Series CA6 Contactors

The modern contactor for demanding applications from 60 to 350HP

Sprecher + Schuh's CA6 contactor line combines the simple function of our popular CA7 series with the rugged performance demanded in this middle horsepower range. On average these contactors are 50% smaller than traditional contactors in this size class.

A broad selection for middle horsepower applications

The CA6 range consists of eight contactors in three frame sizes covering motors from 60 to 350HP (at 460V) and from 75 to 400HP (at 575V). This line is ideally suited for demanding applications such as steel mills, rock quarries, mines or for any middle horsepower application where a sturdy, durable contactor is needed.

Rugged and reliable

CA6 contactors conform to UL508, as well as IEC 947 and can be operated at rated voltages up to 600V (UL) and 1000V (IEC). High thermal and switching capacities guarantee reliable operation and long life. CA6 contactors are listed in CSA Certified Elevator Equipment for heavy duty use in elevators, refrigerators and heating installations in Canada.

Arc quenching extends contact life

All CA6 contactors are designed with sophisticated arc quenching techniques that extinguish damaging breaking arcs quickly. This is accomplished by guiding the arc away from the contacts and into "arc chambers" which are built-in to every CA6 cover.

Safety first

CA6 arc chambers are completely enclosed (without arc exhaust vents), offering the best protection against hot arcing gases. A large safety distance in front of the contactor is unnecessary. CA6 contactors are also designed so that operation is impossible if the arc chambers are removed. Conversely, once the contactor is energized, the arc chambers cannot be removed.

When used with terminal covers, CA6 contactors meet the strictest international standards for touch-safe design.

120mm
(≈4 3/4")

85A
105A

120mm
(≈4 3/4")

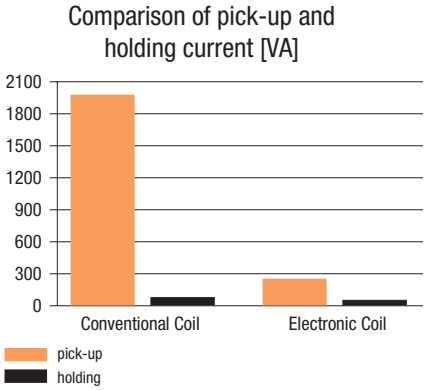
140A
170A

155mm
(≈6 3/32")

210A
250A
300A
420A

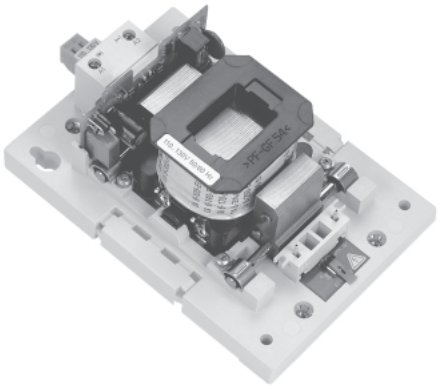
Electronic coils offer many advantages

Behind the attractive outward appearance of the CA6 contactor are advanced engineering solutions that offer convenience and savings. The CA6-105-EI through 420-EI incorporate an electronically controlled coil that reduces pick-up currents by 60% on average. Holding current is also reduced.



Other advantages of the CA6 electronic coil include:

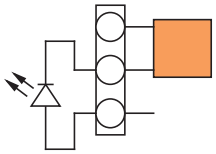
- Direct connection to a PLC
- Overvoltage protection and suppression circuits (eliminating interference from the coil) are standard
- Smooth, even operation over the entire voltage range minimizes the possibility of contact bounce
- No safeguards are necessary to bridge brief supply interruptions
- Precisely defined pick-up and drop-out voltages, eliminate the possibility of chattering
- Electronic coils operate over a much broader voltage range, providing flexibility in applications and lower costs due to reduced inventory



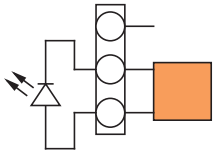
CA6 "EI" electronic coils offer many unique advantages over conventional types

Two user-selectable modes

CA6 contactors with electronic coils operate in either the "E" mode for normal operation or the "EI" mode for interfacing directly with a Programmable Logic Controller (PLC) or other low level signal source (13...30.2 VDC). The coil is set in the "E" mode from the factory, offering all of the functions and advantages of an electronic coil with the exception of electronic interface. An orange "jumper" located on the bottom of the contactor can be quickly changed if interface from a PLC is desired. A detailed technical explanation of CA6-EI coils along with connection diagrams can be found on page A57.



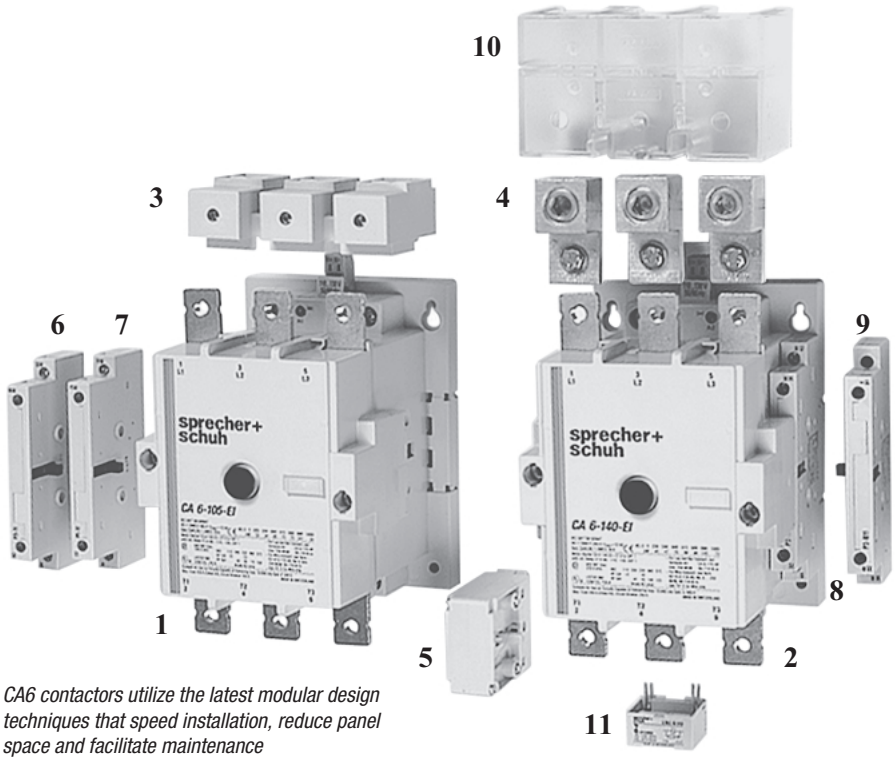
Jumper set in "E" mode (factory default)



Jumper set in "EI" mode (user selectable)

The entire CA6 line is modularly designed for easy inspection, coil change and contact replacement. Maintenance can be performed from the front so that mounting requires no additional space. Even with the installation of mechanical interlocks and auxiliary contact blocks, the units can be flush mounted side by side, saving panel space.

1 CA6-105-EI Contactor
2 CA6-140-EI Contactor
3 Main Terminal Set
4 Lug set
5 Mechanical Interlock
6 Aux. Contact Block
7 Aux. Contact Block
8 Aux. Contact Block
9 Aux. Contact Block
10 Terminal Cover
11 Surge Suppressor



CA6 contactors utilize the latest modular design techniques that speed installation, reduce panel space and facilitate maintenance

Non-Reversing, Three Pole Contactors With AC Coil, Series CA6 (Open type only) ❶❸

I_e [A]		Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type	
		kW (50 Hz)				UL/CSA HP (60 Hz)									
						1 Ø		3 Ø							
AC-3	AC-1	230V	400V 415V	500V	690V	115V	230V	200V	230V	460V	575V	NO	NC	Catalog Number ❶❸	Price
85	160	26	47/55	59	81	7 1/2	15	25	30	60	75	1	1	CA6-85-11-✶	320
105	160	33	58/75	75	101	10	25	40	40	75	100	1	1	CA6-105-11-✶ CA6-105-EI-11-✶	395 595
140	250	45	78/90	80	110	15	30	40	50	100	125	1	1	CA6-140-11-✶ CA6-140-EI-11-✶	670 870
170	250	55	95/100	118	167	~	40	50	60	150	150	1	1	CA6-170-EI-11-✶	920
210	350	67	118/132	147	205	~	50	60	75	150	200	1	1	CA6-210-EI-11-✶	1225
250	350	80	140/150	177	245	~	~	75	100	200	250	1	1	CA6-250-EI-11-✶	1225
300	420	97	170/185	213	293	~	~	100	125	250	300	1	1	CA6-300-EI-11-✶	1575
420	500	135	238/250	300 ❹	424 ❹	~	~	150	175	350	400	1	1	CA6-420-EI-11-✶	2275

CA6-140-EI contactor

CA6-420-EI contactor

Note: CA6 open-type contactors include terminal bolts. If lugs are required, see page A46 for ordering information.

Coil Codes ❷

CA6-85 / 105 / 140		
A.C. Coil Code	Voltage Range 50 Hz	60 Hz
24	21V	24V
120	105V	120V
208	210V	240V
220	190V	220V
240	220-230V	260V
277	240V	277V
380	440-460V	380-400V
480	415V	480V
575	500V	575V

CA6-105-EI … CA6-170-EI ❶		
A.C. Coil Code	Voltage Range 50 Hz	60 Hz
24	24-28V	24-28V
120	110-130V	110-130V
220W	208-277V	208-277V
380	380-400V	380-400V

CA6-210-EI … CA6-420-EI ❶		
A.C. Coil Code	Voltage Range 50 Hz	60 Hz
120	110-130V	110-130V
220W	208-277V	208-277V
380	380-400V	380-400V

CA6 "EI" coils are electronically controlled coils with the following characteristics:

- Ability to connect directly to a low level signal source such as a PLC (13-30 VDC at 15mA max.)
- Very low pull-in and holding current for contactors in this size class
- Threshold voltages for pull-in and drop-out are very precisely defined, eliminating "chattering"
- Supply voltage dips are bridged without extra equipment
- "EI" coils cover a much wider voltage range with only one coil

Ordering Instructions

- Specify Catalog Number
- Replace (✶) With Coil Code — **See Coil Code table on this page for codes**

❶ "-EI" designates contactor with Electronic Interface coil.
❷ Other voltages available, see page A49. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
❸ For CSA Elevator duty rating, consult Technical Information on page A52.
❹ AC3 ratings. AC4 ratings are lower. See Technical Information.

