

Think Automation and beyond...



IDEC  
Safety Technology

# HE1G-L Grip Switch

The distinctive tactile feedback when shifting to position 2 (enabling position) makes it easier to know where the enabling switch is currently positioned—position 1 (OFF), 2 (ON), or 3 (OFF).

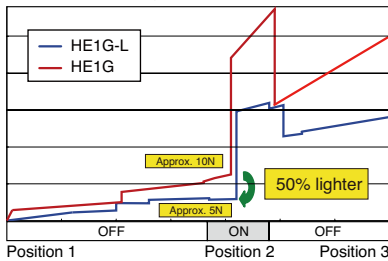
Lighter operating force on position 2 assures more comfortable, stress-free operation when operating long hours.

An HE2B enabling switch compliant with IEC/EN60947-5-8 (2006) is installed inside the HE1G-L grip switch.



**50% less operating force required on position 2**

Operating Force Comparison

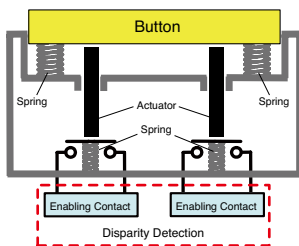


The operating force required to shift from position 1 (contact OFF) to position 2 (contact ON) is reduced by 50% from that of IDEC's HE1G grip switch. Less operating force assures comfortable and stress-free operation for long hours. Because it is designed ergonomically to require greater operating force to shift from position 2 to position 3, inadvertent shifting to position 3 is avoided.



UL listing pending

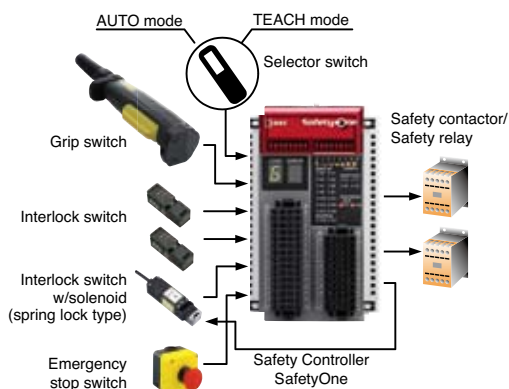
## Redundant contacts and construction for an even higher level of safety



The dual enabling contacts with a separate actuator for each contact is IDEC's original structure, which assures higher level of safety. Disparity detection of a Category 4 (ISO 13849-1) level can be achieved by using this switch with a safety relay module or safety controller.

## Safety circuits configurable

Safety circuits can be configured easily by using the HE1G-L grip switch with the FS1A SafetyOne (safety controller). Automatic (in operation) and teach mode (maintenance) can be selected using a selector switch.



## Variation

In addition to a monitoring switch, the HE1G grip switch is also available with an emergency stop switch or a momentary pushbutton. Screw terminal and wire-saving internal connector models can be selected.



Screw Terminal Connections



Internal Connector Type

# HE1G-L Grip Switch

## Types

Contact Configuration			Rubber Boot	Wiring Style	Ordering Type No.
3-position Switch	Monitor Switch	Additional Pushbutton Switch			
2 contacts	With (1NC)	Without	Silicon Rubber / yellow (Note 1)	Terminal Block	HE1G-L21SM
				Internal Connector	HE1G-L21SMC
			NBR/PVC Polyblend / gray (Note 2)	Terminal Block	HE1G-L21SM-1N
		Internal Connector		HE1G-L21SMC-1N	
		Momentary Pushbutton Switch (1NO: AB6M-M1PB)	Silicon Rubber / yellow	Terminal Block	HE1G-L21SMB
				Internal Connector	HE1G-L21SMB
	NBR/PVC Polyblend / gray		Terminal Block	HE1G-L21SMB-1N	
		Internal Connector	HE1G-L21SMB-1N		
	Without	Emergency Stop Switch (2NC: HA1E-V2S2R)	Silicon Rubber / yellow	Terminal Block	HE1G-L20ME
				Internal Connector	HE1G-L20MCE
			NBR/PVC Polyblend / gray	Terminal Block	HE1G-L20ME-1N
		Internal Connector		HE1G-L20MCE-1N	
Momentary Pushbutton Switch (2NO: AB6M-M2PB)		Silicon Rubber / yellow	Terminal Block	HE1G-L20MB	
			Internal Connector	HE1G-L20MCB	
	NBR/PVC Polyblend / gray	Terminal Block	HE1G-L20MB-1N		
Internal Connector		HE1G-L20MCB-1N			

Note 1: Silicon rubber: Can be used in general factories. Remains flexible at cold temperatures. Suitable to applications in a wide operating temperature range.

