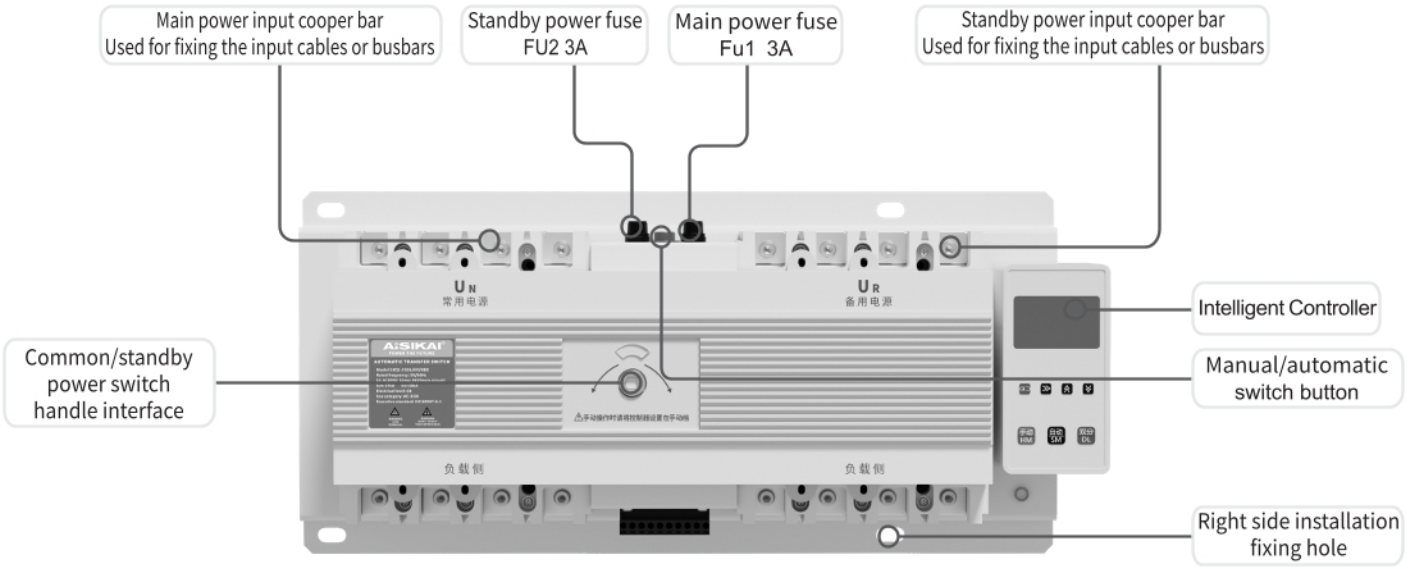
AiSIKAI®

SKQ1-NBX SERIES
INTELLIGENT FIRE AUTOMATIC TRANSFER SWITCH
MANUAL 24V1.0



AUTOMATIC TRANSFER SWITCH

Structure Introduction(SKQ1-NBX Intelligent Fire-fighting Type125A~1600A)



The SKQ1-NBX intelligent fire-fighting dual power automatic transfer switch has comprehensive detection and protection functions. It uses a high-speed single-chip embedded microprocessor as the main control chip, which can monitor the power supply status in real time and ensure the reliable operation of the power supply system.

• 1. Equipped with both mechanical and electrical interlock protection functions to prevent two circuit breakers from closing simultaneously;

• 2. Features six control operation methods: "Manual Control," "Auto-recovery," "Normal Power Supply," "Standby Power Supply," "Power-off Restore," and "Auto-recovery Disallowed."

• 3.Provides under-voltage, over-voltage, and phase-loss protection to prevent faulty power supplies from feeding the load.

• 4. Includes alarm or indication functions for power failures, circuit breaker tripping, and other faults.

