

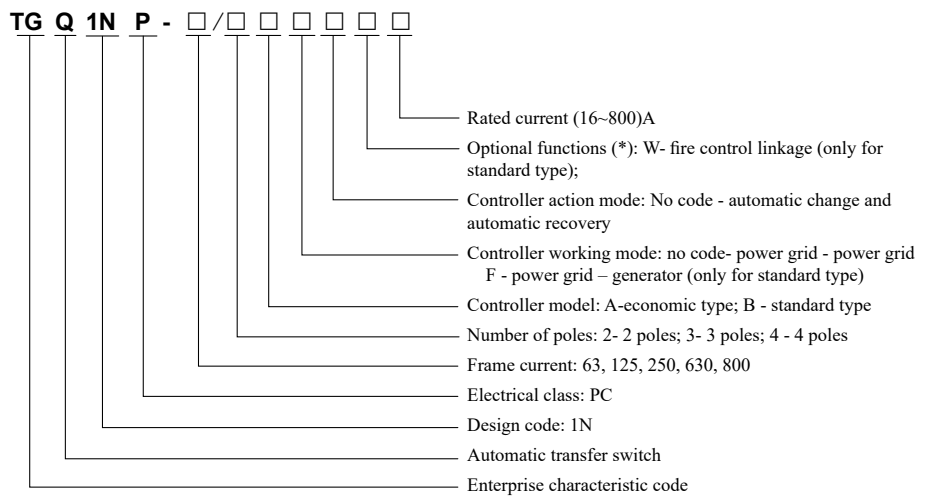
TGQ1NP Series Automatic Transfer Switch



1 Overview

TGQ1NP series automatic transfer switch is suitable for AC 50Hz two-phase/three-phase four-wire two-circuit power supply network with rated operating voltage AC230V(2P)/AC400V(3P/4P) and rated operating current up to 800A, used to connect one or more load circuits to the other power supply from one power supply automatically to ensure normal power supply of load circuit. This product is used in more important places such as industries, commerce, and high-rise and residential buildings.

2 Type Designation



Note: (*) The fire control linkage function is optional to the standard type, with the code of W. If the function is not selected, it will be displayed as no code by default. Economic type has no optional function, It is displayed as no code by default.

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3 Technical Parameters

Product model	TGQ1NP-63	TGQ1NP-125	TGQ1NP-250	TGQ1NP-400	TGQ1NP-630	TGQ1NP-800
Standard	GB/T 14048.11					
Rated current (A)	16/20/25/32 40/50/63	16/20/25/32/40 50/63/80/100/ 125	125/140/160/180/ 200/225/250	250/315/ 350/400	250/315/350/ 400/500/630	630/700/800
Rated operating voltage (V)	AC-230/50Hz(2P) AC-400/50Hz			AC-400/415V/50Hz		
Rated insulation voltage (V)	800			1000		
Impulse withstand voltage (KV)	8			12		
Rated impulse withstand current Icw (Ka)	5/30ms	10/30ms		25/1e		32/1s
Rated short-circuit making capacity Icm (kA)	8	17		52,5		67.2
Number of poles	2P/3P/4P			3P/4P		
Use classes	AC-33B					
Contact conversion time (s)	0.6±20%					
Action conversion time (s)	1.3±10%					
Return time (s)	1.3±10%					
Power-off time (s)	0.6±20%					
Electrical level	PC class					
Installation connection	Fixed vertical installation					
Wiring mode	Screw wiring					
Connection mode	Front-board wiring					
Operation mode	Automatic / manual					
Electromagnetic compatibility	Environment B					
The maximum number of conductor allowed to be clamped	1			2		
Protection grade	IP20 (excluding the wiring terminals of the main circuit)					
Tightening torque of screw (N·m)	2,5	2,5	10	22	28	
Screw failure moment (N·m)	3	3	15	26	33	
Supply voltage deviation range (V)	160±10% (economical type, standard type)					
Normal operation scope	85%Ue ~ 110%Ue					
Special requirements	None					
Isolation function	Yes					
Switch position	Common (I), power off (O), standby (II)					
Mechanical life (times)	8000(*)			5000(*)	4000(*)	3000(*)
Electrical life (times)	2000(*)			1000(*)	1000(*)	1000(*)

