</sup> | Contactor   | Overload Relay              |                          |
|                                                      |                                             |             | Part Number                 | Adjustable Current Range |
| 1/2                                                  | 2.2                                         | SC-E02-xxxx | <a href="#">TK26E-1P7</a>   | 1.7 to 2.6A              |
| 3/4                                                  | 3.2                                         |             | <a href="#">TK26E-2P8</a>   | 2.8 to 4.2A              |
| 1                                                    | 4.2                                         |             | <a href="#">TK26E-004</a>   | 4 to 6A                  |
| 1-1/2                                                | 6                                           |             | <a href="#">TK26E-005</a>   | 5 to 7.5A                |
| 2                                                    | 6.8                                         |             | <a href="#">TK26E-006</a>   | 6 to 9A                  |
| 3                                                    | 9.6                                         | SC-E03-xxxx | <a href="#">TK26E-009</a>   | 9 to 13A                 |
| 5                                                    | 15.2                                        | SC-E04-xxxx | <a href="#">TK26E-012</a>   | 12 to 18A                |
| 7-1/2                                                | 22                                          | SC-E05-xxxx | <a href="#">TK26E-020</a>   | 20 to 26A                |
| 10                                                   | 28                                          | SC-E1-xxxx  | <a href="#">TK-E2-3600</a>  | 24 to 36A                |
| 15                                                   | 42                                          | SC-E2-xxxx  | <a href="#">TK-E2-4200</a>  | 32 to 42A                |
| 20                                                   | 54                                          | SC-E3-xxxx  | <a href="#">TK-E3-6500</a>  | 45 to 65A                |
| 25                                                   | 68                                          | SC-E4-xxxx  | <a href="#">TK-E3-6800</a>  | 48 to 68A                |
| 30                                                   | 80                                          | SC-E5-xxxx  | <a href="#">TK-E5-9500</a>  | 65 to 95A                |
| 40                                                   | 104                                         | SC-E6-xxxx  | <a href="#">TK-E6-12500</a> | 85 to 125A               |
| 50                                                   | 130                                         | SC-E7-xxxx  | <a href="#">TK-E6-16000</a> | 110 to 160A              |

Note 1: For 220-240 V three-phase motors up to 150 hp refer to the Fuji Odyssey series.

Note 2: Per NEC 2017 table 430.250 column for 230VAC

## 440-480V 3-Phase Motor (0.5 to 100hp)<sup>1</sup>

| Overload Relay Selection for 440–480V 3-phase motors |                                             |             |                             |                          |
|------------------------------------------------------|---------------------------------------------|-------------|-----------------------------|--------------------------|
| Motor Rating                                         |                                             | A           | B                           |                          |
| Motor HP                                             | Motor Full Load Amperage (FLA) <sup>2</sup> | Contactor   | Overload Relay              |                          |
|                                                      |                                             |             | Part Number                 | Adjustable Current Range |
| 1/2                                                  | 1.1                                         | SC-E02-xxxx | <a href="#">TK26E-P95</a>   | 0.95 to 1.45A            |
| 3/4                                                  | 1.6                                         | SC-E02-xxxx | <a href="#">TK26E-1P1</a>   | 1.1 to 1.65A             |
| 3/4                                                  | 1.6                                         | SC-E02-xxxx | <a href="#">TK26E-1P4</a>   | 1.4 to 2.1A              |
| 1                                                    | 2.1                                         | SC-E02-xxxx | <a href="#">TK26E-1P7</a>   | 1.7 to 2.6A              |
| 1-1/2                                                | 3.0                                         | SC-E02-xxxx | <a href="#">TK26E-2P8</a>   | 2.8 to 4.2A              |
| 2                                                    | 3.4                                         | SC-E02-xxxx | <a href="#">TK26E-2P8</a>   | 2.8 to 4.2A              |
| 3                                                    | 4.8                                         | SC-E02-xxxx | <a href="#">TK26E-004</a>   | 4 to 6A                  |
| 5                                                    | 7.6                                         | SC-E02-xxxx | <a href="#">TK26E-006</a>   | 6 to 9A                  |
| 7 1/2                                                | 11                                          | SC-E03-xxxx | <a href="#">TK26E-009</a>   | 9 to 13A                 |
| 10                                                   | 14                                          | SC-E04-xxxx | <a href="#">TK26E-012</a>   | 12 to 18A                |
| 15                                                   | 21                                          | SC-E05-xxxx | <a href="#">TK26E-020</a>   | 20 to 26A                |
| 20                                                   | 27                                          | SC-E1-xxxx  | <a href="#">TK-E2-3600</a>  | 24 to 36A                |
| 25                                                   | 34                                          | SC-E1-xxxx  | <a href="#">TK-E2-4200</a>  | 32 to 42A                |
| 30                                                   | 40                                          | SC-E2-xxxx  | <a href="#">TK-E2-4200</a>  | 32 to 42A                |
| 40                                                   | 52                                          | SC-E3-xxxx  | <a href="#">TK-E3-6500</a>  | 45 to 65A                |
| 50                                                   | 65                                          | SC-E4-xxxx  | <a href="#">TK-E3-6800</a>  | 48 to 68A                |
| 60                                                   | 77                                          | SC-E5-xxxx  | <a href="#">TK-E5-9500</a>  | 65 to 95A                |
| 75                                                   | 96                                          | SC-E6-xxxx  | <a href="#">TK-E6-12500</a> | 85 to 125A               |
| 100                                                  | 124                                         | SC-E7-xxxx  | <a href="#">TK-E6-16000</a> | 110 to 160A              |

