Starters + Enclosed Product

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Motor Starters and Enclosed Product

Open & Enclosed pre-wired motor starters and enclosed contactors for any application

In addition to selling “open” components, Sprecher + Schuh also offers a full array of preassembled and enclosed products ready to install when they reach your dock.

Standard or customized

The cataloged products in this section comprise Sprecher + Schuh’s standard offerings. In most cases, engineering drawings and bills-of-material have already been created and assembly procedures have been standardized. Generally speaking, lead times are shorter on these standard items.

- Fractional Manual Starters
- Enclosed contactors
- Magnetic motor starters
- KWIKstarters
- Combination starters
- Explosion-proof starters
- Multi-speed starters
- Reduced voltage starters
- Pump controllers
- Softstarters (see Section D)
- Type E/F combination controllers
  (see Section F)

Your sales representative and our Engineering department will also work with you to customize any of our standard pre-assembled or enclosed products to suit your exact specifications. Any combination of enclosure types, pilot devices, control power transformers, meters and other modifications can be combined to provide exactly the panel you need.

UL/CSA approved shop

Sprecher + Schuh’s assembly operations are UL Approved UL508A and CSA certified. This means, upon customer request, we can build UL 508A Listed and CSA compliant panels that satisfy the most rigorous UL inspection. Regardless of whether your panel has a UL508A Listing, panels built by Sprecher + Schuh adhere to UL mandated design and wiring standards.

Built with quality and pride

Every panel built by Sprecher + Schuh is meticulously designed and constructed. Where possible, all panels are laid out with generous wiring space. Control wiring is neatly bundled and tied to the back pan. Outsourced components are industrial control
quality from name brand manufacturers. Control wiring and device function is electrically tested before the panel leaves our facility.

ISO 9001 and ATEX Certified

Sprecher + Schuh is committed to a quality system, focused on customer solutions. This is achieved through superior products and services, excellent customer service, technical expertise, supplier partnerships, and industry leadership.

Our facility is ISO 9001 certified. That was the catalyst in allowing Sprecher + Schuh to obtain Atmospheres Explosives certification (ATEX). ATEX certification permits us to build explosion-proof equipment and panels to be supplied across the European Union, including Canada.
### Catalog Number Coding

**Standard Starters and Enclosed Contactors**

*FMS and KW starters do not use these principles*

<table>
<thead>
<tr>
<th>Contactors or Starter Type</th>
<th>Contactor Size</th>
<th>Coil Code (or CPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-reversing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>CAT</td>
<td>7-30 480</td>
</tr>
<tr>
<td>CAT</td>
<td>7-9(E)</td>
<td>AC 242</td>
</tr>
<tr>
<td>CBT</td>
<td>7-12(E)</td>
<td>DC 12E, 12DD</td>
</tr>
<tr>
<td>CATN</td>
<td>7-16(E)</td>
<td>24E, 24DD</td>
</tr>
<tr>
<td>CBTN</td>
<td>7-23(E)</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>7-30(E)</td>
<td>220W</td>
</tr>
<tr>
<td></td>
<td>7-37(E)</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>7-43(E)</td>
<td>277</td>
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<tr>
<td></td>
<td>7-55(E)</td>
<td>380</td>
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<tr>
<td></td>
<td>7-69(D)</td>
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<td>7-72(D)</td>
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<td></td>
<td>7-85(D)</td>
<td>AC/DC 24W</td>
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<td></td>
<td>7-97(D)</td>
<td>48W, 120W, 480W</td>
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<td><strong>Reversing</strong></td>
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<tr>
<td>CAU</td>
<td>CBU</td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td></td>
<td>CAUTN</td>
<td></td>
</tr>
<tr>
<td><strong>Multi-speed</strong></td>
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<td></td>
</tr>
<tr>
<td>CAZTT</td>
<td>CAZTH</td>
<td></td>
</tr>
<tr>
<td>CAETT</td>
<td>CAEHT</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>CAYT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAPWT</td>
<td></td>
</tr>
<tr>
<td><strong>Reduced Voltage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAAT</td>
<td>CAYT</td>
<td></td>
</tr>
<tr>
<td>CAPWT</td>
<td>CAPWT</td>
<td></td>
</tr>
<tr>
<td><strong>Pump Panels</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPT</td>
<td>CAPTN</td>
<td></td>
</tr>
<tr>
<td>CADPT</td>
<td>CADPT</td>
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<table>
<thead>
<tr>
<th>Small - Series CA7</th>
<th>7-9(E)</th>
<th>7-12(E)</th>
<th>7-16(E)</th>
<th>7-23(E)</th>
<th>7-30(E)</th>
<th>7-37(E)</th>
<th>7-43(E)</th>
<th>7-55(E)</th>
<th>7-69(D)</th>
<th>7-72(D)</th>
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<tbody>
<tr>
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<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>XA</td>
<td>208</td>
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</tr>
<tr>
<td>XB</td>
<td>240</td>
<td>120</td>
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<td></td>
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</tr>
<tr>
<td>XC</td>
<td>480</td>
<td>120</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XD</td>
<td>575</td>
<td>120</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>XE</td>
<td>240</td>
<td>24</td>
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<td></td>
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</tr>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

