

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. 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		CA6-115, CA6-140 CA6-180, CAN6-180		③ CA6-115-EI CA6-140-EI CA6-180-EI CAN6-180-EI	③ CA6-210-EI CA6-250-EI CA6-300-EI CAN6-300-EI CA6-420-EI	③ CA6-630-EI CA6-860-EI	③ CA5-1200
	50 Hz	60 Hz	50 Hz	60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
	24			~	24V	24V	~	~
24Z ②	24V	24V	~	~	~	~	~	~
120 ②	110V	120V	~	~	110-130V	110-130V	110-130V	~
110	~	~	~	~	~	~	~	110V
120B	~	~	110V	120V	~	~	~	~
208	~	208V	180V	208V	~	~	~	~
208W	~	~	~	~	~	~	200-220V	~
220W ② ③	200-220V	208-240V	~	~	208-277V	208-277V	~	~
240	220V	240V	~	~	~	~	~	~
240B	~	~	220-230V	240V	~	~	~	220V
240W	~	~	~	~	~	~	230-250V	~
277	240V	277V	240V	277V	~	~	277V	~
380	380-400V	440V	380-400V	440V	~	~	~	380V
440W	~	~	~	~	~	~	~	440V
460W	~	~	~	~	380-500V	380-500V	~	~
480 ②	440V	480V	415V	480V	~	~	440-480V	~
575	~	~	500V	575V	~	~	~	~
600 ②	550V	600V	550V	600V	~	~	~	~
Price Adder ⑤	~		~		215	~	~	~

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: CAT7-9...CAT7-43 contactors, add an “E” to catalog number for Electronic DC Coils.

i.e.: CAT7-9... becomes CAT7-9E... For CAT7-60...CAT7-97 contactors, add a “D” to catalog number. i.e.: CAT7-60... becomes CAT7-60D...

D.C. Coil Codes (Replace “*” in cat.# with coil code)		⑦ CA7-9E...37E CAN7-12E...37E	⑦ CA7-43E CAN7-43E	④ CA7-60D...97D CAN7-85D	③ CA6-115 CA6-140 CA6-180	③ CA6-115...300-EI CAN6-180-EI CAN6-300-EI	③ CA6-420-EI	③ CA6-630-EI ③ CA6-860-EI ③ CA5-1200
CA7 Code	CA6 Code	Voltage	Voltage	Voltage	Voltage	Voltage	Voltage	
24E ②	~	24VDCE	24VDCE	~	~	~	~	CA6-630-EI and 860-EI contactors are equipped with coils that operate with both AC and DC control voltages. For DC coil operation. Consult page A82 for details. CA5-1200. Consult factory for information on DC coil application.
24DD	24D	~	~	24VDC	24VDC	24VDC ③	~	
48E	~	48VDCE	48VDCE	~	~	~	~	
48DD	48D	~	~	48VDC	48VDC	48-72VDC	~	
110E	~	110VDCE	110VDCE	~	~	~	~	
110DD	110D	~	~	110VDC	110VDC	~	~	
~	120D	~	~	~	~	110-130V	110-130V	
125DD	125D	~	~	125VDC	125VDC	~	~	
220E	~	220VDCE	220VDCE	~	~	~	~	
220DD	220D	~	~	220VDC	220VDC	200-255VDC	200-255VDC	
250DD	250D	~	~	250VDC	250VDC	~	~	
Price Adder ⑤		50	100	125	360	575	1270	~

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

② Wide range coil.

③ “EI” Coils are field convertible to operate with PLC interface.

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

⑤ Add appropriate price adder(s) to list price of enclosed contactors and starters. Remember to add price for each coil required. Reversing applications require two coils (Price Adder x 2).

③ CA5 coils utilize a special coil pair arrangement with a feeder group. For detailed coil information, please refer to CA5 contactors in Section A.

⑦ CA7-9E...43E electronic coils are not interchangeable with non-electronic DC or AC coils.

③ Customers selecting a 24VDC coil should consider the “EI” functionality of CA6.

