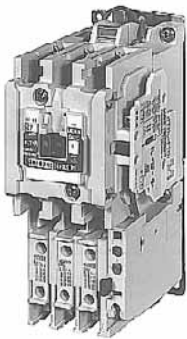
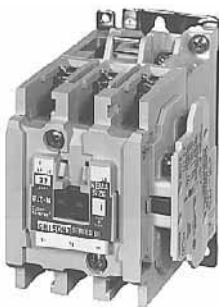


Product Family Overview



NEMA AN16DN0AB
NEMA Size 1 Starter



NEMA Size 1 Contactor

Product Description

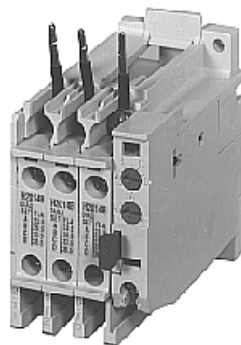
Freedom Series starters and contactors feature a compact, space-saving design, using state-of-the-art technology and the latest in high strength, impact and temperature resistant insulating materials.

Features

Freedom NEMA

- Adjustable Bimetallic Ambient Compensated Overload relays with interchangeable heater packs — available in three basic sizes, covering applications up to 900 hp — reducing the number of different contactor/overload relay combinations that have to be stocked. Fixed heater overloads are optional.
- Electronic Solid-State Overload Relay (C396) available as a stand-alone unit and assembled with Freedom Contactor.
- A full line of snap-on accessories common to both IEC and NEMA devices — top and side mounted auxiliary contacts, solid-state and pneumatic timers, etc.

- Straight-through wiring — line lugs at top, load lugs at bottom.
- Horizontal or vertical mounting on upright panel for application freedom.
- Screw type power terminals have captive, backed-out self-lifting pressure plates with \pm screws — reduced wiring time.
- Accessible terminals for easy wiring. Optional fingerproof shields available to prevent electrical shock.
- Top located coil terminals convenient and readily accessible. 45 mm contactor magnet coils have three terminals, permitting either top or diagonal wiring — easy to replace European or U.S. style starters or contactors without changing wiring layout.
- Encapsulated dual voltage/frequency magnet coils — permanently marked with voltage, frequency and part number. NEMA Sizes 00 – 0 have non-encapsulated coils as standard.
- Designed to meet or exceed NEMA, UL, CSA, VDE, BS and other international standards and listings.
- American engineering — built by Eaton, using the latest in statistical process control methods to produce high quality, reliable products.
- Sized based on standard NEMA classifications.
- Easy coil change and inspectable/replaceable contacts.
- Available in Open and NEMA Type 1, 3R, 4/4X and 12 enclosures.



Series B1 32A Overload



C396 Electronic Overload

Standards and Certifications

- Standard: Designed to meet or exceed UL, NEMA, IEC, CSA, VDE and BS.
- UL listed: UL File #E1491, Guide #NLDX — Open and NEMA 1, 4, 12 Enclosed
- CSA Certified: CSA File #LR353, Class #321104 Open and NEMA 1 Enclosed

ISO 9000 Certification

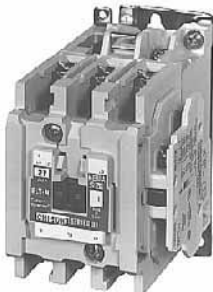
When you turn to Eaton's Cutler-Hammer Products, you turn to quality. The International Standards Organization (ISO) has established a series of standards acknowledged by 91 industrialized nations to bring harmony to the international quest for quality. The ISO certification process covers 20 quality system elements in design, production and installation that must conform to achieve registration. This commitment to quality will result in increased product reliability and total customer satisfaction.

Short Circuit Protection

Fuses and Inverse-Time Circuit Breakers may be selected per Article 430, Part D of the National Electrical Code to protect motor branch circuits from fault conditions. If higher ratings or settings are required to start the motor, do **not** exceed the maximum as listed in Exception No. 2, Article 430-52.

