



# TK TYPE



## FEATURES

- The built-in switching contacts are applicable to the output from 4 circuits with different functions. The use of this indicator can save the auxiliary relays.
- The versions for voltage and current are so designed as to prevent wrong insertion.
- The inside element is a plug-in type, which facilitates maintenance and checks (or replacement).
- A no-voltage one-shot pulse contact can be incorporated.
- A variety of combinations of output contacts are available.

## SPECIFICATIONS (RATINGS, PERFORMANCE)

| Specification \ Type            | TK                                                                   |
|---------------------------------|----------------------------------------------------------------------|
| Rated insulation voltage (UI)   | 250V                                                                 |
| Operating temperature           | −20 to 50°C                                                          |
| Operating humidity              | 45 to 85%                                                            |
| Storing temperature             | −20 to 60°C                                                          |
| Shape                           | Embedded in switchboard, with 1 element                              |
| Panel thickness                 | 1 to 3.2mm                                                           |
| Inclination of applicable panel | 30 degrees max. from vertical plane                                  |
| Surface cover color             | JIS (Munsell color) code: N1.5, 7.5BG4 / 1.5 (N1.5 only for MK type) |
| Weight                          | Approx. 430g                                                         |

# PILOT LAMP & INDICATOR

## HOW TO ORDER Select from the following product coding.

### ●Standard spec

**TKL 121 - DC110 B R**

①      ②      ③      ④      ⑤      ⑥

### ●Power monitor spec (Normally exciting type)

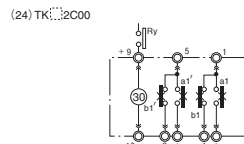
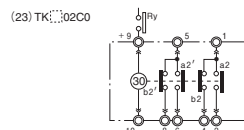
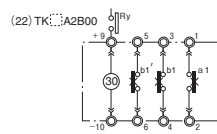
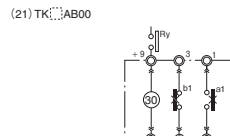
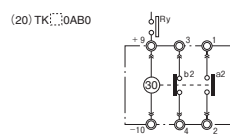
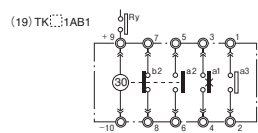
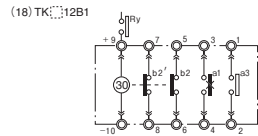
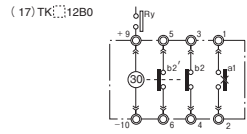
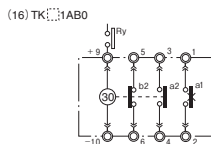
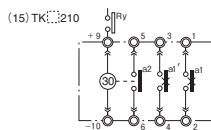
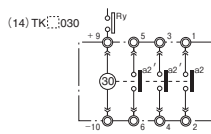
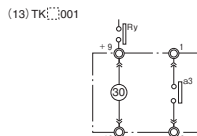
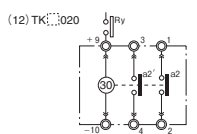
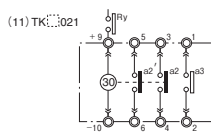
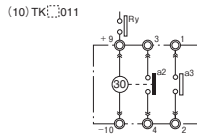
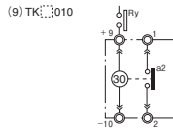
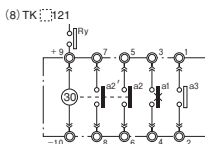
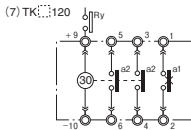
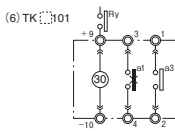
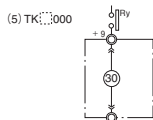
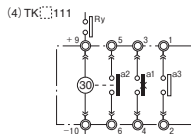
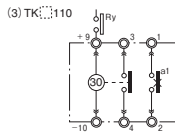
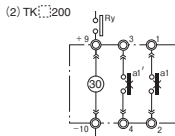
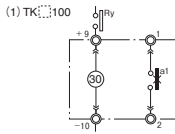
**TKL 12B0 TX - DC110 B R**

