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Technical Data and Specifications

XT Contactors—Frame B

Description	XTCE007B	XTCE009B	XTCE012B	XTCE015B
General				
Standards	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS
Weights in kg [lb]				
AC operated	0.23 [0.51]	0.23 [0.51]	0.23 [0.51]	0.23 [0.51]
DC operated	0.28 [0.62]	0.28 [0.62]	0.28 [0.62]	0.28 [0.62]
Mechanical life—operations	10,000,000	10,000,000	10,000,000	10,000,000
Mechanical operating frequency (ops/hr)				
AC operated	9000	9000	9000	5000
DC operated	9000	9000	9000	5000
Electrical life	See Curves, **Page V5-T1-111**	See Curves, **Page V5-T1-111**	See Curves, **Page V5-T1-111**	See Curves, **Page V5-T1-111**
Electrical operating frequency (ops/hr)—see Curves, **Page V5-T1-111**				
AC-1; 400V I_e	800	800	800	800
AC-3; 400V I_e	1000	1000	1000	1000
AC-4; 400V I_e	300	300	300	300
Climatic proofing	③	③	③	③
Insulation voltage (U_i) Vac	690	690	690	690
Impulse withstand voltage (U_{imp}) Vac	8000	8000	8000	8000
Operational voltage (U_e) Vac	690	690	690	690
Safe isolation to VDE 0106 Part 101 and Part 101/A1				
Between coil and contacts (Vac)	400	400	400	400
Between contacts (Vac)	400	400	400	400
Making capacity up to 690V (amps) ①	112	112	144	155
Breaking capacity (amps)				
220/230V	70	90	120	124
380/400V	70	90	120	124
500V	50	70	100	100
660/690V	40	50	70	70
Short-circuit protection rating maximum fuse				
Type 2 coordination ②				
400V; gG/gL 500V	20	20	20	20
690V; gG/gL 690V	16	16	20	20
Type 1 coordination ②				
400V; gG/gL 500V	35	35	35	63
690V; gG/gL 690V	20	20	20	50
Degree of protection	IP20	IP20	IP20	IP20
Protection against direct contact when actuated from front (IEC 536)	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof
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)

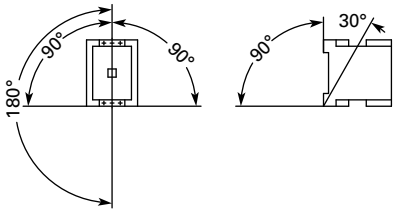
Notes

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

② IEC 60947 Standard.

③ Damp heat, constant, to IEC 60068-2-78; damp heat, cyclical, to IEC 60068-2-30.

XT Contactors—Frame B, continued

Description	XTCE007B	XTCE009B	XTCE012B	XTCE015B
General, continued				
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.	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)	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)	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)	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—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)	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)	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)	1 x (0.75–2.5) 1 x (0.75–2.5)
Solid or stranded (AWG)	18–14	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

XT Contactors—Frames C–D

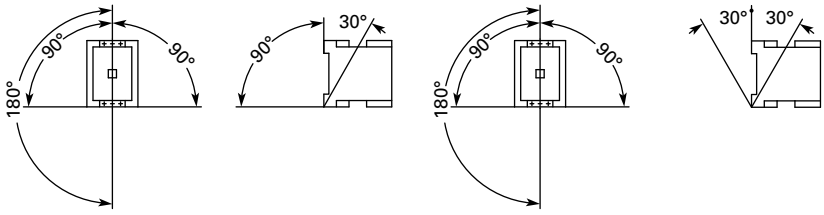
Description	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D, XTCE072D
General						
Standards	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	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—operations	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 Curves, **Page V5-T1-111**						
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	②	②	②	②	②	②
Insulation voltage (U_i) Vac	690	690	690	690	690	690
Impulse withstand voltage (U_{imp}) Vac	8000	8000	8000	8000	8000	8000
Operating voltage (U_e) Vac	690	690	690	690	690	690
Safe isolation to VDE 0106 Part 101 and Part 101/A1						
Between coil and contacts (Vac)	440	440	440	440	440	440
Between contacts (Vac)	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	IP00	IP00	IP00	IP00	IP00
Protection against direct contact when actuated from front (IEC 536)	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	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)	14–8	14–8	14–8	14–1	14–1	14–1
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)

Notes

① IEC 60947 Standard.

② Damp heat, constant, to IEC 60068-2-78; damp heat, cyclic, to IEC 60 068-2-30.

XT Contactors—Frames C–D, continued

Description	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D, XTCE072D
General, continued						
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
Tools						
Main and control circuit cable—screw terminals	Size 2	Size 2	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	0.8 x 5.5	0.8 x 5.5
Standard screwdriver	1 x 6	1 x 6	1 x 6	1 x 6	1 x 6	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	–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]
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]	–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]	–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	10	10	10	10	1	1
Auxiliary contact—NO Contact	7	7	7	7	7	7
Auxiliary contact—NC Contact	5	5	5	5	5	5
Overvoltage category/pollution degree	III/3	III/3	III/3	III/3	III/3	III/3