For additional Control Transformer Codes, refer to Modification pages in this section.

---

(D) & (E) suffix designates contactors with DC coils

This illustration is for reference only. Turn to the appropriate page to determine specific catalog number.
Visit www.sprecherschuh.com/ecatalog for pricing and the most up to date information.

**CT7N - Bimetallic Thermal**

CA7-9 thru CAT-97

- A-C: CT7N O/L Relay, Class 10, manual or automatic reset
- P: CT7N O/L Relay, Class 10, manual or automatic reset, separate mount

**CEP7 Second Generation - Solid State**

CA7-9 thru CA9-1060-EI

- D1...: CEP7 O/L Relay, 3Ø, Class 10, man. reset
- E...: CEP7S O/L Relay, 1Ø, (selectable)
- E...: CEP7 O/L Relay, 3Ø, (selectable)
- CT...: Current Transformers

**Through-the-Door Operated Combo**

<table>
<thead>
<tr>
<th>Thermal Magnetic Circuit Breaker</th>
<th>Fusible Disconnect</th>
<th>Non Fusible Disconnect</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB(H)15</td>
<td>JF61 600V/30A</td>
<td>JU61 600V/30A</td>
</tr>
<tr>
<td>TB20</td>
<td>JF62 600V/60A</td>
<td>JU62 600V/60A</td>
</tr>
<tr>
<td>TB25</td>
<td>JF63 600V/100A</td>
<td>JU63 600V/100A</td>
</tr>
<tr>
<td>thru</td>
<td>JF64 600V/200A</td>
<td>JU64 600V/200A</td>
</tr>
<tr>
<td>TB1200</td>
<td>JF65 600V/400A</td>
<td>JU65 600V/400A</td>
</tr>
<tr>
<td>Blank</td>
<td>JF66 600V/600A</td>
<td>JU66 600V/600A</td>
</tr>
<tr>
<td>Blank</td>
<td>JF67 600V/800A</td>
<td>JU67 600V/800A</td>
</tr>
<tr>
<td>Blank</td>
<td>Blank</td>
<td>Blank</td>
</tr>
</tbody>
</table>

*TBH represents high interrupt capacity breaker*
### General Information

**Enclosure Ratings**

#### NEMA / UL Enclosure Type Definitions

<table>
<thead>
<tr>
<th>For a degree of protection against:</th>
<th><strong>NEMA / UL Type (IP Equivalent)</strong>*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indoor Use</td>
</tr>
<tr>
<td>Incidental contact with enclosed equipment</td>
<td>✓</td>
</tr>
<tr>
<td>Falling dirt</td>
<td>✓</td>
</tr>
<tr>
<td>Rust</td>
<td>✓</td>
</tr>
<tr>
<td>Circulating dust, lint, fibers and flyings</td>
<td>✓</td>
</tr>
<tr>
<td>Windblown dust</td>
<td>✓</td>
</tr>
<tr>
<td>Falling liquids and light splashing</td>
<td>✓</td>
</tr>
<tr>
<td>Rain (limited water allowed inside)</td>
<td>✓</td>
</tr>
<tr>
<td>Rain (no water allowed inside)</td>
<td>✓</td>
</tr>
<tr>
<td>Snow and sleet</td>
<td>✓</td>
</tr>
<tr>
<td>Hosedown and splashing water</td>
<td>✓</td>
</tr>
<tr>
<td>Occasional prolonged submersion</td>
<td>✓</td>
</tr>
<tr>
<td>Oil or coolant spraying or splashing</td>
<td>✓</td>
</tr>
<tr>
<td>Corrosive agents</td>
<td>✓</td>
</tr>
<tr>
<td>Occasional temporary submersion</td>
<td>✓</td>
</tr>
</tbody>
</table>

*IP Equivalents are only approximate. It is the responsibility of the user to verify the enclosure rating necessary for the given application.*

