

# Series CA7 Contactors

Contactor

CA7

Rugged, space saving  
and modular...  
Sprecher + Schuh's  
newest contactor for  
applications up to 60HP

Over 100 years of design experience has produced Sprecher + Schuh's seventh generation contactor line. The CA7 represents the most modern and flexible power contactor available today, meeting the highest industrial application requirements.

## Big performance in a small package

A wide selection of ten contactors in four frame sizes covers the entire CA7 horsepower range (up to 60HP @ 460/575V). Six of the contactors are only 45mm wide, an extremely small footprint for such rugged performance. A number of design features account for this efficiency, including high contact pressure and "bounce-free" contacts, allowing the devices to handle the high starting currents typical of modern motors.



## Type 1 and Type 2 Coordination

Whether you're designing motor circuits for use in North America, Europe or any other part of the world, all CA7 contactors have been designed and tested with respect to Type 1 and Type 2 short circuit coordination. Find out more in the CA7 Technical Information section in this chapter.

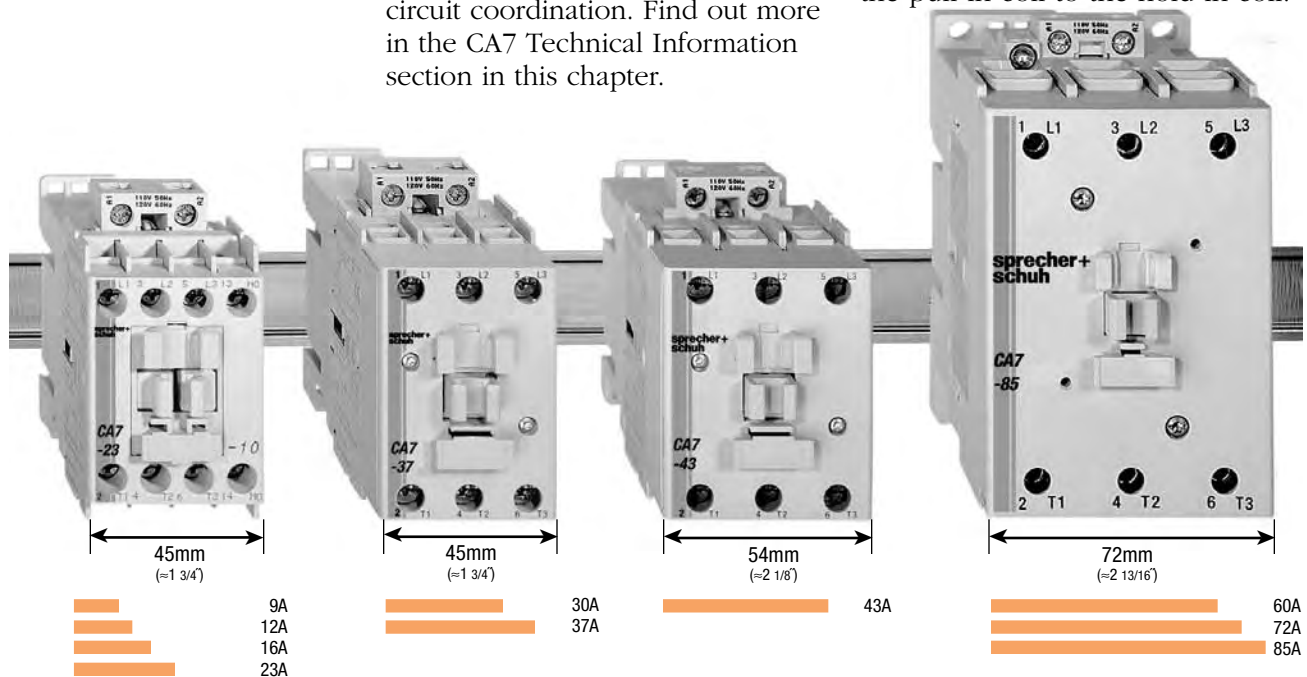
## Advanced safety and reliability features

The entire CA7 line features mechanically linked contacts, sometimes referred to as "positively guided contacts" or "force guided contacts". If a main power pole welds, adequate clearances exist ( $\geq 0.3\text{mm}$ ) to ensure that the auxiliary contacts do not change state when coil power is removed and the device tries to open. This is a requirement in safety circuits per IEC 60947-5-1.

Reliability is further assured by "cross-stamped" auxiliary contacts, which provide multi-point reliability in low current, low voltage applications.

## Two types of DC coils available

CA7-9C through 43C contactors are available with true DC coils that dramatically decrease wattage consumption during pull-in. This allows the use of smaller power supplies. The entire CA7 line is also available with a two winding DC coil that reduces the size of the contactor, as well as the hold-in values. Two winding coils include built-in coil suppression and an internal contact that bypasses the pull-in coil to the hold-in coil.



## Modular accessories are common to all devices

All accessories are interchangeable among all CA7 contactors and CS7 control relays. This minimizes inventory requirements and maximizes flexibility. Top and side mount auxiliary contacts are available depending on your application. A mechanical interlock with two built-in NC auxiliaries also provides electrical interlocking if desired. Pneumatic and electronic timers, surge suppressors and electronic interface modules provide solutions for even the most complex applications.

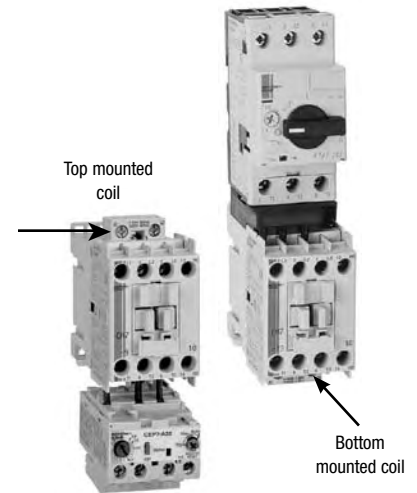


## Reversible coil provides total flexibility

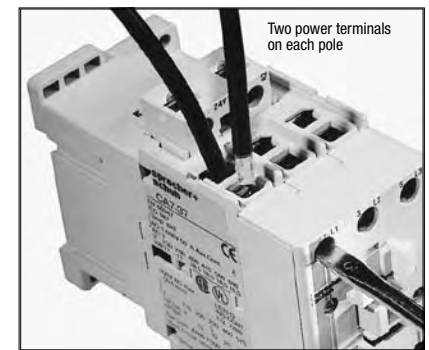
When shipped, both coil connections are normally located at the top of the contactor in preparation for mounting an overload relay at the bottom. For multi-starter panels, however, the coil can be reversed, which provides space to close-couple a KT7 Motor Circuit Controller on the top of the contactor. CA7 contactors can either be ordered with the coil reversed or may be easily reversed in the field.

## Dual power terminals speed wiring

CA7-30 through 85 contactors are designed with two power terminals for all three poles. This simplifies power wiring of interconnected contactors in reversing, reduced voltage and two-speed applications. Preformed power wiring connectors are also available for virtually instantaneous wiring in these labor intensive applications. Simplified wiring means less labor and less cost.



Reversible coils are standard on all CA7 contactors



Dual power terminals assure hassle-free wiring in complex control schemes

## Special use contactors for specialized applications

The CA7 line has been expanded to include a number of contactors designed and labeled for specific industrial applications. In all cases, these devices are UL and CSA approved for these specialized uses.

### Lighting contactors

The CAL7 contactor can be used to control a wide variety of lighting loads. These contactors are well suited to handle the high inrush currents typical of this application as well as other non-motor (resistive) loads. Both mechanically held and electrically held models are available for lighting load applications up to 20A, 30 A and 60 A.

CAL7 Lighting Contactor



CAQ7 Capacitor Switching Contactor

CNX Special Purpose Contactor

CAQ7 contactors manage the peak inrush common with capacitor switching by incorporating a built-in set of resistors and early-make contacts, wired in parallel with the power contacts, to pre-charge the capacitors. Selection is based on applied KVAR.

## NEMA Labeled Contactors

CAN7 contactors are UL Listed and rated in accordance with the requirements of NEMA standards publication ICS-2. These contactors are NEMA compliant and are labeled accordingly.

## Special purpose contactors

CNX contactors are standard CA7 contactors that have been tested, approved and labeled by UL for heating ventilation and air conditioning (HVAC) applications.

## Capacitor contactors

Sprecher + Schuh's expanded CA7 line includes contactors designed and labeled for specific industrial applications



Contactors

CA7

#### Non-Reversing, Three Pole Contactors With AC Coil, Series CA7 (Open type only) ①

| I <sub>e</sub> [A]<br>① |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |                |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor |             | Open Type                               | Price             |
|-------------------------|------|---------------------------------------------------|----------------|------|------|-------------------|-------|-------|-------|-------|-------|----------------------------------------|-------------|-----------------------------------------|-------------------|
|                         |      | kW (50 Hz)                                        |                |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                        |             |                                         |                   |
|                         |      | 230V                                              | 400V /<br>415V | 500V | 690V | 1 Ø               |       | 3 Ø   |       |       |       |                                        |             |                                         |                   |
| AC-3                    | AC-1 |                                                   |                |      |      | 115V              | 230V  | 200V  | 230V  | 460V  | 575V  | NO                                     | NC          |                                         |                   |
| 9                       | 32   | 3                                                 | 4              | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1<br>0                                 | 0<br>1      | CA7-9-10-<br>CA7-9-01-*                 | 120               |
| 12                      | 32   | 4                                                 | 5.5            | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1<br>0                                 | 0<br>1      | CA7-12-10-<br>CA7-12-01-*               | 155               |
| 16                      | 32   | 5.5                                               | 7.5            | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1<br>0                                 | 0<br>1      | CA7-16-10-<br>CA7-16-01-*               | 174               |
| 23                      | 32   | 7.5                                               | 11             | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1<br>0                                 | 0<br>1      | CA7-23-10-<br>CA7-23-01-*               | 193               |
| 30                      | 65   | 10                                                | 15             | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-30-00-<br>CA7-30-10-<br>CA7-30-01-* | 222<br>244<br>244 |
| 37                      | 65   | 11                                                | 18.5/<br>20    | 20   | 18.5 | 3                 | 5     | 10    | 10    | 25    | 30    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-37-00-<br>CA7-37-10-<br>CA7-37-01-* | 266<br>288<br>288 |
| 43                      | 85   | 13                                                | 22             | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-43-00-<br>CA7-43-10-<br>CA7-43-01-* | 286<br>308<br>308 |
| 60                      | 100  | 18.5                                              | 37             | 37   | 32   | 5                 | 10    | 15    | 20    | 40    | 50    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-60-00-<br>CA7-60-10-<br>CA7-60-01-* | 350<br>372<br>372 |
| 72                      | 100  | 22                                                | 40             | 45   | 40   | 5                 | 15    | 20    | 25    | 50    | 60    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-72-00-<br>CA7-72-10-<br>CA7-72-01-* | 403<br>425<br>425 |
| 85                      | 100  | 25                                                | 45             | 55   | 45   | 7-1/2             | 15    | 25    | 30    | 60    | 60    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-85-00-<br>CA7-85-10-<br>CA7-85-01-* | 460<br>482<br>482 |



CA7-9-10-120 contactor



CA7-43-00-120 contactor



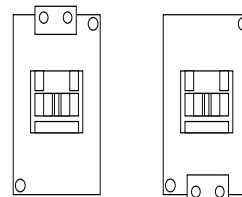
CA7-85-00-120 contactor

#### Coil Codes ②

| A.C.<br>Coil Code | Voltage Range |           |
|-------------------|---------------|-----------|
|                   | 50 Hz         | 60 Hz     |
| 24Z               | 24V           | 24V       |
| 120               | 110V          | 120V      |
| 208               | ~             | 208V      |
| 220W              | ~             | 208V-240V |
| 240               | 220V          | 240V      |
| 277               | 240V          | 277V      |
| 380               | 380V-400V     | 440V      |
| 480               | 440V          | 480V      |
| 600               | 550v          | 600V      |

#### Coil Terminal Position

All CA7 contactors are stocked and delivered with the coil terminals located on the line side (top) of the contactor. This is the typical configuration when using the contactor with an overload relay. When the contactor is used with the KT7 Motor Circuit Controller, the coil must be reversed, so that the coil terminals are located at the load side (bottom) of the contactor. CA7 coils can easily be reversed in the field, however, they are also available for order with the coils reversed from the factory. Contact your Sprecher+Schuh representative for more information about ordering CA7 contactors with reversed coils.



All CA7 contactors come with reversible coils.

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- ① AC1 Resistive Ratings and UL/CSA Continuous Current Ratings may be increased by the use of Lug Kits or Paralleling Links. See CA7 Accessories section for applicable information.
- ② Other voltages available, see page A37. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.

**Non-Reversing, Four Pole Contactors With AC Coil, Series CA7 (Open type only)**

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |         |      |              |                   |       |      |       |       |       | Contact Configuration, Main Pole |             | Open Type                                                            |                   | Price |
|--------------------|------|---------------------------------------------------|---------|------|--------------|-------------------|-------|------|-------|-------|-------|----------------------------------|-------------|----------------------------------------------------------------------|-------------------|-------|
|                    |      | kW (50 Hz)                                        |         |      |              | UL/CSA HP (60 Hz) |       |      |       |       |       |                                  |             |                                                                      |                   |       |
|                    |      | AC-3                                              | AC-1    | 230V | 400V<br>415V | 500V              | 690V  | 1 Ø  |       | 3 Ø   |       |                                  |             | NO                                                                   | NC                |       |
| 115V               | 230V |                                                   |         |      |              |                   |       | 200V | 230V  | 460V  | 575V  |                                  |             |                                                                      |                   |       |
| 9                  | 32   | 3                                                 | 4       | 4    | 4            | 1/2               | 1 1/2 | 2    | 2     | 5     | 7-1/2 | 4<br>3<br>2                      | 0<br>1<br>2 | CA7-9-M40- <b>*</b><br>CA7-9-M31- <b>*</b><br>CA7-9-M22- <b>*</b>    | 120<br>132<br>132 |       |
| 12                 | 32   | 4                                                 | 5.5     | 5.5  | 5.5          | 1/2               | 2     | 3    | 3     | 7-1/2 | 10    | 4<br>3<br>2                      | 0<br>1<br>2 | CA7-12-M40- <b>*</b><br>CA7-12-M31- <b>*</b><br>CA7-12-M22- <b>*</b> | 157<br>167<br>167 |       |
| 16                 | 32   | 5.5                                               | 7.5     | 7.5  | 7.5          | 1                 | 3     | 5    | 5     | 10    | 15    | 4<br>3<br>2                      | 0<br>1<br>2 | CA7-16-M40- <b>*</b><br>CA7-16-M31- <b>*</b><br>CA7-16-M22- <b>*</b> | 176<br>186<br>186 |       |
| 23                 | 32   | 7.5                                               | 11      | 13   | 11           | 2                 | 3     | 5    | 7-1/2 | 15    | 15    | 4<br>3<br>2                      | 0<br>1<br>2 | CA7-23-M40- <b>*</b><br>CA7-23-M31- <b>*</b><br>CA7-23-M22- <b>*</b> | 194<br>206<br>206 |       |
| 37                 | 75   | 11                                                | 18.5    | 20   | 18.5         | 3                 | 5     | 10   | 10    | 25    | 30    | 4                                | 0           | CA7-40-M40- <b>*</b>                                                 | 385               |       |
| 37                 | 75   | 11                                                | 18.5/20 | 18.5 | 7.5          | 3                 | 5     | 10   | 10    | 25    | 15    | 2                                | 2           | CA7-40-M22- <b>*</b>                                                 | 385               |       |
| 85                 | 130  | 25                                                | 45      | 55   | 45           | 7-1/2             | 15    | 25   | 30    | 60    | 50    | 4                                | 0           | CA7-90-M40- <b>*</b>                                                 | 657               |       |
| 85                 | 130  | 25                                                | 45      | 55   | 18.5         | 7-1/2             | 15    | 25   | 30    | 50    | 20    | 2                                | 2           | CA7-90-M22- <b>*</b>                                                 | 657               |       |



CA7-23-M22-120 contactor

**Coil Codes ❶**

| A.C.<br>Coil Code | Voltage Range |           |
|-------------------|---------------|-----------|
|                   | 50 Hz         | 60 Hz     |
| <b>24Z</b>        | 24V           | 24V       |
| <b>120</b>        | 110V          | 120V      |
| <b>208</b>        | ~             | 208V      |
| <b>220W</b>       | ~             | 208V-240V |
| <b>240</b>        | 220V          | 240V      |
| <b>277</b>        | 240V          | 277V      |
| <b>380</b>        | 380V-400V     | 440V      |
| <b>480</b>        | 440V          | 480V      |
| <b>600</b>        | 550V          | 600V      |

**Ordering Instructions**

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

❶ Other voltages available, see page A37. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.

#### Non-Reversing, Three Pole Contactors With True DC Coil, Series CA7 (Open type only) ①④

| I <sub>e</sub> [A]<br>① |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |               |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor |             | Open Type                                    | Catalog<br>Number | Price |
|-------------------------|------|---------------------------------------------------|---------------|------|------|-------------------|-------|-------|-------|-------|-------|----------------------------------------|-------------|----------------------------------------------|-------------------|-------|
|                         |      | kW (50 Hz)                                        |               |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                        |             |                                              |                   |       |
|                         |      |                                                   |               |      |      |                   |       |       |       |       |       |                                        |             |                                              |                   |       |
| AC-3                    | AC-1 | 230V                                              | 400V/<br>415V | 500V | 690V | 1 Ø               | 3 Ø   |       |       |       | NO    | NC                                     |             |                                              |                   |       |
| 9                       | 32   | 3                                                 | 4             | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1<br>0                                 | 0<br>1      | CA7-9C-10-*<br>CA7-9C-01-*                   | 155               |       |
| 12                      | 32   | 4                                                 | 5.5           | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1<br>0                                 | 0<br>1      | CA7-12C-10-*<br>CA7-12C-01-*                 | 200               |       |
| 16                      | 32   | 5.5                                               | 7.5           | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1<br>0                                 | 0<br>1      | CA7-16C-10-*<br>CA7-16C-01-*                 | 225               |       |
| 23                      | 32   | 7.5                                               | 11            | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1<br>0                                 | 0<br>1      | CA7-23C-10-*<br>CA7-23C-01-*                 | 250               |       |
| 30                      | 65   | 10                                                | 15            | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-30C-00-*<br>CA7-30C-10-*<br>CA7-30C-01-* | 290<br>312<br>312 |       |
| 37                      | 65   | 11                                                | 18.5/<br>20   | 20   | 18.5 | 3                 | 5     | 10    | 10    | 25    | 30    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-37C-00-*<br>CA7-37C-10-*<br>CA7-37C-01-* | 350<br>372<br>372 |       |
| 43                      | 85   | 13                                                | 22            | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-43C-00-*<br>CA7-43C-10-*<br>CA7-43C-01-* | 410<br>432<br>433 |       |



CA7-9C contactor (typical)



CA7-43C-00-120 contactor

#### Description:

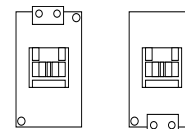
True DC coils have very low inrush which allows the use of smaller power supplies. See page A48 for more information. DC and AC coils are not interchangeable. CA7-9C...43C contactors have increased dimensions to accommodate true DC coils.

