TGQ1NP Series Automatic Transfer Switch

1 Product overview

TGQ1NP series automatic transfer switch is suitable for two-phase/three-phase four-wire dual power supply network with AC current of 50Hz, rated working voltage of AC230V (2P) / AC400V (3P/4P), rated working current up to 250A, to automatically connect one or more load circuits from one power supply to another, ensuring the normal power supply of the load circuit. This product is suitable for industrial places, commercial places, high-rise and residential buildings and other important places.
Comply with the following standards: This product complies with IEC 60947-6-1.

2 Type designation

TG Q 1N P - □/□ □ □ □ □ □ □

- Rated current (16-250) A
- Optional functions (*): W- fire control linkage (only for standard type);
- Controller action mode: No code - automatic change and automatic recovery
- Controller working mode: no code- power grid - power grid F - power grid – generator (only for standard type)
- Controller model: A-economic type; B - standard type
- Pole number: 2- 2 poles; 3- 3 poles; 4 - 4 poles
- Frame current: 125, 250
- Electrical level: PC level
- Design code: 1N
- Automatic transfer switch
- Enterprise characteristic code

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 Product parameter

Product model	TGQ1NP-125	TGQ1NP-250
Standards	IEC60947-6-1	
Rated current (A)	16/20/25/32/40/50/ 63/80/100/125	125/140/160/180/ 200/225/250
Rated operating voltage (V)	2P：AC-230/50Hz 3P/4P：AC-400/50Hz	
Rated insulation voltage (V)	800	1000
Impulse withstand voltage (KV)	8	12
Rated impulse withstand current Icw (Ka)	10/30ms	
Rated short-circuit making capacity Icm （kA）	17	
Pole number	2P/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 level	
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	
Protection grade	IP20 (excluding the wiring terminals of the main circuit)	
Tightening torque of screw (N·m)	2.5	10
Screw failure moment (N·m)	3	15
Delay time range (s)	Fixation	
Supply voltage deviation range (V)	160±10%	
Normal operation scope	85%Ue - 110%Ue	
Special requirements	None	
Isolation function	Yes	
Switch position	Common (I), power off (O), standby (II)	
Mechanical life	8000(*)	
Electrical life	2000(*)	

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	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: -5ºC~ +40ºC, with the average temperature within 24h not exceeding +35ºC;

5.2 Altitude: the altitude of the installation site shall be not more than 2,000m;

5.3 Atmospheric conditions: the relative humidity of atmosphere shall not exceed 50% at the maximum ambient temperature of +40ºC, and a higher relative humidity is allowed at the lower temperature. For example, the relative humidity can reach 90% at +20ºC. Special measures shall be taken for occasional condensation due to temperature changes.

5.4 Pollution class: 3.

6 Features and functions

TGQ1NP series automatic transfer switch is a new generation of Grade 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.

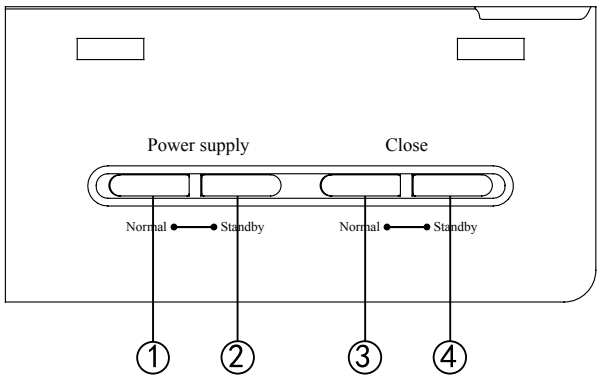
6.1 Small volume, novel appearance, sliding closure design, flexible operation, safety and reliability.

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

Description of the display interface of the economic and basic controllers



① Indication of normal power supply;
② Indication of standby power supply;
③ Indication of normal closing;
④ Indication of standby closing.

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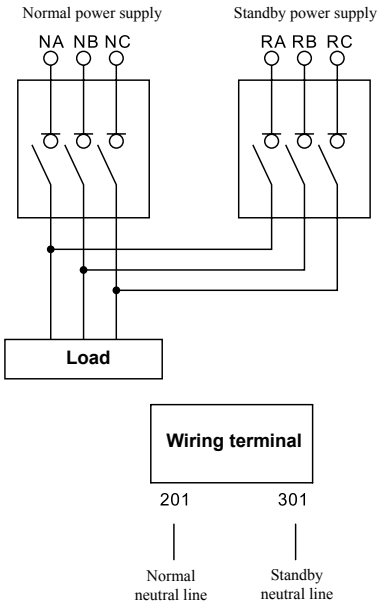
8 Installation and use

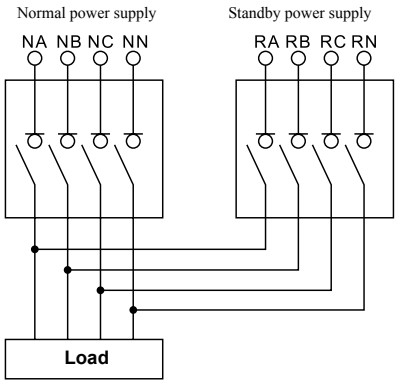
8.1 Wiring diagram of the main circuit of the product (power phase sequence must be consistent)

Wiring of 3-pole main circuit



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

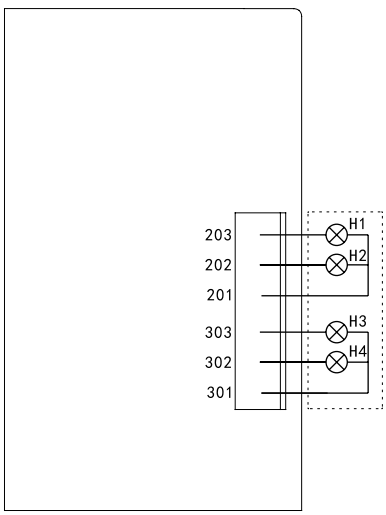
Wiring of 4-pole main circuit



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.

