

Industrial Automation Catalog Section - U906

Switches & Pilot Devices

HW Series

- Selection Guide
- Non-Illuminated Pushbuttons, Emergency Stop Pushbuttons, Emergency Stop Stations, Pilot Lights, Illuminated Pushbuttons, Selector Switches
- Key Switches, Illuminated Selector Switches, Mono Lever Switches, Pushbutton Selectors, Contactor Reset Button
- Nameplates
- Accessories
- Dimensions

For up-to-date information, or to request a full copy of this catalog, contact us at www.idec.com or 800-262-IDEC..

Due to continuous product improvements, specifications are subject to change without notice.

HW Series Oiltight Switches and Pilot Devices Ø 7/8" (22mm)

Series Model	HW△B-	HW△P-	HW△L-	HW1B, HW1E	HW1S, HW1K, HW1F-	HW1R and HW1M-
Appearance	Flush 		Flush 	Push-Pull 		
	Extended 		Extended 	Pushlock Turn Reset 	Knob Operator 	HW1M
	40mm Mushroom 	Dome Lens 	Extended/Shroud 	Pushlock Turn Reset 	Key Operator 	
	Square Flush 	Flush Lens 	40mm Mushroom 	Pushlock Key Reset 	Illuminated 	HW1R
	Square Extended 	Square Flush 	Square Extended 	Jumbo Pushlock Turn Reset 		
	Jumbo Mushroom 			Unibody E-Stop 		
				Illuminated Unibody E-Stop 		
See Page	A-77	A-84	A-87	A-75	A-91, A-95, A-98	A-110 and A-108
Operator Types	Non-illuminated: • Momentary • Maintained	Pilot Lights • LED/Incandescent	Illuminated Pushbuttons: • Momentary • Maintained • LED/Incandescent	• Modular or Unibody • Non-Illuminated • Illuminated (unibody only) (all units meet EN418)	Selector Switches • Non-Illuminated • Illuminated • LED/Incandescent • 2, 3, 4, 5- position (key & illum. 2 or 3-position only)	HW1R Selector Pushbutton • 2 position selector • Momentary HW1M Monolever • 2 or 4 position • Maintained or Spring return
Contact Configuration	Modular: NO, NC, NO-EM, NC-LB (maximum 6 contacts)	—	Modular: NO, NC, NO-EM, NC-LB (maximum 6 contacts)	2NO, 1NO/1NC (Unibody)	Modular: NO, NC, NO-EM, NC-LB (maximum 6 contacts)	Modular: NO, NC, NO-EM, NC-LB (maximum 6 contacts)
Electrical Reliability	MTBF < 1 fault in 10 million operation cycles (3V DC, 5mA)					
Mechanical Life	Momentary Pushbuttons: 5,000,000 operations minimum (900 operations per hour) All other switches: 500,000					
Degree of Protection	IP65 (from front of the panel), IP20 (type HW-F contact blocks) (conforming to IEC60529) NEMA Type 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 13 (conforming to NEMA ICS-110)					HW1R: IP65, IP20 NEMA 1, 2, 3, 3R, 3S, 4, 4x, 5, 12, 13 HW1M: IP40, IP20
Termination	M3.5 screw terminals (fingersafe/spring-up/exposed screw) with captive sems plate					
Approvals	File No. E68961		File No. LR92374		Registration No. R9551089 (E-stops) Registration No. J9551458 (all other switches) Registration No. J9650511 (Pilot Lights)	

General Information

Information About LED Lamps

Light-emitting diodes (LEDs) are P–N junction semiconductors with mechanisms called “junction electro-luminescence.” Application of direct current results in radiation or emission of a monochromatic light.

Different semiconductor materials produce different wavelengths of light as shown below:

Specifications	Green	Gallium Phosphide (GaP)	5600 Å
	Yellow	Gallium Arsenide Phosphide (GaAsP)	5800 Å
	Amber	Gallium Arsenide Phosphide (GaAsP)	6300 Å
	Red	Gallium Arsenide Phosphide (GaAsP)	6600 Å
	Infrared	Gallium Arsenide (GaAs)	9000 Å



Advantages of Using LEDs

- LEDs are used when heat generated by incandescent lamps would damage nearby equipment or interfere with a precision process. This is particularly advantageous when multiple lights are grouped.
- LEDs can operate at low temperatures which would cause incandescent lamps to fail, since glass cracks during rapid cooling.
- LEDs consume 50 times less power than incandescent lamps, thereby reducing energy consumption.
- LEDs last 500 times longer than incandescent lamps. LEDs average a million hours (114 years) while incandescent lamps average 2000 hours.
- LEDs do not generally “blow out” unless subjected to a severe overvoltage. They exhibit a half-life type dimishment in brightness over time. After 50,000 hours (6 years) of use, IDEC LEDs will retain approximately half of their original intensity.
- IDEC’s SUPERBRIGHT LEDs have high visibility.
- LEDs require little or no maintenance because of long life and high reliability.

IDEC Recommendations

For optimum results, especially when using switches and pilot lights in operating environments which are conducive to overheating, use IDEC LED illuminated units. Transformers are available for use with incandescent illuminated units, which operate at lower voltages to avoid overheating.

When IDEC’s L-120L lamp is used, make sure ambient temperatures do not exceed 30°C (86°F). If a lamp from another supplier is used, it should be rated for less than 1.8 watts (15mA at 120V AC), with ambient temperatures as stated above.

Information About Incandescent Lamps

Filament-type incandescent lamps operate within the following parameters.

Light output and life expectancy depend on operating voltage. Light output varies to the 3rd or 4th power of the voltage. Life expectancy varies inversely to the 12th power of voltage. In other words, over-voltage of 5% reduces life expectancy by 50%. Under-voltage of 5% doubles life expectancy at the price of light output efficiency.

Inrush current (initial current through the filament) has an adverse effect on life expectancy. Cold resistance (room temperature) will have a more detrimental effect than hot resistance to inrush current. Life expectancy of incandescent lamps can be maximized by reducing occurrences of cold resistance to inrush current.

Continued intermittent flashing will significantly reduce life expectancy. When using an incandescent lamp with a tungsten filament, flashing will not reduce life expectancy as long as light output does not exceed that of steady burning.

When an incandescent lamp must withstand shock and vibration, use low voltage/high amperage (5–6V/60–120mA) lamps. These lamps have a short, thick filament with a high resonant frequency.

Provide cooling by using a heat sink, particularly when multiple incandescent lamps are grouped or when air circulation is limited. Make sure ambient temperatures do not exceed 100°C (212°F) for maximum life of incandescent lamps.

Comparison: LED vs. Incandescent Lamps

	<i>Superbright LEDs</i>	<i>Incandescent</i>	
Characteristics	Heat Dissipation	Very Low	High
	Life Expectancy	Very Long	Short
	Reliability	Very High	Low
	Mechanical Strength	Not Susceptible	Susceptible to Shock/Vibration
	Maintenance Required	Negligible	Frequent
	Operation at Low Temps.	Possible	Not Possible
	Inrush Current	Negligible	Very Large
	Voltage Effects on Life	Insignificant	Significant
	Brightness	Slightly Less	Slightly More

Ordering Information

1. IDEC offers assembled and sub-assembled switches and pilot lights for your convenience. In some cases there is a cost difference, with sub-assembled units costing slightly less. Since assembled units are custom made to your order, a couple of days for assembly is added to delivery . To minimize delivery or inventory requirements, it is recommended that switches and pilot lights be ordered as sub-components.
2. When ordering pilot lights or illuminated pushbuttons, make sure to specify the color code in place of the asterisk in the part number, (LED or incandescent lamp included). Spare lamps can be ordered and are listed with sub-assembly components.
3. Accessories, such as locking ring wrench, lens removal tool, and lamp holder, are available to make installation and assembly easier. IDEC recommends using these accessories and is not responsible for damage as a result of using the wrong tool.
4. Marking plates are available for switches and pilot lights which feature a flat lens. Printed mylar (not included) can also be inserted under lens for labeling purposes.
5. Nameplates are available for TW, 7/8" (22mm), HW 7/8" (22mm), and TWTD series, Ø1-13/64" (30mm). For prompt delivery, order standard legends. Custom engraving is also offered for an additional charge.

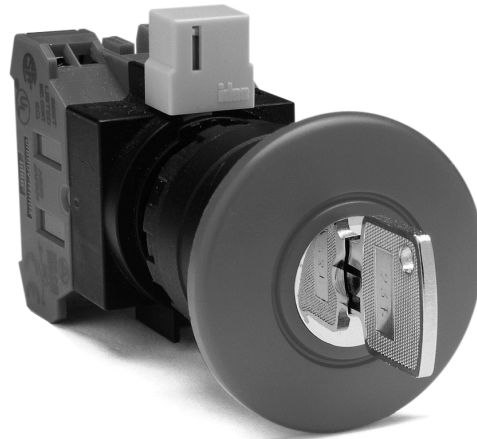
Installation and Operation

1. Use the appropriate lamp holder to remove or install LED or incandescent lamps. Using pliers will damage the lamp.
2. When mounting switches and pilot lights into a panel, use locking ring wrench. Using pliers or tightening excessively will damage the locking ring.
3. A series, 21/64" (8mm), can be mounted on a panel 0.019" (0.5mm) to 0.236" (6mm) thick.
4. LW 7/8" (22mm), TW, 7/8" (22mm), and TWTD series, Ø1-13/64" (30mm), feature an adjustment ring for mounting on a panel 0.038" (1mm) to 0.236" (6mm) thick. Using a nameplate or an anti-rotation ring adds 0.031" (0.8mm) to the panel thickness.
5. When applicable, solder terminals within 20W/5sec or 260°/3sec without exerting external force to the terminals. Use a non-corrosive resin liquid flux.
6. The operating voltage for LED units represents a complete DC value. When using a pulsing voltage, such a full-wave rectification, keep peak currents within the forward current I_f . Peak currents exceeding I_f may shorten the life of the LED lamp.
7. To avoid a short circuit, never connect NO and NC contacts to different voltages or power sources.
8. Optimum performance of TW and TWTD illuminated pushbuttons, selector switches, and pilot lights is obtained with IDEC LED and incandescent lamps.
9. For maximum life of incandescent lamps (approximately 2000 hours), use within the rated operating voltage. If it is necessary to use a higher voltage, keeping ambient temperature below 30°C (86°F) will help prolong the life of an incandescent lamp.



If excessive voltage is applied (over 50V), the lamp may blow and the lens holder may pop out.

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
- Worldwide approvals
- Easy to assemble
- Available assembled or as sub-components
- 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, 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. J9551458 (all other switches)
 Registration No. J9650511 (Pilot Lights)

Specifications	Conforming to Standards		EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14					
	Approvals		<p>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)</p>					
	File No. E68961 File No. LR92374 TÜV Rheinland Registration No. R9551089 (E-stops) Registration No. J9551458 (all other switches) Registration No. J9650511 (Pilot Lights)							
	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 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)					
	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: 6, 12, 24V: 20mA / 120, 240V: 10mA					
Maximum Inrush Current		40 A (40 ms)						
Contact Material		Silver						
Contact Ratings	Break Values				Make Values			
	AC		DC		AC		DC	
	Inductive	Resistive	Inductive	Resistive	Inductive	Resistive	Inductive	Resistive
	Rated Operating Current	120V: 6A 240V: 3A 480V: 1.5A 600V: 1.2 A	120V: 10A 240V: 6A 480V: 2A	120V: 1.1A 240V: 0.6A 12V: 4A 24V: 4A	120V: 2A 240V: 1.1A 480V: 0.4A 12V: 4A 24V: 4A	120V: 60A 240V: 30A 480V: 15A 600V: 12 A	120V: 100A 240V: 60A 480V: 20A	120V: 11A 240V: 6A 12V: 40A 24V: 40A

1. For dimensions, see page A-117.
2. For life expectancy derating curves, see page A-121.

Non-Illuminated Pushbuttons (Assembled)

Part Numbers: Non-Illuminated Pushbuttons

Style	Contact	Part Number	
		Momentary	Maintained (Latching)
Flush 	1NO	HW1B-M1F10-①	HW1B-A1F10-①
	1NC	HW1B-M1F01-①	HW1B-A1F01-①
	1NO-1NC	HW1B-M1F11-①	HW1B-A1F11-①
	2NO	HW1B-M1F20-①	HW1B-A1F20-①
	2NC	HW1B-M1F02-①	HW1B-A1F02-①
	2NO-2NC	HW1B-M1F22-①	HW1B-A1F22-①
Extended 	1NO	HW1B-M2F10-①	HW1B-A2F10-①
	1NC	HW1B-M2F01-①	HW1B-A2F01-①
	1NO-1NC	HW1B-M2F11-①	HW1B-A2F11-①
	2NO	HW1B-M2F20-①	HW1B-A2F20-①
	2NC	HW1B-M2F02-①	HW1B-A2F02-①
	2NO-2NC	HW1B-M2F22-①	HW1B-A2F22-①
Mushroom 1-5/32" (29mm) 	1NO	HW1B-M3F10-①	HW1B-A3F10-①
	1NC	HW1B-M3F01-①	HW1B-A3F01-①
	1NO-1NC	HW1B-M3F11-①	HW1B-A3F11-①
	2NO	HW1B-M3F20-①	HW1B-A3F20-①
	2NC	HW1B-M3F02-①	HW1B-A3F02-①
	2NO-2NC	HW1B-M3F22-①	HW1B-A3F22-①
Mushroom 1-9/16" (40mm) 	1NO	HW1B-M4F10-①	HW1B-A4F10-①
	1NC	HW1B-M4F01-①	HW1B-A4F01-①
	1NO-1NC	HW1B-M4F11-①	HW1B-A4F11-①
	2NO	HW1B-M4F20-①	HW1B-A4F20-①
	2NC	HW1B-M4F02-①	HW1B-A4F02-①
	2NO-2NC	HW1B-M4F22-①	HW1B-A4F22-①
Square Flush 	1NO	HW2B-M1F10-①	HW2B-A1F10-①
	1NC	HW2B-M1F01-①	HW2B-A1F01-①
	1NO-1NC	HW2B-M1F11-①	HW2B-A1F11-①
	2NO	HW2B-M1F20-①	HW2B-A1F20-①
	2NC	HW2B-M1F02-①	HW2B-A1F02-①
	2NO-2NC	HW2B-M1F22-①	HW2B-A1F22-①
Square Extended 	1NO	HW2B-M2F10-①	HW2B-A2F10-①
	1NC	HW2B-M2F01-①	HW2B-A2F01-①
	1NO-1NC	HW2B-M2F11-①	HW2B-A2F11-①
	2NO	HW2B-M2F20-①	HW2B-A2F20-①
	2NC	HW2B-M2F02-①	HW2B-A2F02-①
	2NO-2NC	HW2B-M2F22-①	HW2B-A2F22-①
Jumbo Mushroom 2-3/8" (60mm) 	1NO	HW1B-M5F10-①	—
	1NC	HW1B-M5F01-①	—
	1NO-1NC	HW1B-M5F11-①	—
	2NO	HW1B-M5F20-①	—
	2NC	HW1B-M5F02-①	—
	2NO-2NC	HW1B-M5F22-①	—

① Button Color Code

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





1. In place of ①, specify the button color code.
2. Jumbo mushroom available only in red, green, and black.
3. For nameplates and accessories, see page A-114.
4. For dimensions, see page A-117.
5. For sub-assembly part numbers, see page A-79.

