Oiltight Switches & Pilot Devices

HW Series — 22mm IEC Style Global Pushbuttons





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. LR92374





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



Certificate No. 2005010305145656

IDEC Oiltight Switches & Pilot Devices

Approvals CSA: pushbuttons and selector switches: A600 Pile No. E8801 File No. LB2274 Control Contrel Control Control Contrel Control Control	(Conforming to Standards				EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14											
File No. E6801 File No. E8237 File No. E6801 File No. E8237 Operating Temperature Constituented gualabilities	4	Approvals															
File No. LRS2T Continues No. File No. LRS2T File No. LRS2T File No. LRS2T File No. LRS2T <		File No. E68961 File No. LR92374 Certificate No.				CSA: pushbuttons and selector switches: A600 pilot lights and illuminated pushbuttons, direct supply											
File No. EGG81 File No. LR2274 Conservation No. Construction Construction Construction Construction TW public lights and alluminated public lights with insignal randomer public lights and alluminated public lights with insignal randomer public lights and alluminated public lights with insignal randomer public lights and alluminated public lights with insignal randomer randomer randomer randomera randomera randomer randomer randomer randomera randomer randome						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											
Available Minimum Structure South 1995 The Bindle Minimum Structure 1000 10 10 11 02, 20022, 2003, 2004, 2004, 2000) The Bindle Minimed Parabolic Minimum Structure 1000 10 10 11 02, 20022, 2003, 2004, 2004, 2000) The Bindle Minimed Parabolic Minimed Parabolic Minimum Structure 1000 10 10 11 02, 20022, 2003, 2004, 2004, 2000, 2000, 2004, 2000, 2004, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 2004, 2000, 20	F																
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The set of th						(100/110, 115, 120, 1 TÜV: pushbuttons	200/220, and sele	230, 2	40, 380, 4 witches	00/440, A600=P	480V) 2600 (NC	NC)/06	MO (NO-EM NC-LB)	A.			
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Rejeration No. 3660541 (Pliot Lights) Operating FmorePreture Operating FmorePreture Operation Service (Pliot (Pliot Lights)) Vibration Resistance 10 to 55Hz, 38m/sec ² (106) conforming to IEC0688-2-6 Shock Resistance S	R	egistration No.	. R9551 . J95514	089 (E-sto 158 (all oth	ps) ier switches)	(100/110, 115, 120, 1	minated 200/220,	230, 2	40, 380, 4	00/440,	grai trai 480V)	istormer		SN			
Operation Operation 256 a - 49°C (without freezing), Storage: - 40 a rOPC (without freezing) Vitration Resistance 10 to 55H, gemsae2 (100) conforming to IEC6008-2-7 Electric Shock Protection Class 0 conforming to IEC6008-2-7 Machanical Life Momentary pushbuitons: 5,000,000 (900 operations per hour), All other switches: 500,000 Machanical Life Momentary pushbuitons: 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 Rated Insulation Voltage Ecs 3 Pa00 rule : 25V, le = 3A (ND, NC, NC-EB) Rated Insulation Voltage Less than 4KV, conforming to IEC60947-1 Rated Insulation Voltage Less than 4KV, conforming to IEC60947-1 Rated Inpulse Withstanding Voltage 4 4 V for contact circuit, 25KV for lamp circuit Rated Inpulse Withstanding Voltage Som kreak NC or ND, self-cleaning Positive Action Operation Som kreak NC or ND, self-cleaning Positive Action Operation Som kreak NC or ND, self-cleaning	R	egistration No.	. J96505	511 (Pilot l	_ights)									Xi			
