

## 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.

## Contents

## Description

	Page
Relays and Timers .....	V5-T1-3
Miniature Controls .....	V5-T1-18
Contactors and Starters	
Product Identification .....	V5-T1-36
Catalog Number Selection .....	V5-T1-38
Product Selection .....	V5-T1-39
Accessories .....	V5-T1-65
Technical Data and Specifications .....	V5-T1-78
Wiring Diagrams .....	V5-T1-109
Dimensions .....	V5-T1-114
 An Eaton Green Solution	
Thermal Overload Relays .....	V5-T1-128
C440/ <b>XT</b> Electronic Overload Relay .....	V5-T1-141
Manual Motor Protectors .....	V5-T1-157
Combination Motor Controllers .....	V5-T1-193
<b>XT</b> Electronic Manual Motor Protector .....	V5-T1-216
EMS—Electronic Motor Starter .....	V5-T1-229
Reference Data .....	V5-T1-231

## 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

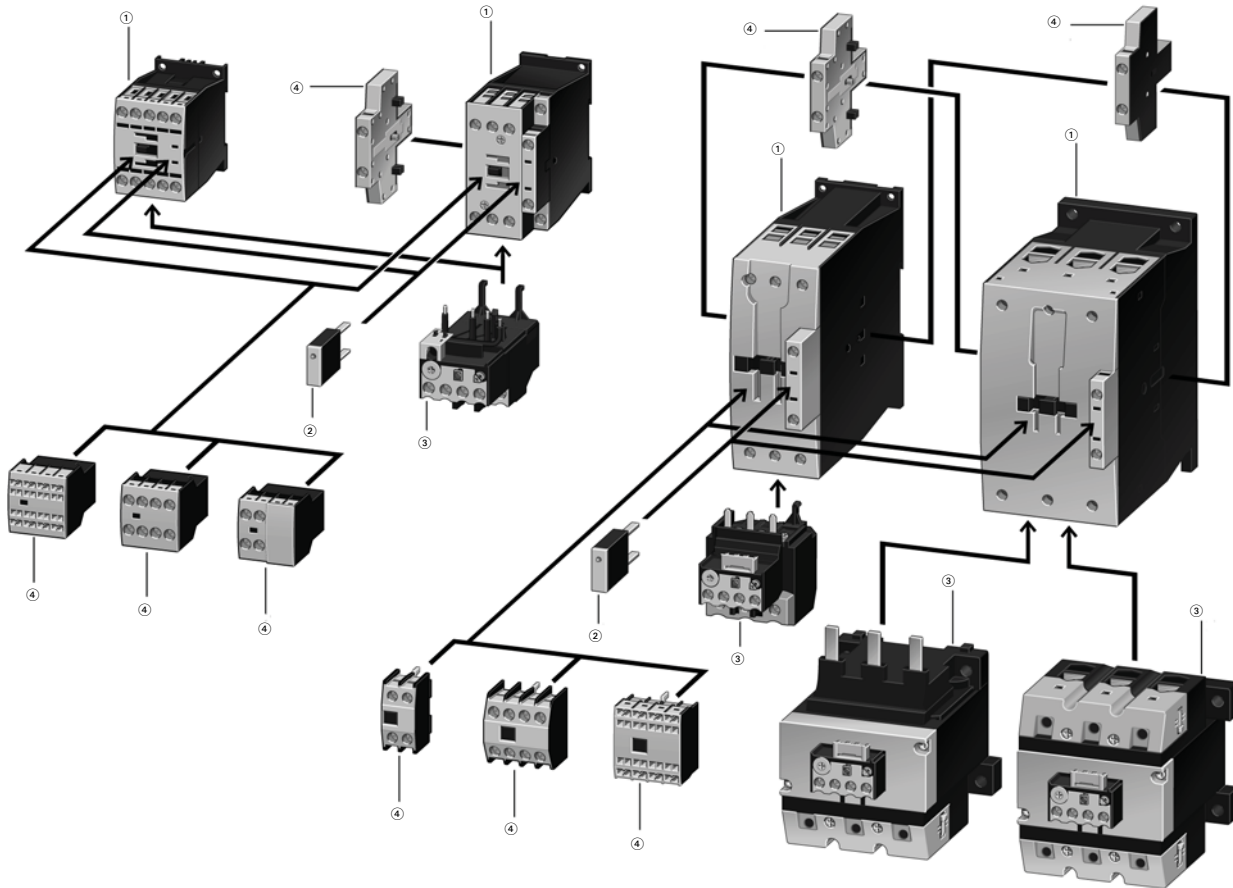
- IEC EN 60947
- CE approved
- UL
- CSA
- ATEX
- RoHS



**Note:** For Type 2 Coordination, see **Page V5-T1-232**.

## 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  
 $0.8–1.1 \times U_c$

DC: 12–250V

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

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

24V:  $0.7–1.3 \times U_c$  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-T1-130)

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-T1-130](#))

