



NXQ Series Electromagnetic Starter

1. Scope of application

NXQ series electromagnetic starter (referred to as "starter") is designed for circuits with AC 50Hz (or 60Hz), rated operational voltage up to 690V, and rated control power up to 45kW (with current up to 100A) under AC-3, 380/400V utilization category. It serves to control direct start/stop of motors. The starter includes an integrated thermal overload relay (referred to as "thermal relay"), which offers protection against motor overload and phase failure.

Comply with standards: GB/T 14048.4, IEC/EN 60947-4-1.

Product certification: CB, CE, TUV

2. Models and meanings

NXQ-18.5 □

① ② ③

① product series: NXQ series electromagnetic starter

② rated control power under 380/400 VAC-3: 5.5/7.5,11/15/18.5, 22/30/37/45
3 frame size: 7.5/18.5/45

③ function: Blank-without pushbutton

R-reset pushbutton only

P-start pushbutton + dual-function pushbutton (stop and reset)

PD- start button with indicator light + dual-function pushbutton (stop and reset)

PR- start pushbutton + stop pushbutton + reset pushbutton

PDR- start button with indicator light + stop pushbutton + reset pushbutton

3. Normal working conditions and installation conditions

3.1 Altitude: not more than 2000m.

3.2 The ambient air temperature is $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, and the average temperature within 24 hours does not exceed $+35^{\circ}\text{C}$.

3.3 Atmospheric conditions: Humidity: When the maximum temperature is $+40^{\circ}\text{C}$, the relative humidity of the air shall not exceed 50%. Higher relative humidity is allowed at lower temperatures, for example, 90% at $+20^{\circ}\text{C}$. Special measures shall be taken for occasional condensation due to temperature changes.

3.4 The inclination from the vertical plane shall not exceed 5° .

3.5 In a place without explosive hazard medium and without gas and conductor dust that can corrode metal and damage insulation.

3.6 In places with rain and snow protection equipment and not filled with water vapor.

3.7 In a place without significant shaking, impact and vibration.

4. Main technical parameters

Table 1

Product Model	AC contactor model	Thermal relay model	Current setting range	AC-3						Equipped with SCPD
				220/230/240V		380/400/415V		660/690V		
				Ie(A)	Power(kW)	Ie(A)	Power(kW)	Ie(A)	Power(kW)	
NXQ-5.5 □	NXC-12	NXR-25	0.1~0.16	0.16	0.03	0.16	0.04	0.16	0.06	gG2
			0.16~0.25	0.25	0.04	0.25	0.06	0.25	0.12	gG2
			0.25~0.4	0.4	0.06	0.4	0.09	0.4	0.18	gG2
			0.4~0.63	0.63	0.09	0.63	0.18	0.63	0.25	gG2
			0.63~1	1	0.18	1	0.25	1	0.55	gG6
			1~1.6	1.6	0.25	1.6	0.55	1.6	1.1	gG6
			1.25~2	2	0.37	2	0.75	2	1.1	gG6
			1.6~2.5	2.5	0.37	2.5	0.75	2.5	1.5	gG6
			2.5~4	4	0.75	4	1.5	4	3	gG16
			4~6	6	1.1	6	2.2	6	4	gG16
			5.5~8	8	1.5	8	3	8	5.5	gG20
			7~10	10	2.2	10	4	8.9	7.5	gG20
9~13	12	3	12	5.5	-	-	gG25			
NXQ-7.5 □	NXC-18	NXR-25	0.1~0.16	0.16	0.03	0.16	0.04	0.16	0.06	gG2
			0.16~0.25	0.25	0.04	0.25	0.06	0.25	0.12	gG2
			0.25~0.4	0.4	0.06	0.4	0.09	0.4	0.18	gG2
			0.4~0.63	0.63	0.09	0.63	0.18	0.63	0.25	gG2
			0.63~1	1	0.18	1	0.25	1	0.55	gG6
			1~1.6	1.6	0.25	1.6	0.55	1.6	1.1	gG6
			1.25~2	2	0.37	2	0.75	2	1.1	gG6
			1.6~2.5	2.5	0.37	2.5	0.75	2.5	1.5	gG6
			2.5~4	4	0.75	4	1.5	4	3	gG16
			4~6	6	1.1	6	2.2	6	4	gG16
			5.5~8	8	1.5	8	3	8	5.5	gG20
			7~10	10	2.2	10	4	10	7.5	gG20
9~13	13	3	13	5.5	12	10	gG25			
12~18	18	4	18	7.5	12	10	gG35			
NXQ-11 □	NXC-25	NXR-25	0.63~1	1	0.18	1	0.25	1	0.55	gG6
			1~1.6	1.6	0.25	1.6	0.55	1.6	1.1	gG6
			1.25~2	2	0.37	2	0.75	2	1.1	gG6
			1.6~2.5	2.5	0.37	2.5	0.75	2.5	1.5	gG6
			2.5~4	4	0.75	4	1.5	4	3	gG16
			4~6	6	1.1	6	2.2	6	4	gG16
			5.5~8	8	1.5	8	3	8	5.5	gG20
			7~10	10	2.2	10	4	10	7.5	gG20
			9~13	13	3	13	5.5	13	11	gG25
12~18	18	4	18	7.5	18	15	gG35			
NXQ-15 □	NXC-32	NXR-25	7~10	10	2.2	10	4	10	7.5	gG20
			9~13	13	3	13	5.5	13	11	gG25
			12~18	18	4	18	7.5	18	15	gG35
			17~25	25	5.5	25	11	22	18.5	gG50
		NXR-38	23~32	32	7.5	32	15	-	-	gG63

