



NKG1
Time Switch

User Instruction

Safety Warning

- ① Only professional technicians are allowed for installation and maintenance.
- ② Installation in any damp, condensed-phase environment with inflammable and explosive gas is forbidden.
- ③ When the product is being installed or maintained, the power must be switched off.
- ④ You are prohibited from touching the conductive part when the product is operating.
- ⑤ The product shall be stored, installed and used in accordance with the rated control power supply voltage and specified conditions indicated in the user instructions.
- ⑥ The products shall be properly wired in strict accordance with the wiring diagram.

1 Use Purpose

NKG1 time switch is mainly used in automatic control circuits with AC 50Hz/60Hz, rated control supply voltage up to 220V and rated operating current up to 3A, for the purpose of timed connect and disconnect control for lamppost, advertising light boxes, etc.

2 Key Technical Parameters

Table 1 Ambient Conditions

Normal use conditions	Ambient temp.: -5°C~+40°C; average value within 24h not exceeding +35°C; altitude not exceeding 2,000m.
Atmospheric conditions	RH shall not exceed 50% when maximum temperature is +40°C; in case of lower temperature, higher RH is allowed. Measures should be taken against occasional condensation due to temperature change.
Installation category	II
Transport and storage conditions	-25°C~+55°C

Table 2 Product Specifications and Main Technical Parameters

Model	NKG1
Installation method	Equipment type, Rail mounting, Wall mounting
Operating method	Manual on, manual off, automatic on/off
Number of programmable groups	16 groups
Time control range	1min~168h
Timing error	±2s/d
Output method	1 NO contact
Other function	Delayed sleep function, Clock auto calibration function

Table 3 Main Circuit and Auxiliary Circuit Technical Parameters

No.	Product specifications	NKG1
1	Rated control supply voltage U_s (V), frequency (Hz)	AC220V, 50Hz/60Hz

Table 3 (continued)

No.	Product specifications	NKG1
2	Allowable fluctuation range of rated control power supply voltage	85%Us~110%Us
3	Agreed free air heating current Ith (A)	10
4	Rated duty	Uninterrupted duty or 8h duty
5	Rated operating voltage Ue(V)	AC240V
6	Utilization category and rated operating current Ie(A)	AC-15
		3A
7	Rated insulation voltage Ui (V)	240
8	Rated impulse withstand voltage Uimp (kV)	4
9	Enclosure protection class (if applicable)	IP20
10	Pollution class	Class 3
11	Type and maximum value of short circuit protection	RT36-00/16A
12	Size of terminal tightening screw (or nut)	M4
13	Torque of terminal tightening screw (N·m)	1.2
14	Electrical life/mechanical life (10,000 times)	10/100

Table 4 Immunity to Interference

No.	Test type	Test level
1	Electrostatic discharge immunity test	8kV (air discharge)
2	RF electromagnetic field immunity test	10V/m
3	Electrical fast transient/burst immunity test	2kV/5kHz on the power supply side
4	Surge immunity test	1kV (wire to wire)

3 Installation

3.1 Outline and installation size: see Figure 1, unit: mm.

3.2 Installation, commissioning and operation

3.2.1 Wiring method

3.2.1.1 Single-phase direct control method

The controlled load is single-phase power supply, and the operating current should be no more than the rated value of the switch. Direct control method can be adopted, wiring diagram as shown in Figure 2; for loads with big inrush current, please adopt the method of AC contactor expanded capacity control.

3.2.1.2 Single-phase expanded capacity control method

The controlled load is single-phase power supply, and if the operating current exceeds the rated value of the switch, please adopt the method of AC contactor (coil voltage AC220V) expanded capacity control. Wiring diagram is shown in Figure 3.

3.2.1.3 Three-phase control method

The controlled load is three-phase power supply, which requires external AC contactor.

a) The coil voltage of controlled contactor is AC220V 50Hz/60Hz. Wiring diagram is shown in Figure 4;

b) The coil voltage of controlled contactor is AC380V 50Hz/60Hz. Wiring diagram is shown in Figure 5.

