Technical Data and Specifications

Contents

Frame B XTCE Contactor

XT Contactors

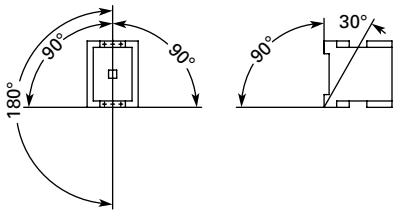
Frame B

Table 34-107. *XT* Contactors Technical Data and Specifications — Frame B

Description	XTCE007B	XTCE009B	XTCE012B, XTCF020B	XTCE015B
General				
Standards	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS			
Weights in kg [Lb] AC operated DC operated	 0.23 [0.51] 0.28 [0.62]	 0.23 [0.51] 0.28 [0.62]	 0.23 [0.51] 0.28 [0.62]	 0.23 [0.51] 0.28 [0.62]
Mechanical Life	10,000,000	10,000,000	10,000,000	10,000,000
Mechanical Operating Frequency (ops/hr) AC operated DC operated	 9000 9000	 9000 9000	 9000 9000	 5000 5000
Electrical Life	See Curves, **Page 34-82**			
Electrical Operating Frequency (ops/hr) — see Curve, **Page 34-82** AC-1; 400V I_e AC-3; 400V I_e AC-4; 400V I_e	 800 1000 300	 800 1000 300	 800 1000 300	 800 1000 300
Climatic Proofing	Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclical, to IEC 60068-2-30			
Insulation Voltage (U_i) V AC	690	690	690	690
Impulse Withstand Voltage (U_{imp}) V AC	8000	8000	8000	8000
Operational Voltage (U_e) V AC	690	690	690	690
Safe Isolation to VDE 0106 Part 101 and Part 101/A1 Between coil and contacts (V AC) Between contacts (V AC)	 400 400	 400 400	 400 400	 400 400
Making Capacity Up to 690V (Amps) ②	112	112	144	155
Breaking Capacity (Amps) 220/230V 380/400V 500V 660/690V	 70 70 50 40	 90 90 70 50	 120 120 100 70	 124 124 100 70
Short-Circuit Protection Rating Maximum Fuse Type 2 Coordination ① 400V; gG/gL 500V 690V; gG/gL 690V Type 1 Coordination ① 400V; gG/gL 500V 690V; gG/gL 690V	 20 16 35 20	 20 16 35 20	 20 20 35 20	 20 20 63 50
Degree of Protection	IP20			
Protection against Direct Contact when Actuated from Front (IEC 536)	Finger- and back-of-hand proof			

① IEC 60947 Standard.
② Rated operational current: Making and breaking conditions to DC-13, L/R constant as stated.

Table 34-107. *XT* Contactors Technical Data and Specifications — Frame B (Continued)

Description	XTCE007B	XTCE009B	XTCE012B, XTCF020B	XTCE015B
General (Continued)				
Terminal Capacity Main Cable — Screw Terminals				
Solid (mm^2)	1 x (0.75 – 4) 2 x (0.75 – 2.5)	1 x (0.75 – 4) 2 x (0.75 – 2.5)	1 x (0.75 – 4) 2 x (0.75 – 2.5)	1 x (0.75 – 4) 2 x (0.75 – 2.5)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	18 – 14
Terminal Capacity Control Circuit Cable — Screw Terminals				
Solid (mm^2)	1 x (0.75 – 4) 2 x (0.75 – 2.5)	1 x (0.75 – 4) 2 x (0.75 – 2.5)	1 x (0.75 – 4) 2 x (0.75 – 2.5)	1 x (0.75 – 4) 2 x (0.75 – 2.5)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	18 – 14
Main Cable and Control Circuit Cable Connection Screw/Bolt	M3.5	M3.5	M3.5	M3.5
Tightening torque				
Nm	1.2	1.2	1.2	1.2
Lb-in	10.6	10.6	10.6	10.6
Tools				
Main and Control circuit cable — Screw Terminals	Size 2	Size 2	Size 2	Size 2
Pozidriv screwdriver	0.8 x 5.5	0.8 x 5.5	0.8 x 5.5	0.8 x 5.5
Standard screwdriver	1 x 6	1 x 6	1 x 6	1 x 6
Terminal Capacity Main Circuit Cable — Spring Cage Terminals				
Solid (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	— —
Flexible (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	— —
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	— —
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	—
Terminal Capacity Control Circuit Cable — Spring Cage Terminals				
Solid (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	— —
Flexible (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	— —
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	1 x (0.75 – 2.5) 1 x (0.75 – 2.5)	— —
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	—
Tools				
Main and Control Circuit Cable — Spring Cage Terminals				
Stripping Length (mm)	10	10	10	10
Screwdriver blade width (mm)	3.5	3.5	3.5	3.5
Mounting Position, AC and DC Operated				
Ambient Temperature				
Open	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]
Enclosed	-25 to 40°C [-13 to 104°F]	-25 to 40°C [-13 to 104°F]	-25 to 40°C [-13 to 104°F]	-25 to 40°C [-13 to 104°F]
Ambient Storage Temperature	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]
Environmental				
Mechanical Shock Resistance (IEC/EN 60068-2-27)				
Half-sinusoidal shock 10 mS				
Main contact — NO Contact	10g	10g	10g	10g
Auxiliary contact — NO Contact	7g	7g	7g	7g
Auxiliary contact — NC Contact	5g	5g	5g	5g
Overvoltage Category/Pollution degree	III/3	III/3	III/3	III/3

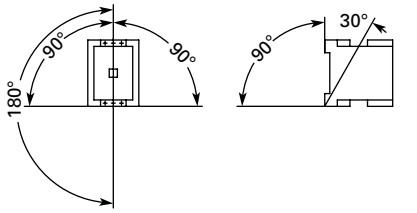
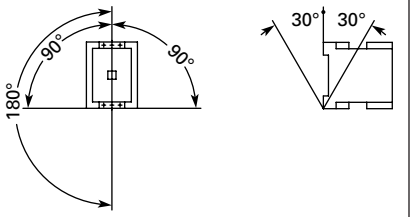
Frame C – D

Table 34-108. *XT* Contactors Technical Data and Specifications — Frame C – D

Description	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D
General						
Standards	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS					
Weights in kg [Lb]						
AC operated	0.42 [0.93]	0.42 [0.93]	0.42 [0.93]	0.9 [2.0]	0.9 [2.0]	0.9 [2.0]
DC operated	0.48 [1.06]	0.48 [1.06]	0.48 [1.06]	1.1 [2.4]	1.1 [2.4]	1.1 [2.4]
Mechanical Life	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Mechanical Operating Frequency (ops/hr)						
AC operated	5000	5000	5000	5000	5000	5000
DC operated	5000	5000	5000	5000	5000	5000
Electrical Mechanical Operating Frequency (ops/hr) — see Curve, **Page 34-82**						
AC-1; 400V I_e	800	800	800	800	800	800
AC-3; 400V I_e	800	800	800	800	800	800
AC-4; 400V I_e	300	300	300	300	300	300
Climatic Proofing	Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60 068-2-30					
Insulation Voltage (U_i) V AC	690	690	690	690	690	690
Impulse Withstand Voltage (U_{imp}) V AC	8000	8000	8000	8000	8000	8000
Operating Voltage (U_e) V AC	690	690	690	690	690	690
Safe Isolation to VDE 0106 Part 101 and Part 101/A1						
Between coil and contacts (V AC)	440	440	440	440	440	440
Between contacts (V AC)	238	440	440	440	440	440
Making Capacity (Amps)	238	350	384	560	700	910
Breaking Capacity (Amps)						
220/230V	170	250	320	400	500	650
380/400V	170	250	320	400	500	650
500V	170	250	320	400	500	650
660/690V	120	150	180	250	320	370
Short-Circuit Protection Rating Maximum Fuse (Amps)						
Type 2 Coordination ①						
400V; gG/gL 500V	25	35	63	63	80	125
690V; gG/gL 690V	25	35	35	50	63	80
Type 1 Coordination ①						
400V; gG/gL 500V	63	100	125	125	160	250
690V; gG/gL 690V	50	50	63	80	80	100
Degree of Protection	IP00					
Protection against Direct Contact when Actuated from Front (IEC 536)	Finger- and back-of-hand proof					
Terminal Capacity Main Cable — Screw Terminals						
Solid (mm^2)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)
Flexible with ferrule (mm^2)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (0.75 – 16) 2 x (0.75 – 10)	1 x (2.5 – 35) 2 x (2.5 – 25)	1 x (2.5 – 35) 2 x (2.5 – 25)	1 x (2.5 – 35) 2 x (2.5 – 25)
Stranded (mm^2)	1 x 16	1 x 16	1 x 16	1 x (16 – 50) 2 x (16 – 35)	1 x (16 – 50) 2 x (16 – 35)	1 x (16 – 50) 2 x (16 – 35)
Solid or Stranded (AWG)	18 – 6	18 – 6	18 – 6	12 – 2	12 – 2	12 – 2
Flat Conductor (Number of Segments x Width x Thickness) (mm)	—	—	—	2 x (6 x 9 x 0.8)	2 x (6 x 9 x 0.8)	2 x (6 x 9 x 0.8)
Main Cable Connection Screw/Bolt	M5	M5	M5	M6	M6	M6
Tightening torque						
Nm	3	3	3	3.3	3.3	3.3
Lb-in	26.6	26.6	26.6	29.2	29.2	29.2
Terminal Capacity Control Circuit Cable — Screw Terminals						
Solid (mm^2)	1 x (0.75 – 4) 2 x (0.75 – 4)	1 x (0.75 – 4) 2 x (0.75 – 4)	1 x (0.75 – 4) 2 x (0.75 – 4)	1 x (0.75 – 4) 2 x (0.75 – 4)	1 x (0.75 – 4) 2 x (0.75 – 4)	1 x (0.75 – 4) 2 x (0.75 – 4)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14
Control Circuit Cable Connection Screw/Bolt	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque						
Nm	1.2	1.2	1.2	1.2	1.2	1.2
Lb-in	10.6	10.6	10.6	10.6	10.6	10.6

① IEC 60947 Standard.

