

XT Family of Contactors



Contactors and Starters

Product Description

The Eaton **XT** contactors and starters includes non-reversing and reversing contactors, overload relays and a variety of related accessories. Because **XT** meets IEC, UL®, CSA® and CE standards, it is the perfect product solution for IEC applications all over the world. The compact, space saving and easy to install **XT** line of IEC contactors and starters is the efficient and effective solution for customer applications from 7A to 2450A.

Application Description

The **XT** line of IEC power control was engineered to provide highly effective control and protection for a variety of loads, including motors, compressors, pumps, resistive, capacitor banks, isolation, and others. **XT** also includes IEC ratings for lighting applications as well.

XT contactors can be used in safety applications according to EN 954-1, EN ISO 13849-1 and IEC 62061 up to Category 4, PL e and SIL 3. Information concerning safety related characteristics (B10 and B10d values) is available online. The auxiliary contact modules and built-in auxiliary contacts meet IEC EN 60947-5-1 Annex L (positively driven) and IEC EN 60947-4-1 Annex F (mirror contacts).

Reference

Refer to **Volume 10—Enclosed Control**, CA08100012E, Tab 3, section 3.1 for additional product information on IEC Non-Metallic Enclosed Contactors and Starters.

Contents

Description

	<i>Page</i>
Relays and Timers	V5-T1-3
Miniature Controls	V5-T1-18
Contactors and Starters	
Product Identification	V5-T1-36
Catalog Number Selection	V5-T1-38
Product Selection	V5-T1-39
Accessories	V5-T1-65
Technical Data and Specifications	V5-T1-78
Wiring Diagrams	V5-T1-109
Dimensions	V5-T1-114
 An Eaton Green Solution	
Thermal Overload Relays	V5-T1-128
C440/ XT Electronic Overload Relay	V5-T1-141
Manual Motor Protectors	V5-T1-157
Combination Motor Controllers	V5-T1-193
XT Electronic Manual Motor Protector	V5-T1-216
EMS—Electronic Motor Starter	V5-T1-229
Reference Data	V5-T1-231

Features and Benefits

- AC control from 12V to 600V 50/60 Hz
- DC control from 12V to 220V
- Available with screw or spring cage terminals
- Reversing or non-reversing contactors and starters
- AC-3 contactor ratings to 1000A and AC-1 contactor ratings to 2000A
- Non-reversing starters to 650A
- Panel or DIN rail mounting to 65A
- IP20 finger and back-of-hand proof
- Large ambient temperature range, -25 to 50°C [-13 to 122°F]
- AC and DC controlled contactors in the same compact frame
- Low power consumption AC and DC coils
- Built-in NO or NC auxiliary contacts to 32A
- Plug-in accessories for reduced installation time
- Coil replacement on Frames C–N (18–820A)
- Contact replacement on Frames D–N (40 –820A)
- Integrated suppressor 7–150A DC operated contactors and 185–2000A AC and DC operated contactors

Standards and Certifications

- IEC EN 60947
- CE approved
- UL
- CSA
- ATEX
- RoHS



Note: For Type 2 Coordination, see **Page V5-T1-232**.

Product Identification

XTCE007B to XTCE170G (7 to 170A) Contactors



Notes

① Contactor up to 170A AC-3 (see Page V5-T1-39)

AC: 12–600V, 50, 60, 50/60 Hz
 $0.8–1.1 \times U_c$

DC: 12–250V

XTCE...B_ (7–15A): $0.8–1.1 \times U_c$

XTCE...C_–XTCE...G_ (18–150A): $0.7–1.2 \times U_c$

24V: $0.7–1.3 \times U_c$ at 40°C without additional auxiliary contacts

Coils for special voltages

"Safe Isolation" to IEC 536 between coil and contacts

② Suppressors (see Page V5-T1-71)

RC suppressor

Varistor suppressor

Free-wheel diode suppressor

③ Overload Relays (see Page V5-T1-130)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

