Stock Code
605066

## TGQ1N Series Automatic Transfer Switch



TGQ1N－63


TGQ1N－160


125－800 frame A type controller


125－800 frame B type controller
 controller

## 1 Overview

TGQ1N series automatic transfer switch is suitable for three－phase four－wire dual power supply network with AC current 50 Hz ，rated working voltage of AC400V，rated working current up to 800 A ，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，residential buildings and other important places．

2 Type Designation


## TGQ1N Series Automatic Transfer Switch

## 3 Technical Parameters

| Model | TGQ1N－63 |  | TGQ1N－125 |  | TGQ1N－160 |  | $\begin{gathered} \hline \text { TGQ1N-250, } \\ 320 \end{gathered}$ |  | $\begin{gathered} \hline \text { TGQ1N-400, } \\ 630 \end{gathered}$ |  | TGQ1N－800 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Standard | IEC60947－6－1 |  |  |  |  |  |  |  |  |  |  |  |
| Executive circuit breaker | TGBIN－63 | TGB3H－63 | TGM | －125 | TGM | 160 | TGM | 250, |  |  | TGM | －800 |
| Current specifications（A） | $\begin{gathered} 10, ~ 16, ~ 20, ~ \\ 25, ~ 32, ~ 40, ~ \\ 50, ~ 63 \end{gathered}$ |  | $\begin{aligned} & 16, ~ \\ & 32, ~ \\ & 63, ~ \end{aligned}$ | $\begin{gathered} \hline 25, ~ \\ 50 \text {, } \\ 100 \text {, } \end{gathered}$ | $\begin{gathered} 100, ~ 125, ~ \\ 140, ~ 160 \end{gathered}$ |  |  | $\begin{aligned} & 80, ~ \\ & \text { 25, } \\ & \text { 80, } 350 \end{aligned}$ | $\begin{gathered} 250, ~ 315, ~ \\ 350, ~ 400, ~ \\ 500, ~ 630 \end{gathered}$ |  | 630，700，800 |  |
| Rated working voltage（Ue） | AC 400 V 50 Hz |  |  |  |  |  |  |  |  |  |  |  |
| Rated insulation voltage（Ui） | AC 500 V |  | AC 800 V |  |  |  |  |  |  |  |  |  |
| Rated impulse withstand voltage（Uimp） | 4 kV |  | 8kV |  |  |  |  |  |  |  |  |  |
| Number of poles | 3P／4P |  |  |  |  |  |  |  |  |  |  |  |
| Tripping type | Grades C and D tripper |  | ／ |  |  |  |  |  |  |  |  |  |
| Code of short－circuit breaking capacity | M | H | L | M | L | M | L | M | L | M | L | M |
| Rated short－circuit making capacity $\operatorname{Icm}(\mathrm{kA})$ | 9.2 | 17 | 52.5 | 73.5 | 73.5 | 105 | 73.5 | 105 | 105 | 154 | 105 | 154 |
| Rated short－circuit breaking capacity Icn（kA） | 6 | 10 | 25 | 35 | 35 | 50 | 35 | 50 | 50 | 70 | 50 | 70 |
| Mechanical life（times） | 10，000（＊） |  |  |  |  |  | 6，000（ ${ }^{*}$ ） |  |  |  | 4，000（＊） |  |