Note 1: For 440-480V three-phase motors up to 300 hp refer to the Fuji Odyssey series.

Note 2: Per NEC 2017 table 430.250 column for 460VAC

# Fuji Duo Series Manual Motor Starters

## BM3RHB-xxx Specifications



| General Specifications: 45mm Frame Width - BM3RHB-xxx Series |          |                                |                                       |            |            |            |                                |                                                       |        |        |                                                                       |
|--------------------------------------------------------------|----------|--------------------------------|---------------------------------------|------------|------------|------------|--------------------------------|-------------------------------------------------------|--------|--------|-----------------------------------------------------------------------|
| Part Number                                                  | Price    | Adjustable Current Range       | UL/CSA 3-Phase HP Rating <sup>1</sup> |            |            |            | Instantaneous Trip Current (A) | UL/CSA Short Circuit Current Rating (kA) <sup>2</sup> |        |        | Max. Listed Branch Circuit Protection - Fuse or MCCB (A) <sup>2</sup> |
|                                                              |          | I <sub>e</sub> : Min.-Max. (A) | 200-208VAC                            | 220-240VAC | 440-480VAC | 550-600VAC |                                | 240VAC                                                | 480VAC | 600VAC |                                                                       |
| <a href="#">BM3RHB-P16</a>                                   | \$75.00  | 0.1-0.16                       | Rated to motor full-load amperage     |            |            |            | 2.1                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-P25</a>                                   | \$75.00  | 0.16-0.25                      |                                       |            |            |            | 3.3                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-P40</a>                                   | \$75.00  | 0.25-0.4                       |                                       |            |            |            | 5.2                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-P63</a>                                   | \$75.00  | 0.4-0.63                       |                                       |            |            |            | 8.2                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-001</a>                                   | \$75.00  | 0.63-1                         |                                       |            |            |            | 13                             | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-1P6</a>                                   | \$75.00  | 1-1.6                          |                                       |            |            |            | 20.8                           | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-2P5</a>                                   | \$75.00  | 1.6-2.5                        | 1/2                                   | 1/2        | 1          | 1-1/2      | 32.5                           | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-004</a>                                   | \$75.00  | 2.5-4                          | 3/4                                   | 3/4        | 2          | 3          | 52                             | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-6P3</a>                                   | \$75.00  | 4-6.3                          | 1                                     | 1-1/2      | 3          | 5          | 81.9                           | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-010</a>                                   | \$79.00  | 6.3-10                         | 2                                     | 3          | 5          | 7-1/2      | 130                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-013</a>                                   | \$79.00  | 9-13                           | 3                                     | 3          | 7-1/2      | 10         | 169                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-016</a>                                   | \$79.00  | 11-16                          | 3                                     | 5          | 10         | 10         | 208                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-020</a>                                   | \$79.00  | 14-20                          | 5                                     | 5          | 10         | 15         | 260                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-025</a>                                   | \$95.00  | 19-25                          | 7-1/2                                 | 7-1/2      | 15         | 20         | 325                            | 100                                                   | 50     | 10     | 500                                                                   |
| <a href="#">BM3RHB-032</a>                                   | \$120.00 | 24-32                          | 10                                    | 10         | 20         | 30         | 416                            | 100                                                   | 50     | 10     | 500                                                                   |

Note 1: BM3RHB-xxx are cUL listed as HP rated motor controllers.