#### Explosion-Proof Enclosure Type Definitions

**NEMA Classifications - Marked with Rated Class, Division, and Group**

- **NEMA 7** For use in indoor locations classified as Class I, Groups A, B, C or D, as defined in the National Electrical Code
- **NEMA 8** For use in indoor or outdoor locations classified as Class I, Groups A, B, C or D, as defined in the National Electrical Code - oil immersed
- **NEMA 9** For use in indoor locations classified as Class II, Groups E, F or G, as defined in the National Electrical Code

**Summary of NEC Classes and Group Examples**

<table>
<thead>
<tr>
<th>Group</th>
<th>Class I (Potentially explosive gas or vapor)</th>
<th>Group</th>
<th>Class II (Potentially explosive dusts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Acetylene</td>
<td>E</td>
<td>Metallic Duffs (all metals)</td>
</tr>
<tr>
<td>B</td>
<td>Hydrogen, Ethylene Oxide, Propylene Oxide</td>
<td>F</td>
<td>Carbonaceous Duffs (coal, asphalt, etc.)</td>
</tr>
<tr>
<td>C</td>
<td>Ether, Hydrogen Sulfide, Hydrazine, Nitroethane</td>
<td>G</td>
<td>Nonconductive Duffs (grain, drugs, pesticides, plastics, dyes, etc.)</td>
</tr>
<tr>
<td>D</td>
<td>Methane, Acetone, Benzene, Gasoline, Naptha</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Summary of NEC Divisions**

- **Division 1** Potentially explosive substance present under normal operating conditions
- **Division 2** Potentially explosive substance present under abnormal operating conditions

---

[www.sprecherschuh.com/ecatalog](http://www.sprecherschuh.com/ecatalog) - All pricing shown in US dollars - FY19
# IP Ratings Definitions

<table>
<thead>
<tr>
<th>IP Ratings Definitions</th>
<th>IP...0</th>
<th>IP...1</th>
<th>IP...2</th>
<th>IP...3</th>
<th>IP...4</th>
<th>IP...5</th>
<th>IP...6</th>
<th>IP...7</th>
<th>IP...8</th>
</tr>
</thead>
<tbody>
<tr>
<td>No protection</td>
<td><img src="image" alt="No protection icon" /></td>
<td><img src="image" alt="Protected against vertically falling drops of water (condensation) icon" /></td>
<td><img src="image" alt="Protected against spraying water with enclosure up to 15° from vertical icon" /></td>
<td><img src="image" alt="Protected against sprinkled water from all directions (limited ingress permitted) icon" /></td>
<td><img src="image" alt="Protected against strong jets of water from all directions (limited ingress permitted) icon" /></td>
<td>Protected against immersion up to one meter</td>
<td>Protected against long periods of immersion under pressure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IP0...**
- IP00
  - No protection

**IP1...**
- IP10
  - Protected against solid objects up to 50mm (accidental touch by hands)
- IP11
- IP12

**IP2...**
- IP20
  - Protected against solid objects up to 12mm (fingers, knuckles)
- IP21
- IP22
- IP23

**IP3...**
- IP30
  - Protected against solid objects up to 2.5mm (tools, wires)
- IP31
- IP32
- IP33
- IP34

**IP4...**
- IP40
  - Protected against solid objects up to 1mm (wires)
- IP41
- IP42
- IP43
- IP44

**IP5...**
- IP50
  - Protected against dust (limited ingress permitted)
- IP53
- IP54
- IP55
- IP56

**IP6...**
- IP60
  - Totally protected against dust
- IP65
- IP66
- IP67
Orange Express

A program designed to meet the demand for shipment of enclosed contactors, starters and Type E Self-Protected Manual Motor Controllers in 3 days or less, from the time we enter your order until it is ready for shipment; GUARANTEED.

Sprecher + Schuh has shipped stock components for years while the demands on our Custom Control Panel Shop business has steadily increased. Our panel facilities accommodate customer demand for quick turn around on standard enclosed contactors, manual motor starters, magnetic motor starters and combination starters. More stock, more manpower and streamlined logistics are all combined to make it possible for Sprecher + Schuh to guarantee three day shipment for a variety of enclosed products.

Check out the details of Orange Express; we are confident you won’t be disappointed!

