

CONTACTORS



c3controls' line of Contactors are easy to install and designed to perform in a broad range of global applications. Our Series 300 Non-Reversing and Series 310 Reversing Contactors feature DIN rail and panel mounting, IP20 guarded terminals, multi-point coils, and include a wide variety of shared accessories.



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PROVEN



Conformity to Standards:

UL 508, 60947-4-1
 CSA C22.2 No. 14
 IEC 60947-1, 60947-4-1

Certifications:

UL File #: E236197 (Guide NLDX, NLDX7), E68568 (Guide NKCR, NKCR7)

CE Marked (per EU Low Voltage Directive 2006/95/EC and RoHS Directive 2011/65/EU)

Visit www.c3controls.com to download product certifications.

CONTACTORS

c3controls offers a comprehensive line of Motor Control products designed and manufactured to meet the needs of the machine builder. We promise durable products at a price that gives you an edge, and we guarantee same-day shipping. Check out all the features of our Series 300/310 standard contactors below!

DELIVERING SUPERIOR PRODUCT QUALITY AND MANUFACTURING EXCELLENCE

| | |
|--|--|
| ✓ Proven | Our Series 300 and 310 Standard Contactors are UL Listed and CE marked, meeting global standards requirements.  |
| ✓ Compact Size | Reduced panel area for lower installed costs—Four (4) frame sizes directly interchangeable with other manufacturers. |
| ✓ Lower Cost | Snap-on front mounted and side mounted auxiliary contacts install without the use of tools for lower installed costs. |
| ✓ Convenient | Wide variety of AC and DC operating coils for control circuit application flexibility. 50A to 105A DC operated devices feature electronic coil control. |
| ✓ Easy to Install | 35mm DIN rail mounting for all contactors from 9A to 105A for fast and easy installation and removal, or panel mounting for more secure installation in high shock and vibration applications. |
| ✓ Modular Design | Modular design allows easy installation of Series 320 Overload Relays and the complete range of Series 330 Motor Protection Circuit Breakers and accessories. |
| ✓ Visible Certifications | Our product certifications and electrical ratings are clearly marked on the outside of the device for easy reference during installation. |
| ✓ Environmentally Friendly | Environmentally friendly contacts are cadmium free and non-metallic materials are asbestos, halogen, and cadmium free. All c3controls products are compliant to the RoHS directives. |
| ✓ Added Safety | IP20 guarded terminals with dual terminal markings prevent accidental contact with live parts. |
| ✓ Lifetime Warranty* | Every product is backed by our lifetime warranty—unmatched in the industry—bringing you quality components that perform in the most demanding applications. |
| ✓ Guaranteed Same-Day Shipping* | Product availability reduces inventory, and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same-day. |
| ✓ Advantage Pricing | Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry. |

*See c3controls Terms & Conditions

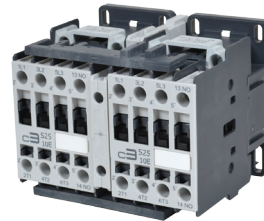
“When GinSan expanded to Canada, we needed to find a supplier that could provide us with motor protection products that conformed to Canadian standards without increasing our bottom line. During the evaluation and testing of a new supplier, c3controls motor control products met all of our quality standards. One added feature c3controls offers on their contactors is they have an extra, fourth contact—eliminating the need to add an extra auxiliary onto the device.”

Mike Fox, Engineering Chief • **GinSan Industries Inc.**

Non-Reversing Contactor



Reversing Contactor



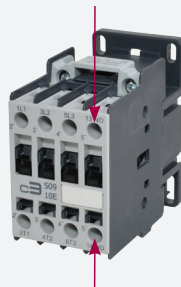
UNIQUE PRODUCT LINE FEATURES

HIGH FAULT SCCR



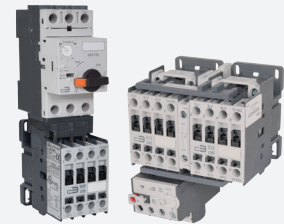
High fault short circuit current rating of 100kA @ 480V and 600V with Class J fuses, provides safety and reliability in high fault applications.

INTEGRAL AUXILIARY



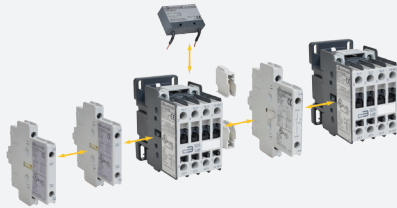
Integral auxiliary contacts, 3 power poles + 1 auxiliary, are standard on all c3controls 9A to 25A non-reversing contactors.

SEAMLESS COMPATIBILITY



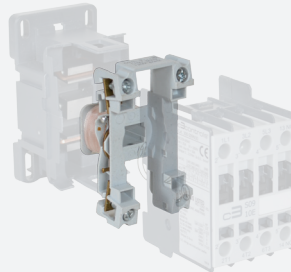
c3controls Series 310, 9A to 25A, AC/DC Reversing Contactors are compatible with directly mounted Series 320-B2 Overload Relays, and our 9A to 40A AC/DC Reversing Contactors direct mount onto Series 330 Motor Protection Circuit Breakers.

COMMON ACCESSORIES



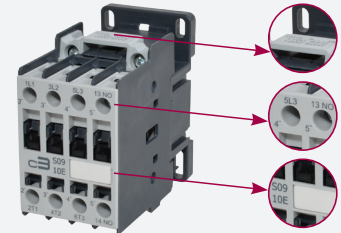
Designing starter assemblies and panels is easy! No more remembering which auxiliary works with each contactor. Our complete range of Series 300 Non-Reversing and Series 310 Reversing Contactors shares common accessories reducing inventory and simplifying installation and assembly.

MULTI-POINT TERMINAL COILS



Four terminal coils on all 9A to 105A AC and DC operated contactors are easily accessible, two on the line side and two on the load side.

QUICK IDENTIFICATION



Enhanced markings, improved identification labels, and dual IEC and NEMA terminal markings ensure quick identification of product from all angles simplifying troubleshooting in panels with many devices.

FIND IT FAST

Contactors



- Certifications
- Specifications
- Dimension Drawings
- Installation Instructions
- Easy to Buy

www.c3controls.com

Motor Control Device Solutions

c3controls motor control devices are the perfect solution for manufacturers who want proper motor control and superior motor protection without having to overpay or compromise on quality. In fact, we engineer so much performance and flexibility into our products, we can deliver a remarkably better value than our competitors.

c3controls products deliver like no other.



Seamless Compatibility

Contactors, overload relays and motor protection circuit breakers are designed by c3controls to work together, with common connections and accessories, resulting in a high functioning compact starter.

LEADING THE INDUSTRY
with our compact miniature 10HP contactors and control relays. One frame size (AC or DC)—28% reduction in panel area.

Compact

The small size of c3controls motor control devices, plus features like common accessories, enable assembly into smaller control panels for lower installed costs.

Reliable Protection

Contactors provide the repeated on/off switching for the motor and are designed for motor, actuator, solenoid, and other power switching applications. Overload relays provide Trip Class 10 protection against overload and phase-loss conditions, and have ambient temperature compensation for motor protection in high temperature environments.

Ensures the protection of equipment and user.

Motor protection circuit breakers provide overload, phase-loss and short circuit protection, can be used by themselves as manual motor controllers or with contactors in group motor installations, and can achieve Type 2 coordination for optimum performance.

Type E self-protected combination manual motor controllers provide disconnecting means, branch circuit protection, motor control and motor overload protection all in a single device.



Proven

Our motor control devices are UL Listed and CE marked, meeting global standards requirements for use anywhere in the world.

NFPA 70 - National Electrical Code (NEC)

Understanding what functions are needed in your motor control circuit is critical when selecting motor control devices. Engineers benefit from the standards and codes established to ensure safety and protection to personnel and equipment.

More than just knowing the standards, c3controls, as a manufacturer of motor control products, has the application expertise you need to select the right products.

| c3controls & Article 430 - Motors, Motor Circuits and Controllers | | | |
|---|-----------|----------|--|
| | To Supply | NEC Part | c3controls Product Series |
| Motor disconnecting means | | Part IX | 330 630 Type E 330 630 |
| Motor branch-circuit, short circuit, and ground-fault protection | | Part IV | Type E 330 630 |
| Motor circuit conductor | | Part II | |
| Motor controller | | Part VII | 300/310 330 620 630 Type E 330 630 |
| Motor control circuits | | Part VI | |
| Motor overload protection | | Part III | 320 330 620 630 Type E 330 630 |
| Motor | | Part I | |

Our motor control products align with Article 430 Part VII, Motor Controller, of the NFPA 70, the National Electrical Code.

IT'S EASY TO BUILD YOUR OWN CONTACTOR

Simply pick the code number from each of the sections below and combine them to build your part number.

Non-Reversing Contactors



Example: To build one of our most popular Contactors, the part number would be **I + II + III** or **300-S09N30D10**



I. NON-REVERSING CONTACTORS (3 NORMALLY OPEN POLES)

| CODE | MAX. Ie (A) | | RATINGS FOR SWITCHING AC MOTORS - AC-2, AC-3 | | | | | | | | | | LIST |
|-------------|-------------|-----|--|------|------|----------|-----------|-------|---------|-------|-------|-------|----------|
| | | | kW (50Hz) | | | | HP (60Hz) | | | | | | |
| | | | 3 PHASE | | | | 1 PHASE | | 3 PHASE | | | | |
| | | | AC-3 | AC-1 | 230V | 400/415V | 500V | 690V | 115V | 230V | 200V | 230V | |
| 300-S09N30 | 9 | 25 | 2.2 | 4 | 5.5 | 5.5 | 1/2 | 1-1/2 | 3 | 3 | 5 | 7-1/2 | \$ 53.00 |
| 300-S12N30 | 12 | 25 | 3 | 5.5 | 7.5 | 7.5 | 3/4 | 2 | 3 | 3 | 7-1/2 | 10 | \$ 79.00 |
| 300-S18N30 | 18 | 32 | 4 | 7.5 | 10 | 10 | 1 | 3 | 5 | 5 | 10 | 15 | \$ 87.00 |
| 300-S25N30 | 25 | 45 | 7.5 | 11 | 15 | 15 | 2 | 3 | 7-1/2 | 7-1/2 | 15 | 15 | \$ 99.00 |
| 300-S32N30 | 32 | 60 | 9 | 15 | 18.5 | 18.5 | 3 | 5 | 10 | 10 | 20 | 25 | \$130.00 |
| 300-S40N30 | 40 | 60 | 11 | 18.5 | 25 | 30 | 3 | 5 | 10 | 15 | 30 | 25 | \$178.00 |
| 300-S50N30 | 50 | 90 | 15 | 22 | 30 | 35 | 3 | 7-1/2 | 15 | 15 | 40 | 40 | \$212.00 |
| 300-S65N30 | 65 | 110 | 18.5 | 30 | 40 | 45 | 5 | 10 | 20 | 20 | 50 | 50 | \$236.00 |
| 300-S80N30 | 80 | 110 | 22 | 37 | 45 | 45 | 7-1/2 | 15 | 20 | 25 | 50 | 60 | \$271.00 |
| 300-S95N30 | 95 | 140 | 25 | 45 | 55 | 55 | 7-1/2 | 15 | 25 | 30 | 60 | 75 | \$346.00 |
| 300-S105N30 | 105 | 140 | 30 | 55 | 65 | 65 | 10 | 20 | 30 | 40 | 75 | 75 | \$398.00 |

II. COIL VOLTAGE CODE

| AC COIL VOLTAGE CODES | | | | | | | | | | | | | | | |
|-----------------------|----|----|----|-----------|-----|-----|-----|-----|-----|-----|-----------|-----|-----|-----|-----|
| VOLTAGE | 12 | 24 | 48 | 110 / 120 | 208 | 220 | 230 | 240 | 277 | 400 | 400 ~ 415 | 480 | 500 | 550 | 600 |
| 50Hz | — | — | — | D | — | — | — | — | — | — | R | — | T | U | — |
| 60Hz | — | — | — | D | L | — | — | F | P | — | — | R | — | — | T |
| 50/60Hz | XB | XC | XJ | — | — | XAJ | XN | — | — | XAM | — | — | — | — | — |

| DC COIL VOLTAGE CODES | | | | | | | | LIST |
|-----------------------|----|----|---------|-----|-----------|-----------|-----|----------|
| VOLTAGE | 12 | 24 | 24 ~ 28 | 125 | 110 ~ 130 | 208 ~ 240 | 250 | |
| -S09 to -S25 | ZB | ZC | — | ZQ | — | — | ZP | \$ 35.00 |
| -S32 to -S40 | ZB | ZC | — | ZQ | — | — | ZP | \$ 78.00 |
| -S50 to -S105 | — | — | EC | — | EL | EE | — | \$282.00 |

III. AUXILIARY CONTACT CONFIGURATION

| CODE | DESCRIPTION | LIST |
|------|---|----------|
| 00 | Without Auxiliary Contacts (Contactors 300-S32 to 300-S105 only) | — |
| 10 | 1 Normally Open* | \$ 18.00 |
| 01 | 1 Normally Closed* | \$ 18.00 |

*NOTE: Integral right side mounted on 9A ~ 25A contactors, front mounted on 32A ~ 105A contactors.



