

Ecombo and EcomboPlus Starters

Save space,
save money
in individual or
multi-motor
starter applications

See page F119 for
Methods
of Applying
KT7
Motor Circuit Controllers



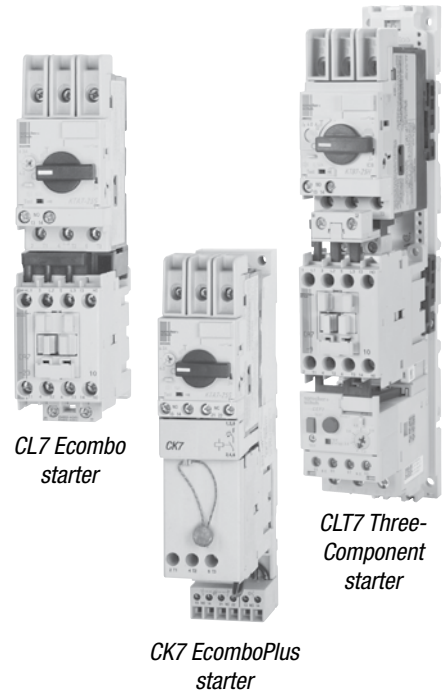
Sprecher + Schuh's Ecombo and EcomboPlus starters are the compact alternative to larger and higher priced combination starters. Both models consist of a KTA7 Motor Circuit Controller (cULus listed as a Type E, self-protected combination starter), assembled with a CA7 or CA8 contactor, which provides remote operation (Type E/F). Whether used as a stand-alone starter or in multi-motor starter applications, Ecombo and EcomboPlus starters save significant panel space and dollars over conventional combination starter alternatives.

Control and protection for most industrial applications

The Ecombo starter line covers motors to 45 amperes, while providing current limiting short circuit protection up to 65kA. Class 10 thermal overload protection is also assured with a very accurate current adjustment setting which is factory calibrated to the smallest and largest current the unit can handle. A "differential tripping" mechanism also provides accelerated tripping under single phase conditions (see illustration on page F3). Ecombo starters may be selected as Type 2 Coordinated per IEC 60947-4-1, or UL Construction Type E or F.

The Ecombo starter...

Ecombo starters (CL7) come standard with a KTA7 Motor Circuit Controller connected to Sprecher + Schuh's CA7 contactor (or CA8 mini contactor) through a specially designed connection module. The unit is DIN-rail mounted. Contactor coil connections are at the bottom of the starter to provide attractive and cost effective panel wiring. Ecombo starters may also be purchased with just three parts and assembled by the user to further increase economy. The new CLT7 is a three component starter with a KTB7 controller, CA7 contactor, and a CEP7 solid state overload relay, pre-assembled on a bus bar module and ready to mount to a DIN rail or panel.

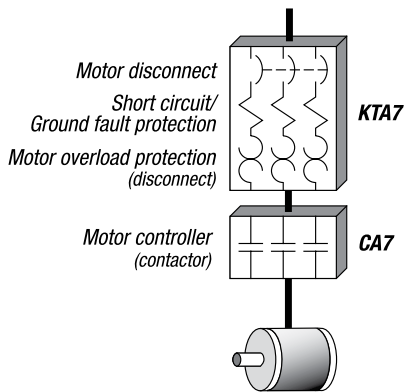


EcomboPlus... the complete solution

The EcomboPlus starter (CK7) is factory assembled on a special socket base that provides support and allows the starter to be mounted on one or two DIN-rails or screw mounted. Each starter comes standard with a front mounted auxiliary trip contact that is pre-wired to a built-in terminal block at the bottom of the unit. Contactor coil connections are also at the bottom of the starter to provide attractive and cost effective panel wiring.

Reduce panel size, complexity and cost

Because KT7 Motor Circuit Controllers are UL listed as self-protected combination starters, NEC / CEC group motor rules are simplified substantially. In many cases, only a non-fused switch is required for panel disconnect. See "Methods of Applying KT7 Motor Circuit Controllers" in this publication, which explains applying KT7s in multi-motor starter applications.



The Ecombo starter line combines a KTA7 self-protected Type E combination controller with a CA7 contactor to form a cost effective compact Type E/F alternative to traditional combination starters.

Starter Type		Contactor Series		Auxiliary Contact		Control Voltage*	
EcomboPlus Starter with CA7		Series CA7 ①		4-pole CA8 Contactors ②		Code AC Voltage	
CK7	2 component DOL Starter	9(E)		01	1 NC	24Z	24V 50/60Hz
CKU7	2 component REV Starter	12(E)		10	1 NO	120	110V 50Hz / 120V 60Hz
Ecombo Starter with CA7		16(E)		11	1 NO + 1 NC	208	208V 60Hz
CL7	2 component DOL Starter	23(E)		20	2 NO	220W	208...240V 60Hz
CLU7	2 component REV Starter	30(E)		22	2 NO + 2 NC	277	240V 50Hz / 277V 60Hz
CLT7	3 component DOL Starter	37(E)		-M40 4 N.O. Power Poles -M31 3 N.O. Power Poles / 1 N.C. Power Pole			
CLUT7	3 component REV Starter	43(E)					
Ecombo Starter with CA8		60(D)		-M22 2 N.O. Power Poles / 2 N.C. Power Poles			
CL8	2 component DOL Starter	72(D)					
CLU8	2 component REV Starter	85(D)		Code DC Voltage		12D(E)	12V
		Series CA8				24D(E)	24V
		9(C)				24DD	24V with diode
		12(C)				48D(E)	48V
						110D(E)	110V
						220D(E)	220V

* Other control voltages available
(E) designates Electronic DC Coils

This illustration is for reference only.

CL7 - 9 - 10 - 24Z - AS 0.25A - A01

Turn to the appropriate page to determine specific catalog number & pricing.

Circuit Breaker Type	Adj. Range	Auxiliaries + Trip Contacts	Option(s)
KT...Z	0.16A 0.1...0.16A	X No auxiliary contacts	For complete listing of Options Codes, refer to Modifications page in this section.
A... Motor Protection	0.25A 0.16...0.25A	A10 Aux. Contact 1 NO	
B... Starter Protection	0.4A 0.25...0.4A	A01 Aux. Contact 1 NC	
C... High Inrush Protection	0.63A 0.4...0.63A	A11 Aux. Contact 1 NO + 1 NC	
...S Standard Performance	1.0A 0.63...1.0A	A20 Aux. Contact 2 NO	
...H High Performance	1.6A 1.0...1.6A	T10A01 1 NO Short Circuit or Overload + 1 NC Aux. Contact	
	2.5A 1.6...2.5A	T10A10 1 NO Short Circuit or Overload + 1 NO Aux. Contact	
	4.0A 2.5...4.0A		
	6.3A 4.0...6.3A		
	10A 6.3...10A		
	16A 10...16A		
	20A 16...20A		
	25A 20...25A		
	32A 25...32A		
	45A 32...45A		

① (D & E) designations indicate DC coil.

② On four pole contactors, this number designates main power pole configuration.

Non-Reversing Ecombo Starters with AC Coil, Series CA8 Contactor

Thermal Trip [A]	Magnetic Trip [A]	Index ❶	Typical Three Phase [HP]				Catalog Number ❷	Price
			200V	230V	460V	575V		
0.10...0.16	2.1	1M	~	~	~	~	CL8-09-10-*AS0.16A-X	390
0.16...0.25	3.3	2M	~	~	~	~	CL8-09-10-*AS0.25A-X	390
0.25...0.40	5.2	3M	~	~	~	~	CL8-09-10-*AS0.4A-X	390
0.40...0.63	8.2	4M	~	~	~	~	CL8-09-10-*AS0.63A-X	420
0.63...1	13	5M	~	~	~	1/2	CL8-09-10-*AS1.0A-X	420
1...1.6	21	6M	~	~	1/2	3/4	CL8-09-10-*AS1.6A-X	420
1.6...2.5	33	7M	1/2	1/2	1	1-1/2	CL8-09-10-*AS2.5A-X	420
2.5...4	52	8M	3/4	3/4	2	3	CL8-09-10-*AS4.0A-X	420
4...6.3	82	9M	1	1-1/2	3	~	CL8-09-10-*AS6.3A-X	425
6.3...10	130	10M	2	2	5	~	CL8-09-10-*AS10A-X	425
6.3...10	130	11M	~	3	~	~	CL8-12-10-*AS10A-X	500
10...16	208	12M	3	~	7-1/2	~	CL8-12-10-*AS16A-X	500