Utration Resistance Uto 5412, 987,9882 Uto 101 (conforming to 1EC083-26 Shock Resistance 980%,vss2 (1000) conforming to 1EC083-26 Electric Shock Protection Class 6 conforming to 1EC083-27 Electric Shock Protection Class 6 conforming to 1EC083-26 Informing to 1EC083-26 Informing to 1EC08329 IP20 (Type HW-F contact block) Informing to 12000-200, 1900 operations part hour), All other switches: 500,000 Pollution Begree (conforming to 1EC08347-1) 3 for switches not using a transformer, 2 for switches using a transformer Act -15, A000 or Ue = 250V, le = 3A (NO, NC, NO, EM, NC-LB) Bated Derational Characteristics DC -13 G00 or Ue = 250V, le = 3A (NO, NO, CM, NC-LB) Rated Diversion DC -13 G00 or Ue = 250V, le = 3A (NO, NO, CM, CLB) Bated Inpulse Withstanding Votage Less than 44V, conforming to 1EC0847-1 Rated Switching Over-Votage Less than 44V, conforming to 1EC0847-1 Entersion Rated Diversion 10 Amp Minimum Switching Capacity 5 mA at 3V AC/DC Contact Operation Some Yeak KO or NO, self-cleaning Some Yeak KO or NO, self-cleaning Contact Resistance Some Yeak KO or NO, self-cleaning for Contact 6.2±2N (momentary), 7.0±2N (maintained) Operating Force Forming to EEXPECE ENSODOS <t< td=""><td></td><td>Operating Tem</td><td>peratur</td><td>е</td><td></td><td>Operation: –25 to +</td><td>-50°C (M</td><td>vithout</td><td>freezing</td><td>), Storaç</td><td>ge: –40 t</td><td>:o +70°C</td><td>(without freezing)</td><td>¢</td></t<>		Operating Tem	peratur	е		Operation: –25 to +	-50°C (M	vithout	freezing), Storaç	ge: –40 t	:o +70°C	(without freezing)	¢			
Saluck Aussizance 9900rgster (1000 (camorining to EC0006-27) Electric Shock Protection (conforming to EC00529) (conforming to EC00529) (conforming to EC00529) (conforming to NEMA (CS6-110) PES (from front of the panel) P2O (Type HW-F contract block) (conforming to NEMA (CS6-110) Nechanical Life Momentary pushbuttons: 500,000 operations per hour), All other switches: 500,000 Pollution Degree (conforming to IEC0029) (conforming to NEMA (CS6-110) AC -15 A 200 other = 5200, We = 34 (A), NO-M, NC-LB) Rated Dyperational Characteristics DC-13: 600 or Ue = 125V, le = 11A (ND, NC)- DC-13: 6000 or Ue = 125V, le = 0.9A (NO-EM, NC-LB) Rated Insulation Voltage East than 44V, conforming to IEC00297-1 Rated Insulation Voltage Less than 44V, conforming to IEC00297-1 Rated Insulation Voltage Less than 44V, conforming to IEC00297-1 Rated Insulation Voltage Sow break NC or N0, self-cleaning Fated Insulation Voltage Sow break NC or N0, self-cleaning Rated Insulation Voltage Sow break NC or N0, self-cleaning Positive Action Operation Som break NC or N0, self-cleaning Positive Action Operation Som travel to latch Humir More voltage Conforming to EE00289-1 Applicable Write Size Minimum Swite ND or INC - 3.2N (momentary), 7.0-2N (maintained) Terminal Referencing Conforming to EE00289-1 Applicable Write Size Minimum Swite ND or INC - 3.2N (momentary), 7.0-2N (mai		/Ibration Kesis	stance			10 to 55Hz, 98m/se	c² (10G)	conto	rming to	1EC6068	1-2-6			1 e			
Dereit of Protection (conforming to LEXABOD) (conforming to		Shock Resistan	Protoc	tion		980m/sec² (100G) (10536	IEC6068-	2-1				©			
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Teoriorming to Netwin LSS-10/ Netwin 1, 2, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3,		(conforming t	o IEC60	529)		IP20 (Type HW-F c	ontact b	lock)	10 /6	£				Pi			
