

#### 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

	<i>Page</i>
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-T1-193</b>
<b>XT</b> Electronic Manual Motor Protector	
Catalog Number Selection .....	<b>V5-T1-217</b>
Product Selection .....	<b>V5-T1-218</b>
Accessories .....	<b>V5-T1-220</b>
Technical Data and Specifications .....	<b>V5-T1-226</b>
Dimensions .....	<b>V5-T1-228</b>
Reference Data .....	<b>V5-T1-229</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

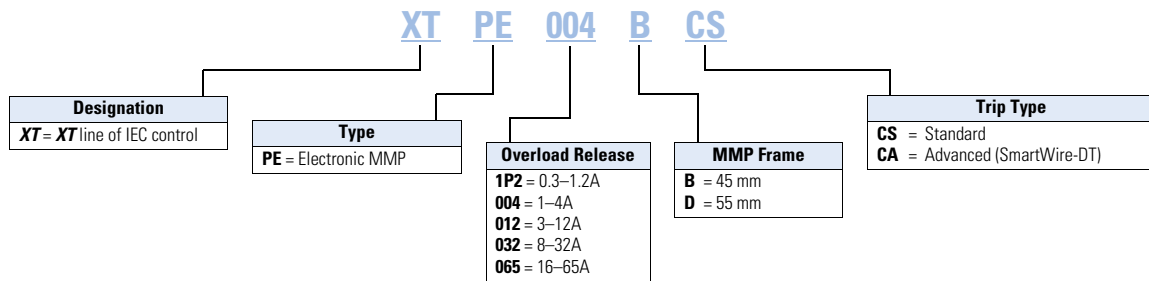
#### XTPE Electronic MMP



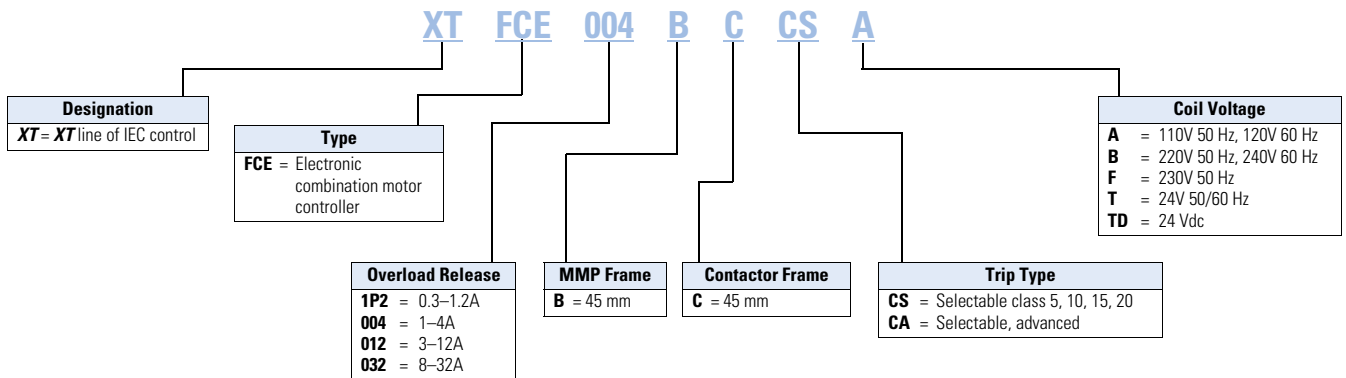
The XTPE Electronic MMP provides the selectability, control, and insight options that give panel builders and OEMs the solutions necessary to enhance motor control designs while reducing total costs.