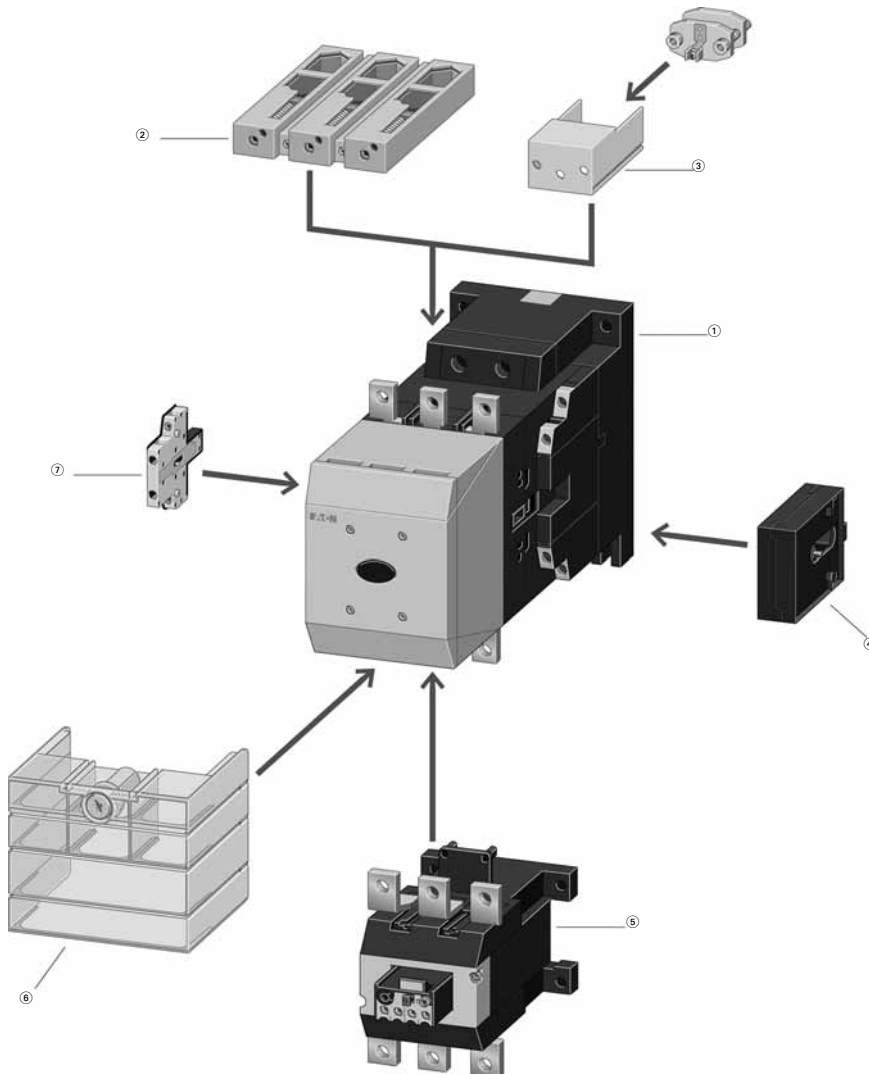
④ Auxiliary Contact Modules (see Page V5-T1-24)

Two-pole, plug-in type

Four-pole, plug-in type

Overlapping contacts

Two-pole, side-mounting

XTCE185–XTCE20 Contactors**Notes**① **XTCE Contactors for 185–2000A**(see [Page V5-T1-46](#))

Multi-voltage coils:

24–48 Vdc

48–110 Vac/Vdc

110–250 Vac/Vdc

250–500 Vac

0.7–1.15 x U_c

Actuation options:

Directly

From the PLC

With low-consumption contact

② **XTCS Contactors for 185–570A AC-3**(see [Page V5-T1-42](#))

Control voltages:

110–120V 50/60 Hz

220–240V 50/60 Hz

Conventional operation

② **Cable Terminal Block**(see [Page V5-T1-97](#))

One or two conductors per phase

Round and flat conductor connectable

Finger-proof

③ **Flat Strip Conductor Terminals**(see [Page V5-T1-97](#))

One or two strips per phase

Control circuit terminal

Cover for fingerproofing

④ **Mechanical Interlock**(see [Page V5-T1-73](#))

