

Compact All-in-One Solutions



EATON

Powering Business Worldwide

- Eliminate the overload relay with a manual motor protector or combination motor controller
- Get a disconnect, starter, and overload and motor protection in one compact device
- A complete motor protector and remote control solution easily assembled
- UL 508F ratings means no need for protection upstream when using a combination motor controller

Circuit & Motor Protection

Manual Motor Protectors & Controllers

PRODUCT OVERVIEW

Manual Motor Protectors & Controllers Product Overview

				
Description	XTPB Pushbutton Manual Motor Protector	XTPR Rotary Manual Motor Protector	XTSC Manual Motor Controller	XTFC Combination Motor Controller
Page	Page 42	Page 42	Page 49	Page 49
Operator Style	Pushbutton	Rotary	Rotary	Rotary
Components	Manual Motor Protector	Manual Motor Protector	Manual Motor Protector Contactor Connector Kit	Manual Motor Protector Contactor Connector Kit Line Side Adapter
UL 508 Type E	—	Yes, Line Side Adapter	—	—
UL 508 Type F	—	—	—	Yes, Line Side Adapter
Branch Motor Circuit Functions	Disconnect Controller (manual) Short Circuit Protection Motor Overload Protection	Disconnect Controller (manual) Short Circuit Protection Motor Overload Protection	Disconnect Controller (manual & remote) Short Circuit Protection Motor Overload Protection	Disconnect Controller (manual & remote) Short Circuit Protection Motor Overload Protection
FLA Range	0.1 – 25A	0.1 – 65A	0.1 – 65A	0.1 – 65A

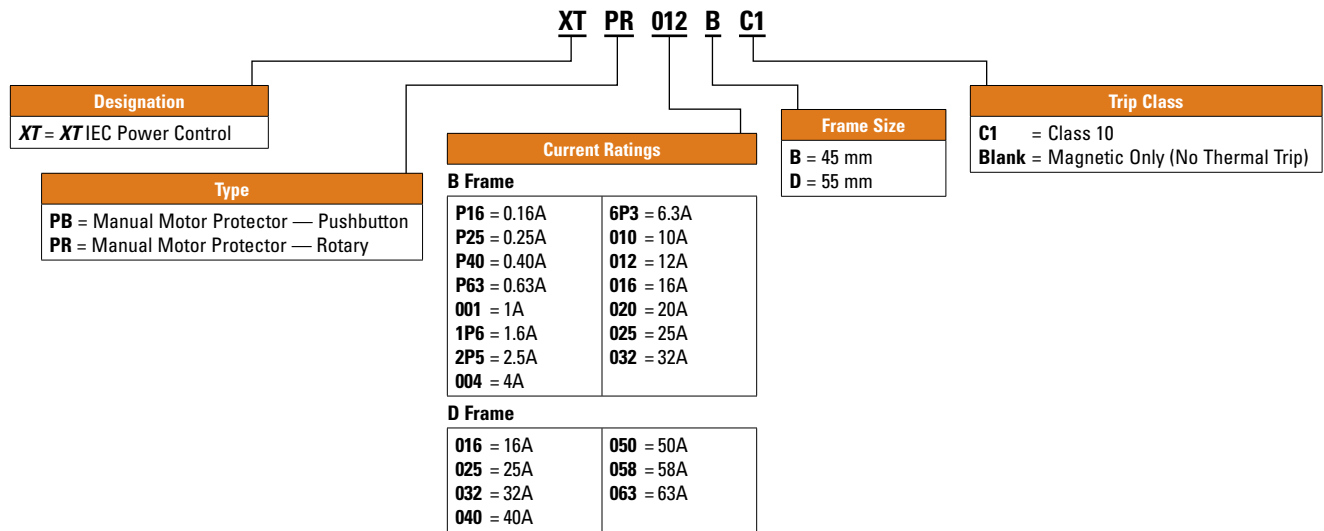
Manual Motor Protectors & Controllers

Circuit & Motor Protection

Manual Motor Protectors & Controllers

CATALOG SELECTION

XT IEC Manual Motor Protectors — Catalog Numbering System



Circuit & Motor Protection

Manual Motor Protectors & Controllers

PRODUCT SELECTION

XTIEC Manual Motor Protectors

- ON / OFF rotary handle with lockout provision
- Class 10 overload protection
- Motor applications from 0.1A to 63A
- Built-in heater and magnetic trip elements to protect the motor
- Adjustment dial for setting motor FLA
- XTPR Rotary MMP with a lineside adapter is rated for UL 508 Type E



