HW Series — 22mm IEC Style Global Pushbuttons

Key features:

- Locking lever removable contact blocks
- Finger-safe IP20 contacts
- Tamperproof construction
- All E-stops meet EN60947-5-5, and are compliant with SEMI S2 standards
- Worldwide approvals
- Easy to assemble
- Choice of black plastic or metallic front bezels
- LED illumination
- Transformer or full voltage
- Slow make double break contacts



HW: The Best Engineered Switch in the World

IDEC's HW switches are "The best engineered switch in the world" for a reason. Carrying the CE mark, UL, CSA, CCC (Chinese), and TUV approvals, these switches are designed for use in almost any part of the world.

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. LR21451

TÜV Rheinland Certificate No. R50086203_HW_e-stop R50391189_HW

Certificate No. 2017010305987846

Specifications

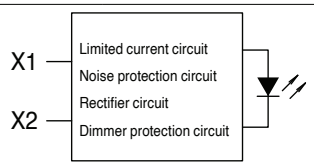
Electrical	Rated Operational Characteristics	AC-15: A600 or Ue = 250V, Ie = 3A (NO, NC, NO-EM, NC-LB) DC-13: P600 or Ue = 125V, Ie = 1.1A (NO, NC) DC-13: Q600 or Ue = 125V, Ie = 0.9A (NO-EM, NC-LB)
	Rated Insulation Voltage	600V
	Rated Switching Over-Voltage	Less than 4kV, conforming to IEC60947-1
	Rated Impulse Withstanding Voltage	4kV for contact circuit, 2.5kV for lamp circuit
	Rated Thermal Current	10 Amp
	Minimum Switching Capacity	5 mA at 3V AC/DC
	Electrical Reliability	MTBF < 1 fault for 10 million operation cycles (3V DC, 5mA)
	Lamp Ratings	LEDs: 6V/17mA max, 12V & 24V/11mA max, 120 & 240V/10mA max
Mechanical	Contact Operation	Slow break NC or NO
	Positive Action Operation (Emergency Stops with NC contacts)	5.5mm to 10mm travel to latch, 45N minimum force to latch 10mm maximum travel, 1,800 operations per hour maximum for a Pushlock Turn Reset 900 operations per hour maximum for a Push-Pull
	Operating Force	Flush and extended pushbuttons—with 1NO or 1NC contact: 6.2±2N (momentary), 7.0±2N (maintained) Additional contacts—1NO or 1NC: +3.2N (momentary), + 3.3N (maintained)
	Recommended Terminal Torque	See table below
	Applicable Wire Size	See table below
		1. * refers to the lamp terminals of the illuminated push buttons and selector switches.
	Applicable Wire Size	Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG
	Contact Resistance	Initial contact resistance of 50mΩ or less
	Contact Gap	4mm (NO and NC), 2mm (NO-EM and NC-LB)
	Horsepower Rating	Reference Value: 1/4 HP @ 120V (1ø non-reversing), 1HP @ 240V (3ø non-reversing)
	Contact Material	Silver (gold plated contacts available - contact IDEC)
	Operating Temperature	Operation: -25 to +60°C (illuminated -25 to +50°C dome -25 to +55°C)
	Vibration Resistance	10 to 55Hz, 98m/sec^2 (10G) conforming to IEC6068-2-6
	Shock Resistance	980m/sec^2 (100G) conforming to IEC6068-2-7
	Mechanical Life	Momentary pushbuttons: 5,000,000 (900 operations per hour), All other switches: 500,000

Unit	Wire		Number of Wires	Recommended Tightening Torque (Nm)	Terminal Screw
HW-U Contact Block	Crimping Terminal		2	1.0 to 1.3	M3.5
	Solid Wire	ø0.5 to 1.6 mm (AWG14 to 22)	2	1.0 to 1.3	
		ø1.7 to 2.0 mm (AWG12)	1	1.2 to 1.3	
	Stranded Wire	0.3 to 2.0 mm^2 (AWG14 to 22)	2	1.0 to 1.3	
		2.1 to 3.5 mm^2 (AWG12)	1	1.2 to 1.3	
Illuminated Unit (*1)	Crimping Terminal		2	1.0 to 1.3	M3.5
	Solid Wire	ø0.5 to 1.6 mm (AWG14 to 22)			
	Stranded Wire	0.3 to 2.0 mm (AWG14 to 22)			
Pilot Light	Crimping Terminal		2	0.6 to 1.0 (M3.0) 1.0 to 1.3 (M3.5)	
	Solid Wire	ø0.5 to 1.6 mm (AWG14 to 22)			
	Stranded Wire	ø0.3 to 2.0 mm (AWG14 to 22)			

Standards & Approvals	Conforming to Standards		EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14					
	File No. E68961 / File No. LR92374 / Approvals / TÜV Rheinland Certificate No. 2005010305145656 Registration No. R9551089 (E-stops) Registration No. R50054316 (Dual Pushbuttons) Registration No. J9650511 (Pilot Lights) Registration No. J9551458 (all other switches)		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)				
	Electric Shock Protection		Class 2 conforming to IEC60664-7					
	Degree of Protection (conforming to IEC60529 and UL50)		UL Type 1, 4X, 12, 13 [1] IP65 (from front of the panel) IP20 (Type HW-U contact block)					
	Pollution Degree (conforming to IEC60947-1)		3					
	External Short-Circuit Protection		10A 250V fuse conforming to IEC60269-1					
Contact Ratings	Pushbuttons Illuminated Pushbuttons Selector Switches Illuminated Selector Switches Pushbutton Selectors		Contact Block			Type HW-U		
			Rated Insulation Voltage			600V		
			Rated Continuous Current			10A		
			Contact Ratings by Utilization Category IEC 60947-5-1			AC-15 (A600) DC-13 (P600)		
Characteristics	Operational Voltage			24V	48V	50V	110V	220V	440V
	Operational Current	AC 50/60 Hz	AC-12 Control of resistive loads & solid state loads	10A	—	10A	10A	6A	2A
			AC-15 Control of electromagnetic loads (> 72VA)	10A	—	7A	5A	3A	1A
		DC	DC-12 Control of resistive loads & solid state loads	10A	5A	—	2.2A	1.1A	—
			DC-13 Control of electromagnets	5A	2A	—	1.1A	0.6A	—

For dimensions, see page 682.
Note 1. Except HW2B

LED Lamp Ratings (LSRD Type)

Rated Voltage		6V AC/DC	12V AC/DC	24V AC/DC	100/120V AC/DC	200/240V AC (50/60Hz sine wave)
Voltage Range		6V AC/DC ±10%	12V AC/DC ±10%	24V AC/DC ±10%	100/120V AC/DC ±10%	200/240V AC ±10%
Current Draw	DC	10mA	7mA	7mA	2mA	2mA
	AC	14mA	8mA	8mA	2mA	2mA
Part No.		LSRD-6	LSRD-1	LSRD-2	LSRD-H2	LSRD-M4
Life (reference value)		Approx. 50,000 hours (The luminance is reduced to 50% the initial intensity when used on complete DC at 25°C.)				
Internal Circuit						

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Non-Illuminated Round Pushbuttons (Assembled)








		Round Flush		Round Extended	
Function	Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Momentary	*Operator Only*	*HW1B-M1-①*	*HW4B-M1-①*	*HW1B-M2-①*	*HW4B-M2-①*
	1NO	HW1B-M1F10-①	HW4B-M1F10-①	HW1B-M2F10-①	HW4B-M2F10-①
	1NC	HW1B-M1F01-①	HW4B-M1F01-①	HW1B-M2F01-①	HW4B-M2F01-①
	1NO-1NC	HW1B-M1F11-①	HW4B-M1F11-①	HW1B-M2F11-①	HW4B-M2F11-①
	2NO	HW1B-M1F20-①	HW4B-M1F20-①	HW1B-M2F20-①	HW4B-M2F20-①
	2NC	HW1B-M1F02-①	HW4B-M1F02-①	HW1B-M2F02-①	HW4B-M2F02-①
	2NO-2NC	HW1B-M1F22-①	HW4B-M1F22-①	HW1B-M2F22-①	HW4B-M2F22-①
Maintained	*Operator Only*	*HW1B-A1-①*	*HW4B-A1-①*	*HW1B-A2-①*	*HW4B-A2-①*
	1NO	HW1B-A1F10-①	HW4B-A1F10-①	HW1B-A2F10-①	HW4B-A2F10-①
	1NC	HW1B-A1F01-①	HW4B-A1F01-①	HW1B-A2F01-①	HW4B-A2F01-①
	1NO-1NC	HW1B-A1F11-①	HW4B-A1F11-①	HW1B-A2F11-①	HW4B-A2F11-①
	2NO	HW1B-A1F20-①	HW4B-A1F20-①	HW1B-A2F20-①	HW4B-A2F20-①
	2NC	HW1B-A1F02-①	HW4B-A1F02-①	HW1B-A2F02-①	HW4B-A2F02-①
	2NO-2NC	HW1B-A1F22-①	HW4B-A1F22-①	HW1B-A2F22-①	HW4B-A2F22-①

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 from table below.
2. For nameplates and accessories, see page 677 and 680.
3. For dimensions, see page 682.
4. For contact assembly part numbers, see page 682.
5. All assembled part numbers in catalog include standard, Finger-Safe (HW-U...) contacts.
6. Operator only models include operator plus button.
7. Additional contact configurations available (up to 6 total contacts).

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Part Number Structure

H W 1 B - M 1 F 10 – R

Bezel
1: Plastic Bezel
4: Metal Bezel

Function
M: Momentary Action
A: Maintained Action

Operator
1: Flush
2: Extended

Terminals
F: Finger-Safe Spring-Up Contacts

Contact Arrangement
10: 1NO
01: 1NC
11: 1NO-NC
20: 2NO
02: 2NC
22: 2NO-2NC

Button Colors
B: Black
G: Green
R: Red
S: Blue
W: White
Y: Yellow

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Non-Illuminated Round Pushbuttons (Replacement Parts)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	+	Button	=	Completed Unit

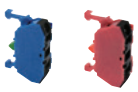








Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

1. Used to mount contact blocks to operator.
2. IDEC strongly recommends using the safety lever lock to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style		Plastic Bezel	Metal Bezel
Round Flush/ Extended 	Momentary	HW1B-M0	HW4B-M0
	Maintained	HW1B-A0	HW4B-A0

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Buttons

Style	Part Number
Round Flush 	HW1A-B1-①
Round Extended 	HW1A-B2-①

1. In place of ①, specify the Button Color Code from table.

① Button Color Code

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

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Non-Illuminated Mushroom Head Pushbuttons (Assembled)








		ø29mm Mushroom Head		ø40mm Mushroom Head	
Function	Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Momentary	*Operator Only*	*HW1B-M3-①*	*HW4B-M3-①*	*HW1B-M4-①*	*HW4B-M4-①*
	1NO	HW1B-M3F10-①	HW4B-M3F10-①	HW1B-M4F10-①	HW4B-M4F10-①
	1NC	HW1B-M3F01-①	HW4B-M3F01-①	HW1B-M4F01-①	HW4B-M4F01-①
	1NO-1NC	HW1B-M3F11-①	HW4B-M3F11-①	HW1B-M4F11-①	HW4B-M4F11-①
	2NO	HW1B-M3F20-①	HW4B-M3F20-①	HW1B-M4F20-①	HW4B-M4F20-①
	2NC	HW1B-M3F02-①	HW4B-M3F02-①	HW1B-M4F02-①	HW4B-M4F02-①
	2NO-2NC	HW1B-M3F22-①	HW4B-M3F22-①	HW1B-M4F22-①	HW4B-M4F22-①
Maintained	*Operator Only*	*HW1B-A3-①*	*HW4B-A3-①*	*HW1B-A4-①*	*HW4B-A4-①*
	1NO	HW1B-A3F10-①	HW4B-A3F10-①	HW1B-A4F10-①	HW4B-A4F10-①
	1NC	HW1B-A3F01-①	HW4B-A3F01-①	HW1B-A4F01-①	HW4B-A4F01-①
	1NO-1NC	HW1B-A3F11-①	HW4B-A3F11-①	HW1B-A4F11-①	HW4B-A4F11-①
	2NO	HW1B-A3F20-①	HW4B-A3F20-①	HW1B-A4F20-①	HW4B-A4F20-①
	2NC	HW1B-A3F02-①	HW4B-A3F02-①	HW1B-A4F02-①	HW4B-A4F02-①
	2NO-2NC	HW1B-A3F22-①	HW4B-A3F22-①	HW1B-A4F22-①	HW4B-A4F22-①



		ø60mm Mushroom Head
Function	Contacts	Plastic Bezel
Momentary	*Operator Only*	*HW1B-M5-①**
	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 from table.
2. *60mm mushroom available only in red, green, black, and yellow.
3. For nameplates and accessories, see page 677 and 680.
4. For dimensions, see page 682.
5. For contact assembly part numbers, see page 682.
6. All assembled part numbers in catalog include standard spring-up Finger-Safe (HW-U...) contacts.
7. Operator only models include operator plus button.
8. Additional contact configurations available (up to 6 total contacts).

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Part Number Structure

H W 1 B - M 3 F 10 – R

Bezel
1: Plastic Bezel
4: Metal Bezel
(Not available for 60mm mushroom)

Function
M: Momentary Action
A: Maintained Action
(Not available for 60mm jumbo mushroom pushbutton.)

Operator
3: ø29mm Mushroom
4: ø40mm Mushroom
5: ø60mm Mushroom

Terminals
F: Finger-Safe Spring-Up Contacts

Contact Arrangement
10: 1NO
01: 1NC
11: 1NO-NC
20: 2NO
02: 2NC
22: 2NO-2NC

Button Colors
B: Black
G: Green
R: Red
S: Blue
W: White
Y: Yellow

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Non-Illuminated Mushroom Head Pushbuttons (Replacement Parts)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	+	Button	=	Completed Unit

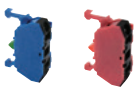








Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

1. Used to mount contact blocks to operator.
2. IDEC strongly recommends using the safety lever lock to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Operators

Style		Plastic Bezel	Metal Bezel
ø29mm Mushroom ø40mm Mushroom 	Momentary	HW1B-M0L	HW4B-M0L
	Maintained	HW1B-A0L	HW4B-A0L
Ø60mm Jumbo Mushroom 	Momentary	HW1B-M5-①*	–

1. *60mm mushroom operator includes non-removable button (available in red, black, green and yellow only).
2. For nameplates and accessories, see page 677 and 680.
3. For dimensions, see page 682.

Buttons

Style	Part Number
ø29mm Mushroom Cap 	HW1A-B3-①
ø40mm Mushroom Cap 	HW1A-B4-①

1. In place of ①, specify the Button Color Code from table.

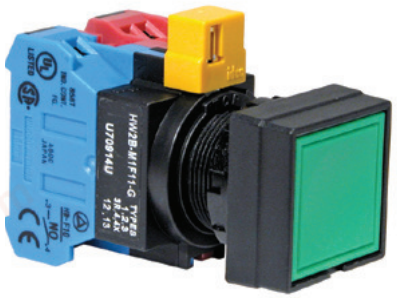
① Button Color Code

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

HW1B-M5 available only in black, red, green and yellow.

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Non-Illuminated Square Pushbuttons (Assembled)







Function	Contacts	Square Flush Plastic Bezel	Square Extended Plastic Bezel
Momentary	*Operator Only*	*HW2B-M1-①*	*HW2B-M2-①*
	1NO	HW2B-M1F10-①	HW2B-M2F10-①
	1NC	HW2B-M1F01-①	HW2B-M2F01-①
	1NO-1NC	HW2B-M1F11-①	HW2B-M2F11-①
	2NO	HW2B-M1F20-①	HW2B-M2F20-①
	2NC	HW2B-M1F02-①	HW2B-M2F02-①
	2NO-2NC	HW2B-M1F22-①	HW2B-M2F22-①
Maintained	*Operator Only*	*HW2B-A1-①*	*HW2B-A2-①*
	1NO	HW2B-A1F10-①	HW2B-A2F10-①
	1NC	HW2B-A1F01-①	HW2B-A2F01-①
	1NO-1NC	HW2B-A1F11-①	HW2B-A2F11-①
	2NO	HW2B-A1F20-①	HW2B-A2F20-①
	2NC	HW2B-A1F02-①	HW2B-A2F02-①
	2NO-2NC	HW2B-A1F22-①	HW2B-A2F22-①

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 from table.
2. For nameplates and accessories, see page 677 and 680.
3. For dimensions, see page 682.
4. For contact assembly part numbers, see page 682.
5. Square pushbuttons available in plastic bezel only.
6. All assembled part numbers in catalog include finger-safe spring-up (HW-U...) contacts.
7. Operator only model includes operator and button.
8. Additional contact configurations available (up to 6 total contacts).

Part Number Structure

H W 2 B - M 1 F 10 – R

Function
M: Momentary Action
A: Maintained Action

Operator
1: Flush
2: Extended

Terminals
F: Finger-Safe Spring-Up Contacts

Contact Arrangement
10: 1NO
01: 1NC
11: 1NO-NC
20: 2NO
02: 2NC
22: 2NO-2NC

Button Colors
B: Black
G: Green
R: Red
S: Blue
W: White
Y: Yellow

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Non-Illuminated Square Pushbuttons (Replacement Parts)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	+	Button	=	Completed Unit

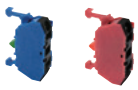








Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

1. Used to mount contact blocks to operator.
2. IDEC strongly recommends using the safety lever lock to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style		Plastic Bezel
Square Flush Extended 	Momentary	HW2B-M0
	Maintained	HW2B-A0

2. For nameplates and accessories, see pages 677 and 680.
3. For dimensions, see page 682.

Buttons

Style	Part Number
Square Flush 	HW2A-B1-①
Square Extended 	HW2A-B2-①

1. In place of ①, specify the Button Color Code from table.

① Button Color Code

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

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Non-Illuminated E-Stop Pushbuttons (Assembled)







	Ø29mm Head Pushlock Turn Reset		Ø40mm Head Pushlock Turn Reset	
Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Operator Only	*HW1B-V3①†*	*HW4B-V3①†*	*HW1B-V4①†*	*HW4B-V4①†*
1NO	HW1B-V3F10-①†	HW4B-V3F10-①†	HW1B-V4F10-①†	HW4B-V4F10-①†
1NC	HW1B-V3F01-①†	HW4B-V3F01-①†	HW1B-V4F01-①†	HW4B-V4F01-①†
1NO-1NC	HW1B-V3F11-①†	HW4B-V3F11-①†	HW1B-V4F11-①†	HW4B-V4F11-①†
2NO	HW1B-V3F20-①†	HW4B-V3F20-①†	HW1B-V4F20-①†	HW4B-V4F20-①†
2NC	HW1B-V3F02-①†	HW4B-V3F02-①†	HW1B-V4F02-①†	HW4B-V4F02-①†









	Ø40mm Head EMO Pushlock Turn Reset		Ø40mm Head Pushlock Key Reset	
Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Operator Only	*HW1B-V4R-EMO-2**	*HW4B-V4R-EMO-2**	*HW1B-X4R**	*HW4B-X4R**
1NO	HW1B-V4F10-R-EMO-2*	HW4B-V4F10-R-EMO-2*	HW1B-X4F10-R*	HW4B-X4F10-R*
1NC	HW1B-V4F01-R-EMO-2*	HW4B-V4F01-R-EMO-2*	HW1B-X4F01-R*	HW4B-X4F01-R*
1NO-1NC	HW1B-V4F11-R-EMO-2*	HW4B-V4F11-R-EMO-2*	HW1B-X4F11-R*	HW4B-X4F11-R*
2NO	HW1B-V4F20-R-EMO-2*	HW4B-V4F20-R-EMO-2*	HW1B-X4F20-R*	HW4B-X4F20-R*
2NC	HW1B-V4F02-R-EMO-2*	HW4B-V4F02-R-EMO-2*	HW1B-X4F02-R*	HW4B-X4F02-R*



	ø60mm Head Pushlock Turn Reset
Contacts	Plastic Bezel
Operator Only	*HW1B-V5R**
1NO	HW1B-V5F10-R*
1NC	HW1B-V5F01-R*
1NO-1NC	HW1B-V5F11-R*
2NO	HW1B-V5F20-R*
2NC	HW1B-V5F02-R*

1. * Available in Red only.
2. † Available in red or yellow. Insert color code in place of ① (R: Red, Y: Yellow).
2. For accessories, see page 680.
3. For dimensions, see page 682.
5. For nameplates and shrouds, see page 682.
4. For contact assembly part numbers, see page 682.
7. All HW series E-stops comply with EN60947-5-5, 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.
8. All assembled part numbers in catalog include standard finger-safe spring-up (HW-U...) contacts.
9. Operator only models include operator and button.
10. Additional contact configurations available (up to 6 total contacts).

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Part Number Structure

H W 1 B – V 3 F 10 – R – EMO-2

Bezel
1: Plastic Bezel
4: Metal Bezel
(not available for 60mm jumbo mushroom)

Function
V: Pushlock Turn Reset
X: Pushlock Key Reset

Operator
3: ø29mm Head
4: ø40mm Head
5: ø60mm Head

Terminals
F: Finger-Safe Spring-Up

Contact Arrangement
10: 1NO
01: 1NC
11: 1NO-NC
20: 2NO
02: 2NC
22: 2NO-2NC

Button Colors
R: Red
Y: Yellow
Note: some switches only available in red.

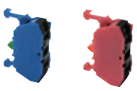
Engraved Button*
EMO-2: EMO switch
*Option available for red EMO E-Stop only

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Non-Illuminated E-Stop Pushbuttons (Replacement Parts)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit
										

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

1. Used to mount contact blocks to operator.
2. IDEC strongly recommends using the safety lever lock to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

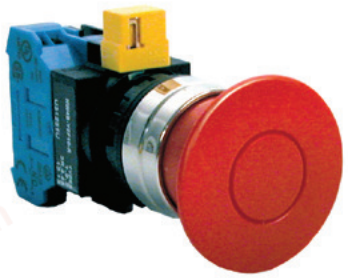
Style	Plastic		Metal
ø29mm Head Pushlock Turn Reset 	red	HW1B-V3R	HW4B-V3R
	yellow	HW1B-V3Y	HW4B-V3Y
ø40mm Head Pushlock Turn Reset 	red	HW1B-V4R	HW4B-V4R
	yellow	HW1B-V4Y	HW4B-V4Y
ø40mm Head EMO Pushlock Turn Reset* 	HW1B-V4R-EMO-2		HW4B-V4R-EMO-2
ø40mm Head Pushlock Key Reset* 	HW1B-X4R		HW4B-X4R
ø60mm Head Pushlock Turn Reset* 	HW1B-V5R		–

1. *Available in red only.
2. All E-Stop buttons are not removable from the operator.

Note: Determine mounting centers to ensure proper spacing.

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Push Pull & Unibody E-Stop Pushbuttons (Assembled)







	ø40mm Head Push–Pull	
Contacts	Plastic Bezel	Metal Bezel
Operator Only (Red)	*HW1B-Y2R*	*HW4B-Y2R*
Operator Only (Yellow)	*HW1B-Y2Y*	*HW4B-Y2Y*
1NO	HW1B-Y2F10-①†	HW4B-Y2F10-①†
1NC	HW1B-Y2F01-①†	HW4B-Y2F01-①†
1NO-1NC	HW1B-Y2F11-①†	HW4B-Y2F11-①†
2NC	HW1B-Y2F02-①†	HW4B-Y2F02-①†
2NO	HW1B-Y2F20-①†	HW4B-Y2F20-①†



	ø40mm Unibody Pushlock Turn Reset*
Contacts	Plastic Bezel
1NO-1NC	HW1E-BV4F11-R
2NC	HW1E-BV4F02-R
1NO-2NC*	HW1E-BV412R-TK2093-1

* NO contact is used as a monitoring contact



	Unibody Illuminated E-Stops*
Contacts	LED
1NO-1NC	HW1E-LV4F11QD-R-③
2NC	HW1E-LV4F02QD-R-③
2NC (with push-on illumination)	HW1E-TV4F02QD-R-③
1NO-1NC (with push-on illumination)	HW1E-TV4F11QD-R-③

③ Full Voltage LED Code

Voltage	Code
6VAC/DC	6V
12VAC/DC	12V
24VAC/DC	24V
120V AC	120V
240V AC	240V

Terminal Numbering (Unibody only)

Models	Terminal Number
1NO-1NC	NO = 13/14, NC = 11/12
2NC	NC = 11/12, NC = 21/22
HW1E-L HW1E-T	LED + = X2, LED - = X1

1. * Available in Red only.
2. † Available in red or yellow. Insert color code in place of ① (R: Red, Y: Yellow).
3. In place of ③, specify Full Voltage LED Code.
4. 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.
5. In the illuminated version, the light is independent of the switch action (except push-on LED model).
6. For accessories, see page 680.
7. For dimensions, see page 682.
8. For nameplates and shrouds, see page 680.
9. For contact assembly part numbers, see page 680.
10. All HW Series E-Stop operators include non-removable color caps.
11. All HW series E-Stops comply with EN60947-5-5, 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.
12. All HW series E-Stop switches comply with SEMI S2 standards.
13. All assembled part numbers in catalog include standard finger-safe spring-up (HW-U...) contacts.
14. Additional contact configurations available (up to 6 total contacts).

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Part Number Structure

H W 1 E – LV4 F 11 – Q D – R – 24V

Bezel
1: Plastic Bezel
4: Metal Bezel*
(*not available for HW1E unibody)

Function
B: Push Pull
E: Unibody Pushlock Turn Reset

Illumination
BV4: Non-illuminated (unibody style)
LV4: Illuminated (unibody style)
TV4: Illuminated Push On (unibody style)
Y2: Non-illuminated Push Pull E-Stop

Contacts
11: 1NO-1NC
02: 2NC
10: 1NO
20: 2NO

Illumination Circuit
blank: 40mm Push Pull & Non-illuminated Unibody E-Stop
Q: Illuminated Unibody E-Stop

Lamp Code
D: LED

Button Colors
R: Red
Y: Yellow*
(*only available in 40mm Push Pull E-Stop)

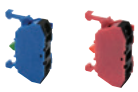
Full Voltage Code
(Illuminated E-Stop)
6V: 6V AC/DC
12V: 12V AC/DC
24V: 24V AC/DC
120V: 120V AC
240V: 240V AC

Note: Use only for interpreting part numbers.
Do not use for developing part numbers.

Illuminated & Non-Illuminated E-Stop Pushbuttons (Replacement Parts)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit
										

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

1. There are no replacement parts for the HW1E unibody E-Stop.
2. For illuminated unibody E-Stop, see page 682 for replacement lens.

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

1. Used to mount contact blocks to operator.
2. IDEC strongly recommends using the safety lever lock to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style			Part Number
ø40mm Head Push-Pull	Plastic	red	HW1B-Y2R
	Metal	red	HW4B-Y2R
	Plastic	yellow	HW1B-Y2Y
	Metal	yellow	HW4B-Y2Y

All E- Stop Buttons are not removable from the operator.

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E-Stop Stations







	29mm Pushlock Turn Reset		40mm Pushlock Turn Reset	
Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
1NO-1NC	FB1W-HW1B-V311R	FB1W-HW4B-V311R	FB1W-HW1B-V411R	FB1W-HW4B-V411R
2NC	FB1W-HW1B-V302R	FB1W-HW4B-V302R	FB1W-HW1B-V402R	FB1W-HW4B-V402R





	40mm Push-Pull Reset		40mm Pushlock Key Reset	
Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
1NO-1NC	FB1W-HW1B-Y211R	FB1W-HW4B-Y211R	FB1W-HW1B-X411R	FB1W-HW4B-X411R
2NC	FB1W-HW1B-Y202R	FB1W-HW4B-Y202R	FB1W-HW1B-X402R	FB1W-HW4B-X402R



	40mm EMO Pushlock Turn Reset	
Contacts	Plastic Bezel	Metal Bezel
1NO-1NC	FB1W-HW1B-V411R-EMO-2	FB1W-HW4B-V411R-EMO-2
2NC	FB1W-HW1B-V402R-EMO-2	FB1W-HW4B-V402R-EMO-2

1. Maximum of two contact blocks.
2. Box is supplied with yellow top and black bottom only.

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Jumbo Dome Pilot Lights



			Plastic Bezel
Jumbo Dome	LED	*Operator Only*	*HW1P-5Q0*
		Full Voltage 24V AC/DC	HW1P-5Q4-②

1. In place of ②, specify the Lens/LED Color Code.
2. Spring-Up terminals with 24V LED.
3. For nameplates and accessories, see page 677 and 680.
4. For dimensions, see page 682.

Actual Size



② Lens/LED Color Code

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



Jumbo Dome Replacement Parts

Item	Appearance	Description	Part Number
Lens		Polycarbonate Lens	HW1A-P5②
LED Diffusing Lens			HW9Z-PP5C
LED Lamps		LED Lamp	LSTDB-2②

1. In place of ②, specify the Lens/LED Color Code.
2. Use white LED for yellow lens.



Lamp Ratings

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

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Pilot Lights (Assembled)





		Round Flush		Dome	
		Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Operator Only		*HW1P-1FQ0-②*	*HW4P-1FQ0-②*	*HW1P-2FQ0-②*	*HW4P-2FQ0-②*
Full Voltage		HW1P-1FQD-②-③	HW4P-1FQD-②-③	HW1P-2FQD-②-③	HW4P-2FQD-②-③
Transformer	120V AC	HW1P-1FH2D-②	HW4P-1FH2D-②	HW1P-2FH2D-②	HW4P-2FH2D-②
	240V AC	HW1P-1FM4D-②	HW4P-1FM4D-②	HW1P-2FM4D-②	HW4P-2FM4D-②
	480V AC	HW1P-1FT8D-②	HW4P-1FT8D-②	HW1P-2FT8D-②	HW4P-2FT8D-②
DC-DC Converter*	110V DC	HW1P-1D2D-②	–	HW1P-2D2D-②	–



		Square Flush
		Plastic Bezel
Operator Only		*HW2P-1FQ0-②*
Full Voltage		HW2P-1FQD-②-③
Transformer	120V AC	HW2P-1FH2D-②
	240V AC	HW2P-1FM4D-②
	480V AC	HW2P-1FT8D-②
DC-DC Converter*	110V DC	HW2P-1D2D-②

* DC-DC converter voltage input from 90-140V DC.

② Lens Color Code

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

③ LED Full Voltage Code

Voltage	Code
6VAC/DC	6V
12VAC/DC	12V
24VAC/DC	24V
120V AC/DC	120V
240V AC	240V

1. In place of ②, specify the Lens Color Code from table below.
2. In place of ③specify the Full Voltage Code from table below.
3. For nameplates and accessories, see page 677 and 680.
4. For dimensions, see page 682.
5. **Pilot lights do not come with anti-rotation ring.**
6. Operator models come with operator and lens.
7. **Yellow pilot light comes with white LED.**

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Part Number Structure

H W 1 P – 2 F Q D – R – 12V

Bezel
1: Round Plastic
2: Square Plastic
4: Round Metal

Operator
1: Flush
2: Dome

Illumination Circuit
Q: Full Voltage
H2: 120V AC Transformer
M4: 240V AC Transformer
T8: 480V AC Transformer
D2: DC-DC Converter

Lamp Type Code
D: LED

Lens Colors
A: Amber
G: Green
R: Red
S: Blue
W: White
Y: Yellow

LED Voltage
(full voltage units only)
6V: 6V AC/DC
12V: 12V AC/DC
24V: 24V AC/DC
120V: 120V AC/DC
240V: 240V AC

Note: Use only for interpreting part numbers.
Do not use for developing part numbers.

Pilot Lights (Replacement Parts)

Transformer*	+	LED	+	Operator	+	Lens	=	Completed Unit







(not applicable for full voltage units)

Transformer Units

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

1. *DC-DC convertor can only be used with HW1P-100 and HW2P-100 operators
2. † DC-DC converter voltage input from 90-140V DC.

LED Lamps

Style	Voltage	Part Number
LED 	6V AC/DC	LSRD-6
	12V AC/DC	LSRD-1
	24V AC/DC	LSRD-2
	120V AC/DC	LSRD-H2
	240V AC	LSRD-M4

1. All LED lamps are white
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

Operators

Style		Type	Plastic Bezel	Metal Bezel
Round Flush 	Full Voltage	Finger-Safe	HW1P-1FQ0	HW4P-1FQ0
	Transformer	Finger-Safe	HW1P-10	HW4P-10
		Used for DC-DC convertor only	HW1P-100	-
Dome 	Full Voltage	Finger-Safe	HW1P-2FQ0	HW4P-2FQ0
	Transformer	Finger-Safe	HW1P-20	HW4P-20
Square Flush 	Full Voltage	Finger-Safe	HW2P-1FQ0	–
	Transformer	Finger-Safe	HW2P-10	–
		Used for DC-DC convertor only	HW2P-100	–

1. Transformer type requires separate transformer & LED. Must select correct transformer bases. Use 6V LEDs.
2. Full voltage type only requires LED.

Lenses

Style		Part Number
Round/ Flush		HW1A-P1-③-K
Dome		HW1A-P2-③ -K
Square/ Flush		HW2A-P1-③-K

In place of ③, specify the Lens Color Code.

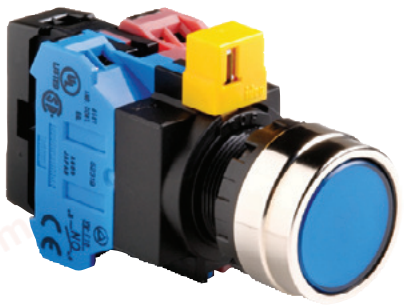
③ Lens Color Code

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

For yellow lens use white LED.

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Illuminated Round Pushbuttons (Assembled)



Illuminated Full Voltage Pushbuttons








	Contacts	Flush		Extended		Extended w/ Full Shroud	
		Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Momentary	*Operator Only*	*HW1L-M1-②*	*HW4L-M1-②*	*HW1L-M2-②*	*HW4L-M2-②*	*HW1L-MF2-②*	*HW4L-MF2-②*
	1NO	HW1L-M1F10QD-②-③	HW4L-M1F10QD-②-③	HW1L-M2F10QD-②-③	HW4L-M2F10QD-②-③	HW1L-MF2F10QD-②-③	HW4L-MF2F10QD-②-③
	1NC	HW1L-M1F01QD-②-③	HW4L-M1F01QD-②-③	HW1L-M2F01QD-②-③	HW4L-M2F01QD-②-③	HW1L-MF2F01QD-②-③	HW4L-MF2F01QD-②-③
	1NO-1NC	HW1L-M1F11QD-②-③	HW4L-M1F11QD-②-③	HW1L-M2F11QD-②-③	HW4L-M2F11QD-②-③	HW1L-MF2F11QD-②-③	HW4L-MF2F11QD-②-③
	2NO	HW1L-M1F20QD-②-③	HW4L-M1F20QD-②-③	HW1L-M2F20QD-②-③	HW4L-M2F20QD-②-③	HW1L-MF2F20QD-②-③	HW4L-MF2F20QD-②-③
Maintained	*Operator Only*	*HW1L-A1-②*	*HW4L-A1-②*	*HW1L-A2-②*	*HW4L-A2-②*	*HW1L-AF2-②*	*HW4L-AF2-②*
	1NO	HW1L-A1F10QD-②-③	HW4L-A1F10QD-②-③	HW1L-A2F10QD-②-③	HW4L-A2F10QD-②-③	HW1L-AF2F10QD-②-③	HW4L-AF2F10QD-②-③
	1NC	HW1L-A1F01QD-②-③	HW4L-A1F01QD-②-③	HW1L-A2F01QD-②-③	HW4L-A2F01QD-②-③	HW1L-AF2F01QD-②-③	HW4L-AF2F01QD-②-③
	1NO-1NC	HW1L-A1F11QD-②-③	HW4L-A1F11QD-②-③	HW1L-A2F11QD-②-③	HW4L-A2F11QD-②-③	HW1L-AF2F11QD-②-③	HW4L-AF2F11QD-②-③
	2NO	HW1L-A1F20QD-②-③	HW4L-A1F20QD-②-③	HW1L-A2F20QD-②-③	HW4L-A2F20QD-②-③	HW1L-AF2F20QD-②-③	HW4L-AF2F20QD-②-③

Illuminated Transformer Pushbuttons








	Contacts	Flush		Extended		Extended w/ Full Shroud	
		Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel	Plastic Bezel	Metal Bezel
Momentary	*Operator Only*	*HW1L-M1-②*	*HW4L-M1-②*	*HW1L-M2-②*	*HW4L-M2-②*	*HW1L-MF2-②*	*HW4L-MF2-②*
	1NO-1NC	HW1L-M1F11-③D-②	HW4L-M1F11-③D-②	HW1L-M2F11-③D-②	HW4L-M2F11-③D-②	HW1L-MF2F11-③D-②	HW4L-MF2F11-③D-②
	2NO	HW1L-M1F20-③D-②	HW4L-M1F20-③D-②	HW1L-M2F20-③D-②	HW4L-M2F20-③D-②	HW1L-MF2F20-③D-②	HW4L-MF2F20-③D-②
Maintained	*Operator Only*	*HW1L-A1-②*	*HW4L-A1-②*	*HW1L-A2-②*	*HW4L-A2-②*	*HW1L-AF2-②*	*HW4L-AF2-②*
	1NO-1NC	HW1L-A1F11-③D-②	HW4L-A1F11-③D-②	HW1L-A2F11-③D-②	HW4L-A2F11-③D-②	HW1L-AF2F11-③D-②	HW4L-AF2F11-③D-②
	2NO	HW1L-A1F20-③D-②	HW4L-A1F20-③D-②	HW1L-A2F20-③D-②	HW4L-A2F20-③D-②	HW1L-AF2F20-③D-②	HW4L-AF2F20-③D-②

1. In place of ②, specify Lens Color Code from table.
2. In place of ③specify Voltage Code from table.
3. Light independent of switch position.
4. For replacement part numbers, see page 648.
5. For nameplates and accessories, see page 677. and 680.
6. For dimensions, see page 682.
7. For contact assembly part numbers, see page 682.
8. Full voltage and transformer models use the same operator.
9. Additional contact configurations available (up to 6 total contacts).
10. **Yellow pushbutton comes with white LED.**

② Lens Color Code

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

③ Voltage Code

Full Voltage Models		Transformer Models	
Voltage	Code	Voltage	Code
6V AC/DC	6V	120V AC	H2
12V AC/DC	12V	240V AC	M4
24V AC/DC	24V	480V AC	T8
120V AC/DC	120V		
240V AC	240V		

Part Number Structure

H W 1 L – M 1F 10 Q D – G – 12V

Bezel
1: Plastic
4: Metal

Function
M: Momentary
A: Maintained

Operator
1F: Flush
2F: Extended
F2F: Extended w/ shroud

Contact Arrangement
10: 1NO
01: 1NC
11: 1NO-1NC
20: 2NO

Illumination Circuit
Q: Full Voltage
H2: Transformer 120V AC
M4: Transformer 240V AC
T8: Transformer 480V AC

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

LED Lamp Voltage
(full voltage units only)
6V: 6V AC/DC
12V: 12V AC/DC
24V: 24V AC/DC
120V: 120V AC/DC
240V: 240V AC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Illuminated Round Pushbuttons (Replacement Parts)

Transformer*	+	Contact Blocks	+	Lead Holder	+	Mounting Adaptor	+	Safety Lever Lock	+	Lamp	+	Anti-Rotation Ring	+	Operator	+	Lens	=	Completed Unit
																		

*Transformer not needed with full voltage models.