XT Contactors—Frames F–G

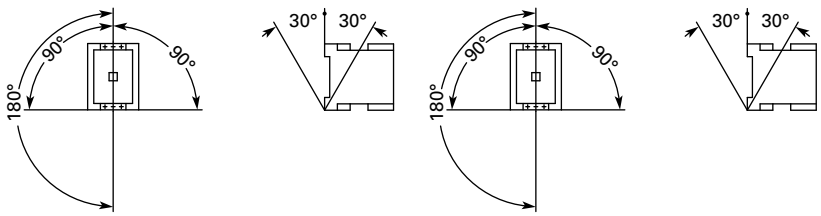
Description	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
General					
Standards	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS	IEC/EN 60947, VDE 0660, UL, CSA, CCC, RoHS
Weights in kg [lb]					
AC operated	2 [4.41]	2 [4.41]	2 [4.41]	2 [4.41]	2 [4.41]
DC operated	2.1 [4.63]	2.1 [4.63]	2.1 [4.63]	2.1 [4.63]	2.1 [4.63]
Mechanical life—operations	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Mechanical operating frequency (ops/hr)					
AC operated	3600	3600	3600	3600	3600
DC operated	3600	3600	3600	3600	3600
Electrical mechanical operating frequency (ops/hr)— see Curves, **Page V5-T1-111**					
AC-1; 400V I_e	800	800	800	800	800
AC-3; 400V I_e	800	800	800	800	800
AC-4; 400V I_e	300	300	300	300	300
Climatic proofing	②	②	②	②	②
Insulation voltage (U_i) Vac	690	690	690	690	690
Impulse withstand voltage (U_{imp}) Vac	8000	8000	8000	8000	8000
Operational voltage (U_e) Vac	690	690	690	690	690
Safe isolation to VDE 0106 Part 101 and Part 101/A1					
Between coil and contacts (Vac)	690	690	690	690	690
Between contacts (Vac)	690	690	690	690	690
Making capacity (amps)	1120	1330	1610	2100	2100
Breaking capacity (amps)					
220/230V	800	950	1150	1500	1500
380/400V	800	950	1150	1500	1500
500V	800	950	1150	1500	1500
660/690V	650	800	1100	1200	1320
1000V	—	—	—	—	—
Short-circuit protection rating maximum fuse					
Type 2 coordination ①					
400V; gG/gL 500V	160	160	250	25	400
690V; gG/gL 690V	160	160	25	250	25
Type 1 coordination ①					
400V; gG/gL 500V	250	25	250	250	400
690V; gG/gL 690V	200	200	250	250	250
Degree of protection	IP00	IP00	IP00	IP00	IP00
Protection against direct contact when actuated from front (IEC 536)	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	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)	1 x (10–95) 2 x (10–70)
Stranded (mm^2)	1 x (16–95) 2 x (16–70)	1 x (16–95) 2 x (16–70)	1 x (16–95) 2 x (16–70)	1 x (16–95) 2 x (16–70)	1 x (16–95) 2 x (16–70)
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)	2 x (6 x 16 x 0.8)
Solid or stranded (AWG)	8–3/0	8–3/0	8–3/0	8–3/0	8–3/0
Main cable connection screw/bolt	M10	M10	M10	M10	M10
Tightening torque					
Nm	14	14	14	14	14
Lb-in	123.9	123.9	123.9	123.9	123.9

Notes

① IEC 60947 Standard.

② Damp heat, constant, to IEC 60068-2-78; damp heat, cyclic, to IEC 60 068-2-30.

XT Contactors—Frames F–G, continued

Description	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
General, continued					
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)	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)	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
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
Tools					
Main circuit cable—screw terminals					
Hexagon socket-head spanner (mm)	5	5	5	5	5
Control circuit cable—screw terminals					
Pozidriv screwdriver	Size 2	Size 2	Size 2	Size 2	Size 2
Standard screwdriver	1 x 6, 0.8 x 5.5	1 x 6, 0.8 x 5.5	1 x 6, 0.8 x 5.5	1 x 6, 0.8 x 5.5	1 x 6, 0.8 x 5.5
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)
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)
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)
Solid or stranded (AWG)	18–14	18–14	18–14	18–14	18–14
Tools					
Control circuit cable—spring cage terminals					
Stripping length (mm)	10	10	10	10	10
Screwdriver blade width (mm)	3.5	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]	–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]	–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]
Environmental					
Mechanical shock resistance (IEC/EN 60068-2-27)					
Half-sinusoidal shock 10 ms					
Main contact—NO contact	10g	10g	10g	10g	10g
Auxiliary contact—NO contact	7g	7g	7g	7g	7g
Auxiliary contact—NC contact	5g	5g	5g	5g	5g
Overvoltage category/pollution degree	III/3	III/3	III/3	III/3	III/3

Coil Data—Frames B–D

Description	XTCE007B	XTCE009B	XTCE012B, XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D, XTCE072D
Voltage Tolerance										
Pickup (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
Dropout (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										
Pickup VA	24	24	24	24	52	52	52	149	149	149
Pickup 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										
Pickup VA	30	30	30	30	67	67	67	178	178	178
Pickup 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										
Pickup VA	27 25	27 25	27 25	27 25	62 58	62 58	62 58	168 154	168 154	168 154
Pickup W	22 21	22 21	22 21	22 21	48 43	48 43	48 43	120 43	120 43	120 43
Sealing VA	4.2 3.3	4.2 3.3	4.2 3.3	4.2 3.3	9.1 6.5	9.1 6.5	9.1 6.5	22 14	22 14	22 14
Sealing W	1.4 1.2	1.4 1.2	1.4 1.2	1.4 1.2	2.5 2	2.5 2	2.5 2	5.3 4.3	5.3 4.3	5.3 4.3
DC operated										
Pickup 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	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1
Noise immunity	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1	To EN-60947-1