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NEMA Size 1 — Cat. No. CN15DN3AB

Product Description

Non-reversing

Contactors are most commonly used to switch motor loads in applications where running overcurrent protection is either not required or is provided separately. Contactors consist of a magnetically actuated switch which can be remotely operated by a push-button station or pilot device such as a proximity switch, limit switch, float switch, auxiliary contacts, etc.



NEMA Size 1
Cat. No. CN55DN3AB

Reversing

Reversing contactors are used primarily for reversing single- or three-phase motors in applications where running overcurrent protection is either not required or is provided separately. They consist of two contactors mechanically and electrically interlocked to prevent line shorts and energization of both contactors simultaneously.

Features

- Designed specifically for use in applications requiring NEMA ratings. Contactors meet or exceed NEMA standards ICS 2-1993.
- Long life twin break, silver cadmium oxide contacts — provide excellent conductivity and superior resistance to welding and arc erosion.
- Designed to 3,000,000 electrical operations at maximum hp ratings up through 25 hp at 600V.
- Steel mounting plate standard on all open type contactors.

Non-reversing

- Holding circuit contact(s) supplied as standard:
 - Sizes 00 – 3 have NO auxiliary contact block mounted on right hand side (on Size 00, contact occupies 4th power pole position — no increase in width).
 - Sizes 4 – 5 have a NO contact block mounted on left side.
 - Sizes 6 – 7 have a 2NO/2NC contact block on top left.
 - Size 8 has a NO/NC contact block on top left back and a NO contact block on top right back.

Reversing

- One NO-NC side mounted interlock supplied as standard on each contactor for Sizes 00 – 8.

Technical Data

Table 33-92. Wire (75°C) Sizes — AWG or kcmil — Open and Enclosed

| NEMA Size | Power Terminals Line or Load | Control Terminals Cu Only |
|-----------|--|-----------------------------------|
| 00 | 12 – 16 stranded; 12 – 14 solid Cu | 12 – 16 stranded 12 – 14 solid |
| 0 | 8 – 16 stranded; 10 – 14 solid Cu | |
| 1 | 8 – 14 stranded or solid Cu | |
| 2 | 3 – 14 (upper) and/or 6 – 14 (lower) stranded or solid ① Cu | |
| 3 | 1/0 – 14 Cu/Al | |
| 4 | 250 mcm – 6 | |
| 5 | 750 kcmil – 2, or (2) 250 kcmil – 3/0 Cu/Al | |
| 6 | (2) 750 kcmil – 3/0 Cu/Al | |
| 7 | (3) 750 kcmil – 3/0 Cu/Al | |
| 8 | (4) 750 kcmil – 4/0 Cu/Al | |

① Two compartment box lug.

Table 33-93. Plugging and Jogging Service Horsepower Ratings ②

| NEMA Size | 200V | 230V | 460V | 575V |
|-----------|-------|-------|------|------|
| 00 | — | 1/2 | 1/2 | 1/2 |
| 0 | 1-1/2 | 1-1/2 | 2 | 2 |
| 1 | 3 | 3 | 5 | 5 |
| 2 | 7-1/2 | 10 | 15 | 15 |
| 3 | 15 | 20 | 30 | 30 |
| 4 | 25 | 30 | 60 | 60 |
| 5 | 60 | 75 | 150 | 150 |
| 6 | 125 | 150 | 300 | 300 |

② Maximum horsepower where operation is interrupted more than 5 times per minute or more than 10 times in a 10 minute period. NEMA standard ICS 2-1993 table 2-4-3.

Kits and Accessories

- Auxiliary Contacts, contactor mounted — **Pages 33-96 and 33-97.**
- Transient Suppressor, for magnet coil — **Pages 33-94.**
- Timers — Solid-State and Pneumatic, mount on contactor — **Page 33-93.**

Renewal Parts Publication Numbers

- See **Page 33-101.**