Note 2: BM3RHB-xxx are cUL listed for group installation per NEC430-53(C).

| General Specifications: 45mm Frame Width - BM3RHB-xxx Series - continued |                                   |                                                                                  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| Features                                                                 |                                   | Adjustable thermal-magnetic trip type                                            |  |  |  |  |  |  |  |  |  |
| Number of Poles                                                          |                                   | 3                                                                                |  |  |  |  |  |  |  |  |  |
| Handle Type                                                              |                                   | Rotary                                                                           |  |  |  |  |  |  |  |  |  |
| Rated Current I <sub>e</sub> (A)                                         |                                   | 0.16 to 32                                                                       |  |  |  |  |  |  |  |  |  |
| Rated Operational Voltage U <sub>e</sub> (V)                             |                                   | 200 to 690                                                                       |  |  |  |  |  |  |  |  |  |
| Rated Frequency (Hz)                                                     |                                   | 50/60                                                                            |  |  |  |  |  |  |  |  |  |
| Rated insulation Voltage U <sub>i</sub> (V)                              |                                   | 690                                                                              |  |  |  |  |  |  |  |  |  |
| Rated Impulse Withstand Voltage U <sub>imp</sub> (kV)                    |                                   | 6                                                                                |  |  |  |  |  |  |  |  |  |
| Utilization                                                              | IEC 60947-2 Circuit Breaker       | Cat. A                                                                           |  |  |  |  |  |  |  |  |  |
| Category                                                                 | IEC 60947-4-1 Motor Starter       | AC-3                                                                             |  |  |  |  |  |  |  |  |  |
| Trip Class IEC 60947-4-1                                                 |                                   | 10                                                                               |  |  |  |  |  |  |  |  |  |
| Instantaneous Trip Characteristic                                        |                                   | 13 x I <sub>e</sub> max.                                                         |  |  |  |  |  |  |  |  |  |
| Power Loss (total of 3-pole)                                             |                                   | 7W: I <sub>n</sub> =0.16 to 25A    8.5W: I <sub>n</sub> =32A                     |  |  |  |  |  |  |  |  |  |
| Mechanical Durability (operations)                                       |                                   | 100,000: I <sub>n</sub> =0.16 to 25A    70,000: I <sub>n</sub> =32A              |  |  |  |  |  |  |  |  |  |
| Electrical Durability (operations)                                       |                                   | 100,000: I <sub>n</sub> =0.16 to 25A    70,000: I <sub>n</sub> =32A              |  |  |  |  |  |  |  |  |  |
| Max. Operations per Hour (motor start-up)                                |                                   | 25                                                                               |  |  |  |  |  |  |  |  |  |
| Phase-loss Protection                                                    |                                   | Provided                                                                         |  |  |  |  |  |  |  |  |  |
| Trip Indicator                                                           |                                   | Provided                                                                         |  |  |  |  |  |  |  |  |  |
| Test Trip Function                                                       |                                   | Provided                                                                         |  |  |  |  |  |  |  |  |  |
| Dimensions (mm) WxHxD                                                    |                                   | 45x90x79                                                                         |  |  |  |  |  |  |  |  |  |
| Weight (oz/g)                                                            |                                   | 13.05 / 370                                                                      |  |  |  |  |  |  |  |  |  |
| Optional Accessories                                                     | Auxiliary Contact Block           | Yes                                                                              |  |  |  |  |  |  |  |  |  |
|                                                                          | Alarm Contact Block               | Yes                                                                              |  |  |  |  |  |  |  |  |  |
|                                                                          | Auxiliary and Alarm Contact Block | Yes                                                                              |  |  |  |  |  |  |  |  |  |
|                                                                          | Short-Circuit Alarm Contact Block | Yes                                                                              |  |  |  |  |  |  |  |  |  |
|                                                                          | Shunt Trip Device                 | Yes                                                                              |  |  |  |  |  |  |  |  |  |
|                                                                          | Undervoltage Trip Device          | Yes                                                                              |  |  |  |  |  |  |  |  |  |
| Standards & Agency Approvals                                             |                                   | IEC 60947-1, 60947-2, 60947-4-1, UL 508 file E163944, CSA C22.2 No.14 file 20479 |  |  |  |  |  |  |  |  |  |