Notes

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

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

Auxiliary Contacts

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, (U_{imp}) Vac	6000	6000	6000	6000	6000
Overvoltage category/pollution degree	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage, (U_i) Vac	690	690	690	690	690
Rated operational voltage, (U_e) Vac	500	500	500	500	500
Safe isolation to VDE 0106 Part 101 and Part 101(A) in Vac					
Between coil and auxiliary contacts	400	400	400	440	440
Between the auxiliary contacts	400	400	400	440	440
Rated operational current, I_e					
AC-15					
230V	6A	6A	6A	6A	6A
380/415V	4A	3A	4A	4A	4A
500V	1.5A	—	1.5A	1.5A	1.5A
DC-3 L/R ≤5 ms ①					
24V	10A	10A	10A	10A	10A
60V	6A	6A	6A	6A	6A
110V	3A	3A	3A	3A	3A
220V	1A	1A	1A	1A	1A
Conventional thermal current, I_{th}	16A	16A	16A ③	10A	10A
Control circuit reliability (at U_e = 24 Vdc, U_{min} = 17 V, I_{min} = 5.4 mA)	$<10^{-8}$, <1 failure at 100 million operations	$<10^{-8}$, <1 failure at 100 million operations	$<10^{-8}$, <1 failure at 100 million operations	$<10^{-8}$, <1 failure at 100 million operations	$<10^{-8}$, <1 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

Notes

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.

AC Ratings—AC-3 Operation

Description	XTCE007B	XTCE009B	XTCE012B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
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 Ratings—AC-4 Operation

Description	XTCE007B	XTCE009B	XTCE012B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Rated operational current, 50/60 Hz ② (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	1	13	1
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	—	—	—	—	—	—	—

Notes

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.

AC Ratings—AC-6A Operation

Description	XTCE007B	XTCE009B	XTCE012B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Transformer loads	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific
Calculation is I_e AC-3 = X / 6 * I_e transformer where X is the inrush current of the transformer and I_e transformer is the nominal current. ①							

AC Ratings—AC-6B Operation

Description	XTCE007B	XTCE009B	XTCE012B	XTCE015B	XTCE018C	XTCE025C	XTCE032C
Capacitor loads Individual compensation rated operational current I_e of three-phase capacitors in amperes							
Up to 525V	See **Page V5-T1-63** for capacitor ratings						
690V	See **Page V5-T1-63** 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)	—	—	—	—	—	—	—

AC Ratings—AC-1 Operation

Description	XTCE040D	XTCE050D	XTCE065D	XTCE072D	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
Conventional free air thermal current, three-pole, 50–60 Hz									
Open									
at 40°C (I_{th})	60A	80A	98A	98A	110A	130A	160A	190A	275A ②
at 50°C (I_{th})	57A	71A	88A	88A	98A	125A	142A	180A	200A
at 55°C (I_{th})	55A	68A	83A	83A	94A	115A	135A	170A	190A
at 60°C (I_{th})	50A	65A	80A	80A	90A	110A	130A	160A	185A
Enclosed	45A	58A	72A	72A	80A	100A	115A	144A	166A
Conventional free air thermal current, single-pole (I_{th})									
Open	125A	162A	200A	200A	225A	275A	325A	400A	460A
Enclosed	112A	145A	180A	180A	200A	250A	285A	360A	415A

Notes

① 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.

② For 225–275A, use 2X 70 mm^2 wire.

③ At maximum permissible ambient temperature.

AC Ratings—AC-3 Operation

Description	XTCE040D	XTCE050D	XTCE065D	XTCE072D	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
Rated operational current, 50/60 Hz ① (I_e) in amperes									
220/230V	40	50	65	72	80	95	115	150	170
240V	40	50	65	72	80	95	115	150	170
380/400V	40	50	65	7	80	95	115	150	170
415V	40	50	65	72	80	95	115	150	170
440V	40	50	65	72	80	95	115	15	170
500V	40	50	65	72	80	95	115	150	170
660/690	25	32	37	37	65	80	93	100	150
1000V	—	—	—	—	—	—	—	—	—
Rated power (P) in kilowatts									
220/230V	12.5	15.5	20	22	25	30	37	48	52
240V	13.5	17	22	35	27.5	34	40	52	57
380/400V	18.5	22	30	37	37	45	55	75	90
415V	24	30	39	41	43	57	70	91	100
440V	25	32	41	44	51	60	75	95	105
500V	28	36	47	45	58	70	85	110	120
660/690V	23	30	35	35	63	75	90	96	140
1000V	—	—	—	—	—	—	—	—	—

AC Ratings—AC-4 Operation

Description	XTCE040D	XTCE050D	XTCE065D	XTCE072D	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
Rated operational current, 50/60 Hz ① (I_e) in amperes									
220/230V	18	21	25	25	40	50	55	65	65
240V	18	21	25	25	40	50	55	65	65
380/400V	18	21	25	25	40	50	55	65	65
415V	18	21	25	25	40	50	55	65	65
440V	18	21	25	25	40	50	55	65	65
500V	18	21	25	25	40	50	55	65	65
660/690V	14	17	20	20	40	50	45	50	50
1000V	—	—	—	—	—	—	—	—	—
Rated power (P) in kilowatts									
220/230V	5	6	7	7	12	16	17	20	20
240V	5.5	6.5	7.5	7.5	13	17	19	22	22
380/400V	9	10	12	12	20	26	28	33	33
415V	9.5	11	13	13	24	30	33	39	39
440V	10	12	14	14	25	32	35	41	41
500V	11	13	16	16	29	36	40	47	47
660/690V	12	14	17	17	26	35	43	48	48
1000V	—	—	—	—	—	—	—	—	—

Note

① At maximum permissible ambient temperature.

