

## Combination Motor Controllers



## Combination Motor Controllers

## Product Description

Eaton's **XT** IEC open non-reversing and reversing manual motor controllers combine a manual motor protector with an IEC contactor(s) to provide a complete motor protection solution by combining motor disconnect function, thermal overload protection, magnetic short-circuit protection and remote control operation in one compact, assembled unit. These assembled manual motor controllers cover motors with FLA ratings from 0.10A to 65A.

The UL 508 Type F labeled combination motor controller (CMC) includes a line side adapter (LSA). These assembled combination motor controllers cover motors with FLA ratings from 0.10A to 65A.


## Application Description

The **XT** IEC non-reversing and reversing manual and combination motor controllers can be used in the following applications:

**Group Motor Control**

Manual motor controllers (MMCs) are ideal for group motor applications where an upstream breaker or fuse provides protection for two or more motors. **XT** manual motor controllers (MMC) combine a manual motor protector, a wiring connector link and IEC contactor.

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**Individual Branch Circuit for Motor Loads**

Combination motor controller (CMC), consisting of a line side adapter, manual motor protector, wiring connector link and IEC contactor, provide an efficient means to build an entire branch circuit. The **XT** CMC is UL 508 Type F approved, meaning it is "self-protected" and doesn't require the use of an additional fuse or breaker for short circuit protection. This approval means CMC's can be used in place of a traditional fuse-starter and breaker-starter motor circuit.

Based around two key functional components (MMP and contactor), the CMC is a very cost effective means to build a branch circuit. Fuses and breakers must be oversized to prevent tripping during motor start up, and thus these oversized devices can no longer protect the motor. To compensate for this, a motor overload relay is necessary to protect the motor.

The manual motor protector was invented in Germany by Moeller to correct this inefficiency. The MMP operates similarly to a circuit breaker, except the inrush (magnetic) protection is set to 14 times the running current, thus accounting for motor start-up current without the necessity to oversize. A overcurrent dial was added to the face of the MMP to serve as the motor overload protection. This "motor protective circuit breaker", as it is referred to in Europe, now accomplishes all four key functions of a motor branch circuit: disconnect, short circuit, motor controller and motor overload protection. With the addition of a contactor, users have the ability to remotely control the starter device.

Whether a single motor application or a multiple motor application, CMC's are an ideal solution for machinery OEMs and panel builders.

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### Features

- ON/OFF rotary handle with lockout provision
- Visible trip indication
- Test trip function
- Motor applications from 0.10A to 65A
- Class 10 overload protection
- Built-in heater and magnetic trip elements to protect the motor
- Phase loss sensitivity
- Type 2 coordination
- Ambient compensated up to 55°C [140°F]
- Control inputs located at front of starter for easy access and wiring
- Wide range of coils
- DIN rail mount—XTSC...BB\_
- Mounting plates—XTSC...BC\_, XTSC...D motor controllers
- Adjustment dial for setting motor FLA
- Short-circuit trip at 14 times the maximum setting of the FLA adjustment dial
- UL 508 Type F CMC high fault short-circuit ratings
- 1NO-1NC auxiliary contact as standard on manual motor controller and combination motor controller

### Standards and Certifications

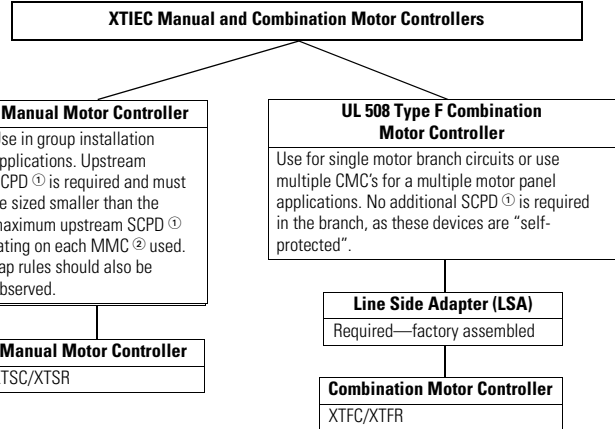
UL 508 Type F combination motor controller

- IEC Type 2 Approved per IEC 60947-4-1
- UL Listed File No. E245398
- CE Mark



**Note:** For Type 2 Coordination of MMCs, see **Page V5-T1-230**. Protection in different controller types

### MMC and CMC Applications



### Notes

Technical Paper AP03402001E.

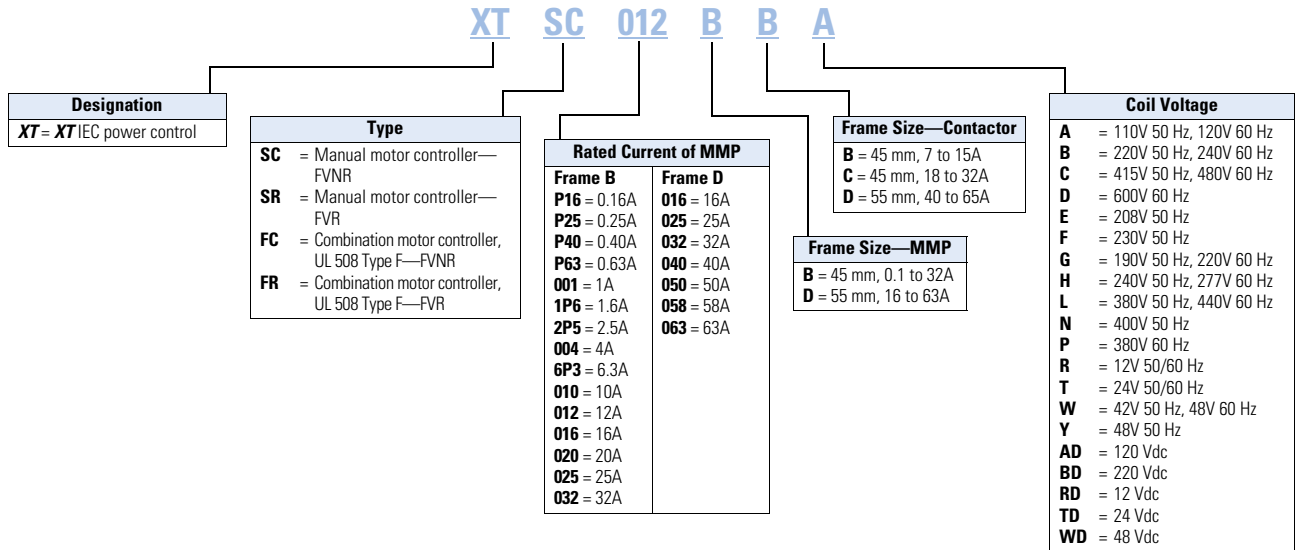
Line side adapters are not required for non-U.S. applications. Most countries outside of the U.S. classify the MMP as a motor-protective circuit breaker.

① SCPD = Short-circuit protective device (circuit breaker, fuses).

② MMC = Manual motor controller

Catalog Number Selection

Combination Motor Controllers



Product Selection

XTSC and XTSR Manual Motor Controllers (MMC)/Starter Combinations

Frame B MMP + Frame B Contactor



Factory-Assembled Manual Motor Controller—Frame B MMP + Frame B Contactor—Maximum UL Ratings ①

FLA Adjustment Range/Overload Release— $I_r$  (Amps)



FLA Adjustment Range/Overload Release— $I_r$ (Amps)	Short-Circuit Release— $I_{rm}$ (Amps)	Three-Phase				Assembled Manual Motor Controller ②	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
0.1–0.16	3.2	③	③	1/2	1/2	XTSCP16BB_	XTSRP16BB_
0.16–0.25	3.5	③	③	1/2	1/2	XTSCP25BB_	XTSRP25BB_
0.25–0.4	5.6	③	③	1/2	1/2	XTSCP40BB_	XTSRP40BB_
0.4–0.63	8.82	③	③	1/2	1/2	XTSCP63BB_	XTSRP63BB_
0.63–1	14	③	③	1/2	1/2	XTSC001BB_	XTSR001BB_
1–1.6	22.4	③	③	3/4	1	XTSC1P6BB_	XTSR1P6BB_
1.6–2.5	35	1/2	1/2	1	1-1/2	XTSC2P5BB_	XTSR2P5BB_
2.5–4	56	1	1	2	3	XTSC004BB_	XTSR004BB_
4–6.3	88.2	1-1/2	1-1/2	3	5	XTSC6P3BB_	XTSR6P3BB_
6.3–10	140	3	3	7-1/2	3	XTSC010BB_	XTSR010BB_
8–12	168	3	3	7-1/2	3	XTSC012BB_	XTSR012BB_
10–16	224	3	3	10	3	XTSC016BB_	—

Notes

- ① Select manual motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.
- ② Underscore ( \_ ) indicates magnetic coil suffix required. See Page V5-T1-198.
- ③ In this range, calculate motor rating according to rated current. Specified values to NEC 430.6(A)(1).

