

HE6B Enabling Switch

Key features:

- Ergonomically-designed OFF-ON-OFF operation.
- The switch does not turn ON while returning from position 3 (OFF) to position 1 (OFF)
- IEC 60204-1 (2005), 10.9
- IEC 60947-5-8 (2006), 7.1.9*
- Some teach pendants are equipped with two 3-position enabling switches, and when one switch is pressed to position 3 (OFF), the other switch must not enable machine operation even when pressed to position 2. Machine operation can resume after both switches are released. The monitoring switches monitor the OFF status of the 3-position enabling switch, whether the button is returned to position 1 or the button is pressed to position 3 (monitor switches have direct opening action mechanism.)
- Two contacts are provided in a 3-position enabling switch so that even if one contact fails, the other contact will still disable machine operation.
- The waterproof rubber boot provides IP65 protection.



* IEC 60947-5-8 Control circuit devices and switching elements – Three-position enabling switches



Part Numbers

Model	Contact Configuration/No. of Contacts			Color	Part Number
	3-position Switch	Button Return Monitor Switch (↶)	Button Depress Monitor Switch (↷)		
	2	0	0	Yellow	HE6B-M200Y
				Black	HE6B-M200B
	2	1	1	Yellow	HE6B-M211Y
				Black	HE6B-M211B

Accessories

Replacement Rubber Cover

Appearance	Color	Part Number	Material
	Yellow	HE9Z-D6Y	Silicon Rubber
	Black	HE9Z-D6B	

Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Specifications

Overview	Conforming to Standards	IEC 60947-5-1/EN60947-5-1 IEC 60947-5-8/EN60947-5-8 (TÜV approved) GS-ET-22 (TÜV approved) UL508 (UL recognized) CSA C22.2 No.14 (c-UL recognized)
XW Series E-Stops	Application Standards for Use	ISO 12100/EN ISO 12100, IEC 60204-1/EN 60204-1, ISO 11161/EN ISO 11161, ISO 10218-1/EN ISO 10218-1, ANSI/RIA/ISO 10218-1, ANSI/RIA/R15.06, ANSI B 11.19 ISO 13849-1/EN ISO 13849-1
	Operating Temperature	-25 to +60°C (no freezing)
	Relative Humidity	45 to 85% RH (no condensation)
Interlock Switches	Storage Temperature	-40 to +80°C (no freezing)
	Pollution Degree	2 (inside panel, terminal side) 3 (outside panel, operator side)
	Contact Resistance	50mΩ maximum (initial value)
Enabling Switches	Insulation Resistance	Between live and dead metal parts: 100MΩ minimum (500V DC megger) Between terminals of different poles: 10 MΩ minimum (500V DC megger)
	Impulse Withstand Voltage	1.5kV (3 position switch) 2.5kV (monitor switch)
	Operating Frequency	1200 operations per hour
Safety Control Relays	Mechanical Life	Position 1→2→1: 1,000,000 operations minimum Position 1→2→3→1: 100,000 operations minimum
	Electrical Life	100,000 operations minimum (rated load) 1,000,000 operations minimum (24V AC/DC, 100 mA)
	Shock Resistance	Operating extremes: 150m/s ² (15G) Damage limits: 500m/s ² (50G)
Light Curtains	Vibration Resistance	Operating extremes: 5 to 55 Hz, amplitude 0.5mm Damage limits: 16.7Hz, amplitude 1.5mm
	Terminal Style	Solder terminal
	Applicable Wire Size	1 cable, 0.5mm ² maximum (20AWG wire)
AS-Interface Safety at Work	Solder Terminal Heat Resistance	310 to 350°C, 3 seconds maximum
	Terminal Tensile Strength	20N minimum
	Locking Ring Recommended Tightening Torque	0.5 to 0.8N-m
AS-Interface Safety at Work	Degree of Protection	IP65 (IEC 60529)
	Conditional Short-circuit Current	50A (125V): 3-position switch (Use 120V/10A fast acting type fuse for short circuit protection.) (IEC 60127-1) 50A (250V): monitor switch (Use 250V/10A fast acting type fuse for short circuit protection.) (IEC 60127-1)
	Direct Opening Force	40N minimum (button release monitor and button depress monitor switches)
AS-Interface Safety at Work	Direct Opening Stroke (when pressing the entire button surface)	0.9mm minimum (button return monitor switch) 4.0mm minimum (button depress monitor switch)
	Operator Strength	250N minimum (when pressing the entire button surface)
	Weight (approx.)	17g

