

XT Family of Contactors



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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



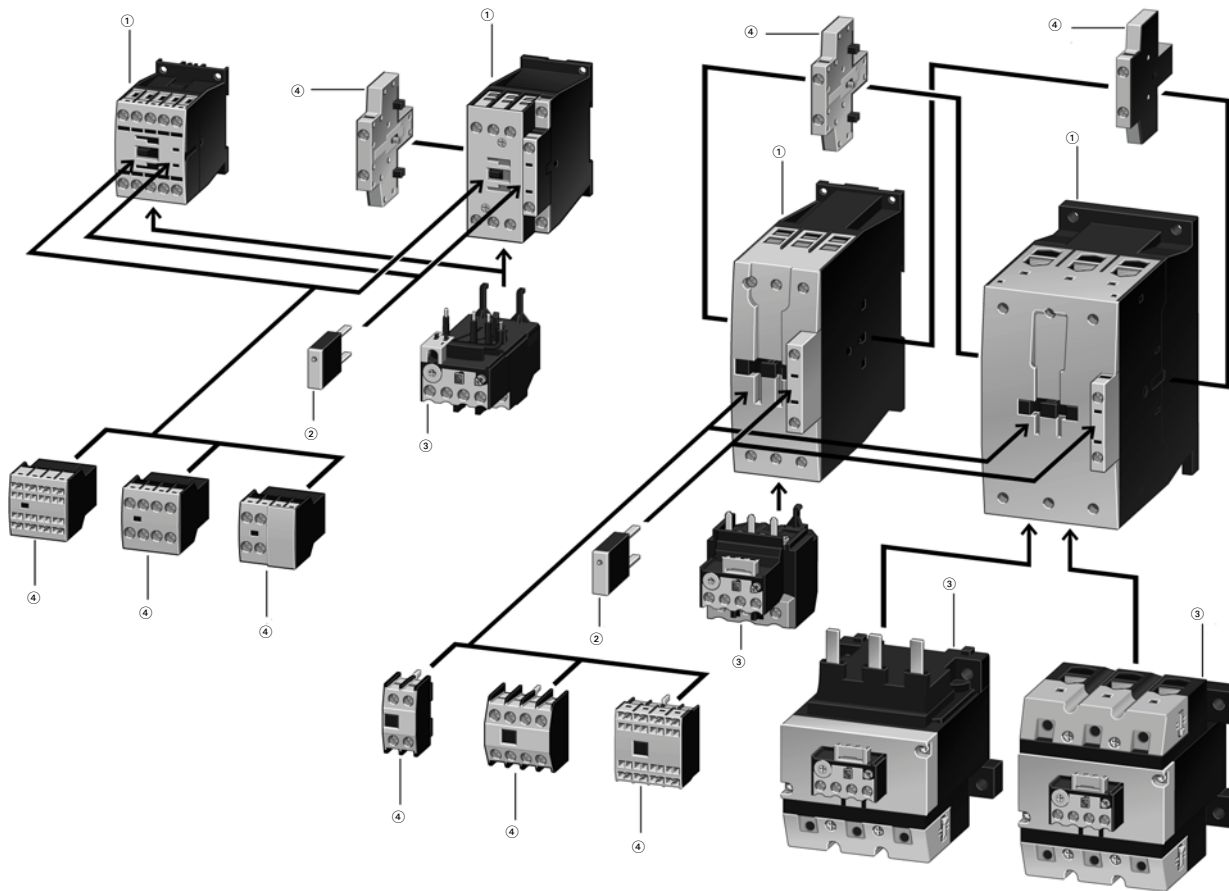
Note: For Type 2 Coordination, see **Page V5-T1-235**.

