

Contactors — Full Voltage, Non-reversing and Reversing

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IEC Full Voltage Non-reversing Contactor, C-Frame
Cat. No. E111C50X3N



IEC Full Voltage Reversing Contactor, D-Frame
Cat. No. E511D10X3N

Product Description

The Cutler-Hammer® Intelligent Technologies (IT.) Electro-Mechanical Contactor from Eaton's electrical business consists of an IT. Electro-Mechanical Contact Block and IT. Electro-Mechanical Coil Controller as a Full Voltage Non-reversing (FVNR) or Full Voltage Reversing (FVR) device. B-Frame (45 mm) to E-Frame (105 mm) Contact Blocks combined with Coil Controllers (factory or field assembled) are stand-alone Contactors. Only the A-Frame (27 mm) and F-Frame (140 mm) Contactors have internal factory assembled coil controllers.

Also available are the IT. Manual and Combination Motor Controllers which combine a Manual Motor Protector, Wiring Connector Link and IT. Contactor. See **Tab 38** for more information.

Application Description

When selecting an IEC Contactor, the user must consider the specific load, utilization category and required electrical life. Actual application life may vary depending on environmental conditions and duty cycle.

Features

- 115V AC – 600V AC, 1/4 – 350 hp/ 3/4 – 250 kW, 50/60 Hz
- 24V DC Coil Control — safe, reliable global standard
- Most compact DC operated contactors available — e.g., A-Frame 27 mm wide, 7-1/2 hp @ 12A, 460V
- Frame sizes (mm): 27, 45, 54, 76, 105, 140
- No laminations, shading coils or magnet noise
- -40 to 149°F (-40 to 65°C) operating temperature
- No seal in auxiliary contacts required — control wiring is not needed between the contactor and overload relay

- Unique Pulse Width Modulated (PWM) coil controller minimizes energy and coil power consumption
- Conformal coated PWM board (coil controller) for environmental toughness
- Microprocessor-based control
- 95% humidity non-condensing (99% consult factory)
- Easily accessible mounting feet for panel mounting
- High immunity to ESD, harmonics — minimal Total Harmonic Distortion
- Front and side mounted Auxiliary Contacts: 1NO, 1NC, 2NO, 2NC, 1NO/1NC and logic level
- Built-in logic to provide either 2- or 3-wire control, eliminating the need to provide and wire auxiliary contacts to seal in and interlock the contactor coils
- Easy field assembly of control wiring — plug and unplug lockable control connector
- DIN rail mounting, 6 – 100A (A – D Frames)
- Common accessories
- Long-life silver nickel (A – B Frames) and silver tin oxide (C – F Frames) contacts provide excellent conductivity and superior resistance to welding and arc erosion
- Environmentally friendly materials
- IP20 Finger Protection
- Low wattage coils and minimal heat dissipation

Reversing Contactors

- Includes Reversing Power Wiring and bus bars
- Mounting plates for B-Frame (45 mm) to E-Frame (105 mm)
- Exclusive internal electronic interlock for reversing
- Unique coil controller energizes both forward and reverse contactors — one control point for wiring

Product Selection

When Ordering

Select required contactor by amp rating, frame size, kW/hp, voltage and non-reversing or reversing.

Non-reversing Contactors

Note:

- An E111 (45 – 105 mm) consists of an E04N (Contact Block) and an E02N (FVNR Coil Controller), factory assembled.
- An E111 (27 and 140 mm) has an internal coil controller, factory assembled.



**IEC A-Frame FVNR Contactor
Cat. No. E111A12X3N**



**IEC B-Frame FVNR Contactor
Cat. No. E111B32X3N**

Table 34-267. 3-Pole DC-Operated Full Voltage Non-reversing Contactors (A – F Frames)