Includes:

- KTA7-25S (Standard Interrupting Capacity) Motor Controller
- CA8 Contactor
- Connecting Module (Cat.# KT7-25S-PEK12)
- Terminal Adaptor for Type F Applications (Cat.# KT7-25-TE1)
- Can mount on one DIN-rail

Non-Reversing Ecombo Starters with DC Coil, Series CA8 Contactor

Thermal Trip [A]	Magnetic Trip [A]	Index ❶	Typical Three Phase [HP]				Catalog Number ❷	Price
			200V	230V	460V	575V		
0.10...0.16	2.1	1M	~	~	~	~	CL8-09C-10-*AS0.16A-X	420
0.16...0.25	3.3	2M	~	~	~	~	CL8-09C-10-*AS0.25A-X	420
0.25...0.40	5.2	3M	~	~	~	~	CL8-09C-10-*AS0.4A-X	420
0.40...0.63	8.2	4M	~	~	~	~	CL8-09C-10-*AS0.63A-X	450
0.63...1	13	5M	~	~	~	1/2	CL8-09C-10-*AS1.0A-X	450
1...1.6	21	6M	~	~	1/2	3/4	CL8-09C-10-*AS1.6A-X	450
1.6...2.5	33	7M	1/2	1/2	1	1-1/2	CL8-09C-10-*AS2.5A-X	450
2.5...4	52	8M	3/4	3/4	2	3	CL8-09C-10-*AS4.0A-X	450
4...6.3	82	9M	1	1-1/2	3	~	CL8-09C-10-*AS6.3A-X	470
6.3...10	130	10M	2	2	5	~	CL8-09C-10-*AS10A-X	470
6.3...10	130	11M	~	3	~	~	CL8-12C-10-*AS10A-X	525
10...16	208	12M	3	~	7-1/2	~	CL8-12C-10-*AS16A-X	525

AC Coil Codes ❸

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

DC Coil Codes ❹

DC Coil Code	Voltage
	12D
24D	24V ❺
110D	110V
125D	125V
220D	220V

Horsepower ratings shown in the tables are for reference only. *The final selection of the manual starter depends on the actual motor full load current and service factor.*

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. – 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

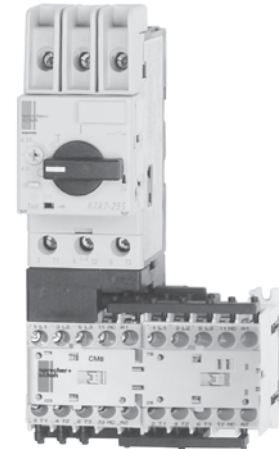
Ordering Instructions

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

- ❶ KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ❷ Does not include auxiliary contacts. See Factory Options on page F67 for additional auxiliary contact configurations.
- ❸ The coil codes shown are the most commonly stocked items. Contact your Sprecher + Schuh representative to determine if special voltages, are required.
- ❹ Integrated surge suppressor for coil is available.
- ❺ The European Community has agreed that 400V is the nominal voltage in lieu of 380V. Use this code when 380V is required.
- ❻ Use this code for 575V applications.

Reversing Ecombo Starters with AC Coil, Series CA8 Contactor

Thermal Trip [A]	Magnetic Trip [A]	Index ❶	Typical Three Phase [HP]				Catalog Number ❷	Price
			200V	230V	460V	575V		
0.10...0.16	2.1	1M	~	~	~	~	CLU8-09-02-*AS0.16A-X	560
0.16...0.25	3.3	2M	~	~	~	~	CLU8-09-02-*AS0.25A-X	560
0.25...0.40	5.2	3M	~	~	~	~	CLU8-09-02-*AS0.4A-X	560
0.40...0.63	8.2	4M	~	~	~	~	CLU8-09-02-*AS0.63A-X	600
0.63...1	13	5M	~	~	~	1/2	CLU8-09-02-*AS1.0A-X	600
1...1.6	21	6M	~	~	1/2	3/4	CLU8-09-02-*AS1.6A-X	600
1.6...2.5	33	7M	1/2	1/2	1	1-1/2	CLU8-09-02-*AS2.5A-X	600
2.5...4	52	8M	3/4	3/4	2	3	CLU8-09-02-*AS4.0A-X	600
4...6.3	82	9M	1	1-1/2	3	~	CLU8-09-02-*AS6.3A-X	630
6.3...10	130	10M	2	2	5	~	CLU8-09-02-*AS10A-X	630
6.3...10	130	11M	~	3	~	~	CLU8-12-02-*AS10A-X	720
10...16	208	12M	3	~	7-1/2	~	CLU8-12-02-*AS16A-X	720



Reversing Ecombo Starters with DC Coil, Series CA8 Contactor

Thermal Trip [A]	Magnetic Trip [A]	Index ❶	Typical Three Phase [HP]				Catalog Number ❷	Price
			200V	230V	460V	575V		
0.10...0.16	2.1	1M	~	~	~	~	CLU8-09C-02-*AS0.16A-X	590
0.16...0.25	3.3	2M	~	~	~	~	CLU8-09C-02-*AS0.25A-X	590
0.25...0.40	5.2	3M	~	~	~	~	CLU8-09C-02-*AS0.4A-X	590
0.40...0.63	8.2	4M	~	~	~	~	CLU8-09C-02-*AS0.63A-X	630
0.63...1	13	5M	~	~	~	1/2	CLU8-09C-02-*AS1.0A-X	630
1...1.6	21	6M	~	~	1/2	3/4	CLU8-09C-02-*AS1.6A-X	630
1.6...2.5	33	7M	1/2	1/2	1	1-1/2	CLU8-09C-02-*AS2.5A-X	630
2.5...4	52	8M	3/4	3/4	2	3	CLU8-09C-02-*AS4.0A-X	630
4...6.3	82	9M	1	1-1/2	3	~	CLU8-09C-02-*AS6.3A-X	660
6.3...10	130	10M	2	2	5	~	CLU8-09C-02-*AS10A-X	660
6.3...10	130	11M	~	3	~	~	CLU8-12C-02-*AS10A-X	750
10...16	208	12M	3	~	7-1/2	~	CLU8-12C-02-*AS16A-X	750

Includes:

- KTA7-25S (Standard Interrupting Capacity) Motor Controller
- One Reversing CAU8 Contactor with Mechanical Interlock (CM8)
- Connecting Module (Cat.# KT7-25S-PEK12)
- Terminal Adaptor for Type F Applications (Cat.# KT7-25-TE1)
- Reversing Power Wiring Kit (Cat.# CAUT8-PW)
- Can mount on one DIN-rail

AC Coil Codes ❸

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

DC Coil Codes ❸

DC Coil Code	Voltage
12D	12V
24D	24V ❹
110D	110V
125D	125V
220D	220V

Horsepower ratings shown in the tables are for reference only. **The final selection of the manual starter depends on the actual motor full load current and service factor.**

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. – 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

Ordering Instructions

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

- ❶ KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ❷ Does not include auxiliary contacts. See Factory Options on page F67 for additional auxiliary contact configurations.
- ❸ The coil codes shown are the most commonly stocked items. Contact your Sprecher + Schuh representative to determine if special voltages, are required.
- ❹ Integrated surge suppressor for coil is available.
- ❺ The European Community has agreed that 400V is the nominal voltage in lieu of 380V. Use this code when 380V is required.
- ❻ Use this code for 575V applications.