Note 2: NBR/PVC polyblend: Oil-proof. Suitable for environments subjected to machine oil and painting robot where silicon rubber cannot be used.

## Contact Ratings

Rated Insulation Voltage (Ui)		250V (momentary pushbutton: 125V)			
Rated Thermal Current (Ith)		2.5A (Note)			
Rated Voltage (Ue)		30V	125V	250V	
Rated Current (Ie) 3-position switch Terminal No. 1-2/A1-B1, 3-4/A2-B2	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	—

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

Note:

Operating temp. -40 to up to +50°C (not included): 2A (4 circuits)  
-50 to +60°C: 1.5A (3 or 4 circuits)

## Specifications

Degree of Protection (IEC 60529)	HE1G-L21SM: IP66 HE1G-L21SMB, -L20ME, -L20MB: IP65
Conditional Short-circuit Current	50A (250V) (Use a 250V/10A fast-blow fuse for short-circuit protection.)
Direct Opening Force	70N minimum (monitor switch)
Free Fall	1.0m, 1 fall (IEC 60068-2-32 compliant)
Applicable Wire Size	Terminal block type: 0.14 to 1.5 mm <sup>2</sup> (AWG16 to 25) Internal connector type: 0.05 to 0.86 mm <sup>2</sup> (AWG18 to 30)

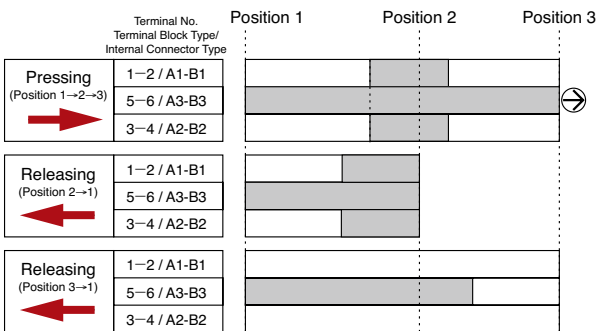
\* For more specifications, see Cat. No. EP1045-0 HE1G grip switch catalog.

## Dimensions

- HE1G-L21SM, HE1G-L21SMC,  
HE1G-L21SM-1N, HE1G-L21SMC-1N

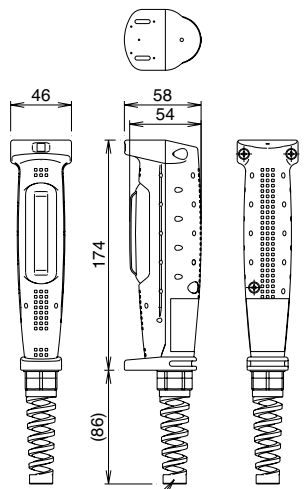
## Operating Characteristics

- HE1G-L21SM, HE1G-L21SMC,  
HE1G-L21SM-1N, HE1G-L21SMC-1N



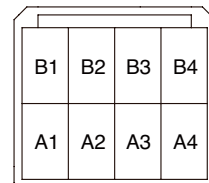
■ : contact ON (closed) □ : contact OFF (open)

- Terminals 1-2/A1-B1 and 3-4/A2-B2 are outputs of the 3-position enabling switch.
- Terminals 5-6/A3-B3 are outputs of the monitor switch.
- The above operation characteristics show when the center of the grip switch button is pressed. Because two contacts are designed to operate independently, pressing the edge of the button turns on one contact earlier than the other contact, causing a delay in operation. To avoid this, always press the center of the button.



Cable Gland (supplied with grip switch)  
Type No.: SKINTOP BS-M20 x 1.5 (LAPP)

## Internal Connector Terminal No.



## Connector

Tyco Electronics D-1200D series

- Receptacle housing: 1-1827864-4
- Receptacle contact  
1827586-2: AWG28 to 30  
(Hand tool: 1762952-1)  
1827587-2: AWG22 to 28  
(Hand tool: 1762846-1)  
1827588-2: AWG22 to 28  
(Hand tool: 1762950-1)  
1827589-2: AWG18 to 22  
(Hand tool: 1762625-1)

Specifications and other descriptions in this catalog are subject to change without notice.



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