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Frame B MMP +  
Frame B Contactor



#### Factory-Assembled Motor Protective Device with Thermal and Magnetic Trip + Contactor— Maximum IEC Ratings<sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)



	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
0.1–0.16	3.2	—	—	—	0.06	XTSCP16BB_	XTSRP16BB_
0.16–0.25	3.5	—	0.06	0.06	0.12	XTSCP25BB_	XTSRP25BB_
0.25–0.4	5.6	0.06	0.09	0.12	0.18	XTSCP40BB_	XTSRP40BB_
0.4–0.63	8.82	0.09	0.18	0.25	0.25	XTSCP63BB_	XTSRP63BB_
0.63–1	14	0.12	0.25	0.37	0.55	XTSC001BB_	XTSR001BB_
1–1.6	22.4	0.25	0.55	0.75	1.1	XTSC1P6BB_	XTSR1P6BB_
1.6–2.5	35	0.37	0.75	1.1	1.5	XTSC2P5BB_	XTSR2P5BB_
2.5–4	56	0.75	1.5	2.2	3	XTSC004BB_	XTSR004BB_
4–6.3	88.2	1.1	2.2	3	4	XTSC6P3BB_	XTSR6P3BB_
6.3–10	140	2.2	4	4	7.5	XTSC010BB_	XTSR010BB_
8–12	168	3	5.5	5.5	11	XTSC012BB_	XTSR012BB_
10–16	224	4	7.5	9	12.5	XTSC016BB_	—

Frame B MMP +  
Frame C Contactor



#### Factory-Assembled Manual Motor Controller—Frame B MMP + Frame C Contactor— Maximum UL Ratings<sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)



	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	3	3	10	10	XTSC016BC_	XTSR016BC_
16–20	280	5	5	10	15	XTSC020BC_	XTSR020BC_
20–25	350	5	7-1/2	15	20	XTSC025BC_	XTSR025BC_
25–32	448	7-1/2	10	20	25	XTSC032BC_	XTSR032BC_

Frame B MMP +  
Frame C Contactor



#### Factory-Assembled Manual Motor Controller—Frame B MMP + Frame C Contactor— Maximum IEC Ratings<sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)



	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	4	7.5	9	12.5	XTSC016BC_	XTSR016BC_
16–20	280	5.5	9	12.5	15	XTSC020BC_	XTSR020BC_
20–25	350	5.5	11	15	22	XTSC025BC_	XTSR025BC_
25–32	448	7.5	15	22	30	XTSC032BC_	XTSR032BC_

#### Notes

- ① Select manual motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.
- ② Underscore (\_) indicates magnetic coil suffix required. See **Page V5-T1-198**.

Frame D MMP +  
Frame C ContactorFactory-Assembled Manual Motor Controller—Frame D MMP + Frame C Contactor—  
Maximum UL Ratings ①FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_{rm}$ (Amps)	Three-Phase				Assembled Manual Motor Controller ②	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	3	5	10	15	XTSC016DC_	XTSR016DC_
16–25	350	5	7-1/2	15	20	XTSC025DC_	XTSR025DC_
25–32	448	7-1/2	10	20	30	XTSC032DC_	XTSR032DC_

Frame D MMP +  
Frame C ContactorFactory-Assembled Manual Motor Controller—Frame D MMP + Frame C Contactor—  
Maximum IEC Ratings ①FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_{rm}$ (Amps)	Three-Phase				Assembled Manual Motor Controller ②	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	4	7.5	9	12.5	XTSC016DC_	XTSR016DC_
16–25	350	5.5	12.5	12.5	22	XTSC025DC_	XTSR025DC_
25–32	448	7.5	15	17.5	22	XTSC032DC_	XTSR032DC_

Frame D MMP +  
Frame D ContactorFactory-Assembled Manual Motor Controller—Frame D MMP + Frame D Contactor—  
Maximum UL Ratings ①FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_{rm}$ (Amps)	Three-Phase				Assembled Manual Motor Controller ②	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
32–40	560	10	15	30	30	XTSC040DD_	XTSR040DD_
40–50	700	15	15	30	—	XTSC050DD_	XTSR050DD_
50–58	812	15	15	40	—	XTSC058DD_	XTSR058DD_
55–65	882	15	15	40	—	XTSC063DD_	XTSR063DD_

**Notes**

- ① Select manual motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.  
 ② Underscore (\_) indicates magnetic coil suffix required. See **Page V5-T1-198**.

**Frame D MMP +  
Frame D Contactor**



**Factory-Assembled Manual Motor Controller—Frame D MMP + Frame D Contactor—  
Maximum IEC Ratings ①**

**FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)**



	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller ②	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
32–40	560	11	20	22	30	<b>XTSC040DD_</b>	<b>XTSR040DD_</b>
40–50	700	14	25	30	45	<b>XTSC050DD_</b>	<b>XTSR050DD_</b>
50–58	812	17	30	37	55	<b>XTSC058DD_</b>	<b>XTSR058DD_</b>
55–65	882	18.5	34	37	55	<b>XTSC063DD_</b>	<b>XTSR063DD_</b>

**AC and DC Coil Suffixes**

Coil Voltage	Suffix Code
<b>Frame B Contactors</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24 Vdc	<b>TD</b> ③
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>

Coil Voltage	Suffix Code
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
120 Vdc	<b>AD</b> ③
220 Vdc	<b>BD</b> ③
12 Vdc	<b>RD</b> ③
48 Vdc	<b>WD</b> ③

Coil Voltage	Suffix Code
<b>Frame C and D Contactors</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b> ③
415V 50 Hz, 480V 60 Hz	<b>C</b>
550V 50 Hz, 600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>

Coil Voltage	Suffix Code
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
110–130 Vdc	<b>AD</b> ③
200–240 Vdc	<b>BD</b> ③
12–14 Vdc	<b>RD</b> ③
48–60 Vdc	<b>WD</b> ③

**Notes**

The assembled manual motor controller (MMC) consists of an XTPR manual motor protector (MMP) and an XTCE contactor. For Frame B MMP + Frame B contactor assemblies, the XTSC and XTSR can be mounted directly on DIN rail without an adapter. The contactors are supported mechanically with a mechanical connection element (included in XTPAXTPCB, XTPAXRPCR). For MMCs using a Frame C or Frame D contactor, the assembly is mounted via a DIN rail adapter plate (XTPAXTPCPC, XTPAXTPCPD) and the electrical connection is made with electrical contact modules (XTPAXECMC, XTPAXECMD), both included in XTPAXTPCC and XTPAXTPCD.

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

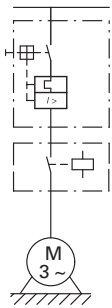
$$SF = 1.15 \rightarrow I_r = 1 \times I_{n \text{ mot}}$$

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

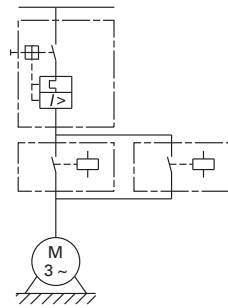
Single-phasing sensitivity to IEC/EN 60947-4-1, VDE 0660 Part 102.

- ① Select manual motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.
- ② Underscore (\_) indicates magnetic coil suffix required. See AC and DC coil suffixes above.
- ③ With DC operation: Integrated diode-resistor combination, coil rating 2.6W.

