

B-Frame



D-Frame

Table 34-146. XTPR Rotary Manual Motor Protectors with Screw Terminals — Global Ratings and North American Ratings
Type 1 and Type 2 Coordination
Motor Protective Device with Thermal and Magnetic Trip

Rated Uninterrupted Current — $I_u = I_e$ (Amps)	FLA Adjustment Range / Overload Release — I_r (Amps)	Short Circuit Release — I_{rm} (Amps)	Maximum Motor Ratings ①									Screw Terminals ③	
			Maximum kW Rating AC-3 — P (kW)					Maximum hp Rating — P (hp) UL 508/CSA C 22.2 No. 14				Catalog Number	Price U.S. $
			3-Phase					3-Phase					
			220 – 240V	380 – 415V	440V	500V	660 – 690V	200V	240V	480V	600V		
Frame B													
0.16	0.1 – 0.16	2.2	—	—	—	—	0.06	②	②	②	②	**XTPRP16BC1**	
0.25	0.16 – 0.25	3.5	—	0.06	0.06	0.06	0.12	②	②	②	②	**XTPRP25BC1**	
0.4	0.25 – 0.4	5.6	0.06	0.09	0.12	0.12	0.18	②	②	②	②	**XTPRP40BC1**	
0.63	0.4 – 0.63	8.8	0.09	0.12	0.18	0.25	0.25	②	②	②	②	**XTPRP63BC1**	
1	0.63 – 1	14	0.12	0.25	0.25	0.37	0.55	②	②	1/2	1/2	**XTPR001BC1**	
1.6	1 – 1.6	22	0.25	0.55	0.55	0.75	1.1	②	②	3/4	1	**XTPR1P6BC1**	
2.5	1.6 – 2.5	35	0.37	0.75	1.1	1.1	1.5	1/2	1/2	1	1-1/2	**XTPR2P5BC1**	
4	2.5 – 4	56	0.75	1.5	1.5	2.2	3	1	1	2	3	**XTPR004BC1**	
6.3	4 – 6.3	88	1.1	2.2	3	3	4	1-1/2	1-1/2	3	5	**XTPR6P3BC1**	
10	6.3 – 10	140	2.2	4	4	4	7.5	3	3	7-1/2	10	**XTPR010BC1**	
12	8 – 12	168	3	5.5	5.5	5.5	11	3	3	7-1/2	10	**XTPR012BC1**	
16	10 – 16	224	4	7.5	9	9	12.5	3	5	10	10	**XTPR016BC1**	
20	16 – 20	280	5.5	9	11	12.5	15	5	5	10	15	**XTPR020BC1**	
25	20 – 25	350	5.5	12.5	12.5	15	22	5	7-1/2	15	20	**XTPR025BC1**	
32	25 – 32	448	7.5	15	15	22	30	7-1/2	10	25	30	**XTPR032BC1**	
Frame D													
16	10 – 16	224	4	7.5	9	9	12.5	3	5	10	15	**XTPR016DC1**	
25	16 – 25	350	5.5	12.5	12.5	15	22	7-1/2	7-1/2	20	25	**XTPR025DC1**	
32	25 – 32	448	7.5	15	17.5	22	22	10	10	25	30	**XTPR032DC1**	
40	32 – 40	560	11	20	22	24	30	10	15	30	40	**XTPR040DC1**	
50	40 – 50	700	14	25	30	30	45	10	15	30	40	**XTPR050DC1**	
58	50 – 58	812	17	30	37	37	55	—	—	40	—	**XTPR058DC1**	
65	55 – 65	882	18.5	34	37	45	55	—	—	—	—	**XTPR063DC1**	

① Select Manual Motor Protectors by full load amperes. Maximum Motor Ratings (kW, hp) are for reference only.

② In this range, calculate motor rating according to rated current. Specified values to NEC 430.6(A)(1).

③ Catalog number shown comes with screw terminals. For Frame B devices up to 16A, spring cage terminals are available. For spring cage terminals on line and load sides, insert a "C" into the catalog number in the 5th position — Example: XTPR**C**_BC1. For spring cage terminals on the load side only, insert an "SC" into the catalog number in the 5th and 6th positions — Example: XTPR**SC**_BC1.