# Fuji Duo Series Manual Motor Starters

## BM3VHB-xxx Specifications

| General Specifications: 55mm Frame Width - BM3VHB-xxx Series |          |                                |                                       |            |            |            |                                |                                                       |        |        |                                                                       |
|--------------------------------------------------------------|----------|--------------------------------|---------------------------------------|------------|------------|------------|--------------------------------|-------------------------------------------------------|--------|--------|-----------------------------------------------------------------------|
| Part Number                                                  | Price    | Adjustable Current Range       | UL/CSA 3-Phase hp Rating <sup>1</sup> |            |            |            | Instantaneous Trip Current (A) | UL/CSA Short Circuit Current Rating (kA) <sup>2</sup> |        |        | Max. Listed Branch Circuit Protection - Fuse or MCCB (A) <sup>2</sup> |
|                                                              |          | I <sub>e</sub> : Min.-Max. (A) | 200-208VAC                            | 220-240VAC | 440-480VAC | 550-600VAC |                                | 240VAC                                                | 480VAC | 600VAC |                                                                       |
| <a href="#">BM3VHB-010</a>                                   | \$184.00 | 6.3-10                         | 2                                     | 3          | 5          | 7-1/2      | 130                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-013</a>                                   | \$184.00 | 9-13                           | 3                                     | 3          | 7-1/2      | 10         | 169                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-016</a>                                   | \$184.00 | 11-16                          | 3                                     | 5          | 10         | 10         | 208                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-020</a>                                   | \$184.00 | 14-20                          | 5                                     | 5          | 10         | 15         | 260                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-025</a>                                   | \$216.00 | 19-25                          | 7-1/2                                 | 7-1/2      | 15         | 20         | 325                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-032</a>                                   | \$228.00 | 24-32                          | 10                                    | 10         | 20         | 30         | 416                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-040</a>                                   | \$228.00 | 28-40                          | 10                                    | 10         | 30         | 30         | 520                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-050</a>                                   | \$237.00 | 35-50                          | 15                                    | 15         | 30         | 40         | 650                            | 100                                                   | 50     | 10     | 600                                                                   |
| <a href="#">BM3VHB-063</a>                                   | \$237.00 | 45-63                          | 20                                    | 20         | 40         | 60         | 819                            | 100                                                   | 50     | 10     | 600                                                                   |

Note 1: BM3VHB-xxx are cUL listed as HP rated motor controllers.

Note 2: BM3VHB-xxx are cUL listed for group installation per NEC430-53(C).