NXQ-18.5 □	NXC-38	NXR-25	9~13	13	3	13	5.5	13	11	gG25
			12~18	18	4	18	7.5	18	15	gG35
			17~25	25	5.5	25	11	22	18.5	gG50
		NXR-38	23~32	32	7.5	32	15	-	-	gG63
			30~38	38	9	38	18.5	-	-	gG80
NXQ-22 □	NXC-50	NXR-100	23~32	32	7.5	32	15	32	30	gG63
			30~40	40	11	40	18.5	39	37	gG100
			37~50	50	15	50	22	39	37	gG100
NXQ-30 □	NXC-65	NXR-100	30~40	40	11	40	18.5	39	37	gG100
			37~50	50	15	50	22	42	37	gG100
			48~65	65	18.5	65	30	-	-	gG100
NXQ-37 □	NXC-75	NXR-100	30~40	40	11	40	18.5	40	37	gG100
			37~50	50	15	50	22	42	37	gG100
			48~65	65	18.5	65	30	-	-	gG100
			55~70	70	22	70	37	-	-	gG125
			63~80	75	22	75	37	-	-	gG125
NXQ-45 □	NXC-100	NXR-100	30~40	40	11	40	18.5	40	37	gG100
			37~50	50	15	50	22	49	45	gG100
			48~65	65	18.5	65	30	49	45	gG100
			55~70	70	22	70	37	-	-	gG125
			63~80	80	22	80	37	-	-	gG125
			80~93	93	25	93	45	-	-	gG160
			80~100	100	25	100	45	-	-	gG160