| Electrical life（times） | 3，000（＊） |  |  |  |  |  |  |  | 2，000（＊） |  |  |  |
| Usage category | AC－33iB |  | AC－33B |  |  |  |  |  |  |  |  |  |
| Electrical level | CB class |  |  |  |  |  |  |  |  |  |  |  |
| Protection features | Overload protection／short circuit protection |  |  |  |  |  |  |  |  |  |  |  |
| Installation mode | Fixed vertical installation |  |  |  |  |  |  |  |  |  |  |  |
| Wiring mode | Screw wiring |  |  |  |  |  |  |  |  |  |  |  |
| Operation mode | Manual／automatic／remote operation（with communication device） |  |  |  |  |  |  |  |  |  |  |  |
| Electromagnetic compatibility | Environment B |  |  |  |  |  |  |  |  |  |  |  |
| Length of insulation to be removed before insertion of the conductor into the terminal（mm） | 11 |  | 1 |  |  |  |  |  |  |  |  |  |
| The maximum number of conductor allowed to be clamped | 1 |  |  |  |  |  |  |  | 2 |  |  |  |
| Switch position | Normal（I），power off（O），standby（II） |  |  |  |  |  |  |  |  |  |  |  |
| Pollution degree | 2 |  | 3 |  |  |  |  |  |  |  |  |  |
| Screw tightening torque （ $\mathrm{N} \cdot \mathrm{m}$ ） | 2.5 |  | 8 |  | 10 |  | 12 |  | 22 |  | 28 |  |
| Screw failure moment（ $\mathrm{N} \cdot \mathrm{m}$ ） | 3 |  | 12 |  | 15 |  | 18 |  | 26 |  | 33 |  |
| Protection grade | IP20 |  | IP00 |  |  |  |  |  |  |  |  |  |
| Contact transfer time（s）$\pm 10 \%$ | 0.45 |  | 1.2 |  | 0.9 |  | 1 |  | 2.8 |  | 2.8 |  |
| Off time $\pm 10 \%$ | 0.45 |  | 1.2 |  | 0.9 |  |  |  | 2.8 |  | 2.8 |  |
| Delay time range（s） | ```Fixed (standard type), 0-30s adjustable (intelligent type)``` |  | Fixed（economic type），0－30s adjustable（standard type），0－90s continuously adjustable （intelligent type） |  |  |  |  |  |  |  |  |  |
| Supply voltage deviation range（V） | 160 $\pm 10 \%$ |  | $160 \pm 10 \%$（economic type，standard type），160－200 adjustable $\pm 10 \%$（intelligent type） |  |  |  |  |  |  |  |  |  |
| Control features | Undervoltage，voltage loss，overvoltage，phase loss transformation |  |  |  |  |  |  |  |  |  |  |  |
| Controller power consumption（W） | $\leq 5$ |  | $\leq 10$ |  |  |  |  |  |  |  |  |  |
| Normal operation scope | $85 \% \mathrm{Ue} \sim 110 \% \mathrm{Ue}$ |  |  |  |  |  |  |  |  |  |  |  |
| Special requirements | Normal installation conditions |  |  |  |  |  |  |  |  |  |  |  |
| Isolation function | Yes |  |  |  |  |  |  |  |  |  |  |  |