Non-Reversing Ecombo Starters with AC Coil, Series CA7 Contactor ③

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CL7-9-10-*AS0.16A-A10	427
0.16...0.25	3.3	2	~	~	~	~	CL7-9-10-*AS0.25A-A10	427
0.25...0.40	5.2	3	~	~	~	~	CL7-9-10-*AS0.4A-A10	427
0.40...0.63	8.2	4	~	~	~	~	CL7-9-10-*AS0.63A-A10	461
0.63...1	13	5	~	~	~	1/2	CL7-9-10-*AS1.0A-A10	461
1...1.6	21	6	~	~	1/2	3/4	CL7-9-10-*AS1.6A-A10	461
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CL7-9-10-*AS2.5A-A10	461
2.5...4	52	8	3/4	3/4	2	3	CL7-9-10-*AS4.0A-A10	461
4...6.3	82	9	1	1-1/2	3	5 ⑤	CL7-9-10-*AS6.3A-A10 ⑤	461
6.3...10	130	11	2	3	5	7-1/2 ⑤	CL7-12-10-*AS10A-A10 ⑤	490
10...16	208	12	3	5	10	10 ⑤	CL7-16-10-*AS16A-A10 ⑤	550
14.5...20	260	15	5	5	10	15 ⑤	CL7-23-10-*AS20A-A10 ⑤	570
18.5...25	325	16	5 ⑤	7-1/2 ⑤	15 ⑤	20 ⑤	CL7-23-10-*AS25A-A10 ⑤	570
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CL7-9-10-*AH2.5A-A10	524
2.5...4	52	19	3/4	3/4	2	3	CL7-9-10-*AH4.0A-A10	524
4...6.3	82	22	1	1-1/2	3	5	CL7-9-10-*AH6.3A-A10	524
6.3...10	130	24	2	3	5	7-1/2	CL7-12-10-*AH10A-A10	560
10...16	208	28	3	5	10	10	CL7-16-10-*AH16A-A10	620
14.5...20	260	31	5	5	10	15 ⑤	CL7-23-10-*AH20A-A10 ⑤	640
18...25	325	33	5	7-1/2	15	20 ⑤	CL7-23-10-*AH25A-A10 ⑤	640
KTA7-45H — High Interrupting Capacity ③								
6.3...10	130	36	2	3	5	7-1/2	CL7-30-10-*AH10A-A10-W	895
10...16	208	37	3	5	10	10	CL7-30-10-*AH16A-A10-W	895
14.5...20	260	38	5	5	10	15	CL7-30-10-*AH20A-A10-W	895
18...25	325	39	7-1/2	7-1/2	15	20	CL7-30-10-*AH25A-A10-W	895
23...32	416	41	7-1/2	10	20	25	CL7-30-10-*AH32A-A10-W	954
32...45	585	45	10	10	25	30	CL7-37-10-*AH45A-A10-W	1016
32...45	585	46	10	15	30	30	CL7-43-11-*AH45A-A10-W ④	1040



CL7-23-10-120-AS25A-A10

Includes:

- KT7 Motor Controller with 1 NO Auxiliary Contact
- CA7 Contactor (AC)
- Connecting Module (Cat.# KT7-25[S or H]-PEC23)
- Terminal Adaptor for Type E/F Applications
- Can mount on one DIN-rail

Optional: ⑤

- Type W Mounting Module is optional on 25S & 25H. Type W Module is standard on 45H models. See modifications on page F67.



Coil Codes (*) ②

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	~	208V
220W	200V-220V	208V-240V
240	220V	240V
277	240V	277V
380	380...400V	440V
480	440V	480V
600	550V	600V

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. - 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

Ordering Instructions

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

- ① KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② Other voltages available, see Section A in this catalog. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.
- ③ CL7-30...43 with KTA7-45H include Type W Mounting Modules for 35mm or 70mm DIN rail or Panel Mounting as necessary from page F17. To add Type W Mounting Modules for 25S or 25H models add -W to end of catalog number. See page F67 for modifications.
- ④ CL7-43 supplied with (1) NO and (1) NC front mount auxiliary.
- ⑤ Catalog numbers and/or specific voltages (i.e. ⑤ 575V) shaded in gray are suitable for Group Installation, per NEC 430-53C, because they are not Type E/F rated. See page F71 for ratings.

Non-Reversing Ecombo Starters with Electronic DC Coil, Series CA7 Contactor Ⓞ

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CL7-9E-10-*-AS0.16A-A10	500
0.16...0.25	3.3	2	~	~	~	~	CL7-9E-10-*-AS0.25A-A10	500
0.25...0.40	5.2	3	~	~	~	~	CL7-9E-10-*-AS0.4A-A10	500
0.40...0.63	8.2	4	~	~	~	~	CL7-9E-10-*-AS0.63A-A10	535
0.63...1	13	5	~	~	~	1/2	CL7-9E-10-*-AS1.0A-A10	535
1...1.6	21	6	~	~	1/2	3/4	CL7-9E-10-*-AS1.6A-A10	535
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CL7-9E-10-*-AS2.5A-A10	535
2.5...4	52	8	3/4	3/4	2	3	CL7-9E-10-*-AS4.0A-A10	535
4...6.3	82	9	1	1-1/2	3	5 Ⓞ	CL7-9E-10-*-AS6.3A-A10 Ⓞ	535
6.3...10	130	11	2	3	5	7-1/2 Ⓞ	CL7-12E-10-*-AS10A-A10 Ⓞ	565
10...16	208	12	3	5	10	10 Ⓞ	CL7-16E-10-*-AS16A-A10 Ⓞ	635
14.5...20	260	15	5	5	10	15 Ⓞ	CL7-23E-10-*-AS20A-A10 Ⓞ	660
18.5...25	325	16	5 Ⓞ	7-1/2 Ⓞ	15 Ⓞ	20 Ⓞ	CL7-23E-10-*-AS25A-A10 Ⓞ	660
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CL7-9E-10-*-AH2.5A-A10	600
2.5...4	52	19	3/4	3/4	2	3	CL7-9E-10-*-AH4.0A-A10	600
4...6.3	82	22	1	1-1/2	3	5	CL7-9E-10-*-AH6.3A-A10	600
6.3...10	130	24	2	3	5	7-1/2	CL7-12E-10-*-AH10A-A10	630
10...16	208	28	3	5	10	10	CL7-16E-10-*-AH16A-A10	705
14.5...20	260	31	5	5	10	15 Ⓞ	CL7-23E-10-*-AH20A-A10 Ⓞ	725
18...25	325	33	5	7-1/2	15	20 Ⓞ	CL7-23E-10-*-AH25A-A10 Ⓞ	725
KTA7-45H — High Interrupting Capacity Ⓞ								
6.3...10	130	36	2	3	5	7-1/2	CL7-30E-10-*-AH10A-A10-W	1005
10...16	208	37	3	5	10	10	CL7-30E-10-*-AH16A-A10-W	1005
14.5...20	260	38	5	5	10	15	CL7-30E-10-*-AH20A-A10-W	1005
18...25	325	39	7-1/2	7-1/2	15	20	CL7-30E-10-*-AH25A-A10-W	1005
23...32	416	41	7-1/2	10	20	25	CL7-30E-10-*-AH32A-A10-W	1064
32...45	585	45	10	10	25	30	CL7-37E-10-*-AH45A-A10-W	1142
32...45	585	46	10	15	30	30	CL7-43E-11-*-AH45A-A10-W Ⓞ	1207



CL7-23E-10-24E-AS25A-A10

Includes:

- KT7 Motor Controller with 1 NO Auxiliary Contact
- CA7-9E...43E Contactor
- Connecting Module (Cat.# KT7-25[S or H]-PEC23)
- Terminal Adaptor for Type E/F Applications
- Can mount on one DIN-rail

Optional: Ⓞ

- Type W Mounting Module is optional on 25S & 25H. Type W Module is standard on 45H models. See modifications on page F67.

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. – 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

Coil Codes ②

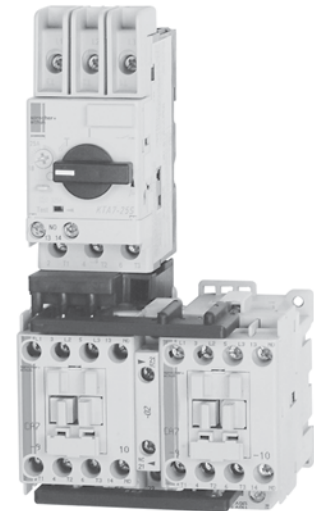
DC Coil Codes	Voltage
12E	12V
24E	24V
48E	48-72V
110E	110-125V
220E	220-250V