CA7 Starters with CEP7 Solid State Overload Relay ①③④ ex

For use with contactor...	Amp Range	Overload Relay Code (◆)	Catalog Number (of Overload Relay used)	Price Adder
3-Phase / Manual Reset / Class 10				
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...CA7-43	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
3-Phase / Auto or Manual / Adjustable Trip Class 10, 15, 20 & 30				
CA7-9...CA7-23	0.1...0.5	EAB	CEP7-EEAB	+17
	0.2...1.0	EBB	CEP7-EEBB	+17
	1.0...5.0	ECB	CEP7-EECB	+17
	3.2...16	EDB	CEP7-EEDB	+17
	5.4...27	EEB	CEP7-EEEB	+17
CA7-30...CA7-43	1.0...5.0	ECD	CEP7-EECD	+21
	3.2...16	EDD	CEP7-EEDD	+21
	5.4...27	EED	CEP7-EEED	+21
	9...45	EFD	CEP7-EEFD	+21
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

For use with contactor...	Amp Range	Overload Relay Code (◆)	Catalog Number (of Overload Relay used)	Price Adder
1-Phase / Automatic or Manual Reset / Class 10				
CA7-9...CA7-23	1.0...5.0	EPB	CEP7S-EEPB	Standard
	3.2...16	ERB	CEP7S-EERB	Standard
	5.2...27	ESB	CEP7S-EESB	Standard
CA7-30...CA7-43	9...45	ETD	CEP7S-EETD	Standard
CA7-60...CA7-85	18...90	EUE	CEP7S-EEUE	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.

C
 Starters & Enclosed Prod.
CODES

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

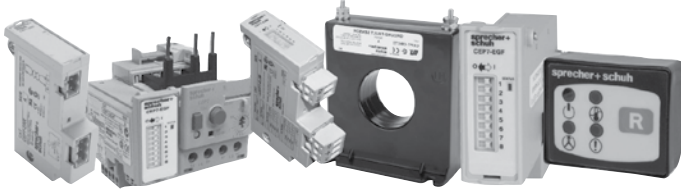
Directly Mounts to Contactor... ②	Adjustment Range (A)	Overload Relay Code (◆)	CT Ratio	Selectable Trip Class (10, 15, 20 & 30)	
				Catalog Number (of Overload Relay used)	Price Adder
Automatic or Manual Reset for 3-Phase Applications					
CA6-115...-180	30...150	EHF	150:5	CEP7-EEHF	Standard
	40...200	EJF	200:5	CEP7-EEJF	Standard
CA6-210...-420	40...200	EJG	200:5	CEP7-EEJG	Standard
	60...300	EKG	300:5	CEP7-EEKG	Standard
	100...500	ELG	500:5	CEP7-EELG	Standard
CA6-630...-860	120...600	EMH	600:5	CEP7-EEMH	Standard
	160...800	ENH	800:5	CEP7-EENH	Standard


 This item is available in the **ORANGE EXPRESS** 3-day shipping program. See selection guide for details.

- ① 3-phase CEP7 units are only designed for 3∅ applications. Single phase CEP7S units are only designed for 1∅ 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.
- ④ CEP7 Overload relays do not work with Variable Frequency Drives or any Sprecher + Schuh Softstarter with braking options.

Intelli-button Reset Kit Factory Modification

The CEP7-ERID Intelli-button plus your choice of side-mounted module can be ordered as a factory modification, installed in any control panel built by Sprecher + Schuh that contains a CEP7-EE_ overload relay. Just add the kit suffix shown below to the end of the starter catalog number. For example, CAT7-9-120-EEB-G0 becomes CAT7-9-120-EEB-G0-IB2



CEP7-ERID + Side Mount Module...	Add to end of Catalog Number	Kit includes...	Price Adder
Remote Reset Only	-IB1	CEP7-ERID CEP7-ERR	200
Jam and Remote Reset	-IB2	CEP7-ERID CEP7-EJM (B)	210
Thermistor Relay and Remote Reset	-IB3	CEP7-ERID CEP7-EPT	225
Ground Fault and Remote Reset	-IB4	CEP7-ERID CEP7-EGF CEP7-CBCT1 (45A)	260
	-IB5	CEP7-ERID CEP7-EGF CEP7-CBCT2 (90A)	385
	-IB6	CEP7-ERID CEP7-EGF CEP7-CBCT3 (180A)	436
	-IB7	CEP7-ERID CEP7-EGF CEP7-CBCT4 (420A)	497
Ground Fault and Jam and Remote Reset Module	-IB8	CEP7-ERID CEP7-EGJ CEP7-CBCT1 (45A)	295
	-IB9	CEP7-ERID CEP7-EGJ CEP7-CBCT2 (90A)	420
	-IB10	CEP7-ERID CEP7-EGJ CEP7-CBCT3 (180A)	471
	-IB11	CEP7-ERID CEP7-EGJ CEP7-CBCT4 (420A)	532

