Overview

Applicable scope

The new NXC AC contactors feature a novel appearance and a compact structure. They are mainly used for frequent starts and control of AC motors as well as remote circuit making /breaking. They can also be combined with appropriate thermal overload relays to form electromagnetic starters.

Compliant standards: IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1.

Parameters

- Rated operation current Ie: 6A~630A
- Rated operation voltage Ue: 220V~690V
- Rated insulation voltage: 690V (NXC-06M~100), 1000V (NXC-120~630)
- Number of poles: 3P and 4P (only for NXC-06M~12M)
- Coil control method: AC (NXC-06(M)~225), DC (NXC-06M~12M), AC/DC (NXC-265~630)
- Installation method: NXC-06M~100 rail and screw installation, NXC-120~630 screw installation

Operation and installation conditions

Type	Operation and installation conditions
Installation class	Ⅲ
Pollution degree	3
Compliant standards	IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1
Certification mark	CE
Enclosure protection degree	NXC-06M~38: IP20; NXC-40~100: IP10; NXC-120~630: IP00
Ambient temperature	Operation temperature limits: -35℃~+70℃. Normal operation temperature range: -5℃~+40℃. The 24-hour average temperature should not exceed +35℃. For use beyond the normal operation temperature range, see "Instructions for use in abnormal conditions" in the annex.
Altitude	Not exceeding 2000 m above sea level
Atmospheric conditions	The relative humidity should not exceed 50% at the upper temperature limit of +70℃. A higher relative humidity is allowed at a lower temperature, e.g. 90% at +20℃. Special precautions should be taken against occasional condensation due to humidity variations.
Installation conditions	The angle between the installation surface and the vertical surface should not exceed ±5°.
Shock and vibration	The product should be installed in places without significant shaking, shock, and vibration.

Description

NXC AC contactor

NXC	-	12	/N	230V	50Hz
Model		Rated current	Special function	Coil voltage	Frequency
		06, 09, 12, 16, 18, 22, 25, 32, 38, 40, 50, 65, 75, 85, 100, 120, 160, 185, 225, 265, 330, 400, 500, 630	/N: Reversible contactor None: Standard contactor	24V, 36V, 48V, 110V, 127V, 220V, 230V,240V, 380V, 415V, 440V, 480V, 660V (AC: 06A~225A; AC/DC: 265A~630A)	50Hz, 60Hz, 50/60Hz

Note: 06A-100A products contain one NO auxiliary contact and one NC auxiliary contact. 120A-630A products contain two NO auxiliary contacts and two NC auxiliary contacts.

NXC miniature 3P AC contactor

NXC	-	06M	10	/Z	/N	230V	50Hz
Model		Rated current	Auxiliary contact	Coil form	Special function	Coil voltage	Frequency
		06M 09M 12M	10: NO 01: NC	/Z: DC control coil None: AC control coil	/N: Reversible contactor None: Standard contactor	AC: 24V, 36V, 48V, 110V, 127V, 220V, 230V, 240V 380V, 415V, 440V, 480V, 660V DC: 24V, 48V, 110V, 220V	50Hz, 60Hz, 50/60Hz

NXC miniature 4P AC contactor

NXC	-	06M	/22	/Z	/N	230V	50Hz
Model		Rated current	4P main contact combination	Coil form	Special function	Coil voltage	Frequency
		06M 09M 12M	/22: 2 NO and 2 NC main contacts /04: 4 NC main contacts /40: 4 NO main contacts	/Z: DC control coil None: AC control coil	/N: Reversible contactor None: Standard contactor	AC: 24V, 36V, 48V, 110V, 127V, 220V, 230V,240V, 380V, 415V, 440V, 480V, 660V DC: 24V, 48V, 110V, 220V	50Hz, 60Hz, 50/60Hz

Model example: NXC-12 240V 50Hz represents an AC contactor under AC-3 utilization category that provides a rated current of 12A at a main circuit voltage of 380V/400V/415V. Each contactor body contains one NO auxiliary contact and one NC auxiliary contact. The coil control voltage and frequency are 240V AC and 50Hz respectively.

NXC AC contactor selection table

Motor power kW			Maximum operation current A	Number of contacts contained in the contactor body		Contactor model
220V/230V/240V	380V/400V	660V/690V	(AC-3 380V/400V)	NO	NC	
1.5	2.2	3	6	1	0	NXC-06M10
1.5	2.2	3	6	0	1	NXC-06M01
1.5	2.2	3	6	1	1	NXC-06
2.2	4	4	9	1	0	NXC-09M10
2.2	4	4	9	0	1	NXC-09M01
2.2	4	5.5	9	1	1	NXC-09
3	5.5	4	12	1	0	NXC-12M10
3	5.5	4	12	0	1	NXC-12M01
3	5.5	7.5	12	1	1	NXC-12
3	7.5	7.5	16	1	1	NXC-16
4	7.5	10	18	1	1	NXC-18
5.5	11	11	22	1	1	NXC-22
5.5	11	15	25	1	1	NXC-25
7.5	15	18.5	32	1	1	NXC-32
9	18.5	18.5	38	1	1	NXC-38
11	18.5	30	40	1	1	NXC-40
15	22	37	50	1	1	NXC-50
18.5	30	37	65	1	1	NXC-65
22	37	37	75	1	1	NXC-75
22	37	45	85	1	1	NXC-85
25	45	45	100	1	1	NXC-100
37	55	80	120	2	2	NXC-120
45	75	100	160	2	2	NXC-160
55	90	100	185	2	2	NXC-185
63	110	110	225	2	2	NXC-225
75	132	160	265	2	2	NXC-265
90	160	200	330	2	2	NXC-330
132	200	300	400	2	2	NXC-400
160	250	335	500	2	2	NXC-500
200	335	350	630	2	2	NXC-630