AC Ratings—AC6-A Operation

Description	XTCE040D	XTCE050D	XTCE065D	XTCE072D	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
Transformer loads	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific	Values are application specific
	Calculation is I_e AC-3 = X / 6 * I_e transformer where X is the inrush current of the transformer and I_e transformer is the nominal current. ①								

AC Ratings—AC6-B Operation

Description	XTCE040D	XTCE050D	XTCE065D	XTCE072D	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
Capacitor loads Individual compensation rated operational current I_e of three-phase capacitors in amperes									
Up to 525V				See **Page V5-T1-63** for capacitor ratings					
690V				See **Page V5-T1-63** for capacitor ratings					
Maximum inrush current peak (x I_e)	30	30	30	30	30	30	30	30	30
Component lifesaving (operations)	—	—	—	—	—	—	—	—	—
Maximum operating frequency (ops/hr)	—	—	—	—	—	—	—	—	—

AC Ratings—AC-1 Operation

Description	XTCE185H	XTCE225L	XTCE250L	XTCE300L	XTCE400M	XTCE500M	XTCE570M	XTCE580N
Conventional free air thermal current, three-pole, 50–60 Hz								
at 40°C (I_{th})	337	356	429	490	612	857	857	980
at 50°C (I_{th})	301	310	383	438	548	767	767	876
at 55°C (I_{th})	287	295	366	418	522	731	731	836
at 60°C (I_{th})	275	285	350	400	500	700	700	800
Conventional free air thermal current, single-pole (I_{th})	245	275	875	315	1250	1750	1750	2000

Note

① 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.

DC Ratings—DC-1

Description Rated Operation Current {1} (I_e) in Amperes	XTCE007B	XTCE009B	XTCE012B, XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D
60V	20	20	20	20	35	40	40	50	60	72
110V	20	20	20	20	35	40	40	50	50	72
220V	15	15	15	15	3	4	40	45	45	65
440V	1	1.3	1.3	1.3	2.9	2.9	2.9	2.9	2.9	2.9

	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE185H	XTCE225H	XTCE250L	XTCE300L	XTCE400M	XTCE500M
60V	110	110	160	160	300	300	300	300	400	400
110V	110	110	16	160	300	300	300	300	400	400
220V	70	70	90	90	300	300	300	300	400	400
440V	4.5	4.5	4.5	4.5	11	11	11	11	11	11

	XTCE580N	XTCE650N	XTCE750N	XTCE820N	XTCEC10N	XTCEC14P	XTCEC20R	XTCEC16R
60V	—	—	—	—	—	—	—	—
110V	—	—	—	—	—	—	—	—
220V	—	—	—	—	—	—	—	—
440V	—	—	—	—	—	—	—	—

DC Ratings—DC-3

Description Rated Operation Current {1} (I_e) in Amperes	XTCE007B	XTCE009B	XTCE012B	XTCE015B	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D
60V	20	20	20	20	35	35	40	50	60	72
110V	20	20	20	20	35	35	40	50	50	72
220V	1.5	1.5	1.5	1.5	10	10	25	25	25	35
440V	0.2	0.2	0.2	0.2	0.6	0.6	0.6	0.6	0.6	0.6

	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE185H	XTCE225H	XTCE250L	XTCE300L	XTCE400M	XTCE500M
60V	110	110	160	160	300	300	300	300	400	400
110V	110	110	160	160	300	300	300	300	400	400
220V	35	35	40	40	300	300	300	300	400	400
440V	1	1	1	1	—	—	—	—	—	—

	XTCE580N	XTCE650N	XTCE750N	XTCE820N	XTCEC10N	XTCEC14P	XTCEC20R	XTCEC16R
60V	—	—	—	—	—	—	—	—
110V	—	—	—	—	—	—	—	—
220V	—	—	—	—	—	—	—	—
440V	—	—	—	—	—	—	—	—

DC Ratings—DC-5

Description Rated Operation Current {1} (I_e) in Amperes	XTCE007B	XTCE009B	XTCE012B	XTCE015B	XTCE018C	XTCE025C	XTCE032C	XTCE040D	XTCE050D	XTCE065D
60V	20	20	20	20	35	35	40	50	60	72
110V	20	20	20	20	35	35	40	50	50	72
220V	1.5	1.5	1.5	1.5	10	10	25	25	25	35
440V	0.2	0.2	0.2	0.2	0.6	0.6	0.6	0.6	0.6	0.6

	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE185H	XTCE225H	XTCE250L	XTCE300L	XTCE400M	XTCE500M
60V	110	110	160	160	300	300	300	300	400	400
110V	110	110	160	160	300	300	300	300	400	400
220V	35	35	40	40	300	300	300	300	400	400
440V	1	1	1	1	—	—	—	—	—	—

	XTCE580N	XTCE650N	XTCE750N	XTCE820N	XTCEC10N	XTCEC14P	XTCEC20R
60V	—	—	—	—	—	—	—
110V	—	—	—	—	—	—	—
220V	—	—	—	—	—	—	—
440V	—	—	—	—	—	—	—

DC Ratings—Four-Pole—DC-1 Operation

Description Rated Operation Current {1} (I_e) in Amperes	XTCF020B	XTCF032C	XTCF045C	XTCF063D	XTCF080D	XTCF125G	XTCF160G	XTCF200G
60V	22	32	45	63	80	125	160	200
110V	22	32	45	6	80	125	160	200
220V	6	32	45	63	80	125	160	200
440V	1.3	3	3	5	5	100	125	150

