







NXC-XMG Series AC Contactors

1. Scope of Application

The NXC-XMG series AC contactors are mainly used for AC 50Hz (or 60Hz), with a rated operating voltage up to 690V.400 (380V) AC-1 and AC-3 are used for frequent switching of circuits under their respective categories and can be combined with appropriate thermal overload relays to form electrical circuits.Magnetic starter. This product has an IP50 dustproof rating (excluding terminal blocks), and the normally closed auxiliary contact is for low-voltage signal conduction; normally open contacts can be customized.Auxiliary contacts with weak electrical signal conduction type or normally open and normally closed auxiliary contacts with weak electrical signal conduction type are suitable for applications requiring sensitive conduction of auxiliary contacts.

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

2. Main parameters

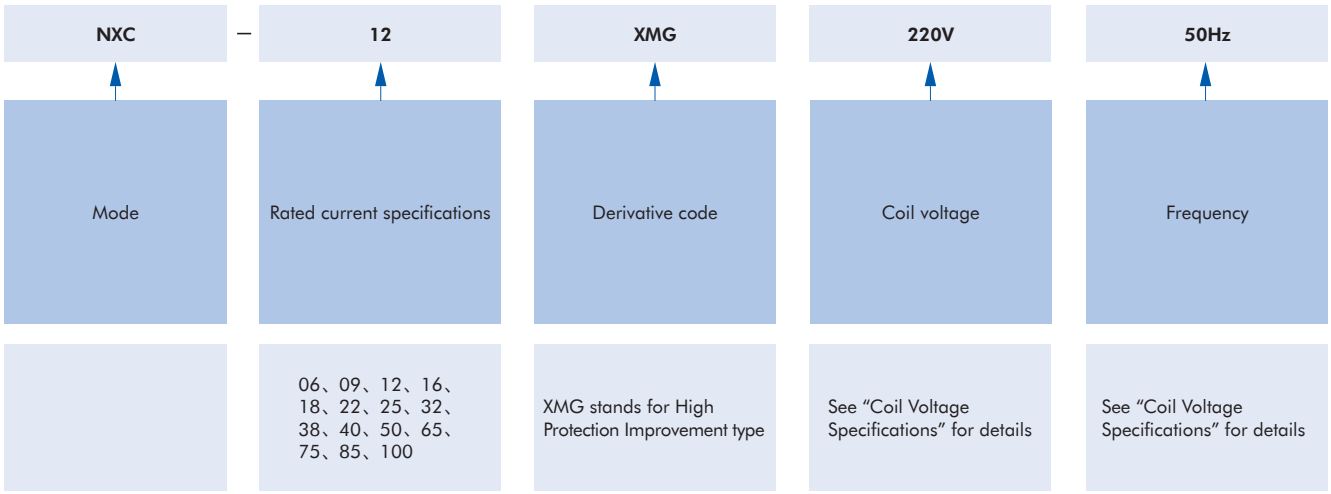
2.1 Rated operating current Ie: 6A~100A
2.2 Rated operating voltage Ue: 220V~690V
2.3 Rated insulation voltage: 690V
2.4 Number of poles: 3P
2.5 Coil control method: AC
2.6 Installation method: NXC-06XMG~38XMG screws or 35mm screws. ⊓⊔⊓ "Standard rail mounting, NXC-"40XMG~100XMG screw or 35mm or 75mm standard caliper rail mounting ⊓⊔⊓

3. Working conditions and installation conditions

Installation Category	Working conditions and installation conditions
Category	III
Pollution level	3
Meets standards	GB/T 14048.1/IEC 60947-1、GB/T 14048.4/IEC 60947-4-1、GB/T 14048.5/IEC 60947-5-1、GB 21518
Certification	CE、TUV、CCC
Enclosure protection rating	IP50 (excluding terminal blocks)
Ambient air temperature	The extreme operating temperature is -40℃ to +70℃ , and the normal operating temperature is -5℃ to +40℃ , with an average value not exceeding +35℃ over 24 hours. If not operating normally... For usage within the specified temperature range, please refer to the appendix "Instructions for Use in Abnormal Environments" for details.
Altitude	The range should not exceed 2000m. If used outside this range, please refer to the appendix "Instructions for Use in Abnormal Environments".
Atmospheric conditions	At a maximum temperature of +70℃ , the relative humidity should not exceed 50%. Higher relative humidity is permissible at lower temperatures. For example, it reaches 90% at +20℃ . Special measures should be taken for occasional condensation caused by humidity changes.
Installation conditions	The inclination of the mounting surface from the vertical plane shall not exceed ±5°.
Shock and vibration	The product should be installed and used in a place free from significant shaking, impact, and vibration.

