

# Series CA8 Contactors and CAT8 Starters

## An ingenious miniature contactor and starter system

Sprecher + Schuh's CA8 Series of miniature contactors and starters provide an extremely compact and reliable method of controlling motors of 7.5 HP or less (@460V). The CA8 is an economical choice for applications where space is limited or where a minimal enclosure is desired.

### Small but rugged

Even though their contacts and coils are not replaceable, Sprecher + Schuh has subjected this series of contactors to monitored endurance tests that demonstrate their ruggedness. At full load, under 3-phase power, the contacts in the CA8 have an electrical life of 700,000 operations, while the AC magnet system has a mechanical life of 15,000,000 operations.



### The CAT8 Starter – Efficient and reliable

This miniature starter features the new CT8 Thermal Overload Relay. A complex current limiting calibration procedure performed after each unit ensures the consistent high quality of Sprecher + Schuh's thermal overload relay. Today's Class 10 T-frame design, like the CT Series, has been recognized by many motor manufacturers as the ideal type to assure optimum motor protection due to less use of copper and iron.



*CAT8 starters feature  
the CT8 thermal overload.*

### Accessories require no additional panel space

The entire CA8 System is logically engineered. Modular accessories like auxiliary contact blocks snap-on without increasing the CA8's original width of 45mm. Also, due to its horizontal switching movement, the basic contactor has the same low profile whether an AC or DC operating magnet is used. This permits the use of enclosures with shallow mounting depths. Once the CA8 is installed,



all auxiliary contact blocks can be snapped-on or removed without changing any existing power wiring. Other accessories include a snap-on RC Link (surge suppressor), mechanical interlocks and space saving adaptors for connecting auxiliary components.

### Effortless installation

Both the CA8 Contactor and the CAT8 Starter are DIN-rail mountable for instant installation and modification. Fittings are also included on the CA8 for base mounting. All terminals are clearly marked and shipped in the open position for installation with either manual or power screwdrivers.



45mm  
(=1 7/16)



9A  
12A

**Series CA8 Miniature Contactors, Starters, Overloads & Industrial Relays**

- ✓ Rated 690V
- ✓ RoHs Compliant
- ✓ Conforming to U.S., Canadian, and IEC Standards
- ✓ Same Dimensions for AC and DC



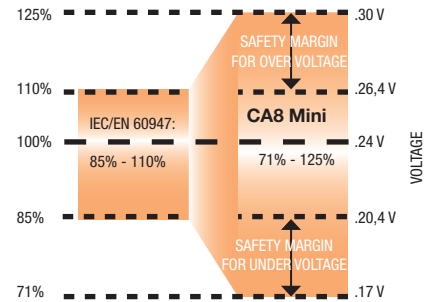
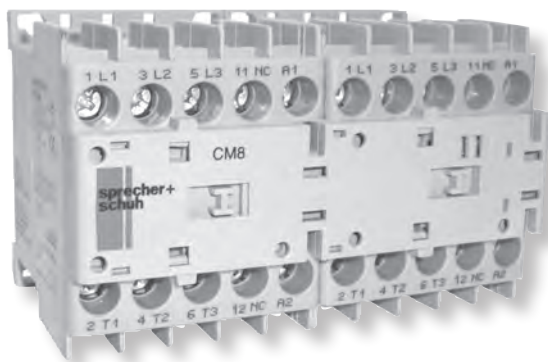
**Pluggable Surge Suppressor Modules**

- Suppressor modules are simply plugged on the front of the contactors, next to the auxiliary contact blocks.
- No wiring required.
- Fast and easy installation.



**Auxiliary Contact Reliability**

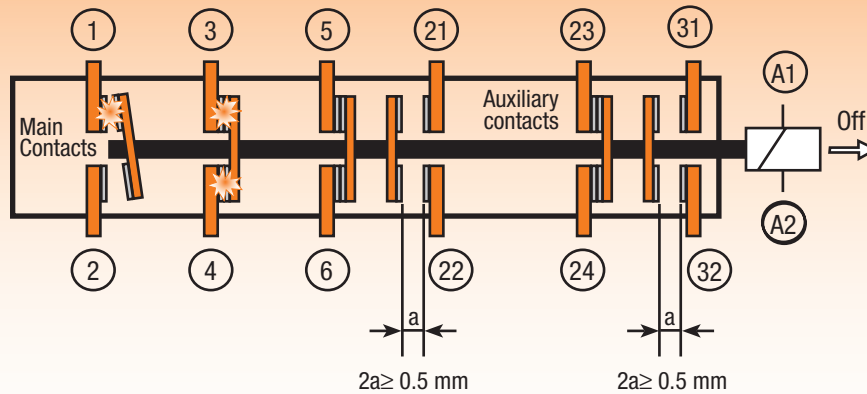
- Bifurcated, AgNi (silver/nickel) plated contacts for high contact reliability for 15V/2 mA electronic signals.
- H-shaped self cleaning auxiliary contacts provide a 4-way current path ensure high contact reliability for low energy switching.



