

HW Series – 22mm IEC Style Global Pushbuttons

Key features:

- Locking lever removable contact blocks
- Finger-safe IP20 contacts as standard, other terminal styles available
- Tamperproof construction
- All E-stops meet EN418 and are compliant with SEMI S2 standards
- Worldwide approvals
- Easy to assemble
- Choice of black plastic or metallic front bezels
- Incandescent or LED illumination
- Transformer or full voltage
- Slow make double break self cleaning contacts



HW: The Best Engineered Switch in the World

IDEC's HW switches are "The best engineered switch in the world" for a reason. Carrying the CE mark, UL, CSA, CCC (Chinese), and TUV approvals, these switches are designed for use in almost any part of the world.

lights, selector switches, and emergency stop switches.

All switches also incorporate mechanically keyed safety locking levers, ensuring correct installation and maintaining safety in high-vibration applications.

Complete with finger-safe contact blocks offering IP20 protection, these 7/8" (22mm) switches include illuminated and non-illuminated pushbuttons, pilot



File No. E68961



File No. LR92374



Registration No. R9551089 (E-stops)
 Registration No. R50054316 (Dual Pushbuttons)
 Registration No. J9650511 (Pilot Lights)
 Registration No. J9551458 (all other switches)



TÜV Rheinland
 Certificate No.
 2005010305145656



Specifications

Electrical	Rated Operational Characteristics	AC-15: A600 or Ue = 250V, Ie = 3A (NO, NC, NO-EM, NC-LB) DC-13: P600 or Ue = 125V, Ie = 1.1A (NO, NC) DC-13: Q600 or Ue = 125V, Ie = 0.9A (NO-EM, NC-LB)
	Maximum Inrush Current	40 A (40 ms)
	Rated Insulation Voltage	600V
	Rated Switching Over-Voltage	Less than 4kV, conforming to IEC60947-1
	Rated Impulse Withstanding Voltage	4kV for contact circuit, 2.5kV for lamp circuit
	Rated Thermal Current	10 Amp
	Minimum Switching Capacity	5 mA at 3V AC/DC
	Electrical Reliability	MTBF < 1 fault for 10 million operation cycles (3V DC, 5mA)
Lamp Ratings	Incandescent: 1 W LEDs: 6V/17mA max, 12V & 24V/11mA max, 120 & 240V/10mA max	

Mechanical	Contact Operation	Slow break NC or NO, self-cleaning							
	Positive Action Operation (Emergency Stops with NC contacts)	5.5mm to 10mm travel to latch, 45N minimum force to latch 10mm maximum travel, 1,800 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Push-Pull							
	Operating Force	Flush and extended pushbuttons—with 1NO or 1NC contact: 6.2±2N (momentary), 7.0±2N (maintained) Additional contacts—1NO or 1NC: +3.2N (momentary), + 3.3N (maintained)							
	Recommended Terminal Torque	0.8 N m (7.1 in lb.)							
	Applicable Wire Size	Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG							
	Contact Resistance	Initial contact resistance of 50mΩ or less							
	Contact Gap	4mm (NO and NC), 2mm (NO-EM and NC-LB)							
	Horsepower Rating	Reference Value: 1/4 HP @ 120V (1ø non-reversing), 1HP @ 240V (3ø non-reversing)							
	Contact Material	Silver (gold plated contacts available - contact IDEC)							
	Operating Temperature	Operation: -25 to +50°C (without freezing), Storage: -40 to +70°C (without freezing)							
Vibration Resistance	10 to 55Hz, 98m/sec ² (10G) conforming to IEC6068-2-6								
Shock Resistance	980m/sec ² (100G) conforming to IEC6068-2-7								
Mechanical Life	Momentary pushbuttons: 5,000,000 (900 operations per hour), All other switches: 500,000								
Conforming to Standards	EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14								
Standards & Approvals	Approvals	 File No. E68961  File No. LR92374   Registration No. R9551089 (E-stops) Registration No. R50054316 (Dual Pushbuttons) Registration No. J9650511 (Pilot Lights) Registration No. J9551458 (all other switches)  TÜV Rheinland Certificate No. 2005010305145656							
	Electric Shock Protection	Class 0 conforming to IEC60536							
Timers	Degree of Protection (conforming to IEC60529) (conforming to NEMA ICS6-110)	IP65 (from front of the panel) IP20 (Type HW-F contact block) NEMA 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 13 (from front of panel)							
	Pollution Degree (conforming to IEC60947-1)	3 for switches not using a transformer, 2 for switches using a transformer							
	External Short-Circuit Protection	10A 250V fuse conforming to IEC60269-1							
	Terminal Referencing	Conforming to CENELEC EN50005							
Contact Ratings	Pushbuttons	Contact Block						Type HW-C/HW-F /HW-G	
	Illuminated Pushbuttons	Rated Insulation Voltage	600V						
	Selector Switches	Rated Continuous Current	10A						
	Illuminated Selector Switches Pushbutton Selectors	Contact Ratings by Utilization Category IEC 60947-5-1	AC-15 (A600) DC-13 (P600)						
Characteristics	Operational Voltage		24V	48V	50V	110V	220V	440V	
	Operational Current	AC 50/60 Hz	AC-12 Control of resistive loads & solid state loads	10A	—	10A	10A	6A	2A
			AC-15 Control of electromagnetic loads (> 72VA)	10A	—	7A	5A	3A	1A
		DC	DC-12 Control of resistive loads & solid state loads	8A	5A	—	2.2A	1.1A	—
DC-13 Control of electromagnets			5A	2A	—	1.1A	0.6A	—	

 For dimensions, see page 601.