4. Model Description

NXC-06XMG~100XMG AC Contactor



NXC-XMG Series AC Contactor Selection Table

Three-phase asynchronous motor power kW (AC-3)			Maximum operating current A (AC-3 380V/400V)	Number of auxiliary contacts built into the main body		Contactor mode
220V/230V	380V/400V	660V/690V		Normally open	Normally closed	
1.5	2.2	3	6	1	1	NXC-06XMG
2.2	4	5.5	9	1	1	NXC-09XMG
3	5.5	7.5	12	1	1	NXC-12XMG
3	7.5	7.5	16	1	1	NXC-16XMG
4	7.5	10	18	1	1	NXC-18XMG
5.5	11	11	22	1	1	NXC-22XMG
5.5	11	15	25	1	1	NXC-25XMG
7.5	15	18.5	32	1	1	NXC-32XMG
9	18.5	18.5	38	1	1	NXC-38XMG
11	18.5	30	40	1	1	NXC-40XMG
15	22	37	50	1	1	NXC-50XMG
18.5	30	37	65	1	1	NXC-65XMG
22	37	37	75	1	1	NXC-75XMG
22	37	45	85	1	1	NXC-85XMG
25	45	45	100	1	1	NXC-100XMG

Coil Voltage Specification Table

NXC-06XMG~100XMG	
AC(V)50Hz	24、36、42、48、110、120、127、200、208、220、230、240、277、380、400、415、440、460、480、500、525、600、660
AC(V)60Hz	
AC(V)50/60Hz	

5. Main parameters and technical performance

Contactor model			NXC-06XMG	NXC-09XMG	NXC-12XMG	NXC-16XMG	NXC-18XMG	NXC-22XMG
								
Frame grade			06~16				18~22	
The free air heating current Ith (A) is defined			20	20	25	25	32	32
Rated insulation voltage Ui (V)								
Rated impulse withstand voltage Uimp (kV)			8					
Rated switching capacity			Current required to connect: 10 × Ie (AC-3)					
Rated breaking capacity			Making and breaking current: 8 × Ie (AC-3)					
Short-time withstand current (A):Starting from a cold state, the surroundings Temperature ÿ ÿ 40ÿ, and The no-current period lasts for 15 minutes.	10s		8Ie					
Rated work Current Ie (A)	AC-1		20	20	25	25	32	32
	220V/230V AC-3		6	9	12	16	18	22
	380V/400V AC-3		6	9	12	16	18	22
	660V/690V AC-3		3.8	6.6	8.9	8.9	12	14
Rated control power	AC-3 (kW)	220V/230V 1.5		2.2	3	3	4	5.5
		380V/400V 2.2		4	5.5	7.5	7.5	11
		660V/690V 3		5.5	7.5	7.5	10	11
Electrical life (ten thousand cycles)		AC-3	120					
Mechanical life (ten thousand cycles)			1200					
Main contact structure			3 Normally ope					
SCPD's fuse			gG20	gG20	gG25	gG25	gG32	gG32
Matching thermal overload relay			NXR-25					
Number of auxiliary contacts included		3P	1 normally open, 1 normally closed; the normally closed auxiliary contact of this product is for low-voltage signal conduction; normally open auxiliary contact for low-voltage signal conduction or normally open and normally closed auxiliary contacts for low-voltage signal conduction can be customized.					
		4P						

Control circuit		Contactor model		NXC-06XMG	NXC-09XMG	NXC-12XMG	NXC-16XMG	NXC-18XMG	NXC-22XMG
Main circuit wiring	Cable connection (mm^2)	Precast flexible cord	1 root	1~4				1.5~6	
			2 roots	1~2.5				1.5~4	
		Hard wire	1 root	1~4				1.5~6	
			2 roots	1~4				1.5~6	
	Fastening screw size			M3.5				M3.5	
	Tightening torque (N·m)			1.2				1.2	
Control Return Road connection	Cable connection (mm^2)	Precast flexible cord	1 root	1~1.5					
			2 roots	1~1.5					
		Hard wire	1 root	1~1.5					
			2 roots	1~1.5					
	Fastening screw size			M3.5					
	Tightening torque (N·m)			1.2					

Contactor model		NXC-06XMG	NXC-09XMG	NXC-12XMG	NXC-16XMG	NXC-18XMG	NXC-22XMG
Operating range (contactor itself) (body at room temperature and in a cold state)	Suction	(70%~120%)Us					
	Release	(20%~65%)Us					
Average power dissipation of the coil (VA)	Start up	≤70					
	Keep	≤9.0				≤9.5	
Heat loss rate (W)	Comminicate	1~3					
	DC						
Main contact action Time (ms)	Closure	12~40					
	Disconnect	4~25					

Contactors of the same frame class refer to contactors with the same external dimensions and internal structure, differing only in some dimensions, but with different rated operating currents; for example, NXC-06XMG and NXC-16XMG are contactors of the same frame class (06~16).

