

## XT Family of Contactors



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An Eaton  
Green Solution

|                                      |           |
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## 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).

## 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



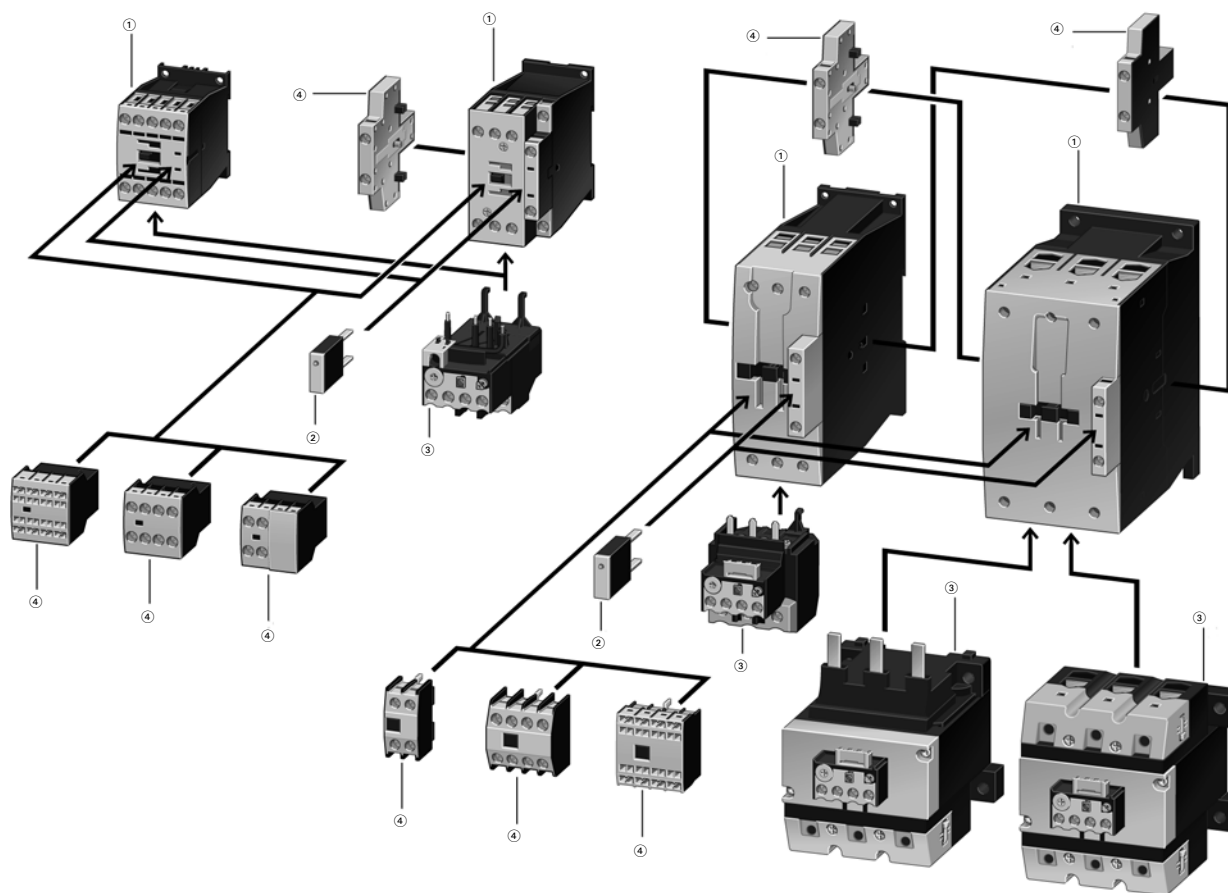
**Note:** For Type 2 Coordination, see **Page V5-T1-235**.

## 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.

## 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

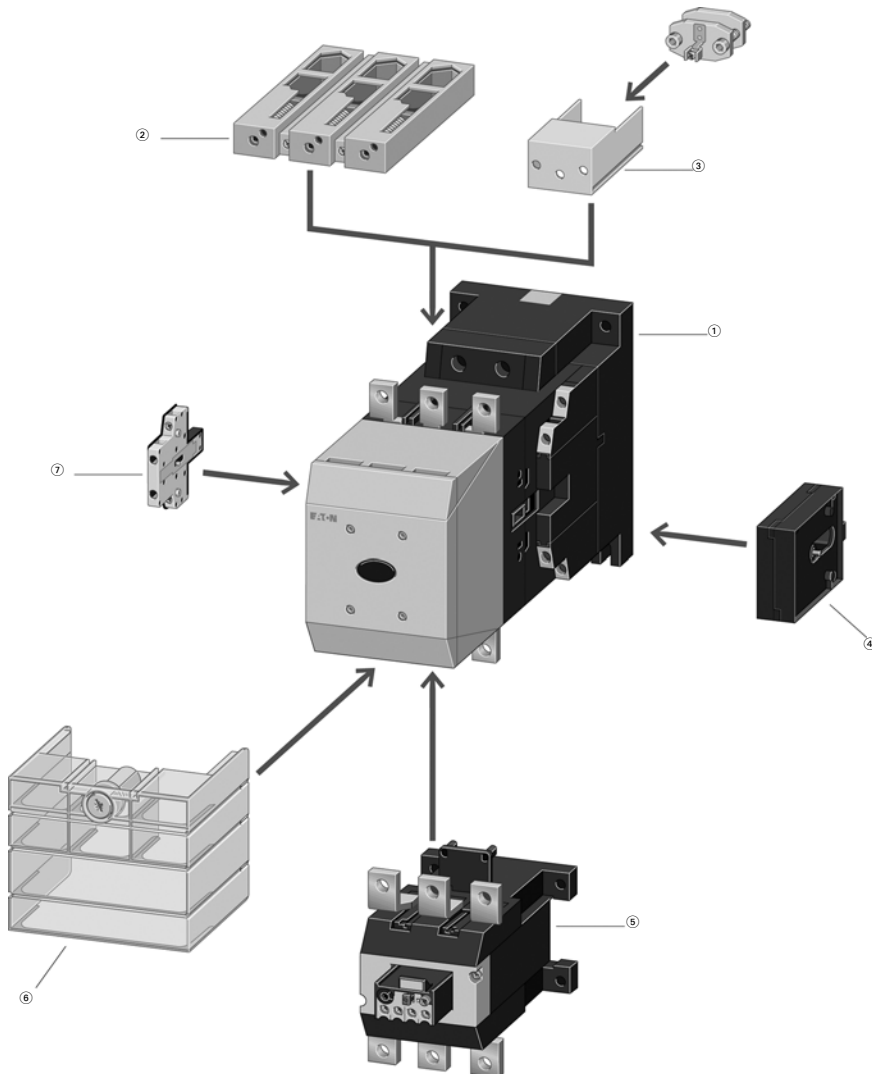
## ④ Auxiliary Contact Modules (see Page V5-T1-24)

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 ×  $U_c$

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-T1-130](#))

Can be mounted directly  
Separate mounting, possible  
Protection of EEx e-motors  
PTB certificate

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

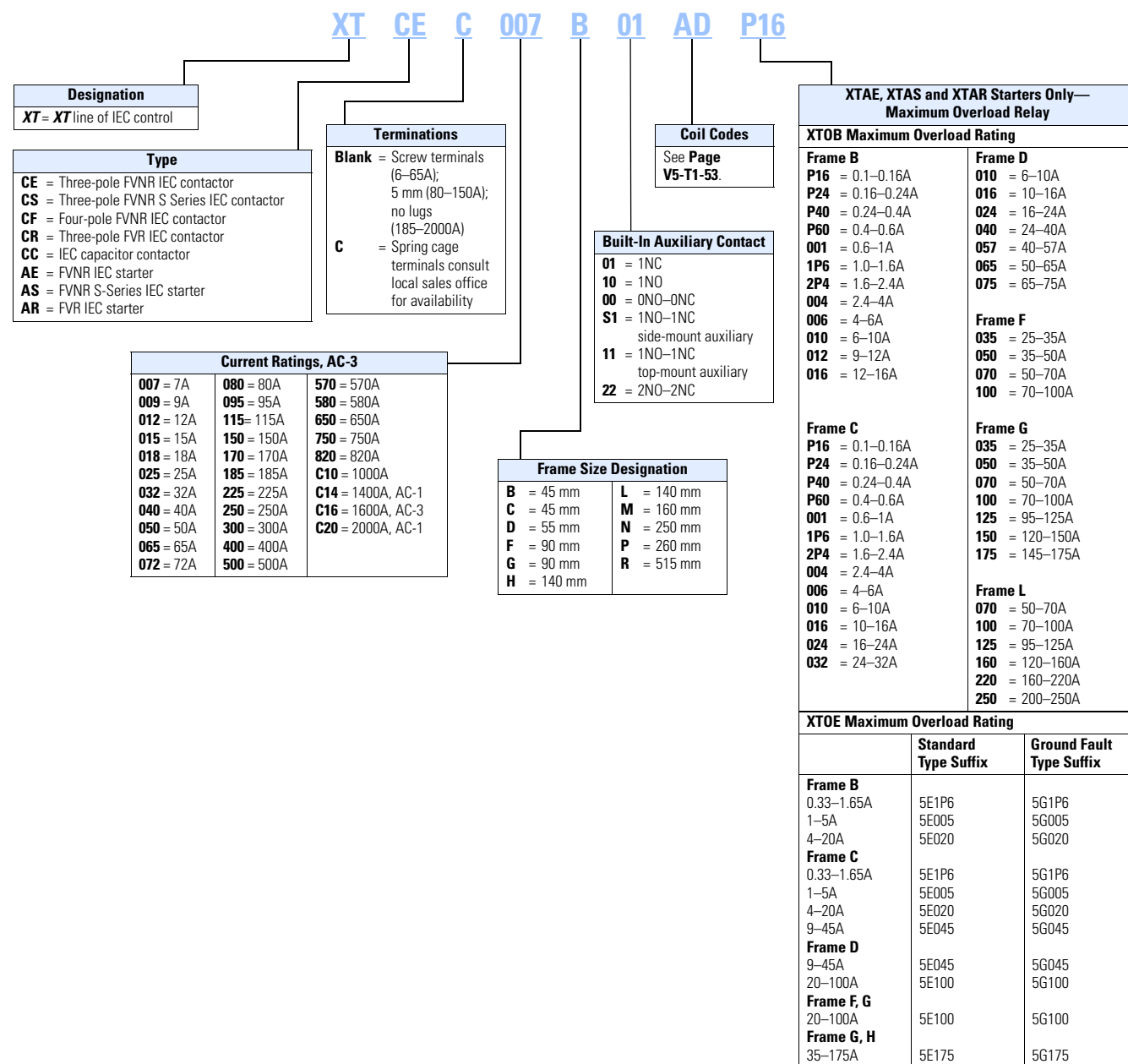
Finger-proof

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

Two-pole, side-mounting

## Catalog Number Selection

## XT IEC Contactors and Starters



## Product Selection

## Full Voltage, Non-Reversing Contactors

## Frame B



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

| UL General Purpose<br>Ampere Rating | Single-Phase hp Ratings |      |       | Three-Phase hp Ratings |      |                 |       | Auxiliary<br>Contacts | Screw Terminal<br>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<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 | Screw Terminal<br>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**.

Frame C



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

| UL General Purpose<br>Ampere Rating | Single-Phase hp Ratings |      |      | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|-------------------------------------|-------------------------|------|------|------------------------|------|------|------|-----------------------|------------------------------------------------|
|                                     | 115V                    | 200V | 230V | 200V                   | 230V | 460V | 575V |                       |                                                |
| 40                                  | 2                       | 2    | 3    | 5                      | 5    | 10   | 15   | 1NO                   | XTCE018C10_                                    |
| 40                                  | 2                       | 2    | 3    | 5                      | 5    | 10   | 15   | 1NC                   | XTCE018C01_                                    |
| 40                                  | 2                       | 3    | 5    | 7-1/2                  | 10   | 15   | 20   | 1NO                   | XTCE025C10_                                    |
| 40                                  | 2                       | 3    | 5    | 7-1/2                  | 10   | 15   | 20   | 1NC                   | XTCE025C01_                                    |
| 40                                  | 3                       | 5    | 5    | 10                     | 10   | 20   | 25   | 1NO                   | XTCE032C10_                                    |
| 40                                  | 3                       | 5    | 5    | 10                     | 10   | 20   | 25   | 1NC                   | XTCE032C01_                                    |
| 40                                  | 3                       | 5    | 5    | 10                     | 10   | 25   | 30   | 1NO                   | XTCE038C10_                                    |
| 40                                  | 3                       | 5    | 5    | 10                     | 10   | 25   | 30   | 1NC                   | XTCE038C01_                                    |

## Three-Pole Contactors, Frame C—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 | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|----------|-----------------------|------------------------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V |                       |                                                |
| 18                         | 40                                                  | 5                                                   | 7.5      | 10   | 11       | 1NO                   | XTCE018C10_                                    |
| 18                         | 40                                                  | 5                                                   | 7.5      | 10   | 11       | 1NC                   | XTCE018C01_                                    |
| 25                         | 45                                                  | 7.5                                                 | 11       | 14.5 | 14       | 1NO                   | XTCE025C10_                                    |
| 25                         | 45                                                  | 7.5                                                 | 11       | 14.5 | 14       | 1NC                   | XTCE025C01_                                    |
| 32                         | 45                                                  | 10                                                  | 15       | 18   | 17       | 1NO                   | XTCE032C10_                                    |
| 32                         | 45                                                  | 10                                                  | 15       | 18   | 17       | 1NC                   | XTCE032C01_                                    |
| 38                         | 45                                                  | 11                                                  | 18.5     | 18.5 | 21       | 1NO                   | XTCE038C10_                                    |
| 38                         | 45                                                  | 11                                                  | 18.5     | 18.5 | 21       | 1NC                   | XTCE038C01_                                    |

Frame D



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

| UL General Purpose<br>Ampere Rating | Single-Phase hp Ratings |       |       | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|-------------------------------------|-------------------------|-------|-------|------------------------|------|------|------|-----------------------|------------------------------------------------|
|                                     | 115V                    | 200V  | 230V  | 200V                   | 230V | 460V | 575V |                       |                                                |
| 63                                  | 3                       | 5     | 7-1/2 | 10                     | 15   | 30   | 40   | —                     | XTCE040D00_                                    |
| 63                                  | 3                       | 5     | 7-1/2 | 10                     | 15   | 30   | 40   | 1NO-1NC               | XTCE040DS1_                                    |
| 80                                  | 3                       | 7-1/2 | 10    | 15                     | 20   | 40   | 50   | —                     | XTCE050D00_                                    |
| 80                                  | 3                       | 7-1/2 | 10    | 15                     | 20   | 40   | 50   | 1NO-1NC               | XTCE050DS1_                                    |
| 88                                  | 5                       | 10    | 15    | 20                     | 25   | 50   | 60   | —                     | XTCE065D00_                                    |
| 88                                  | 5                       | 10    | 15    | 20                     | 25   | 50   | 60   | 1NO-1NC               | XTCE065DS1_                                    |
| 88                                  | 5                       | 10    | 15    | 20                     | 25   | 50   | 60   | —                     | XTCE072D00_                                    |
| 88                                  | 5                       | 10    | 15    | 20                     | 25   | 50   | 60   | 1NO-1NC               | XTCE072DS1_                                    |

## Three-Pole Contactors, Frame D—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 | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|----------|-----------------------|------------------------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V |                       |                                                |
| 40                         | 60                                                  | 12.5                                                | 18.5     | 24   | 23       | —                     | XTCE040D00_                                    |
| 40                         | 60                                                  | 12.5                                                | 18.5     | 24   | 23       | 1NO-1NC               | XTCE040DS1_                                    |
| 50                         | 80                                                  | 15.5                                                | 22       | 30   | 30       | —                     | XTCE050D00_                                    |
| 50                         | 80                                                  | 15.5                                                | 22       | 30   | 30       | 1NO-1NC               | XTCE050DS1_                                    |
| 65                         | 98                                                  | 20                                                  | 30       | 39   | 35       | —                     | XTCE065D00_                                    |
| 65                         | 98                                                  | 20                                                  | 30       | 39   | 35       | 1NO-1NC               | XTCE065DS1_                                    |
| 72                         | 98                                                  | 22                                                  | 37       | 41   | 35       | —                     | XTCE072D00_                                    |
| 72                         | 98                                                  | 22                                                  | 37       | 41   | 35       | 1NO-1NC               | XTCE072DS1_                                    |

## 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.

The 40–65A XTCE contactors have positively driven contacts within the auxiliary contact module.

Six auxiliary contacts are possible with a combination of side-mounted and front-mount auxiliary contacts.

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: XTCEC007B10A.

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.

Frame F



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

| UL General Purpose<br>Ampere Rating | Single-Phase hp Ratings |      |      | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|-------------------------------------|-------------------------|------|------|------------------------|------|------|------|-----------------------|------------------------------------------------|
|                                     | 115V                    | 200V | 230V | 200V                   | 230V | 460V | 575V |                       |                                                |
| 125                                 | 7-1/2                   | 15   | 15   | 25                     | 30   | 60   | 75   | —                     | XTCE080F00_                                    |
| 125                                 | 7-1/2                   | 15   | 15   | 25                     | 30   | 60   | 75   | 1NO-1NC               | XTCE080FS1_                                    |
| 125                                 | 7-1/2                   | 15   | 15   | 25                     | 40   | 75   | 100  | —                     | XTCE095F00_                                    |
| 125                                 | 7-1/2                   | 15   | 15   | 25                     | 40   | 75   | 100  | 1NO-1NC               | XTCE095FS1_                                    |

## Three-Pole Contactors, Frame F—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 | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|----------|-----------------------|------------------------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V |                       |                                                |
| 80                         | 110                                                 | 25                                                  | 37       | 48   | 63       | —                     | XTCE080F00_                                    |
| 80                         | 110                                                 | 25                                                  | 37       | 48   | 63       | 1NO-1NC               | XTCE080FS1_                                    |
| 95                         | 130                                                 | 30                                                  | 45       | 57   | 75       | —                     | XTCE095F00_                                    |
| 95                         | 130                                                 | 30                                                  | 45       | 57   | 75       | 1NO-1NC               | XTCE095FS1_                                    |

Frame G



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

| UL General Purpose<br>Ampere Rating | Single-Phase hp Ratings |      |      | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|-------------------------------------|-------------------------|------|------|------------------------|------|------|------|-----------------------|------------------------------------------------|
|                                     | 115V                    | 200V | 230V | 200V                   | 230V | 460V | 575V |                       |                                                |
| 160                                 | 10                      | 25   | 25   | 40                     | 50   | 100  | 100  | —                     | XTCE115G00_                                    |
| 160                                 | 10                      | 25   | 25   | 40                     | 50   | 100  | 100  | 1NO-1NC               | XTCE115GS1_                                    |
| 180                                 | 10                      | 25   | 30   | 40                     | 60   | 125  | 125  | —                     | XTCE150G00_                                    |
| 180                                 | 10                      | 25   | 30   | 40                     | 60   | 125  | 125  | 1NO-1NC               | XTCE150GS1_                                    |
| 180                                 | 10                      | 25   | 30   | 40                     | 60   | 125  | 125  | —                     | XTCE170G00_                                    |
| 180                                 | 10                      | 25   | 30   | 40                     | 60   | 125  | 125  | 1NO-1NC               | XTCE170GS1_                                    |

## Three-Pole Contactors, Frame G—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 | Screw Terminal<br>Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|----------|-----------------------|------------------------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V |                       |                                                |
| 115                        | 160                                                 | 37                                                  | 55       | 70   | 90       | —                     | XTCE115G00_                                    |
| 115                        | 160                                                 | 37                                                  | 55       | 70   | 90       | 1NO-1NC               | XTCE115GS1_                                    |
| 150                        | 190                                                 | 48                                                  | 75       | 91   | 96       | —                     | XTCE150G00_                                    |
| 150                        | 190                                                 | 48                                                  | 75       | 91   | 96       | 1NO-1NC               | XTCE150GS1_                                    |
| 170                        | 225                                                 | 52                                                  | 90       | 100  | 96       | —                     | XTCE170G00_                                    |
| 170                        | 225                                                 | 52                                                  | 90       | 100  | 96       | 1NO-1NC               | XTCE170GS1_                                    |

## Notes

The 40–65A XTCE contactors have positively driven contacts within the auxiliary contact module.  
Six auxiliary contacts are possible with a combination of side-mounted and front-mount auxiliary contacts.

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: XTCEC007B10A.

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.

## 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>①②③</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>①②③</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|-----------------------|--------------------|-----------------------|----------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 660/690V <sup>④</sup> | 1000V <sup>④</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 |                       |                                 |
| Standard Coil (110/120V, 230/240 Vac Coil Only) |                        |      |      |      |                       |                                 |
| 300                                             | 75                     | 100  | 200  | 250  | 2NO-2NC               | XTCS250L22_                     |
| 350                                             | 100                    | 125  | 250  | 300  | 2NO-2NC               | XTCS300L22_                     |
| Electronic Coil                                 |                        |      |      |      |                       |                                 |
| 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>④</sup> | 1000V <sup>④</sup> |                       |                                 |
| Standard Coil (110/120V, 230/240 Vac Coil Only) |                                                     |                                                     |          |                       |                    |                       |                                 |
| 250                                             | 429                                                 | 75                                                  | 132      | 240                   | 108                | 2NO-2NC               | XTCS250L22_                     |
| 300                                             | 490                                                 | 90                                                  | 160      | 195                   | 132                | 2NO-2NC               | XTCS300L22_                     |
| Electronic Coil                                 |                                                     |                                                     |          |                       |                    |                       |                                 |
| 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 Add “-S730” to the end of the catalog number after the coil voltage to configure as extended H frame model. Extended H frame will align with L frame contactor for interlocks and mounting height. Consult Vista/Eaton care for availability of extended base models
- ④ For 185–500A contactors at 660/690V or 1000V: Do not reverse directly.

## Frame M



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

| UL General Purpose<br>Ampere Rating             | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog<br>Number ①② |
|-------------------------------------------------|------------------------|------|------|------|-----------------------|----------------------|
|                                                 | 200V                   | 230V | 460V | 575V |                       |                      |
| Standard Coil (110/120V, 230/240 Vac Coil Only) |                        |      |      |      |                       |                      |
| 450                                             | 125                    | 150  | 300  | 400  | 2NO-2NC               | XTCS400M22_          |
| 550                                             | 150                    | 200  | 400  | 500  | 2NO-2NC               | XTCS500M22_          |
| Electronic Coil                                 |                        |      |      |      |                       |                      |
| 450                                             | 125                    | 150  | 300  | 400  | 2NO-2NC               | XTCE400M22_          |
| 550                                             | 150                    | 200  | 400  | 500  | 2NO-2NC               | XTCE500M22_          |

## Three-Pole Contactors, Frame M—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 | 415V | 660/690V <sup>③</sup> | 1000V <sup>③</sup> |                       |                                 |
| Standard Coil (110/120V, 230/240 Vac Coil Only) |                                                     |                                                     |          |      |                       |                    |                       |                                 |
| 400                                             | 612                                                 | 125                                                 | 200      | 240  | 344                   | 132                | 2NO-2NC               | XTCS400M22_                     |
| 500                                             | 800                                                 | 155                                                 | 250      | 300  | 344                   | 132                | 2NO-2NC               | XTCS500M22_                     |
| Electronic Coil                                 |                                                     |                                                     |          |      |                       |                    |                       |                                 |
| 400                                             | 612                                                 | 125                                                 | 200      | 240  | 344                   | 132                | 2NO-2NC               | XTCE400M22_                     |
| 500                                             | 800                                                 | 155                                                 | 250      | 300  | 344                   | 132                | 2NO-2NC               | XTCE500M22_                     |

**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.

## Frame N



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

| UL General Purpose<br>Ampere Rating | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog Number <sup>①②</sup> |
|-------------------------------------|------------------------|------|------|------|-----------------------|------------------------------|
|                                     | 200V                   | 230V | 460V | 575V |                       |                              |
| 630                                 | 200                    | 200  | 400  | 600  | 2NO-2NC               | XTCE580N22_ <sup>③</sup>     |
| 700                                 | 200                    | 250  | 500  | 600  | 2NO-2NC               | XTCE650N22_ <sup>③</sup>     |
| 800                                 | 250                    | 300  | 600  | 700  | 2NO-2NC               | XTCE750N22_ <sup>③</sup>     |
| 850                                 | 290                    | 350  | 700  | 860  | 2NO-2NC               | XTCE820N22_ <sup>③</sup>     |
| 1100                                | 350                    | 420  | 850  | 980  | 2NO-2NC               | XTCEC10N22_ <sup>③</sup>     |

## Three-Pole Contactors, Frame N (Electronic Coil)—IEC Ratings

| AC-3<br>I <sub>b</sub> (A) | AC-1 (40°C)<br>I <sub>b</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |      |                       |                    | Auxiliary<br>Contacts | Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|-----------------------|--------------------|-----------------------|------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V <sup>④</sup> | 1000V <sup>④</sup> |                       |                              |
| 580                        | 980                                                 | 185                                                 | 315      | 348  | 560                   | 600                | 2NO-2NC               | XTCE580N22_ <sup>③</sup>     |
| 650                        | 1041                                                | 205                                                 | 355      | 390  | 630                   | 600                | 2NO-2NC               | XTCE650N22_ <sup>③</sup>     |
| 750                        | 1102                                                | 240                                                 | 400      | 455  | 720                   | 800                | 2NO-2NC               | XTCE750N22_ <sup>③</sup>     |
| 820                        | 1225                                                | 260                                                 | 450      | 500  | 750                   | 800                | 2NO-2NC               | XTCE820N22_ <sup>③</sup>     |
| 1000                       | 1225                                                | 315                                                 | 560      | 610  | 1000                  | 1000               | 2NO-2NC               | XTCEC10N22_ <sup>③</sup>     |

## Frame P



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

| UL General Purpose<br>Ampere Rating | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog Number <sup>①②</sup> |
|-------------------------------------|------------------------|------|------|------|-----------------------|------------------------------|
|                                     | 200V                   | 230V | 460V | 575V |                       |                              |
| 1400                                | —                      | —    | —    | —    | 2NO-2NC               | XTCEC14P22_ <sup>③</sup>     |

## Three-Pole Contactors, Frame P (Electronic Coil)—IEC Ratings

| AC-3<br>I <sub>b</sub> (A) | AC-1 (40°C)<br>I <sub>b</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |      |                       |                    | Auxiliary<br>Contacts | Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|-----------------------|--------------------|-----------------------|------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V <sup>④</sup> | 1000V <sup>④</sup> |                       |                              |
| —                          | 1714                                                | —                                                   | —        | —    | —                     | —                  | 2NO-2NC               | XTCEC14P22_ <sup>③</sup>     |

## Frame R



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

| UL General Purpose<br>Ampere Rating | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog Number <sup>①②</sup> |
|-------------------------------------|------------------------|------|------|------|-----------------------|------------------------------|
|                                     | 200V                   | 230V | 460V | 575V |                       |                              |
| 1600                                | 560                    | 640  | 1200 | 1300 | 2NO-2NC               | XTCEC16R22_ <sup>③</sup>     |
| 2000                                | —                      | —    | —    | —    | 2NO-2NC               | XTCEC20R22_ <sup>③</sup>     |

## Three-Pole Contactors, Frame R (Electronic Coil)—IEC Ratings

| AC-3<br>I <sub>b</sub> (A) | AC-1 (40°C)<br>I <sub>b</sub> = I <sub>th</sub> (A) | Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz |          |      |                       |                    | Auxiliary<br>Contacts | Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------------------------------|-----------------------------------------------------|----------|------|-----------------------|--------------------|-----------------------|------------------------------|
|                            |                                                     | 220/230V                                            | 380/400V | 415V | 660/690V <sup>④</sup> | 1000V <sup>④</sup> |                       |                              |
| 1600                       | 2200                                                | 500                                                 | 900      | 900  | 1600                  | 1700               | 2NO-2NC               | XTCEC16R22_ <sup>③</sup>     |
| —                          | 2450                                                | —                                                   | —        | —    | —                     | —                  | 2NO-2NC               | XTCEC20R22_ <sup>③</sup>     |

## 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 When operating the 580–2000A XTCE contactors with frequency inverters, the suppressor on the load side must be removed. The load side suppressor must also be removed when performing a high-voltage test—see Pub51204, Pub51209.
- ④ For 185–500A contactors at 660/690V or 1000V: do not reverse directly.

### Contactor Application Data <sup>①②</sup>

| Catalog Prefix | Electrical Life (Operations) for 10 hp, 480V (14.2A) Applications |
|----------------|-------------------------------------------------------------------|
| XTCE012B       | 1 million                                                         |
| XTCE015B       | 1.2 million                                                       |
| XTCE018C       | 2 million                                                         |

### Full Voltage Non-Reversing Three-Pole Contactors—Contact Sequence (Circuit Symbols)—Standard Offering

| Contactor Frame | Auxiliary Contacts | Contact Sequence |
|-----------------|--------------------|------------------|
| B-C             | 1NO                |                  |
| B-C             | 1NC                |                  |
| D-G             | —                  |                  |
| L-R             | 2NO-2NC            |                  |

### Four-Pole Contactors with Screw Terminals—Maximum UL/CSA Motor Ratings

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |      |      |      | Auxiliary Contacts | Contact Sequence | Catalog Number <sup>③</sup> |
|-------------------------|------|------------------------|------|------|------|--------------------|------------------|-----------------------------|
| 115V                    | 230V | 200V                   | 230V | 460V | 575V |                    |                  |                             |
| 1                       | 2    | 3                      | 3    | 10   | 10   | —                  |                  | XTCF020B00_                 |
| —                       | —    | 7.5                    | 7.5  | 10   | 15   | 1NO                |                  | XTCF032C10_                 |
| —                       | —    | 7.5                    | 10   | 15   | 20   | 1NO                |                  | XTCF045C10_                 |
| —                       | —    | 10                     | 15   | 30   | 40   | —                  |                  | XTCF063D00_                 |
| —                       | —    | 15                     | 20   | 40   | 50   | —                  |                  | XTCF080D00_                 |
| —                       | —    | 25                     | 30   | 60   | 75   | —                  |                  | XTCF125G00_                 |
| —                       | —    | 25                     | 40   | 75   | 100  | —                  |                  | XTCF160G00_                 |
| —                       | —    | 40                     | 50   | 100  | 125  | —                  |                  | XTCF200G00_                 |

### Four-Pole Contactors with Screw Terminals—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | AC-1<br>(40°C) | Three-Phase hp Ratings |      |      |      | Auxiliary Contacts | Contact Sequence | Catalog Number <sup>③</sup> |
|----------------------------|----------------|------------------------|------|------|------|--------------------|------------------|-----------------------------|
|                            |                | 200V                   | 230V | 460V | 575V |                    |                  |                             |
| 12                         | 22             | 3                      | 3    | 10   | 10   | —                  |                  | XTCF020B00_                 |
| 12                         | 22             | 3.5                    | 5.5  | 7    | 6.5  | —                  |                  | XTCF020B00_                 |
| 18                         | 32             | 5                      | 7.5  | 10   | 11   | 1NO                |                  | XTCF032C10_                 |
| 25                         | 45             | 7.5                    | 11   | 14.5 | 14   | 1NO                |                  | XTCF045C10_                 |
| 40                         | 63             | 12.5                   | 18.5 | 24   | 23   | —                  |                  | XTCF063D00_                 |
| 50                         | 80             | 15.5                   | 22   | 30   | 30   | —                  |                  | XTCF080D00_                 |
| 80                         | 125            | 25                     | 37   | 48   | 63   | —                  |                  | XTCF125G00_                 |
| 95                         | 160            | 30                     | 45   | 57   | 75   | —                  |                  | XTCF160G00_                 |
| 115                        | 200            | 37                     | 55   | 70   | 90   | —                  |                  | XTCF200G00_                 |

#### Notes

- ① See **Page V5-T1-109** for electrical life curves.  
 ② AC and DC operated contactors have a built-in suppressor circuit (Frames L-R, 185–2000A).  
 ③ Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-53**.