Non-Illuminated Pushbuttons (Partial-Assemblies)

Contact Assembly + Operator Assembly + Complete Switch



Part Numbers: Contact Assemblies

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

① Button Color Code

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

Part Numbers: Operator Assemblies

Style	Part Number	
	Momentary	Maintained (Latching)
Round Flush 	HW1B-M1-①	HW1B-A1-①
Round Extended 	HW1B-M2-①	HW1B-A2-①
Square Flush 	HW2B-M1-①	HW2B-A1-①
Square Extended 	HW2B-M2-①	HW2B-A2-①
29mm Mushroom 	HW1B-M3-①	HW1B-A3-①
40mm Mushroom 	HW1B-M4-①	HW1B-A4-①
60mm Mushroom 	HW1B-M5-①*	—



- In place of ①, specify the button color code from table on left.
- *60mm mushroom available in red, green, and black only.
- For complete sub-assemblies, see page A-79.

Non-Illuminated Pushbuttons (Sub-Assembled)

Contact Blocks + Adaptor & Safety Lever Lock + Anti-Rotation Ring + Operator + Button = Complete Part









Part Numbers: Operators

Style	Part Number	
	Momentary	Maintained (Latching)
Round Flush/Extended 	HW1B-M0	HW1B-A0
Square Flush/Extended 	HW2B-M0	HW2B-A0
Ø 1-5/32" (29mm) Mushroom Ø 1-9/16" (40mm) Mushroom 	HW1B-M0L	HW1B-A0L
Ø 2-3/8" (60mm) Jumbo Mushroom 	HW1B-M5-①	—

Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe Contacts (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	

Part Numbers: Buttons

Style	Part Numbers
Round Flush 	HW1A-B1-①
Round Extended 	HW1A-B2-①
Square Flush 	HW2A-B1-①
Square Extended 	HW2A-B2-①
Ø 1-37/64" (29mm) Mushroom 	HW1A-B3-①
Ø 1-5/32" (40mm) Mushroom 	HW1A-B4-①



- In place of ①, specify the button color code from table below.
- 60mm mushroom operator includes non-removable button (available in red, black, and green only).
- For nameplates and accessories, see page A-114.
- For dimensions, see page A-117.

① Button Color Code

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




HW1B-M5 available only in black, red or green.



- 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.
- All contacts (including non-fingersafe versions) are UL, CSA, and IEC compliant and carry the CE mark.

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



Use with notched panel cutout to prevent unit rotation.

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

Style	Part Number
	HW-CB2C



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

Emergency Stop Pushbuttons (Assembled)

Part Numbers: Special Function Non-Illuminated Pushbuttons

Style	Contact	Part Number
1-9/16" (40mm) Push-Pull 	1NO	HW1B-Y2F10-①†
	1NC	HW1B-Y2F01-①†
	1NO-1NC	HW1B-Y2F11-①†
	2NC	HW1B-Y2F02-①†
	2NO	HW1B-Y2F20-①†
1-5/32" (29mm) Pushlock Turn Reset 	1NO	HW1B-V3F10-R*
	1NC	HW1B-V3F01-R*
	1NO-1NC	HW1B-V3F11-R*
	2NO	HW1B-V3F20-R*
	2NC	HW1B-V3F02-R*
1-9/16" (40mm) Pushlock Turn Reset 	1NO	HW1B-V4F10-①†
	1NC	HW1B-V4F01-①†
	1NO-1NC	HW1B-V4F11-①†
	2NO	HW1B-V4F20-①†
	2NC	HW1B-V4F02-①†
1-9/16" (40mm) Pushlock Key Reset 	1NO	HW1B-X4F10-R*
	1NC	HW1B-X4F01-R*
	1NO-1NC	HW1B-X4F11-R*
	2NO	HW1B-X4F20-R*
	2NC	HW1B-X4F02-R*
2-3/8" (60mm) Pushlock Turn Reset 	1NO	HW1B-V5F10-R*
	1NC	HW1B-V5F01-R*
	1NO-1NC	HW1B-V5F11-R*
	2NO	HW1B-V5F20-R*
	2NC	HW1B-V5F02-R*
1-9/16" (40mm) Unibody Pushlock Turn Reset 	1NO-1NC	HW1E-BV4F11-R*
	2NC	HW1E-BV4F02-R*
	1NO-2NC	HW1E-BV412-R-TK2093



* Available only in Red.

† Available in red or yellow (insert color code in place of ①)

Part Numbers: Illuminated Unibody Emergency Stop

Style	Illumination Type	Contact	Part Number
	LED	1NO-1NC	HW1E-LV4F11QD-R*-③
		2NC	HW1E-LV4F02QD-R*-③
		2NC (with active lamp circuit)	HW1E-TV4F02QD-R-③
		1NO-1NC (with active lamp circuit)	HW1E-TV4F11QD-R*-③
	Incandescent	1NO-1NC	HW1E-LV4F11Q-R*-③
		2NC	HW1E-LV4F02Q-R*-③
		1NO-1NC (with active lamp circuit)	HW1E-TV4F11Q-R*-③
		2NO (with active lamp circuit)	HW1E-TV4F02Q-R*-③



1. * Available in Red only.

2. In place of ③, specify full voltage code.

3. With single unit construction, the positive action contacts are integrated in the body of the switch. This provides an extra degree of safety and reliability for critical emergency stop functions.

4. In the illuminated version, the light is independent of the switch action.

5. For nameplates and accessories, see page A-114.

6. For dimensions, see page A-117.

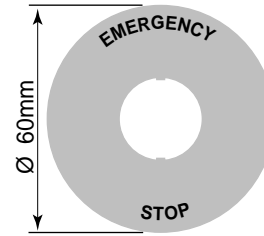
7. For sub-assembly part numbers, see next page.

8. All HW series E-stops comply with EN418, the IEC "E-Stop Addendum to the Low Voltage Directive," this includes "tamper proof" operation whereby a change of contact state is not possible by "teasing" or "floating" the operator.

9. "Active Lamp Circuit" consists of a built-in Normally Open contact in series with the lamp. This allows the lamp to illuminate only when the button is pressed and eliminates the need for external jumpering.

Part Numbers: Nameplates

HWAV-Yellow Plastic



	Part Number
60mm Diameter "Emergency Stop" Engraved	HWAV-27†
60mm Diameter Blank	HWAV-0Y
Engraved 80mm Diameter Emergency Stop (for jumbo mushroom use)	HWAV-527



† HWAV-27 comes engraved "Emergency Stop" as shown in drawing.

Part Number: E-Stop Shroud

Style	Part Number
	HW9Z-KG1-TK2120



Not applicable for 60mm mushroom.

③ Full Voltage Code



Voltage	Code
6VAC/DC	6
12VAC/DC	12
24VAC/DC	24

Emergency Stop Pushbuttons (Partial-Assemblies)

Contact Assembly + Operator Assembly + Complete Switch



Part Numbers: Contact Assemblies

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

Part Numbers: Operator Assemblies

Style	Part Numbers
Ø 1-5/32" (29mm) Pushlock Turn Reset 	HW1B-V3R*
Ø 1-37/64" (40mm) Pushlock Turn Reset 	red HW1B-V4R
	yellow HW1B-V4Y
Ø 1-37/64" (40mm) Push-Pull 	red HW1B-Y2R
	yellow HW1B-Y2Y
Pushlock Key Reset 	HW1B-X4R*
Ø 2-3/8" (60mm) Pushlock Turn Reset 	HW1B-V5R*



- *Available in red only.
- All Emergency Stop Buttons are non-removable from the operator.

Emergency Stop Pushbuttons (Sub-Assembled)

Contact Blocks + Adaptor & Safety Lever Lock + Anti-Rotation Ring + Operator = Complete Part



A

Part Numbers: Emergency Stop Operators

Style	Part Numbers
 Ø 1-5/32" (29mm) Pushlock Turn Reset	HW1B-V3R*
 Ø 1-37/64" (40mm) Pushlock Turn Reset	red HW1B-V4R yellow HW1B-V4Y
 Ø 1-37/64" (40mm) Push-Pull	red HW1B-Y2R yellow HW1B-Y2Y
 Pushlock Key Reset	HW1B-X4R*
 Ø 2-3/8" (60mm) Pushlock Turn Reset	HW1B-V5R*



- *Available in red only.
- All Emergency Stop Buttons are non-removable from the operator.



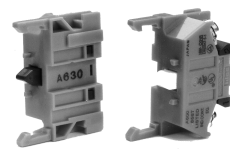

Part Number: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
	HW-CB2C



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

Part Numbers: Contact Blocks

Description	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	



- All assembled part numbers in catalog include standard (HW-F...) contacts. (except unibody)
- 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.
- All contacts (including exposed screw) are UL, CSA, and IEC compliant and carry the CE mark.

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



Use with notched panel cutout to prevent unit rotation.

Emergency Stop Stations

Part Numbers: Emergency Stop Stations

Description	Contacts	Part Number
Ø 1-37/64 (40mm) Pushlock Turn Reset	1NO-1NC	HW1X-BV411-R*
	2NC	HW1X-BV402-R*
Ø 1-5/32" (29mm) Pushlock Turn Reset	1NO-1NC	HW1X-BV311-R*
	2NC	HW1X-BV302-R*
Ø 1-37/64 (40mm) Push-Pull Reset	1NO-1NC	HW1X-BY411-R*
	2NC	HW1X-BY402-R*
Ø 1-37/64 (40mm) Pushlock Key Reset	1NO-1NC	HW1X-BX411-R*
	2NC	HW1X-BX402-R*



- * Available in Red only.
- Maximum of two contact blocks.
- Available as completed unit only.
- Box is supplied with yellow top and black bottom only.



Part Numbers: Nameplates for Emergency Stop Stations

NSA-Aluminum	Color	Part Number	
		Blank	Engraved
	Black Red	NSA-OB NSA-OR	NSA-* NSA-*R



- In place of * please insert the word, letters, or numbers you would like engraved. For standard engraving.
- For specifications on engravings, please consult factory.

Part Numbers: Base Mount Contact Blocks

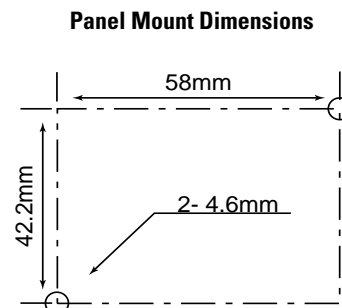
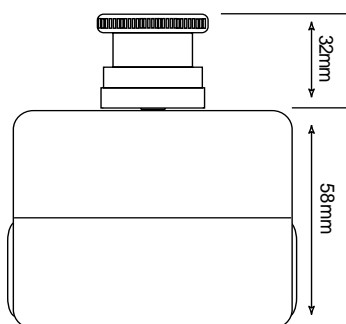
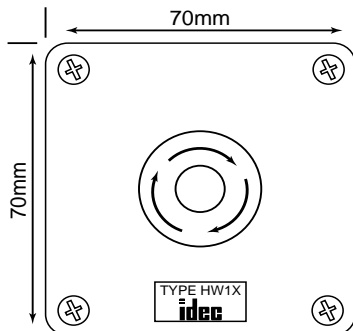
Configuration	Part Number
1NO	HW-S10
1NC	HW-S01

Part Numbers: Plug Adaptors

Type	Part Number
G1/2	HW9Z-G
PG16	HW9Z-PG






Panel Mount Dimensions



Pilot Lights (Assembled)




Part Numbers: LED Pilot Lights

Style		Part Number	
	Full Voltage	HW1P-1FQD-②-③	
	Transformer	120V 240V 480V	HW1P-1FH2D-② HW1P-1FM4D-② HW1P-1FT8D-②
	Full Voltage	HW2P-1FQD-②-③	
	Transformer	120V 240V 480V	HW2P-1FH2D-② HW2P-1FM4D-② HW2P-1FT8D-②
	Full Voltage	HW1P-2FQD-②-③	
	Transformer	120V 240V 480V	HW1P-2FH2D-② HW1P-2FM4D-② HW1P-2FT8D-②



1. In place of ②, specify the Lens/LED color code, in place of ③ specify the full voltage code from table below.
2. Other voltages available, contact IDEC for details.
3. For nameplates and accessories, see page A-114.
4. For dimensions, see page A-117.

Part Numbers: Incandescent Pilot Lights

Style		Part Number	
	Full Voltage	HW1P-1FQ-②-③	
	Transformer	120V 240V 480V	HW1P-1FH2-② HW1P-1FM4-② HW1P-1FT8-②
	Full Voltage	HW2P-1FQ-②-③	
	Transformer	120V 240V 480V	HW2P-1FH2-② HW2P-1FM4-② HW2P-1FT8-②
	Full Voltage	HW1P-2FQ-②-③	
	Transformer	120V 240V 480V	HW1P-2FH2-② HW1P-2FM4-② HW1P-2FT8-②



1. In place of ②, specify the lens color code, in place of ③ specify the full voltage code. from tables below.
2. Other voltages available, contact IDEC for details.