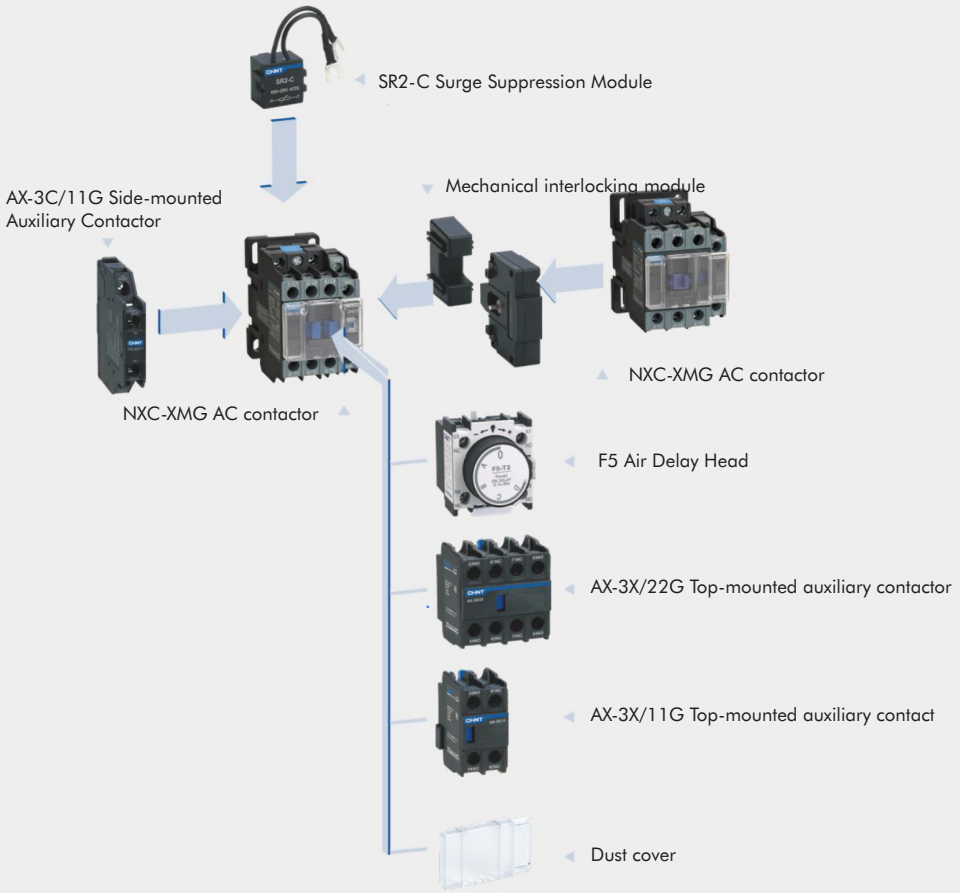
Contactor model			NXC-25XMG	NXC-32XMG	NXC-38XMG	NXC-40XMG	NXC-50XMG	NXC-65XMG	NXC-75XMG	NXC-85XMG	NXC-100XMG
											
Frame grade			25~38			40~65			75~100		
The free air heating current Ith (A) is defined			40	50	50	60	80	80	90	100	125
Rated insulation voltage Ui (V)			690								
Rated impulse withstand voltage Uimp (kV)			8								
Rated making capacity			Current required to connect: 10 × Ie (AC-3)								
Rated breaking capacity			Making and breaking current: 8 × Ie (AC-3)								
Short-time withstand current (A): From cold state Initially, the surrounding temperature was Temperature ÿ ÿ 40ÿ And no current time Lasting 15 minutes	10S		8Ie								
Rated work Current Ie (A)	AC-1		40	50	50	60	80	80	90	100	125
	220V/230V AC-3		25	32	38	40	50	65	75	85	100
	380V/400V AC-3		25	32	38	40	50	65	75	85	100
	660V/690V AC-3		18	22	22	34	39	42	42	49	49
Rated control power	AC-3 (kW)	220V/230V 5.5		7.5	9	11	15	18.5	22	22	25
		380V/400V 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 (ten thousand cycles)		AC-3	120			100			80		
Mechanical life (ten thousand cycles)			1000			900			650		
Main contact structure			3 Normally open								
SCPD's fuse			gG40	gG50	gG50	gG63	gG80	gG80	gG100	gG100	gG125
Matching thermal overload relay model			NXR-25、NXR-38			NXR-100					
Number of auxiliary contacts included		3P	1 normally open, 1 normally closed; the normally closed auxiliary contact of this product is for low-voltage signal conduction; normally open auxiliary contact for low-voltage signal conduction or normally open and normally closed auxiliary contacts for low-voltage signal conduction can be customized								
		4P									

Control circuit		Contactor model		NXC-25XMG	NXC-32XMG	NXC-38XMG	NXC-40XMG	NXC-50XMG	NXC-65XMG	NXC-75XMG	NXC-85XMG	NXC-100XMG
Main circuit wiring	Cable connection (mm^2)	Precast flexible cord	1 piece	1.5~6			6~25			10~50		
			2 pieces	1.5~4			4~10			6~25		
		Hard wire	1 piece	1.5~6			6~25			10~50		
			2 pieces	1.5~6			4~10			6~25		
	Fastening screw size			M4			M8			M8		
	Tightening torque (N·m)			1.85			6			9		
Control Return Road connection	Cable connection (mm^2)	Precast flexible cord	1 piece									
			2 pieces									
		Hard wire	1 piece									
			2 pieces									
	Fastening screw size			M3.5								
	Tightening torque (N·m)			1.2								

