

DATE: 2/03/2020

INVITATION TO BID  
THIS IS NOT AN ORDER

Page: 4

BID NO.: 50-00129644

**JEFFERSON PARISH**

PURCHASING DEPARTMENT  
P.O. BOX 9  
GRETNA, LA. 70054-0009  
504-364-2678

VENDOR:

BUYER: DABRAHAM

As per LSA-RS 47:301 et seq., all governmental bodies are excluded from payment of sales taxes to any Louisiana taxing body. Quotations shall be based on F.O.B. Agency warehouse or jobsite, anywhere within the Parish as designated by the Purchasing Department.

JEFFERSON PARISH reserves the right to cancel all or any part of an order if not shipped promptly. No charges will be allowed for parking or cartage unless specified in quotation. The order must not be filled at a higher price than quoted. JEFFERSON PARISH reserves the right to cancel at any time and for any reason by issuing a THIRTY (30) day written notice to the contractor.

JEFFERSON PARISH is expecting all products to be new and all work to be done in workman-like manner, according to standard practices. Any deviations or alteration from the specifications must be indicated on the bid form for each item and upon request, product data for same must be submitted by the time specified by the Purchasing Department.

**DELIVERY: FOB JEFFERSON PARISH**

INDICATE DELIVERY DATE ON EQUIPMENT AND SUPPLIES

7-10 DAYS ARO

INDICATE STARTING TIME (IN DAYS) FOR CONSTRUCTION WORK

INDICATE COMPLETION TIME (IN DAYS) FOR CONSTRUCTION WORK

In the event that addenda are issued with this bid, bidders MUST acknowledge all addenda on the bid form. Bidder must acknowledge receipt of an addendum on the bid form as indicated. Failure to acknowledge any addendum on the bid form will result in bid rejection.

Acknowledge Receipt of Addenda: NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

NUMBER: \_\_\_\_\_

LOUISIANA CONTRACTOR'S LICENSE NO.: (if applicable) \_\_\_\_\_

<b>*** ALL BIDDERS MUST COMPLETE SECTION BELOW ***</b>	
FIRM NAME: <u>INDUSTRIAL COMMERCIAL MOTORS &amp; CONTROLS</u>	
SIGNATURE: <u>William Pappas</u> (Must be signed here)	TITLE: <u>PRESIDENT</u>
PRINT OR TYPE NAME: <u>William Pappas</u>	
ADDRESS: <u>PO BOX 1842</u>	
CITY, STATE: <u>MAHODOVILLE, LA.</u>	ZIP: <u>70470</u>
TELEPHONE: <u>( ) 504 415-7288</u>	FAX: <u>( ) 985 727-7725</u>
EMAIL ADDRESS: <u>WPAPPAS@ICMCLLC.COM</u>	

TOTAL PRICE OF ALL BID ITEMS: \$ 5,130.00

## INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00129644

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
			A purchase of electrical stock items for the Public Works Warehouse		
1	1.00	EA	0010 - PAN, METER, COMMERCIAL, 200 AMPERES, 3 PHASE OH/UG 7 JAW, 4 WIRE,  T AND B TB2072-HO/HLO, LANDIS BRAND NO. 40407-025 SK NUMBER 00-0874550	NO BID	
2	12.00	EA	0020 - CHANNEL, FRAMING, STAINLESS STEEL NO. 316, NO HOLES, 1-5/8 IN. X  1-5/8 IN. X 10 FT., B-LINE NO. B22SS610 SK NUMBER 00-087890F	NO BID	
3	2.00	EA	0030 - CAP, SERVICE ENTRANCE, 2 IN., ALUMINUM, CLAMP TYPE, PECO NO. 175  SK NUMBER 00-0880300	NO BID	
4	4.00	EA	0040 - MOTOR, 7.5 HORSEPOWER, 1740 RPM, 230/460V, NEMA 213T, TEFC,  3 PHASE, ALL CAST IRON, HOSTILE DUTY, US MODEL NO. EL16, TECHTOP NO. GR3-CI-TF-213T-4-B-D-7.5 OR EQUAL SK NUMBER 00-0891200 QUOTING TECHTOP	479 <sup>00</sup>	1,916.00
5	2.00	EA	* 0050 - STARTER, SIZE 2, 120 VOLT, WITH BASE AND TYPE B OVERLOAD RELAY, NEW  IN FACTORY BOX, CUTLER-HAMMER/ WESTINGHOUSE NO. A200M2CAC SK NUMBER 00-0861610 CATN7-43-120-EFD	429 <sup>00</sup>	858.00
6	4.00	EA	* 0060 - STARTER, SIZE 3, 3 POLE, 120 VOLT COIL, NEW IN FACTORY BOX,  FURNAS/SIEMENS NO. 14HUG32AA SK NUMBER 00-0861700 CATN7-85-120-EVE	589 <sup>00</sup>	2,356.00
7	20.00	EA	0070 - CONNECTOR, FEMALE PLUG, 2 POLE 3 WIRE, GROUND, 20 AMP, 125 VOLT,  DANIEL WOODHEAD NO. 1533 SK NUMBER 00-0881030	NO BID	
8	6.00	EA	0080 - COUPLING, CONDUIT, RIGID, THREE PIECE, 3/4 IN., APPLETON NO. EC-75 SK NUMBER 00-0878750  DELIVER TO:  * QUOTING - SPRECHER & SCHUH SPEC SHEETS ATTACHED	NO BID	