Lamp Circuit Components

Style	Description	Terminals	Part Number
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.		HW-LH3
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	Finger-Safe	HW-DA1FBN
Full Voltage Adaptor 	For use with even number of contacts.	Finger-Safe	TW-DA1FB
Transformer Unit (6V secondary voltage) 	120VAC 240VAC 480VAC	Finger-Safe	TW-F126B TW-F246B TW-F486B
DC-DC Converter	110VDC		HW-L16D

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

Operators

Style			Plastic Bezel	Metal Bezel
Round Flush/ Extended		Momentary	HW1L-M0	HW4L-M0
		Maintained	HW1L-A0	HW4L-A0
Extended with Full Shroud		Momentary	HW1L-MF0	HW4L-MF0
		Maintained	HW1L-AF0	HW4L-AF0

Contact Blocks

Style	Contacts	1NO	1NC
 	Finger-Safe Spring-Up Terminal	HW-U10-F HW-U10R-F (early make)	HW-U01-F HW-U01R-F (late break)

1. All assembled part numbers in catalog include standard finger-safe spring-up (HW-U...) contacts.

Contact Block Mounting Adaptor

Style	Part Number
	HW-CBL

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

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Lenses

Style	Part Number
Round Flush 	HW1A-L1-②-K
Round Extended 	HW1A-L2-②-K

In place of ②, specify the Lens Color Code from previous page.

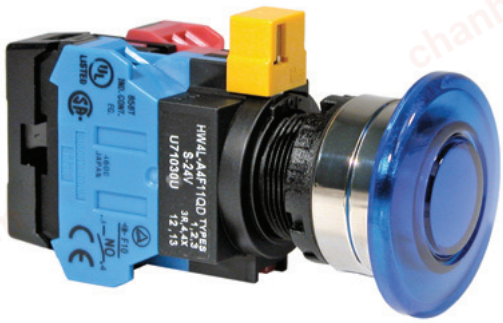
LED Lamps

Style	Voltage	Part Number
LED 	6V AC/DC	LSRD-6
	12V AC/DC	LSRD-1
	24V AC/DC	LSRD-2
	120V AC/DC	LSRD-H2
	240V AC	LSRD-M4

1. All LED lamps are white
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

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Illuminated Mushroom & Square Pushbuttons (Assembled)









			40mm Mushroom Head		Square Flush
		Contacts	Plastic Bezel	Metal Bezel	Plastic Bezel
Full Voltage	Momentary	*Operator Only*[†]	*HW1L-M4-②*	*HW4L-M4-②*	*HW2L-M1-②*
		1NO	HW1L-M4F10QD-②-③	HW4L-M4F10QD-②-③	HW2L-M1F10QD-②-③
		1NC	HW1L-M4F01QD-②-③	HW4L-M4F01QD-②-③	HW2L-M1F01QD-②-③
		1NO-1NC	HW1L-M4F11QD-②-③	HW4L-M4F11QD-②-③	HW2L-M1F11QD-②-③
		2NO	HW1L-M4F20QD-②-③	HW4L-M4F20QD-②-③	HW2L-M1F20QD-②-③
	Maintained	*Operator Only*[†]	*HW1L-A4-②*	*HW4L-A4-②*	*HW2L-A1-②*
		1NO	HW1L-A4F10QD-②-③	HW4L-A4F10QD-②-③	HW2L-A1F10QD-②-③
		1NC	HW1L-A4F01QD-②-③	HW4L-A4F01QD-②-③	HW2L-A1F01QD-②-③
		1NO-1NC	HW1L-A4F11QD-②-③	HW4L-A4F11QD-②-③	HW2L-A1F11QD-②-③
		2NO	HW1L-A4F20QD-②-③	HW4L-A4F20QD-②-③	HW2L-A1F20QD-②-③
Transformer	Momentary	1NO-1NC	HW1L-M4F11③D-②	HW4L-M4F11③D-②	HW2L-M1F11③D-②
		2NO	HW1L-M4F20③D-②	HW4L-M4F20③D-②	HW2L-M1F20③D-②
	Maintained	1NO-1NC	HW1L-A4F11③D-②	HW4L-A4F11③D-②	HW2L-A1F11③D-②
		2NO	HW1L-A4F20③D-②	HW4L-A4F20③D-②	HW2L-A1F20③D-②

1. [†] Full voltage and transformer units use the same operator.
2. In place of ②, specify the Lens Color Code from table.
3. In place of ③specify the Voltage Code from table.
4. Light independent of switch position
5. For nameplates and accessories, see page 677. and 680.
6. For dimensions, see page 682.
7. For contact assembly part numbers, see page 682.
8. Additional contact configurations available (up to 6 total contacts).
9. **Yellow pushbutton comes with white LED.**

② Lens Color Code

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

1. *40mm mushroom lenses not available in yellow.

③ Voltage Code

Full Voltage Models		Transformer Models	
Voltage	Code	Voltage	Code
6V AC/DC	6V	120V AC	H2
12V AC/DC	12V	240V AC	M4
24V AC/DC	24V	480V AC	T8
120V AC/DC	120V		
240V AC	240V		

Part Number Structure

H W 1 L – M 1 F 10 Q D – G – 12V

Bezel
1: Round Plastic
2: Square Plastic
4: Round Metal

Function
M: Momentary
A: Maintained

Operator
1: Square Flush
4: Mushroom

Contact Arrangement
10: 1NO
01: 1NC
11: 1NO-1NC
20: 2NO

Illumination Circuit
Q: Full Voltage
H2: Transformer 120V AC
M4: Transformer 240V AC
T8: Transformer 480V AC

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

Voltage
(full voltage units only)
6V: 6V AC/DC
12V: 12V AC/DC
24V: 24V AC/DC
120V: 120V AC/DC
240V: 240V AC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Illuminated Mushroom & Square Pushbuttons (Replacement Parts)

Transformer*	+	Contact Blocks	+	Lead Holder	+	Adaptor†	+	Safety Lever Lock	+	LED	+	Anti-Rotation Ring	+	Operator	+	Lens	=	Completed Unit
																		

*Transformer not needed with full voltage models.

Lamp Circuit Components

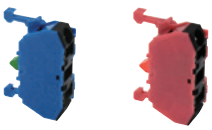
Style	Description	Terminals	Part Number
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.		HW-LH3
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	Finger-Safe	HW-DA1FBN
Full Voltage Adaptor 	For use with even number of contacts.	Finger-Safe	TW-DA1FB
Transformer Unit (6V secondary voltage) 	120VAC 240VAC 480VAC	Finger-Safe	TW-F126B TW-F246B TW-F486B
DC-DC Converter	110VDC		HW-L16D

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

Operators

Style			Plastic Bezel	Metal Bezel
ø40mm Mushroom		Momentary	HW1L-M0L	HW4L-M0L
		Maintained	HW1L-A0L	HW4L-A0L
Square		Momentary	HW2L-M0	–
		Maintained	HW2L-A0	

Contact Blocks

Style		Contacts	1NO	1NC
		Finger-Safe Spring-Up Terminal	HW-U10-F HW-U10R-F (early make)	HW-U01-F HW-U01R-F (late break)

1. All assembled part numbers in catalog include standard finger-safe spring-up contacts (HW-U...).

Contact Block Mounting Adaptor

Style	Part Number
	HW-CBL

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

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Lenses

Style		Part Number
ø40mm Mushroom Lens		ALW4BLU-②-K*
Square Flush		HW2A-L1-②-K

1. In place of ②, specify the Lens Color Code.
2. *Mushroom lens not available in yellow.

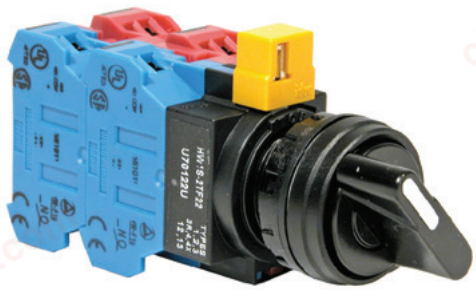
LED Lamps

Style	Voltage	Part Number
LED 	6V AC/DC	LSRD-6
	12V AC/DC	LSRD-1
	24V AC/DC	LSRD-2
	120V AC/DC	LSRD-H2
	240V AC	LSRD-M4

1. All LED lamps are white
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

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Selector Switches 2-Position (Assembled)



2-Position Selector Switches

Contact	Mounting	Operator Position L	Operator Position R	Handle	Maintained	Spring Return from Right
Operator Only				*Knob Lever*	*HW⑤S-2T HW⑤S-2L*	*HW⑤S-21T HW⑤S-21L*
1NO	1	0	X	Knob Lever	HW⑤S-2TF10 HW⑤S-2LF10	HW⑤S-21TF10 HW⑤S-21LF10
1NO-1NC	1 2	0 X	X 0	Knob Lever	HW⑤S-2TF11 HW⑤S-2LF11	HW⑤S-21TF11 HW⑤S-21LF11
2NO	1 2	0 0	X X	Knob Lever	HW⑤S-2TF20 HW⑤S-2LF20	HW⑤S-21TF20 HW⑤S-21LF20
2NO-2NC	1 2 3 4	0 X 0 X	X 0 X 0	Knob Lever	HW⑤S-2TF22 HW⑤S-2LF22	HW⑤S-21TF22 HW⑤S-21LF22

1. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
2. For nameplates, see page 677.
3. All assembled part numbers in catalog include standard finger-safe spring-up (HW-U...) contacts.
4. Standard color for knob and lever is black.
5. Optional colors available for lever type. Must order in components. See next page for part numbers.
6. Additional contact configurations available (up to 6 total contacts).
7. For Truth Tables see page 690.

⑤ Bezel Type

Type	Code
Plastic	1
Metal	4

Part Number Structure

H W 1 S - 2 1 T F 10

Bezel
1: Plastic
4: Metal

# of Positions
2: 2-Position

Operator
blank: Maintained
1: Spring Return from Right

Handle
T: Knob
L: Lever

Contact Arrangement
10: 1NO
11: 1NO-1NC
20: 2NO

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Selector Switches 2-Position (Replacement Parts)

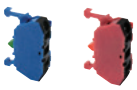
Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit








Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

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

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Description	Handle	Plastic Bezel	Metal Bezel
	Maintained	Knob	HW1S-2T	HW4S-2T
		Lever	HW1S-2	HW4S-2
	Spring Return from Right	Knob	HW1S-21T	HW4S-21T
		Lever	HW1S-21	HW4S-21

1. Knob operator comes with black handle.
2. To order lever type, lever and inserts must be ordered separately, along with lever operator. See part numbers below.

Levers & Inserts

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

Standard lever color is black. Standard insert color is white.

① Handle/Insert Color Code

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

1. * Lever color inserts not available in black.
2. †Lever not available in white.

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Selector Switches 3-Position (Assembled)



3–Position Selector Switches

Contact	Mounting	Operator Position L	Operator Position C	Operator Position R	Handle	Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-Way
Operator Only					*Knob Lever*	*HW⑤S-3T* HW⑤S-3L*	*HW⑤S-31T HW⑤S-31L*	*HW⑤S-32T HW⑤S-32L*	*HW⑤S-33T HW⑤S-33L*
1NO-1NC	1 2	0 0	X—X 0	X X	Knob Lever	HW⑤S-3TF11 HW⑤S-3LF11	HW⑤S-31TF11 HW⑤S-31LF11	HW⑤S-32TF11 HW⑤S-32LF11	HW⑤S-33TF11 HW⑤S-33LF11
2NO	1 2	X 0	0 0	0 X	Knob Lever	HW⑤S-3TF20 HW⑤S-3LF20	HW⑤S-31TF20 HW⑤S-31LF20	HW⑤S-32TF20 HW⑤S-32LF20	HW⑤S-33TF20 HW⑤S-33LF20
2NC	1 2	0 X—X	X—X	X 0	Knob Lever	HW⑤S-3TF02 HW⑤S-3LF02	HW⑤S-31TF02 HW⑤S-31LF02	HW⑤S-32TF02 HW⑤S-32LF02	HW⑤S-33TF02 HW⑤S-33LF02
2NO-1NC	1 2 3	X 0 0	0 0 X	0 X 0	Knob	HW⑤S-3JTF21N1	–	–	–
2NO-2NC	1 2 3 4	X 0 0 X—X	0 0 X—X	0 X X 0	Knob	HW⑤S-3TF22	HW⑤S-31TF22	HW⑤S-32TF22	HW⑤S-33TF22
2NO-2NC	1 2 3 4	0 X X—X 0	0 0 X—X 0	X 0 0 X	Knob	HW⑤S-3STF22N9	–	–	–
4NO	1 2 3 4	X 0 X 0	0 0 0 0	0 X 0 X	Knob	HW⑤S-3TF40	HW⑤S-31TF40	HW⑤S-32TF40	HW⑤S-33TF40
4NO	1 2 3 4	X 0 X 0	0 X—X 0 0	0 X 0 X	Knob	HW⑤S-3STF40N2	–	–	–
4NC	1 2 3 4	0 X—X 0 X—X	X—X X—X X—X X—X	X 0 X 0	Knob	HW⑤S-3TF04	HW⑤S-31TF04	HW⑤S-32TF04	HW⑤S-33TF04

⑤ Bezel Type

Type	Code
Plastic	1
Metal	4

1. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
2. Knob operator includes black knob/lever operator includes black lever.
3. * Three position operator is available with three different cams.
   HW⑤S-3T: Maintained (standard cam)
   HW⑤S-3ST: Maintained (S cam)
   HW⑤S-3JT: Maintained (J cam)
4. Operator cams are color coded (white=standard cam, red=S cam, black =J cam).
5. For nameplates, see page 677.
6. For contact assembly part numbers, see page 682
7. All assembled part numbers in catalog include standard finger-safe spring-up (HW-U...) contacts.
8. Standard color for knob and lever is black.
9. Optional colors available for lever type. Must order in components. See next page for part numbers.
10. Additional contact configurations available (up to 6 total contacts).
11. For Truth Tables see page 690.

Part Number Structure

H W 1 S - 3 1 T F 20

Bezel
1: Plastic
4: Metal

# of Positions
3: 3-Position

Operator
blank: Maintained
1: Spring Return from Right
2: Spring Return from Left
3: Spring Return Two Way

Handle
T: Knob
L: Lever

Contact Arrangement
11: 1NO-1NC
20: 2NO
21: 2NO-1NC
22: 2NO-2NC
40: 4NO
04: 4NC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Selector Switches 3-Position (Replacement Parts)

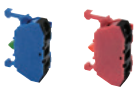
Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit








Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

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

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Description	Handle	Plastic Bezel	Metal Bezel
 	Maintained (standard cam)	Knob	HW1S-3T	HW4S-3T
		Lever	HW1S-3	HW4S-3
	Maintained (S cam)	Knob	HW1S-3ST	HW4S-3ST
	Maintained (J cam)	Knob	HW1S-3JT	HW4S-3JT
	Spring Return from Right (standard cam)	Knob	HW1S-31T	HW4S-31T
		Lever	HW1S-31	HW4S-31
	Spring Return from Left (standard cam)	Knob	HW1S-32T	HW4S-32T
		Lever	HW1S-32	HW4S-32
	2-Way Spring Return (standard cam)	Knob	HW1S-33T	HW4S-33T
		Lever	HW1S-33	HW4S-33

1. Knob operator comes with black handle.
2. Three position knob operator is available with three different cams.
3. Operator cams are color coded (white=standard cam, red=S cam, black =J cam).
4. To order lever type, lever and inserts must be ordered separately, along with lever operator. See part numbers below.

Levers & Inserts

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

Standard lever color is black. Standard insert color is white.

① Handle/Insert Color Code

Black*	B
Blue	S
Green	G
Red	R

Color	Code
Yellow	Y
White†	W

1. * Lever color inserts not available in black.
2. †Lever not available in white.

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Selector Switches 4- & 5-Position (Assembled)



4-Position Selector Switches

Contact	Mounting	Operator Position 1	2	3	4	Handle	Maintained
Operator Only						*Knob Lever*	*HW⑤S-4T HW⑤S-4L*
1NO-2NC	1 2 3 4	X 0 0 0	0 X 0 0	0 0 X 0	0 0 0 0	Knob Lever	HW⑤S-4TF12 HW⑤S-4LF12
1NO-3NC	1 2 3 4	0 0 0 0	X X 0 0	X 0 X 0	X 0 0 X	Knob Lever	HW⑤S-4TF13N6 HW⑤S-4LF13N6
2NO-2NC	1 2 3 4	X 0 0 0	0 X 0 0	0 0 X 0	0 0 0 X	Knob Lever	HW⑤S-4TF22N3 HW⑤S-4LF22N3

5-Position Selector Switch

Contact	Mounting	Operator Position 1	2	3	4	5	Handle	Maintained
Operator Only							*Knob Lever*	*HW⑤S-5T HW⑤S-5L*
2NO-2NC	1 2 3 4	X 0 0 0	0 X 0 0	0 0 0 0	0 0 X 0	0 0 0 X	Knob Lever	HW⑤S-5TF22N3 HW⑤S-5LF22N3

1. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
2. Knob operator includes black knob/lever operator includes black lever.
3. For nameplates, see page 677.
4. For contact assembly part numbers, see page 682.
5. Five position circuit cannot be made to make five independent contact closures.
6. All assembled part numbers in catalog include standard finger-safe spring-up (HW-U...) contacts.
7. Standard color for knob and lever is black.
8. Optional colors available for lever type. Must order in components. See next page for part numbers.
9. Additional contact configurations available (up to 6 total contacts).
10. For Truth Tables see page 690.

⑤ Bezel Type

Type	Code
Plastic	1
Metal	4

Part Number Structure

H W 1 S - 4 T F 13N6

Bezel
1: Plastic
4: Metal

# of Positions
4: 4-Position
5: 5-Position

Handle
T: Knob
L: Lever

Contact Arrangement
(based on desired truth table)
12: 1NO-2NC
13N6: 1NO-3NC
22N3: 2NO-2NC

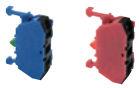
Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Selector Switches 4- & 5-Position (Replacement Parts)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit



Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

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

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Position	Description	Handle	Plastic Bezel	Metal Bezel
	4	Maintained	Knob	HW1S-4T	HW4S-4T
			Lever	HW1S-4	HW4S-4
	5	Maintained	Knob	HW1S-5T	HW4S-5T
			Lever	HW1S-5	HW4S-5

1. Knob operator comes with black handle.
2. To order lever type, lever and inserts must be ordered separately, along with lever operator. See part numbers below.

Levers & Inserts

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

Standard lever color is black. Standard insert color is white.

① Handle/Insert Color Code

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

1. * Lever color inserts not available in black.
2. †Lever not available in white.

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Key Switches 2-Position (Assembled)



2-Position Key Switches

Contact	Mounting	Operator Position L	Operator Position R	Maintained	Spring Return from Right
Operator Only				*HW⑤K-2A*	*HW⑤K-21B*
1NO	1	0	X	HW⑤K-2AF10	HW⑤K-21BF10
1NO-1NC	1 2	0 X	X 0	HW⑤K-2AF11	HW⑤K-21BF11
2NO	1 2	0 0	X X	HW⑤K-2AF20	HW⑤K-21BF20
2NO-2NC	1 2 3 4	0 X 0 X	X 0 X 0	HW⑤K-2AF22	HW⑤K-21BF22

1. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
2. Key is removable in all maintained positions. Other key removable options available.
3. Two keys are supplied with all switches.
4. All standard operators are keyed alike.
5. Other key removable options available. See table below
6. For nameplates, see page 677.
7. For contact assembly part numbers, see page 682.
8. Key is retained in "Spring Return" position.
9. All assembled part numbers in catalog include finger-safe spring-up (HW-U...) contacts.
10. Additional contact configurations available (up to 6 total contacts).
11. For Truth Tables see page 682.

⑤ Bezel Type

Type	Code
Plastic	1
Metal	4

Key Removable Option Codes

Code	Description
A	Key not retained in any position (removable in all positions)
B	Key retained in right position only (removable LEFT)
C	Key retained in left position only (removable RIGHT)

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Part Number Structure

H W 1 K - 2 1 B F 10

Bezel
1: Plastic
4: Metal

# of Positions
2: 2-Position

Operator
blank: Maintained
1: Spring Return from Right

Key Retained Position
A: Key not retained in any position (removable in all positions)
B: Key retained in right position only (removable LEFT)
C: Key retained in left position only (removable RIGHT)

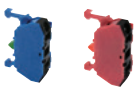
Contact Arrangement
10: 1NO 20: 2NO
11: 1NO-1NC 22: 2NO-2NC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Key Switches 2-Position (Replacement Parts)

Contact Assembly	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit
										

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

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

Operators

Style	Description	Plastic Bezel	Metal Bezel
	Maintained	HW1K-2A	HW4K-2A
	Maintained, key removed left only	HW1K-2B	HW4K-2B
	Spring Return from Right	HW1K-21B	HW4K-21B
	Maintained, key removed right only	HW1K-2C	HW4K-2C

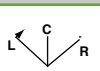
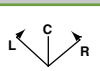
1. Operator includes two keys.
2. All standard operators are keyed alike.

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Key Switches 3-Position (Assembled)



3-Position Key Switches

Contact	Mounting	Operator Position L	Operator Position C	Operator Position R	Maintained 	Spring Return from Right 	Spring Return from Left 	Spring Return Two Way 
Operator Only					*HW⑤K-3A**	*HW⑤K-31B*	*HW⑤K-32C*	*HW⑤K-33D*
1NO-1NC	1 2	0 0	X 0	X X	HW⑤K-3AF11	HW⑤K-31BF11	HW⑤K-32CF11	HW⑤K-33DF11
2NO	1 2	X 0	0 0	0 X	HW⑤K-3AF20	HW⑤K-31BF20	HW⑤K-32CF20	HW⑤K-33DF20
2NC	1 2	0 X	X X	X 0	HW⑤K-3AF02	HW⑤K-31BF02	HW⑤K-32CF02	HW⑤K-33DF02
2NO-1NC	1 2 3	X 0 0	0 0 X	0 X 0	HW⑤K-3JAF21N1	–	–	–
2NO-2NC	1 2 3 4	X 0 0 X	0 0 X X	0 X X 0	HW⑤K-3AF22	HW⑤K-31BF22	HW⑤K-32CF22	HW⑤K-33DF22
2NO-2NC	1 2 3 4	0 X X 0	0 0 X 0	X 0 0 X	HW⑤K-3SAF22N9	–	–	–
4NO	1 2 3 4	X 0 X 0	0 0 0 0	0 X 0 X	HW⑤K-3AF40	HW⑤K-31BF40	HW⑤K-32CF40	HW⑤K-33DF40
4NO	1 2 3 4	X 0 X 0	0 X 0 0	0 X 0 X	HW⑤K-3SAF40N2	–	–	–
4NC	1 2 3 4	0 X 0 X	X X X X	X 0 X 0	HW⑤K-3AF04	HW⑤K-31BF04	HW⑤K-32CF04	HW⑤K-33DF04

⑤ Bezel Type

Type	Code
Plastic	1
Metal	4

1. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
2. Key is removable in all maintained positions. Other key removable options available.
3. Two keys are supplied with all switches.
4. All standard operators are keyed alike.
5. Other key removable options available. See table to the right.
6. * Operator is available with three different cams.
   HW⑤K-3A: Maintained (standard cam)
   HW⑤K-3SA: Maintained (Cam S)
   HW⑤K-3JA: Maintained (Cam J)
7. For nameplates, see page 677.
8. For contact assembly part numbers, see page 682.
9. All assembled part numbers in catalog include standard Finger-Safe spring-up (HW-U...) contacts.
10. Additional contact configurations available (up to 6 total contacts).
11. For Truth Tables see page 690.

Key Removable Option Codes

Code	Description
A	Key not retained in any 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)

Part Number Structure

H W 1 K - 3 1 B F 11

Bezel
1: Plastic
4: Metal

# of Positions
3: 3-Position

Operator
blank: Maintained
1: Spring Return from Right
2: Spring Return from Left
3: Spring Return Two Way

Key Removable Option Code
(see chart on previous page)

Contact Arrangement
11: 1NO-1NC 40: 4NO
20: 2NO 04: 4NC
22: 2NO-2NC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Key Switches 3-Position (Replacement Parts)

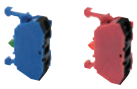
Contact Assembly	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit








Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Contact Block Mounting Adaptor

Style	Part Number
	HW-CB2C

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

Operators

Style	Description	Plastic Bezel	Metal Bezel
	Maintained (standard cam)	HW1K-3A	HW4K-3A
	Maintained (S cam)	HW1K-3SA	HW4K-3SA
	Maintained (J cam)	HW1K-3JA	HW4K-3JA
	Spring Return from Right (standard cam)	HW1K-31B	HW4K-31B
	Spring Return from Left (standard cam)	HW1K-32C	HW4K-32C
	2-Way Spring Return (standard cam)	HW1K-33D	HW4K-33D

1. Operator includes two keys.
2. All standard operators are keyed alike.
3. Other key removable options available. See table on previous page.
4. Key not removable from spring-returned position

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Illuminated Selector Switches 2-Position (Assembled)



2-Position Illuminated Selector Switches

Style						Part Number	
Contact	Mounting	Operator Position L	Operator Position R	Type		Maintained	Spring Return from Right
		↖	↗			L ◡ R	L ◡ R
Operator Only						*HW⑤F-2②*	*HW⑤F-21②*
1NO-1NC	1 2	0 X	X 0	Full Voltage		HW⑤F-2F11QD-②-③	HW⑤F-21F11QD-②-③
				Transformer	120V 240V 480V	HW⑤F-2F11H2D-② HW⑤F-2F11M4D-② HW⑤F-2F11T8D-②	HW⑤F-21F11H2D-② HW⑤F-21F11M4D-② HW⑤F-21F11T8D-②
2NO	1 2	X 0	0 X	Full Voltage		HW⑤F-2F20QD-②-③	HW⑤F-21F20QD-②-③
				Transformer	120V 240V 480V	HW⑤F-2F20H2D-② HW⑤F-2F20M4D-② HW⑤F-2F20T8D-②	HW⑤F-21F20H2D-② HW⑤F-21F20M4D-② HW⑤F-21F20T8D-②
2NO-2NC	1 2 3 4	0 X 0 X	X 0 X 0	Full Voltage		HW⑤F-2F22QD-②-③	HW⑤F-21F22QD-②-③
				Transformer	120V 240V 480V	HW⑤F-2F22H2D-② HW⑤F-2F22M4D-② HW⑤F-2F22T8D-②	HW⑤F-21F22H2D-② HW⑤F-21F22M4D-② HW⑤F-21F22T8D-②

1. In place of ② specify Lens color code.
2. In place of ③ specify Full Voltage code.
3. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
4. For nameplates, see page 677.
5. For contact assembly part numbers, see page 682.
6. Light is independent of switch position.
7. All assembled part numbers in catalog include standard Finger-Safe spring-up (HW-U...) contacts.
8. **Yellow selector switch comes with white LED.**
9. Additional contact configurations available (up to 6 total contacts).
10. For Truth Tables see page 690.

② Lens Color Code

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

③ Full Voltage Code

Full Voltage Models	
Voltage	Code
6VAC/DC	6V
12VAC/DC	12V
24VAC/DC	24V
120V AC/DC	120V
240V AC	240V

⑤ Bezel Code

Type	Code
Plastic	1
Metal	4

Part Number Structure

H W 1 F – 21 F 20 Q D – G – 24V

Bezel
1: Plastic
4: Metal

Position
2: Maintained
21: Spring Return from Right

Contact Arrangement
11: 1NO-1NC
20: 2NO
22: 2NO-2NC

Illumination Circuit
Q: Full Voltage
H2: Transformer 120V AC
M4: Transformer 240V AC
T8: Tranformer 480V AC

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

LED Voltage
(Full voltage units only)
6V: 6V AC/DC
12V: 12V AC/DC
24V: 24V AC/DC
120V: 120V AC/DC
240V: 240V AC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Illuminated Selector Switches 2-Position (Replacement Parts)

Transformer*	+	Contact Blocks	+	Lead Holder	+	Mounting Adaptor	+	Safety Lever Lock	+	LED	+	Anti-Rotation Ring	+	Operator	+	Lens	=	Completed Unit
																		

*Transformer not needed with full voltage models.

Lamp Circuit Components

Style	Description	Terminals	Part Number
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.		HW-LH3
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	Finger-Safe	HW-DA1FBN
Full Voltage Adaptor 	For use with even number of contacts.	Finger-Safe	TW-DA1FB
Transformer Unit (6V secondary voltage) 	120VAC 240VAC 480VAC	Finger-Safe	TW-F126B TW-F246B TW-F486B
DC-DC Converter	110VDC		HW-L16D

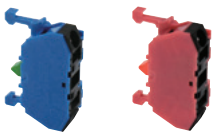
1. DC-DC convertor features spring-up terminals.
2. DC-DC convertor applicable voltage range 90-140V DC.

Operators

Style	Description	Plastic Bezel	Metal Bezel
	Maintained	HW1F-2	HW4F-2
	Spring return from right	HW1F-21	HW4F-21

Illuminated knobs must be ordered separately.

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F HW-U10R-F (early make)	HW-U01-F HW-U01R-F (late break)

Contact Block Mounting Adaptor

Style	Part Number
	HW-CBL

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

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Illuminated Knob

Appearance	Part Number
	HW9Z-FDY-②-K

In place of ②, specify the Color Code.

② Lens Color Code

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

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

LED Lamps

Style	Voltage	Part Number
LED 	6V AC/DC	LSRD-6
	12V AC/DC	LSRD-1
	24V AC/DC	LSRD-2
	120V AC/DC	LSRD-H2
	240V AC	LSRD-M4

1. All LED lamps are white
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

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Illuminated Selector Switches 3-Position (Assembled)



3-Position Illuminated Selector Switches

Style						Part Number			
Contact	Mounting	Operator Position L	Operator Position C	Operator Position R	Type	Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-Way
						L C R	L C R	L C R	L C R
Operator Only						*HW⑤F-3②*	*HW⑤F-31②*	*HW⑤F-32②*	*HW⑤F-33②*
1NO-1NC	1 2	0 0	X 0	X X	Full Voltage	HW⑤F-3F11QD-②-③	HW⑤F-31F11QD-②-③	HW⑤F-32F11QD-②-③	HW⑤F-33F11QD-②-③
					Transformer 120V	HW⑤F-3F11H2D-②	HW⑤F-31F11H2D-②	HW⑤F-32F11H2D-②	HW⑤F-33F11H2D-②
					Transformer 240V	HW⑤F-3F11M4D-②	HW⑤F-31F11M4D-②	HW⑤F-32F11M4D-②	HW⑤F-33F11M4D-②
					Transformer 480V	HW⑤F-3F11T8D-②	HW⑤F-31F11T8D-②	HW⑤F-32F11T8D-②	HW⑤F-33F11T8D-②
2NO	1 2	X 0	0 0	0 X	Full Voltage	HW⑤F-3F20QD-②-③	HW⑤F-31F20QD-②-③	HW⑤F-32F20QD-②-③	HW⑤F-33F20QD-②-③
					Transformer 120V	HW⑤F-3F20H2D-②	HW⑤F-31F20H2D-②	HW⑤F-32F20H2D-②	HW⑤F-33F20H2D-②
					Transformer 240V	HW⑤F-3F20M4D-②	HW⑤F-31F20M4D-②	HW⑤F-32F20M4D-②	HW⑤F-33F20M4D-②
					Transformer 480V	HW⑤F-3F20T8D-②	HW⑤F-31F20T8D-②	HW⑤F-32F20T8D-②	HW⑤F-33F20T8D-②
2NC	1 2	0 X	X X	X 0	Full Voltage	HW⑤F-3F02QD-②-③	HW⑤F-31F02QD-②-③	HW⑤F-32F02QD-②-③	HW⑤F-33F02QD-②-③
					Transformer 120V	HW⑤F-3F02H2D-②	HW⑤F-31F02H2D-②	HW⑤F-32F02H2D-②	HW⑤F-33F02H2D-②
					Transformer 240V	HW⑤F-3F02M4D-②	HW⑤F-31F02M4D-②	HW⑤F-32F02M4D-②	HW⑤F-33F02M4D-②
					Transformer 480V	HW⑤F-3F02T8D-②	HW⑤F-31F02T8D-②	HW⑤F-32F02T8D-②	HW⑤F-33F02T8D-②
2NO-2NC	1 2 3 4	X 0 0 X	0 0 X X	0 X X 0	Full Voltage	HW⑤F-3F22QD-②-③	HW⑤F-31F22QD-②-③	HW⑤F-32F22QD-②-③	HW⑤F-33F22QD-②-③
					Transformer 120V	HW⑤F-3F22H2D-②	HW⑤F-31F22H2D-②	HW⑤F-32F22H2D-②	HW⑤F-33F22H2D-②
					Transformer 240V	HW⑤F-3F22M4D-②	HW⑤F-31F22M4D-②	HW⑤F-32F22M4D-②	HW⑤F-33F22M4D-②
					Transformer 480V	HW⑤F-3F22T8D-②	HW⑤F-31F22T8D-②	HW⑤F-32F22T8D-②	HW⑤F-33F22T8D-②
4NO	1 2 3 4	X 0 X 0	0 0 0 0	0 X 0 X	Full Voltage	HW⑤F-3F40QD-②-③	HW⑤F-31F40QD-②-③	HW⑤F-32F40QD-②-③	HW⑤F-33F40QD-②-③
					Transformer 120V	HW⑤F-3F40H2D-②	HW⑤F-31F40H2D-②	HW⑤F-32F40H2D-②	HW⑤F-33F40H2D-②
					Transformer 240V	HW⑤F-3F40M4D-②	HW⑤F-31F40M4D-②	HW⑤F-32F40M4D-②	HW⑤F-33F40M4D-②
					Transformer 480V	HW⑤F-3F40T8D-②	HW⑤F-31F40T8D-②	HW⑤F-32F40T8D-②	HW⑤F-33F40T8D-②
4NC	1 2 3 4	0 X 0 X	X X X X	X 0 X 0	Full Voltage	HW⑤F-3F04QD-②-③	HW⑤F-31F04QD-②-③	HW⑤F-32F04QD-②-③	HW⑤F-33F04QD-②-③
					Transformer 120V	HW⑤F-3F04H2D-②	HW⑤F-31F04H2D-②	HW⑤F-32F04H2D-②	HW⑤F-33F04H2D-②
					Transformer 240V	HW⑤F-3F04M4D-②	HW⑤F-31F04M4D-②	HW⑤F-32F04M4D-②	HW⑤F-33F04M4D-②
					Transformer 480V	HW⑤F-3F04T8D-②	HW⑤F-31F04T8D-②	HW⑤F-32F04T8D-②	HW⑤F-33F04T8D-②

1. In place of ② specify Lens color code.
2. In place of ③ specify Full Voltage code.
3. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
4. For nameplates, see page 677.
5. For contact assembly part numbers, see page 682.
6. Light is independent of switch position.
7. All assembled part numbers in catalog include standard Finger-Safe spring-up (HW-U..) contacts.
8. **Yellow selector switch comes with white LED.**
9. Additional contact configurations available (up to 6 total contacts).
10. For Truth Tables see page 690.

② Lens Color

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

③ Full Voltage Code

Full Voltage Models	
Voltage	Code
6VAC/DC	6V
12VAC/DC	12V
24VAC/DC	24V
120V AC/DC	120V
240V AC	240V

⑤ Bezel Code

Type	Code
Plastic	1
Metal	4

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Part Number Structure

H W 1 F – 31 F 20 Q D – G – 24V

Bezel
1: Plastic
4: Metal

Position
3: Maintained
31: Spring Return from Right
32: Spring Return from Left
33: Spring Return 2-Way

Contact Arrangement
11: 1NO-1NC
20: 2NO
02: 2NC
22: 2NO-2NC
40: 4NO
04: 4NC

Illumination Circuit
Q: Full Voltage
H2: Transformer 120V AC
M4: Transformer 240V AC
T8: Tranformer 480V AC

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

Full Voltage Code
6V: 6V AC/DC
12V: 12V AC/DC
24V: 24V AC/DC
120V: 120V AC/DC
240V: 240V AC

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Illuminated Selector Switches 3-Position (Replacement Parts)

Transformer*	+	Contact Blocks	+	Lead Holder	+	Mounting Adaptor	+	Safety Lever Lock	+	LED	+	Anti-Rotation Ring	+	Operator	+	Lens	=	Completed Unit
																		

*Transformer not needed with full voltage models.