#### Coil Codes ②

| D.C Coil Codes | Voltage |
|----------------|---------|
| 12D            | 12V     |
| 24D ③          | 24V     |
| 48D            | 48V     |
| 110D           | 110V    |
| 220D           | 220V    |

#### Coil Terminal Position

All CA7 contactors are stocked and delivered with the coil terminals located on the line side (top) of the contactor. This is the typical configuration when using the contactor with an overload relay. When the contactor is used with the KT7 Motor Circuit Controller, the coil must be reversed, so that the coil terminals are located at the load side (bottom) of the contactor. CA7 coils can easily be reversed in the field, however, they are also available for order with the coils reversed from the factory. Contact your Sprecher+Schuh representative for more information about ordering CA7 contactors with reversed coils.



All CA7 contactors come with reversible coils.

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- ① AC1 Resistive Ratings and UL/CSA Continuous Current Ratings may be increased by the use of Lug Kits or Paralleling Links. See CA7 Accessories section for applicable information.
- ② Other voltages available, see page A38. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ③ Surge suppressor coil with integrated diode available. Order coil code **24DD** and add \$42 to list price. To order, change "C" in catalog number to "D".  
Ex: CA7-9C-10-24DD becomes CA7-9D-10-24DD. Check with customer service representative to determine stock availability.
- ④ See pages A29-A30 for limitations on adding auxiliaries to true DC contacts.



**Non-Reversing, Four Pole Contactors With True DC Coil, Series CA7 (Open type only)**

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |              |      |      |                   |       |      |       |       |       | Contact Configuration, Main Pole |       | Open Type     |     |  |
|--------------------|------|---------------------------------------------------|--------------|------|------|-------------------|-------|------|-------|-------|-------|----------------------------------|-------|---------------|-----|--|
|                    |      | kW (50 Hz)                                        |              |      |      | UL/CSA HP (60 Hz) |       |      |       |       |       |                                  |       |               |     |  |
|                    |      | 230V                                              | 400V<br>415V | 500V | 690V | 1 Ø               |       | 3 Ø  |       |       |       |                                  |       |               |     |  |
| 115V               | 230V |                                                   |              |      |      | 200V              | 230V  | 460V | 575V  | NO    | NC    | Catalog Number                   | Price |               |     |  |
| AC-3               | AC-1 |                                                   |              |      |      |                   |       |      |       |       |       |                                  |       |               |     |  |
| 9                  | 32   | 3                                                 | 4            | 4    | 4    | 1/2               | 1 1/2 | 2    | 2     | 5     | 7-1/2 | 4                                | 0     | CA7-9C-M40-*  | 156 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 3                                | 1     | CA7-9C-M31-*  | 168 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 2                                | 2     | CA7-9C-M22-*  | 168 |  |
| 12                 | 32   | 1                                                 | 5.5          | 5.5  | 5.5  | 1/2               | 2     | 3    | 3     | 7-1/2 | 10    | 4                                | 0     | CA7-12C-M40-* | 198 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 3                                | 1     | CA7-12C-M31-* | 210 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 2                                | 2     | CA7-12C-M22-* | 210 |  |
| 16                 | 32   | 5.5                                               | 7.5          | 7.5  | 7.5  | 1                 | 3     | 5    | 5     | 10    | 15    | 4                                | 0     | CA7-16C-M40-* | 222 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 3                                | 1     | CA7-16C-M31-* | 235 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 2                                | 2     | CA7-16C-M22-* | 235 |  |
| 23                 | 32   | 7.5                                               | 11           | 13   | 10   | 2                 | 3     | 5    | 7-1/2 | 15    | 15    | 4                                | 0     | CA7-23C-M40-* | 248 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 3                                | 1     | CA7-23C-M31-* | 260 |  |
|                    |      |                                                   |              |      |      |                   |       |      |       |       |       | 2                                | 2     | CA7-23C-M22-* | 260 |  |
| 37                 | 75   | 11                                                | 18.5         | 20   | 18.5 | 3                 | 5     | 10   | 10    | 25    | 30    | 4                                | 0     | CA7-40C-M40-* | 475 |  |
| 37                 | 75   | 11                                                | 18.5/20      | 18.5 | 7.5  | 3                 | 5     | 10   | 10    | 25    | 15    | 2                                | 2     | CA7-40C-M22-* | 485 |  |



CA7-9C contactor (typical)

**Description:**

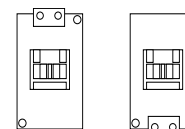
True DC coils have very low inrush which allows the use of smaller power supplies. See page A48 for more information. DC and AC coils are not interchangeable. CA7-9C...40C contactors have increased dimensions to accommodate true DC coils.

**Coil Codes ❶**

| D.C Coil Codes | Voltage |
|----------------|---------|
| 12D            | 12V     |
| 24D ❷          | 24V     |
| 48D            | 48V     |
| 110D           | 110V    |
| 220D           | 220V    |

**Coil Terminal Position**

All CA7 contactors are stocked and delivered with the coil terminals located on the line side (top) of the contactor. This is the typical configuration when using the contactor with an overload relay. When the contactor is used with the KT7 Motor Circuit Controller, the coil must be reversed, so that the coil terminals are located at the load side (bottom) of the contactor. CA7 coils can easily be reversed in the field, however, they are also available for order with the coils reversed from the factory. Contact your Sprecher+Schuh representative for more information about ordering CA7 contactors with reversed coils.



All CA7 contactors come with reversible coils.

**Ordering Instructions**

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

❶ Other voltages available, see page A38. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.

❷ Surge suppressor coil with integrated diode available. Order coil code 24DD and add \$42 to list price. To order, change "C" in catalog number to "D".  
Ex: CA7-9C-M40-24DD becomes CA7-9D-M40-24DD.

### Non-Reversing, Three Pole Contactors With Electronic 24VDC Coil, Series CA7 (Open type only) ①②③

| I <sub>e</sub> [A]<br>① |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |               |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor |             | Open Type                                          |                   | Price |
|-------------------------|------|---------------------------------------------------|---------------|------|------|-------------------|-------|-------|-------|-------|-------|----------------------------------------|-------------|----------------------------------------------------|-------------------|-------|
|                         |      | kW (50 Hz)                                        |               |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                        |             |                                                    |                   |       |
|                         |      |                                                   |               |      |      |                   | 1 Ø   |       | 3 Ø   |       |       |                                        |             | Catalog<br>Number                                  |                   |       |
| AC-3                    | AC-1 | 230V                                              | 400V/<br>415V | 500V | 690V | 115V              | 230V  | 200V  | 230V  | 460V  | 575V  | NO                                     | NC          |                                                    |                   |       |
| 9                       | 32   | 3                                                 | 4             | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1<br>0                                 | 0<br>1      | CA7-9E-10-24E<br>CA7-9E-01-24E                     | 197               |       |
| 12                      | 32   | 4                                                 | 5.5           | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1<br>0                                 | 0<br>1      | CA7-12E-10-24E<br>CA7-12E-01-24E                   | 242               |       |
| 16                      | 32   | 5.5                                               | 7.5           | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1<br>0                                 | 0<br>1      | CA7-16E-10-24E<br>CA7-16E-01-24E                   | 267               |       |
| 23                      | 32   | 7.5                                               | 11            | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1<br>0                                 | 0<br>1      | CA7-23E-10-24E<br>CA7-23E-01-24E                   | 292               |       |
| 30                      | 65   | 10                                                | 15            | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-30E-00-24E<br>CA7-30E-10-24E<br>CA7-30E-01-24E | 332<br>354<br>354 |       |
| 37                      | 65   | 11                                                | 18.5/<br>20   | 20   | 18.5 | 3                 | 5     | 10    | 10    | 25    | 30    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-37E-00-24E<br>CA7-37E-10-24E<br>CA7-37E-01-24E | 392<br>414<br>414 |       |
| 43                      | 85   | 13                                                | 22            | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 0<br>1<br>0                            | 0<br>0<br>1 | CA7-43E-00-24E<br>CA7-43E-10-24E<br>CA7-43E-01-24E | 455<br>475<br>475 |       |



CA7-23E-10-24E contactor



CA7-37E-00-24E contactor

#### Description

Low Consumption Electronic DC coils have extremely low inrush which allows the use of smaller power supplies. CA7-9E...37E has internal surge suppression. See page A48 for more information.

This new design results in:

- Lighter, lower depth
- More energy efficient contactors
- Easier wiring
- Uniform panel appearance.

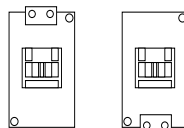
#### Applications

Direct control from PLC:

The low power consumption contactor designed to control motors and other loads is especially aligned to the specific requirement of electronic control circuits. The low power consumption of 1.5 W/60 mA allows direct control through PLC's without the need for interposing relays. Power dissipation is greatly reduced limiting the heat effect in control panels.

#### Coil Terminal Position

All CA7 contactors are stocked and delivered with the coil terminals located on the line side (top) of the contactor. This is the typical configuration when using the contactor with an overload relay. When the contactor is used with the KT7 Motor Circuit Controller, the coil must be reversed, so that the coil terminals are located at the load side (bottom) of the contactor. CA7 coils can easily be reversed in the field, however, they are also available for order with the coils reversed from the factory. Contact your Sprecher+Schuh representative for more information about ordering CA7 contactors with reversed coils.



All CA7 contactors come with reversible coils.

① AC1 Resistive Ratings and UL/CSA Continuous Current Ratings may be increased by the use of Lug Kits or Paralleling Links. See CA7 Accessories section for applicable information.

② DC and AC coils are not interchangeable. CA7-9E...43E are only available in 24VDC.

③ See pages A29-A30 for limitations on adding auxiliaries to Electronic DC Coil contacts.

**Non-Reversing, Four Pole Contactors With Electronic 24VDC Coil, Series CA7 (Open type only) ①②**

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |         |      |      |                   |       |      |       |       |       | Contact Configuration, Main Pole |    | Open Type       |       |
|--------------------|------|---------------------------------------------------|---------|------|------|-------------------|-------|------|-------|-------|-------|----------------------------------|----|-----------------|-------|
|                    |      | kW (50 Hz)                                        |         |      |      | UL/CSA HP (60 Hz) |       |      |       |       |       |                                  |    |                 |       |
|                    |      |                                                   | 400V    |      |      | 1 Ø               |       | 3 Ø  |       |       |       |                                  |    |                 |       |
| AC-3               | AC-1 | 230V                                              | 415V    | 500V | 690V | 115V              | 230V  | 200V | 230V  | 460V  | 575V  | NO                               | NC | Catalog Number  | Price |
| 9                  | 32   | 3                                                 | 4       | 4    | 4    | 1/2               | 1 1/2 | 2    | 2     | 5     | 7-1/2 | 4                                | 0  | CA7-9E-M40-24E  | 198   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 3                                | 1  | CA7-9E-M31-24E  | 210   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 2                                | 2  | CA7-9E-M22-24E  | 210   |
| 12                 | 32   | 1                                                 | 5.5     | 5.5  | 5.5  | 1/2               | 2     | 3    | 3     | 7-1/2 | 10    | 4                                | 0  | CA7-12E-M40-24E | 240   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 3                                | 1  | CA7-12E-M31-24E | 252   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 2                                | 2  | CA7-12E-M22-24E | 252   |
| 16                 | 32   | 5.5                                               | 7.5     | 7.5  | 7.5  | 1                 | 3     | 5    | 5     | 10    | 15    | 4                                | 0  | CA7-16E-M40-24E | 264   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 3                                | 1  | CA7-16E-M31-24E | 277   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 2                                | 2  | CA7-16E-M22-24E | 277   |
| 23                 | 32   | 7.5                                               | 11      | 13   | 10   | 2                 | 3     | 5    | 7-1/2 | 15    | 15    | 4                                | 0  | CA7-23E-M40-24E | 290   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 3                                | 1  | CA7-23E-M31-24E | 302   |
|                    |      |                                                   |         |      |      |                   |       |      |       |       |       | 2                                | 2  | CA7-23E-M22-24E | 302   |
| 37                 | 75   | 11                                                | 18.5    | 20   | 18.5 | 3                 | 5     | 10   | 10    | 25    | 30    | 4                                | 0  | CA7-40E-M40-24E | 520   |
| 37                 | 75   | 11                                                | 18.5/20 | 18.5 | 7.5  | 3                 | 5     | 10   | 10    | 25    | 15    | 2                                | 2  | CA7-40E-M22-24E | 535   |



CA7-23E-M22-24E contactor

Contactors

CA7

**Description**

Low Consumption Electronic DC coils have extremely low inrush which allows the use of smaller power supplies. CA7-9E...37E has internal surge suppression. See page A48 for more information.

This new design results in:

- Lighter, lower depth
- More energy efficient contactors
- Easier wiring
- Uniform panel appearance.

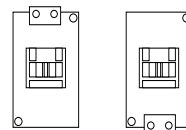
**Applications**

Direct control from PLC:

The low power consumption contactor designed to control motors and other loads is especially aligned to the specific requirement of electronic control circuits. The low power consumption of 1.5 W/60 mA allows direct control through PLC's without the need for interposing relays. Power dissipation is greatly reduced limiting the heat effect in control panels.

**Coil Terminal Position**

All CA7 contactors are stocked and delivered with the coil terminals located on the line side (top) of the contactor. This is the typical configuration when using the contactor with an overload relay. When the contactor is used with the KT7 Motor Circuit Controller, the coil must be reversed, so that the coil terminals are located at the load side (bottom) of the contactor. CA7 coils can easily be reversed in the field, however, they are also available for order with the coils reversed from the factory. Contact your Sprecher+Schuh representative for more information about ordering CA7 contactors with reversed coils.



All CA7 contactors come with reversible coils.

① DC and AC coils are not interchangeable. CA7-9E...43E are only available in 24VDC.

② See pages A29-A30 for limitations on adding auxiliaries to Electronic DC Coil contacts.



#### Non-Reversing, Three Pole Contactors With Two Winding DC Coil, Series CA7 (Open type only) ①②③

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |               |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor<br>①②③ |             | Open Type                                     |                   | Price |
|--------------------|------|---------------------------------------------------|---------------|------|------|-------------------|-------|-------|-------|-------|-------|-----------------------------------------------|-------------|-----------------------------------------------|-------------------|-------|
|                    |      | kW (50 Hz)                                        |               |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                               |             |                                               |                   |       |
|                    |      |                                                   | 400V/<br>415V |      |      | 1 Ø               |       | 3 Ø   |       |       |       |                                               |             |                                               |                   |       |
| AC-3               | AC-1 | 230V                                              |               | 500V | 690V | 115V              | 230V  | 200V  | 230V  | 460V  | 575V  | NO                                            | NC          | Catalog Number                                |                   |       |
| 9                  | 32   | 3                                                 | 4             | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1<br>0<br>2                                   | 1<br>2<br>0 | CA7-9Y-D11-<br>CA7-9Y-D02-<br>CA7-9Y-D20-*    | 211               |       |
| 12                 | 32   | 4                                                 | 5.5           | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1<br>0<br>2                                   | 1<br>2<br>0 | CA7-12Y-D11-<br>CA7-12Y-D02-<br>CA7-12Y-D20-* | 254               |       |
| 16                 | 32   | 5.5                                               | 7.5           | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1<br>0<br>2                                   | 1<br>2<br>0 | CA7-16Y-D11-<br>CA7-16Y-D02-<br>CA7-16Y-D20-* | 278               |       |
| 23                 | 32   | 7.5                                               | 11            | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1<br>0<br>2                                   | 1<br>2<br>0 | CA7-23Y-D11-<br>CA7-23Y-D02-<br>CA7-23Y-D20-* | 305               |       |
| 30                 | 65   | 10                                                | 15            | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 1<br>0<br>0                                   | 0<br>1      | CA7-30Y-E10-<br>CA7-30Y-E01-*                 | 345               |       |
| 37                 | 65   | 11                                                | 18.5/<br>20   | 20   | 18.5 | 3                 | 5     | 10    | 10    | 25    | 30    | 1<br>0<br>0                                   | 0<br>1      | CA7-37Y-E10-<br>CA7-37Y-E01-*                 | 404               |       |
| 43                 | 85   | 13                                                | 22            | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 1<br>0<br>0                                   | 0<br>1      | CA7-43Y-E10-<br>CA7-43Y-E01-*                 | 461               |       |
| 60                 | 100  | 18.5                                              | 32            | 37   | 32   | 5                 | 10    | 15    | 20    | 40    | 50    | 0<br>1<br>0                                   | 0<br>1      | CA7-60D-00-<br>CA7-60D-10-<br>CA7-60D-01-*    | 475<br>497<br>497 |       |
| 72                 | 100  | 22                                                | 40            | 45   | 40   | 5                 | 15    | 20    | 25    | 50    | 60    | 0<br>1<br>0                                   | 0<br>1      | CA7-72D-00-<br>CA7-72D-10-<br>CA7-72D-01-*    | 530<br>552<br>552 |       |
| 85                 | 100  | 25                                                | 45            | 55   | 45   | 7-1/2             | 15    | 25    | 30    | 60    | 60    | 0<br>1<br>0                                   | 0<br>1      | CA7-85D-00-<br>CA7-85D-10-<br>CA7-85D-01-*    | 590<br>612<br>612 |       |

NOTE: Items in gray are special order.