| General Specifications: 55mm Frame Width - BM3VHB-xxx Series - continued |                                   |                                                                                                 |  |
|--------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------|--|
| Features                                                                 |                                   | Adjustable thermal-magnetic trip type                                                           |  |
| Number of Poles                                                          |                                   | 3                                                                                               |  |
| Handle Type                                                              |                                   | Rotary                                                                                          |  |
| Rated Current I <sub>e</sub> (A)                                         |                                   | 10 to 63                                                                                        |  |
| Rated Operational Voltage U <sub>e</sub> (V)                             |                                   | 200 to 690                                                                                      |  |
| Rated Frequency (Hz)                                                     |                                   | 50/60                                                                                           |  |
| Rated Insulation Voltage U <sub>i</sub> (V)                              |                                   | 1,000                                                                                           |  |
| Rated Impulse Withstand Voltage U <sub>imp</sub> (kV)                    |                                   | 8                                                                                               |  |
| Utilization                                                              | IEC 60947-2 Circuit Breaker       | Cat. A                                                                                          |  |
| Category                                                                 | IEC 60947-4-1 Motor Starter       | AC-3                                                                                            |  |
| Trip Class IEC 60947-4-1                                                 |                                   | 10                                                                                              |  |
| Instantaneous Trip Characteristic                                        |                                   | 13 x I <sub>e</sub> max.                                                                        |  |
| Power Loss (total of 3-pole)                                             |                                   | 11W: I <sub>n</sub> = 10 to 32A    15W: I <sub>n</sub> = 40 to 50A    17W: I <sub>n</sub> = 63A |  |
| Mechanical Durability (operations)                                       |                                   | 50,000                                                                                          |  |
| Electrical Durability (operations)                                       |                                   | 25,000                                                                                          |  |
| Max. Operations per Hour (motor start-up)                                |                                   | 25                                                                                              |  |
| Phase-Loss Protection                                                    |                                   | Provided                                                                                        |  |
| Trip Indicator                                                           |                                   | Provided                                                                                        |  |
| Test Trip Function                                                       |                                   | Provided                                                                                        |  |
| Dimensions (mm) WxHxD                                                    |                                   | 55x110x96                                                                                       |  |
| Weight (oz/g)                                                            |                                   | 27.51 / 780                                                                                     |  |
| Optional Accessories                                                     | Auxiliary Contact Block           | Yes                                                                                             |  |
|                                                                          | Alarm Contact Block               | Yes                                                                                             |  |
|                                                                          | Auxiliary and Alarm Contact Block | Yes                                                                                             |  |
|                                                                          | Short-Circuit Alarm Contact Block | Yes                                                                                             |  |
|                                                                          | Shunt Trip Device                 | Yes                                                                                             |  |
|                                                                          | Undervoltage Trip Device          | Yes                                                                                             |  |
|                                                                          | External Operating Handle         | Yes                                                                                             |  |
| Standards & Agency Approvals                                             |                                   | IEC 60947-1, 60947-2, 60947-4-1, UL 508 file E163944, CSA C22.2 No.14 file 20479                |  |

# Fuji Duo Series Manual Motor Starters

## DIN-rail mounting

The MMS can be mounted to a 35 mm DIN rail. Secure the rail with screws at mounting pitch of less than 400 mm for the BM3R type and less than 300 mm for the BM3V type.

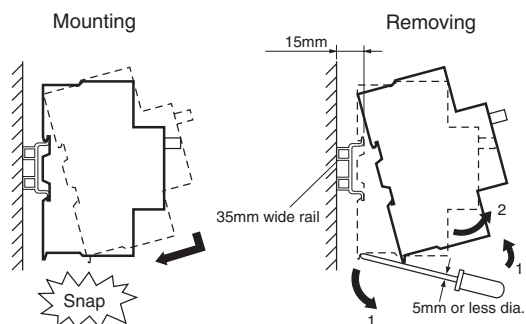
Applicable rail:

Use a 15 mm-high DIN rail, such as our DN-R35HS1, which conforms to EN-50022 and IEC715.

The standard DIN rail mounting direction is horizontal. When using the MMS on vertically mounted DIN rail, use end clamps.

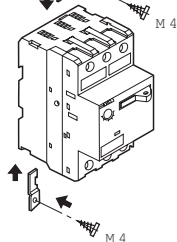
## Screw mounting

The separately sold push-in lug (BZ0SET) is required for screw mounting the BM3R frame. The BM3V frame can be screw mounted directly to the panel.

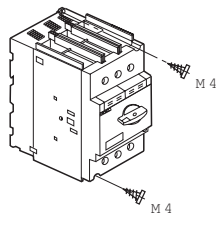


BM3RHB-xxx

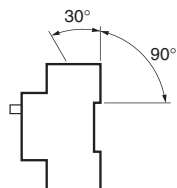
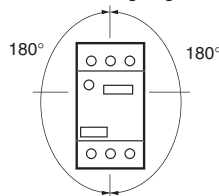
Push-in lug  
BZ0SET



BM3VHB-xxx



Mounting angle



## Wiring

While pressing the wire with a screwdriver, tighten the screw to the specified tightening torque.