Notes:

Single-phasing sensitivity to IEC/EN 60947-4-1, VDE 0660 Part 102.
Can be snap-fit to IEC/EN 60715 top-hat (DIN) with 7.5 or 15 mm height.
Service Factor (SF) — Setting I_r of current scale in dependence of load factor:
SF = 1.15 -> $I_r = 1 \times I_{n\ mot}$
SF = 1 -> $I_r = 0.9 \times I_{n\ mot}$

For manual motor protective circuit breaker switching capacity, see **Page 34-147**.

Technical Data . . . . . **Page 34-142**
Discount Symbol **1CD7**



B-Frame



D-Frame

Table 34-147. XTPR Manual Self-Protected Motor Starters — North American Ratings, UL 508 Type E ①
Motor Protective Device with Thermal and Magnetic Trip

Rated Uninterrupted Current — I_u (Amps)	FLA Adjustment Range / Overload Release — I_r (Amps)	Short Circuit Release — I_{rm} (Amps)	Maximum Motor Ratings ②				Rated Short-Circuit Breaking Capacity (kA)			Line Side Adapter ①	Price U.S. $	Manual Motor Protector — Screw Terminals	Price U.S. $
			Maximum hp Rating — P (hp)				240V	480/ 277V	600/ 347V				
			3-Phase										
			200V	240V	480V/ 277V	600V/ 247V				Catalog Number		Catalog Number	
Frame B													
0.16	0.1 – 0.16	2.2	③	③	1/2	1/2	50	50	50	**XTPAXLSA**		**XTPRP16BC1**	
0.25	0.16 – 0.25	3.4	③	③	1/2	1/2	50	50	50	**XTPAXLSA**		**XTPRP25BC1**	
0.4	0.25 – 0.4	5.6	③	③	1/2	1/2	50	50	50	**XTPAXLSA**		**XTPRP40BC1**	
0.63	0.4 – 0.63	8.8	③	③	1/2	1/2	50	50	50	**XTPAXLSA**		**XTPRP63BC1**	
1	0.63 – 1	14	③	③	1/2	1/2	50	50	50	**XTPAXLSA**		**XTPR001BC1**	
1.6	1 – 1.6	22	③	③	3/4	3/4	50	50	50	**XTPAXLSA**		**XTPR1P6BC1**	
2.5	1.6 – 2.5	35	1/2	1/2	1	1-1/2	50	50	50	**XTPAXLSA**		**XTPR2P5BC1**	
4	2.5 – 4	56	3/4	1	2	3	50	50	50	**XTPAXLSA**		**XTPR004BC1**	
6.3	4 – 6.3	88	1	1-1/2	3	5	50	50	50	**XTPAXLSA**		**XTPR6P3BC1**	
10	6.3 – 11	140	3	3	7-1/2	10	50	50	50	**XTPAXLSA**		**XTPR010BC1**	
12	8 – 12	168	3	3	7-1/2	—	42	42	—	**XTPAXLSA**		**XTPR012BC1**	
16	10 – 16	224	3	5	10	—	42	42	—	**XTPAXLSA**		**XTPR016BC1**	
20	16 – 20	280	5	5	—	—	42	42	—	**XTPAXLSA**		**XTPR020BC1**	
25	20 – 25	350	5	7-1/2	15	—	18	18	—	**XTPAXLSA**		**XTPR025BC1**	
32	25 – 32	448	7-1/2	10	25	—	18	18	—	**XTPAXLSA**		**XTPR032BC1**	
Frame D													
16	10 – 16	224	3	5	10	10	50	50	50	**XTPAXLSAD**		**XTPR016DC1**	
25	16 – 25	350	7-1/2	7-1/2	20	25	50	50	50	**XTPAXLSAD**		**XTPR025DC1**	
32	25 – 32	448	10	10	25	30	50	50	50	**XTPAXLSAD**		**XTPR032DC1**	
40	32 – 40	560	10	10	30	40	50	50	50	**XTPAXLSAD**		**XTPR040DC1**	
50	40 – 50	700	10	15	30	—	65	65	—	**XTPAXLSAD**		**XTPR050DC1**	
58	50 – 58	812	15	15	40	—	65	65	—	**XTPAXLSAD**		**XTPR058DC1**	
65	55 – 65	882	15	15	40	—	65	65	—	**XTPAXLSAD**		**XTPR063DC1**	

① UL 508 Type E starters are assembled from a standard XTPR and a special incoming terminal Line Side Adapter (XTPAXLSA or XTPAXLSAD).
② Select Manual Motor Protectors by full load amperes. Maximum Motor Ratings (kW, hp) are for reference only.
③ In this range, calculate motor rating according to rated current. Specified values to NEC 430.6(A)(1).