Manual Motor Protectors & Controllers

XTPB Pushbutton Manual Motor Protectors — Global and North American Ratings

Motor Protective Device with Thermal and Magnetic Trip

Rated Uninterrupted Current — $I_u = I_r$ (Amps)	FLA Adjustment Range / Overload Release — I_r (Amps)	Short Circuit Release — I_{rm} (Amps)	Maximum Motor Ratings ①								Catalog Number — Screw Terminals	
			Maximum kW Rating AC-3 — P (kW)				Maximum hp Rating — P (hp) UL 508 / CSA C 22.2 No. 14					
			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	XTPBP16BC1
0.25	0.16 – 0.25	3.5	—	0.06	0.06	0.06	0.12	②	②	②	②	XTPBP25BC1
0.4	0.25 – 0.4	5.6	0.06	0.09	0.12	0.12	0.18	②	②	②	②	XTPBP40BC1
0.63	0.4 – 0.63	8.8	0.09	0.12	0.18	0.25	0.25	②	②	②	②	XTPBP63BC1
1	0.63 – 1	14	0.12	0.25	0.25	0.37	0.55	②	②	1/2	1/2	XTPB001BC1
1.6	1 – 1.6	22	0.25	0.55	0.55	0.75	1.1	②	②	3/4	1	XTPB1P6BC1
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	XTPB2P5BC1
4	2.5 – 4	56	0.75	1.5	1.5	2.2	3	1	1	2	3	XTPB004BC1
6.3	4 – 6.3	88	1.1	2.2	3	3	4	1-1/2	1-1/2	3	5	XTPB6P3BC1
10	6.3 – 10	140	2.2	4	4	4	7.5	3	3	7-1/2	10	XTPB010BC1
12	8 – 12	168	3	5.5	5.5	5.5	11	3	3	7-1/2	10	XTPB012BC1
16	10 – 16	224	4	7.5	9	9	12.5	3	5	10	10	XTPB016BC1
20	16 – 20	280	5.5	9	11	12.5	15	5	5	10	15	XTPB020BC1
25	20 – 25	350	5.5	12.5	12.5	15	22	5	7-1/2	15	20	XTPB025BC1

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).

Note: Service Factor (SF) — Setting I_r of current scale in dependence of load factor:

$$SF = 1.15 \rightarrow I_r = 1 \times I_{n \text{ mot}}$$

$$SF = 1 \rightarrow I_r = 0.9 \times I_{n \text{ mot}}$$

Circuit & Motor Protection

Manual Motor Protectors & Controllers

PRODUCT SELECTION

XTIEC Manual Motor Protectors

XTPR Rotary Manual Motor Protectors with Screw Terminals — Global Ratings and North American Ratings

Motor Protective Device with Thermal and Magnetic Trip

Rated Uninterrupted Current — $I_u = I_n$ (Amps)	FLA Adjustment Range / Overload Release — I_r (Amps)	Short Circuit Release — I_{rm} (Amps)	Maximum Motor Ratings ①										Catalog Number — Screw Terminals ③
			Maximum kW Rating AC-3 — P (kW)					Maximum hp Rating — P (hp) UL 508 / CSA C 22.2 No. 14					
			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: XTPRC_CBC1.

For spring cage terminals on the load side only, insert an "SC" into the catalog number in the 5th and 6th positions — Example: XTPRSC_CBC1.

Note: Service Factor (SF) — Setting I_r of current scale in dependence of load factor:

$$SF = 1.15 \rightarrow I_r = 1 \times I_n \text{ mot}$$

$$SF = 1 \rightarrow I_r = 0.9 \times I_n \text{ mot}$$

Circuit & Motor Protection

Manual Motor Protectors & Controllers

PRODUCT SELECTION

XTIEC Manual Motor Protectors

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_r (Amps)	FLA Adjustment Range / Overload Release — I_r (Amps)	Short Circuit Release — I_m (Amps)	Maximum Motor Ratings ②				Rated Short-Circuit Breaking Capacity (kA)			Line Side Adapter ①	Manual Motor Protector — Screw Terminals
			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).

