**Switches & Pilot Lights** 

**Display Lights** 

**Relays & Sockets** 

Timers

## HW Series – 22mm IEC Style Global Pushbuttons

#### **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
- Choice of black plastic or metallic front bezels
- Incandescent or LED illumination
- Transformer or full voltage
- · Slow make double break self cleaning contacts



lights, selector switches, and emergency stop switches.

### 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



File No. E68961





Registration No. R9551089 (E-stops) Registration No. R50054316 (Dual Pushbuttons) Registration No. J9650513 (Pilot Lights) Registration No. J9551458 (all other switches)

AC-15: A600 or Ue = 250V, Ie = 3A (NO, NC, NO-EM, NC-LB)

**Specifications** 

DC-13: P600 or Ue = 125V, le = 1.1A (NO, NC)

40 A (40 ms)

DC-13: Q600 or Ue = 125V, Ie = 0.9A (NO-EM, NC-LB)

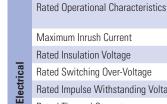
# TÜV Rheinland Certificate No.

All switches also incorporate mechanically keyed safety locking levers, ensuring

correct installation and maintaining safety in high-vibration applications.



2005010305145656



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
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 $50m\Omega$ 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 <sup>2</sup> (10G) conforming to IEC6068-2-6
Shock Resistance	980m/sec <sup>2</sup> (100G) conforming to IEC6068-2-7
Mechanical Life	Momentary pushbuttons: 5,000,000 (900 operations per hour), All other switches: 500,000