Coil voltage specification table

NXC-06M~12M								
AC (V) 50Hz	24	36	48	110	127	220 230 240	380	415
AC (V) 60Hz	24	36	48	110	127	220	380	415
DC (V)	24	-	48	110	-	220	-	-

NXC-06~100								
AC (V) 50Hz	24	36	48	110	127	220 230 240	380	415
AC (V) 60Hz	24	36	48	110	127	220	380	415

NXC-120~225								
AC (V) 50Hz	-	-	-	-	110	127	220 230 240	380
AC (V) 60Hz	-	-	-	-	110	127	220	380

NXC-265~630								
AC/DC (V)	-	-	-	-	110~127	220~240	380~415	-

Parameters

Main circuit parameters and technical performance

Contactor model			NXC-06M	NXC-09M	NXC-12M	NXC-06	NXC-09	NXC-12	NXC-16	NXC-18	NXC-22
Conventional thermal current Ith (A)			20	20	20	20	20	25	25	32	32
Rated insulation voltage Ui (V)			690								
Rated impulse withstand voltage Uimp (kV)			6			8					
Rated making capacity			Making current: 10×Ie (AC-3) or 12×Ie (AC-4)								
Rated breaking capacity			Breaking current: 8×Ie (AC-3) or 10×Ie (AC-4)								
Rated operation current Ie (A)	220V/230V/240V	AC-3	6	9	12	6	9	12	16	18	22
		AC-4	6	9	12	6	9	12	16	18	22
	380V/400V/415V	AC-3	6	9	12	6	9	12	16	18	22
		AC-4	6	9	9	6	9	12	12	18	18
	660V/690V	AC-3	3.8	4.9	4.9	3.8	6.6	8.9	8.9	12	14
		AC-4	3.8	4.9	4.9	3.8	6.6	8.9	8.9	12	12
Rated control power	AC-3 (kW)	220V/230V/240V	1.5	2.2	3	1.5	2.2	3	3	4	5.5
		380V/400V/415V	2.2	4	5.5	2.2	4	5.5	7.5	7.5	11
		660V/690V	3	4	4	3	5.5	7.5	7.5	10	11
Electrical life (cycles)		AC-3	1.2×10^6								
Mechanical life (cycles)			1.2×10^7								
Main contact			3 NO, 4 NO, 2 NO+2 NC			3 NO					
Fuse supplied for SCPD			NT00-20	NT00-20	NT00-25	NT00-20	NT00-20	NT00-25	NT00-25	NT00-32	NT00-32
Matching thermal overload relay		Model	NXR-12			NXR-25					
Built-in auxiliary contact		3P	1 NO or 1 NC			1 NO+1 NC					
		4P	-								

Control circuit		Contactor model		NXC-06M	NXC-09M	NXC-12M	NXC-06	NXC-09	NXC-12	NXC-16	NXC-18	NXC-22
Main circuit connection	Cable connection (mm^2)	Prefabricated flexible wire	1	1~2.5			1~4				1.5~6	
			2	1~1.5			1~2.5				1.5~4	
		Hard wire	1	1~2.5			1~4				1.5~6	
			2	1~2.5			1~4				1.5~6	
	Size of fastening screw			M3			M3.5				M3.5	
	Tightening torque (N·m)			0.8			0.8				0.8	
Control circuit connection	Cable connection (mm^2)	Prefabricated flexible wire	1	1~2.5			1~4					
			2	1~1.5			1~2.5					
		Hard wire	1	1~2.5			1~4					
			2	1~2.5			1~4					
	Size of fastening screw			M3			M3.5					
	Tightening torque (N·m)			0.8			0.8					

Contactor model		NXC-06M	NXC-09M	NXC-12M	NXC-06	NXC-09	NXC-12	NXC-16	NXC-18	NXC-22
Coil control power supply	AC 50Hz	24, 36, 48, 110, 127, 220, 230, 240, 380, 415			24, 36, 48, 110, 127, 220, 230, 240, 380, 415					
	DC	24, 48, 110, 220			-					
Control voltage	Pull-in	(75%~120%) Us			(70%~120%) Us					
	Release	AC: (20%~70%) Us; DC: (10%~70%) Us			(20%~65%) Us					
Coil average power (VA)	Start	25~40			40~60				40~60	
	Hold	2~7			9.5				9.5	
Heat dissipation (W)	AC	1~3			1~3				1~3	
	DC	-			-				-	