Contactor model		NXC-25XMG	NXC-32XMG	NXC-38XMG	NXC-40XMG	NXC-50XMG	NXC-65XMG	NXC-75XMG	NXC-85XMG	NXC-100XMG
Operating range (contactor itself) (body at room temperature and in a cold state)	Suction	(70%~120%)Us			(75%~120%)Us					
	Release	(20%~65%)Us								
Average power dissipation of the coil (VA)	Start up	≤110			≤210			≤300		
	Keep	≤14.0			≤36.6					
Heat loss rate (W)	Comminicate	1~3			4~8			6~10		
	DC									
Main contact action Time (ms)	Closure	12~40			15~50					
	Disconnect	4~25			4~40					

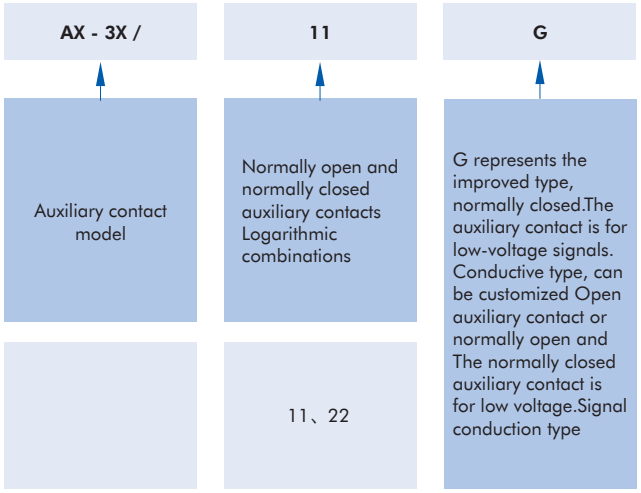
6. Attachments

Attached diagram

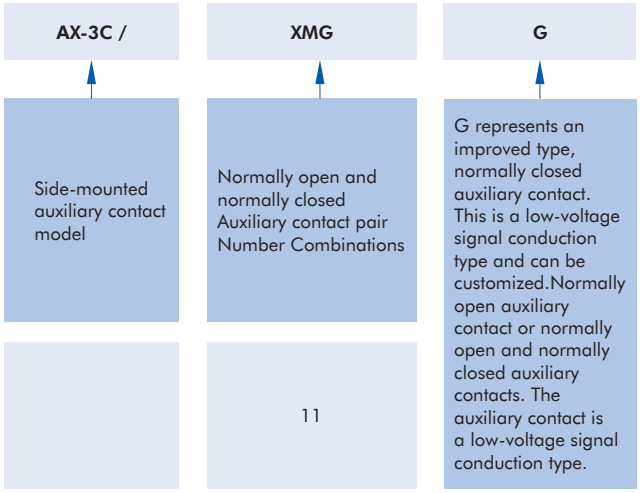


• Attachment Model Description

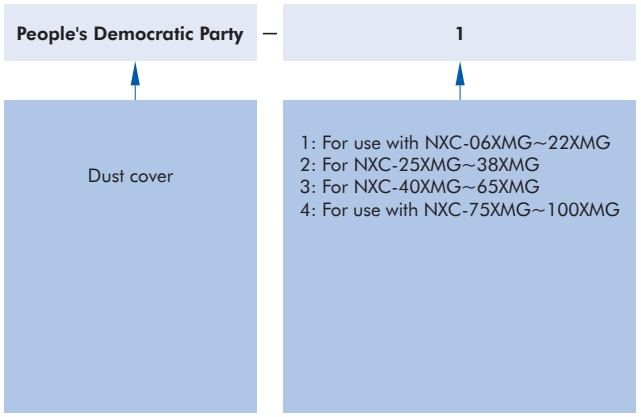
Top-mounted auxiliary contact



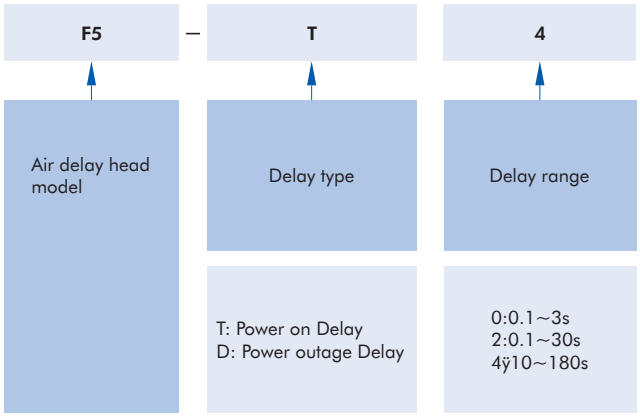
Side-mounted auxiliary contact



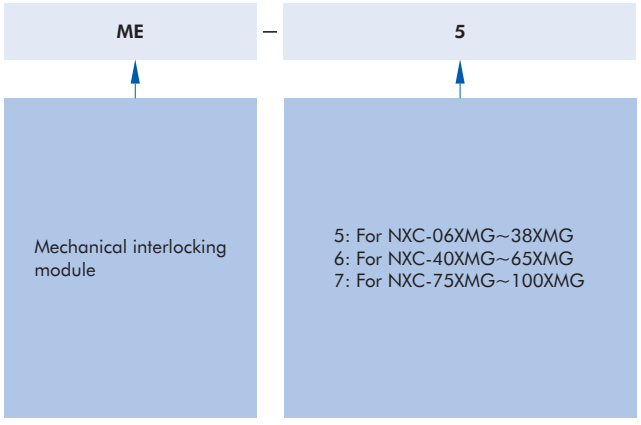
Dust cover



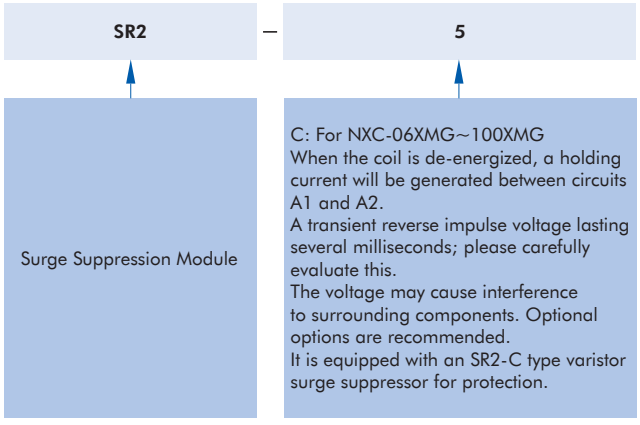
Air delay head



Mechanical interlocking module



Surge suppression module



• Attachment Selection Table (Auxiliary Contacts)

Contactor	Optional accessories	Attachment Model	Contact assembly	Remark