Non-Reversing, Three Pole Contactors With DC Coil, Series CA6 (Open type only) ❶❸

I_e [A]		Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type	
		kW (50 Hz)				UL/CSA HP (60 Hz)									
						1 Ø		3 Ø							
AC-3	AC-1	230V	400V 415V	500V	690V	115V	230V	200V	230V	460V	575V	NO	NC	Catalog Number ❶❸	Price
85	160	26	47/55	59	81	7 1/2	15	25	30	60	75	1	1	CA6-85-11-✶	345
105	160	33	58/75	75	101	10	25	40	40	75	100	1	1	CA6-105-11-✶ CA6-105-EI-11-✶	420 620
140	250	45	78/90	80	110	15	30	40	50	100	125	1	1	CA6-140-11-✶ CA6-140-EI-11-✶	695 895
170	250	55	95/100	118	167	~	40	50	60	150	150	1	1	CA6-170-EI-11-✶	945
210	350	67	118/132	147	205	~	50	60	75	150	200	1	1	CA6-210-EI-11-✶	1250
250	350	80	140/150	177	245	~	~	75	100	200	250	1	1	CA6-250-EI-11-✶	1450
300	420	97	170/185	213	293	~	~	100	125	250	300	1	1	CA6-300-EI-11-✶	1600
420	500	135	238/250	300 ❹	424 ❹	~	~	150	175	350	400	1	1	CA6-420-EI-11-✶	2300

Note: CA6 open-type contactors include terminal bolts. If lugs are required, see page A46 for ordering information.

CA6-140-EI contactor with DC coil

CA6-420-EI contactor with DC coil

Coil Codes ❷

CA6-85 / 105 / 140 ❶	
D.C. Coil Code	Voltage
24D	24V
48D	48V
110D	110V
220D	220V

CA6-105-EI … CA6-300-EI ❶	
D.C. Coil Code	Voltage Range
24D	24 - 28V
48D	48 - 72V
110D	90 - 135V
220D	170 - 255V

Note: Non-"EI" DC coils have high current pick-up winding and low current "seal-in" winding wired in parallel. The pick-up winding is taken out of the circuit after the armature pulls in. Price includes three lead coils and a NC late break auxiliary contact.

CA6-410-EI ❶	
D.C. Coil Code	Voltage Range
48D	48 - 72V
110D	110 - 135V
220D	190 - 255V

CA6 "EI" coils are electronically controlled coils with the following characteristics:

- Ability to connect directly to a low level signal source such as a PLC (13-30 VDC at 15mA max.)
- Very low pull-in and holding current for contactors in this size class
- Threshold voltages for pull-in and drop-out are very precisely defined, eliminating "chattering"
- Supply voltage dips are bridged without extra equipment
- "EI" coils cover a much wider voltage range with only one coil

Ordering Instructions

- Specify Catalog Number
- Replace (✶) With Coil Code — **See Coil Code table on this page for codes**

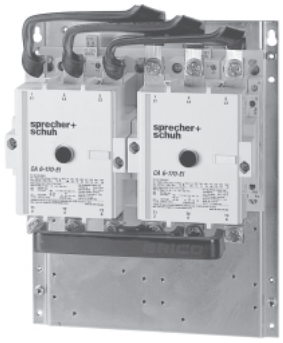
❶ "-EI" designates contactor with Electronic Interface coil.
❷ Other voltages available, see page A49. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
❸ For CSA Elevator duty rating, consult Technical Information on page A52.
❹ AC3 ratings. AC4 ratings are lower. See Technical Information.

Reversing, Three Pole Contactors With AC Coil, Series CA6 (Open type only) ❸❻

I_e [A]		Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type	
		kW (50 Hz)				UL/CSA HP (60 Hz) ❻									
						1 Ø		3 Ø							
AC-3	AC-1	230V	400V 415V	500V	690V	115V	230V	200V	230V	460V	575V	NO	NC ❹	Catalog Number ❶❷❸	Price
85	160	26	47/55	59	81	7 1/2	15	25	30	60	75	1	1	**CAU6-85-22-✶**	**910**
105	160	33	58/75	75	101	10	25	40	40	75	100	1	1	**CAU6-105-22-✶** **CAU6-105-EI-22-✶**	**1085** **1485**
140	250	45	78/90	80	110	15	30	40	50	100	125	1	1	**CAU6-140-22-✶** **CAU6-140-EI-22-✶**	**1710** **2110**
170	250	55	95/100	118	167	~	40	50	60	150	150	1	1	**CAU6-170-EI-22-✶**	**2210**
210	350	67	118/132	147	205	~	50	60	75	150	200	1	1	**CAU6-210-EI-22-✶**	**3195**
250	350	80	140/150	177	245	~	~	75	100	200	250	1	1	**CAU6-250-EI-22-✶**	**3595**
300	420	97	170/185	213	293	~	~	100	125	250	300	1	1	**CAU6-300-EI-22-✶**	**3945**
420	500	135	238/250	300 ❼	424 ❼	~	~	115	135	275	350	1	1	**CAU6-420-EI-22-✶**	**5345**

Includes:

- Mechanical and electrical Interlock ❹
- Reversing power wiring (using Power Wiring Kit Cat.# CA6-…VL[T]) ❶
- Mounting plate
- Control wiring available; see footnote ❷



CAU6-105 reversing contactor

Note: CA6 open-type contactors include terminal bolts. If lugs are required, see page A46 for ordering information.

Coil Codes ❺

CA6-85 / 105 / 140		
A.C. Coil Code	Voltage Range 50 Hz	60 Hz
24	21V	24V
120	105V	120V
208	210V	240V
220	190V	220V
240	220-230V	260V
277	240V	277V
380	440-460V	380-400V
480	415V	480V
575	500V	575V

CA6-105-EI … CA6-170-EI ❸		
A.C. Coil Code	Voltage Range 50 Hz	60 Hz
24	24-28V	24-28V
120	110-130V	110-130V
220W	208-277V	208-277V
380	380-400V	380-400V

CA6-210-EI … CA6-420-EI ❸		
A.C. Coil Code	Voltage Range 50 Hz	60 Hz
120	110-130V	110-130V
220W	208-277V	208-277V
380	380-400V	380-400V

CA6 "EI" coils are electronically controlled coils with the following characteristics:

- Ability to connect directly to a low level signal source such as a PLC (13-30 VDC at 15mA max.)
- Very low pull-in and holding current for contactors in this size class
- Threshold voltages for pull-in and drop-out are very precisely defined, eliminating "chattering"
- Supply voltage dips are bridged without extra equipment
- "EI" coils cover a much wider voltage range with only one coil

Ordering Instructions

- Specify Catalog Number
- Replace (✶) With Coil Code — **See Coil Code table on this page for codes**

❶ For Reversing Contactors *without* power wiring add suffix "**-LW**" to catalog number and deduct $175 for CA6-85…170 and $360 for CA6-210…420. Example: CAU6-85-22-✶ becomes CAU6-85-22-✶**-LW.** Control wiring is not included.
❷ For control wiring, add suffix **-CW** to catalog number and add $20. Example: CAU6-85-22-✶ becomes CAU6-85-22-✶**-CW.**
❸ "-EI" designates contactor with Electronic Interface coil.
❹ One NC auxiliary contact on each contactor is used for electrical interlocking.
❺ Other voltages available, see page A49. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*
❻ For CSA Elevator duty rating, consult Technical Information on page A52.
❼ AC3 ratings. AC4 ratings are lower. See Technical Information.

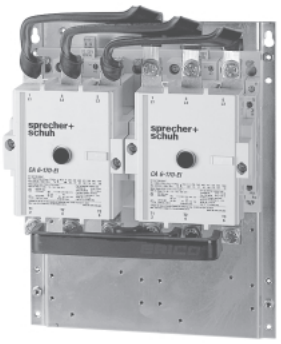
Reversing, Three Pole Contactors With DC Coil, Series CA6 (Open type only) ❸❻

I_e [A]		Ratings for Switching AC Motors (AC2 / AC3 / AC4)										Auxiliary Contacts per Contactor		Open Type	
		kW (50 Hz)				UL/CSA HP (60 Hz) ❻									
						1 Ø		3 Ø							
AC-3	AC-1	230V	400V 415V	500V	690V	115V	230V	200V	230V	460V	575V	NO	NC ❸	Catalog Number ❶❷❸	Price
85	160	26	47/55	59	81	7 1/2	15	25	30	60	75	1	1	CAU6-85-22-✶	960
105	160	33	58/75	75	101	10	25	40	40	75	100	1	1	CAU6-105-22-✶ CAU6-105-EI-22-✶	1135 1535
140	250	45	78/90	80	110	15	30	40	50	100	125	1	1	CAU6-140-22-✶ CAU6-140-EI-22-✶	1760 2160
170	250	55	95/100	118	167	~	40	50	60	150	150	1	1	CAU6-170-EI-22-✶	2260
210	350	67	118/132	147	205	~	50	60	75	150	200	1	1	CAU6-210-EI-22-✶	3245
250	350	80	140/150	177	245	~	~	75	100	200	250	1	1	CAU6-250-EI-22-✶	3645
300	420	97	170/185	213	293	~	~	100	125	250	300	1	1	CAU6-300-EI-22-✶	3995
420	500	135	238/250	300 ❼	424 ❼	~	~	115	135	275	350	1	1	CAU6-420-EI-22-✶	5395

Note: CA6 open-type contactors include terminal bolts. If lugs are required, see page A46 for ordering information.

Includes:

- DC operating mechanism
- Mechanical and electrical Interlock ❹
- Reversing power wiring (using Power Wiring Kit Cat.# CA6-…VL[T]) ❶
- Mounting plate
- Control wiring available; see footnote ❷



CAU6-105 reversing contactor with DC coil

Coil Codes ❺

CA6-85 / 105 / 140	
D.C. Coil Code	Voltage
24D	24V
48D	48V
110D	110V
220D	220V

CA6-105-EI … CA6-300-EI ❸	
D.C. Coil Code	Voltage Range
24D	24 - 28V
48D	48 - 72V
110D	90 - 135V
220D	170 - 255V

CA6-410-EI ❸	
D.C. Coil Code	Voltage Range
48D	48 - 72V
110D	110 - 135V
220D	190 - 255V

Note: Non-"EI" DC coils have high current pick-up winding and low current "seal-in" winding wired in parallel. The pick-up winding is taken out of the circuit after the armature pulls in. Price includes three lead coils and a NC late break auxiliary contact.

CA6 "EI" coils are electronically controlled coils with the following characteristics:

- Ability to connect directly to a low level signal source such as a PLC (13-30 VDC at 15mA max.)
- Very low pull-in and holding current for contactors in this size class
- Threshold voltages for pull-in and drop-out are very precisely defined, eliminating "chattering"
- Supply voltage dips are bridged without extra equipment
- "EI" coils cover a much wider voltage range with only one coil

Ordering Instructions

- Specify Catalog Number
- Replace (✶) With Coil Code — **See Coil Code table on this page for codes**

❶ For Reversing Contactors *without* power wiring add suffix "**-LW**" to catalog number and deduct $175 for CA6-85…170 and $360 for CA6-210…420. Example: CAU6-85-22-✶ becomes CAU6-85-22-✶**-LW.** Control wiring is not included.

