

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							
	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
	Operational Current	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

Jumbo Dome Pilot Lights (Assembled)



Plastic Bezel

Jumbo Dome	LED	Operator Only	HW1P-5Q0
		Full Voltage 24V AC/DC	HW1P-5Q4-Ⓢ
	Incandescent	Operator Only	HW1P-5Q7*
		Full Voltage 24V AC/DC	HW1P-5Q7-Ⓢ

Actual Size



1. In place of Ⓢ, specify the Lens/LED Color Code.
2. *Incandescent operator comes with bulb.
3. Available with spring-up terminals in 24V only.
4. For nameplates and accessories, see page 596 and 599.
5. For dimensions, see page 601.

Ⓢ Lens/LED Color Code

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



Jumbo Dome Replacement Parts

Item	Appearance	Description	Part Number
Lens		Polycarbonate Lens	HW1A-P5Ⓢ
LED Diffusing Lens*			HW9Z-PP5C
LED Lamps		LED Lamp	LSTDB-2Ⓢ



1. In place of Ⓢ, specify the Lens/LED Color Code.
2. *Diffusing lens for LED models only.
3. Use white LED for yellow lens.

Lamp Ratings

	Part Number	Operating Voltage	Rated Current	Power Consumption
LED	LSTDB-2	24V AC/DC ±10%	15mA	0.36W
Incandescent	LSB-2		150mA	3.6W



Pilot Lights (Assembled)



		Round Flush		Dome	
		Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Operator Only		HW1P-1FQ0-②	HW4P-1FQ0-②	HW1P-2FQ0-②	HW4P-2FQ0-②
Full Voltage		HW1P-1FQ④-②-③	HW4P-1FQ④-②-③	HW1P-2FQ④-②-③	HW4P-2FQ④-②-③
Transformer	120V AC	HW1P-1FH2④-②	HW4P-1FH2④-②	HW1P-2FH2④-②	HW4P-2FH2④-②
	240V AC	HW1P-1FM4④-②	HW4P-1FM4④-②	HW1P-2FM4④-②	HW4P-2FM4④-②
	480V AC	HW1P-1FT8④-②	HW4P-1FT8④-②	HW1P-2FT8④-②	HW4P-2FT8④-②
DC-DC Converter*	110V DC	HW1P-1D2D-②	—	HW1P-2D2D-②	—



		Square Flush	
		Plastic Bezel	Metal Bezel
Operator Only		HW2P-1FQ0-②	
Full Voltage		HW2P-1FQ④-②-③	
Transformer	120V AC	HW2P-1FH2④-②	
	240V AC	HW2P-1FM4④-②	
	480V AC	HW2P-1FT8④-②	
DC-DC Converter*	110V DC	HW2P-1D2D-②	

② Lens/LED Color Code

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

③ Full Voltage Code

Voltage	Code
6VAC/DC	6V
12VAC/DC	12V
24VAC/DC	24V
120V AC (LED only)	120V
240V AC (LED only)	240V

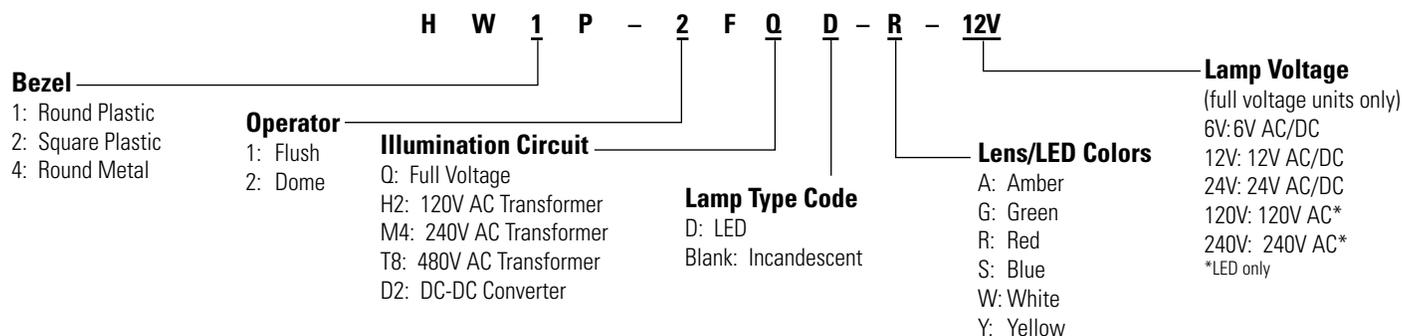
④ Lamp Type Code

Lamp	Code
Incandescent	Blank
LED	D



1. In place of ②, specify the Lens/LED Color Code from table below.
2. In place of ③ specify the Full Voltage Code from table below.
3. In place of ④ specify Lamp Type Code from table below.
4. *DC-DC convertor voltage input from 90-140V DC, comes with spring-up terminals only.
5. DC-DC converter models with LED lamps only.
6. For nameplates and accessories, see page 596 and 599.
7. For dimensions, see page 601.
8. **Pilot lights do not come with anti-rotation ring.**
9. Operator models come with operator and lens.
10. **Yellow pilot light comes with white LED.**

Part Number Structure



Pilot Lights (Replacement Parts)



(not applicable for full voltage units)

Transformer Units

Style	Voltage	Part Number
LED/Incandescent 	120V AC	HW-FH20 HW-MH20*
	240V AC	HW-FM40 HW-MM40*
	480V AC	HW-FT80 HW-RT80*
	110V DC** (6V secondary voltage)	HW-RD0*

- *With spring-up terminals - to use spring-up terminal type, must use transformer type operator designed for spring-up transformer.
- ** DC-DC converter voltage input from 90-140V DC.

Lamps

Style	Voltage	Part Number
LED 	6V AC/DC	LSTD-6⊙
	12V AC/DC	LSTD-1⊙
	24V AC/DC	LSTD-2⊙
	120V AC	LSTD-H2⊙
Incandescent 	240V AC	LSTD-M4⊙
	6V AC/DC	IS-6
	12V AC/DC	IS-12
	24V AC/DC	IS-24

- In place of ⊙, 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		

 For yellow lens use white LED.

Operators

Style	Type	Plastic Bezel	Metal Bezel
Round Flush 	Full Voltage	Standard	HW1P-1FQ0
		Spring-up Terminals	HW1P-1Q0
	Transformer	Standard	HW1P-10
		Spring-up Terminals	HW1P-100
Dome 	Full Voltage	Standard	HW1P-2FQ0
		Spring-up Terminals	HW1P-2Q0
	Transformer	Standard	HW1P-20
		Spring-up Terminals	HW1P-200
Square Flush 	Full Voltage	Standard	HW2P-1FQ0
		Spring-up Terminals	HW2P-1Q0
	Transformer	Standard	HW2P-10
		Spring-up Terminals	HW2P-100

- Transformer type requires separate transformer & lamp. Must select correct transformer bases on standard or spring up terminal type. Use 6V lamps or LEDs.
- Full voltage type only requires lamp.

Lenses

Style	Part Number
Round/Flush 	HW1A-P1-⊙
Dome 	HW1A-P2-⊙
Square/Flush 	HW2A-P1-⊙

 In place of ⊙, specify the Lens Color Code.

③ Lens Color Code

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

 For yellow lens use white LED.