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

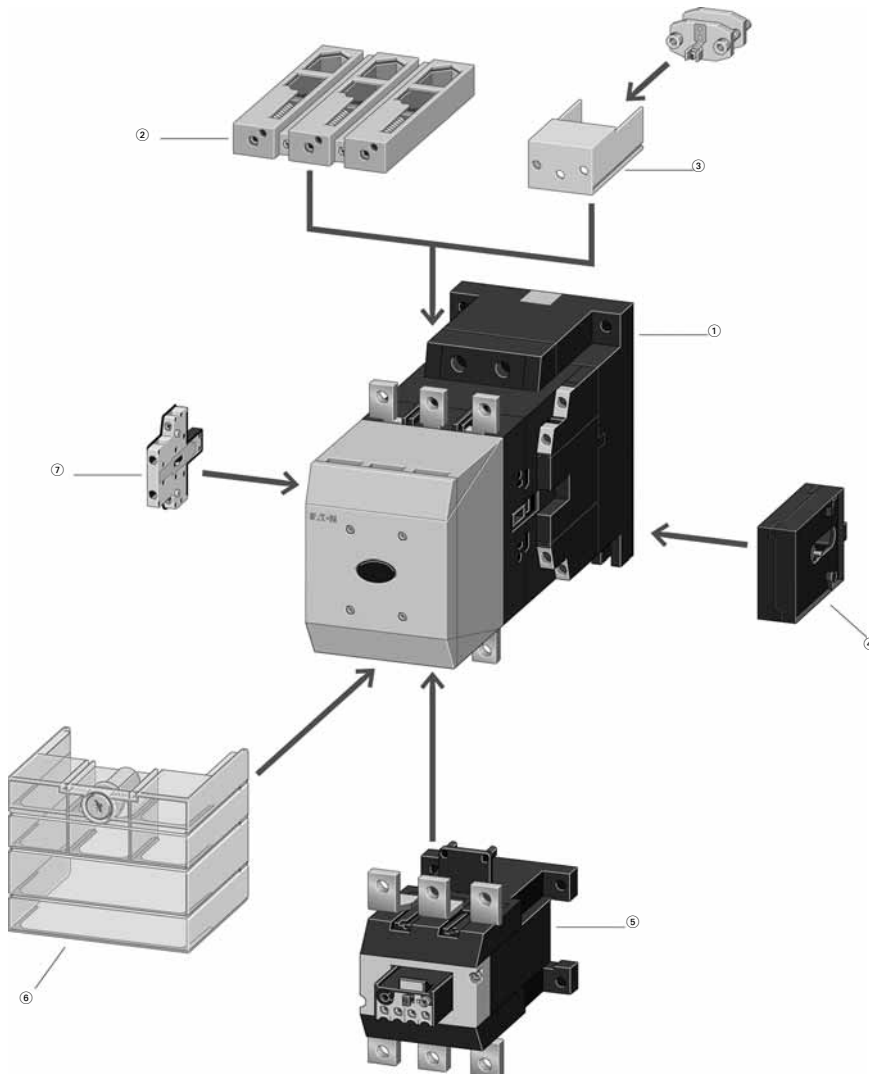
④ Auxiliary Contact Modules (see Page V5-T1-24)

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 x U_c

Actuation options:

Directly
From the PLC
With low-consumption contact

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

Control voltages:
110–120V 50/60 Hz
220–240V 50/60 Hz
Conventional operation

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

One or two conductors per phase
Round and flat conductor connectable
Finger-proof

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

One or two strips per phase
Control circuit terminal
Cover for fingerproofing

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

Fits between contactors

⑤ **Overload Relays**
(see **Page V5-T1-130**)

