

## XT Family of Contactors



## Contactors and Starters

## Product Description

The Eaton **XT** contactors and starters includes non-reversing and reversing contactors, overload relays and a variety of related accessories. Because **XT** meets IEC, UL®, CSA® and CE standards, it is the perfect product solution for IEC applications all over the world. The compact, space saving and easy to install **XT** line of IEC contactors and starters is the efficient and effective solution for customer applications from 7A to 2450A.

## Application Description

The **XT** line of IEC power control was engineered to provide highly effective control and protection for a variety of loads, including motors, compressors, pumps, resistive, capacitor banks, isolation, and others. **XT** also includes IEC ratings for lighting applications as well.

**XT** contactors can be used in safety applications according to EN 954-1, EN ISO 13849-1 and IEC 62061 up to Category 4, PL e and SIL 3. Information concerning safety related characteristics (B10 and B10d values) is available online. The auxiliary contact modules and built-in auxiliary contacts meet IEC EN 60947-5-1 Annex L (positively driven) and IEC EN 60947-4-1 Annex F (mirror contacts).

## Reference

Refer to **Volume 10—Enclosed Control**, CA08100012E, Tab 3, section 3.1 for additional product information on IEC Non-Metallic Enclosed Contactors and Starters.

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## Features and Benefits

- AC control from 12V to 600V 50/60 Hz
- DC control from 12V to 220V
- Available with screw or spring cage terminals
- Reversing or non-reversing contactors and starters
- AC-3 contactor ratings to 1000A and AC-1 contactor ratings to 2000A
- Non-reversing starters to 650A
- Panel or DIN rail mounting to 65A
- IP20 finger and back-of-hand proof
- Large ambient temperature range, -25 to 50°C [-13 to 122°F]
- AC and DC controlled contactors in the same compact frame
- Low power consumption AC and DC coils
- Built-in NO or NC auxiliary contacts to 32A
- Plug-in accessories for reduced installation time
- Coil replacement on Frames C–N (18–820A)
- Contact replacement on Frames D–N (40–820A)
- Integrated suppressor 7–150A DC operated contactors and 185–2000A AC and DC operated contactors

## Standards and Certifications

- IEC EN 60947
- CE approved
- UL
- CSA
- RoHS



**Note:** For Type 2 Coordination, see **Page V5-T1-237**.

## Product Identification

## XTCE007B to XTCE170G (7 to 170A) Contactors



## Notes

## ① Contactor up to 170A AC-3 (see Page V5-T1-39)

AC: 12–600V, 50, 60, 50/60 Hz  
 $0.8\text{--}1.1 \times U_c$

DC: 12–250V

XTCE...B\_ (7–15A):  $0.8\text{--}1.1 \times U_c$

XTCE...C\_–XTCE...G\_ (18–150A):  $0.7\text{--}1.2 \times U_c$

24V:  $0.7\text{--}1.3 \times U_c$  at 40°C without additional auxiliary contacts