Lamp Circuit Components

Style	Description	Terminals	Part Number
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.		HW-LH3
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	Finger-Safe	HW-DA1FBN
Full Voltage Adaptor 	For use with even number of contacts.	Finger-Safe	TW-DA1FB
Transformer Unit (6V secondary voltage) 	120VAC 240VAC 480VAC	Finger-Safe	TW-F126B TW-F246B TW-F486B
DC-DC Converter	110VDC		HW-L16D

1. DC-DC convertor features spring-up terminals.
2. DC-DC convertor applicable voltage range 90-140V DC.

Operators

Style	Description	Plastic Bezel	Metal Bezel
	Maintained	HW1F-3	HW4F-3
	Spring return from right	HW1F-31	HW4F-31
	Spring return from left	HW1F-32	HW4F-32
	2-Way spring return	HW1F-33	HW4F-33

Illuminated knobs must be ordered separately.

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F HW-U10R-F (early make)	HW-U01-F HW-U01R-F (late break)

Contact Block Mounting Adaptor

Style	Part Number
	HW-CBL

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

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Illuminated Knob

Appearance	Part Number
	HW9Z-FDY-②-K

In place of ②, specify the Color Code.

② Lens Color Code

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

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

LED Lamps

Style	Voltage	Part Number
LED 	6V AC/DC	LSRD-6
	12V AC/DC	LSRD-1
	24V AC/DC	LSRD-2
	120V AC/DC	LSRD-H2
	240V AC	LSRD-M4

1. All LED lamps are white
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

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Mono Lever Switches 2-Position (Assembled)



2-Position Mono Lever Switches

Style	Part Number	Description
HW1M Standard Lever	HW1M-F1010-20	Maintained up and down
	HW1M-F2020-20	Spring return up and down
	HW1M-F1010-40	Maintained up and down
	HW1M-F2020-40	Spring return up and down
	HW1M-F0101-20	Maintained right and left
	HW1M-F0202-20	Spring return right and left
	HW1M-F0101-40	Maintained right and left
	HW1M-F0202-40	Spring return right and left
HW1M-L Interlocking Lever	HW1M-LF1010-20	Maintained up and down
	HW1M-LF2020-20	Spring return up and down
	HW1M-LF1010-40	Maintained up and down
	HW1M-LF2020-40	Spring return up and down
	HW1M-LF0101-20	Maintained right and left
	HW1M-LF0202-20	Spring return right and left
	HW1M-LF0101-40	Maintained right and left
	HW1M-LF0202-40	Spring return right and left

All Assembled units with Finger-Safe spring-up (HW-U...) contacts

Circuit Diagrams

2 Position Left/Right

Circuit Number	Contact Mounting No.		Position Left	Center	Right
20	1	HW-U10-F	X	0	0
	2	HW-U10-F	0	0	X
40	1	HW-U10-F	X	0	0
	2	HW-U10-F	0	0	X
	3	HW-U10-F	X	0	0
	4	HW-U10-F	0	0	X

2 Position Up/Down

Circuit Number	Contact Mounting No.		Position Down	Center	Up
20	1	HW-U10-F	X	0	0
	2	HW-U10-F	0	0	X
40	1	HW-U10-F	X	0	0
	2	HW-U10-F	0	0	X
	3	HW-U10-F	X	0	0
	4	HW-U10-F	0	0	X

Part Number Structure

H W 1 M - L F 0 1 0 1 20

(0 1 0 1: up right down left)

Type
blank: Standard
L: Interlocking

Lever Action
1: Maintained
2: Spring
0: Blocked

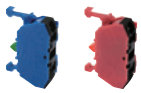
Circuit Number
20 or 40 (see contact arrangement on previous page)

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Mono Lever Switches 2-Position (Sub-assembled) Part Numbers

Contact Assembly	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit
										

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	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 inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Description	Part Number
Standard 	Maintained Up/Down	HW1M-1010
	Spring return Up/Down	HW1M-2020
	Maintained Left/Right	HW1M-0101
	Spring return Left/Right	HW1M-0202
Interlocking 	Maintained Up/Down	HW1M-L1010
	Spring return Up/Down	HW1M-L2020
	Maintained Left/Right	HW1M-L0101
	Spring return Left/Right	HW1M-L0202

Replacement Parts

Item	Part Number
Black Cap 	HW9Z-CPM
Boot 	HW9Z-BLM (fits standard operator only)

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Mono Lever Switches 3- & 4-Position (Assembled)



3-Position

Style	Part Number	Description
HW1M Standard Lever	HW1M-F0121-12N3	Maintained right and left, spring return down
	HW1M-F0222-12N3	Spring return right, down, left
HW1M-L Interlocking Lever	HW1M-LF0121-12N3	Maintained right and left, spring return down
	HW1M-LF0222-12N3	Spring return right, down, left

Circuit Diagram

Circuit Number	Contact Mounting		Position				
	No.		Down	Left	Center	Up	Right
12N3	1	HW-U01-F	0	0	0	0	X
	2	HW-U01-F	X	0	0	0	0
	3	HW-U10-F	0	X	0	0	0

4-Position

Style	Part Number	Description
HW1M Standard Lever	HW1M-F1111-22N9	Maintained all positions
	HW1M-F1212-22N9	Maintained up and down, spring left and right
	HW1M-2121-22N9	Spring up and down, maintained left and right
	HW1M-2222-22N9	Spring return all positions
HW1M-L Interlocking Lever	HW1M-LF1111-22N9	Maintained all positions
	HW1M-LF1212-22N9	Maintained up and down, spring left and right
	HW1M-LF2121-22N9	Spring up and down, maintained left and right
	HW1M-LF2222-22N9	Spring return all positions

Circuit Diagram

Circuit Number	Contact Mounting		Position				
	No.		Down	Left	Center	Up	Right
22N9	1	HW-U01-F	0	0	0	0	X
	2	HW-U01-F	X	0	0	0	0
	3	HW-U10-F	0	X	0	0	0
	4	HW-U10-F	0	0	0	X	0

All assembled part numbers in catalog include Finger-Safe spring-up (HW-U...) contacts.

Part Number Structure

H W 1 M - L F 0 1 2 1 12N3

Type
blank: Standard
L: Interlocking

Lever Action
1: Maintained
2: Spring
0: Blocked
(up right down left)

Circuit Number
3 Position: 12N3
4 Position: 22N9

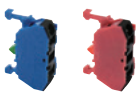
Note: Use only for interpreting part numbers.
Do not use for developing part numbers.

Mono Lever Switches 3 & 4-Position (Sub-assembled) Part Numbers

Contact Assembly	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	=	Completed Unit



Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style	Part Number
	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 inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Description	Part Number
Standard 	Combination, 3 position	HW1M-0121
	Spring return, 3 position	HW1M-0222
	Maintained, 4 position	HW1M-1111
	Combination, 4 position	HW1M-1212
	Combination, 4 position	HW1M-2121
	Spring return, 4 position	HW1M-2222
Interlocking 	Combination, 3 position	HW1M-L0121
	Spring return, 3 position	HW1M-L0222
	Maintained, 4 position	HW1M-L1111
	Combination, 4 position	HW1M-L1212
	Combination, 4 position	HW1M-L2121
	Spring return, 4 position	HW1M-L2222

Replacement Parts

Item	Part Number
Black Cap 	HW9Z-CPM
Boot 	HW9Z-BLM (fits standard operator only)

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Pushbutton Selectors (Assembled)



2-Position Pushbutton Selectors

Cam	Contacts	Mounting		Operator Position: Left Normal	Left Push	Right Normal	Right Push	Part Number
A	*Operator Only*							*HW1R-2A-①*
	1NO-1NC	1 2	HW-U10-F HW-U01-F	0 X	X 0	0 0	X 0	HW1R-2AF11-①
	2NO	1 2	HW-U10-F HW-U10-F	0 0	X X	0 X	X X	HW1R-2AF20-①
	2NO-2NC	1 2 3 4	HW-U10-F HW-U01-F HW-U10-F HW-U01-F	0 X 0 X	X 0 X 0	0 0 0 0	X 0 X 0	HW1R-2AF22-①
D	*Operator Only*							*HW1R-2D-①*
	2NO	1 2	HW-U10-F HW-U10-F	0 0	X 0	0 0	0 X	HW1R-2DF20-①
	2NO-2NC	1 2 3 4	HW-U10-F HW-U10-F HW-U01-F HW-U01-F	0 0 X X	X 0 0 X	0 0 X X	0 X X 0	HW1R-2DF22N1-①
E	*Operator Only*							*HW1R-2E-①*
	2NO-2NC	1 2 3 4	HW-U10-F HW-U10-F HW-U01-F HW-U01-F	0 0 0 X	X 0 0 X	0 0 X 0	0 X X 0	HW1R-2EF22N1-①
F	*Operator Only*							*HW1R-2F-①*
	2NO-2NC	1 2 3 4	HW-U10-F HW-U10-F HW-U01-F HW-U01-F	0 0 0 X	0 X 0 0	0 0 X 0	X 0 0 0	HW1R-2FF22N1-①
N	*Operator Only*							*HW1R-2N-①*
	2NO-2NC	1 2 3 4	HW-U01-F HW-U10-F HW-U01-F HW-U10-F	0 0 0 0	0 X 0 X	X 0 X 0	0 X 0 X	HW1R-2NF22N2-①
T	*Operator Only*							*HW1R-2T-①*
	2NO-2NC	1 2 3 4	HW-U10-F HW-U10-F HW-U01-F HW-U01-F	0 0 X X	X X 0 0	X X 0 0	Blocked	HW1R-2TF22N1-①

① Button Color Code

Color	Code
Black	B
Green	G
Red	R
Blue	S

Color	Code
White	W
Yellow	Y

1. All assembled part numbers in catalog include Finger-Safe spring-up (HW-U...) contacts.
2. Operator only models come with operator and button.

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Part Number Structure

H W 1 R - 2 D F 22N1 – R

Operator
A: Cam A
D: Cam D
E: Cam E
F: Cam F
N: Cam N
T: Cam T

Contact Arrangement Code
11: 1NO-1NC
20: 2NO
(For additional contact codes see previous page)

Button Colors
B: Black
G: Green
R: Red
S: Blue
W: White
Y: Yellow

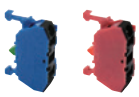
Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Pushbutton Selectors (Sub-assembled)

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Anti-Rotation Ring	+	Operator	+	Button	=	Completed Unit



Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor
(safety lever lock included)

Style	Part Number
	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 inadvertently unlocking contacts.

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Style	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

Operators

Style	Description	Part Number
	Cam A	HW1R-2A
	Cam D	HW1R-2D
	Cam E	HW1R-2E
	Cam F	HW1R-2F
	Cam N	HW1R-2N
	Cam T	HW1R-2T

Buttons

Style	Part Number
Round Flush 	HW1A-B1-①

In place of ①, specify the Button Color Code from table below.

① Button Color Code

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

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Dual Pushbutton Switches

Key features:

- Two pushbuttons and a pilot light are integrated into one space-saving ø22 mm control unit.
- Momentary and interlock types are available for pushbuttons. Interlock type prevents both buttons from being pressed at the same time.
- Pilot lights are available in full voltage and transformer with LED.
- IP40 protection, IP65 when using silicon boot.



Applications:

- Ideal for use as power switches and start/stop switches (available with I/ON and O/OFF markings on the buttons and a pilot light in the center).
- Interlock type prevents two pushbuttons from being pressed at the same time.

Dual Pushbutton Switches (Assembled) Part Numbers

Without Center Pilot Light

Operation Type	Button Style		Contact Arrangement		Part Number	④Button Color Code	⑤Legend Code
			Top Button	Bottom Button			
Momentary	Flush (top) Flush (bottom)		1NO	1NC	HW7D-B11F1001-④⑤	GR: Green (top) Red (bottom) WB: White (top) Black (bottom)	Blank: Without legend 1: I/ON (top) O/OFF (bottom)
			1NO	1NO	HW7D-B11F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B11F1111-④⑤		
			2NO	2NC	HW7D-B11F2002-④⑤		
			2NO	2NO	HW7D-B11F2020-④⑤		
	Flush (top) Extended (bottom)		1NO	1NC	HW7D-B12F1001-④⑤		
			1NO	1NO	HW7D-B12F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B12F1111-④⑤		
			2NO	2NC	HW7D-B12F2002-④⑤		
			2NO	2NO	HW7D-B12F2020-④⑤		
Interlock*	Flush (top) Flush (bottom)		1NO	1NC	HW7D-B21F1001-④⑤		
			1NO	1NO	HW7D-B21F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B21F1111-④⑤		
			2NO	2NC	HW7D-B21F2002-④⑤		
			2NO	2NO	HW7D-B21F2020-④⑤		
	Flush (top) Extended (bottom)		1NO	1NC	HW7D-B22F1001-④⑤		
			1NO	1NO	HW7D-B22F1010-④⑤		
			1NO-1NC	1NO-1NC	HW7D-B22F1111-④⑤		
			2NO	2NC	HW7D-B22F2002-④⑤		
			2NO	2NO	HW7D-B22F2020-④⑤		

1. *Interlock type prevents both top and bottom buttons from being pressed simultaneously.
2. Clear silicon rubber cover part number HW9Z-D7D.
3. Additional contact configurations available (up to 6 total contacts).

With Center Pilot Light

Operation Type	Button Style		Top Button	Bottom Button	Part Number
Momentary	Flush (Top) Flush (Bottom)	Flush (top) Flush (bottom)	1NO	1NC	HW7D-L11F1001②③-④⑤
			1NO	1NO	HW7D-L11F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L11F1111②③-④⑤
			2NO	2NC	HW7D-L11F2002②③-④⑤
			2NO	2NO	HW7D-L11F2020②③-④⑤
	Flush (Top) Extended (Bottom)		1NO	1NC	HW7D-L12F1001②③-④⑤
			1NO	1NO	HW7D-L12F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L12F1111②③-④⑤
			2NO	2NC	HW7D-L12F2002②③-④⑤
			2NO	2NO	HW7D-L12F2020②③-④⑤
Interlock*	Flush (Top) Flush (Bottom)	Flush (top) Extended (bottom)	1NO	1NC	HW7D-L21F1001②③-④⑤
			1NO	1NO	HW7D-L21F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L21F1111②③-④⑤
			2NO	2NC	HW7D-L21F2002②③-④⑤
			2NO	2NO	HW7D-L21F2020②③-④⑤
	Flush (Top) Extended (Bottom)		1NO	1NC	HW7D-L22F1001②③-④⑤
			1NO	1NO	HW7D-L22F1010②③-④⑤
			1NO-1NC	1NO-1NC	HW7D-L22F1111②③-④⑤
			2NO	2NC	HW7D-L22F2002②③-④⑤
			2NO	2NO	HW7D-L22F2020②③-④⑤

1. *Interlock type prevents both top and bottom buttons from being pressed simultaneously.
2. Clear silicon rubber cover part number HW9Z-D7D.
3. All assembled part numbers in catalog include Finger-Safe spring-up (HW-U...) contacts.

②Pilot Light Illumination & Voltage Code

Full Voltage	
Voltage	Code
6V AC/DC, LED	Q2
12V AC/DC, LED	Q3
24V AC/DC, LED	Q4
120V AC, LED	Q8
Step-Down Transformer (6V Secondary LED Voltage)	
Voltage	Code
120V AC, LED	H22
240V AC, LED	M42
480V AC, LED	T82

③ Pilot Lamp Color Code

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

④Pushbutton Color Code

Color		Code
Top	Green	GR
Bottom	Red	
Top	White	WB
Bottom	Black	

⑤Engraving Codes

Engraving		Code
No Engraving		Blank
I/ON	Top	1
O/OFF	Bottom	

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Part Number Structure

H W 7 D – L 21 F 20 20 H22 R – GR 1

Pilot Light
B: Without Center Pilot Light
L: With Center Pilot Light

Button Arrangement
11: Momentary (Flush/Flush)
12: Momentary (Flush/Extended)
21: Interlock (Flush/Flush)
22: Interlock (Flush/Extended)

Contact Arrangement
Top Button
01: 1NC 02: 2NC
10: 1NO 20: 2NO
Bottom Button
01: 1NC 02: 2NC
10: 1NO 20: 2NO

Voltage Code
blank: without center pilot light
Full Voltage*
Q2: 6V LED
Transformer*
H22: 120V AC LED
*For additional voltage codes, please see previous page

Pilot Lamp Color
A: Amber
G: Green
R: Red
S: Blue
W: White
Y: Yellow
blank: without center pilot light

Engraving Code
blank: No Engraving
1: Top: I/ON
Bottom: O/OFF

Pushbutton Color
GR: Top: Green
Bottom: Red
WB: Top: White
Bottom: Black

Note: Use only for interpreting part numbers. Do not use for developing part numbers.

Dual Pushbutton Switches (Sub-assembled) Part Numbers

Contact Blocks	+	Mounting Adaptor	+	Safety Lever Lock	+	Operator	+	Lens	=	Completed Unit



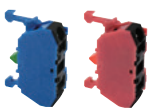





Lamp Circuit Components with Finger-Safe Terminals

Style		Description	Part Number
Lead Holder		For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.	HW-LH3
Dummy Block with Full Voltage Adaptor		For use with odd number of contacts.	HW-DA1FBN
Full Voltage Adaptor		For use with even number of contacts.	TW-DA1FB
Transformer Unit (6V secondary voltage)		120VAC 240VAC 480VAC	TW-F126B TW-F246B TW-F486B

Contact Blocks

Style	Contacts	1NO	1NC
	Finger-Safe Spring-Up Terminal	HW-U10-F	HW-U01-F
		HW-U10R-F (early make)	HW-U01R-F (late break)
	Dummy Block	HW-DB	

Contact Block Mounting Adaptor

Style		Part Number
	Non-illuminated	HW-CB2C
	Illuminated (with Pilot Light)	HW-CBL

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 inadvertently unlocking contacts.

Lamps/Lens

Style		Voltage	Part Number
	LED	6V AC/DC	LSTD-6②
		12V AC/DC	LSTD-1②
		24V AC/DC	LSTD-2②
		120V AC	LSTD-H2②
		240V AC	LSTD-M4②
Non-illuminated			HW9Z-B7B
Illuminated			HW9Z-L7W

1. In place of ②, specify the LED Color Code.
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.

Operators

Style		Button	Part Number
Momentary		Flush (top)	HW7D-*11④-⑤
		Flush (bottom)	
		Flush (top)	HW7D-*12④-⑤
		Extended (bottom)	
Interlock		Flush (top)	HW7D-*21④-⑤
		Flush (bottom)	
		Flush (top)	HW7D-*22④-⑤
		Extended (bottom)	

Instead of * insert:
B: Non-illuminated
L: Illuminated

Safety Lever Lock

Style	Part Number
	HW9Z-LS

Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

Use with notched panel cutout to prevent unit rotation.

②LED Color Code

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

④Pushbutton Color Code

Color		Code	Color		Code
Top	Green	GR	Top	White	WB
Bottom	Red		Bottom	Black	

⑤Engraving Codes

Engraving		Code
No Engraving		Blank
I/ON	Top	1
O/OFF	Bottom	

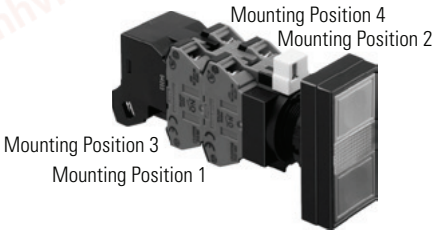
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Contact Arrangement Chart

Contact Arrangement			Contact Block		Top Button		Bottom Button	
Top Button	Bottom Button	Contact Code	Mounting Position	Type	Normal	Push	Normal	Push
1NO	1NO	1010	1	NO		X		
			2	NO				X
1NO	1NC	1001	1	NO		X		
			2	NC			X	
1NC	1NO	0110	1	NC	X			
			2	NO				X
1NC	1NC	0101	1	NC	X			
			2	NC			X	
1NO	2NO	1020	1	NO		X		
			2	NO				X
			3	Dummy				
			4	NO				X
1NO	1NO-1NC	1011	1	NO		X		
			2	NO				X
			3	Dummy				
			4	NC			X	
1NO	2NC	1002	1	NO		X		
			2	NC			X	
			3	Dummy				
			4	NC			X	
1NC	2NO	0120	1	NC	X			
			2	NO				X
			3	Dummy				
			4	NO				X
1NC	1NO-1NC	0111	1	NC	X			
			2	NO				X
			3	Dummy				
			4	NC			X	
1NC	2NC	0102	1	NC	X			
			2	NC			X	
			3	Dummy				
			4	NC			X	
2NO	1NO	2010	1	NO		X		
			2	NO				X
			3	NO		X		
			4	Dummy				
2NO	1NC	2001	1	NO		X		
			2	NC			X	
			3	NO		X		
			4	Dummy				
1NO-1NC	1NO	1110	1	NO		X		
			2	NO				X
			3	NC	X			
			4	Dummy				
1NO-1NC	1NC	1101	1	NO		X		
			2	NC			X	
			3	NC	X			
			4	Dummy				

1. Transformers can have two or four contact blocks only.
2. Contact blocks 1 and 3 are actuated by the top button. Contact blocks 2 and 4 are actuated by the bottom button.

Contact Block Mounting Position Example

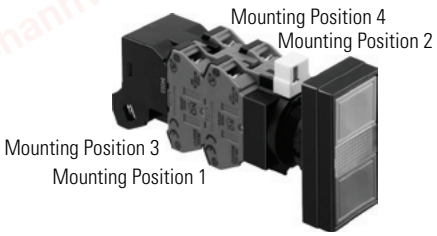


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Contact Arrangement Chart (con't)

Contact Arrangement			Contact Block		Top Button		Bottom Button	
Top Button	Bottom Button	Contact Code	Mounting Position	Type	Normal	Push	Normal	Push
2NC	1NO	0210	1	NC	X			
			2	NO				X
			3	NC	X			
			4	Dummy				
2NC	1NC	0201	1	NC	X			
			2	NC			X	
			3	NC	X			
			4	Dummy				
2NO	2NO	2020	1	NO		X		
			2	NO				X
			3	NO		X		
			4	NO				X
2NO	1NO-1NC	2011	1	NO		X		
			2	NO				X
			3	NO		X		
			4	NC			X	
2NO	2NC	2002	1	NO		X		
			2	NC			X	
			3	NO		X		
			4	NC			X	
1NO-1NC	2NO	1120	1	NO		X		
			2	NO				X
			3	NC	X			
			4	NO				X
1NO-1NC	1NO-1NC	1111	1	NO		X		
			2	NO				X
			3	NC	X			
			4	NC			X	
1NO-1NC	2NC	1102	1	NO		X		
			2	NC			X	
			3	NC	X			
			4	NC			X	
2NC	2NO	0220	1	NC	X			
			2	NO				X
			3	NC	X			
			4	NO				X
2NC	1NO-1NC	0211	1	NC	X			
			2	NO				X
			3	NC	X			
			4	NC			X	
2NC	2NC	0202	1	NC	X			
			2	NC			X	
			3	NC	X			
			4	NC			X	

Contact Block Mounting Position Example



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Contactor Reset Button



Reset Buttons (Assembled)

	Plastic Bezel	Metal Bezel
(Blank)	HW1B-M1RS-①T	HW4B-M1RS-①T
Engraved "R"	HW1B-M1RS-①T-ENG-R	HW4B-M1RS-①T-ENG-R

1. In place of ① specify Button Color Code.
2. 130mm (5.1") overall length.
3. 16mm flat base for easy alignment

① Button Color Code

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

Contactor Reset Button (Sub-assembled)

Rod	+	Operator	+	Button	=	Completed Unit
						

Rod

Style	Part Number
	HW9Z-RS-TK2141

Operator

Style	Plastic	Metal
	HW1B-MO	HW4B-MO

Button

Style	Part Number
	HW1A-B1-①

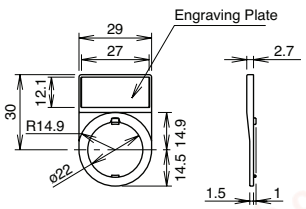
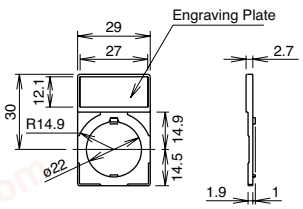
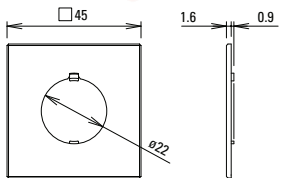
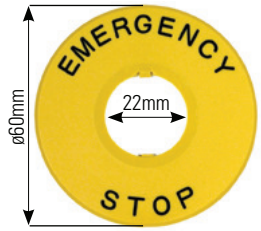
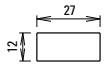
In place of ①, specify the Button Color Code from table.

① Button Color Code

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

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Nameplates - HW Series

	HWAM–Black Plastic	HWAQ–Black Plastic	HWAS–Black Plastic	HWAV–Yellow Plastic
				
Nameplate (blank engraving plate included)	HWAM-0B	HWAQ-0B	HWAS-0B	HWAV-0-Y HWAV5-0†
Nameplate (engraved)	HWAM-①	HWAQ-①	HWAS-①	HWAV-27-Y* HWAV5-27†
Additional Insert (blank)	HWNP-0	HWNP-0	HWNP Dimensions 	
Additional Insert (engraved)	HWNP-①	HWNP-①		

1. In place of ①, insert either the standard legend code from table below or custom engraving delimited by " ".
2. Standard engravings are available at no charge.
3. * HWAV-27-Y comes engraved "Emergency Stop" as shown in drawing.
4. † HWAV5-27 and HWAV5-0 for 60mm diameter E-Stops (80mm diameter nameplate).

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	REV-FOR	216	AUTO-MAN-OFF	301
CLOSE	102	OUT	117	CLOSE-OPEN	202	RUN-JOG	217	AUTO-OFF-MAN	302
DOWN	103	RAISE	118	DOWN-UP	203	RUN-SAFE	218	CLOSE-OFF-OPEN	303
EMERG.STOP	104	RESET	119	FAST-SLOW	204	SAFE-RUN	219	DOWN-OFF-SLOW	304
FAST	105	REVERSE	120	FOR-REV	205	SLOW-FAST	220	FAST-OFF-SLOW	305
FORWARD	106	RUN	121	HAND-AUTO	206	START-STOP	221	FOR-OFF-REV	306
HAND	107	SLOW	122	HIGH-LOW	207	STOP-START	222	LEFT-OFF-RIGHT	307
HIGH	108	START	123	JOG-RUN	208	UP-DOWN	223	LOWER-OFF-RAISE	308
IN	109	STOP	125	LEFT-RIGHT	209	OI (Int'l OFF ON)	250	OFF-MAN-AUTO	309
INCH	110	TEST	126	LOWER-RAISE	210			OFF-SLOW-FAST	310
JOG	111	UP	127	MAN-AUTO	211			OFF-1-2	311
LOW	112	I (Int'l On)	150	OFF-ON	212			OPEN-OFF-CLOSE	312
LOWER	113	O (Int'l Off)	151	ON-OFF	213			SLOW-OFF-FAST	313
OFF	114	EMO	152	OPEN-CLOSE	214			SUMMER-OFF-WINTER	314
ON	115			RAISE-LOWER	215			UP-OFF-DOWN	315
								1-OFF-2	316
								HAND-OFF-AUTO	317

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

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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 ensure engraving accuracy, fax it to your IDEC representative or Distributor.

Your Company: _____

Name: _____

Telephone: _____

Fax & Email: _____

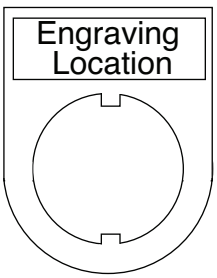
IDEC Rep/Distributor Contact: _____

PO number (if known): _____

IDEC Rep/Distributor Phone: _____

IDEC Rep/Distributor Fax & Email: _____

HWAM Nameplate



Step 1.
Choose Letter Size - 7/64" or 1/8".
Check the box for the letter size you want. Then write your lettering in box below the check boxes. Note: 1/8" size letters cannot exceed 9 characters.

Step 2.
Specify Quantity.
Enter the number of nameplates desired in the box on the right.

Qty

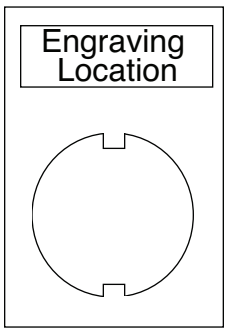
7/64" Letter Size ☐ 11 characters maximum (for 7/64" size letters)

1/8" Letter Size ☐ 9 characters maximum (for 7/8" size letters)

1 2 3 4 5 6 7 8 9 10 11

Sample Letter Sizes
7/64" Letters: A B C D
1/8" Letters: A B C D

HWAQ Nameplate



Step 1.
Choose Letter Size - 7/64" or 1/8".
Check the box for the letter size you want. Then write your lettering in box below the check boxes. Note: 1/8" size letters cannot exceed 9 characters.

Step 2.
Specify Quantity.
Enter the number of nameplates desired in the box on the right.

Qty

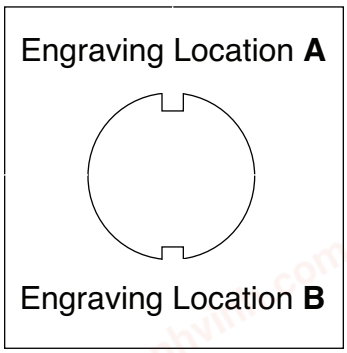
7/64" Letter Size ☐ 11 characters maximum (for 7/64" size letters)

1/8" Letter Size ☐ 9 characters maximum (for 1/8" size letters)

1 2 3 4 5 6 7 8 9 10 11

Sample Letter Sizes
7/64" Letters: A B C D
1/8" Letters: A B C D

HWAS Nameplate



Step 1.
Choose Letter Size - 3/32" or 1/8".
Check the box for the letter size you want. Then write your lettering in box below the check boxes. Note: 1/8" size letters cannot exceed 14 characters.

Step 2.
Specify Quantity.
Enter the number of nameplates desired in the box on the right.

Qty

Step 3.
Specify Location.
Enter the location of engraving (A or B or Both), in box on the right.

Location

3/32" Letter Size ☐ 20 characters maximum (for 3/32" size letters)

1/8" Letter Size ☐ 14 characters maximum (for 1/8" size letters)

A 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Sample Letter Sizes
3/32" Letters: A B C D
1/8" Letters: A B C D

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Switch Engraving Order Form – HW Series

Copy this order form and use it to specify Letter Height, Maximum Number of Lines and Text to be engraved.

To ensure engraving accuracy, fax it to your IDEC representative or Distributor.

Your Company: _____ Telephone: _____

Name: _____ Fax: _____

Address: _____ Email: _____

PO: _____ Part Number to be Engraved: _____

Please check one of the boxes below to indicate your choice of engraving options:

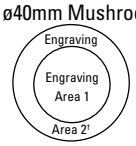
Square Switch

	# of Lines	Letter Height	Max. Characters Per Line
☐	1	5/32	5
☐		1/8	6
☐	2	5/32	5
☐		1/8	6
☐	3	1/8	6
☐	4	3/32	5

Round Switch

	# of Lines	Letter Height	Max. Characters Per Line
☐	1	5/32	5
☐		1/8	5
☐	2	5/32	5
☐		1/8	6
☐	3	1/8	5
☐	4	3/32	5

ø29mm, ø40mm Mushroom Head



		# of Lines	Letter Height	Max. Characters Per Line
☐	Engraving Area 1	1	5/32	5
☐			1/8	5
☐	Engraving Area 2	1	5/32	7
☐			1/8	7

1. Above mentioned specifications hold true for standard size pushbuttons (round and square).
2. †Engraving Area 2 can be engraved for 40mm mushroom Head non-Illuminated push button only.
3. Engraving is done on the button itself for non-Illuminated push buttons and on marking plate for illuminated push buttons and pilot lights.
4. Please enter text exactly how you want it engraved, take care to emphasize capital or small letters.

Enter text to be engraved:

Line 1: _____

Line 2: _____

Line 3: _____

Line 4: _____

Sample Letter Sizes

1/8 Letters: OPEN

5/32 Letters: OPEN

For IDEC Internal Use Only:

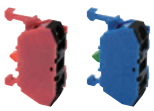
Work Order #: _____

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Accessories

Item	Appearance	Description/Usage	Part Number	
Locking Ring Wrench		Metallic tool used to tighten the plastic locking ring when installing the HW series 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 except pilot lights)	for notched panel cutout (standard)	HW9Z-RL
			for round panel cutout	LW9Z-L
Rubber Mounting Hole Plug		Black rubber plug fills unused 7/8" mounting holes in panel.	OB-31	
Metallic Mounting Hole Plug		For plugging unused 7/8" mounting holes in the panel. Tighten the attached locking ring to a torque of 12 kfg-cm maximum Degree of protection: IP66	LW9Z-BM	
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 padlockable cover to protect pushbuttons or selector switches. (Not intended for E-Stops) Degree of protection: IP65	HW9Z-KL1	
Tab Terminal Adapter		Tab #250 (6.35 x 0.8mm): Single tab	TW-FA4	
Mounting Adaptor		Used to mount round HW series (except Jumbo Mushroom, unibody, and square units) into a larger panel cut-out. (includes both pieces)	22 to 30mm	HW9Z-A30
			22 to 25mm	HW9Z-A25
Replacement Safety Lever Lock		Used to prevent contact mounting lever from moving due to heavy vibration or panel maintenance.	HW9Z-LS	
Reset Rod for Contactors Overload		5" rod used with HW1B-M0.	HW9Z-RS-TK2141	
Replacement Operator Washer		Provided with operator. Insert between bezel and locking ring.	HWM-WASHER	
Replacement Locking Ring		Plastic locking nut comes with all HW operators & assemblies.	Standard (plastic)	HW9Z-LN
			Optional (metal)	HW9Z-LNM
Switch Cover (Square)		Used only with round or square flush pushbuttons.	HW9Z-K1 (spring return) HW9Z-K11 (maintained cover)	
Replacement Keys		Pair of Keys (#231)	HW9Z-SKP	
Replacement Lens		HW Illuminated Unibody Replacement Lens	HWLV-LENSR	

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Item	Appearance	Description/Usage	Part Number	
Replacement Jumbo Dome Lens		Polycarbonate Replacement Lens (If using yellow lens, use white LED.)	HW1A-P5① ① = (A, G, R, S, W, Y))	
Replacement Jumbo LED Diffusing Lens			HW9Z-PP5C	
Replacement LED Lamps for HW Jumbo Dome		Replacement LED Lamp - applicable for jumbo pilot lights only	LSTDB-2① ① = (A, G, R, S, W)	
Rubber Cover for Dual Pushbuttons		Clear Silicon rubber cover	HW9Z-D7D	
Barrier for Dual Pushbuttons		Plastic barrier. Used when mounting the HW7 units on 30mm horizontal centers, to prevent possible interconnections between adjoining terminals.	HW-VU1	
EMO Sticker		Emergency stop nameplate sticker	HW9Z-EMO-NP-TK2120	
Contact Blocks (with side entry)		These contacts are applicable for wires terminated by ring, fork, terminals, **not recommended for bare wire connections**.	**1NC** HW-U01 HW-U01-MAU HW-U01R HW-U01R-MAU (with side entry)	**1NO** HW-U10 HW-U10-MAU HW-U10R HW-U10R-MAU (with side entry)
Contact Blocks (without side entry)		These contacts are applicable for wires terminated by ring, fork, or ferule terminals, and **also bare wire connections**.	HW-U01-F HW-U01-MAU-F HW-U01R-F HW-U01R-MAU-F (no side entry)	HW-U10-F HW-U10-MAU-F HW-U10R-F HW-U10R-MAU-F (no side entry)

E-Stop Shrouds

Style	Part Numbers	E-Stop Types	Applicable Standards
	HW9Z-KG1	40mm Mushroom Head	SEMI S2-0703, 12.5.1 Compliant
	HW9Z-KG2	40mm Mushroom Head	SEMI S2-0703, 12.5.1 & SEMATECH Compliant

Style	Part Numbers	E-Stop Types	Applicable Standards
	HW9Z-KG3	40mm Mushroom Head	SEMI S2 Compliant (Approved by TUV) ISO 13850
	HW9Z-KG4	40mm Mushroom Head	SEMI S2 Compliant (Approved by TUV) & SEMATECH ISO 13850

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Contact Assemblies

Standard Contact Assemblies

For use with Non-Illuminated Pushbuttons & E-Stops

Style	Contacts	Part Number
Standard Finger-Safe Contacts 	1NO	HW-CBF10
	1NC	HW-CBF01
	1NO/1NC	HW-CBF11
	2NO	HW-CBF20
	2NC	HW-CBF02
	2NO/2NC	HW-CBF22

Gold contact option is available. Add suffix "MAU" to end of part number. For example, HW-CBF20 becomes HW-CBF20-MAU.

Full Voltage Contact Assemblies

For use with Illuminated Pushbuttons.

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

Order LED separately.

Transfomer Contact Assemblies

For use with Illuminated Pushbuttons.

