

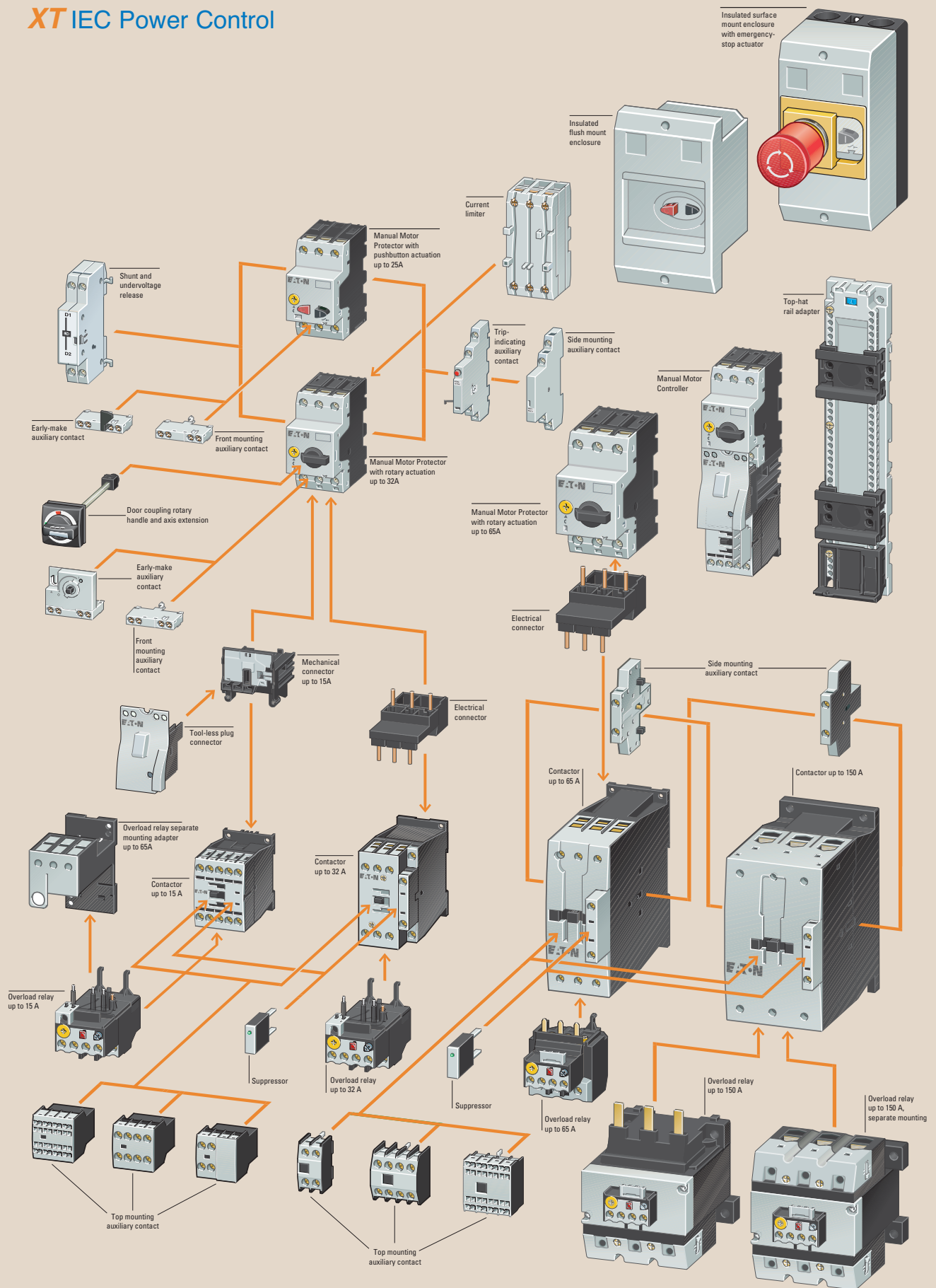


XT IEC Power Control

Quick Reference Guide

**Contactors
Starters
Manual Motor
Protectors**





Also available (not shown):

- XT Mini Contactors, 6-9A
- XT Contactors up to 2000A
- XT Overload Relays up to 630A