Note: 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 downstream motor, while the contactor has been added to provide remote operation of the motor circuit.

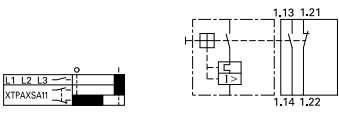
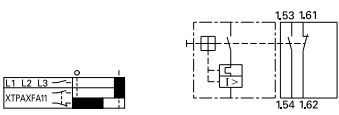
Circuit & Motor Protection

Manual Motor Protectors & Controllers


PRODUCT SELECTION

XT IEC Manual Motor Protectors — Accessories

Auxiliary Contacts


Contact Configuration	Contact Sequence	Screw Terminals	
		Pkg. Qty.	Catalog Number
Side-Mount			
1NO-1NC		5	XTPAXSA11
Front-Mount			
1NO-1NC		5	XTPAXFA11

IP65 Rotary Handle Mechanism ①②③


Description	Pkg. Qty.	Catalog Number
Complete Kits — Includes Handle, Shaft and Required Hardware		
 Rotary Handle Mechanism IP65 Black — For use on main switches to IEC / EN 60204.	1	XTPAXRHMB
Rotary Handle Mechanism IP65 Red / Yellow — For use on main switch with Emergency-Stop function to IEC / EN 60204.	1	XTPAXRHMR
Rotary Handle Mechanism IP65 Black — For use on main switches to IEC / EN 60204 where XTPR is mounted 90° from vertical.	1	XTPAXRHM90B
Rotary Handle Mechanism IP65 Red / Yellow — For use on main switch with Emergency-Stop function to IEC / EN 60204 where XTPR is mounted 90° from vertical.	1	XTPAXRHM90R

- ① With ON/OFF switch position and "+" (tripped), lockable with 3 padlocks, 4 – 8 mm hasp. Can be locked in the OFF position, if required.
- ② Rotary handle mechanisms ship with door interlock disabled. See instruction publication with product for how to enable door interlock.
- ③ Not for use with XTPAXFAEM20 early-make front-mount auxiliary contact.

Shunt Release

Catalog Number — Screw Terminals	Pkg. Qty.
 XTPAXSR120V60H	2
XTPAXSR240V60H	2
XTPAXSR480V60H	2
XTPAXSR24VDC	2

Undervoltage Release




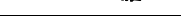
Catalog Number — Screw Terminals	Pkg. Qty.
 XTPAXUVR120V60H	2
XTPAXUVR240V60H	2
XTPAXUVR480V60H	2

XTIEC Manual Motor Protectors — Accessories


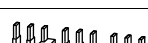

Three-Phase Commoning Links ①

	For Use with...	Qty MMP	Length of Link (mm)	Unit Width (mm)	Pkg Qty.	Catalog Number
--	-----------------	---------	---------------------	-----------------	----------	----------------

Frame B

	MMP With No Side-Mounted Auxiliaries or Voltage Releases	2	90	45	10	XTPAXCLKA2
		3	135	45	10	XTPAXCLKA3
		4	180	45	10	XTPAXCLKA4
		5	225	45	10	XTPAXCLKA5

Frame D

	MMP With No Side-Mounted Auxiliaries or Voltage Releases	2	110	55	1	XTPAXCLKA2D
		3	165	55	1	XTPAXCLKA3D
		4	220	55	1	XTPAXCLKA4D



① Protected against accidental contact. B-Frame short circuit proof $U_e = 690V$, $I_u = 63A$; D-Frame short circuit proof $U_e = 690V$, $I_u = 128A$. Frame B links can be combined by rotating mounting. Frame D links cannot be combined.

Incoming Terminal for Three-Phase Commoning Link ①

	For Use with...	Pkg Qty.	Catalog Number
	B-Frame XTPR, XTPB	5	XTPAXIT

① For three-phase commoning link, protected against accidental contact, $U_e = 690V$, $I_u = 63A$; for conductor cross-sections: 2.5 – 25 mm² stranded; 2.5 – 16 mm² flexible with ferrules, AWG 14-6.