| Max. AC-3 Amp. Rating 480V AC (Ie) | IEC 60947-4-1 AC-1 Thermal Current 480V AC and (Ith) | Frame Size ② | Maximum kW Rating @ Ue (V) 50/60 Hz | | | | | | Maximum UL Horsepower (hp) 50/60 Hz | | | | | | 3-Pole Open Type | | |
|------------------------------------|--|--------------|-------------------------------------|------|-----------|-----------|------|-----------|-------------------------------------|-----------|-----------|-----------|-----------|-----------|------------------|---------------|-----------|
| | | | 3-Phase | | | | | | 1-Phase | | 3-Phase | | | | Catalog Number | Price U.S. \$ | |
| | | | 220V/240V | 380V | 400V/415V | 440V/460V | 500V | 550V/575V | 115V/120V | 220V/230V | 200V/208V | 230V/240V | 380V/415V | 460V/480V | | | 575V/600V |
| 6 | 12 | A | 1.1 | 2.2 | 2.2 | 3 | 3 | 3 | 1/4 | 1/2 | 1 | 1-1/2 | 3 | 3 | 3 | E111A06X3N | |
| 9 | 16 | A | 2.2 | 4 | 4 | 4 | 4 | 4 | 1/3 | 1 | 2 | 2 | 3 | 5 | 5 | E111A09X3N | |
| 12 | 20 | A | 3 | 5.5 | 5.5 | 6.5 | 6.5 | 6.5 | 1/2 | 2 | 3 | 3 | 5 | 7-1/2 | 7-1/2 | E111A12X3N | |
| 18 | 25 | B | 4 | 7.5 | 9 | 9 | 10 | 11 | 1 | 3 | 5 | 5 | 10 | 10 | 10 | E111B18X3N | |
| 25 | 40 | B | 5.5 | 12.5 | 12.5 | 13 | 15 | 15 | 2 | 3 | 5 | 7-1/2 | 10 | 15 | 15 | E111B25X3N | |
| 32 | 50 | B | 9 | 15 | 15 | 18.5 | 18.5 | 18.5 | 2 | 5 | 7-1/2 | 10 | 15 | 20 | 20 | E111B32X3N | |
| 40 | 63 | C | 11 | 18.5 | 22 | 22 | 22 | 25 | 3 | 7-1/2 | 10 | 10 | 20 | 25 | 25 | E111C40X3N | |
| 50 | 85 | C | 12.5 | 22 | 25 | 30 | 30 | 33 | 3 | 10 | 15 | 15 | 25 | 30 | 30 | E111C50X3N | |
| 65 | 100 | D | 18.5 | 30 | 33 | 40 | 40 | 45 | 5 | 10 | 20 | 20 | 40 | 50 | 50 | E111D65X3N | |
| 85 | 115 | D | 25 | 45 | 45 | 51 | 51 | 55 | 7-1/2 | 15 | 25 | 30 | 50 | 60 | 60 | E111D85X3N | |
| 100 | 130 | D | 25 | 51 | 55 | 59 | 59 | 63 | 10 | 20 | 30 | 30 | 50 | 75 | 75 | E111D10X3N | |
| 125 | 200 | E | 33 | 63 | 63 | 80 | 80 | 80 | 10 | 25 | 40 | 40 | 60 | 100 | 100 | E111E12X3N | |
| 160 | 225 | E | 45 | 80 | 80 | 100 | 100 | 100 | 15 | 30 | 50 | 60 | 75 | 125 | 125 | E111E16X3N | |
| 200 | 250 | E | 59 | 100 | 110 | 110 | 110 | 132 | — | 40 | 60 | 75 | 100 | 150 | 150 | E111E20X3N | |
| 250 | 300 | F | 75 | 132 | 140 | 160 | 160 | 160 | — | 50 | 75 | 100 | 150 | 200 | 200 | E111F25X3N | |
| 315 | 375 | F | 90 | 160 | 160 | 200 | 200 | 200 | — | — | 100 | 125 | 150 | 250 | 250 | E111F31X3N | |
| 420 | 450 | F | 110 | 220 | 220 | 257 | 257 | 257 | — | — | 150 | 150 | 200 | 350 | 350 | E111F42X3N | |

① 24V DC coil voltage.

②

Frame Size

- A = 27 mm
- B = 45 mm
- C = 54 mm
- D = 76 mm
- E = 105 mm
- F = 140 mm

Note:

- If required, accessories are available starting on **Page 34-234**.
- Integral solid-state auxiliary hold-in circuit.
- 3 main contacts.
- See **Table 34-276** for 24V DC power supply requirements.
- Control inputs (P, F) are rated 24V DC (3 – 5 mA).

Accessories **Pages 34-234 – 34-237**
 Technical Data **Pages 34-230 – 34-233**
 Dimensions **Pages 34-240 – 34-242**
 Discount Symbol **1CD7**

Contactors — Full Voltage, Non-reversing and Reversing

Reversing Contactors

Note:

- An **E511** (45 – 105 mm) consists of two **E04N** (Contact Blocks), an **E03N** (FVR Coil Controller), Mechanical Interlock, Fanning Strips and Mounting Plate, factory assembled.
- An **E511F** (140 mm) consists of two **E111F** (Contactors), Mechanical Interlock, Crossover Bus Bars and Wiring Harness, factory assembled.
- An **E511A** (27 mm) Contactor is factory assembled only.