Ordering Instructions

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

Reversing Ecombo Starters with AC Coil, Series CA7 Contactor ③

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CLU7-9-22-*AS0.16A-A10	647
0.16...0.25	3.3	2	~	~	~	~	CLU7-9-22-*AS0.25A-A10	647
0.25...0.40	5.2	3	~	~	~	~	CLU7-9-22-*AS0.4A-A10	647
0.40...0.63	8.2	4	~	~	~	~	CLU7-9-22-*AS0.63A-A10	680
0.63...1	13	5	~	~	~	1/2	CLU7-9-22-*AS1.0A-A10	680
1...1.6	21	6	~	~	1/2	3/4	CLU7-9-22-*AS1.6A-A10	680
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CLU7-9-22-*AS2.5A-A10	680
2.5...4	52	8	3/4	3/4	2	3	CLU7-9-22-*AS4.0A-A10	680
4...6.3	82	9	1	1-1/2	3	5 ⑤	CLU7-9-22-*AS6.3A-A10 ⑤	680
6.3...10	130	11	2	3	5	7-1/2 ⑤	CLU7-12-22-*AS10A-A10 ⑤	760
10...16	208	12	3	5	10	10 ⑤	CLU7-16-22-*AS16A-A10 ⑤	821
14.5...20	260	15	5	5	10	15 ⑤	CLU7-23-22-*AS20A-A10 ⑤	863
18.5...25	325	16	5 ⑤	7-1/2 ⑤	15 ⑤	20 ⑤	CLU7-23-22-*AS25A-A10 ⑤	863
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CLU7-9-22-*AH2.5A-A10	742
2.5...4	52	19	3/4	3/4	2	3	CLU7-9-22-*AH4.0A-A10	742
4...6.3	82	22	1	1-1/2	3	5	CLU7-9-22-*AH6.3A-A10	742
6.3...10	130	24	2	3	5	7-1/2	CLU7-12-22-*AH10A-A10	850
10...16	208	28	3	5	10	10	CLU7-16-22-*AH16A-A10	893
14.5...20	260	31	5	5	10	15 ⑤	CLU7-23-22-*AH20A-A10 ⑤	935
18...25	325	33	5	7-1/2	15	20 ⑤	CLU7-23-22-*AH25A-A10 ⑤	935
KTA7-45H — High Interrupting Capacity ③								
6.3...10	130	36	2	3	5	7-1/2	CLU7-30-22-*AH10A-A10-W	1075
10...16	208	37	3	5	10	10	CLU7-30-22-*AH16A-A10-W	1075
14.5...20	260	38	5	5	10	15	CLU7-30-22-*AH20A-A10-W	1075
18...25	325	39	7-1/2	7-1/2	15	20	CLU7-30-22-*AH25A-A10-W	1075
23...32	416	41	7-1/2	10	20	25	CLU7-30-22-*AH32A-A10-W	1175
32...45	585	45	10	10	25	30	CLU7-37-22-*AH45A-A10-W	1240
32...45	585	46	10	15	30	30	CLU7-43-22-*AH45A-A10-W ④	1310



CLU7-9-22-120-AS25A-A10

Includes:

- KT7 Motor Controller with 1 NO Auxiliary Contact
- Two CA7 Contactors (AC)
- Connecting Module (Cat.# KT7-25[S or H]-PEC23)
- Terminal Adaptor for Type E/F Applications
- Reversing Power Wiring Kit (Cat.# CAUT7-PW23)
- Electrical / Mechanical Interlock
- Can mount on one DIN-rail

Optional: ⑤

- Type W Mounting Module is optional on 25S & 25H. Type W Module is standard on 45H models. See modifications on page F67.

Coil Codes (*) ②

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	~	208V
220W	200V-220V	208V-240V
240	220V	240V
277	240V	277V
380	380...400V	440V
480	440V	480V
600	550V	600V

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. - 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

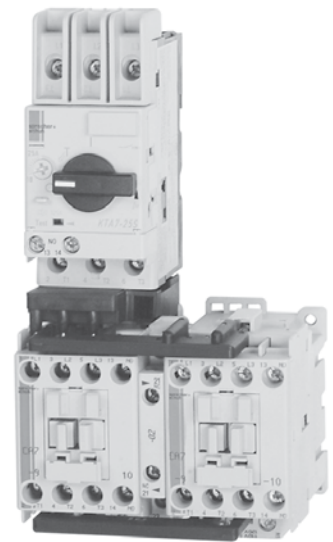
Ordering Instructions

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

- ① KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② Other voltages available, see Section A in this catalog. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ③ CLU7-30...43 with KTA7-45H include Type W Mounting Modules for 35mm or 70mm DIN rail or Panel Mounting as necessary from page F17. To add Type W Mounting Modules for 25S or 25H models add -W to end of catalog number. See page F67 for modifications.
- ④ CLU7-43 supplied with (1) NO and (1) NC front mount auxiliary per contactor.
- ⑤ Catalog numbers and/or specific voltages (i.e. @ 575V) shaded in gray are suitable for Group Installation, per NEC 430-53C, because they are not Type E/F rated. See page F71 for ratings.

Reversing Ecombo Starters with Electronic DC Coil, Series CA7 Contactor

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CLU7-9E-22-*AS0.16A-A10	790
0.16...0.25	3.3	2	~	~	~	~	CLU7-9E-22-*AS0.25A-A10	790
0.25...0.40	5.2	3	~	~	~	~	CLU7-9E-22-*AS0.4A-A10	790
0.40...0.63	8.2	4	~	~	~	~	CLU7-9E-22-*AS0.63A-A10	820
0.63...1	13	5	~	~	~	1/2	CLU7-9E-22-*AS1.0A-A10	820
1...1.6	21	6	~	~	1/2	3/4	CLU7-9E-22-*AS1.6A-A10	820
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CLU7-9E-22-*AS2.5A-A10	820
2.5...4	52	8	3/4	3/4	2	3	CLU7-9E-22-*AS4.0A-A10	820
4...6.3	82	9	1	1-1/2	3	5 ③	CLU7-9E-22-*AS6.3A-A10 ③	820
6.3...10	130	11	2	3	5	7-1/2 ③	CLU7-12E-22-*AS10A-A10 ③	925
10...16	208	12	3	5	10	10 ③	CLU7-16E-22-*AS16A-A10 ③	995
14.5...20	260	15	5	5	10	15 ③	CLU7-23E-22-*AS20A-A10 ③	1040
18.5...25	325	16	5 ③	7-1/2 ③	15 ③	20 ③	CLU7-23E-22-*AS25A-A10 ③	1040
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CLU7-9E-22-*AH2.5A-A10	885
2.5...4	52	19	3/4	3/4	2	3	CLU7-9E-22-*AH4.0A-A10	885
4...6.3	82	22	1	1-1/2	3	5	CLU7-9E-22-*AH6.3A-A10	885
6.3...10	130	24	2	3	5	7-1/2	CLU7-12E-22-*AH10A-A10	1010
10...16	208	28	3	5	10	10	CLU7-16E-22-*AH16A-A10	1060
14.5...20	260	31	5	5	10	15 ③	CLU7-23E-22-*AH20A-A10 ③	1110
18...25	325	33	5	7-1/2	15	20 ③	CLU7-23E-22-*AH25A-A10 ③	1110
KTA7-45H — High Interrupting Capacity ④								
6.3...10	130	36	2	3	5	7-1/2	CLU7-30E-22-*AH10A-A10-W	1298
10...16	208	37	3	5	10	10	CLU7-30E-22-*AH16A-A10-W	1298
14.5...20	260	38	5	5	10	15	CLU7-30E-22-*AH20A-A10-W	1298
18...25	325	39	7-1/2	7-1/2	15	20	CLU7-30E-22-*AH25A-A10-W	1298
23...32	416	41	7-1/2	10	20	25	CLU7-30E-22-*AH32A-A10-W	1398
32...45	585	45	10	10	25	30	CLU7-37E-22-*AH45A-A10-W	1574
32...45	585	46	10	15	30	30	CLU7-43E-22-*AH45A-A10-W ⑤	1646



CLU7-9E-22-24E-AS25A-A10

Includes:

- KT7 Motor Controller with 1 NO Auxiliary Contact
- Two CA7-9E...43E Contactors
- Connecting Module (Cat.# KT7-25[S or H]-PEC23)
- Terminal Adaptor for Type E/F Applications
- Reversing Power Wiring Kit (Cat.# CAUT7-PW23)
- Electrical / Mechanical Interlock
- Can mount on one DIN-rail

Optional: ⑥

- Type W Mounting Module is optional on 25S & 25H. Type W Module is standard on 45H models. See modifications on page F67.

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. - 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

Coil Codes ②

DC Coil Codes	Voltage
12E	12V
24E	24V
48E	48-72V
110E	110-125V
220E	220-250V

Ordering Instructions

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

- ① KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② CLU7-9E...43E with electronic coils are not interchangeable with non-electronic DC or AC coils.
- ③ See Section A for limitations on adding auxiliaries to Electronic DC Coil contacts.
- ④ CLU7-30E...43E with KTA7-45H include Type W Mounting Modules for 35mm or 70mm DIN rail or Panel Mounting as necessary from page F17. To add Type W Mounting Modules for 25S or 25H models add -W to end of catalog number. See page F67 for modifications.
- ⑤ CLU7-43E supplied with (1) NO and (1) NC front mount auxiliary per contactor.
- ⑥ Catalog numbers and/or specific voltages (i.e. ⑤ 575V) shaded in gray are suitable for Group Installation, per NEC 430-53C, because they are not Type E/F rated. See page F71 for ratings.