Note: (*) maintainable

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4 Functions of Controller

Controller		Economy type	Standard type
Installation form		Integrated	Integrated
Rated operating voltage		AC230	
Rated operating frequency		50Hz	
Work location	Closing of normal power supply	■	■
	Closing of standby power supply	■	■
	Opening of dual-way power supply	■	■
Automatic operation	Automatic operation	■	■
	Handle operation	■	■
	Controller button operation	—	—
	Remote control	—	—
Key operation	Switch the button to normal	—	—
	Switch the button to standby	—	—
	Switch the button to double split	—	—
Monitor	Monitoring phase	3-phase for common use, single phase for standby	3-phase for common use, single phase for standby
	Normal undervoltage monitoring	■	■
	Normal overvoltage monitoring	—	—
	Normal voltage loss monitoring	■	■
	Normal loose of phase monitoring	■	■
	Standby undervoltage monitoring	—	—
	Standby overvoltage monitoring	—	—
	Standby voltage loss monitoring	■	■
	Standby loose of phase monitoring	—	—
Fire-fighting signal power off	—	■	
Conversion mode	Automatic transfer and restoration	■	■
	Mutual backup	—	—
	Automatic transfer and without restoration	—	—
Grid connection	Power grid - power grid	■	■
	Power grid - generator	—	□
Display	Screen	Indicator light	Indicator light
	Indication of normal power supply	■	■
	Indication of standby power supply	■	■
	Connection and disconnection of the common power supply	■	■
	Connection and disconnection of the standby power supply	■	■
	Voltage values of the common power supply	—	—
	Voltage values of the standby power supply	—	—
	Manual / automatic	■	■
	Display of time delay	—	—
	Display of fault alarm	—	—
	Display of transfer numbers	—	—
	Fire control linkage status	—	—
	Generator starting state	■	■
	Parameter setting	Adjustable transfer time delay (s)	Fixed value
Adjustable return time delay (s)		Fixed value	Fixed value
Manual / automatic switch		■	■
Adjustable undervoltage		Fixed value	Fixed value
Adjustable overvoltage		—	—
Other functions	Fire control feedback	—	□
	Fault alarm output	—	—
	Position feedback output	■	■
	Fault memory function	—	—
	Communications function	—	—
	Three-phase imbalance setting	—	—
	Transfer failure alarm	—	—
	Wrong wiring alarm	—	—

Remarks: “-” this function is not available; “□” this function is optional; “■” this function is a standard function;

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5 Normal working conditions and installation conditions

- 5.1 Ambient air temperature: $-5^{\circ}\text{C}\sim +40^{\circ}\text{C}$, with the average temperature within 24h not exceeding $+35^{\circ}\text{C}$;
- 5.2 Altitude: the altitude of the installation site shall be not more than 2,000 meters;
- 5.3 Atmospheric conditions: the relative humidity of atmosphere shall not exceed 50% at the maximum ambient temperature of $+40^{\circ}\text{C}$, and a higher relative humidity is allowed at the lower temperature. For example, the relative humidity can reach 90% at $+20^{\circ}\text{C}$. Special measures shall be taken for occasional condensation due to temperature changes.
- 5.4 Pollution degree: 3.