Current Ratings


Rated Insulation Voltage (Ui)		125V (monitor switch: 250V)				
Rated Thermal Current (Ith)		3A				
Rated Voltage (Ue)		30V	125V	250V		
Rated Current (Ie)	3-position switch	AC	Resistive Load (AC-12)	-	0.5A	-
			DC	Resistive Load (DC-12)	1A	-
		AC		Resistive Load (AC-12)	-	2A
			DC	Resistive Load (DC-12)	2A	0.4A
	Button return monitor switch	AC		Resistive Load (AC-12)	-	2A
			DC	Resistive Load (DC-12)	2A	0.4A
Button depress monitor switch (NC)	AC	Resistive Load (AC-12)		-	1A	0.5A
		DC	Resistive Load (DC-12)	1A	0.22A	0.1A

TÜV ratings:
 3 position switch:
 AC-12 125V/0.5A
 DC-12 30V/1A
 DC-13 30V/0.7A
 Monitor Switch:
 AC-15 250V/0.5A
 DC-13 125V/0.22A
 DC-13 30V/1A

UL ratings:
 3-position switch:
 125V AC/0.5A (Resistive)
 30V DC/1A (Resistive)
 Monitor switch:
 250V AC/0.5A (General use)
 30V DC/1A (General use)

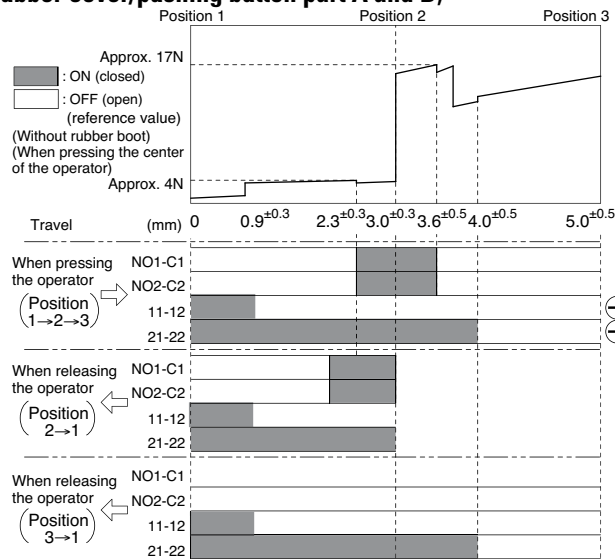
Contact Configuration

3-position switch	2 contacts
Button return monitor switch	0 or 1 contact
Button depress monitor switch	0 or 1 contact

 Minimum applicable load (reference value): 3V AC/DC, 5mA (Applicable operation area depends on the operating conditions and load.)

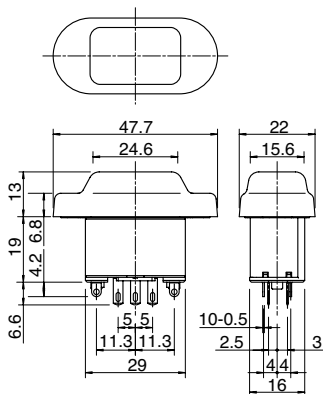
Operating Characteristics

Operating Characteristics (without rubber cover/pushing button part A and B)

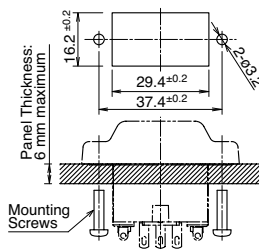


Notes: When a rubber boot is used, the operating force depends on the operating temperature.

Dimensions (mm)

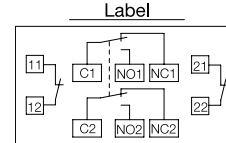


Mounting Hole Layout



Mounting screws: M3 screw × 2
 (not attached and must be supplied by the user)
 Mounting screw length: 5 to 6 mm (panel thickness + gasket)

Terminal Arrangement (bottom view) HE6B-M211



3-position switch 2 contacts¹
 Button return monitor switch: 1 contact, terminals 11-12
 Button depress monitor switch: 1 contact, terminals 21-22
 There are no terminals 11-22 and 21-22 for HE6B-M200 type.
¹Use NO and C terminals for OFF → ON → OFF 3-position switch (NC terminal is not used.)