SOME OF OUR POPULAR CONFIGURATIONS:

| NON-REVERSING CONTACTORS | | |
|--------------------------|--|----------|
| CATALOG NUMBER | DESCRIPTION | LIST |
| 300-S09N30D10 | Non-Reversing, 9A, 3 Pole, 120V AC Coil, 1 NO Auxiliary Contact | \$ 71.00 |
| 300-S09N30ZC10 | Non-Reversing, 9A, 3 Pole, 24V DC Coil, 1 NO Auxiliary Contact | \$106.00 |
| 300-S25N30D10 | Non-Reversing, 25A, 3 Pole, 120V AC Coil, 1 NO Auxiliary Contact | \$117.00 |

NON-REVERSING CONTACTORS

c3controls Series 300 Contactors are ideal for motor, actuator, solenoid, and other power switching applications where panel space is at a premium and device modularity is required to satisfy virtually any application requirement. cULus and CE Markings make them suitable for use anywhere in the world. Small size, IP20 guarded terminals with dual terminal markings, and shared accessories will help reduce your total installed costs and enhance the features and performance of your equipment. Just look and see what the Series 300 has to offer.

Product features include:

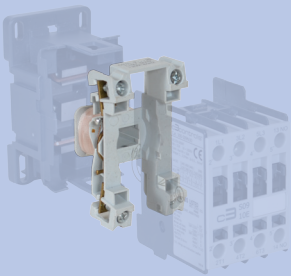
- High fault short circuit rating of 100kA @ 480V and 600V with Class J fuses, provides safety and reliability in high fault applications.
- Series 300 25A contactor has an integral auxiliary, 3 power poles plus 1 auxiliary, provides more functionality in a smaller package, reducing bill of material and panel size.
- Removable and replaceable identification marker, standard on all c3controls contactors and Series 300-SFA Auxiliaries, for labeling contactors and front mounted auxiliary contacts - simplifies trouble shooting in panels with many contactors.
- Our side mounted auxiliaries and interlocks are 9mm wide and install without the use of tools onto Series 300 Contactors, reducing panel footprint and simplifying installation.
- Multi-point terminal coils on 9A to 80A AC and DC contactors providing wiring flexibility and installation convenience.
- Lower power consumption for 32A and 40A DC contactors.
- Enhanced markings and high visibility labels for ease of troubleshooting and maintenance.
- Compact size - four (4) frame sizes for devices rated from 9A to 105A. Contactors rated 15HP @ 460V (11kW @ 400V) are only 45mm (1-49/64") wide reducing panel area requirements - smaller enclosures can be used for lower installed costs.
- AC and DC operating coils for control circuit application flexibility. 50A to 105A DC operated devices feature electronic coil control.
- Environmentally friendly contacts are cadmium free and non-metallic materials are asbestos, halogen, and cadmium free.
- IP20 guarded terminals prevent accidental contact with live parts.
- Dual IEC and NEMA terminal markings for ease of wiring anywhere in the world.
- 35mm DIN rail mounting for all contactors from 9A to 105A for fast and easy installation and removal or panel mounting for more secure installation in high shock and vibration applications. Our 9A to 25A devices are easily installed or removed without the use of tools.
- Modular design allows easy installation of Series 320 Overload Relays and the complete range of Series 330 Motor Protection Circuit Breakers and accessories.
- Combination head terminal screws allow the use of straight, phillips, or posidrive screwdrivers. Allen head screws on 50A through 105A contactors make it easy to apply the proper terminal tightening torque for secure conductor connections.
- Snap-on front mounted auxiliary contacts install without the use of tools for lower installed costs. Single circuits available so you only purchase what you need.



UNIQUE PRODUCT FEATURES

MULTI-POINT TERMINAL COILS

Four terminal coils on all 9A to 105A AC and DC operated contactors are easily accessible on contactor and overload relay assemblies or contactor and motor protection circuit breaker assemblies. The control circuit can be wired from the line side or the load side of the contactor, whichever is most convenient for the installation. Control circuit wire runs can be minimized, and the devices can be easily substituted in your existing equipment without disturbing or changing your control wires. So no matter what components are being used, Series 300 Contactors can be easily and quickly wired, reducing your labor and installation costs.



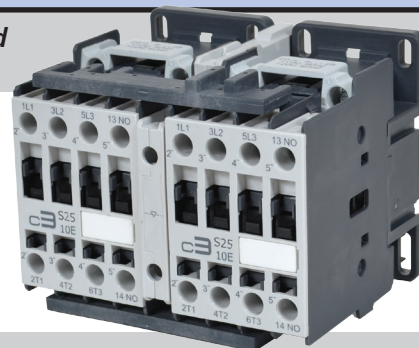
IT'S EASY TO BUILD YOUR OWN CONTACTOR

Simply pick the code number from each of the sections below and combine them to build your part number.

Reversing Contactors



Example: To build one of our most popular Contactors, the part number would be I + II + III + IV or 310-S25N30D22



I. REVERSING CONTACTORS (3 NORMALLY OPEN POLES)

| CODE | MAX. Ie (A) | | RATINGS FOR SWITCHING AC MOTORS - AC-2, AC-3 | | | | | | | | | | LIST |
|------------|-------------|-----|--|------|------|----------|---------|-------|-------|-----------|-------|-------|----------|
| | | | kW (50Hz) | | | | 1 PHASE | | | HP (60Hz) | | | |
| | | | 3 PHASE | | | | 3 PHASE | | | 3 PHASE | | | |
| | | | AC-3 | AC-1 | 230V | 400/415V | 500V | 690V | 115V | 230V | 200V | 230V | |
| 310-S09N30 | 9 | 25 | 2.2 | 4 | 5.5 | 5.5 | 1/2 | 1-1/2 | 3 | 3 | 5 | 7-1/2 | \$214.00 |
| 310-S12N30 | 12 | 25 | 3 | 5.5 | 7.5 | 7.5 | 3/4 | 2 | 3 | 3 | 7-1/2 | 10 | \$266.00 |
| 310-S18N30 | 18 | 32 | 4 | 7.5 | 10 | 10 | 1 | 3 | 5 | 5 | 10 | 15 | \$282.00 |
| 310-S25N30 | 25 | 45 | 7.5 | 11 | 15 | 15 | 2 | 3 | 7-1/2 | 7-1/2 | 15 | 15 | \$342.00 |
| 310-S32N30 | 32 | 60 | 9 | 15 | 18.5 | 18.5 | 3 | 5 | 10 | 10 | 20 | 25 | \$415.00 |
| 310-S40N30 | 40 | 60 | 11 | 18.5 | 25 | 30 | 3 | 5 | 10 | 15 | 30 | 25 | \$511.00 |
| 310-S50N30 | 50 | 90 | 15 | 22 | 30 | 35 | 3 | 7-1/2 | 15 | 15 | 40 | 40 | \$625.00 |
| 310-S65N30 | 65 | 110 | 18.5 | 30 | 40 | 45 | 5 | 10 | 20 | 20 | 50 | 50 | \$673.00 |
| 310-S80N30 | 80 | 110 | 22 | 37 | 45 | 45 | 7-1/2 | 15 | 20 | 25 | 50 | 60 | \$743.00 |

II. COIL VOLTAGE CODE

| AC COIL VOLTAGE CODES | | | | | | | | | | | | | | | |
|-----------------------|----|----|----|-----------|-----|-----|-----|-----|-----|-----|-----------|-----|-----|-----|-----|
| VOLTAGE | 12 | 24 | 48 | 110 / 120 | 208 | 220 | 230 | 240 | 277 | 400 | 400 ~ 415 | 480 | 500 | 550 | 600 |
| 50Hz | — | — | — | D | — | — | — | — | — | — | R | — | T | U | — |
| 60Hz | — | — | — | D | L | — | — | F | P | — | — | R | — | — | T |
| 50/60Hz | XB | XC | XJ | — | — | XAJ | XN | — | — | XAM | — | — | — | — | — |

| DC COIL VOLTAGE CODES | | | | | | | | LIST |
|-----------------------|----|----|---------|-----|-----------|-----------|-----|----------|
| VOLTAGE | 12 | 24 | 24 ~ 28 | 125 | 110 ~ 130 | 208 ~ 240 | 250 | |
| -S09 to -S25 | ZB | ZC | — | ZQ | — | — | ZP | \$ 70.00 |
| -S32 to -S40 | ZB | ZC | — | ZQ | — | — | ZP | \$157.00 |
| -S50 to -S105 | — | — | EC | — | EL | EE | — | \$563.00 |

III. AUXILIARY CONTACT CONFIGURATION

| CODE | DESCRIPTION | LIST |
|------|---|----------|
| 00 | Without Auxiliary Contacts (Contactors 310-S32 to 310-S80 only) | — |
| 22 | 2 Normally Open (1 NO on Forward Contactor ^① and 1 NO on Reverse Contactor ^①) and 2 Normally Closed (1 NC on Forward Contactor ^② and 1 NC on Reverse Contactor ^②) | \$ 47.00 |

① Integral right side mounted on 9A ~ 25A contactors, front mounted on 32A ~ 80A contactors.

② Integrated contacts as part of the electrical/mechanical interlock.