Pollution Degree (conforming to IEC60947-1) 3 for switches not using a transformer 2 for switches not using a transformer Rated Operational Characteristics DC-15: A600 or Ue = 250V, le = 3A (NO, NC, NC-LB) 2 for switches not using a transformer Rated Approximation Characteristics DC-15: A600 or Ue = 250V, le = 3A (NO, NC, NC-LB) 2 for switches not using a transformer Rated Approximation Comparison Com	-	(conforming t Mechanical Lit	.∪ NEIVIA fe	4 IU 20-I IL	11	Momentary nushb	ی, 4, 4X ۱ttone ^{, 1}	, 5, 12, 5 000 0	13 (Trom 00 (900 o	neration	panei) 1s ner h	οur) ΔΠ	other switches: 500 000	<u>[0</u>]			
Act-15: ABOD or Use - 350V, Ise - 3A INO, MC, NO-EM, NC-LB) Rated Operational Characteristics Act-15: ABOD or Use - 350V, Ise - 3A INO, MC, NO-EM, NC-LB) Rated Insulation Voltage 600V Rated Switching Over-Voltage Less than 4KV, conforming to IEC60947-1 Rated Switching Over-Voltage Less than 4KV, conforming to IEC60947-1 Rated Thermal Current 10 Amp Minimum Switching Capacity 5 mA at 3V AC/D C Contact Operation Slow break NC or NO, self-cleaning Positive Action Operation Slow break NC or NO, self-cleaning Itemargency Stops with NC contacts) Sim to 10mm travel to latch 100 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 breating Force Trush and extended pushbuttons—with 1N0 or 1NC contact: 6.2.22N (momentary), 7.0.22N (maintained) Terminal Referencing Conforming to EEKEC BN0005 Recommended Terminal Incrue 0.8 N m (7.1 in ib.) External Short-Circuit Protection 10A 250V fuse conforming to IES0228-1 Applicable Wire Size Minimum 1x22 AWG or 1 x 12 AWG Contact Resistance Initial contact resistance of 50mQ or less Contact Gap 4mm (N0 and NC), 2mm (No-EM) and NC-LB) Horse	F	Pollution Degr	ee (con	forming to	IEC60947-1)	3 for switches not	using a	transf	ormer, 21	for swite	ches usi	ng a trar	nsformer	— T			
Heted Uperational Characteristics DC-13: C600 or Ue = 125V, le = 1.1A (N0, CV) Rated Insulation Voltage 600V 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 43 3V 4C/DC Contact Operation Slow break NC or N0, self-cleaning Positive Action Operation 5 smm to 10mm travel to latch 10mm maximum travel 10M nimum Switching Capacity Operating Force Flush and extended pushtuttons—with 1NO or 1NC contact 6.2±2N (momentary), 7.0±2N (maintained) Recommended Terminal Referencing Conforming to CENELEC ENS0005 Recommended Terminal Torque 0.8 m (7.1 in lb.) External Short-Circuit Protection 10A 250V fuse conforming to IEC60269-1 Applicable Wire Size Minimum 1x 22 AWG, max, 2x 14 AWG or 1 x 12 AWG Contact Baistance Initial contact resistance of Som April 20 (apartion-reversing) Contact Gap 4mm (N0 and NC), zmm (No-EM and NC-LB) Horsenwer Rating Reference Value: 1/4 HP @ 120V (1a non-reversing) Hest Hort To 10 millin operation cycles (3V 0C, 5mA) Lamp Ratings Lices 6V/17m Amax, 12& & 24V/11mA max, 120 & 240V (3a non-reversing) El					•	AC-15: A600 or Ue	= 250V,	le = 34	(NO, NC	, NO-EN	M, NC-L	B)		—)e			
Rated Insulation Voltage 600V Rated Insulation Voltage 600V Rated Switching Over-Voltage Less than 4kV, conforming to IEC60947-1 Rated Ingulse Withstanding Voltage 4kV for contact circuit, 2.5kV for lamp circuit Rated Thermal Current 10 Amp Minimum Switching Ozeration Siow break NC or NO, self-cleaning Contact Operation Siow break NC or NO, self-cleaning Iferegency Stops with NC contacts) Siow break NC or NO, self-cleaning Operating Force 5.5mm to 10mm travel to latch 1900 operations per hour maximum for a Pushlock Turn Reset 5000 operations per hour maximum for a Pushlock Turn Reset Operating Force Flush and extended pushbuttons—with INO or INC contact 6.2±2N (momentary), 7.0±2N (mained) Recommended Terminal Torque 0.8 N m (7.1 in lb.) Recommended Terminal Torque 0.8 N m (7.1 in lb.) Reterne Vire Size Minimum 1 x 22 AVG, max. 2 x 14 AWG or 1 x 12 AWG Contact Resistance Initial contact resistance of S0mQ or less Contact Gap 4mm (NO and NC), 2mm (No-EM and NC-EB) Horsepower Rating Reference Value 1/4H 'P0 22V0 (Is non-reversing). Electrical Reliability MTF < 1 fault for 10 million operation cycles (SV DC, 5mA)	F	Rated Operation	onal Cha	aracteristi	CS	DC-13: P600 or Ue DC-13: Q600 or Ue	= 125V, = 125V	le = 1.1 le = 0.9	IA (NO, N 9A (NO-F	IC) M, NC-I	LB)			Yi.			