NXC-06XMG~100XMG	AX-3X Top-mounted auxiliary contactor	AX-3X/11G	1 Normally Open + 1 Normally Closed	The normally closed auxiliary contact is for weak electrical signal conduction. Normally open auxiliary contact or normally open and normally closed contacts can be customized. The auxiliary contact is a low-voltage signal conduction type.
		AX-3X/22G	2 normally open + 2 normally closed	
	AX-3C Side-mounted Auxiliary Contactor	AX-3C/11G	1 Normally Open + 1 Normally Closed	

• Attachment Selection Table (Air Delay Head)

Contactor	Optional accessories	Attachment Model	Contact assembly	Delay range (s)
NXC-06XMG~100XMG	F5 Air Delay Head	F5-T0	1 Normally Open + 1 Normally Closed	0.1~3
		F5-T2	1 Normally Open + 1 Normally Closed	0.1~30
		F5-T4	1 Normally Open + 1 Normally Closed	10~180
		F5-D0	1 Normally Open + 1 Normally Closed	0.1~3
		F5-D2	1 Normally Open + 1 Normally Closed	0.1~30
		F5-D4	1 Normally Open + 1 Normally Closed	10~180

• Attachment Selection Table (Dust Cover)

Contactor	Optional accessories (standard configuration upon shipment)
NXC-06XMG~22XMG	AXC-1 Dust Cover
NXC-25XMG~38XMG	AXC-2 Dust Cover
NXC-40XMG~65XMG	AXC-3 Dust Cover
NXC-75XMG~100XMG	AXC-4 Dust Cover

• Attachment Selection Table (Dust Cover)

Contactor	Optional accessories
NXC-06XMG~38XMG	MI-5
NXC-40XMG~65XMG	MI-6
NXC-75XMG~100XMG	MI-7

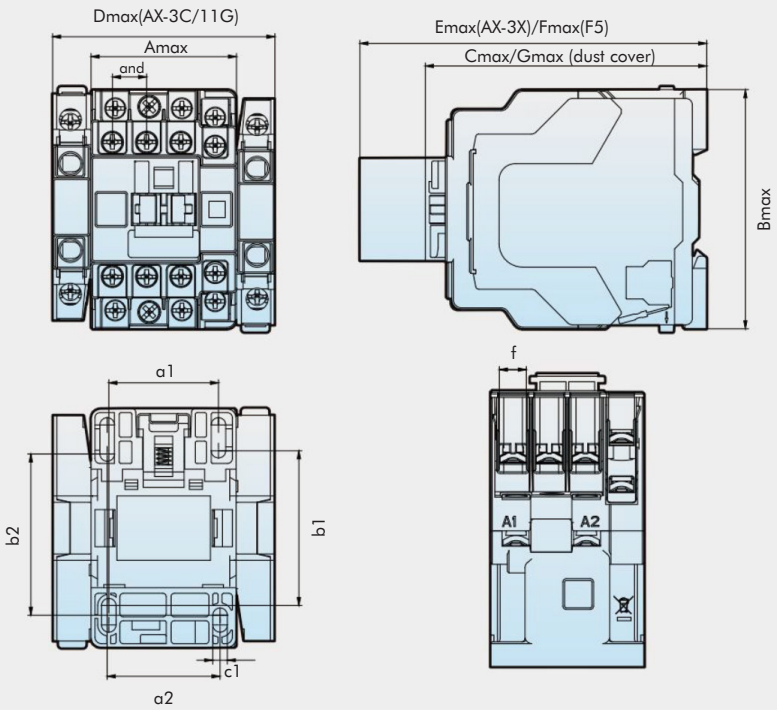
• Appendix: Main Parameters and Technical Performance Indicators