Table 34-108. *XT* Contactors Technical Data and Specifications — Frame C – D (Continued)

Description	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D
General (Continued)						
Tools Main and Control Circuit Cable — Screw Terminals Pozidriv screwdriver Standard screwdriver	 Size 2 0.8 x 5.5 1 x 6	 Size 2 0.8 x 5.5 1 x 6	 Size 2 0.8 x 5.5 1 x 6	 Size 2 0.8 x 5.5 1 x 6	 Size 2 0.8 x 5.5 1 x 6	 Size 2 0.8 x 5.5 1 x 6
Terminal Capacity Control Circuit Cable — Spring Cage Terminals Solid (mm^2)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Flexible (mm^2)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14	18 – 14
Tools Main and Control Circuit Cable — Spring Cage Terminals Stripping Length (mm)	 10	 10	 10	 10	 10	 10
Screwdriver blade width (mm)	3.5	3.5	3.5	3.5	3.5	3.5
Mounting Position, AC and DC operated						
Ambient Temperature Open Enclosed	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F]	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F]	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F]	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F]	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F]	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F]
Ambient Storage Temperature	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]
Environmental						
Mechanical Shock Resistance (IEC/EN 60068-2-27) Main contact — NO Contact Auxiliary contact — NO Contact Auxiliary contact — NC Contact	 10 7 5	 10 7 5	 10 7 5	 10 7 5	 10 7 5	 10 7 5
Overvoltage Category / Pollution Degree	III/3	III/3	III/3	III/3	III/3	III/3

34

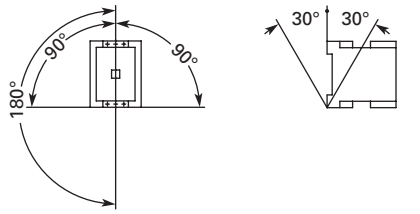
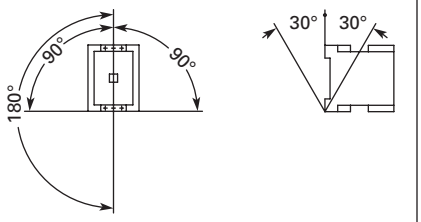
Frame F – G

Table 34-109. *XT* Contactors Technical Data and Specifications — Frame F – G

Description	XTCE080F	XTCE095F	XTCE115G	XTCE150G
General				
Standards	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS			
Weights in kg [Lb]				
AC operated	2 [4.41]	2 [4.41]	2 [4.41]	2 [4.41]
DC operated	2.1 [4.63]	2.1 [4.63]	2.1 [4.63]	2.1 [4.63]
Mechanical Life	10,000,000	10,000,000	10,000,000	10,000,000
Mechanical Operating Frequency (ops/hr)				
AC operated	3600	3600	3600	3600
DC operated	3600	3600	3600	3600
Electrical Mechanical Operating Frequency (ops/hr) — see Curve, **Page 34-82**				
AC-1; 400V I_e	800	800	800	800
AC-3; 400V I_e	800	800	800	800
AC-4; 400V I_e	300	300	300	300
Climatic Proofing	Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60 068-2-30			
Insulation Voltage (U_i) V AC	1000	1000	1000	1000
Impulse Withstand Voltage (U_{imp}) V AC	8000	8000	8000	8000
Operational Voltage (U_e) V AC	1000	1000	1000	1000
Safe Isolation to VDE 0106 Part 101 and Part 101/A1				
Between coil and contacts (V AC)	690	690	690	690
Between contacts (V AC)	690	690	690	690
Making Capacity (Amps)	1120	1330	1610	2100
Breaking Capacity (Amps)				
220/230V	800	950	1150	1500
380/400V	800	950	1150	1500
500V	800	950	1150	1500
660/690V	650	800	1100	1200
1000V	—	—	—	—
Short-Circuit Protection Rating Maximum Fuse				
Type 2 Coordination ②				
400V; gG/gL 500V	160	160	250	250
690V; gG/gL 690V	160	160	①	①
Type 1 Coordination ②				
400V; gG/gL 500V	250	250	250	250
690V; gG/gL 690V	200	200	①	①
Degree of Protection	IP00			
Protection Against Direct Contact when Actuated from Front (IEC 536)	Finger- and back-of-hand proof			
Terminal Capacity Main Cable — Screw Terminals				
Solid (mm^2)	—	—	—	—
Flexible with ferrule (mm^2)	1 x (10 – 95) 2 x (10 – 70)	1 x (10 – 95) 2 x (10 – 70)	1 x (10 – 95) 2 x (10 – 70)	1 x (10 – 95) 2 x (10 – 70)
Stranded (mm^2)	1 x (16 – 120) 2 x (16 – 95)	1 x (16 – 120) 2 x (16 – 95)	1 x (16 – 120) 2 x (16 – 95)	1 x (16 – 120) 2 x (16 – 95)
Flat Conductor (Number of Segments x Width x Thickness) (mm)	2 x (6 x 16 x 0.8)	2 x (6 x 16 x 0.8)	2 x (6 x 16 x 0.8)	2 x (6 x 16 x 0.8)
Solid or Stranded (AWG)	8 – 250 MCM	8 – 250 MCM	8 – 250 MCM	8 – 250 MCM
Main Cable Connection Screw/Bolt	M10	M10	M10	M10
Tightening torque				
Nm	14	14	14	14
Lb-in	123.9	123.9	123.9	123.9
Terminal Capacity Control Circuit Cable — Screw Terminals				
Solid (mm^2)	1 x (0.75 – 4) 1 x (0.75 – 4)	1 x (0.75 – 4) 1 x (0.75 – 4)	1 x (0.75 – 4) 1 x (0.75 – 4)	1 x (0.75 – 4) 1 x (0.75 – 4)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	18 – 14
Control Circuit Cable Connection Screw/Bolt	M3.5	M3.5	M3.5	M3.5
Tightening torque				
Nm	1.2	1.2	1.2	1.2
Lb-in	10.6	10.6	10.6	10.6

① Contact Eaton.
② IEC 60947 Standard.

Table 34-109. *XT* Contactors Technical Data and Specifications — Frame F – G (Continued)

Description	XTCE080F	XTCE095F	XTCE115G	XTCE150G
General (Continued)				
Tools Main Circuit Cable — Screw Terminals Hexagon Socket-Head Spanner (mm) Control Circuit Cable — Screw Terminals Pozidriv screwdriver Standard screwdriver	 5 Size 2 0.8 x 5.5 1 x 6	 5 Size 2 0.8 x 5.5 1 x 6	 5 Size 2 0.8 x 5.5 1 x 6	 5 Size 2 0.8 x 5.5 1 x 6
Terminal Capacity Control Circuit Cable — Spring Cage Terminals Solid (mm^2)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	 1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Flexible (mm^2)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)
Solid or Stranded (AWG)	18 – 14	18 – 14	18 – 14	18 – 14
Tools Control Circuit Cable — Spring Cage Terminals Stripping Length (mm)	 10	 10	 10	 10
Screwdriver blade width (mm)	3.5	3.5	3.5	3.5
Mounting Position, AC and DC operated				
Ambient Temperature Open Enclosed	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F)	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F)	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F)	 -25 to 60°C [-13 to 140°F] -25 to 40°C [-13 to 104°F)
Ambient Storage Temperature	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]
Environmental				
Mechanical Shock Resistance (IEC/EN 60068-2-27) Half-sinusoidal shock 10 mS Main contact — NO Contact Auxiliary contact — NO Contact Auxiliary contact — NC Contact	 10g 7g 5g	 10g 7g 5g	 10g 7g 5g	 10g 7g 5g
Overvoltage Category/Pollution Degree	III/3	III/3	III/3	III/3

34

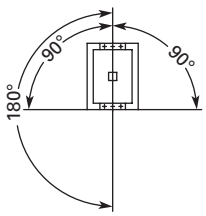
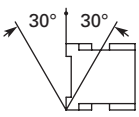
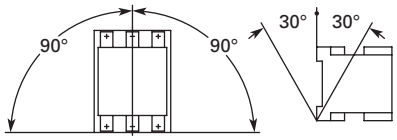
Frame L – M

Table 34-110. *XT* Contactors Technical Data and Specifications — Frame L – M

Description	XTCE185L	XTCE225L	XTCE250L	XTCE300M	XTCE400M	XTCE500M
General						
Standards	IEC/EN 60947, VDE 0660, UL, CSA					
Weights in kg [Lb]	6.5 [14.3]	6.5 [14.3]	6.5 [14.3]	8 [18]	8 [18]	8 [18]
Mechanical Life	10,000,000	10,000,000	10,000,000	7000000	7000000	7000000
Mechanical Operating Frequency (ops/hr)						
AC operated	3000	3000	3000	2000	2000	2000
DC operated	3000	3000	3000	2000	2000	2000
Mechanical Operating Frequency (ops/hr)	See **Figure 34-43** on **Page 34-83**.					
Climatic Proofing	Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60 068-2-30					
Insulation Voltage (U_i) V AC	1000	1000	1000	1000	1000	1000
Impulse Withstand Voltage (U_{imp}) V AC	8000	8000	8000	8000	8000	8000
Operating Voltage (U_e) V AC	1000	1000	1000	1000	1000	1000
Safe Isolation to VDE 0106 Part 101 and Part 101/A1						
Between coil and contacts (V AC)	500	500	500	500	500	500
Between contacts (V AC)	500	500	500	500	500	500
Making Capacity (Amps)	3000	3000	3000	5500	5500	5500
Breaking Capacity (Amps)						
220/230V	2500	2500	2500	5000	5000	5000
380/400V	2500	2500	2500	5000	5000	5000
500V	2500	2500	2500	5000	5000	5000
660/690V	2500	2500	2500	5000	5000	5000
1000V	760	760	760	950	950	950
Short-Circuit Protection Rating Maximum Fuse						
Type 2 Coordination ②						
400V; gG/gL 500V	315	315	315	500	500	500
690V; gG/gL 690V	315	315	315	500	500	500
1000V; gG/gL 1000V	160	160	160	200	200	200
Type 1 Coordination ②						
400V; gG/gL 500V	400	400	400	630	630	630
690V; gG/gL 690V	400	400	400	630	630	630
1000V; gG/gL 1000V	200	200	200	250	250	250
Degree of Protection	IP00					
Protection Against Direct Contact when Actuated from Front (Iec 536)	Finger- and back-of-hand proof with terminal shroud or terminal block.					
Main Cable Cross-Section						
Flexible with cable lug (mm^2)	35 – 95	50 – 240	50 – 240	50 – 240	50 – 240	50 – 240
Stranded with cable lug (mm^2)	50 – 120	70 – 240	70 – 240	70 – 240	70 – 240	70 – 240
Solid or Stranded (AWG)		1/0 – 250 MCM ①	1/0 – 250 MCM ①	1/0 – 250 MCM ①	1/0 – 250 MCM ①	1/0 – 250 MCM ①
Flat Conductor (mm)						
Busbar — Width in mm	20	20	25	25	25	30
Main Cable Connection Screw/Bolt	M10	M10	M10	M10	M10	M10
Tightening torque						
Nm	24	24	24	24	24	24
Lb-in	213	213	213	213	213	213
Control Circuit Cable Cross-Sections						
Solid (mm^2)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)
	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)
	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)
Solid or Stranded (AWG)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)
Control Circuit Cable Connection Screw/Bolt	M3.5	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque						
Nm	1.2	1.2	1.2	1.2	1.2	1.2
Lb-in	10.6	10.6	10.6	10.6	10.6	10.6
Tools						
Main cable wrench	16 mm	16 mm	16 mm	16 mm	16 mm	16 mm
Control circuit cable pozidriv screwdriver	Size 2	Size 2	Size 2	Size 2	Size 2	Size 2

① Screw tightening with flat cable terminal or cable terminal blocks. See terminal capacity for cable terminal blocks.
② IEC 60947 Standard.