DATE: 2/03/2020

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INVITATION TO BID FROM JEFFERSON PARISH - continued

BID NO.: 50-00129644

SEALED BID

ITEM NUMBER	QUANTITY	U/M	DESCRIPTION OF ARTICLES	UNIT PRICE QUOTED	TOTALS
			<p>PUBLIC WORKS WAREHOUSE 1500 RIVER PARK RD. BRIDGE CITY, LA 70094 ATTN: MARK MCDONALD</p>		

# NEMA Sized Open and Enclosed Non-Combination Motor Starters

Built to your specifications and ready to install

Sprecher + Schuh magnetic motor starters are intended to eliminate the purchase and assembly of a separate contactor, overload relay and associated wiring. When purchased with an enclosure, the starters are mounted and ready to install on receipt.

## Starting with the best

At the heart of all Sprecher + Schuh NEMA sized magnetic motor starters is the CATN7 line of motor starters. Each starter proudly displays the NEMA size (00, 0, 1, 2, or 3) and HP at applied voltage. This line of starters is designed to meet rigid consultant specifications for NEMA starters.

## Top line protection...

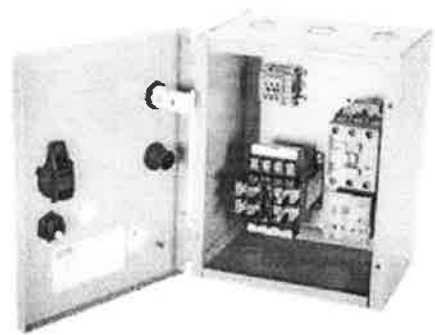


NEMA labeled magnetic starters are equipped with Sprecher + Schuh's premium CEP7 solid state overload relay standard. Unlike traditional overload relays that indirectly sense motor current through heater elements, CEP7 solid state overload relays measure motor current directly through integrated current transformers and on board electronics. The electronics provide numerous advantages over electromechanical relays. Alternatively, the CT7N Thermal Overload Relay may also be selected.

## The right enclosure... whatever the application

Sprecher + Schuh's line of NEMA style starters can be purchased pre-installed in a variety of standard enclosures. Cataloged enclosures include:

<b>Type 1</b>	General Purpose
<b>Type 12</b>	Industrial Dusttight
<b>Type 3R</b>	Raintight (outdoor)
<b>Type 4</b>	Watertight
<b>Type 4X</b>	Watertight, Corrosion Resistant



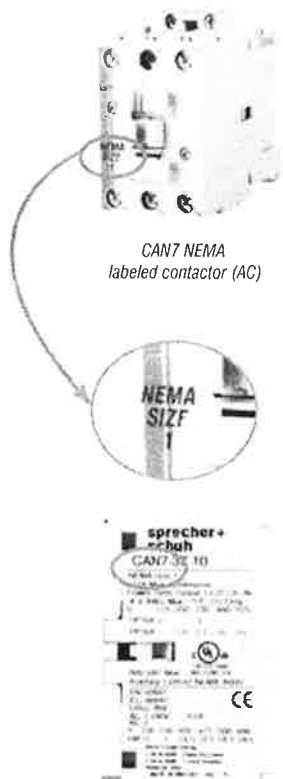
Even though these are the most popular enclosure types for most industrial applications, we can house any starter in a custom enclosure of your choosing.

## Quality enclosures ensure the highest confidence

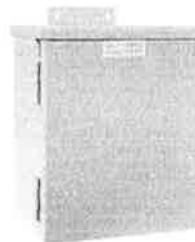
Sprecher + Schuh only sources enclosures from name brand manufacturers, ensuring the highest quality. We primarily use enclosures that meet UL Standards, i.e., Type 1, Type 3R, etc., however, we can also source other enclosures at your request. Enclosures are sized first to accommodate the depth of the contactor and offer sufficient electrical clearances to satisfy UL.