Table 2

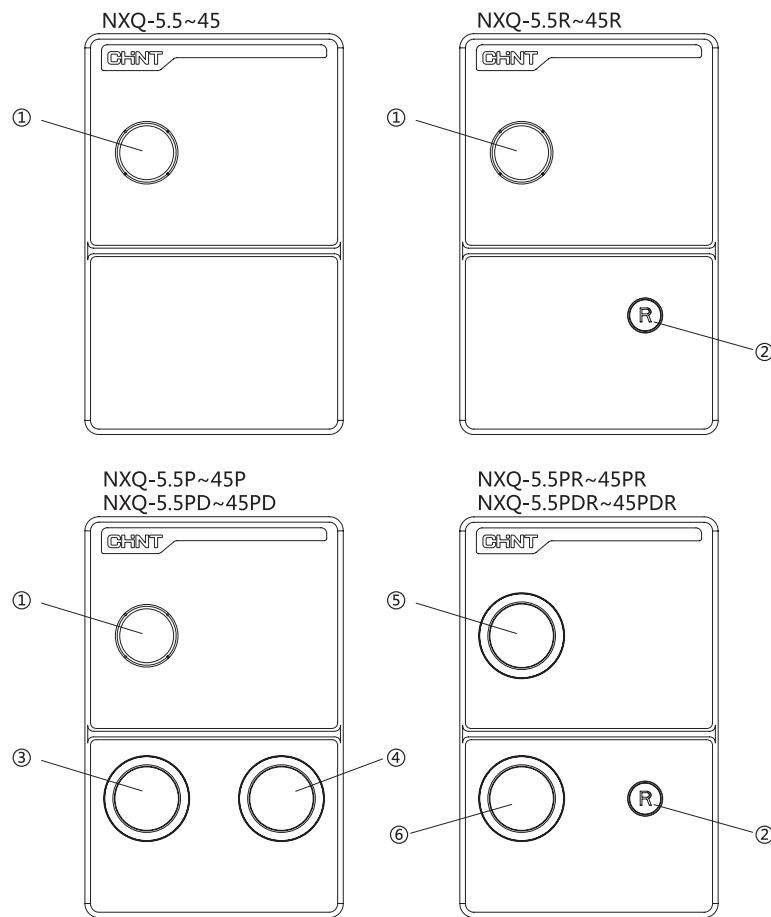
Product Model		NXQ-5.5 □	NXQ-7.5 □	NXQ-11 □	NXQ-15 □	NXQ-18.5 □	NXQ-22 □	NXQ-30 □	NXQ-37 □	NXQ-45 □
Use Category		Main circuit: AC-3; Auxiliary circuit: AC-15								
Rated insulation voltage Ui(V)		690								
Rated impulse withstand voltage Uimp(kV)		6								
Coil power (VA)	Pull-in power	≤70	≤70	≤70	≤70	≤70	≤210	≤210	≤300	≤300
	Holding power	≤9.0	≤9.5	≤14.0	≤14.0	≤14.0	≤36.6	≤36.6	≤36.6	≤36.6
Range of motion	Pull-in voltage	(85%~110%)Us								
	Release voltage	(20%~75%)Us								
Pole impedance(Ω)		≤0.05								
Rated limiting short-circuit current Iq(kA) (Corresponding test voltage 400V)		50								
Coordination type		Type 2 coordination and cooperation								
Enclosure protection grade		IP65					IP55			
Rated duty		Eight-hour work system, uninterrupted work system, intermittent cycle work system								
Tripping level		10A								

5. Structural characteristics

The starter adopts a shell protection structure, and its protection level is IP65 for NXQ-5.5~18.5 and IP55 for NXQ-22~45. The interior is composed of NXC AC contactor and NXR thermal overload relay. The in and out wiring of the starter adopts knock-out wiring holes. Users can selectively knock out and wire the four knock-out holes according to the needs of wiring. The cover and base of the starter can be completely separated, and the internal control circuit has a quick-connect plug, which is very convenient for users to install and maintain; the button realizes the start and stop of the starter, which is safe and reliable to use.

To improve the protection performance of the starter, the starter must be installed vertically, and the mounting screws should be selected according to the size of the mounting hole and should not be smaller than M5. Spring washers, flat washers and sealing rubber rings should be added to ensure the tight installation of the starter. In addition, the knock-down wiring holes should be equipped with corresponding waterproof wiring heads.

The product has the following different configurations for users to choose from:



No.	Structure Description
①	Knockout mounting hole $\varnothing 23\text{mm}$; can be removed as needed by the customer
②	Reset button (blue)
③	P: Start button (green) PD: Start button (green) with indicator light
④	Stop button (red) with reset function, not suitable for frequent operation
⑤	PR: Start button (green) PDR: Start button (green) with indicator light
⑥	Stop button (red), suitable for frequent operation

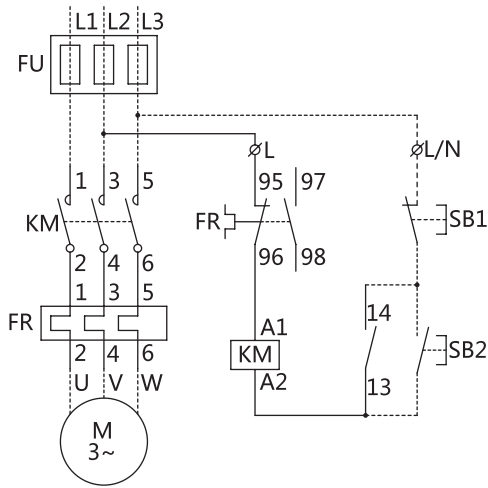
6. Starter wiring schematic diagram

When the product is shipped from the factory, the control circuit is pre-wired under the assumption that the starter's control voltage matches the main circuit voltage. In this configuration, the starter is ready to operate as soon as the main circuit is powered-no additional wiring is required.