Contactor model				NXC-25	NXC-32	NXC-38	NXC-40	NXC-50	NXC-65	NXC-75	NXC-85	NXC-100
Conventional thermal current Ith (A)				40	50	50	60	80	80	90	100	110
Rated insulation voltage Ui (V)				690								
Rated impulse withstand voltage Uimp (kV)				8								
Rated making capacity				Making current: 10×Ie (AC-3) or 12×Ie (AC-4)								
Rated breaking capacity				Breaking current: 8×Ie (AC-3) or 10×Ie (AC-4)								
Rated operation current Ie (A)	220V/230V/240V		AC-3	25	32	38	40	50	65	75	85	100
			AC-4	25	32	38	40	50	65	75	85	100
	380V/400V/415V		AC-3	25	32	38	40	50	65	75	85	100
			AC-4	25	32	32	40	50	65	75	85	100
	660V/690V		AC-3	18	22	22	34	39	42	42	49	49
			AC-4	18	22	22	34	39	42	42	49	49
Rated control power	AC-3 (kW)	220V/230V/240V		5.5	7.5	9	11	15	18.5	22	22	25
		380V/400V/415V		11	15	18.5	18.5	22	30	37	37	45
		660V/690V		15	18.5	18.5	30	37	37	37	45	45
Electrical life (cycles)			AC-3	1.2×10^6			1×10^6			0.8×10^6		
			AC-4	See electrical life curve								
Mechanical life (cycles)				1×10^7			0.9×10^7			0.65×10^7		
Main contact				3 NO								
Fuse supplied for SCPD				gG40	gG50	gG50	gG63	gG80	gG80	gG100	gG100	gG125
Matching thermal overload relay			Model	NXR-25	NXR-38		NXR-100					
Built-in auxiliary contact			3P	1 NO+1 NC								
			4P	-								

Control circuit		Contactor model		NXC-25	NXC-32	NXC-38	NXC-40	NXC-50	NXC-65	NXC-75	NXC-85	NXC-100
Main circuit connection	Cabling (mm^2)	Prefabricated flexible wire	1	1.5~10			6~25			10~35		
			2	1.5~6			4~10			6~16		
		Hard wire	1	1.5~6			6~25			10~35		
			2	1.5~6			4~10			6~16		
	Size of fastening screw			M4			M8			M8		
	Tightening torque (N·m)			1.2			6			6		
Control circuit connection	Cabling (mm^2)	Prefabricated flexible wire	1	1~4								
			2	1~2.5								
		Hard wire	1	1~4								
			2	1~4								
	Size of fastening screw			M3.5								
	Tightening torque (N·m)			0.8								

Contactor model		NXC-25	NXC-32	NXC-38	NXC-40	NXC-50	NXC-65	NXC-75	NXC-85	NXC-100
Coil control power supply	AC 50Hz	24, 36, 48, 110, 127, 220, 230, 240, 380, 415								
Control voltage	Pull-in	(70%~120%) Us								
	Release	(20%~65%) Us								
Coil average power (VA)	Start	50~70			160~210			190~250		
	Hold	8~11.4			13~25			17~30		
Heat dissipation (W)	AC	1~3			4~8			6~10		
	DC	-			-			-		

Contactor model			NXC-120	NXC-160	NXC-185	NXC-225	NXC-265	NXC-330	NXC-400	NXC-500	NXC-630
Conventional thermal current Ith (A)			200	200	275	275	315	380	450	630	700
Rated insulation voltage Ui (V)			1000								
Rated impulse withstand voltage Uimp (kV)			12								
Rated making capacity			Making current: 10×Ie (AC-3) or 12×Ie (AC-4)								
Rated breaking capacity			Breaking current: 8×Ie (AC-3) or 10×Ie (AC-4)								
Rated operation current Ie (A)	220V/230V/240V	AC-3	120	160	185	225	265	330	400	500	630
		AC-4	120	160	160	185	265	330	330	500	500
	380V/400V/415V	AC-3	120	160	185	225	265	330	400	500	630
		AC-4	120	160	160	185	265	330	330	500	500
	660V/690V	AC-3	86	107	107	118	170	235	303	353	400
		AC-4	86	107	107	107	137	170	235	303	353
Rated control power	AC-3 (kW)	220V/230V/240V	37	45	55	63	75	90	132	160	200
		380V/400V/415V	55	75	90	110	132	160	200	250	335
		660V/690V	80	100	100	110	160	200	300	335	350
Electrical life (cycles)		AC-3	1.2×10^6				0.8×10^6				
		AC-4	See electrical life curve								
Mechanical life (cycles)			0.6×10^7								
Main contact			3 NO								
Fuse supplied for SCPD			gG224	gG224	gG315	gG315	gG400	gG425	gG500	gG800	gG950
Matching thermal overload relay		Model	NXR-200			NXR-630					
Built-in auxiliary contact		3P	2 NO+2 NC								
		4P	-								