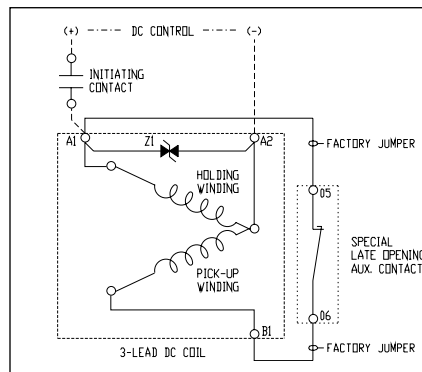
CA7-16Y contactor (typical)

#### Description:

Contactors with two winding DC coils have very low hold-in values and share the same dimensions with AC contactors. See page A48 for more information. See page A58 for dimensional information.

#### Coil Codes ④⑤⑥

| D.C. Coil Code | Voltage |
|----------------|---------|
| 24DD           | 24V     |
| 110DD          | 110V    |



#### CA7-9Y...43Y Contactors with Two Winding, 3-lead Coils

- 1) The two winding, 3-lead DC coil consists of a "pick-up" winding and a "hold-in" winding.
- 2) The contactor pulls-in through the lower resistance pick-up winding and holds-in through a higher resistance holding winding.
- 3) The pick-up winding is not designed for continuous operation and must be disconnected by the special late opening auxiliary contact immediately after the contactor pulls-in and seals.
- 4) Z1 is a built-in bi-directional diode (surge suppressor) for voltages up to 220V, which is located below the coil terminal cover at A1 & A2. For coil voltages 230/250V, an externally mounted CRD7-250 must be used for surge suppression.

- ① CA7-9Y...23Y-D11(D20) contactors are supplied with one NO auxiliary in the base. CA7-9Y...23Y-D02 contactors are supplied with one NC auxiliary in the base.
- ② All CA7-9Y...43Y contactors are supplied with an extra right side mounted block, that includes one auxiliary available for customer use, in addition to a 50ms late opening auxiliary contact for transition from pick-up winding to hold-in winding.
- ③ CA7-60D...CA7-85D have an internal auxiliary contact to transition from the start winding to the run winding.
- ④ Coils include an integrated diode surge suppressor.
- ⑤ Other coil voltages are available, see page A38. Contact your Sprecher + Schuh Sales Representative to determine which coil voltages may be stocked. *Non-standard coil voltages (non-stock) must be ordered and installed separately as renewal parts.*
- ⑥ The coil codes shown are the most commonly stocked items. Contact your Sprecher + Schuh representative to determine if other voltages, i.e., 12DD, 48DD, 220DD are on-hand or can be specially ordered in quantities.

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

#### Non-Reversing, Four Pole Contactors With Two Winding DC Coil, Series CA7 (Open type only) ①②

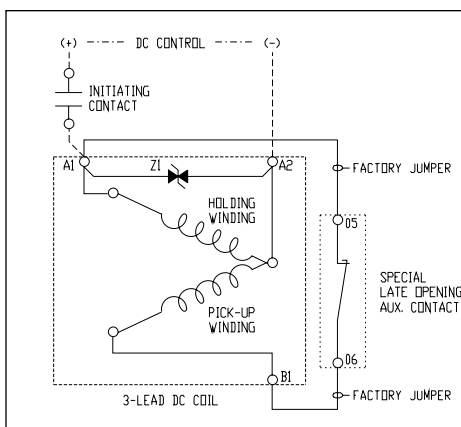
Description:  
See opposite page.

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |      |      |      |                   |       |      |       |       |       | Contact Configuration Main Pole |    | Auxiliary Contacts Per Contactor ① |    | Open Type         |       |
|--------------------|------|---------------------------------------------------|------|------|------|-------------------|-------|------|-------|-------|-------|---------------------------------|----|------------------------------------|----|-------------------|-------|
|                    |      | kW (50 Hz)                                        |      |      |      | UL/CSA HP (60 Hz) |       |      |       |       |       |                                 |    |                                    |    |                   |       |
|                    |      |                                                   | 415V |      |      | 1 Ø               |       | 3 Ø  |       |       |       |                                 |    |                                    |    |                   |       |
| AC-3               | AC-1 | 230V                                              | 400V | 500V | 690V | 115V              | 230V  | 200V | 230V  | 460V  | 575V  | NO                              | NC | NO                                 | NC | Catalog Number    | Price |
| 9                  | 32   | 3                                                 | 4    | 4    | 4    | 1/2               | 1-1/2 | 2    | 2     | 5     | 7-1/2 | 4                               | 0  | 1                                  | 0  | CA7-9Y-M40-D10-*  | 211   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 4                               | 0  | 0                                  | 1  | CA7-9Y-M40-D01-*  | 211   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 1                                  | 0  | CA7-9Y-M31-D10-*  | 224   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 0                                  | 1  | CA7-9Y-M31-D01-*  | 224   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 1                                  | 0  | CA7-9Y-M22-D10-*  | 224   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 0                                  | 1  | CA7-9Y-M22-D01-*  | 224   |
| 12                 | 32   | 4                                                 | 5.5  | 5.5  | 5.5  | 1/2               | 2     | 3    | 3     | 7-1/2 | 10    | 4                               | 0  | 1                                  | 0  | CA7-12Y-M40-D10-* | 255   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 4                               | 0  | 0                                  | 1  | CA7-12Y-M40-D01-* | 255   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 1                                  | 0  | CA7-12Y-M31-D10-* | 268   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 0                                  | 1  | CA7-12Y-M31-D01-* | 268   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 1                                  | 0  | CA7-12Y-M22-D10-* | 268   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 0                                  | 1  | CA7-12Y-M22-D01-* | 268   |
| 16                 | 32   | 5.5                                               | 7.5  | 7.5  | 7.5  | 1                 | 3     | 5    | 5     | 10    | 15    | 4                               | 0  | 1                                  | 0  | CA7-16Y-M40-D10-* | 278   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 4                               | 0  | 0                                  | 1  | CA7-16Y-M40-D01-* | 278   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 1                                  | 0  | CA7-16Y-M31-D10-* | 291   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 0                                  | 1  | CA7-16Y-M31-D01-* | 291   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 1                                  | 0  | CA7-16Y-M22-D10-* | 291   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 0                                  | 1  | CA7-16Y-M22-D01-* | 291   |
| 23                 | 32   | 7.5                                               | 11   | 13   | 10   | 2                 | 3     | 5    | 7-1/2 | 15    | 15    | 4                               | 0  | 1                                  | 0  | CA7-23Y-M40-D10-* | 305   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 4                               | 0  | 0                                  | 1  | CA7-23Y-M40-D01-* | 305   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 1                                  | 0  | CA7-23Y-M31-D10-* | 317   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 3                               | 1  | 0                                  | 1  | CA7-23Y-M31-D01-* | 317   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 1                                  | 0  | CA7-23Y-M22-D10-* | 317   |
|                    |      |                                                   |      |      |      |                   |       |      |       |       |       | 2                               | 2  | 0                                  | 1  | CA7-23Y-M22-D01-* | 317   |
| 85                 | 130  | 25                                                | 45   | 55   | 45   | 7-1/2             | 15    | 25   | 30    | 60    | 50    | 4                               | 0  | 0                                  | 0  | CA7-90D-M40-*     | 781   |
| 85                 | 130  | 25                                                | 45   | 55   | 18.5 | 7-1/2             | 15    | 25   | 30    | 60    | 20    | 2                               | 2  | 0                                  | 0  | CA7-90D-M22-*     | 781   |

NOTE: Items in gray are special order.

#### Coil Codes ③④

| D.C. Coil Code | Voltage |
|----------------|---------|
| 24DD           | 24V     |
| 110DD          | 110V    |



#### CA7-9Y...23Y Contactors with Two Winding, 3-lead Coils

- 1) The two winding, 3-lead DC coil consists of a "pick-up" winding and a "hold-in" winding.
- 2) The contactor pulls-in through the lower resistance pick-up winding and holds-in through a higher resistance holding winding.
- 3) The pick-up winding is not designed for continuous operation and must be disconnected by the special late opening auxiliary contact immediately after the contactor pulls-in and seals.
- 4) Z1 is a built-in bi-directional diode (surge suppressor) for voltages up to 220V, which is located below the coil terminal cover at A1 & A2. For coil voltages 230/250V, an externally mounted CRD7-250 must be used for surge suppression.

- ① All CA7-9Y...23Y contactors are supplied with an extra right side mounted block, that includes one auxiliary available for customer use, in addition to a 50ms late opening auxiliary contact for transition from pick-up winding to hold-in winding.
- ② CA7-90D...contactors have an internal auxiliary contact to transition from the start winding to the run winding.
- ③ Coils include an integrated diode surge suppressor.
- ④ Other coil voltages are available, see page A38. Contact your Sprecher + Schuh Sales Representative to determine which voltage may be stocked. *Non-standard coil voltages (non-stocked) must be ordered and installed separately as renewal parts.*

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

#### Reversing, Three Pole Contactors With AC Coil, Series CAU7 (Open type only)

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |              |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor |        | Open Type    | Price |
|--------------------|------|---------------------------------------------------|--------------|------|------|-------------------|-------|-------|-------|-------|-------|----------------------------------------|--------|--------------|-------|
|                    |      | kW (50 Hz)                                        |              |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                        |        |              |       |
|                    |      | 230V                                              | 400V<br>415V | 500V | 690V | 1 Ø               |       | 3 Ø   |       |       |       |                                        |        |              |       |
| AC-3               | AC-1 |                                                   |              |      |      | 230V              | 415V  | 500V  | 690V  | 115V  | 230V  | 200V                                   | 230V   | 460V         | 575V  |
| 9                  | 32   | 3                                                 | 4            | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1                                      | 1      | CAU7-9-22-*  | 338   |
| 12                 | 32   | 4                                                 | 5.5          | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1                                      | 1      | CAU7-12-22-* | 409   |
| 16                 | 32   | 5.5                                               | 7.5          | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1                                      | 1      | CAU7-16-22-* | 451   |
| 23                 | 32   | 7.5                                               | 11           | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1                                      | 1      | CAU7-23-22-* | 491   |
| 30                 | 65   | 10                                                | 15           | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 0<br>1 ④                               | 1<br>1 | CAU7-30-02-* | 553   |
|                    |      |                                                   |              |      |      |                   |       |       |       |       |       |                                        |        | CAU7-30-22-* | 597   |
| 37                 | 65   | 11                                                | 18.5/<br>20  | 20   | 8.5  | 3                 | 5     | 10    | 10    | 25    | 30    | 0<br>1 ④                               | 1<br>1 | CAU7-37-02-* | 640   |
|                    |      |                                                   |              |      |      |                   |       |       |       |       |       |                                        |        | CAU7-37-22-* | 684   |
| 43                 | 85   | 13                                                | 22           | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 0<br>1 ④                               | 1<br>1 | CAU7-43-02-* | 710   |
|                    |      |                                                   |              |      |      |                   |       |       |       |       |       |                                        |        | CAU7-43-22-* | 754   |
| 60                 | 100  | 18.5                                              | 32           | 37   | 32   | 5                 | 10    | 15    | 20    | 40    | 50    | 0<br>1 ④                               | 1<br>1 | CAU7-60-02-* | 895   |
|                    |      |                                                   |              |      |      |                   |       |       |       |       |       |                                        |        | CAU7-60-22-* | 939   |
| 72                 | 100  | 22                                                | 40           | 45   | 40   | 5                 | 15    | 20    | 25    | 50    | 60    | 0<br>1 ④                               | 1<br>1 | CAU7-72-02-* | 1010  |
|                    |      |                                                   |              |      |      |                   |       |       |       |       |       |                                        |        | CAU7-72-22-* | 1054  |
| 85                 | 100  | 25                                                | 45           | 55   | 45   | 7-1/2             | 15    | 25    | 30    | 60    | 60    | 0<br>1 ④                               | 1<br>1 | CAU7-85-02-* | 1125  |
|                    |      |                                                   |              |      |      |                   |       |       |       |       |       |                                        |        | CAU7-85-22-* | 1169  |



CAU7-9-22-120 reversing contactor



CAU7-43-22-120 reversing contactor

#### Includes:

- Line side coil terminations
- Mechanical and electrical Interlock ⑤
- Reversing power wiring ① (using Power Wiring Kit Cat.# CAUT7-PW...)
- Control wiring available; see footnote ②

#### Coil Codes ⑥

| A.C.<br>Coil<br>Code | Voltage Range |             |
|----------------------|---------------|-------------|
|                      | 50 Hz         | 60 Hz       |
| 24Z                  | 24V           | 24V         |
| 120                  | 110V          | 120V        |
| 208                  | ~             | 208V        |
| 220W                 | ~             | 208V - 240V |
| 240                  | 220V          | 240V        |
| 277                  | 240V          | 277V        |
| 380                  | 380V-400V     | 440V        |
| 480                  | 440V          | 480V        |
| 600                  | 550V          | 600V        |

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- ① For Reversing Contactors *without* power wiring add suffix “-LW” to catalog number and deduct the following amount:  
CAU7-9...23 deduct \$10  
CAU7-30...37 deduct \$12  
CAU7-43 deduct \$22  
CAU7-60...85 without power wiring not available  
Ex: CAU7-9-22-\* becomes CAU7-9-22-\***-LW**.
- ② For control wiring, add suffix **-CW** to catalog number and add \$20.  
Example: CAU7-9-22-\* becomes CAU7-9-22-\***-CW**.
- ③ The NC auxiliary contacts are supplied as part of the mechanical interlock (Cat.# CM7-02) and are used to electrically interlock the contactors.
- ④ The NO auxiliary contacts supplied are side mounted. Top mount NO auxiliary contacts must be special ordered. Contact your Sprecher+Schuh representative.
- ⑤ Other voltages available, see page A37. *Nonstandard coil voltages not listed here must be ordered and installed separately as renewal parts.*

#### Reversing, Three Pole Contactors With DC Coil, Series CAU7 (Open type only)

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |             |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor |   | Open Type     | Price |    |
|--------------------|------|---------------------------------------------------|-------------|------|------|-------------------|-------|-------|-------|-------|-------|----------------------------------------|---|---------------|-------|----|
|                    |      | kW (50 Hz)                                        |             |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                        |   |               |       |    |
|                    |      | AC-3                                              | AC-1        | 230V | 400V | 500V              | 690V  | 1 Ø   |       | 3 Ø   |       |                                        |   |               |       | NO |
| 415V               | 115V |                                                   |             |      | 230V |                   |       | 200V  | 230V  | 460V  | 575V  |                                        |   |               |       |    |
| 9                  | 32   | 3                                                 | 4           | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1                                      | 1 | CAU7-9C-22-*  | 400   |    |
| 12                 | 32   | 4                                                 | 5.5         | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1                                      | 1 | CAU7-12C-22-* | 495   |    |
| 16                 | 32   | 5.5                                               | 7.5         | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1                                      | 1 | CAU7-16C-22-* | 545   |    |
| 23                 | 32   | 7.5                                               | 11          | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1                                      | 1 | CAU7-23C-22-* | 595   |    |
| 30                 | 65   | 10                                                | 15          | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 0<br>1 ④                               | 1 | CAU7-30C-02-* | 692   |    |
|                    |      |                                                   |             |      |      |                   |       |       |       |       |       | 1 ④                                    | 1 | CAU7-30C-22-* | 736   |    |
| 37                 | 65   | 11                                                | 18.5/<br>20 | 20   | 8.5  | 3                 | 5     | 10    | 10    | 25    | 30    | 0<br>1 ④                               | 1 | CAU7-37C-02-* | 890   |    |
|                    |      |                                                   |             |      |      |                   |       |       |       |       |       | 1 ④                                    | 1 | CAU7-37C-22-* | 934   |    |
| 43                 | 85   | 13                                                | 22          | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 0<br>1 ④                               | 1 | CAU7-43C-02-* | 938   |    |
|                    |      |                                                   |             |      |      |                   |       |       |       |       |       | 1 ④                                    | 1 | CAU7-43C-22-* | 982   |    |
| 60                 | 100  | 18.5                                              | 32          | 37   | 32   | 5                 | 10    | 15    | 20    | 40    | 50    | 0<br>1 ④                               | 1 | CAU7-60D-02-* | 1115  |    |
|                    |      |                                                   |             |      |      |                   |       |       |       |       |       | 1 ④                                    | 1 | CAU7-60D-22-* | 1159  |    |
| 72                 | 100  | 22                                                | 40          | 45   | 40   | 5                 | 15    | 20    | 25    | 50    | 60    | 0<br>1 ④                               | 1 | CAU7-72D-02-* | 1240  |    |
|                    |      |                                                   |             |      |      |                   |       |       |       |       |       | 1 ④                                    | 1 | CAU7-72D-22-* | 1284  |    |
| 85                 | 100  | 25                                                | 45          | 55   | 45   | 7-1/2             | 15    | 25    | 30    | 60    | 60    | 0<br>1 ④                               | 1 | CAU7-85D-02-* | 1360  |    |
|                    |      |                                                   |             |      |      |                   |       |       |       |       |       | 1 ④                                    | 1 | CAU7-85D-22-* | 1410  |    |

**NOTE:** DC and AC coils are not interchangeable. CA7-9C...43C contactors have increased dimensions to accommodate true DC coils. CA7-60D...85D contactors have a two winding, 3-lead coil with built-in late break auxiliary contact and coil suppression. Refer to page A64-A65 for dimensions.



CAU7-9C-22 reversing contactor



CAU7-43C-02 reversing contactor

#### Includes:

- DC operating mechanism
- Line side coil terminations
- Mechanical and electrical Interlock ⑤
- Reversing power wiring ① (using Power Wiring Kit Cat.# CAUT7-PW...)
- Control wiring available; see footnote ②

#### Coil Codes ⑤⑥

| CAU7-9C...43C  | CAU7-60D...85D | Voltage |
|----------------|----------------|---------|
| D.C. Coil Code | D.C. Coil Code |         |
| 12D            | 12DD           | 12V     |
| 24D ⑦          | 24DD           | 24V     |
| 48D            | 48DD           | 48V     |
| 110D           | 110DD          | 110V    |
| 220D           | 220DD          | 220V    |

- ① For Reversing Contactors *without* power wiring add suffix “-LW” to catalog number and deduct the following amount:

CAU7-9C...23C deduct \$10

CAU7-30C...37C deduct \$12

CAU7-43C deduct \$22

CAU7-60D...85D without power wiring not available

Ex: CAU7-9-22-\* becomes CAU7-9-22-\***-LW**.