Getting started

• Orange Express orders received by Customer Service by noon on day one will ship by the end of day three.
• Orange Express orders must be complete with all details before the three day clock can be started.
• Orange Express orders must be clearly identified as an Orange Express order on the purchase order.
• Orange Express orders may be shipped standard freight or express. Express delivery must be clearly marked and will be pre-paid and charged.
• Orange Express orders are limited to the enclosed products detailed and marked with the OE logo in this catalog.
• Orange Express orders may include up to five items; that’s five of the same item or five different line items.
• Orange Express orders must utilize established Sprecher + Schuh standard wiring diagrams.
• Orange Express orders cannot be combined with any other specialty programs.
Look for the Orange Express Icons

The OE icon is scattered throughout the catalog, indicating which products are available in the program. Orange Express includes the following products:

- **KWIKStarters**
- **FVNR CA7 Contactors** – Type 1 and 12 enclosed
- **FVR CA7 Contactors** – Type 1 and 12 enclosed
- **FVNR CAT7 Magnetic Starters** – Type 1, 12 and non-metallic 4X enclosed
- **FVR CAUT7 Magnetic Starters** – Type 1, 12 and non-metallic 4X enclosed
- **FVNR CBT7 Magnetic Starters** – Type 1, 12 and non-metallic 4X enclosed
- **FVR CBUT7 Magnetic Starters** – Type 1, 12 and non-metallic 4X enclosed
- **FVNR CATN7 NEMA Size 00, 0, 1 and 2 Magnetic Starters** – Type 1, 12 and non-metallic 4X enclosed
- **Combo CAT7 & CATN7 MCCB FVNR Magnetic Starters** - Type 1, 12 and non-metallic 4X enclosed
- **Combo CAT7 Fusible FVNR Magnetic Starters** - Type 1, 12 and non-metallic 4X enclosed
- **Combo CAT7 Non-Fusible FVNR Magnetic Starters** - Type 1, 12 and non-metallic 4X enclosed
- **KTA7 Type E Self-Protected Manual Motor Controller** – Type IP65, 12, 4 and non-metallic 4X enclosed
- **CX7 Type E KTA7 Self-Protected Combination FVNR Controller** – Type 4/12 enclosed
- **All contactors and starters listed are with AC coil only**
- **Options** - factory installed modifications include:
  - Start – Stop Pushbutton
  - Hand – Off – Auto Selector Switch
  - Forward – Stop – Reverse Pushbutton for FVR starters/contactors
  - Forward – Off – Reverse Selector Switch for FVR starters/contactors
  - Pilot Lights (Two Maximum)
  - Additional interlocks
  - Surge Suppressor
  - Control Power Transformer (with primary and secondary fusing as required)

Our Guarantee

Orange Express orders not shipped by day three, for some unforeseen reason, will be shipped via premium freight at our expense; that’s Sprecher + Schuh’s guarantee of quality service and performance.
Need Custom Control Panels? You Got It

Sprecher + Schuh is your go to builder for custom motor control panels. Our panel shops are UL508 and CSA approved. This means our knowledgeable team can design your panel for custom applications to meet UL/CSA, ATEX, UL1203, and CE standards. Our engineering and custom quotes staff work with the customer one-on-one in designing a motor control panel that best fits the customer’s needs. No job is too small or too big for our staff to take on.

We continuously strive to develop innovative, new products and improve existing designs. We constantly strive to maintain a superior level of service including our ISO 9001 Certification.

Our large panel shop is designed to accommodate our customers’ needs. We stock not only Sprecher + Schuh components but also MCCB and popular enclosures in a variety of sizes and types (metallic, non-metallic, and explosion-proof). This means we can design, assemble, wire, and quickly ship a variety of custom panels.

What Can We Build For You?

Regardless of your industry or custom control panel needs, we at Sprecher + Schuh have the engineering experience and manufacturing facilities to design and build your panels. Whether your need is to design an OEM panel that will be repeated, or a one-of-a-kind, we have an experienced engineering and quality control team dedicated to providing the best solution to your custom control panels. Our manufacturing facilities are staffed with experienced wiring and installation technicians, ensuring your custom panel meets safety and performance criteria. Through this commitment to service, and never-ending attention to detail, we continue to be the first and last words in motor protection.
Custom Built Panels

Custom built to your specifications!

- Multi-Motor Starter Panels
- Combination & Non-Combination Motor Starters
- Reduced Voltage Starters
- Softstarter Panels (see Section D)
- Multi-plex Pump Panels
- Door-in-Door Panels
- Explosion-Proof Starters
- UL508/CSA Labeled Custom Panels
- ATEX Explosion Proof Panels
- Labeled Service Entrance Rated Panels
- and many more!

For your contact:
customquotes@sprecherschuh.com

www.sprecherschuh.com/ecatalog - All pricing shown in US dollars