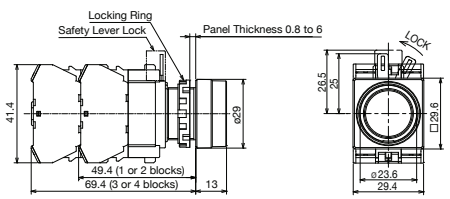
Style		Contacts	Part Number
	120V AC with LED	1NO	HW-FL10H2-②
		2NO	HW-FL20H2-②
		1NC	HW-FL01H2-②
		1NO/1NC	HW-FL11H2-②
	240V AC with LED	1NO	HW-FL10M4-②
		2NO	HW-FL20M4-②
		1NC	HW-FL01M4-②
		1NO/1NC	HW-FL11M4-②
	480V AC with LED	1NO	HW-FL10T8-②
		2NO	HW-FL20T8-②
		1NC	HW-FL01T8-②
		1NO/1NC	HW-FL11T8-②

1. In place of ②, specify the LED Color Code.
   ② = A, G, R, S, or W
2. 6V LED included.

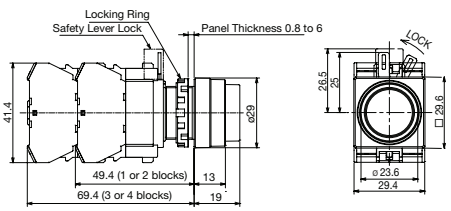
Dimensions (mm)

Non-Illuminated Pushbuttons

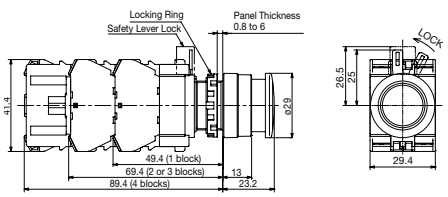
Flush (HW1B-M1, -A1)



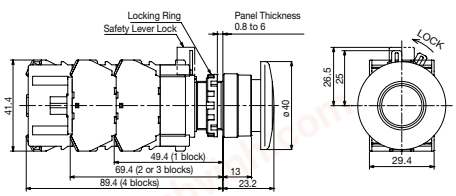
Extended (HW1B-M2, -A2)



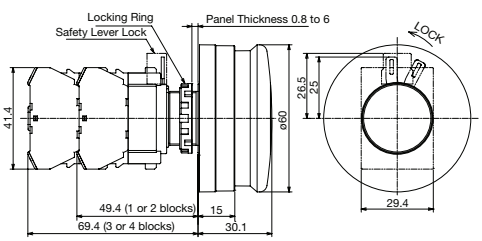
ø29mm Mushroom (HW1B-M3 -A3)



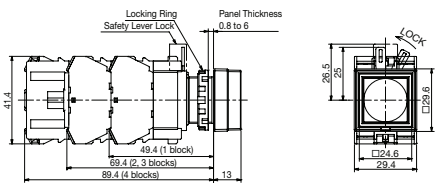
ø40mm Mushroom (HW1B-M4, -A4)



ø60mm Mushroom (HW1B-M5)

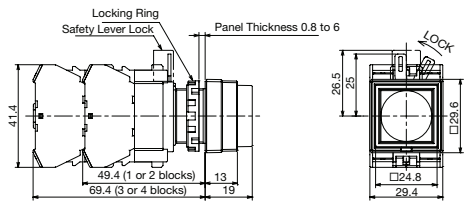


Square Flush (HW2B-M1, -A1)

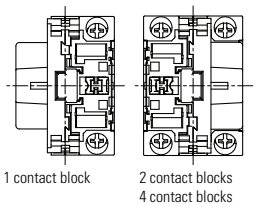


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Square Extended (HW2B-M2, -A2)

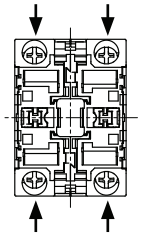


Contact Block (Bottom View)



Terminal Wiring

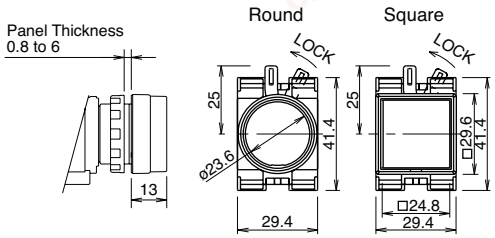
Arrows indicate access directions for wiring



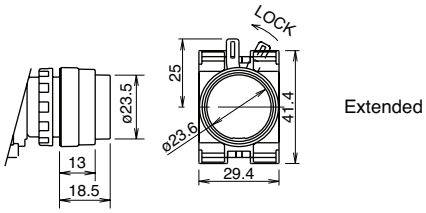
Operators

Dimensions (mm)

Flush (Round & Square)

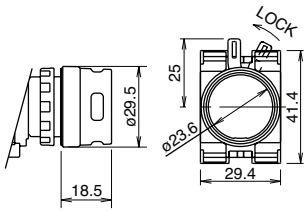


Extended

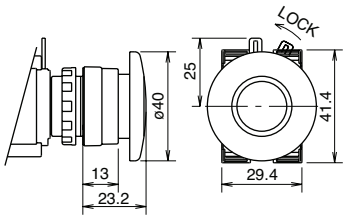


Extended

Extended with Full Shroud



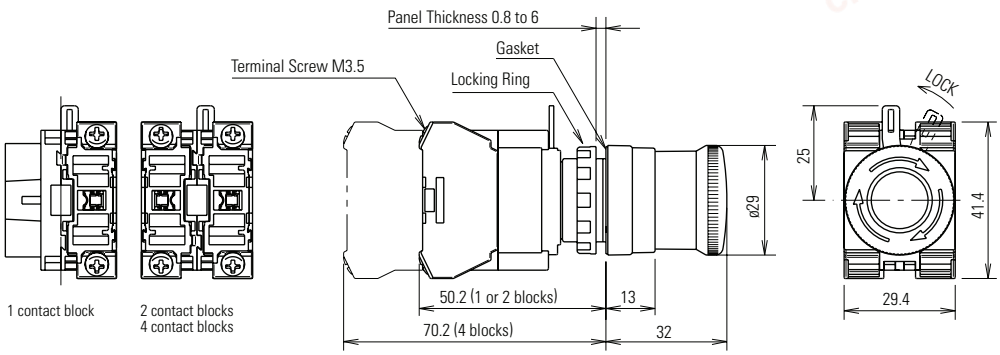
ø40mm Mushroom



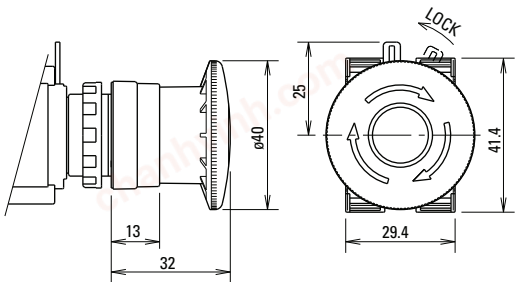
Emergency Stop Pushbuttons

Dimensions (mm)

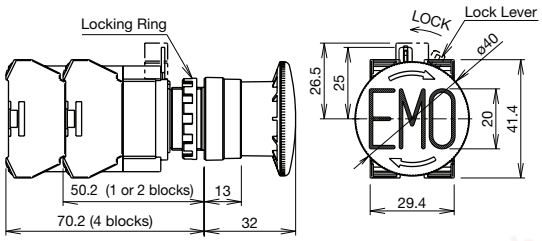
ø29mm Head Pushlock Turn Reset (HW1B-V3)



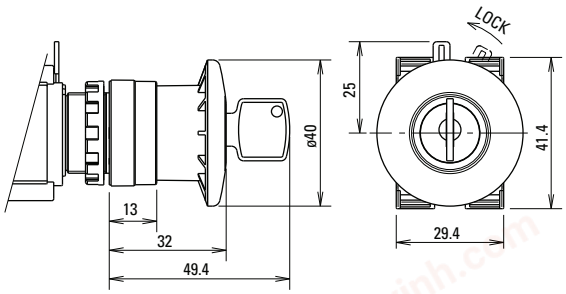
ø40mm Head Pushlock Turn Reset (HW1B-V4)



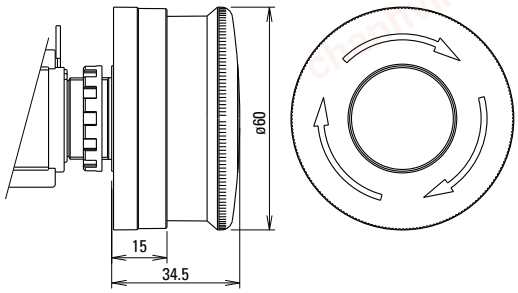
ø40mm Head EMO Pushlock Turn Reset (HW1B-V4)



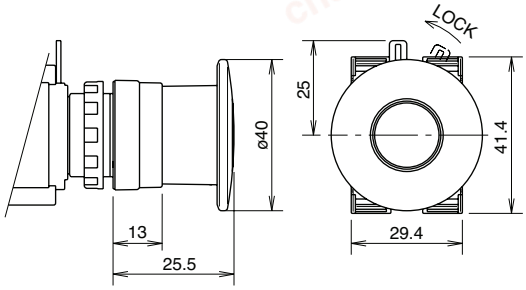
ø40mm Head Pushlock Key Reset (HW1B-X4)



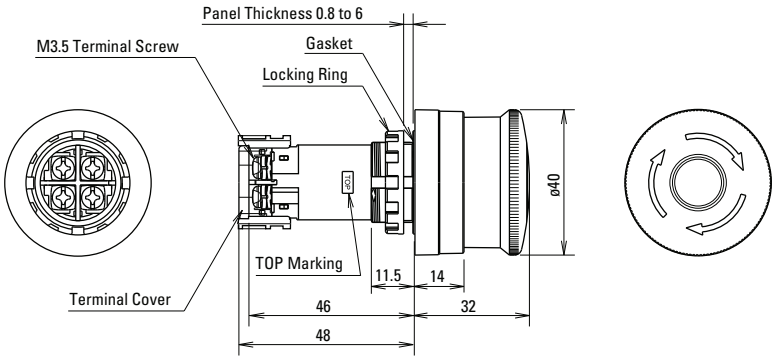
ø60mm Head Pushlock Turn Reset (HW1B-V5)



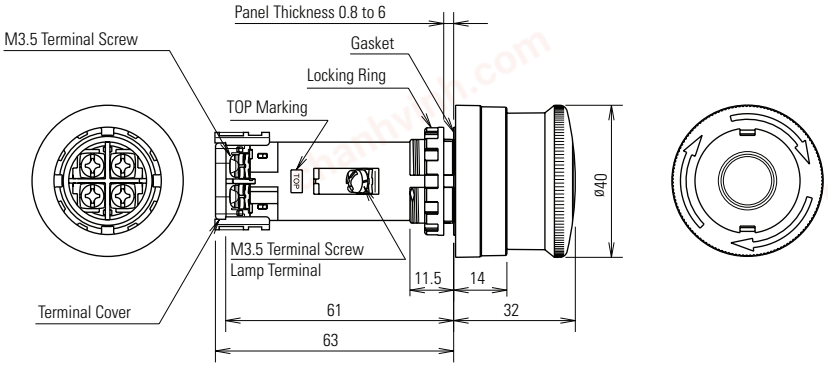
ø40mm Head Push-Pull (HW1B-Y2)



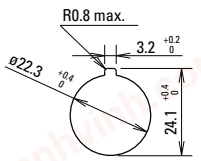
ø40mm Head Unibody Pushlock Turn Reset (HW1B-BV4)



Illuminated E-Stop Pushbuttons (HW1E-LV4)



Mounting Hole

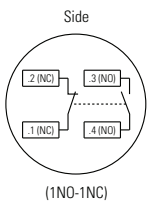


The minimum mounting centers shown below are applicable to E-Stop switches with one layer of contact blocks (two contact blocks). When two layers of contact blocks are mounted, determine the minimum mounting centers for ease of wiring.

Unit	Vertical Spacing	Horizontal Spacing
HW1B-V3 HW1B-V4 HW1B-X4 HW1B-Y2	50 mm	50 mm
HW1B-V5	60 mm	60 mm

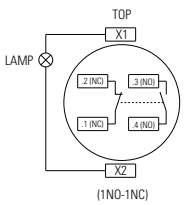
Terminal Arrangement (Bottom View)

HW1E-BV4



(1NO-1NC)

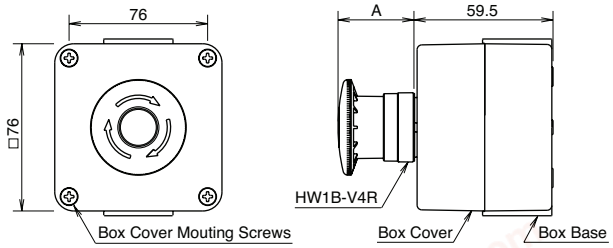
HW1E-LV4



(1NO-1NC)

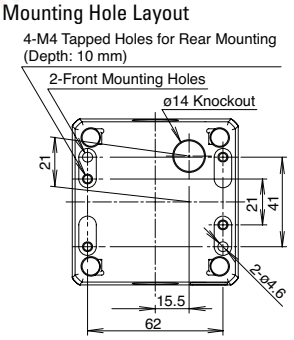
Emergency Stop Stations

Dimensions (mm)



Operator	Dimension A (mm)
Pushlock Turn Reset	32
Pushlock Key Reset	32 (Key inserted: 49.4)
Push Pull	25.5

Mounting Hole Layout

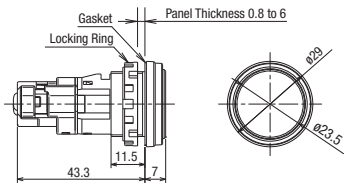


Pilot Lights

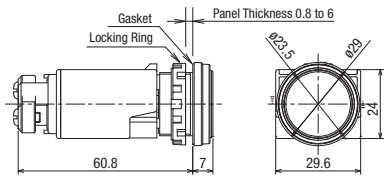
Dimensions (mm)

Round Flush Terminal screws: M3.5, integrated terminal cover

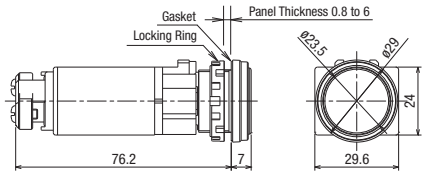
6, 12, 24V AC/DC, Without LED lamp



100/110V AC, 200/220V AC (240V AC maximum)

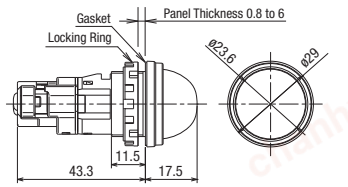


110V DC, 380V AC minumum

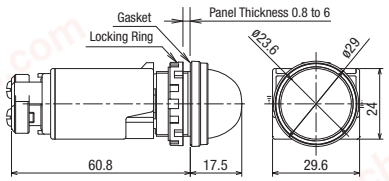


Extended Terminal screws: M3.5, integrated terminal cover

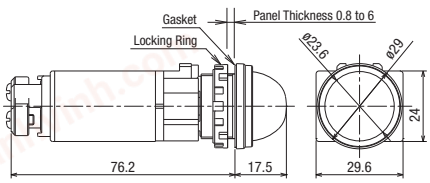
6, 12, 24V AC/DC, Without LED lamp



100/110V AC, 200/220V AC (240V AC maximum)

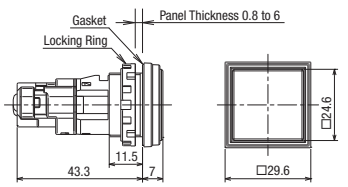


110V DC, 380V AC minimum

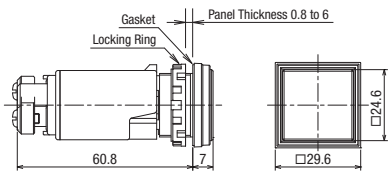


Square Flush Terminal screws: M3.5, integrated terminal cover

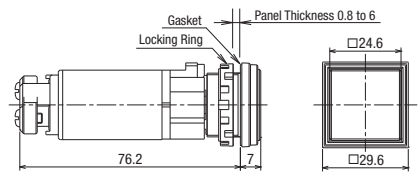
6, 12, 24V AC/DC, Without LED lamp



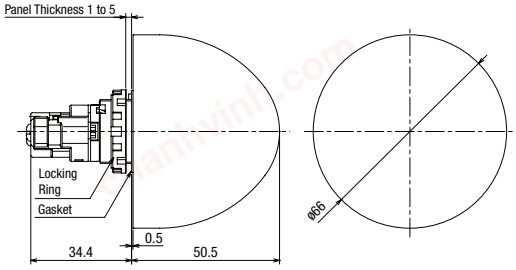
100/110V AC, 200/220V AC (240V AC maximum)



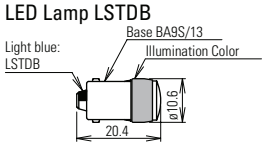
110V DC, 380V AC minimum



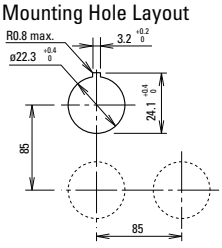
Jumbo Dome Pilot Light Terminal screws: M3.5, integrated terminal cover



LED Lamp LSTDB

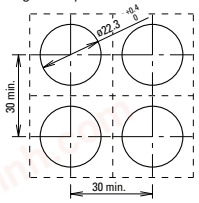


Mounting Hole Layout



Mounting Hole Layout

Close mounting on 30mm centers
Degree of protection: IP65



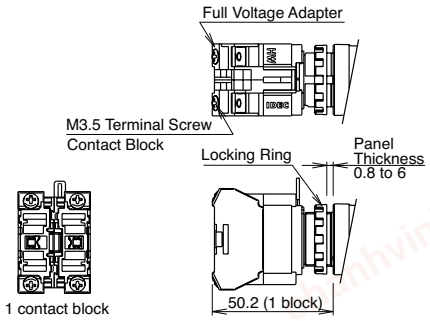
When mounting transformer or DC-DC converter type units on 30mm centers vertically and horizontally, keep the ambient temperature below 40°C.

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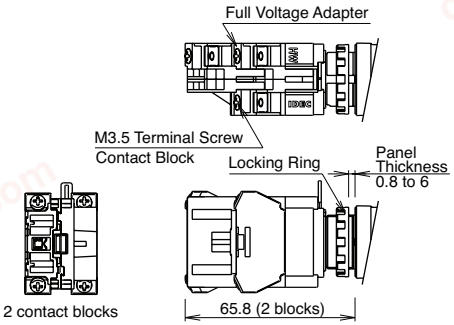
Illuminated Pushbuttons

Full Voltage Models

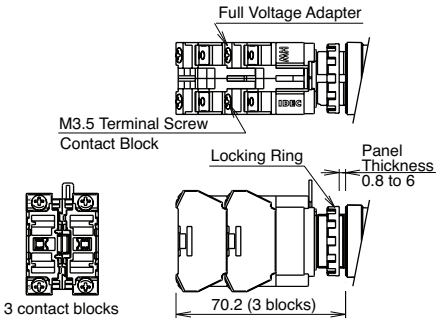
1 Contact Block



2 Contact Blocks



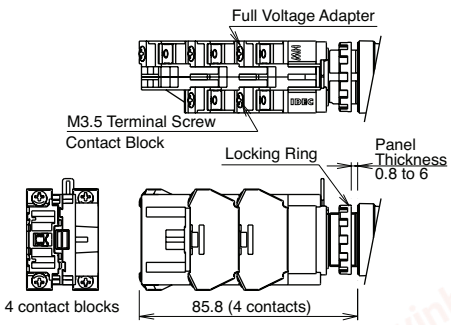
3 Contact Blocks



Illuminated Pushbuttons con't

Dimensions (mm)

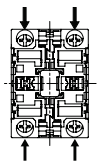
4 Contact Blocks



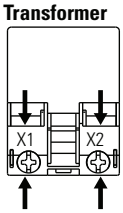
Terminal Wiring

Arrows indicate access directions for wiring.

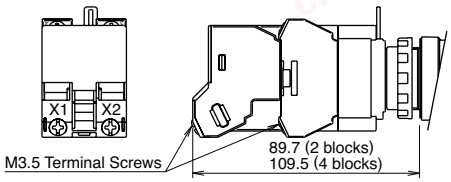
Contact Block
Full Voltage Adaptor



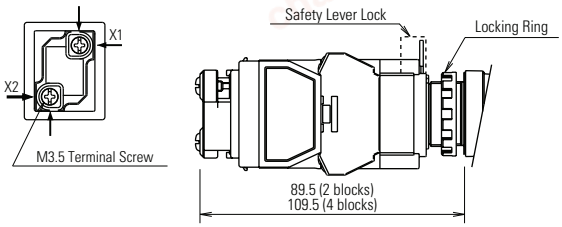
Transformer



Transformer Models



DC-DC Converter Models

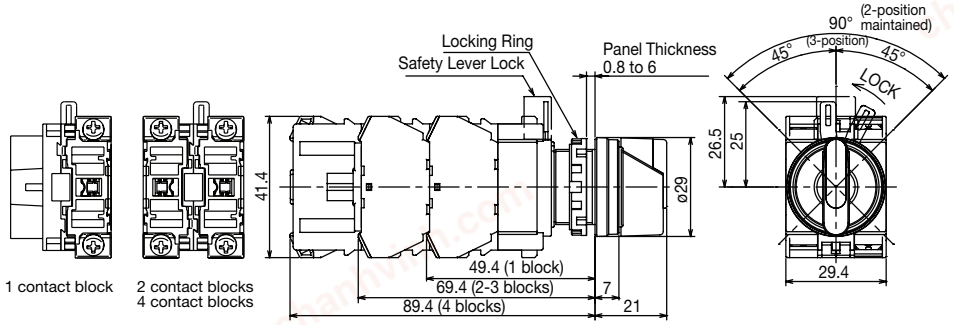


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Non-Illuminated Selector & Key Switches

Dimensions (mm)

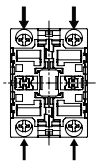
Knob Operator



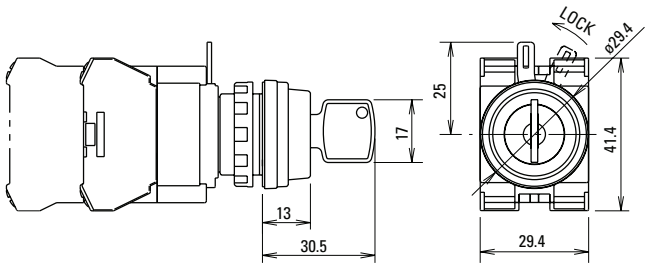
Terminal Wiring

Arrows indicate access directions for wiring.

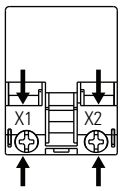
Contact Block
Full Voltage Adaptor



Key Operator

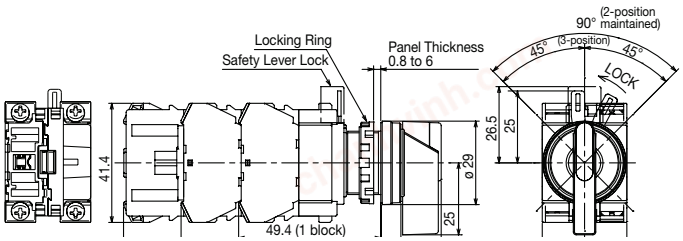


Tranformer

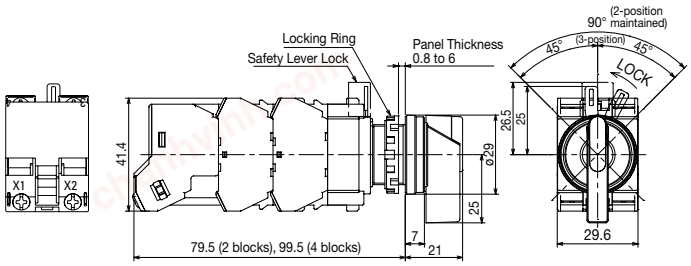


Illuminated Selector Switches

Full Voltage Model



Transformer Model

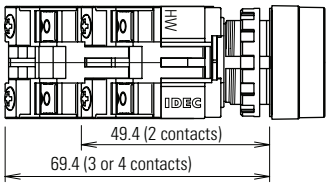


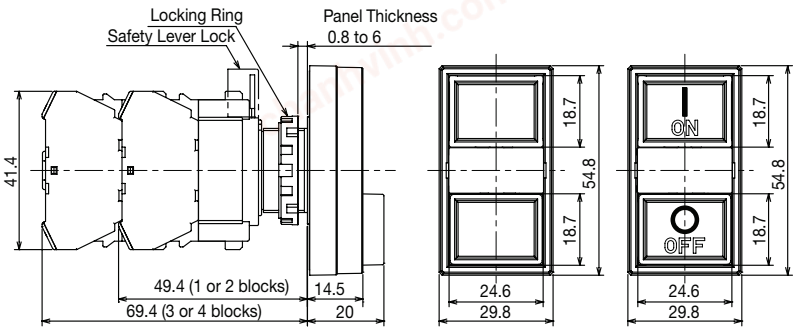
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Dual Pushbutton

Dimensions (mm)

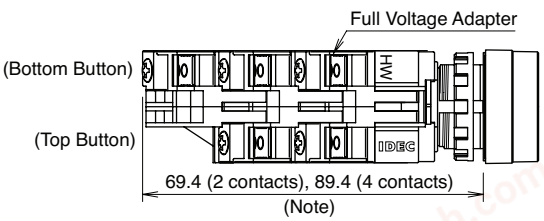
Without Pilot Light





With Pilot Light

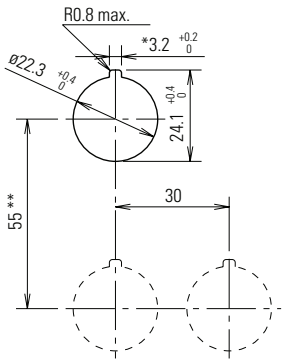
Full Voltage



The depth of a 3-contact model depends on the combination of contact blocks at top and bottom pushbuttons.

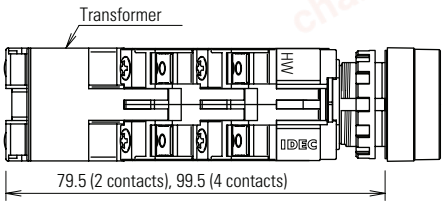
Top Button	1 contact block	2 contact blocks
Bottom Button	2 contact blocks	1 contact block
Depth	89.4 mm	69.4 mm

Mounting Hole Layout

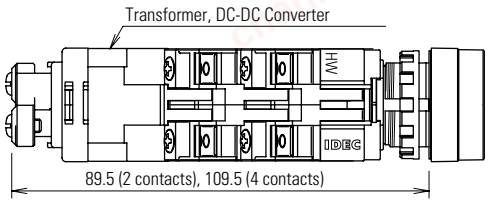


-The 3.2 mm recess is for preventing rotation and is not necessary when a nameplate or anti-rotation ring is not used.
-When using the safety lever lock, determine the vertical spacing in consideration of convenience for installing and removing the safety lever lock.
-Recommended vertical spacing: 100 mm
-The minimum mounting centers are applicable to switches with one layer of contact blocks (two contact blocks). When two layers of contact blocks are mounted, determine the minimum mounting centers for ease of wiring.

Transfomer (240V minimum)



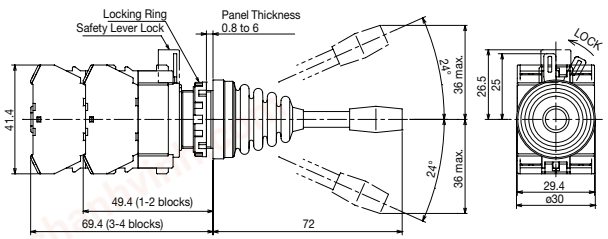
Transformer (480V)



Monolever

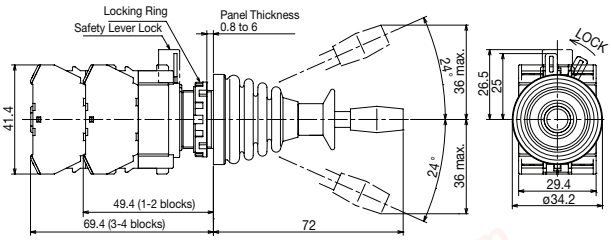
Dimensions

Standard Lever



Interlocking Lever

All dimensions in mm.

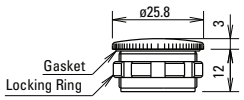


Terminal Screws M3.5 Integrated Terminal Cover

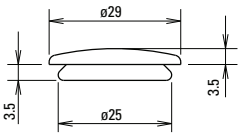
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Accessory Dimensions

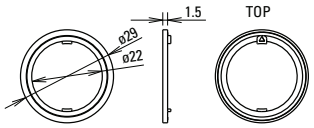
LW9Z-BM
Metallic Mounting Hole Plug



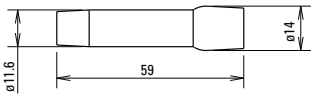
OB-31
Rubber Mounting Hole Plug



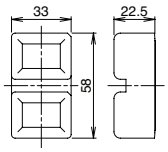
HW9Z-RL
Anti-Rotation Ring



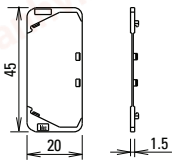
OR-55
Lamp/LED Removal Tool



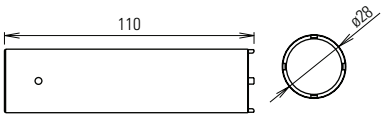
HW9Z-D7D
Dual Pushbutton Rubber Cover



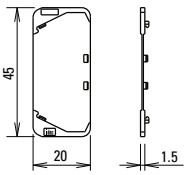
HW-VU1
Dual Pushbutton Barrier



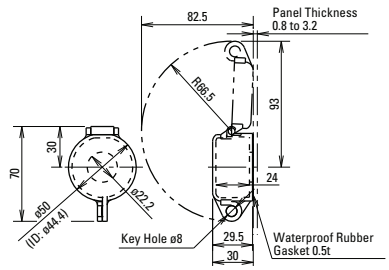
MW9Z-T1
Locking Ring Wrench



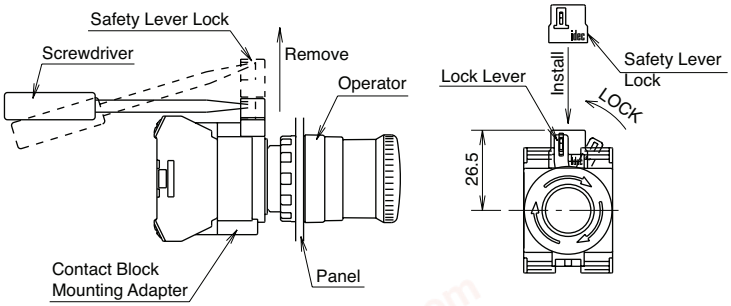
HW-VL1
Barrier



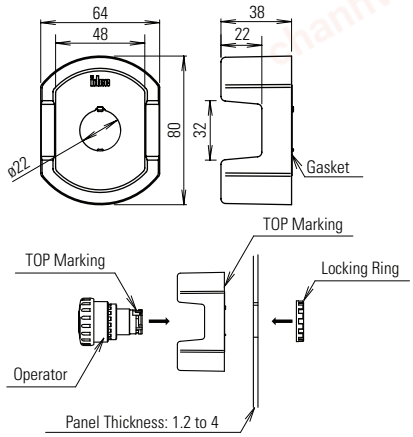
HW9Z-KL1
Padlock Cover



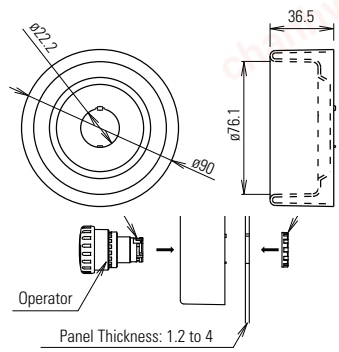
HWLS-TK1971
Safety Lever Lock



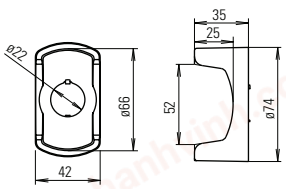
HW9Z-KG1



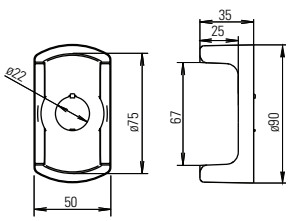
HW9Z-KG2



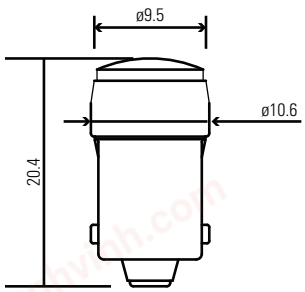
HW9Z-KG3



HW9Z-KG4



LSTD



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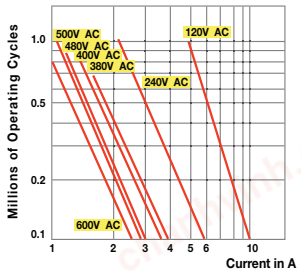
Specification Charts

INDUCTIVE

DC Voltages

Voltage V	24	48	110
Current A	4	2	1.1

AC Voltages

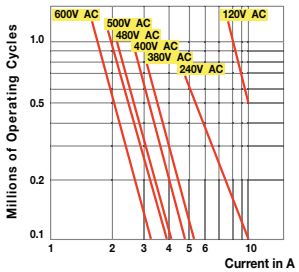


RESISTIVE

DC Voltages

Voltage V	24	48	110
Current A	8	4	2.2

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:
Inductive 0.4 ± 0.05
Resistive 0.9 ± 0.05

Operator Truth Tables

2 Position Selector Switches

	Contact	Mounting Position	Operator Position	
			Left	Right
HW1S-2T HW1K-2* HW1F-2	HW-U10-F (NO)	L	0	X
		R	0	X
	HW-U01-F (NC)	L	X	0
		R	X	0
	HW-U10R-F (NO-EM)	L	0	~~X~~
		R	0	~~X~~
	HW-U01R-F (NC-LB)	L	~~X~~	0
		R	~~X~~	0

3 Position Selector Switches

	Contact	Mounting Position	Operator Position		
			Left	Center	Right
HW1S-3T HW1K-3* HW1F-3	HW-U10-F (NO)	L	X	0	0
		R	0	0	X
	HW-U01-F (NC)	L	0	~~X~~	~~X~~
		R	~~X~~	~~X~~	0
	HW-U10R-F (NO-EM)	L	~~X~~	0	0
		R	0	0	~~X~~
	HW-U01R-F (NC-LB)	L	0	~~X~~	~~X~~
		R	~~X~~	~~X~~	0

	Contact	Mounting Position	Operator Position		
			Left	Center	Right
HW1S-3ST HW1K-3S*	HW-U10-F (NO)	L	X	0	0
		R	0	0	X
	HW-U01-F (NC)	L	0	0	X
		R	X	0	0
	HW-U10R-F (NO-EM)	L	~~X~~	~~X~~	0
		R	0	~~X~~	~~X~~
	HW-U01R-F (NC-LB)	L	0	~~X~~	~~X~~
		R	~~X~~	~~X~~	0

3 Position Selector Switches con't

	Contact	Mounting Position	Operator Position		
			Left	Center	Right
HW1S-3JT HW1K-3J*	HW-U10-F (NO)	L	X	0	0
		R	0	0	X
	HW-U01-F (NC)	L	0	X	0
		R	0	X	0
	HW-U10R-F (NO-EM)	L	X	0	X
		R	~~X~~	0	~~X~~
	HW-U01R-F (NC-LB)	L	0	~~X~~	~~X~~
		R	~~X~~	~~X~~	0

4 Position Selector Switches

	Contact	Mounting Position	Operator Position			
			1	2	3	4
HW1S-4T	HW-U10-F (NO)	L	X	0	0	0
		R	0	0	0	X
	HW-U01-F (NC)	L	0	0	X	0
		R	0	X	0	0
	HW-U10R-F (NO-EM)	L	~~X~~	X	0	X
		R	X	0	~~X~~	X
	HW-U01R-F (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
HW1S-5T	HW-U10-F (NO)	L	X	0	0	0	0
		R	0	0	0	0	X
	HW-U01-F (NC)	L	0	0	0	X	0
		R	0	X	0	0	0
	HW-U10R-F (NO-EM)	L	~~X~~	~~X~~	X	0	X
		R	X	0	~~X~~	~~X~~	X
	HW-U01R-F (NC-LB)	L	0	~~X~~	~~X~~	~~X~~	X
		R	~~X~~	~~X~~	~~X~~	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 660.
3. HW1S-3T is identified by white plungers on the operator.
4. HW1S-3ST is identified by red plungers on the operator.
5. HW1S-3JT is identified by black plungers on the operator.

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HW Safety Precautions

Turn off power to HW series control units before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.

To avoid the possibility of burning yourself, use the lamp holder tool when replacing lamps.

For wiring, use wires of a proper size to meet voltage and current requirements.

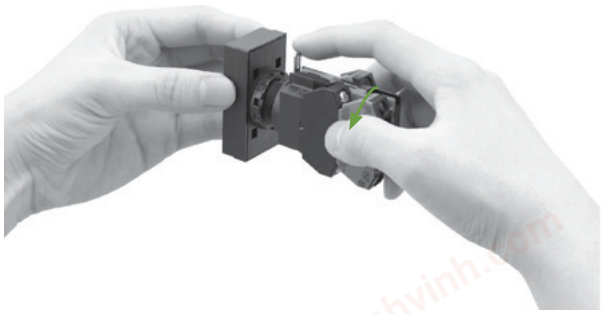
HW General Instructions

Panel Mounting

Remove the contact block assembly from the operator (for transformer type pilot lights, remove the transformer from the illumination unit). Remove the locking ring from the operator. Insert the operator into the panel cut-out from the front, tighten the locking ring from the back, then install the contact block assembly to the operator.

Removing and Installing the Contact Block Assembly

1. To remove the operator from the contact block, turn the locking lever in the direction of the arrow shown below. The operator can now be removed.
2. To reinstall, place the TOP markings on the operator and the contact block mounting adapter in the same direction, and insert the operator into the contact block mounting adapter. Then turn the locking lever in the opposite direction.



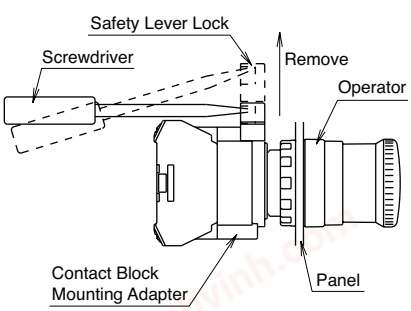
Notes for Panel Mounting

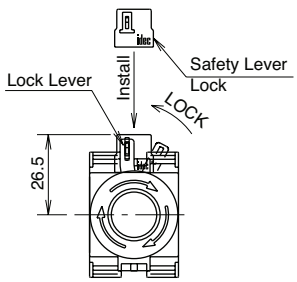
1. When mounting the operator onto a panel, use the optional locking ring wrench (MW9Z-T1) to tighten the locking ring. Tightening torque must not exceed 2.0 N·m. Do not use pliers. Excessive tightening will damage the locking ring.
2. For the contact blocks and transformers housing LED lamps, make sure not to press the lamps too hard, otherwise the lamp socket may be damaged.