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

PTB certificate

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

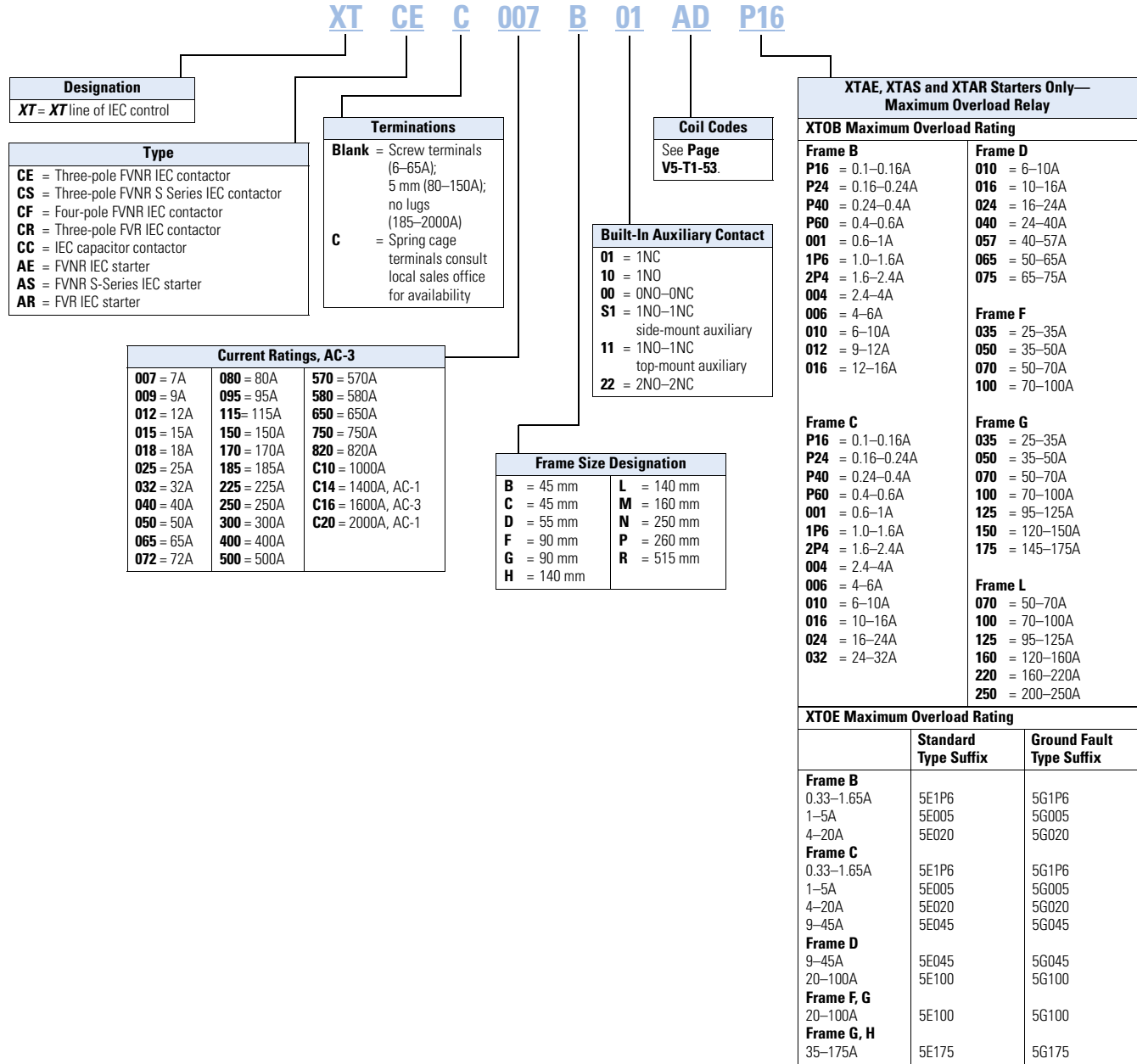
Finger-proof

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

Two-pole, side-mounting

### Catalog Number Selection

#### XT IEC Contactors and Starters



1

#### Frame H



#### Three-Pole Contactors, Frame H (Electronic Coil)—UL/CSA Ratings

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number <sup>①②</sup>
	200V	240V	480V	600V		
250	50	60	125	150	2NO-2NC	XTCE185H22_
250	60	75	150	200	2NO-2NC	XTCE225H22_

#### Three-Pole Contactors, Frame H (Electronic Coil)—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	Catalog Number <sup>①②</sup>
		220/230V	380/400V	660/690V <sup>③</sup>	1000V <sup>③</sup>		
185	337	55	90	140	108	2NO-2NC	XTCE185H22_
225	386	70	110	215	108	2NO-2NC	XTCE225H22_