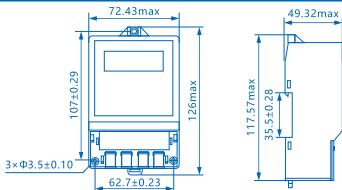


Figure 1 Outline and installation size

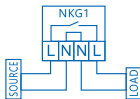


Figure 2 Wiring method of single phase control

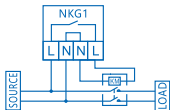


Figure 3 Wiring method of single phase expanded capacity control (contactor coil AC220V)

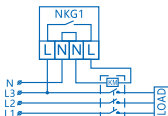


Figure 4 Wiring diagram of 3-phase control (contactor coil AC220V)

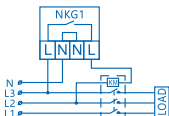


Figure 5 Wiring diagram of 3-phase control (contactor coil AC380V)

3.2.2 Settings and Usage

Before use, please make sure to insert battery first.

When reading this User Instructions, please identify each key on the product panel. On the panel, there are seven keys: "RESET/RECALL", "HOUR", "MINUTE", "WEEK", "AUTO/MANU", "TIMER" and "CLOCK". All the setup functions of the production are available until the keyboard lock is unlocked.

3.2.2.1 Unlock Setting

Press "RESET/RECALL" key four times to cancel the keyboard lock function.


" " disappears, as shown in Figure 6.



Figure 6 LCD (after unlocking settings)

3.2.2.2 Clock Setting

Press "HOUR", "MINUTE" and "WEEK" respectively, adjust the clock to show the current time.

3.2.2.3 Timing Setting

3.2.2.3.1 After pressing "TIMER" key, you will see "1 ON" displayed on the bottom left corner of the LCD (to suggest the initial ON time). Next, press "HOUR", "MINUTE" and "WEEK" respectively to set the ON time, as shown in Figure 7.

3.2.2.3.2 Press "TIMER" key again, the LCD will display on its bottom left corner "1 OFF" (to suggest the initial OFF time). Next, press "HOUR", "MINUTE" and "WEEK" respectively (operating mode can be set, as shown in Table. 5) to set the required OFF time, as shown in Figure 8.

3.2.2.3.3 Continue to press "TIMER" key, and (2 ON, 2 OFF.....16 ON, 16 OFF) will be displayed in turn on the bottom left corner of the LCD. Set the ON and OFF time of

remaining groups according to the above procedure. If the switch is on and off only once a day, you must press "RESET/RECALL" key, and eliminate the time of the remaining groups, so the LCD displays "--:--" as shown in Figure 9.



Figure 7 LCD (time setting 1 ON)



Figure 8 LCD (time setting 1 OFF)



Figure 9 LCD (time setting time removal)

3.2.2.3.4 After time setting, press "CLOCK" key so that the LCD displays the current time; failure to press "CLOCK" key will result in the timer switch automatically returning to "CLOCK" mode after 30s.

3.2.2.4 Auto/Manual mode setting

Press "Auto/Manual" key, the arrow at the bottom of the LCD will switch to "ON" or "OFF" position to make and break circuits directly. If you want the timer switch to run automatically, you should press "Auto/Manual" key so that the arrow at the bottom of the LCD switches to the "ON" position and then to the "Auto" position, if the circuit needs to be in a making state; and you should press "AUTO/MANU" key so that the arrow at the bottom of the LCD switches to the "OFF" position and then to the "Auto" position, if the circuit needs to be in a breaking state. By doing so, the timer switch will operate according to the set time to realize automatic control.