**Non-Reversing Manual  
Motor Controller Power  
Circuit**



**Reversing Manual  
Motor Controller Power  
Circuit**



## XTFC and XTFR Combination Motor Controllers (CMC), UL 508 Type F

Frame B MMP + Two  
Frame B ContactorsFactory-Assembled Type F Combination Motor Controller—Frame B MMP + Frame B Contactor—  
Maximum UL Ratings <sup>①</sup>FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

FLA Adjustment Range/Overload Release— $I_r$ (Amps)	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
0.16–0.25	3.5	③	③	1/2	1/2	XTFCP25BB_	XTFRP25BB_
0.25–0.4	5.6	③	③	1/2	1/2	XTFCP40BB_	XTFRP40BB_
0.4–0.63	8.82	③	③	1/2	1/2	XTFCP63BB_	XTFRP63BB_
0.63–1	14	③	③	1/2	1/2	XTFC001BB_	XTFR001BB_
1–1.6	22.4	③	③	3/4	1	XTFC1P6BB_	XTFR1P6BB_
1.6–2.5	35	1/2	1/2	1	1-1/2	XTFC2P5BB_	XTFR2P5BB_
2.5–4	56	1	1	2	3	XTFC004BB_	XTFR004BB_
4–6.3	88.2	1-1/2	1-1/2	3	5	XTFC6P3BB_	XTFR6P3BB_
6.3–10	140	3	3	7-1/2	10	XTFC010BB_	XTFR010BB_
8–12	168	3	3	7-1/2	—	XTFC012BB_	XTFR012BB_
10–16	224	3	5	10	—	XTFC016BB_	—

Factory-Assembled Type F Combination Motor Controller—Frame B MMP + Frame B Contactor—  
Maximum IEC Ratings <sup>①</sup>FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)


FLA Adjustment Range/Overload Release— $I_r$ (Amps)	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
0.1–0.16	2.2	—	—	—	0.06	XTFCP16BB_	XTFRP16BB_
0.16–0.25	3.5	—	0.06	0.06	0.12	XTFCP25BB_	XTFRP25BB_
0.25–0.4	5.6	0.06	0.09	0.12	0.18	XTFCP40BB_	XTFRP40BB_
0.4–0.63	8.82	0.09	0.18	0.25	0.25	XTFCP63BB_	XTFRP63BB_
0.63–1	14	0.12	0.25	0.37	0.55	XTFC001BB_	XTFR001BB_
1–1.6	22.4	0.25	0.55	0.75	1.1	XTFC1P6BB_	XTFR1P6BB_
1.6–2.5	35	0.37	0.75	1.1	1.5	XTFC2P5BB_	XTFR2P5BB_
2.5–4	56	0.75	1.5	2.2	3	XTFC004BB_	XTFR004BB_
4–6.3	88.2	1.1	2.2	3	4	XTFC6P3BB_	XTFR6P3BB_
6.3–10	140	2.2	4	4	7.5	XTFC010BB_	XTFR010BB_
8–12	168	3	5.5	5.5	11	XTFC012BB_	XTFR012BB_
10–16	224	4	7.5	9	12.5	XTFC016BB_	—

## Notes

- ① Select combination motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.  
 ② Underscore ( \_ ) indicates magnetic coil suffix required. See Page V5-T1-202.  
 ③ In this range, calculate motor rating according to rated current. Specified values to NEC 430.6(A)(1).


#### Factory-Assembled Type F Combination Motor Controller—Frame B MMP + Frame C Contactor—Maximum UL Ratings <sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	3	5	10	—	XTFC016BC_	XTFR016BC_
16–20	280	5	5	—	—	XTFC020BC_	XTFR020BC_
20–25	350	5	7-1/2	15	—	XTFC025BC_	XTFR025BC_
25–32	448	7-1/2	10	20	—	XTFC032BC_	XTFR032BC_

#### Factory-Assembled Type F Combination Motor Controller—Frame B MMP + Frame C Contactor—Maximum IEC Ratings <sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	4	7.5	9	12.5	XTFC016BC_	XTFR016BC_
16–20	280	5.5	9	12.5	15	XTFC020BC_	XTFR020BC_
20–25	350	5.5	11	15	22	XTFC025BC_	XTFR025BC_
25–32	448	7.5	15	22	30	XTFC032BC_	XTFR032BC_


**Notes**

- ① Select combination motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.
- ② Underscore (\_) indicates magnetic coil suffix required. See **Page V5-T1-202**.




### Factory-Assembled Type F Combination Motor Controller—Frame D MMP + Frame C Contactor—Maximum UL Ratings <sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	3	5	10	10	XTFC016DC_	XTFR016DC_
16–25	350	5	7-1/2	15	20	XTFC025DC_	XTFR025DC_
25–32	448	7-1/2	10	25	30	XTFC032DC_	XTFR032DC_


### Factory-Assembled Type F Combination Motor Controller—Frame D MMP + Frame C Contactor—Maximum IEC Ratings <sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)

	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		220– 240V	380– 415V	500V	660– 690V	Non-Reversing Catalog Number	Reversing Catalog Number
10–16	224	4	7.5	9	12.5	XTFC016DC_	XTFR016DC_
16–25	350	5.5	12.5	12.5	22	XTFC025DC_	XTFR025DC_
25–32	448	7.5	15	17.5	22	XTFC032DC_	XTFR032DC_

### Factory-Assembled Type F Combination Motor Controller—Frame D MMP + Frame D Contactor—Maximum UL Ratings <sup>①</sup>

FLA Adjustment  
Range/Overload  
Release— $I_r$   
(Amps)


	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		200V	240V	480V	600V	Non-Reversing Catalog Number	Reversing Catalog Number
32–40	560	10	15	30	30	XTFC040DD_	XTFR040DD_
40–50	700	10	15	30	—	XTFC050DD_	XTFR050DD_
50–58	812	15	15	40	—	XTFC058DD_	XTFR058DD_
55–65	882	15	15	40	—	XTFC063DD_	XTFR063DD_

#### Notes

- <sup>①</sup> Select combination motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.  
<sup>②</sup> Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-202**.

#### Factory-Assembled Type F Combination Motor Controller—Frame D MMP + Frame D Contactor—Maximum IEC Ratings <sup>①</sup>

**FLA Adjustment Range/Overload Release— $I_r$  (Amps)**

	Short-Circuit Release— $I_m$ (Amps)	Three-Phase				Assembled Manual Motor Controller <sup>②</sup>	
		220–240V	380–415V	500V	660–690V	Non-Reversing Catalog Number	Reversing Catalog Number
32–40	560	11	20	22	30	<b>XTFC040DD_</b>	<b>XTFR040DD_</b>
40–50	700	14	25	30	45	<b>XTFC050DD_</b>	<b>XTFR050DD_</b>
50–58	812	17	30	37	55	<b>XTFC058DD_</b>	<b>XTFR058DD_</b>
55–65	882	18.5	34	37	55	<b>XTFC063DD_</b>	<b>XTFR063DD_</b>

#### AC and DC Coil Suffixes

Coil Voltage	Suffix Code
<b>Frame B Contactors</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24 Vdc	<b>TD</b> <sup>③</sup>
415V 50 Hz, 480V 60 Hz	<b>C</b>
600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>

Coil Voltage	Suffix Code
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
120 Vdc	<b>AD</b> <sup>③</sup>
220 Vdc	<b>BD</b> <sup>③</sup>
12 Vdc	<b>RD</b> <sup>③</sup>
48 Vdc	<b>WD</b> <sup>③</sup>

Coil Voltage	Suffix Code
<b>Frame C and D Contactors</b>	
110V 50 Hz, 120V 60 Hz	<b>A</b>
220V 50 Hz, 240V 60 Hz	<b>B</b>
230V 50 Hz	<b>F</b>
24V 50/60 Hz	<b>T</b>
24–27 Vdc	<b>TD</b> <sup>③</sup>
415V 50 Hz, 480V 60 Hz	<b>C</b>
550V 50 Hz, 600V 60 Hz	<b>D</b>
208V 60 Hz	<b>E</b>
190V 50 Hz, 220V 60 Hz	<b>G</b>
240V 50 Hz, 277V 60 Hz	<b>H</b>

Coil Voltage	Suffix Code
380V 50 Hz, 440V 60 Hz	<b>L</b>
400V 50 Hz	<b>N</b>
380V 60 Hz	<b>P</b>
12V 50/60 Hz	<b>R</b>
42V 50 Hz, 48V 60 Hz	<b>W</b>
48V 50 Hz	<b>Y</b>
110–130 Vdc	<b>AD</b> <sup>③</sup>
200–240 Vdc	<b>BD</b> <sup>③</sup>
12–14 Vdc	<b>RD</b> <sup>③</sup>
48–60 Vdc	<b>WD</b> <sup>③</sup>

#### Notes

The assembled manual motor controller (MMC) consists of an XTPR manual motor protector (MMP) and an XTCE contactor. For Frame B MMP + Frame B contactor assemblies, the XTSC and XTSR can be mounted directly on DIN rail without an adapter. The contactors are supported mechanically with a mechanical connection element (included in XTPAXTPCB, XTPAXRPCR). For 16A and above, the assembly is mounted via a DIN rail adapter plate (XTPAXTPCPC, XTPAXTPCPD) and the electrical connection is made with electrical contact modules (XTPAXECMC, XTPAXECMD), both included in XTPAXTPCC and XTPAXTPCD.