Notes:
A UL 508 Type E Self-Protected Manual Combination Starter (XTPR) consists of a Manual Motor Protector (XTPR) and a UL Listed Line Side Adapter (e.g. XTPAXLSA). The Type E Self-Protected Manual Combination Starter alone is a legitimate short-circuit protective device and disconnect means for the down-stream motor, while the contactor has been added to provide remote operation of the motor circuit.

Accessories ..... **Page 34-130**
Technical Data ..... **Page 34-142**
Discount Symbol **1CD7**

Table 34-185. Ratings for Group Motor Applications — UL 508 / CSA C22.2 No. 14

Catalog Number	Rated Uninterrupted Current — I_u (Amps)	FLA Adjustment Range / Overload Release — I_r (Amps)	Short Circuit Release — I_{rm} (Amps)	Maximum Protective Device for UL/CSA Group Protection					
				Max. RMS Sym Current — 600V (kA)		Maximum Fuse Rating (A)		Circuit Breaker Max (A)	
					w/Current Limiter — XTPAXCL		w/Current Limiter — XTPAXCL		w/Current Limiter — XTPAXCL
XTPB — Frame B, Manual Motor Protector with Thermal and Magnetic Trip									
XTPBP16BC1	0.16	0.1 – 0.16	2.2	50	—	600	—	600	—
XTPBP25BC1	0.25	0.16 – 0.25	3.5	50	—	600	—	600	—
XTPBP40BC1	0.4	0.25 – 0.4	5.6	50	—	600	—	600	—
XTPBP63BC1	0.63	0.4 – 0.63	8.8	50	—	600	—	600	—
XTPB001BC1	1	0.63 – 1	14	50	—	600	—	600	—
XTPB1P6BC1	1.6	1 – 1.6	22	50	—	600	—	600	—
XTPB2P5BC1	2.5	1.6 – 2.5	35	50	—	600	—	600	—
XTPB004BC1	4	2.5 – 4	56	50	—	600	—	600	—
XTPB6P3BC1	6.3	4 – 6.3	88	50	—	600	—	600	—
XTPB010BC1	10	6.3 – 10	140	10	50	150	600	125 ②	600
XTPB012BC1	12	8 – 12	168	10	50	150	600	125 ②	600
XTPB016BC1	16	10 – 16	224	10 ①	50 ①	150 ①	600 ①	125 ①②	600 ①
XTPB020BC1 ③	20	16 – 20	280	10 ①	18 ①	150 ①	600 ①	125 ①	600 ①
XTPB025BC1 ③	25	20 – 25	350	10 ①	18 ①	150 ①	600 ①	125 ①	600 ①
XTPR — Frame B (all Screw and Spring Cage terminal options), Manual Motor Protector with Thermal and Magnetic Trip									
XTPRP16BC1	0.16	0.1 – 0.16	2.2	50	—	600	—	600	—
XTPRP25BC1	0.25	0.16 – 0.25	3.5	50	—	600	—	600	—
XTPRP40BC1	0.4	0.25 – 0.4	5.6	50	—	600	—	600	—
XTPRP63BC1	0.63	0.4 – 0.63	8.8	50	—	600	—	600	—
XTPR001BC1	1	0.63 – 1	14	50	—	600	—	600	—
XTPR1P6BC1	1.6	1 – 1.6	22	50	—	600	—	600	—
XTPR2P5BC1	2.5	1.6 – 2.5	35	50	—	600	—	600	—
XTPR004BC1	4	2.5 – 4	56	50	—	600	—	600	—
XTPR6P3BC1	6.3	4 – 6.3	88	50	—	600	—	600	—
XTPR010BC1	10	6.3 – 10	140	10	50	150	600	125 ②	600
XTPR012BC1	12	8 – 12	168	10	50	150	600	125	600
XTPR016BC1	16	10 – 16	224	10	50	150	600	125 ②	600
XTPR020BC1	20	16 – 20	280	10	18	150	600	125	600
XTPR025BC1	25	20 – 25	350	10	18	150	600	125	600
XTPR032BC1	32	25 – 32	448	10	18	150	600	125	600
XTPR — Frame D, Manual Motor Protector with Thermal and Magnetic Trip									
XTPR016DC1	16	10 – 16	224	10	—	600	—	600	—
XTPR025DC1	25	16 – 25	350	10	—	600	—	600	—
XTPR032DC1	32	25 – 32	448	10	—	600	—	600	—
XTPR040DC1	40	32 – 40	560	10	—	600	—	600	—
XTPR050DC1	50	40 – 50	700	10 ①	—	600 ①	—	600 ①	—
XTPR058DC1	58	50 – 58	812	10 ①	—	600 ①	—	600 ①	—
XTPR063DC1	65	55 – 63	882	10 ①	—	600 ①	—	600 ①	—
XTPT — Frame D, Manual Motor Protector with Thermal and Magnetic Trip									
XTPTP16BC1	0.16	0.1 – 0.16	2.4	50	—	600	—	600	—
XTPTP25BC1	0.25	0.16 – 0.25	4.25	50	—	600	—	600	—
XTPTP40BC1	0.4	0.25 – 0.4	6.8	50	—	600	—	600	—
XTPTP63BC1	0.63	0.4 – 0.63	12	50	—	600	—	600	—
XTPT001BC1	1	0.63 – 1	20	50	—	600	—	600	—
XTPT1P6BC1	1.6	1 – 1.6	32	50	—	600	—	600	—
XTPT2P5BC1	2.5	1.6 – 2.5	50	50	—	600	—	600	—
XTPT004BC1	4	2.5 – 4	84	50	—	600	—	600	—
XTPT6P3BC1	6.3	4 – 6.3	141	50	—	600	—	600	—
XTPT010BC1	10	6.3 – 10	224	10	50	150	600	125 ②	600
XTPT012BC1	12	8 – 12	224	10	50	150	600	125	600
XTPT016BC1	16	10 – 16	358	10	50	150	600	125	600
XTPT020BC1	20	16 – 20	380	10	18	150	600	125	600
XTPT025BC1	25	20 – 25	420	10	18	150	600	125	600