Control circuit	Contactor model			NXC-120	NXC-160	NXC-185	NXC-225	NXC-265	NXC-330	NXC-400	NXC-500	NXC-630
Main circuit connection	Cable connection (mm^2)	Prefabricated flexible wire	1	10~150								
			2	10~75								
		Hard wire	1	10~150			50~240					
			2	10~75			50~240					
	Size of fastening screw			M6	M8		M10					
	Tightening torque (N·m)			10			14					
Control circuit connection	Cable connection (mm^2)	Prefabricated flexible wire	1	1~4								
			2	1~2.5								
		Hard wire	1	1~4								
			2	1~4								
	Size of fastening screw			M3.5								
	Tightening torque (N·m)			0.8								

Contactor model		NXC-120	NXC-160	NXC-185	NXC-225	NXC-265	NXC-330	NXC-400	NXC-500	NXC-630
Coil control power supply	AC 50Hz	110, 127, 220, 230, 240, 380				Common for AC and DC: 110, 127, 220, 230, 240, 380				
	DC	-								
Control voltage	Pull-in	(75%~120%)Us				(75%~120%)Us				
	Release	(20%~70%)Us				(10%~70%)Us				
Coil average power (VA)	Start	500				600			800	
	Hold	50				11			11	
Heat dissipation (W)	AC	30~50				3~6			3~7	
	DC	-				3~6			3~7	

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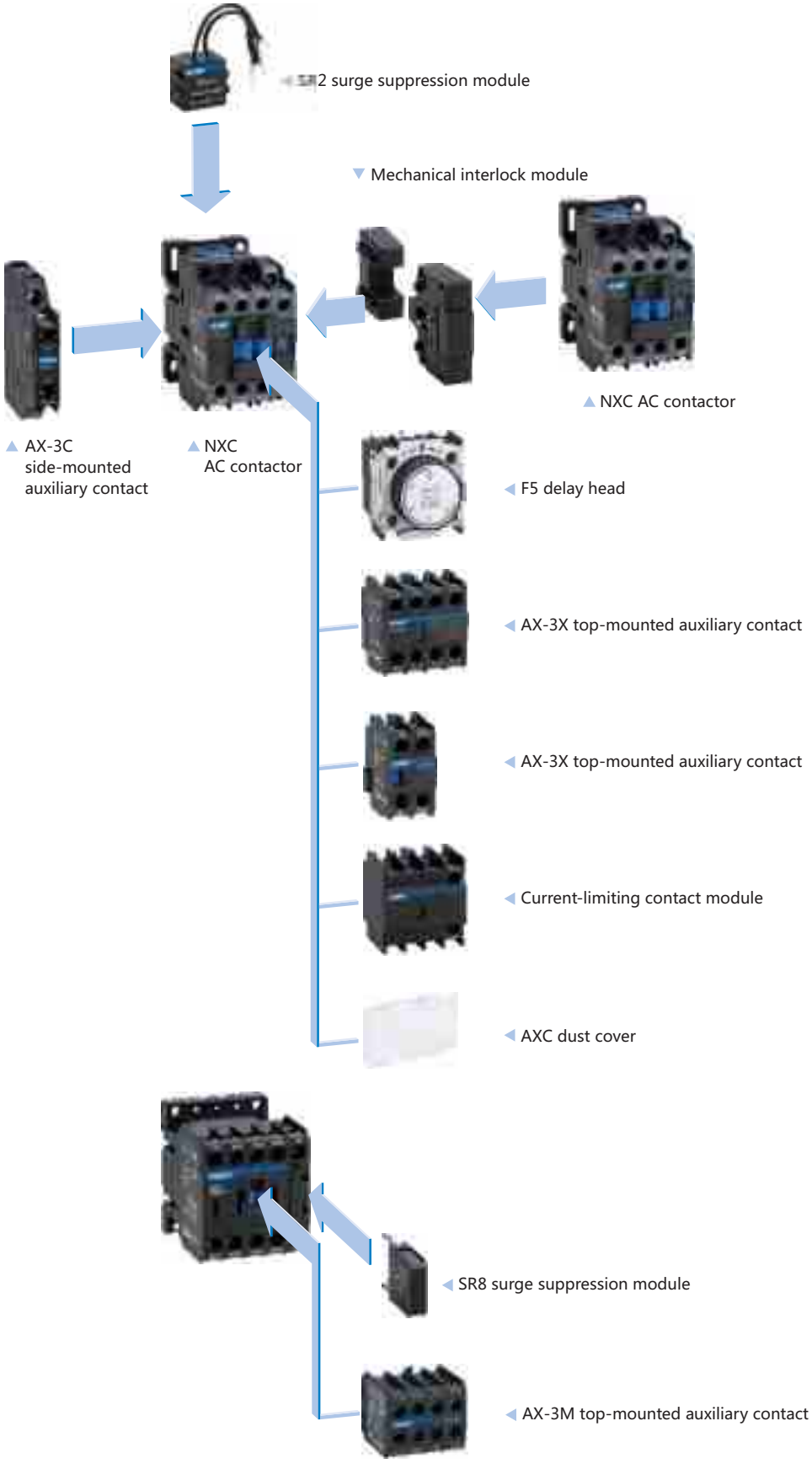
Accessories