## Environmental Specifications

|                     |                                                                               |                                                                      |
|---------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Ambient Temperature | Operating: -5 to +55°C<br>Storage: -40 to +65°C                               | No sudden temperature changes<br>resulting in condensation or icing. |
| Humidity            | 45 to 85%RH                                                                   |                                                                      |
| Altitude            | 2000m or lower                                                                |                                                                      |
| Atmosphere          | No excessive dust, smoke, corrosive gases,<br>flammable gases, steam or salt. |                                                                      |
| Vibration           | 10 to 55Hz 15m/s2                                                             | No abnormal shock or<br>vibration.                                   |
| Shock               | 50m/s2                                                                        |                                                                      |

## Wiring Specifications

### Wire Size and Tightening Torque

| Type                                | BM3RHB-xxx                                                 | BM3VHB-xxx                                                | BZ0 Accessories                                                 |
|-------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------|
| <b>Solid Wire (mm)</b>              | 1.6 to 2.6 dia.                                            | 1.6 to 2.6 dia.                                           | 1 to 1.6 dia.                                                   |
| <b>Stranded Wire (mm2)</b>          | <b>Single-wire</b><br>1 to 10<br><b>2-wire</b><br>1 to 6   | <b>Single-wire</b><br>1 to 25<br><b>2-wire</b><br>1 to 16 | <b>Single-wire</b><br>0.5 to 2.5<br><b>2-wire</b><br>0.5 to 2.5 |
| <b>AWG</b>                          | <b>Single-wire</b><br>18 to 8<br><b>2-wire</b><br>18 to 10 | <b>Single-wire</b><br>18 to 4<br><b>2-wire</b><br>18 to 4 | <b>Single-wire</b><br>18 to 14<br><b>2-wire</b><br>18 to 14     |
| <b>Sheath Stripping Length (mm)</b> | Approx.10                                                  | Approx.13                                                 | Approx.10                                                       |
| <b>Terminal Screw</b>               | Pan head screw (PZ2)<br>M4                                 | Pan head screw (PZ2)<br>M6                                | Pan head screw (PZ2)<br>M3.5                                    |
| <b>Tightening Torque (N·m)</b>      | 2                                                          | 4                                                         | 0.8                                                             |

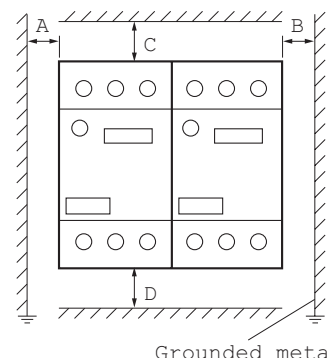
Note: There is no need for a crimp terminal or any other terminal on the end of the connection wire.

## Arc Space Requirements

### Arc Space Requirements

| Part Number | Rated operational voltage $U_e$ | Minimum distance to grounded metal (mm) |     |
|-------------|---------------------------------|-----------------------------------------|-----|
|             | (V)                             | A,B                                     | C,D |
| BM3RHB-xxx  | Up to 500                       | 15                                      | 30  |
|             | Up to 690                       | 40                                      | 50  |
| BM3VHB-xxx  | Up to 500                       | 15                                      | 40  |
|             | Up to 690                       | 40                                      | 50  |

When frames are mounted side-by-side, operating conditions such as a high ambient temperature or using the maximum setting for continuous carrying current may cause slight changes in operating characteristics due to temperature rises. Under such conditions, it is recommended that the frames be separated by at least 5mm.



# Fuji Duo Series Combination Starter Selection Table - 45mm

Use this selection table to select 45mm frame width (A) Manual Motor Starter, (B) Contactor, (C) Link Module, and (D) Base Plate for a Combination Starter