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

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

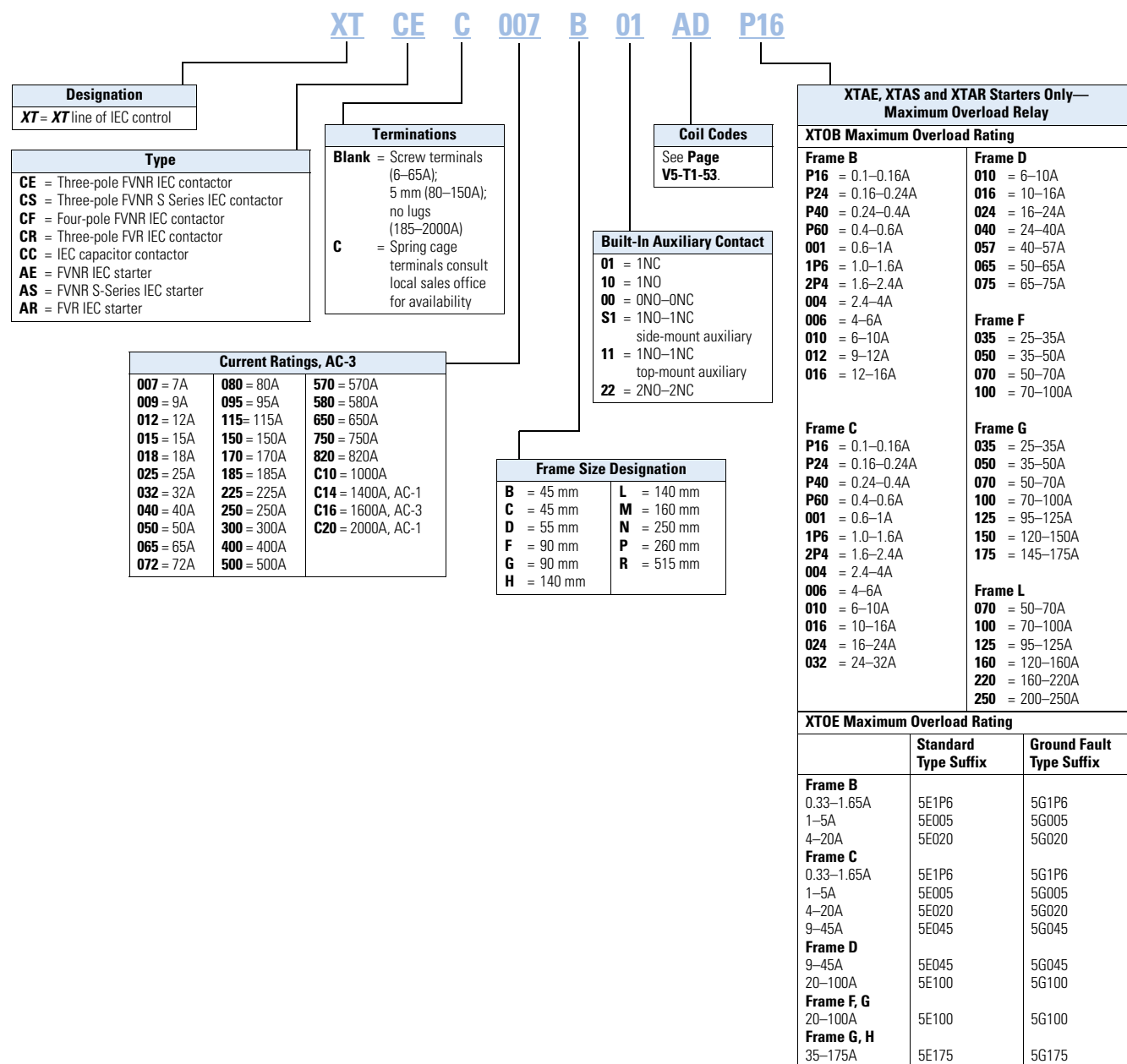
Finger-proof

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 Ampere Rating	Single-Phase hp Ratings			Three-Phase hp Ratings				Auxiliary Contacts	Screw Terminal Catalog Number ^{①②}
	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 ^③	10	1NO	XTCE012B10_
20	1	2	2	3	3	10 ^③	10	1NC	XTCE012B01_
20	1	2	3	5	5	10 ^③	10	1NO	XTCE015B10_
20	1	2	3	5	5	10 ^③	10	1NC	XTCE015B01_

Three-Pole Contactors, Frame B—IEC Ratings

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

Notes

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

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

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

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

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

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

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

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

Starter Application Data ^①

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

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

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

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

Notes

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

② Frames L–M only.