❷ For control wiring, add suffix **-CW** to catalog number and add $20. Example: CAU6-85-22-✶ becomes CAU6-85-22-✶**-CW.**

❸ "-EI" designates contactor with Electronic Interface coil.

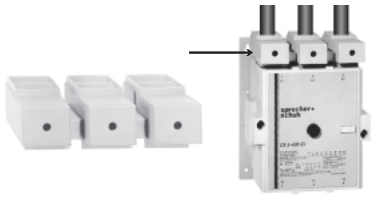
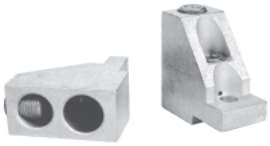
❹ One NC auxiliary contact on each contactor is used for electrical interlocking.

❺ Other voltages available, see page A49. *Non-standard coil voltages not listed here must be ordered and installed separately as renewal parts.*

❻ For CSA Elevator duty rating, consult Technical Information on page A52.

❼ AC3 ratings. AC4 ratings are lower. See Technical Information.

Main Lugs and Lug Accessories

Lug or Accessory	Connection	Description	Catalog Number	Price
	• Accomodation for dual connections to each pole • Accepts flat or round conductors • Touch safe to IP2LX according to IEC 529 	**Main Terminal Set, Dual Conductor, Touch Safe** (priced as complete set, containing 2 blocks, 6 lugs) For CA6-85 and 105 For CA6-105-EI; 140(-EI); 170-EI For CA6-210-EI to 420-EI	 **CA6-HB1** **CA6-HB2** **CA6-HB3**	 **55** **85** **125**
	• Single connections to each pole • Accepts round conductors only 	**Screw Type Lugs -** (set of 3 - two sets required to wire line and load sides) For CA6-85 and 105 For CA6-105-EI; 140(-EI); 170-EI	 **CA6-105-HU** **CA6-170-HU**	 **30** **50**
	• Accomodation for dual connections to each pole • Accepts round conductors only 	**Screw Type Lugs -** (set of 3 - two sets required to wire line and load sides) For CA6-210-EI to CA6-420-EI	 **CA6-420-HU**	 **75**
		**Control Wire Terminal -** Supplies control voltage from main current terminal For CA6-85 to 170-EI For CA6-210-EI to 420-EI	 **22.115.247-01** **TI-12-11**	 **3** **10**
		**Main Terminal Cover - ❶❷** CA6 & CT6 touch protection - line & load (Two pieces per set) For CA6-85 to 105 For CA6-105-EI; 140(-EI); 170-EI For CA6-210-EI to 420-EI	 **CA6-HA1 ❸** **CA6-HA2** **CA6-HA3**	 **20** **25** **30**

See Page A55 for wire ranges.

TIP!

Main Terminal Sets (catalog #: CA6-HB…) are specifically designed for connecting line and load to all three poles on CA6 contactors. Each touch safe terminal set contains three built-in terminals capable of carrying two round conductors or multiple flat conductors. In addition, Main Terminal Sets add a clean finished appearance to CA6 contactors.

Multiple conductors (flat or round) fit in each terminal on CA6-HB Main Terminal Sets (top view)

❶ Terminal Covers not necessary when using Main Terminal Sets (CA6-HB…).
❷ Full covers available by special order for selected CA6-85 to CA6-170 starters. Contact your Sprecher + Schuh representative for more information.
❸ Not for use with CA6-105-HU lugs.

Connection Kits

Connection Kits	Description	Catalog Number	Price
	**Reversing Power Wiring Kit Line Side -** (connects L1-L1, L2-L2 & L3-L3)		
	For CA6-85 to 170-EI	**CA6-105-VL**	**75**
	For CA6-85 to 170-EI (when using HB-type lugs)	**CA6-105-VLHB**	**75**
	For CA6-210-EI to 420-EI	**CA6-250-VL**	**185**
	**Reversing Power Wiring Kit Load Side -** (connects T1-T3, T2-T2 & T3-T1)		
	For CA6-85 to 170-EI	**CA6-105-VT**	**100**
	For CA6-85 to 170-EI (when using HB-type lugs)	**CA6-105-VTHB**	**100**
	For CA6-210-EI to 420-EI	**CA6-250-VT**	**175**
	**Shorting connection**		
	For CA6-85 to 170-EI	**CA6-105-VYU**	**10**
	For CA6-210-EI to 420-EI	**CA6-250-VYU**	**20**

Auxiliary Contact Blocks (2 Pole)

Auxiliary Contact Blocks	NO	NC	Contact Arrangement	Catalog Number	Price
 *Up to two auxiliary contact blocks (4 poles) may be mounted on the CA6 contactor*	1	1	 For fitting on the left ❶❷	**CA6-P1-11** ❷	**30**
	1	1	 For fitting on the right ❶	**CA6-P2-11**	**30**
	1	1 LB	 For fitting on the right ❶	**CA6-P2-L11**	**30**
	1	1	 For fitting on the left ❶	**CA6-P3-11**	**30**
	1	1	 For fitting on the right ❶	**CA6-P4-11**	**30**
	Form C		*Electronic Compatible*  For fitting on the right ❶	**CA6-P2-B11** ❸	**50**
	Form C		*Electronic Compatible*  For fitting on the left ❶	**CA6-P3-B11** ❸	**50**

❶ Refers to mounting position of auxiliary contacts relative to the contactor (as viewed from the front). If mounted on opposite side from that indicated, terminal markings will appear up-side-down.

❷ P1-11 auxiliary contact included with contactor.

❸ Electronic compatible auxiliary contacts function through the use of an internal micro-switch and have the following ratings:

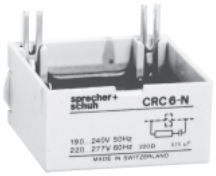
IEC 947 Data:

AC-1	250V	0.1A
AC-15/DC-13 min.	3…125V	1…100mA

UL 508, CSA 22.2 Data:

250VAC max.	0.1A

Miscellaneous Accessories

Accessory	Description	Catalog Number	Price
	**Mounting Plates –** 1 contactor & 1 O/L relay (Across-The-Line) For CA6-85 to 170-EI For CA6-210-EI to 420-EI 2 contactors & 2 O/L relays (Reversing or Multispeed) For CA6-85 to 170-EI For CA6-210-EI to 420-EI 3 contactors, 2 O/L relays & 1 relay/timer (Wye-delta) For CA6-85 to 170-EI For CA6-210-EI to 420-EI	 **CA6-105-PS** **CA6-250-PS** **CA6-105-PU** **CA6-250-PU** **CA6-105-PY** **CA6-250-PY**	 **30** **65** **50** **100** **113** **135**
	**Surge Suppressor CRC6 –** Limits voltage spikes when switching off coil. Attaches to all CA6 contactors *with conventional coil.* RC Link: 21-48V 50 / 24-55V 60Hz 95-110V 50 / 110-127V 60Hz 190-240V 50 / 220-277V 60Hz 380-550V 50 / 440-575V 60Hz Varistor Link: 12-55V 50/60Hz 56-136V 50/60Hz 137-277V 50/60Hz 278-575V 50/60Hz	 **CRC6-48** **CRC6-110** **CRC6-240** **CRC6-550** **CRV6-55** **CRV6-136** **CRV6-277** **CRV6-575**	 **22** **15**
	**Mechanical Interlock –** Intelocks all CA6 contactors	**CM6**	**35**

Marking Systems

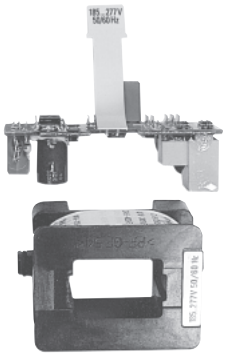
Component	Description	Pkg. Qty.	Catalog Number	Price Each
	**Label Sheet –** 1 sheet with 105 self-adhesive paper labels each, 6 x 17mm	1	**CA7-FMS**	**1**
	**Marking Tag Sheet -** 1 sheet with 160 perforated paper labels each, 6 x 17mm. To be used with transparent cover.	1	**CA7-FMP**	**1**
	Transparent Cover - To be used with Marking Tag Sheets.	100 ❶	**CA7-FMC**	**.10**
	**Tag Carrier -** For marking with Clip-on Tags. See Terminals Section for complete listing of Clip-on Tags.	100 ❶	**CA7-FMA1**	**.10**

❶ Minimum order quantity is one package of 100.
Price each x 100 = total price.

A.C. Coils (CA6-85 thru CA6-140) ❶❷❸

A.C. Control Voltage		A.C. COIL ⇓ CODES ⇓	CA6-85 CA6-105 CA6-140
50 Hz	60 Hz		
21V	24V	**24**	**22.801.314-04**
95V	110V	110	**22.801.314-09**
105V	120V	**120**	**22.801.314-25**
180V	208V	**208**	**22.801.314-27**
190V	220V	**220**	**22.801.314-12**
210V	240V	**240**	**22.801.314-28**
220-230V	260V	260	**22.801.314-13**
240V	277V	**277**	**22.801.314-15**
380-400V	440-460V	**380**	**22.801.314-16**
415V	480V	**480**	**22.801.314-17**
500V	575V	**575**	**22.801.314-19**
Price			**125**

CA6 A.C. Coil (typical) ❷



CA6 A.C. EI coil (typical)

A.C. Coils (CA6-105-EI thru CA6-420-EI) ❶❸❹

A.C. Control Voltage 50/60Hz	A.C. COIL ⇓ CODES ⇓	CA6-105-EI CA6-140-EI CA6-170-EI	CA6-210-EI CA6-250-EI CA6-300-EI	CA6-420-EI
24-28V	**24**	**22.805.314-05**	~	~
43-65V	48	**22.805.314-08**	**22.805.314-08**	**22.806.314-08**
110-130V	**120**	**22.805.314-10**	**22.805.314-10**	**22.806.314-10**
208-277V	**220W**	**22.805.314-14**	**22.805.314-14**	**22.806.314-14**
380-400V	**380**	**22.805.314-16**	**22.805.314-16**	**22.806.314-16**
Price		**325**	**325**	**350**

D.C. Coils (CA6-85 to CA6-140) ❶❷❹

D.C. Control Voltage VDC	D.C. COIL ⇓ CODES ⇓	CA6-85 CA6-105 CA6-140
24V	**24D**	**22.801.315-66**
48V	**48D**	**22.801.315-70**
110V	**120D**	**22.801.315-76**
220V	**220D**	**22.801.315-86**
Price		**150**

D.C. Coils (CA6-105-EI to CA6-300-EI) ❶❹

D.C. Control Voltage VDC	D.C. COIL ⇓ CODES ⇓	CA6-105-EI thru CA6-300-EI
24-28V	**24D**	**22.805.316-66**
48-72V	**48D**	**22.805.316-70**
90-135V	**110D**	**22.805.316-76**
170-255V	**220D**	**22.805.316-86**
Price		**325**

D.C. Coils (CA6-420-EI) ❶❹

D.C. Control Voltage VDC	D.C. COIL ⇓ CODES ⇓	CA6-420-EI
48-72V	**48D**	**22.806.316-70**
110-135V	**110D**	**22.806.316-76**
190-255V	**220D**	**22.806.316-86**
Price		**350**

❶ Other coil voltages available. Contact your Sprecher + Schuh representative for information.
❷ Conventional coil.
❸ Coil Codes in large, bold letters indicate coils that are standard stocked items.
❹ Refer to Technical Section for detailed information on CA6-EI electronic coils.