IV. OPTIONS

| CODE | DESCRIPTION | FOR CONTACTOR | LIST (deduct) |
|---------|-------------------------------------|--|-------------------------------------|
| (Blank) | With Power Wires | — | — |
| WW | Without Interconnecting Power Wires | -S09 to -S25 -S32 to -S40 -S50 to -S80 | -\$ 34.00 -\$ 51.00 -\$ 97.00 |

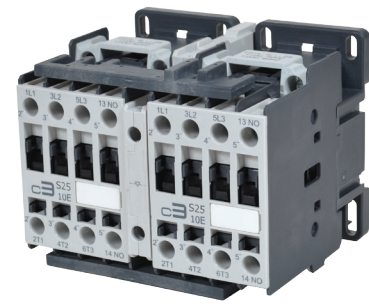


REVERSING CONTACTORS

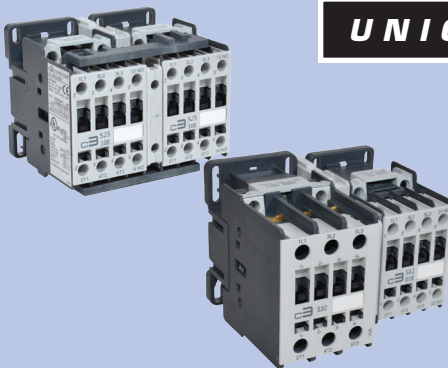
c3controls Series 310 Reversing Contactors are ideal for reversing motors in applications where panel space is at a premium and device modularity is required to satisfy virtually any application requirement. cULus and CE Markings make them suitable for use anywhere in the world. A common mechanical interlock, power wiring modules, IP20 guarded terminals with dual terminal markings, and shared accessories help reduce your total installed costs and enhance the features and performance of your equipment. Just look and see what our Series 310 has to offer.

Product features include:

- High fault short circuit rating of 100kA @ 480V and 600V with Class J fuses, provides safety and reliability in high fault applications.
- Series 300 25A contactor has an integral - auxiliary, 3 power poles plus 1 auxiliary, provides more functionality in a smaller package, reducing bill of material and panel size.
- Modular design allows Series 320-B2 Overload Relays to be directly mounted onto Series 310, 9A to 25A, reversing contactors resulting in a high functioning compact starter.
- Removable and replaceable identification marker, standard on all c3controls contactors, simplifies troubleshooting in panels with many devices.
- Multi-point terminal coils on 9A to 80A AC and DC contactors providing wiring flexibility and installation convenience.
- Lower power consumption for 32A and 40A DC contactors.
- Series 330 Motor Protection Circuit Breakers direct mount onto Series 310, 9A to 40A AC and DC, reversing contactors, resulting in a high functioning compact starter.
- Modular design allows use with separately mounted overload relays, or Series 320 Overload Relays can be directly mounted on Series 310 32A to 50A reversing contactors without load-side interconnecting power wires.
- AC and DC operating coils for control circuit application flexibility. 50A to 80A DC operated devices feature electronic coil control.
- Environmentally friendly contacts are cadmium free and non-metallic materials are asbestos, halogen and cadmium free.
- IP20 guarded terminals prevent accidental contact with live parts.
- Dual IEC and NEMA terminal markings for ease of wiring anywhere in the world.
- Device identification marker for labeling contactors and front mounted auxiliary contacts simplify trouble shooting in panels without the use of tools.
- Power wiring modules provide reliable, rigid interconnections between the forward and reverse contactors.
- Combination head terminal screws allow the use of straight, phillips, or posidrive screwdrivers. Allen head screws on 50A through 80A contactors make it easy to apply the proper terminal tightening torque for secure conductor connections.
- Snap-on front mounted auxiliary contacts install without the use of tools for lower installed costs. Single circuits available so you only purchase what you need.



UNIQUE PRODUCT FEATURES



Series 310 Reversing Contactors feature a single, side mounted electrical and mechanical or mechanical only interlock that is used for the whole range of contactors, enabling a 9A contactor to be interlocked with a 105A contactor. The side mounted interlock doesn't increase the depth of the contactor and doesn't prevent front mounted auxiliary contacts from being added to either the forward or reverse contactors. Contactors are physically secured together with a dovetail bracket that installs from the bottom of the contactor - so it can't fall out when it is installed on a DIN rail or on a panel, even in high vibration applications. To complete the reversing contactor assembly, attractive, insulated wiring modules provide error free interconnections between the forward and reverse contactors. Simple to use, modular accessories make reversing contactors easy to assemble in the field - or order them factory assembled. Either way you'll get the performance and features you need for your reversing motor applications.

SOME OF OUR POPULAR CONFIGURATIONS:

| REVERSING CONTACTORS | | |
|----------------------|--|----------|
| CATALOG NUMBER | DESCRIPTION | LIST |
| 310-S09N30D22 | Reversing, 9A, 3 Pole, 120V AC Coil, 2 NO and 2 NC Auxiliary Contacts | \$261.00 |
| 310-S09N30ZC22 | Reversing, 9A, 3 Pole, 24V DC Coil, 2 NO and 2 NC Auxiliary Contacts | \$331.00 |
| 310-S25N30D22 | Reversing, 25A, 3 Pole, 120V AC Coil, 2 NO and 2 NC Auxiliary Contacts | \$389.00 |
| 310-S25N30ZC22 | Reversing, 25A, 3 Pole, 24V DC Coil, 2 NO and 2 NC Auxiliary Contacts | \$459.00 |
| 310-S32N30D22 | Reversing, 32A, 3 Pole, 120V AC Coil, 2 NO and 2 NC Auxiliary Contacts | \$462.00 |

FRONT MOUNTED AUXILIARY CONTACTS



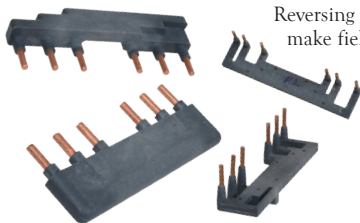
Our front mounted auxiliary contacts feature IP20 guarded terminals to protect against accidental contact with live parts. The device identification marker simplifies trouble shooting in panels with many contactors. These contacts snap-on and install without the use of tools. NOTE: See chart below for maximum number of front mounted auxiliary contacts.

| CODE | CONTACT CONFIGURATION | CONNECTION DIAGRAM | LIST |
|-------------|---------------------------------|--------------------|---------|
| 300-SFA10 | 1 Normally Open | | \$11.50 |
| 300-SFA01 | 1 Normally Closed | | \$11.50 |
| 300-SFA10EM | 1 Normally Open Early Make | | \$17.00 |
| 300-SFA01DB | 1 Normally Closed Delayed Break | | \$17.00 |

MAXIMUM NUMBER OF FRONT OR SIDE MOUNTED AUXILIARY CONTACTS

| CONTACTOR | MAXIMUM NUMBER |
|--------------------------|----------------|
| S09, S12, S18, S25 | 4 |
| S32, S40 | 6 |
| S50, S65, S80, S95, S105 | 8 |

WIRING MODULES



Reversing contactor power wiring modules make field assembly of reversing contactors easy. Line and load side over-molded copper bus bar conductors ensure error free installation and make for a rigid assembly with a mechanical interlock (300-SMI) or electrical/mechanical interlock (300-SMEI).

| CODE | FOR USE WITH CONTACTORS | LIST |
|-----------|-------------------------|---------|
| 300-RWS25 | S09, S12, S18, S25 | \$40.00 |
| 300-RWS40 | S32, S40 | \$51.00 |
| 300-RWS80 | S50, S65, S80 | \$97.00 |



SIDE MOUNTED AUXILIARY CONTACTS



Side mounted auxiliary contacts feature IP20 guarded terminals to protect against accidental contact with live parts. NOTE: See chart at left for maximum number of side mounted auxiliary contacts.

| CODE | CONTACT CONFIGURATION | CONNECTION DIAGRAM | LIST |
|------------|--|--------------------|---------|
| 300-SSA11 | 1 Normally Open and 1 Normally Closed | | \$31.00 |
| 300-SSA20 | 2 Normally Open | | \$31.00 |
| 300-SSA11X | 1 Normally Open and 1 Normally Closed* | | \$31.00 |
| 300-SSA20X | 2 Normally Open* | | \$31.00 |

*NOTE: For use with 300-SSA11 or 300-SSA20 when more than one side mounted auxiliary contact module is installed on the same side of the contactor.

INTERLOCKS



MECHANICAL INTERLOCK

Our side mounted mechanical interlock for use with reversing contactors, reversing starters, two-speed starters and star-delta (wye-delta) starters. This single interlock can be used with all size contactors from 9A ~ 105A, preventing the forward and reverse contactors from being energized at the same time.

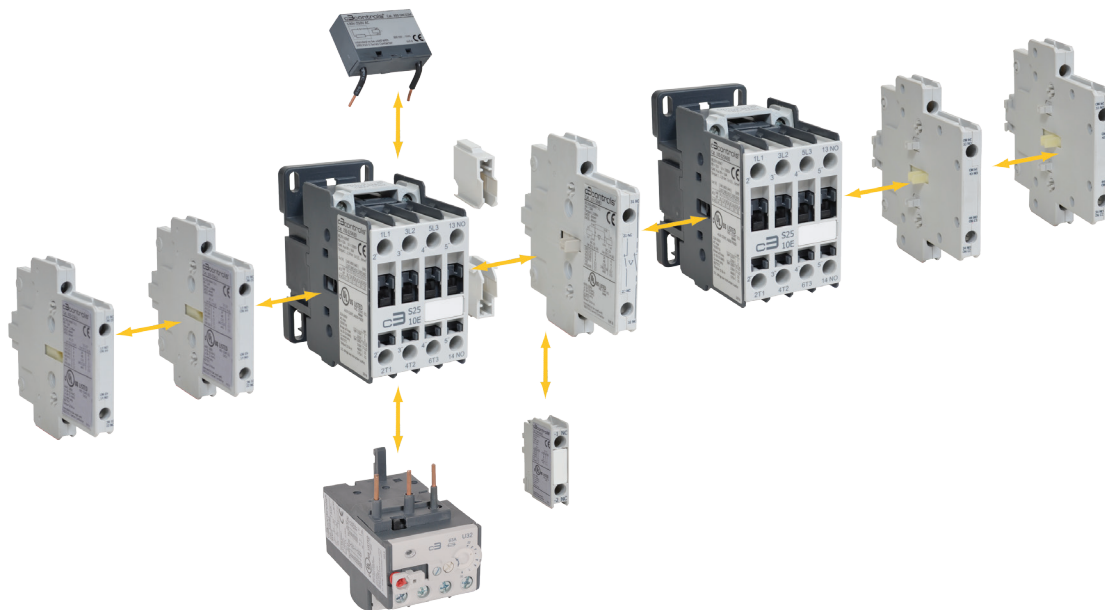
ELECTRICAL & MECHANICAL INTERLOCK

c3controls electrical/mechanical interlock for reversing contactors has the same features as the mechanical interlock but also has two normally closed auxiliaries built into the unit for electrical interlocking, eliminating the need for two normally closed auxiliary contacts and the mechanical interlock. The result of integrating the normally closed auxiliary contact is decreased width of reversing contactors and more available auxiliary contact locations.

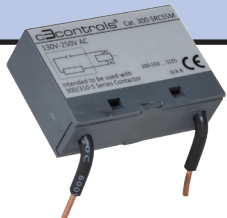
| CODE | DESCRIPTION | LIST |
|----------|--|---------|
| 300-SMI | Side Mounted Mechanical Interlock | \$34.00 |
| 300-SMEI | Side Mounted Electrical/Mechanical Interlock | \$43.00 |

ACCESSORIES FOR NON-REVERSING AND REVERSING CONTACTORS

The complete range of Series 300 Non-Reversing Contactors and Series 310 Reversing Contactors share common accessories including single circuit front mounted auxiliary contacts, two circuit side mounted auxiliary contacts, a single electrical/mechanical or mechanical interlock, and coil mounted surge suppressors. Designing starter assemblies and panels is easy – you don't have to remember which auxiliary is required for each contactor, they all work together. Installation is easy too – once you learn how to install each accessory, it's always the same no matter what contactor it's being installed on. If simple design and assembly isn't enough – you'll also reduce your inventory and maximize its flexibility, because unique accessories are not required for each size contactor.