Table 34-110. *XT* Contactors Technical Data and Specifications — Frame L – M (Continued)

Description	XTCE185L	XTCE225L	XTCE250L	XTCE300M	XTCE400M	XTCE500M
General (Continued)						
Mounting Position, AC and DC Operated						
Ambient Temperature	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]
Ambient Storage Temperature	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]
Environmental						
Mechanical Shock Resistance (IEC/EN 60068-2-27) Half-sinusoidal shock 10 mS						
Main contact — NO Contact	10g	10g	10g	10g	10g	10g
Auxiliary contact — NO Contact	10g	10g	10g	10g	10g	10g
Auxiliary contact — NC Contact	8g	8g	8g	8g	8g	8g
Overvoltage Category/ Pollution Degree	III/3	III/3	III/3	III/3	III/3	III/3
Switching Capacity, kVar ① Individual Compensation						
230V	87	—	—	115	—	—
400/420/440V	150	—	—	200	—	—
525V	190	—	—	265	—	—
690V	150	—	—	200	—	—
Group Compensation, with Choke						
230V	80	100	110	130	160	160
400/420/440V	150	175	190	225	280	280
525V	200	230	260	290	370	370
690V	260	300	340	390	480	480
Group Compensation, without Choke						
230V	66	—	—	85	—	—
400/420/440V	115	—	—	150	—	—
525V	145	—	—	195	—	—
690V	115	—	—	150	—	—

① When using contactors for group compensation, a minimum inductance of approx. 6 uh per capacitor must be available to limit the high inrush current peaks. This corresponds to an air-cored coil with 5 windings and a coil diameter of approximately 140 mm. The conductor cross-section must be selected according to the rated current per phase.

34

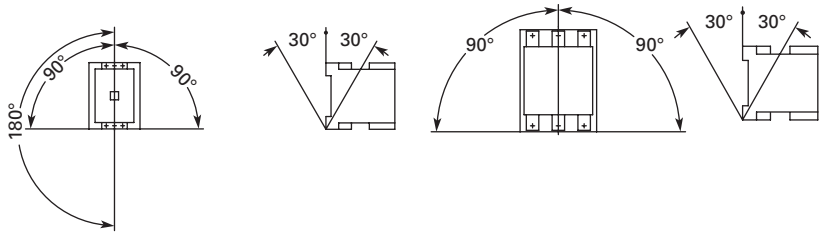
Frame N – R

Table 34-111. *XT* Contactors Technical Data and Specifications — Frame N – R

Description	XTCE580N	XTCE650N	XTCE750N, XTCE820N,	XTCEC10N	XTCEC14P, XTCEC20R
General					
Standards	IEC/EN 60947, VDE 0660, UL, CSA				
Weights in kg [Lb]	15 [33]	15 [33]	15 [33]	15 [33]	15, 32 [33, 70]
Mechanical Life	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Mechanical Operating Frequency (ops/hr)					
AC operated	1000	1000	1000	1000	1000
DC operated	1000	1000	1000	1000	1000
Maximum Operating frequency (ops/hr)	See **Figure 34-43** on **Page 34-83**.				
Climatic Proofing	Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60 068-2-30				
Insulation Voltage (U_i) V AC	1000	1000	1000	1000	1000
Impulse Withstand Voltage (U_{imp}) V AC	8000	8000	8000	8000	8000
Operating Voltage (U_e) V AC	1000	1000	1000	1000	1000
Safe Isolation to VDE 0106 Part 101 and Part 101/A1					
Between coil and contacts (V AC)	500	500	500	500	500
Between contacts (V AC)	500	500	500	500	500
Making Capacity (Amps)	7800	7800	9840	9840	9840
Breaking Capacity (Amps)					
220/230V	6500	6500	8200	8200	8200
380/400V	6500	6500	8200	8200	8200
500V	6500	6500	8200	8200	8200
660/690V	6500	6500	8200	8200	8200
1000V	4350	4350	5800	5800	5800
Short-Circuit Protection Rating Maximum Fuse					
Type 2 Coordination ②					
400V; gG/gL 500V	630	630	630	630	—
690V; gG/gL 690V	630	630	630	630	—
1000V; gG/gL 1000V	500	500	630	630	—
Type 1 Coordination ②					
400V; gG/gL 500V	1000	1000	1200	1200	—
690V; gG/gL 690V	1000	1000	1200	1200	—
1000V; gG/gL 1000V	630	630	800	800	—
Degree of Protection	IP00				
Protection Against Direct Contact when Actuated from Front (Iec 536)	Finger- and back-of-hand proof with terminal shroud or terminal block.				
Main Cable Cross-Section					
Flexible with cable lug (mm^2)	50-240	50-240	50-240	50-240	50-240
Stranded with cable lug (mm^2)	70-240	70-240	70-240	70-240	70-240
Solid or Stranded (AWG)	2/0 – 500 MCM	2/0 – 500 MCM	2/0 – 500 MCM	2/0 – 500 MCM	2/0 – 500 MCM
Flat Conductor (mm)	①	①	①	①	①
Busbar — Width in mm	50	50	50	50	50
Main Cable Connection Screw/Bolt	M10	M10	M12	M12	M12
Tightening torque					
Nm	24	24	35	35	35
Lb-in	213	213	311	311	311
Control Circuit Cable Cross-Sections					
Solid (mm^2)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)
	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)
Flexible with ferrule (mm^2)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)	1 x (0.75 – 2.5)
	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)	2 x (0.75 – 2.5)
Solid or Stranded (AWG)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)	2 x (18 – 12)
Control Circuit Cable Connection Screw/Bolt	M3.5	M3.5	M3.5	M3.5	M3.5
Tightening torque					
Nm	1.2	1.2	1.2	1.2	1.2
Lb-in	10.6	10.6	10.6	10.6	10.6

① Screw tightening with flat cable terminal or cable terminal blocks. See terminal capacity for cable terminal blocks.
② IEC 60947 Standard.

Table 34-111. *XT* Contactors Technical Data and Specifications — Frame N – R (Continued)

Description	XTCE580N	XTCE650N	XTCE750N, XTCE820N,	XTCEC10N	XTCEC14N, XTCEC20N
General (Continued)					
Tools Main cable wrench Control circuit cable pozidriv screwdriver	 16 mm Size 2	 16 mm Size 2	 18 mm Size 2	 18 mm Size 2	 18 mm Size 2
Mounting Position, AC and DC Operated					
Ambient Temperature	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]	-25 to 60°C [-13 to 140°F]
Ambient Storage Temperature	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]	-40 to 80°C [-40 to 176°F]
Environmental					
Mechanical Shock Resistance (IEC/EN 60068-2-27) Half-sinusoidal shock 10 mS (g) Main contact — NO Contact Auxiliary contact — NO Contact Auxiliary contact — NC Contact	 10 10 8	 10 10 8	 10 10 8	 10 10 8	 10 10 8
Overvoltage Category/Pollution Degree	III/3	III/3	III/3	III/3	III/3
Switching Capacity, kVar ① Individual Compensation 230V 400/420/440V 525V 690V	 175 300 400 300	 — — — —	 — — — —	 — — — —	 — — — —

① When using contactors for group compensation, a minimum inductance of approx. 6 uh per capacitor must be available to limit the high inrush current peaks. This corresponds to an air-cored coil with 5 windings and a coil diameter of approximately 140 mm. The conductor cross-section must be selected according to the rated current per phase.

Instructional Leaflets

Table 34-112. Instructional Leaflets

Publication Number	Description
Pub51210	7 – 15A, B Frame XTCE, XTCEC and XTCF Contactors and Accessories (Inside of Packaging)
Pub51211	18 – 32A, C Frame XTCE and XTCEC Contactors and Accessories (Inside of Packaging)
Pub51221	XTOB, D Frame Overload Relays (Inside of Packaging)
Pub51222	XTOB, B – C Frame Overload Relays (Inside of Packaging)
Pub51237	7 – 12A, B Frame XTCE Contactors and Auxiliary Contacts
Pub51232	18 – 32A, C Frame XTCE Contactors and Auxiliary Contacts
Pub51216	40 – 65A, D Frame XTCE Contactors and Auxiliary Contacts
Pub51203	185 – 500A, L – M Frame XTCE Contactors and Auxiliary Contacts
Pub51215	S-Series 185 – 500A, L – M Frame XTCE Contactors and Auxiliary Contacts
Pub51204	580 – 1000A, N Frame XTCE Contactors and Auxiliary Contacts
Pub51209	1400 – 2000A, P – R Frame XTCE Contactors and Auxiliary Contacts
Pub51213	7 – 150A, B – G Frame XTAE Non-reversing and XTAR Reversing Starters
Pub51217	XTCEXFA and XTCEXSA Front and Side Mount Auxiliary Contacts from 40 – 150A, D – G Frame XTCE Contactors
Pub51212	XTCEXML Mechanical Interlock for 7 – 150A, B – G Frame XTCE Contactors
Pub51214	XTCEXRL Reversing Link Kits for 18 – 32A, C Frame XTCE Contactors
Pub51218	XTCEXTL Lug Kits for 500 – 820A, M – N Frame XTCE Contactors
Pub51219	XTCEXRLB and XTCEXSDLB Reversing and Star-Delta (Wye-Delta) Link Kits for 7 – 12A, B Frame XTCE Contactors
Pub51205	Accessories for 185 – 500A, L – M Frame XTCE Contactors
Pub51207	Replacement DC Coils
Pub51213	Renewal Parts — Coils for 18 – 32A, C Frame XTCE Contactors
Pub51186	Renewal Parts — Coils for 40 – 65A, D Frame XTCE Contactors