DC Ratings—Four-Pole—DC-3 Operation

Description Rated Operation Current {1} (I_e) in Amperes	XTCF020B	XTCF032C	XTCF045C	XTCF063D	XTCF080D	XTCF125G	XTCF160G	XTCF200G
60V	20	32	45	63	80	125	160	200
110V	20	32	45	63	80	125	160	200
220V	1.5	32	45	63	80	125	160	200
440V	0.2	6	6	8	8	75	95	115

DC Ratings—Four-Pole—DC-5 Operation

Description Rated Operation Current {1} (I_e) in Amperes	XTCF020B	XTCF032C	XTCF045C	XTCF063D	XTCF080D	XTCF125G	XTCF160G	XTCF200G
60V	20	32	45	63	80	125	160	200
110V	20	25	32	508	80	125	160	200
220V	1.5	15	22	38	70	100	125	150
440V	0.2	4	4	8	8	60	75	90

Current Heat Loss (Three-Pole) in Watts

Description	XTCE007B	XTCE009B	XTCE012B, XTCF020B	XTCE015B	XTCE018C	XTCE025C	XTCE032C	XTCE040D
Current heat loss (three-pole) in watts								
at I_{th}	3	3	3	3	7.3	9.6	12.1	11.3
at I_e to AC-3/400V	0.37	0.6	1.1	1.8	1.9	3.8	6.1	7.2
Impedance per pole, megohms	2.5	2.5	2.5	2.5	2	2	2	1.5

	XTCE050D	XTCE065D	XTCE072D	XTCE080F	XTCE095F	XTCE115G	XTCE150G	XTCE170G
Current heat loss (three-pole) in watts								
at I_{th}	19	28.8	28.8	12.2	18.2	20.3	30.7	41.1
at I_e to AC-3/400V	11.3	19	23	9.6	13.5	15.9	27.0	34.7
Impedance per pole, megohms	1.5	1.5	1.5	0.5	0.5	0.4	0.4	0.4

	XTCE185H	XTCE225H	XTCE250L	XTCE300L	XTCE400M	XTCE500M	XTCE580N	XTCE650N
Current heat loss (three-pole) in watts								
at I_{th}	34	45	55	37	58	113	61	69
at I_e to AC-3/400V	16	23	28	21	37	58	32	41
Impedance per pole, megohms	—	—	—	—	—	—	—	—

	XTCE750N	XTCE820N	XTCEC10N	XTCEC14P	XTCEC20R	XTCEC16R
Current heat loss (three-pole) in watts						
at I_{th}	78	96	96	188	192	155
at I_e to AC-3/400V	54	65	96	—	—	123
Impedance per pole, megohms	—	—	—	—	—	—

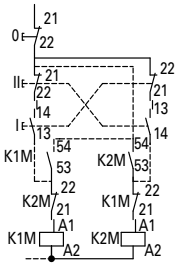
Current Heat Loss (Four-Pole) in Watts

Description	XTCF020B	XTCF032C	XTCF045C	XTCF063D	XTCF080D	XTCF125G	XTCF160G	XTCF200G
Current heat loss (four-pole) in watts								
at I_{th}	4.7	8.2	12	16	23	29	46	60
Impedance per pole, megohms	2.5	2	1.5	1	0.7	0.6	0.6	0.5

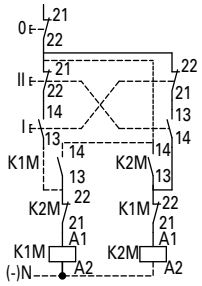
Wiring Diagrams

7–150A XTCR Reversing Contactors

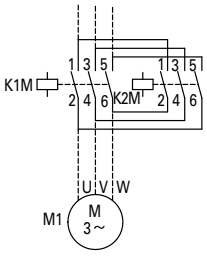
Control Circuit—7–32A



Control Circuit—40–170A

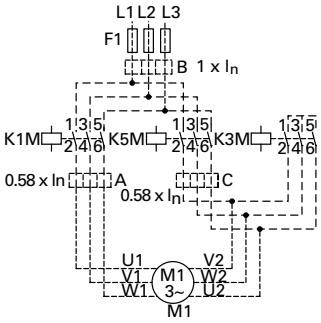


Power Circuit—7–150A with Mechanical Interlock 80–150A on Mounting Plate

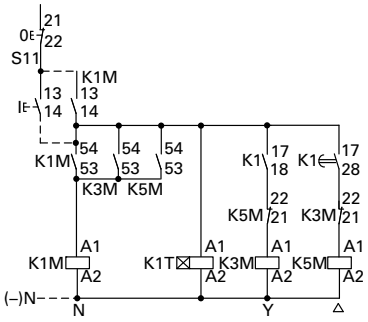


Star-Delta (Wye-Delta) Starters

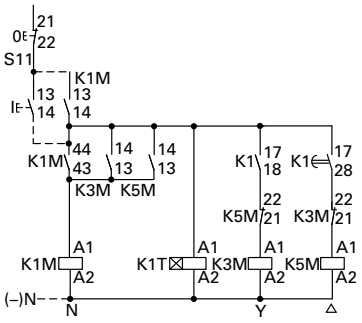
Power Circuit—12–385A AC-3



Control Circuit—12–55A AC-3

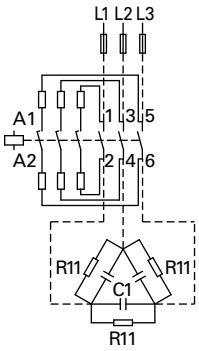


Control Circuit—70–1700A AC-3



XTCC Contactors for Three-Phase Capacitors

Power Circuit—11–85 kVAR



In the case of group compensation, multi-stage capacitor banks are connected to the mains, as required. In the process, transient currents of up to 180 x I_e can flow between the capacitors. The capacitors are pre-charged via the early-make auxiliary contacts and the fitted wire resistors, thereby reducing the inrush current. The main contacts then close after a time lag and carry the uninterrupted current. The contactors for capacitors are weld-resistant with inrush current peaks up to 180 x 1 I_e due to their special contacts. For switching reactive-power compensation equipment with chokes, observe design notes.