Coils for special voltages

"Safe Isolation" to IEC 536 between coil and contacts

## ② Suppressors (see Page V5-T1-71)

RC suppressor

Varistor suppressor

Free-wheel diode suppressor

## ③ Overload Relays (see Page V5-T1-132)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

## ④ Auxiliary Contact Modules (see Page V5-T1-24)

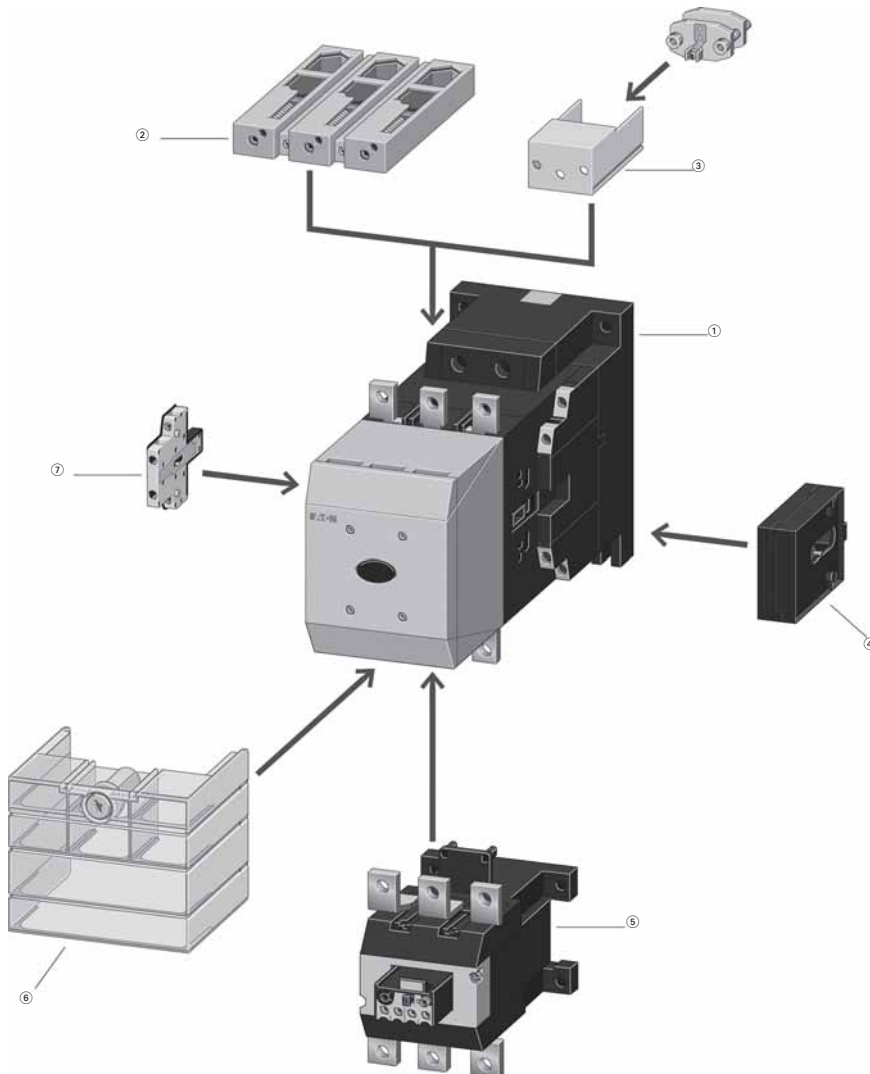
Two-pole, plug-in type

Four-pole, plug-in type

Overlapping contacts

Two-pole, side-mounting

## XTCE185–XTCE20 Contactors



## Notes

## ① XTCE Contactors for 185–2000A

(see Page V5-T1-46)

Multi-voltage coils:

24–48 Vdc

48–110 Vac/Vdc

110–250 Vac/Vdc

250–500 Vac

0.7–1.15 x  $U_c$ 

Actuation options:

Directly

From the PLC

With low-consumption contact

## XTCS Contactors for 185–570A AC-3

(see Page V5-T1-42)

Control voltages:

110–120V 50/60 Hz

220–240V 50/60 Hz

Conventional operation

## ② Cable Terminal Block

(see Page V5-T1-97)

One or two conductors per phase

Round and flat conductor connectable

Finger-proof

## ③ Flat Strip Conductor Terminals

(see Page V5-T1-97)

One or two strips per phase

Control circuit terminal

Cover for fingerproofing

## ④ Mechanical Interlock

(see Page V5-T1-73)

Fits between contactors

## ⑤ Overload Relays

(see Page V5-T1-132)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

PTB certificate

## ⑥ Terminal Shroud

(see Page V5-T1-75)

Finger-proof

## ⑦ Auxiliary Contact Modules

(see Page V5-T1-24)

Two-pole, side-mounting

### Catalog Number Selection

#### XT IEC Contactors and Starters



## Product Selection

## Full Voltage, Non-Reversing Contactors

## Frame B



## Three-Pole Contactors, Frame B—UL/CSA Ratings

UL General Purpose Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
	115V	200V	230V	200V	230V	460V	575V		
20	1/4	3/4	1	1-1/2	2	3	5	1NO	XTCE007B10_
20	1/4	3/4	1	1-1/2	2	3	5	1NC	XTCE007B01_
20	1/2	1	1-1/2	3	3	5	7-1/2	1NO	XTCE009B10_
20	1/2	1	1-1/2	3	3	5	7-1/2	1NC	XTCE009B01_
20	1	2	2	3	3	10 <sup>③</sup>	10	1NO	XTCE012B10_
20	1	2	2	3	3	10 <sup>③</sup>	10	1NC	XTCE012B01_
20	1	2	3	5	5	10 <sup>③</sup>	10	1NO	XTCE015B10_
20	1	2	3	5	5	10 <sup>③</sup>	10	1NC	XTCE015B01_

## Three-Pole Contactors, Frame B—IEC Ratings

AC-3 I <sub>e</sub> (A)	AC-1 (40°C) I <sub>e</sub> = I <sub>th</sub> (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
		220/230V	380/400V	415V	660/690V		
7	22	2.2	3	4	3.5	1NO	XTCE007B10_
7	22	2.2	3	4	3.5	1NC	XTCE007B01_
9	22	2.5	4	5.5	4.5	1NO	XTCE009B10_
9	22	2.5	4	5.5	4.5	1NC	XTCE009B01_
12	22	3.5	5.5	7	6.5	1NO	XTCE012B10_
12	22	3.5	5.5	7	6.5	1NC	XTCE012B01_
15.5	22	4	7.5	8	7	1NO	XTCE015B10_
15.5	22	4	7.5	8	7	1NC	XTCE015B01_

## Notes

The 7–32A XTCE contactors have positively driven contacts between the integrated auxiliary contact and the auxiliary contact module as well as within the auxiliary contact modules.