Coil Data

Frame B – D

Table 34-113. Coil Data — Frame B – D

	XTCE007B	XTCE009B	XTCE012B XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D
Voltage Tolerance										
Pick-Up (x U_C)										
AC operated	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1
DC operated	0.8 – 1.1 ①	0.8 – 1.1 ①	0.8 – 1.1 ①	0.8 – 1.1 ①	0.7 – 1.2 ②	0.7 – 1.2 ②	0.7 – 1.2 ②	0.7 – 1.2 ②	0.7 – 1.2 ②	0.7 – 1.2 ②
Drop-Out (x U_C)										
AC operated	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6	0.3 – 0.6
DC operated	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6
Power Consumption of the coil at cold state and 1.0 x U_C										
AC operated										
Single-voltage coil 50 Hz										
Pick-Up VA	24	24	24	24	52	52	52	149	149	149
Pick-Up W	19	19	19	19	40	40	40	80	80	80
Sealing VA	3.4	3.4	3.4	3.4	7.1	7.1	7.1	16	16	16
Sealing W	1.2	1.2	1.2	1.2	2.1	2.1	2.1	4.3	4.3	4.3
Single-voltage coil 60 Hz										
Pick-Up VA	30	30	30	30	67	67	67	178	178	178
Pick-Up W	23	23	23	23	50	50	50	117	117	117
Sealing VA	4.4	4.4	4.4	4.4	8.7	8.7	8.7	19	19	19
Sealing W	1.4	1.4	1.4	1.4	2.6	2.6	2.6	5.3	5.3	5.3
50/60 Hz										
Pick-Up VA	27	27	27	27	62	62	62	168	168	168
	25	25	25	25	58	58	58	154	154	154
Pick-Up W	22	22	22	22	48	48	48	120	120	120
	21	21	21	21	43	43	43	43	43	43
Sealing VA	4.2	4.2	4.2	4.2	9.1	9.1	9.1	22	22	22
	3.3	3.3	3.3	3.3	6.5	6.5	6.5	14	14	14
Sealing W	1.4	1.4	1.4	1.4	2.5	2.5	2.5	5.3	5.3	5.3
	1.2	1.2	1.2	1.2	2	2	2	4.3	4.3	4.3
DC operated										
Pick-Up W	3	3	4.5	4.5	12 at 24V	12 at 24V	12 at 24V	24 at 24V	24 at 24V	24 at 24V
Sealing W	3	3	4.5	4.5	0.5 at 24V	0.5 at 24V	0.5 at 24V	0.5 at 24V	0.5 at 24V	0.5 at 24V
Duty Factor (%DF)	100	100	100	100	100	100	100	100	100	100
Switching Time at 100% U_C (approximate values)										
Main Contact										
AC operated										
Closing delay (mS)	<21	<21	<21	<21	<22	<22	<22	<18	<18	<18
Opening delay (mS)	<18	<18	<18	<18	<14	<14	<14	<13	<13	<13
DC operated										
Closing delay (mS)	<31	<31	<31	<31	<47	<47	<47	<54	<54	<54
Opening delay (mS)	<12	<12	<12	<12	<30	<30	<30	<24	<24	<24
Arcing time (mS)	10	10	10	10	10	10	10	10	10	10
Electromagnetic Compatibility (EMC)										
Emitted interference	To EN-60947-1									
Noise Immunity	To EN-60947-1									

① 0.7 – 1.3 without additional auxiliary contact modules and ambient temperature +40°C [104°F].

② Coil Suffix TD: U_{min} 24V DC/U_{max} 27V DC.
Coil Suffix WD: U_{min} 48V DC/U_{max} 60V DC.
Coil Suffix AD: U_{min} 110V DC/U_{max} 130V DC.
Coil Suffix BD: U_{min} 200V DC/U_{max} 240V DC.
Example:
$U_c = 0.7 \times U_{min} — 1.2 \times U_{max}$
$U_c = 0.7 \times 24V — 1.2 \times 27V$ DC

Frame F – G

Table 34-114. Coil Data — Frame F – G

	XTCE80F	XTCE95F	XTCE115G	XTCE150G
Voltage Tolerance				
Pick-Up (x U_C)				
AC operated	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1	0.8 – 1.1
DC operated	0.7 – 1.2 ①	0.7 – 1.2 ①	0.7 – 1.2 ①	0.7 – 1.2 ①
Drop-Out (x U_C)				
AC operated	0.3 – 0.6	0.3 – 0.6	0.25 – 0.6	0.25 – 0.6
DC operated	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6
Power Consumption of the coil at cold state and 1.0 x U_C				
AC operated				
Single-voltage coil 50 Hz				
Pick-Up VA	310	310	180	180
Pick-Up W	165	165	130	130
Sealing VA	26	26	3.1	3.1
Sealing W	5.8	5.8	2.1	2.1
Single-voltage coil 60 Hz				
Pick-Up VA	345	345	170	170
Pick-Up W	190	190	130	130
Sealing VA	30	30	3.1	3.1
Sealing W	7.1	7.1	2.1	2.1
50/60 Hz				
Pick-Up VA	372	328	170	170
Pick-Up W	190	190	130	130
Sealing VA	37.1	22.6	3.1	3.1
Sealing W	7.5	6.1	2.1	2.1
DC operated				
Pick-Up W	90 at 24V	90 at 24V	149 at 24V	149 at 24V
Sealing W	1.3 at 24V	1.3 at 24V	2.1 at 24V	2.1 at 24V
Duty Factor (%DF)	100	100	100	100
Switching Time at 100% U_C (approximate values)				
Main Contact				
AC operated				
Closing delay (mS)	<20	<20	<33	<33
Opening delay (mS)	<14	<14	<41	<41
DC operated				
Closing delay (mS)	<45	<45	<35	<35
Opening delay (mS)	<34	<34	<30	<30
Arcing Time (mS)	15	15	15	15
Permissible Residual Current with Actuation of A1 – A2 By the Electronics (with 0 signal) (mA)	≤ 1	≤ 1	≤ 1	≤ 1
Electromagnetic Compatibility (EMC)				
Emitted interference	To EN60947-1			
Noise Immunity	To EN60947-1			

① At 24V: 0.7 – 1.3 without additional auxiliary contact modules and ambient temperature +40°C [104°F].

34

Frame L – R

Table 34-115. Coil Data — Frame L – R

Description	XTCE185L	XTCE225L, XTCE250L	XTCE300M, XTCE400M	XTCE500M
Voltage Tolerance				
Pick-Up (x U_c) XTCE185L – XTCEC20R XTCS185L – XTCS500M Drop-Out (x U_c) XTCE185L – XTCEC20R XTCS185L – XTCS500M	 0.7 x U_{cmin} — 1.15 x U_{cmax} 0.85 x U_{cmin} — 1.1 x U_{cmax} 0.2 x U_{cmin} — 0.6 x U_{cmax} 0.2 x U_{cmin} — 0.4 x U_{cmax}			
Power Consumption of the coil at cold state and 1.0 x U_C				
XTCE185L – XTCEC20R Pick-Up VA Pick-Up W Sealing VA Sealing W	 250 ① 200 4.3 3.3	 250 ① 200 4.3 3.3	 450 ① 350 4.3 3.3	 450 ① 350 4.3 3.3
XTCS185L – XTCS500M Pick-Up VA Pick-Up W Sealing VA Sealing W	 360 325 4.3 3.3	 360 325 4.3 3.3	 715 645 4.3 3.3	 715 645 4.3 3.3
Duty Factor (%DF)	100	100	100	100
Switching Time at 100% Main Contact U_C (approximate values)				
XTCE185L – XTCEC20R Closing delay (mS) Opening delay (mS) XTCS185L – XTCS500M Closing delay (mS) Opening delay (mS)	 <100 <80 <50 <40	 <100 <80 <50 <40	 <80 <80 <50 <40	 <80 <80 <50 <40
Reaction in Threshold and Sealing State Transition Range (XTCE185L – XTCEC20R)				
Voltage interruptions (0 – 0.2 x U_{cmin}) ≤ 10ms (0 – 0.2 x U_{cmin}) > 10ms	 Time is bridged successfully Drop-out of the contactor			
Voltage Dips (0.2 – 0.6 x U_{cmin}) ≤ 12ms (0.2 – 0.6 x U_{cmin}) > 12ms (0.6 – 0.7 x U_{cmin})	 Time is bridged successfully Drop-out of the contactor Contactor remains switched on			
Excess Voltage (1.15 – 1.3 x U_{cmax}) (>1.3 x U_{cmax}) ≤ 3s (>1.3 x U_{cmax}) > 3s	 Contactor remains switched on Contactor remains switched on Drop-out of the contactor			
Pick – Up phase (0 – 0.7 x U_{cmin}) (0.7 x U_{cmin} –1.15 x U_{cmax}) (>1.15 x U_{cmax})	 Contactor does not switch on Contactor switches on with certainty Contactor switches on with certainty			
Permissible contact resistance (of the external command device with actuation of A11), Ω	≤ 500	≤ 500	≤ 500	≤ 500
Permissible residual current (with actuation of A11 by the electronics with 0 signal)	≤ 1	≤ 1	≤ 1	≤ 1
SPS Signal Level (A3 – A4) to IEC/EN 61131-2 (Type 2) High Low	 15V 5V	 15V 5V	 15V 5V	 15V 5V
Electromagnetic compatibility (EMC)	This product is designed for operation in industrial environments. Usage in domestic areas can cause radio frequency interference (RFI). Noise suppression measures must be provided for the additional interference.			

① Control transformer with U_k ≤6%.