## Add a variety of modifications

If you need a larger enclosure than what is specified in our catalog, your sales representative and our Engineering department will work with you to customize any of our enclosed products to suit your exact specifications. Any combination of enclosure types, sizes, pilot devices, meters and other modifications can be combined to provide exactly the panel you need.



Type 1



Type 3R



Type 4



Type 4X

# CEP7 Solid State Overload Relays

**B**  
CEP7 Overloads

## Advanced solid state motor protection

The CEP7 solid state overload relay includes advanced technology with several key features like:

- Selectable trip class and field installable modules
- A wide (5:1) set current adjustment range
- A robust mechanical and electrical mounting
- Self-sealed latching mechanism

The basic concept of utilizing Application Specific Integrated Circuits (ASICs) results in an affordable solid state overload relay. This kind of versatility and accuracy is simply not possible with traditional bimetallic or eutectic alloy electromechanical overload relays.



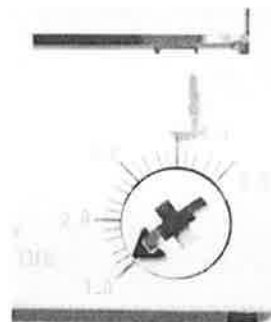
## Fewer units means greater application flexibility

The CEP7 Solid State Overload Relay is available in three basic models:

- CEP7-ED1 is a Class 10, manual reset model available up to 45 amperes which covers the most common horsepower motors and your every day application. This model is economically priced to be competitive with adjustable bimetallic overload relays.
- CEP7-EE is a full featured selectable trip class (10, 15, 20 & 30) 3-phase application overload relay with provision for field mountable modules to handle remote reset, jam protection, and other modules previously available only in higher priced electronic overload relays.

Manual reset or automatic reset can be selected with dip switches on the CEP7-EE models.

- CEP7S-EE is a 1-phase application overload relay packing all features of the 3-phase CEP7-EE model.



## Wide current adjustment range

Thermal or bimetallic overload relays typically have a small current adjustment range of 1.5:1 meaning that the maximum setting is generally 1.5 times the lower setting. The CEP7 caused the industry to take note of the flexibility when it first introduced a 3.2:1 adjustment ratio. A wider adjustment range is the primary reason the industry has been turning to more specifications calling for electronic overload relay protection over thermal overload relays. Sprecher + Schuh's CEP7 overload relay is capable of adjustment to a maximum of five times the minimum set current, which dramatically reduces the number of units required on-hand to cover the full range of current settings up to 200 amperes.

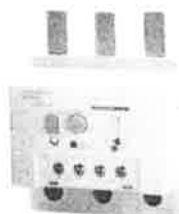
## 5 : 1 Current Range



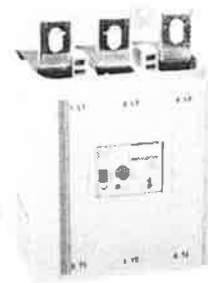
45A



45A

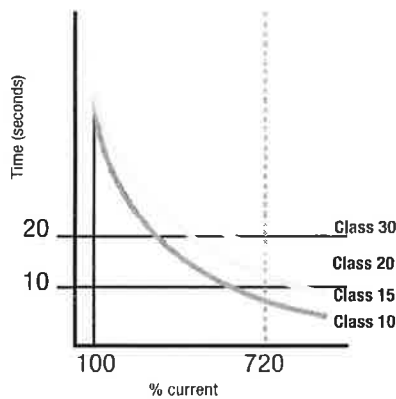


120A



30A

200A



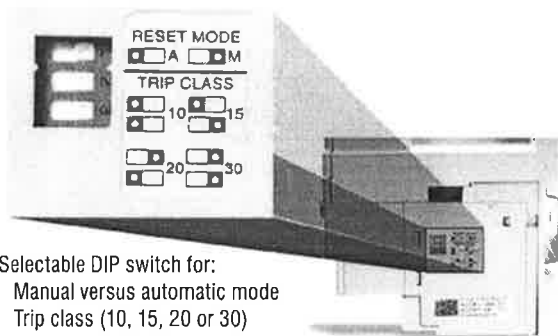
CEP7 overload relays are available with Class 10, 15, 20 or 30 tripping characteristics

## Selectable tripping class

Because of today's lighter T-frame motors, Class 10 overload relays (relays that trip within 10 seconds of a locked rotor condition) have become the industry standard. If your application requires a longer motor run-up time, the CEP7-EE Selectable Trip Class has DIP-switches providing Trip Class selection of 10, 15, 20 or 30 seconds. This ability allows you to closely match the Trip Class with the run-up time of the motor.