DC operated contactors (Frames B–G, 7–150A) have a built-in suppressor circuit.

① Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-53**.

② For spring cage terminals, insert **C** after the fourth digit of the catalog number. Example: XTCE**C**007B10A.

For 7–12A XTCEC contactors, the power, auxiliary and coil terminals are spring cage.

For 18–32A XTCEC contactors, the auxiliary and coil terminals are spring cage.

For 40–150A XTCEC contactors, the coil terminals only are spring cage.

③ For electrical life contactor application data. See **Page V5-T1-45**.

**Starter Application Data** <sup>①</sup>

Catalog Prefix	AC-3	Electrical Life (Operations)
XTAE012B	12A	1 million
XTAE015B	15A	1.2 million
XTAE018C	18A	2 million

**Magnet Coil Suffix**

Coil Voltage	Suffix Code
<b>Frames A–B</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
120 Vdc	<b>AD</b>
220 Vdc	<b>BD</b>
12 Vdc	<b>RD</b>
48 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames C–F</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frame G</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
42–48V 50/60 Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>
<b>Frame H</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
24V 50/60Hz	<b>T</b>
42–48V 50/60Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
24–27 Vdc	<b>TD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames L–N</b>	
110–250 Vdc 40–60 Hz	<b>A</b>
250–500V 40–60 Hz	<b>C</b>
48–110 Vdc 40–60 Hz	<b>Y</b>
24–48 Vdc	<b>TD</b> <sup>②</sup>
<b>Frames L–M, S-Series</b>	
110–120V 50/60 Hz	<b>A</b>
220–240V 50/60 Hz	<b>B</b>
<b>Frames P–R</b>	
230–250 Vdc 50–60 Hz	<b>B</b>

**Notes**

① See **Page V5-T1-111** for electrical life curves.

② Frames L–M only.

## XT Family of Contactors



## Contactors and Starters

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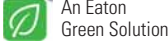
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**XT** contactors can be used in safety applications according to EN 954-1, EN ISO 13849-1 and IEC 62061 up to Category 4, PL e and SIL 3. Information concerning safety related characteristics (B10 and B10d values) is available online. The auxiliary contact modules and built-in auxiliary contacts meet IEC EN 60947-5-1 Annex L (positively driven) and IEC EN 60947-4-1 Annex F (mirror contacts).

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## Features and Benefits

- AC control from 12V to 600V 50/60 Hz
- DC control from 12V to 220V
- Available with screw or spring cage terminals
- Reversing or non-reversing contactors and starters
- AC-3 contactor ratings to 1000A and AC-1 contactor ratings to 2000A
- Non-reversing starters to 650A
- Panel or DIN rail mounting to 65A
- IP20 finger and back-of-hand proof
- Large ambient temperature range, -25 to 50°C [-13 to 122°F]
- AC and DC controlled contactors in the same compact frame
- Low power consumption AC and DC coils
- Built-in NO or NC auxiliary contacts to 32A
- Plug-in accessories for reduced installation time
- Coil replacement on Frames C–N (18–820A)
- Contact replacement on Frames D–N (40–820A)
- Integrated suppressor 7–150A DC operated contactors and 185–2000A AC and DC operated contactors

## Standards and Certifications

- IEC EN 60947
- CE approved
- UL
- CSA
- RoHS



**Note:** For Type 2 Coordination, see **Page V5-T1-237**.

## Product Identification

## XTCE007B to XTCE170G (7 to 170A) Contactors



## Notes

## ① Contactor up to 170A AC-3 (see Page V5-T1-39)

AC: 12–600V, 50, 60, 50/60 Hz  
 $0.8\text{--}1.1 \times U_c$

DC: 12–250V

XTCE...B\_ (7–15A):  $0.8\text{--}1.1 \times U_c$

XTCE...C\_–XTCE...G\_ (18–150A):  $0.7\text{--}1.2 \times U_c$

24V:  $0.7\text{--}1.3 \times U_c$  at 40°C without additional auxiliary contacts