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## TGQ1N Series Automatic Transfer Switch

## 4 Functions of controller

| Applicable frame |  | 63 |  | 125－800 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Type of controller | A（standard type） | B （intelligent type） | A（Economic type） | B（standard type） | C （intelligent type） |
|  | Installation form | Integrated |  | Integrated | Integrated | Integrated，split type |
|  | Rated working voltage | $230 \mathrm{~V} / 50 \mathrm{~Hz}$ |  |  |  |  |
| Work location | Closing of normal power supply | － | － | － | － | － |
|  | Closing of standby power supply | － | － | － | － | － |
|  | Opening of dual－way power supply | $\square$ | － | － | － | － |
| $\begin{aligned} & \text { Operation } \\ & \text { mode } \end{aligned}$ | Automatic operation | － | － | － | － | － |
|  | Handle operation | $\bullet$ | － | － | － | － |
|  | Controller button operation | － | － | － | － | － |
|  | Remote communication control | － | $\square$ | － | － | － |
| $\begin{gathered} \text { Key } \\ \text { operation } \end{gathered}$ | Switch to normal | － | － | － | － | － |
|  | Switch to standby | － | － | － | － | － |
|  | Switch double split | － | － | － | － | － |
|  | Test button | － | － | － | － | － |
| Monitor | Monitoring phase | 3－phase for common use，single phase for standby | 3－phase | 3－phase for common use， single phase for standby | 3 －phase | 3 －phase |
|  | Normal undervoltage monitoring | － | － | － | － | － |
|  | Normal overvoltage monitoring | － | － | － | － | － |
|  | Normal voltage loss monitoring | － | － | － | － | － |
|  | Normal loose of phase monitoring | $\bullet$ | － | － | － | － |
|  | Standby undervoltage monitoring | Phase A | － | Phase A | － | － |
|  | Standby overvoltage monitoring | － | － | － | － | － |
|  | Standby voltage loss monitoring | － | － | $\square$ | － | － |
|  | Standby loose of phase monitoring | Phase A | － | Phase A | － | － |
|  | Fire－fighting signal power off | － | － | － | － | － |
| Conversion mode | Automatic change and automatic recovery | － | － | － | － | － |
|  | Mutual backup | － | $\bullet$ | － | － | $\square$ |
|  | Automatic change without automatic recovery | － | $\bullet$ | － | － | $\square$ |
| $\begin{gathered} \text { Grid } \\ \text { connection } \end{gathered}$ | Power grid－power grid | － | － | $\square$ | $\bullet$ | － |
|  | Power grid－generator | － | $\square$ | － | － | $\square$ |
| Display | Screen | Indicator light | Indicator light | Indicator light | Indicator light | Liquid crystal |
|  | Indication of normal power supply | － | － | $\bullet$ | － | － |
|  | 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 | － | － | － | － | $\square$ |
|  | Manual／automatic | － | － | － | － | － |
|  | Display of time delay | － | （ （Dial－up indicator） | － | （ （Dial－up indicator） | － |
|  | Display of fault alarm | － | － | － | － | － |
|  | Fire control linkage status | － | － | － | － | － |
|  | Generator starting state | － | － | － | － | － |
| Parameter setting | Adjustable transfer time delay（s） | － | － | － | － | － |
|  | Adjustable return time delay（s） | － | － | － | － | － |
|  | Operating mode switch settings | $\bullet$ | － | － | － | － |
|  | Generator startup time delay | － | － | － | － | － |
|  | Generator shutdown time delay | － | － | － | － | $\square$ |
|  | Adjustable undervoltage | － | － | － | － | $\square$ |
|  | Adjustable overvoltage | － | － | － | － | $\bullet$ |
| $\begin{aligned} & \text { Other } \\ & \text { functions } \end{aligned}$ | Fire control feedback | － | $\square$（one from four，default） | － | $\square$（one from four，default） | $\square$（one from four，default） |
|  | Fault alarm output | － | $\square$（one from four） | － | $\square$（one from four） | $\square$（one from four） |
|  | Position feedback output | － | － | － | － | － |
|  | Communications function | － | $\square$ | － | － | $\square$ |
|  | Transfer failure alarm | － | $\square$（one from four） | － | $\square$（ one from four） | $\square$（one from four） |
|  | Wrong wiring alarm | － | $\square$（ one from four） | － | $\square$（one from four） | $\square$（one from four） |

Note：
1．＂－＂this function is not available；＂$\square$＂this function is optional；＂$\square$＂standard function；
2．The one from four function of $C$ type is adjustable．The one from four function of $B$ type can only set when delivery．

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## 5 Normal working conditions and installation conditions

5．1 Ambient air temperature：the ambient air temperature shall be not higher than $+40^{\circ} \mathrm{C}$ but shall not lower than $-5^{\circ} \mathrm{C}$ ，with the average temperature within 24 h not exceeding $+35^{\circ} \mathrm{C}$ ；
5．2 Altitude：The altitude of the installation site should 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 $40^{\circ} \mathrm{C}$ ，and a higher relative humidity is allowed at the lower temperature．For example，the relative humidity can reach $90 \%$ at $+20^{\circ} \mathrm{C}$ ．Special measures shall be taken for occasional condensation due to temperature changes．
5．4 Pollution degree：The pollution degree of 63 frame is Level 2 ；the pollution degree of 125 and above frames is Level 3 ．
5．5 Installation category：IV．
5．6 Inclination of installation：The product is fixed and installed in the cabinet，with the maximum inclination of $\pm 22.5^{\circ}$ ．

## 6 Features and functions

TGQ1N series automatic transfer switch（hereinafter referred to as automatic transfer switch）is a new generation of Grade CB products combining advanced digital electronic control technology．It has the characteristics of small size，good－looking appearance，energy－saving，convenient installation and reliable double interlocking protection and advanced and complete functions．
6．1 Small volume，
It adopts single motor driving structure，which achieves transfer through the positive rotation and reverse rotation of the motor，and reduces the product height and installation space．
6．2 Energy－saving
It is driven by motor，with small power consumption and small noise．
6．3 Double interlocking protection
It adopts mechanical interlock and electronic interlock to prevent the synchronous power on of two power supplies．

## 7 Controller display and operating instructions

## 7．1 Description of the display interface of 63 frame type A controller



63 frame type A controller

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## 7．2 Description of the display interface of 63 frame type B controller