XT Manual Motor Protectors

						
Catalog Number Selection	kW@ 400V	Max hp @ 460V	Amp Range	Pushbutton B-Frame	Rotary B-Frame	Rotary D-Frame
Example: XTPB P16 B C1 Prefix Frame Size Max Overload Setting Trip Class C1 = 10	①	①	0.1 – 0.16	XTPBP16BC1	XTPRP16BC1	
	0.06	①	0.16 – 0.25	XTPBP25BC1	XTPRP25BC1	
	0.09	①	0.25 – 0.40	XTPBP40BC1	XTPRP40BC1	
	0.12	①	0.40 – 0.63	XTPBP63BC1	XTPRP63BC1	
	0.25	1/2	0.63 – 1.0	XTPB001BC1	XTPR001BC1	
	0.55	3/4	1.0 – 1.6	XTPB1P6BC1	XTPR1P6BC1	
	0.75	1	1.6 – 2.5	XTPB2P5BC1	XTPR2P5BC1	
	1.5	2	2.5 – 4.0	XTPB004BC1	XTPR004BC1	
	2.2	3	4.0 – 6.3	XTPB6P3BC1	XTPR6P3BC1	
	4.0	7-1/2	6.3 – 10	XTPB010BC1	XTPR010BC1	
	5.5	7-1/2	8 – 12	XTPB012BC1	—	
	7.5	10	9 – 12	—	XTPR012BC1	
	7.5	10	10 – 16	XTPB016BC1	XTPR016BC1	XTPR016DC1
	9.0	10	16 – 20	XTPB020BC1	XTPR020BC1	XTPR025DC1
	12.5	15	20 – 25	XTPB025BC1	XTPR025BC1	XTPR025DC1
	15	25	25 – 32		XTPR032BC1	XTPR032DC1
	20	30	32 – 40			XTPR040DC1
	25	30②	40 – 50			XTPR050DC1
	30	40②	50 – 58			XTPR058DC1
	34	—	55 – 65			XTPR063DC1
Width			mm	45	45	55
Height			mm	93	93	140
Depth			mm	90.5	76	160
Auxiliary contact modules, front mount				XTPAXFA_③		
Auxiliary contact modules, side mount				XTPAXSA_③		
Short circuit breaking capacity I _{cu} at 10A / 400V			kA	50 AC/60 DC	150 AC/60 DC	—
Short circuit breaking capacity I _{cu} at 12A / 400V			kA	50 AC/60 DC	50 AC/60 DC	—
Short circuit breaking capacity I _{cu} at 25A / 400V			kA	50 AC/60 DC	50 AC/40 DC	150 AC/60 DC
Short circuit breaking capacity I _{cu} at 32A / 400V			kA	—	50 AC/40 DC	50 AC/60 DC
Short circuit breaking capacity I _{cu} at 65A / 400V			kA	—	—	50 AC/60 DC
Electrical lifespan			Operations	50,000	100,000	30,000
Single-phasing sensitivity				yes	yes	yes
Undervoltage release				XTPAXUVR120V60H④		
Shunt release				XTPAXSR120V60H④		
Three-phase commoning link (number of MMPs on bus bar)			MMPs only	2 – 5	2 – 5	2 – 4
			With 1 aux	2 – 5	2 – 5	2 – 4
			With 2 auxs	2 or 4	2 or 4	2 or 4

① Use motor current for sizing.

② Consult Eaton for availability.

③ Consult catalog for available auxiliary contact configurations.

④ Consult catalog for other voltage options.

General Applications

Enclosed manual motor protectors (MMPs) are often specified for small fans and blower motors in commercial and industrial applications. OEM opportunities include woodworking machinery, small machine tools, pumps and compressors.

Group Motor Applications

XT manual motor protectors are UL listed for group motor installations. A group motor installation consists of two or more motor circuits protected by a single set of fuses or circuit breaker. This eliminates the need for individual branch fusing or circuit protection.

The reduced cost of components, panel size, wiring, assembly charges and labor are substantial with group motor installations.

Consult NEC Article 430-52 for sizing the branch circuit protective device for a group motor application.

XT IEC
Power Control

XT IEC Power Control	Frame Size A				Frame Size B								Frame Size C						Frame Size D				Frame Size F				Frame Size G																					
																																																