Fits between contactors

⑤ **Overload Relays**(see [Page V5-T1-130](#))

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

PTB certificate

⑥ **Terminal Shroud**(see [Page V5-T1-75](#))

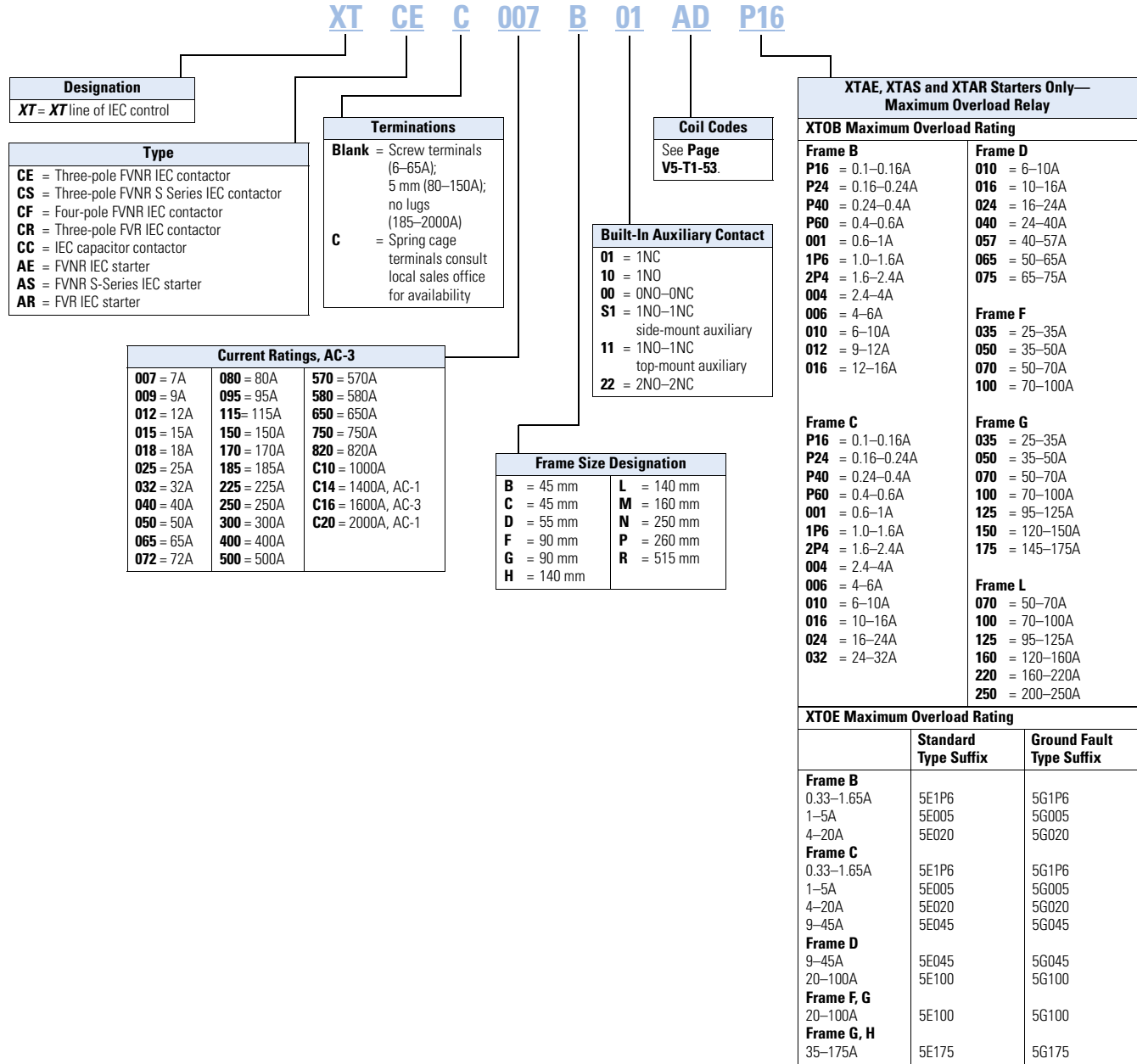
Finger-proof

⑦ **Auxiliary Contact Modules**(see [Page V5-T1-24](#))