Safety Lever Lock

IDEC strongly recommends using the safety lever lock (HW9Z-LS, yellow) to prevent heavy vibration or maintenance personnel from unlocking the contact assembly.

1. HW series can be mounted vertically with a minimum spacing of 55 mm but spacing should be determined to ensure easy operation (recommended minimum spacing: 100 mm).
2. Mount the control unit onto the panel, lock the lever, and push in the safety lever lock to install.
3. When the spacing is narrower than the recommended value, with the lever unlocked, mount the safety lever lock and insert the contact unit to the operator. Then, lock the lever and strongly push in the safety lever lock to install.
4. To remove the safety lever lock, insert a flat screwdriver into the safety lever and push upwards.





Dual Pushbutton Instructions

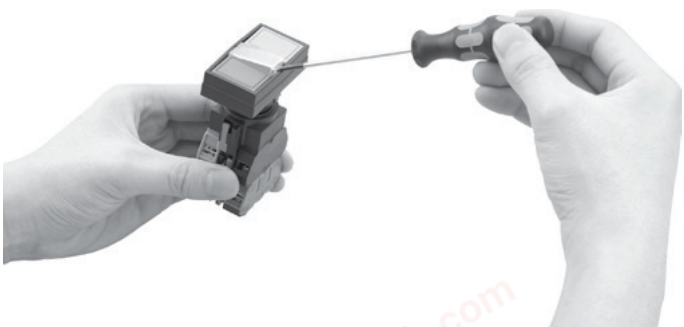
Replacement of Lens

Removing

Remove the lens by inserting a screwdriver into the recess of the lens through the bezel.

Installing

Install the lens in the recess between the buttons by pressing against the bezel.



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Dual Pushbuttons Instructions continued

Replacement of Lamps

LED lamps can be replaced by using the lamp holder tool (OR-55) from the front of the panel, or by removing the contact block assembly from the operator unit.

Removing the Lamps from the Front of the Panel

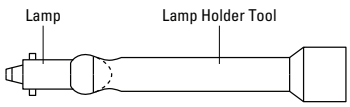
Removal

1. To remove, slip the lamp holder tool onto the lamp head lightly. Then push slightly, and turn the lamp holder tool counterclockwise.

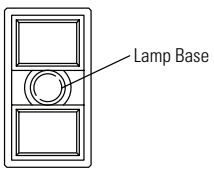


Installation

1. To install, insert the lamp head into the lamp holder tool, and hold the lamp as shown in the figure below.



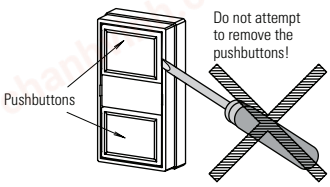
2. Place the pins on the lamp base to the grooves in the lamp socket. Insert the lamp and turn it clockwise.



About Dual Pushbutton Switches

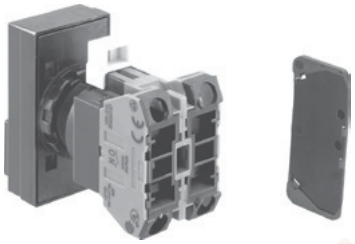
The dual pushbuttons cannot be removed or replaced!

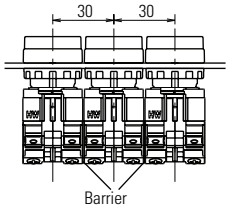
Do not attempt to remove using a flat screwdriver or pincers, otherwise the dual pushbuttons may be damaged.



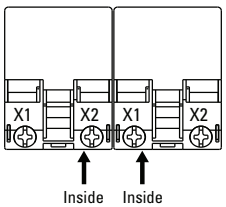
Narrow Mounting

When mounting the units closely in a horizontal row on 30mm centers, use optional barriers to prevent interconnection between adjoining terminals. The barriers can be attached simply by pressing them onto the sides of contact blocks.





When mounting transformer type illuminated units closely in a horizontal row on 30-mm centers, insert solid wires or stranded wires into inside of the terminal screw on the transformer (see figure on the right) to prevent short circuit between adjoining terminals.



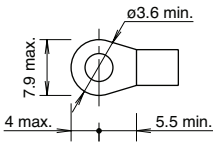
Installation of LED Illuminated Units

When using full voltage type LED illuminated units, provide protection against electrical noise, if necessary.

Applicable Wiring

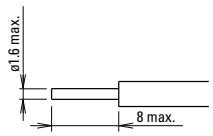
The applicable wire size is 2 mm^2 maximum. (solid wire ø1.6mm^2 maximum) One or two wires can be connected.

Applicable Crimping Terminal

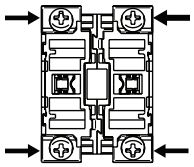


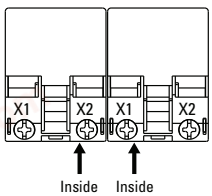
Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

Solid Wire



Note: When connecting wires to contact blocks or transformers in the direction shown below, keep the insulation stripping length 6.6 mm at the maximum.





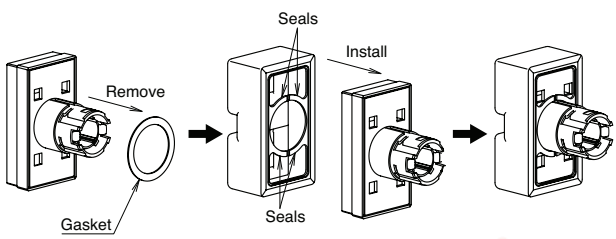
Installing the Rubber Boot

When using the HW7D pushbuttons in places where the pushbuttons are subjected to water splash or an excessive amount of dust, make sure to use the HW9Z-D7D rubber boot (IP65) which is ordered separately.

Notes for Installing the Rubber Boot

Remove the gasket from the operator, and install the rubber boot on the operator. Pull out the seals of the rubber boot and place them around the operator sleeve as shown. Make sure that the seals are not twisted or tucked inside and that the gasket does not remain, otherwise the normal waterproof and dustproof characteristics are not ensured.

1. Remove the gasket.
2. Install the rubber boot on the pushbuttons.
3. Rubber boot is installed.



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ø22 HW Series Push-in Switches & Pilot Lights

- Push-in terminal connection reduces wiring time.
- Safety enhanced with IP20 finger-safe protection.

c UL us LISTED
File No. E68961

- See website for details on approvals and standards.

Note) Approvals for pushbuttons, selector switches, pilot lights only.
For illuminated/non-illuminated buzzer (page 775) and emergency stop switches (page 776), see each page.

Specifications and Ratings

Contact Ratings

Pushbuttons Illuminated Pushbuttons Dual Pushbuttons Selector Switches Key Selector Switches Illuminated Selector Switches Selector Pushbuttons Monolever Switches Emergency Stop Switches	Rated insulation voltage	600V
	Rated continuous current	10A
	Contact ratings by utilization category IEC60947-5-1	AC-15 (A600) DC-13

- See website for approved contact ratings.

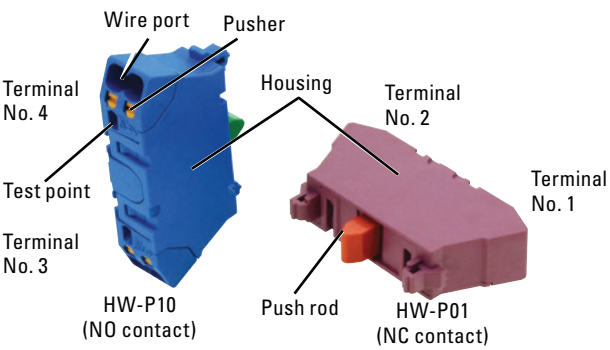
Rated Operating Voltage and Current by Utilization Category

HW-P10 (NO contact), HW-P01 (NC contact), HW-PW20 (2NO contact), HW-PW11 (1NO-1NC contact), HW-PW02 (2NC contact)

Operating Voltage			24V	48V	50V	110V	220V	440V
Operating Current	AC 50/60 Hz	AC-12 Control of resistive loads and solid state loads	10A	–	10A	10A	6A	2A
		AC-15 Control of electromagnetic loads (> 72 VA)	10A	–	7A	5A	3A	1A
	DC	DC-12 Control of resistive loads and solid state loads	10A	5A	–	2.2A	1.1A	–
		DC-13 Control of electromagnets	5A	2A	–	1.1A	0.6A	–

- The operating current represents making and breaking currents (IEC 60947-5-1).
- Contact materials: Silver contacts
- Minimum applicable load: 3V AC/DC, 5 mA (applicable range may vary with operating conditions)

Push-in Contact Block (HW-P..)



	Single Contact Block		Double Contact Block		
Contact	1NO	1NC	2NO	2NC	1NO-1NC
Part No.	HW-P10	HW-P01	HW-PW20	HW-PW02	HW-PW11
Shape					
Housing	Blue	Purple red	Blue	Purple red	Blue/Purple red
Push Rod	Green	Red	Green	Red	Light Blue
Contact No.	3-4	1-2	1st deck: 13-14 2nd deck: 23-24	1st deck: 11-12 2nd deck: 21-22	1st deck: 13-14 2nd deck: 21-22
Weight	8g		16g		

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LED Illuminated Part Specifications

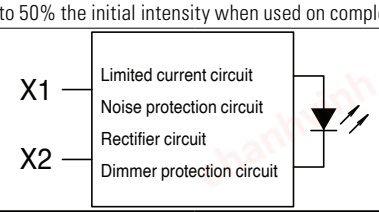
Illuminated Pushbuttons, Illuminated Selector Switches, Dual Pushbuttons (with pilot light)

Rated Voltage	Operating Voltage		LED Lamp	
			Ramp Base	Part No.
6V AC/DC	6V AC/DC	±10%	BA9S/13	LSRD-6
12V AC/DC	12V AC/DC			LSRD-1
24V AC/DC	24V AC/DC			LSRD-2
100/120V AC/DC	100/120V AC/DC			LSRD-H2
200/220V AC	200/220V AC			LSRD-M2
230/240V AC	230/240V AC	207~250V		LSRD-M4

Pilot Light (Short Body)

Rated Voltage		Operating Voltage		LED Lamp	
				Ramp Base	Part No.
6V AC/DC		6V AC/DC	±10%	BA9S/13	LSRD-6
12V AC/DC		12V AC/DC			LSRD-1
24V AC/DC		24V AC/DC			LSRD-2
100/120V AC	50/60Hz	100/120V AC			LSRD-6
200/240V AC		200/240V AC			

LED Lamp Ratings

Part No.		LSRD-6	LSRD-1	LSRD-2	LSRD-H2	LSRD-M2	LSRD-M4
Ramp Base		BA9S/13					
Rated Voltage		6V AC/DC	12V AC/DC	24V AC/DC	100/120V AC/DC	200/220V AC	230/240V AC
Voltage Range		6V AC/DC ±10%	12V AC/DC ±10%	24V AC/DC ±10%	100/120V AC/DC ±10%	200/220V AC ±10%	230/240V AC ±10%
Current Draw	DC	10mA	7mA	7mA	2mA	2mA	2mA
	AC	14mA	8mA	8mA	2mA	2mA	2mA
Life (reference value)		Approx. 50,000 hours (The luminance is reduced to 50% the initial intensity when used on complete DC at 25°C.)					
Internal Circuit							

Direct Opening of Key Selector Switch

Applicable Type	2-position	3-position
Minimum Operator Angle for Direct Opening Action	60° (90° Maintained)	45°
Minimum Operator Torque for Direct Opening Action	0.4 N·m	
Maximum Operator Angle	60° (90° Maintained)	45°

Degree of Protection

IEC60529

Unit	IEC 60529
All models except Illuminated selector switches, dual pushbuttons, pilot lights	IP65 (*1)
Illuminated selectors, pilot lights	IP65
Dual pushbuttons	IP40 (*2)

*1) When using a nameplate with the HW series, IP65 protection degree is achieved only when nameplates shown on page 780 are used.
(IP40 when other ø22 namplates such as NWA are used)
*2) IP65 when used with button covers (HW9Z-D7D).

UL50

Unit	UL50
All models except illuminated selector switches	Type 4X (*3)(*4)

*3) When using a nameplate with the HW series, IP65 protection degree is achieved only when nameplates shown on page 780 are used.
*4) For dual pushbuttons, Type 4X is acheived when used with button covers (HW9Z-D7D).

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Specifications

Switches (except for emergency stop switch)

Operating Temperature	–25 to +60°C (no freezing) Illuminated unit: –25 to +50°C
Operating Humidity	45 to 85% RH (no condensation)
Storage Temperature	–40 to +80°C (no freezing)
Contact Resistance	50 mΩ maximum (initial value)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Overvoltage Category	II
Impulse Withstand Voltage	4.0kV Illuminated unit: 2.5kV
Pollution Degree	3 (IEC60947-5-1)
Dielectric Strength	Between live and dead parts: 2500V AC, 1 minute
Vibration Resistance	Damage limits: 30 Hz, amplitude 1.5 mm Operating extremes: 5 to 55Hz, amplitude 0.5 mm
Shock Resistance	Damage limits: 1,000 m/s^2 Operating extremes: 100 m/s^2
Degree of Protection	Terminal: Finger-safe (IP20) structure Panel front: IP65 (IEC 60529), UL Type 4X
Recommended Tightening Torque for Locking Ring	2.0N·m
Terminal Style	Push-in terminal
Mechanical Life (minimum operations)	Pushbuttons, Illuminated Pushbuttons Momentary 5,000,000 (*5) 1,000,000 (*6) Maintained 500,000 (*5) 100,000 (*6) Dual pushbuttons 500,000 (*5) 100,000 (*6) Selector switches 500,000 (*5) 100,000 (*6) Key selector switches (Disc tumbler) 500,000 (*5) 100,000 (*6) Key selector switches (Pin tumbler) 100,000 (*5) 100,000 (*6) Illuminated selector switches 500,000 (*5) 100,000 (*6) Selector pushbuttons 250,000 (*5) 100,000 (*6) Monolever switches 250,000 (*5) 100,000 (*6)
Electrical Life (*5)	Pushbuttons, Illuminated Pushbuttons Momentary 500,000 (*1)(*5) 50,000 (*1)(*6) Maintained 500,000 (*3)(*5) 50,000 (*3)(*6) Dual pushbuttons 500,000 (*1)(*5) 50,000 (*1)(*6) Selector switches 500,000 (*2)(*5) 50,000 (*2)(*6) Key selector switches (Disc tumbler) 500,000 (*2)(*5) 50,000 (*2)(*6) Key selector switches (Pin tumbler) 100,000 (*2)(*5) 50,000 (*2)(*6) Illuminated selector switches 500,000 (*2)(*5) 50,000 (*2)(*6) Selector pushbuttons 250,000 (*2)(*5) 50,000 (*2)(*6) Monolever switches 250,000 (*3)(*5) 50,000 (*3)(*6)
Weight (approx.)	38g (HW1B-M1P11), 54g (HW1B-M1P22) 38g (HW1S-2TP11), 54g (HW1S-2TP22) 76g (HW1K-2AP11), 92g (HW1K-2AP22N2) 66g (HW1K-2PCP11), 45g (HW1L-M1P11Q4) 44g (HW1F-2P11Q4), 43g (HW1R-2AP11) 55g (HW1M-1010P-20), 45g (HW7D-B11P1001)

*1) Switching frequency 1,800 operations/h, duty ratio 40%
*2) Switching frequency 1,200 operations/h, duty ratio 40%
*3) Switching frequency 900 operations/h, duty ratio 40%
*4) Load condition 220V AC, 3A (AC-15)
*5) Single contact block
*6) Double contact block

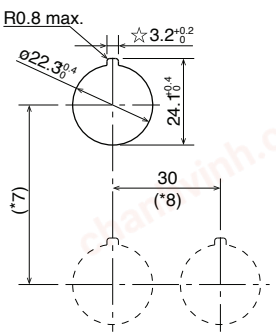
Pilot lights

Operating Temperature	–25 to +50°C (no freezing)
Operating Humidity	45 to 85% RH (no condensation)
Storage Temperature	–40 to +80°C (no freezing)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Overvoltage Category	II
Impulse Withstand Voltage	2.5kV
Pollution Degree	3
Dielectric Strength	Between live and dead parts: 2000V AC, 1 minute
Vibration Resistance	Damage limits: 30 Hz, amplitude 1.5 mm Operating extremes: 5 to 55Hz, amplitude 0.5 mm
Shock Resistance	Damage limits: 1,000 m/s^2 Operating extremes: 100 m/s^2
Degree of Protection	Terminal: Finger-safe (IP20) structure Panel front: IP65 (IEC 60529), UL Type 4X
Recommended Tightening Torque for Locking Ring	2.0N·m
Terminal Style	Push-in terminal
Weight (approx.)	26g (HW1P-2JPQ4) 27g (HW1P-2JPRH2) 28g (HW1P-2JPCM2)

Mounting Hole Layout

(Dimensions in mm)

Panel Cut (IEC60947-5-1)



- When high temperature is expected, take necessary measures such as securing sufficient mounting centers or using a cooling fan.
- The 3.2 mm recess is for preventing rotation and is not necessary when the nameplate or anti-rotation ring is not used.

Minimum Mounting Centers

(Dimensions in mm)

Unit	Vertical (*7)	Horizontal (*8)
ø40mm mushroom buttons	50	40
Selector pushbuttons	50	50
Monolever switches	72	72
Pilot lights	50	30
Dual pushbuttons	55	30
Illuminated selector switches	50	50

- For emergency stop switch mounting centers, see page 776.
- Determine the mounting cetners in consideration of the operation, wiring, and testing terminals.

Ordering Information

- Specify the Ordering No. when ordering.
  When ordering, specify button color, lens color, key removal specification, or key number codes.
- Some combinations cannot be ordered. For details, contact IDEC.
- Nameplates and accessories for mono-lever switch are ordered separately. See page 780 to 785.

Illuminated / non-illuminated buzzer specifications: see page 775
Emergency stop switch specifications: see page 776

Pushbuttons

Assembled



Package Quantity: 1

Name / Shape	Operation	Contact Configuration	Part No. Coded	⑤ Color Code
Flush HW1B-M1 / HW1B-A1  HW1B-A1 / HW4B-A1	Momentary	1NO	**HW1B-M1P10⑤** HW4B-M1P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	**HW1B-M1P01⑤** HW4B-M1P01⑤	
		1NO-1NC	**HW1B-M1P11⑤** HW4B-M1P11⑤	
		2NO	**HW1B-M1P20⑤** HW4B-M1P20⑤	
		2NC	**HW1B-M1P02⑤** HW4B-M1P02⑤	
		2NO-2NC	HW1B-M1P22⑤ HW4B-M1P22⑤	
	Maintained	1NO	HW1B-A1P10⑤ HW4B-A1P10⑤	
Extended HW1B-M2 / HW4B-M2 	Momentary	1NO	HW1B-M2P10⑤ HW4B-M2P10⑤	
		1NC	HW1B-M2P01⑤ HW4B-M2P01⑤	
		1NO-1NC	HW1B-M2P11⑤ HW4B-M2P11⑤	

• For other configurations, select from sub-assembled units (page 13 to 14).

Pushbuttons Part No. Example

Assembled and sub-assembled unit

Assembled

HW1B - M 1 P 10 B

①Bezel shape code
1: Round black
2: Square black
4: Round metal

②Operation code
M: Momentary
A: Maintained

③Button style code
1: Flush
2: Extended
3: ø29mm Mushroom
4: ø40mm Mushroom
5: ø60mm Mushroom

④Contact configuration code
10: 1NO
01: 1NC
11: 1NO-1NC
20: 2NO
02: 2NC
22: 2NO-2NC

⑤Button color code (see the table above)

• For available assembled products, see above table.

Package Quantity: 1

Name / Shape	Operation	Contact Configuration	Part No. Coded	⑤ Color Code
ø60mm Mushroom HW1B-M5	Momentary	1NO	**HW1B-M5P10⑤**	B (black) G (green) R (red) Y (yellow) S (blue) * W (white) * * Not available for ø60mm
		1NC	**HW1B-M5P01⑤**	
ø40mm Mushroom HW1B-M4 / HW4B-M4 	Momentary	1NO	**HW1B-M4P10⑤** **HW4B-M4P10⑤**	
		1NC	**HW1B-M4P01⑤** **HW4B-M4P01⑤**	
		1NC-1NC	**HW1B-M4P11⑤** **HW4B-M4P11⑤**	

• Specify a button color code in place of ⑤ in the Part No.
• Pushbuttons with 1 contact block contain 2 dummy blocks. Pushbuttons with 2 contact blocks contain 1 dummy block.
• When requiring flush type maintained switches other than 1NO contact configuration, select from sub-assembled product.

Operator unit

MW1B - M 1 - B

①Bezel shape code
1: Round black
2: Square black
4: Round metal

②Operation code
M: Momentary
A: Maintained

③Button style code
1: Flush
2: Extended
3: ø29mm Mushroom
4: ø40mm Mushroom
5: ø60mm Mushroom

⑤Button color code

Contact unit

HW- CN P 10

④Contact configuration code
(see page 743)

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Pushbuttons

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 742 for available assembled products.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)






Sub-Assembled Ordering No.

Package Quantity: 1

Name / Shape	Operation	Contact Configuration	<Reference> Assembled Part No. ① = 1 or 4	⑤ Button Color Code
Flush 	Momentary	1NO	HW①B-M1P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	HW①B-M1P01⑤	
		1NO-1NC	HW①B-M1P11⑤	
		2NO	HW①B-M1P20⑤	
		2NC	HW①B-M1P02⑤	
		2NO-2NC	HW①B-M1P22⑤	
	Maintained	1NO	HW①B-A1P10⑤	
		1NC	HW①B-A1P01⑤	
		1NO-1NC	HW①B-A1P11⑤	
		2NO	HW①B-A1P20⑤	
		2NC	HW①B-A1P02⑤	
		2NO-2NC	HW①B-A1P22⑤	
Flush 	Momentary	1NO	HW①B-M2P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	HW①B-M2P01⑤	
		1NO-1NC	HW①B-M2P11⑤	
		2NO	HW①B-M2P20⑤	
		2NC	HW①B-M2P02⑤	
		2NO-2NC	HW①B-M2P22⑤	
	Maintained	1NO	HW①B-A2P10⑤	
		1NC	HW①B-A2P01⑤	
		1NO-1NC	HW①B-A2P11⑤	
		2NO	HW①B-A2P20⑤	
		2NC	HW①B-A2P02⑤	
		2NO-2NC	HW①B-A2P22⑤	
ø29mm Mushroom 	Momentary	1NO	HW①B-M3P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	HW①B-M3P01⑤	
		1NO-1NC	HW①B-M3P11⑤	
		2NO	HW①B-M3P20⑤	
		2NC	HW①B-M3P02⑤	
		2NO-2NC	HW①B-M3P22⑤	
	Maintained	1NO	HW①B-A3P10⑤	
		1NC	HW①B-A3P01⑤	
		1NO-1NC	HW①B-A3P11⑤	
		2NO	HW①B-A3P20⑤	
		2NC	HW①B-A3P02⑤	
		2NO-2NC	HW①B-A3P22⑤	

Operator Unit	
Name / Shape	Part No.
Flush 	HW①B-M1-⑤
	HW①B-A1-⑤
Extended 	HW①B-M2-⑤
	HW①B-A2-⑤
ø29mm Mushroom 	HW①B-M3-⑤
	HW①B-A3-⑤

Contact Unit		
Shape	Contact Configuration	Part No. (Ordering No.)
	1NO	HW-CNP10
	1NC	HW-CNP01
	1NO-1NC	HW-CNP11
	2NO	HW-CNP20
	2NC	HW-CNP02
	2NO-2NC	HW-CNP22
	1NO	HW-CNP10
	1NC	HW-CNP01
	1NO-1NC	HW-CNP11
	2NO	HW-CNP20
	2NC	HW-CNP02
	2NO-2NC	HW-CNP22
	1NO	HW-CNP10
	1NC	HW-CNP01
	1NO-1NC	HW-CNP11
	2NO	HW-CNP20
	2NC	HW-CNP02
	2NO-2NC	HW-CNP22

- Specify a bezel type code in place of ① in the Part No. See page 12.
- Specify a button color code in place of ⑤ in the Part No.
  B (black), G (green), R (red), Y (yellow), S (blue), W (white)

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

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Pushbuttons

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 742 for available assembled products.

Package Quantity: 1

Name / Shape	Operation	Contact Configuration	<Reference> Assembled Part No. ① = 1 or 4	⑤ Button Color Code
ø40mm Mushroom 	Momentary	1NO	HW①B-M4P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	HW①B-M4P01⑤	
		1NO-1NC	HW①B-M4P11⑤	
		2NO	HW①B-M4P20⑤	
		2NC	HW①B-M4P02⑤	
		2NO-2NC	HW①B-M4P22⑤	
	Maintained	1NO	HW①B-A4P10⑤	
		1NC	HW①B-A4P01⑤	
		1NO-1NC	HW①B-A4P11⑤	
		2NO	HW①B-A4P20⑤	
		2NC	HW①B-A4P02⑤	
		2NO-2NC	HW①B-A4P22⑤	
ø60mm Mushroom 	Momentary	1NO	HW1B-M5P10⑤	B (black) G (green) R (red) Y (yellow)
		1NC	HW1B-M5P01⑤	
		1NO-1NC	HW1B-M5P11⑤	
		2NO	HW1B-M5P20⑤	
		2NC	HW1B-M5P02⑤	
		2NO-2NC	HW1B-M5P22⑤	
Square Flush 	Momentary	1NO	HW2B-M1P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	HW2B-M1P01⑤	
		1NO-1NC	HW2B-M1P11⑤	
		2NO	HW2B-M1P20⑤	
		2NC	HW2B-M1P02⑤	
		2NO-2NC	HW2B-M1P22⑤	
	Maintained	1NO	HW2B-A1P10⑤	
		1NC	HW2B-A1P01⑤	
		1NO-1NC	HW2B-A1P11⑤	
		2NO	HW2B-A1P20⑤	
		2NC	HW2B-A1P02⑤	
		2NO-2NC	HW2B-A1P22⑤	
Square Extended 	Momentary	1NO	HW2B-M2P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	HW2B-M2P01⑤	
		1NO-1NC	HW2B-M2P11⑤	
		2NO	HW2B-M2P20⑤	
		2NC	HW2B-M2P02⑤	
		2NO-2NC	HW2B-M2P22⑤	
	Maintained	1NO	HW2B-A2P10⑤	
		1NC	HW2B-A2P01⑤	
		1NO-1NC	HW2B-A2P11⑤	
		2NO	HW2B-A2P20⑤	
		2NC	HW2B-A2P02⑤	
		2NO-2NC	HW2B-A2P22⑤	

Sub-Assembled Ordering No.

Operator Unit	
Name / Shape	Part No.
ø40mm Mushroom 	HW①B-M4-⑤
	HW①B-A4-⑤
ø60mm Mushroom 	HW1B-M5-⑤ (*1)
Square Flush 	HW2B-M1-⑤
	HW2B-A1-⑤
Square Extended 	HW2B-M2-⑤
	HW2B-A2-⑤

Contact Unit		
Shape	Contact Configuration	Part No. (Ordering No.)
	1NO	HW-CNP10
	1NC	HW-CNP01
	1NO-1NC	HW-CNP11
	2NO	HW-CNP20
	2NC	HW-CNP02
	2NO-2NC	HW-CNP22

- Specify a bezel type code in place of ① in the Part No. See page 742.
- Specify a button color code in place of ⑤ in the Part No.
  B (black), G (green), R (red), Y (yellow), S (blue), W (white)

*1) Only B (black), G (green), R (red), Y (yellow) available for ø60mm mushroom. The anti-rotation ring P/N: HW9Z-RL is **not** included with the operator and can be purchased separately.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

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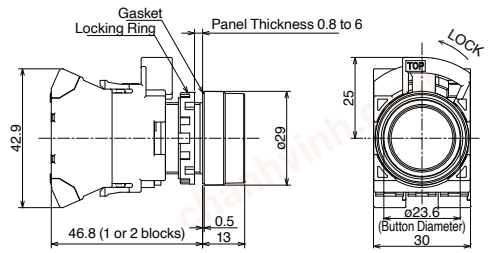
Pushbuttons Dimensions

All dimensions in mm.

Flush

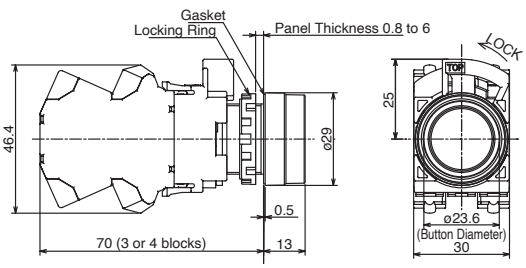
1 to 2 contacts

HW1B-☐1P



3 to 4 contacts

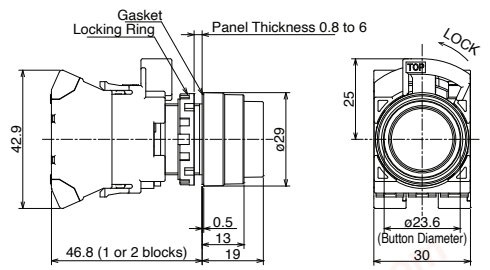
HW1B-☐1P



Extended

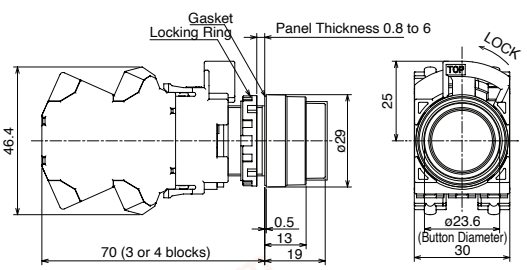
1 to 2 contacts

HW1B-☐2P



3 to 4 contacts

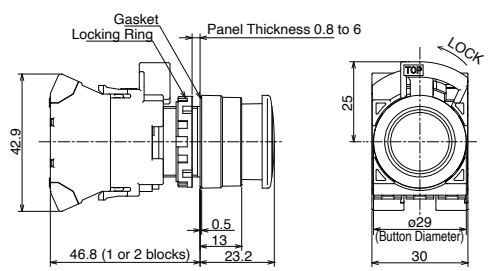
HW1B-☐2P



ø29mm Mushroom

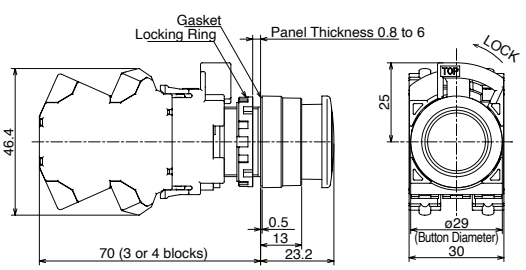
1 to 2 contacts

HW1B-☐3P



3 to 4 contacts

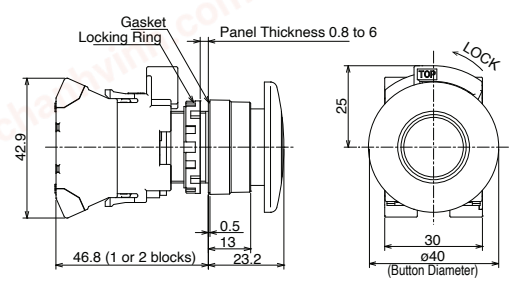
HW1B-☐3P



ø40mm Mushroom

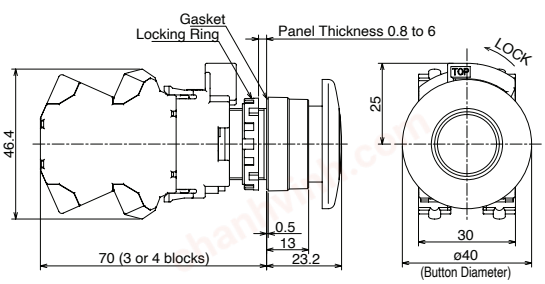
1 to 2 contacts

HW1B-☐4P



3 to 4 contacts

HW1B-☐4P



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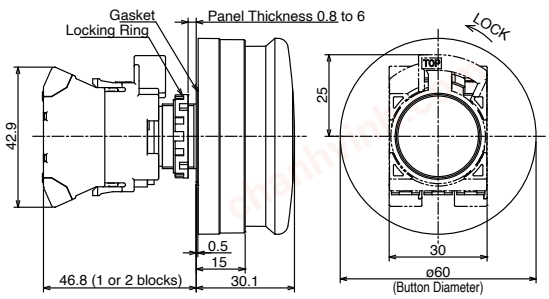
Pushbuttons Dimensions

All dimensions in mm.

ø60mm Mushroom

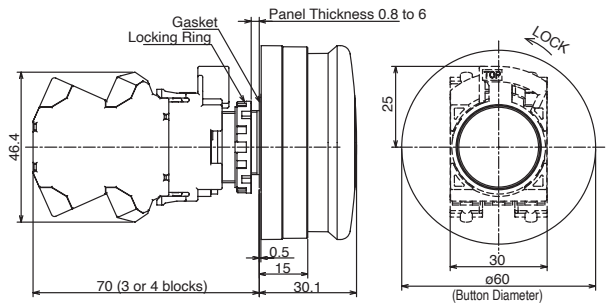
1 to 2 contacts

HW1B-M5P



3 to 4 contacts

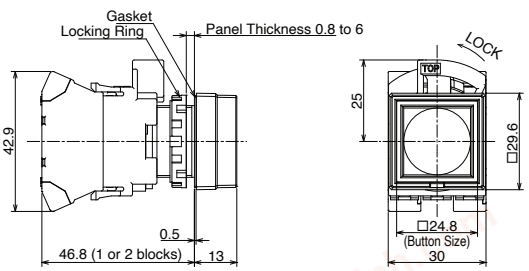
HW1B-M5P



Square Flush

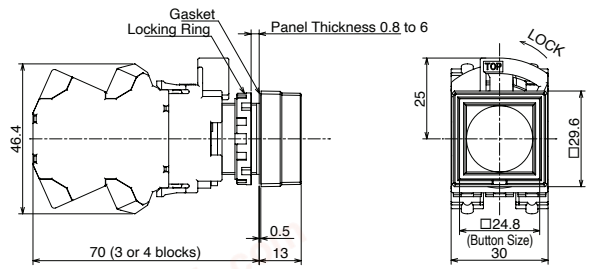
1 to 2 contacts

HW2B-☐1P



3 to 4 contacts

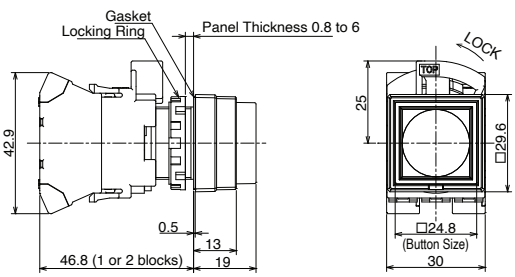
HW2B-☐1P



Square Extended

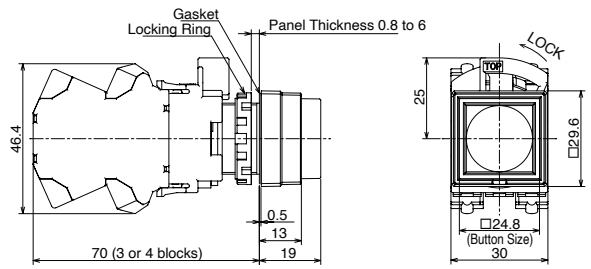
1 to 2 contacts

HW2B-☐2P



3 to 4 contacts

HW2B-☐2P



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Illuminated Pushbuttons

Assembled



Package Quantity: 1

Name / Shape	Operation	Rated Voltage	Contact Configuration	Part No. (coded) ① = 1 or 4	⑥ Illumination Color Code
Round Flush (marking) HW1L-M1 HW1L-A1 HW4L-M1 HW4L-A1 	Momentary	24V AC/DC	1NO	HW①L-M1P10Q4⑥	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
			1NO-1NC	HW①L-M1P11Q4⑥	
		100/120V AC/DC	1NO	HW①L-M1P10QH2⑥	
	Maintained	24V AC/DC	1NO	HW①L-A1P10Q4⑥	
			1NO-1NC	HW①L-A1P11Q4⑥	
			2NO	HW①L-A1P20Q4⑥	
Round Extended (marking) HW1L-M2 / HW4L-M2 	Momentary	24V AC/DC	1NO	HW①L-M2P10Q4⑥	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
			1NO-1NC	HW①L-M2P11Q4⑥	
Round Extended with Full Shroud (marking) HW1L-MF2 	Momentary	24V AC/DC	1NO	HW①L-MF2P10Q4⑥	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
		100/120V AC/DC	1NO	HW①L-MF2P10QH2⑥	
Square Flush (marking) HW2L-M1 	Momentary	24V AC/DC	1NO	**HW2L-M1P10Q4⑥**	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
			1NO-1NC	**HW2L-M1P11Q4⑥**	

- Specify a bezel type code in place of ① in the Part No. See page 742.
- Specify an illumination color code in place of ⑥ in the Part No.

- For other configurations, select from sub-assembled units (page 748 to 749).

Illuminated Pushbuttons

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 747 for available assembled products.