Accessory diagrams



Accessory Description

Top-mounted auxiliary contact

AX - 3X	/	11	AX - 3M	/	11
Auxiliary contact model		NO and NC auxiliary contact combination	Auxiliary contact model		NO and NC auxiliary contact combination
Applicable to 6A-630A AC contactor product		11, 20, 02 22, 13, 31 04, 40	Applicable to NXC-06M ~12M AC contactor product		11, 20, 02 22, 13, 31 04, 40

Side-mounted auxiliary contact

AX - 3C	/	11	B
Side-mounted auxiliary contact model		NO and NC contact combination	None: Standard model, applicable to 6A~225A AC contactor
		11	B: Expanded model, applicable to 265A~630A AC contactor

Dust cover

AXC	-	1
Dust cover		1: Used for NXC-06~22, NXC-120~630 2: Used for NXC-25~38 3: Used for NXC-40~65 4: Used for NXC-75~100

Air delay head

F5	/	T	4
Air delay head model		Delay type	Delay range
		T: Power-on delay D: Power-off delay	0: 0.1~3s 2: 0.1~30s 4: 10~180s

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Accessory selection table (auxiliary contact)

Contactor	Optional accessory	Accessory model	Contact combination
NXC-06M~12M	AX-3M top-mounted auxiliary contact	AX-3M/20	2NO+0NC
		AX-3M/11	1NO+1NC
		AX-3M/02	0NO+2NC
		AX-3M/40	4NO+0NC
		AX-3M/31	3NO+1NC
		AX-3M/22	2NO+2NC
		AX-3M/13	1NO+3NC
		AX-3M/04	0NO+4NC
NXC-06~225	AX-3X top-mounted auxiliary contact	AX-3X/20	2NO+0NC
		AX-3X/11	1NO+1NC
		AX-3X/02	0NO+2NC
		AX-3X/40	4NO+0NC
		AX-3X/31	3NO+1NC
		AX-3X/22	2NO+2NC
		AX-3X/13	1NO+3NC
		AX-3X/04	0NO+4NC
	AX-3C side-attached auxiliary contact	AX-3C/11	1NO+1NC
NXC-265~630	AX-3X top-mounted auxiliary contact	AX-3X/20	2NO+0NC
		AX-3X/11	1NO+1NC
		AX-3X/02	0NO+2NC
		AX-3X/40	4NO+0NC
		AX-3X/31	3NO+1NC
		AX-3X/22	2NO+2NC
		AX-3X/13	1NO+3NC
		AX-3X/04	0NO+4NC
	AX-3C side-attached auxiliary contact	AX-3C/11B	1NO+1NC

Accessory selection table (air delay head)

Contactor	Optional accessory	Accessory model	Contact combination	Delay range (s)
NXC full series (except for NXC-06M~12M)	F5 air delay head	F5-T0	1NO+1NC	0.1~3
		F5-T2	1NO+1NC	0.1~30
		F5-T4	1NO+1NC	10~180
		F5-D0	1NO+1NC	0.1~3
		F5-D2	1NO+1NC	0.1~30
		F5-D4	1NO+1NC	10~180

Accessory selection table (dust cover)

Contactor	Optional accessory
NXC-06~22、NXC-120~630	AXC-1 dust cover
NXC-25~38	AXC-2 dust cover
NXC-40~65	AXC-3 dust cover
NXC-75~100	AXC-4 dust cover

Main parameters and technical performance indicators of accessories

Item			Main technical parameters	
Rated operation current (V)			To 690	
Rated insulation voltage (V)			690	
Conventional thermal current Ith (A)			10	
Rated making capacity (A)			Breaking current 10 Ie (AC-15) or Ie (DC-13)	
Short-circuit protection			gG fuse: 10A	
Control capacity	Auxiliary contact	AC-15	380V/400V/415V	1.5A
		DC-13	220V/230V/240V	0.3A
	F5 air delay head	AC-15	660V/380V	0.52A/0.95A
		DC-13	220V	0.15A
Compliant standards			IEC/EN 60947-5-1	
Product certification			CE	
Enclosure protection degree			IP 20	
Cable connection (mm^2)	Flexible wire without cold-pressed terminal		1~4	
			1~4	
	Flexible wire with cold-pressed terminal		1~4	
			1~2.5	
	Hard wire		1~4	
			1~4	
Fastening screw size			M3.5, M3 (AX-3M)	
Tightening torque (N·m)			0.8	