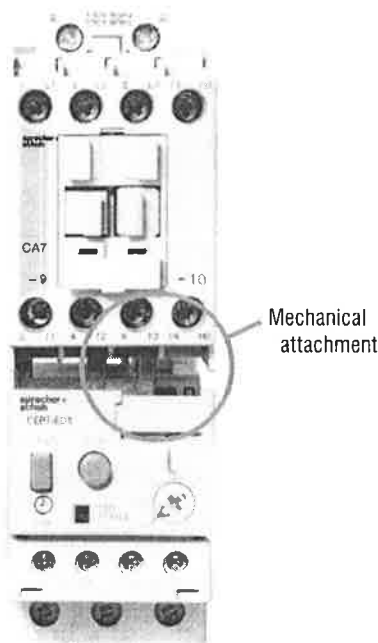
## Choice of reset options

Most industrial applications usually call for an overload relay that must be manually reset in the event of a trip. This allows the cause of the overload to be identified before the motor is restarted. In specialized cases, however, such as rooftop AC units or where restarting the motor will not harm people or equipment, automatic reset may be desired. CEP7-ED1 overload relays are available with Manual Reset exclusively which keeps the cost down. CEP7-EE models have a selectable dip switch for Manual or Automatic Reset modes.



Selectable DIP switch for:

- Manual versus automatic mode
- Trip class (10, 15, 20 or 30)



## Robust design

The CEP7 has been designed to physically extend to the back-pan therefore aligning the mounting of the overload with the corresponding contactor. Further, the mechanical attachment and direct electrical connection to the contactor provides a robust mounting, which means less damage from shipping or during field wire installation. The bipolar latching relay which controls the normally closed trip contacts and normally open alarm circuit contacts have been self-enclosed, therefore insulating the electromagnet and shielding against airborne metal particles and other potential environmental debris. The CEP7 has been tested to operate in -20° C. or up to 60° C (140 °F.) and withstand

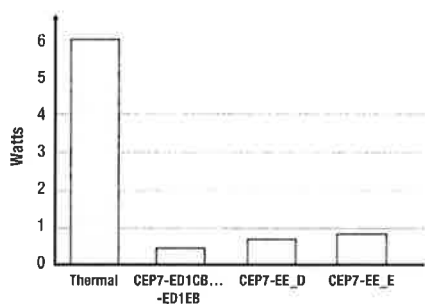
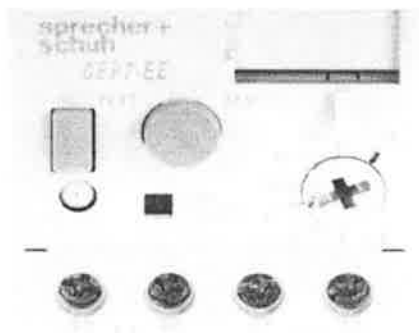
3G of vibration or 30G of shock on a mountain up to an altitude of 2000m or in a jungle at 95% humidity. Reliability under every conceivable environmental condition is a quality built into the design of the CEP7 electronic overload relay.

## Self-powered design means convenience

By developing the power it requires from the applied voltage, the CEP7 is "self-powered," eliminating the need for a separate control power source. This is not the case with some other electronic overload relays. Since the CEP7 is self-powered and a traditional auxiliary contact is used to interface with the contactor, the user can apply the CEP7 the same way as an electromechanical overload. No special connections or control schematic diagram provisions are required in 3-phase applications.

## Superior phase failure protection

The CEP7's on-board electronics are constantly monitoring all three phases. If the ASIC board senses that one phase is missing during a steady state running condition on a fully loaded motor, it will trigger in 3 seconds. If a single phase condition is present during starting, the CEP7 will trip within 8 seconds (for a motor >80% loaded). These times are much faster than any thermal bimetallic overload relay. In addition, CEP7 overload relays detect a 50% phase imbalance in the same way as a phase loss.



Conventional overload relays dissipate as much as six watts of energy compared with as little as 0.5 watts for a comparable size CEP7

## Increased accuracy and improved motor protection

Microelectronics provide flexible and accurate motor overload protection. Unlike traditional overload relays that simulate heat build-up in the motor by passing current through a heater element, CEP7 solid state overload relays measure motor current directly through integrated current transformers. The transformers, in turn, create a magnetic field that induces DC voltage onto the ASIC board. The electronics identify excessive current or loss of phase more accurately, and react to the condition with greater speed and reliability than traditional overload relays. In addition, CEP7 solid state relays offer setting accuracies from 2.5 – 5% and repeat accuracy of 1%.