Main Contact - 3 Per Set

Main Contacts *(typical)*	For use with…	Catalog Number	Price/ Set
	CA6-85	**22.801.200-01**	**240**
	CA6-105	**22.801.201-01**	**300**
	CA6-105-EI	**22.801.206-01**	**300**
	CA6-140	**22.802.206-01**	**430**
	CA6-140-EI	**22.802.200-01**	**430**
	CA6-170-EI	**22.802.201-01**	**450**
	CA6-210-EI	**22.805.201-01**	**795**
	CA6-250-EI	**22.805.202-01**	**950**
	CA6-300-EI	**22.806.201-01**	**1050**
	CA6-420-EI	**22.806.202-01**	**1400**

Standard Terminal Hardware (screw & washer) ❶

Terminal Hardware	Fits Contactor…	Screw Type	Catalog Number	Price Each
	CA6-85 & 105	M6	**CA6-105-HF**	**21**
	CA6-105-EI, 140(-EI) & 170-EI	M8	**CA6-170-HF**	**29**
	CA6-210-EI to 420-EI	M10	**CA6-420-HF**	**32**

Arc Chutes ❷❸

Arc Chutes *(typical)*	For use with…	Catalog Number	Price Each
	CA6-85	**22.801.204-09**	**95**
	CA6-105	**22.801.204-10**	**105**
	CA6-105-EI	**22.801.208-01**	**105**
	CA6-140	**22.802.204-03**	**150**
	CA6-140-EI	**22.802.204-05**	**150**
	CA6-170-EI	**22.802.204-06**	**225**
	CA6-210-EI	**22.805.203-01**	**425**
	CA6-250-EI	**22.805.204-01**	**450**
	CA6-300-EI	**22.806.203-01**	**475**
	CA6-420-EI	**22.806.204-01**	**525**

❶ Set of six (6). Priced per set.
❷ One (1) required per contactor.
❸ CA6-…W Arc Chutes available by special order.

Technical Information

			CA6-85	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Rated Insulation Voltage U_i										
IEC, AS, BS, SEV, VDE 0660		[V]				1000V				
UL; CSA		[V]				600V				
Rated Impulse Voltage U_{imp}		[kV]				12 kV				
Rated Voltage U_e – Main Contacts										
AC 50/60Hz		[V]				230, 240, 400, 415, 500, 690, 1000V				
DC		[V]				24, 48, 110, 220, 440V				
Operating Frequency for AC Loads		[Hz]				50/60Hz				

Switching Motor Loads

Standard IEC Ratings										
AC-2, AC-3, AC-4	230V	[A]	85	105	140	170	210	250	300	420
DOL & Reversing	240V	[A]	85	105	140	170	210	250	300	420
50Hz	400V	[A]	85	105	140	170	210	250	300	420
	415V	[A]	95	130	155	170	227	258	315	425
	500V	[A]	85	105	115 / 140 ❶	170	210	250	300	420 / 360 ❷
	690V	[A]	85	105	115 / 140 ❶	170	210	250	300	420 / 360 ❷
	1000V	[A]	33	40	55	65	80	95	115	160
	230V	[kW]	26	33	45	55	67	80	97	135
	240V	[kW]	27	34	47	57	70	83	101	141
	400V	[kW]	47	58	78	95	118	140	170	238
	415V	[kW]	55	75	90	100	132	150	185	250
	500V	[kW]	59	75	80 / 98 ❶	118	147	177	213	300 / 255 ❷
	600V	[kW]	81	101	110 / 135 ❶	167	205	245	293	424 / 356 ❷
	1000V	[kW]	45	55	75	90	110	133	163	225
UL/CSA	115V	[A]	80	100	135	~	~	~	~	~
DOL & Reversing 1∅	230V	[A]	68	110	136	176	216	~	~	~
60Hz	115 V	[HP]	7.5	10	15	~	~	~	~	~
	230 V	[HP]	15	25	30	40	50	~	~	~
	200V	[A]	78.2	119.6	119.6	149.5	180	220.8	285.2	414
	230 V	[A]	68	104	130	154	192	248	312	420
	460 V	[A]	77	96	124	180	180	240	302	414
3∅	575 V	[A]	77	99	125	144	192	242	289	382
	200 V	[HP]	25	40	40	50	60	75	100	150
	230 V	[HP]	30	40	50	60	75	100	125	175
	460 V	[HP]	60	75	100	150	150	200	250	350
	575 V	[HP]	75	100	125	150	200	250	300	400
AC4 (200,000 Op. Cycles)	230V	[A]	38	47	60	72	90	105	115	144
50Hz	240V	[A]	38	47	60	72	90	105	115	144
	400V	[A]	38	47	60	72	90	105	115	144
	415V	[A]	38	47	60	72	90	105	115	144
	230V	[kW]	11	15	18	22	28	33	37	47
	240V	[kW]	12	15	19	23	30	34	38	48
	400V	[kW]	20	25	33	40	50	58	64	81
	415V	[kW]	22	26	35	43	52	63	66	85
Max. Operating Rate		[ops/hour]	100	100	100	100	50	50	50	50

❶ Rating CA6-140 / CA6-140-EI.
❷ AC3 rating / AC4 rating.

Electrical Data

Switching Motor Loads *(continued)*

			CA6-85	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Wye-Delta (Star Delta)	230V	[A]	147	182	242	294	364	433	520	727
50 Hz	240V	[A]	147	182	242	294	364	433	520	727
	400V	[A]	147	182	242	294	364	433	520	727
	415V	[A]	165	225	268	294	393	447	546	736
	500V	[A]	147	182	199 / 242 ❶	294	364	433	520	727
	690V	[A]	147	182	199 / 242 ❶	294	364	433	520	727
	1000V	[A]	55	65	96	112	139	165	200	277
	230V	[kW]	50	63	80	100	117	140	169	237
	240V	[kW]	52	64	85	104	125	150	177	250
	400V	[kW]	90	110	136	167	208	250	300	430
	415V	[kW]	100	132	160	173	231	263	335	452
	500V	[kW]	110	132	150 / 177 ❶	220	258	315	384	538
	690V	[kW]	141	178	200 / 243 ❶	300	356	425	531	759
	1000V	[kW]	75	90	133	160	200	231	280	400
60 Hz	200V	[HP]	40	60	60	75	100	125	175	250
	230V	[HP]	50	60	75	100	125	175	200	250
	460V	[HP]	100	125	175	200	250	350	450	600
	575V	[HP]	125	150	200	250	300	450	500	650
CSA Elevator Duty	230V	[HP]	25	30	40 ❷	50 ❷	~	~	~	~
Full voltage	460V	[HP]	50	60	75 ❷	100 ❷	~	~	~	~
	575V	[HP]	60	75	75 ❷	100 ❷	~	~	~	~
Wye-Delta	230V	[HP]	40	50	60	75	~	~	~	~
	460V	[HP]	75	100	125	150	~	~	~	~
	575V	[HP]	100	125	125	150	~	~	~	~
AC-1 Load, 3∅ Switching	I_{th}	[A]	160	160	250	250	350	350	450	500
Ambient Temperature 40°C	230V	[kW]	64	64	100	100	139	139	179	199
	240V	[kW]	67	67	104	104	145	145	187	208
	400V	[kW]	111	111	173	173	242	242	312	346
	415V	[kW]	115	115	180	180	252	252	323	359
	500V	[kW]	139	139	217	217	303	303	390	433
	690V	[kW]	151	131	299	299	418	418	538	598
	1000V	[kW]	277	277	433	433	606	606	779	866
Ambient Temperature 60°C	I_{th}	[A]	135	135	210	210	300	300	380	425
	230V	[kW]	54	54	84	84	120	120	151	169
	240V	[kW]	56	56	87	87	125	125	158	177
	400V	[kW]	94	94	145	145	208	208	263	294
	415V	[kW]	97	97	151	151	216	216	273	305
	500V	[kW]	117	117	182	182	260	260	329	368
	690V	[kW]	161	161	251	251	359	359	454	508
	1000V	[kW]	234	234	364	364	520	520	658	736

❶ Rating CA6-140 / CA6-140-EI.

❷ In order to achieve the listed CSA elevator duty rating, the CA6-140**W**(-EI) or CA6-170**W**-EI must be ordered. No change in price.

Electrical Data

			CA6-85	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Continuous Current (UL/CSA)										
General Purpose Rating (40°C)	Open	[A]	178	178	250	250	350	350	420	500
	Enclosed	[A]	160	160	220	220	300	300	340	420
Lighting Loads										
Elec.Dischrg.Lamps-AC-5a, single compensated	Open	[A]	144	144	225	225	315	315	405	450
	Enclosed	[A]	121.5	121.5	189	189	270	270	342	383
Incandescent Lamps - AC-5b,		[A]	107	120	140	170	210	250	300	420
Switching power transformers AC-6a										
Inrush										
Rated transformer currrent, I_e										
n = 30	230 VAC	[kVA]	15	19	25	30	38	45	54	75
	240 VAC	[kVA]	16	20	26	32	39	47	56	79
	400 VAC	[kVA]	27	33	44	53	65	78	94	131
	415 VAC	[kVA]	31	42	50	55	73	83	102	137
	500 VAC	[kVA]	33	41	45 / 55	66	82	97	117	164
	690 VAC	[kVA]	46	56	62 / 75	91	113	134	161	226
	1000 VAC	[kVA]	26	31	43	51	62	74	90	125