Assembled = Operator unit + LED lamp + Contact unit (illuminated) (Contact block, LED module, connecting unit)







Name / Shape	Operation	Contact Configuration	<Reference> Assembled Part No. ① = 1 or 4	⑥ Illumination Color Code
Round Flush (marking) 	Momentary	1NO	HW①L-M1P10⑤⑥	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
		1NC	HW①L-M1P01⑤⑥	
		1NO-1NC	HW①L-M1P11⑤⑥	
		2NO	HW①L-M1P20⑤⑥	
		2NC	HW①L-M1P02⑤⑥	
		2NO-2NC	HW①L-M1P22⑤⑥	
	Maintained	1NO	HW①L-A1P10⑤⑥	
		1NC	HW①L-A1P01⑤⑥	
		1NO-1NC	HW①L-A1P11⑤⑥	
		2NO	HW①L-A1P20⑤⑥	
		2NC	HW①L-A1P02⑤⑥	
		2NO-2NC	HW①L-A1P22⑤⑥	
Round Extended (marking) 	Momentary	1NO	HW①L-M2P10⑤⑥	
		1NC	HW①L-M2P01⑤⑥	
		1NO-1NC	HW①L-M2P11⑤⑥	
		2NO	HW①L-M2P20⑤⑥	
		2NC	HW①L-M2P02⑤⑥	
		2NO-2NC	HW①L-M2P22⑤⑥	
	Maintained	1NO	HW①L-A2P10⑤⑥	
		1NC	HW①L-A2P01⑤⑥	
		1NO-1NC	HW①L-A2P11⑤⑥	
		2NO	HW①L-A2P20⑤⑥	
		2NC	HW①L-A2P02⑤⑥	
		2NO-2NC	HW①L-A2P22⑤⑥	
Round Extended with Full Shroud (marking) 	Momentary	1NO	HW①L-MF2P10⑤⑥	
		1NC	HW①L-MF2P01⑤⑥	
		1NO-1NC	HW①L-MF2P11⑤⑥	
		2NO	HW①L-MF2P20⑤⑥	
		2NC	HW①L-MF2P02⑤⑥	
		2NO-2NC	HW①L-MF2P22⑤⑥	
	Maintained	1NO	HW①L-AF2P10⑤⑥	
		1NC	HW①L-AF2P01⑤⑥	
		1NO-1NC	HW①L-AF2P11⑤⑥	
		2NO	HW①L-AF2P20⑤⑥	
		2NC	HW①L-AF2P02⑤⑥	
		2NO-2NC	HW①L-AF2P22⑤⑥	

- Specify a bezel type code in place of ① in the Part No. See page 742.
- Specify a rated voltage code in place of ⑤ in the Part No.

Code	Rated voltage	Code	Rated voltage
Q2	6V AC/DC	**QH2**	100/120V AC/DC
Q3	12V AC/DC	**QM**	200/220V AC
Q4	24V AC/DC	**QM4**	230/240V AC

- Specify an illumination color code in place of ⑥ in the Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

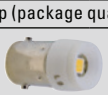
Sub-Assembled Ordering No.

Package Quantity: 1

Operator unit	
Name / Shape	<Reference> Assembled Part No. ① = 1 or 4
Round Flush (marking) 	HW①L-M1⑥-PI-USA
	HW①L-A1⑥-PI-USA
Round Extended (marking) 	HW①L-M2⑥-PI-USA
	HW①L-A2⑥-PI-USA
Round Extended with Full Shroud (marking) 	HW①L-MF2⑥-PI-USA
	HW①L-AF2⑥-PI-USA

Contact Unit		
Shape	Contact Configuration	Part No. (Ordering No.)
	1NO	HW-CNP10Q0
	1NC	HW-CNP01Q0
	1NO-1NC	HW-CNP11Q0
	2NO	HW-CNP20Q0
	2NC	HW-CNP02Q0
	2NO-2NC	HW-CNP22Q0
	1NO	HW-CNP10Q0
	1NC	HW-CNP01Q0
	1NO-1NC	HW-CNP11Q0
	2NO	HW-CNP20Q0
	2NC	HW-CNP02Q0
	2NO-2NC	HW-CNP22Q0
	1NO	HW-CNP10Q0
	1NC	HW-CNP01Q0
	1NO-1NC	HW-CNP11Q0
	2NO	HW-CNP20Q0
	2NC	HW-CNP02Q0
	2NO-2NC	HW-CNP22Q0

Note) LED lamp is not supplied. When ordering contact units (illuminated) selected LED from below table.

LED lamp (package quantity:1)	
	
Rated Voltage	Part No. (Ordering No.)
6V AC/DC	LSRD-6
12V AC/DC	LSRD-1
24V AC/DC	LSRD-2
100/120V AC/DC	LSRD-H2
200/220V AC	LSRD-M2
230/240V AC	LSRD-M4

For Part No. (Ordering No.)/ mounting positions of contact units, see page 782.

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Illuminated Pushbuttons

Name / Shape	Operation	Contact Configuration	<Reference> Assembled Part No. ① = 1 or 4	⑥ Color Code
Square Flush (marking) 	Momentary	1NO	**HW2L-M1P10⑤⑥**	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
		1NC	**HW2L-M1P01⑤⑥**	
		1NO-1NC	**HW2L-M1P11⑤⑥**	
		2NO	**HW2L-M1P20⑤⑥**	
		2NC	**HW2L-M1P02⑤⑥**	
		2NO-2NC	**HW2L-M1P22⑤⑥**	
	Maintained	1NO	**HW2L-A1P10⑤⑥**	
		1NC	**HW2L-A1P01⑤⑥**	
		1NO-1NC	**HW2L-A1P11⑤⑥**	
		2NO	**HW2L-A1P20⑤⑥**	
		2NC	**HW2L-A1P02⑤⑥**	
		2NO-2NC	**HW2L-A1P22⑤⑥**	
ø29 Mushroom (marking) 	Momentary	1NO	HW①L-M3P10⑤⑥	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
		1NC	HW①L-M3P01⑤⑥	
		1NO-1NC	HW①L-M3P11⑤⑥	
		2NO	HW①L-M3P20⑤⑥	
		2NC	HW①L-M3P02⑤⑥	
		2NO-2NC	HW①L-M3P22⑤⑥	
	Maintained	1NO	HW①L-A3P10⑤⑥	
		1NC	HW①L-A3P01⑤⑥	
		1NO-1NC	HW①L-A3P11⑤⑥	
		2NO	HW①L-A3P20⑤⑥	
		2NC	HW①L-A3P02⑤⑥	
		2NO-2NC	HW①L-A3P22⑤⑥	
ø40 Jumbo Mushroom (marking) 	Momentary	1NO	HW①L-M4P10⑤⑥	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
		1NC	HW①L-M4P01⑤⑥	
		1NO-1NC	HW①L-M4P11⑤⑥	
		2NO	HW①L-M4P20⑤⑥	
		2NC	HW①L-M4P02⑤⑥	
		2NO-2NC	HW①L-M4P22⑤⑥	
	Maintained	1NO	HW①L-A4P10⑤⑥	
		1NC	HW①L-A4P01⑤⑥	
		1NO-1NC	HW①L-A4P11⑤⑥	
		2NO	HW①L-A4P20⑤⑥	
		2NC	HW①L-A4P02⑤⑥	
		2NO-2NC	HW①L-A4P22⑤⑥	

- Specify a bezel type code in place of ① in the Part No. See page 742.
- Specify a rated voltage code in place of ⑤ in the Part No.

Code	Rated voltage	Code	Rated voltage
Q2	6V AC/DC	**QH2**	100/120V AC/DC
Q3	12V AC/DC	**QM**	200/220V AC
Q4	24V AC/DC	**QM4**	230/240V AC

- Specify an illumination color code in place of ⑥ in the Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

Sub-Assembled Ordering No.

Operator unit	
Name / Shape	<Reference> Assembled Part No. ① = 1 or 4
Square Flush (marking) 	**HW2L-M1**⑥-PI-USA
	HW2L-A1⑥-PI-USA
ø29 Mushroom (marking) 	HW①L-M3⑥-PI-USA
	HW①L-A3⑥-PI-USA
ø40 Jumbo Mushroom (marking) 	HW①L-M4⑥-PI-USA
	HW①L-A4⑥-PI-USA

Package Quantity: 1

Contact Unit		
Shape	Contact Configuration	Part No. (Ordering No.)
	1NO	**HW-CNP10Q0**
	1NC	**HW-CNP01Q0**
	1NO-1NC	**HW-CNP11Q0**
	2NO	**HW-CNP20Q0**
	2NC	**HW-CNP02Q0**
	2NO-2NC	**HW-CNP22Q0**
	1NO	**HW-CNP10Q0**
	1NC	**HW-CNP01Q0**
	1NO-1NC	**HW-CNP11Q0**
	2NO	**HW-CNP20Q0**
	2NC	**HW-CNP02Q0**
	2NO-2NC	**HW-CNP22Q0**
	1NO	**HW-CNP10Q0**
	1NC	**HW-CNP01Q0**
	1NO-1NC	**HW-CNP11Q0**
	2NO	**HW-CNP20Q0**
	2NC	**HW-CNP02Q0**
	2NO-2NC	**HW-CNP22Q0**

Note) LED lamp is not supplied. When ordering contact units (illuminated) selected LED from below table.

LED lamp (package quantity:1)	
	
Rated Voltage	Part No. (Ordering No.)
6V AC/DC	**LSRD-6**
12V AC/DC	**LSRD-1**
24V AC/DC	**LSRD-2**
100/120V AC/DC	**LSRD-H2**
200/220V AC	**LSRD-M2**
230/240V AC	**LSRD-M4**

For Part No. (Ordering No.)/ mounting positions of contact units, see page 782.

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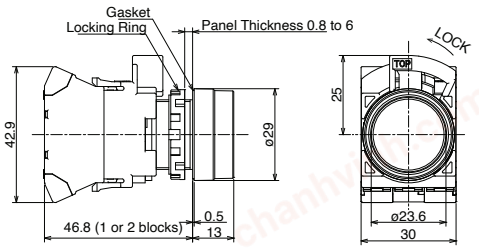
Illuminated Pushbuttons Dimensions

All dimensions in mm.

Round Flush

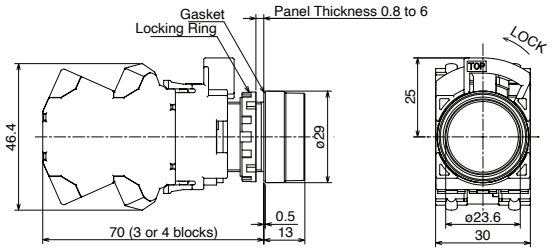
1 to 2 contacts

HW1L-☐1P



3 to 4 contacts

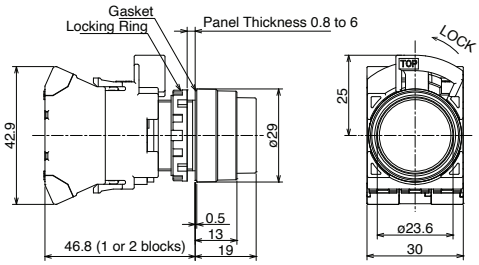
HW1L-☐1P



Round Extended

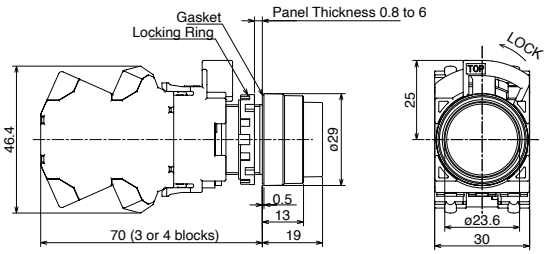
1 to 2 contacts

HW1L-☐2P



3 to 4 contacts

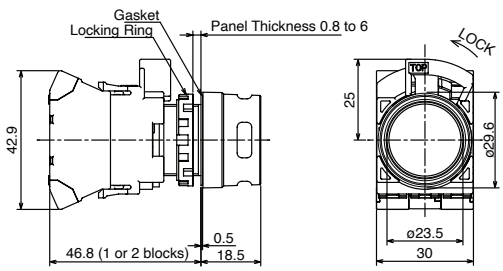
HW1L-☐2P



Round Extended with Full Shroud

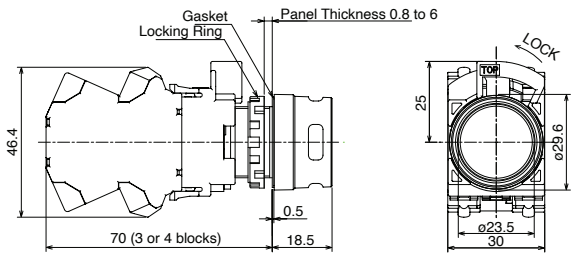
1 to 2 contacts

HW1L-☐F2P



3 to 4 contacts

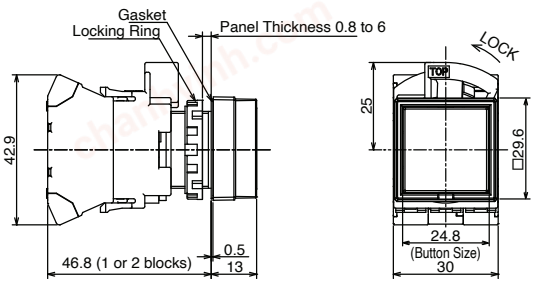
HW1L-☐F2P



Square Flush

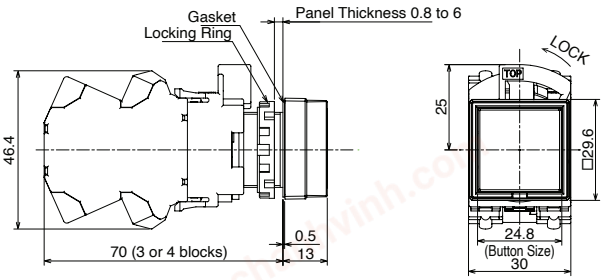
1 to 2 contacts

HW2L-☐1P



3 to 4 contacts

HW2L-☐1P



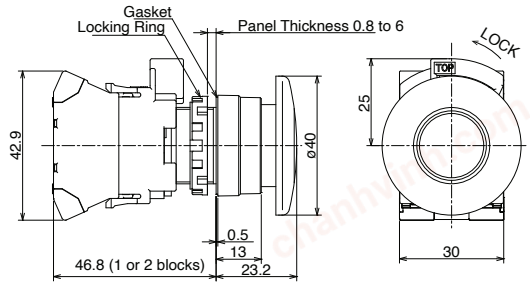
Illuminated Pushbuttons Dimensions

All dimensions in mm.

ø29 Mushroom

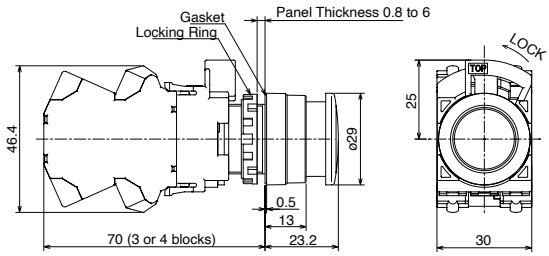
1 to 2 contacts

HW1L-☐3P



3 to 4 contacts

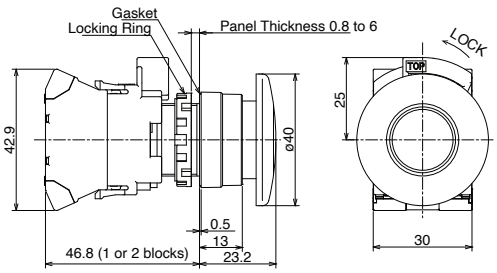
HW1L-☐3P



ø40 Jumbo Mushroom

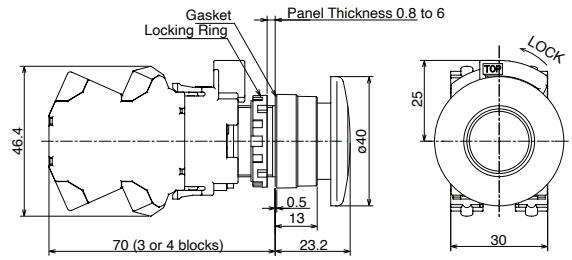
1 to 2 contacts

HW1L-☐4P



3 to 4 contacts

HW1L-☐4P



Illuminated Pushbuttons Part No. Example

Assembled and sub-assembled unit

Assembled

HW1L - M 1 P 11 Q4 R

①Bezel shape code
- **1**: Round black
- **2**: Square black
- **4**: Round Metal

②Operation code
- **M**: Momentary
- **A**: Maintained

③Button style code
- **1**: Flush
- **2**: Extended
- **F2**: Round Extended with full Shroud
- **3**: ø29mm Mushroom
- **4**: ø40mm Mushroom

④Contact configuration code
- **10**: 1NO
- **01**: 1NC
- **11**: 1NO1NC
- **20**: 2NO
- **02**: 2NC
- **22**: 2NO-2NC

⑤Rated voltage code
- **Q2 : 6V AC/DC**
- **Q3 : 12V AC/DC**
- **Q4 : 24V AC/DC**
- **QH2: 100/120V AC/DC**
- **QM : 200/220V AC**
- **QM4 : 230/240V AC**

⑥Button color code (see page 747)

• For available assembled products, see table on page 747.

Operator unit

HW1L - M 1 R - PI-USA

①Bezel shape code
- **1**: Round black
- **2**: Square black
- **4**: Round metal

②Operation code
- **M**: Momentary
- **A**: Maintained

③Button style code
- **1**: Flush
- **2**: Extended
- **F2**: Round Extended with full Shroud
- **3**: ø29mm Mushroom
- **4**: ø40mm Mushroom

⑥Button color code (see page 748 & 749)

Contact unit (illuminated)

HW - CN P 10 Q0

④Contact configuration code (see page 748)

• **LED lamps are not supplied.**

LED lamp

LSRD - 6

⑤Rated voltage code
- **6 : 6V AC/DC**
- **1 : 12V AC/DC**
- **2 : 24V AC/DC**
- **H2 : 100/120V AC/DC**
- **M2: 200/220V AC**
- **M4: 230/240V AC**

Dual Pushbuttons without Pilot Light

Sub-Assembled

Dual pushbuttons can be purchased only as a sub-assembled product.

Assembled (Flush–Flush, Flush–Extended) = Operator unit + Contact unit (Contact block, dummy block, connecting unit)



Without Pilot Light

Sub-Assembled Ordering No.

Package Quantity: 1

<Reference>					Operator Unit	Contact Unit		
Operation	Button style	Contact Configuration		<Reference> Assembled Part No	Part No. (Ordering No.)	Contact Configuration		Part No. (Ordering No.)
		Top Button	Bottom Button			Top Button	Bottom Button	
Momentary	Flush–Flush	1NO	1NC	HW7D-B11P1001⑥⑦	HW7D-B11⑥⑦	1NO	1NC	HW-CNP11
		1NO	1NO	HW7D-B11P1010⑥⑦		1NO	1NO	HW-CNP20
		1NO-1NC	1NO-1NC	HW7D-B11P1111⑥⑦		1NO-1NC	1NO-1NC	HW-CNP22
		2NO	2NC	HW7D-B11P2002⑥⑦		2NO	2NC	HW-CNP22N1
	Flush–Extended	1NO	1NC	HW7D-B12P1001⑥⑦	HW7D-B12⑥⑦			
		1NO	1NO	HW7D-B12P1010⑥⑦				
		1NO-1NC	1NO-1NC	HW7D-B12P1111⑥⑦				
		2NO	2NC	HW7D-B12P2002⑥⑦				
Interlocking (*1)	Flush–Flush	1NO	1NC	HW7D-B21P1001⑥⑦	HW7D-B21⑥⑦	1NO	1NC	HW-CNP11
		1NO	1NO	HW7D-B21P1010⑥⑦		1NO	1NO	HW-CNP20
		1NO-1NC	1NO-1NC	HW7D-B21P1111⑥⑦		1NO-1NC	1NO-1NC	HW-CNP22
		2NO	2NC	HW7D-B21P2002⑥⑦		2NO	2NC	HW-CNP22N1
	Flush–Extended	1NO	1NC	HW7D-B22P1001⑥⑦	HW7D-B22⑥⑦			
		1NO	1NO	HW7D-B22P1010⑥⑦				
		1NO-1NC	1NO-1NC	HW7D-B22P1111⑥⑦				
		2NO	2NC	HW7D-B22P2002⑥⑦				

*1) Interlock: Momentary operation. When one of the buttons is pressed, the other button cannot be operated. Do not operate top and bottom buttons at the same time. Operating the buttons at the same time may lead to malfunctions.

- For contact mounting position, see page 781.
- Specify a code in place of ⑥⑦ in the Part No. See tables below

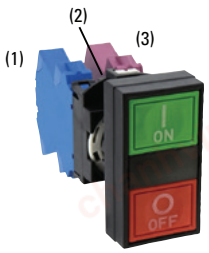
⑥Button Color Code

Code	
GR	Top Button Green Bottom Button Red
WB	Top Button White Bottom Button Black

⑦Button Legends Code

Code	
Blank	Blank
1	Top Button: I & ON / Bottom Button: O & OFF

Contact Block Mounting Position



Note) (2) can only be mounted with a dummy block.

Contact Configuration

Contact Configuration			Contact Block			Top Button		Bottom Button	
Top Button	Bottom Button	Code	Mounting Position	Contact		Nomal	Push	Nomal	Push
1NO	1NC	1001	(1)	NO			X		
			(3)	NC				X	
1NO	1NO	1010	(1)	NO			X		
			(3)	NO					X
1NO-1NC	1NO-1NC	1111	(1)	NONC	NO		X		
					NC	X			
			(3)	NONC	NO				X
					NC			X	
2NO	2NC	2002	(1)	2NO	NO		X		
					NO		X		
			(3)	2NC	NC			X	
					NC			X	

← Button Position
← Pushbutton Operation

Contact block (1) is actuated by the top button.
Contact block (3) is actuated by the bottom button.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

Dual Pushbuttons with Pilot Light

Sub-Assembled

Dual pushbuttons can be purchased only as a sub-assembled product.

Assembled (Flush–Flush, Flush–Extended) = Operator unit + LED Lamp + Contact unit (illuminated) (Contact block, LED module, connecting unit)








With Pilot Light

Sub-Assembled Ordering No.

Package Quantity: 1

<Reference>				
Operation	Button Style	Contact Configuration: Top Button	Contact Configuration: Bottom Button	<Reference> Assembled Part No
Momentary	Flush–Flush	1NO	1NC	HW7D-L11P1001PW⑥⑦
		1NO	1NO	HW7D-L11P1010PW⑥⑦
		1NO-1NC	1NO-1NC	HW7D-L11P1111PW⑥⑦
		2NO	2NC	HW7D-L11P2002PW⑥⑦
	Flush–Extended	1NO	1NC	HW7D-L12P1001PW⑥⑦
		1NO	1NO	HW7D-L12P1010PW⑥⑦
		1NO-1NC	1NO-1NC	HW7D-L12P1111PW⑥⑦
		2NO	2NC	HW7D-L12P1010PW⑥⑦
Interlocking (*1)	Flush–Flush	1NO	1NC	HW7D-L21P1001PW⑥⑦
		1NO	1NO	HW7D-L21P1010PW⑥⑦
		1NO-1NC	1NO-1NC	HW7D-L21P1111PW⑥⑦
		2NO	2NC	HW7D-L21P2002PW⑥⑦
	Flush–Extended	1NO	1NC	HW7D-L22P1001PW⑥⑦
		1NO	1NO	HW7D-L22P1010PW⑥⑦
		1NO-1NC	1NO-1NC	HW7D-L22P1111PW⑥⑦
		2NO	2NC	HW7D-L22P2002PW⑥⑦

Operator Unit: Part No. (Ordering No.)	
HW7D-L11⑥⑦	
HW7D-L12⑥⑦	
HW7D-L21⑥⑦	
HW7D-L22⑥⑦	

Contact Unit		
Contact Configuration: Top Button	Contact Configuration: Bottom Button	Part No. (Ordering No.)
1NO	1NC	HW-CNP11Q0
1NO	1NO	HW-CNP20Q0
1NO-1NC	1NO-1NC	HW-CNP22Q0
2NO	2NC	HW-CNP22N1Q0
1NO	1NC	HW-CNP11Q0
1NO	1NO	HW-CNP20Q0
1NO-1NC	1NO-1NC	HW-CNP22Q0
2NO	2NC	HW-CNP22N1Q0

*1) Interlock: Momentary operation. When one of the buttons is pressed, the other button cannot be operated.

- Do not operate top and bottom buttons at the same time. Operating the buttons at the same time may lead to malfunctions.
- For contact mounting position, see page 782.
- Specify a code in place of ⑥⑦ in the Part No. See tables below

Code	Rated Voltage	Code	Rated Voltage
Q2	6V AC/DC	QH2	100/120V AC/DC
Q3	12V AC/DC	QM	200/220V AC
Q4	24V AC/DC	QM4	230/240V AC

Note) LED lamp is not supplied. When ordering contact units (illuminated) selected LED from below table.

LED lamp (Package Quantity: 1)	
	
Rated Voltage	Part No. (Ordering No.)
6V AC/DC	LSRD-6
12V AC/DC	LSRD-1
24V AC/DC	LSRD-2
100/120V AC/DC	LSRD-H2
200/220V AC	LSRD-M2
230/240V AC	LSRD-M4

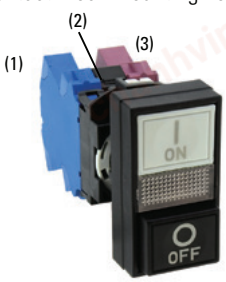
⑥Button Color Code

Code	
GR	Top Button Green Bottom Button Red
WB	Top Button White Bottom Button Black

⑦Button Legends Code

Code	
Blank	Blank
1	Top Button: I & ON / Bottom Button: O & OFF

Contact Block Mounting Position



Note) (2) can only be mounted with a full voltage adapter.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 782.

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Dual Pushbuttons

Dual Pushbuttons Part No. Example

Assembled and sub-assembled unit

Assembled (without pilot light)

HW7D - B 1 1 P 10 10 GR 1

①Operation code
1: Momentary
2: Interlocking

②Button style code
1: Flush–Flush
2: Flush–Extended

③Contact arrangement code (top button)

④Contact arrangement code (bottom button)

⑥Button color code
GR: Top Button Green
Bottom Button Red
WB: Top Button White
Bottom Button Black

⑦Button Legends Code
Blank: Blank
1: I & ON / O & OFF

Top button	Bottom button	Contact configuration	
		Top button	Bottom button
1NO	1NC	10	01
1NO	1NO	10	10
1NO-1NC	1NO-1NC	11	11
2NO	2NC	20	02

Operator unit (without pilot light)

HW7D - B 1 1 GR 1

①Operation code
1: Momentary
2: Interlocking

②Button style code
1: Flush–Flush
2: Flush–Extended

⑥Button color code
GR: Top Button Green
Bottom Button Red
WB: Top Button White
Bottom Button Black

⑦Button Legends Code
Blank: Blank
1: I & ON / O & OFF

Contact unit

HW- CN P 20

④Contact configuration code
(see page 752)

Assembled (with pilot light)

HW7D - L 1 1 P 11 20 QH2 PW GR 1

①Operation code
1: Momentary
2: Interlocking

②Button style code
1: Flush–Flush
2: Flush–Extended

③Contact arrangement code (top button)

④Contact arrangement code (bottom button)

⑤Rated voltage code
Q2: 6V AC/DC
Q3: 12V AC/DC
Q4: 24V AC/DC
QH2: 100/120V AC/DC
QM: 200-220V AC
QM4: 220-240V AC

⑥Button color code
GR: Top Button Green
Bottom Button Red
WB: Top Button White
Bottom Button Black

⑦Button Legends Code
Blank: Blank
1: I & ON / O & OFF

Top button	Bottom button	Contact configuration	
		Top button	Bottom button
1NO	1NC	10	01
1NO	1NO	10	10
1NO-1NC	1NO-1NC	11	11
2NO	2NC	20	02

Operator unit (with pilot light)

HW7D - L 1 1 PW GR 1

①Operation code
1: Momentary
2: Interlocking

②Button style code
1: Flush–Flush
2: Flush–Extended

⑥Button color code
GR: Top Button Green
Bottom Button Red
WB: Top Button White
Bottom Button Black

⑦Button Legends Code
Blank: Blank
1: I & ON / O & OFF

Contact unit (for illuminated unit)

HW- CN P 20 Q0

④Contact configuration code
(see page 753)

• **LED lamps are not supplied.**

LED Lamp

LSRD - 6

⑤Rated Voltage code

6	: 6V AC/DC	**H2**	: 100/120V AC/DC
1	: 12V AC/DC	**M2**	: 200/220V AC
2	: 24V AC/DC	**M4**	: 230/240V AC

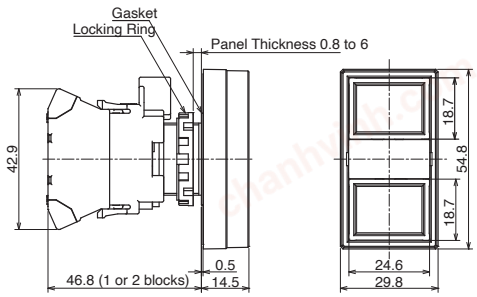
Dual Pushbuttons Dimensions

All dimensions in mm.

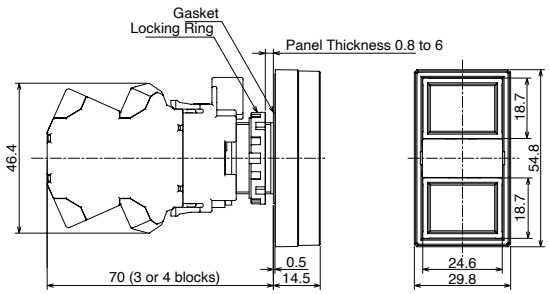
Without Pilot Light

Flush–Flush

1 to 2 contacts

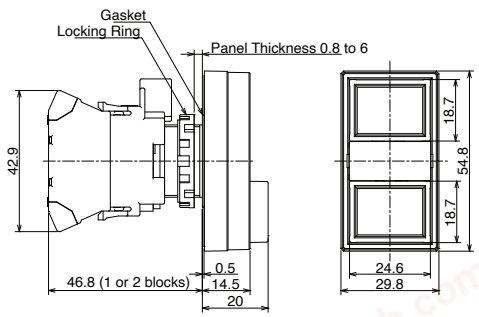


3 to 4 contacts

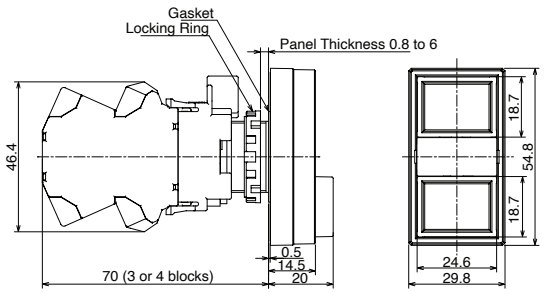


Flush–Extended

1 to 2 contacts



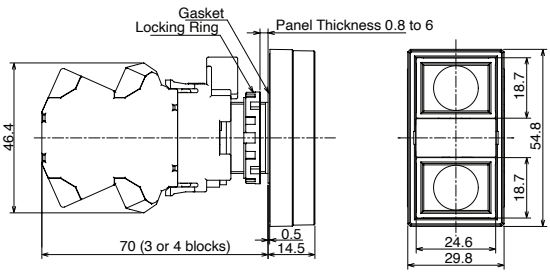
3 to 4 contacts



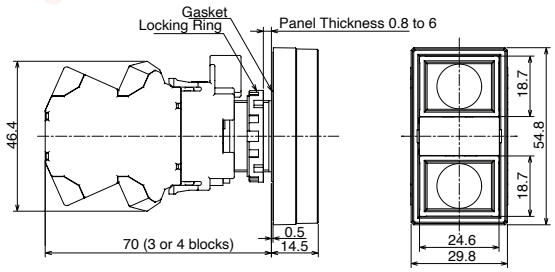
With Pilot Light

Flush–Flush

1 to 2 contacts

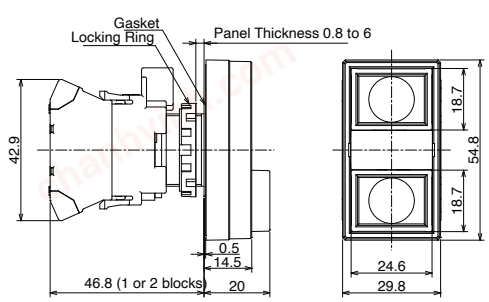


3 to 4 contacts

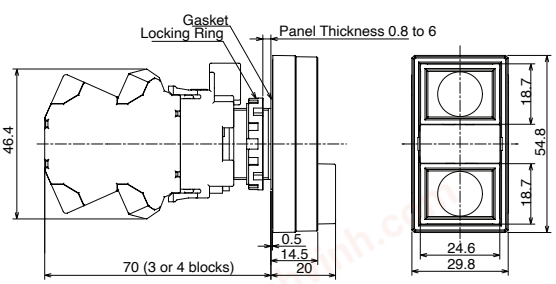


Flush–Extended

1 to 2 contacts



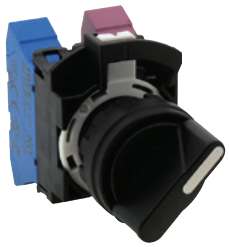
3 to 4 contacts



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Selector Switches (Knob Operator)

Assembled



Package Quantity: 1

Shape	No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 2	Operator Position: 0	Cam Code	Maintained	Spring return two-way
HW⓪S ⓪: Bezel Type 1: Black 2: Metal	90° 2-position	1NO (10)	(1)	NO		X		—	HW⓪S-2TP10	
			(3)	—	Dummy					
		1NC (01)	(1)	—	Dummy				HW⓪S-2TP01	
			(3)	NC	X					
		1NO-1NC (11)	(1)	NO		X			HW⓪S-2TP11	
			(3)	NC	X					
		2NO (20)	(1)	NO		X			HW⓪S-2TP20	
			(3)	NO		X				
		2NO-2NC (22)	(1)	NO		X			HW⓪S-2TP22	
				NC	X					
			(3)	NO		X				
				NC	X					
	45° 3-position	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 0	Operator Position: 2		Maintained	Spring return two-way
		2NO (20)	(1)	NO	X			—	HW⓪S-3TP20	HW⓪S-33TP20
			(3)	NO			X			
		2NO-1NC (21N1) ★☆	(1)	NO	X			J	HW⓪S-3JTP21N3	
				NC		X				
			(3)	NO			X			
		2NO-2NC (22)	(1)	NO	X			—	HW⓪S-3TP22	
				NC		X—X				
			(3)	NO			X			
				NC		X—X				
		4NO (40)	(1)	2NO	X				HW⓪S-3TP40	
					X					
			(3)	2NO			X			
							X			

- On the contact configuration marked with ★ in the table above, the rated load switching current is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.
- On the contact configuration marked with ☆ in the table above, contacts may overlap when the operator position is changed.
- Knob operator: white indicator on black body
- Selector switches with 1 contact block contain 2 dummy blocks. Selector switches with 2 contact blocks contain 1 dummy block.
- Turn the operator to each position accurately.

• For other contact configuration or operator position, select from sub-assembled units (page 757 to 758).

Contact Block Mounting Position

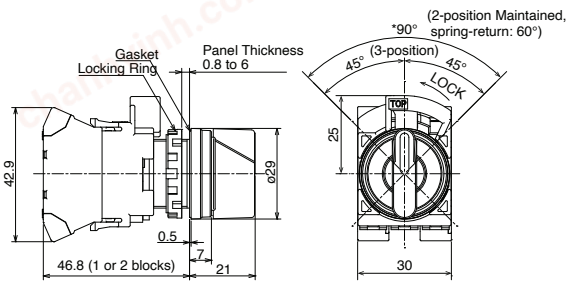


Note) (2) can only be mounted with a dummy block.

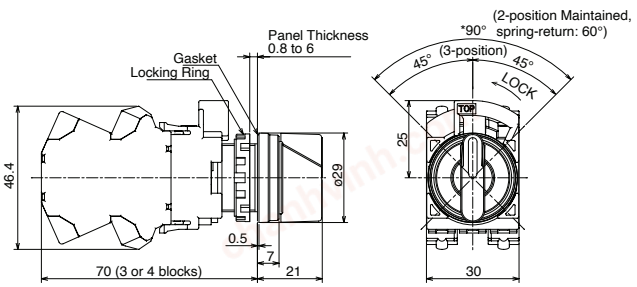
Dimensions

All dimensions in mm.

1 to 2 contacts



3 to 4 contacts



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Selector Switches (Knob / Lever Operator) 2-Position

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 756 for available assembled products.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)





Knob operator



Lever operator



90° 2-position

Package Quantity: 1

<Reference> Assembled Part No.								Operator Unit Ordering No.		Contact Unit	
No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 2		Cam Code	Operator Position Code: Maintained 1 2 / <Reference> Assembled Part No.	④ Operator type	Operator Position Code: Maintained (90°) 1 2 / Part No. (Ordering No.)	Shape	Part No. (Ordering No.)
90° 2-position	1NO (10)	(1)	NO		X		—	HW⓪S-2④P10	Knob Operator	HW⓪S-2④		HW-CNP10
		(3)	—	Dummy								
	1NC (01)	(1)	—	Dummy				HW⓪S-2④P01				HW-CNP01
		(3)	NC	X								
	1NO-1NC (11)	(1)	NO		X			HW⓪S-2④P11				HW-CNP11
		(3)	NC	X								
	2NO (20)	(1)	NO		X			HW⓪S-2④P20				HW-CNP20
		(3)	NO		X							
	2NC (02)	(1)	NC	X				HW⓪S-2④P02				HW-CNP02
		(3)	NC	X								
	2NO-2NC (22)	(1)	NO		X			HW⓪S-2④22	Lever Operator			HW-CNP22
			NC	X								
		(3)	NO		X							
			NC	X								
	3NO-1NC (31N1)	(1)	NC	X				HW⓪S-2④31N1				HW-CNP31N1
			NO		X							
		(3)	NO		X							
			NO		X							
	4NO (40)	(1)	NO		X			HW⓪S-2④40				HW-CNP40
			NO		X							
		(4)	NO		X							
		(5)	NO		X							
	3NC (03N2)	(1)	NC	X				HW⓪S-2④03N2				HW-CNP03N2
			NC	X								
		(3)	NC	X								
	2NO-1NC (21N1)	(1)	2NO NO		X			HW⓪S-2④21N1				HW-CNP21N1
			NO		X							
		(3)	NC NC	X								

90° 2-position Reversed Cam

Package Quantity: 1

<Reference> Assembled Part No.							Operator Unit Ordering No.		Contact Unit	
No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 2	Operator Position: 1	Cam Code	Operator position code: Maintained 1 2 / <Reference> Assembled Part No.	Shape	Operator position code: Maintained (90°) 1 2 / Part No. (Ordering No.)	Shape	Part No. (Ordering No.)
90° 2-position	2NC (02)	(1)	NC		X	J	HW⓪S-2J④TP02	Knob Operator / Lever Operator	HW⓪S-2J④		HW-CNP02
		(3)	NC		X						

- For part no. other than maintained position, see Part No. Example on page 759.