| Combination Starter Selection Table - 45mm |                                                    |                                           |                                                    |                                                   |                                                                      |                                                                            |                                                          |                            |                                               |
|--------------------------------------------|----------------------------------------------------|-------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------|----------------------------|-----------------------------------------------|
| Three Phase Motor                          |                                                    |                                           |                                                    |                                                   | A                                                                    | B                                                                          | C                                                        | D                          |                                               |
| 220-240 Volt                               |                                                    | 440-480 Volt                              |                                                    |                                                   |                                                                      | Contactor                                                                  |                                                          |                            |                                               |
| Motor Horsepower (hp)<br>See Note 1 below  | Motor Full-Load Amperage (FLA)<br>See Note 4 below | Motor Horsepower (hp)<br>See Note 1 below | Motor Full-Load Amperage (FLA)<br>See Note 4 below | Manual Motor Starter Adjustable Current Range (A) | Manual Motor Starter<br>See Note 2 below for UL Type E applications. | The contactor part number needs the coil voltage suffix. See Note 3 below. | Link Module                                              | Base Plate                 | SCCR at 480Y/277 VAC (kA) type F coordination |
| -                                          | -                                                  | -                                         | -                                                  | 0.1 to 0.16                                       | <a href="#">BM3RHB-P16</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> | <a href="#">BZ0BPRE22A</a> | 65                                            |
| -                                          | -                                                  | -                                         | -                                                  | 0.16 to 0.25                                      | <a href="#">BM3RHB-P25</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| -                                          | -                                                  | -                                         | -                                                  | 0.25 to 0.4                                       | <a href="#">BM3RHB-P40</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| -                                          | -                                                  | -                                         | -                                                  | 0.4 to 0.63                                       | <a href="#">BM3RHB-P63</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| -                                          | -                                                  | -                                         | -                                                  | 0.63 to 1.0                                       | <a href="#">BM3RHB-001</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| -                                          | -                                                  | 0.75                                      | 1.6                                                | 1.0 to 1.6                                        | <a href="#">BM3RHB-1P6</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 0.5                                        | 2.2                                                | 1                                         | 2.1                                                | 1.6 to 2.5                                        | <a href="#">BM3RHB-2P5</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 0.75                                       | 3.2                                                | 2                                         | 3.4                                                | 2.5 to 4.0                                        | <a href="#">BM3RHB-004</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 1.5                                        | 6                                                  | 3                                         | 4.8                                                | 4.0 to 6.3                                        | <a href="#">BM3RHB-6P3</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| -                                          | -                                                  | 5                                         | 7.6                                                | 6.3 to 10                                         | <a href="#">BM3RHB-010</a>                                           | <a href="#">SC-E02-110VAC</a><br><a href="#">SC-E02G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 3                                          | 9.6                                                | 7.5                                       | 11                                                 | 9 to 13                                           | <a href="#">BM3RHB-013</a>                                           | <a href="#">SC-E03-110VAC</a><br><a href="#">SC-E03G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 5                                          | 15.2                                               | 10                                        | 14                                                 | 11 to 16                                          | <a href="#">BM3RHB-016</a>                                           | <a href="#">SC-E04-110VAC</a><br><a href="#">SC-E04G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 5                                          | 15.2                                               | 10                                        | 14                                                 | 14 to 20                                          | <a href="#">BM3RHB-020</a>                                           | <a href="#">SC-E04-110VAC</a><br><a href="#">SC-E04G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 65                                            |
| 7.5                                        | 22                                                 | 15                                        | 21                                                 | 19 to 25                                          | <a href="#">BM3RHB-025</a>                                           | <a href="#">SC-E05-110VAC</a><br><a href="#">SC-E05G-24VDC</a>             | <a href="#">BZ0LRE22AA</a><br><a href="#">BZ0LRE22GA</a> |                            | 50                                            |
| 10                                         | 28                                                 | 20                                        | 27                                                 | 24 to 32                                          | <a href="#">BM3RHB-032</a>                                           | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LRE32AA</a><br><a href="#">BZ0LRE32GA</a> | <a href="#">BZ0BPRE32A</a> | 50                                            |

Note 1: When a horsepower rating is listed on two rows, the motor full-load amperage must be known so you can select the MMS with the best adjustable current range for your application. For example, if you have a 230V, 5 hp, 15.2A motor, you can select a MMS with either a 11-16A range or a 14-20A range. Consult the motor data plate or motor manufacturer.

Note 2: When using BM3RHB-xxx MMS in a UL Type E application, you must also use part numbers [BZ0TKUAB](#) (short-circuit contact block) and [BZ0TCRE](#) (line side terminal cover).

Note 3: For AC coil voltages other than 110VAC, substitute the "110VAC" in the part number with "220VAC" for 220/240VAC coils or "24VAC" for 24VAC coils. For example, if the table lists a SC-E02-110VAC contactor for your application and you need a contactor with a 220VAC coil, use contactor SC-E02-220VAC.

Note 4: Per NEC 2005 Table 430.250

Note 5: The table above also include the Fuji part numbers with (P). Example: SC-E02-110VAC = SC-E02P-110VAC.