① Rating is pending UL approval. Contact Eaton for availability.
② 22kA 600V AC
③ IEC/EN 60947-4-1

Table 34-186. UL 508 Type E Ratings

Manual Motor Protector — Screw Terminals	Line Side Adapter	FLA Adjustment Range / Overload Release — I_r (Amps)	Short-Circuit Release — I_{rm} (Amps)	UL508 Type E Application				
				Max. RMS Symmetrical Short-Circuit Ratings (kA)			Maximum Upstream Protective Device (A) ①	
Catalog Number	Catalog Number			240V	480/277V	600/347V	Maximum Fuse 600V	Maximum Circuit Breaker 600V
XTPR Frame B + XTPAXLSA								
XTPRP16BB1	**XTPAXLSA**	0.1 – 0.16	2.2	50	50	50	Not Required	Not Required
XTPRP16BC1	**XTPAXLSA**	0.16 – 0.25	3.5	50	50	50	Not Required	Not Required
XTPRP25BC1	**XTPAXLSA**	0.25 – 0.4	5.6	50	50	50	Not Required	Not Required
XTPRP40BC1	**XTPAXLSA**	0.4 – 0.63	8.82	50	50	50	Not Required	Not Required
XTPRP63BC1	**XTPAXLSA**	0.63 – 1	14	50	50	50	Not Required	Not Required
XTPR001BC1	**XTPAXLSA**	1 – 1.6	22.4	50	50	50	Not Required	Not Required
XTPR1P6BC1	**XTPAXLSA**	1.6 – 2.5	35	50	50	50	Not Required	Not Required
XTPR2P5BC1	**XTPAXLSA**	2.5 – 4	56	50	50	50	Not Required	Not Required
XTPR004BC1	**XTPAXLSA**	4 – 6.3	88.2	50	50	50	Not Required	Not Required
XTPR6P3BC1	**XTPAXLSA**	6.3 – 10	140	50	50	50	Not Required	Not Required
XTPR010BC1	**XTPAXLSA**	8 – 12	168	42	42	—	Not Required	Not Required
XTPR012BC1	**XTPAXLSA**	10 – 16	224	42	42	—	Not Required	Not Required
XTPR016BC1	**XTPAXLSA**	10 – 16	224	18	18	—	Not Required	Not Required
XTPR020BC1	**XTPAXLSA**	16 – 20	280	18	18	—	Not Required	Not Required
XTPR025BC1	**XTPAXLSA**	20 – 25	350	18	18	—	Not Required	Not Required
XTPR032BC1	**XTPAXLSA**	25 – 32	448	18	18	—	Not Required	Not Required
XTPR Frame D + XTPAXLSAD								
XTPR016DC1	**XTPAXLSAD**	10 – 16	224	50	50	50	Not Required	Not Required
XTPR025DC1	**XTPAXLSAD**	16 – 25	350	50	50	50	Not Required	Not Required
XTPR032DC1	**XTPAXLSAD**	25 – 32	448	50	50	50	Not Required	Not Required
XTPR040DC1	**XTPAXLSAD**	32 – 40	560	50	50	50	Not Required	Not Required
XTPR050DC1	**XTPAXLSAD**	40 – 50	700	65	65	—	Not Required	Not Required
XTPR058DC1	**XTPAXLSAD**	50 – 58	812	65	65	—	Not Required	Not Required
XTPR063DC1	**XTPAXLSAD**	55 – 65	882	65	65	—	Not Required	Not Required

① For UL 508 Type E applications, the Manual Motor Protector assembly does not require a dedicated upstream protective device in the panel, thus a maximum rating is not required.

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Table 34-195. XTSC and XTSR Manual Motor Controllers (MMC) / Starter Combinations — Component Bill of Material

Factory Assembled Motor Protective Device with Thermal and Magnetic Trip + Contactor					
Assembled Manual Motor Controller ①	FLA Adjustment Range / Overload Release — I_r (Amps)	Component Catalog Numbers			
		Manual Motor Protector	Combination Connection Kit	Contactor ①	Manual Motor Protector Auxiliary Contact
Non-reversing					
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					
XTSC016BC_	10 – 16	XTPR016BC1	XTPAXTPCC	XTCE018C10_	XTPAXFA11
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_	XTPAXFA11
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 – 63	XTPR063DC1	XTPAXTPCD ③	XTCE065D00_	XTPAXFA11
Reversing					
XTSR Frame B MMP + Frame B Contactor					
XTSRP16BB_	0.1 – 0.16	XTPBP16BC1	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 – 63	XTPR063DC1	③	(2) XTCE065D00_	XTPAXFA11

① Underscore (_) indicates Magnetic Coil Suffix required. See **Table 34-191** on **Page 34-162**.

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).

Table 34-196. XTFC and XTFR Combination Motor Controllers (CMC), UL508 Type F — Component Bill of Material

