

# Series CA7 Special Use Contactors

Contactors designed and labeled for specific industrial applications



## Special Use Contactors

Hydraulic elevator duty contactors

HVAC rated contactors

Lighting contactors

NEMA size labeled contactors

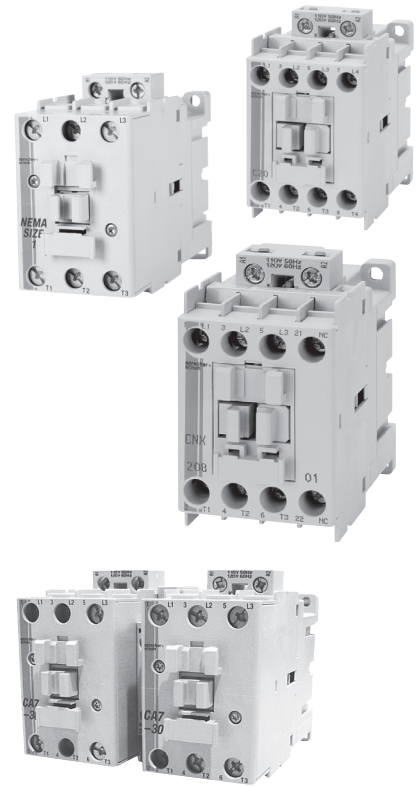
The CA7 line includes a number of contactors designed and labeled for specific industrial applications. In most cases, these devices are UL and CSA approved for these specialized uses. Where appropriate, contactors also carry approval by specific industry associations such as ARI (Air Conditioning and Refrigeration Institute).

## 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 CT7N 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 NEMA size labeled contactors

CAN7 contactors are UL Listed in accordance with NEMA standards publication ICS-2. CAN7 contactors are UL labeled for application under IEC KW, as well as NEMA Size, for specified horsepower at various voltages. CAN7 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 NEMA sized contactors may be combined with all Sprecher + Schuh overload relays to make a NEMA sized starter.



## Hydraulic Elevator Wye-Delta Contactors

Most industrial wye-deltas consist of three contactors with interlocks but Hydraulic Elevators are a special application. Hydraulic Elevator wye-deltas consist of a pair of mechanically linked contactors with sufficient auxiliaries for electrical interlocks. The wye-delta is similar to a reversing contactor but the power wiring is different. We offer Hydraulic Elevator contactors with a choice of power wiring inter-connections for ease of installation, or without power wiring inter-connections, allowing the elevator serviceman to make use of the existing power cables. This convenient selection of a complete assembly saves time and effort in the field.

**Non-Reversing, Three Pole Special Purpose Contactors With AC Coil (Open type only) ①**

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



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 ②**

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
220W	200-220V	208-240V
230Z	230V	230V
277	240V	277V
415	400-415V	~
480	440V	480V
600	550V	600V

**Ordering Instructions**

Specify Catalog Number	
Replace (*) with Coil Code	<b>See Coil Codes on this page.</b>

- ① All CNX contactors listed here are ARI (Air Conditioning and Refrigeration Institute) approved.
- ② Other voltages available, see page A56.
- ③ Reference page A77 for Operation Life Data.

### Non-Reversing, Three Pole NEMA Labeled Contactors with AC Coil ①

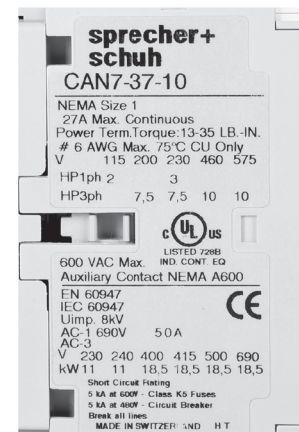
NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower						Standard Auxiliary Contacts		Catalog Number
		1Ø		3Ø				NO	NC	
		115V	230V	200V	230V	460V	575V			
00	~	1/3	1	1-1/2	1-1/2	2	2	1	0	CAN7-12-10-*
0	18	1	2	3	3	5	5	1	0	CAN7-16-10-*
1	27	2	3	7-1/2	7-1/2	10	10	1	0	CAN7-37-10-*
2	45	3	7-1/2	10	15	25	25	1	0	CAN7-43-10-*
3	90	7-1/2	15	25	30	50	50	1	0	CAN7-85-10-*



CAN7 NEMA1 labeled contactor (AC)

#### 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. See page A56 for CAN7 coils.
- Snap-on auxiliary contact blocks available in many configurations. See pages A47-A48.
- Available as open units or in Type 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 C52.