Non-Reversing EcomboPlus Starters with AC Coil, Series CA7 Contactors

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CK7-9-10- * -AS0.16A-A11	560
0.16...0.25	3.3	2	~	~	~	~	CK7-9-10- * -AS0.25A-A11	560
0.25...0.40	5.2	3	~	~	~	~	CK7-9-10- * -AS0.4A-A11	560
0.40...0.63	8.2	4	~	~	~	~	CK7-9-10- * -AS0.63A-A11	590
0.63...1	13	5	~	~	~	1/2	CK7-9-10- * -AS1.0A-A11	590
1...1.6	21	6	~	~	1/2	3/4	CK7-9-10- * -AS1.6A-A11	590
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CK7-9-10- * -AS2.5A-A11	590
2.5...4	52	8	3/4	3/4	2	3	CK7-9-10- * -AS4.0A-A11	590
4...6.3	82	9	1	1-1/2	3	5 ⑤	CK7-9-10- * -AS6.3A-A11 ⑤	590
6.3...10	130	11	2	3	5	7-1/2 ⑤	CK7-12-10- * -AS10A-A11 ⑤	620
10...16	208	12	3	5	10	10 ⑤	CK7-16-10- * -AS16A-A11 ⑤	678
14.5...20	260	15	5	5	10	15 ⑤	CK7-23-10- * -AS20A-A11 ⑤	700
18.5...25	325	16	5 ⑤	7-1/2 ⑤	15 ⑤	20 ⑤	CK7-23-10- * -AS25A-A11 ⑤	700
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CK7-9-10- * -AH2.5A-A11	654
2.5...4	52	19	3/4	3/4	2	3	CK7-9-10- * -AH4.0A-A11	654
4...6.3	82	22	1	1-1/2	3	5	CK7-9-10- * -AH6.3A-A11	654
6.3...10	130	24	2	3	5	7-1/2	CK7-12-10- * -AH10A-A11	684
10...16	208	28	3	5	10	10	CK7-16-10- * -AH16A-A11	750
14.5...20	260	31	5	5	10	15 ⑤	CK7-23-10- * -AH20A-A11 ⑤	770
18...25	325	33	5	7-1/2	15	20 ⑤	CK7-23-10- * -AH25A-A11 ⑤	770
KTA7-45H — High Interrupting Capacity								
6.3...10	130	36	2	3	5	7-1/2	CK7-30-11- * -AH10A-A11	975
10...16	208	37	3	5	10	10	CK7-30-11- * -AH16A-A11	975
14.5...20	260	38	5	5	10	15	CK7-30-11- * -AH20A-A11	975
18...25	325	39	7-1/2	7-1/2	15	20	CK7-30-11- * -AH25A-A11	975
23...32	416	41	7-1/2	10	20	25	CK7-30-11- * -AH32A-A11	1034
32...45	585	45	10	10	25	30	CK7-37-11- * -AH45A-A11	1096
32...45	585	46	10	15	30	30	CK7-43-11- * -AH45A-A11	1107



Description ③

The EcomboPlus starter is a factory assembly consisting of a KT7 controller with 1 NO - 1 NC auxiliary and a CA7 contactor housed in a specially designed frame. All control wiring is pre-wired and brought out to a built-in terminal block, integral to the mounting frame. Terminal Adaptor (Cat.# KT7-25[45]-TE) is also included for Type E applications.

Coil Codes (*) ④

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	~	208V
220W	200V-220V	208V-240V
240	220V	240V
277	240V	277V
380	380...400V	440V
480	440V	480V
600	550V	600V

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. - 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

- ① KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② See Factory Options on page F67 for additional auxiliary contact configurations.
 - KT7 supplied with (1) NO and (1) NC auxiliary contact
 - CK7-9...23 supplied with (1) NO auxiliary contact
 - CK7-30...37 supplied with (1) NO and (1) NC side mount auxiliary contact
 - CK7-43 supplied with (1) NO and (1) NC front mount auxiliary contact
- ③ Mounting Options:
 - Screw Fixing
 - Snap Fixing on (1) or (2) 35 mm DIN Rails
 - Snap Fixing on (1) 75 mm DIN Rail
- ④ Other voltages available, see Section A in this catalog. Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.
- ⑤ Catalog numbers and/or specific voltages (i.e. ⑤ 575V) shaded in gray are suitable for Group Installation, per NEC 430-53C, because they are not Type E/F rated. See page F71 for ratings.

Ordering Instructions

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

Non-Reversing EcomboPlus Starters with Electronic DC Coil, Series CA7 Contactors ④⑤

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CK7-9E-10-*AS0.16A-A11	662
0.16...0.25	3.3	2	~	~	~	~	CK7-9E-10-*AS0.25A-A11	662
0.25...0.40	5.2	3	~	~	~	~	CK7-9E-10-*AS0.4A-A11	662
0.40...0.63	8.2	4	~	~	~	~	CK7-9E-10-*AS0.63A-A11	692
0.63...1	13	5	~	~	~	1/2	CK7-9E-10-*AS1.0A-A11	692
1...1.6	21	6	~	~	1/2	3/4	CK7-9E-10-*AS1.6A-A11	692
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CK7-9E-10-*AS2.5A-A11	692
2.5...4	52	8	3/4	3/4	2	3	CK7-9E-10-*AS4.0A-A11	692
4...6.3	82	9	1	1-1/2	3	5 ⑥	CK7-9E-10-*AS6.3A-A11 ⑥	692
6.3...10	130	11	2	3	5	7-1/2 ⑥	CK7-12E-10-*AS10A-A11 ⑥	732
10...16	208	12	3	5	10	10 ⑥	CK7-16E-10-*AS16A-A11 ⑥	802
14.5...20	260	15	5	5	10	15 ⑥	CK7-23E-10-*AS20A-A11 ⑥	802
18.5...25	325	16	5 ⑥	7-1/2 ⑥	15 ⑥	20 ⑥	CK7-23E-10-*AS25A-A11 ⑥	802
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CK7-9E-10-*AH2.5A-A11	752
2.5...4	52	19	3/4	3/4	2	3	CK7-9E-10-*AH4.0A-A11	752
4...6.3	82	22	1	1-1/2	3	5	CK7-9E-10-*AH6.3A-A11	752
6.3...10	130	24	2	3	5	7-1/2	CK7-12E-10-*AH10A-A11	792
10...16	208	28	3	5	10	10	CK7-16E-10-*AH16A-A11	852
14.5...20	260	31	5	5	10	15 ⑥	CK7-23E-10-*AH20A-A11 ⑥	892
18...25	325	33	5	7-1/2	15	20 ⑥	CK7-23E-10-*AH25A-A11 ⑥	892
KTA7-45H — High Interrupting Capacity								
6.3...10	130	30	2	3	5	7-1/2	CK7-30E-11-*AH10A-A11	1102
10...16	208	37	3	5	10	10	CK7-30E-11-*AH16A-A11	1102
14.5...20	260	38	5	5	10	15	CK7-30E-11-*AH20A-A11	1102
18...25	325	39	7-1/2	7-1/2	15	20	CK7-30E-11-*AH25A-A11	1102
23...32	416	41	7-1/2	10	20	25	CK7-30E-11-*AH32A-A11	1197
32...45	585	45	10	10	25	30	CK7-37E-11-*AH45A-A11	1227
32...45	585	46	10	15	30	30	CK7-43E-11-*AH45A-A11	1282



Description ③
The EcomboPlus starter is a factory assembly consisting of a KT7 controller with 1 NO - 1 NC auxiliary and a CA7-9E...43E contactor housed in a specially designed frame. All control wiring is pre-wired and brought out to a built-in terminal block, integral to the mounting frame. Terminal Adaptor (Cat.# KT7-25[45]-TE) is also included for Type E applications.