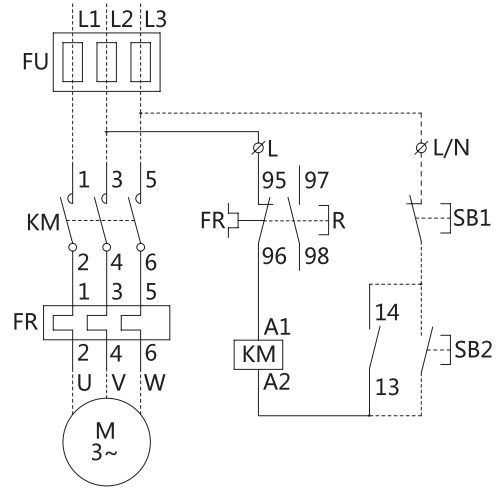
If the control circuit voltage differs from the main circuit voltage, you must disconnect the two control wires from the main circuit and reconnect them to the appropriate control power supply.

Note: The starter cannot directly control a single-phase motor unless two phases of the main circuit are connected in series.

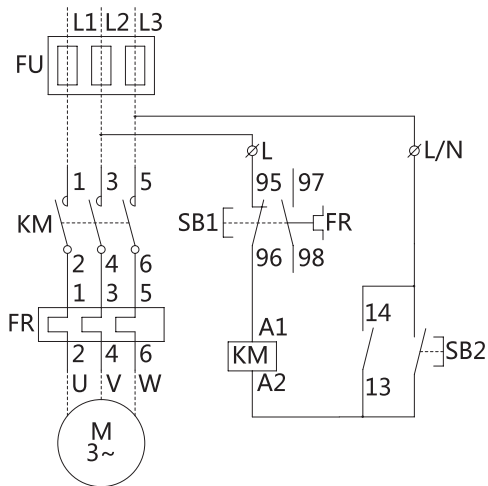
The starter wiring schematic is as follows. The dotted lines in the figure are customer wiring.



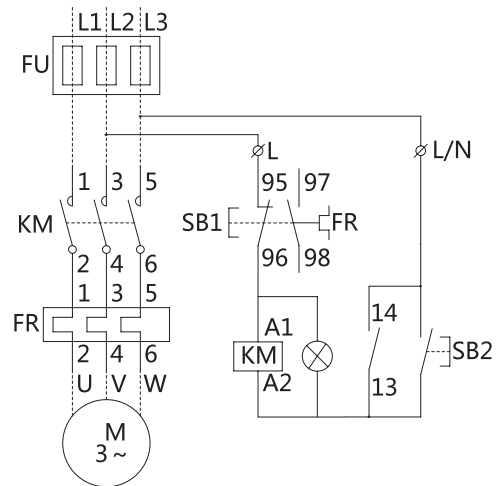
NXQ-5.5~45 wiring diagram (three-phase)



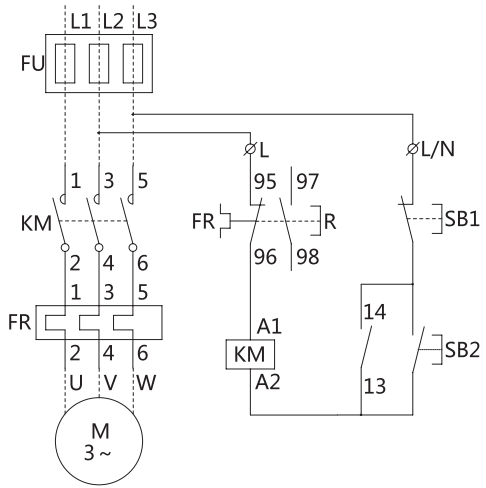
NXQ-5.5R~45R wiring diagram (three-phase)