Note: Turn the operator to each position accurately.

- Specify an operator unit code in place of ④ in the Part No.
- ⓪ Bezel Type: 1: Black, 4: Metal

④Operator Unit Code

Code	Operator style	Code	Operator style
T	Knob Operator	L	Lever Operator

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

Selector Switches (Knob / Lever Operator) 3-Position

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 756 for available assembled products.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)





Knob operator Lever operator



45° 3-position

Package Quantity: 1

<Reference> Assembled Part No.									Operator Unit Ordering No.		Contact unit	
No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact		Operator Position 1	Operator Position 0	Operator Position 2	Cam Code	Operator position code: Maintained (1 0 2) <Reference> Assembled Part No.	④ Operator type	Operator position code: Maintained (1 0 2) Part No. (Ordering No.)	Shape	Part No. (Ordering No.)
45° 3-position	1NO-1NC (11)	(1)	NO		X			—	HW⓪S-3④P11	Knob Operator	HW⓪S-3④		HW-CNP11
		(3)	NC		X (→)	X							
	1NO-1NC (11N1)	(1)	NC			X (→)	X		HW⓪S-3④P11N1				HW-CNP11N1
		(3)	NO				X						
	2NO (20)	(1)	NO		X				HW⓪S-3④P20				HHW-CNP20
		(3)	NO				X						
	2NC (02)	(1)	NC			X (→)	X		HW⓪S-3④P02	Lever Operator			HW-CNP02
		(3)	NC		X (→)	X							
	1NO-1NC (11N1) ★☆	(1)	NC			X		J	HW⓪S-3J④P11N1		HW⓪S-3J④		HW-CNP11N1
		(3)	NO				X						
	2NO-1NC (21N3) ★☆	(1)	NONC	NO	X			J	HW⓪S-3J④P21N3				HW-CNP21N3
				NC		X							
		(3)	NO				X						
	2NO-2NC (22)	(1)	NONC	NO	X				HW⓪S-3④P22N1		HW⓪S-3④		HW-CNP22N1
				NC		X (→)	X						
		(3)	NONC	NO			X						
				NC	X (→)	X							
	2NO-2NC (22N2)	(1)	2NC	NO		X (→)	X		HW⓪S-3④P22N2				HW-CNP22N2
				NC		X (→)	X						
		(3)	2NO	NO			X						
				NC			X						
	4NO (40)	(1)	2NO	NO	X				HW⓪S-3④P40				HW-CNP40
				NO	X								
		(3)	2NO	NO			X						
				NO			X						
	4NC (04)	(1)	2NC	NC		X (→)	X		HW⓪S-3④P04				HW-CNP04
				NC		X (→)	X						
		(3)	2NC	NC	X (→)	X							
				NC	X (→)	X							

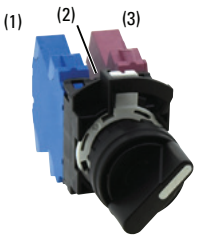
- On the contact configuration marked with ★ in the table above, the rated load switching current is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.
- On the contact configuration marked with ☆ in the table above, contacts may overlap when the operator position is changed.
- For part no. other than maintained position, see Part No. Example on page 759.
- ⓪ Bezel Type: 1: Black, 4: Metal
- Specify an operator unit code in place of ④ in the Part No.

④Operator Unit Code

Code	Operator style	Code	Operator style
T	Knob Operator	L	Lever Operator

Note: Turn the operator to each position accurately.

Contact Block Mounting Position



Note) (2) can only be mounted with a dummy block.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 780.

Selector Switches (Knob / Lever Operator)

Selector Switches Part No. Example

Assembled and sub-assembled unit

Assembled (Without Pilot Light)

HW1S - 2 J T P 10

⓪Bezel Type
1: Black,
4: Metal

①Operator position code:
2: 2-position, maintained
21: 2-position, spring return from right
3: 3-position, maintained
31: 3-position, spring return from right
32: 3-position, spring return from left
33: 3-position, spring return two way

③Contact configuration code (see page 757)

④Operator unit code
T: Knob Operator
L: Lever Operator

②Cam code
J: Specified (①Operator position: 2, 3 only)
Blank: Not specified

Operator (Without Pilot Light)

HW1S - 2 J L

⓪Bezel Type
1: Black,
4: Metal

①Operator position code
2: 2-position, maintained
21: 2-position, spring return from right
3: 3-position, maintained
31: 3-position, spring return from right
32: 3-position, spring return from left
33: 3-position, spring return two way

④ Operator unit code
T: Knob Operator
L: Lever Operator

②Cam code
J: Specified (①Operator position: 2, 3 only)
Blank: Not specified

Contact Unit

HW- CN P 10

③Contact configuration code (see page 757, 758)

① Operator position code

Maintained (90° 2-position)		Spring Return (60° 2-position)
		Spring Return from Right
Cam code: blank	Cam code: J	Cam code: blank

- For available assembled products, see table on page 756.

Maintained (45° 3-position)	Spring Return (45° 3-position)		
	Spring return from right	Spring return from left	Spring return two-way
Cam code: Blank, J, or S	Cam code: blank		

Operator Truth Tables

2 Position Selector Switches

	Contact	MountingPosition	Operator Position	
			Left	Right
HW⓪S-2T HW⓪K-2* HW⓪F-2	HW-P10 (NO)	1	0	X
		3	0	X
	HW-P01 (NC)	1	X	0
		3	X	0
	HW-P10R (NO-EM)	1	0	~~X~~
		3	0	~~X~~

3 Position Selector Switches

	Contact	Mounting Position	Operator Position		
			Left	Center	Right
HW⓪S-3T HW⓪K-3* HW⓪F-3	HW-P10 (NO)	1	X	0	0
		3	0	0	X
	HW-P01 (NC)	1	0	~~X~~	~~X~~
		3	~~X~~	~~X~~	0
	HW-P10R (NO-EM)	1	~~X~~	0	0
		3	0	0	~~X~~

	Contact	Mounting Position	Operator Position		
			Left	Center	Right
HW⓪S-3ST HW⓪K-3S*	HW-P10 (NO)	1	X	0	0
		3	0	0	X
	HW-P01 (NC)	1	0	0	X
		3	X	0	0
	HW-P10R (NO-EM)	1	~~X~~	~~X~~	0
		3	0	~~X~~	~~X~~

3 Position Selector Switches con't

	Contact	Mounting Position	Operator Position		
			Left	Center	Right
HW⓪S-3JT HW⓪K-3J*	HW-P10 (NO)	1	X	0	0
		3	0	0	X
	HW-P01 (NC)	1	0	X	0
		3	0	X	0
	HW-P10R (NO-EM)	1	X	0	X
		3	~~X~~	0	~~X~~

4 Position Selector Switches

	Contact	Mounting Position	Operator Position			
			1	2	3	4
HW⓪S-4T	HW-P10 (NO)	1	X	0	0	0
		3	0	0	0	X
	HW-P01 (NC)	1	0	0	X	0
		3	0	X	0	0
	HW-P10R (NO-EM)	1	~~X~~	X	0	X
		3	X	0	~~X~~	X

5 Position Selector Switches

	Contact	Mounting Position	Operator Position				
			1	2	3	4	5
HW⓪S-5T	HW-P10 (NO)	1	X	0	0	0	0
		3	0	0	0	0	X
	HW-P01 (NC)	1	0	0	0	X	0
		3	0	X	0	0	0
	HW-P10R (NO-EM)	1	~~X~~	~~X~~	X	0	X
		3	X	0	~~X~~	~~X~~	X

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 763
3. HW1S-3T is identified by white plungers on the operator.
4. HW1S-3ST is identified by red plungers on the operator.
5. HW1S-3JT is identified by black plungers on the operator.

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Pin tumbler keys can be purchased only as a sub-assembled product.

Key Selector Switches (Disc Tumbler Key)

Assembled



Package Quantity: 1

Name / Shape	No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 2	Cam Code	Operator position code: Maintained (90°)	—
Disc Tumbler Key HW1K / HW4K  (NC contact only)	90° 2-position	1NO (10)	(1)	NO		X	—	HW©K-2AP10 (Key removable in all positions) HW©K-2BP10 (Key removable at left)	
			(3)	—	Dummy				
		1NO-1NC (11)	(1)	NO		X		HW©K-2AP11 (Key removable in all positions) HW©K-2BP11 (Key removable at left)	
			(3)	NC	X				
		2NO (20)	(1)	NO		X		HW©K-2AP20 (Key removable in all positions) HW©K-2BP20 (Key removable at left)	
			(3)	NO		X			
		2NO-2NC (22)	(1)	NONC NO		X		HW©K-2AP22N2 (Key removable in all positions) HW©K-2BP22N2 (Key removable at left)	
				NONC NC	X				
			(3)	NONC NO		X			
				NONC NC	X				

Contact Code	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 0	Operator Position: 2	Cam Code	Operator position code: Maintained	Operator position code: Spring return from right
45° 3-position								
2NO (20)	(1)	NO	X			—	HW©K-3AP20 (Key removable in all positions) HW©K-3BP20 (Key removable at left/center) HW©K-3DP20 (Key removable at center)	
	(3)	NO			X			
1NO-1NC (11N1)	(1)	NC		X		J	HW©K-3JBP11N1 (Key removable at left/center) HW©K-3JGP11N1 (Key removable at left)	
	(3)	NO			X			
2NO-2NC (22)	(1)	NONC NO	X			—		HW©K-31BP22 (Key removable at left/center) HW©K-31GP22 (Key removable at left)
		NONC NC		X	X			
	(3)	NONC NO			X	—		
		NONC NC	X	X				
2a-2b (22N2)	(1)	2NC NC		X	X	—		HW©K-31BP22N2 (Key removable at left/center) HW©K-31GP22N2 (Key removable at left)
		2NC NC		X	X			
	(3)	2NO NO			X	—		
		2NO NO			X			

- Selector switches with 1 contact block contain 2 dummy blocks. Selector switches with 2 contact blocks contain 1 dummy block.
- Standard key number (231) is available for assembled products. *For numbers other than standard key numbers, contact IDEC.

• For other contact configuration or operator position, select from sub-assembled units (page 761 to 762).

Key removal position

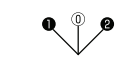
⓪ Bezel Type 1: Black, 4: Metal

① 90° 2-position

Key Retained Position (Cam code: blank)	
A: Key removable in all positions 	**B**: Key removable at left 

①②: Key removal position ❶❷: Key retained position

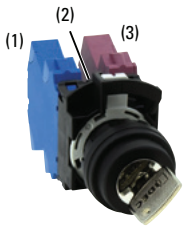
② 45° 3-position

Key Retained Position			
A: Key removable in all positions 	**B**: Key removable at left / center 	**D**: Key removable at center 	**G**: Key removable at left 

⓪①②: Key removal position ❶❷❸: Key retained position

Note: The key cannot be removed in a spring return position.

Contact Block Mounting Position



Note) (2) can only be mounted with a dummy block.

Pin tumbler keys can be purchased only as a sub-assembled product.

Key Selector Switches (Disc Tumbler Key / Pin Tumbler Key) 2-Position

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 760 for available assembled products.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)





Disc Tumbler



Pin Tumbler





90° 2-position

Package Quantity: 1

<Reference> Assembled Part No.									Operator Unit Ordering No.		Contact Unit	
No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact		Operator Position: 1	Operator Position: 2		Cam Code	Operator position code: Maintained 1 2 / <Reference> Assembled Part No.	③Key Operator Type	Operator position code: Maintained 1 2 / Part No. (Ordering No.)	Shape	Part No. (Ordering No.)
90° 2-position	1NO (10)	(1)	NO			X		—	HW⓪K-2③④P10	Disc Tumbler 	HW⓪K-2③④⑥		HW-CNP10
		(3)	—		Dummy								
	1NC (01)	(1)	—		Dummy				HW⓪K-2③④P01				HW-CNP01
		(3)	NC		X								
	1NO-1NC (11)	(1)	NO			X			HW⓪K-2③④P11				HW-CNP11
		(3)	NC		X								
	2NO (20)	(1)	NO			X			HW⓪K-2③④P20	Pin Tumbler 			HW-CNP20
		(3)	NO			X							
	2NC (02)	(1)	NC		X				HW⓪K-2③④P02				HW-CNP02
		(3)	NC		X								
	2NO-2NC (22)	(1)	NONC	NO		X			HW⓪K-2③④P22				HW-CNP22
				NC	X								
		(3)	NONC	NO		X							
				NC	X								
	3NO-1NC (31)	(1)	NONC	NO		X			HW⓪K-2③④P31				HW-CNP31
				NO		X							
		(3)	NONC	NO		X							
				NC	X								
	4NO (40)	(1)	2NO	NO		X			HW⓪K-2③④P40				HW-CNP40
				NO		X							
		(3)	2NO	NO		X							
				NO		X							
	3NC (03N2)	(1)	2NC	NC	X				HW⓪K-2③④P03N2				HW-CNP03N2
				NC	X								
		(3)	NC	NC	X								
	2NO-1NC (21N1)	(1)	2NO	NO		X			HW⓪K-2③④P21N1				HW-CNP21N1
				NO		X							
		(3)	NC	NC	X								

- For part no. other than maintained position, see Part No. Example on page 763.
- Each selector key switch is supplied with two keys.
- ⓪ Bezel Type 1: Black, 4: Metal
- Specify the key style in ③.

③Key type code

Code	Key Operator Shape
Blank	Disc tumbler
P	Pin tumbler

See page 763 Part No. Developent for details.

- Specify the desired key removal position in ④.
- Specify the key number in ⑥.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 000?.

Pin tumbler keys can be purchased only as a sub-assembled product.

Key Selector Switches (Disc Tumbler Key / Pin Tumbler Key) 3-Position

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 760 for available assembled products.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)





Disc Tumbler



Pin Tumbler





45° 3-position

Package Quantity: 1

<Reference> Assembled Part No.									Operator Unit Ordering No.		Contact Unit	
No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact		Operator Position: 1	Operator Position: 0	Operator Position: 2	Cam Code	Operator position code: Maintained (1 0 2) <Reference> Assembled Part No.	③Key Operator Type	Operator position code: Maintained (1 0 2) Part No. (Ordering No.)	Shape	Part No. (Ordering No.)
45° 3-position	1NO-1NC (11)	(1)	NO		X			—	HW◎K-3③④P11	Disc Tumbler 	HW◎K-3④⑥		HW-CNP11
		(3)	NC		X—X								
	1NO-1NC (11N1)	(1)	NC			X—X			HW◎K-3③④P11N1				HW-CNP11N1
		(3)	NO				X						
	2NO (20)	(1)	NO		X				HW◎K-3③④P20				HHW-CNP20
		(3)	NO				X						
	2NC (02)	(1)	NC			X—X			HW◎K-3③④P02				HW-CNP02
		(3)	NC		X—X								
	1NO-1NC (11N1) ★☆	(1)	NC			X		J	HW◎K-3J③④P11N1	Pin Tumbler 	HW◎K-3J④⑥		HW-CNP11N1
		(3)	NO				X						
	2NO-1NC (21N3) ★☆	(1)	NONC	NO	X			J	HW◎K-3J③④P21N3				HW-CNP21N3
				NC		X							
		(3)	NO				X						
	2NO-2NC (22)	(1)	NONC	NO	X			—	HW◎K-3③④P22		HW◎K-3④⑥		HW-CNP22N1
				NC		X—X							
		(3)	NONC	NO			X						
				NC	X—X								
	2NO-2NC (22N2)	(1)	NONC	NC		X—X			HW◎K-3③④P22N2				HW-CNP22N2
				NC		X—X							
		(3)	NONC	NO			X						
				NO			X						
	4NO (40)	(1)	NONC	NO	X				HW◎K-3③④P40				HW-CNP40
				NO	X								
		(3)	NONC	NO			X						
				NO			X						
	4NC (04)	(1)	NONC	NC		X—X			HW◎K-3③④P04				HW-CNP04
				NC		X—X							
		(3)	NONC	NC	X—X								
				NC	X—X								

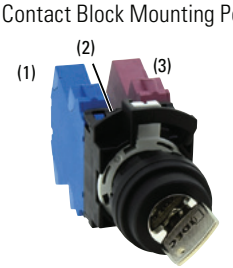
- On the contact arrangement marked with ★ in the table above, the rated load switching current is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.
- For models with ☆, contacts may overlap when the operator position is changed.
- For part no. other than maintained position, see Part No. Example on page 763.
- Each selector key switch is supplied with two keys.
- ◎ Bezel Type 1: Black, 4: Metal
- Specify the key style in ③.
  ③Key type code

Code	Key Operator Shape
Blank	Disc tumbler
P	Pin tumbler

See page 763 Part No. Developent for details.

- Specify the desired key removal position in ④.
- Specify the key number in ⑥.

Contact Block Mounting Position



Note) (2) can only be mounted with a dummy block.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

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Key Selector Switches (Disc Tumbler Key / Pin Tumbler Key)

Key Selector Switches Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

HW1K - 2 J P A P 01 - 501

⓪Bezel Type
1: Black,
4: Metal

①Operator position code:
2: 2-position, maintained
21: 2-position, spring return from right
3: 3-position, maintained
31: 3-position, spring return from right
32: 3-position, spring return from left
33: 3-position, spring return two way

②Cam code
J: Specified (①Operator position: 2, 3 only)
Blank: Not specified

③Key Style
Blank: Disc Tumbler Key
P: Pin Tumbler Key

④Key removal position
2-position
A: Removable in all positions
B: Removable in the left only
C: Removable in the right only

3-position
A: Removable in all positions
B: Removable in the left and center
C: Removable in the right and center
D: Removable in center only
E: Removable in right and left
G: Removable in left only
H: Removable in right only

⑤Contact configuration code

⑥Key No.
Disc Tumbler Key
Blank: Standard (231)
*For key numbers other than the standard key number, contact us.

Pin Tumbler Key
Blank: Standard (500)
-501 to -515 (non-standard)
Note: The key number is engraved on the key cylinder.

Operator unit

HW1K - 2 J P A - 501

⓪Bezel Type
1: Black,
4: Metal

①Operator position code:
2: 2-position, maintained
21: 2-position, spring return from right
3: 3-position, maintained
31: 3-position, spring return from right
32: 3-position, spring return from left
33: 3-position, spring return two way

②Cam code
J: Specified (①Operator position: 2, 3 only)
Blank: Not specified

③Key Style
Blank: Disc Tumbler Key
P: Pin Tumbler Key

④Key removal position
2-position
A: Removable in all positions
B: Removable in the left only
C: Removable in the right only

3-position
A: Removable in all positions
B: Removable in the left and center
C: Removable in the right and center
D: Removable in center only
E: Removable in right and left
G: Removable in left only
H: Removable in right only

⑥Key No.
Disc Tumbler Key
Blank: Standard (231)
*For key numbers other than the standard key number, contact us.

Pin Tumbler Key
Blank: Standard (500)
-501 to -515 (non-standard)
Note: The key number is engraved on the key cylinder.

Contact unit

HW- CN P 10

⑤Contact configuration code
(see page 761, 762)

①Operator position code

Maintained (90° 2-position)		Spring Return (60° 2-position)
		Spring Return from Right
Cam code: blank	Cam code: J	Cam code: blank

Maintained (45° 3-position)	Spring Return (45° 3-position)		
	Spring return from right	Spring return from left	Spring return two-way
Cam code: Blank, J, or S	Cam code: blank		

• For available assembled products, see table on page 760.

④Key removal position

90° 2-position / 60° 2-position

Key Retained Position (Cam code: blank)		
A: Key removable in all positions	**B**: Key removable at left	**C**: Key removable at right

Key Retained Position (Cam code: J)		
A: Key removable in all positions	**B**: Key removable at left	**C**: Key removable at right

45° 3-position

Key Retained Position			
A: Key removable in all positions	**B**: Key removable at left / center	**C**: Key removable at center / right	**D**: Key removable at center
E: Key removable at right / left	**G**: Key removable at left	**H**: Key removable at right	

⓪①②: Key removal position ❶❷: Key retained position
Note: The key cannot be removed in a spring return position.

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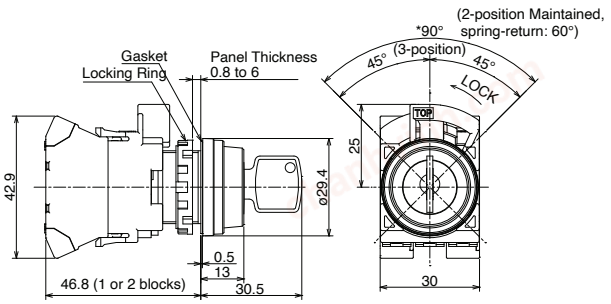
Key Selector Switches (Pin Tumbler Key)

All dimensions in mm.

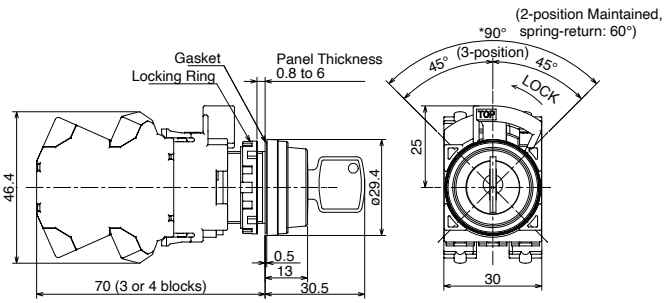
Dimensions

Disc Tumbler Key

1 to 2 contacts

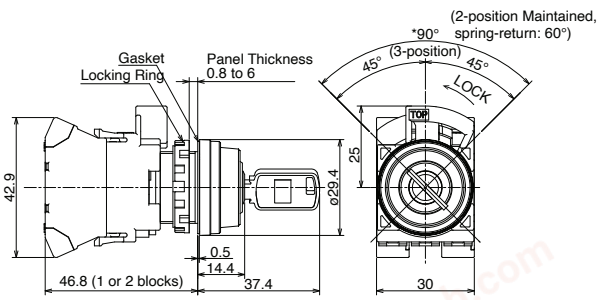


3 to 4 contacts

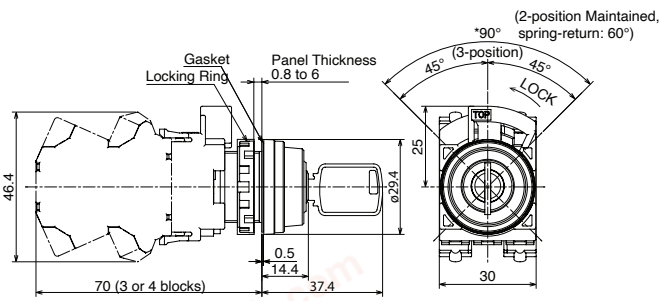


Pin Tumbler Key

1 to 2 contacts



3 to 4 contacts



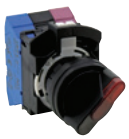
Lever operator can be purchased only as a sub-assembled product.

Illuminated Selector Switches (Knob / Lever Operator) (LED)

Assembled



Package Quantity: 1

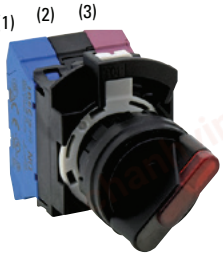
Name / Shape	No. of Positions	Contact Configuration Table: Contact Configuration	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 2	Operator Position:	Operating Voltage	Functional Specifications: Maintained (1 2)	Functional Specifications: —	⑥ Illumination Color Code
	90° 2-position	1NO (10)	(1)	NO		X		24V AC/DC	HW⓪F-2P10Q4⑥		**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
			(3)	◆❍❍▽							
		1NO-1NC (11)	(1)	NO		X			HW⓪F-2P11Q4⑥		
			(3)	–	X						
		2NO (20)	(1)	NO		X			HW⓪F-2P20Q4⑥		
			(3)	NO		X					
		2NO-2NC (22)	(1)	NONC NO		X			HW⓪F-2P22Q4⑥		
				NONC NC	X						
			(3)	NONC NO		X					
				NONC NC	X						
		1NO (10)	(1)	**NO**	X			**100/120V AC/DC**	HW⓪F-2P10QH2⑥		
			(3)	– Dummy							
		1NO-1NC (11)	(1)	**NO**	X				HW⓪F-2P11QH2⑥		
			(3)	**NC** X							
		2NO (20)	(1)	**NO**	X				HW⓪F-2P20QH2⑥		
			(3)	**NO**	X						

No. of Positions	Contact Configuration Table: Contact Configuration	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 0	Operator Position: 2	Cam Code	Operator position code: Maintained (1 0 2)	Operator position code: Spring return two-way (1 0 2)	⑥ Illumination Color Code
45° 3-position	2NO (20)	(1)	NO	X			24V AC/DC	HW⓪F-3P20Q4⑥	HW⓪F-33P20Q4⑥	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
		(3)	NO			X				

- ⓪ Bezel Type 1: Black, 4: Metal
- Specify an illumination color code in place of ⑥ in the Part No.
- Turn the operator to each position accurately.

• For other contact configuration or operator position, select from sub-assembled units. (page 766 to 767).

Contact Block Mounting Position



Note) (2) can only be mounted with a full voltage adapter.

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Illuminated Selector Switches (Knob / Lever Operator) (LED) 2-Position

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 765 for available assembled products.

Assembled = Operator unit + LED Lamp + Contact unit (illuminated) (Contact block, LED module, connecting unit)





Knob operator

Lever operator







90° 2-position

Package Quantity: 1

<Reference> Assembled Part No									Operator Unit		Contact Unit (Illuminated)	
No. of Positions	Contact Configuration	Contact Block		Operator Position			Cam Code	Operator position code (Maintained 1 2)	Name / Shape	Operator position code (Maintained 1 2)	Shape	Part No. (Ordering No.)
		Mounting Position	Contact	1	2			<Reference> Assembled Part No.		Part No. (Ordering No.)		
90° 2-position	1NO (10)	(1)	NO		X		—	HW⓪F-2③P10⑤⑥	Knob Operator	HW⓪F-2③⑥-PI-USA		HW-CNP10Q0
		(3)	—	Dummy								
	1NC (01)	(1)	—	Dummy				HW⓪F-2③P01⑤⑥				HW-CNP01Q0
		(3)	NC	X								
	1NO-1NC (11)	(1)	NO		X			HW⓪F-2③P11⑤⑥	Lever Operator			HW-CNP11Q0
		(3)	NC	X								
	2NO (20)	(1)	NO		X			HW⓪F-2③P20⑤⑥				HW-CNP20Q0
		(3)	NO		X							
	2NC (02)	(1)	NC	X				HW⓪F-2③P02⑤⑥				HW-CNP02Q0
		(3)	NC	X								
	2NO-2NC (22)	(1)	NONC	NO		X		HW⓪F-2③P22⑤⑥				HW-CNP22Q0
				NC	X							
		(3)	NONC	NO		X						
				NC	X							
	3NO-1NC (31)	(1)	NONC	NO		X		HW⓪F-2③P31⑤⑥				HW-CNP31Q0
				NO		X						
		(3)	NONC	NO		X						
				NC	X							
	4NO (40)	(1)	2NO	NO		X		HW⓪F-2③P40⑤⑥				HW-CNP40Q0
				NO		X						
		(3)	2NO	NO		X						
				NO		X						
	3NC (03N2)	(1)	2NC	NC	X			HW⓪F-2③P03N2⑤⑥				HW-CNP03N2Q0
				NC	X							
		(3)	NC	NC	X							

- ⓪ Bezel Type 1: Black, 4: Metal
- Specify an operator unit code in place of ③ in the Part No.

③Operator Unit Code

Code	Operator style
Blank	Knob Operator
L	Lever Operator

- Specify a rated voltage code in place of ⑤ in the Part No.

Code	Rated voltage	Code	Rated voltage
Q2	6V AC/DC	**QH2**	100/120V AC/DC
Q3	12V AC/DC	**QM**	200/220V AC
Q4	24V AC/DC	**QM4**	230/240V AC

- Specify an illumination color code in place of ⑥ in the Part No.
R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

- For part no. other than maintained position, see Part No. Example on page 768.

Note) LED lamp is not supplied. When ordering contact units (illuminated) selected LED from below table.

LED lamp (package quantity:1)	
	
Rated Voltage	Part No. (Ordering No.)
6V AC/DC	LSRD-6
12V AC/DC	LSRD-1
24V AC/DC	LSRD-2
100/120V AC/DC	LSRD-H2
200/220V AC	LSRD-M2
230/240V AC	LSRD-M4

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

Illuminated Selector Switches (Knob / Lever Operator) (LED) 3-Position

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 765 for available assembled products.

45° 3-position

Package Quantity: 1

<Reference> Assembled Part No									Operator Unit		Contact Unit (Illuminated)	
No. of Positions	Contact Configuration	Contact Block		Operator Position				Operator position code	Name / Shape	Operator position code	Shape	Part No. (Ordering No.)
		Mounting Position	Contact	1	0	2		Maintained 1 0 2 <Reference> Assembled Part No.		Maintained 1 0 2 Part No. (Ordering No.)		
45° 3-position	1NO-1NC (11)	(1)	NO	X	—			HW⓪F-3③P11⑤⑥	Knob Operator	HW⓪F-3③⑥-PI-USA		HW-CNP11Q0
		(3)	NC	X	X	—						
	1NO-1NC (11N1)	(1)	NC		X	X		HW⓪F-3③P11N1⑤⑥				HW-CNP11N1Q0
		(3)	NO			X						
	2NO (20)	(1)	NO	X				HW⓪F-3③P20⑤⑥	Lever Operator			HHW-CNP20Q0
		(3)	NO			—	X					
	2NC (02)	(1)	NC		—	X	X	HW⓪F-3③P02⑤⑥				HW-CNP02Q0
		(3)	NC	X	X							
	1NO-1NC (11N1) ★☆	(1)	NC		X			HW⓪F-3J③P11N1⑤⑥		HW⓪F-3J③⑥-PI-USA		HW-CNP11N1Q0
		(3)	NO			X						
	2NO-1NC (21N3) ★☆	(1)	NONC	NO	X			HW⓪F-3J③P21N3⑤⑥				HW-CNP30N1Q0
				NC		X						
		(3)	NO			X						
	2NO-2NC (22)	(1)	NONC	NO	X	—		HW⓪F-3③P22⑤⑥		HW⓪F-3③⑥-PI-USA		HW-CNP22N1Q0
				NC		X	X					
		(3)	NONC	NO	—		X					
				NC	X	—						
	2NO-2NC (22N2)	(1)	2NC	NO		—	—	HW⓪F-3③P22N2⑤⑥				HW-CNP22N2Q0
				NC		X	X					
		(3)	2NO	NO			X					
				NC			X					
	4NO (40)	(1)	2NO	NO	X			HW⓪F-3③P40⑤⑥				HW-CNP40Q0
				NO	X							
		(3)	2NO	NO			X					
				NO		—	—					
	4NC (04)	(1)	2NC	NC		—	—	HW⓪F-3③P04⑤⑥				HW-CNP04Q0
				NC	—	X	X					
		(3)	2NC	NC	—	—						
				NC	X	X						

- ⓪ Bezel Type 1: Black, 4: Metal
- Specify an operator unit code in place of ③ in the Part No.
  ③Operator Unit Code

Code	Operator style
Blank	Knob Operator
L	Lever Operator

- Specify a rated voltage code in place of ⑤ in the Part No.

Code	Rated voltage	Code	Rated voltage
Q2	6V AC/DC	**QH2**	100/120V AC/DC
Q3	12V AC/DC	**QM**	200/220V AC
Q4	24V AC/DC	**QM4**	230/240V AC

- Specify an illumination color code in place of ⑥ in the Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

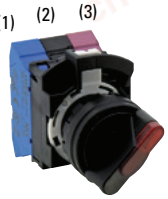
- For part no. other than maintained position, see Part No. Example on page 768.

Note) LED lamp is not supplied. When ordering contact units (illuminated) selected LED from below table.

LED lamp (package quantity:1)	
	
Rated Voltage	Part No. (Ordering No.)
6V AC/DC	LSRD-6
12V AC/DC	LSRD-1
24V AC/DC	LSRD-2
100/120V AC/DC	LSRD-H2
200/220V AC	LSRD-M2
230/240V AC	LSRD-M4

Contact Block Mounting Position

(1) (2) (3)



Note) (2) can only be mounted with a LED module.

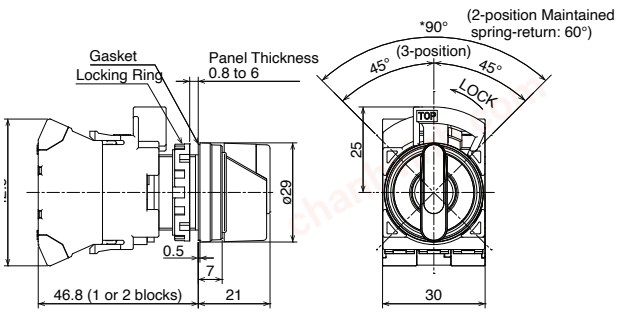
Illuminated Selector Switches (Knob / Lever Operator) (LED)

All dimensions in mm.

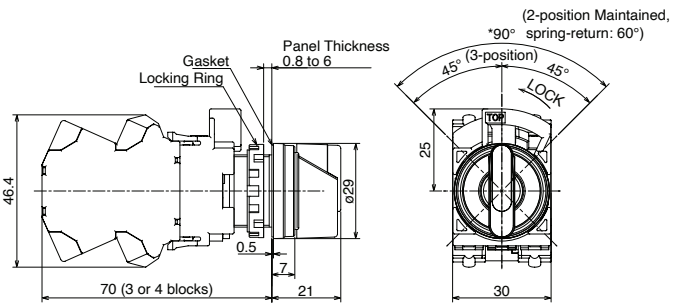
Dimensions

Knob Operator

1 to 2 contacts

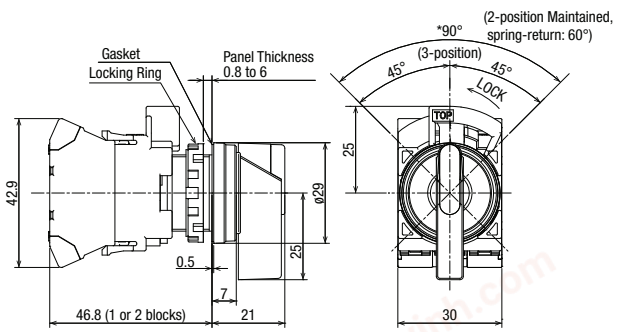


3 to 4 contacts

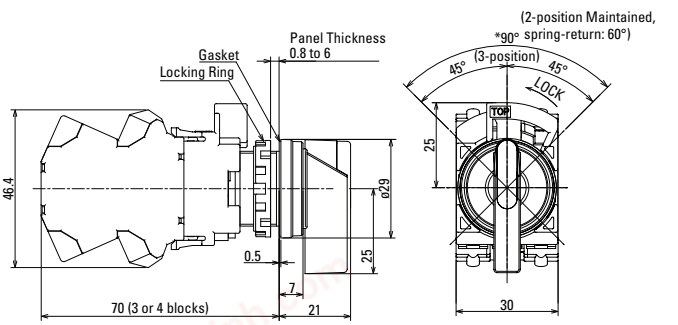


Lever Operator

1 to 2 contacts



3 to 4 contacts



Illuminated Selector Switches Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

HW1F - 2 J L P 11 Q4 R

⓪Bezel Type
- **1**: Black,
- **4**: Metal

①Operator position code:
- **2**: 2-position, maintained
- **21**: 2-position, spring return from right
- **3**: 3-position, maintained
- **31**: 3-position, spring return from right
- **32**: 3-position, spring return from left
- **33**: 3-position, spring return two way

②Cam code
- **J**: Specified (①Operator position: **2, 3** only)
- **Blank**: Not specified

③Operator unit code
- **Blank**: Knob Operator
- **L**: Lever Operator

④Contact configuration code (see page 767)

⑤Operating voltage
- **Q2** : 6V AC/DC
- **Q3** : 12V AC/DC
- **Q4** : 24V AC/DC
- **QH2** : 100/120V AC/DC
- **QM** : 200/220V AC
- **QM4** : 200/240V AC

⑥Illuminated color code (see page 765)

- For available assembled products, see table on page 765.

Operator unit

HW1F - 2 L R - PI-USA

⓪Bezel Type
- **1**: Black,
- **4**: Metal

①Operator position code
- **2**: 2-position, maintained
- **21**: 2-position, spring return from right
- **3**: 3-position, maintained
- **31**: 3-position, spring return from right
- **32**: 3-position, spring return from left
- **33**: 3-position, spring return two way

④ Operator unit code
- T: Knob Operator
- L: Lever Operator

⑥Illuminated color code (see page 765)

Contact Unit (for illuminated unit)

HW- CN P 20 Q0

④Contact configuration code (see page 766, 767)

Note) LED lamps are not supplied.