Two-pole, side-mounting

Catalog Number Selection

XT IEC Contactors and Starters



1

Frame H



Three-Pole Contactors, Frame H (Electronic Coil)—UL/CSA Ratings

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number ^{①②}
	200V	240V	480V	600V		
250	50	60	125	150	2NO-2NC	XTCE185H22_
250	60	75	150	200	2NO-2NC	XTCE225H22_

Three-Pole Contactors, Frame H (Electronic Coil)—IEC Ratings

AC-3 I _e (A)	AC-1 (40°C) I _e = I _{th} (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Catalog Number ^{①②}
		220/230V	380/400V	660/690V ^③	1000V ^③		
185	337	55	90	140	108	2NO-2NC	XTCE185H22_
225	386	70	110	215	108	2NO-2NC	XTCE225H22_

Frame L



Three-Pole Contactors, Frame L—UL/CSA Ratings

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number ^{①②}
	200V	230V	460V	575V		
Standard Coil (110/120V, 230/240 Vac Coil Only)						
300	75	100	200	250	2NO-2NC	XTCS250L22_
350	100	125	250	300	2NO-2NC	XTCS300L22_
Electronic Coil						
300	75	100	200	250	2NO-2NC	XTCE250L22_
350	100	125	250	300	2NO-2NC	XTCE300L22_

Three-Pole Contactors, Frame L—IEC Ratings

AC-3 I _e (A)	AC-1 (40°C) I _e = I _{th} (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Catalog Number ^{①②}
		220/230V	380/400V	660/690V ^③	1000V ^③		
Standard Coil (110/120V, 230/240 Vac Coil Only)							
250	429	75	132	240	108	2NO-2NC	XTCS250L22_
300	490	90	160	195	132	2NO-2NC	XTCS300L22_
Electronic Coil							
250	429	75	132	240	108	2NO-2NC	XTCE250L22_
300	490	90	160	195	132	2NO-2NC	XTCE300L22_

Notes

- ① Underscore (_) indicates magnet coil suffix required. See **Page V5-T1-53**. Terminals not included. See **Page V5-T1-75** for terminal accessories.
- ② Does not include lugs.
- ③ For 185–500A contactors at 660/690V or 1000V: Do not reverse directly.

Starter Application Data ^①

Catalog Prefix	AC-3	Electrical Life (Operations)
XTAE012B	12A	1 million
XTAE015B	15A	1.2 million
XTAE018C	18A	2 million

Magnet Coil Suffix

Coil Voltage	Suffix Code
Frames A–B	
110V 50 Hz, 120V 60 Hz	A
220V 50 Hz, 240V 60 Hz	B
230V 50 Hz	F
24V 50/60 Hz	T
24 Vdc	TD
415V 50 Hz, 480V 60 Hz	C
600V 60 Hz	D
208V 60 Hz	E
190V 50 Hz, 220V 60 Hz	G
240V 50 Hz, 277V 60 Hz	H
380V 50 Hz, 440V 60 Hz	L
400V 50 Hz	N
380V 60 Hz	P
12V 50/60 Hz	R
42V 50 Hz, 48V 60 Hz	W
48V 50 Hz	Y
120 Vdc	AD
220 Vdc	BD
12 Vdc	RD
48 Vdc	WD

Coil Voltage	Suffix Code
Frames C–F	
110V 50 Hz, 120V 60 Hz	A
220V 50 Hz, 240V 60 Hz	B
230V 50 Hz	F
24V 50/60 Hz	T
24–27 Vdc	TD
415V 50 Hz, 480V 60 Hz	C
600V 60 Hz	D
208V 60 Hz	E
190V 50 Hz, 220V 60 Hz	G
240V 50 Hz, 277V 60 Hz	H
380V 50 Hz, 440V 60 Hz	L
400V 50 Hz	N
380V 60 Hz	P
12V 50/60 Hz	R
42V 50 Hz, 48V 60 Hz	W
48V 50 Hz	Y
110–130 Vdc	AD
200–240 Vdc	BD
48–60 Vdc	WD