② Lens/LED Color Code

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

③ Full Voltage Code

LED	Incandescent
6 = 6V AC/DC	6 = 6V AC/DC
12 = 12V AC/DC	12 = 12V AC/DC
24 = 24V AC/DC	24 = 24V AC/DC
120 = 120V AC	—
240 = 240VAC	—

Pilot Lights (Partial-Assemblies)

Full Voltage Models

Operator/Lens + Lamp + Complete Pilot Light



Part Numbers: Operator/Lens

Style	Part Number
Round Flush	HW1P-1FQ0-②
Dome	HW1P-2FQ0-②
Square Flush	HW2P-1FQ0-②



In place of ②, specify the color code from table on previous page.

Part Numbers: Lamps

Type	Voltage	Current	Part Number
LED	6V AC/DC	20mA	LSTD-6②
	12V AC/DC	20mA	LSTD-1②
	24V AC/DC	20mA	LSTD-2②
	120V AC	10mA	LSTD-H2②
Incandescent	240V AC		LSTD-M4②
	6.3V AC/DC, 1W		IS-6
	12V AC/DC, 1W		IS-12
	24V AC/DC, 1W		IS-24
	30V AC/DC, 1W		IS-30



- In place of ②, specify the LED color code from table on previous page.
- The LED contains a current-limiting resistor and reverse polarity protection diodes.

Transformer Models

Transformer/Lamp + Operator/Lens + Complete



Part Numbers: Transformer/Lamp

Voltage	Part Number
120V with LED	HW-FH2-②
240V with LED	HW-FM4-②
480V with LED	HW-FT8-②
120V with Incandescent	HW-FH2
240V with Incandescent	HW-FM4
480V with Incandescent	HW-FT8



In place of ②, specify the color code from table on previous page.

Part Numbers: Operator/Lens

Style	Part Number
Round Flush	HW1P-1F0-②
Round Extended	HW2P-1F0-②
Square Flush	HW1P-2F0-②



In place of ②, specify the color code from table on previous page.

Pilot Lights (Sub-Assembled)




Transformer* + Lamp + Anti-Rotation Ring + Operator + Lens = Complete Part




A

* Not applicable to full voltage units.



Part Numbers: Operators

Style	Part Number	
	Full Voltage	Transformer
 Round Flush	HW1P-1FQ0	HW1P-10
	HW1P-1Q0 (with spring up terminals)	
 Square Flush	HW2P-1FQ0	HW2P-10
	HW2P-1Q0 (with spring up terminals)	
 Dome	HW1P-2FQ0	HW1P-20
	HW1P-2Q0 (with spring up terminals)	

Part Numbers: Transformer Units

Style	Voltage	Part Number
LED/Incandescent		
 (6V secondary voltage)	120V AC	HW-FH20
	240V AC	HW-FM40
	480V AC	HW-FT80




Part Numbers: Lamps


Type	Voltage	Current	Part Number
 LED	6V AC/DC	20mA	LSTD-6②
	12V AC/DC	20mA	LSTD-1②
	24V AC/DC	20mA	LSTD-2②
	120V AC	10mA	LSTD-H2②
	240V AC		LSTD-M4②
 Incandescent	6.3V AC/DC, 1W		IS-6
	12V AC/DC, 1W		IS-12
	24V AC/DC, 1W		IS-24



- In place of ②, specify the LED color code from table on previous page.
- The LED contains a current-limiting resistor and reverse polarity protection diodes.

Part Numbers: Lenses

Style	Part Number
 Round/Flush	HW1A-P1-②
 Square/Flush	HW2A-P1-②
 Dome	HW1A-P2-②

 In place of ②, specify the lens color code.

② Lens/LED Color Code

Color	Code
Amber	A
Green	G (LED lamps)* GD (LED lenses) GL (Incandescent lenses)
Red	R
Blue	S
White	W
Yellow	Y

*GD lens is lighter in color than GL.

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



Use with notched panel cutout to prevent unit rotation.

Illuminated Pushbuttons (Assembled)

Part Numbers: Illuminated Pushbuttons

Style	Description	Contacts	Part Number	
			Momentary	Maintained (Latching)
Flush 	Full Voltage	1NO 1NC 1NO-1NC 2NO	HW1L-M1F10Q ^{④-②-③} HW1L-M1F01Q ^{④-②-③} HW1L-M1F11Q ^{④-②-③} HW1L-M1F20Q ^{④-②-③}	HW1L-A1F10Q ^{④-②-③} HW1L-A1F01Q ^{④-②-③} HW1L-A1F11Q ^{④-②-③} HW1L-A1F20Q ^{④-②-③}
	Transformer 120V 120V 240V 240V 480V 480V	1NO-1NC 2NO 1NO-1NC 2NO 1NO-1NC 2NO	HW1L-M1F11H2 ^{④-②} HW1L-M1F20H2 ^{④-②} HW1L-M1F11M4 ^{④-②} HW1L-M1F20M4 ^{④-②} HW1L-M1F11T8 ^{④-②} HW1L-M1F20T8 ^{④-②}	HW1L-A1F11H2 ^{④-②} HW1L-A1F20H2 ^{④-②} HW1L-A1F11M4 ^{④-②} HW1L-A1F20M4 ^{④-②} HW1L-A1F11T8 ^{④-②} HW1L-A1F20T8 ^{④-②}
Extended 	Full Voltage	1NO 1NC 1NO-1NC 2NO	HW1L-M2F10Q ^{④-②-③} HW1L-M2F01Q ^{④-②-③} HW1L-M2F11Q ^{④-②-③} HW1L-M2F20Q ^{④-②-③}	HW1L-A2F10Q ^{④-②-③} HW1L-A2F01Q ^{④-②-③} HW1L-A2F11Q ^{④-②-③} HW1L-A2F20Q ^{④-②-③}
	Transformer 120V 120V 240V 240V 480V 480V	1NO-1NC 2NO 1NO-1NC 2NO 1NO-1NC 2NO	HW1L-M2F11H2 ^{④-②} HW1L-M2F20H2 ^{④-②} HW1L-M2F11M4 ^{④-②} HW1L-M2F20M4 ^{④-②} HW1L-M2F11T8 ^{④-②} HW1L-M2F20T8 ^{④-②}	HW1L-A2F11H2 ^{④-②} HW1L-A2F20H2 ^{④-②} HW1L-A2F11M4 ^{④-②} HW1L-A2F20M4 ^{④-②} HW1L-A2F11T8 ^{④-②} HW1L-A2F20T8 ^{④-②}
Extended with Full Shroud 	Full Voltage	1NO 1NC 1NO-1NC 2NO	HW1L-MF2F10Q ^{④-②-③} HW1L-MF2F01Q ^{④-②-③} HW1L-MF2F11Q ^{④-②-③} HW1L-MF2F20Q ^{④-②-③}	HW1L-AF2F10Q ^{④-①-③} HW1L-AF2F01Q ^{④-①-③} HW1L-AF2F11Q ^{④-①-③} HW1L-AF2F20Q ^{④-①-③}
	Transformer 120V 120V 240V 240V 480V 480V	1NO-1NC 2NO 1NO-1NC 2NO 1NO-1NC 2NO	HW1L-MF2F11H2 ^{④-②} HW1L-MF2F20H2 ^{④-②} HW1L-MF2F11M4 ^{④-②} HW1L-MF2F20M4 ^{④-②} HW1L-MF2F11T8 ^{④-②} HW1L-MF2F20T8 ^{④-②}	HW1L-AF2F11H2 ^{④-②} HW1L-AF2F20H2 ^{④-②} HW1L-AF2F11M4 ^{④-②} HW1L-AF2F20M4 ^{④-②} HW1L-AF2F11T8 ^{④-②} HW1L-AF2F20T8 ^{④-②}
Square Flush 	Full Voltage	1NO 1NC 1NO-1NC 2NO	HW2L-M1F10Q ^{④-②-③} HW2L-M1F01Q ^{④-②-③} HW2L-M1F11Q ^{④-②-③} HW2L-M1F20Q ^{④-②-③}	HW2L-A1F10Q ^{④-②-③} HW2L-A1F01Q ^{④-②-③} HW2L-A1F11Q ^{④-②-③} HW2L-A1F20Q ^{④-②-③}
	Transformer 120V 120V 240V 240V 480V 480V	1NO-1NC 2NO 1NO-1NC 2NO 1NO-1NC 2NO	HW2L-M1F11H2 ^{④-②} HW2L-M1F20H2 ^{④-②} HW2L-M1F11M4 ^{④-②} HW2L-M1F20M4 ^{④-②} HW2L-M1F11T8 ^{④-②} HW2L-M1F20T8 ^{④-②}	HW2L-A1F11H2 ^{④-②} HW2L-A1F20H2 ^{④-②} HW2L-A1F11M4 ^{④-②} HW2L-A1F20M4 ^{④-②} HW2L-A1F11T8 ^{④-②} HW2L-A1F20T8 ^{④-②}
40mm Mushroom 	Full Voltage	1NO 1NC 1NO-1NC 2NO	HW1L-M4F10Q ^{④-②-③} HW1L-M4F01Q ^{④-②-③} HW1L-M4F11Q ^{④-②-③} HW1L-M4F20Q ^{④-②-③}	HW1L-A4F10Q ^{④-②-③} HW1L-A4F01Q ^{④-②-③} HW1L-A4F11Q ^{④-②-③} HW1L-A4F20Q ^{④-②-③}
	Transformer 120V 120V 240V 240V 480V 480V	1NO-1NC 2NO 1NO-1NC 2NO 1NO-1NC 2NO	HW1L-M4F11H2 ^{④-②} HW1L-M4F20H2 ^{④-②} HW1L-M4F11M4 ^{④-②} HW1L-M4F20M4 ^{④-②} HW1L-M4F11T8 ^{④-②} HW1L-M4F20T8 ^{④-②}	HW1L-A4F11H2 ^{④-②} HW1L-A4F20H2 ^{④-②} HW1L-A4F11M4 ^{④-②} HW1L-A4F20M4 ^{④-②} HW1L-A4F11T8 ^{④-②} HW1L-A4F20T8 ^{④-②}



1. In place of ② specify the Lens color code, in place of ③ specify the full voltage code from tables below and in place of ④ specify Lamp type code.

2. For nameplates and accessories, see page A-114.

3. For dimensions, see page A-117.

4. For partial and sub-assembly part numbers, see pages A-88 and A-89.

② Lens Color Code

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

③ Full Voltage Code

LED	Incandescent
6 = 6V AC/DC	6 = 6V AC/DC
12 = 12V AC/DC	12 = 12V AC/DC
24 = 24V AC/DC	24 = 24V AC/DC
120 = 120V AC	—
240 = 240VAC	—

④ Lamp Type Code

Lamp	Code
Incandescent	Blank
LED	D

Illuminated Pushbuttons (Partial-Assemblies)

Contact Assembly + Lamp* + Operator/Lens = Complete Switch



*Lamp is included in contact assembly for transformer models only.

Full Voltage Models

Part Numbers: Contact Assemblies (order lamp separately)

Style	Contacts	Part Number
	1NO	HW-FL10Q0
	2NO	HW-FL20Q0
	1NO/1NC	HW-FL11Q0
	1NC	HW-FL01Q0
	2NC	HW-FL02Q0



Order lamp separately from table on right.

Part Numbers: Operators/Lens

Type	Part Number
Flush	HW1L-M1-②
Extended	HW1L-M2-②
Extended/Full shroud	HW1L-MF2-②
Square	HW2L-M1-②
Mushroom	HW1L-M4-②



In place of ②, specify the Lens color code from table below.

Part Numbers: Lamps

Type	Voltage	Current	Part Number
LED 	6V AC/DC	20mA	LSTD-6②
	12V AC/DC	20mA	LSTD-1②
	24V AC/DC	20mA	LSTD-2②
	120V AC	10mA	LSTD-H2②
Incandescent 	240V AC		LSTD-M4②
	6.3V AC/DC, 1W		IS-6
	12V AC/DC, 1W		IS-12
	24V AC/DC, 1W		IS-24
	30V AC/DC, 1W		IS-30



1. In place of ②, specify the LED color code from table below.
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

Transformer Models

Part Numbers: Contact Assemblies (lamp included)

Style	Contacts	Part Number
	1NO 2NC 1NC 1NO/1NC	HW-FL10H2-② HW-FL20H2-② HW-FL20H2-② HW-FL01H2-② HW-FL11H2-②
	1NO 2NC 1NC 1NO/1NC	HW-FL10M4-② HW-FL20M4-② HW-FL01M4-② HW-FL11M4-②
	1NO 2NC 1NC 1NO/1NC	HW-FL10T8-② HW-FL20T8-② HW-FL01T8-② HW-FL11T8-②
	1NO 2NC 1NC 1NO/1NC	HW-FL10H2 HW-FL20H2 HW-FL01H2 HW-FL11H2
	1NO 2NC 1NC 1NO/1NC	HW-FL10M4 HW-FL20M4 HW-FL01M4 HW-FL11M4

Part Numbers: Operators/Lens

Type	Part Number
Flush	HW1L-M1-②
Extended	HW1L-M2-②
Extended/Full shroud	HW1L-MF2-②
Square	HW2L-M1-②
Mushroom	HW1L-M4-②



In place of ②, specify the Lens color code from table below.

② Lens/LED Color Code

Color	Code
Amber	A
Green	GD (LED Lens) GL (Incandescent Lens) G (LED Lamp)
Red	R
Blue	S
White	W
Yellow	Y



1. In place of ② specify the Lens/LED color code.
2. For nameplates and accessories, see page A-114.
3. For dimensions, see page A-117.
4. For sub-assembly part numbers, see page A-89.
5. GD lens is lighter in color than GL lens.

Illuminated Pushbuttons (Sub-Assembled)


Part Numbers: LED and Incandescent Illuminated Pushbuttons

Transformer * + Contact Blocks + Lead Holder + Adaptor † + Lamp + Anti-Rotation Ring + Operator + Lens = Complete Part



1. * Transformer not needed with full voltage types.
2. † Adaptor includes safety lever lock.

Part Numbers: Operators

Style	Part Number	
	Momentary Action	Maintained (Latching)
Round Flush/Extended 	HW1L-M0	HW1L-A0
Extended with Full Shroud 	HW1L-MF0	HW1L-AF0
Square Flush 	HW2L-M0	HW2L-A0
Ø 37/64" 40mm Mushroom 	HW1B-M0L	HW1B-A0L

Part Numbers: Lenses

Style	Part Number
Round Flush 	HW1A-L1-②
Extended 	HW1A-L2-②
Square Flush 	HW2A-L1-②
Ø37/64"(40mm) Mushroom 	ALW4BL-②



In place of ②, specify the Lens color code.