Factory Assembled Motor Protective Device with Thermal and Magnetic Trip + Contactor + Required Line Side Adapter						
Assembled Combination Motor Controller ①	FLA Adjustment Range / Overload Release — I_r (Amps)	Component Catalog Numbers				
		Line Side Adapter	Manual Motor Protector	Combination Connection Kit	Contactor ①	Manual Motor Protector Auxiliary Contact
Non-reversing						
XTFC Frame B MMP + Frame B Contactor						
XTFCP16BB_	0.1 – 0.16	XTPAXLSA	XTPRP16BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFCP25BB_	0.16 – 0.25	XTPAXLSA	XTPRP25BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFCP40BB_	0.25 – 0.4	XTPAXLSA	XTPRP40BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFCP63BB_	0.4 – 0.63	XTPAXLSA	XTPRP63BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFC001BB_	0.63 – 1	XTPAXLSA	XTPR001BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFC1P6BB_	1 – 1.6	XTPAXLSA	XTPR1P6BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFC2P5BB_	1.6 – 2.5	XTPAXLSA	XTPR2P5BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFC004BB_	2.5 – 4	XTPAXLSA	XTPR004BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFC6P3BB_	4 – 6.3	XTPAXLSA	XTPR6P3BC1	XTPAXTPCB	XTCE007B10_	XTPAXFA11
XTFC010BB_	6.3 – 10	XTPAXLSA	XTPR010BC1	XTPAXTPCB	XTCE009B10_	XTPAXFA11
XTFC012BB_	8 – 12	XTPAXLSA	XTPR012BC1	XTPAXTPCB	XTCE012B10_	XTPAXFA11
XTFC016BB_	10 – 16	XTPAXLSA	XTPR016BC1	XTPAXTPCB	XTCE015B10_	XTPAXFA11
XTFC Frame B MMP + Frame C Contactor						
XTFC016BC_	10 – 16	XTPAXLSA	XTPR016BC1	XTPAXTPCC	XTCE018C10_	XTPAXFA11
XTFC020BC_	16 – 20	XTPAXLSA	XTPR020BC1	XTPAXTPCC	XTCE025C10_	XTPAXFA11
XTFC025BC_	20 – 25	XTPAXLSA	XTPR025BC1	XTPAXTPCC	XTCE025C10_	XTPAXFA11
XTFC032BC_	25 – 32	XTPAXLSA	XTPR032BC1	XTPAXTPCC	XTCE032C10_	XTPAXFA11
XTFC Frame D MMP + Frame C Contactor						
XTFC016DC_	10 – 16	XTPAXLSAD	XTPR016DC1	②	XTCE018C10_	XTPAXFA11
XTFC025DC_	16 – 25	XTPAXLSAD	XTPR025DC1	②	XTCE025C10_	XTPAXFA11
XTFC032DC_	25 – 32	XTPAXLSAD	XTPR032DC1	②	XTCE032C10_	XTPAXFA11
XTFC Frame D MMP + Frame D Contactor						
XTFC040DD_	32 – 40	XTPAXLSAD	XTPR040DC1	XTPAXTPCD ③	XTCE040D00_	XTPAXFA11
