

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
	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	

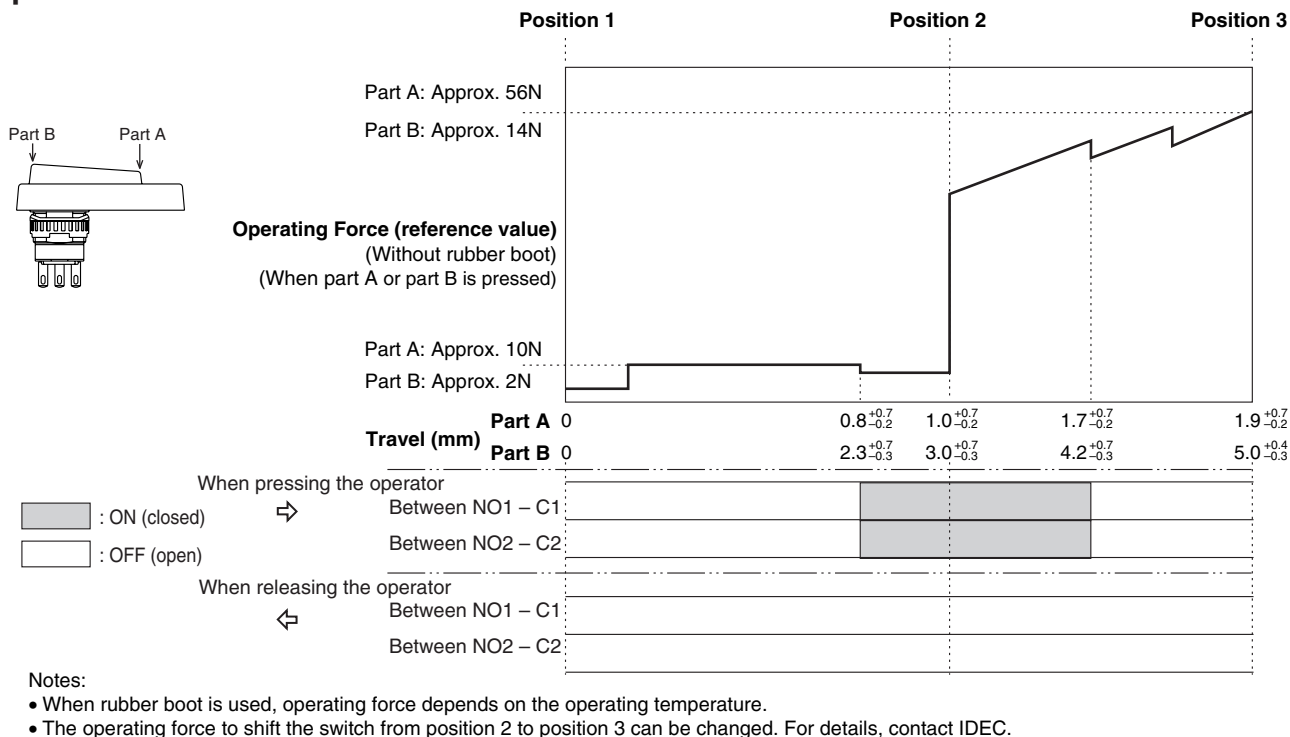
Minimum applicable load (reference value): 3V AC/DC, 5 mA

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 mΩ maximum (initial value)
Insulation Resistance	Between live and dead metal parts: 100 MΩ minimum (500V DC megger) Between terminals of different poles: 100 MΩ minimum (500V DC megger)
Impulse Withstand Voltage	1.5 kV
Operating Frequency	1,200 operations per hour
Mechanical Durability	Position 1 → 2 → 1: 1,000,000 operations minimum Position 1 → 2 → 3 → 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

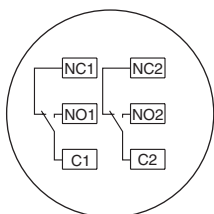


Terminal Arrangement (Bottom View)

- 3-position switch (Note)
- 2 contacts

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

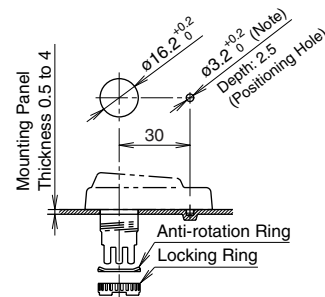
Note: Use NO and C terminals for the 3-position switch of OFF → ON → OFF operation (NC terminal is not used).



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.

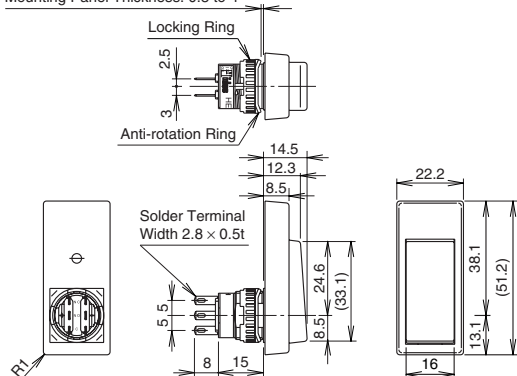
Note: To maintain waterproof property of the switch, do not drill through the anti-rotation hole in the mounting panel. When not providing a hole, cut off the anti-rotation projection from the rubber boot. When cutting off the projection, ensure not to make a hole in the rubber boot.



Dimensions

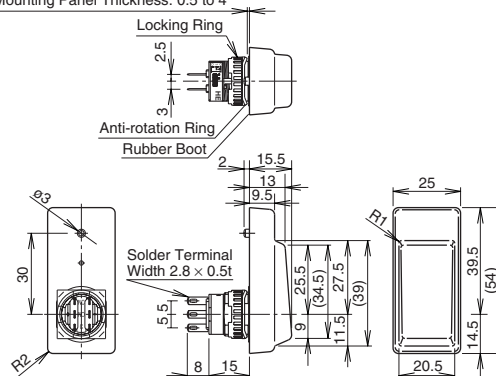
• Without Rubber Boot

Mounting Panel Thickness: 0.5 to 4



• With Rubber Boot

Mounting Panel Thickness: 0.5 to 4



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



All dimensions in mm.