② Lens/LED Color Code


Color	Code
Amber	A
Green	G (LED lamp) GD (LED lens)* GL (Incandescent lens)
Red	R
Blue	S
White	W
Yellow	Y




*GD lens is lighter in color than GL lens.

Illuminated Pushbuttons (Sub- Assembled) con't


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

Style	Part Number
	HW-CBL



A


-  1. Used to mount contact blocks to operator (first pair only). Lamp holder is built-in.
 2. IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

Part Numbers: Transformer Unit

Style	Voltage	Part Number
LED/Incandescent		
	120V 240V 480V	TW-F126B TW-F246B TW-F486B
(6V secondary voltage)		


Part Numbers: Lamps

Type	Voltage	Current	Part Number
LED 	6V AC/DC	20mA	LSTD-6②
	12V AC/DC	20mA	LSTD-1②
	24V AC/DC	20mA	LSTD-2②
	120V AC	10mA	LSTD-H2②
Incandescent 	240V AC		LSTD-M4②
	6.3V AC/DC, 1W		IS-6
	12V AC/DC, 1W		IS-12
	24V AC/DC, 1W		IS-24
	30V AC/DC, 1W		IS-30





-  1. In place of ②, specify the LED color code from table on previous page.
 2. The LED contains a current-limiting resistor and reverse polarity protection diodes.


Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



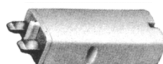
-  Use with notched panel cutout to prevent unit rotation


Part Numbers: Contact Blocks

Description	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 assembled part numbers in catalog include standard (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: Lamp Circuit Components

Style	Application	Part Number
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	HW-DA1FB HW-GA1 (with spring up terminals)
Full Voltage Adaptor 	For use with even number of contacts.	TW-DA1FB
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.	HW-LH3

-  HW-GA1 "Dummy Block with Full Voltage adaptor" does not require the use of HW-LH3.

Selector Switches (Assembled)

Part Numbers: 2-Position Selector Switches

		Operator Position		Maintained	Spring Return from Right
Contact	Mounting	L	R		
				Part Number	Part Number
1NO	1	0	X	HW1S-2TF10	HW1S-21TF10
	2	0	0		
1NO-1NC	1	0	X	HW1S-2TF11	HW1S-21TF11
	2	X	0		
2NO	1	0	X	HW1S-2TF20	HW1S-21TF20
	2	0	X		

Part Numbers: 3-Position Selector Switches

		Operator Position			Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-Way
Contact	Mounting	L	C	R				
					Part Number	Part Number	Part Number	Part Number
2NO	1	X	0	0	HW1S-3TF20	HW1S-31TF20	HW1S-32TF20	HW1S-33TF20
	2	0	0	X				
2NO-1NC	1	X	0	0	HW1S-3JTF21N1	—	—	—
	2	0	0	X				
	3	0	X	0				
2NO-2NC	1	X	0	0	HW1S-3TF22	HW1S-31TF22	HW1S-32TF22	HW1S-33TF22
	2	0	0	X				
	3	0	X	X				
	4	X	X	0				

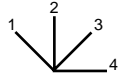


1. Mounting refers to contact location on operator. See page A-106.
2. For nameplates, see page A-114.
3. Custom contact arrangements available. Contact IDEC for details.

Selector Switches (Assembled) con't

Part Numbers: 4-Position Selector Switch

Contact	Mounting	Operator Position				Maintained Part Number
		1	2	3	4	
2NO-2NC	1	X	0	0	0	HW1S-4TF22N3
	2	0	X	0	0	
	3	0	0	X	0	
	4	0	0	0	X	



Part Numbers: 5-Position Selector Switch

Contact	Mounting	Operator Position					Maintained Part Number
		1	2	3	4	5	
2NO-2NC	1	X	0	0	0	0	HW1S-5TF22N3
	2	0	X	0	0	0	
	3	0	0	0	X	0	
	4	0	0	0	0	X	





1. For nameplates, see page A-114.
2. Custom contact arrangements available, contact IDEC for details.
3. Mounting refers to contact location on operator. See picture at right.

Selector Switches (Partial-Assemblies)



Part Numbers: Contact Assemblies

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

Part Numbers: Operators

No. of Positions	Description	Part Number	
		Standard Knob	Lever Handle
2	Maintained	HW1S-2T	HW1S-2L
	Spring Return from Right	HW1S-21T	HW1S-21L
3	Maintained (standard cam)	HW1S-3T*	HW1S-3L
	Maintained (S cam)	HW1S-3ST*	–
	Maintained (J cam)	HW1S-3JT*	–
	Spring Return from Right	HW1S-31T	HW1S-31L
	Spring Return from Left	HW1S-32T	HW1S-32L
	2-Way Spring Return	HW1S-33T	HW1S-33L
4	Maintained	HW1S-4T	HW1S-4L
5	Maintained	HW1S-5T	HW1S-5L



1. Operator includes knob.
2. * Three position operator is available with three different cams.
3. Operator cams are color coded (white=standard cam, red=S cam, black =J cam).
4. For details of determining which cam to use, see page A-103.

Selector Switches (Sub-Assembled)

Contact Blocks + Adaptor and Safety Lever Lock + Anti-Rotation Ring + Operator = Complete Part



Part Numbers: Operators

# of Positions	Description	Part Number	
		Standard Knob	Lever
2	Maintained	HW1S-2T	HW1S-2
	Spring Return from Right	HW1S-21T	HW1S-21
3	Maintained (standard cam)	HW1S-3T*	HW1S-3
	Maintained (S cam)	HW1S-3ST*	–
	Maintained (J cam)	HW1S-3JT*	–
	Spring Return from Right	HW1S-31T	HW1S-31
	Spring Return from Left	HW1S-32T	HW1S-32
4	Maintained	HW1S-4T	HW1S-4
	Maintained	HW1S-5T	HW1S-5



- Operator includes knob.
- Lever operators require lever and insert to be ordered separately.
- * Three position operator is available with three different cams.
- Operator cams are color coded (white=standard cam, red=S cam, black=J cam).
- For details of determining which cam to use, see page A-103.

Part Numbers: Levers and Inserts

Style	Part Number
Lever 	ASWHHL-①
Color Insert 	TW-HC1-①

① Handle/Insert Color Code

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

* Color inserts not available in black.
† Knob and lever not available in white.


Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



- Use with notched panel cutout to prevent unit rotation.
- Not required when using HW series nameplates See page A-114.




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

Appearance	Part Number
	HW-CB2C



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

Part Numbers: Contact Blocks

Description	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	



- 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

Key Switches (Assembled)



Part Numbers: 2-Position Key Switches

		Operator Position		Part Number	
				Maintained	Spring Return from Right
Contact	Mounting	L	R		
		1NO	1	0	X
2	X		0	HW1K-2AF11	HW1K-21BF11
2NO	1	0	X	HW1K-2AF20	HW1K-21BF20
	2	0	X		

Part Numbers: 3-Position Key Switches

		Operator Position			Part Number			
					Maintained	Spring Return from Right	Spring Return from Left	Spring Return from Left & Right
Contact	Mounting	L	C	R				
		2NO	1	X	0	0	HW1K-3AF20	HW1K-31BF20
2	0		0	X				
2NO-2NC	1	X	0	0	HW1K-3AF22	HW1K-31BF22	HW1K-32CF22	HW1K-33DF22
	2	0	0	X				
	3	0	X	X				
	4	X	X	0				



1. Key is removable in all maintained positions. Other key removable options available. Contact IDEC for details.
2. Two keys are supplied with all switches.
3. All standard operators are keyed alike (contact IDEC for special keys).
4. For nameplates, see page A-114.
5. Custom contact arrangements available, contact IDEC for details.
6. Mounting refers to contact location on operator. For more information, see page A-119.
7. Mounting refers to contact location on operator. See page A-106.



Key Switches (Partial-Assemblies)

Contact Assembly + Operator = Complete Part



A

Part Numbers: Contact Assemblies

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

Part Numbers: Operators

# of Positions	Description	Part Number
2	Maintained	HW1K-2A
	Maintained, key remove left only	HW1K-2B
	Spring from Right	HW1K-21B
3	Maintained, Standard Cam	HW1K-3A
	Maintained, Cam A	HW1K-3SA
	Maintained, Cam S	HW1K-3JA
	Spring Return from Right	HW1K-31B
	Spring Return from Left	HW1K-32C
	Two-Way Spring Return	HW1K-33D



- Operator includes two keys.
- All standard operators are keyed alike (contact IDEC for special keys).
- Other key removable options available. See "Other Key Removable Option Codes" on next page.

Key Switches (Sub-Assembled)

Contact Blocks + Adaptor & Safety Lever Lock + Anti-Rotation Ring + Operator = Complete Part



Part Numbers: Operators

# of Positions	Description	Part Number
2	Maintained	HW1K-2A
	Maintained, key remove left only	HW1K-2B
	Spring from Right	HW1K-21B
3	Maintained, Standard Cam	HW1K-3A
	Maintained, Cam S	HW1K-3SA
	Maintained, Cam J	HW1K-SJA
	Spring Return from Right	HW1K-31B
	Spring Return from Left	HW1K-32C
	Two-Way Spring Return	HW1K-33D



- Operator includes two keys.
- All standard operators are keyed alike (contact IDEC for special keys).
- Other key removable options available. See table below.

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

Style	Part Number
	HW-CB2C



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

Other Key Removable Option Codes

Code	Description
A	Key retained in NO position (removable in all positions)
B	Key retained in right position only
C	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)
H	Key retained left and center (3 position only)



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

Part Numbers: Contact Blocks

Description	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	



- 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.

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



- Use with notched panel cutout to prevent unit rotation (not included with assembled units).
- Not required when using HW series nameplates See page A-114.

Illuminated Selector Switches (Assembled)



Part Numbers: 2-Position LED Selector Switches

Contact	Mounting	Operator Position		Type	Part Number	
		L	R		Maintained	Spring Return From Right
1NO-1NC	1 2	0	X	Full voltage	HW1F-2F11Q ^{④-②-③}	HW1F-21F11Q ^{④-②-③}
		X	0	Transformer	120V HW1F-2F11H2 ^{④-②} 240V HW1F-2F11M4 ^{④-②} 480V HW1F-2F11T8 ^{④-②}	120V HW1F-21F11H2 ^{④-②} 240V HW1F-21F11M4 ^{④-②} 480V HW1F-21F11T8 ^{④-②}
2NO	1 2	0	X	Full voltage	HW1F-2F20Q ^{④-②-③}	HW1F-21F20Q ^{④-②-③}
		X	0	Transformer	120V HW1F-2F20H2 ^{④-②} 240V HW1F-2F20M4 ^{④-②} 480V HW1F-2F20T8 ^{④-②}	120V HW1F-21F20H2 ^{④-②} 240V HW1F-21F20M4 ^{④-②} 480V HW1F-21F20T8 ^{④-②}
2NO-2NC	1 2 3 4	0	X	Full voltage	HW1F-2F22Q ^{④-②-③}	HW1F-21F22Q ^{④-②-③}
		X	0	Transformer	120V HW1F-2F22H2 ^{④-②} 240V HW1F-2F22M4 ^{④-②} 480V HW1F-2F22T8 ^{④-②}	120V HW1F-21F22H2 ^{④-②} 240V HW1F-21F22M4 ^{④-②} 480V HW1F-21F22T8 ^{④-②}
		0	X			
		X	0			



- In place of ^② specify the Lens/LED color code, in place of ^③ specify the Full Voltage code and in place of ^④ specify Lamp Type code, from tables below.
- For namplates, see page A-114.
- For partial and sub-assembly part numbers, see pages A-100 and A-101.
- Mounting refers to contact location on operator. See page A-106..

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

④ Lamp Type Code

Lamp	Code
Incandescent	Blank
LED	D

Illuminated Selector Switches (Assembled) con't

Part Numbers: 3-Position LED Selector Switches (Maintained, Spring Return from Right)