## 7．2．1 Controller operation introduction



63 frame type B controller


Top dial－up and test keys of products
（1）Normal power supply indicator light（flicker and alarm in case of fault）；
（2）Standby power supply indicator light（flicker and alarm in case of fault）；
（3）Normal closing indicator light；
（4）Standby closing indicator light；
（5）Switchover button between Automatic Mode and Manual Mode（for products with fire control linkage function， press the automatic／manual key to relieve after implementing the fire control linkage function）；
（6）Test key：Press the test key，and two power supplies perform a transfer to meet the requirements of field debugging and testing．
（7）Dial－up setting switch．

## 7．2．2 Dial－up setting description



8－digit dial－up switch


## Return time delay setting

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Table of setting values

| Setting item | Dial－up switch |  |  |  |  |  |  |  | Remarks |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |
| Transfer mode setting | 0 | 0 | － | － | － | － | － | － | Automatic transfer and restoration |
|  | 1 | 0 | － | － | － | － | － | － | Automatic transfer without restoration |
|  | 1 | 1 | － | － | － | － | － | － | Mutual backup |
| Transfer time delay setting | － | － | 0 | 0 | 0 | － | － | － | 0 s |
|  | － | － | 1 | 0 | 0 | － | － | － | 5s |
|  | － | － | 0 | 1 | 0 | － | － | － | 10s |
|  | － | － | 0 | 0 | 1 | － | － | － | 15s |
|  | － | － | 1 | 0 | 1 | － | － | － | 20s |
|  | － | － | 0 | 1 | 1 | － | － | － | 25s |
|  | － | － | 1 | 1 | 1 | － | － | － | 30s |
| Return time delay setting | － | － | － | － | － | 0 | 0 | 0 | 0s |
|  | － | － | － | － | － | 1 | 0 | 0 | 5s |
|  | － | － | － | － | － | 0 | 1 | 0 | 10s |
|  | － | － | － | － | － | 0 | 0 | 1 | 15s |
|  | － | － | － | － | － | 1 | 0 | 1 | 20s |
|  | － | － | － | － | － | 0 | 1 | 1 | 25s |
|  | － | － | － | － | － | 1 | 1 | 1 | 30s |

Note：The sequence of the dial－up switch increases from left to right，with 8 digits in total，pushing to the direction of the dialing code to meet the ON is 1 ，otherwise it is 0 ，and the dialing should be completed firmly．

7．3 Description of the display interface of 125－800 frame type，A controller

（1）Normal power supply indicator light；
（2）Standby power supply indicator light；
（3）Normal closing indicator light；
（4）Standby closing indicator light；
（5）Switchover Button between Automatic Mode and Manual Mode．

125－800 frame A type controller

## TGQ1N Series Automatic Transfer Switch

7．4 Description of the display interface of 125－800 frame type，B controller

## 7．4．1 Controller operation introduction


（1）Comparison table of dial－up switch settings；
（2）The dial－up switch for parameter determination；
（3）Normal power supply indicator light（flicker and alarm in case of fault）；
（4）Standby power supply indicator light（flicker and alarm in case of fault）；
（5）Normal closing indicator light；
（6）Standby closing indicator light；
（7）Automatic status indicator light；
（8）Manual status indicator light；
（9）Switchover Button between Automatic Mode and Manual Mode；
（10）Test key．

## 7．4．2 Dial－up setting description



8－digit dial－up switch

The setting way of the dial－up switch is same as 7．2．2

## TGQ1N Series Automatic Transfer Switch

## 7．5 Description of the display interface of type Controller

## 7．5．1 Operating instructions of type $\mathbf{C}$ controller


（1）Represent the status of closing for normal power supply；
（2）Represent the status of double split；
（3）Represent the status of closing for standby power supply；
（4）Represent that it is in automatic mode；
（5）Represent that it is in manual mode（It can be forcedly transferred with the operating handle or electrically transferred with the key．It needs to be noted that the power supply for the pre－switching power supply side must be normal voltage，otherwise it will not be transferred）；
（6）Represent that the product is under overcurrent tripping status；
（7）The transfer mode is automatic transfer and restoration；
（8）The transfer mode is automatic transfer without restoration；
（9）Status after implementing the fire control linkage function；
（10）Display of time delay；
（11）Displaying area of real－time voltage monitoring values $\mathrm{A}, \mathrm{B}$ and C of the normal power supply；
（12）Alarm indication（when the word＂alarm＂is displayed（the alarm key can be used to turn on or turn off the＂alarm＂ display status），the phase－to－ground voltage exceeds 300 V or null line is connected wrong，or the buzzer alarms in case of switch overcurrent trip fault）；
（13）Alarm 1 （a reserved function，which can be used for customization）；
（14）Displaying overvoltage status（When it is detected that the power supply terminal voltage exceeds the set threshold value，it displays the word＂overvoltage＂）；
（15）Displaying mode setting；
（16）Displaying undervoltage status（When it is detected that the power supply terminal voltage is lower than the set threshold value，it displays＂undervoltage＂）；