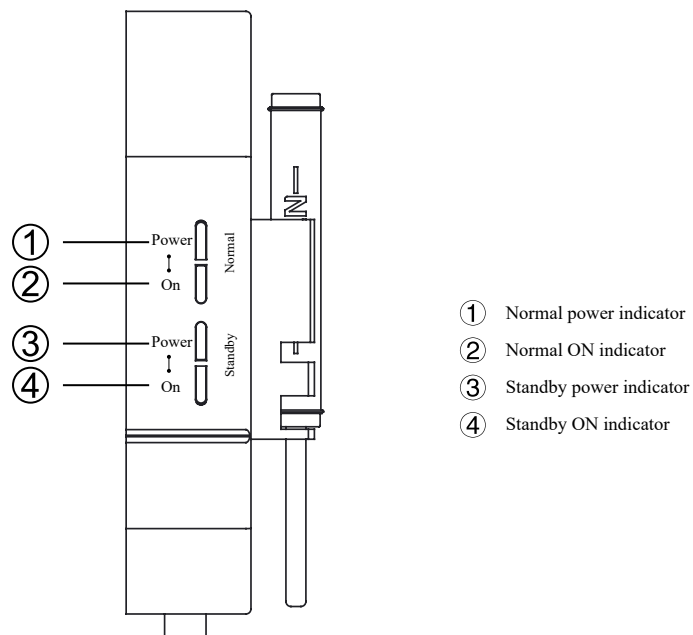
6 Features and functions

TGQ1NP series automatic transfer switch is a new generation of Class PC products combining advanced digital electronic control technology. It has the characteristics of small volume, energy-saving, convenient installation and reliable double interlocking and advanced and complete functions.

- 6.1 Small volume, novel appearance, sliding closure design, flexible operation, safety and reliability.
- 6.2 The instantaneous structure design utilizes the dual-spring drive design, which is simple and stable.
- 6.3 Rotating contact structure and circular arc extinguishing device, with good arc extinguishing performance and long service life of contacts

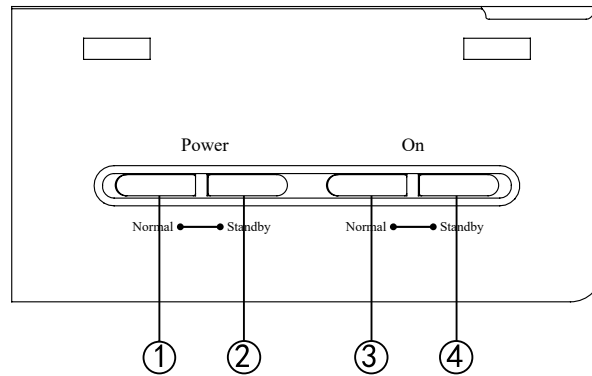
7 Controller display and operating instructions

- 7.1 Description of display interface of economical and standard type controllers (Frame current 63A)



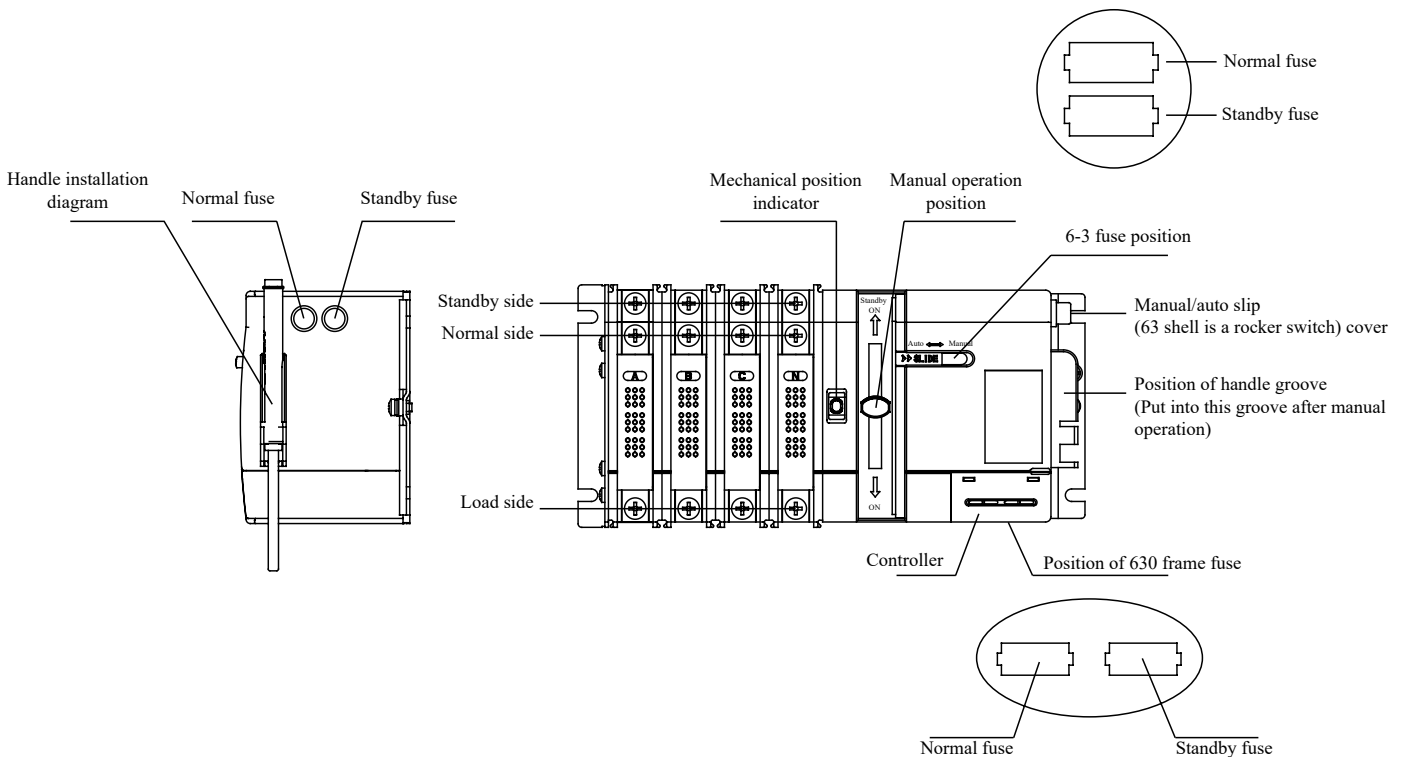
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7.2 Description of display interface of economical and standard type controllers (Frame current 125~630A)