Contact	Mounting	Operator Position			Type	Part Number	Part Number	Part Number	Part Number
		L	C	R					
						Maintained 	Spring Return From Right 	Spring Return From Left 	Spring Return Two-Way
2NO	1	X	0	0	Full voltage	HW1F-3F20Q ^{④-②-③}	HW1F-31F20Q ^{④-②-③}	HW1F-32F20Q ^{④-②-③}	HW1F-33F20Q ^{④-②-③}
	2	0	0	X	Transformer	120V HW1F-3F20H2 ^{④-②} 240V HW1F-3F20M4 ^{④-②} 480V HW1F-3F20T8 ^{④-②}	120V HW1F-31F20H2 ^{④-②} 240V HW1F-31F20M4 ^{④-②} 480V HW1F-31F20T8 ^{④-②}	120V HW1F-32F20H2 ^{④-②} 240V HW1F-32F20M4 ^{④-②} 480V HW1F-32F20T8 ^{④-②}	120V HW1F-33F20H2 ^{④-②} 240V HW1F-33F20M4 ^{④-②} 480V HW1F-33F20T8 ^{④-②}
2NC	1	0	X	X	Full voltage	HW1F-3F02Q ^{④-②-③}	HW1F-31F02Q ^{④-②-③}	HW1F-32F02Q ^{④-②-③}	HW1F-33F02Q ^{④-②-③}
	2	X	X	0	Transformer	120V HW1F-3F02H2 ^{④-②} 240V HW1F-3F02M4 ^{④-②} 480V HW1F-3F02T8 ^{④-②}	120V HW1F-31F02H2 ^{④-②} 240V HW1F-31F02M4 ^{④-②} 480V HW1F-31F02T8 ^{④-②}	120V HW1F-32F02H2 ^{④-②} 240V HW1F-32F02M4 ^{④-②} 480V HW1F-32F02T8 ^{④-②}	120V HW1F-33F02H2 ^{④-②} 240V HW1F-33F02M4 ^{④-②} 480V HW1F-33F02T8 ^{④-②}
2NO-2NC	1	X	0	0	Full voltage	HW1F-3F22Q ^{④-②-③}	HW1F-31F22Q ^{④-②-③}	HW1F-32F22Q ^{④-②-③}	HW1F-33F22Q ^{④-②-③}
	2	0	0	X	Transformer	120V HW1F-3F22H2 ^{④-②}	120V HW1F-31F22H2 ^{④-②}	120V HW1F-32F22H2 ^{④-②}	120V HW1F-33F22H2 ^{④-②}
3	0	X	X	240V HW1F-3F22M4 ^{④-②}		240V HW1F-31F22M4 ^{④-②}	240V HW1F-32F22M4 ^{④-②}	240V HW1F-33F22M4 ^{④-②}	
4	X	X	0	480V HW1F-3F22T8 ^{④-②}		480V HW1F-31F22T8 ^{④-②}	480V HW1F-32F22T8 ^{④-②}	480V HW1F-33F22T8 ^{④-②}	
4NO	1	X	0	0	Full voltage	HW1F-3F40Q ^{④-②-③}	HW1F-31F40Q ^{④-②-③}	HW1F-32F40Q ^{④-②-③}	HW1F-33F40Q ^{④-②-③}
	2	0	0	X	Transformer	120V HW1F-3F40H2 ^{④-②}	120V HW1F-31F40H2 ^{④-②}	120V HW1F-32F40H2 ^{④-②}	120V HW1F-33F40H2 ^{④-②}
3	X	0	0	240V HW1F-3F40M4 ^{④-②}		240V HW1F-31F40M4 ^{④-②}	240V HW1F-32F40M4 ^{④-②}	240V HW1F-33F40M4 ^{④-②}	
4	0	0	X	480V HW1F-3F40T8 ^{④-②}		480V HW1F-31F40T8 ^{④-②}	480V HW1F-32F40T8 ^{④-②}	480V HW1F-33F40T8 ^{④-②}	
4NC	1	0	X	X	Full voltage	HW1F-3F04Q ^{④-②-③}	HW1F-31F04Q ^{④-②-③}	HW1F-32F04Q ^{④-②-③}	HW1F-33F04Q ^{④-②-③}
	2	X	X	0	Transformer	120V HW1F-3F04H2 ^{④-②}	120V HW1F-31F04H2 ^{④-②}	120V HW1F-32F04H2 ^{④-②}	120V HW1F-33F04H2 ^{④-②}
3	0	X	X	240V HW1F-3F04M4 ^{④-②}		240V HW1F-31F04M4 ^{④-②}	240V HW1F-32F04M4 ^{④-②}	240V HW1F-33F04M4 ^{④-②}	
4	X	X	0	480V HW1F-3F04T8 ^{④-②}		480V HW1F-31F04T8 ^{④-②}	480V HW1F-32F04T8 ^{④-②}	480V HW1F-33F04T8 ^{④-②}	



- In place of ② specify the Lens/LED color code, in place of ③ specify the Full Voltage code, and in place of ④- specify Lamp Type code from tables on the previous page.
- For namplates, see page A-114.
- For partial and sub-assembly part numbers, see pages A-100 and A-101.
- Mounting refers to contact location on operator. See page A-106.

Illuminated Selector Switches (Partial-Assemblies)

Contact Assembly + Lamp + Operator/Lens = Complete Part



A

Full Voltage Models

Part Numbers: Contact Assemblies (order lamp separately)

Style	Contacts	Part Number
	1NO	HW-FL10Q0
	2NO	HW-FL20Q0
	1NO/1NC	HW-FL11Q0
	1NC	HW-FL01Q0
	2NC	HW-FL02Q0

Order lamp separately from table on right.

Part Numbers: Operators/Lens

	Type	Part Number
2 pos.	Maintained	HW1F-2 ^②
	Spring from Right	HW1F-21- ^②
	Spring from Left	HW1F-22- ^②
3 pos.	Maintained	HW2F-3- ^②
	Spring from Right	HW1F-31 ^②
	Spring from Left	HW1F-32 ^②
	Spring from Both	HW1F-33 ^②

In place of ^②, specify the Lens color code from table below.

Part Numbers: Lamps

Type	Voltage	Current	Part Number
LED 	6V AC	20mA	LSTD-6 ^②
	12V AC/DC	20mA	LSTD-1 ^②
	24V AC/DC	20mA	LSTD-2 ^②
	120V AC	10mA	LSTD-H2 ^②
	240V AC		LSTD-M4 ^②
Incandescent 	6.3V AC/DC, 1W		IS-6
	12V AC/DC, 1W		IS-12
	24V AC/DC, 1W		IS-24

1. In place of ^②, specify the LED color code from table below.
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

Transformer Models

Part Numbers: Contact Assemblies (lamp included)

Style	Contacts	Part Number
	1NO	HW-FL10H2- ^②
	2NC	HW-FL20H2- ^②
	1NC	HW-FL20H2- ^②
	1NO/1NC	HW-FL01H2- ^②
	1NO/1NC	HW-FL11H2- ^②
120V LED	1NO	HW-FL10M4- ^②
	2NC	HW-FL20M4- ^②
	1NC	HW-FL01M4- ^②
	1NO/1NC	HW-FL11M4- ^②
240V LED	1NO	HW-FL10T8- ^②
	2NC	HW-FL20T8- ^②
	1NC	HW-FL01T8- ^②
	1NO/1NC	HW-FL11T8- ^②
480V LED	1NO	HW-FL10H2
	2NC	HW-FL20H2
	1NC	HW-FL01H2
	1NO/1NC	HW-FL11H2
120V Incandescent	1NO	HW-FL10M4
	2NC	HW-FL20M4
	1NC	HW-FL01M4
	1NO/1NC	HW-FL11M4
240V Incandescent	1NO	HW-FL10M4
	2NC	HW-FL20M4
	1NC	HW-FL01M4
	1NO/1NC	HW-FL11M4

Part Numbers: Operators/Lens

	Type	Part Number
2 pos.	Maintained	HW1F-2 ^②
	Spring from Right	HW1F-21- ^②
	Spring from Left	HW1F-22- ^②
3 pos.	Maintained	HW2F-3- ^②
	Spring from Right	HW1F-31 ^②
	Spring from Left	HW1F-32 ^②
	Spring from Both	HW1F-33 ^②

In place of ^②, specify the Lens color code from table below.

② Lens/LED Color Code

Color	Code
Amber	A
Green	GD (LED Lens) GL (Incandescent Lens) G (LED Lamp)
Red	R
Blue	S
White	W
Yellow	Y

1. In place of ^② specify the Lens/LED color code.
2. For nameplates and accessories, see page A-114.
3. For dimensions, see page A-117.
4. For sub-assembly part numbers, see page A-101.
5. GD lens is lighter in color than GL lens.

Illuminated Selector Switches (Sub-Assembled)

Transformer * + Contact Blocks + Lead Holder + Adaptor + Lamp + Anti-Rotation + Operator + Illuminated Knob = Complete Part



* not applicable for full voltage units

Part Numbers: Operators

Appearance	# of Positions	Description	Part Number
	2	Maintained	HW1F-2
		Spring return from right	HW1F-21
	3	Maintained	HW1F-3
		Spring return from right	HW1F-31
		Spring return from left	HW1F-32
		Two-way spring return	HW1F-33



Illuminated knobs must be ordered separately.

Part Numbers: Illuminated Knob

Appearance	Description	Part Number
	Amber	HW9Z-FDY-A
	Green	HW9Z-FDY-G
	Red	HW9Z-FDY-R
	Blue	HW9Z-FDY-S
	White	HW9Z-FDY-W
	Yellow	HW9Z-FDY-Y

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

Style	Part Number
	HW-CBL



- Used to mount contact blocks to operator (first pair only). Lamp holder is built-in.
- IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

Part Numbers: Transformer Unit (LED and incandescent)

Style	Voltage	Part Number
Transformer	120V 240V 480V	TW-F126B TW-F246B TW-F486B
	(6V secondary voltage)	

Part Numbers: Contact Blocks



Description	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	



- 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.

Illuminated Selector Switches (Sub- Assembled) con't

Part Numbers: Lamps

Type	Voltage	Current	Part Number
LED 	6V AC	20mA	LSTD-6 [Ⓢ]
	12V AC/DC	20mA	LSTD-1 [Ⓢ]
	24V AC/DC	20mA	LSTD-2 [Ⓢ]
	120V AC	10mA	LSTD-H2 [Ⓢ]
	240V AC		LSTD-M4 [Ⓢ]
Incandescent 	6.3V AC/DC, 1W		IS-6
	12V AC/DC, 1W		IS-12
	24V AC/DC, 1W		IS-24



HW-GA1 "Dummy Block with Full Voltage adaptor" does not require the use of HW-LH3.

[Ⓢ] LED Color Code



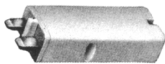
Color	Code
Green	G
Red	R
Blue	S
White	W
Yellow	Y

A



1. In place of [Ⓢ], specify the LED color code from table at right.
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

Part Numbers: Lamp Circuit Components

Style	Application	Part Number
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	HW-DA1FB
		HW-GA1 (with spring up terminals)
Full Voltage Adaptor 	For use with even number of contacts.	TW-DA1FB
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.	HW-LH3

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



1. Use with notched panel cutout to prevent unit rotation.
2. Not required when using HW series nameplates See page A-114.

Custom Selector Switch Building Guide

To build a custom selector switch, follow these steps.

Step 1: How many positions of the switch are needed?

of positions
(2, 3, 4, 5)

Step 2: How many contacts should there be?

of isolated contacts
(maximum 6)

Step 3: Fill in the Truth Table

(X = closed, 0 = open)

		Knob Position				
		1	2	3	4	5
Contacts	1					
	2					
	3					
	4					
	5					
	6					

Step 4: If building a 2, 4, or 5 position selector, skip this step. (2, 4, 5 position selectors have only one cam)

If building a 3 position selector, determine appropriate cam as follows:

Look at Row 1 from above table and locate an identical row in the operator truth tables (See next page).

Repeat for all rows. Find one operator that contains all rows from above table.

Record the operator cam version.

Operator CAM Version
(blank, S, J for 3 position)

Step 5: Build by placing appropriate contact in appropriate mounting position for each desired row on operator cam truth table. "L" and "R" refer to mounting on left or right side of operator as viewed from the front of the panel.

Caution: Before putting any custom selector switch into use, it should be tested using an ohmmeter.



For Operator Truth Tables, see next page.

Operator Truth Tables

Use the following tables to build custom selector switches.

2 Position Selector Switches

A

**HW1S-2T
HW1K-2*
HW1F-2**

Contact	Mounting Position	Operator Position	
		Left	Right
HW-F10 (NO)	L	0	X
	R	0	X
HW-F01 (NC)	L	X	0
	R	X	0
HW-F10R NO-(EM)	L	0	X
	R	0	X
HW-F01R NC-(LB)	L	X	0
	R	X	0



1. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).

2. * for key removable code (see page A-97).

3 Position Selector Switches

**HW1S-3T
HW1K-3*
HW1F-3**

Contact	Mounting Position	Operator Position		
		Left	Center	Right
HW-F10 (NO)	L	X	0	0
	R	0	0	X
HW-F01 (NC)	L	0	X	X
	R	X	X	0
HW-F10R NO-(EM)	L	X	0	0
	R	0	0	X
HW-F01R NC-(LB)	L	0	X	X
	R	X	X	0



1. HW1S-3T is identified by white plungers on the operator.

2. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).

3. * for key removable code (see page A-97).

**HW1S-3ST
HW1K-3S***

Contact	Mounting Position	Operator Position		
		Left	Center	Right
HW-F10 (NO)	L	X	0	0
	R	0	0	X
HW-F01 (NC)	L	0	0	X
	R	X	0	0
HW-F10R NO-(EM)	L	X	X	0
	R	0	X	X
HW-F01R NC-(LB)	L	0	X	X
	R	X	X	0



1. HW1S-3ST is identified by red plungers on the operator.

2. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).

3. * for key removable code (see page A-97).

**HW1S-3JT
HW1K-3J***

Contact	Mounting Position	Operator Position		
		Left	Center	Right
HW-F10 (NO)	L	X	0	0
	R	0	0	X
HW-F01 (NC)	L	0	X	0
	R	0	X	0
HW-F10R NO-(EM)	L	X	0	X
	R	X	0	X
HW-F01R NC-(LB)	L	0	X	X
	R	X	X	0



1. HW1S-3JT is identified by black plungers on the operator.

2. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).

3. * for key removable code (see page A-97).

Operator Truth Tables con't

4 Position Selector Switches

Contact	Mounting Position	Operator Position			
		1	2	3	4
HW-F10 (NO)	L	X	0	0	0
	R	0	0	0	X
HW-F01 (NC)	L	0	0	X	0
	R	0	X	0	0
HW-F10R NO-(EM)	L	X	X	0	X
	R	X	0	X	X
HW-F01R NC-(LB)	L	0	X	X	X
	R	X	X	X	0



5 Position Selector Switches

Contact	Mounting Position	Operator Position				
		1	2	3	4	5
HW-F10 (NO)	L	X	0	0	0	0
	R	0	0	0	0	X
HW-F01 (NC)	L	0	0	0	X	0
	R	0	X	0	0	0
HW-F10R NO-(EM)	L	X	X	X	0	X
	R	X	0	X	X	X
HW-F01R NC-(LB)	L	0	X	X	X	X
	R	X	X	X	X	0



Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).

Custom Selector Switch Building Examples

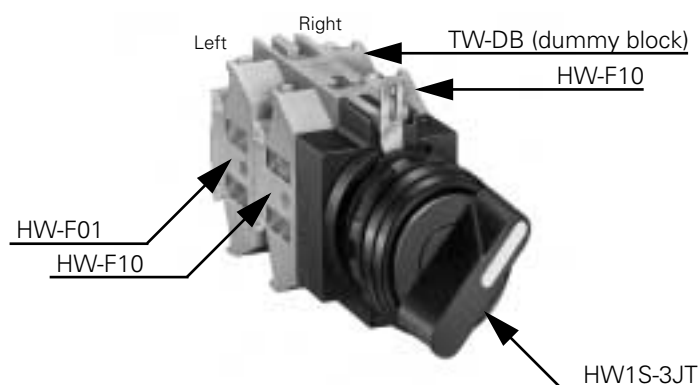
Example 1: 3 Position, Maintained Selector Switch with 3 Contacts

Determine which operator is capable of producing all the desired contact actions.