Contactor: Basic Catalog Number	XTMC6A		XTMC9A		XTCE007B		XTCE009B		XTCE012B		XTCE015B		XTCE018C		XTCE025C		XTCE032C		XTCE040D		XTCE050D		XTCE065D		XTCE080F		XTCE095F		XTCE115G		XTCE150G																	
Current Ratings (I) IEC 60947-4-1 AC-1 Thermal Current I _{th}	20 Amperes		20 Amperes		20 Amperes		20 Amperes		20 Amperes		20 Amperes		35 Amperes		40 Amperes		40 Amperes		50 Amperes		60 Amperes		72 Amperes		110 Amperes		110 Amperes		160 Amperes		160 Amperes																	
AC-3 Operational Power Ratings I _e	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp																
200V	—	1-1/2	—	2	—	1-1/2	—	3	—	3	—	5	—	5	—	7-1/2	—	10	—	10	—	15	—	20	—	25	—	25	—	40	—	40																
220/230V	1.5	2	2.2	3	2.2	2	2.5	3	3.5	3	4	5	5	5	7.5	7-1/2	10	10	12.5	15	15.5	20	20	25	25	30	30	40	37	50	48	60																
380/400V	3	—	4	—	3	—	4	—	5.5	—	7.5	—	7.5	—	11	—	15	—	18.5	—	22	—	30	—	37	—	45	—	55	—	75	—																
460V	—	3	—	5	—	3	—	5	—	10	—	10	—	10	—	15	—	20	—	30	—	40	—	50	—	60	—	75	—	100	—	125																
575V	—	3	—	5	—	5	—	7-1/2	—	10	—	10	—	15	—	20	—	25	—	40	—	50	—	60	—	75	—	100	—	125	—	125																
660/690V ®	3	—	4	—	3.5	—	4.5	—	6.5	—	7	—	11	—	14	—	17	—	23	—	30	—	35	—	63	—	75	—	90	—	96	—																
1000V ®	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—																	
Built-in Auxiliary Contacts	10 = 1NO 01 = 1NC																		00 = 0NO-0NC																													
Coil Options	Coil Voltage 110V 50 Hz, 120V 60 Hz 220V 50 Hz, 240V 60 Hz 230V 50 Hz 24V 50/60 Hz 24V DC				Code A B F T TD®		Coil Voltage 415V 50 Hz, 480V 60 Hz 550V 50 Hz, 600V 60 Hz 208V 60 Hz 190V 50 Hz, 220V 60 Hz 240V 50 Hz, 277V 60 Hz 380V 50 Hz, 440V 60 Hz		Code C D E G H L		Coil Voltage 400V 50 Hz 380V 60 Hz 12V 50/60 Hz 24V 50 Hz 42V 50 Hz, 48V 60 Hz 48V 50 Hz		Code N P R U W Y		Coil Voltage 120V DC 220V DC 12V DC 48V DC		Code AD® BD® RD® WD®		Coil Voltage 110V 50 Hz, 120V 60 Hz 220V 50 Hz, 240V 60 Hz 230V 50 Hz 24V 50/60 Hz 240V 50 Hz, 277V 60 Hz 24 – 27V DC				Code A B F T TD®		Coil Voltage 415V 50 Hz, 480V 60 Hz 550V 50 Hz, 600V 60 Hz 208V 60 Hz 190V 50 Hz, 220V 60 Hz 240V 50 Hz, 277V 60 Hz 380V 50 Hz, 440V 60 Hz		Code C D E G H L		Coil Voltage 400V 50 Hz 380V 60 Hz 12V 50/60 Hz 24V 50 Hz 42V 50 Hz, 48V 60 Hz* 48V 50 Hz		Code N P R U W Y		Coil Voltage 110 – 130V DC 200 – 240V DC 12 – 14V DC 48 – 60V DC		Code AD®® BD® RD® WD®		Coil Voltage 100 – 120V 50/60 Hz 190 – 240V 50/60 Hz 24V 50/60 Hz 24 – 27V DC 480 – 500V 50/60 Hz 380 – 440V 50/60 Hz				Code A B T TD® C L		Coil Voltage 42 – 48V 50/60 Hz 110 – 130V DC 200 – 240V DC 48 – 60V DC		Code W AD® BD® WD®			
AC Magnet Coil Data																																																
Pick-Up VA	50/60 Hz		25		25		24 – 29		24 – 29		24 – 29		24 – 29		50 – 62		50 – 62		50 – 62		150 – 185		150 – 185		150 – 185		310 – 375		310 – 375		130		130															
Sealed VA	50/60 Hz		4.6		4.6		4.0 – 4.4		4.0 – 4.4		4.0 – 4.4		4.0 – 4.4		8.0 – 9.1		8.0 – 9.1		8.0 – 9.1		16.0 – 19.0		16.0 – 19.0		16.0 – 19.0		26.0 – 31.0		26.0 – 31.0		3.5		3.5															