XTFC050DD_	40 – 50	XTPAXLSAD	XTPR050DC1	XTPAXTPCD ③	XTCE050D00_	XTPAXFA11
XTFC058DD_	50 – 58	XTPAXLSAD	XTPR058DC1	XTPAXTPCD ③	XTCE065D00_	XTPAXFA11
XTFC063DD_	55 – 63	XTPAXLSAD	XTPR063DC1	XTPAXTPCD ③	XTCE065D00_	XTPAXFA11
Reversing						
XTFR Frame B MMP + Frame B Contactor						
XTFRP16BB_	0.1 – 0.16	XTPAXLSA	XTPRP16BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFRP25BB_	0.16 – 0.25	XTPAXLSA	XTPRP25BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFRP40BB_	0.25 – 0.4	XTPAXLSA	XTPRP40BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFRP63BB_	0.4 – 0.63	XTPAXLSA	XTPRP63BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFR001BB_	0.63 – 1	XTPAXLSA	XTPR001BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFR1P6BB_	1 – 1.6	XTPAXLSA	XTPR1P6BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFR2P5BB_	1.6 – 2.5	XTPAXLSA	XTPR2P5BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFR004BB_	2.5 – 4	XTPAXLSA	XTPR004BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFR6P3BB_	4 – 6.3	XTPAXLSA	XTPR6P3BC1	XTPAXTPCRB	(2) XTCE007B01_	XTPAXFA11
XTFR010BB_	6.3 – 10	XTPAXLSA	XTPR010BC1	XTPAXTPCRB	(2) XTCE009B01_	XTPAXFA11
XTFR012BB_	8 – 12	XTPAXLSA	XTPR012BC1	XTPAXTPCRB	(2) XTCE012B01_	XTPAXFA11
XTFR Frame B MMP + Frame C Contactor						
XTFR016BC_	10 – 16	XTPAXLSA	XTPR016BC1	XTPAXTPCRC	(2) XTCE018C01_	XTPAXFA11
XTFR020BC_	16 – 20	XTPAXLSA	XTPR020BC1	XTPAXTPCRC	(2) XTCE025C01_	XTPAXFA11
XTFR025BC_	20 – 25	XTPAXLSA	XTPR025BC1	XTPAXTPCRC	(2) XTCE025C01_	XTPAXFA11
XTFR032BC_	25 – 32	XTPAXLSA	XTPR032BC1	XTPAXTPCRC	(2) XTCE032C01_	XTPAXFA11
XTFR Frame D MMP + Frame C Contactor						
XTFR016DC_	10 – 16	XTPAXLSAD	XTPR016DC1	②	(2) XTCE018C01_	XTPAXFA11
XTFR025DC_	16 – 25	XTPAXLSAD	XTPR025DC1	②	(2) XTCE025C01_	XTPAXFA11
XTFR032DC_	25 – 32	XTPAXLSAD	XTPR032DC1	②	(2) XTCE032C01_	XTPAXFA11
XTFR Frame D MMP + Frame D Contactor						
XTFR040DD_	32 – 40	XTPAXLSAD	XTPR040DC1	③	(2) XTCE040D00_	XTPAXFA11
XTFR050DD_	40 – 50	XTPAXLSAD	XTPR050DC1	③	(2) XTCE050D00_	XTPAXFA11
XTFR058DD_	50 – 58	XTPAXLSAD	XTPR058DC1	③	(2) XTCE065D00_	XTPAXFA11
XTFR063DD_	55 – 63	XTPAXLSAD	XTPR063DC1	③	(2) XTCE065D00_	XTPAXFA11

