

## 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
- 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  
 $0.8\text{--}1.1 \times U_c$

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-T1-130)

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

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<br>Ampere Rating | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog<br>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<br>I <sub>e</sub> (A) | AC-1 (40°C)<br>I <sub>e</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |                       |                    | Auxiliary<br>Contacts | Catalog<br>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<br>Ampere Rating                    | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog<br>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<br>I <sub>e</sub> (A)                             | AC-1 (40°C)<br>I <sub>e</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |                       |                    | Auxiliary<br>Contacts | Catalog<br>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.

## XT Family of Contactors



## Contactors and Starters

## Product Description

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## 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
- 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)

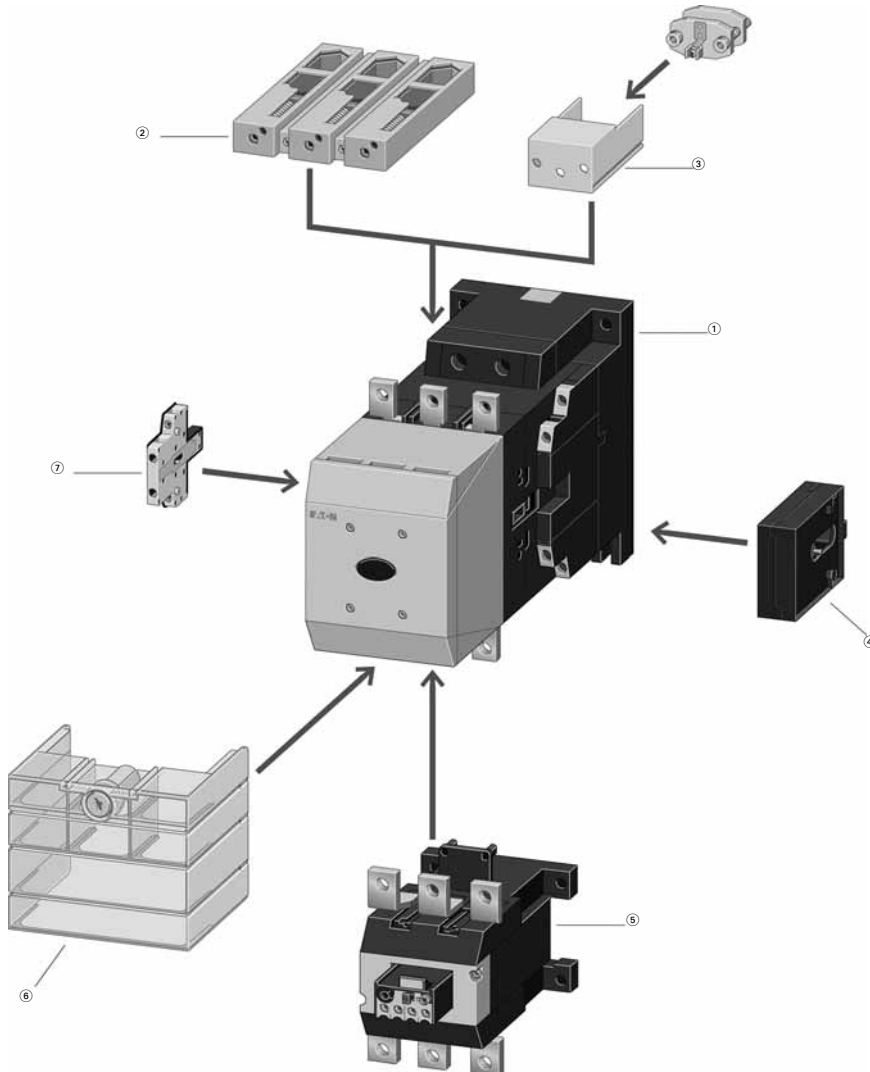
Two-pole, plug-in type

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

**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<br>Ampere Rating | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog<br>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<br>I <sub>e</sub> (A) | AC-1 (40°C)<br>I <sub>e</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |                       |                    | Auxiliary<br>Contacts | Catalog<br>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<br>Ampere Rating                    | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog<br>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<br>I <sub>e</sub> (A)                             | AC-1 (40°C)<br>I <sub>e</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |                       |                    | Auxiliary<br>Contacts | Catalog<br>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

- ① See **Page V5-T1-111** for electrical life curves.  
 ② Frames L–M only.