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

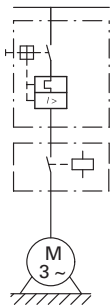
$$SF = 1.15 \rightarrow I_r = 1 \times I_{n \text{ mot}}$$

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

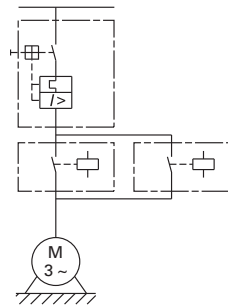
Single-phasing sensitivity to IEC/EN 60947-4-1, VDE 0660 Part 102.

- ① Select combination motor controllers by full load amperes. Maximum motor ratings (kW, hp) are for reference only.
- ② Underscore (\_) indicates magnetic coil suffix required. See AC and DC coil suffixes above.
- ③ With DC operation: Integrated diode-resistor combination, coil rating 2.6W.

#### XTFC Manual Motor Controller



#### XTFR Manual Motor Controller





## Accessories

### Line Side Adapters

Line side adapters are required for use with XTPR MMPs only when used as Type E self-protected manual combination starters or as part of XTFC or XTFR Type F combination motor controllers. Not required for group installation.


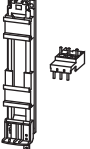
#### Line Side Adapters

	Description	Catalog Number
<b>XTPAXLSA</b> 	For use with Frame B MMPs (up to 32A)	<b>XTPAXLSA</b>
<b>XTPAXLSAD</b> 	For use with Frame D MMPs (up to 40A)	<b>XTPAXLSAD</b>

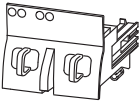
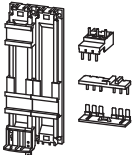
### Combination Connection Kits

Combination connection kits include the necessary components to field assemble a manual motor controller with an MMP (XTPR) and contactor (XTCE).

#### Non-Reversing Starters

	For Use with ...	Description/Composed of ...	Std. Pack ①	Catalog Number
<b>XTPAXTPCB</b> 	XTPR...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	
		Cable guidance	1	
		Use as 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>XTPAXTPCC and XTPAXTPCD</b> 	XTPR...B + XTCE...C	DIN rail adapter plate	1	<b>XTPAXTPCC</b>
	XTPR...D + XTCE...D	Main current wiring between XTPR and contactor	1	<b>XTPAXTPCD</b>

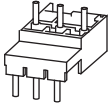
#### Reversing Starters

	For Use with ...	Description/Composed of ...	Std. Pack ①	Catalog Number
<b>XTPAXTPCRB</b> 	XTPR...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— K1M: A1–K2M: 21, K1M: 21–K2M: A1, K1M: A2–K2M: A2	1	
		Cable guidance	1	
		Use as 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> 	XTPR...B + XTCE...C	DIN rail adapter plate	1	<b>XTPAXTPCRB</b>
		Reversing starter main current wiring	1	

#### Note

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

#### XTPAXEC\_



#### Electric Contact Module

For Use with ...	Description/Composed of ...	Std. Pack <sup>①</sup>	Catalog Number
XTPR...B + XTCE...C	Main current wiring between XTPR...B and contactor Use only in combination with busbar adapter	5	<b>XTPAXECMC</b>
XTPR...D + XTCE...D	Main current wiring between XTPR...D and contactor Use only in combination with busbar adapter	5	<b>XTPAXECMD</b>

#### DIN Rail Adapter Plates

##### XTPAXTPCPB



For Use with ...	Description/Composed of ...	Std. Pack <sup>①</sup>	Catalog Number
XTPAXTPCB XTPAXTPCRB	45 mm wide adapter plate with one DIN rail  Connection element for side-by-side positioning of further plates	4	<b>XTPAXTPCPB</b>

##### XTPAXTPCRPB



XTPR...B + XTCE...C XTPAXECMC	45 mm wide adapter plate with one DIN rail  Connection element for side-by-side positioning of further plates	4	<b>XTPAXTPCRPB</b>
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##### XTPAXTPCPD



XTPAXECMD XTPR...D + XTCE...C XTPR...D + XTCE...D	55 mm wide adapter plate with two DIN rails  Connection cams for further plates  For use with reversing and star-delta starters	4  4	<b>XTPAXTPCPD</b>
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#### Lateral Module

For Use with ...	Description/Composed of ...	Std. Pack <sup>①</sup>	Catalog Number
—	Can be grouped on the DIN rail adapter Expansion of the mounting width by 9 mm	10	<b>XTPAXLM</b>

#### Connection Element

For Use with ...	Description/Composed of ...	Std. Pack <sup>①</sup>	Catalog Number
—	For connection of several DIN rail adapters	50	<b>XTPAXCNE</b>

#### Note

<sup>①</sup> Orders must be placed in multiples of package quantity listed.

## 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 <sup>①</sup>	FLA Adjustment Range/Overload Release— $I_r$ (Amps)	Component Catalog Numbers		Contactor <sup>①</sup>	Manual Motor Protector Auxiliary Contact
		Manual Motor Protector	Combination Connection Kit		
<b>XTSC Frame B MMP + Frame B Contactor</b>					
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
<b>XTSC Frame B MMP + Frame C Contactor</b>					
XTSC016BC_	10–16	XTPR016BC1	XTPAXTPCC	XTCE018C10_	XTPAXFA1
XTSC020BC_	16–20	XTPR020BC1	XTPAXTPCC	XTCE025C10_	XTPAXFA11
XTSC025BC_	20–25	XTPR025BC1	XTPAXTPCC	XTCE025C10_	XTPAXFA11
XTSC032BC_	25–32	XTPR032BC1	XTPAXTPCC	XTCE032C10_	XTPAXFA11
<b>XTSC Frame D MMP + Frame C Contactor</b>					
XTSC016DC_	10–16	XTPR016DC1	②	XTCE018C10_	XTPAXFA1
XTSC025DC_	16–25	XTPR025DC1	②	XTCE025C10_	XTPAXFA11
XTSC032DC_	25–32	XTPR032DC1	②	XTCE032C10_	XTPAXFA11
<b>XTSC Frame D MMP + Frame D Contactor</b>					
XTSC040DD_	32–40	XTPR040DC1	XTPAXTPCD <sup>③</sup>	XTCE040D00_	XTPAXFA11
XTSC050DD_	40–50	XTPR050DC1	XTPAXTPCD <sup>③</sup>	XTCE050D00_	XTPAXFA11
XTSC058DD_	50–58	XTPR058DC1	XTPAXTPCD <sup>③</sup>	XTCE065D00_	XTPAXFA11
XTSC063DD_	55–65	XTPR063DC1	XTPAXTPCD <sup>③</sup>	XTCE065D00_	XTPAXFA11

#### Notes

① Underscore (\_) indicates magnetic coil suffix required. See **Page V5-T1-202**.

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).

## XTSR Reversing Manual Motor Controllers (MMC)—Component Bill of Material

## Factory Assembled Manual Motor Protector + Contactor

Assembled Manual Motor Controller <sup>①</sup>	FLA Adjustment Range/Overload Release— $I_r$ (Amps)	Component Catalog Numbers		Contactor <sup>①</sup>	Manual Motor Protector Auxiliary Contact
		Manual Motor Protector	Combination Connection Kit		
<b>XTSR Frame B MMP + Frame B Contactor</b>					
XTSRP16BB_	0.1–0.16	XTPRP16BC1	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
<b>XTSR Frame B MMP + Frame C Contactor</b>					
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
<b>XTSR Frame D MMP + Frame C Contactor</b>					
XTSR016DC_	10–16	XTPR016DC1	②	(2) XTCE018C01	XTPAXFA11
XTSR025DC_	16–25	XTPR025DC1	②	(2) XTCE025C01_	XTPAXFA11
XTSR032DC_	25–32	XTPR032DC1	②	(2) XTCE032C01_	XTPAXFA11
<b>XTSR Frame D MMP + Frame D Contactor</b>					
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_	55–65	XTPR063DC1	③	(2) XTCE065D00_	XTPAXFA11

**Notes**

- ① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-202**.
- 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).

