Square D Type S Contactors and Starters

Right from the Start

The standard for flexibility, simplicity, and reliability

schneider-electric.us

Life Is On

SQUARE D™ by Schneider Electric

Flexibility and reliability to get the job done.

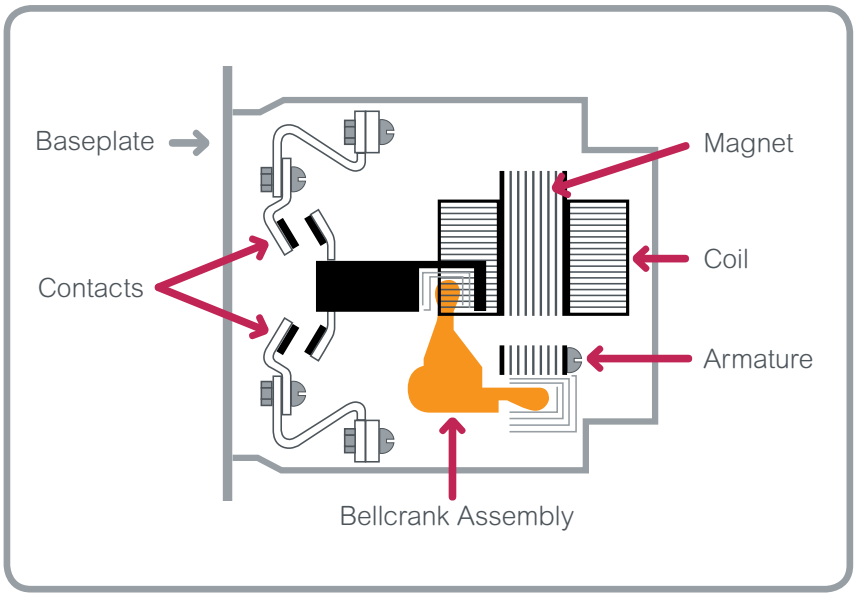
In 1965, Square D, introduced the Type S starter, and after more than 50 years, it continues to be the industry standard.

Type S starters are easy to customize and provide excellent service life; just two reasons why more electrical contractors prefer Square D contactors and starters to any other brand.

Why Type S is the industry standard:

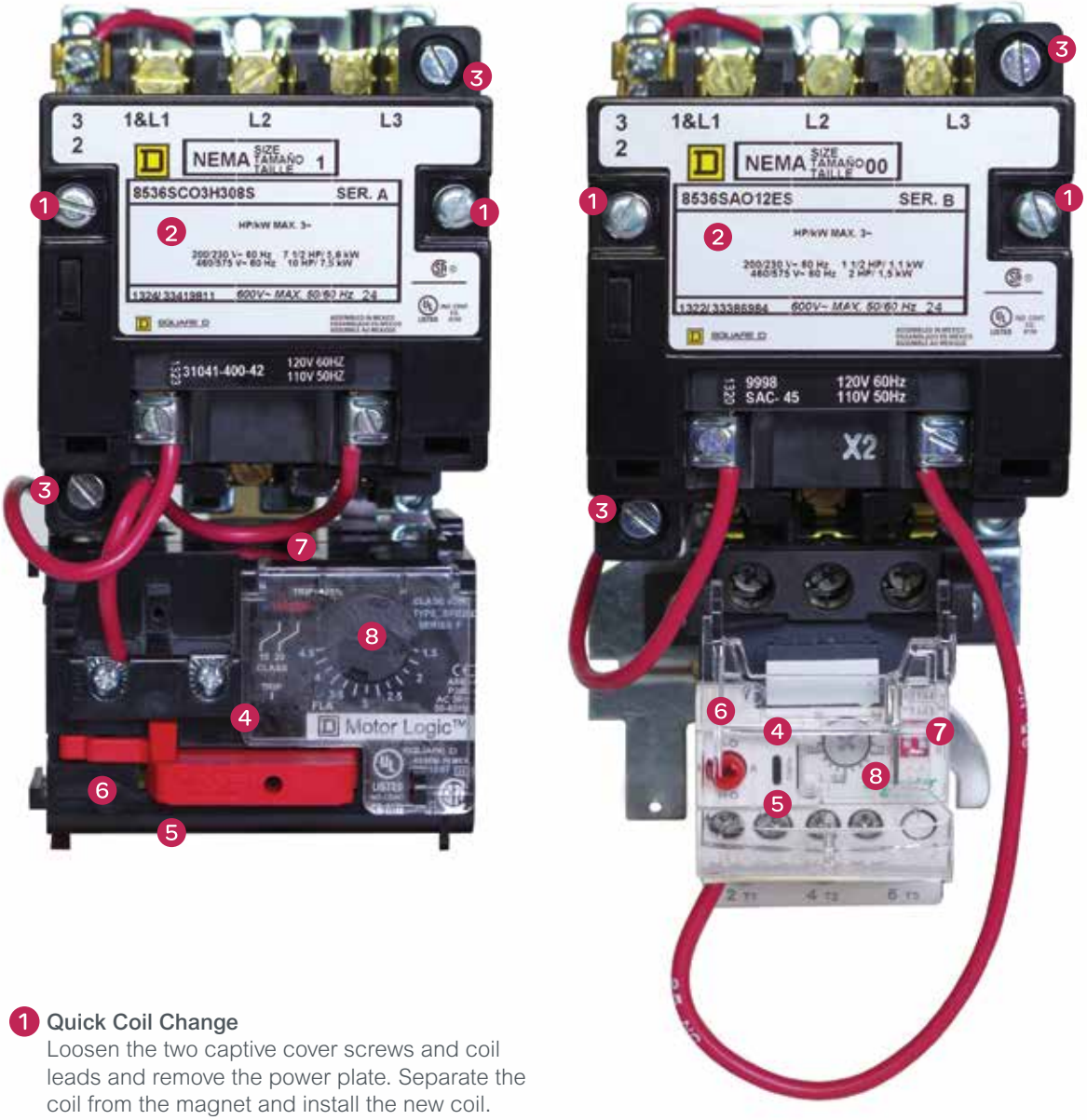
- **Flexible** with five overload relays: Motor Logic™ solid state, TeSys™ T communicating solid state, Adapted Bimetal, Adapted TeSys™ solid state and melting alloy types
- **Customizable** with hundreds of combinations of contactors, starters, combination starters, pump panels, two-speed starters, reduced-voltage starters, enclosure options, and accessories
- **Robust** design and reliable build for long mechanical life and electrical endurance
- **Serviceable** by replacing contacts and coils rather than replacing the entire product; simply service the part that is worn out
- **Simple** catalog numbering for easy and fast ordering

Cross-section of Type S contactor bellcrank assembly



Key features:

- Bellcrank design promotes superior electrical and mechanical life
- Green Premium™ design reduces hazardous substances for RoHS compliance
- NEMA® Sizes 00 – 7 with horsepower range up to 600 HP @ 480 Vac
- Normally open (N/O) holding circuit contact for three-wire control is standard
- Sizes 00 – 2 contactors use a Class 9999 SX11 internal auxiliary contact as the holding circuit contact
- Sizes 3 – 7 contactors use a Class 9999 SX6 auxiliary contact as the holding circuit contact
- Size 00 – 1 single-phase contactors also use a Class 9999 SX11 internal auxiliary contact as the holding circuit contact



1 Quick Coil Change
Loosen the two captive cover screws and coil leads and remove the power plate. Separate the coil from the magnet and install the new coil.

2 Visible Nameplate
Provides the NEMA size, ratings, terminal markings, catalog number, and maintenance information.

3 Easy Contact Inspection and Replacement
Contacts can be inspected or replaced without removing wiring. Simply loosen the two captive screws and lift off the upper housing.

4 Visible Trip Indicator
Easily identifies a tripped overload relay.

5 Manual Trip-to-test
Allows a quick test of the mechanical and electrical operation of the overload relay.

6 Reset Actuator
Used to manually reset the relay after a trip event.

7 Trip Class Selector
Class selectable trip curve for field configuration.

8 Current Adjustment Dial
Last-minute changes to match relay to motor full load current is as easy as setting the dial.

Overload relays can be easily retrofitted into existing Type S starters.