LED Lamp Ratings (LSTD Type)

Model			LSTD-6②	LSTD-1②	LSTD-2②	LSTD-H2②	LSTD-M4②
Lamp Base			BA9S/13				
Rated Voltage			6V AC/DC	12V AC/DC	24V AC/DC	120V AC	240V AC
Voltage Range			6V AC/DC ±10%	12V AC/DC ±10%	24V AC/DC ±10%	120V AC ±5%	240V AC ±5%
Current Draw	AC	A, R, W: G, S:	17mA 8mA	11mA	11mA	10mA	10mA
	DC	A, R, W: G, S:	14mA 5.5mA	10mA	10mA	—	—
Color Code			A (amber), G (green), R (red), S (blue), W (white)				
Lamp Base Color			Same as illumination color				
Voltage Marking			Die stamped on the base				
Life (reference value)			Approx. 50,000 hours (The luminance reduces to 50% the initial intensity when used on complete DC.)				
Internal Circuit	A, R, W						
	A, R, W						
	G, S						
			<ul style="list-style-type: none"> LED Chip Protection Diode Zener Diode 				

In place of ②, specify the Lens/LED Color Code.

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Key Switches 2-Position (Assembled)



2-Position Key Switches

Contact	Mounting	Operator Position		Maintained	Spring Return from Right
		L	R	L 	L 
<i>Operator Only</i>				<i>HW</i> ⊙ <i>K-2A</i>	<i>HW</i> ⊙ <i>K-21B</i>
1NO	1	0	X	HW⊙K-2AF10	HW⊙K-21BF10
1NO-1NC	1	0	X	HW⊙K-2AF11	HW⊙K-21BF11
	2	X	0		
2NO	1	0	X	HW⊙K-2AF20	HW⊙K-21BF20
	2	0	X		
2NO-2NC	1	0	X	HW⊙K-2AF22	HW⊙K-21BF22
	2	X	0		
	3	0	X		
	4	X	0		

- 1. In place of ⊙ enter 1 for plastic bezel or 4 for metal bezel.
- 2. Key is removable in all maintained positions. Other key removable options available.
- 3. Two keys are supplied with all switches.
- 4. All standard operators are keyed alike.
- 5. Other key removable options available. See table below
- 6. For nameplates, see page 596.
- 7. For contact assembly part numbers, see page 600.
- 8. Key is retained in "Spring Return" position.
- 9. All assembled part numbers in catalog include standard fingersafe (HW-F...) contacts.
- 10. Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- 11. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.
- 12. Additional contact configurations available (up to 6 total contacts).
- 13. For Truth Tables see page 600.

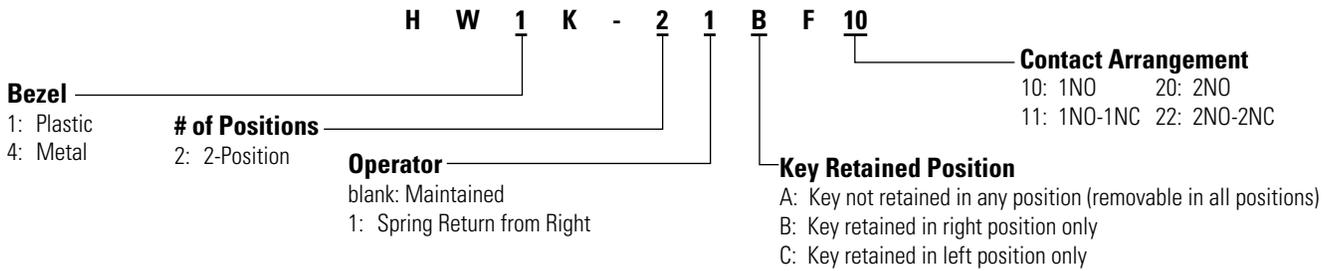
⊙ Bezel Type

Type	Code
Plastic	1
Metal	4

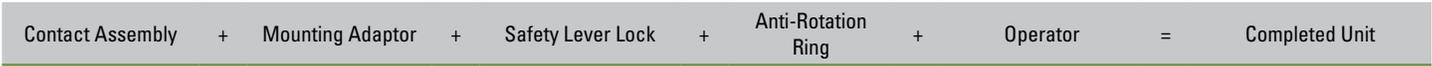
Key Removable Option Codes

Code	Description
A	Key not retained in any position (removable in all positions)
B	Key retained in right position only
C	Key retained in left position only

Part Number Structure



Key Switches 2-Position (Replacement Parts)



Contact Blocks

Style	Contacts	1NO	1NC
	Standard Fingersafe (IP20)	HW-F10	HW-F01
		HW-F10R (early make)	HW-F01R (late break)
	Spring-Up Terminal	HW-G10	HW-G01
		HW-G10R (early make)	HW-G01R (late break)
	Exposed Screw Terminal	HW-C10	HW-C01
		HW-C10R (early make)	HW-C01R (late break)
	Dummy Block	TW-DB	

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Description	Plastic Bezel	Metal Bezel
	Maintained	HW1K-2A	HW4K-2A
	Maintained, key removed left only	HW1K-2B	HW4K-2B
	Spring Return from Right	HW1K-21B	HW4K-21B
	Maintained, key removed right only	HW1K-2C	HW4K-2C

1. Operator includes two keys.
2. All standard operators are keyed alike.

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

1. Used to mount contact blocks to operator (first pair only).
2. IDEC strongly recommends using the safety lever lock to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.