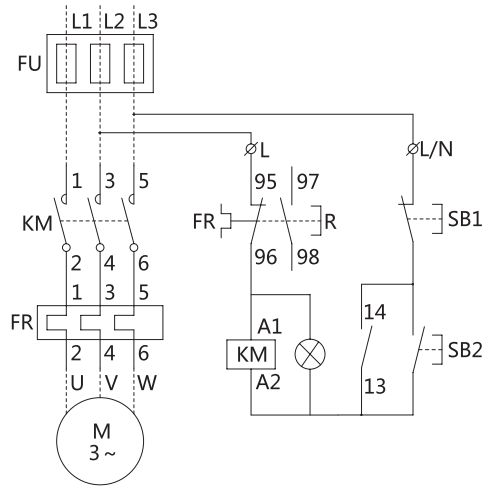
NXQ-5.5P~45P wiring diagram (three-phase)



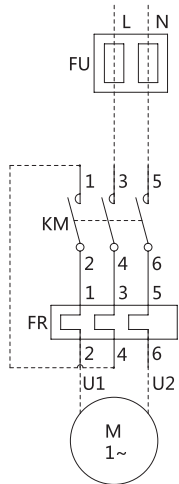
NXQ-5.5PD~45PD wiring diagram (three-phase)



NXQ-5.5PR~45PR wiring diagram (three-phase)

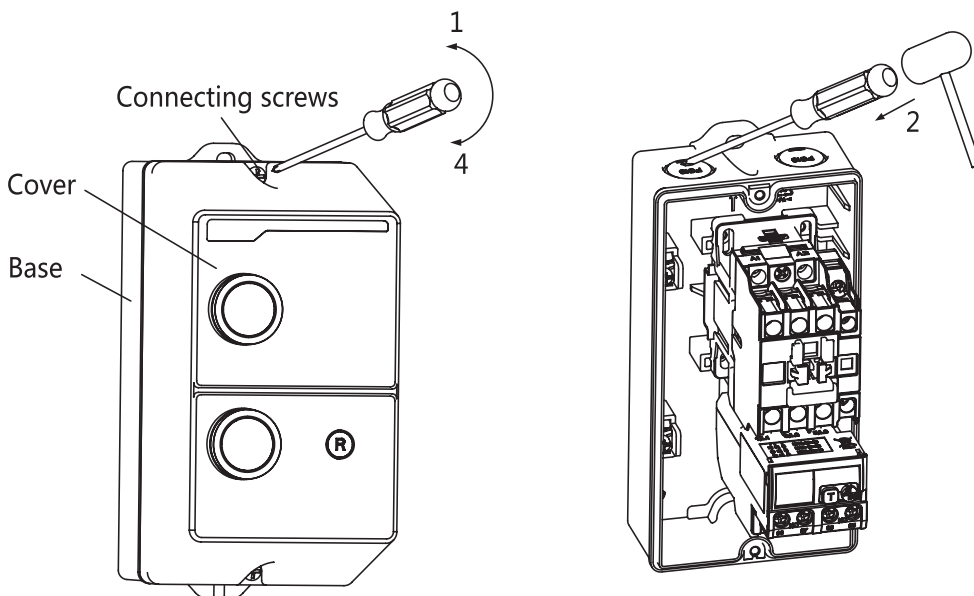


NXQ-5.5PDR~45PDR wiring diagram (three-phase)

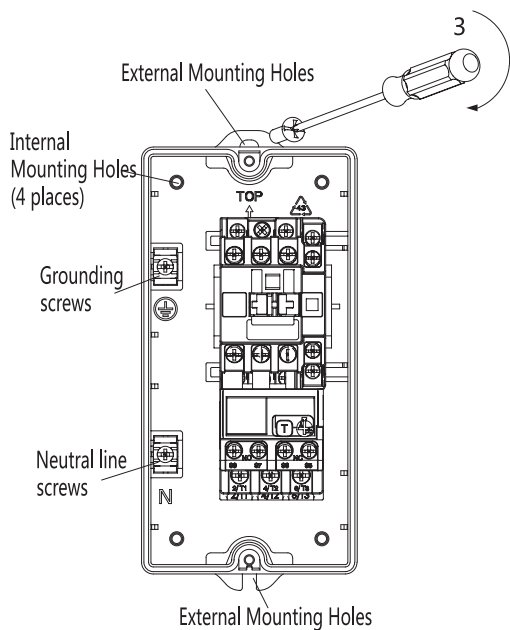


Main circuit wiring diagram (single-phase)