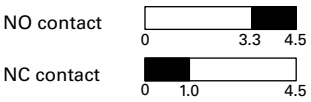
For switching of power factor connection with reactors, please observe engineering notes, **Page V5-T1-64**. Use of the contactors XTCE without series resistor for centralized power factor correction—when using contactors for group compensation, a minimum inductance of approximately 6 µH per capacitor 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 diameter. The conductor cross-section must be selected according to the rated current per phase.

1

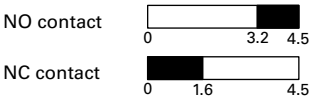
Contactor Contact Travel Diagrams

Frame B

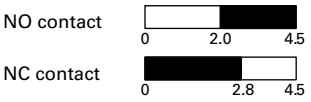
XTCE 7–15A, XTC—AC



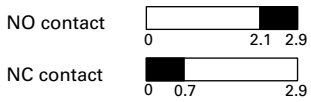
XTCEXSAC11



XTCEXF..LC_



XTCE 7–9A—DC



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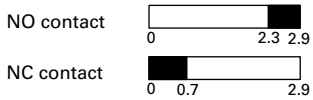
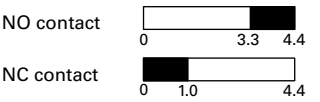
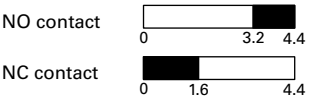


XTCEXF..LC_

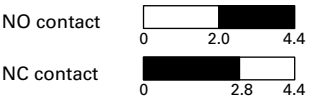
XTCE 12–15A, XTCF—DC



XTCEXSAC11

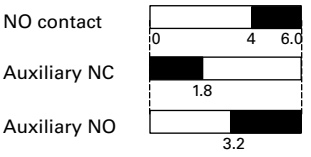


XTCEXF..LC_

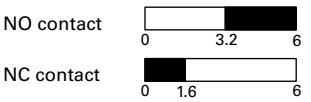


Frame C

XTCE 15–32A



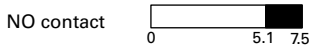
XTCEXSAC11, XTCEXF..C_



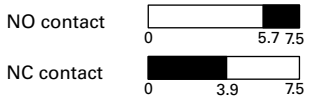
XTCEXF..LC_

Frame D

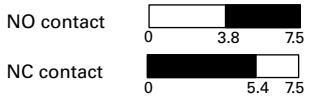
XTCE 40–72A



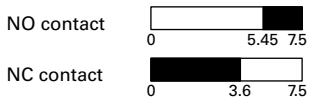
XTCEXF..G_



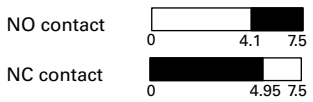
XTCEXF..LG_



XTCEXS...N_

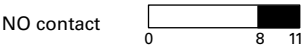


XTCEXSBLN11

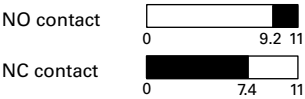


Frames F and G

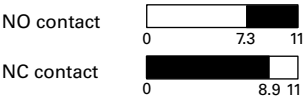
XTCE 80–170A



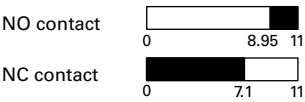
XTCEXF..G_



XTCEXF..LG_



XTCEXS...N_



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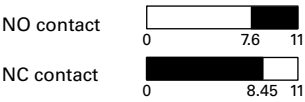
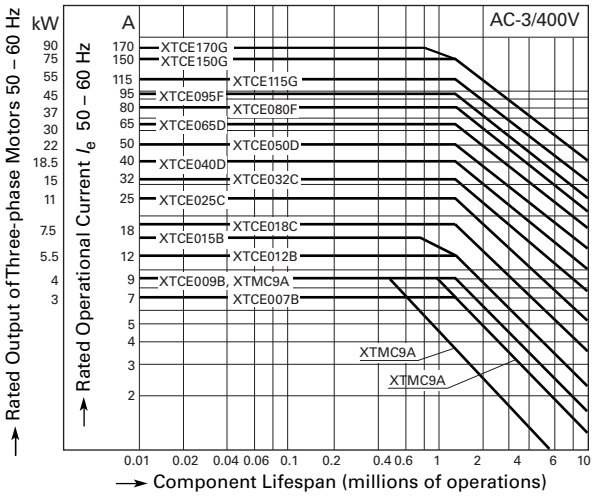


Note: The diagrams indicate the closing and travel of the contacts of the contactors and auxiliary contacts at no-load. Tolerances are not taken into consideration.