- ① Normal power indicator;
- ② Standby power indicator;
- ③ Normal ON indicator;
- ④ Standby ON indicator .

8 Product Structure

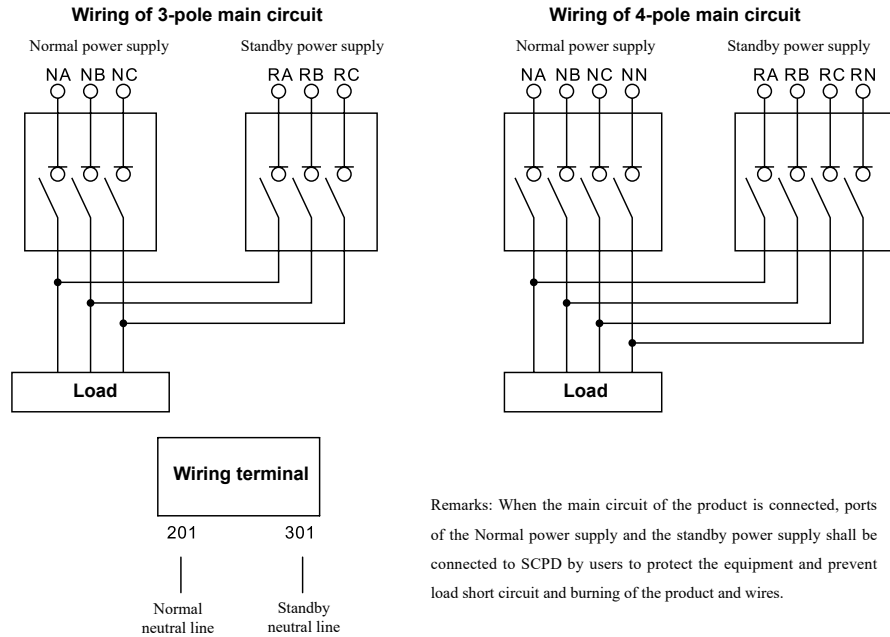


- a. Manual/Auto slip cover: To control the control line power inside the switch. When the manual/auto slip cover is at the “Auto” position, the automatic operation of switch can be realized; when the manual/auto slip cover is at the “Manual” position, the switch can be operated manually;
- b. Remove the operating handle during normal operation and insert it into the handle groove, and only install it in the event of an emergency.