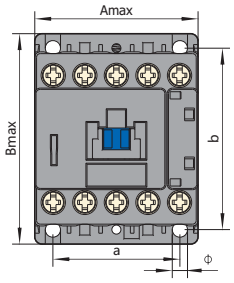
Derivative products

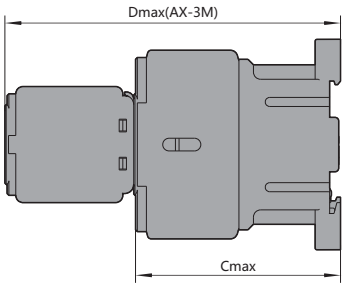
Name	Reversible AC contactor
Reversible AC contactor	

Dimensions and installation

NXC-06M-12M

Dimensions and installation

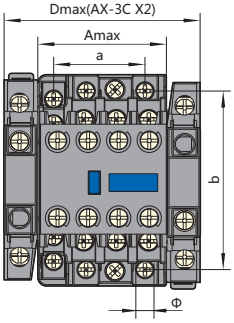


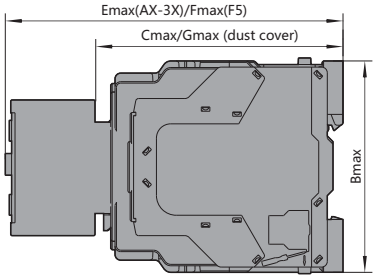


Model	Amax	Bmax	Cmax	Dmax	a	b	Φ
NXC-06M-12M	45.5	59	58	94	35±0.35	50±0.48	4.2
NXC-06M/4-12M/4	45.5	59	58	94	35±0.35	50±0.48	4.2
NXC-06M/Z-12M/Z	45.5	59	70	106	35±0.35	50±0.48	4.2
NXC-06M/4/Z-12M/4/Z	45.5	59	70	106	35±0.35	50±0.48	4.2

NXC-06-22

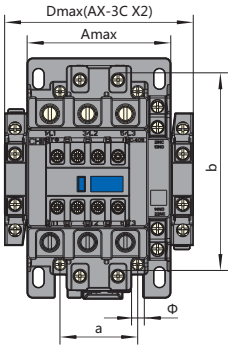
Dimensions and installation

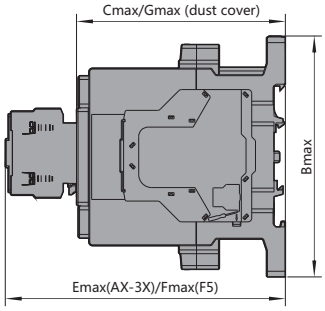




NXC-25-100

Dimensions and installation

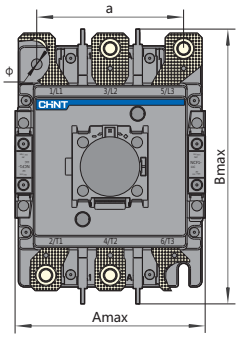


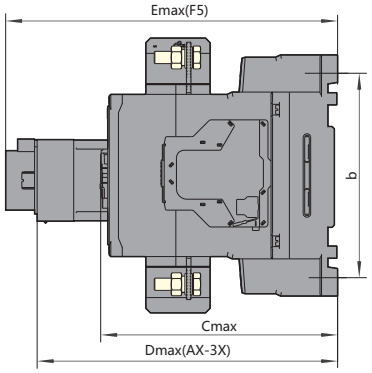


Model	Amax	Bmax	Cmax	Dmax	Emax	Fmax	Gmax	a	b	Φ
NXC-06-22	45.5	75	88	70	126.5	146.5	90	35±0.31	62±0.31	4.5
NXC-25-38	56.5	87	93	81	131.5	151.5	95	40±0.31	48±0.31	4.5
NXC-40-65	77	129	118	102	156.5	176.5	121	40±0.31	105±0.31	6.5
NXC-75-100	87	132	127	112	165.5	185.5	129	40±0.28	105±0.57	6.5