Coil Voltage	Suffix Code
Frame G	
100–120V 50/60 Hz	A
190–240V 50/60 Hz	B
24V 50/60 Hz	T
24–27 Vdc	TD
480–500V 50/60 Hz	C
380–440V 50/60 Hz	L
42–48V 50/60 Hz	W
110–130 Vdc	AD
200–240 Vdc	BD
48–60 Vdc	WD
Frame H	
100–120V 50/60 Hz	A
190–240V 50/60 Hz	B
480–500V 50/60 Hz	C
380–440V 50/60 Hz	L
24V 50/60Hz	T
42–48V 50/60Hz	W
110–130 Vdc	AD
200–240 Vdc	BD
24–27 Vdc	TD
48–60 Vdc	WD

Coil Voltage	Suffix Code
Frames L–N	
110–250 Vdc 40–60 Hz	A
250–500V 40–60 Hz	C
48–110 Vdc 40–60 Hz	Y
24–48 Vdc	TD ^②
Frames L–M, S-Series	
110–120V 50/60 Hz	A
220–240V 50/60 Hz	B
Frames P–R	
230–250 Vdc 50–60 Hz	B

Notes

① See **Page V5-T1-111** for electrical life curves.

② Frames L–M only.

XT Family of Contactors



Contactors and Starters

Product Description

The Eaton **XT** contactors and starters includes non-reversing and reversing contactors, overload relays and a variety of related accessories. Because **XT** meets IEC, UL®, CSA® and CE standards, it is the perfect product solution for IEC applications all over the world. The compact, space saving and easy to install **XT** line of IEC contactors and starters is the efficient and effective solution for customer applications from 7A to 2450A.

Application Description

The **XT** line of IEC power control was engineered to provide highly effective control and protection for a variety of loads, including motors, compressors, pumps, resistive, capacitor banks, isolation, and others. **XT** also includes IEC ratings for lighting applications as well.


XT contactors can be used in safety applications according to EN 954-1, EN ISO 13849-1 and IEC 62061 up to Category 4, PL e and SIL 3. Information concerning safety related characteristics (B10 and B10d values) is available online. The auxiliary contact modules and built-in auxiliary contacts meet IEC EN 60947-5-1 Annex L (positively driven) and IEC EN 60947-4-1 Annex F (mirror contacts).

Reference

Refer to **Volume 10—Enclosed Control**, CA08100012E, Tab 3, section 3.1 for additional product information on IEC Non-Metallic Enclosed Contactors and Starters.

Contents

Description

	<i>Page</i>
Relays and Timers	V5-T1-3
Miniature Controls	V5-T1-18
Contactors and Starters	
Product Identification	V5-T1-36
Catalog Number Selection	V5-T1-38
Product Selection	V5-T1-39
Accessories	V5-T1-65
Technical Data and Specifications	V5-T1-78
Wiring Diagrams	V5-T1-109
Dimensions	V5-T1-114
 An Eaton Green Solution	
Thermal Overload Relays	V5-T1-128
C440/ XT Electronic Overload Relay	V5-T1-141
Manual Motor Protectors	V5-T1-157
Combination Motor Controllers	V5-T1-193
XT Electronic Manual Motor Protector	V5-T1-216
EMS—Electronic Motor Starter	V5-T1-229
Reference Data	V5-T1-231

Features and Benefits

- AC control from 12V to 600V 50/60 Hz
- DC control from 12V to 220V
- Available with screw or spring cage terminals
- Reversing or non-reversing contactors and starters
- AC-3 contactor ratings to 1000A and AC-1 contactor ratings to 2000A
- Non-reversing starters to 650A
- Panel or DIN rail mounting to 65A
- IP20 finger and back-of-hand proof
- Large ambient temperature range, -25 to 50°C [-13 to 122°F]
- AC and DC controlled contactors in the same compact frame
- Low power consumption AC and DC coils
- Built-in NO or NC auxiliary contacts to 32A
- Plug-in accessories for reduced installation time
- Coil replacement on Frames C–N (18–820A)
- Contact replacement on Frames D–N (40 –820A)
- Integrated suppressor 7–150A DC operated contactors and 185–2000A AC and DC operated contactors

Standards and Certifications

- IEC EN 60947
- CE approved
- UL
- CSA
- ATEX
- RoHS



Note: For Type 2 Coordination, see **Page V5-T1-232**.