Project			Main technical parameters	
Rated operating voltage (V)			Up to 660	
Rated insulation voltage (V)			690	
The free air heating current Ith (A) is defined			10	
Rated connecting capacity (A)			The current draw is 10 Ie (AC-15) or Ie (DC-13)	
Short circuit protection			gG Fuse: 10A	
Control capacity	Auxiliary contact	AC-15	220V/230V	2.7A
			380V/400V	1.5A
		DC-13	220V	0.3A
	F5 Air Delay Head	AC-15	220V/230V	2.7A
			380V/400V	1.5A
			660V	0.52A
		DC-13	220V	0.3A
Meets standards			GB/T 14048.5; IEC/EN 60947-5-1	
Product Certification			CE、CCC	
Enclosure protection rating (front side only)			IP 20	
Cable connection (mm^2)	Flexible wire without cold-pressed ends		1~2.5	
			1~2.5	
	Flexible wire with cold-pressed end		1~2.5	
			1~2.5	
	Hard wire		1~2.5	
			1~2.5	
Fastening screw size			M3.5	
Tightening torque (N·m)			1.2	

7. External shape and installation dimensions

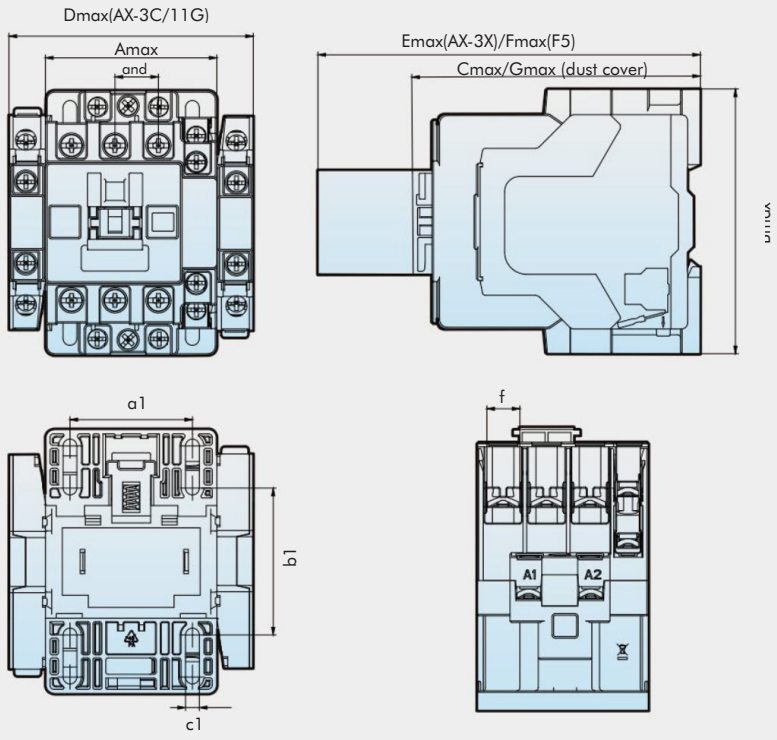
NXC-06XMG~22XMG External Dimensions and Mounting Dimensions