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9 Installation and use

9.1 Wiring diagram of the main circuit of the product (power phase sequence must be consistent)

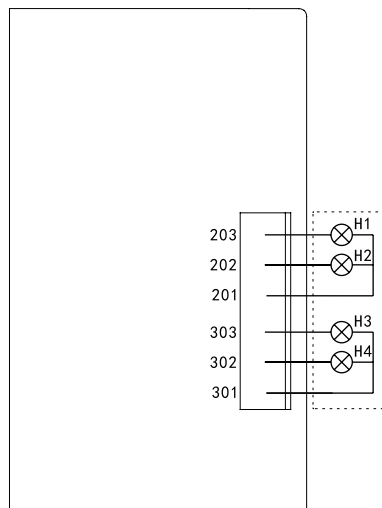


Note: The 3-pole product can operate normally when its neutral line is connected to controller terminal 201 and terminal 301.

Remarks: When the main circuit of the product is connected, ports of the Normal power supply and the standby power supply shall be connected to SCPD by users to protect the equipment and prevent load short circuit and burning of the product and wires.

9.2 Secondary wiring diagram of the controller

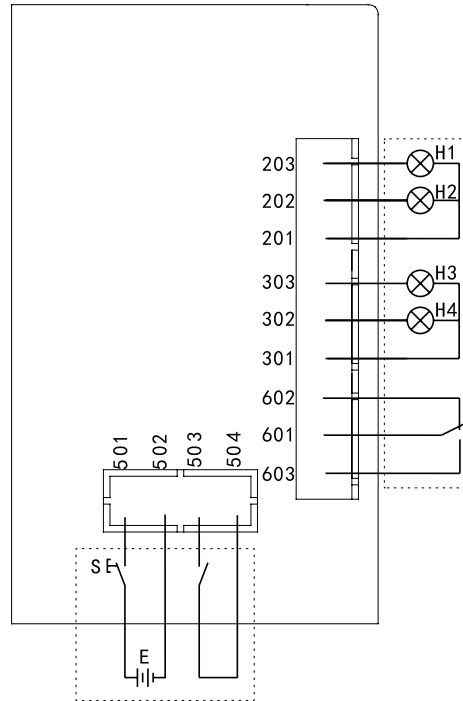
9.2.1 Secondary wiring diagram of the economic controller



1. Normal signal AC220V output (201, 202, 203): 201 is a common terminal (null line output at 3-pole); 202 is power supply instruction; 203 is closing instruction.
2. Standby signal AC220V output (301, 302, 303): 301 is a common terminal (null line input at 3-pole); 302 is power supply instruction; 303 is closing instruction.
3. The parts in the dotted lines shall be connected by users. H1-H4 are AC signal indicator lights.

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9.2.2 Secondary wiring diagram of the basic controller