Coils for special voltages

"Safe Isolation" to IEC 536 between coil and contacts

## ② Suppressors (see Page V5-T1-71)

RC suppressor

Varistor suppressor

Free-wheel diode suppressor

## ③ Overload Relays (see Page V5-T1-132)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

## ④ Auxiliary Contact Modules (see Page V5-T1-24)

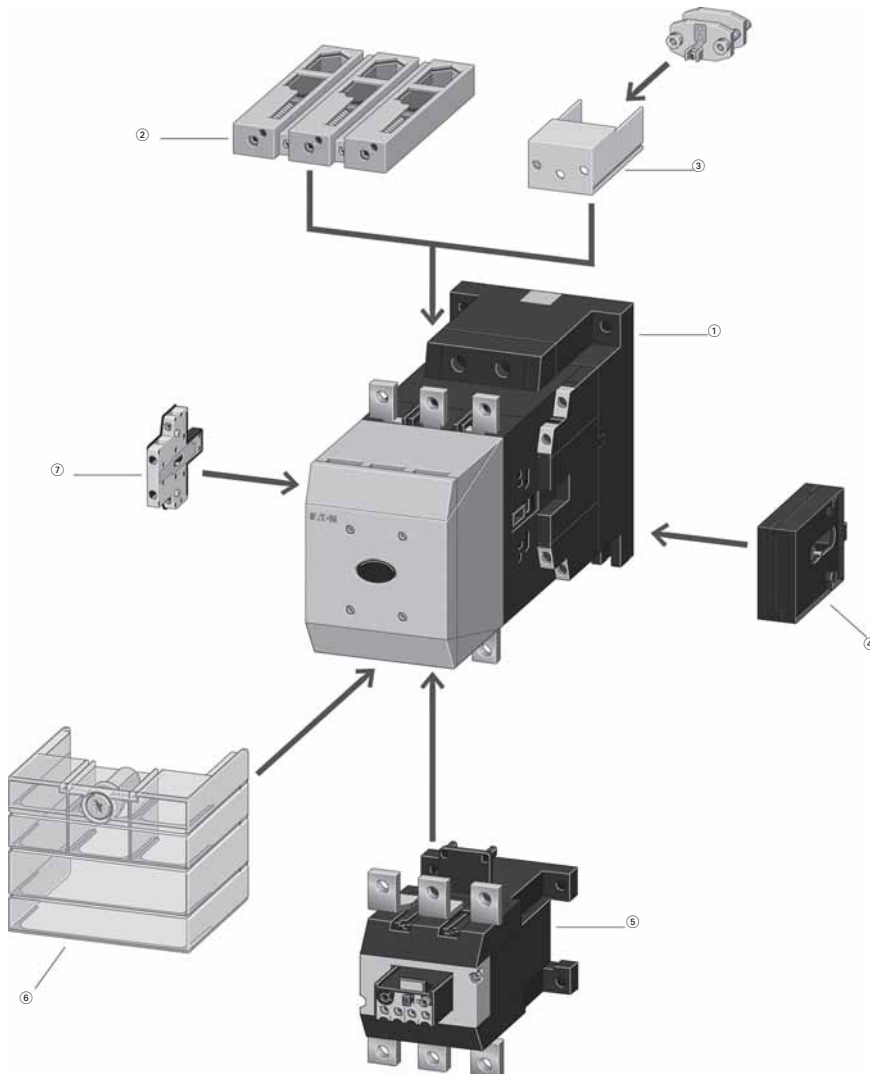
Two-pole, plug-in type

Four-pole, plug-in type

Overlapping contacts

Two-pole, side-mounting



**XTCE185–XTCE20 Contactors****Notes**① **XTCE Contactors for 185–2000A**(see [Page V5-T1-46](#))

Multi-voltage coils:

24–48 Vdc

48–110 Vac/Vdc

110–250 Vac/Vdc

250–500 Vac

0.7–1.15 x U<sub>c</sub>

Actuation options:

Directly

From the PLC

With low-consumption contact

② **XTCS Contactors for 185–570A AC-3**(see [Page V5-T1-42](#))

Control voltages:

110–120V 50/60 Hz

220–240V 50/60 Hz

Conventional operation

② **Cable Terminal Block**(see [Page V5-T1-97](#))

One or two conductors per phase

Round and flat conductor connectable

Finger-proof

③ **Flat Strip Conductor Terminals**(see [Page V5-T1-97](#))

One or two strips per phase

Control circuit terminal

Cover for fingerproofing

④ **Mechanical Interlock**(see [Page V5-T1-73](#))

Fits between contactors

⑤ **Overload Relays**(see [Page V5-T1-132](#))