A

	Knob Position			Operator		
	Left	Center	Right	HW1S-3T	HW1S-3ST	HW1S-3JT
Contact 1	0	0	X	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right
Contact 2	0	X	0	Not possible	Not possible	Possible with HW-F01 mounted on left or right
Contact 3	X	0	0	Possible with HW-F10 mounted on left	Possible with HW-F10 mounted on left	Possible with HW-F10 mounted on left

The only operator in this example that will produce all the desired contact actions is HW1S-3JT. Assemble as follows:

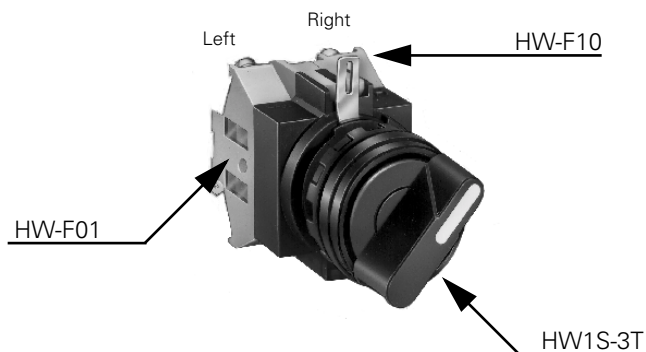


Example 2: 3 Position, Maintained Selector Switch with 2 Contacts

Determine which operator is capable of producing all the desired contact actions.

	Knob Position			Operator		
	Left	Center	Right	HW1S-3T	HW1S-3ST	HW1S-3JT
Contact 1	0	0	X	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right
Contact 2	0	X	X	Possible with HW-F01 mounted on left	Possible with HW-F10R mounted on right or HW-F01R mounted on left	Not possible

This arrangement is possible with either the HW1S-3T or HW1S-3ST operator. It is preferred to use the HW1S-3T as this requires only the standard contacts (HW-F10 and HW-F01 and not the early make (HW-F10R) or late break (HW-F01R) contacts. Assemble as follows:



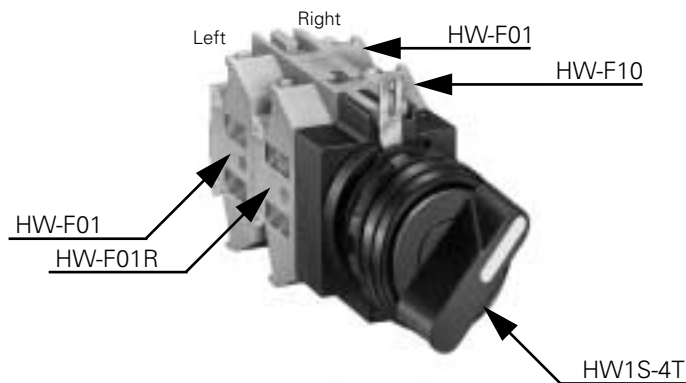
Custom Selector Switch Building Examples con't

Example 3: 4 Position Selector Switch with 4 Contacts

Determine where the contact will be mounted.

	Knob Position				Operator
	1	2	3	4	HW1S-4T
Contact 1	0	X	0	0	HW-F01 mounted on right
Contact 2	0	0	X	0	HW-F01 mounted on left
Contact 3	0	0	0	X	HW-F10 mounted on right
Contact 4	0	X	X	X	HW-F10R mounted on left

Assemble as follows:

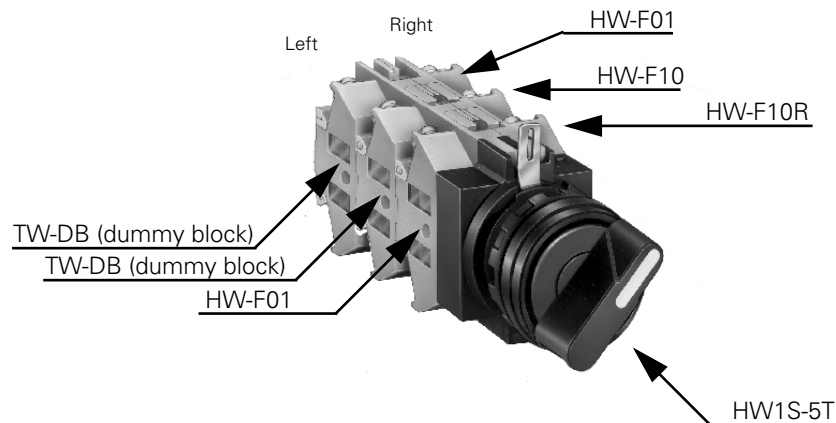


Example 4: 5 Position Selector Switch with 4 Contacts

Determine where the contact will be mounted.

	Knob Position					Operator
	1	2	3	4	5	HW1S-5T
Contact 1	0	X	0	0	0	HW-F01 mounted on right
Contact 2	0	0	0	X	0	HW-F01 mounted on left
Contact 3	0	0	0	0	X	HW-F10 mounted on right
Contact 4	X	0	X	X	X	HW-F10R mounted on right

Assembled as follows:

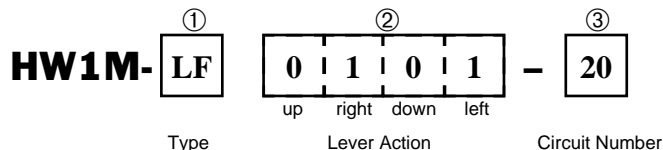


Mono Lever Switches (Assembled)



A

Part Number Guide



Part Numbers: Mono Lever Switches

Description	No. of Positions	Part Number
HW1M Standard Lever	2	HW1M-F1010-20
		HW1M-F2020-20
		HW1M-F0101-20
		HW1M-F0202-20
		HW1M-F0101-40
		HW1M-F0202-40
	4	HW1M-F1111-22N9
		HW1M-F2222-22N9
HW1M-L Interlocking Lever	2	HW1M-LF1010-20
		HW1M-LF2020-20
		HW1M-LF0101-20
		HW1M-LF0202-20
		HW1M-LF0101-40
		HW1M-LF0202-40
	4	HW1M-LF1111-22N9
		HW1M-LF2222-22N9

Description	Code	Remarks
① Type	Standard	F
	Interlocking	LF
② Lever Action	Maintained	1
	Spring	2
	Blocked	0
③ Circuit Number	20	See Circuit Diagrams below
	40	
	22N9	

Circuit Diagrams

2 Position Left/Right

Circuit Number	Contact Mounting		Position		
	No.		Left	Center	Right
20	1	HW-F10	X	0	0
	2	HW-F10	0	0	X
40	1	HW-F10	X	0	0
	2	HW-F10	0	0	X
	3	HW-F10	X	0	0
	4	HW-F10	0	0	X

2 Position Up/Down

Circuit Number	Contact Mounting		Position		
	No.		Down	Center	Up
20	1	HW-F10	X	0	0
	2	HW-F10	0	0	X
40	1	HW-F10	X	0	0
	2	HW-F10	0	0	X
	3	HW-F10	X	0	0
	4	HW-F10	0	0	X

4 Position

Circuit Number	Contact Mounting		Position				
	No.		Down	Left	Center	Up	Right
22N9	1	HW-F01	0	0	0	0	X
	2	HW-F01	X	0	0	0	0
	3	HW-F10	0	X	0	0	0
	4	HW-F10	0	0	0	X	0





Other circuit arrangements available, contact IDEC for details.

Mono Lever Switches (Sub- Assembled)


Contact Blocks + Mounting Adaptor + Anti-Rotation Ring + Operator = Complete Part



Part Numbers: Operators

Appearance	# of Positions	Description	Part Number
	2	Maintained Up/Down	HW1M-1010
		Spring return Up/Down	HW1M-2020
		Maintained Left/Right	HW1M-0101
		Spring return Left/Right	HW1M-0202
	4	Maintained , 4 position	HW1M-1111
		Spring return, 4 position	HW1M-2222
	2	Maintained Up/Down	HW1M-L1010
		Spring return Up/Down	HW1M-L2020
		Maintained Left/Right	HW1M-L0101
		Spring return Left/Right	HW1M-L0202
	4	Maintained , 4 position	HW1M-L1111
		Spring return, 4 position	HW1M-L2222

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

Appearance	Part Number
	HW-CB2C



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

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL







- Use with notched panel cutout to prevent unit rotation.
- Not required when using HW series nameplates See page A-114.

Part Numbers: Replacement Parts

Item	Part Number
Black Cap	TW-M1CA
Boot	HW-BELLOWS1ML

Part Numbers: Contact Blocks

Description	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	



- 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.

Pushbutton Selectors (Assembled)

Part Numbers: 2-Position Pushbutton Selectors

Contacts	Mounting	Operator Position				Part Number
		Left		Right		
		Normal	Depressed	Normal	Depressed	
2NO	1 HW-F10	0	X	0	0	HW1R-2DF20-①
	2 HW-F10	0	0	0	X	
2NO-2NC	1 HW-F10	0	X	0	0	HW1R-2DF22N1-①
	2 HW-F10	0	0	0	X	
	3 HW-F01	X	0	X	X	
	4 HW-F01	X	X	X	0	
2NO-2NC	1 HW-F10	0	X	0	0	HW1R-2EF22N1-①
	2 HW-F10	0	0	0	X	
	3 HW-F01R	0	0	X	X	
	4 HW-F01R	X	X	0	0	
2NO-2NC	1 HW-F10	0	0	0	X	HW1R-2FF22N1-①
	2 HW-F10	0	X	0	0	
	3 HW-F01	0	0	X	0	
	4 HW-F01	X	0	0	0	



1. Available only with momentary pushbutton and maintained selector.
2. In place of ①, specify the button color code from table below
3. Other contact arrangements available. Contact IDEC for details.
4. All assembled parts use flush buttons.
5. **Normal** position refers to the button flush with the selector ring.
6. **Depressed** position refers to the button being pushed in.

① Button Color Code



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

Pushbutton Selectors (Partial-Assemblies)


Contact Assembly + Operator/Button = Complete Part



Part Numbers: Contact Assemblies

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

Part Numbers: Operators

Appearance	Description	Part Number
	Cam D	HW1R-2D-①
	Cam E	HW1R-2E-①
	Cam F	HW1R-2F-①



In place of ① specify button color code.

① Button Color Code

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

Pushbutton Selectors (Sub-Assembled)

Contact Blocks + Contact Mounting Adaptor + Anti-Rotation Ring + Operator + Button = Complete Part



A

Part Numbers: Operators

Appearance	Description	Part Number
	Cam D	HW1R-2D
	Cam E	HW1R-2E
	Cam F	HW1R-2F

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

Appearance	Part Number
	HW-CB2C



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

Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



- Use with notched panel cutout to prevent unit rotation.
- Not required when using HW series nameplates See page A-114.

Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20)		
	HW-F10	HW-F01
	HW-F10R (early make)	HW-F01R (late break)
Spring-Up Terminal Contacts		
	HW-G10	HW-G01
	HW-G10R (early make)	HW-G01R (late break)
Exposed Screw Terminal Contacts		
	HW-C10	HW-C01
	HW-C10R (early make)	HW-C01R (late break)
Dummy Block	TW-DB	



- 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.

Part Numbers: Buttons

Description	Part Number
Round Flush	
	HW1A-B1-①

① Button Color Code

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

Contactor Reset Button

Part Numbers: Reset Buttons (Assembled)

Appearance	Button Engraving	Part Number
	Blank	HW1B-M1RS-①T
	Engraved "R"	HW1B-M1RS-①T

① Button Color Code

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




- In place of ① specify button color code.
- 5.1" (130mm) overall length.
- 16mm flat base for easy alignment

Sub-Assemblies


Rod + Operator + Button = Complete Part




Part Numbers: Rod

Appearance	Part Number
	HW9Z-RS-TK2141

Part Numbers: Button

Appearance	Part Number
	HW1B-B1-①

Part Numbers: Operator

Appearance	Part Number
	HW1B-M0



In place of ① specify button color code from table.

① Button Color Code

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

Nameplates — HW Series

Part Numbers: Nameplates

	HWAM—Black Plastic	HWAQ—Black Plastic	HWAS—Black Plastic	HWAV—Yellow Plastic
	Part Number	Part Number	Part Number	Part Number
Nameplate (blank)	HWAM-0B	HWAQ-0B	HWAS-0B	HWAV-0Y
Nameplate (engraved)	HWAM-①	HWAQ-①	HWAS-①	HWAV-27* HWAV-527†
Additional Insert (blank)	HWNP-0	HWNP-0	HWNP Dimensions 	
Additional Insert (engraved)	HWNP-①	HWNP-①		

- In place of ①, insert either the standard legend code from table below or custom engraving delimited by “ ”.
- Standard engravings are available at no charge.
- * HWAV-27 comes engraved “Emergency Stop” as shown in drawing.
- † HWAV-527 for 80mm diameter jumbo mushroom comes engraved “Emergency Stop” as shown in drawing.

Standard Legend Codes

Pushbuttons				Pushbuttons/Selector Switches				Selector Switches	
Legend	Code	Legend	Code	Legend	Code	Legend	Code	Legend	Code
AUTO	101	OPEN	116	AUTO-MAN	201			AUTO-MAN-OFF	301
CLOSE	102	OUT	117	CLOSE-OPEN	202			AUTO-OFF-MAN	302
DOWN	103	RAISE	118	DOWN-UP	203			CLOSE-OFF-OPEN	303
EMERG.STOP	104	RESET	119	FAST-SLOW	204			DOWN-OFF-SLOW	304
FAST	105	REVERSE	120	FOR-REV	205	REV-FOR	216	FAST-OFF-SLOW	305
FORWARD	106	RUN	121	HAND-AUTO	206	RUN-JOG	217	FOR-OFF-REV	306
HAND	107	SLOW	122	HIGH-LOW	207	RUN-SAFE	218	LEFT-OFF-RIGHT	307
HIGH	108	START	123	JOG-RUN	208	SAFE-RUN	219	LOWER-OFF-RAISE	308
IN	109	STOP	125	LEFT-RIGHT	209	SLOW-FAST	220	OFF-MAN-AUTO	309
INCH	110	TEST	126	LOWER-RAISE	210	START-STOP	221	OFF-SLOW-FAST	310
JOG	111	UP	127	MAN-AUTO	211	STOP-START	222	OFF-1-2	311
LOW	112		150	OFF-ON	212	UP-DOWN	223	OPEN-OFF-CLOSE	312
LOWER	113	I (Int'l On)	151	ON-OFF	213			SLOW-OFF-FAST	313
OFF	114	O (Int'l Off)	152	OPEN-CLOSE	214			SUMMER-OFF-WINTER	314
ON	115	EMO		RAISE-LOWER	215			UP-OFF-DOWN	315
								1-OFF-2	316
								HAND-OFF-AUTO	317

- To order engraved nameplates, add legend code to nameplate part number.
- Character height based on the number of characters and size of nameplate. Standard character size is 3/16".
- Nameplates with standard legends are the same list price as blank nameplates.
- Nameplates have built-in anti-rotation feature for use with notched panel cut-outs. Additional anti-rotation ring (HW9Z-RL) is not necessary.