DC Ratings

DC-1 Rating at 60°C										
Non-inductive or slightly	24VDC	[A]	135	135	210	210	300	300	380	425
inductive loads, resistive	48VDC	[A]	135	135	210	210	300	300	380	425
furnaces	110VDC	[A]	135	135	210	210	300	300	380	425
	220VDC	[A]	3	3	3.3	3.3	4.9	4.9	4.9	5.2
1 Pole	440VDC	[A]	0.6	0.6	0.75	0.75	1	1	1	1.2
	24VDC	[A]	135	135	210	210	300	300	380	425
	48VDC	[A]	135	135	210	210	300	300	380	425
2 Poles in Series	110VDC	[A]	135	135	210	210	300	300	380	425
	220VDC	[A]	135	135	210	210	300	300	380	425
	440VDC	[A]	3	3	4	4	4.9	4.9	4.9	5.2
	24VDC	[A]	135	135	210	210	300	300	300	300
	48VDC	[A]	135	135	210	210	300	300	300	300
3 Poles in Series	110VDC	[A]	135	135	210	210	300	300	300	300
	220VDC	[A]	135	135	210	210	300	300	300	300
	440VDC	[A]	11	11	11	11	4.9	4.9	4.9	5.2
DC-3 Rating at 60°C										
Shunt wound motors -	24VDC	[A]	135	135	210	210	300	300	380	425
Starting, reverse current	48VDC	[A]	135	135	210	210	300	300	380	425
breaking, reversing, stepping	110VDC	[A]	135	135	210	210	300	300	380	425
	220VDC	[A]	135	135	210	210	300	300	380	425
3 Poles in Series	440VDC	[A]	3	3	3.5	3.5	3.5	4.1	4.1	5.8
DC-5 Rating at 60°C										
Series wound motors -	24VDC	[A]	80	80	120	120	170	170	170	240
Starting, reverse current	48VDC	[A]	80	80	120	120	170	170	170	240
breaking, reversing, stepping	110VDC	[A]	80	80	120	120	170	170	170	240
	220VDC	[A]	80	80	120	120	170	170	170	240
3 Poles in Series	440VDC	[A]	1.2	1.2	2.1	2.1	2.1	2.4	2.4	3.0

Electrical Data

			CA6-85	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Capacitor Ratings										
Capacitor Switching - 50Hz										
Single Capacitor - 40°C	230 V	[kVar]	45	45	70	70	98	98	125	139
	240 V	[kVar]	47	47	73	73	102	102	131	145
	400 V	[kVar]	78	78	121	121	170	170	218	242
	415 V	[kVar]	81	81	126	126	176	176	226	252
	500 V	[kVar]	97	97	152	152	212	212	273	303
	690V	[kVar]	134	134	209	209	293	293	376	418
	1000 V	[kVar]	194	194	303	303	424	424	546	606
Single Capacitor - 60°C	230 V	[kVar]	38	38	59	59	84	84	106	119
	240 V	[kVar]	39	39	61	61	87	87	111	124
	400 V	[kVar]	65	65	102	102	145	145	184	206
	415 V	[kVar]	68	68	106	106	151	151	191	214
	500 V	[kVar]	82	82	127	127	182	182	230	258
	690V	[kVar]	113	113	176	176	251	251	318	356
	1000 V	[kVar]	164	164	255	255	364	364	461	515
Capacitor Bank - 40°C	230 V	[kVar]	42	45	70	70	98	98	125	139
	240 V	[kVar]	43	47	73	73	102	102	131	145
	400 V	[kVar]	44	56	76	111	110	170	218	212
	415 V	[kVar]	44	56	76	112	170	176	226	252
	500 V	[kVar]	44	56	76	113	172	212	273	303
	690V	[kVar]	45	57	78	114	174	247	356	418
	1000 V	[kVar]	46	58	79	116	177	251	361	606
Capacitor Bank - 60°C	230 V	[kVar]	38	38	59	59	84	84	106	119
	240 V	[kVar]	39	39	61	61	87	87	111	174
	400 V	[kVar]	44	56	76	102	145	145	184	206
	415 V	[kVar]	44	56	76	106	151	151	191	214
	500 V	[kVar]	44	56	76	113	172	182	230	258
	690V	[kVar]	45	57	78	114	174	247	318	356
	1000 V	[kVar]	46	58	79	116	177	251	361	515
Short-Circuit Coordination										
Contactors without Motor Protection Relays										
DIN Fuses - gG, gL										
Type "1"		[A]	250	250	315	355	500	500	630	630
Type "2" (380/400/415/690V)		[A]	200	200	250	315	400	400	500	500
Type "2" (1000V)		[A]	200	200	250	315	315	315	315	315
UL Class K5, resp. L										
Available Fault Current		[A]	10K	10K	10K	10K	10K	18K	18K	18K
Type "1" (600V)		[A]	225 (K5)	250 (K5)	350 (K5)	450 (K5)	500 (K5)	700 (L)	700 (L)	1000 (L)
UL Circuit Breaker, inverse time										
Available Fault Current		[A]	10K	10K	10K	10K	10K	18K	18K	18K
Type "1" (600V)		[A]	125	150	200	250	300	350	400	500
Short Time Current Withstand Ratings										
I_{cw} 60° C	1 s	[A]	1800	1800	1800 / 2550 ❶	2550	3405	3870	4725	6376
	4 s	[A]	1500	1500	1800 / 1970 ❶	1970	3150	3870	4100	6376
	10 s	[A]	1040	1040	1244 / 1360 ❶	1360	2360	2520	2840	4700
	15 s	[A]	860	860	860 /1130 ❶	1130	2000	2110	2270	3460
	60 s	[A]	650	650	650 / 850 ❶	850	1215	1300	1500	1880
	240 s	[A]	340	340	340 / 600 ❶	600	705	750	840	1280
	900 s	[A]	240	240	250 / 440 ❶	440	460	500	590	840
Off Time Between Operations		[Min.]	20	20	20	20	30	30	30	30
Resistance and Watt Loss I_e AC3										
Resistance per power pole		[mΩ]	0.4	0.4	0.42	0.42	0.22	0.22	0.18	0.15
Watt Loss - 3 power poles		[W]	10.2	10.2 (-EI/10.8)	26.3	26.3	23.2	27.2	36.5	37.5
Coil and 3 power poles	AC	[W]	18.2	22.7 (-EI/17.7)	34.2 (-EI/29.2)	40.9–50.8	33.6–48.7	45.8–58.7	53.1–68.0	83.9–96
(@ I_{AC3})	DC	[W]	16.7	22.2 (-EI/18.0)	32.7 (-EI/29.5)	41.2–42.4	33.9–40.3	46.1–50.3	53.4–59.6	84.2–88

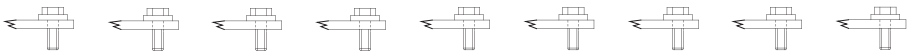
❶ Rating CA6-140 / CA6-140-EI.

Mechanical Data

			CA6-85	CA6-105	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Service Life											
Mechanical	AC	[Mil.]	10	10	10	10	10	10	10	10	10
	DC	[Mil.]	10	10	10	10	10	10	10	10	10
Electrical	AC-3 (400V)	[Mil.]	1	1	1	1	1	1	1	1	1
Shipping Weights											
AC - CA6		[kg]	3.3	3.3	3.8	3.8	3.8	7.5	7.5	7.5	7.5
		[Lbs]	6.9	6.9	8.5	8.5	8.5	15.8	15.8	15.8	15.8
AC - CAU6		[kg]	8.9	8.9	10.3	10.3	10.3	18.5	18.5	18.5	18.5
		[Lbs]	19.9	19.9	23	23	23	41.3	41.3	41.3	41.3
DC - CA6		[kg]	3.3	3.3	3.8	3.8	3.8	7.5	7.5	7.5	7.5
		[Lbs]	6.9	6.9	8.5	8.5	8.5	15.8	15.8	15.8	15.8
DC - CAU6		[kg]	8.9	8.9	10.3	10.3	10.3	18.5	18.5	18.5	18.5
		[Lbs]	19.9	19.9	23	23	23	41.3	41.3	41.3	41.3

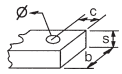
Terminations - Power

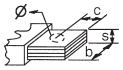
Type

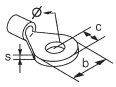


Hexagonal Bolt

Direct Connection

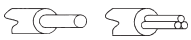






	b max.	[mm]	20	25	30
	c max.	[mm]	10	12.5	15
	s max.	[mm]	2 x 5	2 x 5	2 x 6
	Ø min.	[mm]	6.1	8.3	10.5
Recommended Torque		[Nm]	8…10	10…12	16
		[Lb-in]	70…90	90…110	130…150

With Main Terminal Set (CA6-HB…)



	sm. opening	[mm²]	16…35	16…35 ❶	25…185 ❷
	lg. opening	[mm²]	16…70	16…95 ❶	25…185 ❷
	sm. opening	[mm²]	16…50	16…50 ❶	25…240
	lg. opening	[mm²]	16…95	16…120 ❶	25…240
	b max.	[mm]	16	20	25
	s sm. opening	[mm]	3…9	3…9	6…20
	s lg. opening	[mm]	3…12	3…14	6…20
Recommended Torque		[Nm]	8…10	10…12	20…25
Wire size per UL/CSA	sm. opening	[AWG]	#6…1 / 0	#6…1 / 0	#4…600MCM
	lg. opening	[AWG]	#6…3 / 0	#6…250MCM	#4…600MCM
Recommended Torque		[Lb-in]	70…90	90…110	180…220

With Screw-type Lugs (CA6-HU…)

Screw-type lugs accept round conductors only

CA6-105-HU		[AWG]	#6…#2 / 0	~	~
Recommended Torque		[Lb-in]	70…90	~	~
CA6-170-HU		[AWG]	~	#6…250MCM	~
Recommended Torque		[Lb-in]	~	90…100	~
CA6-420-HU	sm. opening	[AWG]	~	~	#2…500MCM
	lg. opening	[AWG]	~	~	#2 / 0…600MCM
Recommended Torque		[Lb-in]	~	~	375

❶ Minimum 25mm² (#4 AWG) when using CTA6-150 or 200 thermal overload relay.

❷ CA6-HB3 Main Terminal Set is not suitable for use with CEF1-41, 42 or 52 Electronic Overload Relays or CWE4-630 converter units.