# Fuji Duo Series Combination Starter Selection Table - 55mm



Use this selection table to select 55mm frame width (A) Manual Motor Starter, (B) Contactor, (C) Link Module, and (D) Base Plate for a Combination Starter

| Combination Starter Selection Table - 55mm |                                                    |                                           |                                                    |                                                   |                                              |                                                                            |                                                          |                            |                                               |
|--------------------------------------------|----------------------------------------------------|-------------------------------------------|----------------------------------------------------|---------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------|----------------------------|-----------------------------------------------|
| Three Phase Motor                          |                                                    |                                           |                                                    |                                                   | A                                            | B                                                                          | C                                                        | D                          |                                               |
| 220-240 Volt                               |                                                    | 440-480 Volt                              |                                                    |                                                   | Manual Motor Starter                         | Contactor                                                                  | Link Module                                              | Base Plate                 | SCCR at 480Y/277 VAC (kA) type F coordination |
| Motor horsepower (hp)<br>See Note 1 below  | Motor Full-Load Amperage (FLA)<br>See Note 4 below | Motor Horsepower (hp)<br>See Note 1 below | Motor Full-Load Amperage (FLA)<br>See Note 4 below | Manual Motor Starter Adjustable Current Range (A) | See Note 2 below for UL Type E applications. | The contactor part number needs the coil voltage suffix. See Note 3 below. |                                                          |                            |                                               |
| 3                                          | 9.6                                                | 5                                         | 7.6                                                | 6.3 to 10                                         | <a href="#">BM3VHB-010</a>                   | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> | <a href="#">BZ0BPVE51A</a> | 65                                            |
| 3                                          | 9.6                                                | 7.5                                       | 11                                                 | 9 to 13                                           | <a href="#">BM3VHB-013</a>                   | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 5                                          | 15.2                                               | 10                                        | 14                                                 | 11 to 16                                          | <a href="#">BM3VHB-016</a>                   | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 5                                          | 15.2                                               | 10                                        | 14                                                 | 14 to 20                                          | <a href="#">BM3VHB-020</a>                   | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 7.5                                        | 22                                                 | 15                                        | 21                                                 | 19 to 25                                          | <a href="#">BM3VHB-025</a>                   | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 10                                         | 28                                                 | 20                                        | 27                                                 | 24 to 32                                          | <a href="#">BM3VHB-032</a>                   | <a href="#">SC-E1-110VAC</a><br><a href="#">SC-E1G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 10                                         | 28                                                 | 30                                        | 40                                                 | 28 to 40                                          | <a href="#">BM3VHB-040</a>                   | <a href="#">SC-E2-110VAC</a><br><a href="#">SC-E2G-24VDC</a>               | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 15                                         | 42                                                 | 30                                        | 40                                                 | 35 to 50                                          | <a href="#">BM3VHB-050</a>                   | <a href="#">SC-E2S-110VAC</a><br><a href="#">SC-E2SG-24VDC</a>             | <a href="#">BZ0LVE51AA</a><br><a href="#">BZ0LVE51GA</a> |                            | 65                                            |
| 20                                         | 54                                                 | 40                                        | 52                                                 | 45 to 63                                          | <a href="#">BM3VHB-063</a>                   | <a href="#">SC-E3-110VAC</a><br><a href="#">SC-E3G-24VDC</a>               | <a href="#">BZ0LVE65AA</a><br><a href="#">BZ0LVE65GA</a> | <a href="#">BZ0BPVE65A</a> | 65                                            |

Note 1: When a horsepower rating is listed on two rows, the motor full-load amperage must be known so you can select the MMS with the best adjustable current range for your application. For example, if you have a 230V, 10 hp, 28A motor, you can select a MMS with either a 24-32A range or a 28-40A range. Consult the motor data plate or motor manufacturer.

Note 2: When using BM3VHB-xxx MMS in a UL Type E application, you must also use part number [BZ0TKUAB](#) (short-circuit contact block).

Note 3: For AC coil voltages other than 110VAC, substitute the "110VAC" in the part number with "220VAC" for 220/240VAC coils or "24VAC" for 24VAC coils. For example, if the table lists a SC-E1-110VAC contactor for your application and you need a contactor with a 220VAC coil, use contactor SC-E1-220VAC.

Note 4: Per NEC 2005 Table 430.250