**Catalog Number Selection**

**XT—Manual Motor Protector**



**XT—Combinations**



## Product Selection

### XT Electronic Manual Motor Protector

B Frame

#### MMP Base



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

B Frame

#### MMP Trip Units



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

B Frame

#### MMP Advanced Trip Units Used with SmartWire-DT



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

D Frame

#### MMP Complete Assembly



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

#### 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 Amp Range	UL/CSA Maximum Motor hp Ratings				IEC Maximum Motor kW Ratings					Complete Manual Motor Protector	
	200V	230V	460V	575V	220V 230V 240V	380V 400V 415V	440V	500V	600V 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/XTUA-1,2
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 Release Setting Amp Range	UL/CSA Maximum Three-Phase hp Ratings					Maximum Single-Phase hp Ratings			Catalog Number Standard	Catalog Number With SmartWire-DT
	200V	240V	380V/ 415V	480V/ 277V	600V/ 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-T1-238**.
- 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	<b>XTPAXSA11</b>
1NO-2NC		5	<b>XTPAXSA12</b>
2NO-1NC		5	<b>XTPAXSA21</b>

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	<b>XTPAXFA11</b>

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.

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**

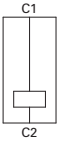
① Orders must be placed in multiples of package quantity listed.

### Additional Accessories

#### XTPAXSR\_



#### Contact Sequence



#### Shunt Release

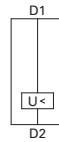
Pkg. Qty. ①	Screw Terminal Catalog Number
2	XTPAXSR24V50H
2	XTPAXSR48V50H
2	XTPAXSR110V50H
2	XTPAXSR120V60H
2	XTPAXSR208V60H
2	XTPAXSR220V50H
2	XTPAXSR230V50H
2	XTPAXSR240V50H
2	XTPAXSR240V60H
2	XTPAXSR380V50H
2	XTPAXSR400V50H
2	XTPAXSR415V50H
2	XTPAXSR440V60H
2	XTPAXSR480V60H
2	XTPAXSR24VDC
2	XTPAXSR48VDC
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

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 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>XTPEXRHM90R</b>



## Three-Phase Commoning Links ⑦

For Use with...	Qty. MMP	Length of Link (mm)	Unit Width (mm)	Pkg. Qty. ④	Catalog Number
MMP with no side-mounted auxiliaries or voltage releases	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>
Each MMP with one auxiliary contact or trip-indicating auxiliary contact fitted on the right	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>
Each MMP with an auxiliary contact and trip-indicating auxiliary contact mounted on the right or a voltage release mounted on the left.	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 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>

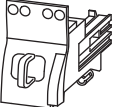
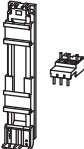
## Notes

- 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.

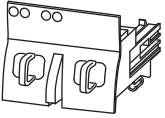
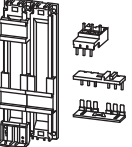


### Combination Connection Kits

#### Non-Reversing Starters

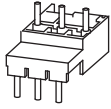
	For Use with...	Description/Comprised of ...	Std. Pack <sup>①</sup>	Catalog Number
<b>XTPAXTPCB</b> 	XTPE...B + XTCE...B	Mechanical connection element for XTPR...B and contactor	1	<b>XTPAXTPCB</b>
		Main current wiring between XTPR...B and contactor in toolless plug connection	1	
Use contactor auxiliary 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>XTPAXTPC_</b> 	XTPR...B + XTCE...C	DIN rail adapter plate	1	<b>XTPAXTPCC</b>
		Main current wiring between XTPR and contactor		

#### Reversing Starters

	For Use with...	Description/Comprised of ...	Std. Pack <sup>①</sup>	Catalog Number
<b>XTPAXTPCRB</b> 	XTPE...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 – K1M: Z1–K2M: A1 – K1M: A2–K2M: A2		
		Cable guidance	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>XTPAXTPCRC</b> 	XTPE...B + XTCE...C	DIN rail adapter plate	1	<b>XTPAXTPCRC</b>
		Reversing starter main current wiring	1	

**Note**

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

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

For Use with...	Description/Comprised of ...	Std. Pack ①	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 ①	Catalog Number
XTPE...B + XTCE...C	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>
--------------------------	---------------------------------	---	-------------------