## Switching of DC Currents ①

| Description                  | Single-Pole | Two-Pole |
|------------------------------|-------------|----------|
| XTCF020B–XTCF200G<br>>60 Vdc |             |          |

## Controlling XTCS and XTCE Contactors Frames L–R (185–2000A)

| Description                                                                                                                                                                                                                 | XTCS250L–XTCS500M,<br>XTCE_H | XTCEC16R, XTCEC20R | XTCE250L–XTCEC14P |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------------|-------------------|
| <b>Conventional</b><br>A1/A2 are applied to voltage in the usual manner.                                                                                                                                                    |                              |                    |                   |
| <b>Direct from the PLC</b><br>A 24V output from the PLC can be connected directly to connections A3/A4.                                                                                                                     |                              |                    |                   |
| <b>From Low-Consumption Command Devices</b><br>Command devices, which can only be subject to minimal loads such as circuit board relays, control circuit devices or position switches can be connected directly to A10/A11. |                              |                    |                   |

## Notes

- ① When necessary, cable to be supplied by customer.
- ② Standstill in an emergency (emergency-stop).
- ③ Command device connection.

**Full Voltage, Reversing Contactors****Frame B****Contactors with Screw Terminals, Frame B—Maximum UL/CSA Ratings**

| Single-Phase hp Ratings |       | Three-Phase hp Ratings |      |      |       | Spare Auxiliary Contacts         |                                  | Catalog Number <sup>①</sup> |
|-------------------------|-------|------------------------|------|------|-------|----------------------------------|----------------------------------|-----------------------------|
| 115V                    | 230V  | 200V                   | 230V | 460V | 575V  | K1M                              | K2M                              |                             |
| 1/4                     | 1     | 1-1/2                  | 2    | 3    | 5     | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR007B21_                 |
| 1/2                     | 1-1/2 | 3                      | 3    | 5    | 7-1/2 | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR009B21_                 |
| 1/2                     | 2     | 3                      | 3    | 10   | 10    | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR012B21_                 |

**Contactors with Screw Terminals, Frame B—Maximum IEC Ratings**

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |          | Spare Auxiliary Contacts         |                                  | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|----------|----------------------------------|----------------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 660/690V | K1M                              | K2M                              |                             |
| 7                          | 2.2                         | 3        | 4    | 3.5      | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR007B21_                 |
| 9                          | 2.5                         | 4        | 5.5  | 4.5      | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR009B21_                 |
| 12                         | 3.5                         | 5.5      | 7    | 6.5      | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR012B21_                 |

**Frame C****Contactors with Screw Terminals, Frame C—Maximum UL/CSA Ratings**

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |      |      |      | Spare Auxiliary Contacts         |                                  | Catalog Number <sup>①</sup> |
|-------------------------|------|------------------------|------|------|------|----------------------------------|----------------------------------|-----------------------------|
| 115V                    | 230V | 200V                   | 230V | 460V | 575V | K1M                              | K2M                              |                             |
| 2                       | 3    | 5                      | 5    | 10   | 15   | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR018C21_                 |
| 2                       | 5    | 7-1/2                  | 10   | 15   | 20   | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR025C21_                 |
| 3                       | 5    | 10                     | 10   | 20   | 25   | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR032C21_                 |

**Contactors with Screw Terminals, Frame C—Maximum IEC Ratings**

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |          | Spare Auxiliary Contacts         |                                  | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|----------|----------------------------------|----------------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 660/690V | K1M                              | K2M                              |                             |
| 18                         | 5                           | 7.5      | 8    | 11       | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR018C21_                 |
| 25                         | 7.5                         | 11       | 14.5 | 14       | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR025C21_                 |
| 32                         | 10                          | 15       | 18   | 17       | $\frac{1}{63}$<br>$\frac{1}{64}$ | $\frac{1}{63}$<br>$\frac{1}{64}$ | XTCR032C21_                 |

**Note**

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

## Frame D



## Contactors with Screw Terminals, Frame D—Maximum UL/CSA Ratings

| Single-Phase hp Ratings |       | Three-Phase hp Ratings |      |      |      | Spare Auxiliary Contacts |     | Catalog Number <sup>①</sup> |
|-------------------------|-------|------------------------|------|------|------|--------------------------|-----|-----------------------------|
| 115V                    | 230V  | 200V                   | 230V | 460V | 575V | K1M                      | K2M |                             |
| 3                       | 7-1/2 | 10                     | 15   | 30   | 40   | —                        | —   | XTCR040D11_                 |
| 3                       | 10    | 15                     | 20   | 40   | 50   | —                        | —   | XTCR050D11_                 |
| 5                       | 15    | 20                     | 25   | 50   | 60   | —                        | —   | XTCR065D11_                 |

## Contactors with Screw Terminals, Frame D—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |          | Spare Auxiliary Contacts |     | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|----------|--------------------------|-----|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 660/690V | K1M                      | K2M |                             |
| 40                         | 12.5                        | 18.5     | 24   | 23       | —                        | —   | XTCR040D11_                 |
| 50                         | 15.5                        | 22       | 30   | 30       | —                        | —   | XTCR050D11_                 |
| 65                         | 20                          | 30       | 39   | 35       | —                        | —   | XTCR065D11_                 |

## Frame F



## Contactors with Screw Terminals, Frame F—Maximum UL/CSA Ratings

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |      |      |      | Spare Auxiliary Contacts |     | Catalog Number <sup>①</sup> |
|-------------------------|------|------------------------|------|------|------|--------------------------|-----|-----------------------------|
| 115V                    | 230V | 200V                   | 230V | 460V | 575V | K1M                      | K2M |                             |
| 7-1/2                   | 15   | 25                     | 30   | 60   | 75   | —                        | —   | XTCR080F11_                 |
| 7-1/2                   | 15   | 25                     | 40   | 75   | 100  | —                        | —   | XTCR095F11_                 |

## Contactors with Screw Terminals, Frame F—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |          | Spare Auxiliary Contacts |     | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|----------|--------------------------|-----|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 660/690V | K1M                      | K2M |                             |
| 80                         | 25                          | 37       | 48   | 63       | —                        | —   | XTCR080F11_                 |
| 95                         | 30                          | 45       | 57   | 75       | —                        | —   | XTCR095F11_                 |

## Frame G



## Contactors with Screw Terminals, Frame G—Maximum UL/CSA Ratings

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |      |      |      | Spare Auxiliary Contacts |     | Catalog Number <sup>①</sup> |
|-------------------------|------|------------------------|------|------|------|--------------------------|-----|-----------------------------|
| 115V                    | 230V | 200V                   | 230V | 460V | 575V | K1M                      | K2M |                             |
| 10                      | 25   | 40                     | 50   | 100  | 100  | —                        | —   | XTCR115G11_                 |
| 15                      | 30   | 40                     | 60   | 100  | 100  | —                        | —   | XTCR150G11_                 |

## Contactors with Screw Terminals, Frame G—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |          | Spare Auxiliary Contacts |     | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|----------|--------------------------|-----|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 660/690V | K1M                      | K2M |                             |
| 115                        | 37                          | 55       | 70   | 90       | —                        | —   | XTCR115G11_                 |
| 150                        | 48                          | 75       | 91   | 96       | —                        | —   | XTCR150G11_                 |

**Note**

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

## XTCR Reversing Contactor Components

| Quantity | Frame                | B           | C           | D           | F           | G           |
|----------|----------------------|-------------|-------------|-------------|-------------|-------------|
| 2        | Contactors           | XTCE...B01_ | XTCE...C01_ | XTCE...D00_ | XTCE...F00_ | XTCE...G00_ |
| 2        | Auxiliary contact    | XTCEXFAC20  | XTCEXFAC20  | XTCEXFBG11  | XTCEXFBG11  | XTCEXFBG11  |
| 1        | Mechanical interlock | XTCEXMLB    | XTCEXMLC    | XTCEXMLD    | XTCEXMLG    | XTCEXMLG    |
| 1        | Reversing link kit   | XTCEXRLB    | XTCEXRLC    | XTCEXRLD    | XTCEXRLG    | XTCEXRLG    |

## 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> ① |
| <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>    |

**Note**

① Frames L–M only.

**Full Voltage, Non-Reversing Starters, with Bimetallic or Electronic Overload****Frame B****Three-Pole Starters, Frame B—Maximum UL/CSA Ratings** ①

| Single-Phase hp Ratings |       | Three-Phase hp Ratings |      |      |       | Auxiliary<br>Contacts | Catalog Number ②③ |
|-------------------------|-------|------------------------|------|------|-------|-----------------------|-------------------|
| 115V                    | 230V  | 200V                   | 230V | 460V | 575V  |                       |                   |
| 1/4                     | 1     | 1-1/2                  | 2    | 3    | 5     | 1NO                   | XTAE007B10_ _     |
| 1/4                     | 1     | 1-1/2                  | 2    | 3    | 5     | 1NC                   | XTAE007B01_ _     |
| 1/2                     | 1-1/2 | 3                      | 3    | 5    | 7-1/2 | 1NO                   | XTAE009B10_ _     |
| 1/2                     | 1-1/2 | 3                      | 3    | 5    | 7-1/2 | 1NC                   | XTAE009B01_ _     |
| 1                       | 2     | 3                      | 3    | 10 ④ | 10    | 1NO                   | XTAE012B10_ _     |
| 1                       | 2     | 3                      | 3    | 10 ④ | 10    | 1NC                   | XTAE012B01_ _     |
| 1                       | 3     | 5                      | 5    | 10 ④ | 10    | 1NO                   | XTAE015B10_ _     |
| 1                       | 3     | 5                      | 5    | 10 ④ | 10    | 1NC                   | XTAE015B01_ _     |

**Three-Pole Starters, Frame B—Maximum IEC Ratings** ①

| AC-3<br>I <sub>e</sub> (A) | AC-1 | Three-Phase Motors 50–60 Hz |          |      |          | Auxiliary<br>Contacts | Catalog Number ②③ |
|----------------------------|------|-----------------------------|----------|------|----------|-----------------------|-------------------|
|                            |      | 220/230V                    | 380/400V | 415V | 660/690V |                       |                   |
| 7                          | 20   | 2.2                         | 3        | 4    | 3.5      | 1NO                   | XTAE007B10_ _     |
| 7                          | 20   | 2.2                         | 3        | 4    | 3.5      | 1NC                   | XTAE007B01_ _     |
| 9                          | 20   | 2.5                         | 4        | 5.5  | 4.5      | 1NO                   | XTAE009B10_ _     |
| 9                          | 20   | 2.5                         | 4        | 5.5  | 4.5      | 1NC                   | XTAE009B01_ _     |
| 12                         | 20   | 3.5                         | 5.5      | 7    | 6.5      | 1NO                   | XTAE012B10_ _     |
| 12                         | 20   | 3.5                         | 5.5      | 7    | 6.5      | 1NC                   | XTAE012B01_ _     |
| 15.5                       | 20   | 4                           | 7.5      | 8    | 7        | 1NO                   | XTAE015B10_ _     |
| 15.5                       | 20   | 4                           | 7.5      | 8    | 7        | 1NC                   | XTAE015B01_ _     |

**Frame C****Three-Pole Starters, Frame C—Maximum UL/CSA Ratings** ①

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |       |      |      | Auxiliary<br>Contacts | Catalog Number ②③ |
|-------------------------|------|------------------------|-------|------|------|-----------------------|-------------------|
| 115V                    | 230V | 200V                   | 230V  | 460V | 575V |                       |                   |
| 2                       | 3    | 5                      | 5     | 10 ④ | 15   | 1NO                   | XTAE018C10_ _     |
| 2                       | 3    | 5                      | 5     | 10 ④ | 15   | 1NC                   | XTAE018C01_ _     |
| 2                       | 5    | 7-1/2                  | 7-1/2 | 15   | 20   | 1NO                   | XTAE025C10_ _     |
| 2                       | 5    | 7-1/2                  | 7-1/2 | 15   | 20   | 1NC                   | XTAE025C01_ _     |
| 3                       | 5    | 10                     | 10    | 20   | 25   | 1NO                   | XTAE032C10_ _     |
| 3                       | 5    | 10                     | 10    | 20   | 25   | 1NC                   | XTAE032C01_ _     |

**Three-Pole Starters, Frame C—Maximum IEC Ratings** ①

| AC-3<br>I <sub>e</sub> (A) | AC-1 | Three-Phase Motors 50–60 Hz |          |      |          | Auxiliary<br>Contacts | Catalog Number ②③ |
|----------------------------|------|-----------------------------|----------|------|----------|-----------------------|-------------------|
|                            |      | 220/230V                    | 380/400V | 415V | 660/690V |                       |                   |
| 18                         | 35   | 5                           | 7.5      | 10   | 11       | 1NO                   | XTAE018C10_ _     |
| 18                         | 35   | 5                           | 7.5      | 10   | 11       | 1NC                   | XTAE018C01_ _     |
| 25                         | 40   | 7.5                         | 11       | 14.5 | 14       | 1NO                   | XTAE025C10_ _     |
| 25                         | 40   | 7.5                         | 11       | 14.5 | 14       | 1NC                   | XTAE025C01_ _     |
| 32                         | 40   | 10                          | 15       | 18   | 17       | 1NO                   | XTAE032C10_ _     |
| 32                         | 40   | 10                          | 15       | 18   | 17       | 1NC                   | XTAE032C01_ _     |

**Notes**

- ① Products shown are with the bimetallic overload relay.  
 ② Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-53**.  
 ③ Underscore ( \_ ) indicates overload relay suffix required. See **Page V5-T1-54**.  
 ④ For electrical life contactor application data. See **Page V5-T1-53**.

Frame D

**Three-Pole Starters, Frame D—Maximum UL/CSA Ratings** ①

| Single-Phase hp Ratings |       | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog Number ②③ |
|-------------------------|-------|------------------------|------|------|------|-----------------------|-------------------|
| 115V                    | 230V  | 200V                   | 230V | 460V | 575V |                       |                   |
| 3                       | 7-1/2 | 10                     | 15   | 30   | 40   | —                     | XTAE040D00__      |
| 3                       | 10    | 15                     | 20   | 40   | 50   | —                     | XTAE050D00__      |
| 5                       | 15    | 20                     | 25   | 50   | 60   | —                     | XTAE065D00__      |

**Three-Pole Starters, Frame D—Maximum IEC Ratings** ①

| AC-3<br>I <sub>e</sub> (A) | AC-1 | Three-Phase Motors 50–60 Hz |          |      |          | Auxiliary<br>Contacts | Catalog Number ②③ |
|----------------------------|------|-----------------------------|----------|------|----------|-----------------------|-------------------|
|                            |      | 220/230V                    | 380/400V | 415V | 660/690V |                       |                   |
| 40                         | 50   | 12.5                        | 18.5     | 24   | 23       | —                     | XTAE040D00__      |
| 50                         | 60   | 15.5                        | 22       | 30   | 30       | —                     | XTAE050D00__      |
| 65                         | 72   | 20                          | 30       | 39   | 35       | —                     | XTAE065D00__      |

Frame F

**Three-Pole Starters, Frame F—Maximum UL/CSA Ratings** ①

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog Number ②③ |
|-------------------------|------|------------------------|------|------|------|-----------------------|-------------------|
| 115V                    | 230V | 200V                   | 230V | 460V | 575V |                       |                   |
| 7-1/2                   | 15   | 25                     | 30   | 60   | 75   | —                     | XTAE080F00__      |
| 7-1/2                   | 15   | 25                     | 40   | 75   | 100  | —                     | XTAE095F00__      |

**Three-Pole Starters, Frame F—Maximum IEC Ratings** ①

| AC-3<br>I <sub>e</sub> (A) | AC-1 | Three-Phase Motors 50–60 Hz |          |      |          | Auxiliary<br>Contacts | Catalog Number ②③ |
|----------------------------|------|-----------------------------|----------|------|----------|-----------------------|-------------------|
|                            |      | 220/230V                    | 380/400V | 415V | 660/690V |                       |                   |
| 80                         | 110  | 25                          | 37       | 48   | 63       | —                     | XTAE080F00__      |
| 95                         | 110  | 30                          | 45       | 57   | 75       | —                     | XTAE095F00__      |

Frame G

**Three-Pole Starters, Frame G—Maximum UL/CSA Ratings** ①

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |      |      |      | Auxiliary<br>Contacts | Catalog Number ②③ |
|-------------------------|------|------------------------|------|------|------|-----------------------|-------------------|
| 115V                    | 230V | 200V                   | 230V | 460V | 575V |                       |                   |
| 10                      | 25   | 40                     | 50   | 100  | 125  | —                     | XTAE115G00__      |
| 15                      | 30   | 40                     | 60   | 125  | 125  | —                     | XTAE150G00__      |

**Three-Pole Starters, Frame G—Maximum IEC Ratings** ①

| AC-3<br>I <sub>e</sub> (A) | AC-1 | Three-Phase Motors 50–60 Hz |          |      |          | Auxiliary<br>Contacts | Catalog Number ②③ |
|----------------------------|------|-----------------------------|----------|------|----------|-----------------------|-------------------|
|                            |      | 220/230V                    | 380/400V | 415V | 660/690V |                       |                   |
| 115                        | 160  | 37                          | 55       | 70   | 105      | —                     | XTAE115G00__      |
| 150                        | 160  | 48                          | 75       | 91   | 125      | —                     | XTAE150G00__      |

**Notes**

- ① Products shown are with the bimetallic overload relay.  
 ② Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-53**.  
 ③ Underscore ( \_ ) indicates overload relay suffix required. See **Page V5-T1-54**.

**Full Voltage, Reversing Starters, with Bimetallic or Electronic Overload****Reversing Starters with Screw Terminals, Frame B—Maximum UL/CSA Ratings**

| Single-Phase hp Ratings |       | Three-Phase hp Ratings |      | 460V | 575V  | Catalog Number <sup>①②</sup> |
|-------------------------|-------|------------------------|------|------|-------|------------------------------|
| 115V                    | 230V  | 200V                   | 230V |      |       |                              |
| 1/4                     | 1     | 1-1/2                  | 2    | 3    | 5     | XTAR007B21_ _                |
| 1/2                     | 1-1/2 | 3                      | 3    | 5    | 7-1/2 | XTAR009B21_ _                |
| 1                       | 2     | 3                      | 3    | 10   | 10    | XTAR012B21_ _                |

**Reversing Starters with Screw Terminals, Frame B—Maximum IEC Ratings**

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          | 415V | 660/690V | Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------|----------|------|----------|------------------------------|
|                            | 220/230V                    | 380/400V |      |          |                              |
| 7                          | 2.2                         | 3        | 4    | 3.5      | XTAR007B21_ _                |
| 9                          | 2.5                         | 4        | 5.5  | 4.5      | XTAR009B21_ _                |
| 12                         | 3.5                         | 5.5      | 7    | 6.5      | XTAR012B21_ _                |

**Reversing Starters with Screw Terminals, Frame C—Maximum UL/CSA Ratings**

| Single-Phase hp Ratings |      | Three-Phase hp Ratings |       | 460V | 575V | Catalog Number <sup>①②</sup> |
|-------------------------|------|------------------------|-------|------|------|------------------------------|
| 115V                    | 230V | 200V                   | 230V  |      |      |                              |
| 2                       | 3    | 5                      | 5     | 10   | 15   | XTAR018C21_ _                |
| 2                       | 5    | 7-1/2                  | 7-1/2 | 15   | 20   | XTAR025C21_ _                |
| 3                       | 5    | 10                     | 10    | 20   | 25   | XTAR032C21_ _                |

**Reversing Starters with Screw Terminals, Frame C—Maximum IEC Ratings**

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          | 415V | 660/690V | Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------|----------|------|----------|------------------------------|
|                            | 220/230V                    | 380/400V |      |          |                              |
| 18                         | 5                           | 7.5      | 8    | 11       | XTAR018C21_ _                |
| 25                         | 7.5                         | 11       | 14.5 | 14       | XTAR025C21_ _                |
| 32                         | 10                          | 15       | 18   | 17       | XTAR032C21_ _                |

**Reversing Starters with Screw Terminals, Frame D—Maximum UL/CSA Ratings**

| Single-Phase hp Ratings |       | Three-Phase hp Ratings |      | 460V | 575V | Catalog Number <sup>①②</sup> |
|-------------------------|-------|------------------------|------|------|------|------------------------------|
| 115V                    | 230V  | 200V                   | 230V |      |      |                              |
| 3                       | 7-1/2 | 10                     | 15   | 30   | 40   | XTAR040D11_ _                |
| 3                       | 10    | 15                     | 20   | 40   | 50   | XTAR050D11_ _                |
| 5                       | 15    | 20                     | 25   | 50   | 60   | XTAR065D11_ _                |

**Reversing Starters with Screw Terminals, Frame D—Maximum IEC Ratings**

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          | 415V | 660/690V | Catalog Number <sup>①②</sup> |
|----------------------------|-----------------------------|----------|------|----------|------------------------------|
|                            | 220/230V                    | 380/400V |      |          |                              |
| 40                         | 12.5                        | 18.5     | 24   | 23       | XTAR040D11_ _                |
| 50                         | 15.5                        | 22       | 30   | 30       | XTAR050D11_ _                |
| 65                         | 20                          | 30       | 39   | 35       | XTAR065D11_ _                |

**Notes**

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

② Underscore ( \_ ) indicates overload relay suffix required. See **Page V5-T1-54**.

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-T1-109** for electrical life curves.

② Frames L–M only.

## Bimetallic Overload Relay Suffix

| Motor Full Load Amperes | Suffix Code | For Use with Contactor Ampere Range | Overload Relay Catalog Number |
|-------------------------|-------------|-------------------------------------|-------------------------------|
| <b>Frame B</b>          |             |                                     |                               |
| 0.1–0.16                | <b>P16</b>  | 7–15A                               | XTOBP16BC1                    |
| 0.16–0.24               | <b>P24</b>  | 7–15A                               | XTOBP24BC1                    |
| 0.24–0.4                | <b>P40</b>  | 7–15A                               | XTOBP40BC1                    |
| 0.4–0.6                 | <b>P60</b>  | 7–15A                               | XTOBP60BC1                    |
| 0.6–1                   | <b>001</b>  | 7–15A                               | XTOB001BC1                    |
| 1–1.6                   | <b>1P6</b>  | 7–15A                               | XTOB1P6BC1                    |
| 1.6–2.4                 | <b>2P4</b>  | 7–15A                               | XTOB2P4BC1                    |
| 2.4–4                   | <b>004</b>  | 7–15A                               | XTOB004BC1                    |
| 4–6                     | <b>006</b>  | 7–15A                               | XTOB006BC1                    |
| 6–10                    | <b>010</b>  | 7–15A                               | XTOB010BC1                    |
| 9–12                    | <b>012</b>  | 9–15A                               | XTOB012BC1                    |
| 12–16                   | <b>016</b>  | 12–15A                              | XTOB016BC1                    |
| <b>Frame C</b>          |             |                                     |                               |
| 0.1–0.16                | <b>P16</b>  | 18–32A                              | XTOBP16CC1                    |
| 0.16–0.24               | <b>P24</b>  | 18–32A                              | XTOBP24CC1                    |
| 0.24–0.4                | <b>P40</b>  | 18–32A                              | XTOBP40CC1                    |
| 0.4–0.6                 | <b>P60</b>  | 18–32A                              | XTOBP60CC1                    |
| 0.6–1                   | <b>001</b>  | 18–32A                              | XTOB001CC1                    |
| 1–1.6                   | <b>1P6</b>  | 18–32A                              | XTOB1P6CC1                    |
| 1.6–2.4                 | <b>2P4</b>  | 18–32A                              | XTOB2P4CC1                    |
| 2.4–4                   | <b>004</b>  | 18–32A                              | XTOB004CC1                    |
| 4–6                     | <b>006</b>  | 18–32A                              | XTOB006CC1                    |
| 6–10                    | <b>010</b>  | 18–32A                              | XTOB010CC1                    |
| 10–16                   | <b>016</b>  | 18–32A                              | XTOB016CC1                    |
| 16–24                   | <b>024</b>  | 18–32A                              | XTOB024CC1                    |
| 24–32                   | <b>032</b>  | 25–32A                              | XTOB032CC1                    |

| Motor Full Load Amperes | Suffix Code | For Use with Contactor Ampere Range | Overload Relay Catalog Number |
|-------------------------|-------------|-------------------------------------|-------------------------------|
| <b>Frame D</b>          |             |                                     |                               |
| 6–10                    | <b>010</b>  | 40–72A                              | XTOB010DC1                    |
| 10–16                   | <b>016</b>  | 40–72A                              | XTOB016DC1                    |
| 16–24                   | <b>024</b>  | 40–72A                              | XTOB024DC1                    |
| 24–40                   | <b>04</b>   | 40–72A                              | XTOB040DC1                    |
| 40–57                   | <b>057</b>  | 50–72A                              | XTOB057DC1                    |
| 50–65                   | <b>065</b>  | 65–72A                              | XTOB065DC1                    |
| 65–75                   | <b>075</b>  | 65–72A                              | XTOB075DC1                    |
| <b>Frame F</b>          |             |                                     |                               |
| 25–35                   | <b>035</b>  | 80–95A                              | XTOB055GC1 ①                  |
| 35–50                   | <b>050</b>  | 80–95A                              | XTOB050GC1 ①                  |
| 50–70                   | <b>070</b>  | 80–95A                              | XTOB070GC1 ①                  |
| 70–100                  | <b>100</b>  | 80–95A                              | XTOB100GC1 ①                  |
| <b>Frame G</b>          |             |                                     |                               |
| 25–35                   | <b>035</b>  | 115–170A                            | XTOB055GC1 ①                  |
| 35–50                   | <b>050</b>  | 115–170A                            | XTOB050GC1 ①                  |
| 50–70                   | <b>070</b>  | 115–170A                            | XTOB070GC1 ①                  |
| 70–100                  | <b>100</b>  | 115–170A                            | XTOB100GC1 ①                  |
| 95–125                  | <b>125</b>  | 115–170A                            | XTOB125GC1 ①                  |
| 120–150                 | <b>150</b>  | 150–170A                            | XTOB150GC1 ①                  |
| 145–175                 | <b>175</b>  | 150–170A                            | XTOB175GC1 ①                  |

## Electronic Overload Relay Suffix

## XTOE Maximum Overload Rating

|                   | Standard Type Suffix | Ground Fault Type Suffix |
|-------------------|----------------------|--------------------------|
| <b>Frame B</b>    |                      |                          |
| 0.33–1.65A        | <b>5E1P6</b>         | <b>5G1P6</b>             |
| 1–5A              | <b>5E005</b>         | <b>5G005</b>             |
| 4–20A             | <b>5E020</b>         | <b>5G020</b>             |
| <b>Frame C</b>    |                      |                          |
| 0.33–1.65A        | <b>5E1P6</b>         | <b>5G1P6</b>             |
| 1–5A              | <b>5E005</b>         | <b>5G005</b>             |
| 4–20A             | <b>5E020</b>         | <b>5G020</b>             |
| 9–45A             | <b>5E045</b>         | <b>5G045</b>             |
| <b>Frame D</b>    |                      |                          |
| 9–45A             | <b>5E045</b>         | <b>5G045</b>             |
| 20–100A           | <b>5E100</b>         | <b>5G100</b>             |
| <b>Frame F, G</b> |                      |                          |
| 20–100A           | <b>5E100</b>         | <b>5G100</b>             |
| <b>Frame G</b>    |                      |                          |
| 35–175A           | <b>5E175</b>         | <b>5G175</b>             |

**Note**

① Catalog number refers to direct mount overload relay. Add an **S** to the end of the catalog number for separate mount.

**Star-Delta (Wye-Delta) Starters****Frame B—Maximum UL/CSA Ratings**

| Three-Phase hp Ratings |      |       |      | Max. Changeover<br>Time (sec) | Component<br>Description | Catalog Number <sup>①</sup> |
|------------------------|------|-------|------|-------------------------------|--------------------------|-----------------------------|
| 200V                   | 230V | 460V  | 575V |                               |                          |                             |
| 3                      | 3    | 2-1/2 | 10   | <20                           | K1M main contactor       | XTCE007B10_                 |
|                        |      |       |      |                               | K5M delta contactor      | XTCE007B01_                 |
|                        |      |       |      |                               | K3M star contactor       | XTCE007B01_                 |
|                        |      |       |      |                               | Mechanical interlock     | XTCEXMLB                    |
|                        |      |       |      |                               | K1T timing relay         | XTTR6A60S51B                |
|                        |      |       |      |                               | Overload relay           | XTOB...BC1                  |
|                        |      |       |      |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                        |      |       |      |                               | Star-delta link kit      | XTCEXSDLB                   |
| 3                      | 5    | 7-1/2 | 10   | <20                           | K1M main contactor       | XTCE009B10_                 |
|                        |      |       |      |                               | K5M delta contactor      | XTCE009B01_                 |
|                        |      |       |      |                               | K3M star contactor       | XTCE009B01_                 |
|                        |      |       |      |                               | Mechanical interlock     | XTCEXMLB                    |
|                        |      |       |      |                               | K1T timing relay         | XTTR6A60S51B                |
|                        |      |       |      |                               | Overload relay           | XTOB...BC1                  |
|                        |      |       |      |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                        |      |       |      |                               | Star-delta link kit      | XTCEXSDLB                   |
| 5                      | 5    | 10    | 15   | <20                           | K1M main contactor       | XTCE012B10_                 |
|                        |      |       |      |                               | K5M delta contactor      | XTCE012B01_                 |
|                        |      |       |      |                               | K3M star contactor       | XTCE012B01_                 |
|                        |      |       |      |                               | Mechanical interlock     | XTCEXMLB                    |
|                        |      |       |      |                               | K1T timing relay         | XTTR6A60S51B                |
|                        |      |       |      |                               | Overload relay           | XTOB...BC1                  |
|                        |      |       |      |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                        |      |       |      |                               | Star-delta link kit      | XTCEXSDLB                   |

**Frame B—Maximum IEC Ratings**

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover<br>Time (sec) | Component<br>Description | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|------|----------|-------|-------------------------------|--------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                               |                          |                             |
| 12                         | 3                           | 5.5      | 7    | 5.5  | 5.5      | —     | <20                           | K1M main contactor       | XTCE007B10_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCE007B01_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCE007B01_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLB                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...BC1                  |
|                            |                             |          |      |      |          |       |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                            |                             |          |      |      |          |       |                               | Star-delta link kit      | XTCEXSDLB                   |
| 16                         | 4                           | 7.5      | 8    | 7.5  | 7.5      | —     | <20                           | K1M main contactor       | XTCE009B10_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCE009B01_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCE009B01_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLB                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...BC1                  |
|                            |                             |          |      |      |          |       |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                            |                             |          |      |      |          |       |                               | Star-delta link kit      | XTCEXSDLB                   |
| 22                         | 5.5                         | 11       | 14.5 | 11   | 11       | —     | <20                           | K1M main contactor       | XTCE012B10_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCE012B01_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCE012B01_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLB                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...BC1                  |
|                            |                             |          |      |      |          |       |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                            |                             |          |      |      |          |       |                               | Star-delta link kit      | XTCEXSDLB                   |

**Note**

<sup>①</sup> Underscore ( ) indicates magnet coil suffix required. See **Page V5-T1-62**.