SURGE SUPPRESSORS



Coil mounted surge suppressors protect sensitive electronic components in control circuits from damaging line voltage spikes.



| RC SURGE SUPPRESSOR | | | |
|---------------------|---------------|------------------------|---|
| CODE | VOLTAGE RANGE | FOR USE WITH CONTACTOR | LIST |
| 300-SRCS2J | 24 ~ 48V AC | | S09, S12, S18, S25, S32, S40 \$29.00 |
| 300-SRCS2AH | 50 ~ 127V AC | | S09, S12, S18, S25, S32, S40 \$29.00 |
| 300-SRCS2M | 130 ~ 250V AC | | S09, S12, S18, S25, S32, S40 \$29.00 |
| 300-SRCS5J | 24 ~ 48V AC | | S50, S65, S80, S95, S105 \$29.00 |
| 300-SRCS5AH | 50 ~ 127V AC | | S50, S65, S80, S95, S105 \$29.00 |
| 300-SRCS5M | 130 ~ 250V AC | | S50, S65, S80, S95, S105 \$29.00 |
| CODE | VOLTAGE RANGE | FOR USE WITH CONTACTOR | LIST |
| 300-SDS5T | 12 ~ 600V DC | | S09, S12, S18, S25, S32, S40, S50, S65, S80, S95, S105 \$29.00 |

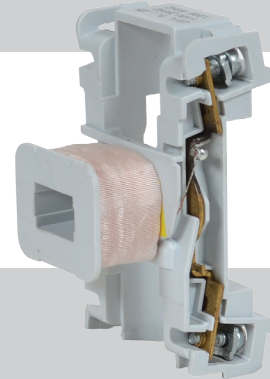
IT'S EASY TO BUILD YOUR OWN OPERATING COIL

Simply pick the code number from each of the sections below and combine them to build your part number.

Operating Coils



Example: To build one of our most popular Operating Coils, the part number would be **I + II** or **ACS25D**



I. OPERATING COIL TYPE

| CODE | DESCRIPTION | FOR USE WITH CONTACTORS | LIST |
|--------|-------------------|--------------------------|----------|
| ACS25 | AC Operating Coil | S09, S12, S18, S25 | \$ 26.00 |
| ACS40 | AC Operating Coil | S32, S40 | \$ 30.00 |
| ACS105 | AC Operating Coil | S50, S65, S80, S95, S105 | \$ 42.00 |
| DCS25 | DC Operating Coil | S09, S12, S18, S25 | \$ 53.00 |
| DCS40 | DC Operating Coil | S32, S40 | \$141.00 |
| DCS105 | DC Operating Coil | S50, S65, S80, S95, S105 | \$211.00 |

II. COIL VOLTAGE CODE

AC COIL VOLTAGE CODES

| VOLTAGE | 12 | 24 | 48 | 110 / 120 | 208 | 220 | 230 | 240 | 277 | 400 | 400 ~ 415 | 480 | 500 | 550 | 600 |
|---------|----|----|----|-----------|-----|-----|-----|-----|-----|-----|-----------|-----|-----|-----|-----|
| 50Hz | — | — | — | D | — | — | — | — | — | — | R | — | T | U | — |
| 60Hz | — | — | — | D | L | — | — | F | P | — | — | R | — | — | T |
| 50/60Hz | XB | XC | XJ | — | — | XAJ | XN | — | — | XAM | — | — | — | — | — |

DC COIL VOLTAGE CODES

| VOLTAGE | 12 | 24 | 24 ~ 28 | 125 | 110 ~ 130 | 208 ~ 240 | 250 |
|---------------|----|----|---------|-----|-----------|-----------|-----|
| -S09 to -S25 | ZB | ZC | — | ZQ | — | — | ZP |
| -S32 to -S40 | ZB | ZC | — | ZQ | — | — | ZP |
| -S50 to -S105 | — | — | EC | — | EL | EE | — |



SPECIFICATIONS:

| | | ELECTRICAL SPECIFICATIONS | | | | | | | | | | |
|---|--------------|--------------------------------|-------|------|-------|------|------|-------|-------|-------|-------|-------|
| | | S09 | S12 | S18 | S25 | S32 | S40 | S50 | S65 | S80 | S95 | S105 |
| ELECTRICAL GENERAL | | | | | | | | | | | | |
| | UNITS | | | | | | | | | | | |
| Rated Operating Frequency | Hz | 25 ~ 400 | | | | | | | | | | |
| Impedance per Pole | mΩ | 1.90 | 1.90 | 1.60 | 1.60 | 2.10 | 1.60 | 0.85 | 0.86 | 0.86 | 0.76 | 0.76 |
| POWER DISSIPATION PER POLE | | | | | | | | | | | | |
| AC-1 | W | 1.47 | 1.47 | 2.46 | 3.34 | 4.60 | 3.42 | 6.89 | 10.40 | 10.40 | 14.89 | 14.89 |
| AC-3 | W | 0.19 | 0.34 | 0.78 | 1.03 | 1.31 | 1.52 | 2.12 | 3.63 | 5.50 | 6.86 | 8.37 |
| Rated Coil Frequencies | | AC: 50Hz, 60Hz, 50/60Hz and DC | | | | | | | | | | |
| ELECTRICAL UL/CSA APPLICATIONS | | | | | | | | | | | | |
| Rated Operating Voltage, Ue | VAC | 600 | | | | | | | | | | |
| General Purpose Current Rating | A | 25 | 25 | 32 | 32 | 60 | 60 | 90 | 110 | 110 | 140 | 140 |
| RATED 1 PHASE OPERATING CURRENT, Ie | | | | | | | | | | | | |
| 115V | A | 9.8 | 13.8 | 16 | 24 | 34 | 34 | 34 | 56 | 80 | 80 | 100 |
| 230V | A | 10 | 12 | 17 | 28 | 28 | 28 | 40 | 40 | 50 | 60 | 88 |
| RATED 1 PHASE OPERATING POWER, Pe | | | | | | | | | | | | |
| 115V | HP | 1/2 | 3/4 | 1 | 2 | 3 | 3 | 3 | 5 | 7-1/2 | 7-1/2 | 10 |
| 230V | HP | 1-1/2 | 2 | 3 | 3 | 5 | 5 | 7-1/2 | 10 | 15 | 15 | 20 |
| RATED 3 PHASE OPERATING CURRENT, Ie | | | | | | | | | | | | |
| 200V | A | 11 | 11 | 17.5 | 25.3 | 32.2 | 32.2 | 48.3 | 62.1 | 62.1 | 78.2 | 92 |
| 230V | A | 9.6 | 9.6 | 15.2 | 22 | 28 | 42 | 42 | 54 | 68 | 80 | 104 |
| 460V | A | 7.6 | 11 | 14 | 21 | 27 | 40 | 52 | 65 | 65 | 77 | 96 |
| 575V | A | 9 | 11 | 17 | 17 | 27 | 27 | 41 | 52 | 62 | 77 | 77 |
| RATED 3 PHASE OPERATING POWER, Pe | | | | | | | | | | | | |
| 200V | HP | 3 | 3 | 5 | 7-1/2 | 10 | 10 | 15 | 20 | 20 | 25 | 30 |
| 230V | HP | 3 | 3 | 5 | 7-1/2 | 10 | 15 | 15 | 20 | 25 | 30 | 40 |
| 460V | HP | 5 | 7-1/2 | 10 | 15 | 20 | 30 | 40 | 50 | 50 | 60 | 75 |
| 575V | HP | 7-1/2 | 10 | 15 | 15 | 25 | 25 | 40 | 50 | 60 | 75 | 75 |
| Size | | 00 | — | 0 | — | 1 | — | 2 | — | — | 3 | — |
| Standard Short Circuit Current | kA | 5 | 5 | 5 | 5 | 5 | 5 | 10 | 10 | 10 | 10 | 10 |
| Maximum Fuse Size | A | 30 | 30 | 60 | 60 | 60 | 60 | 100 | 125 | 150 | 175 | 200 |
| High Fault Short Circuit Current | kA | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Maximum Fuse Size (Class J) | A | 25 | 25 | 40 | 40 | 50 | 60 | 90 | 100 | 125 | 150 | 175 |
| Electrical Endurance, AC-3 at Maximum Rated 3 Phase Operating Power (@460V) | Ops. (mill.) | 1.8 | 2.0 | 1.6 | 1.6 | 1.5 | 1.5 | 1.6 | 1.8 | 1.5 | 1.5 | 1.0 |
| ELECTRICAL IEC APPLICATIONS | | | | | | | | | | | | |
| Rated Insulation Voltage, Ui | V | 1000 | | | | | | | | | | |
| Rated Impulse Voltage Withstand, Uimp | kV | 6 | 6 | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 8 |
| Rated Operating Voltage, Ue | VAC | 690 | | | | | | | | | | |
| Rated Thermal Current, Ith for Ambient Temperature < 55° C (131° F) | A | 25 | 25 | 32 | 45 | 60 | 60 | 90 | 110 | 110 | 140 | 140 |
| RATED AC-1 OPERATING CURRENT, Ie | | | | | | | | | | | | |
| At 55° C (131° F) | A | 25 | 25 | 32 | 45 | 60 | 60 | 90 | 110 | 110 | 140 | 140 |
| At 70° C (158° F) | A | 20 | 20 | 25 | 32 | 48 | 48 | 72 | 88 | 88 | 110 | 110 |
| RATED AC-3 OPERATING CURRENT, Ie | | | | | | | | | | | | |
| 220 ~ 240V | A | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |
| 380 ~ 400V | A | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |
| 415 ~ 440V | A | 9 | 12 | 18 | 25 | 32 | 40 | 50 | 65 | 80 | 95 | 105 |
| 500V | A | 7.5 | 10.5 | 14 | 19 | 24 | 32 | 38 | 55 | 63 | 79 | 85 |
| 660 ~ 690V | A | 7 | 9 | 13 | 15 | 22 | 25 | 34 | 44 | 48 | 60 | 80 |
| RATED 3 PHASE AC-3 OPERATING POWER, Pe | | | | | | | | | | | | |
| 220 ~ 240V | kW | 2.2 | 3 | 4 | 6.5 | 9 | 11 | 15 | 18.5 | 22 | 25 | 30 |
| 380 ~ 400V | kW | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 |
| 415 ~ 440V | kW | 4 | 5.5 | 9 | 12.5 | 15 | 22 | 30 | 37 | 45 | 55 | 55 |
| 500V | kW | 5.5 | 7.5 | 10 | 15 | 18.5 | 25 | 30 | 40 | 45 | 55 | 65 |
| 660 ~ 690V | kW | 5.5 | 7.5 | 10 | 15 | 18.5 | 30 | 33 | 45 | 45 | 55 | 65 |

