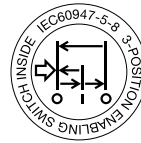


## HE2B Redundant (Double) Basic Enabling Switch

**Key features:**

- 3-position functionality (OFF – ON –OFF) as required for manual robotic control
- Ideally suited for use as enabling (aka “deadman”) switch on teach pendants
- Provides a high level of safety based on human behavioral studies that determine personnel may squeeze OR let go when presented with a panic situation
- Snap acting contacts from Off→On (1→2)
- Positive action contacts from On→Off (2→3) ensure no contact welding (per EN60947-5-1 / IEC60947-5-1)
- Contacts will not re-close when released from Off→On (3→1) (per IEC60204-1; 9.2.5.8)
- Multiple contacts for enhanced reliability
- Monitoring contacts in addition to main load contacts
- Available with or without rubber cover (cover provides IP65 watertight seal)



**Part Numbers**

Style	Number of Contacts			Part Number
	3 Position Switch	Push Monitor Switch	Return Monitor Switch	
Without Rubber Cover	2	0	0	HE2B-M200
	2	1	1	HE2B-M211
	2	2	2	HE2B-M222
With Rubber Cover	Yellow	2	0	HE2B-M200PY
		2	1	HE2B-M211PY
		2	2	HE2B-M222PY
	Black	2	0	HE2B-M200PB
		2	1	HE2B-M211PB
		2	2	HE2B-M222PB
Gray	2	0	HE2B-M200PN1	
	2	1	HE2B-M211PN1	
	2	2	HE2B-M222PN1	

**Accessories**

**Replacement Rubber Cover**

Appearance	Color	Part Number	Material
	Yellow	HE9Z-D2Y	Silicon Rubber
	Black	HE9Z-D2B	
	Gray	HE9Z-D2N1	NBR/PVC Polyblend

Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

## Specifications

Conforming to Standards	UL508 (UL recognized), CSA C22.2, No. 14 (c-UL recognized), IEC/EN 60947-5-1, IEC/EN 60947-5-8 (TÜV approval)	
Application Standards	ISO 12100-1, -2, EN 12100-1, 2 / EN 292, IEC 60204-1 / EN 60204-1 ISO11161 / prEN 11161, ISO10218 / EN 775, ANSI / RIA R15.06, ANSI B11.19	
Operating Temperature	-25 to +60°C (no freezing)	
Operating Humidity	45 to 85% RH (no condensation)	
Storage Temperature	-40 to +80°C (no freezing)	
Pollution Degree	2 (inside of panel/contact side) 3 (outside of panel/operating side)	
Contact Resistance	50mΩ maximum	
Insulation Resistance	Between live and dead metal parts: 100MΩ maximum	
	Between positive and negative live parts: 100MΩ minimum	
Impulse Withstand Voltage	2.5kV	
Operating Frequency	1200 operations/hour	
Mechanical Life	Position 1→2: 1,000,000 operations minimum	
	Position 1→2→3→1: 100,000 operations minimum	
Electrical Life	100,000 (at full rated load)	
Shock Resistance	Operating Extremes	150m/s <sup>2</sup> (15 G)
	Damage Limits	1000m/s <sup>2</sup> (100 G)
Vibration Resistance	Operating Extremes	5 to 55Hz, amplitude 0.5mm minimum
	Damage Limits	16.7Hz, amplitude 1.5mm minimum
Terminal	0.110" quick connect / solder terminal	
Recommended Wire Size	0.5mm <sup>2</sup> maximum / 1 line (20AWG)	
Solder Heat Resistance	310 ~ 350°C / 3 seconds maximum	
Terminal Pulling Strength	20N minimum	
Recommended Screw Torque	0.5 to 0.8Nm	
Degree of Protection	with rubber cover: IP65, without rubber cover: IP40 (IEC 60529),	
Conditional Short-Circuit Current	50A (250V)	
Recommended Short Circuit Protection	250V/10A fast blow fuse (IEC 60127-1)	
Circuit Opening Force	60N minimum (button return monitor & button push monitor)	
Actuating Force (Operating)	500N minimum	
Weight	Approx. 26g (without cover), 30g (with cover)	