Table 34-115. Coil Data — Frame L – R (Continued)

Description	XTCE580N	XTCE750N, XTCE820N	XTCEC10N	XTCEC14P	XTCEC20R
Voltage Tolerance					
Pick-Up (x U_c) XTCE185L – XTCEC20R XTCS185L – XTCS500M Drop-Out (x U_c) XTCE185L – XTCEC20R XTCS185L – XTCS500M	0.7 x U_{cmin} — 1.15 x U_{cmax} 0.85 x U_{cmin} — 1.1 x U_{cmax} 0.2 x U_{cmin} — 0.6 x U_{cmax} 0.2 x U_{cmin} — 0.4 x U_{cmax}				
Power Consumption of the coil at cold state and 1.0 x U_C					
XTCE185L – XTCEC20R Pick-Up VA Pick-Up W Sealing VA Sealing W	 800 ① 700 7.5 6.5	 800 ① 700 7.5 6.5	 800 ① 700 7.5 6.5	 800 ① 700 7.5 6.5	 1600 ① 1400 15 13
XTCS185L –– XTCS500M Pick-Up VA Pick-Up W Sealing VA Sealing W	 — — — —	 — — — —	 — — — —	 — — — —	 — — — —
Duty Factor (%DF)	100	100	100	100	100
Switching Time at 100% Main Contact U_C (approximate values)					
XTCE185L – XTCEC20R Closing delay (mS) Opening delay (mS) XTCS185L – XTCS500M Closing delay (mS) Opening delay (mS)	 <70 <70 — —	 <70 <70 — —	 <70 <70 — —	 <70 <40 — —	 <70 <40 — —
Reaction in Threshold and Sealing State Transition Range (XTCE185L – XTCEC20R)					
Voltage interruptions (0 – 0.2 x U_{cmin}) ≤ 10ms (0 – 0.2 x U_{cmin}) > 10ms	Time is bridged successfully Drop-out of the contactor				
Voltage Dips (0.2 – 0.6 x U_{cmin}) ≤ 12ms (0.2 – 0.6 x U_{cmin}) > 12ms (0.6 – 0.7 x U_{cmin})	Time is bridged successfully Drop-out of the contactor Contactor remains switched on				
Excess Voltage (1.15 – 1.3 x U_{cmax}) (>1.3 x U_{cmax}) ≤ 3s (>1.3 x U_{cmax}) > 3s	Contactor remains switched on Contactor remains switched on Drop-out of the contactor				
Pick – Up phase (0 – 0.7 x U_{cmin}) (0.7 x U_{cmin} –1.15 x U_{cmax}) (>1.15 x U_{cmax})	Contactor does not switch on Contactor switches on with certainty Contactor switches on with certainty				
Permissible contact resistance (of the external command device with actuation of A11), Ω	≤ 500	≤ 500	≤ 500	≤ 500	≤ 500
Permissible residual current (with actuation of A11 by the electronics with 0 signal)	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1
SPS Signal Level (A3 – A4) to IEC/EN 61131-2 (Type 2) High Low	 15V 5V	 15V 5V	 15V 5V	 15V 5V	 15V 5V
Electromagnetic compatibility (EMC)	This product is designed for operation in industrial environments. Usage in domestic areas can cause radio frequency interference (RFI). Noise suppression measures must be provided for the additional interference.				

① Control transformer with U_k ≤7%.

Contactor Contact Travel Diagrams

The diagrams indicate the closing and travel of the contacts of the contactors and auxiliary contacts at no-load. Tolerances are not taken into consideration.

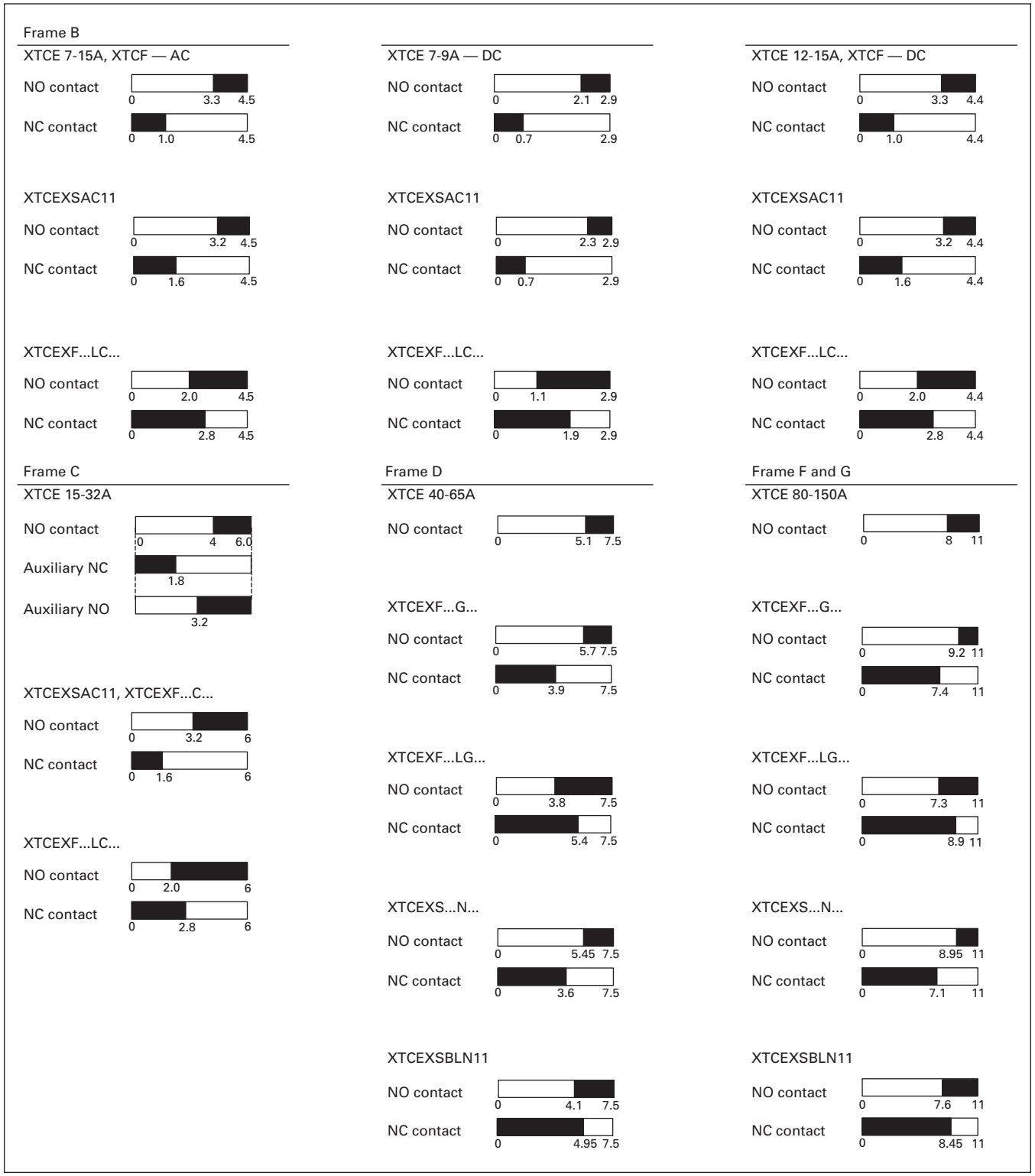


Figure 34-38. Contactor Contact Travel Diagrams

Auxiliary Contacts

Table 34-116. Auxiliary Contacts Technical Data and Specifications

Description	XTCE007B…– XTCE032C	XTCEXFAC… XTCEXFATC…	XTCEXFCC… XTCEXSCC…	XTCEXFAG…	XTCEXSBLN… XTCEXSBN… XTCEXSBNC… XTCEXSCN… XTCEXSCNC…
Interlocked opposing contacts with an auxiliary contact module (to IEC 60947-5 -1 Annex L)	—	Yes	Yes	Yes	Yes
Break contact (not late-break contact) suitable as a mirror contact (to IEC/EN 60947-4 -1 Annex F)	XTCE007B… – XTCE032C	XTCE007B… – XTCE032C	XTCE007B… – XTCE032C	XTCE040D… – XTCE065D…	XTCE040D… – XTCE065D… XTCE185L… – XTCEC10N…
Rated impulse withstand voltage, (Uimp) V AC	6000	6000	6000	6000	6000
Overvoltage category / pollution degree	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage, (Ui) V AC	690	690	690	690	690
Rated operational voltage, (Ue) V AC	500	500	500	500	500
Safe isolation to VDE 0106 Part 101 and Part 101(A) in V AC Between coil and auxiliary contacts Between the auxiliary contacts	 400 400	 400 400	 400 400	 440 440	 440 440
Rated Operational Current, Ie AC-15 230V 380/415V 500V DC-3 L/R ≤5 mS ① 24V 60V 110V 220V	 6A 4A 1.5A 10A 6A 3A 1A	 6A 3A — 10A 6A 3A 1A	 6A 4A 1.5A 10A 6A 3A 1A	 6A 4A 1.5A 10A 6A 3A 1A	 6A 4A 1.5A 10A 6A 3A 1A
Conventional thermal current, Ith	16A	16A	16A ③	10A	10A
Control circuit reliability (at U_e = 24 V DC, U_{min} = 17 V, I_{min} = 5.4 mA)	$<10^{-8}$, < one failure at 100 million operations				
Component Lifespan, Operations x 10^6 at U_e = 230V, AC-15, 3A	1.3	1.3	1.3	1.3	1.3
Short-circuit rating without welding ② Maximum fuse, gG/gL	 10A	 10A	 10A	 16A	 16A

① Making and breaking conditions to DC-13, time L/R contact as stated.
② See fuses overlay for time/current characteristic (on request).
③ Conventional thermal current (I_{th}) of XTCEXSCC_ is 10A.