Nameplates Order Form — HW Series

Copy this order form and use it to specify Letter Height, Custom Engravings, Location of Engraving on Nameplate, and Quantity Desired. To insure engraving accuracy, fax it to your IDEC representative.

Your Company Name: _____

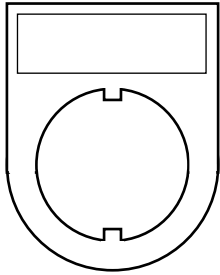
IDEC Representative(if known): _____

Your Name: _____

PO number (if known): _____

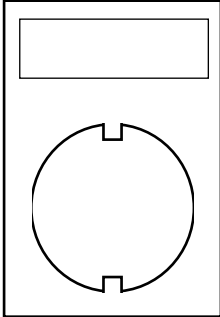
Telephone: _____

HWAM Nameplate

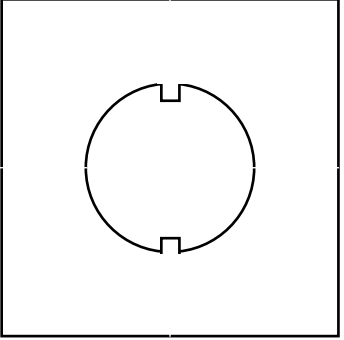
<p>Step 1. Specify letter height and custom engraving. Maximum of 2 lines of engraving.</p> <p>1/8" SAMPLE LETTERING Size (9 characters maximum)</p> <p>-----</p> <p>-----</p> <hr/> <p>7/64" SAMPLE LETTERING (11 characters maximum)</p> <p>-----</p> <p>-----</p>	<p>Step 2. Specify location of engraving on HWAM nameplate.</p> 	<p>Step 3. Specify Quantity. Enter the number of nameplates desired with the specifications defined to the left.</p> <div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto;"></div>
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HWAQ Nameplate

<p>Step 1. Specify letter height and custom engraving. Maximum of 2 lines of engraving.</p> <p>1/8" SAMPLE LETTERING Size (9 characters maximum)</p> <p>-----</p> <p>-----</p> <hr/> <p>7/64" SAMPLE LETTERING (11 characters maximum)</p> <p>-----</p> <p>-----</p>	<p>Step 2. Specify location of engraving on HWAQ nameplate.</p> 	<p>Step 3. Specify Quantity. Enter the number of nameplates desired with the specifications defined to the left.</p> <div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto;"></div>
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HWAS Nameplate

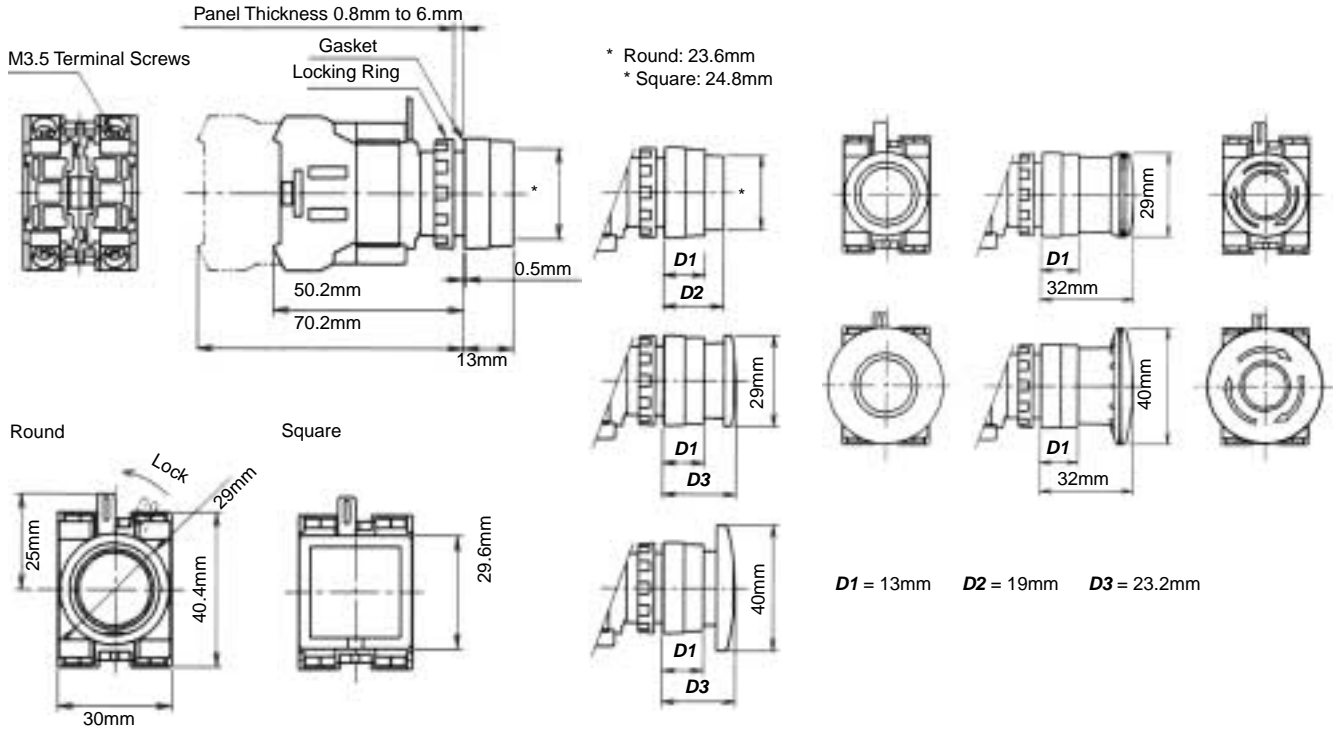
<p>Step 1. Specify letter height and custom engraving.</p> <p style="text-align: center;">Maximum of 1 line of engraving.</p>	<p>Step 2. Specify location of engraving on HWAS nameplate.</p> 
<p>1/8" SAMPLE LETTERING Size (14 characters maximum)</p> <p>-----</p> <hr/> <p>3/32" SAMPLE LETTERING Size (20 characters maximum)</p> <p>-----</p>	<p>Step 3. Specify Quantity Enter the number of nameplates desired with the specifications defined to the left.</p> <div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto;"></div>

Accessories — HW Series

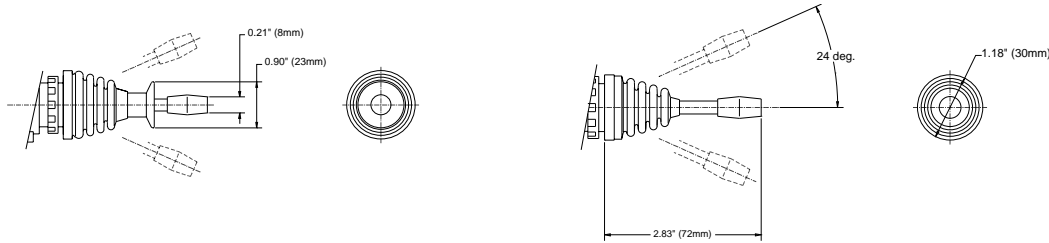
	Appearance	Description/Usage	Part Number	
Locking Ring Wrench		Metallic tool used to tighten the plastic locking ring when installing the HW series unit in a panel	MW9Z-T1	
Lamp/LED Removal Tool		Rubber tool makes lamp/LED removal easier.	OR-55	
Anti-Rotation Ring		Prevents rotation of switches in panel. (included with all assembled switches)	for notched panel cut-out (standard)	HW9Z-RL
			for round panel cutout	LW9Z-L
Rubber Mounting Hole Plug		Black rubber plug fills unused mounting holes in panel.	OB-31	
Metallic Mounting Hole Plug		For plugging unused mounting holes in the panel. Tighten the attached locking ring to a torque of 12 kfg-cm maximum Degree of protection: IP66	LW9Z-BM	
Barrier		To prevent contact between adjacent lead wires when control units are tightly mounted	HW-VL1	
Pushbutton Clear Boot		Used to cover and protect pushbuttons Operating temperature: -50 to +60°C	Flush Pushbuttons	OC-31
			Extended Pushbuttons	OC-32
Padlock Cover		Plastic hinged cover to protect pushbuttons or selector switches. Degree of protection: IP65	HW9Z-KL1	
Tab Terminal Adapter		Tab #250 (6.35 x 0.8mm): Single tab	TW-FA1	
		Tab #110 (2.8 x 0.8mm): Double tab	TW-FA2	
		Tab #187 (4.75 x 0.5mm): Single tab	TW-FA3	
Adaptor (22mm to 30mm)		Used to mount round HW series control unit (except Jumbo Mushroom, unibody, and square units) into a 30mm panel cut-out. (includes both pieces)	HW9Z-A30	
Replacement Safety Lever Lock		Used to prevent contact mounting lever from moving due to heavy vibration or panel maintenance. (included with all Contact Block Mounting Adaptors)	HWLS-TK1971	
Reset Rod for Contactors			HW9Z-RS-TK2141	
Replacement Locking Ring			HW9Z-RN	
Switch Cover (Square)			HW9Z-K1 (spring return) HW9Z-K11 (maintained cover)	
Replacement Keys		Pair of Keys (#231)	HW9Z-SKP	

Dimensions — HW Series

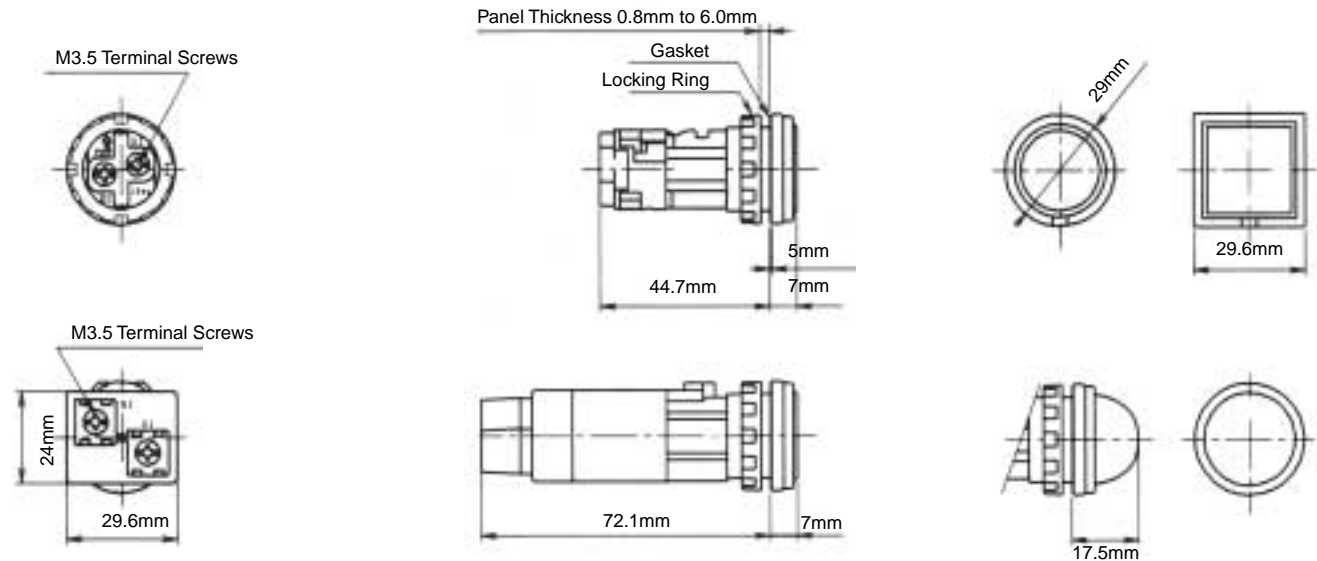

Non-Illuminated Pushbuttons



Monolever



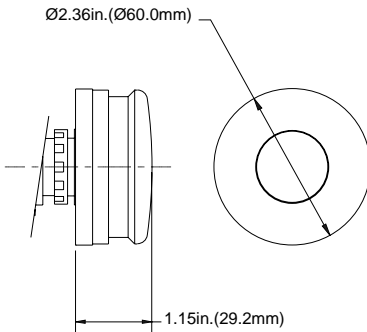
Pilot Lights



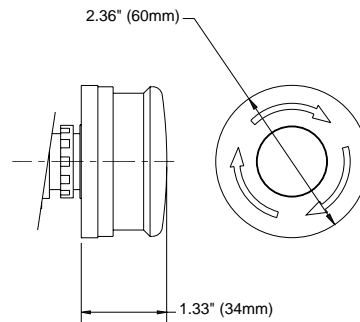
Dimensions con't

Jumbo Mushroom Pushbutton

HW1B-M5

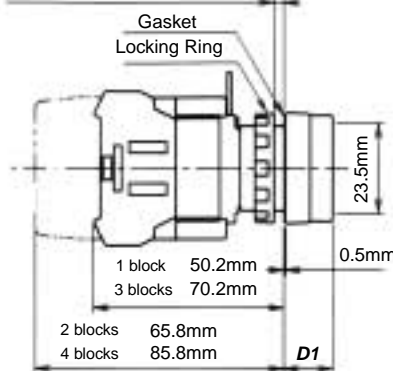


HW1B-V5

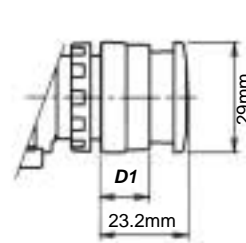


Illuminated Pushbuttons

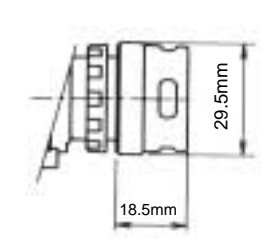
Panel Thickness: 0.8mm to 6.0mm



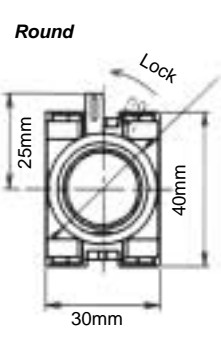
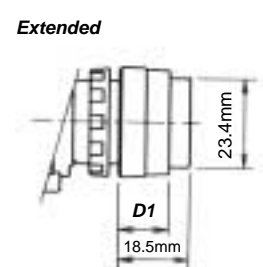
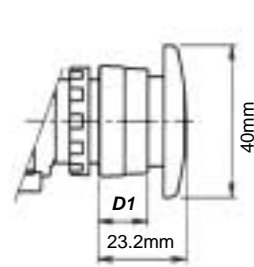
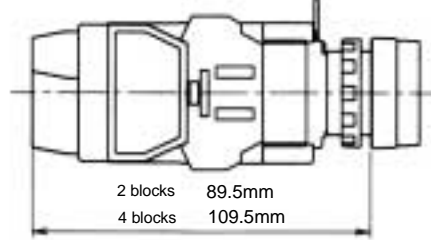
Mushroom