### High Performance AC & DC Coils

- Wide range DC coils can provide reliability in case of over- and under-voltage, a common issue with battery-fed control power supply systems.
- The low coil consumption allows the contactors to be directly controlled via a PLC.
- Optional, integral factory-installed surge suppressor modules for AC and DC for limiting coil switching transients.

#### MIRROR AND MECHANICALLY LINKED DESIGN



### All Around Safety

- CA8: mechanically linked performance between main contacts and internal auxiliary contacts. This feature provides status feedback in the event of a contact weld.
- CA8/Auxiliary contacts: mirror contact between main and auxiliary contacts as per IEC 60947-4-1 prevent any unclear status indications if a N.O. power pole welds.

#### Non-Reversing, Three Pole Contactors With AC Coil, Series CA8 (Open type only) ①

$I_e$ [A]	Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type
	3 Ø kW (50 Hz)				UL/CSA HP (60 Hz)								
					1 Ø		3 Ø				NO	NC	
40°C													
AC-1	230V	400V 415V	500V	690V	115V	230V	200V	230V	460V	575V			
20	3	4	4	4	1/2	1-1/2	2	2	5	5	1	0	CA8-09-10-*
											0	1	CA8-09-01-*
20	3	5.5	5.5	5.5	3/4	2	3	3	7-1/2	7-1/2	1	0	CA8-12-10-*
											0	1	CA8-12-01-*



CA8-09-10 contactor

#### Non-Reversing, Three Pole Contactors With DC Coil, Series CA8 (Open type only) ①②

$I_e$ [A]	Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type
	3 Ø kW (50 Hz)				UL/CSA HP (60 Hz)								
					1 Ø		3 Ø				NO	NC	
40°C													
AC-1	230V	400V 415V	500V	690V	115V	230V	200V	230V	460V	575V			
20	3	4	4	4	1/2	1-1/2	2	2	5	5	1	0	CA8-09C-10-*
											0	1	CA8-09C-01-*
20	3	5.5	5.5	5.5	3/4	2	3	3	7-1/2	7-1/2	1	0	CA8-12C-10-*
											0	1	CA8-12C-01-*

#### AC Coil Codes ①③

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
12	12V	12V
24Z	24V	24V
48	48V	48V
120	110V	120V
208	200V-220V	200V-220V
240	240V	240V
380 ⑤	Use Coil Code 400	
400 ⑥	400V	400V
480	440V	480V
575 ⑥	Use Coil Code 600	
600 ⑥	525V	600V

#### DC Coil Codes ①③










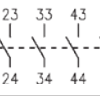
DC Coil Code	Voltage
12D	12V
24D	24V ④
48D	48V
110D	110V
125D	125V
220D	220V


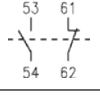
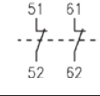
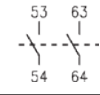
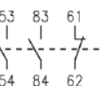
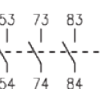

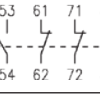
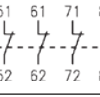
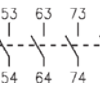
#### Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	See Coil Codes on this page

- ① CA8 not available without coil. Coils and contacts not replaceable.
- ② Select Coil Code from DC Coil Code table only.
- ③ The coil codes shown are the most commonly stocked items. Contact your Sprecher + Schuh representative to determine if special voltages, are required.
- ④ Integrated diode surge suppressor coils available. Order coil code **24DD** and add \$42 to list price. Ex: CA8-09C-10-**24D** becomes CA8-09C-10-**24DD**.
- ⑤ The European Community has agreed that 400V is the nominal voltage in lieu of 380V. Use this code when 380V is required.
- ⑥ Use this code for 575V applications.