## XTFC Non-Reversing Combination Motor Controllers—Component Bill of Material

### Factory Assembled Manual Motor Protector + Contactor + Line Side Adapter

Assembled Combination Motor Controller <sup>①</sup>	FLA Adjustment Range/ Overload Release— $I_r$ (Amps)	Component Catalog Numbers			Manual Motor Protector	Combination Connection Kit	Contactor <sup>①</sup>	Manual Motor Protector Auxiliary Contact
		Line Side Adapter	Manual Motor Protector	Combination Connection Kit				
<b>XTFC Frame B MMP + Frame B Contactor</b>								
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	XTPAXLS	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		
<b>XTFC Frame B MMP + Frame C Contactor</b>								
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		
<b>XTFC Frame D MMP + Frame C Contactor</b>								
XTFC016DC_	10–16	XTPAXLSAD	XTPR016DC1	②	XTCE018C10_	XTPAXFA11		
XTFC025DC_	16–25	XTPAXLSAD	XTPR025DC1	②	XTCE025C10_	XTPAXFA11		
XTFC032DC_	25–32	XTPAXLSAD	XTPR032DC1	②	XTCE032C10_	XTPAXFA11		
<b>XTFC Frame D MMP + Frame D Contactor</b>								
XTFC040DD_	32–40	XTPAXLSAD	XTPR040DC1	XTPAXTPCD <sup>③</sup>	XTCE040D00_	XTPAXFA11		
XTFC050DD_	40–50	XTPAXLSAD	XTPR050DC1	XTPAXTPCD <sup>③</sup>	XTCE050D00_	XTPAXFA11		
XTFC058DD_	50–58	XTPAXLSAD	XTPR058DC1	XTPAXTPCD <sup>③</sup>	XTCE065D00_	XTPAXFA11		
XTFC063DD_	55–65	XTPAXLSAD	XTPR063DC1	XTPAXTPCD <sup>③</sup>	XTCE065D00_	XTPAXFA11		

#### Notes

① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-202**.

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 (XTCEXRDL), additional DIN rail adapter plate (XTPAXTPCPD) and DIN adapter connection element (XTPAXCNE).

## XTFR Reversing Combination Motor Controllers—Component Bill of Material

### Factory Assembled Manual Motor Protector + Contactor + Line Side Adapter

Assembled Combination Motor Controller <sup>①</sup>	FLA Adjustment Range/ Overload Release— $I_r$ (Amps)	Component Catalog Numbers			Contactor <sup>①</sup>	Manual Motor Protector Auxiliary Contact
		Line Side Adapter	Manual Motor Protector	Combination Connection Kit		
<b>XTFR Frame B MMP + Frame B Contactor</b>						
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	XTPR010BC	XTPAXTPCRB	(2) XTCE009B01_	XTPAXFA11
XTFR012BB_	8–12	XTPAXLSA	XTPR012BC1	XTPAXTPCRB	(2) XTCE012B01_	XTPAXFA11
<b>XTFR Frame B MMP + Frame C Contactor</b>						
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
<b>XTFR Frame D MMP + Frame C Contactor</b>						
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
<b>XTFR Frame D MMP + Frame D Contactor</b>						
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_	55–65	XTPAXLSAD	XTPR063DC1	③	(2) XTCE065D00_	XTPAXFA11

#### Notes

- ① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-202**.
- 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).



## Manual Motor Controllers Short-Circuit Ratings for UL/CSA Group Installations

## XTSC and XTSR Manual Motor Controllers (MMC)

Assembled Controller ①		FLA Adjustment Range/Overload Release— I <sub>r</sub> (Amps)	Short-Circuit Release— I <sub>rm</sub> (Amps)	Group Installation, UL/CSA Max. rms Symmetrical Short-Circuit Ratings (kA/kA with Current Limiter)			Maximum Upstream Protective Device (A/A with Current Limiter)	
				240V	480V	600V	Maximum Fuse 600V	Maximum Circuit Breaker 600V
Non-Reversing	Reversing							
<b>XTSC and XTSR Frame B MMP + Frame B Contactor</b>								
XTSCP16BB_	XTSRP16BB_	0.1–0.16	2.2	50	50	50	600	600
XTSCP25BB_	XTSRP25BB_	0.16–0.25	3.5	50	50	50	600	600
XTSCP40BB_	XTSRP40BB_	0.25–0.4	5.6	50	50	50	600	600
XTSCP63BB_	XTSRP63BB_	0.4–0.63	8.82	50	50	50	600	600
XTSC001BB_	XTSR001BB_	0.63–1	14	50	50	50	600	600
XTSC1P6BB_	XTSR1P6BB_	1–1.6	22.4	50	50	50	600	600
XTSC2P5BB_	XTSR2P5BB_	1.6–2.5	35	50	50	50	600	600
XTSC004BB_	XTSR004BB_	2.5–4	56	50	50	50	600	600
XTSC6P3BB_	XTSR6P3BB_	4–6.3	88.2	50	50	50	600	600
XTSC010BB_	XTSR010BB_	6.3–10	140	22	22	22	150/600	125/600
XTSC012BB_	XTSR012BB_	8–12	168	10/50	10/50	10/50	150/600	125/600
XTSC016BB_	—	10–16	224	10/50	10/50	10/50	150/600	125/600
<b>XTSC and XTSR Frame B MMP + Frame C Contactor</b>								
XTSC016BC_	XTSR016BC_	10–16	224	10/50	10/50	10/50	150/600	125/600
XTSC020BC_	XTSR020BC_	16–20	280	10/18	10/18	10/18	150/600	125/600
XTSC025BC_	XTSR025BC_	20–25	350	10/18	10/18	10/18	150/600	125/600
XTSC032BC_	XTSR032BC_	25–32	448	5/18	5/18	5/18	150/600	125/600
<b>XTSC and XTSR Frame D MMP + Frame C Contactor</b>								
XTSC016DC_	XTSR016DC_	10–16	224	50	50	10	600	600
XTSC025DC_	XTSR025DC_	16–25	350	50	50	10	600	600
XTSC032DC_	XTSR032DC_	25–32	448	50	50	10	600	600
<b>XTSC and XTSR Frame D MMP + Frame D Contactor</b>								
XTSC040DD_	XTSR040DD_	32–40	560	50	50	10	600	600
XTSC050DD_	XTSR050DD_	40–50	700	50	50	10	600	600
XTSC058DD	XTSR058DD	50–58	812	50	50	—	—	—
XTSC063DD_	XTSR063DD_	55–65	882	50	50	—	—	—

**Note**

① Underscore ( \_ ) indicates magnetic coil suffix required. See Page V5-T1-202.

## Combination Motor Controllers Short-Circuit Ratings for UL 508 Type F Application

## XTFC and XTFR Combination Motor Controllers (CMC), UL 508 Type F

Assembled Controller <sup>①</sup>		FLA Adjustment Range/Overload Release— I <sub>r</sub> (Amps)	Short-Circuit Release— I <sub>rm</sub> (Amps)	UL 508 Type F Application Max. rms Symmetrical Short-Circuit Ratings (kA)			Maximum Upstream Protective Device (A) <sup>②</sup>	
				240V	480/277V	600/347V	Maximum Fuse 600V	Maximum Circuit Breaker 600V
<b>XTFC and XTFR Frame B MMP + Frame B Contactor</b>								
XTFCP16BB_	XTFRP16BB_	0.1–0.16	2.2	65	65	—	Not required	Not required
XTFCP25BB_	XTFRP25BB_	0.16–0.25	3.5	65	65	—	Not required	Not required
XTFCP40BB_	XTFRP40BB_	0.25–0.4	5.6	65	65	—	Not required	Not required
XTFCP63BB_	XTFRP63BB_	0.4–0.63	8.82	65	65	—	Not required	Not required
XTFC001BB_	XTFR001BB_	0.63–1	14	65	65	—	Not required	Not required
XTFC1P6BB_	XTFR1P6BB_	1–1.6	22.4	65	65	—	Not required	Not required
XTFC2P5BB_	XTFR2P5BB_	1.6–2.5	35	65	65	—	Not required	Not required
XTFC004BB_	XTFR004BB_	2.5–4	56	65	65	—	Not required	Not required
XTFC6P3BB_	XTFR6P3BB_	4–6.3	88.2	65	65	—	Not required	Not required
XTFC010BB_	XTFR010BB_	6.3–10	140	65	65	—	Not required	Not required
XTFC012BB_	XTFR012BB_	8–12	168	50	50	—	Not required	Not required
XTFC016BB_	—	10–16	224	50	50	—	Not required	Not required
<b>XTFC and XTFR Frame B MMP + Frame C Contactor</b>								
XTFC016BC_	XTFR016BC_	10–16	224	18	18	—	Not required	Not required
XTFC020BC_	XTFR020BC_	16–20	280	18	18	—	Not required	Not required
XTFC025BC_	XTFR025BC_	20–25	350	18	18	—	Not required	Not required
XTFC032BC_	XTFR032BC_	25–32	448	18	18	—	Not required	Not required
<b>XTFC and XTFR Frame D MMP + Frame C Contactor</b>								
XTFC016DC_	XTFR016DC_	10–16	224	65	65	50	Not required	Not required
XTFC025DC_	XTFR025DC_	16–25	350	65	65	50	Not required	Not required
XTFC032DC_	XTFR032DC_	25–32	448	65	65	50	Not required	Not required
<b>XTFC and XTFR Frame D MMP + Frame D Contactor</b>								
XTFC040DD_	XTFR040DD_	32–40	560	65	65	50	Not required	Not required
XTFC050DD_	XTFR050DD_	40–50	700	65	65	—	Not required	Not required
XTFC058DD_	XTFR058DD_	50–58	812	65	65	—	Not required	Not required
XTFC063DD_	XTFR063DD_	55–65	882	65	65	—	Not required	Not required