## Frame C—Maximum UL/CSA Ratings

| Three-Phase hp Ratings |       |      |      | Max. Changeover<br>Time (sec) | Component<br>Description | Catalog Number <sup>①</sup> |
|------------------------|-------|------|------|-------------------------------|--------------------------|-----------------------------|
| 200V                   | 230V  | 460V | 575V |                               |                          |                             |
| 7-1/2                  | 7-1/2 | 15   | 20   | <20                           | K1M main contactor       | XTCE018C10_                 |
|                        |       |      |      |                               | K5M delta contactor      | XTCE018C01_                 |
|                        |       |      |      |                               | K3M star contactor       | XTCE018C01_                 |
|                        |       |      |      |                               | Mechanical interlock     | XTCEXMLC                    |
|                        |       |      |      |                               | K1T timing relay         | XTTR6A60S51B                |
|                        |       |      |      |                               | Overload relay           | XTOB...CC1                  |
|                        |       |      |      |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                        |       |      |      |                               | Star-delta link kit      | XTCEXS DLC                  |
| 10                     | 15    | 30   | 40   | <20                           | K1M main contactor       | XTCE025C10_                 |
|                        |       |      |      |                               | K5M delta contactor      | XTCE025C01_                 |
|                        |       |      |      |                               | K3M star contactor       | XTCE025C01_                 |
|                        |       |      |      |                               | Mechanical interlock     | XTCEXMLC                    |
|                        |       |      |      |                               | K1T timing relay         | XTTR6A60S51B                |
|                        |       |      |      |                               | Overload relay           | XTOB...CC1                  |
|                        |       |      |      |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                        |       |      |      |                               | Star-delta link kit      | XTCEXS DLC                  |
| 15                     | 20    | 40   | 50   | <20                           | K1M main contactor       | XTCE032C10_                 |
|                        |       |      |      |                               | K5M delta contactor      | XTCE032C01_                 |
|                        |       |      |      |                               | K3M star contactor       | XTCE032C01_                 |
|                        |       |      |      |                               | Mechanical interlock     | XTCEXMLC                    |
|                        |       |      |      |                               | K1T timing relay         | XTTR6A60S51B                |
|                        |       |      |      |                               | Overload relay           | XTOB...CC1                  |
|                        |       |      |      |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                        |       |      |      |                               | Star-delta link kit      | XTCEXS DLC                  |

## Frame C—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover<br>Time (sec) | Component<br>Description | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|------|----------|-------|-------------------------------|--------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                               |                          |                             |
| 30                         | 7.5                         | 15       | 19   | 18.5 | 18.5     | —     | <20                           | K1M main contactor       | XTCE018C10_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCE018C01_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCE018C01_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLC                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...CC1                  |
|                            |                             |          |      |      |          |       |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                            |                             |          |      |      |          |       |                               | Star-delta link kit      | XTCEXS DLC                  |
| 45                         | 11                          | 22       | 30   | 30   | 22       | —     | <20                           | K1M main contactor       | XTCE025C10_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCE025C01_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCE025C01_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLC                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...CC1                  |
|                            |                             |          |      |      |          |       |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                            |                             |          |      |      |          |       |                               | Star-delta link kit      | XTCEXS DLC                  |
| 55                         | 15                          | 30       | 39   | 37   | 30       | —     | <20                           | K1M main contactor       | XTCE032C10_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCE032C01_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCE032C01_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLC                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...CC1                  |
|                            |                             |          |      |      |          |       |                               | (3) auxiliary contacts   | XTCEXFAC20                  |
|                            |                             |          |      |      |          |       |                               | Star-delta link kit      | XTCEXS DLC                  |

**Note**

<sup>①</sup> Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-62**.

## Frame D—Maximum UL/CSA Ratings

| Three-Phase hp Ratings |      |      |      | Max. Changeover Time (sec) | Component Description             | Catalog Number ① |
|------------------------|------|------|------|----------------------------|-----------------------------------|------------------|
| 200V                   | 230V | 460V | 575V |                            |                                   |                  |
| 20                     | 25   | 50   | 60   | <20                        | K1M main contactor                | XTCE040D00_      |
|                        |      |      |      |                            | K5M delta contactor               | XTCE040D00_      |
|                        |      |      |      |                            | K3M star contactor                | XTCE040D00_      |
|                        |      |      |      |                            | Mechanical interlock              | XTCEXMLD         |
|                        |      |      |      |                            | K1T timing relay                  | XTTR6A60S51B     |
|                        |      |      |      |                            | Overload relay                    | XTOB...DC1       |
|                        |      |      |      |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                        |      |      |      |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                        |      |      |      |                            | Star-delta link kit               | XTCEXSDLD        |
| 25                     | 30   | 60   | 75   | <20                        | K1M main contactor                | XTCE050D00_      |
|                        |      |      |      |                            | K5M delta contactor               | XTCE050D00_      |
|                        |      |      |      |                            | K3M star contactor                | XTCE040D00_      |
|                        |      |      |      |                            | Mechanical interlock              | XTCEXMLD         |
|                        |      |      |      |                            | K1T timing relay                  | XTTR6A60S51B     |
|                        |      |      |      |                            | Overload relay                    | XTOB...DC1       |
|                        |      |      |      |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                        |      |      |      |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                        |      |      |      |                            | Star-delta link kit               | XTCEXSDLD        |
| 40                     | 50   | 100  | 125  | <20                        | K1M main contactor                | XTCE065D00_      |
|                        |      |      |      |                            | K5M delta contactor               | XTCE065D00_      |
|                        |      |      |      |                            | K3M star contactor                | XTCE040D00_      |
|                        |      |      |      |                            | Mechanical interlock              | XTCEXMLD         |
|                        |      |      |      |                            | K1T timing relay                  | XTTR6A60S51B     |
|                        |      |      |      |                            | Overload relay                    | XTOB...DC1       |
|                        |      |      |      |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                        |      |      |      |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                        |      |      |      |                            | Star-delta link kit               | XTCEXSDLD        |

## Frame D—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover Time (sec) | Component Description             | Catalog Number ① |
|----------------------------|-----------------------------|----------|------|------|----------|-------|----------------------------|-----------------------------------|------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                            |                                   |                  |
| 70                         | 18.5                        | 37       | 37   | 45   | 37       | —     | <20                        | K1M main contactor                | XTCE040D00_      |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor               | XTCE040D00_      |
|                            |                             |          |      |      |          |       |                            | K3M star contactor                | XTCE040D00_      |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock              | XTCEXMLD         |
|                            |                             |          |      |      |          |       |                            | K1T timing relay                  | XTTR6A60S51B     |
|                            |                             |          |      |      |          |       |                            | Overload relay                    | XTOB...DC1       |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit               | XTCEXSDLD        |
| 90                         | 22                          | 45       | 45   | 55   | 45       | —     | <20                        | K1M main contactor                | XTCE050D00_      |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor               | XTCE050D00_      |
|                            |                             |          |      |      |          |       |                            | K3M star contactor                | XTCE040D00_      |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock              | XTCEXMLD         |
|                            |                             |          |      |      |          |       |                            | K1T timing relay                  | XTTR6A60S51B     |
|                            |                             |          |      |      |          |       |                            | Overload relay                    | XTOB...DC1       |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit               | XTCEXSDLD        |
| 115                        | 30                          | 55       | 55   | 75   | 55       | —     | <20                        | K1M main contactor                | XTCE065D00_      |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor               | XTCE065D00_      |
|                            |                             |          |      |      |          |       |                            | K3M star contactor                | XTCE040D00_      |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock              | XTCEXMLD         |
|                            |                             |          |      |      |          |       |                            | K1T timing relay                  | XTTR6A60S51B     |
|                            |                             |          |      |      |          |       |                            | Overload relay                    | XTOB...DC1       |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit               | XTCEXSDLD        |

## Note

① Underscore ( ) indicates magnet coil suffix required. See Page V5-T1-62.

## Frame F—Maximum UL/CSA Ratings

| Three-Phase hp Ratings |      |      |      | Max. Changeover Time (sec) | Component Description             | Catalog Number ① |
|------------------------|------|------|------|----------------------------|-----------------------------------|------------------|
| 200V                   | 230V | 460V | 575V |                            |                                   |                  |
| 40                     | 60   | 125  | 150  | <20                        | K1M main contactor                | XTCE080F00_      |
|                        |      |      |      |                            | K5M delta contactor               | XTCE080F00_      |
|                        |      |      |      |                            | K3M star contactor                | XTCE080F00_      |
|                        |      |      |      |                            | Mechanical interlock ②            | XTCEXMLG         |
|                        |      |      |      |                            | K1T timing relay                  | XTTR6A60S51B     |
|                        |      |      |      |                            | Overload relay                    | XT0B...FC1       |
|                        |      |      |      |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                        |      |      |      |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                        |      |      |      |                            | Star-delta link kit               | XTCEXSDF         |
| 40                     | 60   | 125  | 150  | <20                        | K1M main contactor                | XTCE095F00_      |
|                        |      |      |      |                            | K5M delta contactor               | XTCE095F00_      |
|                        |      |      |      |                            | K3M star contactor                | XTCE080F00_      |
|                        |      |      |      |                            | Mechanical interlock ②            | XTCEXMLG         |
|                        |      |      |      |                            | K1T timing relay                  | XTTR6A60S51B     |
|                        |      |      |      |                            | Overload relay                    | XT0B...FC1       |
|                        |      |      |      |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                        |      |      |      |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                        |      |      |      |                            | Star-delta link kit               | XTCEXSDF         |

## Frame F—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover Time (sec) | Component Description             | Catalog Number ① |
|----------------------------|-----------------------------|----------|------|------|----------|-------|----------------------------|-----------------------------------|------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                            |                                   |                  |
| 140                        | 37                          | 75       | 75   | 90   | 90       | —     | <20                        | K1M main contactor                | XTCE080F00_      |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor               | XTCE080F00_      |
|                            |                             |          |      |      |          |       |                            | K3M star contactor                | XTCE080F00_      |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock ②            | XTCEXMLG         |
|                            |                             |          |      |      |          |       |                            | K1T timing relay                  | XTTR6A60S51B     |
|                            |                             |          |      |      |          |       |                            | Overload relay                    | XT0B...FC1       |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit               | XTCEXSDF         |
| 165                        | 45                          | 90       | 110  | 110  | 132      | —     | <20                        | K1M main contactor                | XTCE095F00_      |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor               | XTCE095F00_      |
|                            |                             |          |      |      |          |       |                            | K3M star contactor                | XTCE080F00_      |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock ②            | XTCEXMLG         |
|                            |                             |          |      |      |          |       |                            | K1T timing relay                  | XTTR6A60S51B     |
|                            |                             |          |      |      |          |       |                            | Overload relay                    | XT0B...FC1       |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts (K1M, K3M) | XTCEXFBG11       |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M)       | XTCEXFBG31       |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit               | XTCEXSDF         |

## Notes

① Underscore (\_) indicates magnet coil suffix required. See **Page V5-T1-62**.

② If mechanical interlock of star contactor is required, it must be the same frame size of the delta contactor or use the same mechanical interlock, see **Page V5-T1-73** for mechanical interlocks. (Example: XTCE...L22\_ and XTCE...M22\_ both use mechanical interlock XTCEXMLM.)

## Frame G—Maximum UL/CSA Ratings

| Three-Phase hp Ratings |      |      |      | Max. Changeover Time (sec) | Component Description       | Catalog Number <sup>①</sup> |
|------------------------|------|------|------|----------------------------|-----------------------------|-----------------------------|
| 200V                   | 230V | 460V | 575V |                            |                             |                             |
| 50                     | 60   | 125  | 150  | <20                        | K1M main contactor          | XTCE115G00_                 |
|                        |      |      |      |                            | K5M delta contactor         | XTCE115G00_                 |
|                        |      |      |      |                            | K3M star contactor          | XTCE080F00_                 |
|                        |      |      |      |                            | Mechanical interlock        | XTCEXMLG                    |
|                        |      |      |      |                            | K1T timing relay            | XTTR6A60S51B                |
|                        |      |      |      |                            | Overload relay              | XTOB...GC1                  |
|                        |      |      |      |                            | (2) auxiliary contacts      | XTCEXFBG11                  |
|                        |      |      |      |                            | (1) auxiliary contact (K5M) | XTCEXFBG31                  |
|                        |      |      |      |                            | Star-delta link kit         | XTCEXSDLG                   |
| 75                     | 100  | 200  | 250  | <20                        | K1M main contactor          | XTCE150G00_                 |
|                        |      |      |      |                            | K5M delta contactor         | XTCE150G00_                 |
|                        |      |      |      |                            | K3M star contactor          | XTCE080F00_                 |
|                        |      |      |      |                            | Mechanical interlock        | XTCEXMLG                    |
|                        |      |      |      |                            | K1T timing relay            | XTTR6A60S51B                |
|                        |      |      |      |                            | Overload relay              | XTOB...GC1                  |
|                        |      |      |      |                            | (2) auxiliary contacts      | XTCEXFBG11                  |
|                        |      |      |      |                            | (1) auxiliary contact (K5M) | XTCEXFBG31                  |
|                        |      |      |      |                            | Star-delta link kit         | XTCEXSDLG                   |

## Frame G—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover Time (sec) | Component Description       | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|------|----------|-------|----------------------------|-----------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                            |                             |                             |
| 200                        | 55                          | 110      | 132  | 132  | 160      | —     | <20                        | K1M main contactor          | XTCE115G00_                 |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor         | XTCE115G00_                 |
|                            |                             |          |      |      |          |       |                            | K3M star contactor          | XTCE080F00_                 |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock        | XTCEXMLG                    |
|                            |                             |          |      |      |          |       |                            | K1T timing relay            | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                            | Overload relay              | XTOB...GC1                  |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts      | XTCEXFBG11                  |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M) | XTCEXFBG31                  |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit         | XTCEXSDLG                   |
| 260                        | 75                          | 132      | 148  | 160  | 160      | —     | <20                        | K1M main contactor          | XTCE150G00_                 |
|                            |                             |          |      |      |          |       |                            | K5M delta contactor         | XTCE150G00_                 |
|                            |                             |          |      |      |          |       |                            | K3M star contactor          | XTCE080F00_                 |
|                            |                             |          |      |      |          |       |                            | Mechanical interlock        | XTCEXMLG                    |
|                            |                             |          |      |      |          |       |                            | K1T timing relay            | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                            | Overload relay              | XTOB...GC1                  |
|                            |                             |          |      |      |          |       |                            | (2) auxiliary contacts      | XTCEXFBG11                  |
|                            |                             |          |      |      |          |       |                            | (1) auxiliary contact (K5M) | XTCEXFBG31                  |
|                            |                             |          |      |      |          |       |                            | Star-delta link kit         | XTCEXSDLG                   |

## Note

<sup>①</sup> Underscore ( ) indicates magnet coil suffix required. See Page V5-T1-62.

## Frame L—Maximum UL/CSA Ratings

| Three-Phase hp Ratings |      |      |      | Max. Changeover Time (sec) | Component Description | Catalog Number <sup>①</sup> |
|------------------------|------|------|------|----------------------------|-----------------------|-----------------------------|
| 200V                   | 230V | 460V | 575V |                            |                       |                             |
| 125                    | 150  | 300  | 400  | <30                        | K1M main contactor    | XTCS250L22_                 |
|                        |      |      |      |                            | K5M delta contactor   | XTCS250L22_                 |
|                        |      |      |      |                            | K3M star contactor    | XTCS250L22_                 |
|                        |      |      |      |                            | Mechanical interlock  | XTCEXMLM                    |
|                        |      |      |      |                            | K1T timing relay      | XTTR6A60S51B                |
|                        |      |      |      |                            | Overload relay        | XTOB...LC1                  |

## Frame L—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover<br>Time (sec) | Component<br>Description | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|------|----------|-------|-------------------------------|--------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                               |                          |                             |
| 430                        | 132                         | 250      | 300  | 315  | 400      | 200   | <30                           | K1M main contactor       | XTCS250L22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCS250L22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCS250L22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLM                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOB...LC1                  |

## Frame M—Maximum UL/CSA Ratings

| Three-Phase hp Ratings |      |      |      | Max. Changeover Time (sec) | Component Description | Catalog Number <sup>①</sup> |
|------------------------|------|------|------|----------------------------|-----------------------|-----------------------------|
| 200V                   | 230V | 460V | 575V |                            |                       |                             |
| 200                    | 250  | 500  | 600  | <20                        | K1M main contactor    | XTCS400M22_                 |
|                        |      |      |      |                            | K5M delta contactor   | XTCS400M22_                 |
|                        |      |      |      |                            | K3M star contactor    | XTCS250L22_                 |
|                        |      |      |      |                            | Mechanical interlock  | XTCEXMLM                    |
|                        |      |      |      |                            | K1T timing relay      | XTTR6A60S51B                |
|                        |      |      |      |                            | Overload relay        | XTOT...C3S                  |
| 290                    | 350  | 700  | 860  | <30                        | K1M main contactor    | XTCS500M22_                 |
|                        |      |      |      |                            | K5M delta contactor   | XTCS500M22_                 |
|                        |      |      |      |                            | K3M star contactor    | XTCS300M22_                 |
|                        |      |      |      |                            | Mechanical interlock  | XTCEXMLM                    |
|                        |      |      |      |                            | K1T timing relay      | XTTR6A60S51B                |
|                        |      |      |      |                            | Overload relay        | XTOT...C3S                  |

## Frame M—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover<br>Time (sec) | Component<br>Description | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|------|----------|-------|-------------------------------|--------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                               |                          |                             |
| 685                        | 200                         | 355      | 390  | 450  | 560      | 220   | <20                           | K1M main contactor       | XTCS400M22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCS400M22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCS250L22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCSXMLM                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOT...C3S                  |
| 860                        | 250                         | 450      | 500  | 560  | 600      | 220   | <30                           | K1M main contactor       | XTCS500M22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor      | XTCS500M22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor       | XTCS300M22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock     | XTCEXMLM                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay         | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay           | XTOT...C3S                  |

## Notes

<sup>①</sup> Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-62**.

<sup>②</sup> If mechanical interlock of star contactor is required, it must be the same frame size of the delta contactor or use the same mechanical interlock, see **Page V5-T1-73** for mechanical interlocks. (Example: XTCE...L22\_ and XTCE...M22\_ both use mechanical interlock XTCEXMLM.)

Frame N—Maximum UL/CSA Ratings are not applicable.

### Frame N—Maximum IEC Ratings

| AC-3<br>I <sub>e</sub> (A) | Three-Phase Motors 50–60 Hz |          |      |      |          |       | Max. Changeover<br>Time (sec) | Component<br>Description          | Catalog Number <sup>①</sup> |
|----------------------------|-----------------------------|----------|------|------|----------|-------|-------------------------------|-----------------------------------|-----------------------------|
|                            | 220/230V                    | 380/400V | 415V | 500V | 660/690V | 1000V |                               |                                   |                             |
| 1000                       | 300                         | 560      | 610  | 710  | 900      | 355   | <30                           | K1M main contactor                | XTCE580N22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor               | XTCE580N22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor                | XTCE580N22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock <sup>②</sup> | XTCEXMLN                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay                  | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay                    | XTOT...C3S                  |
| 1120                       | 350                         | 630      | 680  | 750  | 950      | 355   | <30                           | K1M main contactor                | XTCE650N22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor               | XTCE650N22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor                | XTCE580N22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock <sup>②</sup> | XTCEXMLN                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay                  | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay                    | XTOT...C3S                  |
| 1290                       | 400                         | 710      | 760  | 900  | 1200     | 1400  | <30                           | K1M main contactor                | XTCE750N22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor               | XTCE750N22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor                | XTCE580N22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock              | XTCEXMLN                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay                  | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay                    | XTOT...C3S                  |
| 1400                       | 450                         | 800      | 850  | 950  | 1300     | 1400  | <30                           | K1M main contactor                | XTCE820N22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor               | XTCE820N22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor                | XTCE580N22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock              | XTCEXMLN                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay                  | XTTR6A60S51                 |
|                            |                             |          |      |      |          |       |                               | Overload relay                    | XTOT...C3S                  |
| 1700                       | 560                         | 1000     | 1050 | 1200 | 1700     | 1700  | <20                           | K1M main contactor                | XTCEC10N22_                 |
|                            |                             |          |      |      |          |       |                               | K5M delta contactor               | XTCEC10N22_                 |
|                            |                             |          |      |      |          |       |                               | K3M star contactor                | XTCE650N22_                 |
|                            |                             |          |      |      |          |       |                               | Mechanical interlock              | XTCEXMLN                    |
|                            |                             |          |      |      |          |       |                               | K1T timing relay                  | XTTR6A60S51B                |
|                            |                             |          |      |      |          |       |                               | Overload relay                    | XTOT...C3S                  |

#### Notes

Main circuit: Depending on the coordination type required (that is, Type 1 or Type 2) it must be established whether the fuse protection and the input wiring for the main and delta contactors are to be common or separate.

Control circuit: If the combinations are used in the scope of the IEC/EN 60 204-1, VDE 0113 part 1, point 9.1.1 regarding the supply of control circuits is to be observed.

<sup>①</sup> Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-62**.

<sup>②</sup> If mechanical interlock of star contactor is required, it must be the same frame size of the delta contactor or use the same mechanical interlock, see **Page V5-T1-73** for mechanical interlocks. (Example: XTCE...L22\_ and XTCE...M22\_ both use mechanical interlock XTCEXMLN.)

## Spare Auxiliary Contacts

| AC-3     | K1M                                                                               | K3M                                                                               | K5M                                                                               |
|----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 12–55    |  |  |  |
| 90–260   |  | —                                                                                 | —                                                                                 |
| 315–1700 |  |  |  |

## 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>①</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>               |

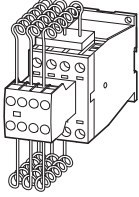
## Overload Relay Settings (A)

| Setting                                                                                                               | Starting  |
|-----------------------------------------------------------------------------------------------------------------------|-----------|
| <b>A:</b> $I_N \times 0.58$<br>Motor protection in the star (wye) and delta configurations                            | ≤15 sec   |
| <b>B:</b> $I_N \times 1$<br>Only partial motor protection in star position                                            | 15–40 sec |
| <b>C:</b> $I_N \times 0.58$<br>Motor not protected in star (wye) position<br>Timing relay set to approximately 10 sec | >40 sec   |

**Note**

<sup>①</sup> Frames L–M only.

XTCC0\_



### XTCC Contactors for Three-Phase Capacitors

Three-Phase Capacitors, 50–60 Hz  
Open kVAR Ratings <sup>①</sup>

| 230V | 400V | 525V | 690V | Contact Sequence | Catalog Number <sup>②</sup> |
|------|------|------|------|------------------|-----------------------------|
| 11   | 20   | 25   | 33.3 |                  | XTCC020C11_                 |
| 15   | 25   | 33.3 | 40   |                  | XTCC025C11_                 |
| 20   | 33.3 | 40   | 55   |                  | XTCC033D10_                 |
| 25   | 50   | 65   | 85   |                  | XTCC050D10_                 |

### Magnet Coil Suffix

| Coil Voltage           | Suffix Code |
|------------------------|-------------|
| 110V 50 Hz, 120V 60 Hz | A           |
| 220V 50 Hz, 240V 60 Hz | B           |
| 230V 50 Hz, 240V 60 Hz | F           |
| 400V 50 Hz, 440V 60 Hz | N           |
| 24V 50/60 Hz           | T           |

#### Notes

Weld-resistant for capacitors with inrush current peaks up to  $180 \times I_N$ .

<sup>①</sup> With series resistors, without quick-discharge resistor.

<sup>②</sup> Underscore ( \_ ) indicates magnet coil suffix required.

**Engineering Notes for XTCC and XTCE Contactors for Power Factor Correction****Individual Compensation, Open Version**

| Catalog Number | Switching Duty in kVAR |                  |      |      |
|----------------|------------------------|------------------|------|------|
|                | 230V                   | 400V, 420V, 440V | 525V | 690V |
| XTCE007B       | 1.5                    | 3                | 3.5  | 5    |
| XTCE009B       | 2                      | 4                | 4.5  | 6    |
| XTCE012B       | 2.5                    | 4.5              | 5.5  | 7    |
| XTCE015B       | 2.5                    | 4.5              | 5.5  | 7    |
| XTCE018C       | 6.5                    | 12               | 14.5 | 19   |
| XTCE025C       | 7                      | 13.5             | 16   | 21   |
| XTCE032C       | 7.5                    | 14.5             | 17   | 22.5 |
| XTCE040D       | 11                     | 20.5             | 24.5 | 32   |
| XTCE050D       | 11.5                   | 22               | 26   | 34.5 |
| XTCE065D       | 12.5                   | 23.5             | 28   | 37   |
| XTCE080F       | 16                     | 30.5             | 36.5 | 48   |
| XTCE095F       | 18                     | 34               | 41   | 54   |
| XTCE115G       | 24                     | 46               | 54.5 | 72   |
| XTCE150G       | 28                     | 53               | 63.5 | 83.5 |
| XTCE580N       | 175                    | 300              | 400  | 300  |

**Group Compensation, with Reactor, Open Version**

| Catalog Number | Switching Duty in kVAR |                  |      |      |
|----------------|------------------------|------------------|------|------|
|                | 230V                   | 400V, 420V, 440V | 525V | 690V |
| XTCE007B       | 4                      | 7                | 7.5  | 12   |
| XTCE009B       | 5                      | 8                | 10   | 14   |
| XTCE012B       | 5.5                    | 1                | 12   | 16   |
| XTCE015B       | 5.5                    | 10               | 12   | 16   |
| XTCE018C       | 7.5                    | 16               | 20   | 28   |
| XTCE025C       | 9                      | 18               | 23   | 30   |
| XTCE032C       | 10                     | 20               | 24   | 32   |
| XTCE040D       | 13                     | 25               | 30   | 40   |
| XTCE050D       | 16                     | 30               | 36   | 48   |
| XTCE065D       | 19                     | 36               | 43   | 57   |
| XTCE080F       | 30                     | 58               | 68   | 90   |
| XTCE095        | 34                     | 6                | 7    | 10   |
| XTCE115G       | 44                     | 8                | 100  | 125  |
| XTCE150        | 5                      | 97               | 115  | 152  |
| XTCE250L       | 110                    | 190              | 260  | 340  |
| XTCE400M       | 160                    | 280              | 370  | 480  |
| XTCE500M       | 220                    | 390              | 500  | 680  |

**Group Compensation, without Reactor, Open Version**

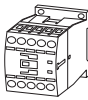
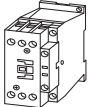
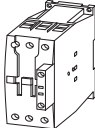
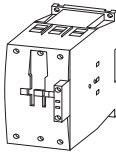
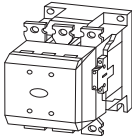
| Catalog Number | Switching Duty in kVAR |                  |      |      |
|----------------|------------------------|------------------|------|------|
|                | 230V                   | 400V, 420V, 440V | 525V | 690V |
| XTCC020C       | 11                     | 20               | 25   | 33.3 |
| XTCC025C       | 15                     | 25               | 33.3 | 40   |
| XTCC033D       | 20                     | 33.3             | 40   | 55   |
| XTCC050D       | 25                     | 50               | 65   | 85   |
| XTCE580N       | 145                    | 250              | 333  | 250  |

## Accessories

### Auxiliary Contacts

Front-mounted snap-on auxiliary contacts for **XT** contactors are available with screw or spring cage terminals in a variety of contact configurations.

### Auxiliary Contacts Possible Combinations

| Frame Size | Catalog Number               | Contactor                                                                           | Built-In Auxiliary | Front (Top) Mount                                                                   |                                                                                     | Side-Mount  |                                                                                       | Total Auxiliary Contacts Available |
|------------|------------------------------|-------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------|------------------------------------|
|            |                              |                                                                                     |                    | Two-Pole                                                                            | Four-Pole                                                                           | Single-Pole | Two-Pole                                                                              |                                    |
| A          | XTMC6A_ –<br>XTMC9A_         |    | 1NO or 1NC         | 1                                                                                   | —                                                                                   | —           | —                                                                                     | 3                                  |
|            |                              |                                                                                     |                    | —                                                                                   | 1                                                                                   | —           | —                                                                                     | 5                                  |
|            |                              |                                                                                     |                    |    |    | —           | —                                                                                     | —                                  |
| B          | XTCE007B_ –<br>XTCE015B_     |    | 1NO or 1NC         | 1                                                                                   | —                                                                                   | —           | —                                                                                     | 3                                  |
|            |                              |                                                                                     |                    | —                                                                                   | 1                                                                                   | —           | —                                                                                     | 5                                  |
|            |                              |                                                                                     |                    | —                                                                                   | —                                                                                   | 1           | —                                                                                     | 2                                  |
| C          | XTCE018C_ –<br>XTCE032C_     |   | 1NO or 1NC         | 1                                                                                   | —                                                                                   | —           | —                                                                                     | 3                                  |
|            |                              |                                                                                     |                    | —                                                                                   | 1                                                                                   | —           | —                                                                                     | 5                                  |
|            |                              |                                                                                     |                    | —                                                                                   | —                                                                                   | —           | 1                                                                                     | 3                                  |
| D          | XTCE040D00_ –<br>XTCE065D00_ |  | —                  | 1                                                                                   | —                                                                                   | —           | 2                                                                                     | 6                                  |
|            |                              |                                                                                     |                    | —                                                                                   | 1                                                                                   | —           | 1                                                                                     | 6                                  |
|            |                              |                                                                                     |                    |  |  | —           |  | —                                  |
| F-G        | XTCE080F00_ –<br>XTCE150G00_ |  | —                  | 1                                                                                   | —                                                                                   | —           | 2                                                                                     | 6                                  |
|            |                              |                                                                                     |                    | —                                                                                   | 1                                                                                   | —           | 2                                                                                     | 8                                  |
|            |                              |                                                                                     |                    | —                                                                                   | —                                                                                   | —           | 4                                                                                     | 8                                  |
| L-R        | XTCE185H22_ –<br>XTCEC20R22_ |  | 2NO–2NC            | —                                                                                   | —                                                                                   | —           | 2                                                                                     | 8                                  |
|            |                              |                                                                                     |                    | —                                                                                   | —                                                                                   | —           | —                                                                                     | —                                  |
|            |                              |                                                                                     |                    | —                                                                                   | —                                                                                   | —           |  | —                                  |

### Notes

Forced operation contact to IEC/EN 60947-5-1 Appendix L (positively driven), inside the auxiliary contact unit (not early close and late opening).  
 Auxiliary normally closed contact can be used as mirror contact to IEC/EN 60947-4-1 Appendix F (not late opening).  
 No auxiliary contacts can be fitted between two contactors.