Wire Ranges	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²														
Main Cable ®	18 – 14	1 x (0.75-1.5) 2 x (0.75-1.5)	18 – 14	1 x (0.75-1.5) 2 x (0.75-1.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 6	1 x (0.75-16) 2 x (0.75-10)	18 – 6	1 x (0.75-16) 2 x (0.75-10)	18 – 6	1 x (0.75-16) 2 x (0.75-10)	12 – 2	1 x (2.5-35) 2 x (2.5-25)	12 – 2	1 x (2.5-35) 2 x (2.5-25)	12 – 2	1 x (2.5-35) 2 x (2.5-25)	8 – 250MCM	1 x (10-95) 2 x (10-70)	8 – 250MCM	1 x (10-95) 2 x (10-70)	8 – 3/0	1 x (10-95) 6 – 2/0	8 – 3/0	1 x (10-95) 6 – 2/0	1 x (10-95) 2 x (10-70)															
Control Circuits ®	18 – 14	1 x (0.75-1.5) 2 x (0.75-1.5)	18 – 14	1 x (0.75-1.5) 2 x (0.75-1.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-2.5)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)	18 – 14	1 x (0.75-4) 2 x (0.75-4)																
Auxiliary Contacts	XTMCX F = Front mount Blank = Screw terminals C = Spring cage terminals 02 = 2NC 04 = 4NC 11 = 1NO-1NC 13 = 1NO-3NC 20 = 2NO 22 = 2NO-2NC 31 = 3NO-1NC 40 = 4NO				XTCEX F = Front mount C = Frames B – C Blank = Screw terminals C = Spring cage terminals A = seq A AL = seq AL C = seq C CL = seq CL D = seq D 02 = 2NC 04 = 4NC 11 = 1NO-1NC 13 = 1NO-3NC 20 = 2NO 22 = 2NO-2NC 31 = 3NO-1NC 40 = 4NO								XTCEX F = Front mount S = Side mount A = seq A B = seq B BL = seq BL G = Front mount, frames D-G N = Side mount, frames D-N Blank = Screw terminals C = Spring cage terminals 02 = 2NC 04 = 4NC 11 = 1NO-1NC 13 = 1NO-3NC 20 = 2NO 22 = 2NO-2NC 31 = 3NO-1NC 40 = 4NO																																			
Overload Relay	XTOM P16 = 0.10 – 0.16A P24 = 0.16 – 0.24A P40 = 0.24 – 0.40A P60 = 0.40 – 0.60A 001 = 0.60 – 1A 1P6 = 1.0 – 1.6A 2P4 = 1.6 – 2.4A 004 = 2.4 – 4A 006 = 4 – 6A 009 = 6 – 10A 012 = 9 – 12A C1 = Class 10				XTOB P16 = 0.10 – 0.16A P24 = 0.16 – 0.24A P40 = 0.24 – 0.40A P60 = 0.40 – 0.60A 001 = 0.60 – 1A 1P6 = 1.0 – 1.6A 2P4 = 1.6 – 2.4A 004 = 2.4 – 4A 006 = 4 – 6A 010 = 6 – 10A 012 = 9 – 12A 016 = 12 – 16A C1 = Class 10								XTOB P16 = 0.10 – 0.16A P24 = 0.16 – 0.24A P40 = 0.24 – 0.40A P60 = 0.40 – 0.60A 001 = 0.60 – 1A 1P6 = 1.0 – 1.6A 2P4 = 1.6 – 2.4A 004 = 2.4 – 4A 006 = 4 – 6A 010 = 6 – 10A 012 = 9 – 12A 024 = 16 – 24A 032 = 24 – 32A C1 = Class 10						XTOB 010 = 6 – 10A 016 = 10 – 16A 024 = 16 – 24A 040 = 24 – 40A 057 = 40 – 57A 065 = 50 – 65A C1 = Class 10				XTOB 035 = 25 – 35A 050 = 35 – 50A 070 = 50 – 70A 100 = 70 – 100A 125 = 95 – 125A G-frame only 150 = 120 – 150A F = 80 – 95A G = 115 – 150A C1 = Class 10																									
Catalog Numbering System	Mini Contactors Example: XTMC 6 A 01 A XT Non-reversing Mini Contactor Amp Rating Frame Auxiliary Contact Configuration Coil Code																												Contactors Example: XTCE 007 B 01 A XT Non-reversing Contactor Amp Rating Frame Auxiliary Contact Configuration Coil Code								Starters Example: XTAE 007 B 10 A 004 XT Non-reversing Starter Amp Rating Frame Coil Code Overload Relay Amp Range Auxiliary Contact Configuration											