**Notes**

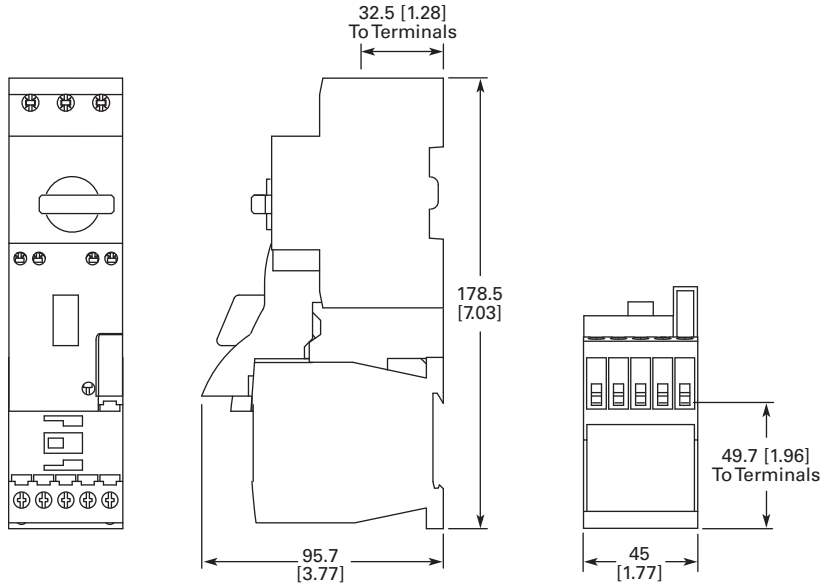
① Underscore ( \_ ) indicates magnetic coil suffix required. See **Page V5-T1-202**.

② For UL 508 Type F applications, the combination motor controller assembly does not require a dedicated upstream protective device in the panel, thus a maximum rating is not required.

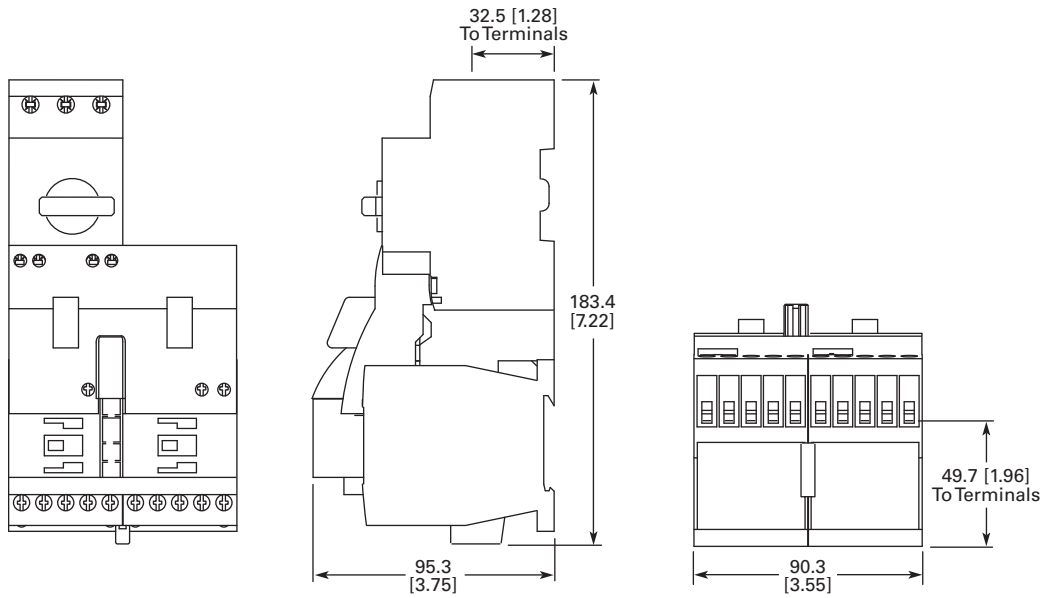
**Dimensions**

Approximate Dimensions in mm [in]