- ② For control wiring, add suffix **-CW** to catalog number and add \$20.

Example: CAU7-9-22-\* becomes CAU7-9-22-\***-CW**.

- ③ The NC auxiliary contacts are supplied as part of the mechanical interlock (Cat.# CM7-02) and are used to electrically interlock the contactors.
- ④ The NO auxiliary contacts supplied are side mounted. Top mount NO auxiliary contacts must be special ordered. Contact your Sprecher+Schuh representative.
- ⑤ Other voltages available, see page A38. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ⑥ Coils for CAU7-60D...85D reversing contactors include an integrated diode surge suppressor.
- ⑦ Surge suppressor coil with integrated diode available. Order coil code **24DD** and add \$84 to list price (\$25 x two contactors). To order, change “C” in catalog number to “D”. Ex: CAU7-9C-22-24D becomes CAU7-9D-22-24DD.

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

### Reversing, Three Pole Contactors With Electronic 24VDC Coil, Series CAU7 (Open type only) ⑤⑥

| I <sub>e</sub> [A] |      | Ratings for Switching AC Motors (AC2 / AC3 / AC4) |             |      |      |                   |       |       |       |       |       | Auxiliary<br>Contacts per<br>Contactor |        | Open Type                          |              | Price |
|--------------------|------|---------------------------------------------------|-------------|------|------|-------------------|-------|-------|-------|-------|-------|----------------------------------------|--------|------------------------------------|--------------|-------|
|                    |      | kW (50 Hz)                                        |             |      |      | UL/CSA HP (60 Hz) |       |       |       |       |       |                                        |        |                                    |              |       |
|                    |      | 230V                                              | 400V        | 500V | 690V | 1 Ø               |       | 3 Ø   |       |       |       |                                        |        |                                    |              |       |
| 415V               | 115V |                                                   | 230V        |      |      | 200V              | 230V  | 460V  | 575V  |       |       |                                        |        |                                    |              |       |
| AC-3               | AC-1 | 230V                                              | 415V        | 500V | 690V | 115V              | 230V  | 200V  | 230V  | 460V  | 575V  | NO                                     | NC ③   | Catalog Number                     | Price        |       |
| 9                  | 32   | 3                                                 | 4           | 4    | 4    | 1/2               | 1 1/2 | 2     | 2     | 5     | 7-1/2 | 1                                      | 1      | CAU7-9E-22-24E                     | 484          |       |
| 12                 | 32   | 4                                                 | 5.5         | 5.5  | 5.5  | 1/2               | 2     | 3     | 3     | 7-1/2 | 10    | 1                                      | 1      | CAU7-12E-22-24E                    | 597          |       |
| 16                 | 32   | 5.5                                               | 7.5         | 7.5  | 7.5  | 1                 | 3     | 5     | 5     | 10    | 15    | 1                                      | 1      | CAU7-16E-22-24E                    | 629          |       |
| 23                 | 32   | 7.5                                               | 11          | 13   | 10   | 2                 | 3     | 5     | 7-1/2 | 15    | 15    | 1                                      | 1      | CAU7-23E-22-24E                    | 679          |       |
| 30                 | 65   | 10                                                | 15          | 15   | 15   | 2                 | 5     | 7-1/2 | 10    | 20    | 25    | 0<br>1 ④                               | 1<br>1 | CAU7-30E-02-24E<br>CAU7-30E-22-24E | 780<br>820   |       |
| 37                 | 65   | 11                                                | 18.5/<br>20 | 20   | 8.5  | 3                 | 5     | 10    | 10    | 25    | 30    | 0<br>1 ④                               | 1<br>1 | CAU7-37E-02-24E<br>CAU7-37E-22-24E | 971<br>1018  |       |
| 43                 | 85   | 13                                                | 22          | 25   | 22   | 3                 | 7-1/2 | 10    | 15    | 30    | 30    | 0<br>1 ④                               | 1<br>1 | CAU7-43E-02-24E<br>CAU7-43E-22-24E | 1050<br>1090 |       |



CAU7-9E-22-24E reversing contactor



CAU7-37E-02-24E reversing contactor

#### Description

Low Consumption Electronic DC coils have extremely low inrush which allows the use of smaller power supplies. CA7-9E...37E has internal surge suppression. See page A48 for more information.

This new design results in:

- Lighter, lower depth
- More energy efficient contactors
- Easier wiring
- Uniform panel appearance.

#### Applications

Direct control from PLC:

The low power consumption contactor designed to control motors and other loads is especially aligned to the specific requirement of electronic control circuits. The low power consumption of 1.5 W/60 mA allows direct control through PLC's without the need for interposing relays. Power dissipation is greatly reduced limiting the heat effect in control panels.

#### Includes:

- Line side coil terminations
- Mechanical and electrical Interlock ③
- Reversing power wiring ① (using Power Wiring Kit Cat.# CAUT7-PW...)
- Control wiring available; see footnote ②
- CAU7-9E...37E has internal surge suppression.

① For Reversing Contactors *without* power wiring add suffix "-LW" to catalog number and deduct the following amount:

CAU7-9E...23E deduct \$10

CAU7-30E...37E deduct \$12

Ex: CAU7-9E-22-24E becomes CAU7-9E-22-24E-LW.

② For control wiring, add suffix "-CW" to catalog number and add \$20.

Example: CAU7-9E-22-24E becomes CAU7-9E-22-24E-CW.

③ The NC auxiliary contacts are supplied as part of the mechanical interlock (Cat.# CM7-02) and are used to electrically interlock the contactors.

④ The NO auxiliary contacts supplied are side mounted. Top mount NO auxiliary contacts must be special ordered. Contact your Sprecher+Schuh representative.

⑤ DC and AC coils are not interchangeable. CA7-9E...43E are only available in 24VDC.

⑥ See pages A29-A30 for limitations on adding auxiliaries to Electronic DC Coil contacts.



# Series CA7 Special Use Contactors

Contactors designed  
and labeled for specific  
industrial applications



## Special Use Contactors

*Capacitor switching contactors*

*HVAC rated contactors*

*NEMA labeled contactors*

*Lighting contactors*

The CA7 line has been expanded to include a number of contactors designed and labeled for specific industrial applications. In all cases, these devices are UL and CSA

approved for these specialized uses. Where appropriate, contactors also carry approval by specific industry associations such as ARI (Air Conditioning and Refrigeration Institute).

## CAQ7 Capacitor Switching Contactors

Capacitor Switching Contactors are often used in power factor correction. Single capacitor switching and capacitor bank switching results in peak inrush currents greater than the six times FLA experienced in motor starting applications. Managing the peak inrush of capacitor switching can involve the use of coils of wire to reduce the harmful inrush currents. CAQ7 contactors offer a simple alternative solution by combining a built-in set of resistors and early-make contacts, factory wired in parallel with the power contacts in the body of a CA7 contactor. CAQ7 contactors are cUL rated and labeled for capacitor switching applications.

## CNX Special Purpose Contactors

CNX Special Purpose Contactors are rated by FLA & LRA as well as resistive current rated - primarily to meet the demands of the HVAC and compressor markets. CNX contactors have all the flexibility of a CA7 contactor like easy coil change out, DIN rail mounting and field installable auxiliaries as well as mechanical interlocks not normally associated with true definite



purpose contactors. CNX contactors may also be combined with CEP7 or CT7 overload relays to make a special purpose starter. CNX starters are cUL rated and labeled as well as ARI (Air Conditioning and Refrigeration Institute) approved.

## CAN7 and CAN6 NEMA size labeled contactors

CAN7 & CAN6 contactors are UL Listed in accordance with the requirements of NEMA standards publication ICS-2. Standard CA7, as well as CA6 contactors bear a UL maximum horsepower rating as well as an IEC KW rating on the label. CAN7 and CAN6 contactors are UL labeled for application under IEC KW, as well as NEMA Size, for specified horsepower at various voltages. CAN7 & CAN6 contactors have been purposely selected larger to increase the life of the device. Only the devices listed here are available with the NEMA size on the UL label. CAN7 & CA6 NEMA sized contactors may be combined with all Sprecher + Schuh overload relays to make a NEMA sized starters.



Contactors

CA7

### Three Pole Capacitor Switching Contactors With AC Coil, Series CAQ7 (Open type only)

For Applications per UL / CSA

| UL/CSA Ratings for Switching Capacitor Banks |      |                         |      |      |      | Auxiliary<br>Contacts per<br>Contactor |    | Open Type      | Price |
|----------------------------------------------|------|-------------------------|------|------|------|----------------------------------------|----|----------------|-------|
| 1-phase<br>60 Hz (kVar)                      |      | 3-phase<br>60 Hz (kVar) |      |      |      |                                        |    |                |       |
| 115V                                         | 230V | 200V                    | 230V | 460V | 575V | NO                                     | NC | Catalog Number |       |
| 2.2                                          | 4.5  | 6.5                     | 7.5  | 15   | 18.5 | 1                                      | 1  | CAQ7-16-11-*   |       |
|                                              |      |                         |      |      |      | 2                                      | 0  | CAQ7-16-20-*   |       |
| 3.6                                          | 7.5  | 11                      | 12.5 | 20   | 25   | 1                                      | 1  | CAQ7-37-11-*   |       |
|                                              |      |                         |      |      |      | 2                                      | 0  | CAQ7-37-20-*   |       |



CAQ7-16-11-120  
Capacitor Switching contactor

For Applications per IEC 60947-4 (AC-6b)

| IEC Ratings for Switching Capacitor Bank |      |      |      |      |                        |      |      |      |      | Auxiliary<br>Contacts per<br>Contactor |    | Open Type      |     | Price |
|------------------------------------------|------|------|------|------|------------------------|------|------|------|------|----------------------------------------|----|----------------|-----|-------|
| 1-phase 50 Hz - (kVar)                   |      |      |      |      | 3-phase 50 Hz - (kVar) |      |      |      |      |                                        |    |                |     |       |
| 230V<br>240V                             | 400V | 415V | 500V | 690V | 230V<br>240V           | 400V | 415V | 500V | 690V | NO                                     | NC | Catalog Number |     |       |
| Switching Capacitor Banks at 40°C        |      |      |      |      |                        |      |      |      |      |                                        |    |                |     |       |
| 5                                        | 8.5  | 9    | 10.5 | 15   | 8.5                    | 15   | 15.5 | 18.5 | 25   | 1                                      | 1  | CAQ7-16-11-*   | 225 |       |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-16-20-*   | 225 |       |
| 8                                        | 14   | 14.5 | 17.5 | 24   | 14                     | 25   | 25   | 30   | 40   | 1                                      | 1  | CAQ7-37-11-*   | 327 |       |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-37-20-*   | 327 |       |
| Switching Capacitor Banks at 60°C        |      |      |      |      |                        |      |      |      |      |                                        |    |                |     |       |
| 5                                        | 8.5  | 9    | 10.5 | 15   | 8.5                    | 15   | 15.5 | 18.5 | 25   | 1                                      | 1  | CAQ7-16-11-*   | 225 |       |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-16-20-*   | 255 |       |
| 7                                        | 12.5 | 13   | 16   | 22   | 12.5                   | 21.5 | 22.5 | 27   | 37.5 | 1                                      | 1  | CAQ7-37-11-*   | 327 |       |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-37-20-*   | 327 |       |

### Description

CAQ7 contactors incorporate a built-in set of resistors and early-make contacts, wired in parallel with the power contacts, to pre-charge the capacitors. This manages the peak inrush common with capacitor switching. The circuitry is housed in a front mounted add-on deck.

**NOTE:** DC and AC coils are not interchangeable. CAQ7-16C...37C contactors have increased dimensions to accommodate DC coils.

### Coil Codes ①

| A.C. Coil Code | Voltage Range |           |
|----------------|---------------|-----------|
|                | 50 Hz         | 60 Hz     |
| 24Z            | 24V           | 24V       |
| 120            | 110V          | 120V      |
| 208            | ~             | 208V      |
| 220W           | ~             | 208V-240V |
| 240            | 220V          | 240V      |
| 277            | 240V          | 277V      |
| 380            | 380V-400V     | 440V      |
| 480            | 440V          | 480V      |
| 600            | 550V          | 600V      |

### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

① Other voltages available, see page A37. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.

**Three Pole Capacitor Switching Contactors With DC Coil, Series CAQ7 (Open type only)**  
For Applications per UL / CSA

| UL/CSA Ratings for Switching Capacitor Banks |      |                         |      |      |      | Auxiliary Contacts per Contactor |    | Open Type      |       |
|----------------------------------------------|------|-------------------------|------|------|------|----------------------------------|----|----------------|-------|
| 1-phase<br>60 Hz (kVar)                      |      | 3-phase<br>60 Hz (kVar) |      |      |      |                                  |    |                |       |
| 115V                                         | 230V | 200V                    | 230V | 460V | 575V | NO                               | NC | Catalog Number | Price |
| 2.2                                          | 4.5  | 6.5                     | 7.5  | 15   | 18.5 | 1                                | 1  | CAQ7-16C-11-*  | 264   |
|                                              |      |                         |      |      |      | 2                                | 0  | CAQ7-16C-20-*  | 264   |
| 3.6                                          | 7.5  | 11                      | 12.5 | 20   | 25   | 1                                | 1  | CAQ7-37C-11-*  | 400   |
|                                              |      |                         |      |      |      | 2                                | 0  | CAQ7-37C-20-*  | 400   |



CAQ7-16C-11-24D  
Capacitor Switching contactor

Contactor

CAQ7

For Applications per IEC 60947-4 (AC-6b)

| IEC Ratings for Switching Capacitor Bank |      |      |      |      |                        |      |      |      |      | Auxiliary<br>Contacts per<br>Contactor |    | Open Type         |       |
|------------------------------------------|------|------|------|------|------------------------|------|------|------|------|----------------------------------------|----|-------------------|-------|
| 1-phase 50 Hz - (kVar)                   |      |      |      |      | 3-phase 50 Hz - (kVar) |      |      |      |      |                                        |    |                   |       |
| 230V<br>240V                             | 400V | 415V | 500V | 690V | 230V<br>240V           | 400V | 415V | 500V | 690V | NO                                     | NC | Catalog<br>Number | Price |
| Switching Capacitor Banks at 40°C        |      |      |      |      |                        |      |      |      |      |                                        |    |                   |       |
| 5                                        | 8.5  | 9    | 10.5 | 15   | 8.5                    | 15   | 15.5 | 18.5 | 25   | 1                                      | 1  | CAQ7-16C-11-*     | 264   |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-16C-20-*     | 264   |
| 8                                        | 14   | 14.5 | 17.5 | 24   | 14                     | 25   | 25   | 30   | 40   | 1                                      | 1  | CAQ7-37C-11-*     | 400   |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-37C-20-*     | 400   |
| Switching Capacitor Banks at 60°C        |      |      |      |      |                        |      |      |      |      |                                        |    |                   |       |
| 5                                        | 8.5  | 9    | 10.5 | 15   | 8.5                    | 15   | 15.5 | 18.5 | 25   | 1                                      | 1  | CAQ7-16C-11-*     | 264   |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-16C-20-*     | 264   |
| 7                                        | 12.5 | 13   | 16   | 22   | 12.5                   | 21.5 | 22.5 | 27   | 37.5 | 1                                      | 1  | CAQ7-37C-11-*     | 400   |
|                                          |      |      |      |      |                        |      |      |      |      | 2                                      | 0  | CAQ7-37C-20-*     | 400   |

**Description**

CAQ7 contactors incorporate a built-in set of resistors and early-make contacts, wired in parallel with the power contacts, to pre-charge the capacitors. This manages the peak inrush common with capacitor switching. The circuitry is housed in a front mounted add-on deck.

**NOTE:** DC and AC coils are not interchangeable. CAQ7-16C...37C contactors have increased dimensions to accommodate DC coils.

**Coil Codes ❶**

| D.C. Coil Code | Voltage |
|----------------|---------|
| 12D            | 12V     |
| 24D ❷          | 24V     |
| 48D            | 48V     |
| 110D           | 110V    |
| 220D           | 220V    |

**Ordering Instructions**

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

❶ Other voltages available, see page A38. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.

❷ Surge suppressor coil with integrated available. Order coil code 24DD and add \$42 to list price.

## Theory of Operation

**Single capacitor switching** is often used in power factor correction on individual loads. Inrush current at the point of becoming energized can peak to 30 times normal current (see Figure 1) depending on impedance of cables and transformers.

**Capacitor bank switching** is often used in power factor correction on multiple loads. Inrush current at the point of becoming energized can peak to 200 times normal current (see Figure 2) because each capacitor in the bank acts as an additional power source and therefore feeds additional current to the circuit.

**Complications of capacitor switching** with standard contactors can include nuisance tripping of the short circuit protective device, welding of main contacts, and stress on components resulting in reduced life of capacitors.

**Managing the peak inrush common with capacitor switching** can involve complicated dimensioning in the form of over sizing standard contactors combined with adding coils of wire. CAQ7 contactors offer a simple alternative solution by combining a built-in set of resistors and early-make contacts, wired in parallel with the power contacts, to pre-charge the capacitors. The increased impedance of the CAQ7 resistors is only present in the circuit during inrush. This circuitry is housed in a front mount add-on deck similar to a four pole auxiliary block, which results in a compact design and ease of selection based on applied KVAR.

CAQ7 is available with AC or DC coils and with 1 NO & 1 NC (see Figure 3) or 2 NO auxiliary contacts (see Figure 4). CAQ7 contactors only show UL/CSA Approved capacitor ratings on the nameplate and should not be used for switching motors.