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 Slow break NC or NO, self-cleaning Itemergency Stops with NC contacts) 5 firm to 10mm ravel to latch 45N minimum force to latch 10mm maximum for a Push-Pull Operating Force Additional contacts—1N0 or 1NC: 43.2N (momentary), 7.0±2N (mai tained) Recommended Terminal Torque 0.8 N m (7.1 in lb.) External Short-Circuit Protection 10A 2500 Huse conforming to IEC60269-1 Applicable Wire Size Minimum 1 x2 2 AWG, max. 2 x 14 AWG or 1 x 12 AWG Contact Resistance Initial contact resistance of 50mΩ or 1 ks: 12 AWG Contact Resistance Initial contact resistance of 50mΩ or 1 ks: 2 (M C, 5mA) Horsepower Rating Reference Value: 1/4 HP @ 120V (1e non-reversing). HP @ 240V (3e non-reversing) Electrical Reliability MTBF < 1 fault for 10 million operation cycles (3V DC, 5mA)	F	Rated Insulatio	on Volta	ge		600V	,			,	/			— <u>e</u>			
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 INC or NO, self-cleaning Positive Action Operation (Emergency Stops with NC contacts) 5 5mm to 10mm travel to latch 10mm maximum travel 1800 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour maximum for a Pushlock Turn Reset 900 operations Per hour Pushlock Turn Reset 900 operations Per hour Pushlock Turn Reset 900 operations Pushlo	F	Rated Switchir	ng Over	-Voltage		Less than 4kV, con	forming	to IEC	60947-1					v			
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Online Coperation Down Voca No. Or No. Set Voca No. Set No.		VIINIMUM SWIT	tion	арасіту		5 mA at 3V AL/DL Slow break NC or	الم مال	-cloan	ina								
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(Emergency Stops with NC contacts) Initial International Gaseries 1,000 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 1N0 or 1NC contact. 6.2±2N (momentary), 7.0±2N (main tained) Additional contacts—1N0 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 Resistance Initial contact resistance of 50mΩ or less Contact Reliability MTBF <1 fault for 10 million operation cycles (3V DC, 5mA)	F	Positive Action	n Opera	tion		45N minimum forc	45N minimum force to latch										
900 operations per hour maximum for a Push-Pull Push and extended pushbuttons—with 1N0 or 1NC contact 6.2±2N (momentary), 7.0±2N (mai tained) Additional contacts—1N0 or 1NC: +3.2N (momentary), + 3.3N (maintained) Terminal Referencing Recommended Terminal Torque 0.8 N m (7.1 in 1b.) External Short-Circuit Protection Applicable Wire Size Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG Contact Resistance Initial contact resistance of SDm2 or less Contact Resistance Initial contact resistance of SDm2 or less Contact Resistance Initial contact resistance of SDm2 or less Contact Resistance Initial contact resistance of SDm2 or less Contact Resistance Incandescent: 1 W Large Contact Reliability MTB Reference Value: 1/4 HP @ 120V (1e non-reversing), 1HP @ 240V (3e non-reversing) Incandescent: 1 W Large Contact Block Type HW-C/HW-F /HW-G Pushbuttons Silver (gold plated contacts available - contact IDEC) Contact Block Type HW-C/HW-F /HW-G <td cols<="" td=""><td>(</td><td>Emergency St</td><td>tops wit</td><td>h NC cont</td><td>acts)</td><td colspan="7">1,800 operations per hour maximum for a Pushlock Turn Reset</td><td></td></td>	<td>(</td> <td>Emergency St</td> <td>tops wit</td> <td>h NC cont</td> <td>acts)</td> <td colspan="7">1,800 operations per hour maximum for a Pushlock Turn Reset</td> <td></td>	(Emergency St	tops wit	h NC cont	acts)	1,800 operations per hour maximum for a Pushlock Turn Reset										
