# MOVING COIL TYPE ALARMING INDICATOR

### DATA SHEET

PAK

The moving coil type alarming indicator is designed to receive various input signals such as FC series signals. DC voltage or current, and signals from themocouples or resistance bulbs.

### FEATURES

- 1. Direct connection of input signals.
- 2. High input impedance (1M $\Omega$  for 1 to 5V DC input). No circuit adjusting resistor is required for thermocouple input.
- 3. Compact and lightweight.

## SPECIFICATIONS

Input signal:

- FC series signal
  - A; 1 to 5V DC B; 4 to 20mA DC
- DC current
- D; 0 to 100µA ..... 200mA DC DC voltage
- E; 0 to 10mV ..... 5V DC Thermocouple
  - F; 0 to 10mV DC or more (with reference junction compensator) (Upper limit overshoot burnout cir-
  - cuit is available on request) G; 10mV DC span or more (with reference junction compensator)
    - (Upper limit overshoot burnout circuit is available on request)
- Resistance bulb
  - H; JPt100Ω
  - 50°C span or more, 3-wire type W; Pt100 $\Omega$
  - 50°C span or more, 3-wire type
- Ring tube (resistance span 14 $\Omega$ )
- Slide resistant (resistance span  $100\Omega$ ) J; 3-wire type
- K; 2-wire type (with adjusting resistor) Opening angle transmitter (resistance span 100 $\Omega$ )
  - L; 3-wire type (zero point and span adjustable)



#### Input resistance and allowable input signal source resistance:

| Input signal |           | Input<br>resistance         | Allowable input signal source resistance                    |
|--------------|-----------|-----------------------------|---|
| Voltage      | 1 to 5V   | 1MΩ                         | $2k\Omega$ or less  |
|              | Others    | 40k $\Omega$ to 1M $\Omega$ | 100 $\Omega$ or less  |
| Current      | 4 to 20mA | 5Ω                          |   |
|              | Others    | 1 to 100Ω                   |   |
| Thermocouple |           | 40 to 600k $\Omega$         | $100\Omega~or~less$ $50\Omega~or~less$ when burnout circuit |
| Resistance   |           |                             | $6\Omega$ or less per wire                                  |

| Allowance:                                     | ±1.0% of full scale   |  |  |  |  |
|--|---|--|--|--|--|
| Scale length:                                  | 100mm   |  |  |  |  |
| Response time:                                 | Within 3 sec (time required for stabilizing the indicator pointer within $\pm 1.5\%$ after applying input corresponding to 2/3 (approx.) of full scale) |  |  |  |  |
| Power supply:                                  | 100V ± 10% AC, 50/60Hz  |  |  |  |  |
|  | *200V ± 10% AC, 50/60Hz, or   |  |  |  |  |
|  | *24V <sup>+15%</sup> AC, 50/60Hz  |  |  |  |  |
| Power consumption:                             |   |  |  |  |  |
|  | Approx. 4.5VA max.  |  |  |  |  |
| Ambient temperature:                           |   |  |  |  |  |
|  | -10 to +50°C  |  |  |  |  |
| Ambient humidity:                              |   |  |  |  |  |
|  | 30 to 90%RH   |  |  |  |  |
| Enclosure:                                     | Steel case  |  |  |  |  |
| External dimensions ( $H \times W \times D$ ): |   |  |  |  |  |
|  | 48 × 144 × 275mm  |  |  |  |  |
| Mass{weight}:                                  | Approx. 2kg   |  |  |  |  |
| Finish color:                                  | Munsell 7.5BG 3.2/0.8 or equivalent   |  |  |  |  |
|  |   |  |  |  |  |

PAK

- Alarm device:
- Upper limit (H or A), lower limit (L or B) Upper and lower limits (K or C with one common contact)
- H, L, K; Excitation alarm
- A, B, C; Non-excitation alarm
- Setting accuracy; ±1.0%
- Contact; ON alarm (OFF alarm is available on request)
- Contact capacity; 100V AC 0.3A/24V DC 0.2A (resistance load)
- Alarm indicator lamp (available on request); Alarm signal displayed with LED mounted on indicator panel

