
BROCHURE

NEMA-rated full voltage controls

300-line



- Motor starters
- Magnetic contactors
- Overload relays

300-line

Industry-leading full voltage motor control

The 300-line of NEMA-rated controls offers dependability and long-term performance for the most demanding industrial installations. And with all the options available, you can match the 300-line to your toughest applications.

Simplicity and durability are key to the 300-line. The unique design allows for contact inspection or coil change-outs in just seconds, and contact replacement in a matter of minutes. There's no need to use tools to remove the starter or contactor from the enclosure, or to remove control or power wires.



Simplicity in design

The right control for your application every time



A wide range of choices

- Non-reversing, reversing, two-speed and combination motor starters in sizes 00–6
- NEMA Type 1, 3R, 12, 4 and 4X enclosures available
- Save time and money with a single source for all your applications



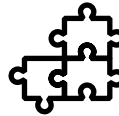
Two options for motor protection

- Three-leg block overload relays feature dual bimetal overload protection and adjustable $\pm 10\%$ trip current for added flexibility
- Solid-state overload relays provide added motor protection for critical processes, feature selectable 10/20/30 trip class for application flexibility and surface-mount technology for increased reliability



Versatile, durable and the industry's easiest to maintain

- Change the coil voltage on a contactor or starter to suit your application
- Inspect and change out contacts without removing any wires, or removing the starter from the enclosure



Largest selection of modification and accessory kits

- Cost-effective solutions
- Allows for application and configuration flexibility
- Kits include auxiliary contacts, coils, surge-suppression, fifth-pole, mechanical interlocks, control circuit fusing, NEMA type enclosures, selector switches, indicating lights, control transformers, space heaters and more

01 The 300-line has proven to be a trusted solution for the toughest industrial applications.



300-line magnetic motor starter

All these features plus an edge on productivity

—
01 CR306C0
magnetic starter

The 300-line starter is a full voltage, magnetic motor starter with encapsulated coil and three-leg block overload relay with visual trip indicator, manual reset and manual weld check. It incorporates all the features and benefits users demand and has received standard specification approval by many major manufacturers.

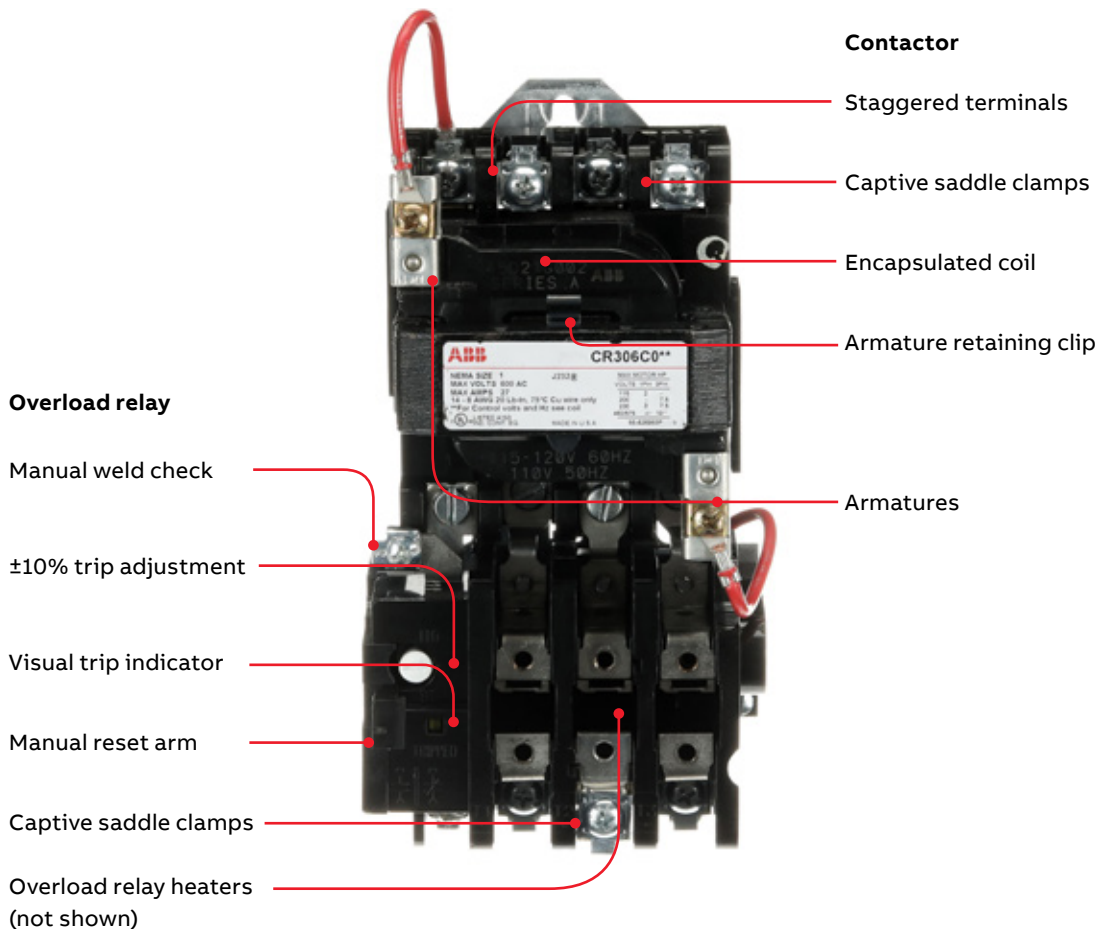
...and in a wide selection of enclosures:

- Type 1 general purpose
- Type 3R rainproof, sleet-resistant
- Type 4 watertight, dust-tight
- Type 4X watertight, dust-tight, corrosion-resistant
- Type 12 driptight, dust-tight

The 300-line is available in the following forms:

NEMA sizes 00-6

- Standard non-reversing
- Reversing
- Two-speed
- Combination



300-line contactor

High performance with simplified maintenance

Several features combine to make the 300-line contactor a high-performance unit that is easy to inspect and maintain.

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01 CR305C0 contactor
—
02 CR306C0 contactor

- All line and load terminals on NEMA size 00, 0 and 1 starters can accommodate ring, spade and stripped-wire terminations
- Tool-less disassembly for sizes 00–4
- Terminal numbering is permanently stamped
- NEMA size 00–1 terminals are staggered for easy termination
- In-line, stripped-wire connections are standard for NEMA size 2–6 starters
- Ring terminal options available for sizes 2–5
- Optional terminals available on NEMA size 1–4 starters to permit easy connection of power factor correction capacitors for energy conservation
- NEMA size 1 starters and larger feature weld-resistant silver alloy contact tips
- Contacts have a wedge-shaped configuration for positive make with minimum bounce

- Size 00, 0 and 1 contacts can be easily changed from normally open to normally closed without additional parts
- The magnet provides long life and is specially treated to resist rust
- Molded coil is impervious to moisture, dirt and oil and is highly resistant to mechanical damage and high-humidity failure
- Retaining clips engage detents encapsulated in the coil to hold it securely in place

The 300-line contactor provides easy disassembly in sizes 00–6:

- Lift off the armature to allow quick inspection and ready access to contacts
- Pull the spring clip from the armature to access the coil
- No need to remove any wiring!



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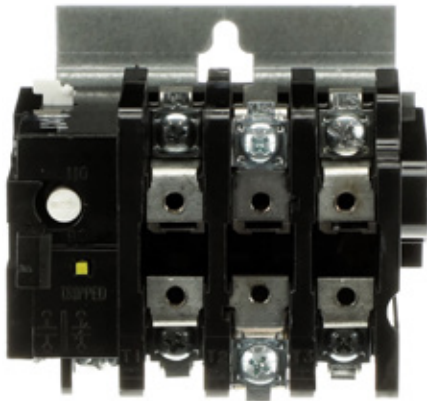
300-line overload relays

Broad selection for positive motor protection

The 300-line three-leg block overload relay includes features that provide positive motor protection and added operator safety.

- 01 Dual bimetallic overload and manual weld check
- 02 Visual trip indicator
- 03 Interchangeable heaters

Dual bimetallic overload: The dual bimetallic overload relay anticipates motor overload, responding to rising current and temperature with faster tripping on severe overloads for better motor protection.

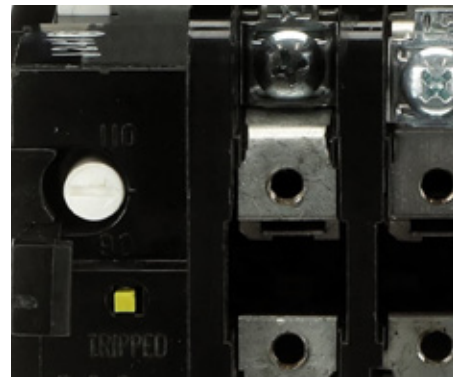


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Isolated NO contact: Where it's essential to monitor performance or diagnose faults, a 300-line starter may be ordered with an additional isolated, high-fidelity, normally open contact in the overload relay. This contact may be used for direct input to a programmable controller or interface with a computer.