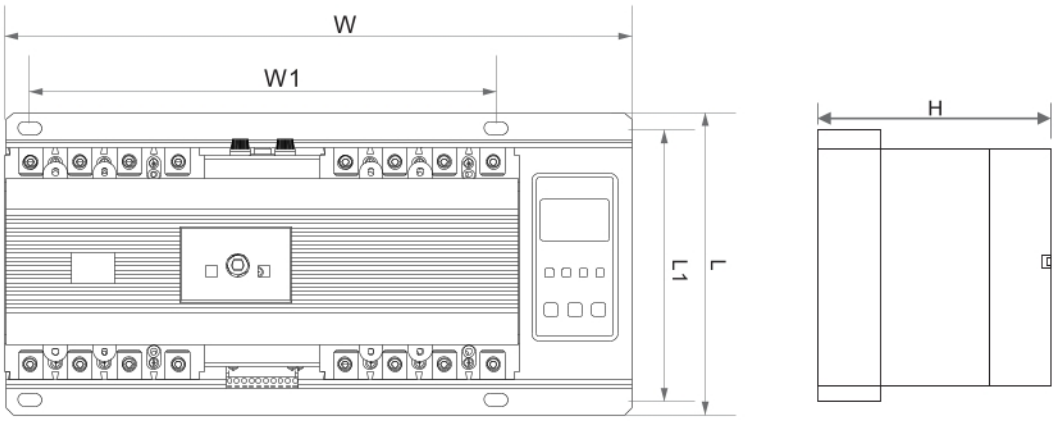
• 5. Prevents secondary reclosing: that is, in case of a short circuit or overload on the load side, or after the circuit breaker automatically trips (opens), it cannot automatically detect itself.

• 6. Allows adjustable setting of operational parameters (under-voltage value, over-voltage value, trip delay time) with dual-phase voltage display on LCD; features a full Chinese menu for easy user inquiry in real-time.

• 7. Equipped with a fire interface; in emergency situations, by simply connecting to the fire control DC24V (control voltage selected by the user), this controller will immediately output a control contact to quickly cut off the relevant circuit.

Outline Dimensions And Installation Method

○ The product



Split, integrated.

Model (**Intelligent**)	Dimensions (**W** X **L** X **H**)			**Installation Size** (**W** X **L** X **H**)	
	W	**L**	**H**	**W1**	**L1**
100/3P/4P	**420X240X125**			**385X220**	
250/3P/4P	**470X240X145**			**435X220**	
400/3P/4P	**615X330X195**			**555X300**	
630/3P/4P	**740X330X200**			**685X300**	
800/3P/4P	**790X330X210**			**735X300**	
1600/3P/4P	**800X390X210**			**755X370**	

Intelligent controller function

The intelligent controller inputs via keyboard position and displays through LED. It can synchronously detect the three phases of both the normal (N) and standby (R) power supplies, alternately displaying the status of each phase voltage. If any phase is missing, has lost voltage, under-voltage, or over-voltage—defined as below 80% of the rated working voltage for under-voltage, and above 120% for over-voltage—the microcomputer processes these detection results and issues corresponding commands. The processing results can be displayed on an LCD, providing a user-friendly human-machine interface. When the controller detects a fire command (DC24V power supply), it issues instructions to open the double switches.When the alarm system is activated(Press the key, Simultaneously, the LCD display shows "alarm" indicating that the alarm system is activated. When an abnormality is detected in the fire command or the backup power supply, a beeping sound will be emitted; the alarm and the alarm system can be manually turned off (Press the key, The word "Alarm" on the LCD has disappeared).

Self-recovering, the main power supply (N) automatically switches to the backup power supply (R) in case of abnormalities. Once the main power supply (N) is restored, it automatically reverts back. If both power supplies fail simultaneously when the alarm system is activated, the microcomputer will issue an alarm prompt. The system prioritizes returning to normal operation once the power is restored.

Work Mode:
- Self-recovery (R) type
- Self-throwing and non-self-recovery type
- Self-restoring type (F)

- Applicable to power grids and electrical networks
- Applicable to power grid and power grid
- Applicable Power Grid and Power Generation

- Built-in power generation and fire protection function DC24V

Note: Self-protection is a feature of this series. When the power supply is abnormal, it has the characteristic of protection first and then delay.