## Technical Data and Specifications

## XTSC Non-Reversing Manual Motor Controllers (MMC)—Component Bill of Material

## Factory Assembled Manual Motor Protector + Contactor

| Assembled Manual<br>Motor Controller ① | FLA Adjustment<br>Range/Overload<br>Release—I <sub>r</sub> (Amps) | Component Catalog Numbers |                               | Contactor ① | Manual Motor Protector<br>Auxiliary Contact |
|----------------------------------------|-------------------------------------------------------------------|---------------------------|-------------------------------|-------------|---------------------------------------------|
|                                        |                                                                   | Manual Motor<br>Protector | Combination<br>Connection Kit |             |                                             |
| XTSC Frame B MMP + Frame B Contactor   |                                                                   |                           |                               |             |                                             |
| XTSCP16BB_                             | 0.1–0.16                                                          | XTPRP16BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSCP25BB_                             | 0.16–0.25                                                         | XTPRP25BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSCP40BB_                             | 0.25–0.4                                                          | XTPRP40BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSCP63BB_                             | 0.4–0.63                                                          | XTPRP63BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSC001BB_                             | 0.63–1                                                            | XTPR001BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSC1P6BB_                             | 1–1.6                                                             | XTPR1P6BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSC2P5BB_                             | 1.6–2.5                                                           | XTPR2P5BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSC004BB_                             | 2.5–4                                                             | XTPR004BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSC6P3BB_                             | 4–6.3                                                             | XTPR6P3BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTSC10BB_                              | 6.3–10                                                            | XTPR010BC1                | XTPAXTPCB                     | XTCE009B10_ | XTPAXFA11                                   |
| XTSC12BB_                              | 8–12                                                              | XTPR012BC1                | XTPAXTPCB                     | XTCE012B10_ | XTPAXFA11                                   |
| XTSC16BB_                              | 10–16                                                             | XTPR016BC1                | XTPAXTPCB                     | XTCE015B10_ | XTPAXFA11                                   |
| XTSC Frame B MMP + Frame C Contactor   |                                                                   |                           |                               |             |                                             |
| XTSC020BC_                             | 16–20                                                             | XTPR020BC1                | XTPAXTPCC                     | XTCE025C10_ | XTPAXFA11                                   |
| XTSC025BC_                             | 20–25                                                             | XTPR025BC1                | XTPAXTPCC                     | XTCE025C10_ | XTPAXFA11                                   |
| XTSC032BC_                             | 25–32                                                             | XTPR032BC1                | XTPAXTPCC                     | XTCE032C10_ | XTPAXFA11                                   |
| XTSC Frame D MMP + Frame C Contactor   |                                                                   |                           |                               |             |                                             |
| XTSC016DC_                             | 10–16                                                             | XTPR016DC1                | ②                             | XTCE018C10_ | XTPAXFA1                                    |
| XTSC025DC_                             | 16–25                                                             | XTPR025DC1                | ②                             | XTCE025C10_ | XTPAXFA11                                   |
| XTSC032DC_                             | 25–32                                                             | XTPR032DC1                | ②                             | XTCE032C10_ | XTPAXFA11                                   |
| XTSC Frame D MMP + Frame D Contactor   |                                                                   |                           |                               |             |                                             |
| XTSC040DD_                             | 32–40                                                             | XTPR040DC1                | XTPAXTPCD ③                   | XTCE040D00_ | XTPAXFA11                                   |
| XTSC050DD_                             | 40–50                                                             | XTPR050DC1                | XTPAXTPCD ③                   | XTCE050D00_ | XTPAXFA11                                   |
| XTSC058DD_                             | 50–58                                                             | XTPR058DC1                | XTPAXTPCD ③                   | XTCE065D00_ | XTPAXFA11                                   |
| XTSC063DD_                             | 55–65                                                             | XTPR063DC1                | XTPAXTPCD ③                   | XTCE065D00_ | XTPAXFA11                                   |

## Notes

① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.

② The connection between the XTPR...DC1 and the XTCE...C\_ contactor will be made with flexible wire and mounted to the DIN rail adapter plate (XTPAXTPCPD).

③ The reversing connection between the XTPR...DC1 and the (2) XTCE...C\_ contactors will be accomplished by using the non-reversing combination connection kit (XTPAXTPCD), Frame D reversing link kit (XTCEXRLD), additional DIN rail adapter plate (XTPAXTPCPD) and DIN adapter connection element (XTPAXCNE).

## XTSR Reversing Manual Motor Controllers (MMC)—Component Bill of Material

## Factory Assembled Manual Motor Protector + Contactor

| Assembled Manual<br>Motor Controller ① | FLA Adjustment<br>Range/Overload<br>Release—I <sub>r</sub> (Amps) | Component Catalog Numbers |                               | Contactor ①     | Manual Motor Protector<br>Auxiliary Contact |
|----------------------------------------|-------------------------------------------------------------------|---------------------------|-------------------------------|-----------------|---------------------------------------------|
|                                        |                                                                   | Manual Motor<br>Protector | Combination<br>Connection Kit |                 |                                             |
| XTSR Frame B MMP + Frame B Contactor   |                                                                   |                           |                               |                 |                                             |
| XTSRP16BB_                             | 0.1–0.16                                                          | XTPRP16BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSRP25BB_                             | 0.16–0.25                                                         | XTPRP25BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSRP40BB_                             | 0.25–0.4                                                          | XTPRP40BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSRP63BB_                             | 0.4–0.63                                                          | XTPRP63BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSR001BB_                             | 0.63–1                                                            | XTPR001BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSR1P6BB_                             | 1–1.6                                                             | XTPR1P6BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSR2P5BB_                             | 1.6–2.5                                                           | XTPR2P5BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSR004BB_                             | 2.5–4                                                             | XTPR004BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSR6P3BB_                             | 4–6.3                                                             | XTPR6P3BC1                | XTPAXTPCRB                    | (2) XTCE007B01_ | XTPAXFA11                                   |
| XTSR010BB_                             | 6.3–10                                                            | XTPR010BC1                | XTPAXTPCRB                    | (2) XTCE009B01_ | XTPAXFA11                                   |
| XTSR012BB_                             | 8–12                                                              | XTPR012BC1                | XTPAXTPCRB                    | (2) XTCE012B01_ | XTPAXFA11                                   |
| XTSR Frame B MMP + Frame C Contactor   |                                                                   |                           |                               |                 |                                             |
| XTSR016BC_                             | 10–16                                                             | XTPR016BC1                | XTPAXTPCRC                    | (2) XTCE018C01  | XTPAXFA11                                   |
| XTSR020BC_                             | 16–20                                                             | XTPR020BC1                | XTPAXTPCRC                    | (2) XTCE025C01_ | XTPAXFA11                                   |
| XTSR025BC_                             | 20–25                                                             | XTPR025BC1                | XTPAXTPCRC                    | (2) XTCE025C01_ | XTPAXFA11                                   |
| XTSR032BC_                             | 25–32                                                             | XTPR032BC1                | XTPAXTPCRC                    | (2) XTCE032C01_ | XTPAXFA11                                   |
| XTSR Frame D MMP + Frame C Contactor   |                                                                   |                           |                               |                 |                                             |
| XTSR016DC_                             | 10–16                                                             | XTPR016DC1                | ②                             | (2) XTCE018C01  | XTPAXFA11                                   |
| XTSR025DC_                             | 16–25                                                             | XTPR025DC1                | ②                             | (2) XTCE025C01_ | XTPAXFA11                                   |
| XTSR032DC_                             | 25–32                                                             | XTPR032DC1                | ②                             | (2) XTCE032C01_ | XTPAXFA11                                   |
| XTSR Frame D MMP + Frame D Contactor   |                                                                   |                           |                               |                 |                                             |
| XTSR040DD_                             | 32–40                                                             | XTPR040DC1                | ③                             | (2) XTCE040D00_ | XTPAXFA11                                   |
| XTSR050DD_                             | 40–50                                                             | XTPR050DC1                | ③                             | (2) XTCE050D00_ | XTPAXFA11                                   |
| XTSR058DD_                             | 50–58                                                             | XTPR058DC1                | ③                             | (2) XTCE065D00_ | XTPAXFA11                                   |
| XTSR063DD_                             | 55–65                                                             | XTPR063DC1                | ③                             | (2) XTCE065D00_ | XTPAXFA11                                   |

**Notes**

① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.

② The connection between the XTPR...DC1 and the XTCE...C\_ contactor will be made with flexible wire and mounted to the DIN rail adapter plate (XTPAXTPCPD).

③ The reversing connection between the XTPR...DC1 and the (2) XTCE...C\_ contactors will be accomplished by using the non-reversing combination connection kit (XTPAXTPCD), Frame D reversing link kit (XTCEXRLD), additional DIN rail adapter plate (XTPAXTPCPD) and DIN adapter connection element (XTPAXCNE).

## XTFC Non-Reversing Combination Motor Controllers—Component Bill of Material

## Factory Assembled Manual Motor Protector + Contactor + Line Side Adapter

| Assembled<br>Combination<br>Motor Controller ① | FLA Adjustment Range/<br>Overload Release— $I_r$<br>(Amps) | Component Catalog Numbers<br>Line Side<br>Adapter | Manual Motor<br>Protector | Combination<br>Connection Kit | Contactor ① | Manual Motor Protector<br>Auxiliary Contact |
|------------------------------------------------|------------------------------------------------------------|---------------------------------------------------|---------------------------|-------------------------------|-------------|---------------------------------------------|
| <b>XTFC Frame B MMP + Frame B Contactor</b>    |                                                            |                                                   |                           |                               |             |                                             |
| XTFCP16BB_②                                    | 0.1–0.16                                                   | XTPAXLSA ③                                        | XTPRP16BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFCP25BB_②                                    | 0.16–0.25                                                  | XTPAXLSA ③                                        | XTPRP25BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFCP40BB_②                                    | 0.25–0.4                                                   | XTPAXLSA ③                                        | XTPRP40BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFCP63BB_②                                    | 0.4–0.63                                                   | XTPAXLSA ③                                        | XTPRP63BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFC001BB_②                                    | 0.63–1                                                     | XTPAXLSA ③                                        | XTPR001BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFC1P6BB_②                                    | 1–1.6                                                      | XTPAXLSA ③                                        | XTPR1P6BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFC2P5BB_②                                    | 1.6–2.5                                                    | XTPAXLSA ③                                        | XTPR2P5BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFC004BB_②                                    | 2.5–4                                                      | XTPAXLSA ③                                        | XTPR004BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFC6P3BB_                                     | 4–6.3                                                      | XTPAXLSA ③                                        | XTPR6P3BC1                | XTPAXTPCB                     | XTCE007B10_ | XTPAXFA11                                   |
| XTFC010BB_                                     | 6.3–10                                                     | XTPAXLSA ③                                        | XTPR010BC1                | XTPAXTPCB                     | XTCE009B10_ | XTPAXFA11                                   |
| XTFC012BB_                                     | 8–12                                                       | XTPAXLSA ③                                        | XTPR012BC1                | XTPAXTPCB                     | XTCE012B10_ | XTPAXFA11                                   |
| XTFC016BB_                                     | 10–16                                                      | XTPAXLSA ③                                        | XTPR016BC1                | XTPAXTPCB                     | XTCE015B10_ | XTPAXFA11                                   |
| <b>XTFC Frame B MMP + Frame C Contactor</b>    |                                                            |                                                   |                           |                               |             |                                             |
| XTFC6P3BC_②                                    | 4–6.3                                                      | XTPAXLSA ③                                        | XTPR6P3BC1                | XTPAXTPCC                     | XTCE018C10_ | XTPAXFA11                                   |
| XTFC010BC_②                                    | 6.3–10                                                     | XTPAXLSA ③                                        | XTPR010BC1                | XTPAXTPCC                     | XTCE018C10_ | XTPAXFA11                                   |
| XTFC012BC_②                                    | 8–12                                                       | XTPAXLSA ③                                        | XTPR012BC1                | XTPAXTPCC                     | XTCE018C10_ | XTPAXFA11                                   |
| XTFC016BC_②                                    | 10–16                                                      | XTPAXLSA ③                                        | XTPR016BC1                | XTPAXTPCC                     | XTCE018C10_ | XTPAXFA11                                   |
| XTFC020BC_                                     | 16–20                                                      | XTPAXLSA ③                                        | XTPR020BC1                | XTPAXTPCC                     | XTCE025C10_ | XTPAXFA11                                   |
| XTFC025BC_                                     | 20–25                                                      | XTPAXLSA ③                                        | XTPR025BC1                | XTPAXTPCC                     | XTCE025C10_ | XTPAXFA11                                   |
| XTFC032BC_                                     | 25–32                                                      | XTPAXLSA ③                                        | XTPR032BC1                | XTPAXTPCC                     | XTCE032C10_ | XTPAXFA11                                   |
| <b>XTFC Frame D MMP + Frame C Contactor</b>    |                                                            |                                                   |                           |                               |             |                                             |
| XTFC016DC_                                     | 10–16                                                      | XTPAXLSAD                                         | XTPR016DC1                | ④                             | XTCE018C10_ | XTPAXFA11                                   |
| XTFC025DC_                                     | 16–25                                                      | XTPAXLSAD                                         | XTPR025DC1                | ④                             | XTCE025C10_ | XTPAXFA11                                   |
| XTFC032DC_                                     | 25–32                                                      | XTPAXLSAD                                         | XTPR032DC1                | ④                             | XTCE032C10_ | XTPAXFA11                                   |
| <b>XTFC Frame D MMP + Frame D Contactor</b>    |                                                            |                                                   |                           |                               |             |                                             |
| XTFC016DD_②                                    | 10–16                                                      | XTPAXLSAD                                         | XTPR016DC1                | XTPAXTPCD                     | XTCE040D00_ | XTPAXFA11                                   |
| XTFC025DD_②                                    | 16–20                                                      | XTPAXLSAD                                         | XTPR025DC1                | XTPAXTPCD                     | XTCE040D00_ | XTPAXFA11                                   |
| XTFC032DD_②                                    | 20–25                                                      | XTPAXLSAD                                         | XTPR032DC1                | XTPAXTPCD                     | XTCE040D00_ | XTPAXFA11                                   |
| XTFC040DD_②                                    | 32–40                                                      | XTPAXLSAD                                         | XTPR040DC1                | XTPAXTPCD ⑤                   | XTCE040D00_ | XTPAXFA11                                   |
| XTFC050DD_②                                    | 40–50                                                      | XTPAXLSAD                                         | XTPR050DC1                | XTPAXTPCD ⑤                   | XTCE050D00_ | XTPAXFA11                                   |
| XTFC058DD_②                                    | 50–58                                                      | XTPAXLSAD                                         | XTPR058DC1                | XTPAXTPCD ⑤                   | XTCE065D00_ | XTPAXFA11                                   |
| XTFC063DD_                                     | 55–65                                                      | XTPAXLSAD                                         | XTPR063DC1                | XTPAXTPCD ⑤                   | XTCE065D00_ | XTPAXFA11                                   |

## Notes

① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.

② Indicates Type E with contactor UL 508 combination. Not all XTFC part numbers feature UL 508 Type E with contactor combinations.

③ XTPAXLSA can be replaced with tool free XTPAXLSA.

④ The connection between the XTPR...DC1 and the XTCE...C\_ contactor will be made with flexible wire and mounted to the DIN rail adapter plate (XTPAXTPCPD).

⑤ The reversing connection between the XTPR...DC1 and the (2) XTCE...C\_ contactors will be accomplished by using the non-reversing combination connection kit (XTPAXTPCD), Frame D reversing link kit (XTCEXRDL), additional DIN rail adapter plate (XTPAXTPCPD) and DIN adapter connection element (XTPAXCNE).

**Note:** Type E UL 508 combinations can be assembled in the field and DO NOT require the manual motor protector auxiliary contact XTPAXFA11. The connection can also be wired and does not require use of the XT connector.

## XTFR Reversing Combination Motor Controllers—Component Bill of Material

### Factory Assembled Manual Motor Protector + Contactor + Line Side Adapter

| Assembled Combination<br>Motor Controller ① | FLA Adjustment Range/<br>Overload Release— $I_r$<br>(Amps) | Component Catalog Numbers |                           |                               | Contactor ①  | Manual Motor Protector<br>Auxiliary Contact |
|---------------------------------------------|------------------------------------------------------------|---------------------------|---------------------------|-------------------------------|--------------|---------------------------------------------|
|                                             |                                                            | Line Side<br>Adapter      | Manual Motor<br>Protector | Combination<br>Connection Kit |              |                                             |
| XTFR Frame B MMP + Frame B Contactor        |                                                            |                           |                           |                               |              |                                             |
| XTFRP16BB_②                                 | 0.1–0.16                                                   | XPAXLSA ③                 | XTPRP16BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFRP25BB_②                                 | 0.16–0.25                                                  | XPAXLSA ③                 | XTPRP25BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFRP40BB_②                                 | 0.25–0.4                                                   | XPAXLSA ③                 | XTPRP40BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFRP63BB_②                                 | 0.4–0.63                                                   | XPAXLSA ③                 | XTPRP63BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFR001BB_②                                 | 0.63–1                                                     | XPAXLSA ③                 | XTPR001BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFR1P6BB_②                                 | 1–1.6                                                      | XPAXLSA ③                 | XTPR1P6BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFR2P5BB_②                                 | 1.6–2.5                                                    | XPAXLSA ③                 | XTPR2P5BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFR004BB_②                                 | 2.5–4                                                      | XPAXLSA ③                 | XTPR004BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFR6P3BB_②                                 | 4–6.3                                                      | XPAXLSA ③                 | XTPR6P3BC1                | XPAXTPCRB                     | XTCE007B01_④ | XTPAXFA11                                   |
| XTFR010BB_②                                 | 6.3–10                                                     | XPAXLSA ③                 | XTPR010BC                 | XPAXTPCRB                     | XTCE009B01_④ | XTPAXFA11                                   |
| XTFR012BB_②                                 | 8–12                                                       | XPAXLSA ③                 | XTPR012BC1                | XPAXTPCRB                     | XTCE012B01_④ | XTPAXFA11                                   |
| XTFR Frame B MMP + Frame C Contactor        |                                                            |                           |                           |                               |              |                                             |
| XTFR6P3BC_②                                 | 4–6.3                                                      | XPAXLSA ③                 | XTPR6P3BC1                | XPAXTPCRC                     | XTCE018C10_④ | XTPAXFA11                                   |
| XTFR010BC_②                                 | 6.3–10                                                     | XPAXLSA ③                 | XTPR103BC1                | XPAXTPCRC                     | XTCE018C10_④ | XTPAXFA11                                   |
| XTFR012BC_②                                 | 8–12                                                       | XPAXLSA ③                 | XTPR123BC1                | XPAXTPCRC                     | XTCE018C10_④ | XTPAXFA11                                   |
| XTFR016BC_②                                 | 10–16                                                      | XPAXLSA ③                 | XTPR016BC1                | XPAXTPCRC                     | XTCE018C01_④ | XTPAXFA11                                   |
| XTFR020BC_②                                 | 16–20                                                      | XPAXLSA ③                 | XTPR020BC1                | XPAXTPCRC                     | XTCE025C01_④ | XTPAXFA11                                   |
| XTFR025BC_②                                 | 20–25                                                      | XPAXLSA ③                 | XTPR025BC1                | XPAXTPCRC                     | XTCE025C01_④ | XTPAXFA11                                   |
| XTFR032BC_②                                 | 25–32                                                      | XPAXLSA ③                 | XTPR032BC1                | XPAXTPCRC                     | XTCE032C01_④ | XTPAXFA11                                   |
| XTFR Frame D MMP + Frame C Contactor        |                                                            |                           |                           |                               |              |                                             |
| XTFR016DC_②                                 | 10–16                                                      | XPAXLSAD                  | XTPR016DC1                | ④                             | XTCE018C01_④ | XTPAXFA11                                   |
| XTFR025DC_②                                 | 16–25                                                      | XPAXLSAD                  | XTPR025DC1                | ④                             | XTCE025C01_④ | XTPAXFA11                                   |
| XTFR032DC_②                                 | 25–32                                                      | XPAXLSAD                  | XTPR032DC1                | ④                             | XTCE032C01_④ | XTPAXFA11                                   |
| XTFR Frame D MMP + Frame D Contactor        |                                                            |                           |                           |                               |              |                                             |
| XTFR016DD_②                                 | 10–16                                                      | XPAXLSAD                  | XTPR016DC1                | ④                             | XTCE040D00_④ | XTPAXFA11                                   |
| XTFR025DD_②                                 | 16–25                                                      | XPAXLSAD                  | XTPR025DC1                | ④                             | XTCE040D00_④ | XTPAXFA11                                   |
| XTFR026DD_②                                 | 25–32                                                      | XPAXLSAD                  | XTPR032DC1                | ④                             | XTCE040D00_④ | XTPAXFA11                                   |
| XTFR040DD_②                                 | 32–40                                                      | XPAXLSAD                  | XTPR040DC1                | ⑤                             | XTCE040D00_④ | XTPAXFA11                                   |
| XTFR050DD_②                                 | 40–50                                                      | XPAXLSAD                  | XTPR050DC1                | ⑤                             | XTCE050D00_④ | XTPAXFA11                                   |
| XTFR058DD_②                                 | 50–58                                                      | XPAXLSAD                  | XTPR058DC1                | ⑤                             | XTCE065D00_④ | XTPAXFA11                                   |
| XTFR063DD_②                                 | 55–65                                                      | XPAXLSAD                  | XTPR063DC1                | ⑤                             | XTCE065D00_④ | XTPAXFA11                                   |

#### Notes

① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.

② Indicates Type E with contactor UL 508 combination. Not all XTFR part numbers feature UL 508 Type E with contactor combinations.

③ XTPAXLSA can be replaced with tool free XTPAXLSA.

④ The connection between the XTPR...DC1 and the XTCE...C\_ contactor will be made with flexible wire and mounted to the DIN rail adapter plate (XTPAXTPCPD).

⑤ The reversing connection between the XTPR...DC1 and the (2) XTCE...C\_ contactors will be accomplished by using the non-reversing combination connection kit (XTPAXTPCD), Frame D reversing link kit (XTCEXRLD), additional DIN rail adapter plate (XTPAXTPCPD) and DIN adapter connection element (XTPAXCNE).

**Note:** Type E UL 508 combinations can be assembled in the field and DO NOT require the manual motor protector auxiliary contact XTPAXFA11. The connection can also be wired and does not require use of the XT connector.

## Manual Motor Controllers Short-Circuit Ratings for UL/CSA Group Installations

## XTSC and XTSR Manual Motor Controllers (MMC)

|                                               |            |                                                                   |                                                 | Group Installation, UL/CSA                                                 |           |           |                                                                  |                                 |
|-----------------------------------------------|------------|-------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------|-----------|-----------|------------------------------------------------------------------|---------------------------------|
| Assembled Controller ①                        |            | FLA Adjustment<br>Range/Overload<br>Release—I <sub>r</sub> (Amps) | Short-Circuit<br>Release—I <sub>rm</sub> (Amps) | Max. rms Symmetrical Short-Circuit<br>Ratings (kA/kA with Current Limiter) |           |           | Maximum Upstream Protective Device<br>(A/A with Current Limiter) |                                 |
| Non-Reversing                                 | Reversing  |                                                                   |                                                 | 240V                                                                       | 480Y/277V | 600Y/347V | Maximum Fuse<br>600V                                             | Maximum Circuit<br>Breaker 600V |
| XTSC and XTSR Frame B MMP + Frame B Contactor |            |                                                                   |                                                 |                                                                            |           |           |                                                                  |                                 |
| XTSCP16BB_                                    | XTSRP16BB_ | 0.1–0.16                                                          | 2.2                                             | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSCP25BB_                                    | XTSRP25BB_ | 0.16–0.25                                                         | 3.5                                             | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSCP40BB_                                    | XTSRP40BB_ | 0.25–0.4                                                          | 5.6                                             | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSCP63BB_                                    | XTSRP63BB_ | 0.4–0.36                                                          | 8.82                                            | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSC001BB_                                    | XTSR001BB_ | 0.36–1                                                            | 14.0                                            | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSC1P6BB_                                    | XTSR1P6BB_ | 1–1.6                                                             | 22.4                                            | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSC2P5BB_                                    | XTSR2P5BB_ | 1.6–2.                                                            | 5                                               | 35                                                                         | 65        | 65        | 50                                                               | 600                             |
| XTSC004BB_                                    | XTSR004BB_ | 2.5–4                                                             | 56                                              | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSC6P3BB_                                    | XTSR6P3BB_ | 4–6.3                                                             | 88.2                                            | 65                                                                         | 65        | 50        | 600                                                              | 600                             |
| XTSC010BB_                                    | XTSR010BB_ | 6.3–10                                                            | 140                                             | 65                                                                         | 65        | 22        | 10/600                                                           | 15/600                          |
| XTSC012BB_                                    | XTSR012BB_ | 8–12                                                              | 168                                             | 65                                                                         | 65        | 22        | 10/600                                                           | 15/600                          |
| XTSC and XTSR Frame B MMP + Frame C Contactor |            |                                                                   |                                                 |                                                                            |           |           |                                                                  |                                 |
| XTSC016BC_                                    | XTSR016BC_ | 10–16                                                             | 224                                             | 42                                                                         | 42        | 50        | 10/600                                                           | 15/600                          |
| XTSC020BC_                                    | XTSR020BC_ | 16–20                                                             | 280                                             | 18                                                                         | 18        | 18        | 10/600                                                           | 15/600                          |
| XTSC025BC_                                    | XTSR025BC_ | 20–25                                                             | 350                                             | 18                                                                         | 18        | 18        | 10/600                                                           | 15/600                          |
| XTSC032BC_                                    | XTSR032BC_ | 25–32                                                             | 448                                             | 18                                                                         | 18        | 18        | 10/600                                                           | 15/600                          |
| XTSC and XTSR Frame D MMP + Frame C Contactor |            |                                                                   |                                                 |                                                                            |           |           |                                                                  |                                 |
| XTSC016DC_                                    | XTSR016DC_ | 10–16                                                             | 224                                             | 65                                                                         | 65        | 22        | 600                                                              | 600                             |
| XTSC025DC_                                    | XTSR025DC_ | 16–25                                                             | 350                                             | 65                                                                         | 65        | 22        | 600                                                              | 600                             |
| XTSC032DC_                                    | XTSR032DC_ | 25–32                                                             | 448                                             | 65                                                                         | 65        | 22        | 600                                                              | 600                             |
| XTSC and XTSR Frame D MMP + Frame D Contactor |            |                                                                   |                                                 |                                                                            |           |           |                                                                  |                                 |
| XTSC040DD_                                    | XTSR040DD_ | 32–40                                                             | 560                                             | 65                                                                         | 65        | 22        | 600                                                              | 600                             |
| XTSC050DD_                                    | XTSR050DD_ | 40–50                                                             | 700                                             | 65                                                                         | 65        | 22        | 600                                                              | 600                             |
| XTSC058DD_                                    | XTSR058DD_ | 50–58                                                             | 812                                             | 65                                                                         | 65        | 22        | —                                                                | —                               |
| XTSC063DD_                                    | XTSR063DD_ | 58–63                                                             | 882                                             | 65                                                                         | 65        | —         | —                                                                | —                               |

**Note**

<sup>①</sup> Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.

## Combination Motor Controllers (Line Side Adapter + Manual Motor Protector + Contactor) UL 508 Type F Self-Protected

XTFC and XTFR Combination Motor Controllers (CMC), UL 508 Type F

Assembled Controller <sup>①</sup>

UL 508 Type F Application <sup>②</sup>

|                                               |              | FLA Adjustment<br>Range/Overload<br>Release—<br>I <sub>r</sub> (Amps) | Short-Circuit<br>Release—<br>I <sub>rm</sub> (Amps) | Max. rms Symmetrical Short-Circuit Ratings (kA) |           |           | Maximum Upstream<br>Protective Device (A) ② |                                 |
|-----------------------------------------------|--------------|-----------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------|-----------|-----------|---------------------------------------------|---------------------------------|
| Non-Reversing                                 | Reversing    |                                                                       |                                                     | 240V                                            | 480Y/277V | 600Y/347V | Maximum Fuse<br>600V                        | Maximum Circuit<br>Breaker 600V |
| XTFC and XTFR Frame B MMP + Frame B Contactor |              |                                                                       |                                                     |                                                 |           |           |                                             |                                 |
| XTFCP16BB_                                    | XTFRP16BB_   | 0.1–0.16                                                              | 2.2                                                 | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFCP25BB_                                    | XTFRP25BB_   | 0.16–0.25                                                             | 3.5                                                 | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFCP40BB_                                    | XTFRP40BB_   | 0.25–0.4                                                              | 5.6                                                 | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFCP63BB_                                    | XTFRP40BB_   | 0.4–0.63                                                              | 8.82                                                | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC001BB_                                    | XTFRP63BB_   | 0.63–1                                                                | 14                                                  | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC1P6BB_                                    | XTFR1P6BB_   | 1–1.6                                                                 | 22.4                                                | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC2P5BB_                                    | XTFR2P5BB_   | 1.6–2.5                                                               | 35                                                  | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC001BB_                                    | XTFR004BB_   | 2.5–4.0                                                               | 56                                                  | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC6P3BB_                                    | XTFR6P3BB_   | 4.0–6.3                                                               | 88.2                                                | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC010BB_                                    | XTFR010BB_   | 6.3–10                                                                | 140                                                 | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC012BB_                                    | XTFR012BB_   | 8–12                                                                  | 168                                                 | 65                                              | 65        | 18        | Not required                                | Not required                    |
| XTFC016BB_                                    | —            | 10–16                                                                 | 224                                                 | 18                                              | 18        | —         | Not required                                | Not required                    |
| XTFC and XTFR Frame B MMP + Frame C Contactor |              |                                                                       |                                                     |                                                 |           |           |                                             |                                 |
| XTFC016BC_ ③                                  | XTFR016BC_ ③ | 10–16                                                                 | 224                                                 | 18                                              | 18        | —         | Not required                                | Not required                    |
| XTFC020BC_                                    | XTFR020BC_   | 16–20                                                                 | 280                                                 | 18                                              | 18        | —         | Not required                                | Not required                    |
| XTFC025BC_                                    | XTFR025BC_   | 20–25                                                                 | 350                                                 | 18                                              | 18        | —         | Not required                                | Not required                    |
| XTFC032BC_                                    | XTFR032BC_   | 25–32                                                                 | 448                                                 | 18                                              | 18        | —         | Not required                                | Not required                    |
| XTFC and XTFR Frame D MMP + Frame C Contactor |              |                                                                       |                                                     |                                                 |           |           |                                             |                                 |
| XTFC016DC_                                    | XTFR016DC_   | 10–16                                                                 | 224                                                 | 65                                              | 65        | 30        | Not required                                | Not required                    |
| XTFC025DC_                                    | XTFR025DC_   | 16–25                                                                 | 350                                                 | 65                                              | 65        | 30        | Not required                                | Not required                    |
| XTFC032DC_                                    | XTFR032DC_   | 25–32                                                                 | 448                                                 | 65                                              | 65        | 50        | Not required                                | Not required                    |
| XTFC and XTFR Frame D MMP + Frame D Contactor |              |                                                                       |                                                     |                                                 |           |           |                                             |                                 |
| XTFC040DD_                                    | XTFR040DD_   | 32–40                                                                 | 560                                                 | 65                                              | 65        | 50        | Not required                                | Not required                    |
| XTFC050DD_                                    | XTFR050DD_   | 40–50                                                                 | 700                                                 | 65                                              | 65        | —         | Not required                                | Not required                    |
| XTFC058DD_                                    | XTFR058DD_   | 50–58                                                                 | 812                                                 | 65                                              | 65        | —         | Not required                                | Not required                    |
| XTFC063DD_                                    | XTFR063DD_   | 55–65                                                                 | 882                                                 | 65                                              | 65        | —         | Not required                                | Not required                    |

### Notes

<sup>①</sup> Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.