## Dramatically lowered energy requirement saves money, reduces panel space

Because traditional overload relays work on the principle of “modeling” the heat generated in the motor (recreating the heat in the bimetal elements or heaters), a significant amount of energy is wasted. In traditional bimetallic overload relays, as many as six watts of heat are dissipated to perform the protective function. Because the CEP7 uses sampling techniques to actually measure the current flowing in the circuit, very little heat is dissipated in the device...as little as 0.5 watts. This not only reduces the total amount of electrical energy consumed in an application, but it can also have a dramatic impact on the design and layout of control panels. The density of motor starters can be much greater because less heat is generated by each of the individual components. Higher density results in smaller control panels. In addition, special ventilation or air conditioning that might have been required to protect sensitive electronic equipment such as PLC's can now be reduced or eliminated. CEP7 overload relays dramatically reduced energy requirement saves money and reduces panel space.



## Additional Protection with Side Mount Modules

The CEP7 offers a variety of field installable accessories for side mount on the left side. Side mount modules provide additional motor protection functionality traditionally found only on more expensive models. Modules include the following additional features.

- **Remote Reset** provision for reset after trip from a remote pilot device
- **Jam Protection/Remote Reset** provides adjustable Jam set points and trip delay plus remote reset
- **Ground Fault Protection/Remote Reset** combined with ground fault current transformers provide adjustable set points for ground fault trip protection of equipment plus remote reset
- **Ground Fault/Jam Protection/Remote Reset** combines all three features as described above
- **PTC Thermistor Relay/Remote Reset** manages thermistor sensor signals from the motor
- **Network Communication Modules** provide motor diagnostic information via **Ethernet** communication
  - Two discreet Inputs and one discreet Output
  - Differentiate between various motor protection algorithms
  - Overload and underload warning
  - Jam protection
  - Proactively alert maintenance personnel just before or when a fault occurs
  - Plus remote reset



### Three Phase, Non-Reversing CATN7

NEMA Size	Maximum Horsepower Three Phase				Auxiliary Contacts per Contactor ③		Open Type		Type 1 General Purpose		D I M	Type 12 [Type 3R ②] Industrial Dusttight		D I M
	200V	230V	460V	575V	NO	NC		Catalog Number	Price	Catalog Number	Price	①	Catalog Number	Price
00	1-1/2	1-1/2	2	2	1	0	CATN7-12-*◆	424.97	CATN7-12-*◆-G0 ②	530.69	A	CATN7-12-*◆-D0 ②	730.74	L
0	3	3	5	5	1	0	CATN7-16-*◆	464.36	CATN7-16-*◆-G0 ②	571.12	A	CATN7-16-*◆-D0 ②	771.17	L
1	7-1/2	7-1/2	10	10	1	0	CATN7-37-*◆	730.74	CATN7-37-*◆-G0 ②	798.11	A	CATN7-37-*◆-D0 ②	1024.08	L
2	10	15	25	25	1	0	CATN7-43-*◆	837.51	CATN7-43-*◆-G0 ②	940.11	A	CATN7-43-*◆-D0 ②	1246.93	L
3	25	30	50	50	1	0	CATN7-85-*◆	1183.69	CATN7-85-*◆-G0 ②	1436.60	B	CATN7-85-*◆-D0 ②	1715.43	M

### Three Phase, Non-Reversing CATN7

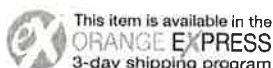
NEMA Size	Maximum Horsepower Three Phase				Auxiliary Contacts per Contactor ③		Type 4 Watertight		D I M	Type 4X Watertight Corrosion Resistant Non-metallic		D I M
	200V	230V	460V	575V	NO	NC	Catalog Number	Price	①	Catalog Number	Price	①
00	1-1/2	1-1/2	2	2	1	0	CATN7-12-*◆-W0	957.74	N	CATN7-12-*◆-C0 ②	771.17	St
0	3	3	5	5	1	0	CATN7-16-*◆-W0	997.12	N	CATN7-16-*◆-C0 ②	810.55	St
1	7-1/2	7-1/2	10	10	1	0	CATN7-37-*◆-W0	1262.48	N	CATN7-37-*◆-C0 ②	1236.56	U1
2	10	15	25	25	1	0	CATN7-43-*◆-W0	1369.23	N	CATN7-43-*◆-C0 ②	1329.85	U1
3	25	30	50	50	1	0	CATN7-85-*◆-W0	1861.57	O	CATN7-85-*◆-C0 ②	1701.95	U1

**NOTE:** Catalog numbers and enclosure dimensions reflect contactors with AC coils. For DC coils, select Coil Code from the DC Coil Code table on page C104 and follow the instructions for modifying catalog numbers.