CA7 Starters with CT7N Bimetallic Overload Relay ①

Directly Mounts to Contactor...	Amp Range	Overload Relay Code (◆)	Catalog Number (of Overload Relay used)	Price Adder
CA7-9... CA7-23 Frame "A"	0.10...0.16	AA16	CT7N-23-A16	+4
	0.16...0.25	AA25	CT7N-23-A25	+4
	0.25...0.40	AA40	CT7N-23-A40	+4
	0.35...0.50	AA50	CT7N-23-A50	+4
	0.45...0.63	AA63	CT7N-23-A63	+4
	0.55...0.80	AA80	CT7N-23-A80	+4
	0.75...1.0	AB10	CT7N-23-B10	+4
	0.90...1.3	AB13	CT7N-23-B13	+4
	1.1...1.6	AB16	CT7N-23-B16	+4
	1.4...2.0	AB20	CT7N-23-B20	+4
	1.8...2.5	AB25	CT7N-23-B25	+4
	2.3...3.2	AB32	CT7N-23-B32	+4
	2.9...4.0	AB40	CT7N-23-B40	+4
	3.5...4.8	AB48	CT7N-23-B48	+4
	4.5...6.3	AB63	CT7N-23-B63	+4
	5.5...7.5	AB75	CT7N-23-B75	+4
	7.2...10	AC10	CT7N-23-C10	+4
	9.0...12.5	AC12	CT7N-23-C12	+4
	11.3...16	AC16	CT7N-23-C16	+4
	15...20	AC20	CT7N-23-C20	+4
	17.5...21.5	AC21	CT7N-23-C21	+4
21...25	AC25	CT7N-23-C25	+4	
CA7-30... CA7-37 Frame "B"	15...20	BC20	CT7N-37-C20	+8
	17.5...21.5	BC21	CT7N-37-C21	+8
	21...25	BC25	CT7N-37-C25	+8
	24.5...30	BC30	CT7N-37-C30	+8
CA7-43 Frame "C"	29...36	BC36	CT7N-37-C36	+8
	33...38	BC38	CT7N-37-C38	+8
	17...25	CC25	CT7N-43-C25	+8
CA7-43 Frame "C"	24.5...36	CC36	CT7N-43-C36	+8
	35...47	CC47	CT7N-43-C47	+8
CA7-60... CA7-85 Frame "D"	35...47	DC47	CT7N-85-C47	+16
	45...60	DC60	CT7N-85-C60	+16
	58...75	DC75	CT7N-85-C75	+16
	72...90	DC90	CT7N-85-C90	+16

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.

① Separately mounted overload is available. See Section B.

Modifications or Special Feature	Change Last Digit in Catalog Number To:	Add Suffix To Catalog Number	Enclosure Type	Controller Series and Price Addition					
				CA7-9 to 43	CA7-60 to 97	CAG-115(-EI) to CAG-140(-EI)	CAG-180(-EI) to CAG-250-EI	CAG-300-EI to 860-EI	CA5-1200
Pilot Devices In Cover or Flange									
"Start-Stop" Pushbutton	3		M1	84	84	84	84	84	84
"On-Off" Pushbutton	4		M3, M4, F4, M12, M7	193	193	193	193	193	193
"Hand-Auto" Selector Switch	5		M1	84	84	84	84	84	84
"Off-On" Selector Switch	6		M3, M4, F4, M12, M7	193	193	193	193	193	193
"Hand-Off-Auto" Selector Switch	7								
Pilot Light Only	1		All	134	134	134	134	134	134
Pilot Lights Only (2)	2		All	260	260	260	260	260	260
Pilot light w/ "Start-Stop" Pushbutton	13		M1	218	218	218	218	218	218
Pilot Light w/ "On-Off" Pushbutton	14		M3, M4, F4, M12, M7	327	327	327	327	327	327
Pilot Light w/ "Hand-Auto" Selector Switch	15		M1	218	218	218	218	218	352
Pilot Light w/ "Off-On" Selector Switch	16		M3, M4, F4, M12, M7	352	352	352	352	352	352
Pilot Light w/ "Hand-Off-Auto" Selector Switch	17								
Reversing "For-Stop-Rev" - Pushbutton	3		M1	218	218	218	218	218	218
	"Up-Stop-Down" Pushbutton	4							
	"Open-Stop-Close" Pushbutton	5							
Multi-Speed "High-Stop-Low" Pushbutton	3		M3, M4, F4, M12, M7	352	352	352	352	352	352
	"Fast-Stop-Slow" Pushbutton	4							
Reversing "For-Off-Rev" Selector Switch	6		All	193	193	193	193	193	193
	"Up-Off-Down" Selector Switch	7							
	"Open-Off-Close" Selector Switch	8							
Multi-Speed "High-Off-Low" Selector Switch	5		All	193	193	193	193	193	193
	"Fast-Off-Slow" Selector Switch	6							
Reversing Pilot Lights (2) w/ "For-Stop-Rev" Pushbutton	23		M1	477	477	477	477	477	477
	Pilot Lights (2) w/ "Up-Stop-Down" Pushbutton	24							
	Pilot Lights (2) w/ "Open-Stop-Close Pushbutton	25							
Multi-Speed Pilot Lights (2) w/ "High-Stop-Low" Pushbutton	23		M3, M4, F4, M12, M7	611	611	611	611	611	611
	Pilot Lights (2) w/ "Fast-Stop-Slow" Pushbutton	24							
Reversing Pilot Lights (2) w/ "For-Off-Rev" Pushbutton	26		All	452	452	452	452	452	452
	Pilot Lights (2) w/ "Up-Off-Down" Pushbutton	27							
	Pilot Lights (2) w/ "Open-Off-Close Pushbutton	28							
Multi-Speed Pilot Lights (2) w/ "High-Off-Low" Pushbutton	25		All	452	452	452	452	452	452
	Pilot Lights (2) w/ "Fast-Off-Slow" Pushbutton	26							