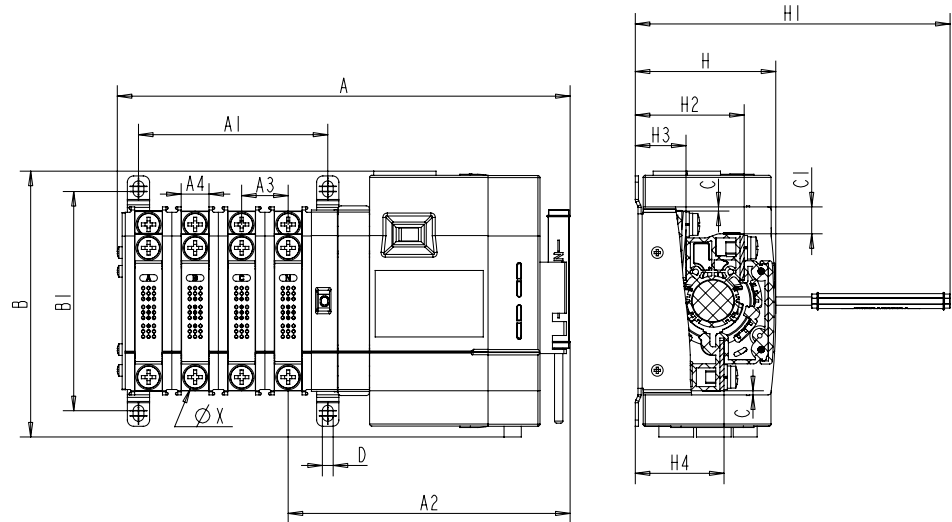


1. Normal signal AC220V output (201, 202, 203): 201 is a common terminal (null line output at 3-pole); 202 is power supply instruction; 203 is closing instruction.
2. Standby signal AC220V output (301, 302, 303): 301 is a common terminal (null line input at 3-pole); 302 is power supply instruction; 303 is closing instruction.
3. Fire control linkage control (501, 502, 503, 504): 501 and 502 are DC24V fire control signal power supply output. 503 and 504 are passive feedback contact output after the implementing fire control.
4. Startup/shutdown control of power generation (601, 602 and 603): 601 is a common terminal; 602 is startup passive contact output; 603 is shutdown passive contact output.
5. The parts in the dotted lines shall be connected by users. H1-H4 are AC signal indicator lights; S is the self-locking button; E is the DC24V signal provided by the fire control center.

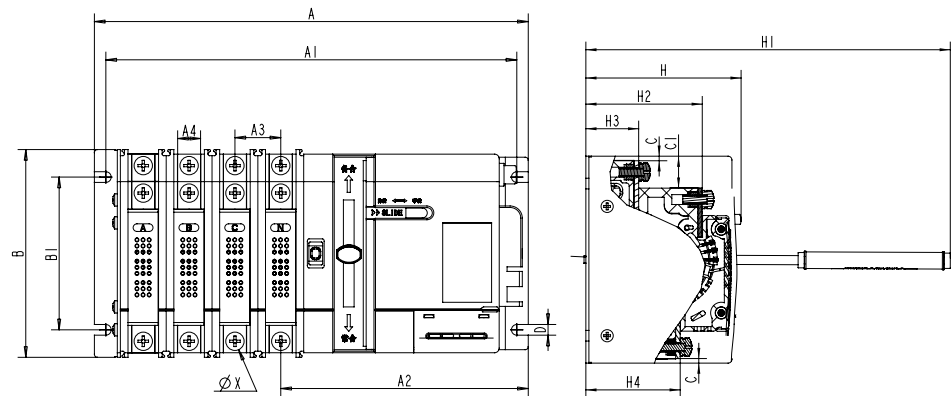
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10 Outline and Installation Dimensions

10.1 TGQ1NP-63 Product Outline Drawing



10.2 TGQ1NP-125~800 Product Outline Drawing



Spec. \ Size

Specification / dimension	A			B	H	A1			B1	A2	A3	A4	H1	H2	H3	H4	C	C1	D	ΦX
	2P	3P	4P			2P	3P	4P												
TGQ1NP-63	171	193	215	138	68	44	66	88	106	136	22	13	152	52	24	43	2	13	5,2	6
TGQ1NP-125	229	259	289	136	102	214	244	274	100	162	30	15	240	77	35	62	4	21	7	6
TGQ1NP-250	302	347	393	170	128	283	328	374	125	207	45,5	25	257	96	44	79	4	22	9	8
TGQ1NP-400	/	414	467	212,5	158	/	397	450	156	251	53	40	344	118	52,5	99	4,5	33	10,5	12
TGQ1NP-630	/	527	595	255	192	/	502	570	188	325	68	49	370	144	65	118	6	40	13	12
TGQ1NP-800	/	527	595	255	192	/	502	570	188	325	68	49	370	144	65	118	6	40	13	12

Remarks: The operation handle is usually removed, and is operated in case of emergency operation or manual operation.

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11 Ordering Notice

Please provide the following details when ordering:

1. Please specify the required model, current, Number of poles and other information when ordering.
2. For special installation conditions or operation requirements for special places, a user shall provide corresponding technical materials or negotiate with us.

For example: Order 50 sets of automatic transfer switch, with frame current of 125A, 4 poles, standard controller, power grid-power generation, rated current of 100A.

Fill in: TGQ1NP-125/4BF100A 50 pcs.