Line-Side Adapter ①

	For Use with...	Pkg Qty.	Catalog Number
	B-Frame XTPR to Create a UL 508 Type E/F Manual Combination Starter	5	XTPAXLSA
	D-Frame XTPR to Create a UL 508 Type E/F Manual Combination Starter	1	XTPAXLSAD ②

① XTPAXLSA is for three-phase commoning link, finger- and back-of-hand proof, $U_e = 690V$, $I_u = 60A$; for conductor cross sections: 2.5 – 25 mm² stranded, 2.5 – 16 mm² flexible with ferrule, AWG 14-6.

② XTPAXLSAD cannot be combined with three-phase commoning links.

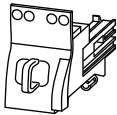
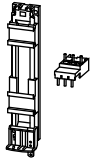
Circuit & Motor Protection

Manual Motor Protectors & Controllers

PRODUCT SELECTION

XTIEC Manual Motor Protectors — Accessories

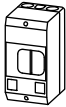
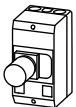
Combination Connection Kits for Connection of XTPR MMP with XTCE Contactor

	For Use with...	Description	Std. Pack	Catalog Number
Non-Reversing Starters				
	XTPR...B + XTCE...B	Comprised of: <ul style="list-style-type: none"> Mechanical connection element for XTPR...B and contactor Main current wiring between XTPR...B and contactor in tool-less plug connection Cable guidance Use contactor auxiliary switch XTCEXFAT_. Control cable guidance: max. 6 cables up to 2.5 mm ² external diameter or 4 cables up to 3.5 mm ² external diameter.	1	XTPAXTPCB
	XTPR...B + XTCE...C	Comprised of: <ul style="list-style-type: none"> DIN-Rail adapter plate Main current wiring between XTPR and contactor 	1	XTPAXTPCC
	XTPR...D + XTCE...D		1	XTPAXTPCD


Insulated Enclosures for Surface Mounting

	Degree of Protection	For Use with...	Description	Catalog Number
--	----------------------	-----------------	-------------	----------------


XTPB Pushbutton Manual Motor Protectors — North American Usage ①②

	IP65 NEMA 3R, 4X, 12, 13	XTPB MMP Only or with: XTPAXFA..., XTPBXFAEM20, XTPAXSA..., XTPAXUVR..., XTPAXSR..., XTPAXCL	With actuating diaphragm	XTPBXENAS65
	IP65 NEMA 3R, 4X, 12, 13	XTPB MMP Only or with: XTPAXFA..., XTPBXFAEM20, XTPAXUVR..., XTPAXSR..., XTPAXCL	With Emergency-Stop (E-Stop) pushbutton actuator, Red-Yellow	XTPBXENASES65

B-Frame (0.1 – 32A) XTPR Rotary Manual Motor Protectors — North American Usage ③

	IP55 NEMA 1, 12, 3R	B-Frame XTPR Only or with: XTPAXSA... and XTPAXFA..., XTPAXUVR... and XTPAXFA..., XTPAXSR... and XTPAXFA..., XTPAXCL	With red/yellow rotary handle for use as Emergency-Stop switch to VDE 0113	XTPAXENAS55RY
---	------------------------	--	--	---------------

D-Frame (10 – 65A) XTPR Rotary Manual Motor Protectors ④⑤

	IP65 NEMA 1, 12, 3R, 4X	D-Frame XTPR Only or with: XTPAXFA..., XTPAXFAEM20, XTPAXSA..., XTPAXSATR..., XTPAXUVR..., XTPAXSR..., XTPAXCL	With red/yellow rotary handle for use as Emergency-Stop switches to IEC / EN 60204	XTPAXENCSD65RY
---	----------------------------	--	--	----------------

① Built-in terminal for PE(N).

② North American enclosures come with conduit adapters for use with 1/2" NPT.

③ Built-in N and PE terminal, lower part without knockouts.

④ Integrated terminal for PE(N) connection.

⑤ % Metric knockouts:
 Top ÷ bottom: M25/M32
 In backplate: M25/M32
 Control cable entry: M20