

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.

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

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.



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 $U_e = 250V$, $I_e = 3A$ (NO, NC, NO-EM, NC-LB) DC-13: P600 or $U_e = 125V$, $I_e = 1.1A$ (NO, NC) DC-13: Q600 or $U_e = 125V$, $I_e = 0.9A$ (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

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

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						
Standards & Approvals	Conforming to Standards			EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14					
	Approvals			CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) UL: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) TÜV: pushbuttons and selector switches: A600=P600 (NO, NC)/Q600 (NO-EM, NC-LB) pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)					
	 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					
	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			Contact Ratings by Utilization Category		AC-15 (A600)			
	Pushbutton Selectors			IEC 60947-5-1		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				
					 LED Chip Protection Diode Zener Diode		

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

Dual Pushbutton Switches

Key features:

- Two pushbuttons and a pilot light are integrated into one space-saving ø22 mm control unit.
- Momentary and interlock types are available for pushbuttons. Interlock type prevents both buttons from being pressed at the same time.
- Pilot lights are available in full voltage and transformer with LED or incandescent lamps.
- IP40 protection, IP65 when using silicon cover.
- UL Listed, CSA approved, and EN compliant



Applications:

- Ideal for use as power switches and start/stop switches (available with I/ON and O/OFF markings on the buttons and a pilot light in the center).
- Interlock type prevents two pushbuttons from being pressed at the same time.

Dual Pushbutton Switches (Assembled) Part Numbers

Without Center Pilot Light

Operation Type	Button Style		Contact Arrangement		Part Number	④Button Color Code	⑤Legend Code
			Top Button	Bottom Button			
Momentary	Flush (top) Flush (bottom)		1NO	1NC	HW7D-B11F1001-④⑤	GR: Green (top) Red (bottom)	Blank: Without legend
			1NO	1NO	HW7D-B11F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B11F1111-④⑤		
			2NO	2NC	HW7D-B11F2002-④⑤		
			2NO	2NO	HW7D-B11F2020-④⑤		
	Flush (top) Extended (bottom)		1NO	1NC	HW7D-B12F1001-④⑤		
			1NO	1NO	HW7D-B12F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B12F1111-④⑤		
			2NO	2NC	HW7D-B12F2002-④⑤		
			2NO	2NO	HW7D-B12F2020-④⑤		
Interlock*	Flush (top) Flush (bottom)		1NO	1NC	HW7D-B21F1001-④⑤	WB: White (top) Black (bottom)	1: I/ON (top) O/OFF (bottom)
			1NO	1NO	HW7D-B21F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B21F1111-④⑤		
			2NO	2NC	HW7D-B21F2002-④⑤		
			2NO	2NO	HW7D-B21F2020-④⑤		
	Flush (top) Extended (bottom)		1NO	1NC	HW7D-B22F1001-④⑤		
			1NO	1NO	HW7D-B22F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B22F1111-④⑤		
			2NO	2NC	HW7D-B22F2002-④⑤		
			2NO	2NO	HW7D-B22F2020-④⑤		

 1. *Interlock type prevents both top and bottom buttons from being pressed simultaneously.
2. Clear silicon rubber cover part number HW9Z-D7D.
3. Additional contact configurations available (up to 6 total contacts).

With Center Pilot Light

Operation Type	Button Style		Top Button	Bottom Button	Part Number
Momentary	Flush (Top) Flush (Bottom)	Flush (top) Flush (bottom)	1NO	1NC	HW7D-L11F1001②③-④⑤
			1NO	1NO	HW7D-L11F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L11F1111②③-④⑤
			2NO	2NC	HW7D-L11F2002②③-④⑤
			2NO	2NO	HW7D-L11F2020②③-④⑤
	Flush (Top) Extended (Bottom)		1NO	1NC	HW7D-L12F1001②③-④⑤
			1NO	1NO	HW7D-L12F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L12F1111②③-④⑤
			2NO	2NC	HW7D-L12F2002②③-④⑤
			2NO	2NO	HW7D-L12F2020②③-④⑤
Interlock*	Flush (Top) Flush (Bottom)	Flush (top) Extended (bottom)	1NO	1NC	HW7D-L21F1001②③-④⑤
			1NO	1NO	HW7D-L21F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L21F1111②③-④⑤
			2NO	2NC	HW7D-L21F2002②③-④⑤
			2NO	2NO	HW7D-L21F2020②③-④⑤
	Flush (Top) Extended (Bottom)		1NO	1NC	HW7D-L22F1001②③-④⑤
			1NO	1NO	HW7D-L22F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L22F1111②③-④⑤
			2NO	2NC	HW7D-L22F2002②③-④⑤
			2NO	2NO	HW7D-L22F2020②③-④⑤