Mechanical Data *(continued)*

			CA6-85	CA6-105	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Terminations - Control											
Description											
			Combination Screw Head: Cross, Slotted, Pozidrive								
Coils											
Wires	1 or 2	[mm2]	1...4								
		[AWG]	16...12								
Torque Requirement		[Nm]	1.4...2.3								
		[Lb-in]	12...20								
Control Modules											
Wires	1	[mm2]	0.08...2.5								
		[AWG]	26...14								
Degree of Protection - contactor			IP00 per IEC 529 and DIN 40 050								
Type of Protection - with accessories											
Single contactor cover			IP1X per IEC 529 and DIN 40 050								
With main terminal set			IP2LX per IEC 529 and DIN 40 050								
Protection against accidental contact			Finger and back-of-hand proof according to VDE 0106, Part 100								

Coil Data

Voltage Range			**Conventional Coil**	**"EI" Coil**	
AC: 50Hz, 60Hz, 50/60 Hz	Pickup	[x U_s]	0.85…1.1	0.85 U_s min…1.1 U_s max	
	Dropout	[x U_s]	0.3…0.6	0.3 U_s min…0.5 U_s max	
DC	Pickup	[x U_s]	0.80…1.1	0.85 U_s min…1.1 U_s max	
	Dropout	[x U_s]	0.10…0.6	0.3 U_s min…0.5 U_s max	
Coil Consumption					
AC: 50Hz, 60Hz, 50/60 Hz	Pickup	[VA/W]	650/310	268…457 / 133…307	370-588/208-336
	Hold-in	[VA/W]	50/10	8.42…13.7 / 4.31…6.09	11.5-18.4/5.57-7.32
DC	Pickup	[W]	540	142…316	285…469
	Hold-in	[W]	8	4.30…5.96	5.49…7.65
Operating Times					
AC: 50Hz, 60Hz, 50/60 Hz	Pickup	[ms]	20…47	≤ 60	≤ 60
	Dropout	[ms]	6…12	≤ 55	≤ 55
with RC Suppressor	Dropout	[ms]	9…18	~	~
DC	Pickup	[ms]	27…47	≤ 60	≤ 60
with Integ. Suppression	Dropout	[ms]	12…20	≤ 55	≤ 55
Insulation Class			Class "B" according to VDE 0660, Table 22		

CA6 Electronic Coils *(CA6-105-EI…CA6-420-EI)*

CA6-EI contactors are supplied with an electronically controlled mechanism, which has an integrated electronic interface that consists of the following main parts:

- The coil bobbin rated for the control voltage.
- A printed circuit board with components for control and interface functions which is matched to the coil and rated for the control voltage.
- An interconnecting printed circuit board with coil terminals, which is located in the contactor base.
- R/C transient surge suppressors which are installed on the printed circuit board.

The CA6-EI coil bobbin and printed circuit board are a matched set; therefore, both must be changed when replacing the coil or changing out the coil to a different voltage. All replacement coils include both the coil bobbin and printed circuit board.

Commissioning

The CA6-EI contactor is operated in either the "E" mode (normal operation) or the "EI" mode (electronic interface operation) and is programmed by an orange "jumper" located on the bottom side of the contactor (opposite the coil terminals). This orange jumper is directly underneath main terminal T2 and is exposed by removing the small plastic cover that shields the mating space for the CRC/CRV protection element.

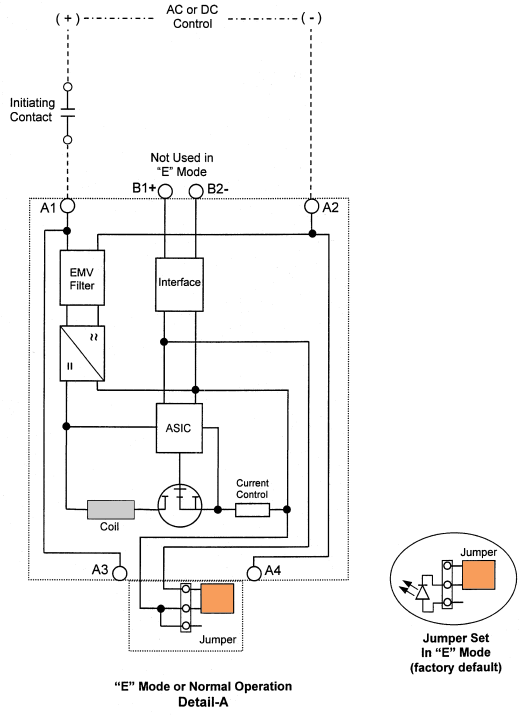
Electronic Operation – "E" Mode

For the "E" mode (factory default setting), the contactor is connected and controlled using terminals A1 & A2 in the same manner as a traditional contactor with an electromechanical coil mechanism. The contactor is programmed from the factory in the "E" mode by means of the orange jumper in the position as shown in Detail A. The "E" mode (or electronic mode) provides electronic control of the coil mechanism, but does not allow coil energization from a low level signal source such as a PLC.

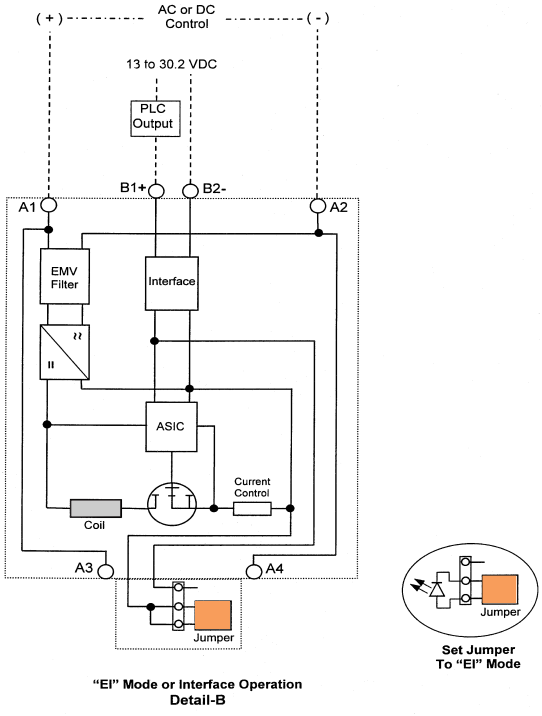
Electronic Interface Operation – "EI" Mode

For the "EI" mode, or optional electronic interface setting, the contactor can be switched from a PLC or other low-level signal source (13…30.2 VDC) without the need for an interposing relay. The contactor is programmed for the "EI" mode by moving the orange jumper to the position as shown in Detail B.

In the "EI" mode, the control voltage (VAC or VDC) must be permanently switched on to terminals A1 & A2 while in operation. The control signal from the PLC or other low-level signal source must be applied to terminals B1 & B2 (orange terminals) of the electronic interface in order to energize the contactor. The current burden of the interface is 15mA maximum.



"E" Mode or Normal Operation
Detail-A



"EI" Mode or Interface Operation
Detail-B

Environmental and General Specifications

	CA6-85	CA6-105	CA6-105(-EI)	CA6-140(-EI)	CA6-170-EI	CA6-210-EI	CA6-250-EI	CA6-300-EI	CA6-420-EI
Ambient Temperature									
Storage	-40...+80° C (-40...176° F)								
Operation at rated current	-25...+60° C (-13...140° F)								
Conditioned 15% current reduction	+70° C (158° F)								
Altitude at installed site	2000 meters above sea level per IEC 947-1								
Resistance to Corrosion / Humidity	Damp-alternating climate: cyclic to IEC 68-2, 56 cycles. Dry heat: IEC 68-2, +100° C (212° F), relative humidity <50%, 7 days. Damp tropical: IEC 68-2, +40° C (104°F), relative humidity <92%, 56 days.								
Shock Resistance	IEC 68-2: Half sinusoidal shock 11ms, 4g (12g in all three directions)								
Vibration Resistance	IEC 68-2: Static >2g, in normal position								
Operating Position	See Dimensions								
Standards	IEC947-4, BS 5424, VDE 0660								
Approvals	CE, UL, CSA, Lloyd's Reg. of Shipping, SUVA, Germanischer Lloyd								

Auxiliary Contacts

			Conventional auxiliary contacts	Suitable for electronic circuits
Switching, AC & DC Loads				
AC-1 I_{th}	at 40°C	[A]	16	0.1A at 250V
	at 60°C	[A]	12	0.1A at 250V
AC-15 at rated operating voltage of:		[V]	230 240 400 415 500 690	
		[A]	5.5 5 3 2.5 1.6 1	1…100mA at 3…125V
DC-13, switching electromagnets at:		[V]	24 48 110 220 440	
		[A]	5 2 0.7 0.25 0.12	1…100mA at 3…125V
Short-Circuit Protection – gG Fuse				
Type 2 Coordination		[A]	16	0.1
Rated Impulse Voltage U_{imp}		[kV]	8	1.5
Load carrying capacity per UL/CSA				
Rated Voltage	AC	[V]	600 max.	250V max.
Continuous Rating	40°C	[A]	10 general purpose	
Switching Capacity	AC		Heavy pilot duty (A600)	0.1A
Rated Voltage	DC	[V]	600 max.	
Switching Capacity	DC		Standard pilot duty (P600)	
Terminals				
Terminal Type				
Maximum Wire Size per IEC 947-1				
 Flexible with Wire-End Ferrule	1 Conductor	[mm²]	1…2.5	
	2 Conductor	[mm²]	1… 2.5	
 Solid/Stranded-Conductor	1 Conductor	[mm²]	1…4	
	2 Conductor	[mm²]	1…4	
Recommended Tightening Torque		[Nm]	1.4…2.3	
Max. Wire Size per UL/CSA		[AWG]	16…12	
Recommended Tightening Torque		[lb-in]	12…20	
Degree of Protection	IP2LX per IEC 529 and DIN 40 050			

Determining Contact Life

To determine the contactor's estimated electrical life, follow these guidelines:

1. Identify the appropriate Utilization Category from Table A.
2. On the following pages, choose the graph for the Utilization Category selected.
3. Locate the Rated Operational Current (I_e) along the bottom of the chart and follow the graph lines up to the intersection of the appropriate contactor's life-load curve.
4. Read the estimated contact life along the vertical axis.

Table A – IEC Special Utilization Categories *(Number of operations under load)* ❶

Category	Typical Applications	Rated Current	Conditions for testing electrical life						Conditions for testing making and breaking capacity					
			Make			Break			Make			Break		
			I/Ie	*U/Ue*	cos	*Ic/Ie*	*Ur/Ue*	cos	*I/Ie*	*U/Ue*	cos	*Ic/Ie*	*Ur/Ue*	cos
AC-1	Non-inductive or slightly inductive loads, resistance furnaces	All values	1	1	0.95	1	1	0.95	1.5	1.05	0.8	1.5	1.05	0.8
AC-2	Slip-ring motors: Starting, plugging	All values	2	1.05	0.65	2	1.05	0.65	4	1.05	0.65	4	1.05	0.65
AC-3	Squirrel-cage motors: Starting, switching off motors during running	*Ie* 17Amp 17Amp < *Ie* 100Amp *Ie* > 100Amp	6 6 6	1 1 1	0.65 0.35 0.35	1 1 1	0.17 0.17 0.17	0.65 0.35 0.35	10 10 8❸	1.1 1.1 1.1	0.65 0.35 0.35	8 8 6❹	1.1 1.1 1.1	0.65 0.35 0.35
AC-4	Squirrel-cage motors: Starting, plugging, inching ❾	*Ie* 17Amp 17Amp < *Ie* 100Amp *Ie* > 100Amp	6 6 6	1 1 1	0.65 0.35 0.35	6 6 6	1 1 1	0.65 0.35 0.35	12 12 10❺	1.1 1.1 1.1	0.65 0.35 0.35	10 10 8❸	1.1 1.1 1.1	0.65 0.35 0.35
AC-5a	Switching of electric discharge lamp control		2	1.05	0.45	2	1.05	0.45	3	1.05	0.45	3	1.05	0.45
AC-5b	Switching of incandescent lamps		1	1.05		1	1.05		1.5	1.05		1.5	1.05	
AC-13	Control of solid state loads with transformer isolation		2	1	0.65	1	1	0.65	10	1.1	0.65	1.1	1.1	0.65
AC-15	Electromagnets for contactors, valves, solenoid actuators		10	1	0.3	1	1	0.3	10	1.1	0.3	10	1.1	0.3
			Make			Break			Make			Break		
			I/Ie	*U/Ue*	L/R ❻ [ms]	*Ic/Ie*	*Ur/Ue*	L/R❻ [ms]	*I/Ie*	*U/Ue*	L/R❻ [ms]	*Ic/Ie*	*Ur/Ue*	L/R❻ [ms]
DC-1	Non-inductive or slightly inductive loads, resistance furnaces	All values	1	1	1	1	1	1	1.5❽	1.1❽	1❽	1.5❽	1.1❽	1❽
DC-2	Shunt-motors: Starting, switching off motors during running	All values	2.5	1	2	1	0.1	7.5	4	1.1	2.5	4	1.1	2.5
DC-3	Shunt-motors: Starting, plugging, inching	All values	2.5	1	2	2.5	1	2	4	1.1	2.5	4	1.1	2.5
DC-4	Series-motors: Starting, switching off motors during running	All values	2.5	1	7.5	1	0.3	10	4	1.1	15	4	1.1	15
DC-5	Series-motors: Starting, plugging, inching	All values	2.5	1	7.5	2.5	1	7.5	4	1.1	15	4	1.1	15
DC-15	Electromagnets for contactors, valves, solenoid actuators		1	1	6 x P❼	1	1	6 x P❼	1.1	1.1	6 x P❼	1.1	1.1	6 x P❼