Starters & Enclosed Prod.
MODS

This item is available in the **ORANGE EXPRESS** 3-day shipping program. See selection guide for details.

Ordering Instructions

● Change base **Catalog Number** according to instructions at top of column 2 or 3. Example: To Add a "Start-Stop" Pushbutton, Control Circuit Transformer (480/120) and RC Link: change **CA7-30-***-♦-GO to **CA7-30-XC**-♦-G3-RC.

Note: Separate multiple modification suffixes with a hyphen (-).

● Pilot Lights may be applied with 24VAC/VDC, 120VAC or 240VAC Control Circuit. Pilot Lights with 380 VAC...575VAC require a control circuit transformer.

Modifications or Special Feature	Change Last Digit in Catalog Number To:	Add Suffix To Catalog Number	Enclosure Type	Controller Series and Price Addition						
				CA7-9 to 43	CA7-60 to 97	CA6-115(-EI) to CA6-140(-EI)	CA6-180(-EI) to CA6-250-EI	CA6-300-EI to 860-EI	CA5-1200	
Control Circuit										
Control Circuit Transformer (with fused primary & secondary)	Primary Volts	Secondary Volts	Replace (*) in catalog # with following codes: ②③	M1, M3, M4, F4, M12 Open	320	420	571	320	320	85
Standard Capacity ④	208	120	XA							
	240	120	XB ⑤	M7	353	537	722	353	353	~
	480	120	XC ⑤							
	600	120	XD	M1, M3, M4, F4, M12 Open	412	~	~	~	~	~
	380	110	XG ⑤							
	240	24	XE	M7	445	~	~	~	~	~
	480	24	XF ⑤							
	600	24	XJ ⑤	M1, M3, M4, F4, M12 Open	504	629	755	504	504	169
50 Watt	208	120	XA05							
Extra Capacity	240	120	XB05	M7	445	~	~	~	~	~
	480	120	XC05							
	600	120	XD05	M1, M3, M4, F4, M12 Open	504	629	755	504	504	169
	240	24	XE05							
	480	24	XF05	M7	537	747	914	537	537	~
100 Watt	208	120	XA1							
Extra Capacity	240	120	XB1	M1, M3, M4, F4, M12 Open	651	789	931	651	651	420
	480	120	XC1							
	600	120	XD1	M7	537	747	914	537	537	~
	240	24	XE1							
	480	24	XF1	M1, M3, M4, F4, M12 Open	651	789	931	651	651	420
	600	24	XJ1							
	208	120	XA2	M1, M3, M4, F4, M12 Open	651	789	931	651	651	420
200 Watt	240	120	XB2							
Extra Capacity	480	120	XC2	M7	537	747	914	537	537	~
	600	120	XD2							
	240	24	XE2	M1, M3, M4, F4, M12 Open	651	789	931	651	651	420
	480	24	XF2							
Special Voltage Transformer			F/A ①	All, Open	Refer to Factory					
Control Circuit (Other)										
Fused Control Circuit - 1 Fuse			F1 ⑤	All, Open	108	108	108	108	108	108
Fused Control Circuit - 2 Fuses Fused Primary for separate or common control			F2 ⑤	All, Open	108	108	108	108	108	108
Control Circuit Interlock (installed on disconnect or circuit breaker. Specify N.O. or N.C.)			F/A ①	Combo Type M1, M3, M4, F4, M12, M7	176	176	176	176	176	176
Control Circuit Fused Disconnect (inside operated)			F/A ①	All	471	471	471	471	471	471
Control Circuit Breaker (inside operated)			F/A ①	All	754	754	754	754	754	754
Surge Suppressor - RC Link			RC ⑤	All, Open	42	42	84 ③	③	③	~
Surge Suppressor - Varistor			RV ⑤	All, Open	42	42	84 ③	③	③	~
Surge Suppressor - Diode			RD	All, Open	42	42	~	~	~	~
Terminal Blocks (unwired) - price per point.			F/A ①	All, Open	22	22	22	22	22	22