#### CAN7 AC Coil Codes ②

CAN7-12...85		
AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
220W	200-220V	208-240V
230Z	230V	230V
277	240V	277V
415	400-415V	~
480	440V	480V
600	550V	600V

#### Ordering Instructions

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

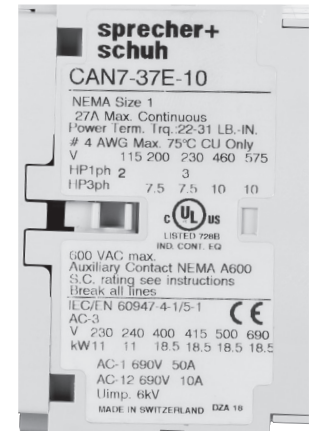
- ① Refer to page A85 for CAN7 dimensional information.
- ② Other voltages available, see page A56 for other coil voltage.

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

NEMA Size	Continuous Ampere Rating [A]	Maximum Horsepower						Standard Auxiliary Contacts		Catalog Number
		1Ø		3Ø				NO	NC	
		115V	230V	200V	230V	460V	575V			
00	~	1/3	1	1-1/2	1-1/2	2	2	1	0	CAN7-12E-10-❶❷
0	18	1	2	3	3	5	5	1	0	CAN7-16E-10-❶❷
1	27	2	3	7-1/2	7-1/2	10	10	1	0	CAN7-37E-10-❶❷
2	45	3	7-1/2	10	15	25	25	1	0	CAN7-43E-10-❶❷
3	90	7-1/2	15	25	30	50	50	2	1	CAN7-85D-10-❶



CAN7 NEMA1 labeled contactor (24V Electronic DC shown)



#### 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 A57 for CAN7 DC coils.
- Snap-on auxiliary contact blocks available in many configurations. See pages A47-A48.
- Available as open units or in Type 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 C52.

#### CAN7 Electronic DC Coil Codes ❸❹

CAN7-12E...43E	
DC Coil Code	Voltage Range
12E	12V
24E	24V
36E ❸	36-48V
48E ❸	48-72V
110E ❸	110-125V
220E ❸	220-250V

#### CAN7 DC Coil Codes with integrated Diode ❺

CAN7-85D	
DC Coil Code	Voltage Range
24DD	24V
110DD	110V

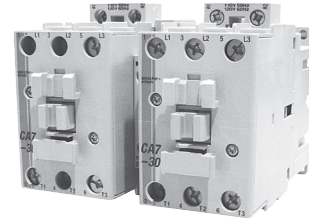
#### Ordering Instructions

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

- ❶ Refer to page A86-A87 for CAN7 dimensional information.
- ❷ Other voltages available, see page A57 for other coil voltage.
- ❸ CAN7-12E...43E electronic coils are not interchangeable with non-electronic DC or AC coils.
- ❹ Voltages of 36V DC and greater are supplied with backpack module standard. See page A86.
- ❺ Not applicable with Electronic Timer accessories (CRZ\_7).

#### Hydraulic Elevator Wye Delta, with AC Coils (Two Contactor Type ①)

Maximum Horsepower Three Phase				Auxiliary Contacts per Contactor		Open Type
200V	230V	460V	575V	NO ④	NC ⑤	Catalog No.
10 7.5	15 7.5	30 20	30 20	0 1	1 1	CA7Y2-30-02-*-LW CA7Y2-30-22-*-LW
15 7.5	20 10	40 20	40 25	0 1	1 1	CA7Y2-37-02-*-LW CA7Y2-37-22-*-LW
20 10	25 10	50 25	50 30	0 1	1 1	CA7Y2-43-02-*-LW CA7Y2-43-22-*-LW
25 10	30 15	60 30	60 40	0 1	1 1	CA7Y2-55-02-*-LW CA7Y2-55-22-*-LW
30 10	40 15	75 30	75 40	0 1	1 1	CA7Y2-60-02-*-LW CA7Y2-60-22-*-LW
40 15	50 20	100 40	100 50	0 1	1 1	CA7Y2-72-02-*-LW CA7Y2-72-22-*-LW
50 20	60 25	125 50	125 60	0 1	1 1	CA7Y2-85-02-*-LW CA7Y2-85-22-*-LW
50 25	60 30	125 60	125 75	0 1	1 1	CA7Y2-97-02-*-LW CA7Y2-97-22-*-LW



CA7Y2-30 Wye-Delta contactor

#### Includes:

- Line side coil terminations
- Mechanical and electrical Interlocks ②
- CA7Y2-60...97 include a back pan

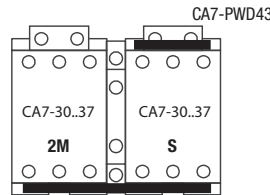
#### Optional:

- Power Wiring available but not included (see page A55) ①⑦
- Elevator controllers often require additional auxiliary contacts. ③

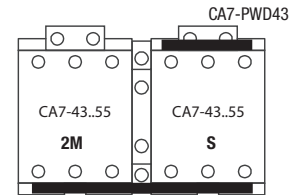
#### HP Selection

Industrial Application ⑥	UL/CSA Elevator Duty ⑥
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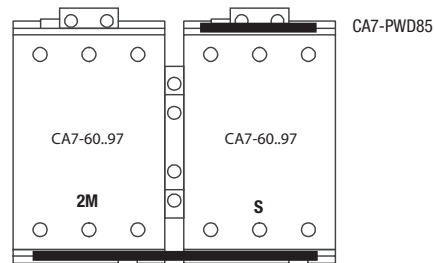
Larger sizes available. Contact your Sprecher + Schuh representative.