7. Starter installation instructions



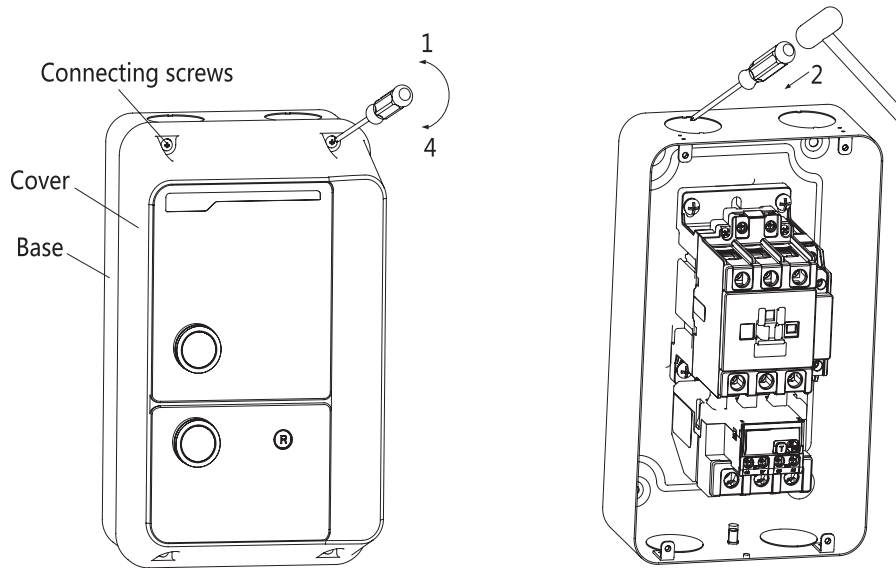
- 1. Turn the connecting screws on both sides of the cover counterclockwise to loosen them, then remove the cover.
- 2. Break out the knock-out holes on both sides of the base as needed for wiring. Install waterproof terminals in the openings to maintain the starter's enclosure protection rating. (Knock-out hole diameter: $\phi 23\text{mm}$)
- 3. Connect the main circuit, control circuit, and grounding screws. Adjust the thermal relay's current setting as required, and install the product according to specified installation guidelines.
- 4. Place the cover back on and tighten the screws on both sides clockwise to secure it.



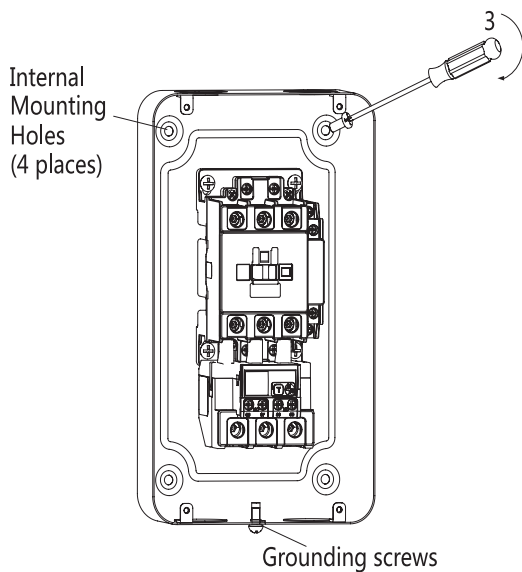
Note 1: The connecting wires of the incoming and outgoing lines of the main circuit must be single-core PVC insulated copper cables with prefabricated terminal, whose cross-sectional area is specified in the following table; the cross-sectional area of connecting wires of the auxiliary circuit should be 1mm^2 . Tighten all these screws during wiring to prevent the starter from slipping and fall due to vibration. Remove the residual of foreign objects to prevent the moving parts of the contactor from getting stuck and the occurrence of short-circuit accidents..

Note 2: Customers may choose either the external mounting holes or internal mounting holes for installation according to requirements. For the mounting screws, select screws no smaller than M5 based on the hole size. When using internal mounting holes, knock out the required holes as needed and ensure to add sealing washers to these screws to maintain the enclosure's protection rating.

7. Starter installation instructions



- 1. Turn the connecting screws on both sides of the cover counterclockwise to loosen them, then remove the cover.
- 2. Break out the knock-out holes on both sides of the base as needed for wiring. Install waterproof terminals in the openings to maintain the starter's enclosure protection rating. (Knockout hole diameter: $\phi 38\text{mm}$)
- 3. Connect the main circuit, control circuit, and grounding screws. Adjust the thermal relay's current setting as required, and install the product according to specified installation guidelines.
- 4. Place the cover back on and tighten the screws on both sides clockwise to secure it...