LINE ITEM 5 CATN7-43-120-EFD

LINE ITEM 6 CATN7-85-120-EGE

\* COIL CODE



### Ordering Instructions

Specify Catalog Number	
Replace (□) with Coil Code	See page C104
Replace (◆) with O/L Relay	See pages C105-C106
Factory Modifications available	See pages C107-C111

- ① Dimensional information starts on page C122.
- ② For Type 3R outdoor applications, replace "D" in catalog number with an "R". Dimensions may change. For example number CATN7-37-\*◆-D0 becomes CATN7-37-\*◆-R0. Price remains the same.
- ③ Contactors are equipped with number and type of auxiliaries indicated. See page C108 to order additional or different auxiliary contacts.



### CA7 Contactor with CEP7 Overload Relay ①③④



For use with contactor...	Amp Range	Overload Relay Code (◆)	Catalog Number (of Overload Relay)	Price Adder
<b>3-Phase / Manual Reset / Class 10</b>				
CA7-9...CA7-23	0.1...0.5	D1AB	CEP7-ED1AB	Standard
	0.2...1.0	D1BB	CEP7-ED1BB	Standard
	1.0...5.0	D1CB	CEP7-ED1CB	Standard
	3.2...16	D1DB	CEP7-ED1DB	Standard
	5.4...27	D1EB	CEP7-ED1EB	Standard
CA7-30...CA7-55	1.0...5.0	D1CD	CEP7-ED1CD	Standard
	3.6...16	D1DD	CEP7-ED1DD	Standard
	5.4...27	D1ED	CEP7-ED1ED	Standard
	9...45	D1FD	CEP7-ED1FD	Standard
<b>3-Phase / Auto or Manual / Adjustable Trip Class 10, 15, 20 &amp; 30</b>				
CA7-9...CA7-23	0.1...0.5	EAB	CEP7-EEAB	17.62
	0.2...1.0	EBB	CEP7-EEBB	17.62
	1.0...5.0	ECB	CEP7-EECB	17.62
	3.2...16	EDB	CEP7-EEDB	17.62
	5.4...27	EEB	CEP7-EEEB	17.62
CA7-30...CA7-55	1.0...5.0	ECD	CEP7-EECD	21.76
	3.2...16	EDD	CEP7-EEDD	21.76
	5.4...27	EED	CEP7-EEED	21.76
	9...45	EFD	CEP7-EEFD	21.76
CA7-55	11...55	EQD	CEP7-EEQD	Standard
CA7-60...CA7-97	5.4...27	EEE	CEP7-EEEE	Standard
	9...45	EFE	CEP7-EEFE	Standard
	18...90	EGE	CEP7-EEGE	Standard
	60...120	EVE	CEP7-EEVE	Standard

### CB7 Contactor with CEP7 Overload Relay

For use with contactor...	Amp Range	Overload Relay Code (◆)	Catalog Number (of Overload Relay)	Price Adder
<b>1-Phase / Automatic or Manual Reset / Class 10</b>				
CA7-9...CA7-23	1.0...5.0	EPB	CEP7S-EEPB	Standard
	3.2...16	ERB	CEP7S-EERB	Standard
	5.4...27	ESB	CEP7S-EESB	Standard
CA7-30...CA7-43	9...45	ETD	CEP7S-EETD	Standard
CA7-60...CA7-97	18...90	EUE	CEP7S-EEUE	Standard



This item is available in the  
**ORANGE EXPRESS**  
3-day shipping program

- ① 3-phase CEP7 units are only designed for 3Ø applications. Single phase CEP7S units are only designed for 1Ø applications.
- ② This reference is not intended to be a guide for selecting contactors. Size overload relays using the full load current of the motor.
- ③ The reset time of a CEP7 set in the automatic mode is approximately 180 seconds.

### Large Amp CEP7 Solid State Overload Relays, Automatic or Manual Adjustable Trip Class ①②③④

Directly Mounts to Contactor... ②	Adj. Range (A)	Over- load Relay Code (◆)	CT Ratio	Catalog Number (of Overload Relay)	Price Adder
<b>Automatic or Manual Reset for 3-Phase Applications Adjustable Trip Class 10, 15, 20 &amp; 30</b>					
CA9-116...146	30...150	EHJ	150:5	CEP7-EEHJ	Standard
CA9-190...205	40...200	EJJ	200:5	CEP7-EEJJ	Standard
CA9-265...305		CT3	300:5	⑤	Standard
CA9-370...580		CT6	600:5	⑤	Standard
CA9-750...1060		~		Refer to Factory	Standard

#### Special Notes:

**Wye-Delta Starters** - First multiply motor full load current by 58%. Then, using this figure, select appropriate Overload Relay Code from tables above.

**Part Winding Starters** - First multiply motor full load current by 50%. Then, using this figure, select appropriate Overload Relay Code from tables above.

**Variable Frequency Drives** - CEP7 solid state overload relays cannot be utilized on VFDs or Softstarters with Braking option.