- *Interlock type prevents both top and bottom buttons from being pressed simultaneously.
- Clear silicon rubber cover part number HW9Z-D7D.
- All assembled part numbers in catalog include standard (HW-F...) contacts.
- 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).
- Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

② Pilot Light Illumination & Voltage Code

Full Voltage	
Voltage	Code
6V AC/DC, LED	Q2
12V AC/DC, LED	Q3
24V AC/DC, LED	Q4
120V AC, LED	Q8
6V AC/DC, Incandescent	Q5*
12V AC/DC, Incandescent	Q6*
24V AC/DC, Incandescent	Q7*
Step-Down Transformer (6V Secondary Lamp Voltage)	
Voltage	Code
120V AC, LED	H22
240V AC, LED	M42
480V AC, LED	T82
120V AC, Incandescent	H25*
240V AC, Incandescent	M45*
480V AC, Incandescent	T85*



*Only available for White Lens Pilot Lamp.

③ Pilot Lamp Color Code

Color	Code
Amber	A*
Green	G*
Red	R*
Blue	S*
White	W



*Only available in LED illumination.

④ Pushbutton Color Code

Color	Code
Top	Green
Bottom	Red
Top	White
Bottom	Black
	WB

⑤ Engraving Codes

Engraving	Code
No Engraving	Blank
I/ON	Top
O/OFF	Bottom
	1

Part Number Structure

Pilot Light

B: Without Center Pilot Light
L: With Center Pilot Light

Button Arrangement

11: Momentary (Flush/Flush)
12: Momentary (Flush/Extended)
21: Interlock (Flush/Flush)
22: Interlock (Flush/Extended)

Contact Arrangement

Top Button
01: 1NC 02: 2NC
10: 1NO 20: 2NO

Bottom Button
01: 1NC 02: 2NC
10: 1NO 20: 2NO

Voltage Code

blank: without center pilot light

Full Voltage*

Q2: 6V LED

*For additional voltage codes, please see previous page

Transformer*

H22: 120V AC LED

Pilot Lamp Color

A: Amber* Y: Yellow*
G: Green* blank: without center pilot light
R: Red*
S: Blue*
W: White

*Only available in LED illumination.

Engraving Code

blank: No Engraving
1: Top: I/ON
Bottom: O/OFF

Pushbutton Color

GR: Top: Green
Bottom: Red
WB: Top: White
Bottom: Black

Dual Pushbutton Switches (Sub-assembled) Part Numbers

Contact Blocks + Mounting Adaptor + Safety Lever Lock + Operator + Lens = Completed Unit



Lamp Circuit Components with Fingersafe Terminals

Style	Description	Part Number
Lead Holder	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.	HW-LH3
Dummy Block with Full Voltage Adaptor	For use with odd number of contacts.	HW-DA1FB
Full Voltage Adaptor	For use with even number of contacts.	TW-DA1FB
Transformer Unit (6V secondary voltage)	120VAC 240VAC 480VAC	TW-F126B TW-F246B TW-F486B

Exposed and spring up terminals also available.

Operators

Style	Button	Part Number
Momentary	Flush (top)	HW7D-*11④-⑤
	Flush (bottom)	
	Flush (top)	HW7D-*12④-⑤
	Extended (bottom)	
Interlock	Flush (top)	HW7D-*21④-⑤
	Flush (bottom)	
	Flush (top)	HW7D-*22④-⑤
	Extended (bottom)	

Instead of * insert:
B: Non-illuminated
L: Illuminated

④ Pushbutton Color Code

Color	Code	Color	Code
Top	Green	Top	White
Bottom	Red	Bottom	Black
	GR		WB

Contact Blocks

Style	Contacts	1NO	1NC
	Standard Fingersafe (IP20)	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
	Dummy Block	TW-DB	

Style	Contacts	1NO	1NC
	Spring-Up Terminal	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
	Exposed Screw Terminal	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)

Contact Block Mounting Adaptor

Style	Part Number
Non-illuminated	HW-CB2C
Illuminated (with Pilot Light)	HW-CBL

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

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

⑤ Engraving Codes

Engraving	Code
No Engraving	Blank
I/ON	Top
O/OFF	Bottom
	1

Lamps/Lens

Style	Voltage	Part Number
LED	6V AC/DC	LSTD-6②
	12V AC/DC	LSTD-1②
	24V AC/DC	LSTD-2②
	120V AC	LSTD-H2②
Incandescent	240V AC	LSTD-M4②
	6V AC/DC	IS-6
	12V AC/DC	IS-12
	24V AC/DC	IS-24
Non-illuminated		HW9Z-B7B
Illuminated		HW9Z-L7W

- In place of ②, specify the LED Color Code.
- The LED contains a current-limiting resistor and reverse polarity protection diodes.

② LED Color Code

Color	Code	Color	Code
Amber	A*	Blue	S*
Green	G*	White	W
Red	R*		

Only for LED illumination.