Note 1: The connecting wires of the incoming and outgoing lines of the main circuit must be single-core PVC insulated copper cables with prefabricated terminal, whose cross-sectional area is specified in the following table; the cross-sectional area of connecting wires of the auxiliary circuit should be 1mm^2 . Tighten all the screws during wiring to prevent the starter from slipping and fall due to vibration. Remove the residual of foreign objects to prevent the moving parts of the contactor from getting stuck and the occurrence of short-circuit accidents.

Note 2: Choose screws no smaller than M5 according to the size of the mounting hole. Add seal ring to the screw to ensure enclosure protection class.

Rated operating current of motor, I(A)	Cross-sectional area of connectingwires of main circuit (mm ²)
0 < I ≤ 8	1
8 < I ≤ 12	1.5
12 < I ≤ 20	2.5
20 < I ≤ 25	4
25 < I ≤ 32	6
32 < I ≤ 50	10
50 < I ≤ 65	16
65 < I ≤ 85	25
85 < I ≤ 100	35

8. Appearance and installation dimensions

NXQ-5.5 □ ~7.5 □ Appearance and installation dimensions

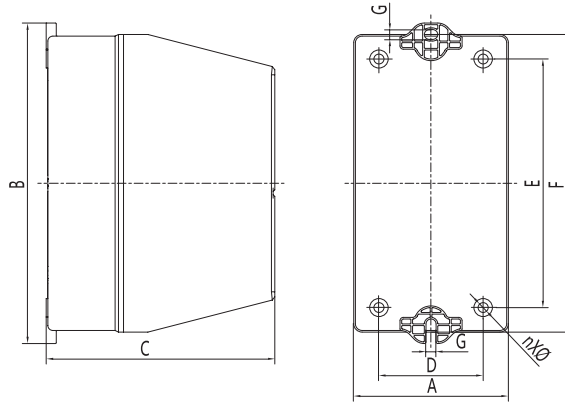
Product Model		NXQ-5.5~7.5 NXQ-5.5R~7.5R	NXQ-5.5P~7.5P NXQ-5.5PD~7.5PD	NXQ-5.5PR~7.5PR NXQ-5.5PDR~7.5PDR
Maximum dimensions (A×B×C)		94×198×138	94×198×149	94×198×149
Installation Dimensions (Inside the shell)	D×E	62×152		
	n×φ	4×φ6		
Installation Dimensions (outside the shell)	F	182		
	G	6		

NXQ-5.5 □ ~7.5 □ Appearance and installation dimensions

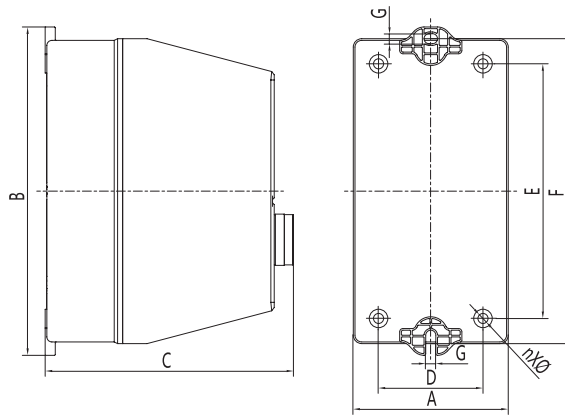
Product Model		NXQ-11~18.5 NXQ-11R~18.5R	NXQ-11P~18.5P NXQ-11PD~18.5PD	NXQ-11PR~18.5PR NXQ-11PDR~18.5PDR
Maximum dimensions (A×B×C)		102×230×145	102×230×156	102×230×156
Installation Dimensions (Inside the shell)	D×E	70×184		
	n×φ	4×φ6		
Installation Dimensions (outside the shell)	F	214		
	G	6		