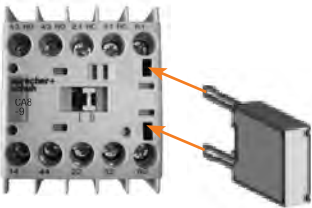






**Auxiliary Contact Blocks (2 & 4 Pole) ①**

Auxiliary Contact Blocks	NO	NC	Contact Arrangement	Catalog No.
 2-Pole  Typical auxiliary contact block	1	1		CA8-P11
	0	2		CA8-P02
	2	0		CA8-P20
	2	2		CA8-P22
	3	1		CA8-P31
 4-Pole	1	3		CA8-P13
	0	4		CA8-P04
	4	0		CA8-P40

Auxiliary Contact Blocks	NO	NC	Contact Arrangement	Catalog No.
 2-Pole  Typical auxiliary contact block	1	1		CS8-P11E
	0	2		CS8-P02E
	2	0		CS8-P20E
	2	2		CS8-P22Z
	3	1		CS8-P31Z
 4-Pole	1	3		CS8-P13E
	0	4		CS8-P04E
	4	0		CS8-P40E

① Auxiliary contacts mirror contact performance per IEC 60947-4-1. Contacts are bifurcated (H-bridge) with a minimum rating of 2mA @ 15V.

#### Miscellaneous Accessories

Accessory	Description	Catalog Number
	<p><b>Surge Suppressor CR_8</b> - for limiting voltage spikes when switching off coil. Coil itself provides sufficient limitation at voltages over 240V.</p> <p>RC Link (Type CRC8...) for AC Control            24-48VAC            110-280VAC            380-480VAC</p>	<p><b>CRC8-50</b>  <b>CRC8-280</b>  <b>CRC8-480</b></p>
	<p>Diode Link (Type CRD8...) for DC Control ❶            12-250VDC (diode)</p>	<p><b>CRD8-250</b></p>
	<p>Varistor Link (Type CRV8...) for AC/DC Control            12-55VAC/12-77VDC            56-136VAC/78-180VDC            137-277VAC/181-250VDC</p>	<p><b>CRV8-55</b>  <b>CRV8-136</b>  <b>CRV8-277</b></p>
	<p><b>Mechanical Interlock Kit</b> -            For interlocking of two adjacent contactor            – without additional space requirement in width            – attachable from the front (top) of contactor            – optional auxiliary contact blocks can be mounted on the top (does not interfere with mounting CR_8)</p>	<p><b>CM8</b></p>
	<p><b>Wiring Kit</b> -            For connecting line, load and control wiring of a CAU8 reversing contactor.            – works with CT8 Overloads</p>	<p><b>CAUT8-PW</b></p>
	<p><b>Connection Modules</b> -            For KTA7 motor circuit controller with a CA8 contactor.</p>	<p><b>KT7-25S-PEK12</b></p>
	<p><b>Feeder Terminal for Compact Bus Bars</b> -            Supply of compact bus bars.            For use with CA8-09 and 12.</p>	<p><b>CA8-WT</b></p>
	<p><b>Three-Phase Compact Bus Bars</b> -            For use with CA8-09 and 12 Contactors with 45 mm spacing. (3 connections)</p>	<p><b>CA8-W453</b></p>
	<p><b>Three-Phase Compact Bus Bars</b> -            For use with CA8-09 and 12 Contactors with 45 mm spacing. (4 connections)</p>	<p><b>CA8-W454</b></p>

❶ CA8 contactors with 24 VDC coils can be special ordered with integrated diodes (built-in) rather than applying CRD8 to the coil terminals.