Operating Force Fills and extended pushbullors—with Two of Two contacts 0.22xV (indiffinally), 7.022V (indi						900 operations per	hour m	aximu	m for a P	ush-Pul	 NC cont	a att 6 2 .	2NI /mamantary \ 7.0.2NI /m				
Additional contacts—INO or 1NC: +3.2N (momentary), + 3.3N (maintained)Terminal ReferencingConforming to CENELEC ENSOUSRecommended Terminal Torque0.8 N m (7.1 in lb.)External Short-Circuit Protection10A 250V (use conforming to IEC60269-1Applicable Wire SizeMinimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWGContact ResistanceInitial contact resistance of 50m Ω or lessContact Gap4mm (NO and NC), 2mm (NO-EM and NC-LB)Horsepower RatingReference Value: 1/4 HP 0 120V (1ø non-reversing), 1HP @ 240V (3ø non-reversing)Electrical ReliabilityMTBF < 1 fault for 10 million operation cycles (3V DC, 5mA)Lamp RatingsLeDs: 6V/17mA max, 12V & 24V/11mA max, 120 & 240V/10mA maxMaximum Inrush Current40 A (40 ms)Contact BlockType HW-C/HW-F /HW-GRated Insulation Voltage600VPushbuttons Illuminated Selector Switches Pushbutton SelectorsContact Ratings by Utilization Category IEC 60947-5-1Operational VoltageAC-15 (A600) LC 001 of electromagnetic loads & solid state loads10AOperational VoltageAC-15 Control of resistive loads & solid state loads10AOperational CurrentAC-15 Control of electromagnetic loads (5 72VA)10A-AC-15 Control of electromagnetic loads (5 72VA)10A-7A5A3A	(Operating Ford	e			tained)							am-				
Contorming to CENELEE ENSUUERecommended Terminal Torque0.8 N m (7.1 in lb.)Recommended Terminal Torque0.8 N m (7.1 in lb.)External Short-Circuit Protection10A 250V fuse conforming to IEC60269-1Applicable Wire SizeMinimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWGContact ResistanceInitial contact resistance of 50m Ω or lessContact Gap4mm (N0 and NC), 2mm (NO-EM and NC-LB)Horsepower RatingReference Value: 1/4 HP @ 120V (1ø non-reversing), 1HP @ 240V (3ø non-reversing)Electrical ReliabilityMTBF < 1 fault for 10 million operation cycles (3V DC, 5mA)Lamp RatingsIncandescent: 1 W LEDs: 6V/17mA max, 12V & 24V/11mA max, 120 & 240V/10mA maxMaximum Inrush Current40 A (40 ms)Contact MaterialSilver (gold plated contacts available - contact IDEC)Pushbuttons Illuminated Selector Switches Pushbutton Selector Switches Pushbutton Selector Switches Illuminated Selector Switches Illuminated Selector Switches Pushbutton Selector SwitchesAc - 12 control of resistive loads & solid state loads Ac-15 Control of resistive loads & solid state loads Ac-15 Control of electromagnetic loads (> 72VA)10AOperational Operational OperationalAc - 15 Control of electromagnetic loads (> 72VA)10A7A5A3AOperational OperationalAc - 15 Control of electromagnetic loads (> 72VA)10A7A5A3A1A						Additional contact	Additional contacts—1NO or 1NC: +3.2N (momentary), + 3.3N (maintained)										
$\begin{tabular}{ c c c c c } \hline Protection & 10A 250V fuse conforming to IEC60269-1 \\ \hline 10A 24V (3a non-reversing) \\ \hline 11D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D max \\ \hline 10D max \\ \hline 10D max \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D max \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D max \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, 5mA) \\ \hline 10D million operation cycles (3V DC, $		lerminal Refer	encing	al Torquo		Conforming to CENELEC EN50005											