- ④ CEP7 Overload relays do not work with Variable Frequency Drives or any Sprecher + Schuh Softstarter with braking options.
- ⑤ Utilizes UL approved Current Transformers and a CEP7-EECB overload relay. Refer to page B13 for current setting guidance. For CE approved Current Transformers refer to factory.

**A.C. Coil Codes & Voltage Ranges ①⑤**

All catalog numbers, list prices and enclosure dimensions in the previous section reflect contactors with AC coils. If necessary, add the appropriate price adder to the list price for each coil required as shown in the online catalog. Remember that reversing applications require two coils. Price Adder x 2.

A.C. Coil Codes (Replace "*" in cat.# with coil code)	CA7-9 thru CA7-97 CAN7-12...85	
	50 Hz	60 Hz
24		
24Z ⑤	24V	24V
110	~	~
120 ⑤	110V	120V
120B	~	~
208	~	208V
208W	~	~
220W ⑤ ⑤	200- 220V	208- 240V
240	220V	240V
240B	~	~
240W	~	~
277	240V	277V
380	380- 400V	440V
440W	~	~
460W	~	~
480 ⑤	440V	480V
575	~	~
600 ⑤	550V	600V
Price Adder	~	~

**D.C. Coil Codes & Voltage Ranges ①⑤**

For starters with DC coils, select Coil Code from the table below. Remember that reversing applications require two coils (Price Adder x 2). Starter catalog numbers must be modified when using DC coils. For example: For **CAT7-9...55** contactors, add an "E" to catalog number for Electronic DC Coils. i.e.: CAT7-9... becomes CAT7-9E... For **CAT7-60...97** contactors, add a "D" to catalog number. i.e.: CAT7-60... becomes CAT7-60D...

D.C. Coil Codes (Replace "*" in cat.# with coil code)	⑥ CA7-9E...37E CAN7-12E...37E	⑥ CA7-43E...55E CAN7-43E	④ CA7-60D...97D CAN7-85D
	Voltage	Voltage	Voltage
CA7 Code			
12E	12VDCE	12VDCE	~
24E ⑤	24VDCE	24VDCE	~
24DD	~	~	24VDC
36E	36-48VDCE	36-48VDCE	~
48E	48-72VDCE	48-72VDCE	~
48DD	~	~	48VDC
110E	110VDCE	110VDCE	~
110DD	~	~	110VDC
~	~	~	~
125DD	~	~	125VDC
220E	220VDCE	220VDCE	~
220DD	~	~	220VDC
250DD	~	~	250VDC
Price Adder ⑥	49.76	100.54	125.42

**CAT9 AC/DC Coil Codes and Voltage Ranges ②③④**

Electronic Coils	V	24-60V	48-130V	100-250V	250-500V	Price Adder for PLC option
		(Replace "*" in cat.# with coil code)				
CA9-116...370	AC/DC	24W	48W	120W	480W	~
CA9-116-EI...370-EI	AC/DC with PLC Input	~	~	120W	480W	51.83
CA9-400-EI...750-EI		24W ⑦	48W	120W	480W	~
CA9-860-EI...1060-EI		~	~	120W	~	~
CA9-1260-EI		24W ⑦	48W	120W	480W	~
CA9-2050-EI...2650-EI		~	~	120W	~	~

① Only the most common coils are shown here. Other coil voltages may be available. Refer to Contactor Renewal Parts in Section A of this catalog, or contact your nearest Sprecher + Schuh sales office.

② Wide range coil.

③ "-EI" designates contactor coil with PLC input. Selections CA9-116...370 with "EI" requires use of control logic on terminals 1, 2, 3. CA9-400 contactors and larger include an integral switch to select use of "EI".

④ "DD" coils are standard for CA7-60D...97D.