Comprehensive overload protection

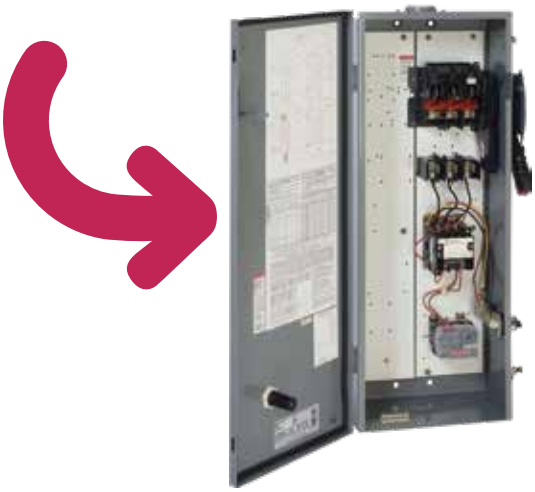
Features	Melting Alloy Overload Relay	Adapted Bimetal Overload Relay	LR9D Electronic Overload Relay	Motor Logic Overload Relay	TeSys T Motor Management System
NEMA Starter Size Range	Starter sizes 00 to 7	Starter sizes 00 to 1	Starter sizes 00 to 1	Starter sizes 00 to 7	Starter sizes 1 to 6
Accuracy	Senses change in current	Senses change in current	True measurement of current	True measurement of current	True measurement of current
Ambient Insensitive Motor Protection	No	Yes	Yes	Yes	Yes
Phase loss protection	No	Optional single-phase sensitivity	Minimizes damage to motors caused by single phasing and extends motor life	Minimizes damage to motors caused by single phasing and extends motor life	Minimizes damage to motors caused by single phasing and extends motor life
Phase unbalance protection	No	No	Provides additional protection while minimizing nuisance tripping due to a dirty power supply	Provides additional protection while minimizing nuisance tripping due to a dirty power supply	Provides additional protection while minimizing nuisance tripping due to a dirty power supply
Phase reversal	No	No	No	No	Yes
Selectable trip class	No	Optional	Switch selectable trip class 5, 10, 20 or 30	Switch selectable trip class 10 or class 20 with repeat trip accuracy of +/- 2%	Programmable trip class 5, 10, 20, and 30 with repeat trip accuracy of +/- 1%
Current range adjustability	No	1.6:1 current range adjustability	5:1 current range adjustability	3:1 current range adjustability	20:1 current range adjustability
Separate thermal units required	Yes	No	No	No	No
Remote reset	No	No	No	Yes	Yes
Voltage and power metering	No	No	No	No	Yes
Statistical and diagnostic functions	No	No	No	No	History of last five detected faults warning of pending faults
Communication capabilities	No	No	No	No	Communicates with modbus/TCP and Ethernet/IP, modbus, CANopen DeviceNet, PROFIBUS DP protocols
Green premium with RoHs compliance	No	Yes	Yes	Yes	Yes
Cost	$$	$	$$	$$	$$$$

Flexible design and robust performance

Pump Panels

Pump panels merge requirements of a disconnect switch, short-circuit protection, motor control, and overload protection into one single, convenient package. With the Type S starter as a foundation, almost any motor control assembly can be constructed.

Pump panels, in NEMA Type 3R enclosures, are specifically designed for irrigation or oil field applications.



Disconnect Switch Combination Starters

Constructed of a molded, insulated material that delivers arc-quenching performance similar to high-voltage switchgear, switch-type combination starters feature:

- Available with fusible or non-fusible disconnect switches.
- Visible blade construction offers safety and performance monitoring at a glance.
- Non-fusible assemblies may be converted in the field to fusible designs easily and quickly.
- Factory-built fusible units accept Class H, K, or J fuses.
- Class R fuse clip kits may be factory- or field-installed to meet rejection fuse requirements.
- The various units have specific UL-listed short-circuit withstand ratings that range from 5,000 to 100,000 amperes. Specific ratings are influenced by many components, including the size of the disconnect switch and the type of fuses used with the switch.