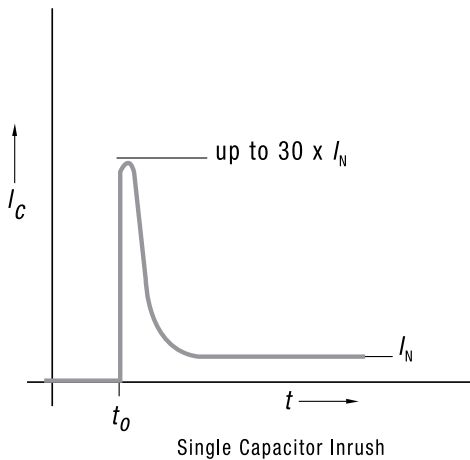


Figure 1

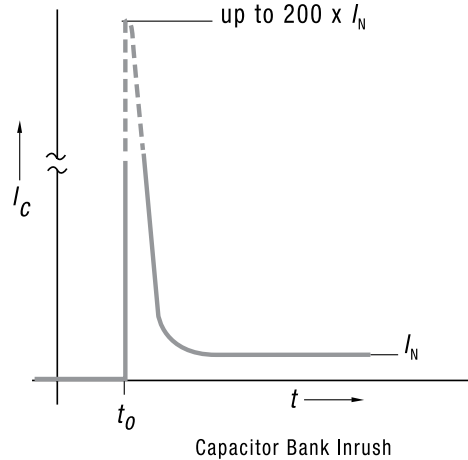
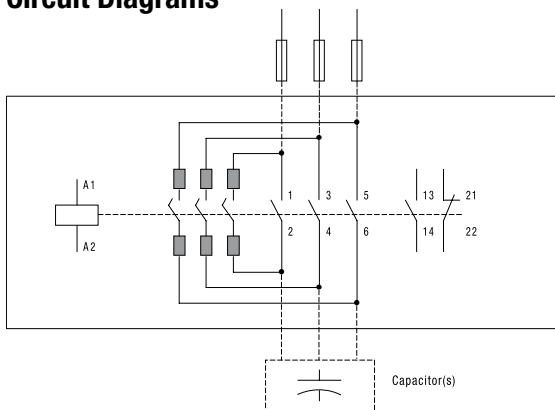


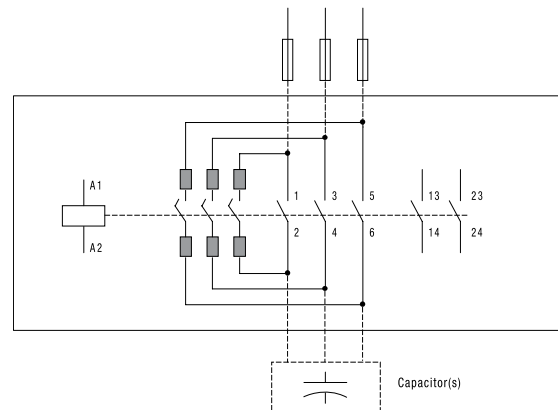
Figure 2

## Circuit Diagrams



CAQ7-16-\* and CAQ7-37-\*  
(1 NO and 1 NC auxiliary contact)

Figure 3



CAQ7-16-\* and CAQ7-37-\*  
(2 NO auxiliary contacts)

Figure 4

**Non-Reversing, Three Pole Special Purpose Contactors With AC Coil (Open type only) ①②**

| Full Load Amps | Locked Rotor Amps - 3Ø |      |      | Resistive Amps ④ | Maximum Horsepower |       |            |      |      |      | Auxiliary Contacts per Contactor |    | Catalog Number | Price |
|----------------|------------------------|------|------|------------------|--------------------|-------|------------|------|------|------|----------------------------------|----|----------------|-------|
|                |                        |      |      |                  | 1 Ø                |       | 3 Ø        |      |      |      |                                  |    |                |       |
|                | 200V 230V              | 460V | 575V |                  | 115V               | 230V  | 200V/ 208V | 230V | 460V | 575V | NO                               | NC |                |       |
| 15             | 91                     | 91   | 66   | 25               | 1-1/2              | 3     | 4          | 5    | 10   | 10   | 1                                | 0  | CNX-205-*      | 174   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 0                                | 1  | CNX-206-*      | 174   |
| 30             | 180                    | 150  | 120  | 40               | 2                  | 5     | 7-1/2      | 10   | 20   | 20   | 1                                | 0  | CNX-207-*      | 240   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 0                                | 1  | CNX-208-*      | 240   |
| 40             | 240                    | 200  | 160  | 50               | 3                  | 5     | 10         | 10   | 25   | 25   | 0                                | 0  | CNX-209-00-*   | 261   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 1                                | 1  | CNX-209-10-*   | 281   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 0                                | 1  | CNX-209-01-*   | 281   |
| 50             | 300                    | 250  | 200  | 65               | 3                  | 7-1/2 | 10         | 15   | 30   | 30   | 0                                | 0  | CNX-212-00-*   | 281   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 1                                | 0  | CNX-212-10-*   | 302   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 0                                | 1  | CNX-212-01-*   | 302   |
| 90             | 540                    | 450  | 360  | 120              | ~                  | ~     | 25         | 30   | 60   | 60   | 0                                | 0  | CNX-218-00-*   | 452   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 1                                | 0  | CNX-218-10-*   | 472   |
|                |                        |      |      |                  |                    |       |            |      |      |      | 0                                | 1  | CNX-218-01-*   | 472   |



CNX-208-120  
Special Purpose contactor

**Description**

Series CNX Special Purpose Contactors are standard CA7 contactors that have been tested, approved and labeled by UL for heating, ventilation and air conditioning (HVAC) applications. ②

**Coil Codes ③**

| A.C. Coil Code | Voltage Range |           |
|----------------|---------------|-----------|
|                | 50 Hz         | 60 Hz     |
| 24Z            | 24V           | 24V       |
| 120            | 110V          | 120V      |
| 208            | ~             | 208V      |
| 220W           | ~             | 208V-240V |
| 240            | 220V          | 277V      |
| 277            | 240V          | 440V      |
| 380            | 380V-400V     | 480V      |
| 480            | 440V          | 480V      |
| 600            | 550V          | 600V      |

**Ordering Instructions**

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- ① Special order contactors. Contact your Sprecher + Schuh representative for availability.
- ② All CNX contactors listed here are ARI (Air Conditioning and Refrigeration Institute) approved.
- ③ Other voltages available, see page A37. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ④ Reference page A56 for Operation Life Data.



#### Non-Reversing, Three Pole Special Purpose Contactors With DC Coil (Open type only) ①②

| Full Load Amps | Locked Rotor Amps - 3Ø |      |      | Resistive Amps ④ | Maximum Horsepower |       |               |      |      |      | Auxiliary Contacts per Contactor |    | Catalog Number | Price |
|----------------|------------------------|------|------|------------------|--------------------|-------|---------------|------|------|------|----------------------------------|----|----------------|-------|
|                |                        |      |      |                  | 1 Ø                |       | 3 Ø           |      |      |      |                                  |    |                |       |
|                | 200V<br>230V           | 460V | 575V |                  | 115V               | 230V  | 200V/<br>208V | 230V | 460V | 575V | NO                               | NC |                |       |
| 15             | 91                     | 91   | 66   | 25               | 1-1/2              | 3     | 4             | 5    | 10   | 10   | 1                                | 0  | CNX-205C-*     | 209   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 0                                | 1  | CNX-206C-*     | 209   |
| 30             | 180                    | 150  | 120  | 40               | 2                  | 5     | 7-1/2         | 10   | 20   | 20   | 1                                | 0  | CNX-207C-*     | 288   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 0                                | 1  | CNX-208C-*     | 288   |
| 40             | 240                    | 200  | 160  | 50               | 3                  | 5     | 10            | 10   | 25   | 25   | 0                                | 0  | CNX-209C-00-*  | 323   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 1                                | 1  | CNX-209C-10-*  | 343   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 0                                | 1  | CNX-209C-01-*  | 343   |
| 50             | 300                    | 250  | 200  | 65               | 3                  | 7-1/2 | 10            | 15   | 30   | 30   | 0                                | 0  | CNX-212C-00-*  | 397   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 1                                | 0  | CNX-212C-10-*  | 417   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 0                                | 1  | CNX-212C-01-*  | 417   |
| 90             | 540                    | 450  | 360  | 120              | ~                  | ~     | 25            | 30   | 60   | 60   | 0                                | 0  | CNX-218D-00-*  | 575   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 1                                | 0  | CNX-218D-10-*  | 595   |
|                |                        |      |      |                  |                    |       |               |      |      |      | 0                                | 1  | CNX-218D-01-*  | 595   |



CNX-208C-24D  
Special Purpose contactor

#### Description

Series CNX Special Purpose Contactors are standard CA7 contactors that have been tested, approved and labeled by UL for heating, ventilation and air conditioning (HVAC) applications. ②

#### Coil Codes ③

| CNX-205C...212C |                | CNX-218D | Voltage |
|-----------------|----------------|----------|---------|
| D.C. Coil Code  | D.C. Coil Code |          |         |
| 24D ⑤           | 24DD ⑥         |          | 24V     |
| 110D ⑤          | 110DD ⑥        |          | 110V    |

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- ① Special order contactors. Contact your Sprecher + Schuh representative for availability.
- ② All CNX contactors listed here are ARI (Air Conditioning and Refrigeration Institute) approved.
- ③ Other voltages available, see page A38. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ④ Reference page A56 for Operation Life Data.
- ⑤ DC coils for CNX-205C...212C are True DC Coils.
- ⑥ DC coils for CNX-218D contactors are two winding DC Coil Series and include integrated diode surge suppressor.

#### Non-Reversing, Three Pole NEMA Labeled Contactors with AC Coil ①③

| NEMA<br>Size | Maximum Horsepower |       |       |       |      |      | Standard<br>Auxiliary<br>Contacts |    | Catalog<br>Number | Price |
|--------------|--------------------|-------|-------|-------|------|------|-----------------------------------|----|-------------------|-------|
|              | 10                 |       | 30    |       |      |      |                                   |    |                   |       |
|              | 115V               | 230V  | 200V  | 230V  | 460V | 575V | NO                                | NC |                   |       |
| 00           | 1/3                | 1     | 1-1/2 | 1-1/2 | 2    | 2    | 1                                 | 0  | CAN7-12-10-*      | 155   |
| 0            | 1                  | 2     | 3     | 3     | 5    | 5    | 1                                 | 0  | CAN7-30-10-*      | 265   |
| 1            | 2                  | 3     | 7-1/2 | 7-1/2 | 10   | 10   | 1                                 | 0  | CAN7-37-10-*      | 288   |
| 2            | 3                  | 7-1/2 | 10    | 15    | 25   | 25   | 1                                 | 0  | CAN7-72-10-*      | 425   |
| 3            | 7-1/2              | 15    | 25    | 30    | 50   | 50   | 1                                 | 1  | CAN6-110-11-*     | 750   |
|              |                    |       |       |       |      |      |                                   |    | CAN6-110-EI-11-*  | 880   |
| 4            | ~                  | ~     | 40    | 50    | 100  | 100  | 1                                 | 1  | CAN6-180-11-*     | 1608  |
|              |                    |       |       |       |      |      |                                   |    | CAN6-180-EI-11-*  | 1850  |
| 5            | ~                  | ~     | 75    | 100   | 200  | 200  | 1                                 | 1  | CAN6-300-EI-11-*  | 2375  |

#### Application Notes

- NEMA contactors are UL Listed and rated in accordance with the requirements of NEMA standards publication ICS-2. These contactors are labeled for applications that require compliance with NEMA standards.
- Sizes are based on standard NEMA classifications.
- Easy coil change and contact replacement. See page A37 for CAN7 coils and pages A81-82 for CA(N)6 coils and contacts.
- Snap-on auxiliary contact blocks available in many configurations. See pages A29-30 (CA[N]7) and page A79 (CA[N]6).
- Available as open units or in NEMA 1, 3R, 4, 4X and 12 enclosures. Contact your Sprecher + Schuh representative for enclosed pricing. NEMA sized starters with AC Coils are listed on page C33.

**Note:** CA6 open-type contactors include terminal bolts. If lugs are required, see page A76 for ordering information.



CAN7 NEMA labeled contactor (AC)



#### CAN7 AC Coil Codes ②

| AC Coil Code | Voltage Range |           |
|--------------|---------------|-----------|
|              | 50 Hz         | 60 Hz     |
| 24Z          | 24V           | 24V       |
| 120          | 110V          | 120V      |
| 208          | ~             | 208V      |
| 220W         | ~             | 208V-240V |
| 240          | 220V          | 240V      |
| 277          | 240V          | 277V      |
| 380          | 380V-400V     | 440V      |
| 480          | 440V          | 480V      |
| 600          | 550V          | 600V      |

#### CAN6 AC Coil Codes

##### Conventional Coils ②

| CAN6-110...180 |               |       |
|----------------|---------------|-------|
| AC Coil Code   | Voltage Range |       |
|                | 50 Hz         | 60 Hz |
| 24             | ~             | 24V   |
| 120B           | 110V          | 120V  |
| 208            | ~             | 208V  |
| 240B           | 220-230V      | 260V  |
| 277            | 240V          | 277V  |
| 380            | 380V-400V     | 440V  |
| 480            | 415V          | 480V  |
| 575            | 500V          | 575V  |

#### CAN6 AC Coil Codes

##### "EI" Electronic Coils ②③

| CAN6-110-EI...300-EI |               |
|----------------------|---------------|
| AC Coil Code         | Voltage Range |
|                      | 50 Hz / 60 Hz |
| 24 ④                 | 24V           |
| 120                  | 110-130V      |
| 220W                 | 208-277V      |
| 460W                 | 380-500V      |

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- Refer to page A64 for CAN7 dimensional information and page A102 for CA(N)6 dimensions.
- Other voltages available, see page A37 for CAN7 and pages A81-82 for CA(N)6. Nonstandard coil voltages not listed here must be ordered and installed separately as renewal parts.
- "EI" designates contactor with Electronic Interface coil.
- 24 V AC coil not available for CAN6-300-EI.

#### Non-Reversing, Three Pole NEMA Labeled Contactors with DC Coil ①③

| NEMA<br>Size | Maximum Horsepower |       |       |       |      |      | Standard<br>Auxiliary<br>Contacts |    | Catalog<br>Number             | Price |
|--------------|--------------------|-------|-------|-------|------|------|-----------------------------------|----|-------------------------------|-------|
|              | 1Ø                 |       | 3Ø    |       |      |      |                                   |    |                               |       |
|              | 115V               | 230V  | 200V  | 230V  | 460V | 575V | NO                                | NC |                               |       |
| 00           | 1/3                | 1     | 1-1/2 | 1-1/2 | 2    | 2    | 1                                 | 0  | CAN7-12C-10-*                 | 200   |
| 0            | 1                  | 2     | 3     | 3     | 5    | 5    | 1                                 | 0  | CAN7-30C-10-*                 | 312   |
| 1            | 2                  | 3     | 7-1/2 | 7-1/2 | 10   | 10   | 1                                 | 0  | CAN7-37C-10-*                 | 372   |
| 2            | 3                  | 7-1/2 | 10    | 15    | 25   | 25   | 1                                 | 0  | CAN7-72D-10-*                 | 552   |
| 3            | 7-1/2              | 15    | 25    | 30    | 50   | 50   | 2                                 | 1  | CAN6-110-L22-*                | 880   |
|              |                    |       |       |       |      |      |                                   |    | CAN6-110-EI-11-* <sup>®</sup> | 1005  |
| 4            | ~                  | ~     | 40    | 50    | 100  | 100  | 1                                 | 1  | CAN6-180-EI-11-*              | 2290  |
| 5            | ~                  | ~     | 75    | 100   | 200  | 200  | 1                                 | 1  | CAN6-300-EI-11-*              | 2950  |

#### Application Notes

- NEMA contactors are UL Listed and rated in accordance with the requirements of NEMA standards publication ICS-2. These contactors are labeled for applications that require compliance with NEMA standards.
- Sizes are based on standard NEMA classifications.
- Easy coil change and contact replacement. See page A38 for CA(N)7 coils and pages A81-82 for CA(N)6 coils and contacts.
- Snap-on auxiliary contact blocks available in many configurations. See pages A29-30 (CAN7) and page A79 (CA[N]6).
- Available as open units or in NEMA 1, 3R, 4, 4X and 12 enclosures. Contact your Sprecher + Schuh representative for enclosed pricing.

**Note:** CA6 open-type contactors include terminal bolts. If lugs are required, see page A76 for ordering information.



CAN7 NEMA labeled contactor (AC)



#### CAN7 D.C. Coil Codes ②④

| CAN7-12C...37C | CAN7-72D     | Voltage |
|----------------|--------------|---------|
| DC Coil Code   | DC Coil Code |         |
| 24D            | 24DD         | 24V     |
| 110D           | 110DD        | 110V    |

#### CAN6 D.C. Coil Codes Conventional Coils ②

| CAN6-110 + 180 |         |
|----------------|---------|
| DC Coil Code   | Voltage |
| 24D            | 24V     |
| 110D           | 110V    |

#### CAN6 D.C. Coil Codes "EI" Electronic Coils ②⑥

| CAN6-110-EI...300-EI |               |
|----------------------|---------------|
| DC Coil Code         | Voltage Range |
| 24D                  | 24V           |
| 120D                 | 110 - 130V    |

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |

- ① Refer to page A64 for CAN7 dimensional information and page A102 for CA(N)6 dimensions.
- ② Other voltages available, see page A38 for CAN7 and pages A81-A82 for CA(N)6. Nonstandard coil voltages not listed here must be ordered and installed separately as renewal parts.
- ③ "-EI" designates contactor with Electronic Interface coil.
- ④ Coils for CAN7-72D contactor includes a built-in diode surge suppressor.
- ⑤ CAN6-110 includes two winding coil and an L11 block including one NC late break auxiliary contact mounted to the right side. See page A94 for functional schematic. See page C73 for a starter wiring diagram.
- ⑥ Refer to page A93-A95 for CA6-EI Application Notes for 24 volt DC Electronic Coils.

# Series CAL7 Lighting Contactors

Compact contactors for  
North American lighting  
applications



Sprecher + Schuh CA7 and CA6 contactors can be used to control a wide variety of lighting loads. These contactors are well suited to handle the high inrush currents typical of this application as well as other non-motor (resistive) loads.

Lamps can basically be divided into three categories:

#### Tungsten Filament Lamps

- General purpose incandescent
- Special purpose incandescent
- Infrared
- Sodium Iodine

#### Discharge Lamps (with Ballast)

- Fluorescent lamps
- Mercury vapor
- High/low pressure sodium
- Quartz
- Halogen metal-vapor

#### Mixed Light Lamps

## In application...

The tungsten filaments of incandescent lamps have a very low ohmic resistance when cold. As a result, the closing current is very high but also very short.

The closing current of discharge lamps (lighting with ballast) is highly inductive (due to series-connected transformers or chokes), and its duration depends on the lamp type.