ELECTRICAL AND COIL CHARACTERISTICS SPECIFICATIONS

| | | S09 | S12 | S18 | S25 | S32 | S40 | S50 | S65 | S80 | S95 | S105 | |
|---|--------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| ELECTRICAL IEC APPLICATIONS (CONTINUED) | | | | | | | | | | | | | |
| | UNITS | | | | | | | | | | | | |
| RATED AC-4 OPERATING CURRENT, Ie (Achieves maximum of 200,000 operations) | | | | | | | | | | | | | |
| 220 ~ 240V | A | 7.5 | 10.0 | 15.0 | 20.8 | 26.7 | 33.3 | 41.7 | 54.2 | 66.7 | 79.2 | 87.5 | |
| 380 ~ 400V | A | 7.5 | 10.0 | 15.0 | 20.8 | 26.7 | 33.3 | 41.7 | 54.2 | 66.7 | 79.2 | 87.5 | |
| 415 ~ 440V | A | 7.5 | 10.0 | 15.0 | 20.8 | 26.7 | 33.3 | 41.7 | 54.2 | 66.7 | 79.2 | 87.5 | |
| 500V | A | 6.3 | 8.8 | 11.7 | 15.8 | 20.0 | 26.7 | 31.7 | 45.8 | 52.5 | 65.8 | 70.8 | |
| 660 ~ 690V | A | 5.8 | 7.6 | 10.8 | 12.5 | 18.3 | 20.8 | 28.3 | 36.7 | 40.0 | 50.0 | 66.7 | |
| RATED AC-4 OPERATING POWER, Pe (Achieves maximum of 200,000 operations) | | | | | | | | | | | | | |
| 220 ~ 240V | kW | 1.5 | 2.2 | 4.0 | 5.5 | 5.5 | 7.5 | 11.0 | 15.0 | 18.5 | 22.0 | 22.0 | |
| 380 ~ 400V | kW | 3.0 | 4.0 | 5.5 | 7.5 | 11.0 | 15.0 | 22.0 | 22.0 | 37.0 | 37.0 | 45.0 | |
| 415 ~ 440V | kW | 3.0 | 4.0 | 5.5 | 7.5 | 11.0 | 15.0 | 22.0 | 22.0 | 37.0 | 37.0 | 45.0 | |
| 500V | kW | 3.0 | 4.0 | 5.5 | 7.5 | 11.0 | 15.0 | 22.0 | 22.0 | 37.0 | 37.0 | 45.0 | |
| 660 ~ 690V | kW | 4.0 | 5.5 | 7.5 | 7.5 | 15.0 | 18.5 | 22.0 | 30.0 | 37.0 | 45.0 | 55.0 | |
| RATED AC-4 OPERATING CURRENT, Ie (Achieves maximum of 1,000,000 operations) | | | | | | | | | | | | | |
| 220 ~ 240V | A | 2.7 | 3.6 | 5.5 | 7.6 | 9.7 | 12.1 | 15.2 | 19.7 | 24.2 | 28.8 | 31.8 | |
| 380 ~ 400V | A | 2.7 | 3.6 | 5.5 | 7.6 | 9.7 | 12.1 | 15.2 | 19.7 | 24.2 | 28.8 | 31.8 | |
| 415 ~ 440V | A | 2.7 | 3.6 | 5.5 | 7.6 | 9.7 | 12.1 | 15.2 | 19.7 | 24.2 | 28.8 | 31.8 | |
| 500V | A | 2.3 | 3.2 | 4.2 | 5.8 | 7.3 | 9.7 | 11.5 | 16.7 | 19.1 | 23.9 | 25.8 | |
| 660 ~ 690V | A | 2.1 | 2.7 | 3.9 | 4.5 | 6.7 | 7.6 | 10.3 | 13.3 | 14.5 | 18.2 | 24.2 | |
| RATED AC-4 OPERATING POWER, Pe (Achieves maximum of 1,000,000 operations) | | | | | | | | | | | | | |
| 220 ~ 240V | kW | 0.55 | 0.75 | 1.1 | 1.5 | 2.2 | 3.0 | 4.0 | 4.0 | 5.5 | 7.5 | 7.5 | |
| 380 ~ 400V | kW | 1.1 | 1.5 | 2.2 | 3.0 | 4.0 | 5.5 | 5.5 | 7.5 | 11.0 | 11.0 | 15.0 | |
| 415 ~ 440V | kW | 1.1 | 1.5 | 2.2 | 3.0 | 4.0 | 5.5 | 5.5 | 7.5 | 11.0 | 11.0 | 15.0 | |
| 500V | kW | 1.1 | 1.5 | 2.2 | 3.0 | 4.0 | 5.5 | 5.5 | 7.5 | 11.0 | 11.0 | 15.0 | |
| 660 ~ 690V | kW | 1.5 | 1.5 | 3.0 | 3.0 | 5.5 | 5.5 | 7.5 | 11.0 | 11.0 | 15.0 | 22.0 | |
| RATED SHORT-TIME CURRENT, Icw | | | | | | | | | | | | | |
| 1 Second | A | 455 | 455 | 570 | 630 | 1010 | 1265 | 1580 | 2530 | 2530 | 3300 | 3300 | |
| 5 Seconds | A | 205 | 205 | 254 | 280 | 450 | 450 | 710 | 1130 | 1130 | 1485 | 1485 | |
| 10 Seconds | A | 144 | 144 | 180 | 200 | 320 | 400 | 500 | 800 | 800 | 1050 | 1050 | |
| 30 Seconds | A | 85 | 85 | 104 | 115 | 185 | 230 | 290 | 460 | 460 | 600 | 600 | |
| 1 Minute | A | 60 | 60 | 74 | 80 | 130 | 165 | 205 | 325 | 325 | 430 | 430 | |
| 3 Minutes | A | 35 | 35 | 46 | 50 | 90 | 100 | 120 | 185 | 185 | 250 | 250 | |
| Short Circuit Protection with Fuses (gG/gL) Ue ≤ 690V | | | | | | | | | | | | | |
| Type 1 | A | 50 | 50 | 63 | 63 | 100 | 125 | 200 | 200 | 200 | 250 | 250 | |
| Type 2 | A | 25 | 35 | 35 | 50 | 63 | 80 | 100 | 125 | 125 | 160 | 200 | |
| MAXIMUM ELECTRICAL SWITCHING RATE | | | | | | | | | | | | | |
| AC-1 | Ops./hr. | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 600 | 600 | |
| AC-3 | Ops./hr. | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 1200 | 600 | 600 | |
| AC-4 | Ops./hr. | 360 | 360 | 360 | 360 | 360 | 200 | 200 | 200 | 200 | 200 | 200 | |
| Electrical Endurance, AC-3 at Maximum Rated 3 Phase Operating Power (@400V) | | Ops. (mill.) | 1.6 | 1.8 | 1.3 | 1.4 | 1.3 | 1.3 | 1.2 | 1.4 | 1.2 | 1.2 | 1.0 |
| Making Capacity | | A | 450 | 450 | 450 | 450 | 550 | 550 | 1000 | 1000 | 1000 | 1280 | 1280 |
| BREAKING CAPACITY | | | | | | | | | | | | | |
| Ue ≤ 400V | A | 250 | 250 | 250 | 250 | 450 | 450 | 920 | 920 | 920 | 1050 | 1050 | |
| Ue = 500V | A | 250 | 250 | 250 | 250 | 450 | 450 | 920 | 920 | 920 | 1050 | 1050 | |
| Ue = 690V | A | 130 | 130 | 130 | 130 | 170 | 205 | 780 | 780 | 780 | 950 | 950 | |
| COIL CHARACTERISTICS | | | | | | | | | | | | | |
| Rated Insulation Voltage, Ui | | V | 1000 | | | | | | | | | | |
| OPERATING LIMITS | | | | | | | | | | | | | |
| 50HZ, 60HZ, 50/60HZ | | | | | | | | | | | | | |
| Operating | | xUc | 0.80 ~ 1.10 | | | | | | | | | | |
| Pick-Up | | xUc | 0.60 ~ 0.80 | 0.60 ~ 0.80 | 0.60 ~ 0.80 | 0.60 ~ 0.80 | 0.60 ~ 0.80 | 0.60 ~ 0.80 | 0.65 ~ 0.80 | 0.65 ~ 0.80 | 0.65 ~ 0.80 | 0.65 ~ 0.80 | 0.65 ~ 0.80 |
| Drop-Out | | xUc | 0.35 ~ 0.55 | 0.35 ~ 0.55 | 0.35 ~ 0.55 | 0.35 ~ 0.55 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 |

MECHANICAL, ENVIRONMENTAL AND CONSTRUCTION SPECIFICATIONS

| | | S09 | S12 | S18 | S25 | S32 | S40 | S50 | S65 | S80 | S95 | S105 |
|---|--------------|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| COIL CHARACTERISTICS (CONTINUED) | | | | | | | | | | | | |
| | UNITS | | | | | | | | | | | |
| DC | | | | | | | | | | | | |
| Operating | xUc | 0.80 ~ 1.10 | | | | | | | | | | |
| Pick-Up | xUc | 0.45 ~ 0.65 | 0.45 ~ 0.65 | 0.45 ~ 0.65 | 0.45 ~ 0.65 | 0.45 ~ 0.75 | 0.45 ~ 0.75 | 0.70 ~ 0.80 | 0.70 ~ 0.80 | 0.70 ~ 0.80 | 0.70 ~ 0.80 | 0.70 ~ 0.80 |
| Drop-Out | xUc | 0.15 ~ 0.30 | 0.15 ~ 0.30 | 0.15 ~ 0.30 | 0.15 ~ 0.30 | 0.15 ~ 0.30 | 0.15 ~ 0.30 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 | 0.40 ~ 0.60 |
| COIL CONSUMPTION | | | | | | | | | | | | |
| 50HZ, 60HZ, 50/60HZ | | | | | | | | | | | | |
| Pick-Up | VA | 50 ~ 70 | 50 ~ 70 | 50 ~ 70 | 50 ~ 70 | 70 ~ 90 | 70 ~ 90 | 250 ~ 275 | 250 ~ 275 | 250 ~ 275 | 250 ~ 275 | 250 ~ 275 |
| Hold-In | VA | 7 ~ 11 | 7 ~ 11 | 7 ~ 11 | 7 ~ 11 | 9 ~ 13 | 9 ~ 13 | 16 ~ 20 | 16 ~ 20 | 16 ~ 20 | 16 ~ 20 | 16 ~ 20 |
| DC | | | | | | | | | | | | |
| Pick-Up | W | 5 ~ 9 | 5 ~ 9 | 5 ~ 9 | 5 ~ 9 | 7 ~ 10 | 7 ~ 10 | 340 | 340 | 340 | 340 | 340 |
| Hold-In | W | 5 ~ 9 | 5 ~ 9 | 5 ~ 9 | 5 ~ 9 | 7 ~ 10 | 7 ~ 10 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| OPERATING TIMES | | | | | | | | | | | | |
| AC | | | | | | | | | | | | |
| Pick-Up | msec. | 8 ~ 20 | 8 ~ 20 | 8 ~ 20 | 8 ~ 20 | 10 ~ 19 | 10 ~ 19 | 15 ~ 30 | 15 ~ 30 | 15 ~ 30 | 15 ~ 30 | 15 ~ 30 |
| Drop-Out | msec. | 6 ~ 13 | 6 ~ 13 | 6 ~ 13 | 6 ~ 13 | 5 ~ 25 | 5 ~ 25 | 9 ~ 15 | 9 ~ 15 | 9 ~ 15 | 9 ~ 15 | 9 ~ 15 |
| DC | | | | | | | | | | | | |
| Pick-Up | msec. | 35 ~ 45 | 35 ~ 45 | 35 ~ 45 | 35 ~ 45 | 40 ~ 55 | 40 ~ 55 | 50 ~ 60 | 50 ~ 60 | 50 ~ 60 | 50 ~ 60 | 50 ~ 60 |
| Drop-Out | msec. | 7 ~ 12 | 7 ~ 12 | 7 ~ 12 | 7 ~ 12 | 30 ~ 65 | 30 ~ 65 | 55 ~ 60 | 55 ~ 60 | 55 ~ 60 | 55 ~ 60 | 55 ~ 60 |
| POWER DISSIPATION | | | | | | | | | | | | |
| 50Hz, 60Hz, 50/60Hz | W | 2.6 | 2.6 | 2.6 | 2.6 | 4.3 | 4.3 | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| POWER FACTOR | | | | | | | | | | | | |
| Closed | cosφ | 0.33 | 0.33 | 0.33 | 0.33 | 0.28 | 0.28 | 0.26 | 0.26 | 0.26 | 0.26 | 0.26 |
| Open | cosφ | 0.84 | 0.84 | 0.84 | 0.84 | 0.73 | 0.73 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| MECHANICAL | | | | | | | | | | | | |
| Mechanical Endurance | Ops. (mill.) | 10 | | | | | | | | | | |
| Maximum Mechanical Switching Rate | Ops./hr. | 9,000 | | | | | | | | | | |
| ENVIRONMENTAL | | | | | | | | | | | | |
| Ambient Operating Temperature | °C / °F | -25 to +55 / -13 to +131 | | | | | | | | | | |
| Ambient Storage Temperature | °C / °F | -55 to +80 / -58 to +176 | | | | | | | | | | |
| Altitude | m / ft. | 3,000 / 9,792 | | | | | | | | | | |
| CONSTRUCTION GENERAL | | | | | | | | | | | | |
| Pollution Degree | | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| INGRESS PROTECTION | | | | | | | | | | | | |
| Main Terminals | | IP20 | IP20 | IP20 | IP20* | IP20* | IP20* | IP20* | IP20* | IP20* | IP20* | IP20* |
| Coil Terminals | | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| Auxiliary Contact Terminals | | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| Weight | kg | 0.295 | 0.295 | 0.295 | 0.295 | 0.52 | 0.54 | 1.105 | 1.12 | 1.13 | 1.45 | 1.47 |
| | lbs. | 0.65 | 0.65 | 0.65 | 0.65 | 1.15 | 1.19 | 2.44 | 2.47 | 2.49 | 3.20 | 3.24 |