NXQ-22 □ ~45 □ Appearance and installation dimensions

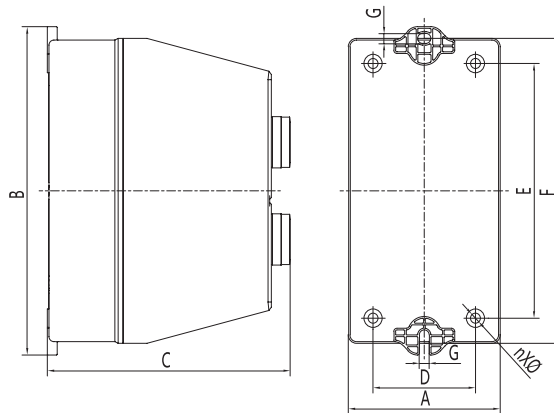
Product Model		NXQ-22~45 NXQ-22R~45R	NXQ-22P~45P NXQ-22PD~45PD	NXQ-22PR~45PR NXQ-22PDR~45PDR
Maximum dimensions (A×B×C)		169×288×163	169×288×174	169×288×174
Installation Dimensions (Inside the shell)	D×E	115×225		
	n×φ	4×φ6.2		



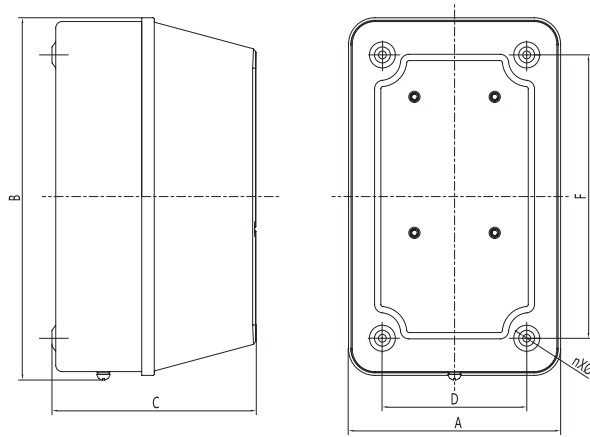
NXQ-5.5(R)~18.5(R) Outline and installation size



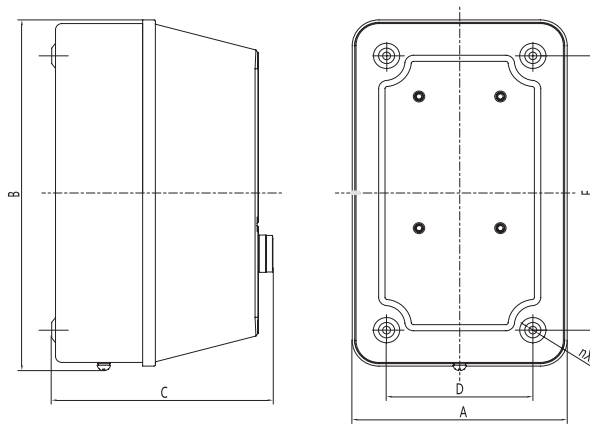
NXQ-5.5P(D)~18.5P(D) Outline and installation size



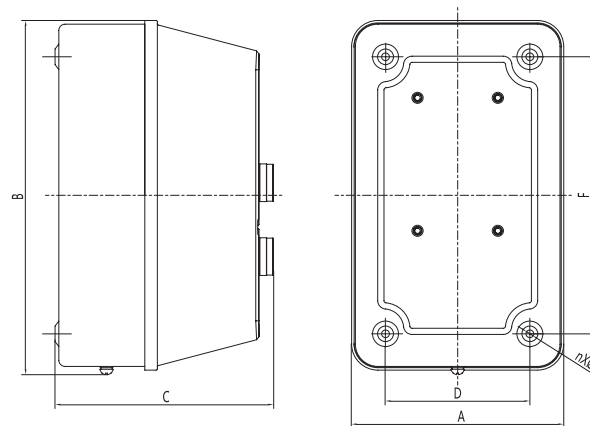
NXQ-5.5P(D)R~18.5P(D)R Outline and installation size



NXQ-22(R)~45(R) Outline and installation size



NXQ-22 P(D)~45P(D) Outline and installation size



NXQ-22 P(D)R~45P(D)R Outline and installation size

9. Ordering Instructions

- 9.1 The complete model, specification, name and structural features of the starter.
- 9.2 Rated control power supply voltage and frequency of the contactor coil in the starter.
- 9.3 The current setting range of the thermal element of the thermal relay in the starter or the rated working current of the motor. If not specified, the starter is equipped with a thermal relay with the maximum control power thermal element.
- 9.4 Order Quantity.
- 9.5 Ordering example. For example: NXQ-5.5P electromagnetic starter 380V 50Hz 10A (7A~10A) 12 units