IEC B-Frame FVR Contactor
Cat. No. E511B32X3N

Table 34-268. 3-Pole DC-Operated Full Voltage Reversing Contactors ① (A – F Frames)

| Max. AC-3 Amp. Rating 480V AC (Ie) | IEC 60947-4-1 AC-1 Thermal Current 480V AC and (Ith) | Frame Size ② | Maximum kW Rating @ Ue (V) 50/60 Hz | | | | | | Maximum UL Horsepower (hp) 50/60 Hz | | | | | | 3-Pole Open Type | | |
|------------------------------------|--|--------------|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------------------------|----------------|------------------|-------------------|-------------------|-------------------|-------------------|--|-----------|
| | | | 3-Phase | | | | | | 1-Phase | | 3-Phase | | | | Catalog Number | Price U.S. \$ | |
| | | | 220V/240V | 380V | 400V/415V | 440V/460V | 500V | 550V/575V | 115V/120V | 220V/230V | 200V/208V | 230V/240V | 380V/415V | 460V/480V | | | 575V/600V |
| 6 9 12 | 12 16 20 | A A A | 1.1 2.2 3 | 2.2 4 5.5 | 2.2 4 5.5 | 3 4 6.5 | 3 4 6.5 | 3 4 6.5 | 1/4 1/3 1/2 | 1/2 1 2 | 1 2 3 | 1-1/2 2 3 | 3 3 5 | 3 5 7-1/2 | 3 5 7-1/2 | E511A06X3N E511A09X3N E511A12X3N | |
| 18 25 32 | 25 40 50 | B B B | 4 5.5 9 | 7.5 12.5 15 | 9 12.5 15 | 9 13 18.5 | 10 15 18.5 | 11 15 18.5 | 1 2 2 | 3 3 5 | 5 5 7-1/2 | 5 7-1/2 10 | 10 10 15 | 10 15 20 | 10 15 20 | E511B18X3N E511B25X3N E511B32X3N | |
| 40 50 | 63 85 | C C | 11 12.5 | 18.5 22 | 22 25 | 22 30 | 22 30 | 25 33 | 3 3 | 7-1/2 10 | 10 15 | 10 15 | 20 25 | 25 30 | 25 30 | E511C40X3N E511C50X3N | |
| 65 85 100 | 100 115 130 | D D D | 18.5 25 25 | 30 45 51 | 33 45 55 | 40 51 59 | 40 51 59 | 45 55 59 | 5 7-1/2 10 | 10 15 20 | 20 25 30 | 20 30 30 | 40 50 50 | 50 60 75 | 50 60 75 | E511D65X3N E511D85X3N E511D10X3N | |
| 125 160 200 | 200 225 250 | E E E | 33 45 59 | 63 80 100 | 63 80 110 | 80 100 110 | 80 100 110 | 80 100 132 | 10 15 — | 25 30 40 | 40 50 60 | 40 60 75 | 60 75 100 | 100 125 150 | 100 125 150 | E511E12X3N E511E16X3N E511E20X3N | |
| 250 315 420 | 300 375 450 | F F F | 75 90 110 | 132 160 220 | 140 160 220 | 160 200 257 | 160 200 257 | 160 200 257 | — — — | 50 — — | 75 100 150 | 100 125 150 | 150 200 350 | 200 250 350 | 200 250 350 | E511F25X3N E511F31X3N E511F42X3N | |

① 24V DC coil voltage.

②

| Frame Size |
|------------|
| A = 27 mm |
| B = 45 mm |
| C = 54 mm |
| D = 76 mm |
| E = 105 mm |
| F = 140 mm |

Note:

- If required, accessories are available starting on **Page 34-234**.
- Integral solid-state auxiliary hold-in circuit.
- 3 main contacts.
- See **Table 34-276** for 24V DC power supply requirements.
- Control inputs (P, F, R) are rated 24V DC (3 – 5 mA).

Accessories **Pages 34-234 – 34-237**
 Technical Data **Pages 34-230 – 34-233**
 Dimensions **Pages 34-240 – 34-242**
 Discount Symbol **1CD7**