*NOTE: With conductors connected.

ROHS COMPLIANCE For RoHS compliance documentation by product, refer to www.c3controls.com.

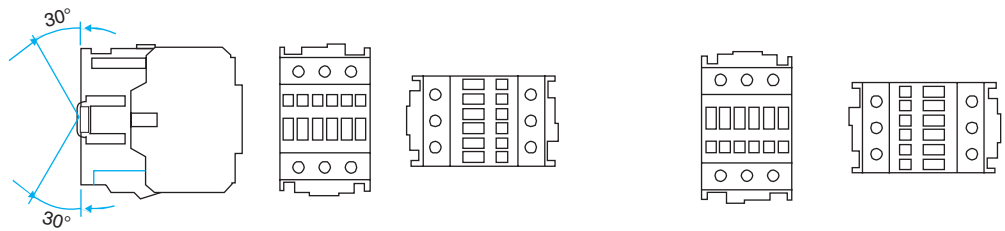
CONSTRUCTION CONDUCTOR CROSS-SECTIONS, MAIN TERMINALS

| | | S09 - S25 | | S32 - S40 | | S50 - S80 | | S95 - S105 | |
|---|-----------------|----------------|--|----------------|--|-------------|--|-------------|--|
| | UNITS | | | | | | | | |
| MAIN TERMINAL CAPACITY | | | | | | | | | |
| Solid Stranded and Finely Stranded without End Sleeve | mm ² | 2 x 0.5 ~ 6 | | 2 x 1 ~ 14 | | 2 x 1 ~ 34 | | 2 x 1 ~ 43 | |
| AWG Wire | AWG | 2 x 20 ~ 10 | | 2 x 18 ~ 6 | | 2 x 16 ~ 2 | | 2 x 16 ~ 1 | |
| Recommended Strip Length | mm | 8.5 | | 10 | | 13 | | 15 | |
| | in | 5/16 | | 3/8 | | 1/2 | | 9/16 | |
| Tightening Torque | Lb-in. | 8.8 ~ 16.9 | | 22.1 ~ 26.6 | | 35.4 ~ 53.1 | | 44.3 ~ 57.5 | |
| | Nm | 1.0 ~ 1.9 | | 2.5 ~ 3.0 | | 4.0 ~ 6.0 | | 5.0 ~ 6.5 | |
| Screwdriver | | Phillips nr. 2 | | Phillips nr. 2 | | Allen 4mm | | Allen 4mm | |

AUXILIARY CONTACTS SPECIFICATIONS

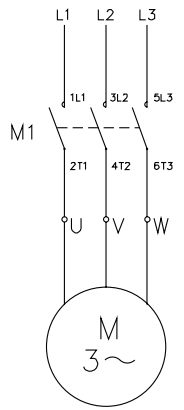
| | | INTERNAL AUXILIARY CONTACT | CONTACT BLOCKS | |
|---|--------------|---|-------------------|--|
| | | S09-S25 | 300-SFA & 300-SSA | |
| ELECTRICAL GENERAL | | | | |
| | UNITS | | | |
| Minimum Switching Capacity | | 5mA @ 17V | | |
| Electrical Endurance | Ops. (mill.) | 1 | | |
| Mechanical Endurance | Ops. (mill.) | 15 | | |
| Non-Overlap Time | msec. | 1.5 | | |
| Insulation Resistance | MΩ | >10 | | |
| ELECTRICAL UL/CSA APPLICATIONS | | | | |
| Rated Operating Voltage, Ue | V | 600 | | |
| PILOT DUTY RATING | | | | |
| AC | | A600 | | |
| DC | | P600 | Q600 | |
| ELECTRICAL IEC APPLICATIONS | | | | |
| Rated Insulation Voltage, Ui | V | 1000 | | |
| Rated Operating Voltage, Ue | V | 690 | | |
| Rated Thermal Current, Ith for Ambient Temperature <55° C | A | 20 | 10 | |
| RATED AC-15 OPERATING CURRENT, Ie | | | | |
| 110 ~ 120V | A | 10 | 6 | |
| 220 ~ 240V | A | 10 | 6 | |
| 380 ~ 400V | A | 6 | 4 | |
| 415 ~ 450V | A | 5 | 3.5 | |
| 500V | A | 4 | 2.5 | |
| 600 ~ 690V | A | 2 | 1.5 | |
| RATED DC-13 OPERATING CURRENT, Ie | | | | |
| 24V | A | 6 | 6 | |
| 48V | A | 4 | 4 | |
| 110V | A | 2 | 2 | |
| 220V | A | 0.7 | 0.7 | |
| 440V | A | 0.7 | 0.3 | |
| MAKING CAPACITY, Im | | | | |
| AC-15/AC-11 Ue ≤ 400V 50/60Hz | A | 250 | 90 | |
| DC-13/DC-11 Ue ≤ 220V | A | 250 | 90 | |
| BREAKING CAPACITY, Im | | | | |
| AC-15/AC-11 Ue ≤ 400V 50/60Hz | A | 250 | 60 | |
| DC-13/DC-11 Ue ≤ 220V | A | 2 | 0.95 | |
| Short Circuit Protection with Fuses (gG/gL) | A | 10 | 10 | |
| ROHS COMPLIANCE | | For RoHS compliance documentation by product, refer to www.c3controls.com . | | |

OPERATING POSITIONS

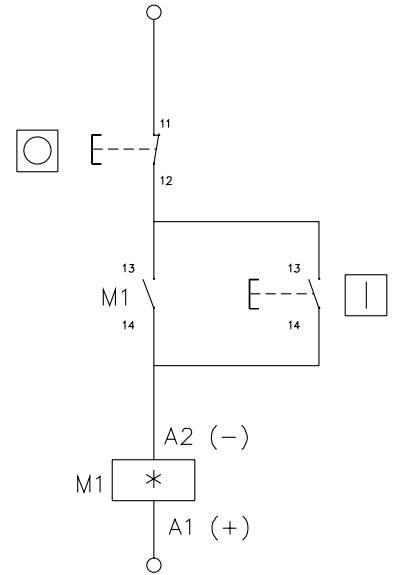


SERIES 300 NON-REVERSING CONTACTOR CIRCUIT DIAGRAMS

POWER CIRCUIT



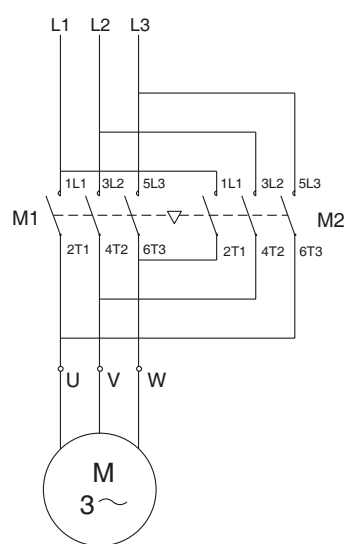
CONTROL CIRCUIT



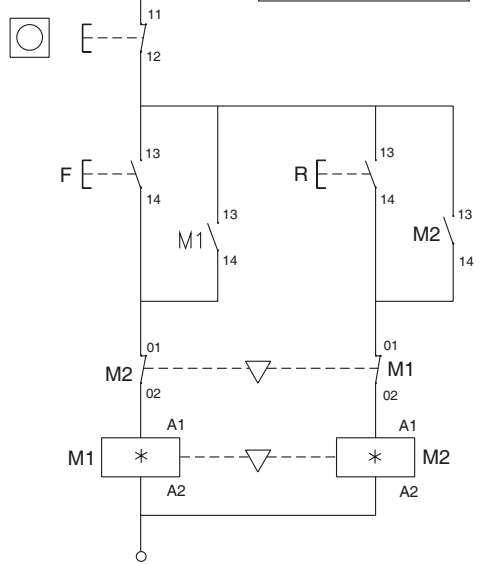
- M1 = Forward Contactor
- F = Forward Push Button
- M2 = Reverse Contactor
- R = Reverse Push Button
- = Start Push Button
- ⊗ = Emergency Stop Push Button
- * = Coil Voltage Code

SERIES 310 REVERSING CONTACTOR CIRCUIT DIAGRAMS

POWER CIRCUIT



CONTROL CIRCUIT



- M1 = Forward Contactor
- F = Forward Push Button
- M2 = Reverse Contactor
- R = Reverse Push Button
- ⊗ = Emergency Stop Push Button
- * = Coil Voltage Code