® For 185 – 2000A Contactors at 660/690V or 1000V: Do not reverse directly. ® 7 – 65A — flexible with ferrule cable, 185 – 2000A — flexible with cable lug. ® Flexible with ferrule cable. ®With DC Operation: Integrated diode-resistor combination, coil rating 2.6W. ®Contact Eaton for availability.

XT IEC Power Control	Frame Size L						Frame Size M						Frame Size N						Frame Size P		Frame Size R					
																										
Contactor: Basic Catalog Number	XTCE185L		XTCE225L		XTCE250L		XTCE300M		XTCE400M		XTCE500M		XTCE580N		XTCE650N		XTCE750N		XTCE820N		XTCEC10N		XTCEC14P		XTCEC20R	
Current Ratings (I) IEC 60947-4-1 AC-1 Thermal Current I _{th}	275 Amperes		315 Amperes		350 Amperes		400 Amperes		500 Amperes		700 Amperes		800 Amperes		850 Amperes		900 Amperes		1000 Amperes		1000 Amperes		1400 Amperes		2000 Amperes	
AC-3 Operational Power Ratings I _e	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp	kW	hp
200V	—	50	—	60	—	75	—	100	—	125	—	150	—	200	—	200	—	250	—	290	—	—	—	—	—	—
220/230V	55	60	70	75	75	100	90	125	125	150	155	200	185	200	205	250	240	300	260	350	315	—	—	—	—	
380/400V	90	—	110	—	132	—	160	—	200	—	250	—	315	—	355	—	400	—	450	—	560	—	—	—	—	
460V	—	125	—	150	—	200	—	250	—	300	—	400	—	400	—	500	—	600	—	700	—	—	—	—	—	
575V	—	150	—	200	—	250	—	300	—	400	—	500	—	600	—	600	—	700	—	860	—	—	—	—	—	
660/690V Ⓢ	175	—	215	—	240	—	286	—	344	—	344	—	516	—	630	—	720	—	750	—	1000	—	—	—	—	
1000V Ⓢ	108	—	108	—	108	—	132	—	132	—	132	—	600	—	600	—	800	—	800	—	1000	—	—	—	—	
Built-in Auxiliary Contacts	22 = 2NO-2NC																									
Coil Options	Coil Voltage 110 – 250V 40 – 60 Hz AC/DC 250 – 500V 40 – 60 Hz AC/DC 48 – 110V 40 – 60 Hz AC/DC 24 – 48V AC/DC Code A C YⓈ TDⓈ																						Coil Voltage 220 – 250V 50/60 Hz DC Code B			
AC Magnet Coil Data																										
Pick-Up VA 50/60 Hz	250		250		250		450		450		450		800		800		800		800		800		800		1600	
Sealed VA 50/60 Hz	4.3		4.3		4.3		4.3		4.3		4.3		7.5		7.5		7.5		7.5		7.5		7.5		15	
Wire Ranges	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²	AWG	mm²
Main Cable Ⓢ	1/0-250MCM	50-240	1/0-250MCM	50-240	1/0-250MCM	50-240	1/0-250MCM	50-240	1/0-250MCM	50-240	1/0-250MCM	50-240	2/0-500MCM	50-240	2/0-500MCM	50-240	2/0-500MCM	50-240	2/0-500MCM	50-240	2/0-500MCM	50-240	2/0-500MCM	50-240	2/0-500MCM	50-240
Control Circuits Ⓢ	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	1 x (0.75-2.5) 2 x (0.75-2.5)	2 x (18-12) 2 x (0.75-2.5)	
Auxiliary Contacts	 XTCEX F S = Side mount B B = seq B BL = seq BL N N = Frames D – N C Blank = Screw terminals C = Spring cage terminals 11 11 = 1NO-1NC <td colspan="4"></td>																									
Overload Relay	XTOB 125 070 = 50 – 70A 100 = 70 – 100A 125 = 95 – 125A 160 = 120 – 160A 220 = 160 – 220A 250 = 200 – 250A L C1 C1 = Class 10						 XTOT 160 063 = 42 – 63A 090 = 60 – 90A 125 = 85 – 125A 160 = 110 – 160A 240 = 160 – 240A 290 = 190 – 290A 400 = 270 – 400A 540 = 360 – 540A 630 = 420 – 630A C3 C3 = Class 30 S S = Separate mounting only for XTOT																			
Catalog Numbering System	Contactors Example: XTCE XT Non-reversing Contactor 185 Amp Rating L Frame 22 Auxiliary Contact Configuration A Coil Code Starters Example: XTAE XT Non-reversing Starter 250 Amp Rating L Frame 22 Auxiliary Contact Configuration A Coil Code 004 Overload Relay Amp Range																									

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Eaton Electrical Inc.

1000 Cherrington Parkway
Moon Township, PA 15108
United States

For more information or to locate regional product support,
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