**XTSC...BB\_**



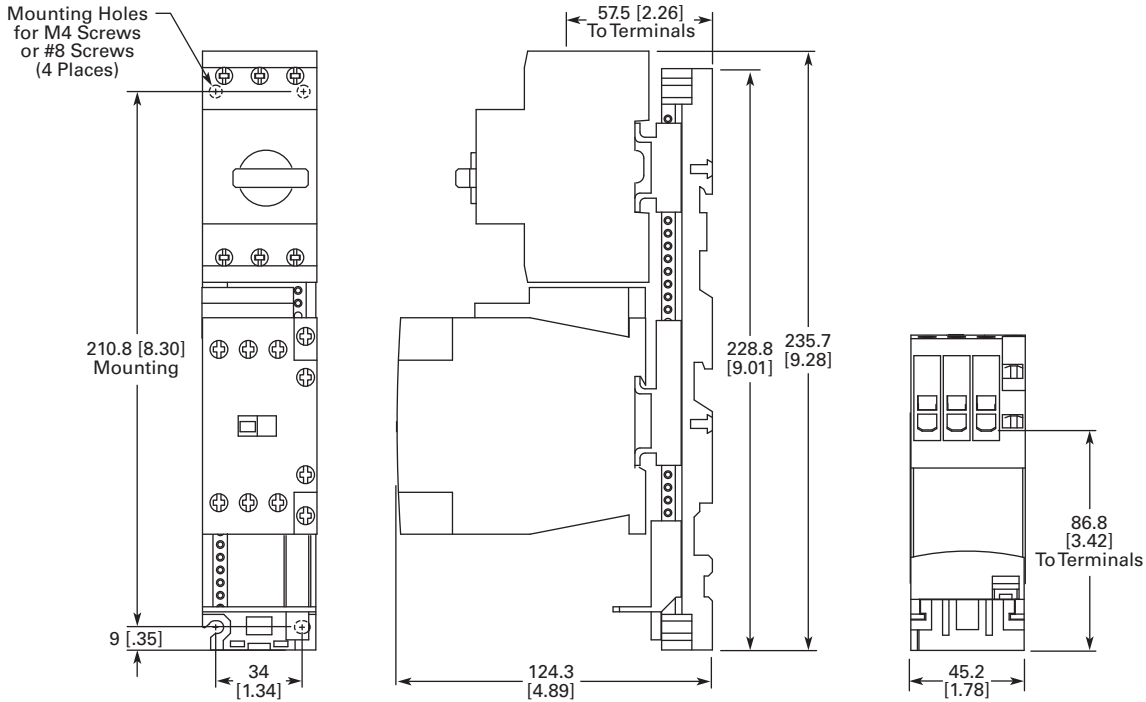
**XTSR...BB\_**



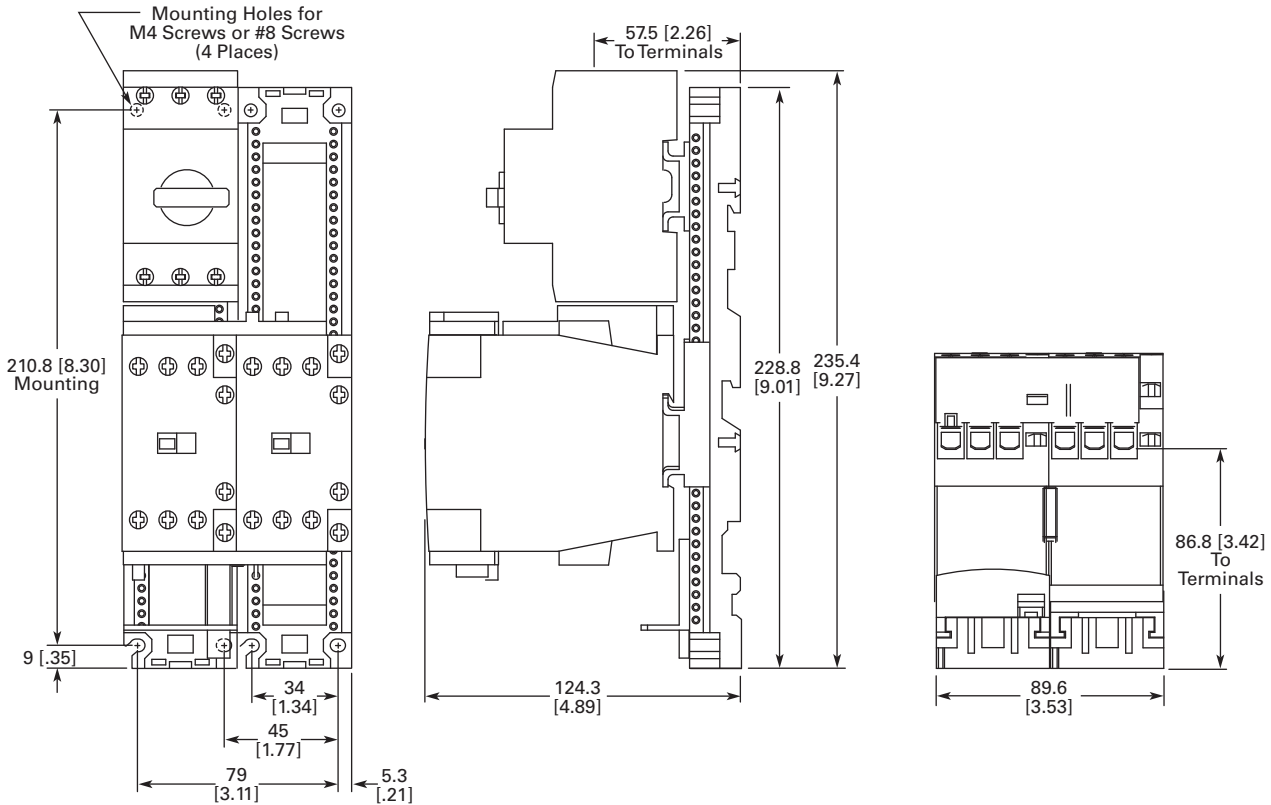
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Approximate Dimensions in mm [in]

#### XTSC...BC\_

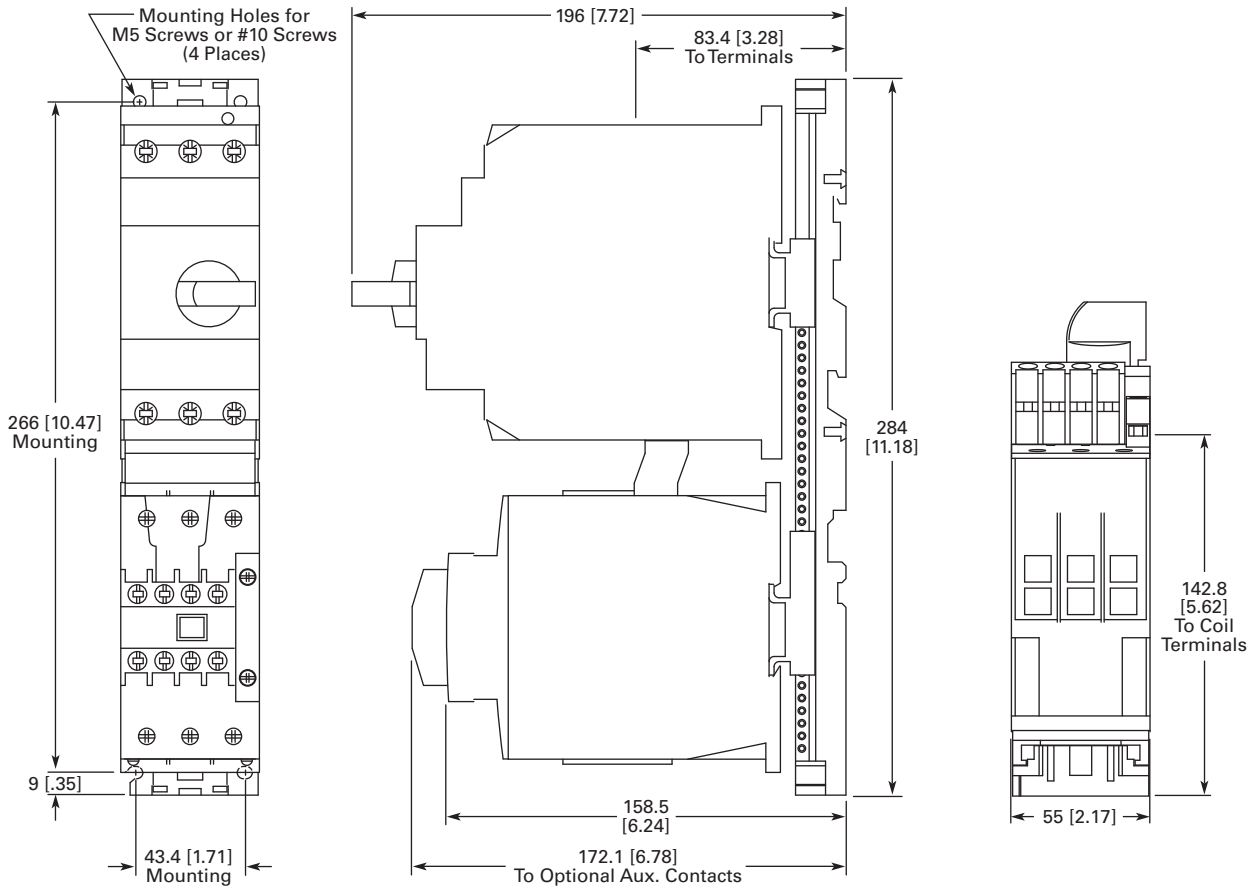


#### XTSR...BC\_

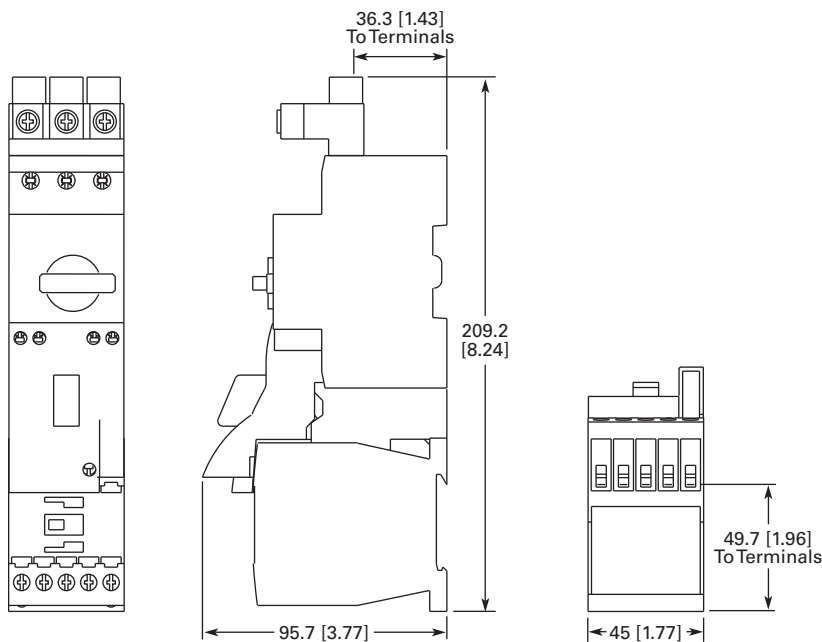


Approximate Dimensions in mm [in]

