

HE3B Enabling Switch

**Rectangular operator part with $\phi 16$ mm mounting for easy installation.
2-contact 3-position enabling switches ideal for installing in small teach pendants.**

- Ergonomically-designed OFF-ON-OFF operation.
- Easy recognition of position 1 to 2 transition is made possible by a snap action switch.
- Sufficient difference in operating force is provided for shifting from position 2 to position 3.
- Low pressure is required to maintain in position 2 allowing for longtime operation.
- Reliable operation is assured even when the edge of the operator button is pressed.
- The switch does not turn ON while being released from position 3 (OFF) to position 1 (OFF) (IEC60204-1, 9.2.5.8).
- Two contacts are provided in a 3-position enabling switch so that even one contact fails due to welding or short-circuit, the other contact can disable machine operation.
- The waterproof rubber boot provides IP65 protection.



Types

| Type | Contact Configuration | Type No. | Ordering Type No. | Package Quantity | |
|---------------------|-----------------------------------|--|-------------------|------------------|----|
| Without Rubber Boot | 2 contacts (3-position switch) | HE3B-M2 | HE3B-M2 | 1 | |
| | | | HE3B-M2PN10 | 10 | |
| With Rubber Boot | | Rubber Boot Material: Silicon Rubber Color: Y: yellow, B: black | HE3B-M2P* | HE3B-M2P* | 1 |
| | | | | HE3B-M2P*PN10 | 10 |
| With Rubber Boot | | Rubber Boot Material: NBR/PVC Polyblend Color: gray | HE3B-M2PN1 | HE3B-M2PN1 | 1 |
| | | | | HE3B-M2PN1PN10 | 10 |

Note: Specify rubber boot color code in place of * in the Type No.

Contact Ratings

| | | | | |
|---|----|------------------------|------------|------|
| Rated Insulation Voltage (Ui) | | | 125V | |
| Rated Thermal Current (Ith) | | | 3A | |
| Rated Voltage (Ue) | | | 30V | 125V |
| Rated Current (Ie) | AC | Resistive Load (AC-12) | — | 1A |
| | | Inductive Load (AC-15) | — | 0.7A |
| | DC | Resistive Load (DC-12) | 1A | 0.2A |
| | | Inductive Load (DC-13) | 0.7A | 0.1A |
| Contact Configuration (3-position switch) | | | 2 contacts | |

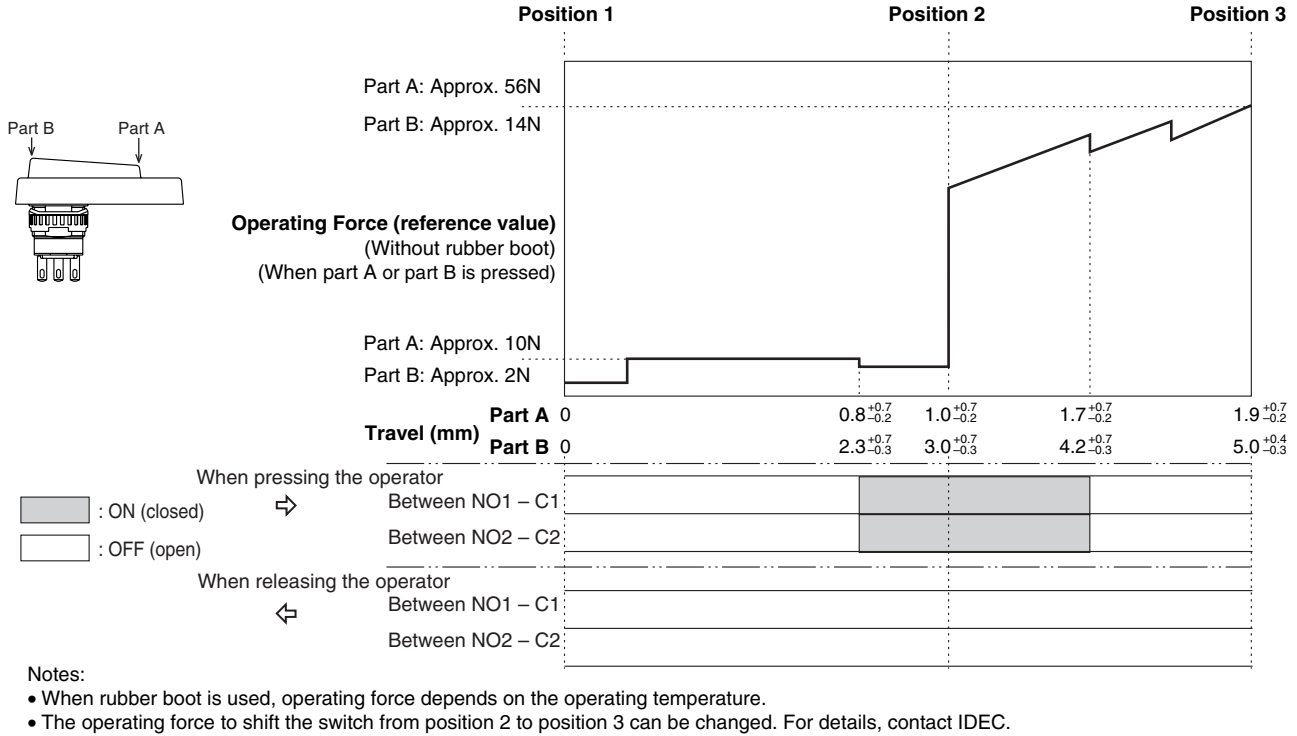
Minimum applicable load (reference value): 3V AC/DC, 5 mA