NXC-120-225

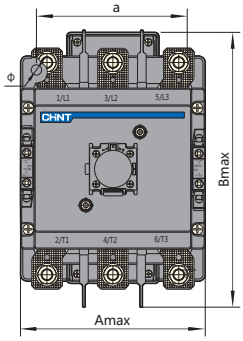
Dimensions and installation

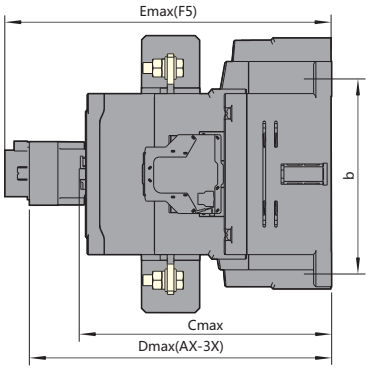




NXC-265-400

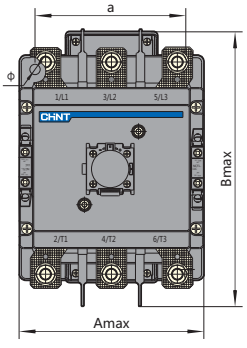
Dimensions and installation

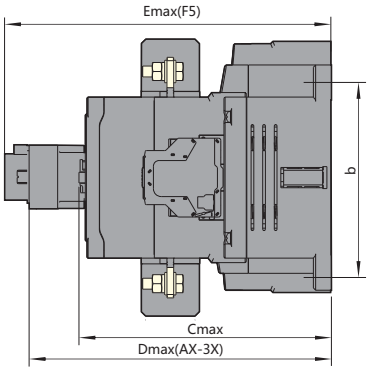




NXC-500-630

Dimensions and installation

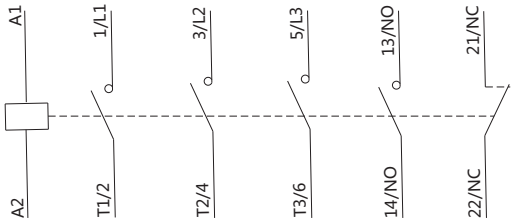




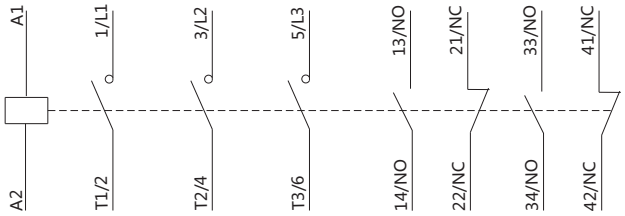
Model	Amax	Bmax	Cmax	Dmax	Emax	a	b	Φ
NXC-120-225	127	182	158	196.5	216.5	96±0.5	133.6±0.8	7
NXC-265-400	150	236	207	245.5	265.5	120±0.5	180±0.8	9
NXC-500-630	165	248	225	263.5	283.5	130±0.5	180±0.8	9

Wiring diagrams

NXC-06~100



NXC-120~630



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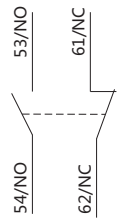

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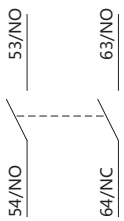

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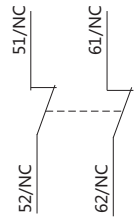

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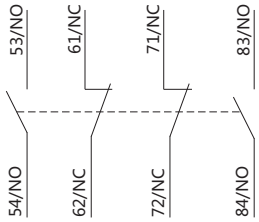

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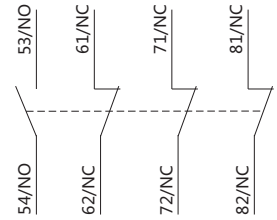

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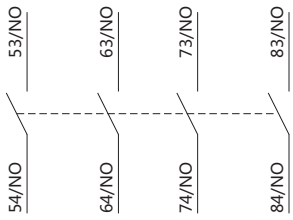

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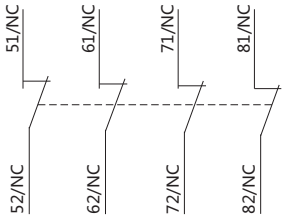

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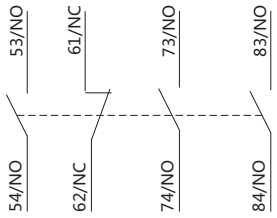

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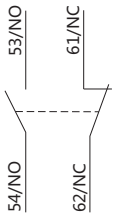

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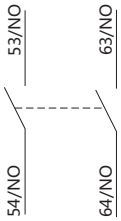

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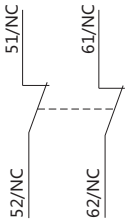

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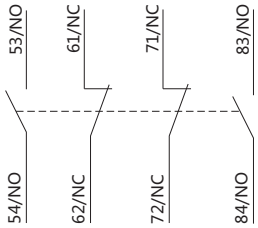

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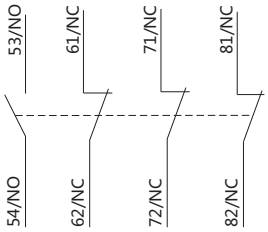

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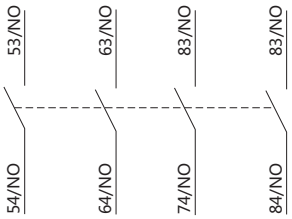

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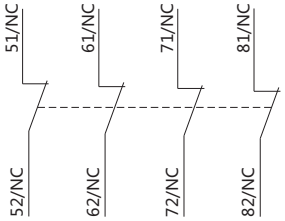

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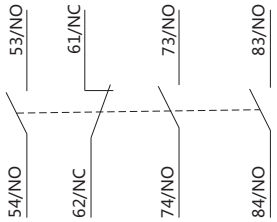

Annex I: Instructions for use in abnormal conditions

Instructions for use of correction factors in high altitude areas

- IEC/EN 60947-4-1 standard defines the relation between altitude and impulse withstand voltage. An altitude of 2000 m above sea level or lower has no significant impact on product performance.
- At an altitude higher than 2000 m, air cooling effect and decease of rated impulse withstand voltage have to be considered. In this case, design and use of products have to be negotiated by the manufacturer and the user.
- The correction factors for rated impulse withstand voltage and rated operation current for altitudes higher than 2000 m are given in the following table. The rated operation voltage remains unchanged.