Circuit Breaker Combination Starters

For applications requiring a breaker-type combination starter, Square D provides both thermal-magnetic circuit breakers and electric motor circuit protectors. Thermal-magnetic circuit breakers use bimetals and electromagnets to provide both thermal and magnetic overcurrent protection.

Electronic motor circuit protectors are similar in construction, but provide only short-circuit protection. When they are used with motor starters, the adjustable instantaneous trip provides maximum motor protection based on specific amperage and application.

Type S combination starters using thermal-magnetic or electronic motor circuit protector breakers carry a UL-listed short-circuit withstand rating of 100,000 amperes for NEMA Sizes 0 through 5 and 65,000 amperes for NEMA Sizes 6 and 7. Published ratings and listings may vary depending on the specific combination of components used in the assembly.

Standard features:

- Handle mechanism is a color-coded knob for quick and easy ON/OFF identification.
- Mechanical interlock either inhibits opening the door when the starter is energized or blocks energizing the starter when the door is open.
- Lockout provision: Additional safety when a padlock is used.
- Door-closing mechanism on NEMA 1 and 12 devices ensures that the door and enclosure are strong, reliable, and can be padlocked closed.
- Solid ground bar for all enclosed starters meet the most stringent control and conduit grounding requirements.

Versatile Enclosures

Type S starters can be used in a wide variety of applications, and Square D manufactures enclosures suitable for all environments, including:

- NEMA Type 1 General purpose
- NEMA Type 3R Rainproof
- NEMA Type 4 and 4X Watertight, dust-tight, and corrosion-resistant stainless steel or glass polyester
- NEMA Type 7 and 9 Explosion-proof bolted and SPIN TOP™ designs for hazardous locations
- NEMA Type 12/3R Dust-tight and drip-tight

The following are SOME of the many Square D™ devices that use Type S starters:

- **Class 8606** Autotransformer reduced voltage starter
- **Class 8640** Part winding reduced voltage starter
- **Class 8810** Multispeed starter
- **Class 8903** Lighting contactor
- **Class 8940** Pumping plant panel
- **Class 8941** Duplex starter

Whatever your application or specific needs, the Type S family of starters and enclosures can provide the right solution.

Modification kits and accessories

Type S remains the industry standard because of its flexibility to be fully customized with a variety of field modification kits and accessories. Your Square D distributor also offers control circuit fuse holders, control transformers, fuse clip kits, pneumatic timers, power pole adders, and transient suppression modules.

- Internal auxiliary contact: Available for use with Type S starters, Sizes 00 – 2
- Selector switch kit: For use with NEMA Type 1 enclosed starters, Sizes 00 – 4. Kits are also available for NEMA Type 3R, 4, 4X, and 12 enclosures
- External auxiliary contact: available for use with starter Sizes 00 – 7; easily converted from normally open to normally closed
- Isolated alarm contact module: Replaces standard melting alloy overload contact when isolated alarm contact is required
- Push button kit: Available for use with NEMA Type 1, 3R, 4, 4X, and 12 enclosed starters, Sizes 00 -7. Kits are also available for NEMA Type 1 slip-on enclosures
- Pilot light kit: Requires no wiring. Used with NEMA Type 1 enclosed starters, Sizes 00 – 4. Kits are also available for NEMA 3R 4, 4X, and 12 enclosures

There are more accessories available!
Ask your distributor for additional customization ideas to solve your needs.

The Square D brand is an integral part of the Schneider Electric portfolio. We deliver proven reliability, expertise, and comprehensive solutions.

For more information on Square D Type S starters and contactors, visit www.schneider-electric.com/us or call 888-SQUARED.

Schneider Electric USA, Inc.

800 Federal Street
Andover, MA 01810
888 SQUARED (888-778-2733)

www.schneider-electric.us

May 2017
Document Number 8536BR1401R05/17

Life Is On

SQUARE D by Schneider Electric

©2017 Schneider Electric, Square D, Life Is On Square D, Green Premium, Motor Logic, Spin Top and TeSys are trademarks and the property of Schneider Electric SE, its subsidiaries and affiliated companies. All other trademarks are the property of their respective owners. • www.schneider-electric.com