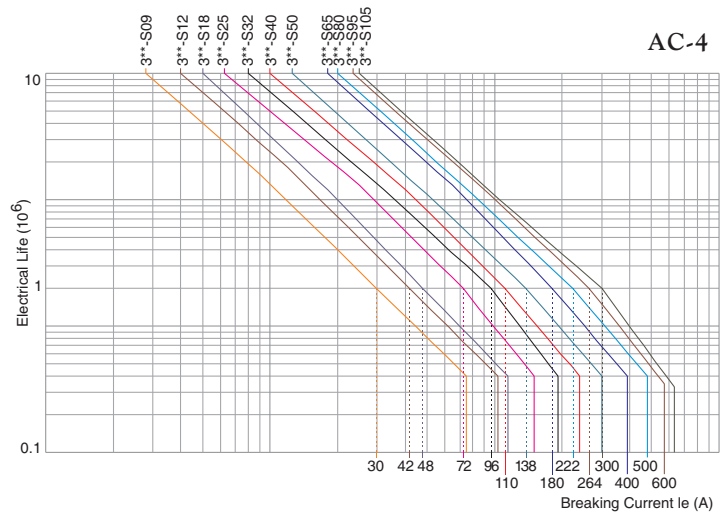
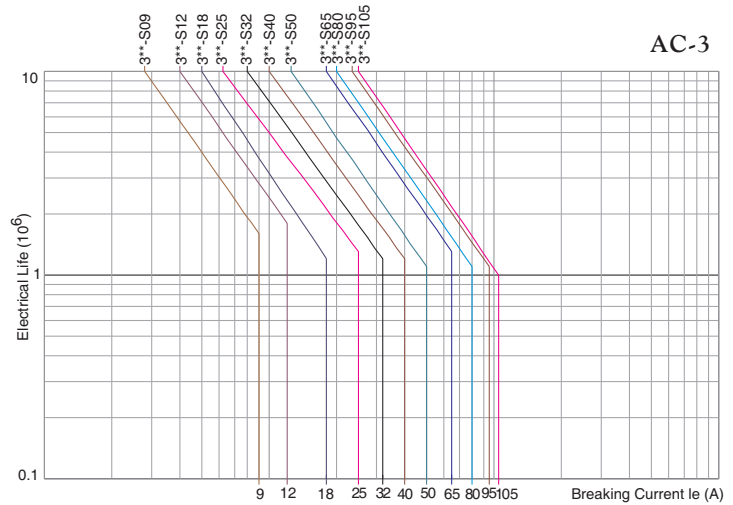
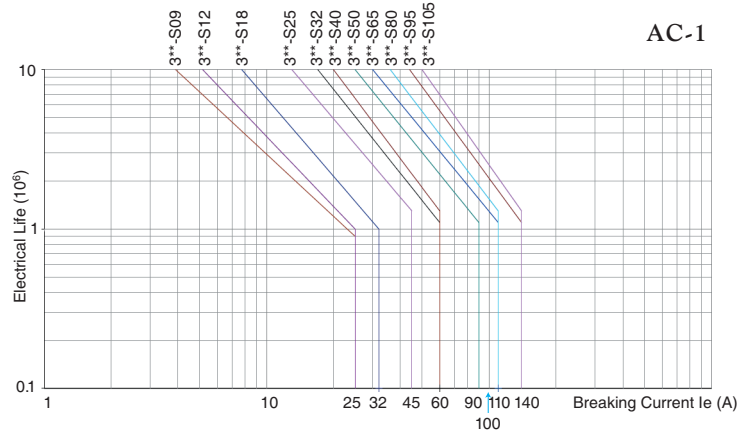
ELECTRICAL LIFE IN UTILIZATION CATEGORY

To find a contactor's estimated life:

1. Identify the utilization category of the application.
2. Refer to the chart for the applicable utilization category.
3. Locate the intersection of the life-load curve for the contactor selected with the application breaking current (Ie) on the horizontal axis of the chart.
4. Read the estimated contactor life from the vertical axis of the chart.

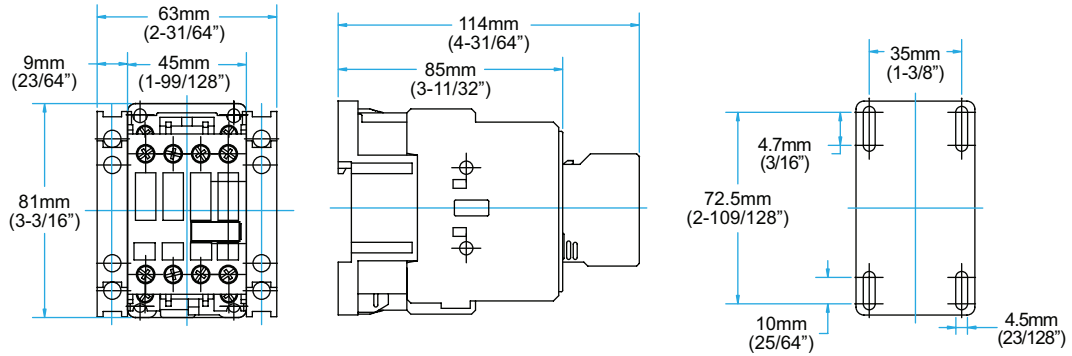
The life-load curves are based on tests in accordance with IEC 60947-4-1. Many conditions of an actual application effect contact life such as the environment and duty cycle. Therefore, the actual contact life may vary from the life indicated by the curves shown here.

NOTE: **Represents the Non-Reversing or Reversing Contactor Code. Refer to pages 47 & 49.