$\begin{tabular}{ c c c c c c c } \hline Applicable Wire Size & Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG & Contact Resistance & Initial contact resistance of 50m Ω or less & Contact Gap & 4mm (N0 and NC), 2mm (N0-EM and NC-LB) & Horsepower Rating & Reference Value: 1/4 HP @ 120V (1ø non-reversing), 1HP @ 240V (3ø non-reversing) & Electrical Reliability & MTBF < 1 fault for 10 million operation cycles (3V DC, 5mA) & Incandescent: 1 W & LEDs: 6V/17mA max, 12V & 24V/11mA max, 120 & 240V/10mA max & Maximum Inrush Current & 40 A (40 ms) & Contact Material & Silver (gold plated contacts available - contact IDEC) & \\ \hline Pushbuttons & Illuminated Pushbuttons & Selector Switches & Illuminated Selector Switches & Illuminated Selector Switches & Rated Continuous Current & 10A & Contact Ratings by Utilization Category & AC-15 (A600) & DC-13 (P600) & \\ \hline Operational Voltage & 24V & 48V & 50V & 110V & 220V & 440V & \\ \hline Ac-15 Control of resistive loads & solid state loads & 10A & - & 10A & 10A & 6A & 2A & \\ \hline Operational & AC-15 Control of resistive loads & solid state loads & 10A & - & 7A & 5A & 3A & 1A & \\ \hline Operational & Current & Contact Ratings by Utilization Category & AC-15 Control of electromagnetic loads (> 72VA) & 10A & - & 7A & 5A & 3A & 1A & \\ \hline Operational & Current & Contact Ratings by Utilization Category & AC-15 (A600) & Current & Curren$		External Short	-Circuit	Protection	1	10A 250V fuse conforming to IEC60269-1											
$\begin{tabular}{ c c c c c c c } \hline Contact Resistance & Initial contact resistance of 50m \Omega or less \\ \hline Contact Gap & 4mm (NO and NC), 2mm (NO-EM and NC-LB) \\ \hline Horsepower Rating & Reference Value: 1/4 HP @ 120V (1ø non-reversing), 1HP @ 240V (3ø non-reversing) \\ \hline Electrical Reliability & MTBF < 1 fault for 10 million operation cycles (3V DC, 5mA) \\ \hline Lamp Ratings & Incandescent: 1 W \\ LEDs: 6V/17mA max, 12V & 24V/11mA max, 120 & 240V/10mA max \\ \hline Maximum Inrush Current & 40 A (40 ms) \\ \hline Contact Material & Silver (gold plated contacts available - contact IDEC) \\ \hline Pushbuttons \\ Illuminated Pushbuttons \\ Selector Switches \\ Illuminated Selector Switches \\ Illuminated Selector Switches \\ Illuminated Selector Switches \\ \hline Pushbutton Selector Switches \\ \hline Operational Voltage & 24V & 48V & 50V & 110V & 220V & 440V \\ \hline Operational & AC & 50/60 \\ \hline Operational & AC & 50/60 \\ \hline Operational & AC & 15 Control of resistive loads & solid state loads & 10A & - & 10A & 10A & 6A & 2A \\ \hline Operational & Current & IOK & INV & INV & INV & 20V & 440V \\ \hline Operational & AC & 50/60 \\ \hline Operational & AC & 15 Control of resistive loads (> 72VA) & 10A & - & 7A & 5A & 3A & 1A \\ \hline Operational & Current & INV & $		Applicable Wir	re Size		·	Minimum 1 x 22 AV	Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG										
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Operational Hz AC-15 Control of electromagnetic loads (> 72VA) 10A – 7A 5A 3A 1A			AC 50/60	AC-12 (Control of resistive loads a	ል solid state loads	10A	_	10A	10A	6A	2A					
	(Operational Current	Hz	AC-15 (Control of electromagnetic	c loads (> 72VA)	10A	-	7A	5A	3A	1A					
DC-12 Control of resistive loads & solid state loads 8A 5A - 2.2A 1.1A -	(Current	DC		DC	DC-12 (Control of resistive loads &	& solid state loads	8A	5A	-	2.2A	1.1A	_		
UC DC 12 Control of algotromagnets 5A 2A 11A 0.6A			DC	DC-13 (ontrol of alactromagnets		5Δ	2Δ	_	114	0.64						

