

A3

Switches & Pilot Devices



HW: The Best Engineered Switch in the World

Key features include:

- 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
- Available assembled or as sub-components
- Choice of black plastic or metallic front bezels
- Incandescent or LED illumination
- Transformer or full voltage
- Slow make double break self cleaning contacts

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



TÜV Rheinland

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



Certificate No.
 2005010305145656

Specifications	Conforming to Standards		EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14						
	Approvals		 File No. E68961  File No. LR92374  Certificate No. 2005010305145656  TÜV Rheinland Registration No. R9551089 (E-stops) Registration No. J9551458 (all other switches) Registration No. J9650511 (Pilot Lights)  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) TUV: 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)						
	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						
	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)						
	Mechanical Life		Momentary pushbuttons: 5,000,000 (900 operations per hour), All other switches: 500,000						
	Pollution Degree (conforming to IEC60947-1)		3 for switches not using a transformer, 2 for switches using a transformer						
	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)						
	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						
	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 (main- tained) Additional contacts—1NO or 1NC: +3.2N (momentary), + 3.3N (maintained)						
	Terminal Referencing		Conforming to CENELEC EN50005						
	Recommended Terminal Torque		0.8 N m (7.1 in lb.)						
	External Short-Circuit Protection		10A 250V fuse conforming to IEC60269-1						
	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)						
	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						
	Maximum Inrush Current		40 A (40 ms)						
	Contact Material		Silver (gold plated contacts available - contact IDEC)						
	Contact Ratings	Pushbuttons Illuminated Pushbuttons Selector Switches Illuminated Selector Switches Pushbutton Selectors		Contact Block			Type HW-C/HW-F /HW-G		
Rated Insulation Voltage				600V					
Rated Continuous Current				10A					
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 A3-100.
- For life expectancy derating curves, see page A3-105.

Non-Illuminated Pushbuttons (Assembled)

Part Numbers: Non-Illuminated Pushbuttons

Style	Contact	Plastic Bezel		Metal Bezel	
		Momentary	Maintained	Momentary	Maintained
Round Flush 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW1B-M1F10-① HW1B-M1F01-① HW1B-M1F11-① HW1B-M1F20-① HW1B-M1F02-① HW1B-M1F22-①	HW1B-A1F10-① HW1B-A1F01-① HW1B-A1F11-① HW1B-A1F20-① HW1B-A1F02-① HW1B-A1F22-①	HW4B-M1F10-① HW4B-M1F01-① HW4B-M1F11-① HW4B-M1F20-① HW4B-M1F02-① HW4B-M1F22-①	HW4B-A1F10-① HW4B-A1F01-① HW4B-A1F11-① HW4B-A1F20-① HW4B-A1F02-① HW4B-A1F22-①
Round Extended 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW1B-M2F10-① HW1B-M2F01-① HW1B-M2F11-① HW1B-M2F20-① HW1B-M2F02-① HW1B-M2F22-①	HW1B-A2F10-① HW1B-A2F01-① HW1B-A2F11-① HW1B-A2F20-① HW1B-A2F02-① HW1B-A2F22-①	HW4B-M2F10-① HW4B-M2F01-① HW4B-M2F11-① HW4B-M2F20-① HW4B-M2F02-① HW4B-M2F22-①	HW4B-A2F10-① HW4B-A2F01-① HW4B-A2F11-① HW4B-A2F20-① HW4B-A2F02-① HW4B-A2F22-①
29mm Mushroom Head 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW1B-M3F10-① HW1B-M3F01-① HW1B-M3F11-① HW1B-M3F20-① HW1B-M3F02-① HW1B-M3F22-①	HW1B-A3F10-① HW1B-A3F01-① HW1B-A3F11-① HW1B-A3F20-① HW1B-A3F02-① HW1B-A3F22-①	HW4B-M3F10-① HW4B-M3F01-① HW4B-M3F11-① HW4B-M3F20-① HW4B-M3F02-① HW4B-M3F22-①	HW4B-A3F10-① HW4B-A3F01-① HW4B-A3F11-① HW4B-A3F20-① HW4B-A3F02-① HW4B-A3F22-①
40mm Mushroom Head 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW1B-M4F10-① HW1B-M4F01-① HW1B-M4F11-① HW1B-M4F20-① HW1B-M4F02-① HW1B-M4F22-①	HW1B-A4F10-① HW1B-A4F01-① HW1B-A4F11-① HW1B-A4F20-① HW1B-A4F02-① HW1B-A4F22-①	HW4B-M4F10-① HW4B-M4F01-① HW4B-M4F11-① HW4B-M4F20-① HW4B-M4F02-① HW4B-M4F22-①	HW4B-A4F10-① HW4B-A4F01-① HW4B-A4F11-① HW4B-A4F20-① HW4B-A4F02-① HW4B-A4F22-①
60mm Jumbo Mushroom Head 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW1B-M5F10-①* HW1B-M5F01-①* HW1B-M5F11-①* HW1B-M5F20-①* HW1B-M5F02-①* HW1B-M5F22-①*	—	—	—
Square Flush 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW2B-M1F10-① HW2B-M1F01-① HW2B-M1F11-① HW2B-M1F20-① HW2B-M1F02-① HW2B-M1F22-①	HW2B-A1F10-① HW2B-A1F01-① HW2B-A1F11-① HW2B-A1F20-① HW2B-A1F02-① HW2B-A1F22-①	—	—
Square Extended 	1NO 1NC 1NO-1NC 2NO 2NC 2NO-2NC	HW2B-M2F10-① HW2B-M2F01-① HW2B-M2F11-① HW2B-M2F20-① HW2B-M2F02-① HW2B-M2F22-①	HW2B-A2F10-① HW2B-A2F01-① HW2B-A2F11-① HW2B-A2F20-① HW2B-A2F02-① HW2B-A2F22-①	—	—