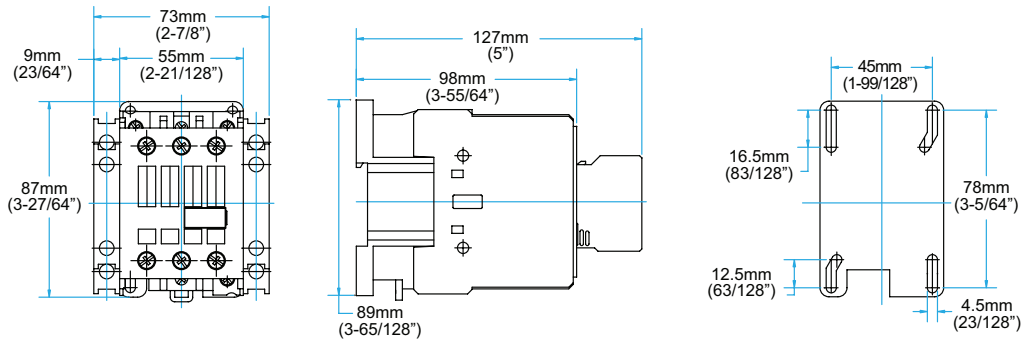


3 POLE NON-REVERSING CONTACTORS - AC COILS

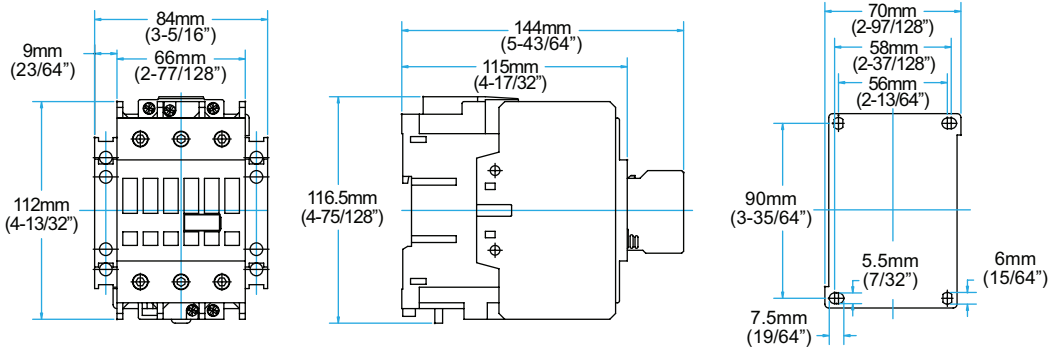
300-S09, 300-S12, 300-S18 & 300-S25



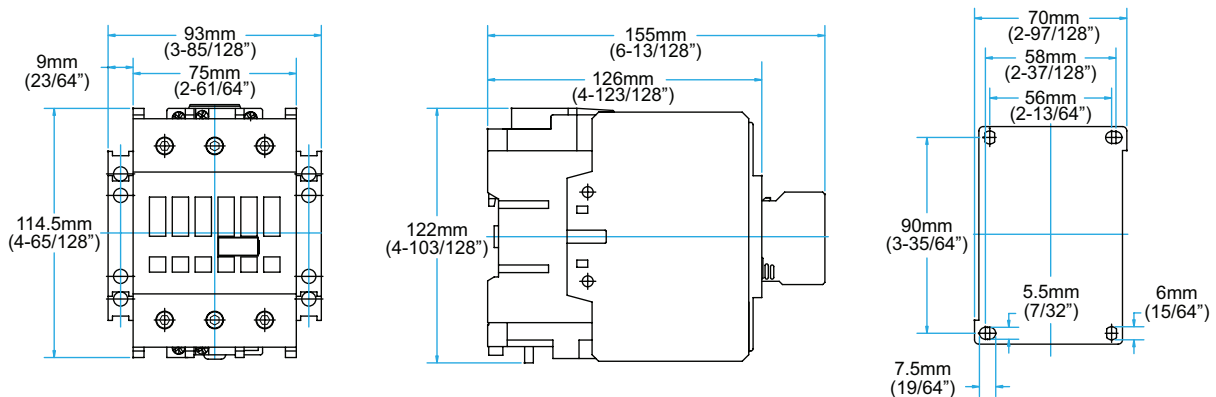
300-S32 & 300-S40



300-S50, 300-S65 & 300-S80

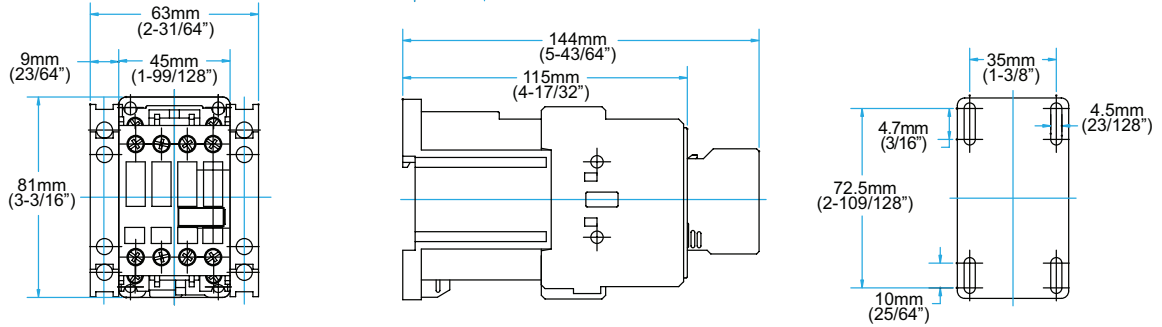


300-S95 & 300-S105

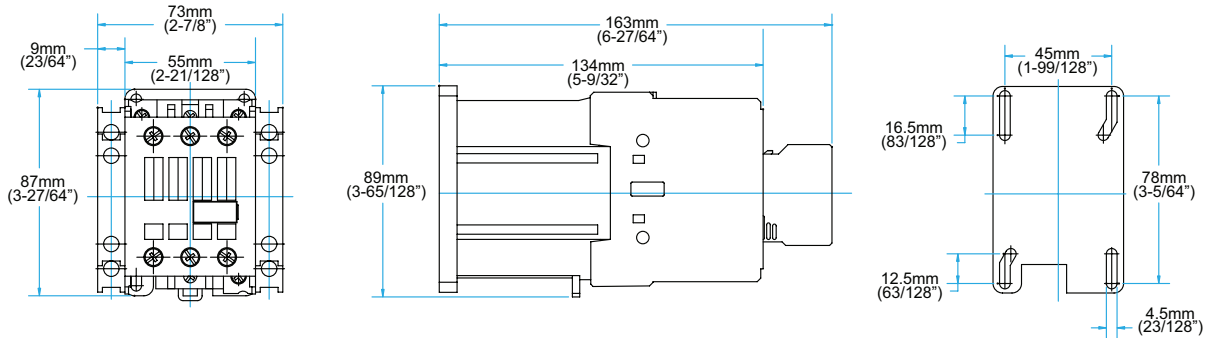


3 POLE NON-REVERSING CONTACTORS - DC COILS

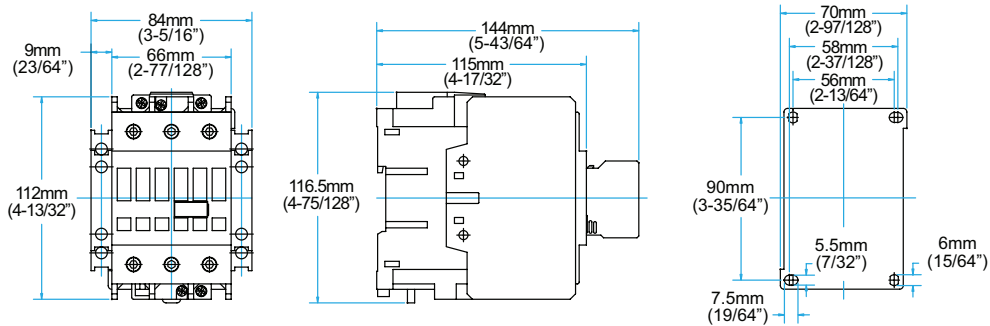
300-S09, 300-S12, 300-S18 & 300-S25



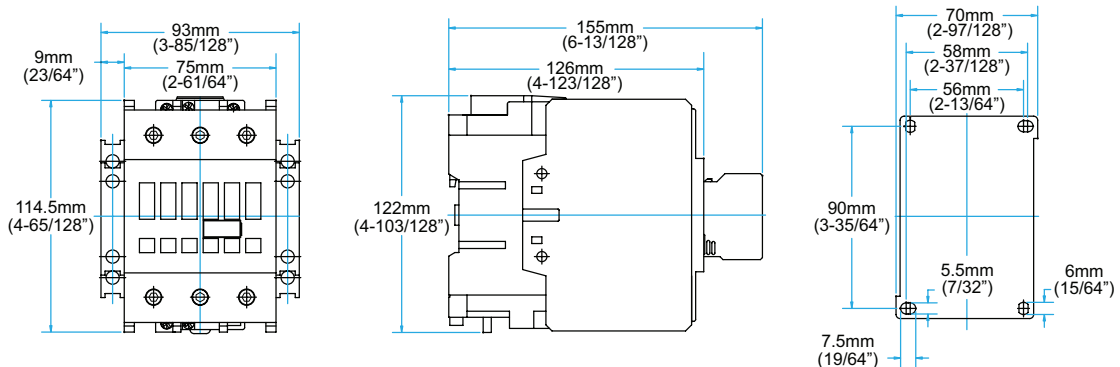
300-S32 & 300-S40



300-S50, 300-S65 & 300-S80

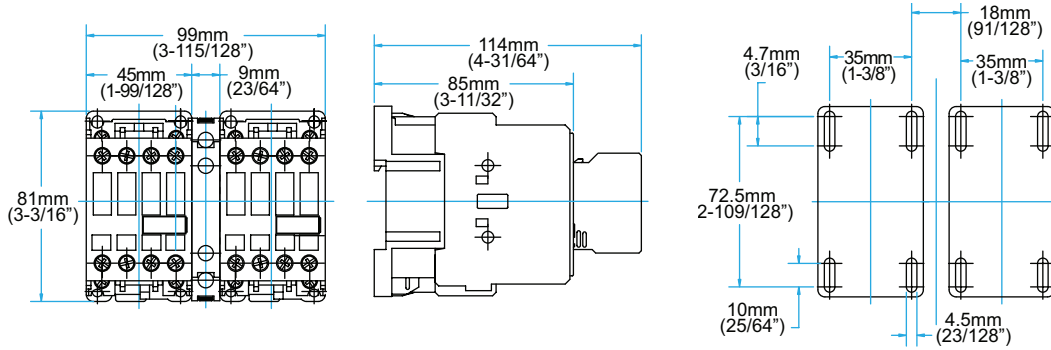


300-S95 & 300-S105

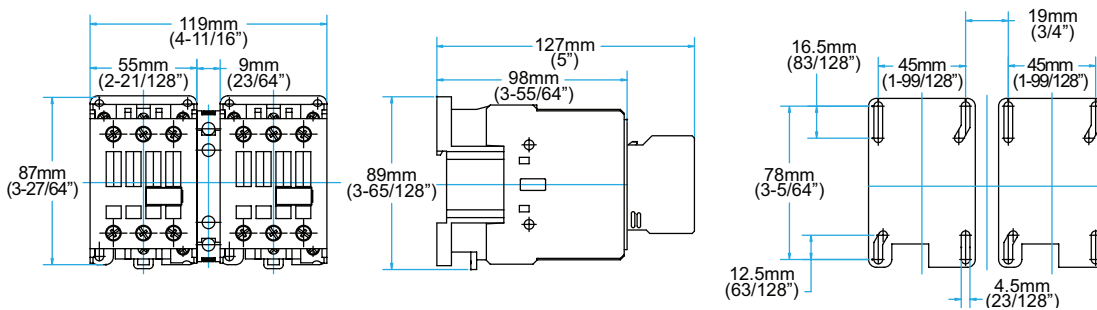


3 POLE CONTACTORS WITH ELECTRICAL / MECHANICAL OR MECHANICAL INTERLOCK - AC COILS

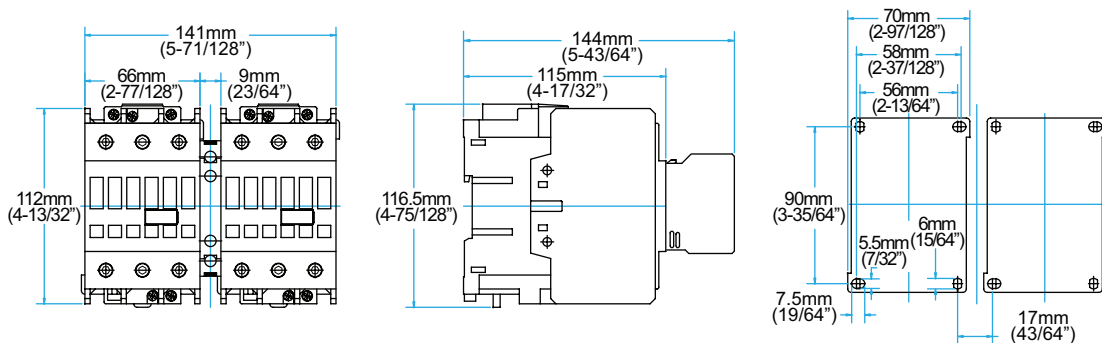
310-S09, 310-S12, 310-S18 & 310-S25



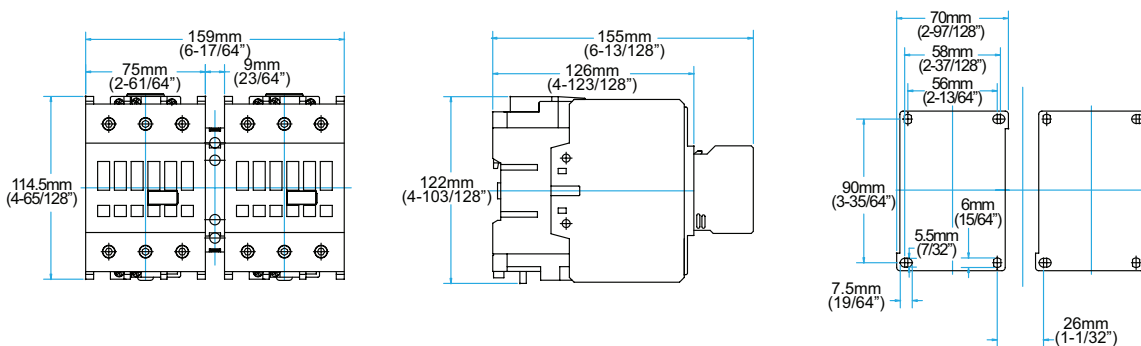
310-S32 & 310-S40



310-S50, 310-S65 & 310-S80

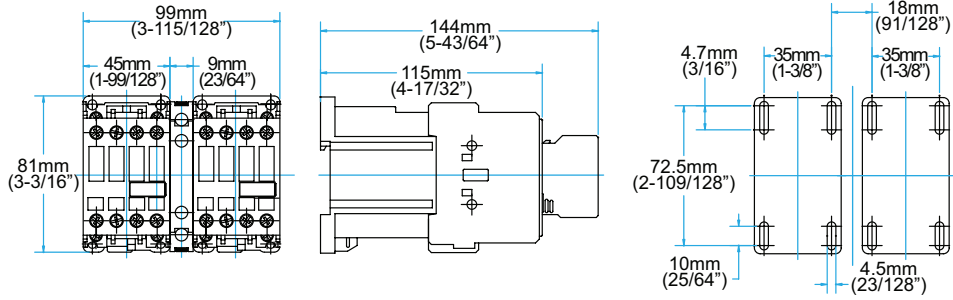


310-S95 & 310-S105

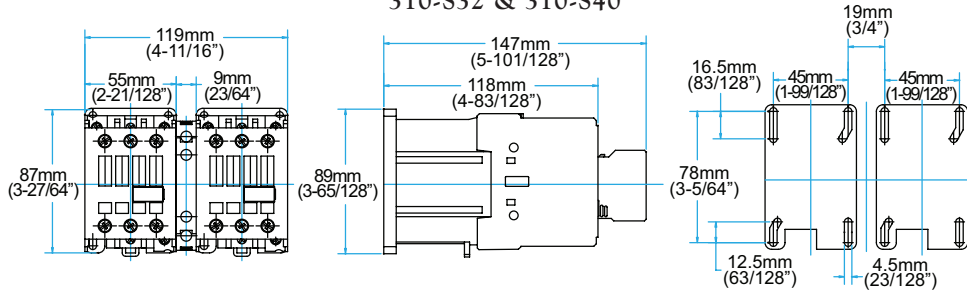


3 POLE CONTACTORS WITH ELECTRICAL/MECHANICAL OR MECHANICAL INTERLOCK - DC COILS

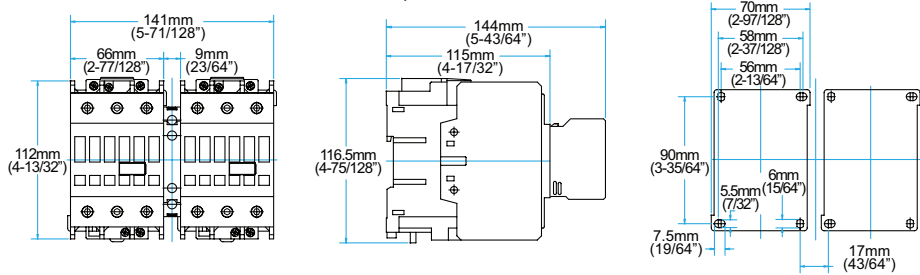
310-S09, 310-S12, 310-S18 & 310-S25



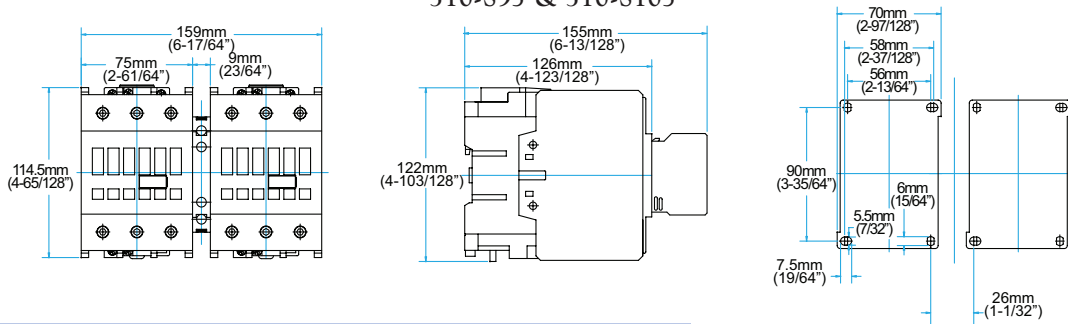
310-S32 & 310-S40



310-S50, 310-S65 & 310-S80



310-S95 & 310-S105



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