①      ②      ③      ④      ⑤      ⑥

| No. | Item                             | Code                                                  | Detail                                       | Note                                             |
|-----|----------------------------------|-------------------------------------------------------|----------------------------------------------|--------------------------------------------------|
| ①   | Basic type                       | TKL                                                   | For voltage                                  | —                                                |
|     |                                  | TKH                                                   | For current                                  | —                                                |
| ②   | Contact arrangement              | Contact arrangement (see list of contact arrangement) |                                              | —                                                |
| ③   | Spec                             | Blank                                                 | Standard coil spec                           | —                                                |
|     |                                  | W                                                     | Double coil spec (1.0A DC only)              | For TKH (1.0A) type only.<br>It is special type. |
|     |                                  | X                                                     | Internal element fixed type<br>With varistor | —                                                |
|     |                                  | TX                                                    | For power source monitoring                  | —                                                |
|     |                                  |                                                       |                                              |                                                  |
| ④   | Coil spec                        | DC024                                                 | 24V DC                                       | Coil resistance: 250Ω                            |
|     |                                  | DC030                                                 | 30V DC                                       | Coil resistance: 320Ω                            |
|     |                                  | DC048                                                 | 48V DC                                       | Coil resistance: 1,170Ω                          |
|     |                                  | DC110                                                 | 100 / 110V DC                                | Coil resistance: 4,700Ω                          |
|     |                                  | L DC125                                               | 125V DC                                      | Coil resistance: 5,200Ω                          |
|     |                                  | DC220                                                 | 200 / 220V DC                                | Coil resistance: 18,600Ω                         |
|     |                                  | AC110                                                 | 100 / 110V AC                                | Coil resistance: 4,700Ω                          |
|     |                                  | AC220                                                 | 200 / 220V AC                                | Coil resistance: 18,600Ω                         |
|     |                                  | AC240                                                 | 240 AC                                       | Coil resistance: 20,600Ω                         |
|     |                                  | DC0.5A                                                | 0.5A DC                                      | Coil resistance: 3.0Ω                            |
|     |                                  | H DC0.7A                                              | 0.7A DC                                      | Coil resistance: 2.0Ω                            |
|     |                                  | DC1A                                                  | 1.0A DC                                      | Coil resistance: 0.75Ω                           |
|     |                                  | DC2A                                                  | 2.0A DC                                      | Coil resistance: 0.35Ω                           |
| ⑤   | Front cover color                | B                                                     | Black (N1.5)                                 | —                                                |
|     |                                  | 4 / 1.5                                               | 7.5BG4 / 1.5                                 | —                                                |
| ⑥   | Flag color<br>(when power loses) | Blank (O)*                                            | Orange (Standard color)                      | —                                                |
|     |                                  | R                                                     | Red (Special color)                          | —                                                |



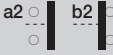
## CONTACT ARRANGEMENT DIAGRAM





# TK TYPE

## LIST OF FUNCTIONS

| No. | Model for each contact configuration | Input rating          |                                 | Output contact                                                                                                           |                                                                                                                          |                                                                                                             |
|-----|--------------------------------------|-----------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|     |                                      | Voltage element (TKL) | Current element (TKH) (TKH...W) | Contact which interlocked with flag<br> | Contact which interlocked with coil<br> | One-shot pulse contact<br> |
| 1   | TK□100                               | ○                     | ○                               | a1×1                                                                                                                     | —                                                                                                                        | —                                                                                                           |
| 2   | TK□200                               | ○                     | ○                               | a1×2                                                                                                                     | —                                                                                                                        | —                                                                                                           |
| 3   | TK□110                               | ○                     | ○                               | a1×1                                                                                                                     | a2×1                                                                                                                     | —                                                                                                           |
| 4   | TK□111                               | ○                     | ○                               | a1×1                                                                                                                     | a2×1                                                                                                                     | a3×1                                                                                                        |
| 5   | TK□000                               | ○                     | ○                               | —                                                                                                                        | —                                                                                                                        | —                                                                                                           |
| 6   | TK□101                               | ○                     | ○                               | a1×1                                                                                                                     | —                                                                                                                        | a3×1                                                                                                        |
| 7   | TK□120                               | ○                     | ○                               | a1×1                                                                                                                     | a2×1                                                                                                                     | —                                                                                                           |
| 8   | TK□121                               | ○                     | ○                               | a1×1                                                                                                                     | a2×2                                                                                                                     | a3×1                                                                                                        |
| 9   | TK□010                               | ○                     | ○                               | —                                                                                                                        | a2×1                                                                                                                     | —                                                                                                           |
| 10  | TK□011                               | ○                     | ○                               | —                                                                                                                        | a2×1                                                                                                                     | a3×1                                                                                                        |
| 11  | TK□021                               | ○                     | ○                               | —                                                                                                                        | a2×2                                                                                                                     | a3×1                                                                                                        |
| 12  | TK□020                               | ○                     | ○                               | —                                                                                                                        | a2×2                                                                                                                     | —                                                                                                           |
| 13  | TK□001                               | ○                     | ○                               | —                                                                                                                        | —                                                                                                                        | a3×1                                                                                                        |
| 14  | TK□030                               | ○                     | ○                               | —                                                                                                                        | a2×3                                                                                                                     | —                                                                                                           |
| 15  | TK□210                               | ○                     | ○                               | a1×2                                                                                                                     | a2×1                                                                                                                     | —                                                                                                           |
| 16  | TK□1AB0                              | ○                     | ○                               | a1×1                                                                                                                     | a2×1, b2×1                                                                                                               | —                                                                                                           |
| 17  | TK□12B0                              | ○                     | ○                               | a1×1                                                                                                                     | b2×2                                                                                                                     | —                                                                                                           |
| 18  | TK□12B1                              | ○                     | ○                               | a1×1                                                                                                                     | b2×2                                                                                                                     | a3×1                                                                                                        |
| 19  | TK□1AB1                              | ○                     | ○                               | a1×1                                                                                                                     | a2×1, b2×1                                                                                                               | a3×1                                                                                                        |
| 20  | TK□0AB0                              | ○                     | ○                               | —                                                                                                                        | a2×1, b2×1                                                                                                               | —                                                                                                           |
| 21  | TK□AB00                              | ○                     | ○                               | a1×1, b1×1                                                                                                               | —                                                                                                                        | —                                                                                                           |
| 22  | TK□A2B00                             | ○                     | ○                               | a1×1, b1×2                                                                                                               | —                                                                                                                        | —                                                                                                           |
| 23  | TK□02C0                              | ○                     | ○                               | —                                                                                                                        | c×2                                                                                                                      | —                                                                                                           |
| 24  | TK□2C00                              | ○                     | ○                               | c×2                                                                                                                      | —                                                                                                                        | —                                                                                                           |