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（17）Displaying area of real－time voltage monitoring values $\mathrm{A}, \mathrm{B}$ and C of the standby power supply；
（18）Fault display（fault display when the phase－to－ground voltage exceeds 300 V or null line is connected wrong）；
（19）Normal－closing／shift composite key（when the normal power supply is normal，press this key to forcibly switch it to the normal power supply；During the mode setting，the key is of parameter right shift function）；
（20）Automatic／manual switch composite key；
（21）Double split／increase composite key（in the manual or automatic mode，press the key to transfer the switch to the power off position；During the mode setting，the parameter is modified to be increasing）；
（22）Standby－closing／decrease composite key（when the standby power supply is normal，press this key to forcibly switch it to the standby power supply；During the mode setting，the parameter is modified to be decreasing）；
（23）Alarm switch key（press the key to turn on or turn off the alarm function）；
（24）Test／set composite key（for test function：When the standby power supply is normal，short press this key to make ATSE transfer from the common power supply to the standby power supply side，vice versa；When setting the functions：Long press this key for 5 s，to enter the setup）．

## 7．5．2 Description of setting of $C$ type controller

In the standby mode，press＂test／set＂for over 5 s （short press the key to enter the test function）to enter the setting mode．

| $2701 \%$ |  | Press＂Double split／increase＂key to increase and press＂Standby－closing／ <br> decrease＂key to decrease． |
| :--- | :--- | :--- |
| Automatic <br> estoration | Overvoltage <br> Settings | Press＂Normal－closing／right shift＂key to set next parameter． |
| 1 |  |  |

The default setting value of overvoltage is 270 V ．The setting range for users is $240-290 \mathrm{~V}$ ．

|  | 150i\％ | Press＂Double split／increase＂key to increase and press＂Standby－closing decrease＂key to decrease． |
| :---: | :---: | :---: |
| $\begin{aligned} & \text { Automatic } \\ & \text { eestoration } \end{aligned}$ | Overvoltage Settings | Press＂Normal－closing／right shift＂key to set next parameter． |

The default setting value of undervoltage is 160 V ．The setting range for users is $160-200 \mathrm{~V}$ ．


The default setting value of transfer time delay is 0 s ．The setting range for users is $0-99 \mathrm{~s}$


Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

The default setting value of return time delay is 0 s ．The setting range for users is $0-99 \mathrm{~s}$


Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

Calibration of common Phase A voltage

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Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

Calibration of normal Phase B voltage

|  | 2eov |
| :--- | ---: |
| Automatic <br> restoration | Settings |
| 7 |  |

Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

Calibration of normal Phase C voltage


Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

Calibration of standby Phase A voltage

|  | 2eov | Press＂Double split／increase＂key to increase and press＂Standby－closing／ <br> decrease＂key to decrease． |
| :--- | :--- | :--- |
| Automatic <br> restoration | Settings |  | Press＂Normal－closing／right shift＂key to set next parameter．

Calibration of standby Phase B voltage


Calibration of standby Phase C voltage

Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

Frame setting（settable parameters include： $125,250,400,630,800$ ；no adjustment of this item is required by the user）．


| 485 |  |  |
| :--- | :--- | :--- |
| Automatic <br> restoration | 32 |  |
| 12 |  | Settings |

Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．
485 communication address setting

## TGQ1N Series Automatic Transfer Switch



Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．
Press＂Normal－closing／right shift＂key to set next parameter．

485 communication baud rate setting

Press＂Double split／increase＂key to increase and press＂Standby－closing／ decrease＂key to decrease．

| EE－000 |  |  |
| :--- | :--- | :--- |
|  |  |  |
| Automatic <br> restoration |  |  |
| 14 |  | Settings |