8.2 Secondary wiring diagram of the controller

8.2.1 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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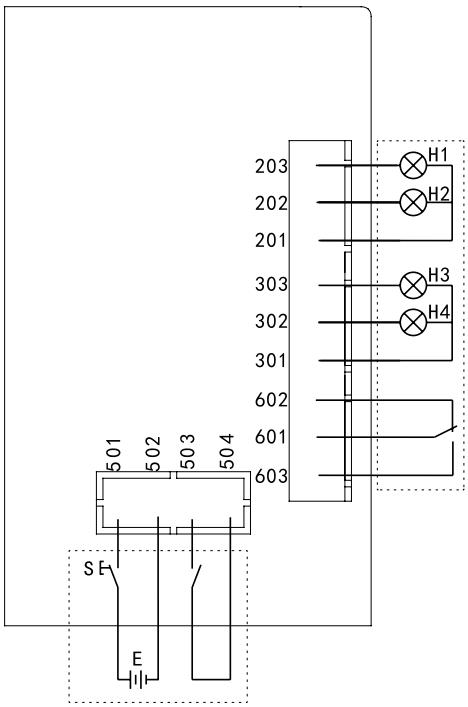
8.2.2 Secondary wiring diagram of the basic controller



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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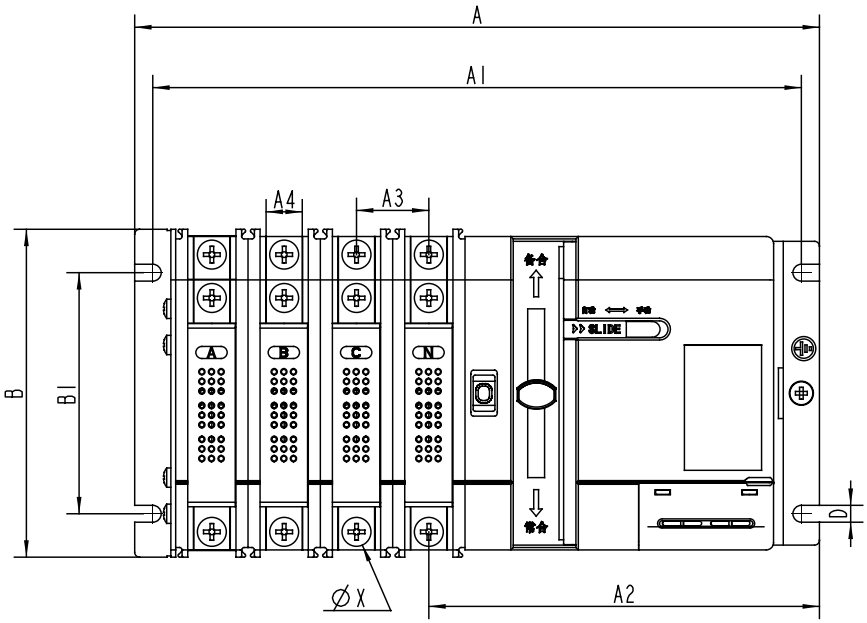
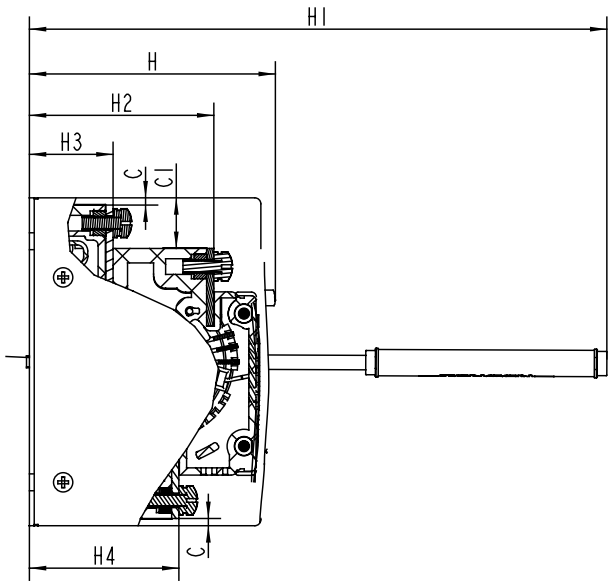
9 Outline and installation dimension of the product





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-125	224	254	284	136	102	209	239	269	100	162	30	15	240	77	35	62	4	21	7	6
TGQ1NP-250	297	342	388	170	128	278	323	369	125	207	45.5	25	257	96	44	79	4	22	9	8
TGQ1NP-630	/	528	596	255	192	/	499	567	188	325	68	49	426	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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10 Ordering instructions

Please provide the following details when ordering:

1. Please specify the required model, current, pole number 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