Extended with Full Shroud



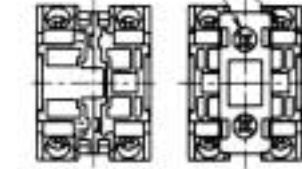
W/ Transformer



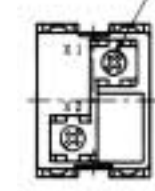
24V AC/DC

M3.5 Terminal Screws

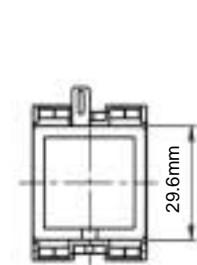
W/ Dummy Block & W/ Full Voltage Adaptor
Full Voltage Adaptor



W/ Transformer M3.5 Terminal Screws



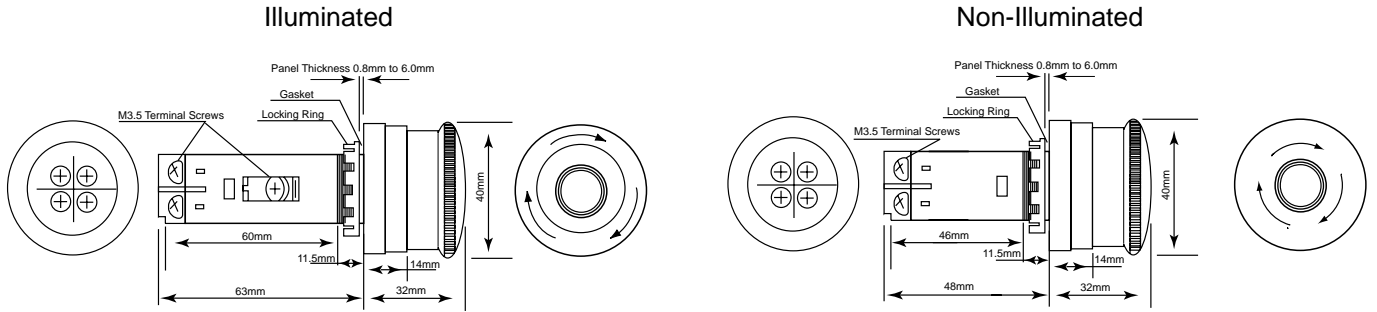
Square



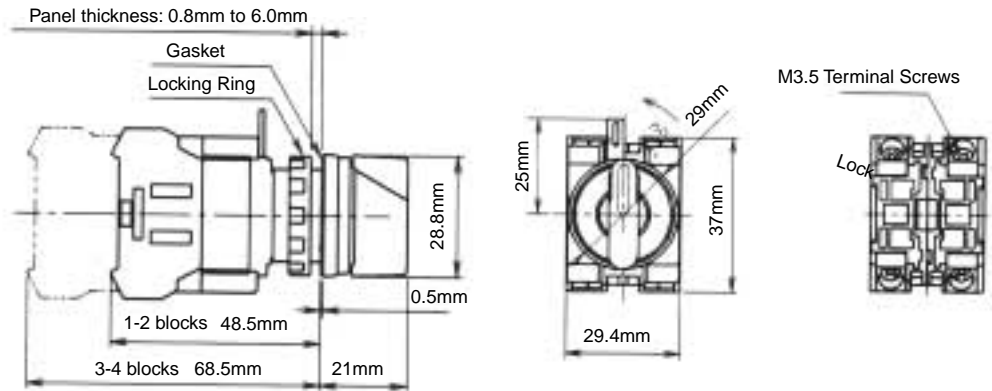
D1 = 0.51" 13mm

Dimensions con't

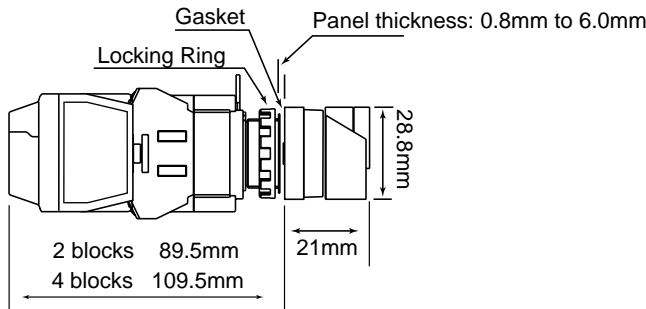
Unibody



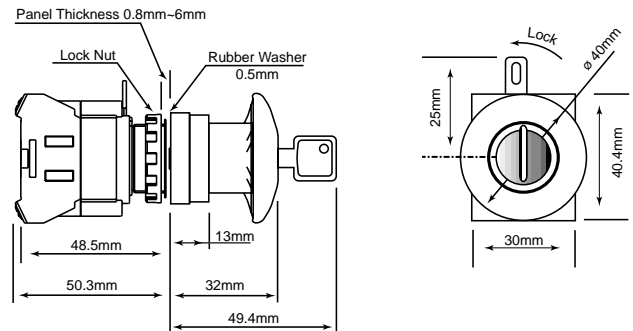
Selector Switches



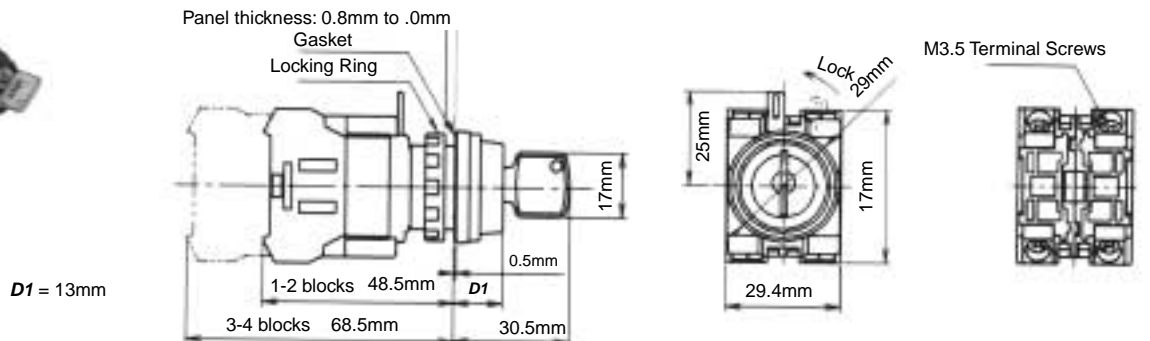
Illuminated Selector Switches



Pushlock Key Reset



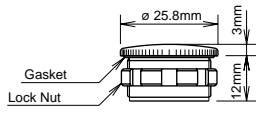
Key Switches



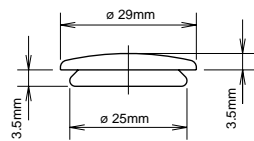
Dimensions con't

Accessories

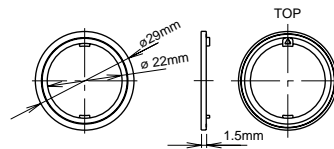
LW9Z-BM
Metallic Mounting Hole Plug



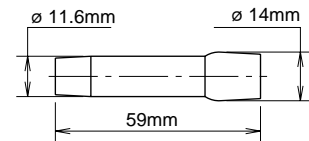
OB-31
Rubber Mounting Hole Plug



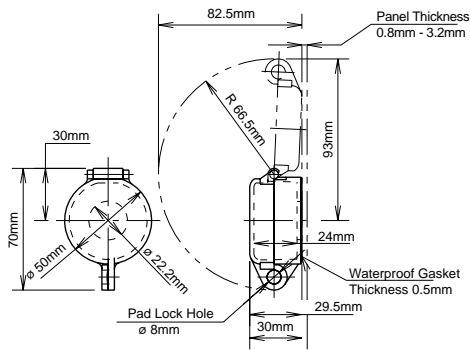
HW9Z-RL
Anti-Rotation Ring



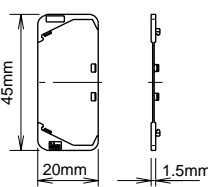
OR-55
Lamp/LED Removal Tool



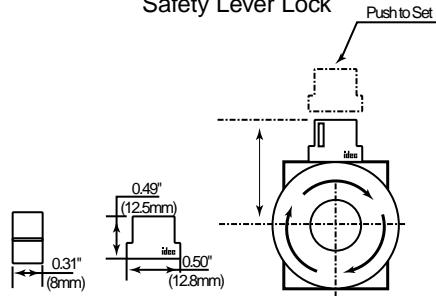
HW9Z-KL1
Padlock Cover



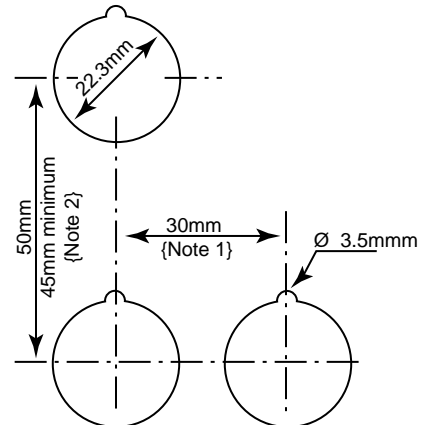
HW-VL1
Barrier



HWLS-TK1971
Safety Lever Lock



Mounting Hole Layout

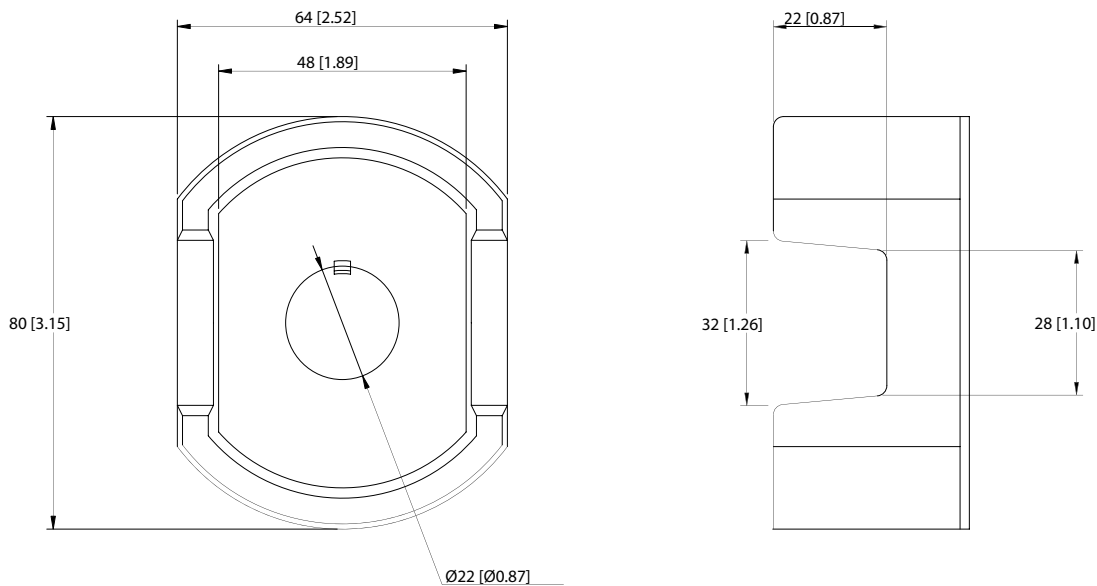


Note 1: Mushroom Button 40mm Type: 40mm or more

Note 2: Pilot Light: 30mm minimum

The values represent the minimum mounting centers when one stack of contact blocks is used. When two stacks or an illuminated unit is used, refer to the dimensions and consider wiring accessibility to determine minimum mounting centers.

HW9Z-KG1-TK2120



Specification Charts — HW Series

Rated Operational Power DC Voltage

Inductive

Resistive

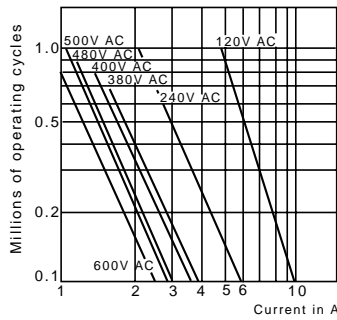
DC Voltages

Voltage V	24	48	110
Current A	4	2	1.1

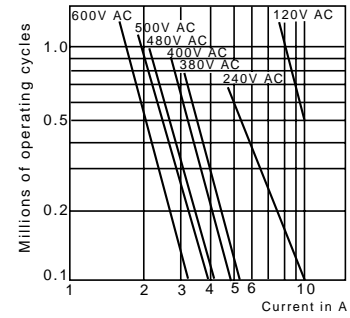
DC Voltages

Voltage V	24	48	110
Current A	8	4	2.2

AC Voltages



AC Voltages



Conforming to IEC 947-5-1 Appendix C.
Utilization categories AC-15 and DC-13.
Operation rate: 1,800 op. hour
Load factor: 0.4 ± 0.05

Conforming to IEC 947-5-1 Appendix C.
Utilization categories AC-15 and DC-13.
Operation rate: 1,800 op. hour
Load factor: 0.9 ± 0.05