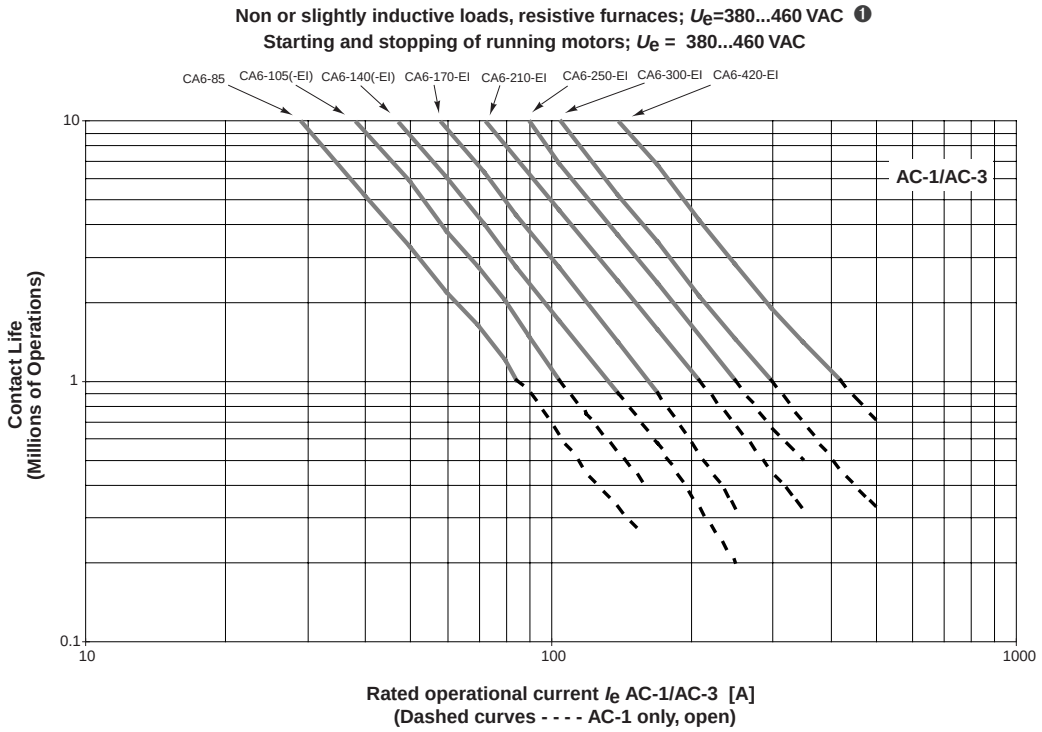
❶ Utilization categories and test conditions for AC & DC. For contactors according to IEC 158-1, starters according to IEC 292-1 ... 4 and control switches according to IEC 337-1 and IEC 337-1A.
❸ With a minimum value of 1000A for *I* or *Ic*.
❹ With a minimum value of 800A for *Ic*.
❺ With a minimum value of 1200A for *I*.
❻ $T_{0.95}$ for DC-15: Time in milliseconds for reaching 95% of steady-state current *Ie* x $T_{0.95}$ is 300% of the time constant $T = L/R$ of the circuit.
❼ $P = Ue \times Ie$ rated power [W]. The value "6 x P" has been derived from an empiric relationship which covers most magnetic loads for DC up to an upper limit of P = 50W.
❽ Only according to VDE.
❾ Plugging is understood as stopping or reversing the motor rapidly by reversing the motor primary connections while the motor is running. Inching [or jogging] is understood as energizing a motor once or repeatedly for short periods to obtain small movements of the driven mechanism.

Legend

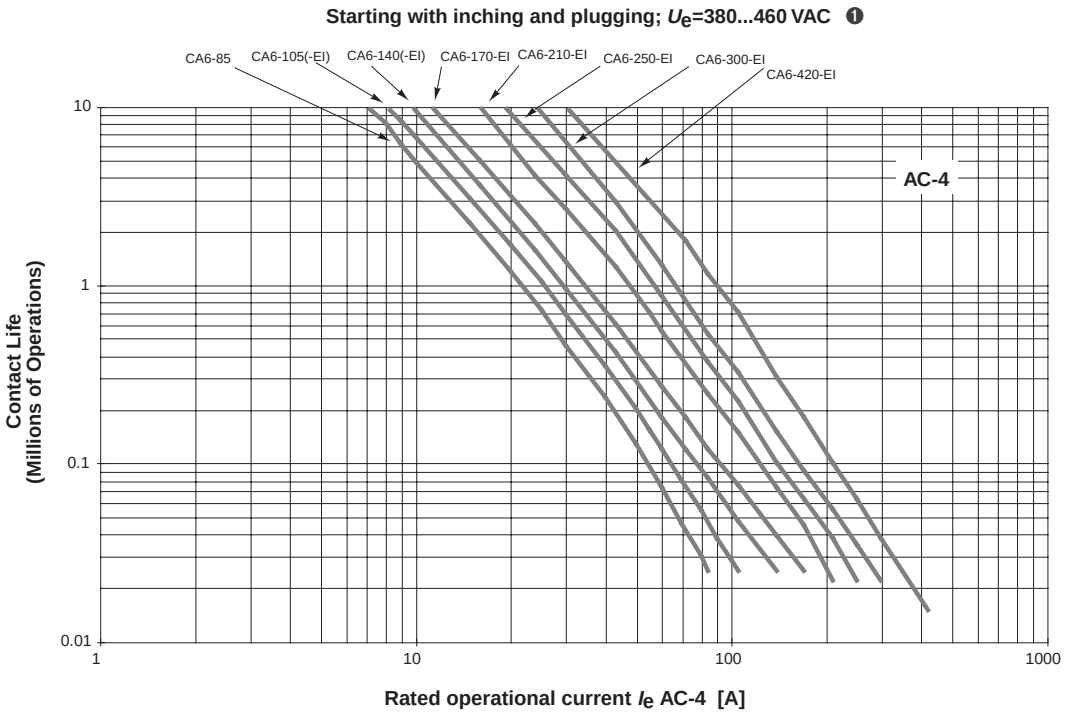
Ue Rated operational voltage
U Voltage before make
Ur Recovery voltage
Ie Rated operational current
I Making current
Ic Breaking current
L Inductance of test circuit
R Resistance of test circuit

Life-Load Curves

AC-1 / AC-3



AC-4

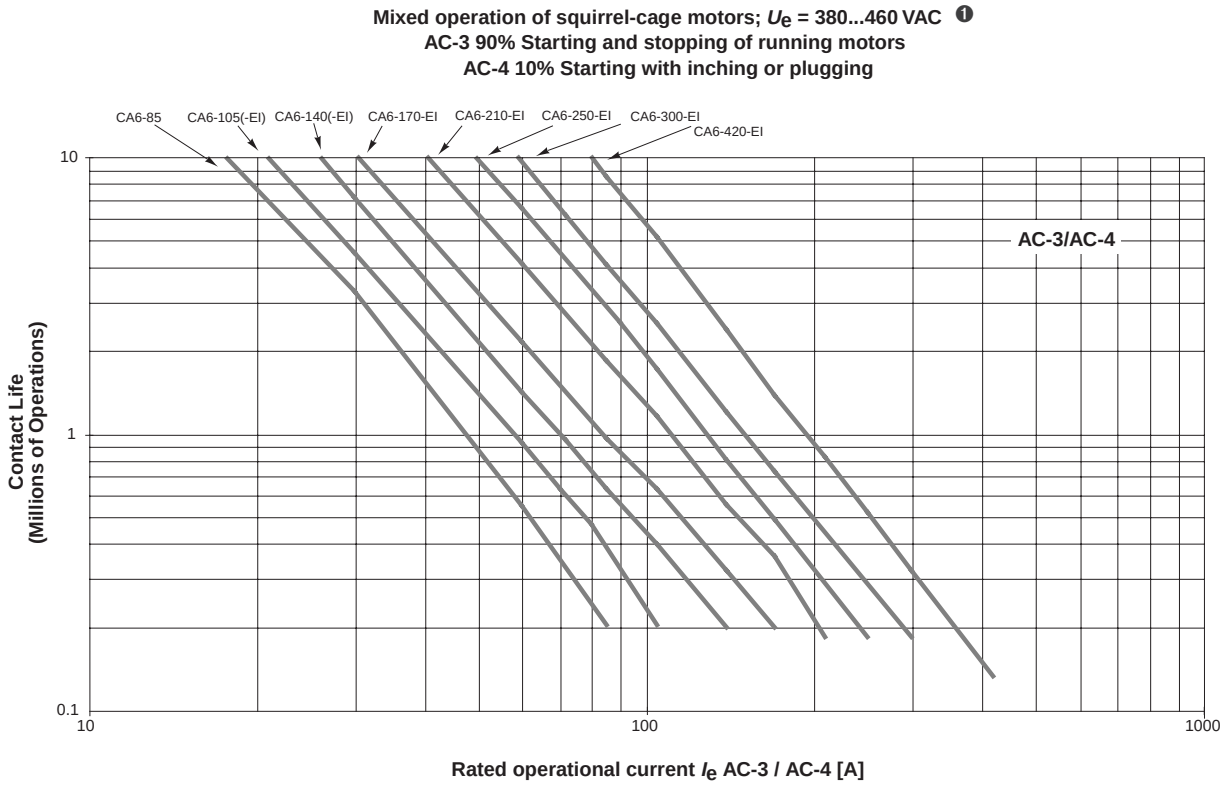


NOTE: The life-load curves shown here are based on Sprecher+Schuh tests according to the requirements defined in IEC 947-4-1. Since contact life in any given application is dependent on environmental conditions and duty cycle, actual application contact life may vary from that indicated by the curves shown here.