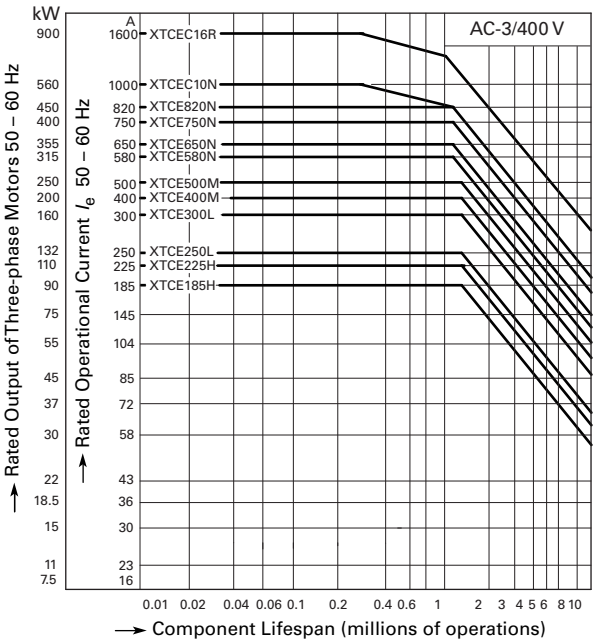
Electrical Life Curves

Normal Switching Duty

XTCE007B–XTCE170G

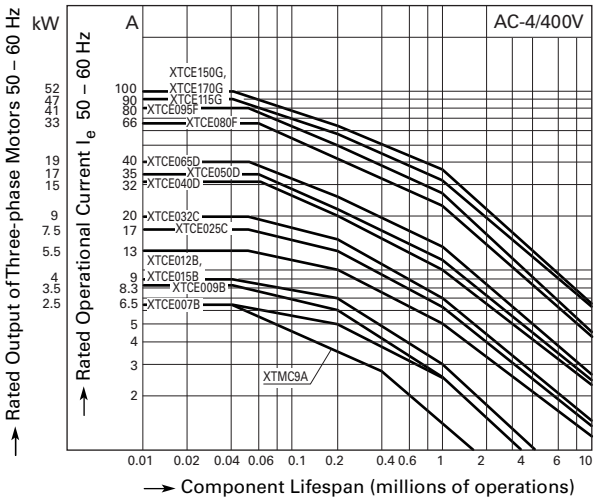


XTCE185H–XTCEC16R

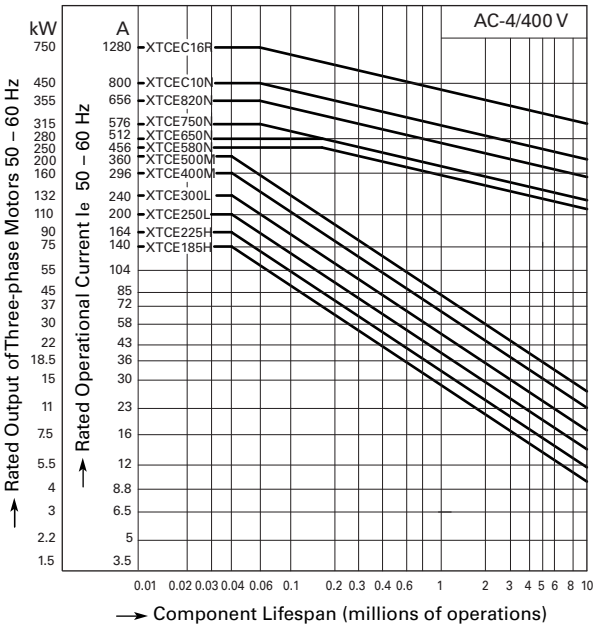


Extreme Switching Duty

XTCE007B–XTCE170G

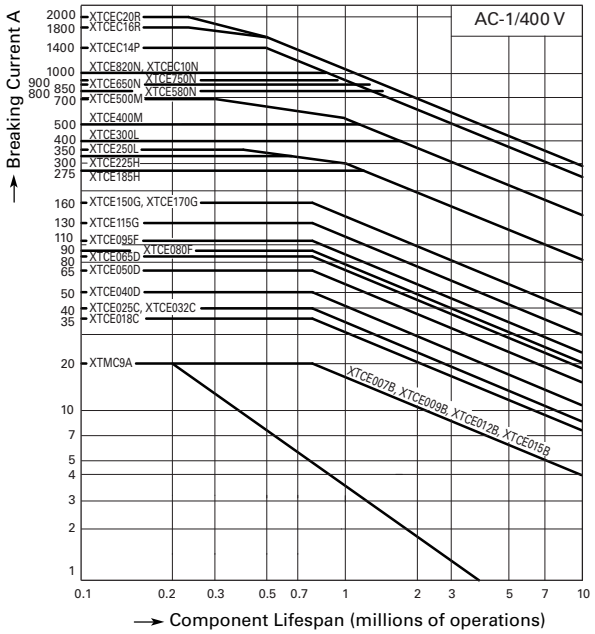


XTCE185H–XTCEC16R

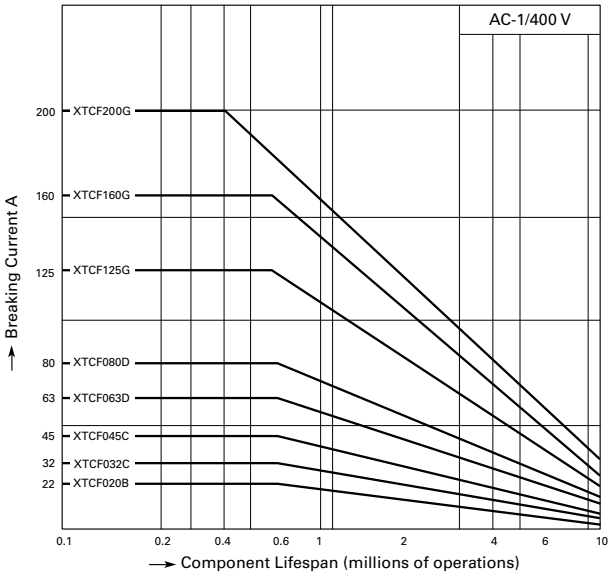


Switching Duty for Non-Motor Loads

Three-Pole—XTCE007B–XTCEC20R



Four-Pole—XTCF020B–XTCF200G



Operating characteristics:
- Non-inductive and slightly inductive loads

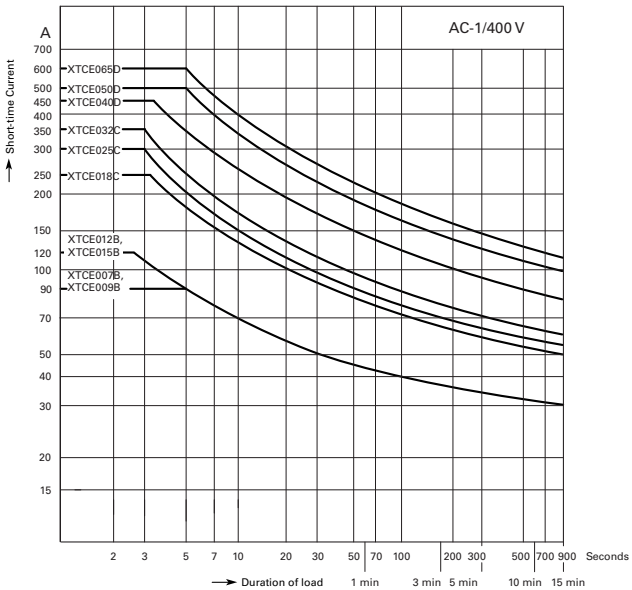
Electrical characteristics:
- Switch on: 1 x Rated current
- Switch off: 1 x Rated current

Utilization category:
- 100% AC-1

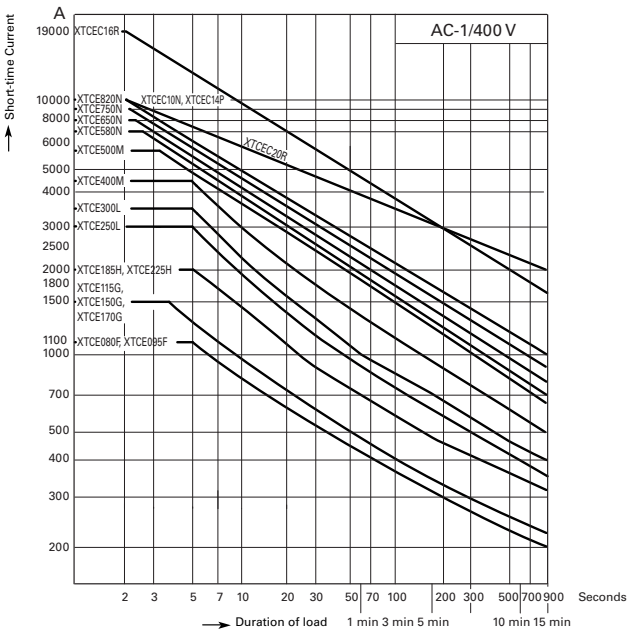
Typical applications:
- Electrical heating

Short-Time Loading

Three-Pole—XTCE007B–XTCEC20R

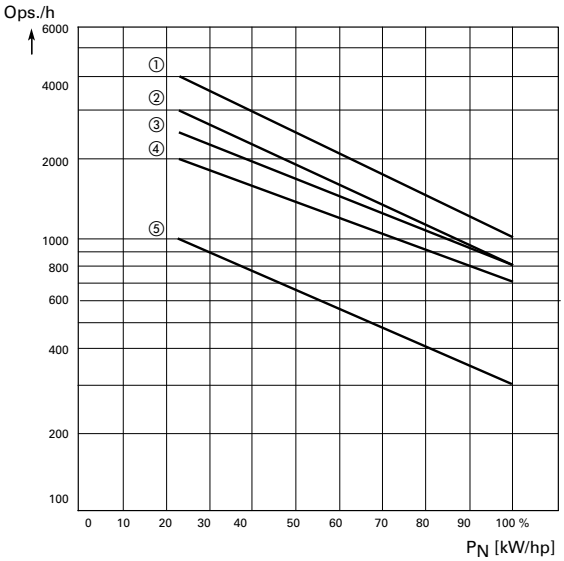


Three-Pole—XTCE080F–XTCEC16R

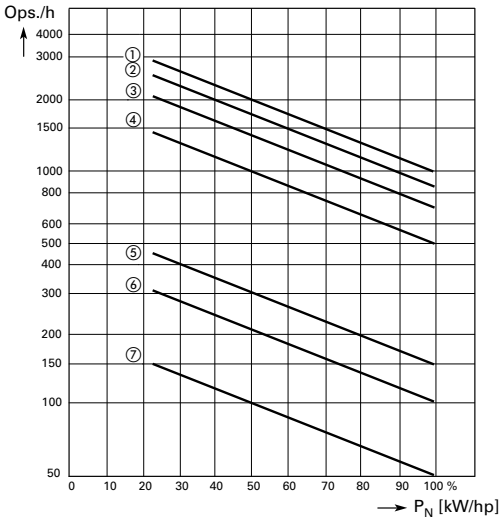


Maximum Operating Frequency—Related to Rating and Utilization Category (400V)

7 to 150 hp



185 to 820 hp



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

Utilization Category ①

Type	Characteristic Curve Above		
	AC-1	AC-3	AC-2, AC-4
XTCE185H	2	1	6
XTCE225H	2	1	6
XTCE250L	2	1	6
XTCE300L	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

Note

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