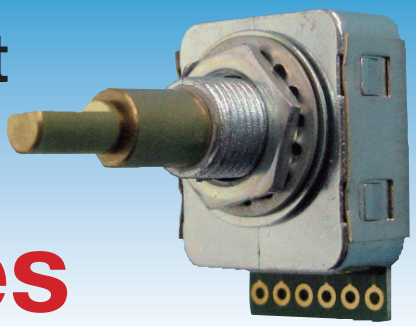
# Rotary Encoder with Dual Functional Shaft

# RE24 Series



## Outline

RE24 rotary encoder series contain unique mechanism for its shaft; its rotational outer axis for rotary encoder and the inner axis for push switch. RE24 is designed for use in various industrial areas: measurement component, medical equipment, industrial machinery, telecommunication device and machine tool.

## Features

- Dual inner/outer axes mechanism to help prevent misoperation
- Eco friendly:
  1) Low cost and lesser parts by VA design
  2) RoHS compliant
- Thin-line (18.8x25.5x8.9mm) and lightweight (18g)
- Long-lasting without “contact chatter” due to its optical switching function
- Specially designed knob (GG60) available

## Specifications

1. Electrical and Mechanical specifications

| Items | | | Rated Value | |
|---|---|---|---|---|
| Number of pulses | | | 16PPR, 25PPR | |
| Supply voltage | | | 3.3V±10% | 5V±10% |
| | | | 20mA | 10mA |
| Output signals | | | two square wave output (A/B), CMOS chip | |
| Output voltage | | High | (Supply Voltage − 0.5V) ≦ | |
| | | Low | ≦ 0.5V | |
| Response frequency | | | 200Hz | |
| Rotational torque | | Light: S | 4±1mN・m | |
| | | Standard: C | 6±2mN・m | |
| | | Medium: M | 10.5±3.5mN・m | |
| | | High: H | 16±5mN・m | |
| Push switch | | Rating of contact | ≦ DC12V | 0.1 ～ 10mA |
| | | Travel of switch | 0.2±0.1mm | |
| | Operational Force | S | 3.2±1N | |
| | | M | 4.0±1N | |
| | | H | 5.0±1N | |
| Weight | | | 18g | |

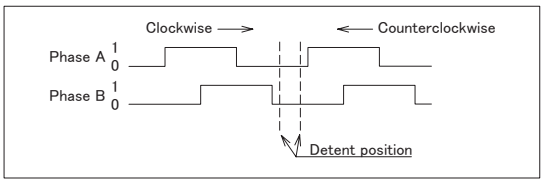
Note : In case Rotational Torque M or H, Operational Torque should be either M or H.

2. Reliability and Environmental specifications

| Items | | | Rated Value |
|---|---|---|---|
| Durability of operating area | Thrust direction | Push | 100N |
| | | Pull | 50N |
| | Radial | | 1N・m |
| Rotational durability | Light: S | | 1 million strokes (No load) |
| | Standard: C | | |
| | Medium: M | | |
| | High: H | | 100 thousand strokes (No load) |
| Screw Torque | | | Not more than 1N・m |
| Heat resistance of solder | Solder bit temp.: MAX 350℃ | | Within 3 seconds for each terminal |
| Operating temperature | | | 0℃ ～ +55℃<br>32F ～ 131F |
| Storage temperature | | | − 40℃ ～ +85℃<br>− 40F ～ 185F |

## Output Waveform

1) Turning the shaft clockwise will generate the signal A when the signal B outputs a low voltage (0);
2) Rotating the shaft counter-clockwise will generate the signal A when the signal B outputs a high voltage(1);
3) Detent positions are where both signal A and B are low (0).



# Part Number Designation

RE24 N S 25 C S 16/24 R A

| Series |
|---|

| | Waterproof |
|---|---|
| N | No |

| | Wiring |
|---|---|
| S | Standard |
| C | With Code |
| F | Front Mount |
| V | Vortical Mount |

| | Pulse |
|---|---|
| 16 | 16PPR |
| 25 | 25PPR |

| | Ckick | Rotation Torque |
|---|---|---|
| S | With | 4mN・m |
| C | | 6mN・m |
| M | | 10.5mN・m |
| H | | 16mN・m |
| Non | W/O | ≦ 4mN・m |

| | Push Switch Force |
|---|---|
| S | 3.2N |
| H | 5N |

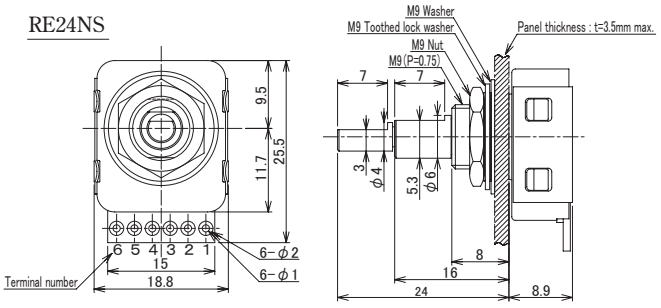
| | Shaft length |
|---|---|
| 16 | 16mm (inner) |
| 20 | 24mm (outer) |