❶ 460V applications use 90% of curve value.

Life-Load Curves

AC-3 (90%), AC-4 (10%)



Contact Life for Mixed Utilization Categories AC-3 and AC-4

In many applications, the utilization category cannot be defined as either purely AC-3 or AC-4. In those applications, the electrical life of the contactor can be estimated with the following equation:

$$L_{mixed} = L_{ac3} / [1+P_{ac4} \times (L_{ac3}/L_{ac4}-1)]$$, where:

L_{mixed} Appoximate contact life in operations for a mixed AC-3/AC-4 utilization category application.

L_{ac3} Approximate contact life in operations for a pure AC-3 utilization category (from the AC-3 life-load curve).

L_{ac4} Approximate contact life in operations for a pure AC-4 utilization category (from the AC-4 life-load curve).

P_{ac4} Percentage of AC-4 operations

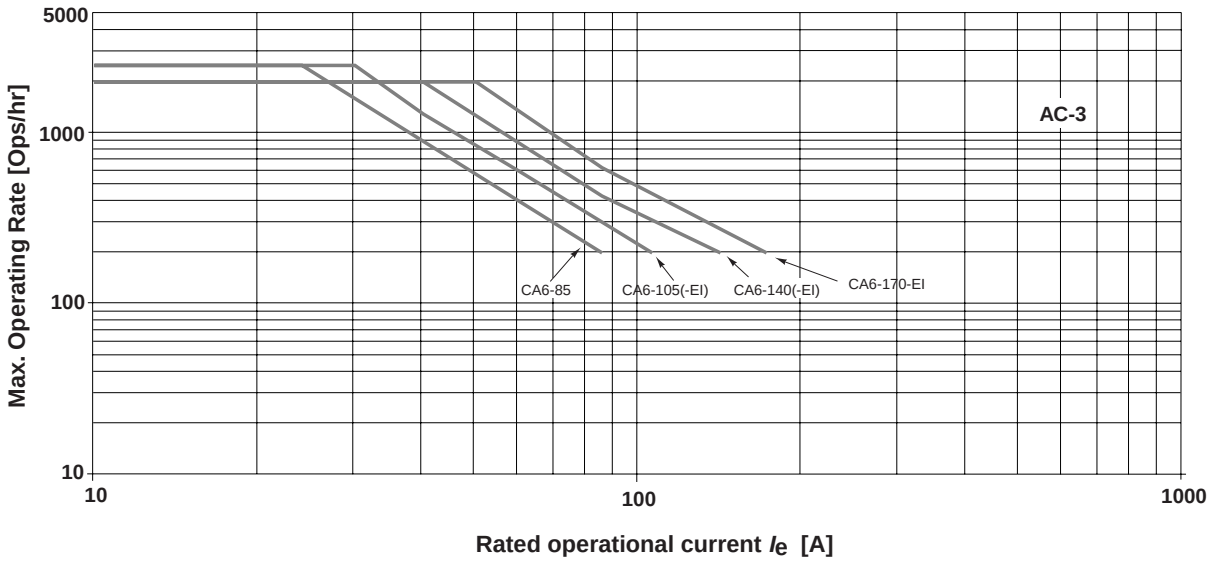
NOTE: The life-load curves shown here are based on Sprecher+Schuh tests according to the requirements defined in IEC 947-4-1. Since contact life in any given application is dependent on environmental conditions and duty cycle, actual application contact life may vary from that indicated by the curves shown here.

❶ 460V applications use 90% of curve value.

Maximum Operating Rates

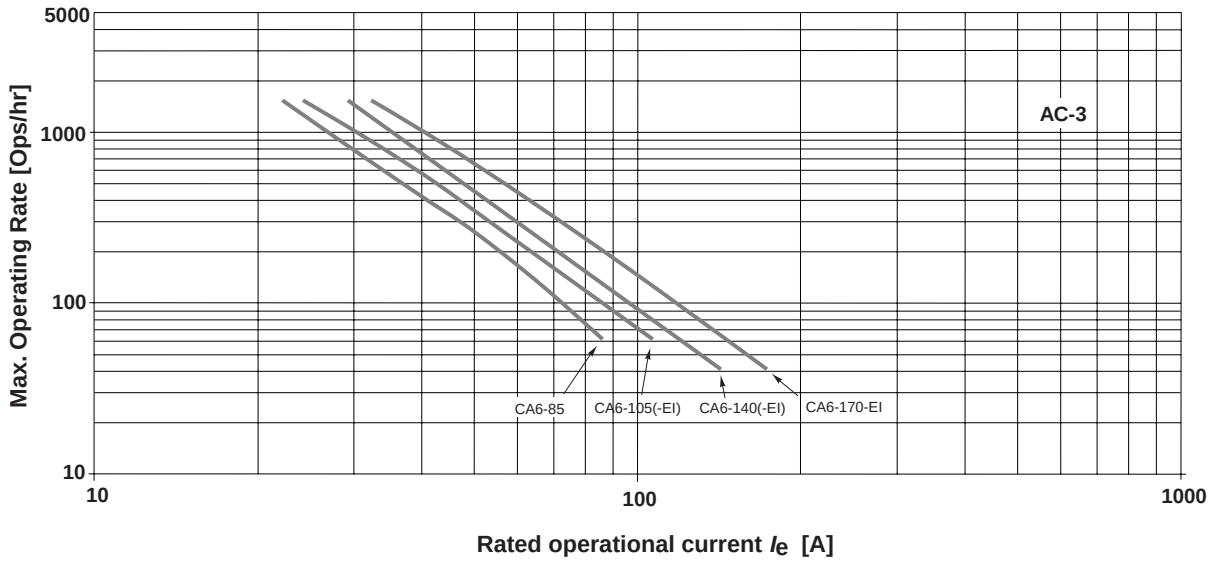
AC-3
250ms start time

Squirrel cage motors; starting, switching off during running; U_e = 380...460 VAC
250ms start time; 40% duty cycle



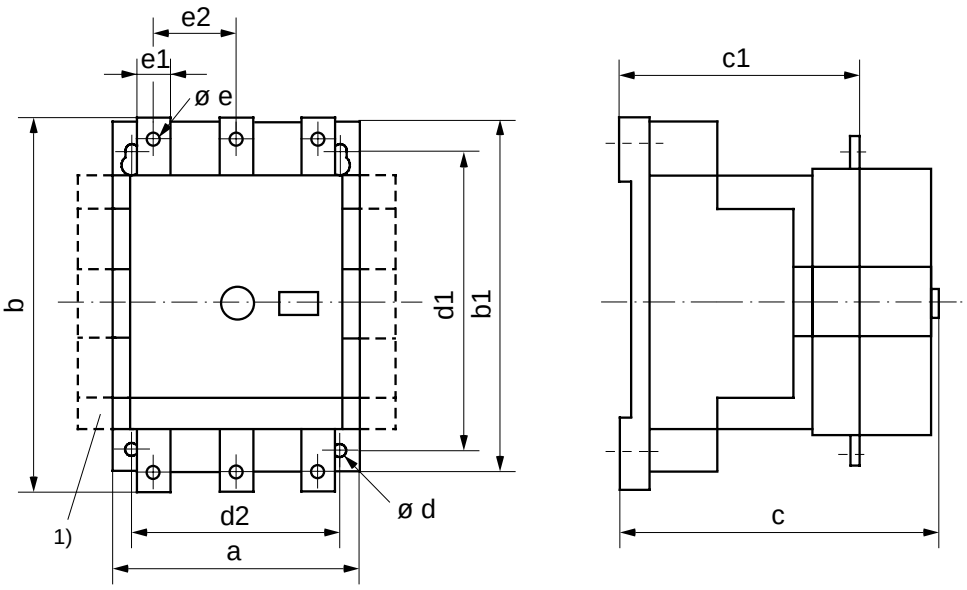
AC-3
1 sec. start time

Squirrel cage motors; starting, switching off during running; U_e = 380...460 VAC
1s start time; 40% duty cycle



Series CA6 & Series CAU6 (Contactors & Reversing Contactors)

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

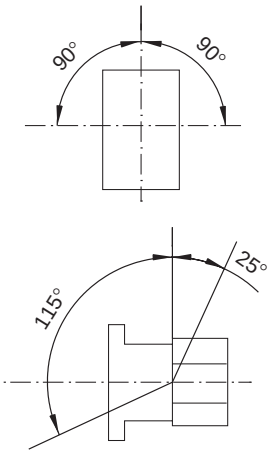


Catalog Number	a	b	b1	c	c1	∅d	d1	d2	∅e	e1	e2
CA6-85 & CA6-105	120 (4-3/4)	165 (6-1/2)	170 (6-11/16)	156 (6-1/8)	110.4 (4-11/32)	5.2 (15/64)	145 (5-11/16)	100 (3-15/16)	M6	16 (5/8)	38.5 (1-17/32)
CA6-105(-EI) ; CA6-140(-EI) ; CA6-170-EI	120 (4-3/4)	182 (7-5/32)	170 (6-11/16)	156 (6-1/8)	110.4 (4-11/32)	5.2 (7/32)	145 (5-11/16)	100 (3-15/16)	M8	20 (13/16)	39 (1-35/64)
CA6-210-EI…CA6-420-EI	155 (6-1/8)	222 (8-3/4)	205 (8-1/16)	180 (7-3/32)	110.4 (4-11/32)	6.5 (9/32)	180 (7-3/32)	130 (5-1/8)	M10	25 (1)	48 (1-7/8)

Reversing Contactors & Accessories (+…)

Contactor with…	CA6…	Dimension [mm]	Dimension [inches]
- auxiliary contact block ❶	+ P1 and/or P2	a	a
	+ P3 or P4	a + 13.5mm each	a + 9/32 each
- reversing w/mechanical interlock		a + a	a + a
- main terminal set	HB1	b + 7mm each	b + 19/64 each
	HB2	b + 7mm each	b + 19/64 each
	HB3	b + 8.5mm each	b + 11/32 each
- terminal cover	HA1	b + 20…40mm each	b + 25/32…1-9/16 each
	HA2	b + 15…40mm each	b + 19/32…1-9/16 each
	HA3	b + 11…50mm each	b + 7/16…1-31/32 each
- label holder		c + 5mm	c + 3/16

Mounting Position



❶ No change of base dimensions with 1 or 2 auxiliary contact blocks (P1, P2). Each dimension increased by 13.5 mm with 3 or 4 auxiliary contact blocks (P3, P4).