<sup>②</sup> For UL 508 Type F applications, the combination motor controller assembly does not require a dedicated upstream protective device in the panel, thus a maximum rating is not required.

<sup>③</sup> For 65 kA UL rating, use Type E rating with contactor.

**Note:** A **Type F** combination motor controller consists of a Type E manual self-protected motor controller and a magnetic motor controller.

## Combination Motor Controllers Short-Circuit Ratings for UL 508 Type E Application

XTFC and XTFR Combination Motor Controllers (CMC), UL 508 Type F/Type E

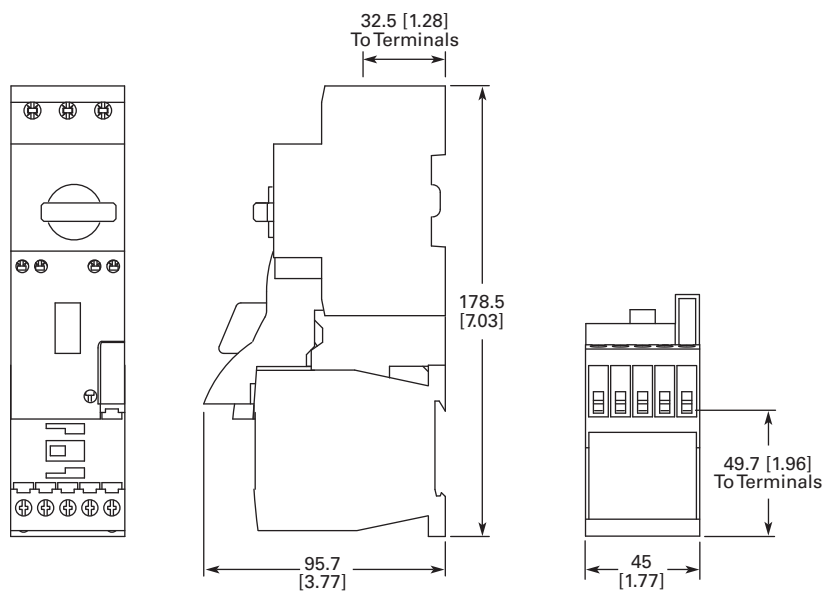
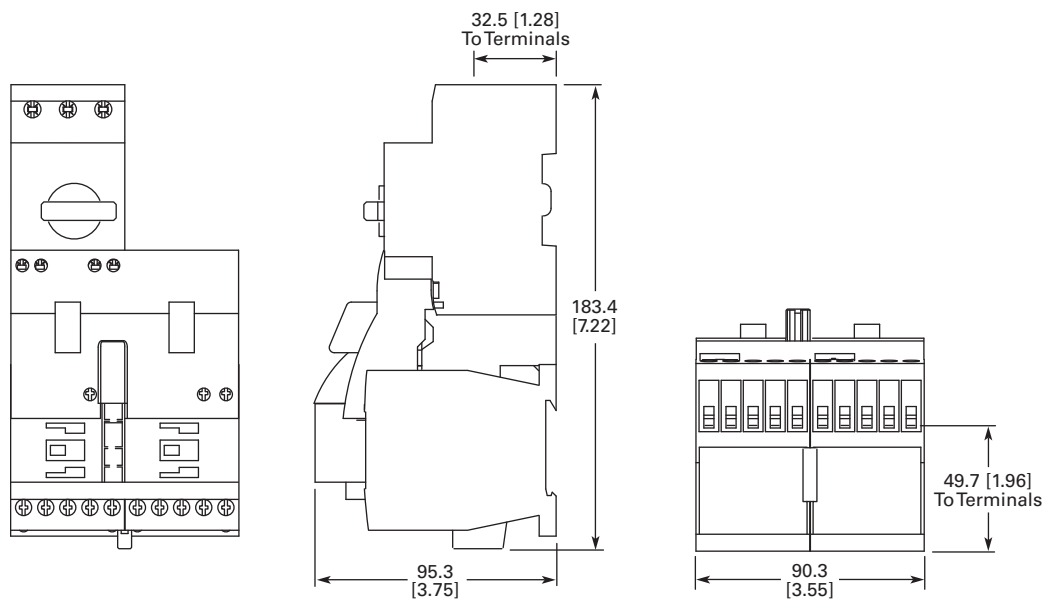
|                                               |            |                                                                       |                                                     | UL 508 Type F Application                          |           |           |                                             |                                 |
|-----------------------------------------------|------------|-----------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|-----------|-----------|---------------------------------------------|---------------------------------|
| Assembled Controller ①                        |            | FLA Adjustment<br>Range/Overload<br>Release—<br>I <sub>r</sub> (Amps) | Short-Circuit<br>Release—<br>I <sub>rm</sub> (Amps) | Max. rms Symmetrical Short-Circuit<br>Ratings (kA) |           |           | Maximum Upstream<br>Protective Device (A) ② |                                 |
| Non-Reversing                                 | Reversing  |                                                                       |                                                     | 240V                                               | 480Y/277V | 600Y/347V | Maximum Fuse<br>600V                        | Maximum Circuit<br>Breaker 600V |
| XTFC and XTFR Frame B MMP + Frame B Contactor |            |                                                                       |                                                     |                                                    |           |           |                                             |                                 |
| XTFCP16BB_                                    | XTFRP16BB_ | 0.1–0.16                                                              | 2.2                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFCP25BB_                                    | XTFRP25BB_ | 0.16–0.25                                                             | 3.5                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFCP40BB_                                    | XTFRP40BB_ | 0.25–0.4                                                              | 5.6                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFCP63BB_                                    | XTFRP63BB_ | 0.4–0.63                                                              | 8.82                                                | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC001BB_                                    | XTFR001BB_ | 0.63–1                                                                | 14                                                  | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC1P6BB_                                    | XTFR1P6BB_ | 1–1.6                                                                 | 22.4                                                | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC2P5BB_                                    | XTFR2P5BB_ | 1.6–2.5                                                               | 35                                                  | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC004BB_                                    | XTFR004BB_ | 2.5–4                                                                 | 56                                                  | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC and XTFR Frame B MMP + Frame C Contactor |            |                                                                       |                                                     |                                                    |           |           |                                             |                                 |
| XTFC6P3BC_                                    | XTFR6P3BC_ | 4–6.3                                                                 | 88.2                                                | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC010BC_                                    | XTFR010BC_ | 6.3–10                                                                | 140                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC012BC_                                    | XTFR012BC_ | 8–12                                                                  | 168                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC016BC_                                    | XTFR016BC_ | 10–16                                                                 | 224                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC and XTFR Frame D MMP + Frame D Contactor |            |                                                                       |                                                     |                                                    |           |           |                                             |                                 |
| XTFC016DD_                                    | XTFR016DD_ | 10–16                                                                 | 224                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC025DD_                                    | XTFR025DD_ | 16–25                                                                 | 350                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC032DD_                                    | XTFR032DD_ | 25–32                                                                 | 448                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC040DD_                                    | XTFR040DD_ | 32–40                                                                 | 560                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC050DD_                                    | XTFR050DD_ | 40–50                                                                 | 700                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC058DD_                                    | XTFR058DD_ | 50–58                                                                 | 812                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |
| XTFC063DD_                                    | XTFR063DD_ | 55–65                                                                 | 882                                                 | 65                                                 | 65        | —         | Not required                                | Not required                    |

**Notes**<sup>①</sup> Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-196**.<sup>②</sup> For UL 508 Type E applications, the assembly does not require a dedicated upstream protective device in the panel, thus a maximum rating is not required.

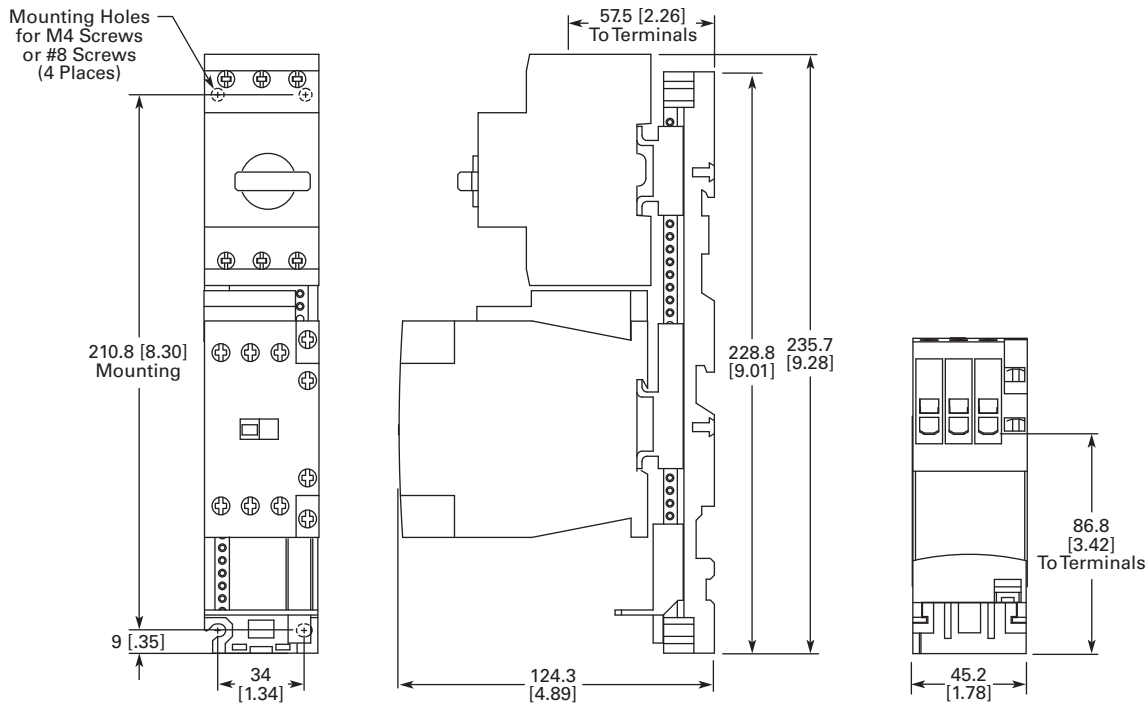
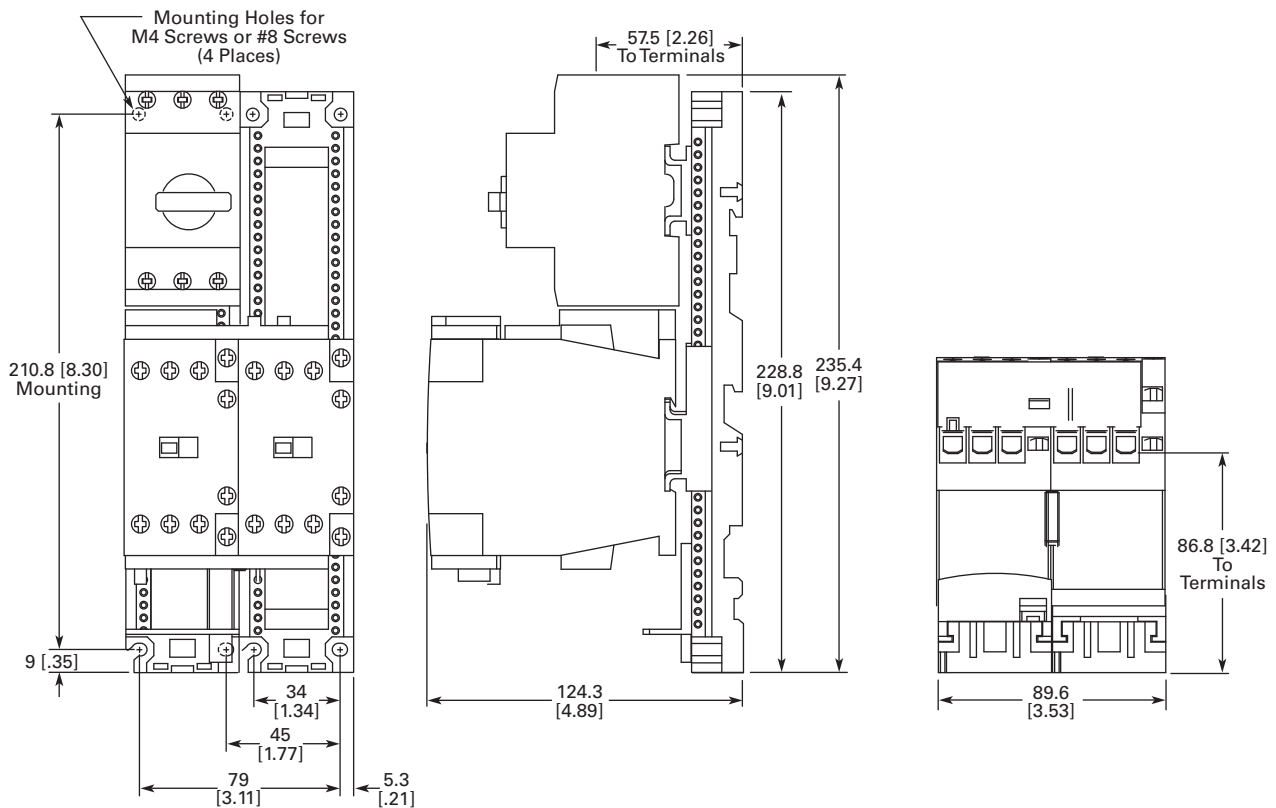
## 1

**Dimensions**

Approximate Dimensions in mm [in]

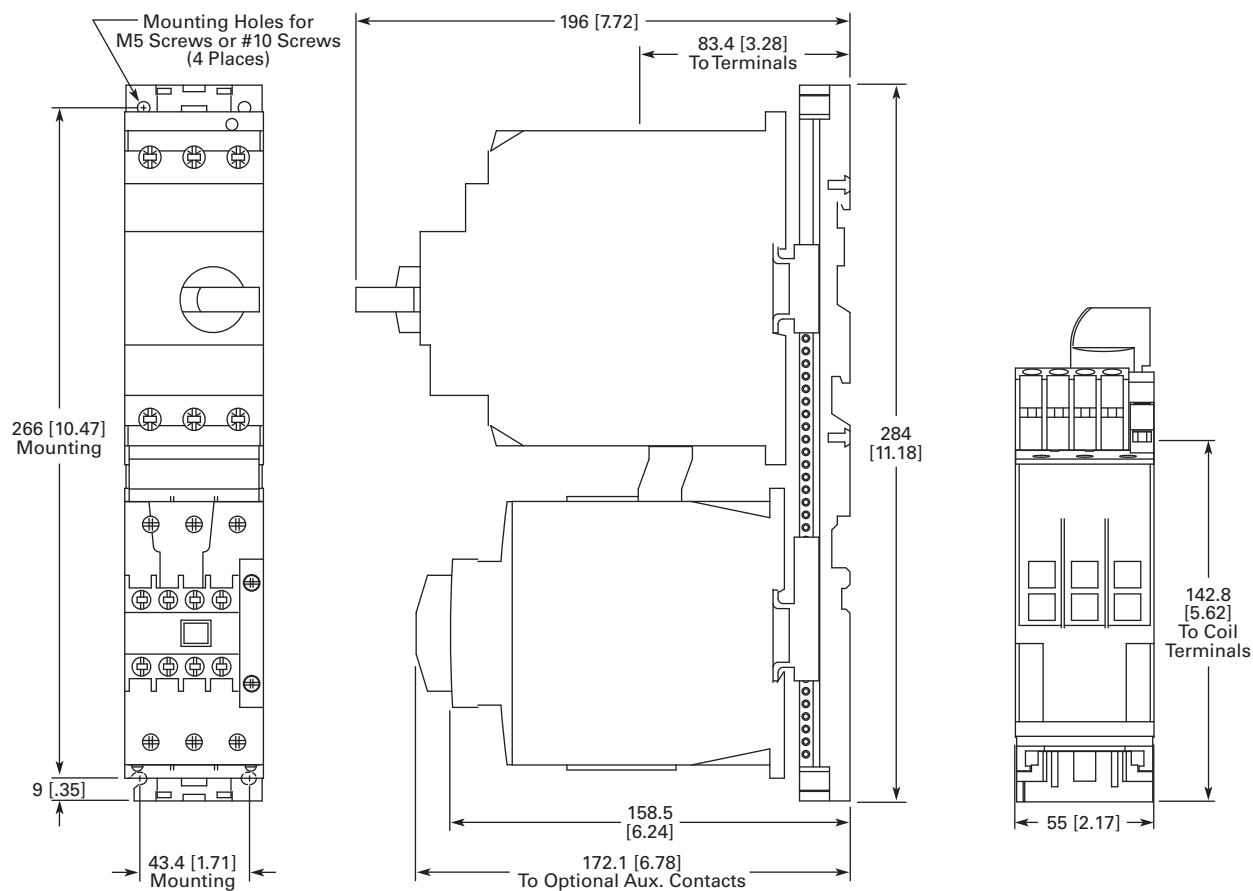
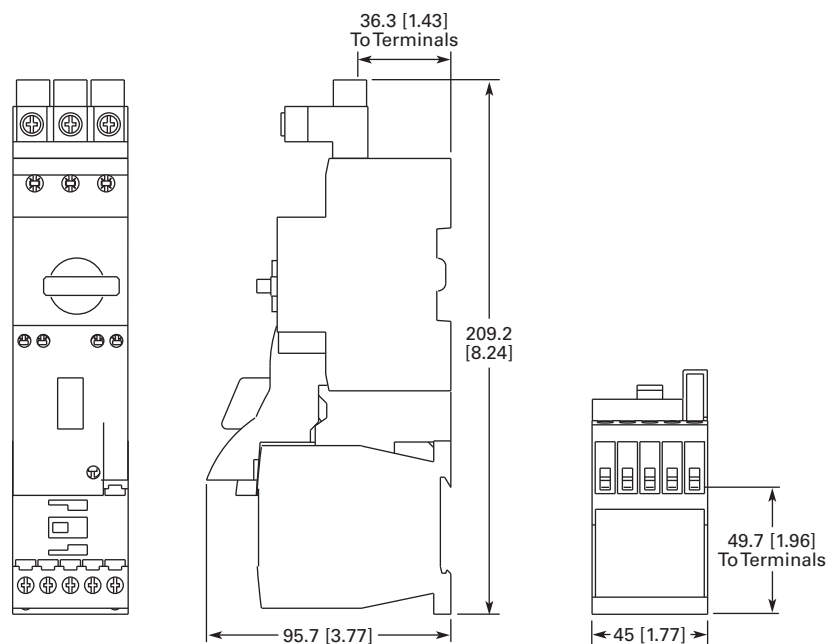
**XTSC...BB\_****XTSR...BB\_**

Approximate Dimensions in mm [in]

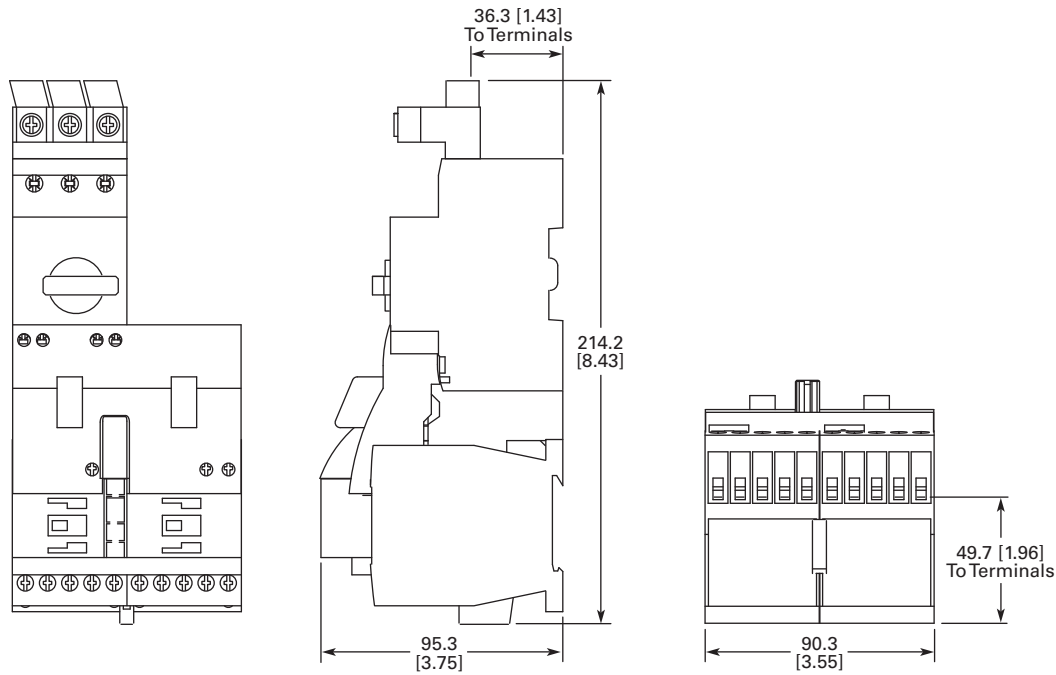
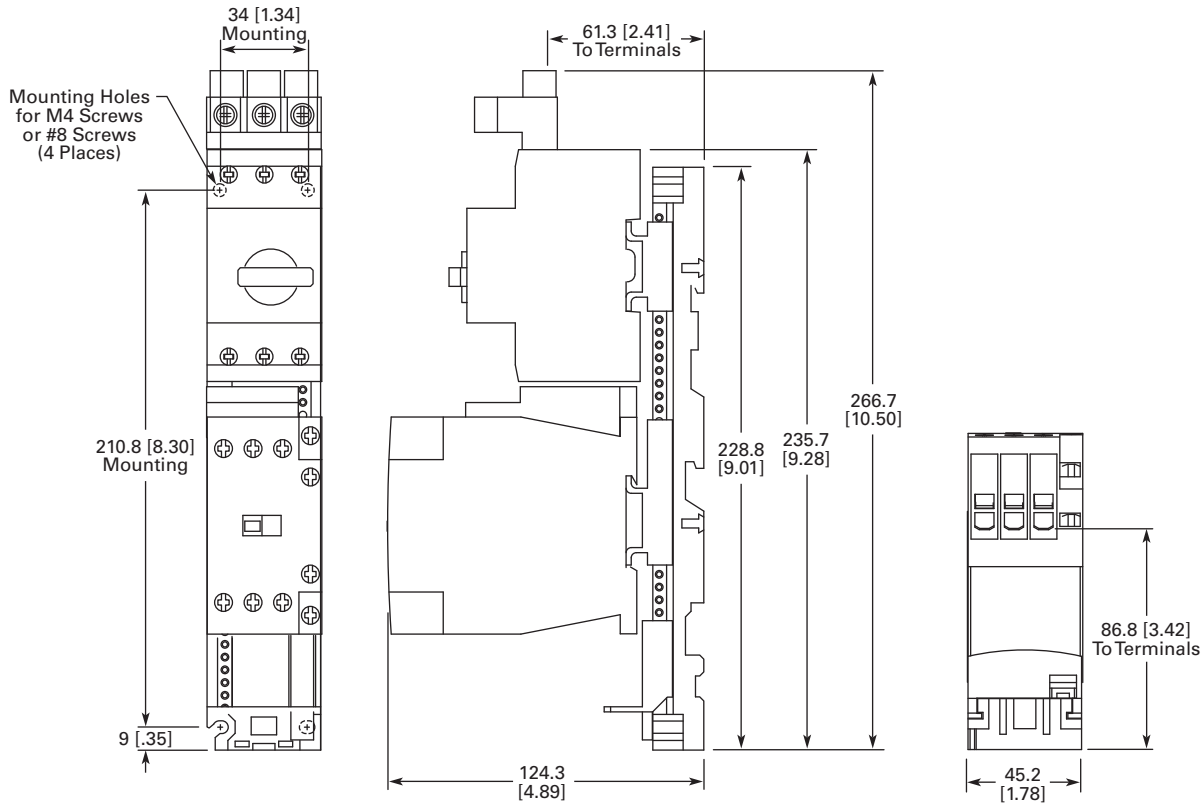
**XTSC...BC\_****XTSR...BC\_**

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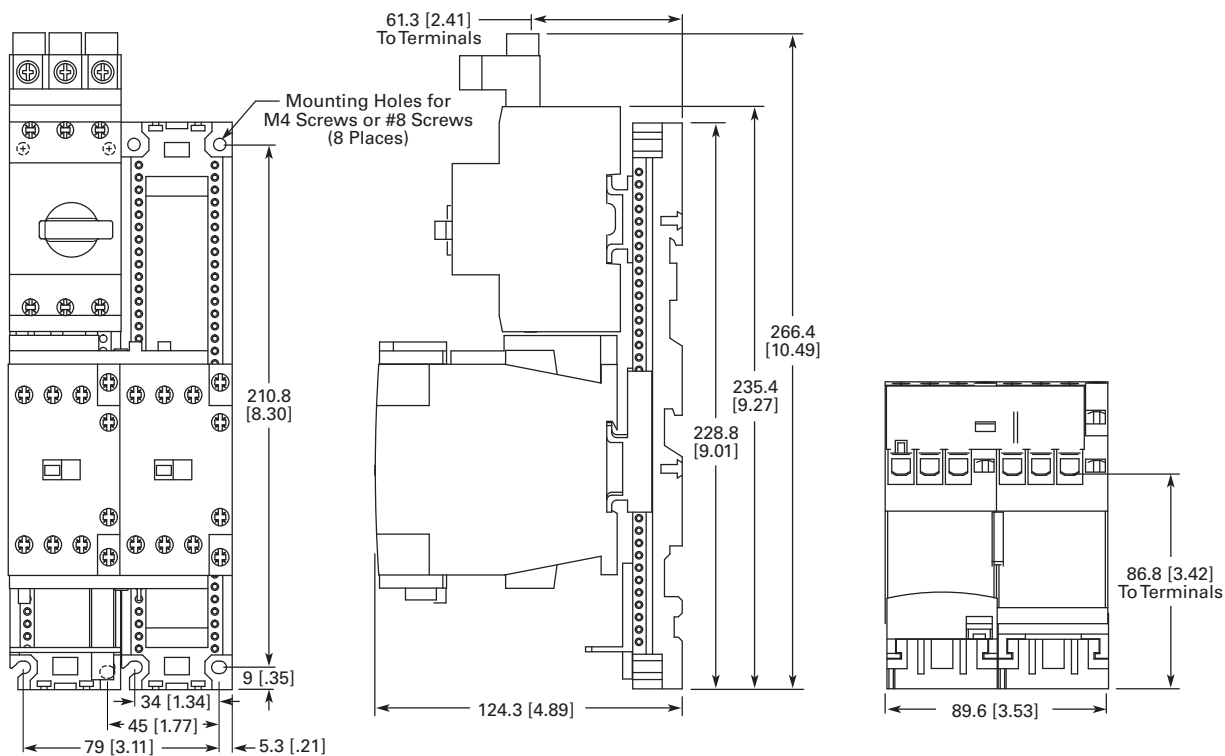
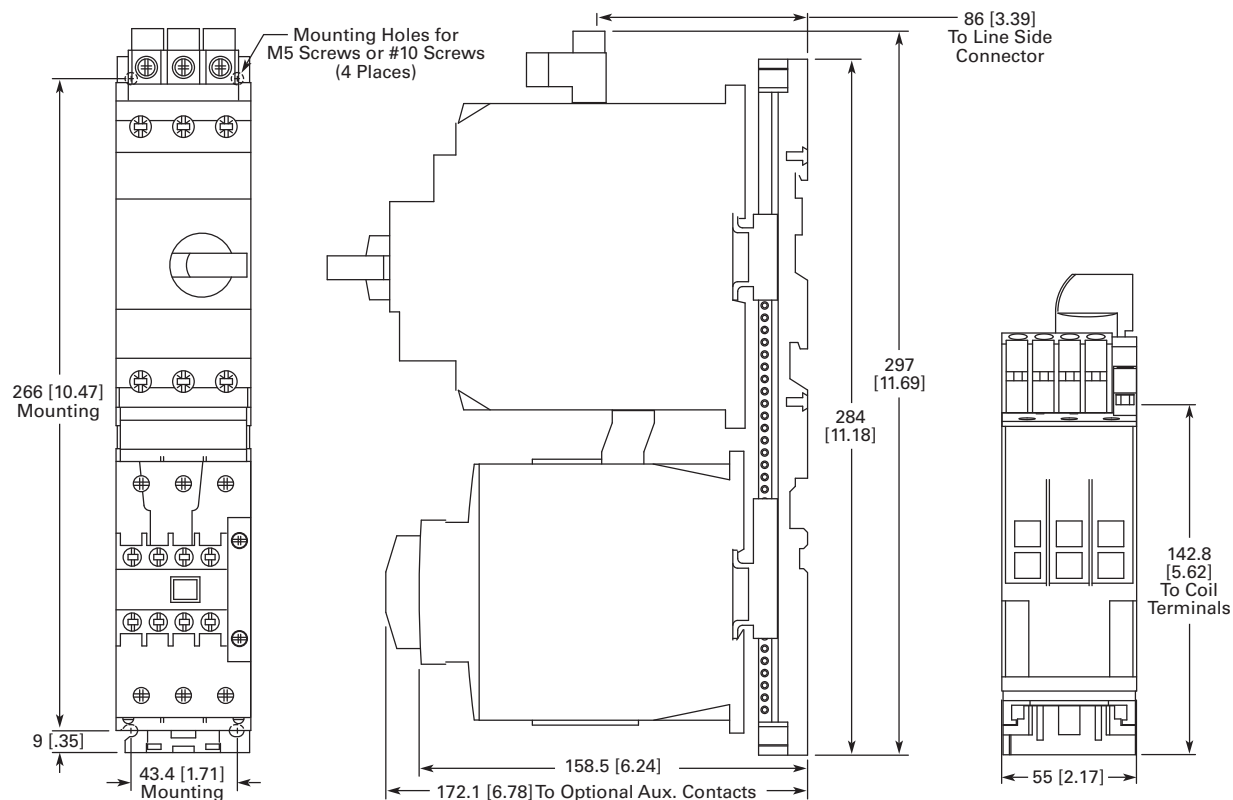
Approximate Dimensions in mm [in]