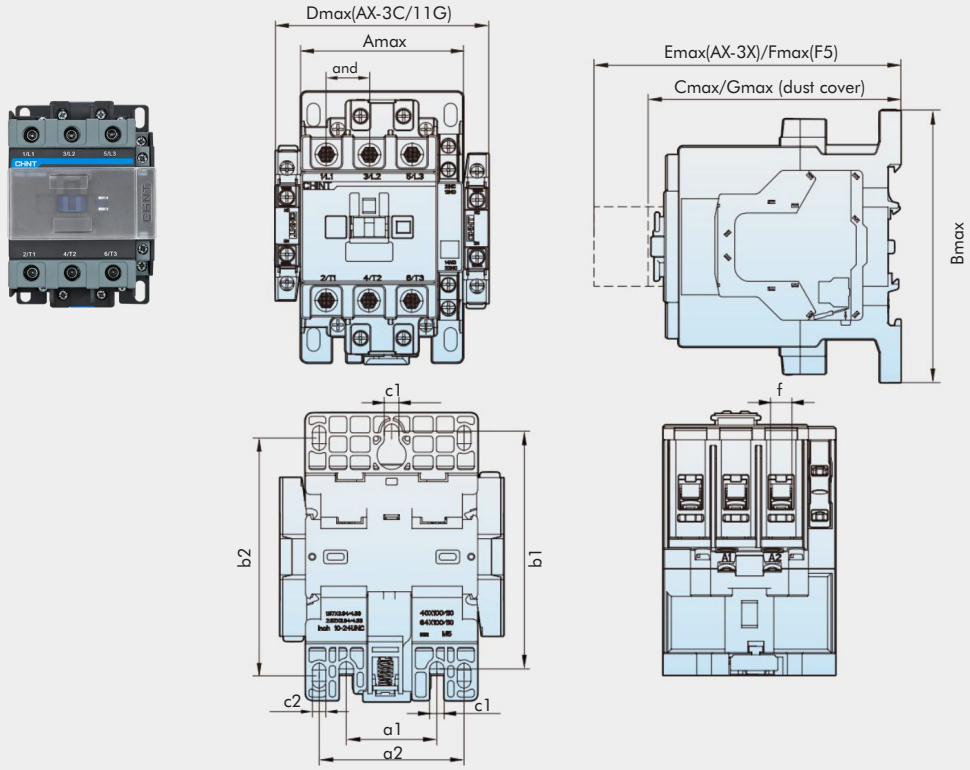


NXC-25XMG~38XMG External Dimensions and Mounting Dimensions





NXC-40XMG~100XMG External Dimensions and Mounting Dimensions

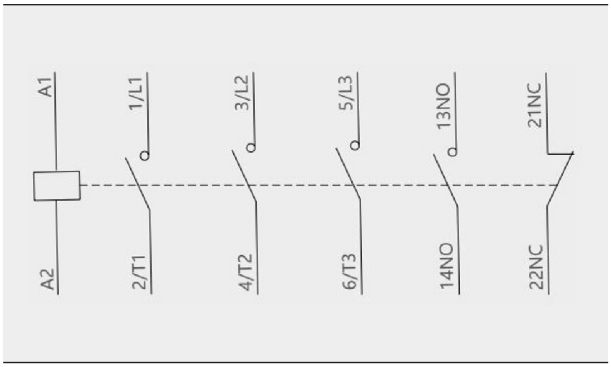


Model	Amax	Bmax	Cmax	Dmax	Emax	Fmax	Gmax	a1	b1	C1	a2	b2	C2	and	f
NXC-06XMG~16XMG 45.5	75	88	70	126.5	146.5	90	34±0.31	48±0.31	ÿ4.5					10.6	7.8
NXC-18XMG~22XMG 45.5	75	88	70	126.5	146.5	90	34±0.31	48±0.31	ÿ4.5					11.4	9.2
NXC-25XMG~38XM G 56.5	87	93	81	131.5	151.5	95	40±0.31	48±0.31	ÿ4.5	-				14.2	10.6
NXC-40XMG~65XMG 77	129	118	102	156.5	176.5	121	40±0.28	105±0.57	ÿ6.5	64		105	F6	20	9.5
NXC-75XMG~100XMG 87	132	127	112	165.5	185.5	129	40±0.28	105±0.57	ÿ6.5	74		112	ÿ6.2	24	13

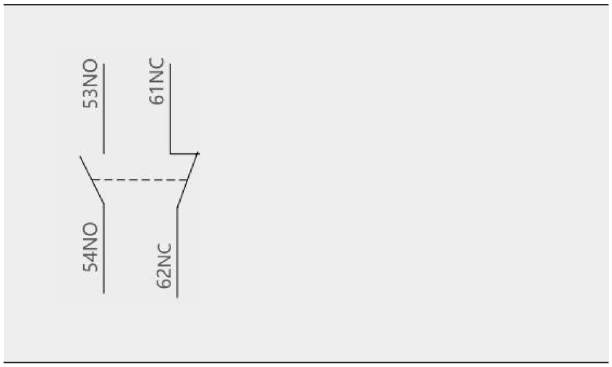
Note: NXC-06XMG~100XMG come standard with a dust cover. The height dimensions are based on Gmax.

8. Wiring Diagram

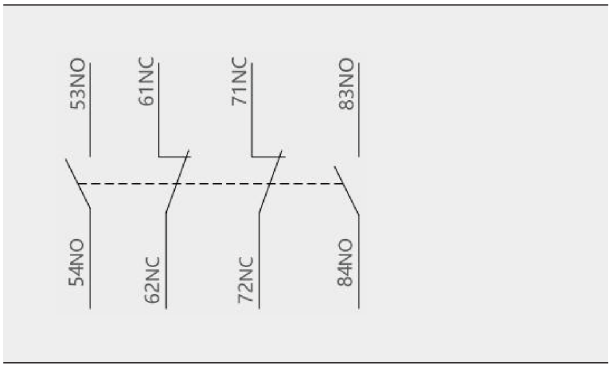
NXC-06XMG~100XMG



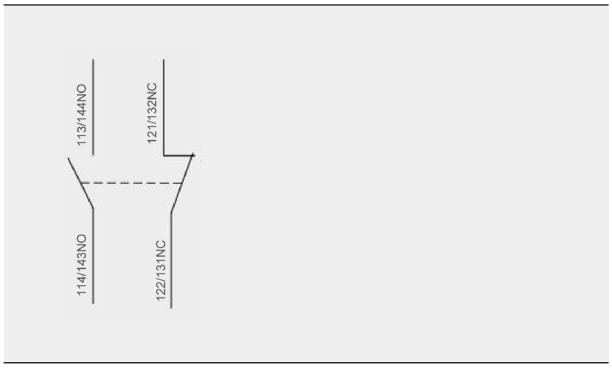
AX-3X/11G



AX-3X/22G



AX-3C/11G



• Appendix 1: Instructions for Use in Abnormal Environments

Explanation of correction factors for high-altitude areas

- GB/T 14048.1 standard specifies the relationship between altitude and impulse withstand voltage. When the altitude is ÿ 2000m, it has no significant impact on product performance.
- When the altitude is >2000mm, the effects of air cooling and the drop in rated impulse withstand voltage must be taken into account. Therefore, the manufacturer and the user need to consult on the design or use.
- The table below shows the correction factors for the rated impulse withstand voltage and rated operating current when the altitude is >2000mm and the rated operating voltage remains unchanged.