#### Frame L



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

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number <sup>①②</sup>
	200V	230V	460V	575V		
<b>Standard Coil (110/120V, 230/240 Vac Coil Only)</b>						
300	75	100	200	250	2NO-2NC	XTCS250L22_
350	100	125	250	300	2NO-2NC	XTCS300L22_
<b>Electronic Coil</b>						
300	75	100	200	250	2NO-2NC	XTCE250L22_
350	100	125	250	300	2NO-2NC	XTCE300L22_

#### Three-Pole Contactors, Frame L—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	Catalog Number <sup>①②</sup>
		220/230V	380/400V	660/690V <sup>③</sup>	1000V <sup>③</sup>		
<b>Standard Coil (110/120V, 230/240 Vac Coil Only)</b>							
250	429	75	132	240	108	2NO-2NC	XTCS250L22_
300	490	90	160	195	132	2NO-2NC	XTCS300L22_
<b>Electronic Coil</b>							
250	429	75	132	240	108	2NO-2NC	XTCE250L22_
300	490	90	160	195	132	2NO-2NC	XTCE300L22_

#### Notes

- ① Underscore (\_) indicates magnet coil suffix required. See **Page V5-T1-53**. Terminals not included. See **Page V5-T1-75** for terminal accessories.
- ② Does not include lugs.
- ③ For 185–500A contactors at 660/690V or 1000V: Do not reverse directly.

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**

<sup>①</sup> See **Page V5-T1-111** for electrical life curves.

<sup>②</sup> Frames L–M only.

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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).

## 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.

## Contents

## Description

	<i>Page</i>
Relays and Timers . . . . .	V5-T1-3
Miniature Controls . . . . .	V5-T1-18
Contactors and Starters	
Product Identification . . . . .	V5-T1-36
Catalog Number Selection . . . . .	V5-T1-38
Product Selection . . . . .	V5-T1-39
Accessories . . . . .	V5-T1-65
Technical Data and Specifications . . . . .	V5-T1-78
Wiring Diagrams . . . . .	V5-T1-109
Dimensions . . . . .	V5-T1-114
 An Eaton Green Solution	
Thermal Overload Relays . . . . .	V5-T1-128
C440/ <b>XT</b> Electronic Overload Relay . . . . .	V5-T1-141
Manual Motor Protectors . . . . .	V5-T1-157
Combination Motor Controllers . . . . .	V5-T1-193
<b>XT</b> Electronic Manual Motor Protector . . . . .	V5-T1-216
EMS—Electronic Motor Starter . . . . .	V5-T1-229
Reference Data . . . . .	V5-T1-231

## 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
- ATEX
- RoHS



**Note:** For Type 2 Coordination, see **Page V5-T1-232**.

## 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  
 $0.8–1.1 \times U_c$

DC: 12–250V

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

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

24V:  $0.7–1.3 \times U_c$  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-T1-130)

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 × U<sub>c</sub>

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-T1-130](#))

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



1

#### Frame H



#### Three-Pole Contactors, Frame H (Electronic Coil)—UL/CSA Ratings

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number <sup>①②</sup>
	200V	240V	480V	600V		
250	50	60	125	150	2NO-2NC	XTCE185H22_
250	60	75	150	200	2NO-2NC	XTCE225H22_

#### Three-Pole Contactors, Frame H (Electronic Coil)—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	Catalog Number <sup>①②</sup>
		220/230V	380/400V	660/690V <sup>③</sup>	1000V <sup>③</sup>		
185	337	55	90	140	108	2NO-2NC	XTCE185H22_
225	386	70	110	215	108	2NO-2NC	XTCE225H22_

#### Frame L



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

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number <sup>①②</sup>
	200V	230V	460V	575V		
<b>Standard Coil (110/120V, 230/240 Vac Coil Only)</b>						
300	75	100	200	250	2NO-2NC	XTCS250L22_
350	100	125	250	300	2NO-2NC	XTCS300L22_
<b>Electronic Coil</b>						
300	75	100	200	250	2NO-2NC	XTCE250L22_
350	100	125	250	300	2NO-2NC	XTCE300L22_

#### Three-Pole Contactors, Frame L—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	Catalog Number <sup>①②</sup>
		220/230V	380/400V	660/690V <sup>③</sup>	1000V <sup>③</sup>		
<b>Standard Coil (110/120V, 230/240 Vac Coil Only)</b>							
250	429	75	132	240	108	2NO-2NC	XTCS250L22_
300	490	90	160	195	132	2NO-2NC	XTCS300L22_
<b>Electronic Coil</b>							
250	429	75	132	240	108	2NO-2NC	XTCE250L22_
300	490	90	160	195	132	2NO-2NC	XTCE300L22_

#### Notes

- ① Underscore (\_) indicates magnet coil suffix required. See **Page V5-T1-53**. Terminals not included. See **Page V5-T1-75** for terminal accessories.
- ② Does not include lugs.
- ③ For 185–500A contactors at 660/690V or 1000V: Do not reverse directly.

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**

<sup>①</sup> See **Page V5-T1-111** for electrical life curves.

<sup>②</sup> Frames L–M only.