## Contact Ratings

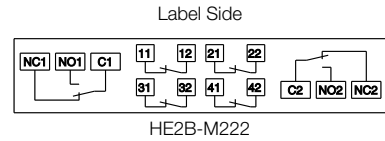
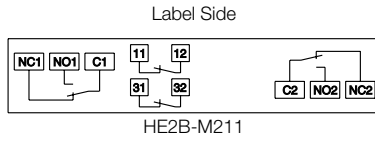
Rated Insulation Voltage (Ui)		250V				
Thermal Current (Ith)		3A				
Rated Operating Voltage (Ue)		30V	125V	250V		
Rated Operating Current (Ie)	3 Position Switch	AC	Resistive Load (AC-12)	–	1A	0.5A
			Inductive Load (AC-15)	–	0.7A	0.5A
		DC	Resistive Load (DC-12)	1A	0.2A	–
			Inductive Load (DC-13)	0.7A	0.1A	–
	Push/return Monitor Switch (NC Contacts)	AC	Resistive Load (AC-12)	–	2A	1A
			Inductive Load (AC-15)	–	1A	0.5A
		DC	Resistive Load (DC-12)	2A	0.4A	0.2A
			Inductive Load (DC-13)	1A	0.22A	0.1A
Contact Configuration	3 Position Switch		2 contacts (DPDT)			
	Return Monitor Switch		0 ~ 2 contacts (NC)			
	Push Monitor Switch		0 ~ 2 contacts (NC)			



Minimum applicable load (reference) = AC/DC3V • 5mA (for reference only)

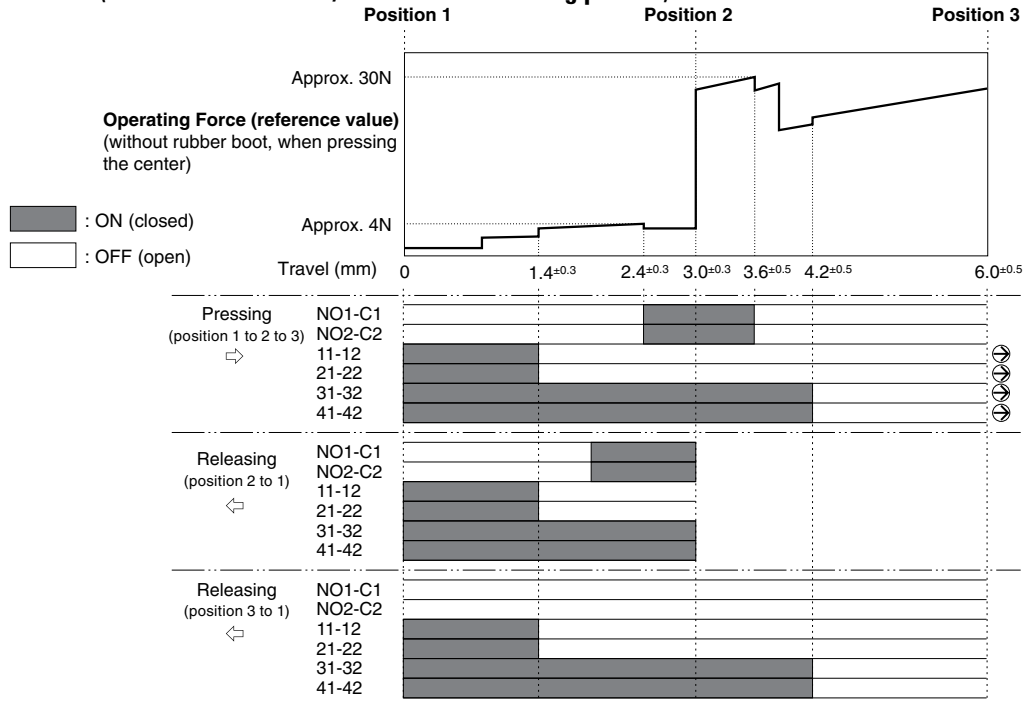
Circuit Diagrams

Terminal Circuit Diagrams (bottom view)



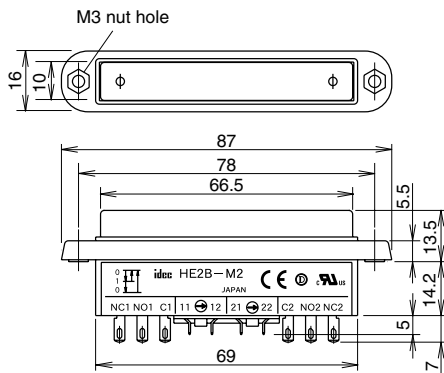
Operating Characteristics

Operating Characteristics (without rubber cover/center of button being pushed)

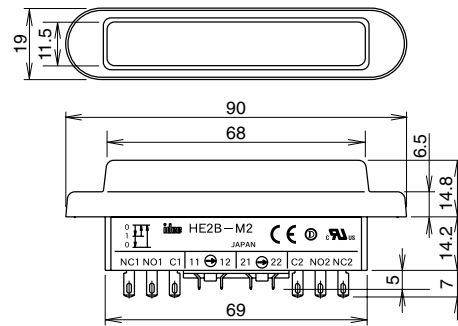


Using rubber boot will change the operating force depending on the operating temperature.

Dimensions (mm)  
Without Rubber Cover



With Rubber Cover



Mounting Hole Layout