Table 34-117. Parallel Link Technical Data and Specifications

Description	XTCEXPLKB	XTECXPLKC	XTCEXPLKD	XTCEXPLKG	XTCEXPLK185
Terminal Capacity Solid (mm^2)	 1 – 16	 16	 16	 —	 —
Flexible with ferrule (mm^2)	1 x (0.5 – 25) 2 x (0.5 – 16)	1 x (16 – 35)	1 x (16 – 120)	—	—
Stranded (mm^2)	1 x (0.5 – 25) 2 x (0.5 – 16)	1 x (16 – 50)	1 x (16 – 120)	1 x (35 – 300) 2 x (35 – 120)	—
Flat conductor — number of segments x width x thickness (mm)	6 x 9 x 0.8	—	—	2 x (11 x 21 x 1)	1 x (6 x 16 x 0.8) 2 x (20 x 32 x 0.5) 2 x (11 x 21 x 1)
Tightening Torque (Nm)	4	4	14	—	—
Tools Pozidriv screwdriver Hexagon socket head spanner — SW (mm)	 Size 2 —	 Size 2 —	 — 5	 — 6	 — —
Conventional Thermal Current 3-Pole (I_{th}) A 4-Pole (I_{th}) A	 50 60	 100 —	 180 —	 400 —	 — —

Table 34-118. Cable Terminal Block, Flat Cable Terminal Technical Data and Specifications

Description	XTCEXTLA225	XTCEXTLA400	XTCEXPLK185	XTCEXTFB650	XTCEXTFB820
Terminal Capacity Stranded (mm^2)	 1 x (16 – 185) 2 x (16 – 150)	 1 x (120 – 300) 2 x (70 – 240)	 —	 —	 —
Stranded (AWG)	1 x (6 – 350 MCM) 2 x (6 – 300 MCM)	1 x (1/0 – 600 MCM) 2 x (1/0 – 500 MCM)	—	—	—
Flat conductor — number of segments x width x thickness (mm)	1 x (3 x 9 x 0.8) 2 x (10 x 16 x 0.8)	1 x (10 x 16 x 0.8) 2 x (20 x 24 x 0.5) 2 x (11 x 21 x 1)	1 x (6 x 16 x 0.8) 2 x (20 x 32 x 0.5) 2 x (11 x 21 x 1)	1 x (6 x 16 x 0.8) 2 x (20 x 32 x 0.5) 2 x (11 x 21 x 1)	1 x (6 x 16 x 0.8) 2 x (10 x 40 x 1) 2 x (20 x 40 x 0.5)

AC Ratings

Table 34-119. AC Ratings

Description	XTCE007B	XTCE009B	XTCE012B XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
AC-1 Operation							
Conventional Free Air Thermal Current, 3-Pole, 50 – 60 Hz							
Open							
at 40°C (I_{th})	22A	22A	22A	22A	40A	45A	45A
at 50°C (I_{th})	21A	21A	21A	21A	38A	43A	43A
at 55°C (I_{th})	21A	21A	21A	21A	37A	42A	42A
at 60°C (I_{th})	20A	20A	20A	20A	35A	40A	40A
Enclosed	18A	18A	18A	18A	32A	36A	36A
Conventional Free Air Thermal Current, 1-Pole (I_{th})							
Open	50A	50A	50A	50A	85A	85A	85A
Enclosed	45A	45A	45A	45A	80A	80A	80A
AC-3 Operation							
Rated Operational Current, 50/60 Hz ① (I_e) in amperes							
220/230V	7	9	12	15.5	18	25	32
240V	7	9	12	15.5	18	25	32
380/400V	7	9	12	15.5	18	25	32
415V	7	9	12	15.5	18	25	32
440V	7	9	12	15.5	18	25	32
500V	5	7	10	12.5	18	25	32
660/690V	4	5	7	9	12	15	18
1000V	—	—	—	—	—	—	—
Rated power (P) in kilowatts							
220/230V	2.2	2.5	3.5	4	5	7.5	10
240V	2.2	3	4	4.6	5.5	8.5	11
380/400V	3	4	5.5	7.5	7.5	11	15
415V	4	5.5	7	8	10	14.5	19
440V	4.5	5.5	7.5	8.4	10.5	15.5	20
500V	3.5	4.5	7	7.5	12	17.5	23
660/690V	3.5	4.5	6.5	7	11	14	17
1000V	—	—	—	—	—	—	—
AC-4 Operation							
Rated Operational Current, 50/60 Hz ① (I_e) in amperes							
220/230V	5	6	7	7	10	13	15
240V	5	6	7	7	10	13	15
380/400V	5	6	7	7	10	13	15
415V	5	6	7	7	10	13	15
440V	5	6	7	7	10	13	15
500V	4.5	5	6	6	10	13	15
660/690V	4	4.5	5	5	8	10	12
1000V	—	—	—	—	—	—	—
Rated power (P) in kilowatts							
220/230V	1	1.5	2	2	2.5	3.5	4
240V	1.5	1.6	2.2	2.2	3	4	4.5
380/400V	2.2	2.5	3	3	4.5	6	7
415V	2.3	2.8	3.4	3.4	5	6.5	7.5
440V	2.4	3	3.6	3.6	5.5	7	8
500V	2.5	2.8	3.5	3.5	6	8	9
660/690V	2.9	3.6	4.4	4.4	6.5	8.5	10
1000V	—	—	—	—	—	—	—
AC-6A Operation							
Transformer Loads	Values are application specific. Calculation is $I_{eAC-3} = X / 6 * I_e$ Transformer where X is the inrush current of the transformer and I_e Transformer is the nominal current. ②						
AC-6B Operation							
Capacitor Loads Individual compensation rated operational current I_e of three-phase capacitors in amperes Up to 525V 690V	See **Page 34-48** for Capacitor Ratings						
Maximum inrush current peak (x I_e)	30	30	30	30	30	30	30
Component Lifesaving (Operations)	—	—	—	—	—	—	—
Maximum Operating Frequency (ops/hr)	—	—	—	—	—	—	—

① At maximum permissible ambient temperature.

② Example —
The transformer has a nominal current of 10A with an inrush current of 18 times the nominal current. So, the contactor must have an AC-3 current of 18/6 x 10A = 30A. Using an XTCE032C (32A AC-3) contactor is recommended.

Table 34-119. AC Ratings (Continued)

Description	XTCE040D	XTCE050D	XTCE065D	XTCE080F	XTCE095F	XTCE115G	XTCE150G
AC-1 Operation							
Conventional Free Air Thermal Current, 3-Pole, 50 – 60 Hz							
Open							
at 40°C (I_{th})	60A	80A	98A	110A	130A	160A	190A
at 50°C (I_{th})	57A	71A	88A	98A	125A	142A	180A
at 55°C (I_{th})	55A	68A	83A	94A	115A	135A	170A
at 60°C (I_{th})	50A	65A	80A	90A	110A	130A	160A
Enclosed	45A	58A	72A	80A	100A	115A	144A
Conventional Free Air Thermal Current, 1-Pole (I_{th})							
Open	125A	162A	200A	225A	275A	325A	400A
Enclosed	112A	145A	180A	200A	250A	285A	360A
AC-3 Operation							
Rated Operational Current, 50/60 Hz ① (I_e) in amperes							
220/230V	40	50	65	80	95	115	150
240V	40	50	65	80	95	115	150
380/400V	40	50	65	80	95	115	150
415V	40	50	65	80	95	115	150
440V	40	50	65	80	95	115	150
500V	40	50	65	80	95	115	150
660/690V	25	32	37	65	80	93	100
1000V	—	—	—	—	—	—	—
Rated power (P) in kilowatts							
220/230V	12.5	15.5	20	25	30	37	48
240V	13.5	17	22	27.5	34	40	52
380/400V	18.5	22	30	37	45	55	75
415V	24	30	39	43	57	70	91
440V	25	32	41	51	60	75	95
500V	28	36	47	58	70	85	110
660/690V	23	30	35	63	75	90	96
1000V	—	—	—	—	—	—	—
AC-4 Operation							
Rated Operational Current, 50/60 Hz ① (I_e) in amperes							
220/230V	18	21	25	40	50	55	65
240V	18	21	25	40	50	55	65
380/400V	18	21	25	40	50	55	65
415V	18	21	25	40	50	55	65
440V	18	21	25	40	50	55	65
500V	18	21	25	40	50	55	65
660/690V	14	17	20	40	50	45	50
1000V	—	—	—	—	—	—	—
Rated power (P) in kilowatts							
220/230V	5	6	7	12	16	17	20
240V	5.5	6.5	7.5	13	17	19	22
380/400V	9	10	12	20	26	28	33
415V	9.5	11	13	24	30	33	39
440V	10	12	14	25	32	35	41
500V	11	13	16	29	36	40	47
660/690V	12	14	17	26	35	43	48
1000V	—	—	—	—	—	—	—
AC-6A Operation							
Transformer Loads	Values are application specific. Calculation is I_{eAC-3} = X / 6 * Ie Transformer where X is the inrush current of the transformer and Ie Transformer is the nominal current. ②						
AC-6B Operation							
Capacitor Loads Individual compensation rated operational current I_e of three-phase capacitors in amperes Up to 525V 690V	See **Page 34-48** for Capacitor Ratings						
Maximum inrush current peak (x I_e)	30	30	30	30	30	30	30
Component Lifesaving (Operations)	—	—	—	—	—	—	—
Maximum Operating Frequency (ops/hr)	—	—	—	—	—	—	—

① At maximum permissible ambient temperature.

② Example —
The transformer has a nominal current of 10A with an inrush current of 18 times the nominal current. So, the contactor must have an AC-3 current of 18/6 x 10A = 30A. Using an XTCE032C (32A AC-3) contactor is recommended.

Table 34-119. AC Ratings (Continued)

Description	XTCE185L	XTCE225L	XTCE250L	XTCE300M	XTCE400M	XTCE500M	XTCE580N
AC-1 Operation							
Conventional Free Air Thermal Current, 3-Pole, 50 – 60 Hz							
at 40°C (I_{th})	337	386	429	490	612	857	980
at 50°C (I_{th})	301	345	383	438	548	767	876
at 55°C (I_{th})	287	329	366	418	522	731	836
at 60°C (I_{th})	275	315	350	400	500	700	800
Conventional Free Air Thermal Current, 1-Pole (I_{th})	685	785	875	1000	1250	1750	2000
AC-3 Operation							
Rated Operational Current, 50/60 Hz ① (I_e) in amperes							
220/230V	185	225	250	300	400	500	580
240V	185	225	250	300	400	500	580
380/400V	185	225	250	300	400	500	580
415V	185	225	250	300	400	500	580
440V	185	225	250	300	400	500	580
500V	185	225	250	300	400	500	580
660/690V	185	225	250	300	400	500	580
1000V	76	76	76	95	95	95	435
Rated power (P) in kilowatts							
220/230V	55	70	75	90	125	155	185
240V	62	75	85	100	132	170	200
380/400V	90	110	132	160	200	250	315
415V	110	132	148	180	240	300	348
440V	115	142	157	190	255	345	370
500V	132	160	180	215	290	360	420
660/690V	175	215	240	286	344	344	560
1000V	108	108	108	132	132	132	600
AC-4 Operation							
Rated Operational Current, 50/60 Hz ① (I_e) in amperes							
220/230V	136	164	200	240	296	360	456
240V	136	164	200	240	296	360	456
380/400V	136	164	200	240	296	360	456
415V	136	164	200	240	296	360	456
440V	136	164	200	240	296	360	456
500V	136	164	200	240	296	360	456
660/690V	136	164	200	240	296	296	456
1000V	76	76	76	95	95	95	348
Rated power (P) in kilowatts							
220/230V	41	51	62	75	92	112	143
240V	45	54	68	82	101	122	156
380/400V	75	90	110	132	160	200	250
415V	80	96	117	142	176	216	274
440V	85	102	125	151	186	229	290
500V	96	116	143	172	214	260	330
660/690V	127	155	189	229	283	344	440
1000V	108	108	108	132	132	132	509
AC-6A Operation							
Transformer Loads	Values are application specific. Calculation is I_{eAC-3} = X / 6 * Ie Transformer where X is the inrush current of the transformer and Ie Transformer is the nominal current. ②						
AC-6B Operation							
Capacitor Loads Individual compensation rated operational current I_e of three-phase capacitors in amperes							
Up to 525V	220	220	220	307	307	307	463
690V	133	133	133	177	177	177	265
Maximum inrush current peak (x I_e)	30	30	30	30	30	30	30
Component Lifesaving (Operations)	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Maximum Operating Frequency (ops/hr)	200	200	200	200	200	200	200

① At maximum permissible ambient temperature.