CA7-PWLM37M



CA7-PWLM55M



CA7-PWLM85M

#### Coil Codes ④

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
220W	200-220V	208-240V
230Z	230V	230V
277	240V	277V
415	400-415V	~
480	440V	480V
600	550V	600V

#### Ordering Instructions

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

① For Contactors *with* power wiring change catalog number suffix “-LW” to “-PW”. Price addition applies. For example CA7Y2-30-22-\*-LW becomes CA7Y2-30-22-\*-PW.

NOTE: CA7Y2-30...55-22-\*-PW do not include a backpan.

② The NC auxiliary contacts are supplied as part of the mechanical interlock (Cat.# CM7-02) and are used to electrically interlock the contactors.

③ The NO auxiliary contacts supplied are side mounted. Top mount NO auxiliary contacts must be special ordered. Contact your Sprecher+Schuh representative.

④ Other voltages available, see page A56.

⑤ HP selection based on UL508 for Industrial Applications.

⑥ HP selection based on UL/CSA Elevator Duty Ratings.

⑦ See typical Wye-Delta Wiring Diagram on page C117.

# Series CAL7 Lighting Contactors

## Compact contactors for North American lighting applications



Sprecher + Schuh CA7 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

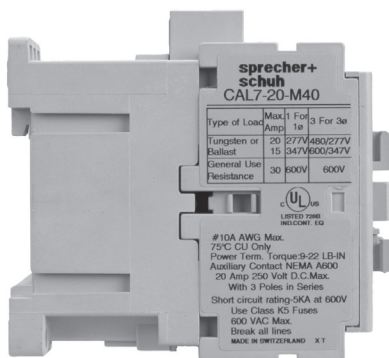
### In application...

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.



CAL7-20...60 are labeled and UL approved for lighting applications



### Electrically held contactors

Electrically held contactors are available 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.

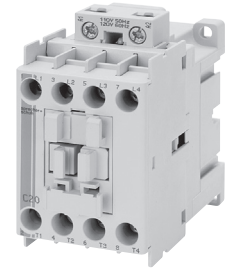
### Mechanically held contactors

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 ④⑤

Type of Load	Continuous Ampere Rating ③	Max. AC Volts, Poles to Load		# of Poles	Standard Auxiliary Contacts		Holding Type	Open Type Catalog Number
		1 for 1Ø	3 for 3Ø		NO	NC		
Tungsten or Ballast General	20	277	480Y/277V	4	0	0	Electrical	<b>CAL7-20-M40-*</b>
	15	347	600Y/347V					<b>CAVL7-20-M40-*-L10 ①</b>
	30	600	600					
Tungsten or Ballast General	30	277	480Y/277V	4	0	0	Electrical	<b>CAL7-30-M40-*</b>
	25	347	600Y/347V					<b>CAVL7-30-M40-*-L10 ①</b>
	37	600	600					
Tungsten or Ballast General	60	277	480Y/277V	4	0	0	Electrical	<b>CAL7-60-M40-*</b>
	55	347	600Y/247V					<b>CAVL7-60-M40-*-L10 ①</b>
	85	600	600					

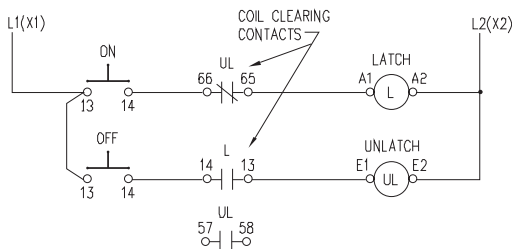
Larger sizes available. Contact your Sprecher + Schuh representative. See catalog page C44 for enclosed lighting contactors.



**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.

#### 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.



#### CA(L)7 Coil Codes ②

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
220W	200-220V	208-240V
230Z	230V	230V
277	240V	277V
415	400-415V	~
480	440V	480V
600	550V	600V

#### Ordering Instructions

Specify Catalog Number	
Replace (*) with Coil Code	<b>See Coil Codes on this page.</b>

- ① The N.O. auxiliary on the mechanical latch is used by the control circuit and is not available to the customer for other uses.
- ② Other voltages available, see page A56.
- ③ Engineering practice permits  $2.5 \times I_n$  to be applied to a contactor when 3 poles are connected in parallel for single phase discharge lamp (ballast lighting) applications. For example 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.
- ④ Lighting contactor applications greater than 4-poles can be achieved. Contact Sprecher + Schuh representative for assistance.
- ⑤ Definite Purpose Contactors can also be used in Lighting Contactor applications. See page A183.