Ordering Instructions

● Change base **Catalog Number** according to instructions at top of column 2 or 3. Example: To Add a "Start-Stop" Pushbutton, Control Circuit Transformer (480/120) and RC Link: change **CA7-30-*** to **CA7-30-XC-◆-G3-RC**.

Note: Separate multiple modification suffixes with a hyphen (-).

- ① Factory assigned.
- ② Coil will be factory selected based on transformer secondary.
- ③ "EI" Coils include built-in surge suppression so adder does not apply. See page A105 for "EI" coil selection.
- ④ See page C96 for detail specifications for Control Circuit Transformer.
- ⑤ Refer to factory for pricing on larger oversized control circuit transformer selections.

Modifications or Special Feature	Change Last Digit in Catalog Number To:	Add Suffix To Catalog Number	Enclosure Type	Controller Series and Price Addition					
				CAT7-9 to 43	CAT7-60 to 97	CAG-115(-EI) to CAG-140(-EI)	CAG-180(-EI) to CAG-250-EI	CAG-300-EI to 860-EI	CA5-1200
Control Circuit (continued)									
Additional Auxiliary Contacts									
1 N.O.		L10	All, Open	45	45	-	-	-	-
1 N.C.		L01							
1 N.O. & 1 N.C.		L11							
2 N.O.		L20		57	57	75	75	75	503
2 N.C.		L02							
1 N.O. & 2 N.C.		L12							
2 N.O. & N.C.		L21							
3 N.O.		L30		64	64	-	-	-	-
3 N.C.		L03							
1 N.O. & 3 N.C.		L13							
3 N.O. & 3 N.C.		L31							
2 N.O. & 2 N.C.		L22		75	75	117	117	117	796
4 N.O.		L40							
4 N.C.		L04							
5 or more auxiliary contacts				Refer to factory					
Alternate Auxiliary Contact Arrangements									
1 N.C. in lieu of standard 1 N.O. (on CAT7)		LX1		N/C	N/C	-	-	-	-
2 N.C. in lieu of standard 2 N.O. (on CAUT7)		LX2		7	7	-	-	-	-
Meters									
Ammeter - Single Phase		AM1	M1, M12	611	611	611	611	611	611
Voltmeter - Single Phase		VM1	M1, M12	1717	1717	1717	1717	1717	1717
Ammeter - Three Phase (includes switch)		AM3	M1, M12	2513	2513	2513	2513	2513	2513
Voltmeter - Three Phase (includes switch)		VM3	M1, M12	2596	2596	2596	2596	2596	2596
Wattmeter		WM	M1, M12	3536	3536	3536	3536	3536	3536
Elapsed Time Meter		ETM	M1, M12	503	503	503	503	503	503
Enclosures									
Omit M1 Standard Enclosure ● All Reduced Voltage Starters		F/A	M1	Refer to factory					
M12 or M3 Autotransformer Starters		Replace the second character from the end of the catalog number with: "D" for M12, "R" for M3, "W" for M4 & "C" for F4	M1	780	1568	1655	2094	2345	3266
M4 or F4 Autotransformer Starters			M1	1600	2680	2680	2680	2680	2680
Space Heater (with N.C. interlock)		HTR	M1, M3, M4M F4 M12	610	610	610	610	610	610
Type 4x Breather and Drain		BD	M7	151	151	151	151	151	151
Service Identification Nameplate		F/A	All	34	34	34	34	34	34

MODS
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Ordering Instructions

● Change base **Catalog Number** according to instructions at top of column 2 or 3. Example: To Add a "Start-Stop" Pushbutton, Control Circuit Transformer (480/120) and RC Link: change **CAT7-30-***-◆-GO to **CAT7-30-XC**-◆-G3-RC.

Note: Separate multiple modification suffixes with a hyphen (-).

Factory assigned.