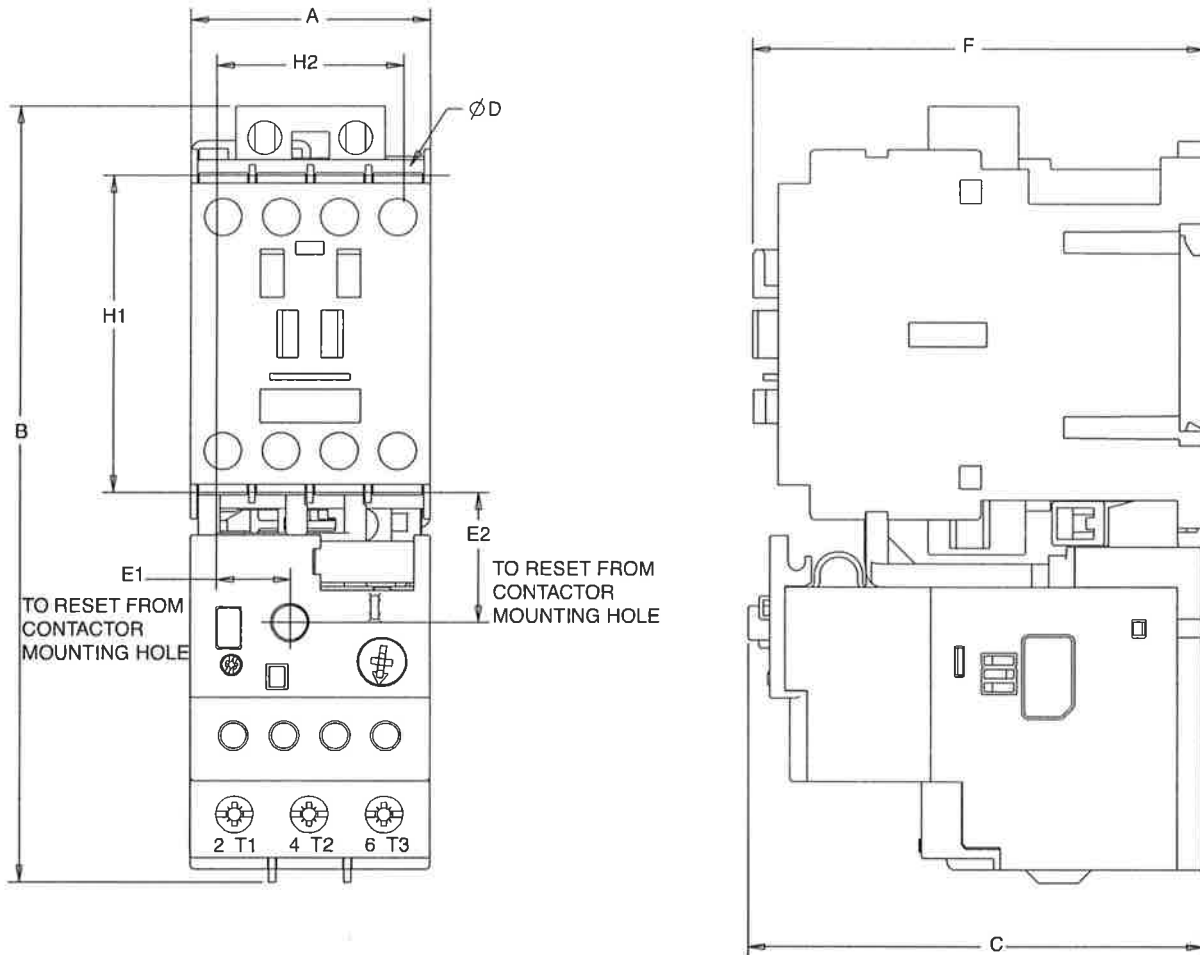
⑤ Reversing applications require two coils. Add appropriate price adder(s) to list price of enclosed contactors and starters. Remember to add price for each coil required.

⑥ CA7-9E...55E electronic coils are not interchangeable with non-electronic DC or AC coils.

⑦ This coil range is 24-60V DC only.

**CEP7 Mounted to CA7 Contactor**

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



Overload	Mounted to Contactor		A Width	B Height	C Depth	D	E1	E2	F	H1	H2
CEP7-ED1...B CEP7-EE...B CEP7S-EE...B	CA7-9...23	mm (in)	45 (1-25/32)	146.6 (5-25/32)	85.2 (3-23/64)	4.5 (3/16)	13.9 (35/64)	24.5 (31/32)	86.5 (3-13/32)	60 (2-23/64)	35 (1-3/8)
CEP7-ED1...D CEP7-EE...D CEP7S-EE...D	CA7-30...37	mm (in)	45 (1-25/32)	146.6 (5-25/32)	101.2 (3-63/64)	4.5 (3/16)	13.9 (35/64)	24.5 (31/32)	104 (4-3/32)	60 (2-23/64)	35 (1-3/8)
CEP7-ED1...D CEP7-EE...D CEP7S-EE...D	CA7-43...55	mm (in)	54 (2-1/8)	146.6 (5-25/32)	101.2 (3-63/64)	4.5 (3/16)	18.9 (3/4)	24.5 (31/32)	107 (4-3/32)	60 (2-23/64)	45 (1-25/32)
CEP7-EE...E CEP7S-EE...E	CA7-60...97	mm (in)	72 (2-53/64)	192.3 (7-37/64)	120.4 (4-3/4)	5.4 (7/32)	23.8 (15/16)	29 (1-9/64)	125.5 (4-15/16)	100 (3-15/16)	55 (2-11/64)