② Example —
The transformer has a nominal current of 10A with an inrush current of 18 times the nominal current. So, the contactor must have an AC-3 current of 18/6 x 10A = 30A. Using an XTCE032C (32A AC-3) contactor is recommended.

Table 34-119. AC Ratings (Continued)

Description	XTCE650N	XTCE750N	XTCE820N	XTCEC10N	XTCEC14P	XTCEC20R
AC-1 Operation						
Conventional Free Air Thermal Current, 3-Pole, 50 – 60 Hz						
at 40°C (I_{th})	1041	1102	1225	1225	1714	2450
at 50°C (I_{th})	931	986	1095	1095	1533	2190
at 55°C (I_{th})	888	940	1044	1044	1462	2089
at 60°C (I_{th})	850	900	1000	1000	1400	2000
Conventional Free Air Thermal Current, 1-Pole (I_{th})	2125	2250	2500	2500	3500	5000
AC-3 Operation						
Rated Operational Current, 50/60 Hz ① (I_e) in amperes						
220/230V	650	750	820	1000	—	—
240V	650	750	820	1000	—	—
380/400V	650	750	820	1000	—	—
415V	650	750	820	1000	—	—
440V	650	750	820	1000	—	—
500V	650	750	820	1000	—	—
660/690V	650	750	820	1000	—	—
1000V	435	580	580	700	—	—
Rated power (P) in kilowatts						
220/230V	205	240	260	315	—	—
240V	225	260	285	340	—	—
380/400V	355	400	450	560	—	—
415V	390	455	500	610	—	—
440V	420	480	525	650	—	—
500V	470	550	600	730	—	—
660/690V	630	720	750	1000	—	—
1000V	600	800	800	1000	—	—
AC-4 Operation						
Rated Operational Current, 50/60 Hz ① (I_e) in amperes						
220/230V	512	576	656	800	—	—
240V	512	576	656	800	—	—
380/400V	512	576	656	800	—	—
415V	512	576	656	800	—	—
440V	512	576	656	800	—	—
500V	512	576	656	800	—	—
660/690V	512	576	656	800	—	—
1000V	348	464	464	700	—	—
Rated power (P) in kilowatts						
220/230V	161	181	209	260	—	—
240V	176	200	228	280	—	—
380/400V	280	315	355	450	—	—
415V	307	346	394	490	—	—
440V	326	367	418	520	—	—
500V	370	417	474	590	—	—
660/690V	494	556	633	780	—	—
1000V	509	678	678	1000	—	—
AC-6A Operation						
Transformer Loads	Values are application specific. Calculation is $I_{eAC-3} = X / 6 * I_e$ Transformer where X is the inrush current of the transformer and Ie Transformer is the nominal current. ②					
AC-6B Operation						
Capacitor Loads Individual compensation rated operational current I_e of three-phase capacitors in amperes						
Up to 525V	463	463	463	463	—	—
690V	265	265	265	265	—	—
Maximum inrush current peak (x I_e)	30	30	30	30	—	—
Component Lifesaving (Operations)	100,000	100,000	100,000	100,000	—	—
Maximum Operating Frequency (ops/hr)	200	200	200	200	—	—

① At maximum permissible ambient temperature.

② Example —
The transformer has a nominal current of 10A with an inrush current of 18 times the nominal current. So, the contactor must have an AC-3 current of 18/6 x 10A = 30A. Using an XTCE032C (32A AC-3) contactor is recommended.

34

DC Ratings

Table 34-120. DC Ratings — DC-1

Description	XTCE007B	XTCE009B	XTCE012B XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Rated operation current {1} (I_e) in amperes							
60V	20	20	20	20	35	40	40
110V	20	20	20	20	35	40	40
220V	15	15	15	15	35	40	40
440V	1	1.3	1.3	1.3	2.9	2.9	2.9
	XTCE040D	**XTCE050D**	**XTCE065D**	**XTCE080F**	**XTCE095F**	**XTCE115G**	**XTCE150G**
60V	50	60	72	110	110	160	160
110V	50	50	72	110	110	160	160
220V	45	45	65	70	70	90	90
440V	2.9	2.9	2.9	4.5	4.5	4.5	4.5
	XTCE185L	**XTCE225L**	**XTCE250L**	**XTCE300M**	**XTCE400M**	**XTCE500M**	**XTCE580N**
60V	300	300	300	400	400	400	—
110V	300	300	300	400	400	400	—
220V	300	300	300	400	400	400	—
440V	11	11	11	11	11	11	—
	XTCE650N	**XTCE750N**	**XTCE820N**	**XTCEC10N**	**XTCEC14P**	**XTCEC20R**	**—**
60V	—	—	—	—	—	—	—
110V	—	—	—	—	—	—	—
220V	—	—	—	—	—	—	—
440V	—	—	—	—	—	—	—

Table 34-121. DC Ratings — DC-3

Description	XTCE007B	XTCE009B	XTCE012B XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Rated operation current {1} (I_e) in amperes							
60V	20	20	20	20	35	35	40
110V	20	20	20	20	35	35	40
220V	1.5	1.5	1.5	1.5	10	10	25
440V	0.2	0.2	0.2	0.2	0.6	0.6	0.6
	XTCE040D	**XTCE050D**	**XTCE065D**	**XTCE080F**	**XTCE095F**	**XTCE115G**	**XTCE150G**
60V	50	60	72	110	110	160	160
110V	50	50	72	110	110	160	160
220V	25	25	35	35	35	40	40
440V	0.6	0.6	0.6	1	1	1	1
	XTCE185L	**XTCE225L**	**XTCE250L**	**XTCE300M**	**XTCE400M**	**XTCE500M**	**XTCE580N**
60V	300	300	300	400	400	400	—
110V	300	300	300	400	400	400	—
220V	300	300	300	400	400	400	—
440V	—	—	—	—	—	—	—
	XTCE650N	**XTCE750N**	**XTCE820N**	**XTCEC10N**	**XTCEC14P**	**XTCEC20R**	**—**
60V	—	—	—	—	—	—	—
110V	—	—	—	—	—	—	—
220V	—	—	—	—	—	—	—
440V	—	—	—	—	—	—	—

Table 34-122. DC Ratings — DC-5

Description	XTCE007B	XTCE009B	XTCE012B XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Rated operation current {1} (I_e) in amperes							
60V	20	20	20	20	35	35	40
110V	20	20	20	20	35	35	40
220V	1.5	1.5	1.5	1.5	10	10	25
440V	0.2	0.2	0.2	0.2	0.6	0.6	0.6
	XTCE040D	**XTCE050D**	**XTCE065D**	**XTCE080F**	**XTCE095F**	**XTCE115G**	**XTCE150G**
60V	50	60	72	110	110	160	160
110V	50	50	72	110	110	160	160
220V	25	25	35	35	35	40	40
440V	0.6	0.6	0.6	1	1	1	1
	XTCE185L	**XTCE225L**	**XTCE250L**	**XTCE300M**	**XTCE400M**	**XTCE500M**	**XTCE580N**
60V	300	300	300	400	400	400	—
110V	300	300	300	400	400	400	—
220V	300	300	300	400	400	400	—
440V	—	—	—	—	—	—	—
	XTCE650N	**XTCE750N**	**XTCE820N**	**XTCEC10N**	**XTCEC14P**	**XTCEC20R**	**—**
60V	—	—	—	—	—	—	—
110V	—	—	—	—	—	—	—
220V	—	—	—	—	—	—	—
440V	—	—	—	—	—	—	—