■ Self-healing power grid - Power grid

The system is initially set to automatically use the primary (manual, dual-divided) power supply by default. When there's an anomaly in the power supply (such as overvoltage, undervoltage, loss of voltage, or phase failure in any phase), the indicators NA, NB, NC, PA, PB, and PC on the controller's LCD will disappear accordingly. If the primary power supply (N) malfunctions for 3 seconds, it automatically switches to the dual-divided state and, after a delay, shifts to the backup power supply (R). The delay time can be set between 0-30 seconds, with the factory setting at 3 seconds. Once the primary power supply returns to normal, it automatically switches back to the primary power supply (N). If the backup power supply (R) fails, the controller will emit a "beep-beep" alarm sound. The alarm can also be manually turned off LCD上The "alarm" sign disappeared, indicating that the alarm system is turned off.When the"alarm" button is pressed, the word "alarm" is displayed and a "beep" sound is emitted to indicate that the alarm system has been turned off.

■ Self-healing grid—Power system

Upon initial power-up, the default automatic or commonly used (manual, split) power supply is activated. When there's an anomaly in the power supply (any phase overvoltage, undervoltage, voltage loss, or phase break), the indicators NA, NB, NC, PA, PB, PC on the controller's LCD will disappear accordingly. If a common power source (N) experiences an anomaly for 3 seconds, it will automatically switch to the split state and then, after a delay, switch to the standby power supply (R). The delay time can be set from 0 to 30 seconds, with the factory setting at 3 seconds. Once the common power source returns to normal, it cannot automatically revert to using the common power supply (N); manual intervention is required to switch back. If the standby power supply (R) encounters an issue, the controller will emit a "beep" alarm sound.The alarm can also be manually turned off LCD上The disappearance of the "alarm" word indicates that the alarm system is off. Press the subtract key The "alarm" sign appears, and a "beep" sound is emitted, indicating that the alarm system has been activated.

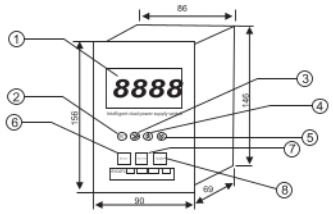
■ Self-healing grid - power generation

The controller monitors both the normal power source (N) and the generator power source ®. When an anomaly occurs in the normal power source (N), the system sends a generation command to the generator set via a normally closed contact and an unloading command through a normally open contact, thereby activating the generator set. Once the grid voltage (N) returns to normal, the control system, after a delay, automatically switches back to supplying power from the normal power source (N), and the generator set must be manually shut down.

Instructions for LCD Display and Controller Settings

"Setup key"、"Shift key "、"Add key "、"reduce keys" 、The initial password is 8888. The internal parameters have been preset by the manufacturer and do not need to be changed by the user.

" 0.3S " delay time、 " FFF0 "Autonomous non-regenerative，" SF01" Double time.



1、LCD screen
2、Setting key
3、Right arrow key
4、Number Key
5、Digital subtraction/alarm
6、Manual key
7、Auto key
8、Double bond

*Controller installation hole size：86×146mm

Note: "LCD display automatic self-recovery" is abbreviated as "self-recovery", and "automatic non-self-recovery" is abbreviated as "non-self-recovery". "SF01" cannot be modified.