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. - 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

Coil Codes ④

DC Coil Codes	Voltage
12E	12V
24E	24V
48E	48-72V
110E	110-125V
220E	220-250V

Ordering Instructions

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

- ① KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② See Factory Options on page F67 for additional auxiliary contact configurations.
 - KT7 supplied with (1) NO and (1) NC auxiliary contact
 - CK7-9...23E supplied with (1) NO auxiliary contact
 - CK7-30...37E supplied with (1) NO and (1) NC side mount auxiliary contact
 - CK7-43E supplied with (1) NO and (1) NC front mount auxiliary contact
- ③ Mounting Options:
 - Screw Fixing
 - Snap Fixing on (1) or (2) 35 mm DIN Rails
 - Snap Fixing on (1) 75 mm DIN Rail
- ④ CK7-9E...43E with electronic coils are not interchangeable with non-electronic DC or AC coils.
- ⑤ See pages A47 for limitations on adding auxiliaries to Electronic DC Coil contactors.
- ⑥ Catalog numbers and/or specific voltages (i.e. @ 575V) shaded in gray are suitable for Group Installation, per NEC 430-53C, because they are not Type E/F rated. See page F71 for ratings.

Reversing EcomboPlus Starters with AC Coil, Series CA7 Contactors

Thermal Trip [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②	Price
			200V	230V	460V	575V		
KTA7-25S — Standard Interrupting Capacity								
0.10...0.16	2.1	1	~	~	~	~	CKU7-9-22-*AS0.16A-A11	850
0.16...0.25	3.3	2	~	~	~	~	CKU7-9-22-*AS0.25A-A11	850
0.25...0.40	5.2	3	~	~	~	~	CKU7-9-22-*AS0.4A-A11	850
0.40...0.63	8.2	4	~	~	~	~	CKU7-9-22-*AS0.63A-A11	875
0.63...1	13	5	~	~	~	1/2	CKU7-9-22-*AS1.0A-A11	875
1...1.6	21	6	~	~	1/2	3/4	CKU7-9-22-*AS1.6A-A11	875
1.6...2.5	33	7	1/2	1/2	1	1-1/2	CKU7-9-22-*AS2.5A-A11	875
2.5...4	52	8	3/4	3/4	2	3	CKU7-9-22-*AS4.0A-A11	875
4...6.3	82	9	1	1-1/2	3	5 ⑤	CKU7-9-22-*AS6.3A-A11 ⑤	875
6.3...10	130	11	2	3	5	7-1/2 ⑤	CKU7-12-22-*AS10A-A11 ⑤	950
10...16	208	12	3	5	10	10 ⑤	CKU7-16-22-*AS16A-A11 ⑤	1050
14.5...20	260	15	5	5	10	15 ⑤	CKU7-23-22-*AS20A-A11 ⑤	1060
18.5...25	325	16	5 ⑤	7-1/2 ⑤	15 ⑤	20 ⑤	CKU7-23-22-*AS25A-A11 ⑤	1060
KTA7-25H — High Interrupting Capacity								
1.6...2.5	33	17	1/2	1/2	1	1-1/2	CKU7-9-22-*AH2.5A-A11	950
2.5...4	52	19	3/4	3/4	2	3	CKU7-9-22-*AH4.0A-A11	950
4...6.3	82	22	1	1-1/2	3	5	CKU7-9-22-*AH6.3A-A11	950
6.3...10	130	24	2	3	5	7-1/2	CKU7-12-22-*AH10A-A11	1025
10...16	208	28	3	5	10	10	CKU7-16-22-*AH16A-A11	1100
14.5...20	260	31	5	5	10	15 ⑤	CKU7-23-22-*AH20A-A11 ⑤	1150
18...25	325	33	5	7-1/2	15	20 ⑤	CKU7-23-22-*AH25A-A11 ⑤	1150



Description ③

The EcomboPlus Reversing starter is a factory assembly consisting of a KT7 controller with 1 NO - 1 NC auxiliary and reversing CA7 contactors housed in a specially designed frame. All control wiring is pre-wired and brought out to a built-in terminal block, integral to the mounting frame. A Reversing Power Wiring Kit (Cat.# CAUT7-PW23) is used to wire the reversing contactors. An electrical and mechanical interlock is also provided (Cat.# CM7-02), as well as a Terminal Adaptor (Cat.# KT7-25-TE) for Type E applications.

Horsepower ratings shown in the tables are for reference only. The final selection of the manual starter depends on the actual motor full load current and service factor.

- For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2A; S.F. = 1.0. - 4.2A x 0.9 = 3.78A. Select Catalog Number KTA7-25S-4.0A.

Coil Codes (*) ④

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	~	208V
220W	200V-220V	208V-240V
240	220V	240V
277	240V	277V
380	380...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 KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② See Factory Options on page F67 for additional auxiliary contact configurations.
 - KT7 supplied with (1) NO and (1) NC auxiliary contact
 - CKU7 supplied with (2) NO auxiliary contact
 - CM7-02 interlock supplied with (2) NC auxiliary contacts
- ③ Mounting Options:
 - Screw Fixing
 - Snap Fixing on (1) or (2) 35 mm DIN Rails
 - Snap Fixing on (1) 75 mm DIN Rail
- ④ Other voltages available, see Section A in this catalog. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ⑤ Catalog numbers and/or specific voltages (i.e. ⑤ 575V) shaded in gray are suitable for Group Installation, per NEC 430-53C, because they are not Type E/F rated. See page F71 for ratings.

CL8 and CL7 Modifications ④

Modification	Change Last Digit in Catalog Number to: ①	Price
KT7 Auxiliary and Trip Contacts		
Auxiliary Contact 1 NO (CL8 only)	A10	55
Auxiliary Contact 1 NC	A01	55
Auxiliary Contact 1 NO + 1 NC	A11	62
Auxiliary Contact 2 NO	A20	62
1 NO SC or OL + 1 NC Auxiliary Contact	T10A01	79
1 NO SC or OL + 1 NO Auxiliary Contact	T10A10	79

CL8 and CL7 Additions ④

Add desired suffix AFTER auxiliary contact option code.

Addition	Add Suffix to Catalog Number:	Price
Accessories		
Electronic Interfaces (CA7)	-JE ⑤	94
Surge Suppressor RC (CA7, CA8)	-R	54
Surge Suppressor Varistor (CA7, CA8)	-V	40
Surge Suppressor Diode (CA7, CA8)	-D	52
Lockable Twist Knob (KT7) - Black	-KN	27
Lockable Twist Knob (KT7) - Red/Yellow	-KRY	34
Type W Mounting Module for CL7-9...23 includes 45mm short module (W-32489) ②	-W	50
Type W Mounting Module for CLU7-9...23 includes 45mm (W-32849) and 54mm (W-32490) short module ②	-W	100
Additional CA7 Contactor Auxiliaries (Side Mount)		
1 NC	-S01	45
1 NO	-S10	45
1 NO + 1 NC	-S11	57
2 NO	-S20	57
Additional CA7 & CA8 Contactor Auxiliaries (Front Mount)		
1 NO + 1 NC	-F11	57
2 NO	-F20	57
2 NO + 2 NC	-F22	57
Additional KT7 Auxiliaries (Side Mount)		
2 NC	-AS02	79
2 NO	-AS20	79
1 NO + 1 NC	-AS11	79
Additional KT7 Trip Contacts (Side Mount)		
1 NO SC or OL + 1 NO SC	-R00	94
1 NO SC or OL + 1 NC SC	-R01	94
1 NC SC or OL + 1 NO SC	-R10	94
1 NC SC or OL + 1 NC SC	-R11	94
1 NO SC + 1 NC SC	-M11	94

CK7 Modifications

Modification	Change Last Digits (A11) in Catalog Number to: ①	Price
CK7 Auxiliary and Trip Contacts		
Auxiliary Contact 2 NO	A20	52
1 NO SC or OL + 1 NC Auxiliary Contact	T10A01	17
1 NO SC or OL + 1 NO Auxiliary Contact	T10A10	17

CK7 Additions ④

Add desired suffix AFTER auxiliary contact option code.

Addition	Add Suffix to Catalog Number:	Price
Accessories		
Electronic Interfaces (CA7)	-JE	94
Surge Suppressor RC (CA7)	-R	54
Surge Suppressor Varistor (CA7)	-V	40
Surge Suppressor Diode (CA7)	-D	52
Socket and Plug for Control Circuit	-SP	45
Lockable Twist Knob (KT7) - Black	-KN	27
Lockable Twist Knob (KT7) - Red/Yellow	-KRY	34
Additional Contactor Auxiliaries (Side Mount)		
1 NC	-S01	45
1 NO	-S10	45
1 NO + 1 NC	-S11	57
2 NO	-S20	57
Additional KT7 Auxiliaries (Side Mount)		
2 NC	-AS02	79
2 NO	-AS20	79
1 NO + 1 NC	-AS11	79
Additional KT7 Trip Contacts (Side Mount)		
1 NO SC or OL + 1 NO SC	-R00	94
1 NO SC or OL + 1 NC SC	-R01	94
1 NC SC or OL + 1 NO SC	-R10	94
1 NC SC or OL + 1 NC SC	-R11	94
1 NO SC + 1 NC SC	-M11	94

① For CL8, change last digit "X" to one of the modifications listed.
Example: CL8-09-10-~~X~~-AS0.16A-~~X~~ changes to CL8-09-10-~~X~~-AS0.16A-A10.
For CL7, change last digits "A10" to one of the modifications listed.
Example: CL7-9-10-~~X~~-AS0.16A-A10 changes to CL7-9-10-~~X~~-AS0.16A-A01.