Altitude (m)	2000	3000	4000
Rated impulse withstand voltage correction factor	1	0.88	0.78
Rated operation current correction factor	1	0.92	0.9

Instructions for use under abnormal ambient temperature

- IEC/EN 60947-4-1 standard defines normal operation temperature range for products. Use of products in the normal range will not cause sig-nificant impact on their performance.
- At an operation temperature higher than +40℃, the tolerable temperature rise of products needs to be reduced. Both rated operation current and number of contactors in standard products have to be decreased to prevent product damage, shortened service life, lower reliability, or impact on control voltage. At a temperature lower than -5℃, freezing of insulation and lubrication grease should be considered to prevent action failures. In these cases, design and use of products have to be negotiated by the manufacturer and the user.
- The correction factors for different rated operation current under operation temperature higher than +55℃ are given in the following table. The rated operation voltage remains unchanged.

Ambient temperature (℃)	55	60	65	70
Correction factor	1	0.93	0.875	0.75

- At the temperature range of +55℃~+70℃, the pull-in voltage range of AC contactors is (90%~110%)Us, and (70%~120%)Us is the results of cold status tests at 40℃ ambient temperature.

Instructions for derating during use in corrosive environment

- **Impact on metal parts**

  Chlorine Cl_2, nitrogen dioxide NO_2, hydrogen sulfide H_2S, sulfur dioxide SO_2

  Copper: The thickness of copper sulfide coating in chlorine environment will be twice that in normal environment conditions. This is also the case for environments with nitrogen dioxide.

  Silver: When used in SO_2 or H_2S environment, the surface of silver or silver coated contacts will become dark due to formation of a silver sulfide coating.

  This will lead to higher contact temperature rise and may damage to the contacts.

  In humid environments where Cl_2 and H_2S coexist, the coating thickness will increase by 7 times. With presence of both H_2S and NO_2, the silver sulfide thickness will increase by 20 times.

- **Considerations during product selection**

  In refinery, steel, paper, artificial fiber (nylon) industry or other industries using sulphur, equipment may experience vulcanization (also called oxidization in some industrial sectors). Equipment installed in machine rooms is not always well protected from oxidization. Short inlets are often used to ensure that the pressure in such rooms is slightly higher than atmospheric pressure, which helps reduce pollutions due to external factor to a certain degree. However, after operation for 5 to 6 years, the equipment still experience rust and oxidization inevitably.

  Hence in operation environments with corrosive gas, the equipment needs to be used with derating. The derating coefficient relative to the rated value is 0.6 (up to 0.8). This helps reduce rate of accelerated oxidization due to temperature rise.

Instructions for use with parallel poles

- In case of parallel poles, the rated current of such poles needs to be corrected to make up for distribution of long-term unstable current, as shown in the table below:

Number of parallel poles	2	3	4
Correction factor	1.6	2.25	2.8

Annex Ⅱ: Utilization category description

Different types of power-consuming equipment may have significantly different loading characteristics and current changes during making/breaking, hence they have different requirements for contactors. IEC 60947-1 standard defines contactor utilization categories that are indicated by one or more of the following use conditions:

- Current, indicated with multiples of rated current
- Voltage, indicated with multiples of rated voltage
- Power factor or time constant
- Short-circuit performance
- Selectivity
- Other use conditions (if applicable)

NXC AC contactors mainly include the following categories:

Utilization categories of AC main circuit

AC-1 type
This type is used for AC loads with a power factor higher than or equal to 0.95.
Examples: heating, power distribution.

AC-2 type
This type is used for start revere braking and inching of slip ring motors.
During closing, the contactor makes a start current that is about 2.5 times motor rated current.
During opening, the contactor must break the start current at a voltage lower than or equal to the main supply voltage.

AC-3 type
This type is used for breaking normally started squirrel cage motors.
During closing, the contactor makes a start current that is about 7 times motor rated current.
During opening, the contactor breaks motor rated current. In this case, the voltage at the contactor wire terminal is about 20% of main supply voltage. The breaking process is not harsh.
Examples: all standard squirrel cage motors such as those in elevator, escalator, conveyance belt, air compressor, pump, mixer, and air conditioner.

AC-4 type
This type is used for reverse braking and inching of squirrel motors and sling ring motors.
The contactor makes a current that is 5 to 7 times rated motor current, and breaks the same current at higher voltage. At lower motor RPMs, the voltage breaking is as harsh as main voltage.
Examples: printing machinery, wire drawing machine, tower crane, crane, metallurgy

Control circuit utilization categories.

DC-13 type
This type of system is used for starting, reverse current braking, and inching of DC shunt excited machines. The duration is equal to or less than 2 ms.
This type is used for switching electromagnetic loads.

AC-15 type
This type is used for switching electromagnetic loads. The pull-in power during closing of electromagnet is higher than 72VA.
Examples: operation coil of switch contactors.