Signal output function setting：＂tt－－000＂fire control feedback output；＂tt－－001＂transfer failure output； ＂tt－－002＂wrong wiring output；＂tt－－003＂failure output．


Press＂double split／increase＂key for increase when＂no automatic recovery＂is displayed on the screen．
Press＂normal－closing／right shift＂key step by step，save and exit parameters until all parameters are pressed．
Automatic restoration／without automatic restoration setting

## Remarks：

1．If factory default settings need to be recovered，press automatic／manual key for 5 s to recover factory default settings（after recovering factory default settings，please recalibrate the normal and standby voltages and reset the frame parameters）．
2．When setting the automatic recovery／no automatic recovery：It can set any item of parameters 1－14．The overvoltage setting parameter is taken as an example here．（When automatic restoration or without automatic restoration is displayed， press＂right shift／normal－closing＂key for confirmation．If no＂automatic restoration／without automatic restoration＂is displayed，the system is of without automatic restoration function by default）．

## 8 Installation and use

8．1 Wiring diagram of the main circuit of the $3 P$ products（power phase sequence must be consistent）

8．1．1 63 frame，3P


## TGQ1N Series Automatic Transfer Switch

Normal power supply I Normal power supply II



8．2 Wiring diagram of the main circuit of the 4 P product（power phase sequence must be consistent）


Note：QN is the executive circuit breaker at the normal power supply；QR the executive circuit breaker at the standby power supply．

## TGQ1N Series Automatic Transfer Switch

## 8．3 Secondary wiring diagram of the controller

8．3．1 Secondary wiring diagram of 63 frame controller



Intelligent controller

## TGQ1N Series Automatic Transfer Switch



The terminal of the 3P production which is connected to the neutral line


Output active AC230VAJ．5A
Status indication of external signal terminals of the controller


Communication function is optional（description is attached separately）

Communication port


Power generation startup and shutdown port

Port wiring instructions：
1．101，102， 201 and 202 only need to be connected for $3 P$ products．Please connect the neutral line of the normal power supply to 101 or 102 （or both）；Please connect the neutral line of the standby power supply to 201 or 202 （or both）．The product will not operate if a three－pole product is not connected to the operating neutral line（not required for 4－pole products）．

2． 501,502 passive fire control signal input（note：After the fire control linkage is started，the control mode will be locked．It can be unlocked by pressing automatic／manual button）．

3． 503 and 504 are optional，one from four（see the function table of the controller for details，a set of dry contact signal output．For products with a communication device，the output options shall be set according to the host computer．For products without a communication device，one function shall be fixed in the procedure according to the requirements of customers）．

4． 601 and 602 are communication port input． 601 is $485+(485 \mathrm{~A}) ; 602$ is $485-(485 \mathrm{~B})$ ．Make sure that all polarities are connected correctly；otherwise，the communication will fail．

5． 801,802 and 803 are power generation startup and shutdown signal output． 802 is COM end； 803 is generator startup signal； 801 is generator shutdown signal．

Remarks：501，502，503，504；601，602，801， 802 and 803 are available only when＂intelligent type＂products are selected by you．

## TGQ1N Series Automatic Transfer Switch

## 8．3．2 Secondary wiring diagram of 125－800 frame controller




Secondary wiring diagram of the economic controller


| Reserved port |
| :---: |
| Reserved port |

8
Reserved port 9 Do not connect

| Normal power supply <br> indicator light |
| :---: |
| Normal closing <br> indicator light |
| Neutral line of normal <br> power supply indictor light |



| Standby power supply <br> indicator light |
| :---: |
| Standby closing indicator <br> light |
| Neutral line of standby <br> indictor lamp |



[^2]
## TGQ1N Series Automatic Transfer Switch



| $485 \mathrm{~A}^{+}$ |
| :---: |
| $485 \mathrm{~B}-$ |

8 The communication function is optional 9 （description is attached separately）

| Common power <br> supply indicator light |
| :---: |
| Common closing <br> indicator light |
| Null line of common power <br> supply indictor light |


| Standby power supply <br> indicator light |
| :---: |
| Standby closing indicator <br> light |
| Neutral line of standby <br> indictor light |