① Button Color Code

Color	Code
Black	B
Green	G
Red	R
Blue	S
White	W
Yellow	Y
Grey	N*

* Grey is available for Round Flush models only.



1. In place of ①, specify the Button Color Code.
2. * Jumbo mushroom available only in red, green, black, and yellow.
3. For nameplates and accessories, see page A3-96 and A3-98.
4. For dimensions, see page A3-100.
5. For sub-assembly part numbers, see page A3-56.

Dimensions — HW Series

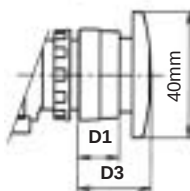
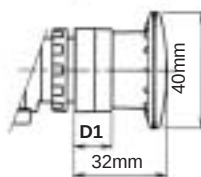
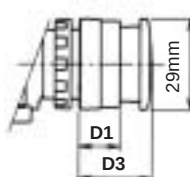
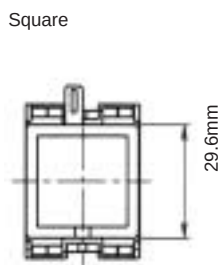
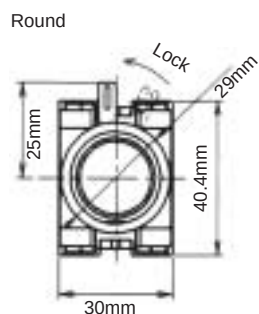
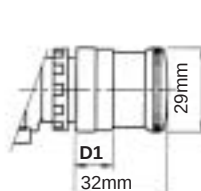
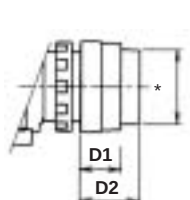
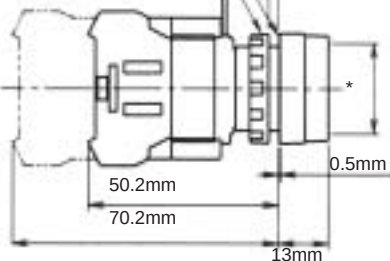
Non-Illuminated Pushbuttons

Panel Thickness 0.8mm to 6.0mm

M3.5 Terminal Screws

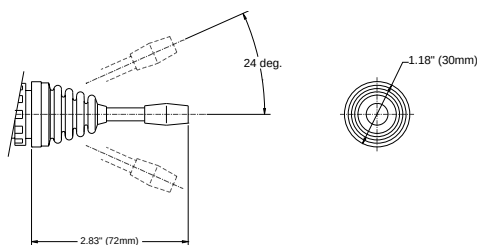
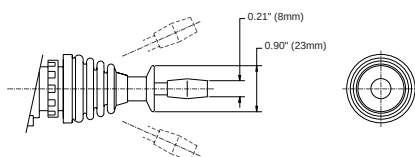
Gasket
Locking Ring

* Round: 23.6mm
* Square: 24.8mm



D1 = 13mm D2 = 19mm D3 = 23.2mm

Monolever



Pilot Lights

M3.5 Terminal Screws

Panel Thickness 0.8mm to 6.0mm

Gasket
Locking Ring