In general, North Americans refer to Lighting Contactor ratings in amperes without distinction between incandescent or ballast type of load. The lighting contactor selection table provided on the following page is for North American use, so ratings are selected for mixed lamp loads which account for the higher incandescent inrush.

Europeans usually separate the values for incandescent from discharge (ballast) lighting. Both values are provided in the technical section of our general catalog and may be more appropriate for those applying by CE standards.

## Electrically held contactors

Electrically held contactors are avail-



able for use where the control signal is activated by a timer or other maintained electrical signal. The coil is energized as long as the contactor is closed. This design is well suited for applications where lights are operated frequently or where the control panel is in a remote location.

## Mechanically held contactors

Mechanically held contactors are available for applications where quiet operation or critical lighting is required, i.e., institutions, hospitals and residential/commercial areas. After the contactor closes, the voltage is disconnected from the operating coil and the contactor is held closed by the mechanical latch. Built-in clearing interlocks allow control from either a momentary or maintained pilot device for the separate "pull-in" and "release" functions.

#### Lighting Contactors with AC Coil

| Continuous<br>Ampere<br>Rating<br>① | Number<br>of Poles | Standard<br>Auxiliary<br>Contacts |    | Electrically Held |       | Mechanically Held ① |       |
|-------------------------------------|--------------------|-----------------------------------|----|-------------------|-------|---------------------|-------|
|                                     |                    | NO                                | NC | Open<br>Type      |       | Open<br>Type        |       |
|                                     |                    |                                   |    | Catalog Number    | Price | Catalog Number      | Price |
| 20                                  | 4                  | 0                                 | 0  | CAL7-20-M40-*     | 195   | CAVL7-20-M40-*-L10  | 379   |
| 30                                  | 4                  | 0                                 | 0  | CAL7-30-M40-*     | 288   | CAVL7-30-M40-*-L10  | 427   |
| 60                                  | 4                  | 0                                 | 0  | CAL7-60-M40-*     | 489   | CAVL7-60-M40-*-L10  |       |
| 100                                 | 3                  | 1                                 | 1  | CA6-95-11-*       | 600   | ~                   | ~     |
| 150                                 | 3                  | 1                                 | 1  | CA6-180-11-*      | 1608  | ~                   | ~     |
| 200                                 | 3                  | 1                                 | 1  | CA6-210-EI-11-*   | 1917  | ~                   | ~     |

Larger sizes available. Contact your Sprecher + Schuh representative.



#### Description

The CAL7 electrically held contactors and CAVL7 mechanical held contactors are cUL rated and labeled for tungsten and ballast lighting duty applications at 20, 30, and 60 amperes respectively.

The CA6 contactors shown are selections based on available technical data. These CA6 units do not bear a cUL rating for use as a lighting contactor.

#### CA(L)7 Coil Codes ②

| A.C.<br>Coil Code | Voltage Range |           |
|-------------------|---------------|-----------|
|                   | 50 Hz         | 60 Hz     |
| 24Z               | 24V           | 24V       |
| 120               | 110V          | 120V      |
| 208               | ~             | 208V      |
| 220W              | ~             | 208V-240V |
| 240               | 220V          | 240V      |
| 277               | 240V          | 277V      |
| 380               | 380V-400V     | 480V      |
| 480               | 440V          | 480V      |
| 600               | 550V          | 600V      |

#### CA6 Coil Codes ②

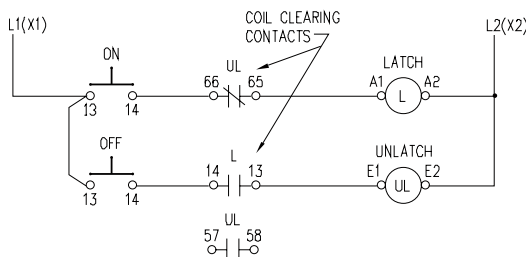
| CA6-95 / 180    |               |       |
|-----------------|---------------|-------|
| AC<br>Coil Code | Voltage Range |       |
|                 | 50 Hz         | 60 Hz |
| 24              | ~             | 24V   |
| 120B            | 110V          | 120V  |
| 208             | ~             | 208V  |
| 240B            | 220-230V      | 260V  |
| 277             | 240V          | 277V  |
| 380             | 380-400V      | 440V  |
| 480             | 415V          | 480V  |
| 575             | 500V          | 575V  |

#### CA6 EI-Coil Codes ③②

| CA6-210-EI      |               |          |
|-----------------|---------------|----------|
| AC<br>Coil Code | Voltage Range |          |
|                 | 50 Hz         | 60 Hz    |
| 120             | 110-130V      | 110-130V |
| 220W            | 208-277V      | 208-277V |
| 380             | 380-400V      | 380-400V |

#### Operation of Mechanically Held Contactor with "ON-OFF" Pushbutton

Catalog number "CAVL7" consists of a CAL7 contactor with CV7-11 mechanical latch. Depressing the "ON" button energizes the "L" coil and the contactor closes. The mechanical latch locks the contactor in the closed position. The "L" coil is then de-energized by the coil, clearing contact "UL" (Terminals 65-66) to remove voltage. Depressing the "OFF" button energizes the "UL" coil, and the mechanical latch releases the contactor. The "UL" coil is immediately de-energized by the coil clearing contact "L" (Terminals 13-14) to remove voltage. The contactor is now open.



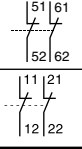
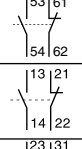
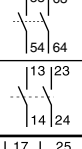
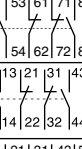
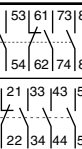
- ① The N.O. auxiliary is used to mechanical latch the control circuit and is not available for use by customer for other uses.
- ② Other voltages available, see page A37. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ③ "EI" designates contactor with Electronic Interface coil.
- ④ Engineering practice permits  $2.5 \times I_L$  to be applied to a contactor when 3 poles are connected in parallel for single phase discharge lamp (ballast lighting) applications. Example: A CAL7-20-M40-\* Lighting Contactor plus a CA7-P-B23 Paralleling Link can be used on a 50A ballast load. Applying parallel conductors to incandescent lamp loads does NOT result in a greater permissible load. Paralleling Links can be found in the Accessories section.

#### Ordering Instructions

|                            |                                             |
|----------------------------|---------------------------------------------|
| Specify Catalog Number     |                                             |
| Replace (*) with Coil Code | See Coil Code table on this page for codes. |



**Top (Front) Mount Auxiliary Contact Blocks ❶**

| Contact Block                                                                                                                                                                                                                                                                                                                                                                                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | NO    | NC    | Contact Arrangement                                                                 | For use with...  | Standard Contacts Catalog Number | Price | Bifurcated Contacts Catalog Number ❷ | Price |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------------------------------------------------------------------------------------|------------------|----------------------------------|-------|--------------------------------------|-------|
|  <p>Top mount auxiliary contact blocks snap-on to the top (front) of any CA7 contactor</p>  <p>4-pole auxiliary</p>  <p>2-pole auxiliary contact block (typical)</p> | <b>Auxiliary Contact Blocks for Top Mounting -</b> <ul style="list-style-type: none"> <li>• 2 and 4 pole</li> <li>• Snap on design - mounts without tools</li> <li>• Electronic compatible contacts</li> <li>• Mutual positive guidance to the main contactor poles (excluding L types)</li> <li>• Several terminal numbering choices even for models with equal function</li> <li>• Late break /early make (L) available</li> </ul> <b>Bifurcated Contacts</b> <p>Bifurcated auxiliary contacts provides a higher degree of reliability than the standard cross-stamped auxiliary contacts because it H-bridge divides each movable contact into two sections at the tip of the spanner. Typical application is low-voltage low-current applications (i.e.: PLC). Cross-stamped contacts are good for a minimum of 5mA at 17v while bifurcated contacts are good for a minimum of 3mA at 5v.</p> | 0     | 2     |    | CA7 all          | CS7-PV-02                        | 27    | CS7-PVB-02                           | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |    | CA7-30...85-✱-00 | CA7-PV-02                        | 27    | CA7-PVB-02                           | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1     | 1     |    | CA7 all          | CS7-PV-11                        | 27    | CS7-PVB-11                           | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |    | CA7-30...85-✱-00 | CA7-PV-11                        | 27    | CA7-PVB-11                           | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |    | CA7-9...23-✱-10  | CA7-PV-S11                       | 27    | CA7-PVB-S11                          | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |    | CA7-9...23-✱-01  |                                  |       |                                      |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2     | 0     |    | CA7 all          | CS7-PV-20                        | 27    | CS7-PVB-20                           | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |    | CA7-30...85-✱-00 | CA7-PV-20                        | 27    | CA7-PVB-20                           | 42    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1EM   | 1LB   |   | CA7-30...85-✱-00 | CA7-PV-L11                       | 37    | NOT AVAILABLE                        | ~     |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1     | 3     |  | CA7-30...85-✱-00 | NOT AVAILABLE                    | ~     | CA7-PVB-13                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2     | 2     |  | CA7 all          | CS7-PV-22                        | 53    | CS7-PVB-22                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |  | CA7-30...85-✱-00 | CA7-PV-22                        | 53    | CA7-PVB-22                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |  | CA7-9...23-✱-10  | CA7-PV-S22                       | 53    | CA7-PVB-S22                          | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |  | CA7-9...23-✱-01  |                                  |       |                                      |       |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3     | 1     |  | CA7 all          | CS7-PV-31                        | 53    | CS7-PVB-31                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |       |  | CA7-9...23-✱-01  | CA7-PV-S31                       | 53    | CA7-PVB-S31                          | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1     | 3     |  | CA7 all          | CS7-PV-13                        | 53    | CS7-PVB-13                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4     | 0     |  | CA7 all          | CS7-PV-40                        | 53    | CS7-PVB-40                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0     | 4     |  | CA7 all          | CS7-PV-04                        | 53    | CS7-PVB-04                           | 79    |
|                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1+1EM | 1+1LB |  | CA7 all          | CS7-PV-L22                       | 74    | NOT AVAILABLE                        | ~     |

❶ Max. number of auxiliary contacts that may be mounted:

- AC Coil contactors-max. 4 N.O. contacts on the front of the contactor, 2-N.O. contacts on the side, 4-N.C. front or side: 6 total.
- DC Coil contactors-max. 4 N.O. contacts on the front of the contactor, or max. 2-N.O. contacts on side, 4-N.C. front or side: (4) total.

❷ Detailed ratings can be found on page A53.

#### Side Mount Auxiliary Contact Blocks (1 & 2 Pole) ❶

| Contact Block                                                                                                                                                                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       | NO  | NC  | Contact Arrangement                                                               | For use with... | Catalog Number ❸ | Price |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----------------------------------------------------------------------------------|-----------------|------------------|-------|
|  <p>1-pole (typical)</p>  <p>2-pole (typical)</p> | <b>Auxiliary Contact Blocks for Side Mounting - ❶</b> <ul style="list-style-type: none"> <li>• 1 and 2-pole</li> <li>• Two way numbering for right or left mounting on the contactor</li> <li>• Snap-on design - mounts without tools</li> <li>• Electronic compatible contacts down to 24V, 20mA</li> <li>• Late break / early make (L) available</li> <li>• Mutual positive guidance to the main contactor poles (excluding L-types)</li> </ul> | 0   | 1   |  | CA7 all         | CA7-PA-01        | 17    |
|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1   | 0   |  | CA7 all ❷       | CA7-PA-10        | 17    |
|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0   | 2   |  | CA7 all         | CA7-PA-02        | 27    |
|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1   | 1   |  | CA7 all ❷       | CA7-PA-11        | 27    |
|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2   | 0   |  | CA7 all ❷       | CA7-PA-20        | 27    |
|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1EM | 1LB |  | CA7 all         | CA7-PA-L11       | 37    |

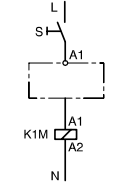
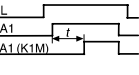
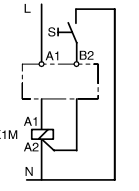
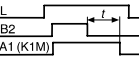
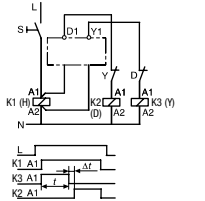
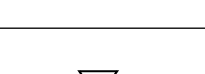
❶ Max. number of auxiliary contacts that may be mounted:

- AC Coil contactors-max. 4 N.O. contacts on the front of the contactor, 2-N.O. contacts on the side, 4-N.C. front or side: 6 total.
- DC Coil contactors-max. 4 N.O. contacts on the front of the contactor, or max. 2-N.O. contacts on side, 4-N.C. front or side: (4) total.

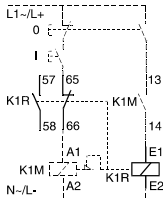
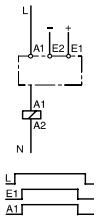
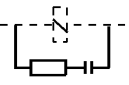
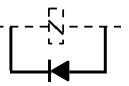
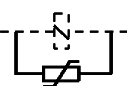
❷ Left mounting only is recommended when using with CA7-9...CA7-23 contactors. These contactors have built-in auxiliaries, which will result in duplicate terminal markings if mounted on the right.

❸ Detailed ratings can be found on page A53.

**Control Modules ❶**

| Module                                                                                                 | Description                                                                                                                                                                                                                                                                                                                         | For use with...    | Connection Diagrams                                                                                                                                                          | Function                                                                | Catalog Number                                                                   | Price |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------|-------|
|                       | <b>Pneumatic Timing Module –</b><br>The contacts in the Pneumatic Timing Element switch after the delay time. The contacts on the main contactor continue to operate without delay. <ul style="list-style-type: none"> <li>Continuous adjustment range</li> </ul>                                                                   | CA7 all            |                                                                                             | <b>ON-Delay</b><br>0.3...30s<br>1.8...180s                              | <b>CZE7-30</b><br><b>CZE7-180</b>                                                | 160   |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                     | CA7 all            |                                                                                             | <b>OFF-Delay</b><br>0.3...30s<br>1.8...180s                             | <b>CZA7-30</b><br><b>CZA7-180</b>                                                | 160   |
|                       | <b>Electronic Timing Module – ON-Delay</b><br>The contactor is energized at the end of the delay time.                                                                                                                                                                                                                              | CA7 all            | <br>     | 110...240V 50/60Hz<br>110...250V DC<br>0.1...3s<br>1...30s<br>10...180s | <b>CRZE7-3-110/240</b><br><b>CRZE7-30-110/240</b><br><b>CRZE7-180-110/240</b>    | 98    |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                     |                    |                                                                                                                                                                              | 24...48V DC<br>0.1...3s<br>1...30s<br>10...180s                         | <b>CRZE7-3-24/48VDC</b><br><b>CRZE7-30-24/48VDC</b><br><b>CRZE7-180-24/48VDC</b> | 104   |
|                     | <b>Electronic Timing Module – OFF-Delay</b><br>After interruption of the control signal, the contactor is de-energized at the end of the delay time.                                                                                                                                                                                | CA7 all            | <br>  | 110...240V 50/60Hz<br>0.3...3s<br>1...30s<br>10...180s                  | <b>CRZA7-3-110/240</b><br><b>CRZA7-30-110/240</b><br><b>CRZA7-180-110/240</b>    | 112   |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                     | CA7-9...<br>CA7-37 |                                                                                                                                                                              | 24V AC 50/60Hz<br>0.3...3s<br>1...30s<br>10...180s                      | <b>CRZA7-3-24VAC</b><br><b>CRZA7-30-24VAC</b><br><b>CRZA7-180-24VAC</b>          | 112   |
|                     | <b>Electronic Timing Module – Wye-Delta Transition Timer</b><br>Contactor K3 (Y) is de-energized and contactor K2 (D) is energized after the end of the set transition time. Switching delay at 50ms. <ul style="list-style-type: none"> <li>Continuous adjustment range</li> <li>High repeat accuracy</li> </ul>                   | CA7 all            | <br> | 110...240V 50/60Hz<br>1...30s                                           | <b>CRZY7-30-110/240</b>                                                          | 112   |
| <br>CM7      CM7-02 | <b>Mechanical/Electrical Interlocks –</b> <ul style="list-style-type: none"> <li>Common to all CA7 contactors; interlocks different contactor sizes</li> <li>Mechanical and electrical interlocking possible in one module by means of integrated auxiliary contacts</li> <li>Dovetail (CA7-S9) connector included (9mm)</li> </ul> | CA7 all<br>❶       |                                                                                           | <b>Mechanical</b><br>Without auxiliaries                                | <b>CM7</b>                                                                       | 34    |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                     |                    |                                                                                           | <b>Mechanical/<br/>Electrical</b><br>Two NC aux contacts                | <b>CM7-02</b>                                                                    | 40    |

#### Control Modules (continued)

| Module                                                                              | Description                                                                                                                                                                                                                                                                                                                  | For use with...                | Connection Diagrams                                                                 | Function                                                                                                                                                   | Catalog Number                                                                        | Price     |                                     |                   |                                                                                         |           |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------|-------------------------------------|-------------------|-----------------------------------------------------------------------------------------|-----------|
|    | <b>Mechanical Latch –</b><br>Following contactor latching, the contactor coil is immediately de-energized by the NC auxiliary contact (65-66). <ul style="list-style-type: none"><li>• Electrical or manual release</li><li>• 1 NO + 1 NC auxiliary switch</li><li>• Suitable for all CA7 contactors</li></ul>               | CA7 all (except true DC coils) |    |                                                                                                                                                            | <b>CV7-11-*</b><br><i>Replace * with coil code below (See Application Note below)</i> | <b>94</b> |                                     |                   |                                                                                         |           |
|    | <b>Electronic Interface –</b><br>Interface between the DC control signal from a PLC and the AC operating mechanism of the contactor. <ul style="list-style-type: none"><li>• Requires no additional surge suppression for the coils</li><li>• Switching capacity 200VA</li><li>• Suitable for all CA7 contactors ④</li></ul> | CA7 all (with AC control)      |    | <table><tr><th>Input</th><th>Output</th></tr><tr><td><b>24V DC ①</b><br/>12V DC<br/>48V DC</td><td>110...<br/>240V AC</td></tr></table>                    | Input                                                                                 | Output    | <b>24V DC ①</b><br>12V DC<br>48V DC | 110...<br>240V AC | <b>CRI7E-24</b><br><b>CRI7E-12</b><br><b>CRI7E-48</b><br><i>Indicates special order</i> | <b>72</b> |
| Input                                                                               | Output                                                                                                                                                                                                                                                                                                                       |                                |                                                                                     |                                                                                                                                                            |                                                                                       |           |                                     |                   |                                                                                         |           |
| <b>24V DC ①</b><br>12V DC<br>48V DC                                                 | 110...<br>240V AC                                                                                                                                                                                                                                                                                                            |                                |                                                                                     |                                                                                                                                                            |                                                                                       |           |                                     |                   |                                                                                         |           |
|  | <b>Surge Suppressors -</b><br>Limits coil switching transients. <ul style="list-style-type: none"><li>• Plug-in, coil mounted</li><li>• Suitable for all CA7 contactors</li></ul>                                                                                                                                            | CA7 all                        |    | <b>RC Module -</b><br>AC Control (50/60Hz)<br>24...48V<br>110...280V<br>380...480V                                                                         | <b>CRC7-48</b><br><b>CRC7-280</b><br><b>CRC7-480</b>                                  | <b>34</b> |                                     |                   |                                                                                         |           |
|                                                                                     |                                                                                                                                                                                                                                                                                                                              |                                |  | <b>Diode Module -</b><br>DC Control<br>12-250VDC                                                                                                           | <b>CRD7-250</b>                                                                       | <b>34</b> |                                     |                   |                                                                                         |           |
|                                                                                     |                                                                                                                                                                                                                                                                                                                              |                                |  | <b>Varistor Module -</b><br>AC/DC Control<br><br>12...55VAC/<br>12...77VDC<br>56...136VAC/<br>78...180VDC<br>137...277VAC/<br>181...350VDC<br>278...575VAC | <b>CRV7-55</b><br><b>CRV7-136</b><br><b>CRV7-277</b><br><b>CRV7-575</b>               | <b>21</b> |                                     |                   |                                                                                         |           |