**XTSC...DD\_****XTFC...BB\_**

Approximate Dimensions in mm [in]

**XTFR...BB\_****XTFC...BC\_**

Approximate Dimensions in mm [in]

**XTFR...BC\_****XTFC...DD\_**

**XT Electronic Manual Motor Protector****XT Electronic Manual Motor Protector****Product Description**

The **XT** Electronic Manual Motor Protector provides the same functionality as the **XT** thermal manual motor protector, but with an added level of flexibility and selectability. The XTPE incorporates electronic control technology to enable more options and larger dial setting ranges. The trip units are interchangeable, allowing users to exchange as needed using the same base. The reduced number of part numbers decreases bill of material complexity while reducing inventory demands. The XTPE electronic manual motor protector includes the following features:

- 4:1 max to min overcurrent dial setting range
- Selectable trip class (5, 10, 15, 20)
- Interchangeable trip units
- Three base units (12, 32 and 65A)
- Common accessories with the XTPR

**Features and Benefits****Advanced Trip Unit**

In addition to the selectability, the XTPE is also available with an advanced trip unit that can communicate system data and protector data thru SmartWire-DT. SmartWire-DT is an innovative cost effective connection technology that enables quick installation of control wiring to the starter through a single green cable. When on SmartWire-DT, the XTPE can communicate the following:

- Current Values
  - Maximum phase current
  - Overload warning

**Contents****Description**

|                                                 | <b>Page</b>      |
|-------------------------------------------------|------------------|
| Relays and Timers .....                         | <b>V5-T1-3</b>   |
| Miniature Controls .....                        | <b>V5-T1-18</b>  |
| Contactors and Starters .....                   | <b>V5-T1-35</b>  |
| Thermal Overload Relays .....                   | <b>V5-T1-128</b> |
| C440/ <b>XT</b> Electronic Overload Relay ..... | <b>V5-T1-141</b> |
| Manual Motor Protectors .....                   | <b>V5-T1-157</b> |
| Combination Motor Controllers .....             | <b>V5-T1-191</b> |
| <b>XT</b> Electronic Manual Motor Protector     |                  |
| Catalog Number Selection .....                  | <b>V5-T1-218</b> |
| Product Selection .....                         | <b>V5-T1-219</b> |
| Accessories .....                               | <b>V5-T1-221</b> |
| Technical Data and Specifications .....         | <b>V5-T1-227</b> |
| Dimensions .....                                | <b>V5-T1-229</b> |
| EMS—Electronic Motor Starter .....              | <b>V5-T1-230</b> |
| <b>XT</b> DC Contactors .....                   | <b>V5-T1-232</b> |
| Reference Data .....                            | <b>V5-T1-234</b> |

**Standards and Certifications**

- CE approved
- UL Listed File No. E36332
- UL 508 group motor and Type E
- IEC/EN 60947
- CSA File 012528, Class 3211-05



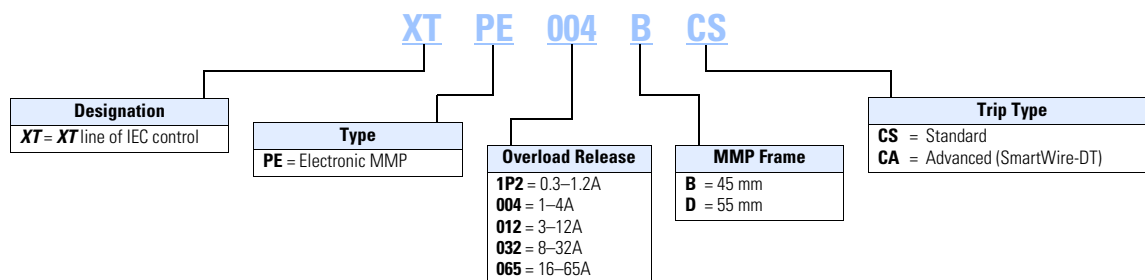
- Diagnostics Data
  - Overload fault
  - Cause of trip (overcurrent or short circuit)
  - Phase loss
  - Trip via TEST
- Status Messages
  - Control unit type
  - Overload setting
  - Time-lag
  - Switching status

**XTPE Electronic MMP**

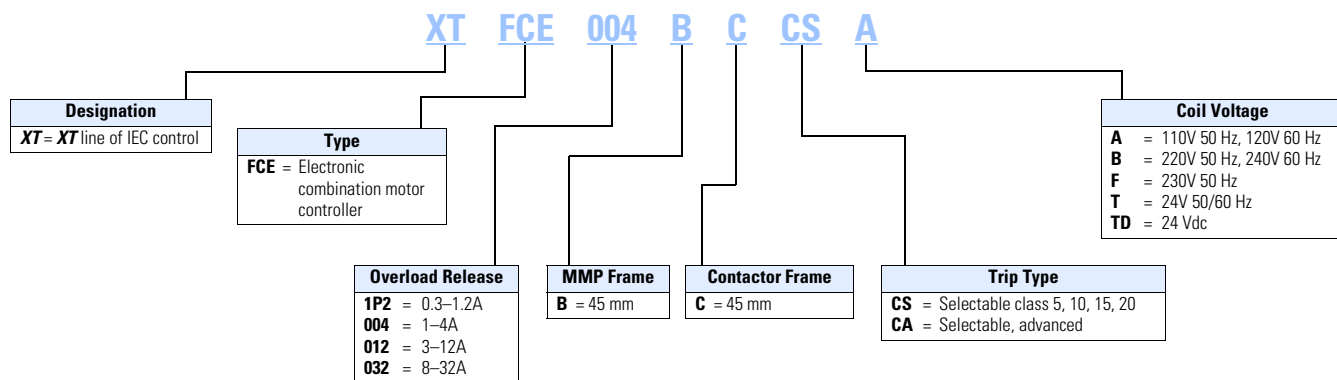
The XTPE Electronic MMP provides the selectability, control, and insight options that give panel builders and OEMs the solutions necessary to enhance motor control designs while reducing total costs.

## Catalog Number Selection

## XT—Manual Motor Protector



## XT—Combinations



## Product Selection

## XT Electronic Manual Motor Protector

## B Frame

## MMP Base



| Maximum Amperage | UL/CSA<br>Maximum Three-Phase hp Ratings |      |      |      | IEC<br>Maximum Motor kW Ratings |                      |      |      |              | Base Unit   |                |
|------------------|------------------------------------------|------|------|------|---------------------------------|----------------------|------|------|--------------|-------------|----------------|
|                  | 200V                                     | 240V | 480V | 600V | 220V<br>230V<br>240V            | 380V<br>400V<br>415V | 440V | 500V | 600V<br>690V | Type Number | Catalog Number |
| 12               | 3                                        | 3    | 7.5  | 10   | 3                               | 5.5                  | 5.5  | 5.5  | 7.5          | PKE12       | XTPE012B       |
| 32               | 5                                        | 7.5  | 15   | 20   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE32       | XTPE032B       |
| 65               | 15                                       | 15   | 40   | 40   | 18.5                            | 30                   | 37   | 45   | 55           | PKE65       | XTPE065D       |

## B Frame

## MMP Trip Units



| Overload Release Setting Amp Range | For Use with Base Catalog Number | UL/CSA<br>Maximum Three-Phase hp Ratings |      |      |      | IEC<br>Maximum Motor kW Ratings |                      |      |      |              | Trip Unit   |                |
|------------------------------------|----------------------------------|------------------------------------------|------|------|------|---------------------------------|----------------------|------|------|--------------|-------------|----------------|
|                                    |                                  | 200V                                     | 240V | 480V | 600V | 220V<br>230V<br>240V            | 380V<br>400V<br>415V | 440V | 500V | 600V<br>690V | Type Number | Catalog Number |
| 0.3–1.2                            | XTPE012B                         | ①                                        | ①    | 0.5  | 0.5  | 0.18                            | 0.37                 | 0.37 | 0.37 | 0.75         | PKE-XTU-1,2 | XTPEXT012B     |
| 1–4                                | XTPE012B                         | 0.75                                     | 0.75 | 2    | 3    | 0.75                            | 1.5                  | 1.5  | 2.2  | 3            | PKE-XTU-4   | XTPEXT004B     |
| 3–12                               | XTPE012B<br>XTPE032B             | 3                                        | 3    | 7.5  | 10   | 3                               | 5.5                  | 5.5  | 5.5  | 7.5          | PKE-XTU-12  | XTPEXT012B     |
| 8–32                               | XTPE032B                         | 5                                        | 7.5  | 15   | 20   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE-XTU-32  | XTPEXT032B     |
| 8–32                               | XTPE065D                         | 7.5                                      | 7.5  | 20   | 25   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE-XTUW-32 | XTPEXT032D     |
| 16–65                              | XTPE065D                         | 15                                       | 15   | 40   | 40   | 18.5                            | 30                   | 37   | 45   | 55           | PKE-XTU-65  | XTPEXT065D     |

## B Frame

## MMP Advanced Trip Units Used with SmartWire-DT



| Overload Release Setting Amp Range | For Use with Base Catalog Number | UL/CSA<br>Maximum Three-Phase hp Ratings |      |      |      | IEC<br>Maximum Motor kW Ratings |                      |      |      |              | Trip Unit    |                |
|------------------------------------|----------------------------------|------------------------------------------|------|------|------|---------------------------------|----------------------|------|------|--------------|--------------|----------------|
|                                    |                                  | 200V                                     | 240V | 480V | 600V | 220V<br>230V<br>240V            | 380V<br>400V<br>415V | 440V | 500V | 600V<br>690V | Type Number  | Catalog Number |
| 0.3–1.2                            | XTPE012B                         | ①                                        | ①    | 0.5  | 0.5  | 0.18                            | 0.37                 | 0.37 | 0.37 | 0.75         | PKE-XTUA-1,2 | XTPEXTA012B    |
| 1–4                                | XTPE012B                         | 0.75                                     | 0.75 | 2    | 3    | 0.75                            | 1.5                  | 1.5  | 2.2  | 3            | PKE-XTUA-4   | XTPEXTA004B    |
| 3–12                               | XTPE012B<br>XTPE032B             | 3                                        | 3    | 7.5  | 10   | 3                               | 5.5                  | 5.5  | 5.5  | 7.5          | PKE-XTUA-12  | XTPEXTA012B    |
| 8–32                               | XTPE032B                         | 5                                        | 7.5  | 15   | 20   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE-XTUA-32  | XTPEXTA032B    |
| 8–32                               | XTPE065D                         | 7.5                                      | 7.5  | 20   | 25   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE-XTUWA-32 | XTPEXTA032D    |
| 16–65                              | XTPE065D                         | 15                                       | 15   | 40   | 40   | 18.5                            | 30                   | 37   | 45   | 55           | PKE-XTUA-65  | XTPEXTA065D    |

## D Frame

## MMP Complete Assembly



| Overload Release Setting Amp Range | UL/CSA<br>Maximum Three-Phase hp Ratings |      |      |      | IEC<br>Maximum Motor kW Ratings |                      |      |      |              | Complete Manual Motor Protector |                |
|------------------------------------|------------------------------------------|------|------|------|---------------------------------|----------------------|------|------|--------------|---------------------------------|----------------|
|                                    | 200V                                     | 240V | 480V | 600V | 220V<br>230V<br>240V            | 380V<br>400V<br>415V | 440V | 500V | 600V<br>690V | Type Number                     | Catalog Number |
| 0.3–1.2                            | ①                                        | ①    | 0.5  | 0.5  | 0.18                            | 0.37                 | 0.37 | 0.37 | 0.75         | PKE12/XTU-1,2                   | XTPE1P2BCS     |
| 1–4                                | 0.75                                     | 0.75 | 2    | 3    | 0.75                            | 1.5                  | 1.5  | 2.2  | 3            | PKE12/XTU-4                     | XTPE004BCS     |
| 3–12                               | 3                                        | 3    | 7.5  | 10   | 3                               | 5.5                  | 5.5  | 5.5  | 7.5          | PKE12/XTU-12                    | XTPE012BCS     |
| 8–32                               | 5                                        | 7.5  | 15   | 20   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE32/XTU-32                    | XTPE032BCS     |
| 8–32                               | 7.5                                      | 7.5  | 20   | 25   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE65/XTUW-32                   | XTPE032DCS     |
| 16–65                              | 15                                       | 15   | 40   | 40   | 18.5                            | 30                   | 37   | 45   | 55           | PKE65/XTU-65                    | XTPE065DCS     |

## Note

① In this range, calculate motor rating according to rated current. Specified values to NEC 430.6 (A) (1).

## B Frame

## MMP Used with SmartWire-DT—Complete Assembly



| Overload Release Setting<br>Amp Range | UL/CSA<br>Maximum Motor hp Ratings |      |      |      | IEC<br>Maximum Motor kW Ratings |                      |      |      |              | Complete Manual Motor Protector |                |
|---------------------------------------|------------------------------------|------|------|------|---------------------------------|----------------------|------|------|--------------|---------------------------------|----------------|
|                                       |                                    |      |      |      |                                 |                      |      |      |              | Type Number                     | Catalog Number |
|                                       | 200V                               | 230V | 460V | 575V | 220V<br>230V<br>240V            | 380V<br>400V<br>415V | 440V | 500V | 600V<br>690V |                                 |                |
| 0.3–1.2                               | ①                                  | ①    | 0.5  | 0.5  | 0.18                            | 0.37                 | 0.37 | 0.37 | 0.75         | PKE12/XTUA-1,2                  | XTPE1P2BCA     |
| 1–4                                   | 0.75                               | 0.75 | 2    | 3    | 0.75                            | 1.5                  | 1.5  | 2.2  | 3            | PKE12/XTUA-4                    | XTPE004BCA     |
| 3–12                                  | 3                                  | 3    | 7.5  | 10   | 3                               | 5.5                  | 5.5  | 5.5  | 7.5          | PKE12/XTUA-12                   | XTPE012BCA     |
| 8–32                                  | 5                                  | 7.5  | 15   | 20   | 7.5                             | 15                   | 15   | 18.5 | 30           | PKE32/XTUA-32                   | XTPE032BCA     |

## UL 508 Type E XT Electronic Combination Motor Controllers—Complete Assembly Including Trip Unit

## B Frame

## B Frame Electronic MMP with C Frame Contactor



| Overload<br>Release Setting<br>Amp Range | UL/CSA<br>Maximum Three-Phase hp Ratings |      |               |               |               | Maximum Single-Phase hp Ratings |      |      | Catalog Number<br>Standard | Catalog Number<br>With SmartWire-DT |
|------------------------------------------|------------------------------------------|------|---------------|---------------|---------------|---------------------------------|------|------|----------------------------|-------------------------------------|
|                                          | 200V                                     | 240V | 380V/<br>415V | 480V/<br>277V | 600V/<br>347V | 115V                            | 200V | 240V |                            |                                     |
|                                          |                                          |      |               |               |               |                                 |      |      |                            |                                     |
| 0.3–1.2                                  | ①                                        | ①    | ①             | ①             | 0.5           | ①                               | ①    | ①    | XTFCE1P2BCCS_③             | XTFCE1P2BCCATD ③                    |
| 1–4                                      | 0.75                                     | 0.75 | 1.5           | 2             | —             | 0.125                           | 0.25 | 0.33 | XTFCE004BCCS_④             | XTFCE004BCCATD ④                    |
| 3–12                                     | 3                                        | 3    | 5             | 7.5           | —             | 0.5                             | 1    | 1.5  | XTFCE012BCCS_④             | XTFCE012BCCATD ④                    |
| 8–32                                     | 5                                        | 5    | 10            | 15            | —             | 1.5                             | 3    | 3    | XTFCE032BCCS_④             | XTFCE032BCCATD ④                    |

## Notes

- ① In this range, calculate motor rating according to rated current. Specified values to NEC 430.6 (A) (1).  
 ② Complete the catalog number by replacing the underscore ( ) with the coil suffix from **Page V5-T1-243**.  
 ③ SCCR: 14 kA, 600 Vac  
 ④ SCCR: 18 kA, 480 Vac

## Accessories

## Auxiliary Contacts

## XTPAXSA\_



## Side-Mount Auxiliary Contacts

| Contact Configuration | Contact Sequence | Pkg. Qty. ① | Screw Terminal Catalog Number |
|-----------------------|------------------|-------------|-------------------------------|
| 1NO-1NC               |                  | 5           | XTPAXSA11                     |
| 1NO-2NC               |                  | 5           | XTPAXSA12                     |
| 2NO-1NC               |                  | 5           | XTPAXSA21                     |

Can be fitted on the right side of manual motor protectors (XTPB, XTPR, XTPM) and manual transformer protectors (XTPT) and can be combined with XTPAXSATR\_ and XTPAXFA\_ trip indicating auxiliary contact.

## XTPAXFA11



## Front-Mount Auxiliary Contacts

| Contact Configuration | Contact Sequence | Pkg. Qty. ① | Screw Terminal Catalog Number |
|-----------------------|------------------|-------------|-------------------------------|
| 1NO-1NC               |                  | 5           | XTPAXFA11                     |

Can be fitted to manual motor protectors (XTPB, XTPR, XTPM) and manual transformer protectors (XTPT). 45 mm (XTPR...B and XTPB) or 55 mm (XTPR...D) widths of manual motor protectors remain unchanged.

**Note**

① Orders must be placed in multiples of package quantity listed.

1

XTPAXSATR\_



## Side-Mount Trip Indicating Auxiliary Contacts

| Contact Configuration | Contact Sequence | Pkg. Qty. ① | For Use with... | Catalog Number |
|-----------------------|------------------|-------------|-----------------|----------------|
| 2 x 1NO               |                  | 2           | XTPE            | XTPAXSATR20    |
| 2 x 1NC               |                  | 2           | XTPE            | XTPAXSATR02    |

Can be fitted on the right side of manual motor protectors. Can be combined with standard auxiliary contacts. Trip indication: A. General trip indication (overload) B. Short-circuit trip. Local short-circuit indication by red indicator, manually resettable.

**Note**

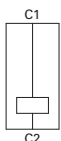
① Orders must be placed in multiples of package quantity listed.

## Additional Accessories

## XTPAXSR\_



## Contact Sequence



## Shunt Release

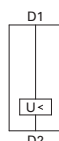
| Pkg. Qty. ① | Screw Terminal Catalog Number |
|-------------|-------------------------------|
| 2           | XTPAXSR24V50H                 |
| 2           | XTPAXSR48V50H                 |
| 2           | XTPAXSR110V50H                |
| 2           | XTPAXSR120V60H                |
| 2           | XTPAXSR208V60H                |
| 2           | XTPAXSR220V50H                |
| 2           | XTPAXSR230V50H                |
| 2           | XTPAXSR240V50H                |
| 2           | XTPAXSR240V60H                |
| 2           | XTPAXSR380V50H                |
| 2           | XTPAXSR400V50H                |
| 2           | XTPAXSR415V50H                |
| 2           | XTPAXSR440V60H                |
| 2           | XTPAXSR480V60H                |
| 2           | XTPAXSR24VDC                  |
| 2           | XTPAXSR48VDC                  |
| 2           | XTPAXSR60VDC                  |
| 2           | XTPAXSR110VDC                 |
| 2           | XTPAXSR125VDC                 |
| 2           | XTPAXSR220VDC                 |
| 2           | XTPAXSR250VDC                 |

Can be used to trip the manual motor protector from a remote location. Can be fitted on the left side of manual motor protectors. Cannot be combined with the XTPAXUVR. DC: Intermittent operation 5 sec.

## XTPAXUVR\_



## Contact Sequence



## Undervoltage Release

| Pkg. Qty. ① | Screw Terminal Catalog Number |
|-------------|-------------------------------|
| 2           | XTPAXUVR24V50H                |
| 2           | XTPAXUVR24V60H                |
| 2           | XTPAXUVR48V50H                |
| 2           | XTPAXUVR60V50H                |
| 2           | XTPAXUVR110V50H               |
| 2           | XTPAXUVR120V60H               |
| 2           | XTPAXUVR208V60H               |
| 2           | XTPAXUVR220V50H               |
| 2           | XTPAXUVR230V50H               |
| 2           | XTPAXUVR240V50H               |
| 2           | XTPAXUVR240V60H               |
| 2           | XTPAXUVR380V50H               |
| 2           | XTPAXUVR400V50H               |
| 2           | XTPAXUVR415V50H               |
| 2           | XTPAXUVR440V60H               |
| 2           | XTPAXUVR480V60H               |
| 2           | XTPAXUVR600V60H               |

Can be used to trip the manual motor protector from a remote location. Can be fitted on left side manual motor protectors. Cannot be combined with XTPAXSR. When combined with a circuit breaker, it can be used as emergency-stop device to IEC/EN 60204.

**Note**

① Orders must be placed in multiples of package quantity listed.

## IP65 Rotary Handle Mechanism ①②③

## XTPAXRHM\_



| Description                                                       | Enclosure Rating     | Pkg. Qty. ④ | Catalog Number      |
|-------------------------------------------------------------------|----------------------|-------------|---------------------|
| <b>Complete Kits—Includes Handle, Shaft and Required Hardware</b> |                      |             |                     |
| Rotary handle mechanism—black ⑤                                   | IP65                 | 1           | <b>XTPEXRHMB</b>    |
| Rotary handle mechanism—red/yellow ⑥                              | NEMA 12<br>UL/CSA 4X | 1           | <b>XTPEXRHMR</b>    |
| Rotary handle mechanism—black—rotated 90° from vertical ⑥         |                      | 1           | <b>XTPEXRHM90B</b>  |
| Rotary handle mechanism—red/yellow—rotated 90° from vertical ⑥    |                      | 1           | <b>XTPEXRHM90RY</b> |

## Three-Phase Commoning Links ⑦

| For Use with... | Qty. MMP | Length of Link (mm) | Unit Width (mm) | Pkg. Qty. ④ | Catalog Number    |
|-----------------|----------|---------------------|-----------------|-------------|-------------------|
|                 | 2        | 90                  | 45              | 10          | <b>XTPAXCLKA2</b> |
|                 | 3        | 135                 | 45              | 10          | <b>XTPAXCLKA3</b> |
|                 | 4        | 180                 | 45              | 10          | <b>XTPAXCLKA4</b> |
|                 | 5        | 225                 | 45              | 10          | <b>XTPAXCLKA5</b> |
|                 | 2        | 99                  | 45 + 9          | 10          | <b>XTPAXCLKB2</b> |
|                 | 3        | 153                 | 45 + 9          | 10          | <b>XTPAXCLKB3</b> |
|                 | 4        | 207                 | 45 + 9          | 10          | <b>XTPAXCLKB4</b> |
|                 | 5        | 261                 | 45 + 9          | 10          | <b>XTPAXCLKB5</b> |
|                 | 2        | 108                 | 45 + 18         | 10          | <b>XTPAXCLKC2</b> |

For parallel power feed to several manual motor protectors on terminals 1, 3 and 5.

## XTPAXUTS



## Shroud for Unused Terminals of Three-Phase Commoning Links

| For Use with... | Description                                                                                | Pkg. Qty. ④ | Catalog Number  |
|-----------------|--------------------------------------------------------------------------------------------|-------------|-----------------|
| Frame B<br>XTPE | To cover unused terminals on three-phase commoning link. Protected against direct contact. | 20          | <b>XTPAXUTS</b> |

## XTPAXIT



## Incoming Terminals for Three-Phase Commoning Link ⑧

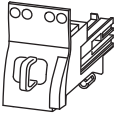
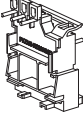
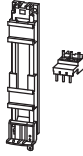
| For Use with... | Pkg. Qty. ④ | Catalog Number |
|-----------------|-------------|----------------|
| Frame B XTPE    | 5           | <b>XTPAXIT</b> |

## Notes

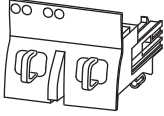
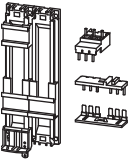
- ① Plug-in connection shafts, XTPAXRHMSFT\_ can be cut to desired length for mounting depths of 100–240 mm. Carrier with extension shaft included.
- ② With ON/OFF switch position and “+” (tripped), lockable with 3 padlocks, 4–8 mm hasp. Can be locked in the OFF position, if required.
- ③ Rotary handle mechanisms ship with door interlock disabled. See instruction publication with product for how to enable door interlock.
- ④ Orders must be placed in multiples of package quantity listed.
- ⑤ For use on main switches to IEC/EN 60204.
- ⑥ For use on main switches with emergency-stop function to IEC/EN 60204.
- ⑦ Protected against accidental contact. Frame B short-circuit proof  $U_b = 690V$ ,  $I_u = 63A$ . Frame B links can be combined by rotating mounting.
- ⑧ For three-phase commoning link, protected against accidental contact,  $U_b = 690V$ ,  $I_u = 63A$ ;  
For conductor cross-sections: 2.5–25 mm<sup>2</sup> stranded; 2.5–16 mm<sup>2</sup> flexible with ferrules, AWG 14–6.

## Combination Connection Kits

## Non-Reversing Starters

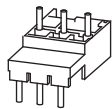
|                                                                                                       | For Use with...     | Description/Comprised of ...                                                                                                                                                               | Std.<br>Pack <sup>①</sup> | Catalog Number   |
|-------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------|
| <b>XTPAXTPCB</b><br> | XTPR...B + XTCE...B | Mechanical connection element for XTPR...B and contactor                                                                                                                                   | 1                         | <b>XTPAXTPCB</b> |
|                                                                                                       |                     | Main current wiring between XTPR...B and contactor in toolless plug connection                                                                                                             | 1                         |                  |
|                                                                                                       |                     | Use contactor auxiliary switch XTCEXFAT... Control cable guidance: max. six cables up to 2.5 mm <sup>2</sup> external diameter or four cables up to 3.5 mm <sup>2</sup> external diameter. |                           |                  |
| <b>XTPAXEMC_</b><br> | XTPR...B + XTCE...B | Mechanical and electrical connection for XTPR...B and contactor                                                                                                                            | 5                         | <b>XTPAXEMCB</b> |
|                                                                                                       | XTPR...B + XTCE...C |                                                                                                                                                                                            | 5                         | <b>XTPAXEMCC</b> |
| <b>XTPAXTPCD</b><br> | XTPR...D + XTCE...D | DIN rail adapter plate<br>Main current wiring between XTPR and contactor                                                                                                                   | 1                         | <b>XTPAXTPCD</b> |

## Reversing Starters

|                                                                                                          | For Use with...        | Description/Comprised of ...                                                                                                                                                               | Std.<br>Pack <sup>①</sup> | Catalog Number    |
|----------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------|
| <b>XTPAXTPCRB</b><br> | XTPR...B + XTCE...B01_ | Mechanical connection element for XTPR...B and contactor                                                                                                                                   | 1                         | <b>XTPAXTPCRB</b> |
|                                                                                                          |                        | Reversing starter main current wiring in toolless plug connection                                                                                                                          | 1                         |                   |
|                                                                                                          |                        | Control cables for electrical interlocking in toolless plug connection:                                                                                                                    | 1                         |                   |
|                                                                                                          |                        | – K1M: A1–K2M: Z1<br>– K1M: Z1–K2M: A1<br>– K1M: A2–K2M: A2                                                                                                                                |                           |                   |
|                                                                                                          |                        | Cable guidance                                                                                                                                                                             | 1                         |                   |
| <b>XTPAXTPCRC</b><br> | XTPR...B + XTCE...C    | Use contactor auxiliary switch XTCEXFAT... Control cable guidance: max. six cables up to 2.5 mm <sup>2</sup> external diameter or four cables up to 3.5 mm <sup>2</sup> external diameter. |                           | <b>XTPAXTPCRC</b> |
|                                                                                                          |                        | DIN rail adapter plate                                                                                                                                                                     | 1                         |                   |
|                                                                                                          |                        | Reversing starter main current wiring                                                                                                                                                      | 1                         |                   |

## Note

<sup>①</sup> Orders must be placed in multiples of package quantity listed.

**XTPAXECM\_****Electrical Connection Module**

| For Use with...     | Description/Comprised of ...                       | Std. Pack <sup>①</sup> | Catalog Number   |
|---------------------|----------------------------------------------------|------------------------|------------------|
| XTPE...B + XTCE...C | Main current wiring between XTPR...B and contactor | 5                      | <b>XTPAXECMC</b> |

**DIN Rail Adapter Plates****XTPAXTPCPB**

| For Use with... | Description/Comprised of ...                                      | Std. Pack <sup>①</sup> | Catalog Number    |
|-----------------|-------------------------------------------------------------------|------------------------|-------------------|
| XTPAXTPCB       | 45 mm wide adapter plate with one DIN rail                        | 4                      | <b>XTPAXTPCPB</b> |
| XTPAXTPCRB      | Connection element for side-by-side positioning of further plates |                        |                   |

**PKE-SWD-32**

|                          |                                 |   |                   |
|--------------------------|---------------------------------|---|-------------------|
| XTPE...B + XTCE...B or C | SmartWire-DT communication link | 1 | <b>PKE-SWD-32</b> |
|--------------------------|---------------------------------|---|-------------------|

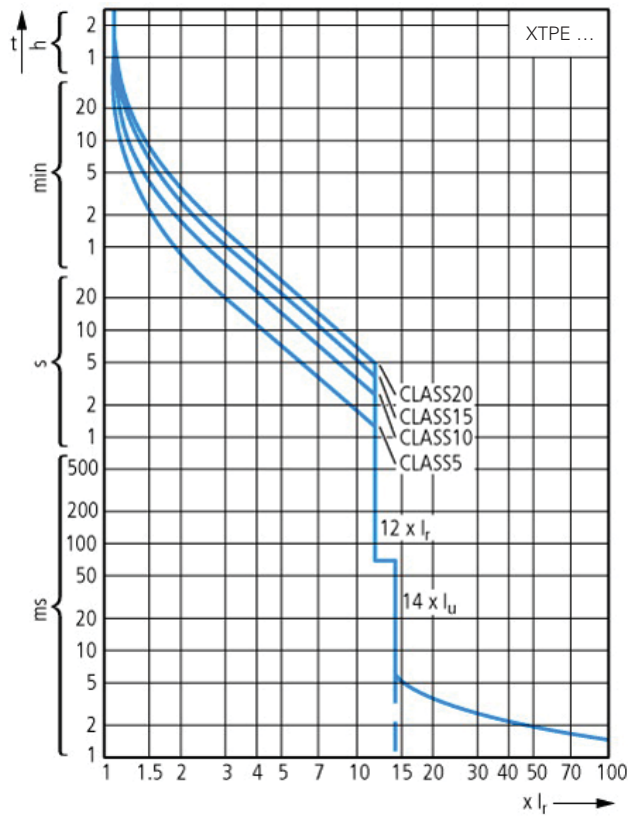
**Note**

<sup>①</sup> Orders must be placed in multiples of package quantity listed.