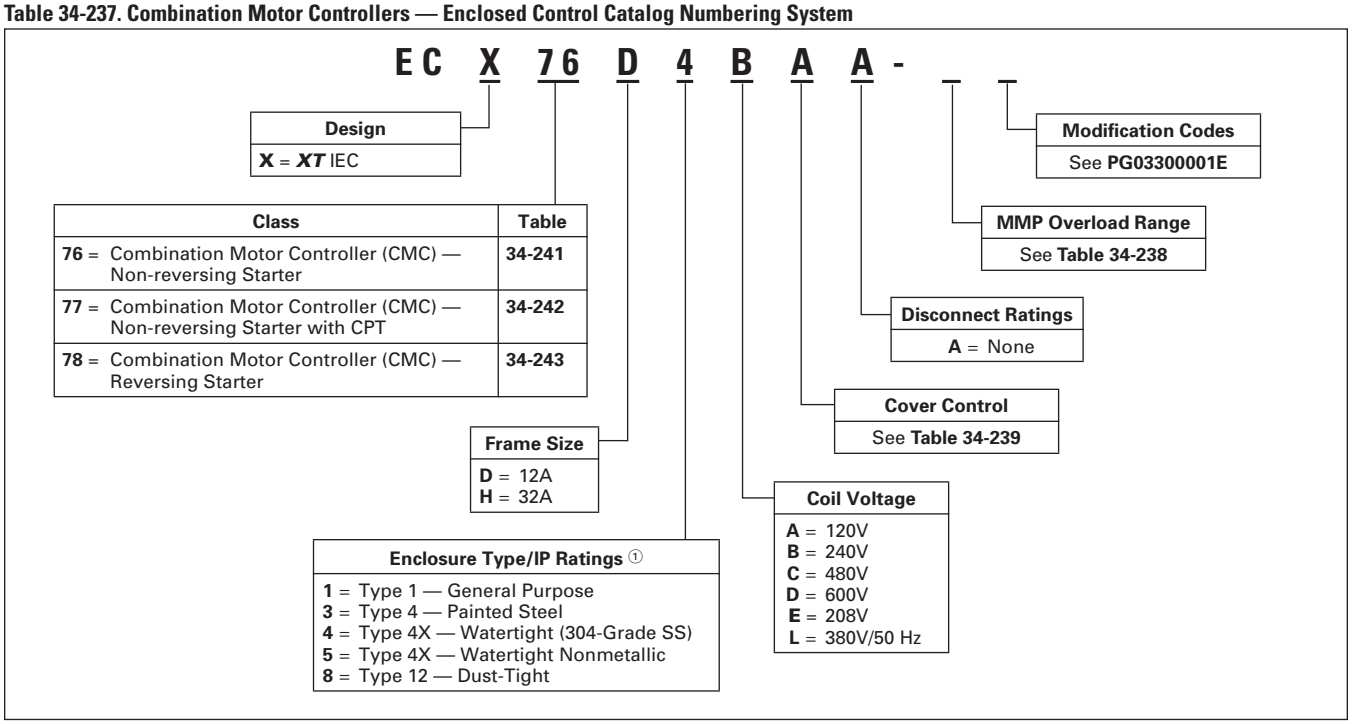
① Underscore (_) indicates Magnetic Coil Suffix required. See **Table 34-191** on **Page 34-162**.