#### CV7 Mechanical Latch Coil Codes ②③⑥

| Coil Code    | Application Range |                      |               | Latch & Contactor Coil Rating |
|--------------|-------------------|----------------------|---------------|-------------------------------|
|              | 50 Hz             | 60 Hz                | VDC           |                               |
| <b>24Z</b>   | <b>24 VAC</b>     | 24 VAC               | 12 VDC        | 24V 50/60 Hz                  |
| <b>48Z</b>   | 48 VAC            | 48 VAC               | <b>24 VDC</b> | 48V 50/60 Hz                  |
| <b>120</b>   | 110 VAC           | <b>120 VAC</b>       | ~             | 110V50/120V60                 |
| <b>220W</b>  | ~                 | <b>208...240 VAC</b> | ~             | 208...240V60                  |
| <b>230Z</b>  | 230 VAC           | 230 VAC              | 110 VDC       | 230V 50/60 Hz                 |
| <b>240Z</b>  | <b>240 VAC</b>    | <b>240 VAC</b>       | 125 VDC       | 240V 50/60 Hz                 |
| <b>277</b>   | 240 VAC           | 277 VAC              | ~             | 240V50/277V60                 |
| <b>380</b>   | 380...400 VAC     | 440 VAC              | ~             | 380...400V50/440V60           |
| <b>400Z</b>  | 400 VAC           | 400 VAC              | 220 VDC       | 400V 50/60 Hz                 |
| <b>415</b>   | 400...415 VAC     | ~                    | ~             | 400...415 V50 Hz              |
| <b>480</b>   | 440 VAC           | <b>480 VAC</b>       | ~             | 440V50/480V60                 |
| <b>600 ⑤</b> | 550 VAC           | 600 VAC              | ~             | 550V50/600V60                 |

**APPLICATION NOTE:** The CV7 Mechanical Latch for CA7 may be used for both AC and DC applications. However, when using in a DC application, both the Contactor and Latch must still be AC, using the Coil Code Table shown. For example, if needing a latched contactor for 24 V DC, choose coil code 48Z for a CA7 contactor and Latch for 48V AC. This combination will work at 24V DC momentary due to coil clearing contacts.

① Control voltage 18...30V DC (10...15mA)

② Other voltages available. Contact your Sprecher + Schuh representative.

③ CV7 must be wired for momentary operation only.

④ Minimum actuation current is 5 volts, 2ma. The leakage current is <1mA for the following:

- CRI7E-12 @ 2.5 VDC input
- CRI7E-24 @5 VDC input
- CRI7E-48 @ 10 VDC input.

⑤ Use 600V AC when 575 V is required.

⑥ Command duration 0.03...10 seconds.

## AC Voltage Sag Immunity Modules

| Module                                                                            | Description                                       | Full-Wave Bridge Rectifier    |                                                                                | Catalog Number | Price |
|-----------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------|----------------|-------|
|                                                                                   |                                                   | Module Input                  | Module Output                                                                  |                |       |
|                                                                                   |                                                   | Control circuit voltage range | For use with<br>CA7 contactors with DC coil<br>CS7 control relays with DC coil |                |       |
|  | SEMI-F47-Module                                   | 24-250 VAC                    | 24-250 VDC ❶                                                                   | CA7-SF47       | 109   |
|  | Semi-F47-Module<br>with 1...30s<br>on-delay timer | 110-250 VAC                   | 110-250 VDC ❶                                                                  | CA7-SF47A30    | 175   |

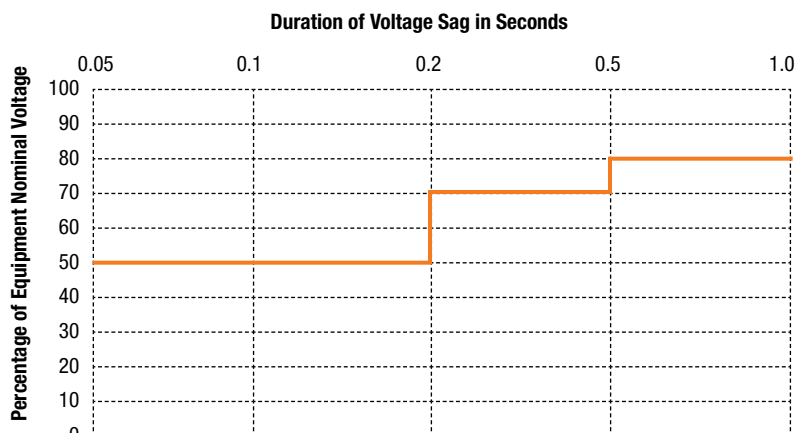
Sprecher + Schuh's CA7-SF47 module meets the Semi-F47 AC voltage sag immunity requirements to 50% voltage sag for 200 ms. Voltage sags can affect the readiness and operation of contactors and starters, resulting in shut downs, lost production, and diminished revenue. It is essential for process equipment to be compatible with its electrical environment. The CA7-SF47 voltage sag immunity module is an essential component to achieve equipment reliability during voltage sag events.

### Product Features

- Meets Semi-F47 standard requirements
- For use with CA7 contactors and CS7 control relays with DC coils. A full-wave bridge rectifier internal to the CA7-SF47 module provides AC to DC coil voltage rectification.
- Suitable for contactor range (with screw terminals)
  - CA7-9 ... 85, 3-Pole contactors
  - CA7-9 ... 90, 4-Pole contactors
- Suitable for control relays (with screw terminals)
  - CS7
- Optional 1 to 30 seconds On-Delay timer function.

### Benefits

- Direct mounting to the coil terminals of the CA7 contactors and CS7 control relays. Only 24 mm is added to the component height.
- Direct electrical connection to the contactor or control relay. Customer coil power connections are made at the terminals of the CA7-SF47 module
- The CA7-SF47A30 module includes a 1 to 30 seconds adjustable On-Delay timer in addition to the voltage sag immunity functionality. Two independent functions in a single module.



| VOLTAGE SAG DURATION |                |                 |                  | VOLTAGE SAG                              |
|----------------------|----------------|-----------------|------------------|------------------------------------------|
| Seconds              | Milliseconds   | Cycles at 60 hz | Cycles at 50 hz  | Percent (%) of Equipment Nominal Voltage |
| < 0.05 s             | < 50 ms        | < 3 cycles      | < 2.5 cycles     | Not specified                            |
| 0.05 to 0.2 s        | 50 to 200 ms   | 3 to 12 cycles  | 2.5 to 10 cycles | 50%                                      |
| 0.2 to 0.5 s         | 200 to 500 ms  | 12 to 30 cycles | 10 to 25 cycles  | 70%                                      |
| 0.5 to 1.0 s         | 500 to 1000 ms | 30 to 60 cycles | 25 to 50 cycles  | 80%                                      |
| > 1.0 s              | > 1000 ms      | > 60 cycles     | > 50 cycles      | Not specified                            |

❶ Input AC control circuit voltage must be matched when selecting the contactor/relay DC coil voltage.

**Terminal Lug Kits ❶**

| Component                                                                         | Description                                                                                                                                                                                                                                                                                                          | For use with . . .                       | Maximum Resistive Current Ratings (A) ❷ |            |               | Pkg. Qty. | Catalog Number ❶         | Price Each |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------|------------|---------------|-----------|--------------------------|------------|
|                                                                                   |                                                                                                                                                                                                                                                                                                                      |                                          | IEC (40°C)                              | IEC (60°C) | UL/CSA (40°C) |           |                          |            |
|  | <b>3 Pole Lug Kit –</b><br>Allows larger wires to be used with the contactor. Ideal for wye-delta, reversing and multispeed contactors and starters. Can increase IEC AC-1 current rating, as well as the UL/CSA continuous current (resistive) rating of the contactor. Three pole kit used for smaller contactors. | CA7-9. . .23<br>-line side<br>-load side | 45                                      | 45         | 40            | 1         | CA7-P-KN23<br>CA7-P-KL23 | 41         |
|                                                                                   |                                                                                                                                                                                                                                                                                                                      | CA7-30. . .37                            | 60                                      | 55         | 55            | 1         | CA7-P-K37                | 56         |
|  | <b>1 Pole Lug Kit –</b><br>Allows larger wires to be used with the contactor. Ideal for wye-delta, reversing and multispeed contactors and starters. Can increase AC-1 current rating of the contactor. One pole kit used for larger contactors.                                                                     | CA7-43                                   | 90                                      | 75         | 75            | 3 ❸       | CA7-P-K43                | 28 ❸ Each  |
|                                                                                   |                                                                                                                                                                                                                                                                                                                      | CA7-60 . . .85                           | 130                                     | 130        | 130           | 3 ❸       | CA7-P-K85                | 33 ❸ Each  |

**Paralleling Links ❶❷**

| Component                                                                           | Description                                                                                                                                                                                                      | For use with . . . | Maximum Resistive Current Ratings (A) ❷ |            |               | Pkg. Qty. | Catalog Number ❶ | Price Each |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------|------------|---------------|-----------|------------------|------------|
|                                                                                     |                                                                                                                                                                                                                  |                    | IEC (40°C)                              | IEC (60°C) | UL/CSA (40°C) |           |                  |            |
|  | <b>3 Pole Paralleling Link –</b><br>Allows smaller CA7 contactors to be used on single-phase resistive applications. By paralleling the three power poles, the contacts see only a portion of the actual load. ❹ | CA7-9. . .23       | 100                                     | 100        | 100           | 2 ❸       | CA7-P-B23        | 10 ❸ Each  |
|                                                                                     |                                                                                                                                                                                                                  | CA7-30. . .37      | 150                                     | 135        | 150           | 2 ❸       | CA7-P-B37        | 15 ❸ Each  |

❶ cULus Approved (File E33916).

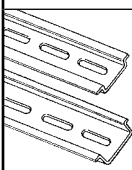
❷ Lighting applications are not considered purely resistive loads. Therefore, the IEC and UL/CSA resistive ratings listed here do not apply to lighting loads. Lighting contactor ratings are provided in the Technical Information section.

❸ Priced per piece. Total cost is package quantity x price. Minimum order, 3 pieces.

❹ Engineering practice permits  $2.5 \times I_L$  to be applied to a contactor when 3 poles are connected in parallel for single phase discharge lamp (ballast lighting) applications.



### Assembly Components

| Component                                                                           | Description                                                                                                                                                           | For Use With...                 | Pkg. Qty. | Catalog Number | Price Each |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------|----------------|------------|
|    | <b>Dovetail Connectors –</b><br>Connects multiple contactor and starter assemblies together.                                                                          | CA7 all                         | 10        | CA7-S9         | 1.75       |
|    | <b>Reversing Power Wiring Kit - ❶</b><br>Provides a solid “wireless” connection for reversing applications. May be used with both solid state and thermal O/L relays. | CA7-9...12                      | 1         | CAUT7-PW23     | 17         |
|                                                                                     |                                                                                                                                                                       | CA7-16...23                     |           |                |            |
|                                                                                     |                                                                                                                                                                       | CA7-30...37                     | 1         | CAUT7-PW37     | 20         |
|                                                                                     |                                                                                                                                                                       | CA7-43                          | 1         | CAUT7-PW43     | 37         |
|                                                                                     |                                                                                                                                                                       | CA7-60...85                     | 1         | CAUT7-PW85     | 94         |
|    | <b>Connecting Module - ❶</b><br>Provides a solid “wireless” connection between a CA7 contactor and a Motor Circuit Controller.                                        | KT4 or KTA3-25 with CA7-9...23  | 1         | KT3-NW23       | 20         |
|    | <b>Stab Connectors -</b><br>Dual stab (0.250 inch)                                                                                                                    | CA7-9...85 coil term.           | 20        | CA7-SC2        | 1.75       |
|                                                                                     |                                                                                                                                                                       | CA7-9...23 power term.          | 100       | CA7-SC10       |            |
|                                                                                     |                                                                                                                                                                       | CA7 accessories                 | 100       | CA4-SC11       |            |
|  | <b>Protective Covers -</b><br>Protects against unintended manual operation of contactors, front mounted auxiliary contacts, pneumatic timers and latches.             | CA7-9...85                      | 10        | CA7-SCC        | 3.35       |
|                                                                                     |                                                                                                                                                                       | CS7-PV, CA7-PV, CZE7, CZA7, CV7 | 1         | CA7-SCF        | 1.75       |
|   | <b>DIN-rail -</b> 2 meter lengths ( 6' 6");<br>price per rail<br><br>Top Hat, low profile<br>Top Hat, high profile                                                    | CA7 all                         | 20        | 3F<br>3AF      | 29         |
|                                                                                     |                                                                                                                                                                       |                                 | 10        |                | 44         |

### Marking Systems

| Component                                                                           | Description                                                                                                               | Pkg. Qty. | Catalog Number | Price Each |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-----------|----------------|------------|
|  | <b>Label Sheet –</b><br>1 sheet with 105 self-adhesive paper labels each, 6 x 17mm                                        | 1         | CA7-FMS        | 1.75       |
|  | <b>Marking Tag Sheet -</b><br>1 sheet with 160 perforated paper labels each, 6 x 17mm. To be used with transparent cover. | 1         | CA7-FMP        | 1.75       |
|                                                                                     | <b>Transparent Cover -</b><br>To be used with Marking Tag Sheets.                                                         | 100<br>❷  | CA7-FMC        | .17        |
|  | <b>Tag Carrier -</b><br>For marking with Clip-on Tags. See Terminals Section N for complete listing of Clip-on Tags.      | 100<br>❷  | CA7-FMA2       | .17        |

❶ cULus Approved (File E33916).

❷ Minimum order quantity is one package of 100. Price each x 100 = total price.

### Wye-Delta Starter Kits ①

Wye-Delta power wiring kits were designed to aid in the field assembly of open-transition wye-delta starters that use CA7 contactors. These kits include line, load and start-point (shorting) connections. Assembling a wye-delta starter requires the use of the following components:

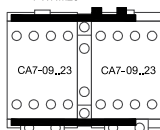
- Contactors and overload relay
- Mechanical / Electrical Interlock (Cat.No: CM7-02)
- Electronic Wye-delta Timer (Cat. No: CRZY7-30-110/240)
- Dovetail Connector to couple 1M and 2M contactor (Cat. No: CA7-S9); optional



| 3-Phase Rating |              |      |      |           |      |      |      |                               |        |        | Catalog Number | Price |
|----------------|--------------|------|------|-----------|------|------|------|-------------------------------|--------|--------|----------------|-------|
| kW (50Hz)      |              |      |      | HP (60Hz) |      |      |      | Use with catalog number . . . |        |        |                |       |
| 230V           | 380V<br>415V | 500V | 690V | 200V      | 230V | 460V | 575V | Delta                         |        | Wye    |                |       |
|                |              |      |      |           |      |      |      | 1M                            | 2M     | 1S     |                |       |
| 5.5            | 8            | 8    | 8    | 5         | 5    | 10   | 10   | CA7-9                         | CA7-9  | CA7-9  | CAYT7-PW23     | 22    |
| 7.5            | 11           | 11   | 11   | 5         | 7.5  | 15   | 15   | CA7-12                        | CA7-12 | CA7-9  |                |       |
| 10             | 14           | 15   | 14   | 7.5       | 10   | 20   | 20   | CA7-16                        | CA7-16 | CA7-12 |                |       |
| 14             | 21           | 21   | 19   | 7.5       | 10   | 25   | 25   | CA7-23                        | CA7-23 | CA7-12 |                |       |
| 18             | 28           | 28   | 28   | 10        | 15   | 30   | 30   | CA7-30                        | CA7-30 | CA7-16 | CAYT7-PW37     | 27    |
| 19             | 35           | 35   | 32   | 15        | 20   | 40   | 40   | CA7-37                        | CA7-37 | CA7-23 |                |       |
| 23             | 40           | 40   | 41   | 20        | 25   | 50   | 50   | CA7-43                        | CA7-43 | CA7-30 | CAYT7-PW43     | 44    |
| 33             | 58           | 60   | 56   | 30        | 40   | 75   | 75   | CA7-60                        | CA7-60 | CA7-37 | CAYT7-PW72     | 79    |
| 39             | 69           | 67   | 70   | 40        | 50   | 100  | 100  | CA7-72                        | CA7-72 | CA7-43 |                |       |
| 47             | 82           | 82   | 81   | 50        | 60   | 125  | 125  | CA7-85                        | CA7-85 | CA7-60 | CAYT7-PW85     | 106   |

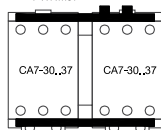
### Reversing Starter Connection Kits ②

Kit = CAUT7-PW23  
CA7-PWLM23



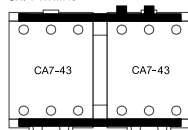
CA7-PWLM23

Kit = CAUT7-PW37  
CA7-PWLM37



CA7-PWLM37

Kit = CAUT7-PW43  
CA7-PWLM43

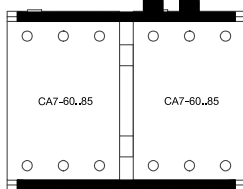


CA7-PWLM43

### Reversing- and WYE-Delta Starter Kits

Only the kits are catalog items. Single components are available by special order in bulk packages of 20 pcs

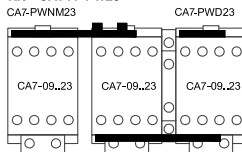
Kit = CAUT7-PW85  
CA7-PWLM85



CA7-PWLM85

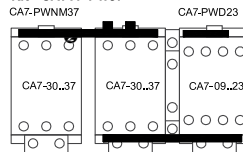
### WYE-Delta Starter Connection Kits

Kit = CAYT7-PW23



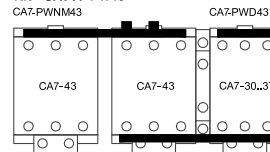
CA7-PWLM23

Kit = CAYT7-PW37



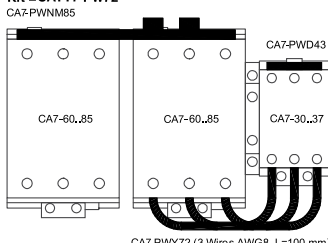
CA7-PWY37

Kit = CAYT7-PW43



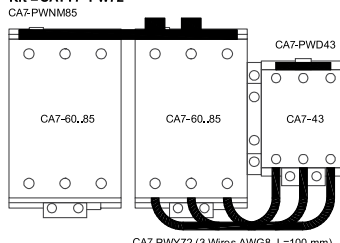
CA7-PWY43

Kit = CAYT7-PW72



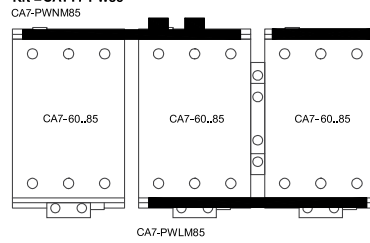
CA7-PWY72 (3 Wires AWG8, L=100 mm)

Kit = CAYT7-PW72



CA7-PWY72 (3 Wires AWG8, L=100 mm)

Kit = CAYT7-PW85



CA7-PWLM85

① cULus Approved (File E33916).