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

Three-Phase hp Ratings				Max. Changeover Time (sec)	Component Description	Catalog Number ①
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	XTCEXSDB
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	XTCEXSDB
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	XTCEXSDB

Frame B—Maximum IEC Ratings

AC-3 I _e (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			
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	XTCEXSDB
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	XTCEXSDB
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	XTCEXSDB

Note① Underscore () indicates magnet coil suffix required. See **Page V5-T1-62**.

Technical Data and Specifications

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

Factory Assembled Manual Motor Protector + Contactor

Assembled Manual Motor Controller ①	FLA Adjustment Range/Overload Release—I _r (Amps)	Component Catalog Numbers		Contactor ①	Manual Motor Protector Auxiliary Contact
		Manual Motor Protector	Combination 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
XTSC010BB_	6.3–10	XTPR010BC1	XTPAXTPCB	XTCE009B10_	XTPAXFA11
XTSC012BB_	8–12	XTPR012BC1	XTPAXTPCB	XTCE012B10_	XTPAXFA11
XTSC016BB_	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).

400, 415V Type 2 Coordination—Contactor with Circuit Breaker ^①

P (kW)	I _e (A)	I _g (kA)	Circuit Breaker—MCP	Contactor Catalog Number ^②
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	HMCPE250D5L	XTCE080F00_
45.0	81.0	80	HMCPE250F5L	XTCE095F00_
55.0	99.0	80	HMCPE250G5L	XTCE115G00_
75.0	134.0	80	HMCPE250J5L	XTCE150G00_
90.0	161.0	80	HMCPE250W5L	XTCE185L22_
110.0	196.0	80	HMCPE250W5L	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 ^①

P (hp)	I _e (A)	I _g (kA)	Circuit Breaker—MCP	Contactor Catalog Number ^②
50.0	65.0	65	HMCPE250G5L	XTCE080F00_
60.0	77.0	65	HMCPE250G5L	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	A
220V 50 Hz, 240V 60 Hz	B
230V 50 Hz	F
24V 50/60 Hz	T
24 Vdc	TD ^③
415V 50 Hz, 480V 60 Hz	C
600V 60 Hz	D
208V 60 Hz	E
190V 50 Hz, 220V 60 Hz	G
240V 50 Hz, 277V 60 Hz	H
380V 50 Hz, 440V 60 Hz	L
400V 50 Hz	N
380V 60 Hz	P
12V 50/60 Hz	R
24V 50 Hz	U
42V 50 Hz, 48V 60 Hz	W
48V 50 Hz	Y
120 Vdc	AD ^③
220 Vdc	BD ^③
12 Vdc	RD ^③
48 Vdc	WD ^③

Frames C–F

Coil Voltage	Suffix Code
110V 50 Hz, 120V 60 Hz	A
220V 50 Hz, 240V 60 Hz	B
230V 50 Hz	F
24V 50/60 Hz	T
24–27 Vdc	TD ^③
415V 50 Hz, 480V 60 Hz	C
600V 60 Hz	D
208V 60 Hz	E
190V 50 Hz, 220V 60 Hz	G
240V 50 Hz, 277V 60 Hz	H
380V 50 Hz, 440V 60 Hz	L
400V 50 Hz	N
380V 60 Hz	P
12V 50/60 Hz	R
24V 50 Hz	U
42V 50 Hz, 48V 60 Hz	W
48V 50 Hz	Y
110–130 Vdc	AD ^③
200–240 Vdc	BD ^③
12–14 Vdc	RD ^③
48–60 Vdc	WD ^③

Frame G

Coil Voltage	Suffix Code
100–120V 50/60 Hz	A
190–240V 50/60 Hz	B
24V 50/60 Hz	T
24–27 Vdc	TD ^③
480–500V 50/60 Hz	C
380–440V 50/60 Hz	L
42–48V 50/60 Hz	W
110–130 Vdc	AD ^③
200–240 Vdc	BD ^③
48–60 Vdc	WD ^③

Frames L–M

Coil Voltage	Suffix Code
110–250V 40–60 Hz/DC	A
250–500V 40–60 Hz/DC	C
48–110V 40–60 Hz/DC	Y ^③
24–48 Vdc	TD ^③

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

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