Product Identification

XTCE007B to XTCE170G (7 to 170A) Contactors

**Notes**① **Contactors up to 170A AC-3** (see Page V5-T1-39)

AC: 12–600V, 50, 60, 50/60 Hz
 $0.8–1.1 \times U_c$

DC: 12–250V

XTCE...B_ (7–15A): $0.8–1.1 \times U_c$

XTCE...C_–XTCE...G_ (18–150A): $0.7–1.2 \times U_c$

24V: $0.7–1.3 \times U_c$ at 40°C without additional auxiliary contacts

Coils for special voltages

"Safe Isolation" to IEC 536 between coil and contacts

② **Suppressors** (see Page V5-T1-71)

RC suppressor

Varistor suppressor

Free-wheel diode suppressor

③ **Overload Relays** (see Page V5-T1-130)

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

④ **Auxiliary Contact Modules** (see Page V5-T1-24)

Two-pole, plug-in type

Four-pole, plug-in type

Overlapping contacts

Two-pole, side-mounting

XTCE185–XTCE20 Contactors**Notes**① **XTCE Contactors for 185–2000A**(see [Page V5-T1-46](#))

Multi-voltage coils:

24–48 Vdc

48–110 Vac/Vdc

110–250 Vac/Vdc

250–500 Vac

0.7–1.15 x U_c

Actuation options:

Directly

From the PLC

With low-consumption contact

② **XTCS Contactors for 185–570A AC-3**(see [Page V5-T1-42](#))

Control voltages:

110–120V 50/60 Hz

220–240V 50/60 Hz

Conventional operation

② **Cable Terminal Block**(see [Page V5-T1-97](#))

One or two conductors per phase

Round and flat conductor connectable

Finger-proof

③ **Flat Strip Conductor Terminals**(see [Page V5-T1-97](#))

One or two strips per phase

Control circuit terminal

Cover for fingerproofing

④ **Mechanical Interlock**(see [Page V5-T1-73](#))

Fits between contactors

⑤ **Overload Relays**(see [Page V5-T1-130](#))

Can be mounted directly

Separate mounting, possible

Protection of EEx e-motors

PTB certificate

⑥ **Terminal Shroud**(see [Page V5-T1-75](#))

Finger-proof

⑦ **Auxiliary Contact Modules**(see [Page V5-T1-24](#))

Two-pole, side-mounting

Catalog Number Selection

XT IEC Contactors and Starters



1

Frame H



Three-Pole Contactors, Frame H (Electronic Coil)—UL/CSA Ratings

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number ^{①②}
	200V	240V	480V	600V		
250	50	60	125	150	2NO-2NC	XTCE185H22_
250	60	75	150	200	2NO-2NC	XTCE225H22_

Three-Pole Contactors, Frame H (Electronic Coil)—IEC Ratings

AC-3 I_e (A)	AC-1 (40°C) $I_e = I_{th}$ (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Catalog Number ^{①②}
		220/230V	380/400V	660/690V ^③	1000V ^③		
185	337	55	90	140	108	2NO-2NC	XTCE185H22_
225	386	70	110	215	108	2NO-2NC	XTCE225H22_

Frame L



Three-Pole Contactors, Frame L—UL/CSA Ratings

UL General Purpose Ampere Rating	Three-Phase hp Ratings				Auxiliary Contacts	Catalog Number ^{①②}
	200V	230V	460V	575V		
Standard Coil (110/120V, 230/240 Vac Coil Only)						
300	75	100	200	250	2NO-2NC	XTCS250L22_
350	100	125	250	300	2NO-2NC	XTCS300L22_
Electronic Coil						
300	75	100	200	250	2NO-2NC	XTCE250L22_
350	100	125	250	300	2NO-2NC	XTCE300L22_