| | Shaft Shape |
|---|---|
| F | Flat |

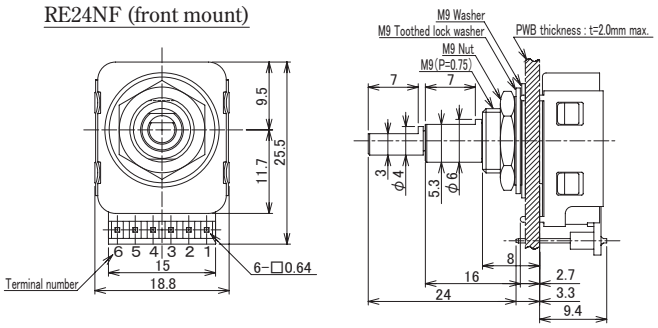
| | Power Voltage |
|---|---|
| A | 5V |
| B | 3.3V |

# Dimensions (mm)

RE24NS



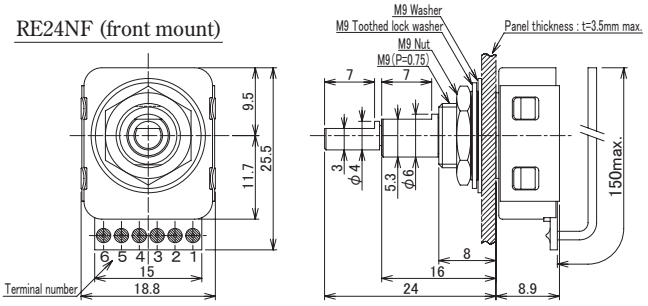

RE24NF (front mount)



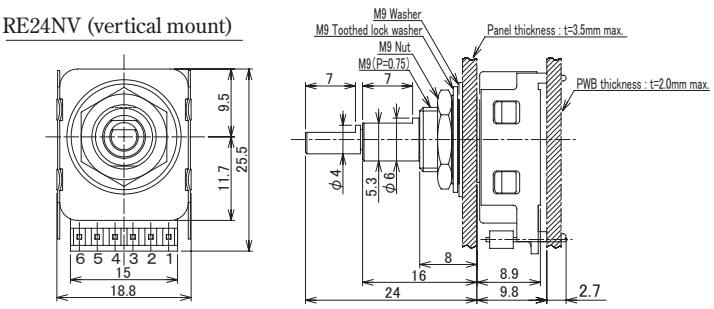




RE24NF (front mount)

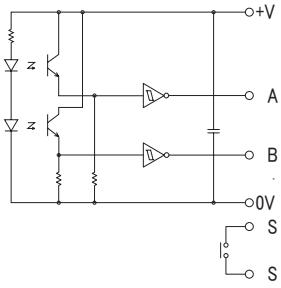



RE24NV (vertical mount)

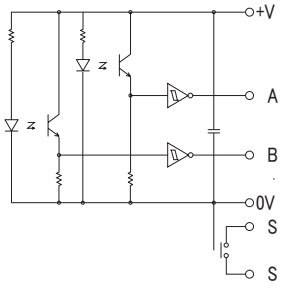



# Circuitry

RE24 5V



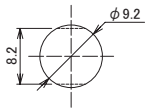

RE24 3.3V



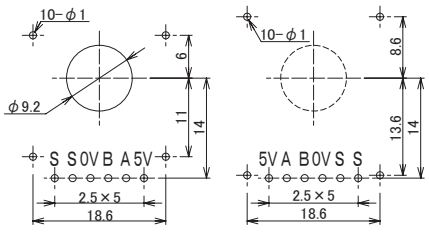

Terminal number

| | | |
|---|---|---|
| 1 | 3.3V/5V | Supply |
| 2 | A | Signal A |
| 3 | B | Signal B |
| 4 | 0V | Ground |
| 5 | S | Push Switch |
| 6 | S | Push Switch |

Mounting hole dimensions (mm)




PWB mounting hole dimensions (mm)




RE24NF RE24NV

# Precautions

| | |
|---|---|
| Wiring | Use buffering amplifier when extending lead wire over 30cm. |
| Soldering | Do not put a load on the terminal area during and immediately after soldering. |
| Operation | Do not use flow/reflow soldering machines. |
| Power | Use under specified power voltage and connect properly. |
| Waterproofing | Do not fasten tighter with the torque of more than 1.5N・m. |

# Warranty

● 1 year from the date of shipment.

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