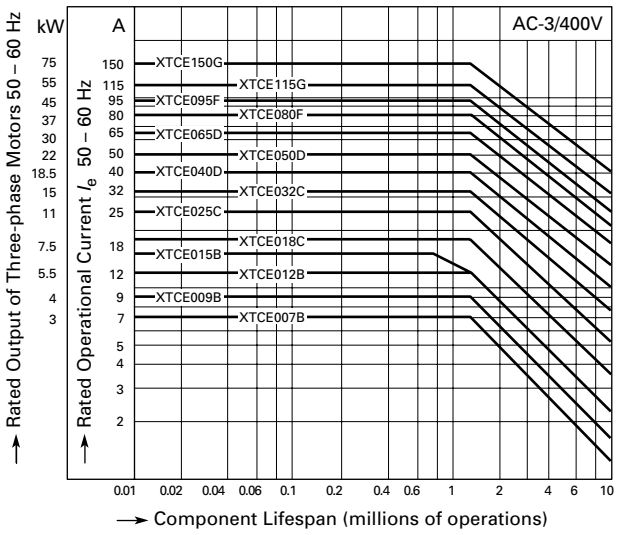
Heat Loss

Table 34-123. Current heat loss (3-Pole) in watts

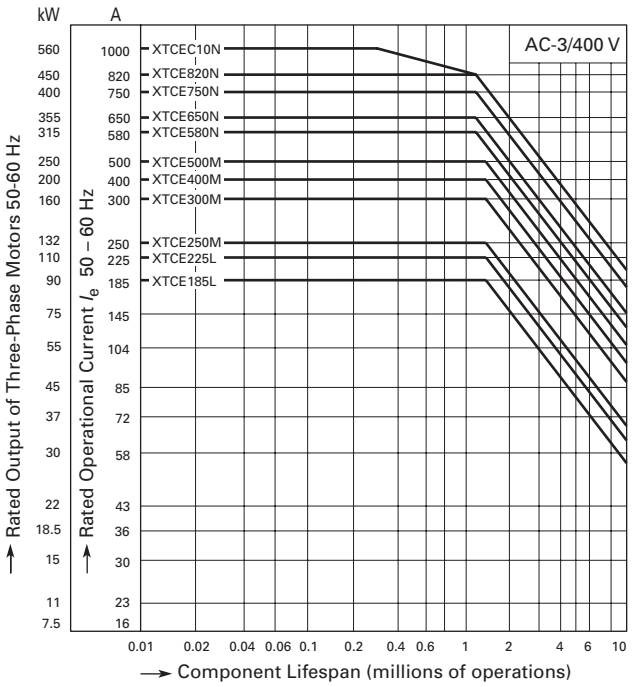
Description	XTCE007B	XTCE009B	XTCE012B XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Current heat loss (3-Pole) in watts							
at I_{th}	3	3	3	3	7.3	9.6	12.1
at I_e to AC-3/400V	0.37	0.6	1.1	1.8	1.9	3.8	6.1
Impedance per pole, mΩ	2.5	2.5	2.5	2.5	2	2	2
	XTCE040D	**XTCE050D**	**XTCE065D**	**XTCE080F**	**XTCE095F**	**XTCE115G**	**XTCE150G**
Current heat loss (3-Pole) in watts							
at I_{th}	11.3	19	28.8	14.6	21.8	30.4	46.1
at I_e to AC-3/400V	7.2	11.3	19	11.5	16.2	23.8	40.5
Impedance per pole, mΩ	1.5	1.5	1.5	0.6	0.6	0.6	0.6
	XTCE185L	**XTCE225L**	**XTCE250L**	**XTCE300M**	**XTCE400M**	**XTCE500M**	**XTCE580N**
Current heat loss (3-Pole) in watts							
at I_{th}	79	108	95	123	188	236	227
at I_e to AC-3/400V	36	55	48	69	120	120	120
Impedance per pole, mΩ	—	—	—	—	—	—	—
	XTCE650N	**XTCE750N**	**XTCE820N**	**XTCEC10N**	**XTCEC14P**	**XTCEC20R**	**—**
Current heat loss (3-Pole) in watts							
at I_{th}	257	288	355	355	697	711	—
at I_e to AC-3/400V	150	200	239	355	—	—	—
Impedance per pole, mΩ	—	—	—	—	—	—	—

34

Life Curves

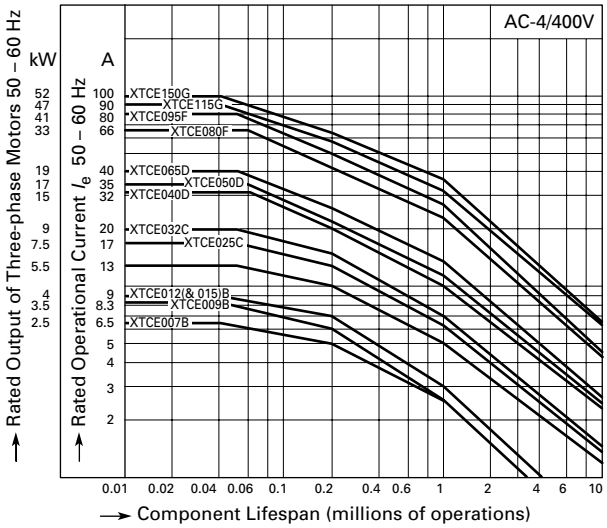


XTCE007B – XTCE150G

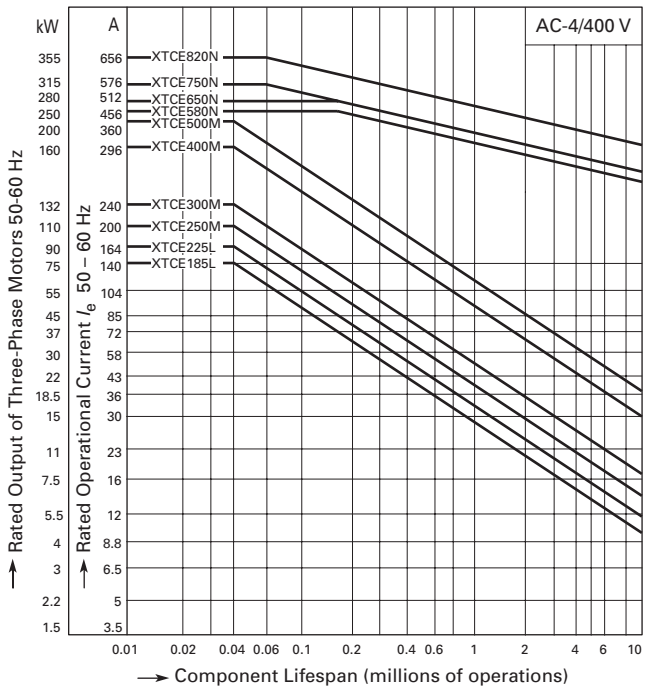


XTCE185L – XTCEC10N

Figure 34-39. Normal Switching Duty



XTCE007B – XTCE150G



XTCE185L – XTCE820N

Figure 34-40. Extreme Switching Duty

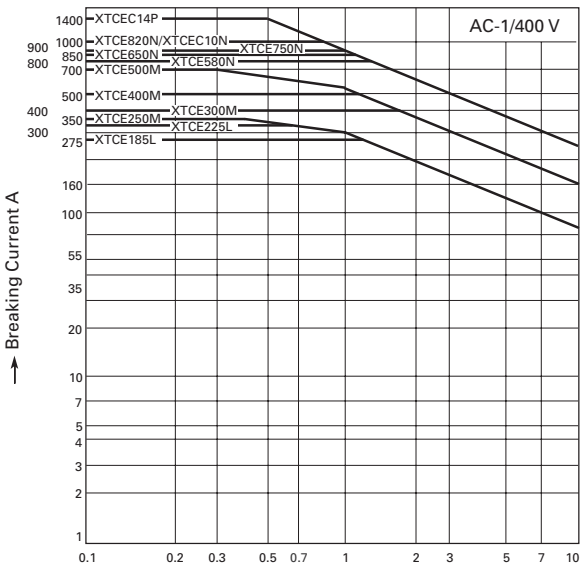


Figure 34-41. Switching Duty for Non-motor loads, 3-pole, 4-pole — XTCE185L – XTCEC14P

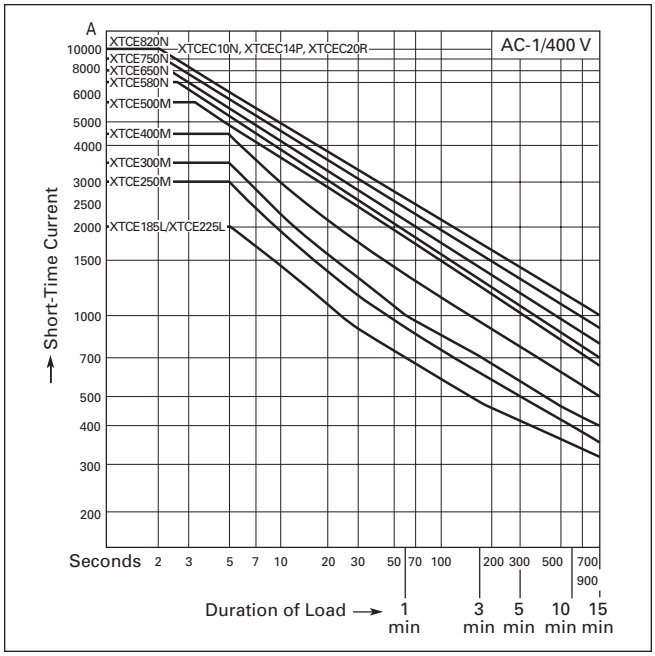
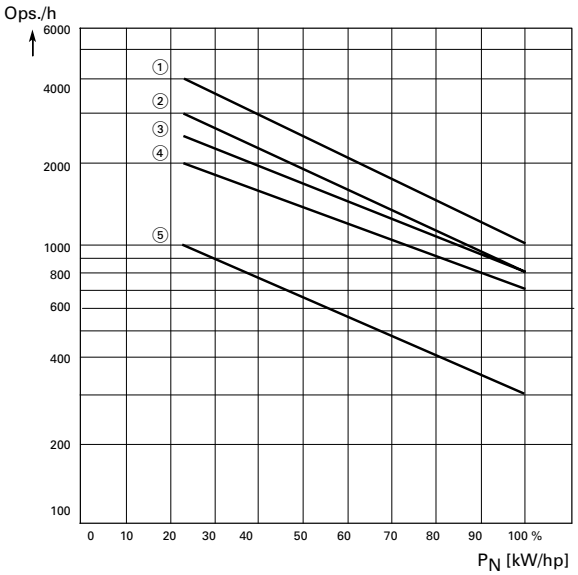


Figure 34-42. Short-Time Loading, 3-pole — XTCE185L – XTCEC20R

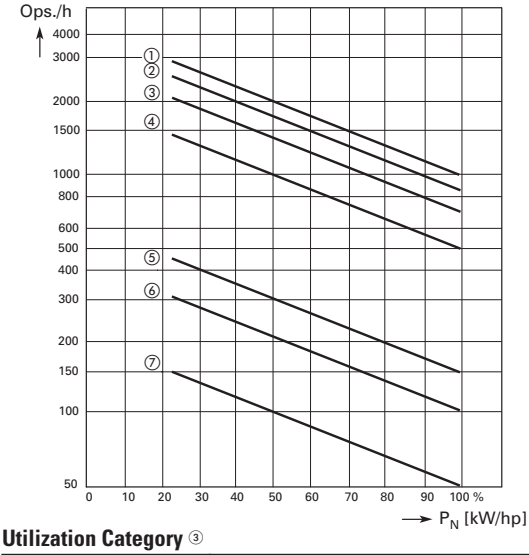


Utilization Category ①

Type	Characteristic Curve Above		
	AC-1	AC-3	AC-2 AC-4
XTCE007B – XTCE015B	3	1	5
XTCE018C – XTCE032C	3	2	5
XTCE040D – XTCE065D	3	2	5
XTCE080F – XTCE150G	3	4	5

① P_N = max. motor rating (kW/hp) of the relevant contactor. ops./h = max. number of operations per hour.

7 to 150 hp



Utilization Category ③

Type	Characteristic Curve Above		
	AC-1	AC-3	AC-4
XTCE185L	2	1	6
XTCE225L	2	1	6
XTCE250L	2	1	6
XTCE300M	3	2	7
XTCE400M	3	2	7
XTCE500M	3	2	7
XTCE580N	3	4	5
XTCE650N	3	4	5
XTCE750N	3	4	5
XTCE820N	3	4	5

③ P_N = max. motor rating (kW/hp) of the relevant contactor. ops./h = max. number of operations per hour.

185 to 820 hp

Figure 34-43. Maximum Operating Frequency — Related to Rating and Utilization Category (400V)