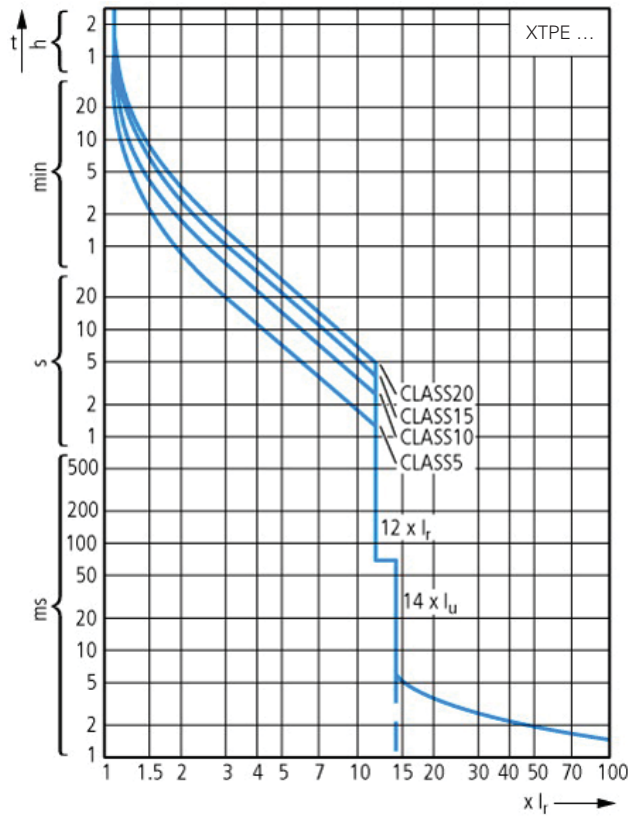
**Note**

① 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	$U_{mp}$	6,000 Vac	6,000 Vac	6,000 Vac
Overvoltage category/pollution degree		III/3	III/3	III/3
Rated operational voltage	$U_e$	690V	690V	690V
Rated uninterrupted current = rated output current	$I_u = I_e$	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 $I_u$	0.25–1 x $I_u$	0.25–1 x $I_u$
Fixed short-circuit trip setting		12 x $I_r$ (trip unit), 14 x $I_u$ (base)	12 x $I_r$ (trip unit), 14 x $I_u$ (base)	12 x $I_r$ (trip unit), 14 x $I_u$ (base)
Short circuit release tolerance		±20%	±20%	±20%
Phase failure sensitivity		Yes	Yes	Yes

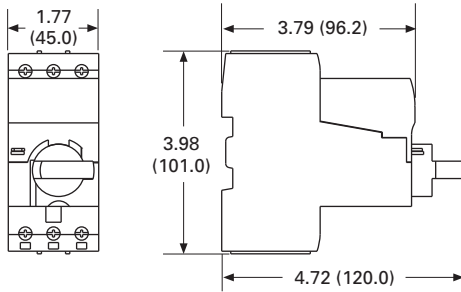
**Trip Characteristics****XT Electronic Manual Motor Controllers**

#### 1

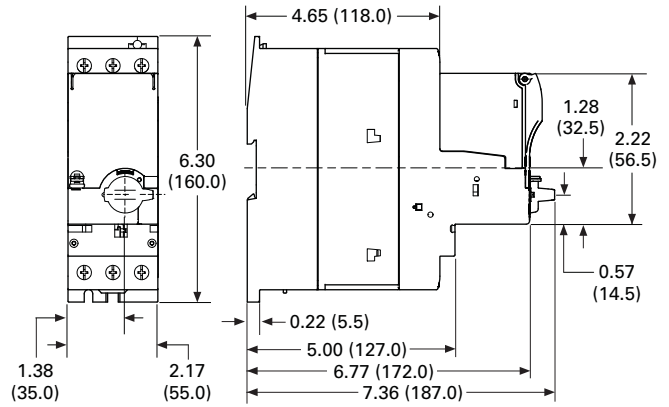
### Dimensions

Approximate Dimensions in Inches (mm)

#### XT Electronic MMP—B Frame



#### XT Electronic MMP—D Frame



#### XT Electronic CMC With C Frame Contactor