Modifications or Special Feature	Change Last Digit in Catalog Number To:	Add Suffix To Catalog Number	Enclosure Type	Controller Series and Price Addition					
				CA7-9 to 43	CA7-60 to 97	CA6-115(-EI) to CA6-140(-EI)	CA6-180(-EI) to CA6-250-EI	CA6-300-EI to 860-EI	CA5-1200
Control Circuit (continued)									
Control Relay Limited to one per controller-8 pole maximum Specify pole arrangement and voltage ⑤		F/A ①	M1, M3, M12, Open	553	553	553	553	553	553
			M4, F4, M7	670	670	670	670	670	670
Timing Relay Limited to one per controller-specify "On" or "Off" delay. Voltage will be same as coil voltage		F/A ①	M1, M3, M12, Open	737	737	737	737	737	737
			M4, F4, M7	963	963	963	963	963	963
② Compelling Relay ⑤		F/A ①	All, Open	578	578	578	578	578	578
② Progressive or Decelerating Relay ⑤		F/A ①	All, Open	1340	1340	1340	1340	1340	1340
③ Omit Automatic Alternator		F/A ①	M1, M3, F4	-503	-503	-503	-503	-503	-503
③ Modify for operation with single pole pilot devices (addition of 2 relays) ⑤		F/A ①	M1, M3, F4	888	888	888	888	888	888
④ Back Spin Timer		F/A ①	M3, F4	670	670	670	670	670	670
④ Timer (delayed start)		F/A ①	M3, F4	670	670	670	670	670	670
④ Program Timer (24 hour)		F/A ①	M3, F4	712	712	712	712	712	712
④ Undervoltage Relay		F/A ①	M3, F4	774	774	774	774	774	774
④ Lockout Relay (For inherently protected motors)		F/A ①	M3, F4	268	268	268	268	268	268
④ Percentage Timer		F/A ①	M3, F4	670	670	670	670	670	670
Miscellaneous									
④ Lighting Arrestor		LA	M3, F4	358	358	358	358	358	358
④ Surge Capacitor		SC	M3, F4	438	438	438	438	438	438
Phase Monitor Relay		F/A ①	All	503	503	503	503	503	503
Omit overload protection from combination starters		F/A ①	All	-84	-135	-420	-569	R/F	R/F
Omit external reset button		F/A ①	All	NC	NC	NC	NC	NC	NC
Mechanical Latch (voltage will be matched to contactor coil)		ML	All	193	193	N/A	N/A	N/A	R/F
Certifications									
<p>UL508A or SUSE label Most starter assemblies can be supplied with a UL508A 'Industrial Control Panel' label. Combination starters can be supplied with Suitable for Service Entrance (SUSE) label. The need for a UL508A or SUSE label must be identified at the time of quotation as well as on the purchase order. The need for a UL508A label may not change the components we would normally use but we must consider all possible requirements at the time we are developing the bill-of-material to be referenced at the time of order entry. Failure to identify the need for a UL508A label or SUSE label at the time of quotation may result in change notice price adders.</p> <p>ATEX Certification A requirement for ATEX certification MUST be identified at the time of quotation as well as on the purchase order. ATEX certification of a Type 7/9 explosion proof enclosure definitely requires all conduit and cover openings to be drilled by the enclosure manufacturer. Further, all pilot devices and equipment to be installed must be identified as it controls the heat dissipation which is an ATEX certification requirement. Absolutely no field modification of an ATEX certified starter assembly is allowed. Failure to identify the need for an ATEX certification at the time of quotation and order entry may result in 100% cancellation or re-stocking charge since a new enclosure will be required.</p>									







Ordering Instructions

- Change base catalog number according to instructions at top of column 2 or 3.
Example: To Add a "Start-Stop" Pushbutton, Control Circuit Transformer (480/120) and RC Link: change **CAT7-30-***-◆-G0 to **CAT7-30-XC-◆-G3-RC**.
Note: Separate multiple modification suffixes with a hyphen (-).

- ① Factory assigned.
- ② For Multi-speed controllers.
- ③ For Duplex Pump controllers.
- ④ For Pump Panel controllers.
- ⑤ If controller has a Control Circuit Transformer, select and price transformer with additional capacity for relay required.