**CAT8 Starters with CT8 Thermal Overload Relay**

For use with contactor....	Amp Range	Overload Relay Code (◆)	Catalog Number (of Overload Relay used)	Price Adder
<b>CT8 Thermal Overload Relay, 1 or 3-Phase, Auto/Manual, Class 10</b>				
CA8-09	0.10...0.16	8A16	CT8-A16	Standard
	0.16...0.25	8A25	CT8-A25	Standard
	0.25...0.4	8A40	CT8-A40	Standard
	0.35...0.5	8A50	CT8-A50	Standard
	0.45...0.63	8A63	CT8-A63	Standard
	0.55...0.8	8A80	CT8-A80	Standard
	0.75...1.0	8B10	CT8-B10	Standard
	0.90...1.3	8B13	CT8-B13	Standard
	1.10...1.6	8B16	CT8-B16	Standard
	1.4...2.0	8B20	CT8-B20	Standard
	1.8...2.5	8B25	CT8-B25	Standard
	2.3...3.2	8B32	CT8-B32	Standard
	2.9...4.0	8B40	CT8-B40	Standard
	3.5...4.8	8B48	CT8-B48	Standard
4.5...6.3	8B63	CT8-B63	Standard	
5.5...7.5	8B75	CT8-B75	Standard	
CA8-09 or 12	7.2...10	8C10	CT8-C10	Standard
CA8-12	9.0...12.5	8C12	CT8-C12	Standard

**Obsolete Contactors Cross Reference, Series CA4 to Series CA8 (Open Type Only)**

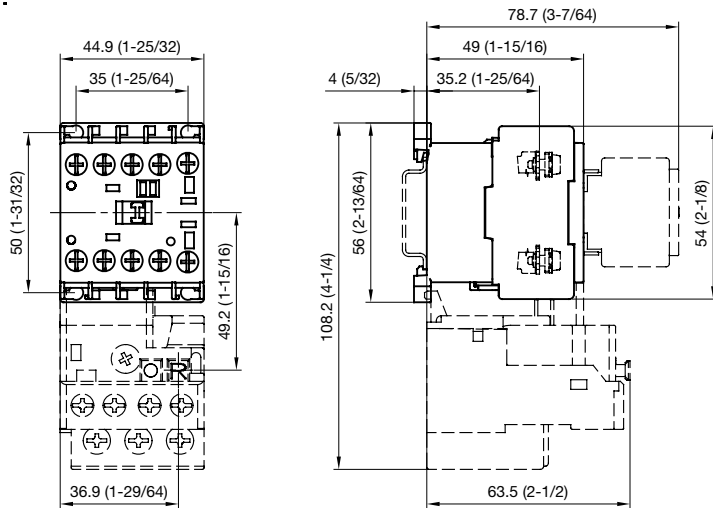
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		kW (50 Hz)			UL/CSA HP (60 Hz)									
		230V	400V	500V	1 Ø			3 Ø						
115V	230V				200V	230V	460V	575V						
AC-3	AC-1	3	4	4	1/2	1-1/2	2	2	5	5	1	0	CA4-9-10	
											0	1	CA4-9-01	
~	20	3	4	4	1/2	1-1/2	2	2	5	5	1	0		CA8-09-10
											0	1		CA8-09-01
12	20	3	5.5	4	1/2	2	3	3	7-1/2	10	1	0	CA4-12-10	
											0	1	CA4-12-01	
~	20	3	5.5	5.5	3/4	2	3	3	7-1/2	7-1/2	1	0		CA8-12-10
											0	1		CA8-12-01



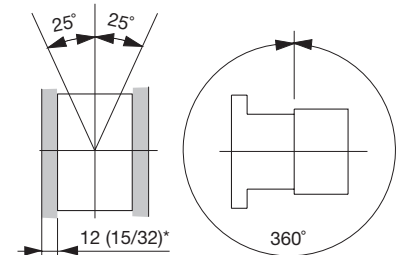
CA4-9-10 Contactor

**Series CA8 & Series CAU8 (Contactors & Reversing Contactors)**

Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.

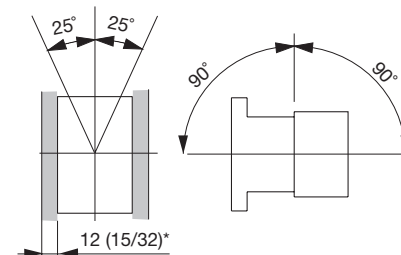


**Mounting Position without Accessories**



\* Minimum distance to grounded parts or walls

**Mounting Position with Accessories**



\* Minimum distance to grounded parts or walls

**Reversing Contactors & Accessories**

Contactor with...	Dim. [mm]	Dim. [inches]
reversing with mechanical interlock	89.8	3.53
with aux. contact block	78.7	3.1
with timer		
on contactor	81.7	3.25
at side of contactor	66.9	2.63
with neutral terminal		
at side of contactor	64.9	2.56
with protection element		
with nameplate	51	2