Secondary wiring diagram of the intelligent controller
Remarks：
1．Fire control linkage signal outputs $(1,2)$ are＂passive pulse，short－circuit signal＂by default（it only needs to be triggered， and can be short－circuit for a long time）．Do not connect them with active power supply during operation；otherwise，the fire control linkage function may be lost．When active DC24V signal needs to be connected to，please consult with the manufacturer for customizing．
2．The generator startup signals $(5,6,7)$ can only be used in the power grid－power generation mode．The generator can be connected as needed．In case of fault of the normal power supply， $5(\mathrm{COM})$ and $6(\mathrm{NC})$ are connected．When the normal power supply is normal， $5(\mathrm{COM})$ and $7(\mathrm{NO})$ are connected．
3．For programmable signal outputs $(3,4)$ ，the output of a function signal shall be determined according to the one from four function（see the function table of the controller for details）．
4． 485 communication ports $(8,9)$ are optional．Please note that，make sure that all polarities are connected correctly during wiring．
5．The output of normal status signals $(10,11,12)$ and standby status signals $(13,14,15)$ is active $\mathrm{AC}-230 \mathrm{~V}$ ．Do not connect it with voltage signal；otherwise，it will be short－circuiting with the internal power supply．

## 9 Description of split assembly of 125－800 frame intelligent controller



Remarks：For intelligent split－type controller，please slightly lever four places on the display module of the controller with a slot type screwdriver according to the direction shown in the figure，to remove the clip，take out the display module，remove and discard the cable（at the dotted line place），connect them with the network cable（standard when ordering，as shown at the full line）special for the split type，and then install the display on the cabinet gate．

TGQ1N Series Automatic Transfer Switch

## 10 Installation and use

10.163 frame outline and installation dimension


Note：Dimensions in brackets are that of the three－pole product

10．2 125－800 frame outline and installation dimension


Remarks：The operation handle is usually removed，and is operated in case of emergency operation or manual debugging．Same for the installation dimension of the intelligent spilt type products．

| Specification／ dimension | A |  | B | C |  | D | H |  | H1 |  | H2 | L | L1 | L2 |  | P | Q |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 3P | 4P |  | 3P | 4P |  | L | M | L | M |  |  |  | 3P | 4P |  |  |
| TGQ1N－125 | 340 | 368 | 196 | 300 | 328 | 170 | 120 | 120 | 200 | 200 | 25 | 25 | 15.5 | 120 | 95 | 9 | 20 |
| TGQ1N－160 | 380 | 410 | 210 | 335 | 365 | 190 | 133 | 149 | 210 | 229 | 25 | 30 | 25.5 | 134 | 104 | 9 | 20 |
| TGQ1N－250～ 320 | 425 | 460 | 225 | 385 | 420 | 205 | 135 | 152 | 205 | 222 | 25 | 35 | 21.5 | 151 | 116 | 9 | 20 |
| TGQ1N－400～ 630 | 552 | 600 | 325 | 492 | 540 | 300 | 183 | 183 | 253 | 253 | 25 | 48 | 31 | 210.5 | 162 | 11 | 20 |
| TGQ1N－800 | 720 | 790 | 350 | 660 | 730 | 320 | 186 | 186 | 256 | 256 | 25 | 70 | 41 | 270 | 200 | 11 | 20 |

## TGQ1N Series Automatic Transfer Switch

10．3 Wiring instructions of 125－800 frame


| Model | a | b | c |
| :---: | :---: | :---: | :---: |
| TGQ1N－125 | 7.5 | 17 | 8 |
| TGQ1N－160 | 8.5 | 18 | 8 |
| TGQ1N－250 $\sim 320$ | 10 | 24 | 8 |
| TGQ1N－400 $\sim 630$ | 17 | 32 | 10 |
| TGQ1N－800 | 19 | 45 | 12 |

10．4 Outline dimension and hole size of 125－800 frame intelligent split controller


## 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 125 A ，breaking capacity of L，4－pole，split－ type，intelligent controller，power grid－power grid，automatic transfer and restoration and rated current of 100A． Fill in：TGQ1N－125L／4C100A 50 sets．


[^0]:    Note：$\left({ }^{*}\right)$ maintainable

[^1]:    （1）Normal power supply indicator light；
    （2）Standby power supply indicator light；
    （3）Normal closing indicator light；
    （4）Standby closing indicator light；
    （5）Switchover button between Automatic Mode and Manual Mode．

[^2]:    Secondary wiring diagram of the standard controller