## Technical Data and Specifications

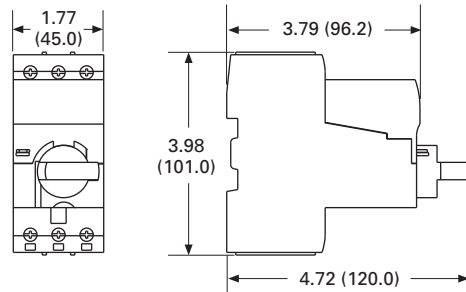
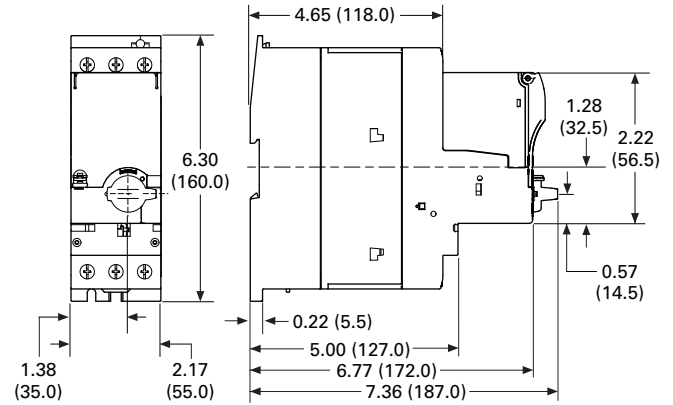
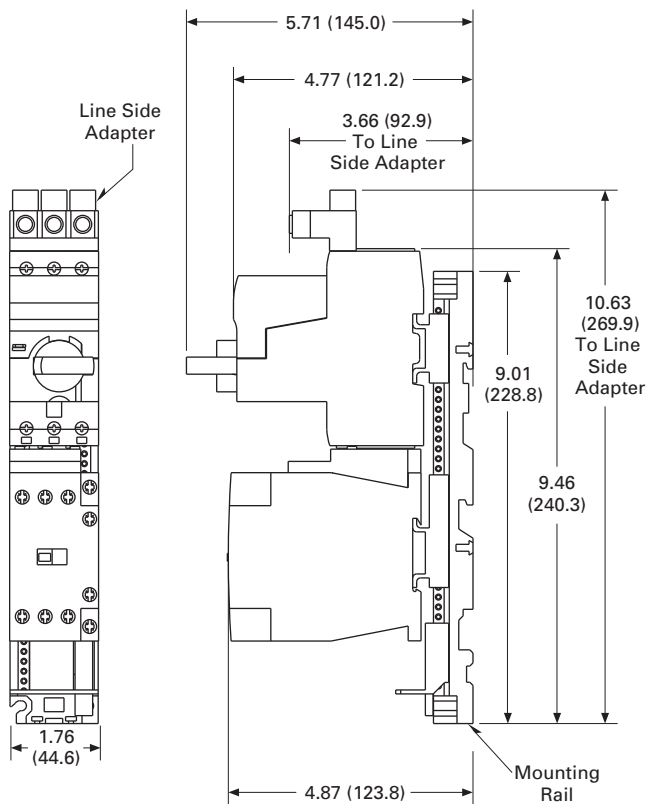
## XT Electronic Manual Motor Controllers

| Description                                                                | Specification                      | XTPE012B                                                    | XTPE032B                                                    | XTPE065D                                                    |
|----------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| <b>General</b>                                                             |                                    |                                                             |                                                             |                                                             |
| Standards and regulations                                                  |                                    | IEC/EN 60947-4-1, VDE 0600, UL 508, CSA C 22.2 No. 14       |                                                             |                                                             |
| Climatic proofing                                                          |                                    | Damp heat, constant, to IEC 60068-2-78                      |                                                             |                                                             |
|                                                                            |                                    | Damp heat, cyclic, to IEC 60068-2-30                        |                                                             |                                                             |
| Ambient temperature                                                        |                                    |                                                             |                                                             |                                                             |
| Storage                                                                    |                                    | –40° to 80°C                                                | –40° to 80°C                                                | –40° to 80°C                                                |
| Open                                                                       |                                    | –25° to 55°C                                                | –25° to 55°C                                                | –25° to 55°C                                                |
| Enclosed                                                                   |                                    | –25° to 40°C                                                | –25° to 40°C                                                | –25° to 40°C                                                |
| Direction of incoming supply                                               |                                    | Any                                                         | Any                                                         | Any                                                         |
| Degree of protection                                                       | Device                             | IP20                                                        | IP20                                                        | IP20                                                        |
|                                                                            | Terminals                          | IP00                                                        | IP00                                                        | IP00                                                        |
| Touch protection                                                           |                                    |                                                             |                                                             |                                                             |
| Mechanical shock resistance half-sinusoidal shock, 10 ms to IEC 60068-2-27 |                                    | 25g                                                         | 25g                                                         | 25g                                                         |
| Altitude                                                                   |                                    | Max. 2000m                                                  | Max. 2000m                                                  | Max. 2000m                                                  |
| <b>Conductor Cross-Sections</b>                                            |                                    |                                                             |                                                             |                                                             |
| Screw terminals                                                            | Solid                              | 1 x (1–6) mm <sup>2</sup>                                   | 1 x (1–6) mm <sup>2</sup>                                   | 1 x (0.75–16) mm <sup>2</sup>                               |
|                                                                            |                                    | 2 x (1–6) mm <sup>2</sup>                                   | 2 x (1–6) mm <sup>2</sup>                                   | 2 x (0.75–16) mm <sup>2</sup>                               |
|                                                                            | Stranded with ferrule to DIN 46228 | 1 x (1–6) mm <sup>2</sup>                                   | 1 x (1–6) mm <sup>2</sup>                                   | 1 x (0.75–35) mm <sup>2</sup>                               |
|                                                                            |                                    | 2 x (1–6) mm <sup>2</sup>                                   | 2 x (1–6) mm <sup>2</sup>                                   | 2 x (0.75–25) mm <sup>2</sup>                               |
|                                                                            | Solid or stranded                  | 18–10 AWG                                                   | 18–10 AWG                                                   | 14–2 AWG                                                    |
| <b>Screw Terminal Tightening Torque</b>                                    |                                    |                                                             |                                                             |                                                             |
| Main conductor                                                             |                                    | 1.7 Nm                                                      | 1.7 Nm                                                      | 3.3 Nm                                                      |
| Auxiliary conductor                                                        |                                    | 1 Nm                                                        | 1 Nm                                                        | 1 Nm                                                        |
| <b>Main Circuit</b>                                                        |                                    |                                                             |                                                             |                                                             |
| Rated impulse withstand voltage                                            | U <sub>mp</sub>                    | 6,000 Vac                                                   | 6,000 Vac                                                   | 6,000 Vac                                                   |
| Overvoltage category/pollution degree                                      |                                    | III/3                                                       | III/3                                                       | III/3                                                       |
| Rated operational voltage                                                  | U <sub>e</sub>                     | 690V                                                        | 690V                                                        | 690V                                                        |
| Rated uninterrupted current = rated output current                         | I <sub>u</sub> = I <sub>e</sub>    | 12A                                                         | 32A                                                         | 65A                                                         |
| Rated frequency                                                            |                                    | 40–60 Hz                                                    | 40–60 Hz                                                    | 40–60 Hz                                                    |
| Current heating losses (three-pole at operating temperature)               |                                    | 6W                                                          | 6W                                                          | 6W                                                          |
| Lifespan, mechanical                                                       | Operations                         | 0.05 x 10 <sup>6</sup>                                      | 0.05 x 10 <sup>6</sup>                                      | 0.05 x 10 <sup>6</sup>                                      |
| Lifespan, electrical (AC-3 at 400V)                                        | Operations                         | 0.05 x 10 <sup>6</sup>                                      | 0.05 x 10 <sup>6</sup>                                      | 0.05 x 10 <sup>6</sup>                                      |
| Maximum operating frequency                                                | Operations/h                       | 60                                                          | 60                                                          | 60                                                          |
| <b>Short-Circuit Rating</b>                                                |                                    |                                                             |                                                             |                                                             |
| Motor switching capacity AC                                                | AC-3 up to 690V                    | 12A                                                         | 32A                                                         | 65A                                                         |
| <b>Trip Unit</b>                                                           |                                    |                                                             |                                                             |                                                             |
| Temperature compensation to IEC/EN 60947, VDE 0660                         |                                    | –5° to 40°C                                                 | –5° to 40°C                                                 | –5° to 40°C                                                 |
| Operating range                                                            |                                    | –25° to 55°C                                                | –25° to 55°C                                                | –25° to 55°C                                                |
| Temperature compensation residual error for T > 40°C                       |                                    | ≤0.1%/K                                                     | ≤0.1%/K                                                     | ≤0.1%/K                                                     |
| Overload release setting range                                             |                                    | 0.25–1 x I <sub>u</sub>                                     | 0.25–1 x I <sub>u</sub>                                     | 0.25–1 x I <sub>u</sub>                                     |
| Fixed short-circuit trip setting                                           |                                    | 12 x I <sub>f</sub> (trip unit), 14 x I <sub>u</sub> (base) | 12 x I <sub>f</sub> (trip unit), 14 x I <sub>u</sub> (base) | 12 x I <sub>f</sub> (trip unit), 14 x I <sub>u</sub> (base) |
| Short circuit release tolerance                                            |                                    | ±20%                                                        | ±20%                                                        | ±20%                                                        |
| Phase failure sensitivity                                                  |                                    | Yes                                                         | Yes                                                         | Yes                                                         |

**Trip Characteristics****XT Electronic Manual Motor Controllers**

**Dimensions**

Approximate Dimensions in Inches (mm)

**XT Electronic MMP—B Frame****XT Electronic MMP—D Frame****XT Electronic CMC With C Frame Contactor**

## EMS—Electronic Motor Starter



## EMS—Electronic Motor Starter

## Product Description

The electronic motor starter (EMS) is the latest technology in safe and efficient motor starting from Eaton's Electrical Sector. The EMS is a full starter with built-in solid-state contacts and integral overload protection. Its compact size and high-electrical life make it an ideal replacement for the traditional contactor/overload relay starter configuration.

## Applications

A versatile solution, the EMS also supports the following installation applications:

- Logistics
- Conveyor control
- Production machines
- Tooling machines
- Packaging machines
- Small elevators

## Contents

## Description

| Description                          | Page      |
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| Miniature Controls                   | V5-T1-18  |
| Contactors and Starters              | V5-T1-35  |
| Thermal Overload Relays              | V5-T1-128 |
| C440/XT Electronic Overload Relay    | V5-T1-141 |
| Manual Motor Protectors              | V5-T1-157 |
| Combination Motor Controllers        | V5-T1-191 |
| XT Electronic Manual Motor Protector |           |
| Catalog Number Selection             | V5-T1-218 |
| Product Selection                    | V5-T1-219 |
| Accessories                          | V5-T1-221 |
| Technical Data and Specifications    | V5-T1-227 |
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| EMS—Electronic Motor Starter         | V5-T1-230 |
| XT DC Contactors                     | V5-T1-232 |
| Reference Data                       | V5-T1-234 |

## Features and Benefits

## Multifunctional

The EMS comes with an optional reversing start feature, eliminating the need for an additional contactor. The optional E-stop functionality eliminates the need for a separate E-stop contactor.

## Extended Life

High-electrical life provides up to 30 million operations. The EMS is ideal for customer applications requiring multiple motor start/stops per hour.

## Easy Installation

The EMS comes equipped with push-in terminals for quick and easy wiring of power and control circuits. Push-in terminals provide 60% time savings over screw-in terminals and better contact against vibrations.

## Standards and Certifications

## Safety Rated

Functional safety is growing in importance for the machinery OEM. The EMS is rated at SIL3 per IEC 62061 and PLe per ISO® 13849, meeting the most stringent of safety requirements.

The EMS carries IEC and UL short-circuit ratings, with 100 kAIC UL short-circuit rating when mated with 30 A Class J fuse.

- UL



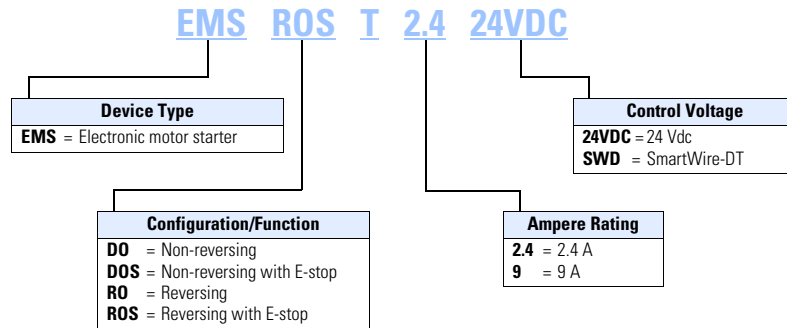
**Panel with four traditional starters installed:**  
FVNR, FVR, FVNR with E-stop and FVR with E-stop



**Identical panel with four EMS starters installed, producing the same functionality**

## Catalog Number Selection

## EMS—Electronic Motor Starter



## Product Selection

EMS—



## EMS—Electronic Motor Starters

| Function                   | Current Range<br>AC-51a (A) | Current Range<br>AC-53a (A) | Motor Rating AC-53a<br>380 V, 400 V, 415 V (kW) | Catalog Number      |
|----------------------------|-----------------------------|-----------------------------|-------------------------------------------------|---------------------|
| Non-reversing              | 0.18–2.4                    | 0.18–2.4                    | 0.06–0.75                                       | EMS-DO-T-2.4-24VDC  |
| Reversing                  | 0.18–2.4                    | 0.18–2.4                    | 0.06–0.75                                       | EMS-RO-T-2.4-24VDC  |
| Non-reversing, with E-stop | 0.18–2.4                    | 0.18–2.4                    | 0.06–0.75                                       | EMS-DOS-T-2.4-24VDC |
| Reversing, with E-stop     | 0.18–2.4                    | 0.18–2.4                    | 0.06–0.75                                       | EMS-ROS-T-2.4-24VDC |
| Non-reversing              | 1.5–9                       | 1.5–6.5                     | 0.55–3.0                                        | EMS-DO-T-9-24VDC    |
| Reversing                  | 1.5–9                       | 1.5–6.5                     | 0.55–3.0                                        | EMS-RO-T-9-24VDC    |
| Non-reversing, with E-stop | 1.5–9                       | 1.5–6.5                     | 0.55–3.0                                        | EMS-DOS-T-9-24VDC   |
| Reversing, with E-stop     | 1.5–9                       | 1.5–6.5                     | 0.55–3.0                                        | EMS-ROS-T-9-24VDC   |

EMS-DOS-...,  
EMS-ROS-...

## EMS with SmartWire-DT

Electronic Motor Starters with SmartWire-DT built in do not require a separate module for connection to the SmartWire-DT network. Connection is made directly to the SmartWire-DT flat cable.

| Description                                                                                                                                                              | Max. Equivalent hp Rating for Three-Phase Motors, 60 Hz |        |            |            | Setting Range of Overload Releases<br>$I_r$<br>A | DC Operation<br>24 Vdc<br>Catalog Number |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------|------------|------------|--------------------------------------------------|------------------------------------------|
|                                                                                                                                                                          | 208 V                                                   | 480 V  | AC1        | AC3        |                                                  |                                          |
| DOL starting,<br>Motor protection,<br>For connecting to SmartWire-DT.<br>Circuit design: Safety output stage with bypass,<br>three-phase disconnect.                     | —<br>2                                                  | 1<br>5 | 2.4<br>9.0 | 2.4<br>7.6 | 0.18–2.4<br>1.5–9<br>7 (AC–53a)                  | EMS-DO-T-2.4-SWD<br>EMS-DO-T-9-SWD       |
| DOL starting,<br>Motor protection,<br>Emergency-stop actuator.<br>Circuit design: Safety output stage with bypass,<br>three-phase disconnect.                            | —<br>2                                                  | 1<br>5 | 2.4<br>9.0 | 2.4<br>7.6 | 0.18–2.4<br>1.5–9<br>7 (AC–53a)                  | EMS-DOS-T-2.4-SWD ①<br>EMS-DOS-T-9-SWD ① |
| DOL starting,<br>Reversing start,<br>Motor protection,<br>For connecting to SmartWire-DT.<br>Circuit design: Safety output stage with bypass,<br>three-phase disconnect. | —<br>2                                                  | 1<br>5 | 2.4<br>9.0 | 2.4<br>7.6 | 0.18–2.4<br>1.5–9<br>7 (AC–53a)                  | EMS-RO-T-2.4-SWD<br>EMS-RO-T-9-SWD       |
| DOL starting,<br>Reversing start,<br>Motor protection,<br>Emergency-stop actuator.<br>Circuit design: Safety output stage with bypass,<br>three-phase disconnect.        | —<br>2                                                  | 1<br>5 | 2.4<br>9.0 | 2.4<br>7.6 | 0.18–2.4<br>1.5–9<br>7 (AC–53a)                  | EMS-ROS-T-2.4-SWD ①<br>EMS-ROS-T-9-SWD ① |

## Note

① EMS-DOS and EMS-ROS starters with emergency stop function have an additional terminal that needs to be connected to 0 V / 24 Vdc to provide an enable signal. (This is in addition to the SmartWire-DT signal.) Actuation of an E-stop will interrupt the 0 V / 24 Vdc connection and also override the SmartWire-DT signal.

## XT DC Contactors



## XT DC Contactors

## Product Description

The **XT** DC contactors for the current range 300 A to 600 A can be used in a variety of applications. The proven hybrid technology ensures a long life span of the devices. Compared to similar DC contactors, Eaton contactors are characterized by much higher electrical switching cycles. This makes the **XT** DC contactors a maintenance-free and reliable part of any machine or system.

## Application Description

Best suited for a breadth of DC non-motor applications that require frequent switching or switching under load:

- Solar energy
- Energy storage
- Railway transportation
- Automotive infrastructure
- Marine and offshore DC
- DC-grids
- Testing equipment

## Contents

## Description

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| Contactors and Starters . . . . .                   | <b>V5-T1-35</b>  |
| Thermal Overload Relays . . . . .                   | <b>V5-T1-128</b> |
| C440/ <b>XT</b> Electronic Overload Relay . . . . . | <b>V5-T1-141</b> |
| Manual Motor Protectors . . . . .                   | <b>V5-T1-157</b> |
| Combination Motor Controllers . . . . .             | <b>V5-T1-191</b> |
| <b>XT</b> Electronic Manual Motor Protector         |                  |
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| <b>XT</b> DC Contactors . . . . .                   | <b>V5-T1-232</b> |
| Reference Data . . . . .                            | <b>V5-T1-234</b> |

## Features and Benefits

## Maintenance Free

The **XT** DC contactors hybrid switching technology allows for nearly arc-free switching under load and an electrical life of 150,000 operations—the best in the industry by 6x. This feature greatly reduces maintenance cost while extending the life of the device.

## Reliable and Flexible

The contactors feature wide coil range and also direct PLC control, making them suitable for most systems. A wide temperature range of –40 °C to +70 °C allows them to handle any environment and their low coil consumption and switching energy means less heat output than standard DC contactors.

## Space Savings

The contactors are true two-pole units—they are compact, take up less space and do not require series wiring. They also allow bi-directional switching, meaning they are polarity independent.

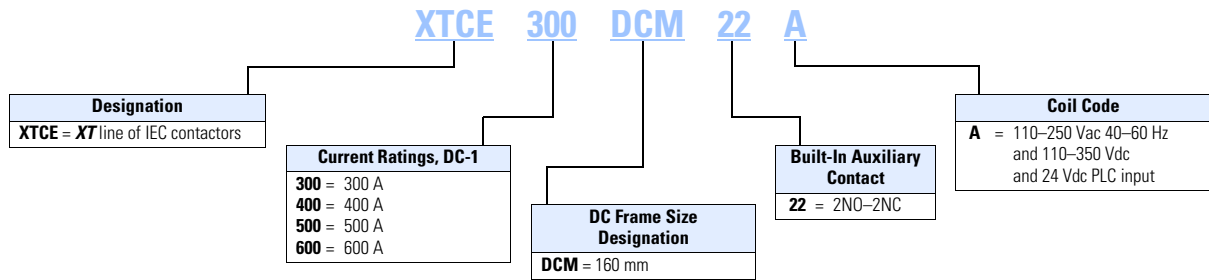
## Standards and Certifications

- CE approved
- UL Listed
- IEC/EN 60947-4-1, 60947-5-1
- CSA File 70044143



## Catalog Number Selection

## XT DC Contactors



## Product Selection

## Frame M DC



## Two-Pole Contactors, Frame M—UL/CSA Ratings

| Thermal Current ( $I_{th}$ )<br>Ampere Rating | Voltage | Article<br>Number | Auxiliary<br>Contacts | Catalog Number <sup>①</sup> |
|-----------------------------------------------|---------|-------------------|-----------------------|-----------------------------|
| 300                                           | 1000    | 183314            | 2NO-2NC               | <b>XTCE300DCM22A</b>        |
| 400                                           | 1000    | 186872            | 2NO-2NC               | <b>XTCE400DCM22A</b>        |
| 500                                           | 1000    | 186873            | 2NO-2NC               | <b>XTCE500DCM22A</b>        |
| 600                                           | 1000    | 183315            | 2NO-2NC               | <b>XTCE600DCM22A</b>        |

**Note**

<sup>①</sup> Does not include lugs.

**Reference Data**

|                                                                     |                  |
|---------------------------------------------------------------------|------------------|
| Type 2 Coordination . . . . .                                       | <b>V5-T1-235</b> |
| Approvals for World Markets . . . . .                               | <b>V5-T1-244</b> |
| IEC Utilization Categories . . . . .                                | <b>V5-T1-247</b> |
| Motor Ratings Data . . . . .                                        | <b>V5-T1-250</b> |
| Ampacities of Insulated Conductors<br>(Based on 2005 NEC) . . . . . | <b>V5-T1-254</b> |

**Type 1 and Type 2 Coordination****What is it?**

The International Electrotechnical Commission (IEC) developed short-circuit performance criteria for contactors and starters called Type 1 coordination and Type 2 coordination. This defines motor controller protection levels following a short-circuit fault. In order to achieve this performance, the combination of a motor controller (contactor or starter) and short-circuit protective device (manual motor protector, circuit breaker or fuse) must meet the following criteria as specified by IEC 60947-4-1—Low voltage switchgear and controlgear—Part 4-1: Contactors and motor-starters—Electromechanical contactors and motor-starters:

**Type 1 Coordination**

Type 1 Coordination requires that under short-circuit conditions, the contactor or starter shall cause no danger to persons or installation and may not be suitable for further service without repair and replacement of parts.

In this case, *significant damage is allowed* to the contactor/starter (for example, contact welding, burning or disintegration) and the overload relay (for example, component harm or heater element burn-out).

**Type 2 Coordination**

Type 2 Coordination requires that under short-circuit conditions, the contactor or starter shall cause no danger to persons or installation and shall be suitable for further use. The risk of contact welding is recognized, in which case the manufacturer shall indicate the measures to be taken as regards to the maintenance of the equipment.

## Type 2 Coordination

## 400, xx415V Type 2 Coordination—MMC

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | MMP<br>Catalog Number | Contactor<br>Catalog Number ② | MMC<br>Catalog Number ② |
|-----------|-----------------------|------------------------|-----------------------|-------------------------------|-------------------------|
| 0.06      | 0.21                  | 50 (150) ①             | XTPRP25BC1            | XTCE007B10_                   | XTSCP25BB_              |
| 0.09      | 0.31                  | 50 (150) ①             | XTPRP40BC1            | XTCE007B10_                   | XTSCP40BB_              |
| 0.12      | 0.41                  | 50 (150) ①             | XTPRP63BC1            | XTCE007B10_                   | XTSCP63BB_              |
| 0.18      | 0.60                  | 50 (150) ①             | XTPRP63BC1            | XTCE007B10_                   | XTSCP63BB_              |
| 0.25      | 0.80                  | 50 (150) ①             | XTPR01BC1             | XTCE007B10_                   | XTSC001BB_              |
| 0.37      | 1.10                  | 50 (150) ①             | XTPR1P6BC1            | XTCE007B10_                   | XTSC1P6BB_              |
| 0.55      | 1.50                  | 50 (150) ①             | XTPR1P6BC1            | XTCE007B10_                   | XTSC1P6BB_              |
| 0.75      | 1.90                  | 50 (150) ①             | XTPR2P5BC1            | XTCE007B10_                   | XTSC2P5BB_              |
| 1.10      | 2.60                  | 50 (150) ①             | XTPR004BC1            | XTCE007B10_                   | XTSC004BB_              |
| 1.50      | 3.60                  | 50 (150) ①             | XTPR004BC1            | XTCE007B10_                   | XTSC004BB_              |
| 2.20      | 5.00                  | 50 (150) ①             | XTPR6P3BC1            | XTCE007B10_                   | XTSC6P3BB_              |
| 3.00      | 6.60                  | 50 (150) ①             | XTPR010BC1            | XTCE018C10_                   | XTSC010BC_              |
| 4.00      | 8.50                  | 50 (150) ①             | XTPR010BC1            | XTCE018C10_                   | XTSC010BC_              |
| 5.50      | 11.3                  | 50                     | XTPR012BC1            | XTCE018C10_                   | XTSC012BC_              |
| 7.50      | 16.0                  | 50                     | XTPR016BC1            | XTCE018C10_                   | XTSC016BC_              |
| 11.0      | 21.7                  | 50                     | XTPR025BC1            | XTCE025C10_                   | XTSC025BC_              |
| 15.0      | 29.3                  | 50                     | XTPR032BC1            | XTCE032C10_                   | XTSC032BC_              |
| 5.50      | 11.3                  | 50                     | XTPR016DC1            | XTCE018C10_                   | XTSC016DC_              |
| 7.50      | 16.0                  | 50                     | XTPR016DC1            | XTCE018C10_                   | XTSC016DC_              |
| 11.0      | 21.7                  | 50                     | XTPR025DC1            | XTCE025C10_                   | XTSC025DC_              |
| 15.0      | 29.3                  | 50                     | XTPR032DC1            | XTCE032C10_                   | XTSC032DC_              |
| 18.5      | 36.0                  | 50                     | XTPR040DC1            | XTCE040D00_                   | XTSC040DD_              |
| 22.0      | 41.0                  | 50                     | XTPR050DC1            | XTCE050D00_                   | XTSC050DD_              |
| 30.0      | 55.0                  | 50                     | XTPR058DC1            | XTCE065D00_                   | XTSC058DD_              |
| 34.0      | 63.0                  | 50                     | XTPR063DC1            | XTCE065D00_                   | XTSC063DD_              |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

① Values in parentheses ( ) are for Type 1 Coordination.

② Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-243**.

## 480V Type 2 Coordination—MMC

| P<br>(hp) | I <sub>e</sub><br>(A) | I <sub>g</sub><br>(kA) | MMP<br>Catalog Number | Current Limiter<br>Catalog Number | Contactor<br>Catalog Number ② | MMC<br>Catalog Number ② |
|-----------|-----------------------|------------------------|-----------------------|-----------------------------------|-------------------------------|-------------------------|
| 1/2       | 0.24                  | 65                     | XTPRP25BC1            | —                                 | XTCE007B10_                   | XTSCP25BB_              |
| 1/2       | 0.32                  | 65                     | XTPRP40BC1            | —                                 | XTCE007B10_                   | XTSCP40BB_              |
| 1/2       | 0.51                  | 65                     | XTPRP63BC1            | —                                 | XTCE007B10_                   | XTSCP63BB_              |
| 1/2       | 0.74                  | 65                     | XTPR001BC1            | —                                 | XTCE007B10_                   | XTSC001BB_              |
| 1/2       | 0.94                  | 65                     | XTPR001BC1            | —                                 | XTCE007B10_                   | XTSC001BB_              |
| 3/4       | 1.32                  | 65                     | XTPR1P6BC1            | —                                 | XTCE007B10_                   | XTSC1P6BB_              |
| 1         | 1.72                  | 65                     | XTPR2P5BC1            | —                                 | XTCE018C10_                   | XTSC2P5BC_              |
| 2         | 2.55                  | 65                     | XTPR004BC1            | —                                 | XTCE018C10_                   | XTSC004BC_              |
| 2         | 3.10                  | 65                     | XTPR004BC1            | —                                 | XTCE018C10_                   | XTSC004BC_              |
| 3         | 4.55                  | 65 (50) ①              | XTPR6P3BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC6P3BC_              |
| 3         | 6.15                  | 65 (50) ①              | XTPR6P3BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC6P3BC_              |
| 7-1/2     | 8.40                  | 65 (50) ①              | XTPR010BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC010BC_              |
| 7-1/2     | 11.0                  | 65 (50) ①              | XTPR012BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC012BC_              |
| 10        | 14.5                  | 65 (50) ①              | XTPR016BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC016BC_              |
| 10        | 20.0                  | 65 (50) ①              | XTPR020BC1            | XTPAXCL                           | XTCE025C10_                   | XTSC020BC_              |
| 20        | 20.0                  | 65                     | XTPR025DC1            | —                                 | XTCE040D00_                   | XTSC025DD_              |
| 25        | 27.0                  | 65                     | XTPR032DC1            | —                                 | XTCE040D00_                   | XTSC032DD_              |
| 25        | 32.0                  | 65                     | XTPR032DC1            | —                                 | XTCE040D00_                   | XTSC032DD_              |
| 30        | 37.5                  | 65                     | XTPR040DC1            | —                                 | XTCE040D00_                   | XTSC040DD_              |
| 40        | 40.5                  | 65                     | XTPR050DC1            | —                                 | XTCE050D00_                   | XTSC050DD_              |
| 40        | 50.5                  | 65                     | XTPR058DC1            | —                                 | XTCE065D00_                   | XTSC058DD_              |
| 40        | 64.0                  | 65                     | XTPR063DC1            | —                                 | XTCE065D00_                   | XTSC063DD_              |

## 600V Type 2 Coordination—MMC

| P<br>(hp) | I <sub>e</sub><br>(A) | I <sub>g</sub><br>(kA) | MMP<br>Catalog Number | Current Limiter<br>Catalog Number | Contactor<br>Catalog Number ② | MMC<br>Catalog Number ② |
|-----------|-----------------------|------------------------|-----------------------|-----------------------------------|-------------------------------|-------------------------|
| 1/2       | 0.19                  | 50                     | XTPRP25BC1            | —                                 | XTCE007B10_                   | XTSCP25BB_              |
| 1/2       | 0.26                  | 50                     | XTPRP40BC1            | —                                 | XTCE007B10_                   | XTSCP40BB_              |
| 1/2       | 0.41                  | 50                     | XTPRP63BC1            | —                                 | XTCE007B10_                   | XTSCP63BB_              |
| 1/2       | 0.59                  | 50                     | XTPRP63BC1            | —                                 | XTCE007B10_                   | XTSCP63BB_              |
| 1/2       | 0.75                  | 50                     | XTPR001BC1            | —                                 | XTCE007B10_                   | XTSC001BB_              |
| 1         | 1.06                  | 50                     | XTPR1P6BC1            | —                                 | XTCE007B10_                   | XTSC1P6BB_              |
| 1         | 1.38                  | 50                     | XTPR1P6BC1            | —                                 | XTCE007B10_                   | XTSC1P6BB_              |
| 1-1/2     | 2.04                  | 50                     | XTPR2P5BC1            | —                                 | XTCE018C10_                   | XTSC2P5BC_              |
| 1-1/2     | 2.48                  | 50                     | XTPR2P5BC1            | —                                 | XTCE018C10_                   | XTSC2P5BC_              |
| 3         | 3.64                  | 50                     | XTPR004BC1            | —                                 | XTCE018C10_                   | XTSC004BC_              |
| 5         | 4.92                  | 50 (18) ①              | XTPR6P3BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC6P3BC_              |
| 10        | 6.72                  | 50 (18) ①              | XTPR010BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC010BC_              |
| 10        | 8.60                  | 50 (18) ①              | XTPR010BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC010BC_              |
| 10        | 11.5                  | 50 (18) ①              | XTPR012BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC012BC_              |
| 10        | 16.0                  | 50 (18) ①              | XTPR016BC1            | XTPAXCL                           | XTCE018C10_                   | XTSC016BC_              |
| 25        | 21.5                  | 50                     | XTPR025DC1            | —                                 | XTCE040D00_                   | XTSC025DD_              |
| 30        | 25.5                  | 50                     | XTPR032DC1            | —                                 | XTCE040D00_                   | XTSC032DD_              |
| 30        | 30.0                  | 50                     | XTPR032DC1            | —                                 | XTCE040D00_                   | XTSC032DD_              |
| 30        | 37.5                  | 50                     | XTPR040DC1            | —                                 | XTCE040D00_                   | XTSC050DD_              |
| 40        | 40.5                  | 50                     | XTPR050DC1            | —                                 | XTCE050D00_                   | XTSC050DD_              |
| 40        | 51.0                  | 42                     | XTPR058DC1            | —                                 | XTCE065D00_                   | XTSC058DD_              |
| 50        | 61.0                  | 42                     | XTPR063DC1            | —                                 | XTCE065D00_                   | XTSC063DD_              |

## Notes

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

① Values in parentheses ( ) are achieved without the current limiter.