② Individual parts of kits are available for unique applications by special order. Contact your Sprecher + Schuh Representative.

#### M1 General Purpose Enclosures ①

| Enclosure | Description                                                                                                                                                                                                                                                                                                                                | For use With. . .                                                                                                                                                                                                     | Catalog Number        | Price      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------|
|           | <b>Sheet metal enclosure ("A" box) - ①</b><br>- Includes installed Reset Kit<br><br>CEP7-ERA adapter is required for all CEP7-ED, EE overloads in "A" boxes. CEP7-ERA must be ordered separately from page B7.1.                                                                                                                           | CA7-9...43 contactor<br>CA7-9...23 starter<br>(using CEP7 second generation)<br><br>CA(T)7-9...37<br>(using CEP7 first generation)                                                                                    | <b>M1-100645/3 ①</b>  | <b>50</b>  |
|           | <b>Sheet metal enclosure ("B" box) - ①</b><br>- Includes Reset Kit<br>- Includes special offset attachment for resetting CEP7 solid state overload relays (only necessary with CA7-60...85 starters) ②<br><br>CEP7-ERA adapter is required for all CEP7-ED, EE overloads in "B" boxes. CEP7-ERA must be ordered separately from page B7.1. | <b>Backpan not required</b><br>CA(T)7-60...85<br><br><b>Backpan required</b><br>CA7-30...43<br>(using second generation CEP7)<br><br>CAU(T)7-9...43<br>CA(T)7-9...43 w/ CPT<br>CA(T)7-43 (with first generation CEP7) | <b>M1-130706-7 ①②</b> | <b>104</b> |
|           | <b>"B box" enclosure backpan</b><br><i>Required when mounting all contactor/ starter configurations noted here.</i>                                                                                                                                                                                                                        | <b>Backpan required</b><br>CA7-30...43<br>(using second generation CEP7)<br><br>CAU(T)7-9...43<br>CA(T)7-9...43 w/ CPT<br>CA(T)7-43 (with first generation CEP7)                                                      | <b>TI-2.11.1</b>      | <b>17</b>  |

#### M1 General Purpose Enclosure Pilot Device Kits

| Enclosure | Description                                                                                                                               | For use With M1 Enclosure . . . | Catalog Number                     | Price      |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------------|------------|
|           | <b>START-STOP pushbutton assembly</b> - includes mounting bracket and                                                                     | M1-100645/3<br>M1-130706-7      | <b>SS3-NA ③</b><br><b>SS3-NB ④</b> | <b>67</b>  |
|           | <b>HAND-OFF-AUTO selector switch assembly</b> -includes mounting bracket and wiring                                                       | M1-100645/3<br>M1-130706-7      | <b>SS2-NA ③</b><br><b>SS2-NB ④</b> | <b>67</b>  |
|           | <b>ON-OFF selector switch assembly</b> - with mounting bracket and wiring                                                                 | M1-100645/3<br>M1-130706-7      | <b>SS4-NA ③</b><br><b>SS4-NB ④</b> | <b>67</b>  |
|           | <b>Pilot light (neon type) assembly</b> - includes mounting bracket, wiring and resistors for all standard voltages between 115V and 575V | M1-100645/3<br>M1-130706-7      | <b>PL-NA ③</b><br><b>PL-NB ④</b>   | <b>126</b> |

① Not designed for use with CT7 or CT7K thermal overload relays or CA7-9C...CA7-43C contactors (with DC coils).

② Special offset attachment (Cat.# TI-12-18) may be purchased separately. List price \$4.

③ Pilot device kit also for use with all enclosed contactors or starters listed in this catalog with enclosure dimension "A".

④ Pilot device kit also for use with all enclosed contactors or starters listed in this catalog with enclosure dimension "B".

**Renewal Coils - A.C. ①②③**

| AC Control Voltages |            |          | AC Coil Codes ② | For use with contactor . . . |                    |                |             |                |
|---------------------|------------|----------|-----------------|------------------------------|--------------------|----------------|-------------|----------------|
|                     |            |          |                 | CA7-9...16                   | CA7-23...37        | CA7-43         | CA7-60...85 | ~              |
| 50 Hz               | 60 Hz      | 50/60 Hz |                 | CA7-9-M...16-M...            | CA7-23-M...37-M... | ~              | ~           | CA7-90-M...    |
|                     |            |          |                 | CAQ7-16                      | CAQ7-37            | ~              | ~           | ~              |
|                     |            |          |                 | CNX-205...206                | CNX-207...209      | CNX-212        | CNX-218     | ~              |
|                     |            |          |                 | CAN7-12                      | CAN7-30...37       | CA7-40-M...    | CAN7-72     | ~              |
|                     |            |          |                 | ~                            | CAL(V)7-20-M40     | CAL(V)7-30-M40 | ~           | CAL(V)7-60-M40 |
|                     |            |          |                 | Cat. No.                     | Cat. No.           | Cat. No.       | Cat. No.    | Cat. No.       |
| 12V                 | 12V        |          | 12B             | TA006                        | TC006              | TD006          | TE006       | TF006          |
| 12V                 |            |          | 12A             | TA404                        | TC404              | TD404          | TE404       | TF404          |
|                     | 24V        |          | 24B             | TA013                        | TC013              | TD013          | TE013       | TF013          |
| 24V                 |            |          | 24A             | TA407                        | TC407              | TD407          | TE407       | TF407          |
|                     |            | 24V      | 24Z             | TA855                        | TC855              | TD855          | TE855       | TF855          |
| 32V                 | 36V        |          | 36              | TA481                        | TC481              | TD481          | TE481       | TF481          |
| 36V                 |            |          | 36A             | TA410                        | TC410              | TD410          | TE410       | TF410          |
| 42V                 | 48V        |          | 48              | TA482                        | TC482              | TD482          | TE482       | TF482          |
| 48V                 |            |          | 48A             | TA414                        | TC414              | TD414          | TE414       | TF414          |
|                     |            | 48V      | 48Z             | TA860                        | TC860              | TD860          | TE860       | TF860          |
| 100V                | 100...110V |          | 110             | TA861                        | TC861              | TD861          | TE861       | TF861          |
| 110V                | 120V       |          | 120             | TA473                        | TC473              | TD473          | TE473       | TF473          |
|                     |            | 110V     | 110Z            | TA856                        | TC856              | TD856          | TE856       | TF856          |
| 120V                |            |          | 120A            | TA425                        | TC425              | TD425          | TE425       | TF425          |
| 127V                |            |          | 127             | TA428                        | TC428              | TD428          | TE428       | TF428          |
| 200V                | 200.. 220V | 200V     | 220             | TA862                        | TC862              | TD862          | TE862       | TF862          |
|                     | 208V       |          | 208             | TA049                        | TC049              | TD049          | TE049       | TF049          |
|                     | 208.. 240V |          | 220W            | TA296                        | TC296              | TD296          | TE296       | TF296          |
| 220V                | 240V       |          | 240             | TA474                        | TC474              | TD474          | TE474       | TF474          |
| 200V...230V         |            |          | 230A            | TA441                        | TC441              | TD441          | TE441       | TF441          |
|                     |            | 230V     | 230Z            | TA851                        | TC851              | TD851          | TE851       | TF851          |
| 230V...240V         |            |          | 240A            | TA440                        | TC440              | TD440          | TE440       | TF440          |
| 240V                | 277V       |          | 277             | TA480                        | TC480              | TD480          | TE480       | TF480          |
|                     |            | 240V     | 240Z            | TA858                        | TC858              | TD858          | TE858       | TF858          |
|                     | 347V       |          | 347             | TA065                        | TC065              | TD065          | TE065       | TF065          |
|                     | 380V       |          | 380B            | TA067                        | TC067              | TD067          | TE067       | TF067          |
| 380V...400V         | 440V       |          | 380             | TA071                        | TC071              | TD071          | TE071       | TF071          |
|                     |            | 400V     | 400Z            | TA863                        | TC863              | TD863          | TE863       | TF863          |
| 400V...415V         |            |          | 415             | TA457                        | TC457              | TD457          | TE457       | TF457          |
| 440V                | 480V       |          | 480             | TA475                        | TC475              | TD475          | TE475       | TF475          |
|                     |            | 440V     | 440Z            | TA859                        | TC859              | TD859          | TE859       | TF859          |
| 500V                |            |          | 500             | TA479                        | TC479              | TD479          | TE479       | TF479          |
| 550V                | 600V       |          | 600             | TA476                        | TC476              | TD476          | TE476       | TF476          |
| Price               |            |          |                 | 59                           | 84                 | 101            | 118         | 118            |


*CA7 A.C. coil (typical)*

① Other coil voltages available. Contact your Sprecher + Schuh representative for information.

② A.C. Codes in large, bold letters indicate coils that are standard stocked items.

③ AC and DC coils on CNX-xxx contactors are not interchangeable.

#### Renewal Coils - D.C. ①②⑦

| AC Control Voltages        | DC Coil Codes ② | True DC Replacement Coils ⑦ |                     |              | Two Winding DC Replacement Coils ⑥ |               |          |                 |              |
|----------------------------|-----------------|-----------------------------|---------------------|--------------|------------------------------------|---------------|----------|-----------------|--------------|
|                            |                 | For use with contactor...   |                     |              | For use with contactor...          |               |          |                 |              |
|                            |                 | CA7-9C(D)...16C(D)          | CA7-23C(D)...37C(D) | CA7-43C      | CA-9Y...16Y                        | CAY-23Y...37Y | CA7-43Y  | CA7-60D...85D ⑤ | ~            |
|                            |                 | CA7-9C(D)-M...16C(D)-M...   | CA7-23C(D)-M...     | CA7-43C(D)   | ~                                  | ~             | ~        | ~               | CA7-90D-M... |
|                            |                 | CAQ7-16C                    | CAQ7-37C            | CA7-40C-M... | ~                                  | ~             | ~        | ~               | ~            |
|                            |                 | CNX-205...206               | CNX7-207...209      | CNX7-212     | ~                                  | ~             | ~        | CNX7-218        | ~            |
|                            |                 | CAN7-12C                    | CAN7-37C            | ~            | ~                                  | ~             | ~        | CAN7-72D        | ~            |
|                            |                 | Cat. No.                    | Cat. No.            | Cat. No.     | Cat. No.                           | Cat. No.      | Cat. No. | Cat. No.        | Cat. No.     |
| 9V ③                       | 9D              | TA766                       | TC766               | TD766        | ~                                  | ~             | ~        | ~               | ~            |
| 9V Diode ③                 | 9DD             | ~                           | ~                   | ~            | TA766Y                             | TC766Y        | TD766Y   | TE766M          | TF766M       |
| 12V                        | 12D             | TA708                       | TC708               | TD708        | ~                                  | ~             | ~        | ~               | ~            |
| 12V Diode ③                | 12DD            | ~                           | ~                   | ~            | TA708Y                             | TC708Y        | TD708Y   | TE708M          | TF708M       |
| 24V ④                      | 24D             | TA714                       | TC714               | TD714        | ~                                  | ~             | ~        | ~               | ~            |
| 24V Diode ④③               | 24DD            | TA714M                      | TC714M              | TD714M       | TA714Y                             | TC714Y        | TD714Y   | TE714M          | TF714M       |
| 36V                        | 36D             | TA719                       | TC719               | TD719        | ~                                  | ~             | ~        | ~               | ~            |
| 36V Diode                  | 36DD            | ~                           | ~                   | ~            | TA719Y                             | TC719Y        | TD719Y   | TE719M          | TF719M       |
| 48V                        | 48D             | TA724                       | TC724               | TD724        | ~                                  | ~             | ~        | ~               | ~            |
| 48V Diode                  | 48DD            | ~                           | ~                   | ~            | TA724Y                             | TC724Y        | TD724Y   | TE724M          | TF724M       |
| 60V                        | 60D             | TA774                       | TC774               | TD774        | ~                                  | ~             | ~        | ~               | ~            |
| 60V Diode                  | 60DD            | ~                           | ~                   | ~            | TA774Y                             | TC774Y        | TD774Y   | TE774M          | TF774M       |
| 64V                        | 64D             | TA727                       | TC727               | TD727        | ~                                  | ~             | ~        | ~               | ~            |
| 64V Diode                  | 64DD            | ~                           | ~                   | ~            | TA727Y                             | TC727Y        | TD727Y   | TE727M          | TF727M       |
| 72V                        | 72D             | TA728                       | TC728               | TD728        | ~                                  | ~             | ~        | ~               | ~            |
| 72V Diode                  | 72DD            | ~                           | ~                   | ~            | TA728Y                             | TC728Y        | TD728Y   | TE728M          | TF728M       |
| 80V                        | 80D             | TA729                       | TC729               | TD729        | ~                                  | ~             | ~        | ~               | ~            |
| 80V Diode                  | 80DD            | ~                           | ~                   | ~            | TA729Y                             | TC729Y        | TD729Y   | TE729M          | TF729M       |
| 110V                       | 110D            | TA733                       | TC733               | TD733        | ~                                  | ~             | ~        | ~               | ~            |
| 110V Diode                 | 110DD           | ~                           | ~                   | ~            | TA733Y                             | TC733Y        | TD733Y   | TE733M          | TF733M       |
| 115V                       | 115D            | TA734                       | TC734               | TD734        | ~                                  | ~             | ~        | ~               | ~            |
| 115V Diode                 | 115DD           | ~                           | ~                   | ~            | TA734Y                             | TC734Y        | TD734Y   | TE734M          | TF734M       |
| 125V                       | 125D            | TA737                       | TC737               | TD737        | ~                                  | ~             | ~        | ~               | ~            |
| 125V Diode                 | 125DD           | ~                           | ~                   | ~            | TA737Y                             | TC737Y        | TD737Y   | TE737M          | TF737M       |
| 220V                       | 220D            | TA747                       | TC747               | TD747        | ~                                  | ~             | ~        | ~               | ~            |
| 220V Diode                 | 220DD           | ~                           | ~                   | ~            | TA747Y                             | TC747Y        | TD747Y   | TE747M          | TF747M       |
| 230V                       | 230D            | TA749                       | TC749               | TD749        | ~                                  | ~             | ~        | ~               | ~            |
| 230V Suppres.              | 230DS           | ~                           | ~                   | ~            | TA749Y                             | TC749Y        | TD749Y   | TE749M          | TF749M       |
| 250V                       | 250D            | TA751                       | TC751               | TD751        | ~                                  | ~             | ~        | ~               | ~            |
| 250V Suppres.              | 250DS           | ~                           | ~                   | ~            | TA751Y                             | TC751Y        | TD751Y   | TE751M          | TF751M       |
| Price (coil without diode) |                 | 92                          | 126                 | 160          | ~                                  | ~             | ~        | ~               | ~            |
| Price (coil with diode)    |                 | 134                         | 168                 | 202          | 134                                | 168           | 202      | 235             | 235          |

**Note:** The “DD” coils listed above include an integrated bi-directional diode. Drop out time of this design is significantly improved when compared to an external diode. See ratings on page A48.



True DC coil (typical)



Two Winding DC coil (typical) ⑥

- ① Other coil voltages available. Contact your Sprecher + Schuh representative for information.
- ② DC Codes in large, bold letters indicate coils that are standard stocked items.
- ③ Voltage operating range:  $0.65 \dots 1.3 \times U_s$ .
- ④ Voltage operating range:  $0.7 \dots 1.25 \times U_s$ .
- ⑤ CA7-60D...85D contactors have a two winding coil with built-in late break auxiliary contact and coil suppression.
- ⑥ CA7-9Y...43Y two winding coils are sold for renewal parts only and are not interchangeable with standard CA7-9...43 AC coil contactors or CA7-9C...43C true DC coil contactors. CA7-9Y...43Y contactors should be tested following a coil swap to insure functionality of the timed auxiliary contact.
- ⑦ AC and DC coils on CNX-xxx contactors are not interchangeable.
- ⑧ “DD” coils with integrated surge suppression diode fit CA7-xxD contactors.