Specifications

| | |
|--|--|
| Applicable Standards | IEC 60947-5-1, EN 60947-5-1 (DEMKO approval) UL508 (UL recognized), CSA C22.2, No. 14 (c-UL recognized), JIS C8201-5-1 |
| Applicable Standards for Use | ISO 12100 / EN 292, IEC 60204-1 / EN 60204-1 ISO 11161 / prEN 11161, ISO 10218 / EN 775 ANSI/RIA R15.06, ANSI B11.19 |
| Operating Temperature | -25 to +60°C (no freezing) (without rubber boot, with silicon rubber boot) -10 to +60°C (no freezing) (with NBR/PVC polyblend rubber boot) |
| Relative Humidity | 45 to 85% (no condensation) |
| Storage Temperature | -40 to +80°C (no freezing) |
| Pollution Degree | 2 (inside panel, terminal side) 3 (outside panel, operator side) |
| Contact Resistance | 50 m Ω maximum (initial value) |
| Insulation Resistance | Between live and dead metal parts: 100 M Ω minimum (500V DC megger) Between terminals of different poles: 100 M Ω minimum (500V DC megger) |
| Impulse Withstand Voltage | 1.5 kV |
| Operating Frequency | 1,200 operations per hour |
| Mechanical Durability | Position 1 \rightarrow 2 \rightarrow 1: 1,000,000 operations minimum Position 1 \rightarrow 2 \rightarrow 3 \rightarrow 1: 100,000 operations minimum |
| Electrical Durability | 100,000 operations minimum |
| Shock Resistance | Operating extremes: 150 m/s ² Damage limits: 500 m/s ² |
| Vibration Resistance | Operating extremes: 5 to 55 Hz, amplitude 0.5 mm Damage limits: 16.7 Hz, amplitude 1.5 mm |
| Terminal Style | Solder terminal |
| Applicable Wire | 1 cable, 0.5 mm ² maximum |
| Solder Terminal Heat Resistance | 310 to 350°C, 3 seconds maximum |
| Terminal Tensile Strength | 20N minimum |
| Locking Ring Recommended Tightening Torque | 0.68 to 0.88 N·m |
| Degree of Protection | IP40 (without rubber boot) IP65 (with rubber boot) |
| Conditional Short-circuit Current | 50A (250V) (Use 250V/10A fast acting type fuse for short-circuit protection.) |
| Operator Strength | 500N minimum (pressing the entire operator surface) |
| Weight (approx.) | 14g (without rubber boot) 18g (with rubber boot) |

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Operation Characteristics

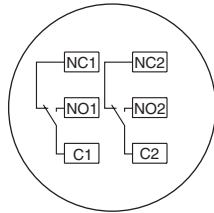


Terminal Arrangement (Bottom View)

• 3-position switch (Note)
2 contacts

Terminal No.: between NO1 and C1, between NO2 and C2

Note: Use NO and C terminals for the 3-position switch of OFF → ON → OFF operation (NC terminal is not used).

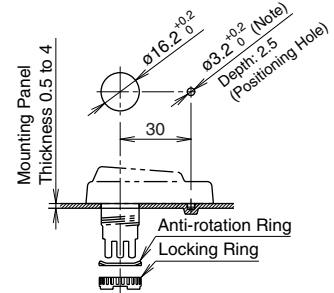


Mounting Hole Layout

• Recommended tightening torque for locking ring: 0.68 to 0.88 N·m

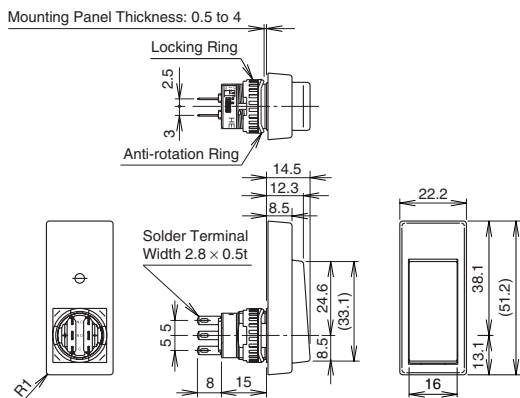
• Use the locking ring wrench MT-001 for tightening.

Note: To maintain waterproof property of the switch, do not drill through the anti-rotation hole in the mounting panel. When not providing a hole, cut off the anti-rotation projection from the rubber boot. When cutting off the projection, ensure not to make a hole in the rubber boot.

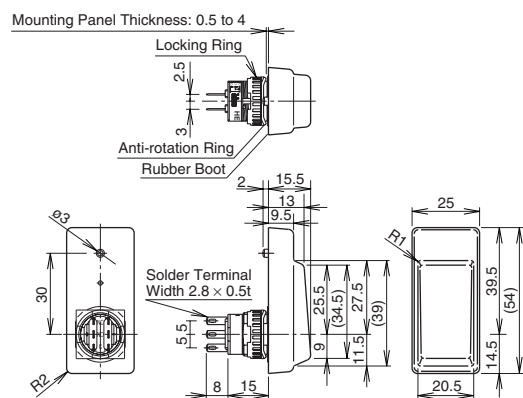


Dimensions

• Without Rubber Boot



• With Rubber Boot



All dimensions in mm.

Accessories

• Replacement Rubber Boot

| Material | Color | Type No. | Ordering Type No. | Package Quantity |
|-------------------|-----------------------|-----------|-------------------|------------------|
| Silicon Rubber | Y: yellow B: black | HE9Z-D3* | HE9Z-D3*PN10 | 10 |
| NBR/PVC Polyblend | Gray | HE9Z-D3N1 | HE9Z-D3N1PN10 | |

• Specify rubber boot color code in place of * in the Type No.

• Locking Ring Wrench

Type No: MT-001
Material: Metal