**XTSC...DD\_**



**XTFC...BB\_**



# 1.1

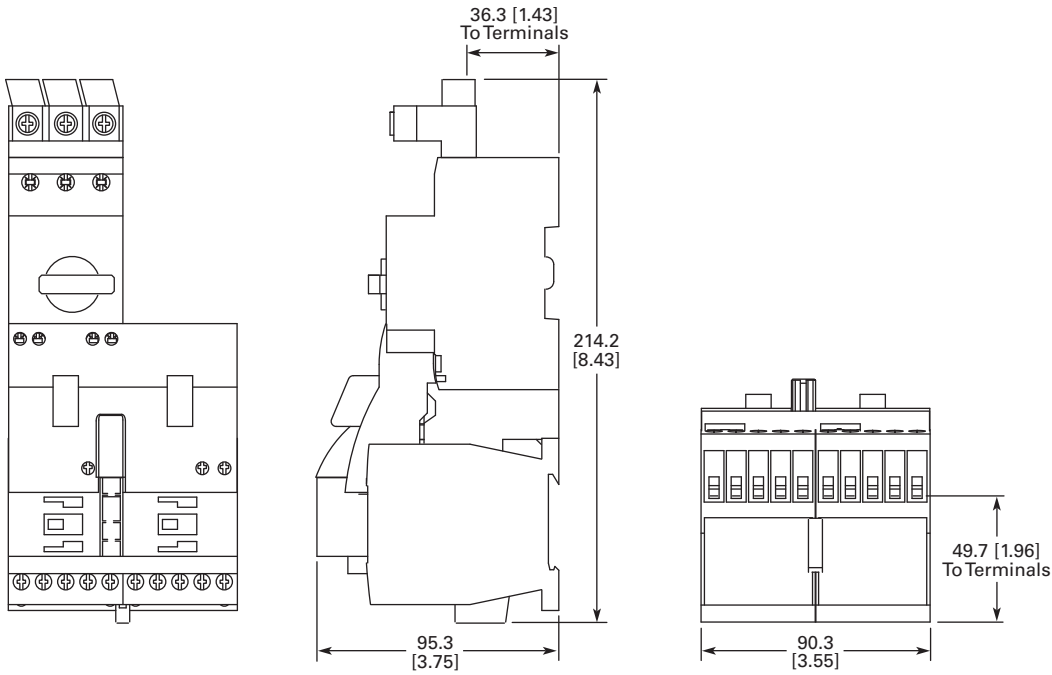
## IEC Contactors and Starters

### XT IEC Power Control

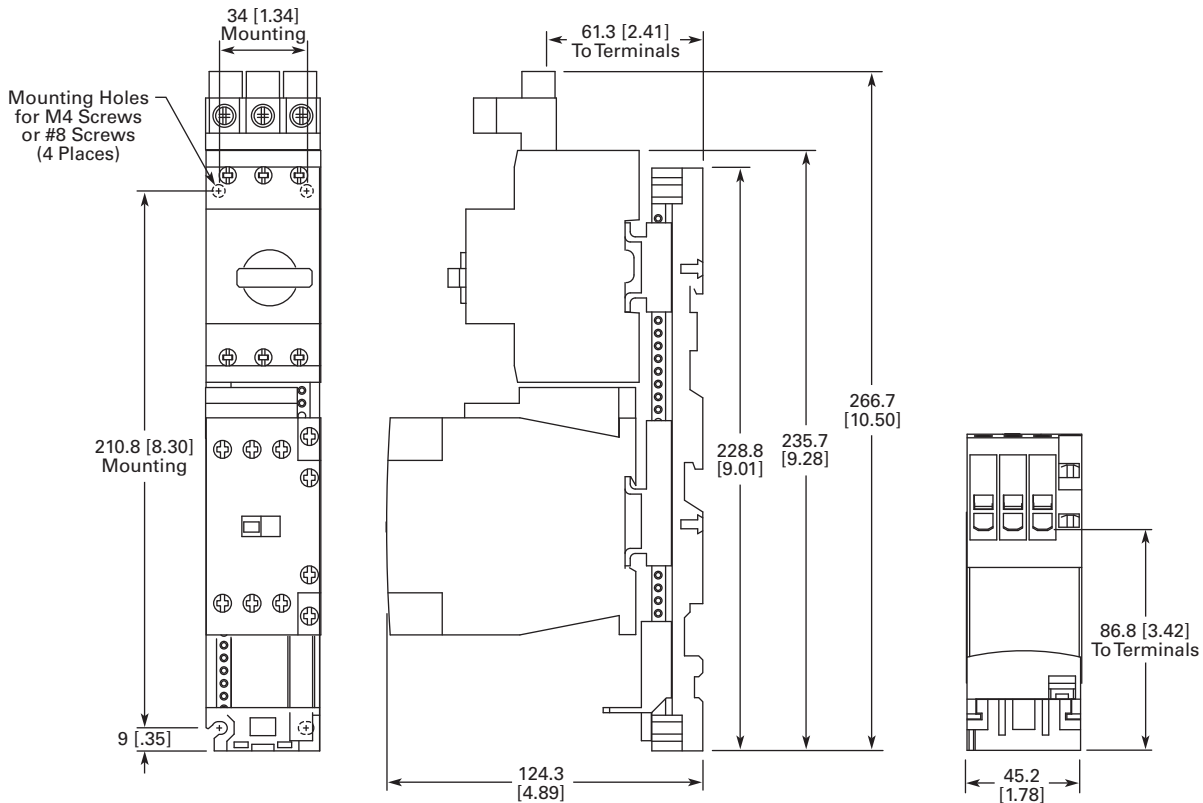
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Approximate Dimensions in mm [in]

#### XTFR...BB\_

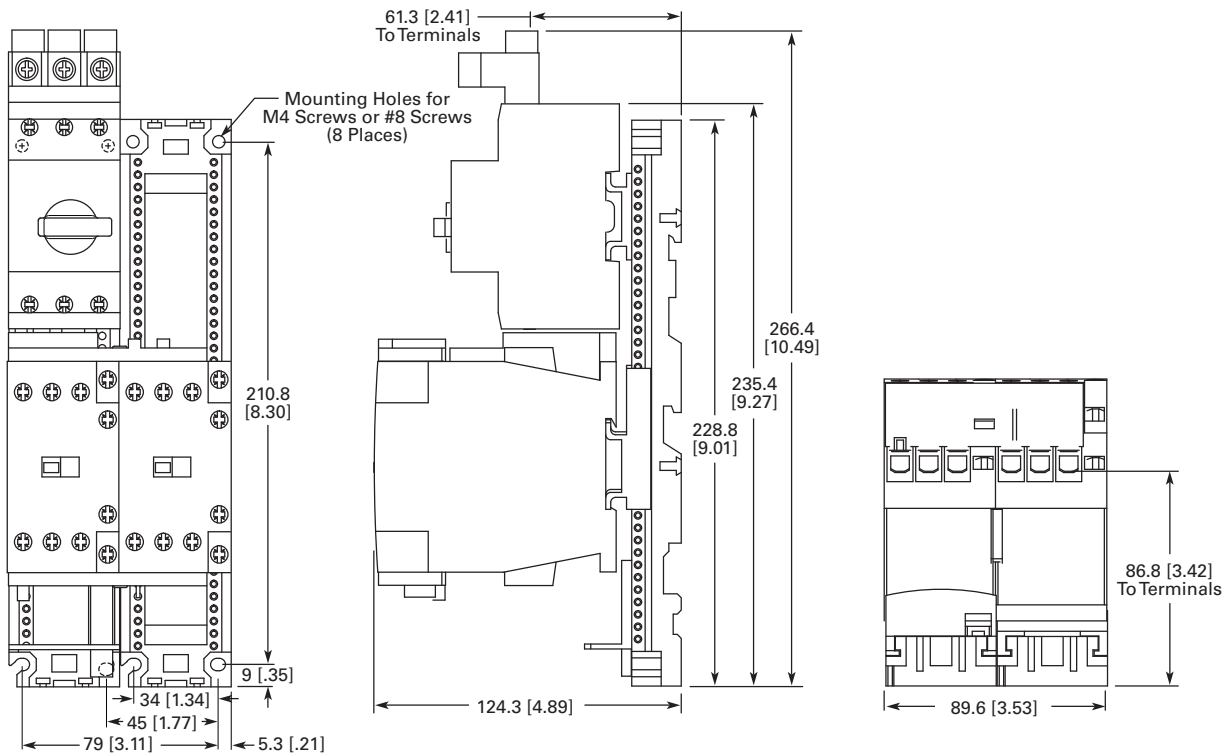


#### XTFC...BC\_



Approximate Dimensions in mm [in]

**XTFR...BC\_**



**XTFC...DD\_**