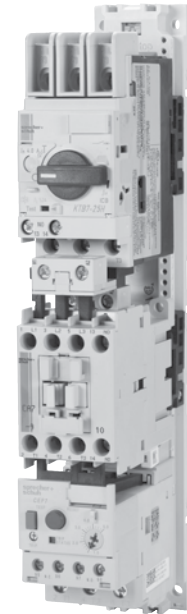
② CL7/CLU7-30...43 include all Type W Mounting Modules necessary from page F17.

⑤ CR17E-24 will be used. CR17E-12 by special order only.

⑥ See pages A47 for limitations on adding auxiliaries to Electronic DC Coil contactors.

Non-Reversing 3-Component Ecombo Starters with AC Coil ⑤⑥

Rated Oper. Current [A] ③	Overload Adj. Range [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP] ④				Catalog Number ②④	Price
				200V	230V	460V	575V		
KTB7-25S — Standard Interrupting Capacity									
0.40	0.1...0.5	5.2	3B	~	~	~	~	CLT7-9-* -B2S0.4-A10-D1AB	644
0.40	0.1...0.5	5.2	3B	~	~	~	~	CLT7-9-* -B2S0.4-A10-EAB	654
1.0	0.2...1.0	13	5B	~	~	~	1/2	CLT7-9-* -B2S1.0-A10-D1BB	675
1.0	0.2...1.0	13	5B	~	~	~	1/2	CLT7-9-* -B2S1.0-A10-EBB	685
2.5	1.0...5.0	33	7B	1/2	1/2	1	~	CLT7-9-* -B2S2.5-A10-D1CB	675
2.5	1.0...5.0	33	7B	1/2	1/2	1	~	CLT7-9-* -B2S2.5-A10-ECB	685
KTB7-25H — High Interrupting Capacity									
2.5	1.0...5.0	33	17B	1/2	1/2	1	~	CLT7-9-* -B2H2.5-A10-D1CB	738
2.5	1.0...5.0	33	17B	1/2	1/2	1	~	CLT7-9-* -B2H2.5-A10-ECB	749
2.5	1.0...5.0	33	18B	1/2	1/2	1	1-1/2	CLT7-23-* -B2H2.5-A10-D1CB	812
2.5	1.0...5.0	33	18B	1/2	1/2	1	1-1/2	CLT7-23-* -B2H2.5-A10-ECB	823
4.0	1.0...5.0	52	21B	3/4	3/4	2	3	CLT7-23-* -B2H4.0-A10-D1CB	812
4.0	1.0...5.0	52	21B	3/4	3/4	2	3	CLT7-23-* -B2H4.0-A10-ECB	823
10	5.1...27	130	27B	2	3	5	7-1/2	CLT7-30-* -B2H10-A10-EED	936
16	5.1...27	208	30B	3	5	10	10	CLT7-30-* -B2H16-A10-EED	982
25	5.1...27	325	34B	5	7-1/2	15	~	CLT7-30-* -B2H25-A10-EED	982
KTB7-45H — High Interrupting Capacity									
25	5.1...27	325	39B	5	7-1/2	15	20	CLT7-30-* -B4H25-A10-EED	1134
32	9...45	416	41B	7-1/2	10	20	20	CLT7-30-* -B4H32-A10-EFD	1195
32	9...45	416	42B	7-1/2	10	20	20	CLT7-37-* -B4H32-A10-EFD	1241
45	9...45	585	45B	10	10	25	~	CLT7-37-* -B4H45-A10-EFD	1241
45	9...45	585	46B	10	15	30	~	CLT7-43-* -B4H45-A10-EFD	1253



Includes:

- KTB7 Motor Controller
- CA7 Contactor (AC)
- CEP7 Solid State Overload Relay
- KT7 PSC and PNC Connectors
- Terminal Adaptor for Type E Applications
- Mounting Modules for 25A or 45A Frame Units as required from page F17.
- See page F70 for Factory Options

Coil Codes (*) ②

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	~	208V
220W	200V-220V	208V-240V
240	220V	240V
277	240V	277V
380	380...400V	440V
480	440V	480V
600	550V	600V

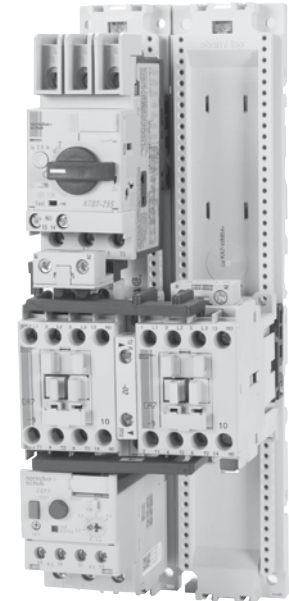
- ① KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② Other voltages available, see Section A in this catalog. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ③ All CLT7 contactors are supplied with Auxiliary Contacts as follows:
 CLT7-9...23 (1) NO Internal Mount
 CLT7-30...37 (1) NO Side Mount
 CLT7-43 (1) NO & (1) NC Front Mount
 All KTB7s are supplied with (1) NO auxiliary contact (A10), which should be used in series with the NC contact on the overload (95-96).
- ④ See page F70 for CEP7 Overload Relay information.
- ⑤ Horsepower ratings shown in tables are for reference only. **The final selection of the magnetic manual starter and solid state overload relay depends on the actual motor full load current and service factor.**
- ⑥ The KTB7 Motor Circuit Controller is designed and tested to protect a motor circuit in case of a short circuit. A separate Sprecher + Schuh CEP7-EE_ overload relay with selectable trip class should be used to protect the motor against overload.
 In Applications with motor starting times exceeding 10 seconds (heavy duty starting) the rated operational current (I_o) of the motor FLA must be multiplied by the following factors for selection of the KTB7 Motor Circuit Controller KTB7-25S, KTB7-25H/32H and KTB7-45H.
 Trip classes according to UL 508 Section 52 and IEC 60947-4-1
 CLASS 10 = 1.0, CLASS 15 = 1.22, CLASS 20 = 1.42, CLASS 25 = 1.58, CLASS 30 = 1.73
 The maximum number of motor starts in 25 cycles/hour with a minimum OFF-time of 120 seconds between cycles. This additional calculation and selecting a larger frame size is necessary to compensate (dissipate) the increased heat resulting from long acceleration applications effecting the rated operational current of the KTB7.