LCD screen display content



1、" Commonly used " translates to "Indicates that the switch is in the normally closed position".
2、" Spare" Indicates that the switch is in a standby closed position.
3、" NA " Display the common A-phase voltage for detection;
4、" NB " Commonly used B-phase voltage for display detection;
5、" NC " Display the common A-phase voltage for detection;
6、" RA " Display check standby phase A voltage;
7、" RB " Display the backup phase B voltage;
8、" RC " Display and check the standby C-phase voltage;
9、" Setting " The controller has entered the setup mode;
10、" Automatic " The controller is in automatic operation mode, automatically monitoringThe controller is in automatic operation mode, automatically monitoring phase voltages for any a automatically monitoring the normal and standby phase voltages for any anomalies, and switching the position of the status switch according to preset conditions.
11、" Manual "Indicates that the controller is in manual mode, and pressing the manual button switch can toggle once;
12、" Double score " The controller has detected the manual button press to switch to the dual split position;
13、" Self-throwing and self-recovery " The controller is set to operate in an auto-recovery mode;
14、" Self-inflicted and irreversible " The controller operates in a self-throwing, non-self-restoring mode;
15、"Alarm" The controller alarm system is now active;
16、" N-R"Flash for commonly used priority;
17、" R-N"Flashing indicates standby priority;
18、Press " " Display the corresponding voltage value.



Intelligent Controller Operation Instructions:

Entry Method and Key Instructions: Press the "SET" key to enter the settings mode when the controller is operating, as shown in Figure 1, Press the " ◑ "Enter the next parameter display or right shift Press the" ◒ "key to increment the current data., Press the" ◓ " to decrease the current data.

Controller Setup Operation Instructions

Press" SET "

code Setting — The password to enter the setup mode is the default "8888", and the current number is flashing, indicating it can be modified.
Press the" ◒ " key to enter addition, Press the " ◓ " key to decrease.

Press" ◑ "

03S Setting — The delay setting for switching from normal to standby mode is set to 3 seconds by default. The current number blinks to indicate it can be modified.
Press the" ◒ " key to enter addition, Press the" ◓ " key to decrease.

Press" ◑ "

03S Setting — The standby to active delay setting, default 3S, the current number blinking is editable.
Press the" ◒ "key to enter addition, Press the" ◓ " key to decrease.

Press" ◑ " Enter the next settings interface

SF 08 Setting — Double split time setting, the current number is flashing and can be modified.
Press the"◒ " key to enter addition, Press the" ◓ " key to decrease.

Press" ◑ " Enter the next settings interface

FF F1 Setting — Self-recovery setting, non-self-recovery setting, "1" Self-throwing and self-recovery, "0" Self-inflicted and irreversible, The current number is flashing and can be changed.
Press the" ◒ "key to enter addition, Press the"◓" key to decrease.

Press" ◑ " Enter the next settings interface

Fd 0 Setting — Grid-to-grid, grid-to-generation setup, " 0 " "Grid-to-grid", "1" The current digital display of the power grid is flickering and can be modified.
Press the" ◒ "key to enter addition, Press the"◓" key to decrease.

Press" ◑ " Enter the next settings interface

FC 0 Setting — Priority for common use, priority for standby settings, "0" Commonly used first, "1" Standby priority, The current number is flashing as editable.
Press the" ◒ "key to enter addition, Press the"◓" key to decrease.

Press" ◑ " Enter the next settings interface

H270U Setting — Overpressure setting 2700 , The current number is flashing and can be modified.
Press the" ◒ "key to enter addition, Press the"◓" key to decrease.

Press" ◑ " Enter the next settings interface

L170U Setting — Undervoltage setting 1700, The current number is flashing and can be modified.
Press the" ◒ "key to enter addition, Press the"◓" key to decrease.

Press" ◑ " Enter the next settings interface

NA 22 0U Setting — Display the NA voltage value.

Press" ◑ " Enter the next settings interface

NB 22 0U Setting — Display the NB voltage value.

Press" ◑ " Enter the next settings interface

NC 22 0U Setting — Display the NC voltage value.

Press" ◑ " Enter the next settings interface

RA 22 0U Setting — Display the RA voltage value.

Press" ◑ " Enter the next settings interface

RB 22 0U Setting — Display the RB voltage value.

Press" ◑ " Enter the next settings interface

RC 22 0U Setting — Display the RC voltage value.

Press the"◑" Settings completed, save and exit settings.

MANUFACTURER INFORMATION

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