3.2.2.5 Sleep delay function setting

When the timer switch is in the lock state, press "AUTO/MANU" and "CLOCK" simultaneously and hold for 3s to enter sleep delay function setting, as shown in Figure 10. Press "HOUR" or "MINUTE" to set sleep delay function operating

mode, as shown in Table 6. After setting is completed, press "AUTO/MANU" and "CLOCK" simultaneously or let it remain idle for 30s to switch into "Clock" mode. By doing so, the timer switch will enter the "Sleep" mode according to the set time of sleep delay. During the "Sleep" mode, press any key to return to "Clock" mode.



Figure 10 LCD (sleep function setting closed)

3.2.2.6 Clock auto calibration function

After unlocking, first press and hold the "RESET/RECALL" key, and press the "TIMER" key together to enter the automatic clock calibration function. As shown in Figure 11, the screen display shows the time to be adjusted in 1 week, unit: s. "- 30" means automatic slowdown for 30s, "30" means automatic speedup for 30s, press the "WEEK" key to adjust the required calibration time of each week, and press the "CLOCK" key to return. After setting, the time switch will automatically calibrate time at 0:01am every Saturday.



Figure 11 LCD (calibration function setting)

3.2.2.7 Wiring for use

Wire correctly according to the wiring diagram. Connect the power supply, and the red light on the panel is on; after the switch is connected, the green light is on, and there is 220V voltage output at the load output end.

Table 5 Operating Mode

No.	Operating Mode	Function Enabled
1	Mo Tu We Th Fr Sa Su	The same operating time for each day
2	Mo Tu We Th Fr Sa	The same operating time from Monday to Saturday
3	Mo Tu We Th Fr	The same operating time from Monday to Friday

Table 5 (continued)

No.	Operating Mode	Function Enabled
4	SA SU	The same operating time on Saturday and Sunday
5	Mo TU WE	The same operating time on Monday, Tuesday and Wednesday
6	TH FR SA	The same operating time on Thursday, Friday and Saturday
7	Mo WE FR	The same operating time on Monday, Wednesday and Friday
8	TU TH SA	The same operating time on Tuesday, Thursday and Saturday
9	Mo/TU/WE/TH/FR/SA/SU	Different operating time for each day
Note 1: All operating modes only need to be set once to ensure operation according to the set procedure.		
Note 2: Mo TU WE TH FR SA SU are the abbreviations of Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday.		

Table 6 Sleep Delay Function Mode

No.	Sleep delay function operating mode	Function
1	OFF	Sleep delay function disabled
2	ON 1	Enable sleep function after 1min delay
3	ON 2	Enable sleep function after 2min delay
4	ON 3	Enable sleep function after 3min delay
5	ON 4	Enable sleep function after 4min delay
6	ON 5	Enable sleep function after 5min delay

4 Maintenance

- 4.1** The terminal of the time switch should be tightened on a regular basis.
- 4.2** Power should be cut off during regular maintenance to ensure personal safety. Please pay attention to the electrode when replacing the battery. After battery replacement, mount the battery cover and connect the power supply.
- 4.3** Avoid squeezing the product; the product should be stored in a well-ventilated place.
- 4.4** For equipment that may cause material economic losses or personal safety, safety

measures such as secondary circuit protection should be taken.

4.5 If the load is capacitive load of switching power supply (such as high-power LED lamps, battery charging device, etc.), conventional products are not applicable, but can be customized.

Table 7 Fault Analysis and Troubleshooting

Symptoms	Cause analysis	Troubleshooting method
LCD is not bright enough, or does not light up	Low battery level	Replace the battery
Product running at timed period that is not preset	Timing setting error	Check if timing setting has set time removal according to Figure 9

5 **Environmental Protection**

In order to protect the environment, the product or product parts should be disposed of according to the industrial waste treatment process, or be sent to the recycling station for assortment, dismantling and recycling according to local regulations.

CHINT

QC PASS

NKG1

Time Switch

IEC/EN 60947-5-1

JDQ Check 10

Test date: Please see the packing

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CHINT

CHINT ELECTRICS

NKG1 Time Switch User Instruction

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