1. For dimensions, see page A3-100.

2. For life expectancy derating curves, see page A3-105.

Oiltight Switches & Pilot Devices

IDEC

Part Nu



Key Switches (Partial-Assemblies)

Part Numbers: Operators

-	# of Position	s Description	Plastic Bezel	Metal Bezel
		Maintained	HW1K-2A	HW4K-2A
	2	Maintained, key remove left only	HW1K-2B	HW4K-2B
		Spring from Right	HW1K-21B	HW4K-21B
		Maintained, Stan- dard Cam	HW1K-3A	HW4K-3A
States VI	(Here)	Maintained, Cam S	HW1K-3SA	HW4K-3SA
		Maintained, Cam J	HW1K-3JA	HW4K-3JA
	3	Spring Return from Right	HW1K-31B	HW4K-31B
		Spring Return from Left	HW1K-32C	HW4K-32C
		Two-Way Spring Return	HW1K-33D	HW4K-33D

1. Operator includes two keys.

2. All standard operators are keyed alike

(contact IDEC for special keys).

3. Other key removable options available. See "Other Key Removable Option Codes" on next page.

Part Numbers: Contact Assemblies

Style	Contacts	Part Number
Standard Fingersafe Contacts	1N0 1NC 1N0/1NC 2N0 2NC 2N0/2NC	HW-CBF10 HW-CBF01 HW-CBF11 HW-CBF20 HW-CBF02 HW-CBF22
Spring Up Terminal Contacts	1N0 1NC 1N0/1NC 2N0 2NC 2NO/2NC	HW-CB10 HW-CB01 HW-CB11 HW-CB20 HW-CB02 HW-CB22

Key Removable Option Codes

Code	Description				
А	Key retained in NO position (removable in all positions)				
В	Key retained in right position only				
С	Key retained in left position only				
D	Key retained in left and right (3 position only)				
Е	Key retained in center only (3 position only)				
G	Key retained right and center (3 position only)				
Н	Key retained left and center (3 position only)				
<u>ili</u>	1. For more information on these op-				

tions, contact your IDEC representative. 2. Key retained in all spring-return positions.

IDEC Oiltight Switches & Pilot Devices

HW1K-3JA

HW1K-31B

HW1K-32C

HW1K-33D

HW4K-3JA

HW4K-31B

HW4K-32C

HW4K-33D

Key Switches (Sub-Assembled) Adaptor & Safety Lever Lock + **Contact Blocks Anti-Rotation Ring Complete Part** Operator Switches & Pilot Devices Part Numbers: Operators Part Numbers: Contact Blocks Plastic Metal # of Description Positions Bezel Bezel Maintained HW1K-2A HW4K-2A 2 HW1K-2B HW4K-2B Maintained, key remove left only Spring from Right HW1K-21B HW4K-21B Maintained, Standard Cam HW1K-3A HW4K-3A HW1K-3SA HW4K-3SA Maintained, Cam S

1. Operator includes two keys.

3

2. All standard operators are keyed alike

(contact IDEC for special keys).

Maintained, Cam J

Spring Return from Right

Spring Return from Left

Two-Way Spring Return

3. Other key removable options available. See table below.

Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
1	HW-CB2C
-	



1. Used to mount contact blocks to operator (first pair only).

2. IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

Key Removable Option Codes

Code	Description
А	Key retained in NO position (removable in all positions)
В	Key retained in right position only
С	Key retained in left position only
D	Key retained in left and right (3 position only)
E	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
Н	Key retained left and center (3 position only)

For more information on these options, contact your IDEC representative.

Description	Part N	Part Number			
	1NO	1NC			
Standard Fingersafe (IP20)					
	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)			
Spring-Up Terminal Contacts	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)			
Exposed Screw Terminal Contacts	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)			
Dummy Block	TW-DB				
1 All accombled part num	have in actalog in	Juda stan			

1. All assembled part numbers in catalog include stan dard (HW-F...) contacts.

2. 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).

3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

Part Numbers: Anti-Rotation Ring Appearance Part Number



1. Use with notched panel cutout to prevent unit rotation (not included with assembled units). 2. Not required when using HW series nameplates See page A3-96.

Oiltight Switches & Pilot Devices



Dimensions con't



Illuminated Selector Switches



Pushlock Key Reset





Key Switches