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

PTB certificate

⑥ **Terminal Shroud**(see [Page V5-T1-75](#))

Finger-proof

⑦ **Auxiliary Contact Modules**(see [Page V5-T1-24](#))

Two-pole, side-mounting

### Catalog Number Selection

#### XT IEC Contactors and Starters



## Product Selection

## Full Voltage, Non-Reversing Contactors

## Frame B



## Three-Pole Contactors, Frame B—UL/CSA Ratings

UL General Purpose Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
	115V	200V	230V	200V	230V	460V	575V		
20	1/4	3/4	1	1-1/2	2	3	5	1NO	XTCE007B10_
20	1/4	3/4	1	1-1/2	2	3	5	1NC	XTCE007B01_
20	1/2	1	1-1/2	3	3	5	7-1/2	1NO	XTCE009B10_
20	1/2	1	1-1/2	3	3	5	7-1/2	1NC	XTCE009B01_
20	1	2	2	3	3	10 <sup>③</sup>	10	1NO	XTCE012B10_
20	1	2	2	3	3	10 <sup>③</sup>	10	1NC	XTCE012B01_
20	1	2	3	5	5	10 <sup>③</sup>	10	1NO	XTCE015B10_
20	1	2	3	5	5	10 <sup>③</sup>	10	1NC	XTCE015B01_

## Three-Pole Contactors, Frame B—IEC Ratings

AC-3 I <sub>e</sub> (A)	AC-1 (40°C) I <sub>e</sub> = I <sub>th</sub> (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Screw Terminal Catalog Number <sup>①②</sup>
		220/230V	380/400V	415V	660/690V		
7	22	2.2	3	4	3.5	1NO	XTCE007B10_
7	22	2.2	3	4	3.5	1NC	XTCE007B01_
9	22	2.5	4	5.5	4.5	1NO	XTCE009B10_
9	22	2.5	4	5.5	4.5	1NC	XTCE009B01_
12	22	3.5	5.5	7	6.5	1NO	XTCE012B10_
12	22	3.5	5.5	7	6.5	1NC	XTCE012B01_
15.5	22	4	7.5	8	7	1NO	XTCE015B10_
15.5	22	4	7.5	8	7	1NC	XTCE015B01_

## Notes

The 7–32A XTCE contactors have positively driven contacts between the integrated auxiliary contact and the auxiliary contact module as well as within the auxiliary contact modules.

DC operated contactors (Frames B–G, 7–150A) have a built-in suppressor circuit.

① Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-53**.

② For spring cage terminals, insert **C** after the fourth digit of the catalog number. Example: XTCE**C**007B10A.

For 7–12A XTCEC contactors, the power, auxiliary and coil terminals are spring cage.

For 18–32A XTCEC contactors, the auxiliary and coil terminals are spring cage.

For 40–150A XTCEC contactors, the coil terminals only are spring cage.

③ For electrical life contactor application data. See **Page V5-T1-45**.

**Starter Application Data** <sup>①</sup>

Catalog Prefix	AC-3	Electrical Life (Operations)
XTAE012B	12A	1 million
XTAE015B	15A	1.2 million
XTAE018C	18A	2 million

**Magnet Coil Suffix**

Coil Voltage	Suffix Code
<b>Frames A–B</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
120 Vdc	<b>AD</b>
220 Vdc	<b>BD</b>
12 Vdc	<b>RD</b>
48 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames C–F</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frame G</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
42–48V 50/60 Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
48–60 Vdc	<b>WD</b>
<b>Frame H</b>	
100–120V 50/60 Hz	<b>A</b>
190–240V 50/60 Hz	<b>B</b>
480–500V 50/60 Hz	<b>C</b>
380–440V 50/60 Hz	<b>L</b>
24V 50/60Hz	<b>T</b>
42–48V 50/60Hz	<b>W</b>
110–130 Vdc	<b>AD</b>
200–240 Vdc	<b>BD</b>
24–27 Vdc	<b>TD</b>
48–60 Vdc	<b>WD</b>

Coil Voltage	Suffix Code
<b>Frames L–N</b>	
110–250 Vdc 40–60 Hz	<b>A</b>
250–500V 40–60 Hz	<b>C</b>
48–110 Vdc 40–60 Hz	<b>Y</b>
24–48 Vdc	<b>TD</b> <sup>②</sup>
<b>Frames L–M, S-Series</b>	
110–120V 50/60 Hz	<b>A</b>
220–240V 50/60 Hz	<b>B</b>
<b>Frames P–R</b>	
230–250 Vdc 50–60 Hz	<b>B</b>

**Notes**

① See **Page V5-T1-111** for electrical life curves.

② Frames L–M only.