### www.idec.com

Mechanical

Switches & Pilot Lights

**Display Lights** 

**Relays & Sockets** 

Timers

**Terminal Blocks** 

**Circuit Breakers** 

Conforming to Standards			EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14						
Registration No. R5005 Registration No. J9650	4316 (Dual Pushbuttons) 511 (Pilot Lights)	Certificate No. 2005010305145656	pilot lights and illuminate integral transformer (100/ UL: pushbuttons and selec pilot lights and illuminate integral transformer (100/ TÜV: pushbuttons and sel pilot lights and illuminate	d pushbuttons (110, 115, 120 ctor switches: d pushbuttons (110, 115, 120 ector switche d pushbuttons	s, direct suppl , 200/220, 23 A600 s, direct suppl , 200/220, 23 s: A600=P600 s, direct suppl	9, 240, 380, 4 y pilot lights a 0, 240, 380, 4 (NO, NC)/Q60 y pilot lights a	, 400/440, 480V) s and illuminated pushbuttons with , 400/440, 480V) 2600 (NO-EM, NC-LB) s and illuminated pushbuttons with		s with
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							
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)			
Operational Voltage				24V	48V	50V	110V	220V	440V
		AC-12 Control of resistive loads & solid state loads		10A	—	10A	10A	6A	2A
Operational	AU 50/60 Hz	AC-15 Control of electromagr	netic loads (> 72VA)	10A	—	7A	5A	3A	1A
Current	20	DC-12 Control of resistive loa	ds & solid state loads	8A	5A	—	2.2A	1.1A	—
	DC	DC-13 Control of electromagnets		5A	2A	_	1.1A	0.6A	—
	Approvals File No. E68961 Registration No. R9551 Registration No. J9557 Registration No. J9557 Electric Shock Degree of Prot (conforming t (conforming t (conforming t (conforming t Registration No. J9557 Electric Shock Degree of Prot (conforming t (conforming t	Approvals File No. E68961 File No. LB92374 File No. LB92374 File No. LB92374 File No. LB92374 Registration No. P80554316 (Dual Pushbuttons) Registration No. 9565051 (#Dual Pushbuttons) Selector Switches Illuminated Selector Switches Pushbuttons Electors Operational Voltage	Approvals       Image: File No. LB89501       Image: File No. LB89501       Image: File No. LB89501         Registration No. B805013090 (E-stops)       Image: File No. LB89501169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)         Registration No. J385051169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)         Registration No. J385051169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)         Registration No. J385051169(Dial Pushbuttons)       Jmage: File No. LB89501169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)         Registration No. J385051169(Dial Pushbuttons)       Jmage: File No. LB89501169(Dial Pushbuttons)       Jmage: File No. LB89501169(Dial Pushbuttons)         Registration No. J38501169(Dial Pushbuttons)       Registration No. J38501169(Dial Pushbuttons)       Image: File No. LB89501169(Dial Pushbuttons)         Pollution Degree (conforming to IEC60929) (conforming to NEMA ICS6-110)       Pollution Degree (conforming to IEC60947-1)         External Short-Circuit Protection       Terminal Referencing         Pushbuttons       Illuminated Pushbuttons       Selector Switches         Illuminated Pushbuttons       Registration Pushbuttons       AC 12 Control of resistive Ioa         Operational Current       Image: Pushbutton Pushbuttons       AC 12 Control of resistive Ioa <t< th=""><th>Approvals       Image: Constraint of the part of t</th><th>Approvals       CSA: pushbuttons and selector switches pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons; pilot lights and illuminated pu</th><th>Approvals       CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supplintegral transformer (100/110, 115, 120, 200/220, 23)         Registration No. B6501087 (Fie Not. IB5274       Image: Comparison of the pushbuttons in the pushbuttons integral transformer (100/110, 115, 120, 200/220, 23)         Registration No. B6501087 (Fie Not. IB5274       Image: Comparison of the pushbuttons integral transformer (100/110, 115, 120, 200/220, 23)         Registration No. B6501087 (Fie Not. Begistration No. B6501087)       Image: Comparison of the pushbuttons integral transformer (100/110, 115, 120, 200/220, 23)         Electric Shock Protection       Class 0 conforming to IEC60536         Degree of Protection (conforming to IEC60529)       IP65 (from front of the panel)         (conforming to NeMA ICS6-110)       PO5 (from front of the panel)         Pollution Degree (conforming to IEC60947-1)       3 for switches not using a transformer, 2 for switche         External Short-Circuit Protection       10A 250V fuse conforming to IEC60269-1         Terminal Referencing       Conforming to IEC60269-1         Pushbuttons selector Switches       Rated Insulation Voltage         Rated Continuous Current       Contact Block         Illuminated Pushbuttons       AC-12 Control of resistive loads &amp; solid state loads       10A         Operational Current       DC-12 Control of resistive loads &amp; solid state loads       8A       5A   </th><th>Approvals       CSA: pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply plot lights and illuminated pushbuttons, direct supply plot lights and illuminated pushbuttons diterest plot lights and illuminated pushbuttore trector suply plot</th><th>Approvals With Energy and State Sta</th><th>Approvals Pie No. 198274 Pie No. 198274CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons 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 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 integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) TÜ: pushbuttons and selector switches: A600-P600 (NO, NC)/CE00 (NO-EM, NC-LB) pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)Pegeteine No: MSENSI IPAL isolation witchesCSA: pushbuttons and selector switches: A600-P600 (NO, NC)/CE00 (NO-EM, NC-LB) pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)Pegree of Protection (conforming to IEC60529) (conforming to IEC60529) (conforming to NEMA ICS6-110)Class 0 conforming to IEC60536Polution Degree (conforming to IEC60547-1)3 for switches to using a transformer, 2 for switches using a transformerPolution Degree (conforming to IEC60547-1)3 for switches to using a transformer, 2 for switches using a transformerPushbuttons Selector SwitchesRated Insulation Voltage Rated Continuous CurrentTipe HW-C/HW-F /HW-GPushbuttons Selector SwitchesAc-12 Control of resist</th></t<>	Approvals       Image: Constraint of the part of t	Approvals       CSA: pushbuttons and selector switches pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120 UL; pushbuttons and selector switches; pilot lights and illuminated pushbuttons; pilot lights and illuminated pu	Approvals       CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supplintegral transformer (100/110, 115, 120, 200/220, 23)         Registration No. B6501087 (Fie Not. IB5274       Image: Comparison of the pushbuttons in the pushbuttons integral transformer (100/110, 115, 120, 200/220, 23)         Registration No. B6501087 (Fie Not. IB5274       Image: Comparison of the pushbuttons integral transformer (100/110, 115, 120, 200/220, 23)         Registration No. B6501087 (Fie Not. Begistration No. B6501087)       Image: Comparison of the pushbuttons integral transformer (100/110, 115, 120, 200/220, 23)         Electric Shock Protection       Class 0 conforming to IEC60536         Degree of Protection (conforming to IEC60529)       IP65 (from front of the panel)         (conforming to NeMA ICS6-110)       PO5 (from front of the panel)         Pollution Degree (conforming to IEC60947-1)       3 for switches not using a transformer, 2 for switche         External Short-Circuit Protection       10A 250V fuse conforming to IEC60269-1         Terminal Referencing       Conforming to IEC60269-1         Pushbuttons selector Switches       Rated Insulation Voltage         Rated Continuous Current       Contact Block         Illuminated Pushbuttons       AC-12 Control of resistive loads & solid state loads       10A         Operational Current       DC-12 Control of resistive loads & solid state loads       8A       5A	Approvals       CSA: pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply pilot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply plot lights and integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 44 UL; pushbuttons and selector switches: A600 plot lights and illuminated pushbuttons, direct supply plot lights and illuminated pushbuttons, direct supply plot lights and illuminated pushbuttons diterest plot lights and illuminated pushbuttore trector suply plot	Approvals With Energy and State Sta	Approvals Pie No. 198274 Pie No. 198274CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons 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 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 integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V) TÜ: pushbuttons and selector switches: A600-P600 (NO, NC)/CE00 (NO-EM, NC-LB) pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)Pegeteine No: MSENSI IPAL isolation witchesCSA: pushbuttons and selector switches: A600-P600 (NO, NC)/CE00 (NO-EM, NC-LB) pilot lights and illuminated pushbuttons, direct supply pilot lights and illuminated pushbuttons integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)Pegree of Protection (conforming to IEC60529) (conforming to IEC60529) (conforming to NEMA ICS6-110)Class 0 conforming to IEC60536Polution Degree (conforming to IEC60547-1)3 for switches to using a transformer, 2 for switches using a transformerPolution Degree (conforming to IEC60547-1)3 for switches to using a transformer, 2 for switches using a transformerPushbuttons Selector SwitchesRated Insulation Voltage Rated Continuous CurrentTipe HW-C/HW-F /HW-GPushbuttons Selector SwitchesAc-12 Control of resist

For dimensions, see page 551.

### LED Lamp Ratings (LSTD Type)

Model No.			LSTD-6 <sup>©</sup>	LSTD-1 <sup>®</sup>	LSTD-2 <sup>©</sup>	LSTD-H2 <sup>®</sup>	LSTD-M4©		
Lamp Ba	ise		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	AC	A, R, W: G, S:	17mA 8mA	11mA	11mA	10mA	10mA		
Draw	DC	A, R, W: G, S:	14mA 5.5mA	10mA	10mA	_	-		
Color Co	de			A (amber), G (green), R (red), S (blue), W (white)					
Lamp Ba	ase Col	or	Same as illumination color						
Voltage Marking				Die stamped on	In place of @,				
Life (reference value) Approx. 50,000 hours (The I			Approx. 50,000 hours (The	luminance reduces to 50% the initial intensity when used on complete DC.)				specify the Len Color Code.	
			A, R, W						
Internal Circuit									
			G, S						
				- LED Chip - ↓ Protection - ↓ Zener Dio	Diode				