Altitude (m)	2000m	3000	4000	5000
Rated impulse withstand voltage voltage correction factor	1	0.88	0.78	0.7
Rated operating current correction factor	1	0.92	0.9	0.85

Instructions for use in abnormal temperature environments

- GB/T 14048.1 standard specifies the normal operating ambient temperature for the product. Use within the normal operating ambient temperature range will not have a significant impact on the product's performance.
- When the ambient temperature is above +40ÿ, the product's allowable temperature rise limit must be reduced, the rated operating current must be lowered, and the number of contactors installed in standard components must be reduced.no This may damage or shorten product lifespan and reduce operational reliability, and may also affect the product's operating range; when the operating ambient temperature is below -5°C, the use of insulating and lubricating greases should be considered.It may freeze at excessively low ambient temperatures, causing the product to malfunction. Therefore, manufacturers and users need to consult with each other on the design or use.
- The table below shows the correction factor for the rated operating current when the operating ambient temperature exceeds +55ÿ and the rated operating voltage remains unchanged.

Ambient temperature (°C)	55	60	65	70
Correction coefficient	1	0.93	0.875	0.75

- The AC contactor pull-in voltage range is (90%~110%)Us, (70%~120%)Us, and (75%~120%)Us, which are test results under normal temperature (40ÿ) cold conditions, with temperatures ranging from +55ÿ to +70ÿ Degradation instructions for use in corrosive environments.
- Effects on metal components: Chlorine (Cl2) , Nitrogen dioxide (NO2) , Hydrogen sulfide (H2S), Sulfur dioxide (SO2) Copper: The thickness of the copper sulfide coating will be twice that under normal conditions in a chlorine environment, and essentially the same in the presence of nitrogen dioxide. Silver: When silver or silver-plated contacts are used in SO2 and H2S environments, the contact surface will darken, forming a silver sulfide coating, increasing contact temperature and potentially causing contact damage. In humid environments, the coating thickness will increase sevenfold when Cl2 and H2S are present simultaneously. If H2S and NO2 are present simultaneously, the silver sulfide coating thickness will increase twentyfold.
- When selecting a model, the following should be considered In industries such as oil refining, steelmaking, papermaking, and synthetic fiber (nylon), or any industry that uses sulfur in general, equipment may undergo sulfidation, a phenomenon also known as "oxidation" in industrial terms.Installing equipment in a computer room does not guarantee it will not oxidize. To ensure the air pressure in the computer room is slightly higher than atmospheric pressure, the air inlets are generally short, which does reduce external pollution to some extent.After 5 to 6 years of operation, the equipment will inevitably experience rust and oxidation. Therefore, in working environments with corrosive gases, the equipment needs to be derated, with the dereasing factor being the rated value multiplied by the rated value.With a value of 0.6 (maximum 0.8), this method can reduce the rate of oxidation that is accelerated by increased temperature.Instructions for using parallel connection of poles.
- When using poles connected in parallel, the rated current of the parallel poles needs to be adjusted to account for the distribution of long-term unstable current, as shown in the table below:

Parallel series	2	3	4
Correction coefficient	1.6	2.25	2.8

• Appendix II: Usage Category Description

Different electrical devices have vastly different load characteristics and current variations during switching processes, thus requiring different contactors. GB/T 14048.1 standard specifies the usage of contactors.Category, characterized by one or more of the following operating conditions:—Current, expressed as a multiple of the rated current —Voltage,expressed as a multiple of the rated operating voltage —Power factor ortime constant —Short-circuit performance —Selectivity —Other operating conditions (if applicable) The NXC series AC contactors are mainly used in the following categories:

- AC main circuit usage categor

AC-1 Category
This category applies to all AC loads with a power factor greater than or equal to 0.95.
For example: heating, power distribution.

AC-2 Category
This category applies to the starting, reversing, braking, and inching of slip ring motors.
When closed, the contactor activates the starting current, which is approximately 2.5 times the rated current of the motor.
When disconnected, the contactor must interrupt the starting current when the voltage is less than or equal to the main power supply.

AC-3 Category
This category applies to squirrel-cage motors that start normally during disconnection.
When closed, the contactor activates the starting current, which is approximately 7 times the rated current of the motor.
When disconnected, the contactor interrupts the rated current of the motor. At this time, the voltage at the contactor terminals is about 20% of the main power supply, and the disconnection is not severe.
For example: all standard squirrel-cage motors: ladders, escalators, conveyors, excavators, air compressors, pumps, mixers, air conditioners, etc.

- Control loop usage category

DC-13 Category
This duty cycle is applied to starting, back-current braking, and jogging of DC shunt motors. Duration ÿ 2 milliseconds.
This category applies to switching electromagnetic loads.

AC-15 Category
This category applies to switching electromagnetic loads where the pull-in power when the electromagnet is closed must be greater than 72VA.
Example: The operating coil of a switch contactor.