② Underscore ( \_ ) indicates magnet coil suffix required. See **Page V5-T1-243**.

## 400, 415V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Fused Disconnect

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Fuses<br>Class gG/gL | Contactor<br>Catalog Number ① | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number ① |
|-----------|-----------------------|------------------------|----------------------|-------------------------------|----------------------------------|---------------------------------------|
| 0.12      | 0.41                  | 100                    | 2                    | XTCE007B10_                   | XTOBP60BC1                       | XTAE007B10_P60                        |
| 0.18      | 0.60                  | 100                    | 2                    | XTCE007B10_                   | XTOB001BC1                       | XTAE007B10_001                        |
| 0.25      | 0.80                  | 100                    | 4                    | XTCE007B10_                   | XTOB001BC1                       | XTAE007B10_001                        |
| 0.37      | 1.10                  | 100                    | 4                    | XTCE007B10_                   | XTOB1P6BC1                       | XTAE007B10_1P6                        |
| 0.55      | 1.50                  | 100                    | 4                    | XTCE007B10_                   | XTOB1P6BC1                       | XTAE007B10_1P6                        |
| 0.75      | 1.90                  | 100                    | 6                    | XTCE007B10_                   | XTOB2P4BC1                       | XTAE007B10_2P4                        |
| 1.10      | 2.60                  | 100                    | 6                    | XTCE007B10_                   | XTOB004BC1                       | XTAE007B10_004                        |
| 1.50      | 3.60                  | 100                    | 6                    | XTCE007B10_                   | XTOB004BC1                       | XTAE007B10_004                        |
| 2.20      | 5.00                  | 100                    | 10                   | XTCE007B10_                   | XTOB006BC1                       | XTAE007B10_006                        |
| 3.00      | 6.60                  | 100                    | 16                   | XTCE007B10_                   | XTOB010BC1                       | XTAE007B10_010                        |
| 4.00      | 8.50                  | 100                    | 20                   | XTCE009B10_                   | XTOB010BC1                       | XTAE009B10_010                        |
| 5.50      | 11.3                  | 100                    | 25                   | XTCE018C10_                   | XTOB016CC1                       | XTAE018C10_016                        |
| 7.50      | 16.0                  | 100                    | 32                   | XTCE018C10_                   | XTOB016CC1                       | XTAE018C10_016                        |
| 11.0      | 21.7                  | 100                    | 40                   | XTCE025C10_                   | XTOB024CC1                       | XTAE032C10_024                        |
| 15.0      | 29.3                  | 100                    | 63                   | XTCE032C10_                   | XTOB032CC1                       | XTAE032C10_032                        |
| 18.5      | 36.0                  | 100                    | 63                   | XTCE040D00_                   | XTOB040DC1                       | XTAE040D00_040                        |
| 22.0      | 41.0                  | 100                    | 80                   | XTCE050D00_                   | XTOB057DC1                       | XTAE065D00_057                        |
| 30.0      | 55.0                  | 100                    | 100                  | XTCE065D00_                   | XTOB057DC1                       | XTAE065D00_057                        |
| 37.0      | 68.0                  | 100                    | 125                  | XTCE080F00_                   | XTOB070GC1                       | XTAE080F00_070                        |
| 45.0      | 81.0                  | 100                    | 160                  | XTCE095F00_                   | XTOB100GC1                       | XTAE095F00_100                        |
| 55.0      | 99.0                  | 100                    | 200                  | XTCE115G00_                   | XTOB100GC1                       | XTAE115G00_100                        |
| 75.0      | 134.0                 | 100                    | 200                  | XTCE150G00_                   | XTOB150GC1                       | XTAE150G00_150                        |
| 90.0      | 161.0                 | 100                    | 250                  | XTCE185L22_                   | XTOB220LC1                       | XTAE185L22_220                        |
| 110.0     | 196.0                 | 100                    | 315                  | XTCE225L22_                   | XTOB220LC1                       | XTAE225L22_220                        |
| 132.0     | 231.0                 | 100                    | 400                  | XTCE250L22_                   | XTOB250LC1                       | XTAE250L22_250                        |
| 160.0     | 279.0                 | 100                    | 400                  | XTCE300M22_                   | XTOT290C35                       | XTAE300M22_290                        |
| 200.0     | 349.0                 | 100                    | 500                  | XTCE400M22_                   | XTOT400C35                       | XTAE400M22_400                        |
| 250.0     | 437.0                 | 100                    | 630                  | XTCE500M22_                   | XTOT540C35                       | XTAE500M22_540                        |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

① Underscore ( \_ ) indicates magnet coil code required. See **Page V5-T1-243**.

## 500V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Fused Disconnect

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Fuses<br>Class gG/gL | Contactor<br>Catalog Number <sup>①</sup> | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number <sup>①</sup> |
|-----------|-----------------------|------------------------|----------------------|------------------------------------------|----------------------------------|--------------------------------------------------|
| 0.12      | 0.33                  | 100                    | 2                    | XTCE007B10_                              | XTOBP40BC1                       | XTAE007B10_P40                                   |
| 0.18      | 0.48                  | 100                    | 2                    | XTCE007B10_                              | XTOBP60BC1                       | XTAE007B10_P60                                   |
| 0.25      | 0.70                  | 100                    | 2                    | XTCE007B10_                              | XTOB001BC1                       | XTAE007B10_001                                   |
| 0.37      | 0.90                  | 100                    | 2                    | XTCE007B10_                              | XTOB001BC1                       | XTAE007B10_001                                   |
| 0.55      | 1.20                  | 100                    | 4                    | XTCE007B10_                              | XTOB1P6BC1                       | XTAE007B10_1P6                                   |
| 0.75      | 1.50                  | 100                    | 4                    | XTCE007B10_                              | XTOB1P6BC1                       | XTAE007B10_1P6                                   |
| 1.10      | 2.10                  | 100                    | 6                    | XTCE007B10_                              | XTOB2P4BC1                       | XTAE007B10_2P4                                   |
| 1.50      | 2.90                  | 100                    | 6                    | XTCE007B10_                              | XTOB004BC1                       | XTAE007B10_004                                   |
| 2.20      | 4.00                  | 100                    | 10                   | XTCE007B10_                              | XTOB006BC1                       | XTAE007B10_006                                   |
| 3.00      | 5.30                  | 100                    | 16                   | XTCE009B10_                              | XTOB006BC1                       | XTAE009B10_006                                   |
| 4.00      | 6.80                  | 100                    | 16                   | XTCE009B10_                              | XTOB010BC1                       | XTAE009B10_010                                   |
| 5.50      | 9.00                  | 100                    | 20                   | XTCE012B10_                              | XTOB010BC1                       | XTAE012B10_010                                   |
| 7.50      | 12.1                  | 100                    | 25                   | XTCE018C10_                              | XTOB016CC1                       | XTAE018C10_016                                   |
| 11.0      | 17.4                  | 100                    | 32                   | XTCE025C10_                              | XTOB024CC1                       | XTAE025C10_024                                   |
| 15.0      | 23.4                  | 100                    | 50                   | XTCE040D00_                              | XTOB024DC1                       | XTAE040D00_024                                   |
| 18.5      | 28.9                  | 100                    | 50                   | XTCE040D00_                              | XTOB040DC1                       | XTAE040D00_040                                   |
| 22.0      | 33.0                  | 100                    | 63                   | XTCE050D00_                              | XTOB040DC1                       | XTAE050D00_040                                   |
| 30.0      | 44.0                  | 100                    | 80                   | XTCE065D00_                              | XTOB057DC1                       | XTAE065D00_057                                   |
| 37.0      | 54.0                  | 100                    | 100                  | XTCE080F00_                              | XTOB070GC1                       | XTAE080F00_070                                   |
| 45.0      | 65.0                  | 100                    | 125                  | XTCE095F00_                              | XTOB070GC1                       | XTAE095F00_070                                   |
| 55.0      | 79.0                  | 100                    | 160                  | XTCE115G00_                              | XTOB100GC1                       | XTAE115G00_100                                   |
| 75.0      | 107.0                 | 100                    | 200                  | XTCE185L22_                              | XTOB125LC1                       | XTAE185L22_125                                   |
| 90.0      | 129.0                 | 100                    | 200                  | XTCE185L22_                              | XTOB125LC1                       | XTAE185L22_125                                   |
| 110.0     | 157.0                 | 100                    | 250                  | XTCE185L22_                              | XTOB160LC1                       | XTAE185L22_160                                   |
| 132.0     | 184.0                 | 100                    | 250                  | XTCE185L22_                              | XTOB220LC1                       | XTAE185L22_220                                   |
| 160.0     | 224.0                 | 100                    | 315                  | XTCE225L22_                              | XTOB250LC1                       | XTAE225L22_250                                   |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

<sup>①</sup> Underscore ( ) indicates magnet coil code required. See **Page V5-T1-243**.

## 690V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Fused Disconnect

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Fuses<br>Class gG/gL | Contactor<br>Catalog Number <sup>①</sup> | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number <sup>①</sup> |
|-----------|-----------------------|------------------------|----------------------|------------------------------------------|----------------------------------|--------------------------------------------------|
| 0.12      | 0.24                  | 100                    | 1                    | XTCE007B10_                              | XTOBP40BC1                       | XTAE007B10_P40                                   |
| 0.18      | 0.35                  | 100                    | 2                    | XTCE007B10_                              | XTOBP40BC1                       | XTAE007B10_P40                                   |
| 0.25      | 0.50                  | 100                    | 2                    | XTCE007B10_                              | XTOBP60BC1                       | XTAE007B10_P60                                   |
| 0.37      | 0.70                  | 100                    | 2                    | XTCE007B10_                              | XTOB001BC1                       | XTAE007B10_001                                   |
| 0.55      | 0.90                  | 100                    | 4                    | XTCE007B10_                              | XTOB001BC1                       | XTAE007B10_001                                   |
| 0.75      | 1.10                  | 100                    | 4                    | XTCE007B10_                              | XTOB1P6BC1                       | XTAE007B10_1P6                                   |
| 1.10      | 1.50                  | 100                    | 4                    | XTCE007B10_                              | XTOB1P6BC1                       | XTAE007B10_1P6                                   |
| 1.50      | 2.10                  | 100                    | 6                    | XTCE007B10_                              | XTOB2P4BC1                       | XTAE007B10_2P4                                   |
| 2.20      | 2.90                  | 100                    | 10                   | XTCE007B10_                              | XTOB004BC1                       | XTAE007B10_004                                   |
| 3.00      | 3.80                  | 100                    | 10                   | XTCE007B10_                              | XTOB004BC1                       | XTAE007B10_004                                   |
| 4.00      | 4.90                  | 100                    | 16                   | XTCE009B10_                              | XTOB006BC1                       | XTAE009B10_006                                   |
| 5.50      | 6.50                  | 100                    | 16                   | XTCE012B10_                              | XTOB010BC1                       | XTAE012B10_010                                   |
| 7.50      | 8.80                  | 100                    | 20                   | XTCE018C10_                              | XTOB010CC1                       | XTAE018C10_010                                   |
| 11.0      | 12.6                  | 100                    | 25                   | XTCE025C10_                              | XTOB016CC1                       | XTAE025C10_016                                   |
| 15.0      | 17.0                  | 100                    | 32                   | XTCE032C10_                              | XTOB024CC1                       | XTAE032C10_024                                   |
| 18.5      | 20.9                  | 100                    | 32                   | XTCE040D00_                              | XTOB024DC1                       | XTAE040D00_024                                   |
| 22.0      | 23.8                  | 100                    | 50                   | XTCE040D00_                              | XTOB040DC1                       | XTAE040D00_040                                   |
| 30.0      | 32.0                  | 100                    | 63                   | XTCE065D00_                              | XTOB040DC1                       | XTAE065D00_040                                   |
| 37.0      | 39.0                  | 100                    | 80                   | XTCE080F00_                              | XTOB050GC1                       | XTAE080F00_050                                   |
| 45.0      | 47.0                  | 100                    | 80                   | XTCE080F00_                              | XTOB050GC1                       | XTAE080F00_050                                   |
| 55.0      | 58.0                  | 100                    | 100                  | XTCE080F00_                              | XTOB070GC1                       | XTAE080F00_070                                   |
| 75.0      | 78.0                  | 100                    | 160                  | XTCE095F00_                              | XTOB100GC1                       | XTAE095F00_100                                   |
| 90.0      | 93.0                  | 100                    | 160                  | XTCE115G00_                              | XTOB100GC1                       | XTAE115G00_100                                   |
| 110.0     | 114.0                 | 100                    | 200                  | XTCE185L22_                              | XTOB125LC1                       | XTAE185L22_125                                   |
| 132.0     | 134.0                 | 100                    | 250                  | XTCE185L22_                              | XTOB160LC1                       | XTAE185L22_160                                   |
| 160.0     | 162.0                 | 100                    | 250                  | XTCE185L22_                              | XTOB220LC1                       | XTAE185L22_220                                   |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

<sup>①</sup> Underscore ( \_ ) indicates magnet coil code required. See **Page V5-T1-243**.

## 400, 415V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Fused Disconnect

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Fuses <sup>①</sup><br>Class BS88 | Contactor<br>Catalog Number <sup>②</sup> | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number <sup>②</sup> |
|-----------|-----------------------|------------------------|----------------------------------|------------------------------------------|----------------------------------|--------------------------------------------------|
| 0.12      | 0.41                  | 80                     | 4                                | XTCE007B10_                              | XTOBP60BC1                       | XTAE007B10_P60                                   |
| 0.18      | 0.60                  | 80                     | 4                                | XTCE007B10_                              | XTOBP60BC1                       | XTAE007B10_P60                                   |
| 0.25      | 0.80                  | 80                     | 4                                | XTCE007B10_                              | XTOB001BC1                       | XTAE007B10_001                                   |
| 0.37      | 1.10                  | 80                     | 6                                | XTCE007B10_                              | XTOB1P6BC1                       | XTAE007B10_1P6                                   |
| 0.55      | 1.50                  | 80                     | 10                               | XTCE007B10_                              | XTOB1P6BC1                       | XTAE007B10_1P6                                   |
| 0.75      | 1.90                  | 80                     | 16                               | XTCE007B10_                              | XTOB2P4BC1                       | XTAE007B10_2P4                                   |
| 1.10      | 2.60                  | 80                     | 16                               | XTCE007B10_                              | XTOB004BC1                       | XTAE007B10_004                                   |
| 1.50      | 3.60                  | 80                     | 20                               | XTCE007B10_                              | XTOB004BC1                       | XTAE007B10_004                                   |
| 2.20      | 5.00                  | 80                     | 20                               | XTCE007B10_                              | XTOB006BC1                       | XTAE007B10_006                                   |
| 3.00      | 6.60                  | 80                     | 20                               | XTCE007B10_                              | XTOB010BC1                       | XTAE007B10_010                                   |
| 4.00      | 8.50                  | 80                     | 25                               | XTCE009B10_                              | XTOB010BC1                       | XTAE009B10_010                                   |
| 5.50      | 11.3                  | 80                     | 25                               | XTCE018C10_                              | XTOB016CC1                       | XTAE018C10_016                                   |
| 7.50      | 16.0                  | 80                     | 25                               | XTCE018C10_                              | XTOB016CC1                       | XTAE018C10_016                                   |
| 11.0      | 21.7                  | 80                     | 35 and 32M35                     | XTCE025C10_                              | XTOB024CC1                       | XTAE032C10_024                                   |
| 15.0      | 29.3                  | 80                     | 50                               | XTCE032C10_                              | XTOB032CC1                       | XTAE032C10_032                                   |
| 18.5      | 36.0                  | 80                     | 63                               | XTCE040D00_                              | XTOB040DC1                       | XTAE040D00_040                                   |
| 22.0      | 41.0                  | 80                     | 80                               | XTCE050D00_                              | XTOB057DC1                       | XTAE065D00_057                                   |
| 30.0      | 55.0                  | 80                     | 100                              | XTCE065D00_                              | XTOB065DC1                       | XTAE065D00_065                                   |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

① GEC/Alstom "Red Spot."

② Underscore (\_) indicates magnet coil code required. See **Page V5-T1-243**.

## 400, 415V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Circuit Breaker

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Circuit<br>Breaker | Contactor<br>Catalog Number <sup>①</sup> | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number <sup>①</sup> |
|-----------|-----------------------|------------------------|--------------------|------------------------------------------|----------------------------------|--------------------------------------------------|
| 0.12      | 0.41                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.18      | 0.60                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.25      | 0.80                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.37      | 1.10                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.55      | 1.50                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.75      | 1.90                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 1.10      | 2.60                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 1.50      | 3.60                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 2.20      | 5.00                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 3.00      | 6.60                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 4.00      | 8.50                  | 15                     | HMCPE015E0C        | XTCE018C10_                              | XTOB010CC1                       | XTAE018C10_010                                   |
| 5.50      | 11.3                  | 15                     | HMCPE015E0C        | XTCE018C10_                              | XTOB016CC1                       | XTAE018C10_016                                   |
| 7.50      | 16.0                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 11.0      | 21.7                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 15.0      | 29.3                  | 15                     | ②                  | ②                                        | ②                                | ②                                                |
| 18.5      | 36.0                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 22.0      | 41.0                  | 50                     | HMCPE100R3C        | XTCE050D00_                              | XTOB057DC1                       | XTAE050D00_057                                   |
| 30.0      | 55.0                  | 50                     | HMCPE100R3C        | XTCE065D00_                              | XTOB065DC1                       | XTAE065D00_065                                   |
| 37.0      | 68.0                  | 80                     | HMCPJ250D5L        | XTCE080F00_                              | XTOB070GC1                       | XTAE080F00_070                                   |
| 45.0      | 81.0                  | 80                     | HMCPJ250F5L        | XTCE095F00_                              | XTOB100GC1                       | XTAE095F00_100                                   |
| 55.0      | 99.0                  | 80                     | HMCPJ250G5L        | XTCE115G00_                              | XTOB125GC1                       | XTAE115G00_125                                   |
| 75.0      | 134.0                 | 80                     | HMCPJ250J5L        | XTCE150G00_                              | XTOB150GC1                       | XTAE150G00_150                                   |
| 90.0      | 161.0                 | 80                     | HMCPJ250W5L        | XTCE185L22_                              | XTOB220LC1                       | XTAE185L22_220                                   |
| 110.0     | 196.0                 | 70                     | HMCPJ250W5L        | XTCE225L22_                              | XTOB220LC1                       | XTAE225L22_220                                   |
| 132.0     | 231.0                 | 70                     | HMCPL600R6G        | XTCE300M22_                              | XTOT240C3S                       | XTAE300M22_240                                   |
| 160.0     | 279.0                 | 70                     | HMCPL600X6G        | XTCE300M22_                              | XTOT400C3S                       | XTAE300M22_400                                   |
| 200.0     | 349.0                 | 70                     | HMCPL600P6G        | XTCE400M22_                              | XTOT400C3S                       | XTAE400M22_400                                   |
| 250.0     | 430.0                 | 70                     | HMCPL600M          | XCE500M22_                               | XTOT540C3S                       | XTAE500M22_540                                   |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

① Underscore (\_) indicates magnet coil code required. See **Page V5-T1-243**.

② Use MMP contactor combination. See **Page V5-T1-235**.

## 525V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Circuit Breaker

| P<br>(kW) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Circuit<br>Breaker | Contactor<br>Catalog Number <sup>①</sup> | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number <sup>①</sup> |
|-----------|-----------------------|------------------------|--------------------|------------------------------------------|----------------------------------|--------------------------------------------------|
| 0.37      | 1.02                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.55      | 1.22                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 0.75      | 1.66                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 1.10      | 2.22                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 1.50      | 3.16                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 2.20      | 4.25                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 3.00      | 5.60                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 4.00      | 7.50                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 5.50      | 9.90                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 7.50      | 14.1                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 11.0      | 19.3                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 15.0      | 23.5                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 18.5      | 27.2                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 22.0      | 37.0                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 30.0      | 45.0                  | 50                     | ②                  | ②                                        | ②                                | ②                                                |
| 37.0      | 54.0                  | 50                     | HMCP100R3C         | XTCE080F00_                              | XTOB070GC1                       | XTAE080F00_070                                   |
| 45.0      | 66.0                  | 50                     | HMCPJ250D5L        | XTCE080F00_                              | XTOB070GC1                       | XTAE080F00_070                                   |
| 55.0      | 79.0                  | 50                     | HMCPJ250F5L        | XTCE115G00_                              | XTOB100GC1                       | XTAE115G00_100                                   |
| 75.0      | 111.0                 | 50                     | HMCPJ250J5L        | XTCE115G00_                              | XTOB125GC1                       | XTAE115G00_125                                   |
| 90.0      | 130.0                 | 50                     | HMCPJ250K5L        | XTCE185L00_                              | XTOB160LC1                       | XTAE185L00_160                                   |
| 110.0     | 159.0                 | 50                     | HMCPJ250W5L        | XTCE185L00_                              | XTOB160LC1                       | XTAE185L00_160                                   |
| 132.0     | 185.0                 | 50                     | HMCPJ600N6G        | XTCE185L22_                              | XTOB220LC1                       | XTAE185L22_220                                   |
| 160.0     | 225.0                 | 50                     | HMCPJ600R6G        | XTCE225L22_                              | XTOB250LC1                       | XTAE225L22_250                                   |
| 200.0     | 270.0                 | 50                     | HMCPJ600X6G        | XTCE300M22_                              | XTOT290C3S                       | XTAE300M22_290                                   |

## 480V Type 2 Coordination—Contactor and Overload Relay (Motor Starter) with Circuit Breaker

| P<br>(hp) | I <sub>e</sub><br>(A) | I <sub>q</sub><br>(kA) | Circuit<br>Breaker | Contactor<br>Catalog Number <sup>①</sup> | Overload Relay<br>Catalog Number | Assembled Starter<br>Catalog Number <sup>①</sup> |
|-----------|-----------------------|------------------------|--------------------|------------------------------------------|----------------------------------|--------------------------------------------------|
| 50.0      | 65.0                  | 65                     | HMCPJ250D5L        | XTCE080F00_                              | XTOB070GC1                       | XTAE080F00_070                                   |
| 60.0      | 77.0                  | 65                     | HMCPJ250G5L        | XTCE080F00_                              | XTOB100GC1                       | XTAE080F00_100                                   |
| 75.0      | 96.0                  | 25                     | HMCPJ250J5L        | XTCE115G00_                              | XTOB125GC1                       | XTAE115G00_125                                   |
| 100.0     | 124.0                 | 50                     | HMCPJ250K5L        | XTCE185L22_                              | XTOB160LC1                       | XTAE185L22_160                                   |
| 125.0     | 156.0                 | 50                     | HMCPJ250W5L        | XTCE185L22_                              | XTOB160LC1                       | XTAE185L22_160                                   |
| 150.0     | 180.0                 | 25                     | HMCPJ600N6G        | XTCE225L22_                              | XTOB220LC1                       | XTAE225L22_220                                   |
| 200.0     | 240.0                 | 50                     | HMCPJ600N          | XTCE300M22_                              | XTOB240C3S                       | XTAE300M22_240                                   |
| 250.0     | 290.0                 | 50                     | HMCPJ600R          | XTCE300M22_                              | XTOB290C3S                       | XTAE300M22_290                                   |
| 300.0     | 361.0                 | 50                     | HMCPJ600Y          | XTCE400M22_                              | XTOB400C3S                       | XTAE400M22_400                                   |
| 350.0     | 414.0                 | 50                     | HMCPJ600M          | XTCE500M22_                              | XTOB540C3S                       | XTAE500M22_540                                   |

**Notes**

See **Page V5-T1-243** for more information on wye-delta (star delta) applications.

① Underscore (\_) indicates magnet coil code required. See **Page V5-T1-243**.

② Use MMP contactor combination.

**400, 415V Type 2 Coordination—Contactor with Circuit Breaker <sup>①</sup>**

| P (kW) | I <sub>e</sub> (A) | I <sub>g</sub> (kA) | Circuit Breaker—MCP | Contactor Catalog Number <sup>②</sup> |
|--------|--------------------|---------------------|---------------------|---------------------------------------|
| 1.50   | 3.60               | 50                  | HMCPE015E0C         | XTCE018C10_                           |
| 2.20   | 5.00               | 50                  | HMCPE015E0C         | XTCE018C10_                           |
| 3.00   | 6.60               | 50                  | HMCPE015E0C         | XTCE018C10_                           |
| 4.00   | 8.50               | 50                  | HMCPE015E0C         | XTCE018C10_                           |
| 5.50   | 11.3               | 50                  | HMCPE015E0C         | XTCE018C10_                           |
| 7.50   | 16.0               | 50                  | HMCPE015E0C         | XTCE018C10_                           |
| 11.0   | 21.7               | 50                  | HMCPE100R3C         | XTCE040D00_                           |
| 15.0   | 29.3               | 50                  | HMCPE100R3C         | XTCE040D00_                           |
| 18.5   | 36.0               | 50                  | HMCPE100R3C         | XTCE040D00_                           |
| 22.0   | 41.0               | 50                  | HMCPE100R3C         | XTCE050D00_                           |
| 30.0   | 55.0               | 50                  | HMCPE100R3C         | XTCE065D00_                           |
| 37.0   | 68.0               | 80                  | HMCPE100R3C         | XTCE080F00_                           |
| 45.0   | 81.0               | 80                  | HMCPE100R3C         | XTCE095F00_                           |
| 55.0   | 99.0               | 80                  | HMCPE100R3C         | XTCE115G00_                           |
| 75.0   | 134.0              | 80                  | HMCPE100R3C         | XTCE150G00_                           |
| 90.0   | 161.0              | 80                  | HMCPE100R3C         | XTCE185L22_                           |
| 110.0  | 196.0              | 80                  | HMCPE100R3C         | XTCE225L22_                           |
| 132.0  | 231.0              | 70                  | HMCPL600R           | XTCE300M22_                           |
| 160.0  | 279.0              | 70                  | HMCPL600X           | XTCE300M22_                           |
| 200.0  | 350.0              | 70                  | HMCPL600P           | XTCE400M22_                           |
| 250.0  | 430.0              | 70                  | HMCPL600M           | XTCE500M22_                           |

**480V Type 2 Coordination—Contactor with Circuit Breaker <sup>①</sup>**

| P (hp) | I <sub>e</sub> (A) | I <sub>g</sub> (kA) | Circuit Breaker—MCP | Contactor Catalog Number <sup>②</sup> |
|--------|--------------------|---------------------|---------------------|---------------------------------------|
| 50.0   | 65.0               | 65                  | HMCPE100R3C         | XTCE080F00_                           |
| 60.0   | 77.0               | 65                  | HMCPE100R3C         | XTCE080F00_                           |
| 150.0  | 180.0              | 50                  | HMCPL600N           | XTCE300M00_                           |
| 200.0  | 240.0              | 50                  | HMCPL600N           | XTCE300M22_                           |
| 250.0  | 300.0              | 50                  | HMCPL600R           | XTCE300M22_                           |
| 300.0  | 361.0              | 50                  | HMCPL600Y           | XTCE400M00_                           |
| 350.0  | 414.0              | 50                  | HMCPL600M           | XTCE500M00_                           |

**Magnet Coil Suffix****Frames A–B**

| Coil Voltage           | Suffix Code            |
|------------------------|------------------------|
| 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> <sup>③</sup> |
| 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>               |
| 24V 50 Hz              | <b>U</b>               |
| 42V 50 Hz, 48V 60 Hz   | <b>W</b>               |
| 48V 50 Hz              | <b>Y</b>               |
| 120 Vdc                | <b>AD</b> <sup>③</sup> |
| 220 Vdc                | <b>BD</b> <sup>③</sup> |
| 12 Vdc                 | <b>RD</b> <sup>③</sup> |
| 48 Vdc                 | <b>WD</b> <sup>③</sup> |

**Frames C–F**

| Coil Voltage           | Suffix Code            |
|------------------------|------------------------|
| 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> <sup>③</sup> |
| 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>               |
| 24V 50 Hz              | <b>U</b>               |
| 42V 50 Hz, 48V 60 Hz   | <b>W</b>               |
| 48V 50 Hz              | <b>Y</b>               |
| 110–130 Vdc            | <b>AD</b> <sup>③</sup> |
| 200–240 Vdc            | <b>BD</b> <sup>③</sup> |
| 12–14 Vdc              | <b>RD</b> <sup>③</sup> |
| 48–60 Vdc              | <b>WD</b> <sup>③</sup> |

**Frame G**

| Coil Voltage      | Suffix Code            |
|-------------------|------------------------|
| 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> <sup>③</sup> |
| 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> <sup>③</sup> |
| 200–240 Vdc       | <b>BD</b> <sup>③</sup> |
| 48–60 Vdc         | <b>WD</b> <sup>③</sup> |

**Frames L–M**

| Coil Voltage         | Suffix Code            |
|----------------------|------------------------|
| 110–250V 40–60 Hz/DC | <b>A</b>               |
| 250–500V 40–60 Hz/DC | <b>C</b>               |
| 48–110V 40–60 Hz/DC  | <b>Y</b> <sup>③</sup>  |
| 24–48 Vdc            | <b>TD</b> <sup>③</sup> |

**Wye-Delta (Star-Delta) Applications**

If Type 2 Coordination is required when using wye-delta starters, the full voltage (direct on-line) test data that is included in this document is valid. To ensure proper

protection, the K1M (main), K3M (star) and K5M (delta) contactors must all be the same size (amperage). For wye-delta starter kits, please see **Page V5-T1-55**.

**Notes**

- <sup>①</sup> For use with magnetic sensing means to monitor motor current.
- <sup>②</sup> Underscore ( \_ ) indicates magnet coil code required. See magnet coil suffix tables on this page.
- <sup>③</sup> With DC operation: integrated diode-resistor combination, coil rating 2.6W.