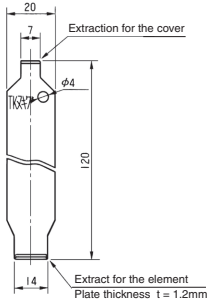
1. For the above □, specify L for voltage or H for current.

2. Please ask us when you need other contact type than the above.

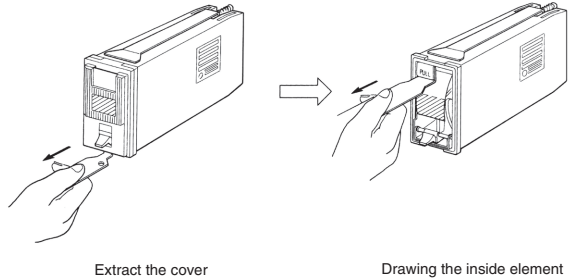
## ACCESSORY

### Element extraction tool

- TK extraction tool

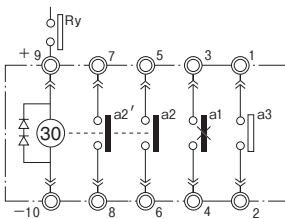


### HOW TO REMOVE THE INTERNAL ELEMENT



## OPERATIONAL INTRODUCTION

- When the failure detection contact of the outside protective relay is closed, the operating coil is excited, and the display panel falls off. The display window changes from black (N1.5) indicating the normal status to orange (2.5YR6/13) indicating the failure status.
- When the reset button is pressed, the display panel will be returned to blank. If the failure is instantaneous and no input is provided, the display window will return to the black display in the normal status. If the failure persists, however, the coil receives input and a pattern of stripes of orange and black is displayed indicating that the failure persists. Once the failure is rectified, the display will automatically return to the black display in the normal status.
- Max. 4 contacts are available.  
Contacts interlocked with the display panel may be taken for a maximum of 2 circuits. Those interlocked with the coil may be taken for a maximum of 3 circuits. One-shot pulse contacts interlocked with the display panel may be taken for a maximum of 2 circuits. Each circuit is provided with contacts a and b.
- The one-shot pulse contacts output pulses (50 to 70 ms) at the initial operation only.



1: All the coils for voltage type are added a counter induced-voltage absorption device.

### ●Standard specification

| Coil voltage  |                                                 |          |  |  |  |
|---------------|-------------------------------------------------|----------|--|--|--|
| Display color | Black                                           |          |  |  |  |
|               | Orange                                          |          |  |  |  |
|               | Stripe pattern                                  |          |  |  |  |
|               | Contact which interlocked with flag (a contact) | a1       |  |  |  |
| Contact       | Contact which interlocked with coil (a contact) | a2 · a2' |  |  |  |
|               | One-shot pulse                                  | a3       |  |  |  |
|               | Manual reset operation                          |          |  |  |  |

### ●Power monitor specification (Normally excited type)

| Coil voltage           |                                                 |   |  |  |  |
|------------------------|-------------------------------------------------|---|--|--|--|
| Display color          | Black                                           |   |  |  |  |
|                        | Orange / Red                                    |   |  |  |  |
| Contact                | Contact which interlocked with flag (a contact) | a |  |  |  |
|                        | Contact which interlocked with coil (b contact) | b |  |  |  |
| Manual reset operation |                                                 |   |  |  |  |

～ Remark ～

The coil is normally in excited status (black). Upon occurrence of a fault, the coil excitation is released, resulting in drop of the target (red). No continuing fault indicating function is provided.