Three-Pole Contactors, Frame L—IEC Ratings

AC-3 I_e (A)	AC-1 (40°C) $I_e = I_{th}$ (A)	Maximum kW Ratings AC-3/Three-Phase Motors 50–60 Hz				Auxiliary Contacts	Catalog Number ^{①②}
		220/230V	380/400V	660/690V ^③	1000V ^③		
Standard Coil (110/120V, 230/240 Vac Coil Only)							
250	429	75	132	240	108	2NO-2NC	XTCS250L22_
300	490	90	160	195	132	2NO-2NC	XTCS300L22_
Electronic Coil							
250	429	75	132	240	108	2NO-2NC	XTCE250L22_
300	490	90	160	195	132	2NO-2NC	XTCE300L22_

Notes

- ① Underscore (_) indicates magnet coil suffix required. See **Page V5-T1-53**. Terminals not included. See **Page V5-T1-75** for terminal accessories.
- ② Does not include lugs.
- ③ For 185–500A contactors at 660/690V or 1000V: Do not reverse directly.

Starter Application Data ^①

Catalog Prefix	AC-3	Electrical Life (Operations)
XTAE012B	12A	1 million
XTAE015B	15A	1.2 million
XTAE018C	18A	2 million

Magnet Coil Suffix

Coil Voltage	Suffix Code
Frames A–B	
110V 50 Hz, 120V 60 Hz	A
220V 50 Hz, 240V 60 Hz	B
230V 50 Hz	F
24V 50/60 Hz	T
24 Vdc	TD
415V 50 Hz, 480V 60 Hz	C
600V 60 Hz	D
208V 60 Hz	E
190V 50 Hz, 220V 60 Hz	G
240V 50 Hz, 277V 60 Hz	H
380V 50 Hz, 440V 60 Hz	L
400V 50 Hz	N
380V 60 Hz	P
12V 50/60 Hz	R
42V 50 Hz, 48V 60 Hz	W
48V 50 Hz	Y
120 Vdc	AD
220 Vdc	BD
12 Vdc	RD
48 Vdc	WD

Coil Voltage	Suffix Code
Frames C–F	
110V 50 Hz, 120V 60 Hz	A
220V 50 Hz, 240V 60 Hz	B
230V 50 Hz	F
24V 50/60 Hz	T
24–27 Vdc	TD
415V 50 Hz, 480V 60 Hz	C
600V 60 Hz	D
208V 60 Hz	E
190V 50 Hz, 220V 60 Hz	G
240V 50 Hz, 277V 60 Hz	H
380V 50 Hz, 440V 60 Hz	L
400V 50 Hz	N
380V 60 Hz	P
12V 50/60 Hz	R
42V 50 Hz, 48V 60 Hz	W
48V 50 Hz	Y
110–130 Vdc	AD
200–240 Vdc	BD
48–60 Vdc	WD

Coil Voltage	Suffix Code
Frame G	
100–120V 50/60 Hz	A
190–240V 50/60 Hz	B
24V 50/60 Hz	T
24–27 Vdc	TD
480–500V 50/60 Hz	C
380–440V 50/60 Hz	L
42–48V 50/60 Hz	W
110–130 Vdc	AD
200–240 Vdc	BD
48–60 Vdc	WD
Frame H	
100–120V 50/60 Hz	A
190–240V 50/60 Hz	B
480–500V 50/60 Hz	C
380–440V 50/60 Hz	L
24V 50/60Hz	T
42–48V 50/60Hz	W
110–130 Vdc	AD
200–240 Vdc	BD
24–27 Vdc	TD
48–60 Vdc	WD

Coil Voltage	Suffix Code
Frames L–N	
110–250 Vdc 40–60 Hz	A
250–500V 40–60 Hz	C
48–110 Vdc 40–60 Hz	Y
24–48 Vdc	TD ^②
Frames L–M, S-Series	
110–120V 50/60 Hz	A
220–240V 50/60 Hz	B
Frames P–R	
230–250 Vdc 50–60 Hz	B

Notes

^① See **Page V5-T1-111** for electrical life curves.

^② Frames L–M only.