Manual weld check: The overload relay can be manually tripped as a convenient way to check against contact welding. Depressing the manual weld check arm trips the relay. A welded contact can then be detected with a simple continuity check across the relay contact terminals.

Visual trip indicator: Unsafe overriding the reset arm is eliminated because overload reset occurs only when the reset is released. A bright yellow visual trip indicator tells you at a glance if the relay has tripped. An optional automatic reset overload relay is available for special applications upon request.



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Interchangeable heaters: Overload relay heaters are completely interchangeable with 200-line starter heaters, eliminating the need to stock an additional line of heaters.



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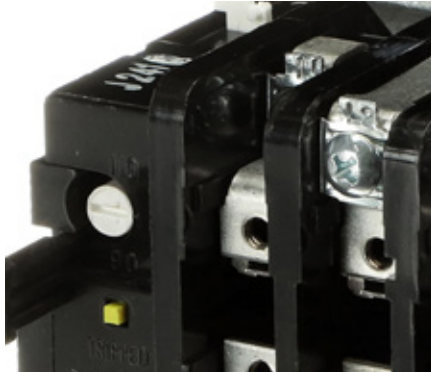
300-line overload relays

Broad selection for positive motor protection

The 300-line three-leg block overload relay includes features that provide positive motor protection and added operator safety.

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01 ±10% adjustment
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02 CR324X solid-state
overload relay

±10% adjustment: Relay trip points are factory calibrated for high accuracy. For added flexibility, the trip current of the relay is adjustable ±10% to allow tuning the protection to any given motor current and to eliminate nuisance tripping. A single calibration adjusts all three legs. The overload relay is available in standard or ambient-compensated forms.



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The CR324X solid-state overload relay provides added motor protection in critical production processes where uptime is vital. It mounts directly to 300-line starters, and a panel-mount version is also available for added application flexibility. Its advanced features can save you time and money:

- Heaters are eliminated
- Phase loss protection prolongs motor life under adverse conditions
- Solid-state surface-mount technology increases reliability, offers excellent vibration resistance and reduces heat generation
- Selectable 10/20/30 trip class offers flexibility for a range of applications



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Accessories

Meet your special operating needs

ABB offers a large selection of accessories that allow you to extend the application of your 300-line starters to match your operating needs.

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01 Auxiliary contact kits

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02 Coil kits

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03 Surge suppression kits

Auxiliary contact kits deliver added versatility to magnetic starters

- Provide additional control circuits to energize accessory equipment, such as indicating lights or to control sequencing of other motor starters
- Can be added to all across-the-line magnetic starters, reversing controllers and two-speed controllers
- Each auxiliary contact rated at 10 amperes AC, continuous current (NEMA A600), and is suitable for right or left side mounting
- Kits include either a basic contact block or an adder block supplied with a single or double circuit



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For low voltage applications

- High fidelity auxiliary contacts for applications where it is necessary to detect starter or contactor operation with circuits that use low voltage levels, such as programmable controls or computer systems
- Control amplifier is available for applications with low level 24 V DC outputs to operate 300-line contactor and starter control coils at line voltage

Coil kits adapt for different voltages

- Encapsulated coils in kit form enable you to change contactor coils for different voltages
- Coils are rated up to 600 volts, 50 and 60 hertz
- Coil changes are quick and easy



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Surge suppression kits provide protection and are designed to meet the demands of solid-state circuitry

- Prevent undesirable reactions in logic circuits by using an RC network to absorb energy surges from opening the coil circuit
- Eliminate the need to install a separate resistor and capacitor network
- Easy to install and requires only one wire connection — the mounting plate makes the other electrical connection
- Unit installs neatly on the contactor coil retaining clip



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Accessories

Meet your special operating needs

01 Contact kits

Mechanical interlock kits

- Used when reversing or multi-speed controllers are customer assembled — usually for panel mounting
- Mechanically interlocks two contactors or starters so that one does not pick up until the other has dropped out

Contact kits for simple and fast replacement

- Complete set of kits for contact replacement due to normal wear
- Designed for quick and easy replacement in just minutes, without removing wires or removing the starter from the enclosure
- Kits include all necessary replacement components



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ABB Inc.

305 Gregson Drive
Cary, NC 27511

electrification.us.abb.com

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