Pilot Device Kits – All applications (except Kwikstarters and Explosion Proof enclosures) ❶

Kits	Description	Contact Blocks included		For Use With Enclosure...	Catalog Number	Price
		NO	NC			
	Multi-Function Pushbutton kit ❷ START-STOP Non-illuminated, Standard for “A” and “B” Box Kits.	1	1	Type 1, 12, 3R, 4, 4X, 13	SS6-D7P	55
				Type 1, 12, 3R, 4, 13	SS6-D7M	58
	Multi-Function Pushbutton kit ❷ FORWARD-STOP-REVERSE Non-illuminated, Standard for “A” and “B” Box Kits.	2	3	Type 1, 12, 3R, 4, 4X, 13	SS5-D7P	103
				Type 1, 12, 3R, 4, 13	SS5-D7M	108
	STOP and START Two button pushbutton kit	1	1	Type 1, 12, 3R, 4, 4X, 13	SS1-D7P	64
				Type 1, 12, 3R, 4, 13	SS1-D7M	68
	FORWARD, REVERSE and STOP ❸ Three button pushbutton kit	2	3	Type 1, 12, 3R, 4, 4X, 13	SS7-D7P	119
				Type 1, 12, 3R, 4, 13	SS7-D7M	125
	HAND-OFF-AUTO selector switch kit Name plate included.	2	0	Type 1, 12, 3R, 4, 4X, 13	SS2-D7P	54
				Type 1, 12, 3R, 4, 13	SS2-D7M	56
	FWD-OFF-REV selector switch kit Name plate included.	2	0	Type 1, 12, 3R, 4, 4X, 13	SS9-D7P	54
				Type 1, 12, 3R, 4, 13	SS9-D7M	56
	OFF-ON selector switch kit Name plate included.	1	0	Type 1, 12, 3R, 4, 4X, 13	SS4-D7P	41
				Type 1, 12, 3R, 4, 13	SS4-D7M	43
	Monolithic Pilot Light kit LED Lamp and lens cap Does not include nameplate		~	Type 1, 12, 3R, 4, 4X Replace ❸ with color choice R = Red G = Green	SS8-D7D-❸24V SS8-D7D-❸120V SS8-D7D-❸240V	37

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MODS

NEMA / UL Type Definitions

For a degree of protection against:	NEMA / UL TYPE									
	Indoor Use			Outdoor Use			Indoor or Outdoor Use			
	1	12	13	3R	3	4	4x	6P	6	
Incidental contact with enclosed equipment	●	●	●	●	●	●	●	●	●	●
Falling dirt	●	●	●	●	●	●	●	●	●	●
Rust	●	●	●	●	●	●	●	●	●	●
Circulating dust, lint, fibers and flyings		●	●		●	●	●	●	●	●
Windblown dust					●	●	●	●	●	●
Falling liquids and light splashing		●	●		●	●	●	●	●	●
Rain (limited water allowed inside)				●	●	●	●	●	●	●
Rain (no water allowed inside)					●	●	●	●	●	●
Snow and sleet				●	●	●	●	●	●	●
Hosedown and splashing water						●	●	●	●	●
Occasional prolonged submersion								●	●	●
Oil or coolant spraying or splashing			●							
Corrosive agents							●	●		
Occasional temporary submersion								●	●	



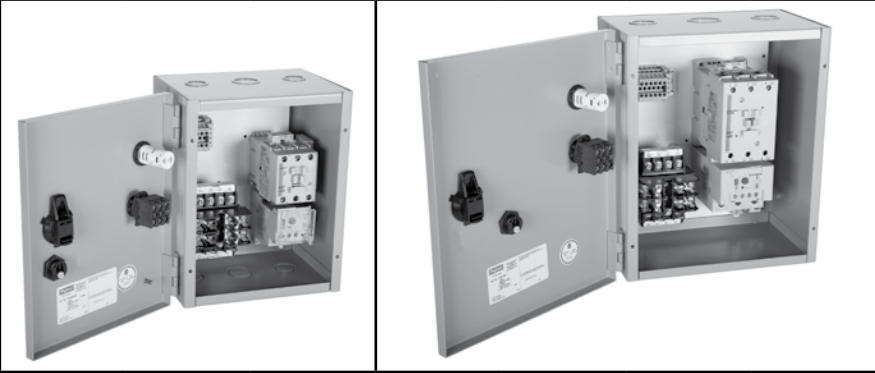
Example of pushbutton kits on an “A” Box

- ❶ Pilot Device Kits do not include control wires. See instruction sheet for installation.
- ❷ Multi-function START/STOP pushbutton are standard for General Purpose Type 1(M1) dimensions A and B enclosures.
- ❸ Not for “A” or “B” Box

Type 1 (M1) General Purpose Enclosures ②③

Enclosure (Box) Kit Includes:

- Hinged cover
- Backpan pre-drilled for listed arrangements (not tapped)
- (2) Ground Lugs and Symbol label
- (2) 22mm knockouts for pilot devices ④
- CEP7-ERA Overload Reset Adapter
- MR7 Reset Kit for Cover
- (2) 22mm knockouts for Reset ⑤
- Dual Conduit knockouts - Top and Bottom
 "A" Box - (2) 1/2 to 3/4" and (1) 3/4 to 1"
 "B" Box - (2) 1/2 to 3/4", (1) 1 to 1-1/4", (1) 3/4 to 1"
- (4) 8-32 x 1/2" screws for mounting controllers
 "B" Box also includes (2) 10-32 x 3/4" screws
- Does not include wire



"A" Box Kit

"B" Box Kit

Catalog Number	Price	Catalog Number	Price
M1-1086-A	120	M1-12106-B	150

Optional: 35mm DIN Rail Kit with (2) 10-32 x 1/4" screws ②	Catalog Number	Price	Catalog Number	Price
SF-2 (2 inches long)	8	SF-3 (3 inches long)	10	

Dimensions ⑥	10" x 8" x 6" Type 1 Enclosure	12" x 10" x 6" Type 1 Enclosure

For use with Controller	For use with overload			"A" Box Kit accommodates			"B" Box Kit accommodates				
	CEP7-ED1*	CEP7-EE*	CT7N	Use with No CPT	Use with 50VA CPT ③	Space for 2" DIN Rail ②	Use with No CPT	Use with 50VA CPT	Use with 100VA CPT ③	Space for 3" DIN Rail ②	
Non-reversing Contactors											
CA7-9...43	~	~	~	✓	✓	✓	✓	✓	✓	✓	✓
CA7-60...85 ⑦	~	~	~	No	No	No	✓	N/A	✓	✓	✓
Reversing Contactors											
CAU7-9...37	~	~	~	✓	No	✓	✓	✓	✓	✓	✓
CAU7-43	~	~	~	No	No	No	✓	✓	✓	✓	✓
CAU7-60...85 ⑦	~	~	~	No	No	No	No	N/A	No	No	No
Non-Reversing Starters											
CAT7-9...23	✓	✓	①	✓	✓	✓	✓	✓	✓	✓	✓
CAT7-30...43	✓	✓	①	✓	✓	✓	✓	✓	✓	✓	✓
CAT7-60...85 ⑦	N/A	✓	①	No	No	No	✓	N/A	✓	✓	✓
Reversing Starters											
CAU7-9...23	✓	✓	①	✓	No	✓	✓	✓	✓	✓	✓
CAU7-30...37	✓	✓	①	✓	No	✓	✓	✓	✓	✓	✓
CAU7-43	✓	✓	①	No	No	No	✓	✓	✓	✓	✓
CAU7-60...85 ⑦	N/A	No	No	No	No	No	No	No	No	No	No
NEMA Sized Non-reversing Starters											
CATN7-12...16	✓	✓	①	✓	✓	✓	✓	✓	✓	✓	✓
CATN7-37	✓	✓	①	✓	✓	✓	✓	✓	✓	✓	✓
CATN7-43	✓	✓	①	✓	✓	✓	✓	✓	✓	✓	✓
CATN7-85	N/A	✓	①	No	No	No	✓	N/A	✓	✓	✓

- ① Alternatively CT7N overload relay can be used which will require CT7N-RA3 Reset Adapter (NOT included in the kit).
- ② 2" DIN rail can accommodate up to (3) V7-W4 TB's or equivalent DIN rail mount timers, relays, etc. Order kit SF-2 separately.
3" DIN rail can accommodate up to (6) V7-W4 TB's or equivalent DIN rail mount timers, relays, etc. Order kit SF-3 separately.
- ③ Enclosure designed for use with CPT with top mount secondary fuse, plus back pan mounted FH8 Fuseholder with (2) primary fuses. A CPT and the addition of extra terminal blocks or other control relay using the 2" DIN rail space may require a design change.

- ④ This enclosure is designed for use with a D7 multi-function Start/Stop as standard plus a D7D monolithic pilot light to fit the (2) 22mm knockouts provided. Additional pilot device holes will require field drilling and may interfere with the controller or the addition of a CPT or TB's.
- ⑤ (2) 22mm knockout locations are provide for one reset Kit to be located contingent on the type of controller used. See box Instruction sheet for mounting details of controller and reset kit.
- ⑥ For enclosure dimensions see page C110
- ⑦ CA7-97 and CAT7-97 will not fit in "B" Box because of wire bending space requirements. See Selection tables for box sizes starting on page C108 for dimensions.