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).

Catalog Number Selection

Table 34-237. Combination Motor Controllers — Enclosed Control Catalog Numbering System



① See **PG03300001E** for Enclosure Type/IP Rating Cross-Reference.

Table 34-238. XTPR MMP Amperage Ranges

XT MMP Catalog Number	Overload Amp Range	Enclosed Control Suffix Code
Frame B Rotary MMP		
XTPRP16BC1	.1 – .16	**A**
XTPRP25BC1	.16 – .25	**B**
XTPRP40BC1	.25 – .4	**C**
XTPRP63BC1	.4 – .63	**D**
XTPR001BC1	.63 – 1	**E**
XTPR1P6BC1	1 – 1.6	**F**
XTPR2P5BC1	1.6 – 2.5	**G**
XTPR004BC1	2.5 – 4	**H**
XTPR6P3BC1	4 – 6.3	**J**
XTPR010BC1	6.3 – 10	**K**
XTPR012BC1	8 – 12.0	**L**
XTPR016BC1	10 – 16.0	**M**
XTPR020BC1	16 – 20	**N**
XTPR025BC1	20 – 25	**Q**
XTPR032BC1	25 – 32	**R**

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 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 (e.g. contact welding, burning, or disintegration) and the overload relay (e.g. component harm or heater element burn-out).

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.

In this case, the contactor/starter is *able to continue use* after the occurrence of a short circuit fault. Light contact burning or tack welding may occur provided the contacts are easily separable.

Table 34-249. 400, 415V Type 2 Coordination — MMC

P (kW)	I_e (A)	I_q (kA)	MMP Catalog Number	Contactor Catalog Number ②	MMC 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	XTPR001BC1	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_

① Values in parentheses ( ) are for Type 1 Coordination.
② Underscore (_) indicates magnet coil suffix required. See **Table 34-261**, **Page 34-216**.

Note: See **Page 34-216** for more information on Wye-Delta (Star Delta) applications.

Table 34-250. 480V Type 2 Coordination — MMC

P (hp)	I_e (A)	I_q (kA)	MMP Catalog Number	Current Limiter Catalog Number	Contactor Catalog Number ②	MMC 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_

① Values in parentheses ( ) are achieved without the current limiter.
② Underscore (_) indicates magnet coil suffix required. See **Table 34-261**, **Page 34-216**.

Note: See **Page 34-216** for more information on Wye-Delta (Star Delta) applications.

Table 34-251. 600V Type 2 Coordination — MMC

P (hp)	I_e (A)	I_q (kA)	MMP Catalog Number	Current Limiter Catalog Number	Contactor Catalog Number ④	MMC Catalog Number ④
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) ③	XTPR6P3BC1	XTPAXCL	XTCE018C10_	XTSC6P3BC_
10	6.72	50 (18) ③	XTPR010BC1	XTPAXCL	XTCE018C10_	XTSC010BC_
10	8.60	50 (18) ③	XTPR010BC1	XTPAXCL	XTCE018C10_	XTSC010BC_
10	11.5	50 (18) ③	XTPR012BC1	XTPAXCL	XTCE018C10_	XTSC012BC_
10	16.0	50 (18) ③	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_

③ Values in parentheses ( ) are achieved without the current limiter.
④ Underscore (_) indicates magnet coil suffix required. See **Table 34-261**, **Page 34-216**.

Note: See **Page 34-216** for more information on Wye-Delta (Star Delta) applications.