### CODE SYMBOLS

| 1 2 3 4 5 6 7 8 | 9 10                         |  |
|-----------------|------------------------------|--|
| PAK 2-          | Ш                            | Description                                    |
|                 |                              | Input signal                                   |
| A               | $\uparrow$                   | 1 to 5V DC                                     |
| B               | †-†                          | 4 to 20mA DC                                   |
| D               | <u>+-</u> +-+                | 0 to 100μA200mA DC                             |
| E               | ††††                         | 0 to 10mV5V DC                                 |
| F               | $\dagger$                    | 0 to 10mV DC or more                           |
|                 |                              | (with reference junction compensator)          |
| G               | †-                           | 10mV DC span or more                           |
|                 |                              | (with reference junction compensator)          |
| H               | $\uparrow \uparrow \uparrow$ | Resistance bulb JPt100 $\Omega$                |
|                 |                              | 50°C span or more, 3-wire type                 |
| M               | $\uparrow$                   | Resistance bulb Pt100 $\Omega$                 |
|                 |                              | 50°C span or more, 3-wire type                 |
| J               | TTT                          | Ring tube, slide resistant, 3-wire type        |
| K               |                              | Ring tube, slide resistant, 2-wire type        |
|                 |                              | (with circuit adjusting resistor)              |
| L               |                              | Opening angle indicator (resistance            |
|                 |                              | 100 $\Omega$ , zero point and span adjustable) |
| * Z             |                              | Other inputs                                   |
|                 |                              | Alarm device                                   |
| H               |                              | Upper limit                                    |
| L               |                              | Lower limit<br>Excitation alarm                |
| K               | <u>+-</u> +                  | Upper and (ON alarm)                           |
|                 |                              | lower limits                                   |
| * A             |                              | Upper limit                                    |
| * B             |                              | Lower limit                                    |
| * C             |                              | Upper and (ON alarm)                           |
|                 |                              | lower limits                                   |
|                 |                              | Power supply                                   |
| * 1             | ++++                         | 24V AC 50/60Hz                                 |
| 3               | ┿┅┿╍                         | 100V AC 50/60Hz                                |
| * 5             | <u>+</u>                     | 200V AC 50/60Hz                                |
|                 |                              | Application                                    |
| 0               |                              | For general use                                |
| 3               |                              | For connection zener barrier:                  |
|                 |                              | Specify "3" only when zener barrier            |
|                 |                              | (PWZB3 or PMZB4) is to be connected            |
|                 |                              | and thermocouple or resistance bulb            |
|                 |                              | is used as input source.                       |
|                 |                              | Mounting method                                |
|                 | 1                            | Horizontal mounting                            |
| *               | 2                            | Vertical mounting                              |
|                 |                              | Alarm indicator lamp                           |
|                 |                              | None   |
|                 | × 1                          | Provided                                       |
|                 | ° [] [                       | I TONIGEO                                      |

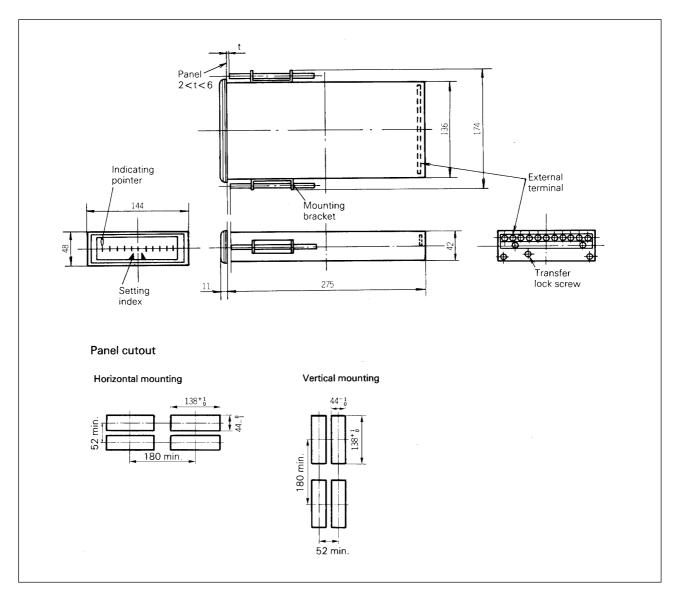
Notes: Symbols of resistance bulbs are as follows. JPt100 Previous JIS standard Pt100 New JIS standard Scope of delivery : Indicator and mounting bracket Mounting method:

Panel flush mounting Standard;

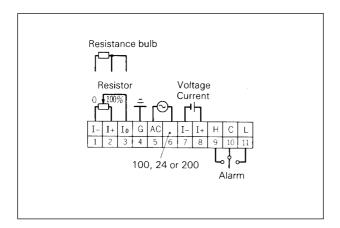
- S
  - Horizontal mounting on vertical panel Non-standard;

Tilted mounting, vertical mounting Specify  $\angle \alpha$  for tilted mounting

# OUTLINE DIAGRAM (Unit : mm)



# **CONNECTION DIAGRAMS**



# ORDERING INFORMATION

- 1. Product name
- 2. Code symbols
- 3. Input
- 4. Scale
- Alarm device and alarm indicator lamp (whether required or not)
- 6. Power supply
- 7. Application
- 8. Other necessary information

▲ Caution on Safety
Asterisked (\*) items; Non-standard
\*Before using this product, be sure to read its instruction manual in advance.

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