Ordering Instructions

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

Reversing 3-Component Ecombo Starters with AC Coil ③④⑤

Rated Oper. Current [A] ⑥	Overload Adj. Range [A]	Magnetic Trip [A]	Index ①	Typical Three Phase [HP]				Catalog Number ②④	Price
				200V	230V	460V	575V		
KTB7-25S — Standard Interrupting Capacity									
0.40	0.1...0.5	5.2	3B	~	~	~	~	CLUT7-9-* B2S0.4-A10-D1AB	928
0.40	0.1...0.5	5.2	3B	~	~	~	~	CLUT7-9-* B2S0.4-A10-EAB	938
1.0	0.2...1.0	13	5B	~	~	~	1/2	CLUT7-9-* B2S1.0-A10-D1BB	959
1.0	0.2...1.0	13	5B	~	~	~	1/2	CLUT7-9-* B2S1.0-A10-EBB	970
2.5	1.0...5.0	33	7B	1/2	1/2	1	~	CLUT7-9-* B2S2.5-A10-D1CB	959
2.5	1.0...5.0	33	7B	1/2	1/2	1	~	CLUT7-9-* B2S2.5-A10-ECB	970
KTB7-25H — High Interrupting Capacity									
2.5	1.0...5.0	33	17B	1/2	1/2	1	~	CLUT7-9-* B2H2.5-A10-D1CB	1022
2.5	1.0...5.0	33	17B	1/2	1/2	1	~	CLUT7-9-* B2H2.5-A10-ECB	1033
2.5	1.0...5.0	33	18B	1/2	1/2	1	1-1/2	CLUT7-23-* B2H2.5-A10-D1CB	1173
2.5	1.0...5.0	33	18B	1/2	1/2	1	1-1/2	CLUT7-23-* B2H2.5-A10-ECB	1185
4.0	1.0...5.0	52	21B	3/4	3/4	2	3	CLUT7-23-* B2H4.0-A10-D1CB	1173
4.0	1.0...5.0	52	21B	3/4	3/4	2	3	CLUT7-23-* B2H4.0-A10-ECB	1185
10	5.1...27	130	27B	2	3	5	7-1/2	CLUT7-30-* B2H10-A10-EED	1346
16	5.1...27	208	30B	3	5	10	10	CLUT7-30-* B2H16-A10-EED	1391
25	5.1...27	325	34B	5	7-1/2	15	~	CLUT7-30-* B2H25-A10-EED	1391
KTB7-45H — High Interrupting Capacity									
25	5.1...27	325	39B	5	7-1/2	15	20	CLUT7-30-* B4H25-A10-EED	1542
32	9...45	416	41B	7-1/2	10	20	20	CLUT7-30-* B4H32-A10-EFD	1610
32	9...45	416	42B	7-1/2	10	20	20	CLUT7-37-* B4H32-A10-EFD	1691
45	9...45	585	45B	10	10	25	~	CLUT7-37-* B4H45-A10-EFD	1691
45	9...45	585	46B	10	15	30	~	CLUT7-43-* B4H45-A10-EFD	1771



Includes:

- KTB7 Motor Controller
- CAU7 Reversing Contactor (AC)
- CEP7 Solid State Overload Relay
- KT7 PSC and PNC Connectors
- Terminal Adaptor for Type E Applications
- Mounting Modules for 25A or 45A Frame Units as required from page F17.
- See page F70 for Factory Options

Coil Codes (*) ②

AC Coil Code	Voltage Range	
	50 Hz	60 Hz
24Z	24V	24V
120	110V	120V
208	~	208V
220W	200V-220V	208V-240V
240	220V	240V
277	240V	277V
380	380...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 KAIC Assembly Rating Index. See pages F71-F73 for Application Rating Guide.
- ② Other voltages available, see Section A in this catalog. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
- ③ All CLUT7 are supplied with Auxiliary Contacts for customer use as follows:
 - CLUT7-9...23 (1) NO Internal Mount
 - CLUT7-30...37 (1) NO Side Mount
 - CLUT7-43 (1) NO & (1) NC Front Mount
 - CM7-02 interlock (2) NC (Electrical Interlocks)
 All KTB7s are supplied with (1) NO auxiliary contact (A10), which should be used in series with the NC contact on the overload (95-96).
- ④ All CAU7 reversing contactors are supplied with CM7-02, including (2) NC contacts for electronic interlocking (not available for customer use).
- ⑤ Horsepower ratings shown in tables are for reference only. **The final selection of the magnetic manual starter and solid state overload relay depends on the actual motor full load current and service factor.**
- ⑥ The KTB7 Motor Circuit Controller is designed and tested to protect a motor circuit in case of a short circuit. A separate Sprecher + Schuh CEP7-EE_ overload relay with selectable trip class should be used to protect the motor against overload.

In Applications with motor starting times exceeding 10 seconds (heavy duty starting) the rated operational current (I_a) of the motor FLA must be multiplied by the following factors for selection of the KTB7 Motor Circuit Controller KTB7-25S, KTB7-25H/32H and KTB7-45H.

Trip classes according to UL 508 Section 52 and IEC 60947-4-1
 CLASS 10 = 1.0, CLASS 15 = 1.22, CLASS 20 = 1.42, CLASS 25 = 1.58, CLASS 30 = 1.73

The maximum number of motor starts in 25 cycles/hour with a minimum OFF-time of 120 seconds between cycles. This additional calculation and selecting a larger frame size is necessary to compensate (dissipate) the increased heat resulting from long acceleration applications effecting the rated operational current of the KTB7.

CLT7/CLUT7 Modifications

Modification	Change "X" Digit in Catalog Number to: ③	Price Adder
KT7 Auxiliary and Trip Contacts		
Auxiliary Contact 1 NO + 1 NC	A11	62
Auxiliary Contact 2 NO	A20	62
1 NO SC + 1 NC Auxiliary Contact	T10A01	79
1 NO SC + 1 NO Auxiliary Contact	T10A10	79

CLT7/CLUT7 Additions

Addition	Add Suffix to end of Catalog Number:	Price Adder
Accessories		
Electronic Interfaces	-JE	94
Surge Suppressor RC	-R	54
Surge Suppressor Varistor	-V	40
Surge Suppressor Diode	-D	52
Lockable Twist Knob (KT7) - Black	-KN	27
Lockable Twist Knob (KT7) - Red/Yellow	-KRY	34
Additional CA7 Contactor Auxiliaries (Side Mount) ④		
1 NC	-S01	45
1 NO	-S10	45
1 NO + 1 NC	-S11	57
2 NO	-S20	57
Additional CA7 Contactor Auxiliaries (Front Mount)		
1 NO + 1 NC	-F11	57
2 NO	-F20	57
2 NO + 2 NC	-F22	57
Additional KT7 Auxiliaries (Side Mount) ④		
2 NC	-AS02	79
2 NO	-AS20	79
1 NO + 1 NC	-AS11	79
Additional KT7 Trip Contacts (Side Mount)		
1 NO SC + 1 NO SC	-R00	94
1 NO SC + 1 NC SC	-R01	94
1 NC SC + 1 NC SC	-R11	94

CEP7 Solid State Overload Relay ①②③

(As specified in the CLT7/CLUT7 Catalog Number)

For use with contactor...	Amp Range	Last Suffix in Catalog Number ⑤	Catalog Number (of Overload Relay used)
3-Phase / Manual Reset / Class 10			
CA7-9...CA7-23	0.1...0.5	D1AB	CEP7-ED1AB
	0.2...1.0	D1BB	CEP7-ED1BB
	1.0...5.0	D1CB	CEP7-ED1CB
3-Phase / Auto or Manual / Adjustable Trip Class 10, 15, 20 & 30			
CA7-9...CA7-23	0.1...0.5	EAB	CEP7-EEAB
	0.2...1.0	EBB	CEP7-EEBB
	1.0...5.0	ECB	CEP7-EECB
CA7-30...CA7-43	5.4...27	EED	CEP7-EEED
	9...45	EFD	CEP7-EEFD

CEP7 Side Mount Module Addition ④⑦⑨

Addition	For use with...	Add Suffix to Catalog Number	Price Adder
Remote Reset Module	Side-mount to any CEP7-EE_	-ERR	100
Jam Protection and Remote Reset Module		-EJM	110
Ground Fault Protection and Remote Reset Module ⑥	Side-mount to any CEP7-EE_	-EGF	110
Ground Fault/Jam Protection and Remote Reset Module ⑥	Must use with CEP7-CBCT_ Current Sensor	-EGJ	145
PTC Thermistor Relay and Remote Reset Module	Side-mount to any CEP7-EE_ Side-mount to any CEP7-EE_	-EPT	125
PROFIBUS Network Communication Module		-EPRB	415
Ethernet Network Communication Module		-ETN	422

- ① 3-phase CEP7 units are only designed for 3Ø applications.
- ② The reset time of a CEP7 set in the automatic mode is approximately 180 seconds.
- ③ CEP7 Overload relays do not work with Variable Frequency Drives or any Sprecher + Schuh Softstarter with braking options.
- ④ Side mount modules must have 24 - 240V, 47 - 63HZ or DC applied to terminals A1 and A2 for control power. See Section B for connection details.
- ⑤ CEP7 Overloads shown are UL approved. Other overload combinations may be possible. Contact your Sprecher+Schuh representative.

- ⑥ ATTENTION: The CEP7 Overload relay is not a ground fault circuit interrupter for personnel protection as defined in Article 100 of the NEC.
- ⑦ See Section B for Technical Data, Wiring, and DIP Switch set up.
- ⑧ For CLT7, change digit "A10" to one of the modifications listed. Example: Change CLT7-9-*B2S0.4-A10-D1AB to CLT7-9-*B2S0.4-A11-D1AB.
- ⑨ Side mount auxiliaries and CEP7 modules change the width dimension of the device. See Dimensions in this section for more information.