LED Lamp

LSRD - 6

⑤Rated voltage code
- **6**: 6V AC/DC
- **1**: 12V AC/DC
- **2**: 24V AC/DC
- **H2**: 100/120V AC/DC
- **M2**: 200/220V AC
- **M4**: 230/240V AC

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Selector Pushbuttons

Assembled



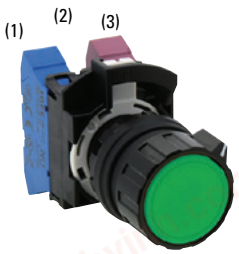
Package Quantity: 1

Name / Shape	Circuit Code.	Contact Configuration	Contact Block		Left		Right		Ring Operator	③ Button Color Code
			Mounting Position	Contact	Normal	Push	Normal	Push	Part No. (Ordering No.)	
HW1R 	D	2NO (20)	(1)	NO		X			HW1R-2DP20③	B (black) G (green)
			(3)	NO				X		

- Specify a button color code in place of ③ in the part No.
- When operating the pushbutton selector, do not turn the operator ring or the lock lever while the button is depressed. Otherwise the pushbutton selector may be damaged.

- For other circuit codes, select from sub-assembled units (page 770).

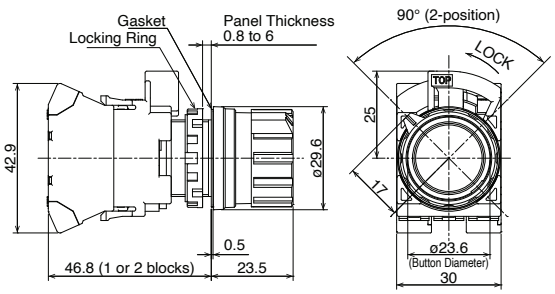
Contact Block Mounting Position

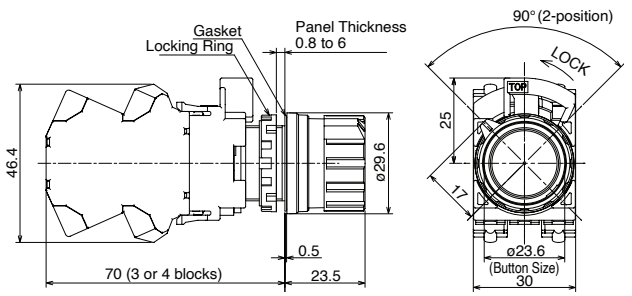


Note)(2) can only be mounted with a dummy block.

Dimensions

All dimensions in mm.





Selector Pushbuttons Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

HW1R - 2 D P 20 B

①Circuit code (see page 770)

②Contact configuration code
- **11**: 1NO1NC
- **20**: 2NO
- **22**: 2NO-2NC
- **11N1**: 1NO-1NC
- **22N2**: 2NO-2NC

⑤Button color code (see page 770)

- For available assembled products, see table on page 770.

Operator unit

HW1R - 2 A B

①Circuit code (see page 770)

③Button color code (see page 770)

Contact unit

HW - CN P 10

⑤Contact configuration code (see page 770)

Selector Pushbuttons

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 769 for available assembled products.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)






Sub-Assembled Ordering No.

Package Quantity: 1

<Reference> Assembled Part No.											Operator unit	Contact unit	
Circuit Code	Contact Configuration (Code)	Contact Block			Left		Right		Ring Operator	③ Button Color Code	Part No. (Ordering No.) 	Contact Configuration (Code)	Part No. (Ordering No.) 
		Mounting Position	Contact		Normal	Push	Normal	Push	Part No. (Ordering No.)				
A	1NO-1NC (11)	(1)	NO			X		X	HW1R-2AP11③	B (black) G (green) R (red) Y (yellow) S (blue) W (white)	HW1R-2A③	1NO-1NC (11)	HW-CNP11
		(3)	NC		X								
	2NO (20)	(1)	NO			X		X	HW1R-2AP20③			2NO (20)	HW-CNP20
		(3)	NO			X	X	X					
	2NO-2NC (22)	(1)	2NO	NO		X			HW1R-2AP22N1③			2NO-2NC (22N1)	HW-CNP22N1
				NO		X							
		(3)	2NC	NC	X								
				NC	X								
D	2NO (20)	(1)	NO			X			HW1R-2DP20③		HW1R-2D③	2NO (20)	HW-CNP20
		(3)	NO					X					
	2NO-2NC (22)	(1)	NONC	NO		X			HW1R-2DP22③			2NO-2NC (22)	HW-CNP22
				NC	X		X	X					
		(3)	NONC	NO				X					
				NC	X	X							
E	2NO-2NC (22)★	(1)	NONC	NO		X			HW1R-2EP22③		HW1R-2E③	2NO-2NC (22)	HW-CNP22
				NC			X	X					
		(3)	NONC	NO				X					
				NC	X	X							
F	2NO-2NC (22)★☆	(1)	NONC	NO				X	HW1R-2FP22③		HW1R-2F③	2NO-2NC (22)	HW-CNP22
				NC			X						
		(3)	NONC	NO		X							
				NC	X								
N	2NO-2NC (22N2)★☆	(1)	2NC	NC			X		HW1R-2NP22N2③		HW1R-2N③	2NO-2NC (22N2)	HW-CNP22N2
				NC			X						
		(3)	2NO	NO		X		X					
				NO		X		X					
T	2NO-2NC (22)	(1)	NONC	NO		X	X		HW1R-2TP22③		HW1R-2T③	2NO-2NC (22)	HW-CNP22
				NC	X			Operation Blocked					
		(3)	NONC	NO		X	X						
				NC	X								

- On the contact arrangement marked with ★ in the table above, the rated load switching current is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.
- For models with ☆, contacts may overlap when the operator position is changed.
- When operating the pushbutton selector, do not turn the operator ring or the lock lever while the button is depressed. Otherwise the pushbutton selector may be damaged.
- For contact mounting position, see page 781.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

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Momoloever switches can be purchased only as a sub-assembled product.

Monolever Switches

Sub-Assembled

When ordering, specify the sub-assembled ordering no.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)






Sub-Assembled Ordering No.

Package Quantity: 1

Name / Shape	Positions	<Reference> Assembled Part No.
HW1M Standard 	2-position	**HW1M-P1010-20**
		HW1M-P2020-20
		HW1M-P0101-20
		HW1M-P0202-20
		HW1M-P0101-40
		HW1M-P0202-40
	4-position	**HW1M-P1111-22N9**
		HW1M-P2222-22N9
HW1M-L Interlocking 	2-position	**HW1M-LP1010-20**
		HW1M-LP2020-20
		HW1M-LP0101-20
		HW1M-LP0202-20
		HW1M-LP0101-40
		HW1M-LP0202-40
	4-position	**HW1M-LP1111-22N9**
		HW1M-LP2222-22N9

Operator unit	
Name / Shape	Part No. (Ordering No.)
HW1M Standard 	HW1M-1010
	HW1M-2020
	HW1M-0101
	HW1M-0202
	HW1M-0101
	HW1M-0202
	HW1M-1111
	HW1M-2222
HW1M-L Interlocking 	HW1M-L1010
	HW1M-L2020
	HW1M-L0101
	HW1M-L0202
	HW1M-L0101
	HW1M-L0202
	HW1M-L1111
	HW1M-L2222

Contact unit		
Shape	Contact Configuration	Part No. (Ordering No.)
	2NO (20)	HW-CNP20
	4NO (40)	HW-CNP40
	2NO-2NC (22)	HW-CNP22
	2NO (20)	HW-CNP20
	4NO (40)	HW-CNP40
	2NO-2NC (22)	HW-CNP22

- On all mono-lever switches, the rated current (load switching current) is reduced to a half of the rated current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

- For contact mounting position, see page 781.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

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Monolever Switches

Contact Configuration

2-position (Right/Left)

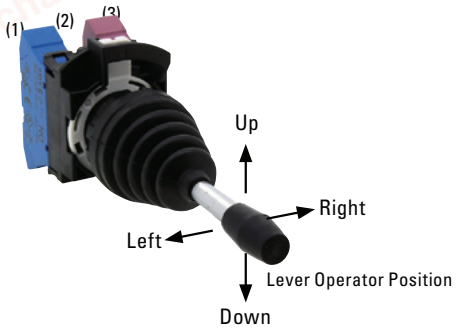
Contact Code	Contact Block			Lever Operator Position		
	Mounting Position	Contact		Left	Center	Right
20	(1)	NO		X		
	(3)	NO				X
40	(1)	2NO	NO	X		
			NO	X		
	(3)	2NO	NO			X
			NO			X

2-position (Up/Down)

Contact Code	Contact Block			Lever Operator Position		
	Mounting Position	Contact		Down	Center	Up
20	(1)	NO		X		
	(3)	NO				X
	(1)	2NO	NO	X		
			NO	X		
	(3)	2NO	NO			X
			NO			X

Contact Code	Contact Block				Lever Operator Position			
	Mounting Position	Contact		Down	Left	Center	Up	Right
22	(1)	NONC	NO		X			
			NC					X
	(3)	NONC	NO				X	
			NC	X				

Contact Block Mounting Position



Note) (2) can only be mounted with a dummy block.

Note) The lever operator of the interlocking type HW1M-L is locked only in the center position. Pull on the interlocking lever before operating the lever up/down/right/left.

Monolever Switches Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

HW1M-L P 1 0 1 0 - 20
(Up Right Down Left)

①Model
HW1M: Standard
HW1M-L: Interlocking

②Lever operation mode
Order of Entry
Up - Right - Down - Left
1: Maintained
2: Spring returned
0: Blocked

③Contact configuration code
Select a required contact operation at each lever operator position from the contact arrangement charts above and specify the Contact Code.

• For available assembled products, see table on page 771.

Operator unit

HW1M - L 1 0 1 0
(Up Right Down Left)

①Model
HW1M: Standard
HW1M-L: Interlocking

②Lever operation mode
Order of Entry
Up - Right - Down - Left
1: Maintained
2: Spring returned
0: Blocked

Contact unit

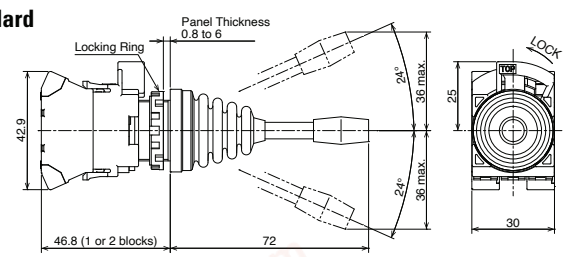
HW- CN P 10 20

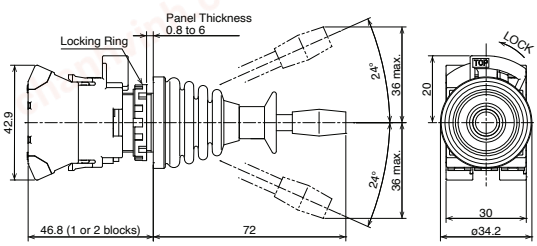
③Contact configuration code
Select a required contact operation at each lever operator position from the contact arrangement charts above and specify the Contact Code.

Dimensions

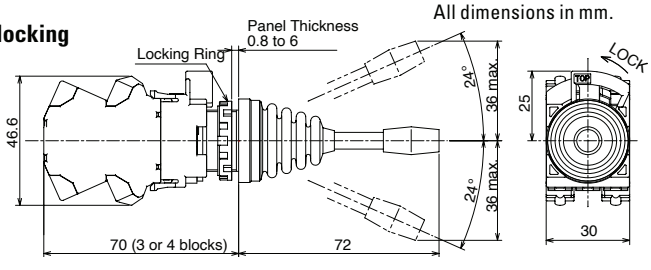
All dimensions in mm.

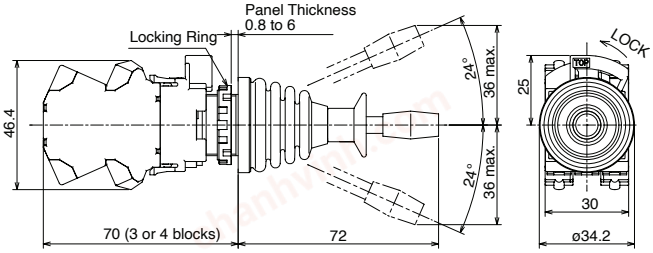
Standard





Interlocking





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Short Body Pilot Lights

Assembled



Package Quantity: 1

Name / Shape	Operating Voltage	Part No. (Ordering No.)	① Lens Color Code
Extended (Dome) HW1P 	6V AC/DC	HW1P-2JPQ2①	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (Pure white)
	12V AC/DC	HW1P-2JPQ3①	
	24V AC/DC	HW1P-2JPQ4①	
	100/120V AC/DC	HW1P-2JPRH2①	
	200/240V AC/DC	HW1P-2JPCM2①	
Square Flush HW2P 	6V AC/DC	HW2P-1JPQ2①	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (Pure white)
	12V AC/DC	HW2P-1JPQ3①	
	24V AC/DC	HW2P-1JPQ4①	
	100/120V AC/DC	HW2P-1JPRH2①	
	200/240V AC/DC	HW2P-1JPCM2①	

- Built-in BA9S base LED lamp. See page 787 for LED Lamps.
- For square flush pilot lights, legends and symbols can be engraved on marking plates, or printed film can be inserted. For details on marking plates or film, see page 792. Engraving and films must be prepared by the customer.
- Specify a lens color code in place of ① in the Part No.

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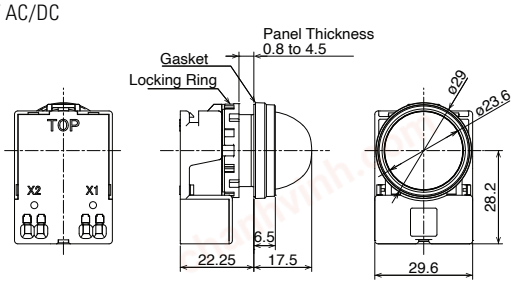
Short Body Pilot Lights

Dimensions

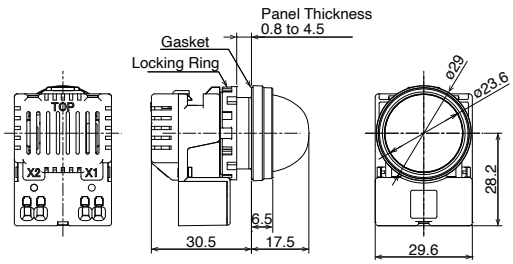
All dimensions in mm.

Extended (Dome)

6V, 12V, 24V AC/DC

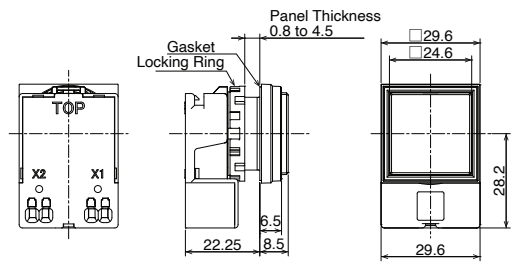


100/120V AC/DC, 200/240V AC

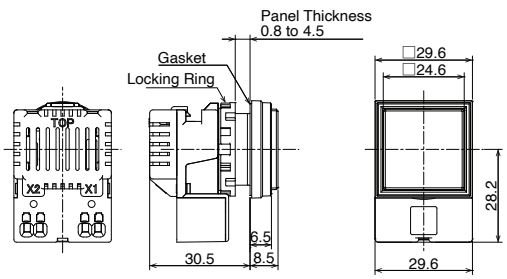


Square Flush

6V, 12V, 24V AC/DC



100/120V AC/DC, 200/240V AC



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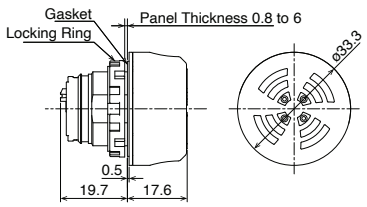
Illuminated / Non-Illuminated Buzzers

Easy installation of buzzers and lamps

- Short, 19.7 mm depth behind panel.
- Buzzer and lamp functions are integrated. (Illuminated buzzers)
- IP65 waterproof from the front of the panel
- Installing an optional terminal rubber boot upgrades the terminal's waterproof characteristics to IP54 without the need to use a rear enclosure.



- See website for details on approvals and standards.

Name / Shape	Part No. (Ordering No.)	Illumination Color	Sound Type	Package Quantity	Dimensions (All dimensions in mm.)
Illuminated Buzzer 	HW1Z-P1F2PQ4R	Red	Intermittent	1	
	HW1Z-P1F2PQ4Y	Yellow			
Non-Illuminated Buzzer 	HW1Z-2PQ4B	—	Steady	1	
	HW1Z-F2PQ4B	—	Intermittent		

- See page 784 for details on terminal rubber boot.

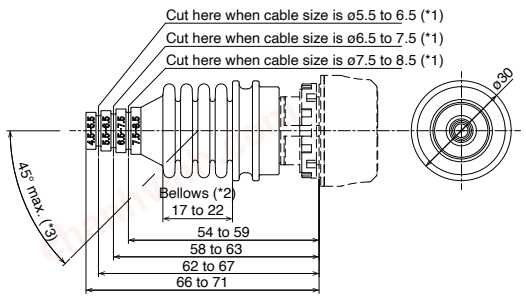
Specifications and Ratings

Rated Insulation Voltage		30V
Rated Voltage		12 to 24V DC
Voltage Range		10.8 to 26.4V DC
Rated Current (effective value)		Illuminated: 18mA (24V DC), 8mA (12V DC) Non-Illuminated (Steady sound): 9mA (24V DC), 4mA (12V DC) (Intermittent sound): 7mA (24V DC), 3mA (12V DC)
Inrush Current		100mA maximum
Buzzer	Sound Pressure (of HW1Z itself) (at 25°C)	90dB min. at 0.1m (24VDC) 70dB min. at 1m (24V DC, equivalent value)
		84dB min. at 0.1m (12V DC) 64dB min. at 1m (12VDC, equivalent value)
	Sound Frequency (at 25°C)	2,200 to 2,450Hz
	Sound Type	Illuminated: Intermittent Non-Illuminated: Steady/Intermittent
	Intermittent Cycle (at 25°C)	105 cycles/minute approx. (1.75Hz approx.)
Illumination	Illumination Type	Flashing
	Flash Cycle (at 25°C)	105 cycles/minute approx. (1.75Hz approx.)
Operating Temperature		–20 to +50°C (no freezing)
Operating Humidity		20 to 85% RH (no condensation)
Storage Temperature		–30 to +80°C (no freezing)
Insulation Resistance		100 MΩ minimum (500V DC megger)
Dielectric Strength		Between live and earthed metal parts: 1000 AC, 1 minute
Vibration Resistance		Damage limits: 5 to 55Hz, amplitude 0.5 mm Operating extremes: 5 to 55Hz, amplitude 0.5 mm
Shock Resistance		Operating extremes: 100 m/s²
		Damage limits: 1,000 m/s²
Degree of Protection	Panel front	IP65 (IEC60529)
	Terminal	IP40 (IEC 60529) IP54 (with terminal rubber boot) (IEC 60529)
Terminal Style		Push-in terminal
Applicable Wire		Solid wire/ferrule (without insulation cover): 0.2 to 1.5 mm², AWG24-16 Ferrule (with insulation cover): 0.2 to 0.75 mm², AWG24-18
Weight (approx.)		17g

Dimensions

All dimensions in mm.

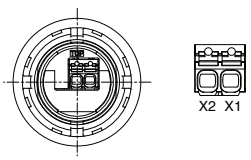
With terminal rubber boot



*1: ø4.5-5.5 cable needs no cutting.
*2: The bellows must be 17 to 22mm long after installing the terminal rubber boot.
*3: Maintain a cable angle of 45° max. to the HW1Z axis.

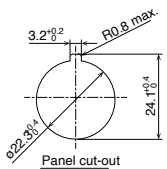
Terminal Arrangement

(botom view)



X1 and X2 have no polarity.

Mounting Hole Layout



3.2+0.2 0 hole is for anti-rotation.
Not required when nameplate/anti-rotation is not used.

Instructions for Illuminated / Non-illuminated buzzers: see page 795

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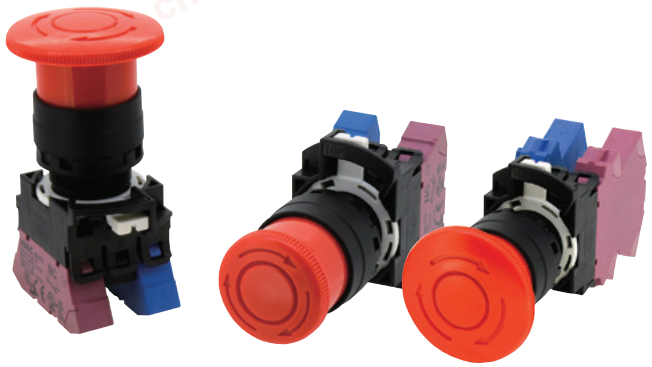
Emergency Stop Switches

Emergency Stop Switches

- Direct opening action (IEC 60947-5-5; 5.2, IEC 60947-5-1; Annex K)
- Safety lock mechanism (IEC 60947-5-5; 6.2)
- Degree of Protection IP65 (IEC 60529)

c UL us LISTED

- See website for details on approvals and standards.

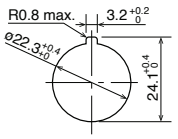


Specifications

Operating Temperature		–25 to +60°C (no freezing)
Operating Humidity		45 to 85% RH (no condensation)
Storage Temperature		–40 to +80°C (no freezing)
Minimum Force Required for Direct Opening Action		80N
Minimum Operator Stroke Required for Direct Opening Action		5.5mm
Maximum Operator Stroke		10.0mm
Contact Resistance		50 mΩ maximum (initial value)
Insulation Resistance		100 MΩ minimum (500V DC megger)
Dielectric Strength		Between live and dead parts: 2500V AC, 1 minute Between terminals of different poles: 2500V AC, 1 minute Bet ween terminals of the same poles: 2500V AC, 1 minute
Vibration Resistance	Damage limits	10 to 500 Hz, Amplitude 0.35 mm, Acceleration 50m/s²
	Operating extremes	10 to 500 Hz, Amplitude 0.35 mm, Acceleration 50m/s²
Shock Resistance		Damage limits: 1,000 m/s2
		Operating extremes: 150 m/s2
Operation Frequency		900 operations/hour
Life	Mechanical	Single contact block: 100,000 operations minimum Double contact block: 50,000 operations minimum
	Electrical	Single contact block: 100,000 operations minimum Double contact block: 50,000 operations minimum (at 900 operations/h, duty ratio 40%)
Degree of Protection		IP65 (IEC 60529), UL Type 4X
Short-circuit Protection		250V/10A fuse (Type aM IEC 60269-1/IEC 60269-2)
Weight (approx.)		51g (HW1B-V4P02) 67g (HW1B-V4P04) 48g (HW1B-Y2P02)

Mounting Hole Layout

All dimensions in mm.



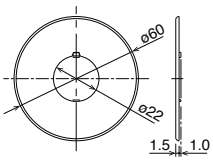
Minimum Mounting Centers for HW1B (emergency stop switch)

	Vertical Spacing	Horizontal Spacing
HW1B-V3 HW1B-V4 HW1B-Y2	50 mm minimum	50 mm minimum
HW1B-V5	60 mm minimum	60 mm minimum

- The minimum mounting centers of HW1B (pushbuttons) and each HW series emergency stop switches are shown. For other button shapes, refer to the dimensions and take wiring and operation of switches into consideration.

Nameplate (for ø22 mm Emergency Stop Switches)

Package Quantity: 1

Shape	Legend	Part No.	Ordering No.	Remarks
	(blank)	**HWAV-0-Y**	HWAV-0-Y	**HWAV-27-Y** Nameplate color: yellow Legend color: black Panel thickness: 0.8 to 4.5 mm Material: Polyamide  Note) Cannot be used on ø60 mushroom pushlock turn reset switches. Use a nameplate exclusive for ø60 mushroom e-stop. See XW series catalog.
	EMERGENCY STOP	**HWAV-27-Y**	HWAV-27-Y	

- "EMERGENCY OFF" and white (blank) nameplates available. See website or catalog for SEMI Emergency off (EMO) switches and Stop switches.

Note) For machinery subject to ISO/IEC standards such as machine tools and food machinery, in compliant with the revised ISO13850, it is not recommended to display texts or symbols such as EMERGENCY STOP on the actuator or nameplate of an emergency stop device.

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Emergency Stop Switches

Assembled



Package Quantity: 1

Name / Shape	Contact Configuration	Part No. (Coded)
ø29mm Mushroom Pushlock Turn Reset HW⓪B-V3	1NC	HW⓪B-V3P01R
	1NO-1NC	HW⓪B-V3P11R
	2NC	HW⓪B-V3P02R
	3NC	HW⓪B-V3P03N2R
	1NO-1NC	HW⓪B-V3P22R
	4NC	HW⓪B-V3P04R



Package Quantity: 1

Name / Shape	Contact Configuration	Part No. (Coded)
ø40mm Mushroom Pushlock Turn Reset HW1B-V4 HW4B-V4	1NC	HW⓪B-V4P01R
	1NO-1NC	HW⓪B-V4P11R
	2NC	HW⓪B-V4P02R
	3NC	HW⓪B-V4P03N2R
	1NO-1NC	HW⓪B-V4P22R
	4NC	HW⓪B-V4P04R



- Pushlock turn reset – Button is maintained when pressed and is reset when turned clockwise.
- Emergency stop switches with 1 contact block contain 2 dummy blocks. Pushbuttons with 2 contact block contains 1 dummy block.

• For other specifications, select from sub-assembled units (page 778).

Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

HW1B-V 4 P 11 R

⓪Bezel Type
- **1**: Black,
- **4**: Metal

①Operation code
- **V**: Pushlock Turn Reset
- **Y**: Push Pull

②Button style code
- **3**: ø29mm Mushroom (pushlock turn reset)
- **4**: ø40mm Mushroom (pushlock turn reset)
- **5**: ø60mm Mushroom (pushlock turn reset)
- **2**: ø40mm Mushroom (push pull)

③Contact configuration code
- **01**: 1NC
- **11**: 1NO-1NC
- **02**: 2NC
- **12N1**: 1NO-2NC
- **03N2**: 3NO
- **22**: 2NO-2NC
- **04**: 4NC

④Button color code

- For available assembled products, see table above.

Note
- For emergency stop purposes, these switches must contain at least one NC contact block.

Sub-assembled operator unit

HW1B - V 3 R

⓪Bezel Type
- **1**: Black,
- **4**: Metal

①Operation code
- **V**: Pushlock Turn Reset
- **Y**: Push Pull

②Button style code
- **3**: ø29mm Mushroom (pushlock turn reset)
- **4**: ø40mm Mushroom (pushlock turn reset)
- **5**: ø60mm Mushroom (pushlock turn reset)
- **2**: ø40mm Mushroom (push pull)

④Button color code (see page 778)

Note) Only up to 2 contacts can be used for push-pull switches

Sub-assembled contact unit

HW- CN P 10

Note) When choosing sub-assembled push-pull operators, only up to 2 contacts can be used.

③Contact configuration code
- **01**: 1NC
- **11**: 1NO-1NC
- **02**: 2NC
- **12N1**: 1NO-2NC
- **03N2**: 3NO
- **22**: 2NO-2NC
- **04**: 4NC

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Emergency Stop Switches

Sub-Assembled

When ordering, specify the sub-assembled ordering no.

Assembled = Operator unit + Contact unit (Contact block, dummy block, connecting unit)



Pushlock Turn Reset

Name / Shape	Contact Configuration	<Reference> Assembled Part No. ⓪ = 1 or 4	④ Button Color Code
ø29mm Mushroom HW⓪B-V3 	1NC	**HW⓪B-V3P01④**	**R** (red) **Y** (yellow)
	1NO-1NC	**HW⓪B-V3P11④**	
	2NC	**HW⓪B-V3P02④**	
	1NO-2NC	**HW⓪B-V3P12N1④**	
	3NC	**HW⓪B-V3P03N2④**	
	2NO-2NC	**HW⓪B-V3P22④**	
	4NC	**HW⓪B-V3P04④**	
ø40mm Mushroom HW⓪B-V4 	1NC	**HW⓪B-V4P01④**	**R** (red) **Y** (yellow)
	1NO-1NC	**HW⓪B-V4P11④**	
	2NC	**HW⓪B-V4P02④**	
	1NO-2NC	**HW⓪B-V4P12N1④**	
	3NC	**HW⓪B-V4P03N2④**	
	2NO-2NC	**HW⓪B-V4P22④**	
	4NC	**HW⓪B-V4P04④**	
ø60mm Mushroom HW⓪B-V5 	1NC	**HW⓪B-V5P01④**	**R** (red) **Y** (yellow)
	1NO-1NC	**HW⓪B-V5P11④**	
	2NC	**HW⓪B-V5P02④**	
	1NO-2NC	**HW⓪B-V5P12N④**	
	3NC	**HW⓪B-V5P03N2④**	
	2NO-2NC	**HW⓪B-V5P22④**	
	4NC	**HW⓪B-V5P04④**	

- Pushlock turn reset – Button is maintained when pressed and is reset when turned clockwise.

Sub-assembled Ordering No.
Pushlock Turn Reset

Package Quantity: 1

Operator Unit		Contact Unit		
Name / Shape	Part No. (Ordering No.)	Shape	Contact Configuration	Part No. (Ordering No.)
ø29mm Mushroom 	HW⓪B-V3④		1NC	HW-CNP01
			1NO-1NC	HW-CNP11
			2NC	HW-CNP02
			1NO-2NC	HW-CNP12N1
			3NC	HW-CNP03N2
			2NO-2NC	HW-CNP22
			4NC	HW-CNP04
ø40mm Mushroom 	HW⓪B-V4④		1NC	HW-CNP01
			1NO-1NC	HW-CNP11
			2NC	HW-CNP02
			1NO-2NC	HW-CNP12N1
			3NC	HW-CNP03N2
			2NO-2NC	HW-CNP22
			4NC	HW-CNP04
ø60mm Mushroom 	HW⓪B-V5④		1NC	HW-CNP01
			1NO-1NC	HW-CNP11
			2NC	HW-CNP02
			1NO-2NC	HW-CNP12N1
			3NC	HW-CNP03N2
			2NO-2NC	HW-CNP22
			4NC	HW-CNP04

- Specify a button color code in place of ④ in the Part No. R (red), Y (yellow)
  Note) Y (yellow) cannot be used as a emergency stop switch by EN standards.

Push Pull

Name / Shape	Contact Configuration	<Reference> Assembled Part No.	④ Button Color Code
ø40mm Mushroom HW1B-Y2 	1NC	HW⓪B-Y2P01④	**R** (red) **Y** (yellow)
	1NO-1NC	HW⓪B-Y2P11④	
	2NC	HW⓪B-Y2P02④	

- Push-Pull – 2-position switches with button maintained in both depressed and reset positions.
- ⓪ Bezel Type: 1: Black, 4: Metal

Push Pull

Package Quantity: 1

Operator Unit		Contact Unit		
Name / Shape	Part No. (Ordering No.)	Shape	Contact Configuration	Part No. (Ordering No.)
ø40mm Mushroom 	HW⓪B-Y2④		1NC	HW-CNP01
			1NO-1NC	HW-CNP11
			2NC	HW-CNP02

- Specify a button color code in place of ④ in the Part No. R (red), Y (yellow)
  Note) Y (yellow) cannot be used as a emergency stop switch by EN standards.

Note) Only up to 2 contacts can be used for push-pull switches.

For Part No. (Ordering No.)/ mounting positions of contact units, see page 781.

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Emergency Stop Switches Dimensions

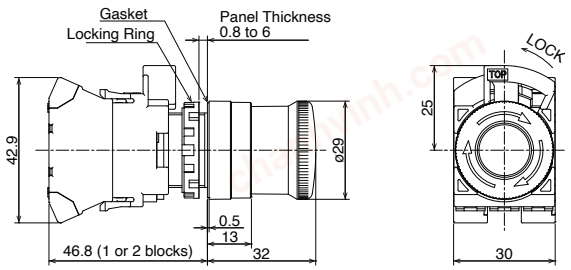
All dimensions in mm.

Dimensions

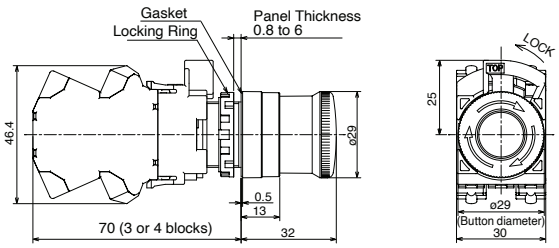
All dimensions in mm.

ø29mm Mushroom Pushlock Turn Reset
HW1B-V3

1 to 2 contacts

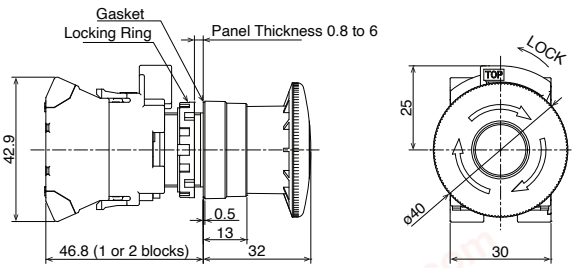


3 to 4 contacts

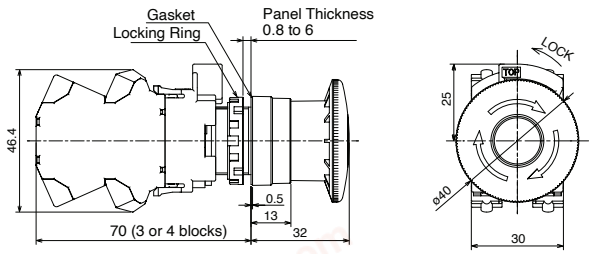


ø29mm Mushroom Pushlock Turn Reset
HW1B-V4

1 to 2 contacts

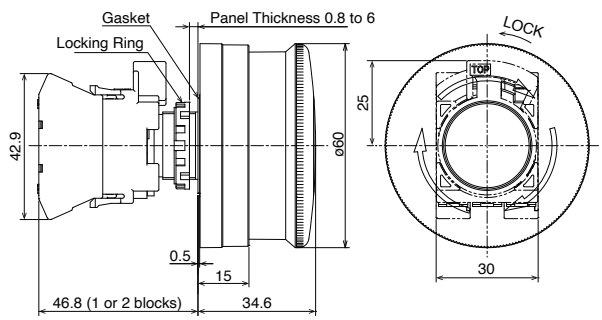


3 to 4 contacts

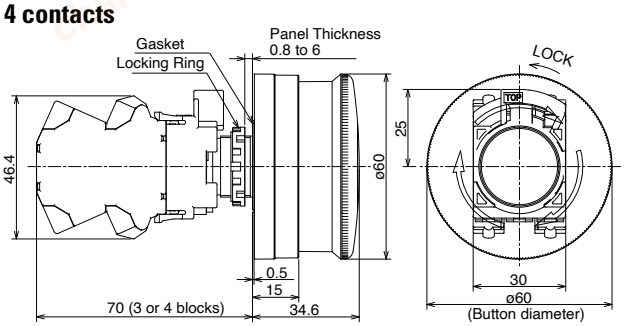


ø60mm Mushroom Pushlock Turn Reset
HW1B-V5

1 to 2 contacts

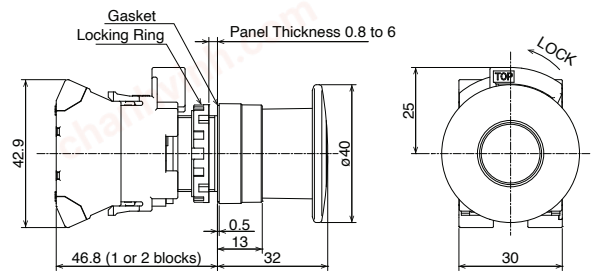


3 to 4 contacts



ø40mm Mushroom Push Pull (2-position)
HW1B-Y2

1 to 2 contacts

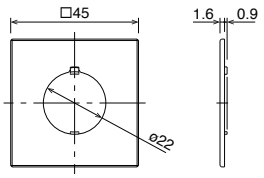


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Nameplates

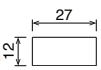
All dimensions in mm

When ordering, specify the Ordering No.

Description	Legend	Material	Part No.	Ordering No.	Dimensions (mm)
HWAM	Order marking plate (round) separately.	Plastic (black)	**HWAM**	HWAM HWAMPN10	HWNP-☐ marking plate (sold separately) is necessary.
HWAQ	Order marking plate (square) separately.	Plastic (black)	**HWAQ**	HWAQ HWAQPN10	HWNP-☐ marking plate (sold separately) is necessary.
HWAS	Blank	Plastic (black)	**HWAS-0**	HWAS-0 HWAS-0PN10	

Marking Plates for HWAM/HWAQ

When ordering, specify the Ordering No.

Description	Material	Part No.	Ordering No.	Dimensions (mm)
HWNP	Aluminum (black) Thickness = 1.0mm	**HWNP-☐**	HWNP-☐ HWNP-☐PN10	White legend on black background. Engraving area: W25×H7 

- Specify a legend code in place of ☐ in the Ordering No.

Legends

Code	Legend
0	(blank)
1	ON
2	OFF
3	START
4	STOP
31	OFF-ON
35	HAND-AUTO
53	HAND-OFF-AUTO

- See page 793 for how to install nameplates/marking plates, and how to remove marking plates.

E-Stop Shrouds

Style	Part Numbers	E-Stop Types	Applicable Standards
	HW9Z-KG1	40mm Mushroom Head	SEMI S2-0703, 12.5.1 Compliant
	HW9Z-KG2	40mm Mushroom Head	SEMI S2-0703, 12.5.1 & SEMATECH Compliant

Style	Part Numbers	E-Stop Types	Applicable Standards
	HW9Z-KG3	40mm Mushroom Head	SEMI S2 Compliant (Approved by TUV) ISO 13850
	HW9Z-KG4	40mm Mushroom Head	SEMI S2 Compliant (Approved by TUV) & SEMATECH ISO 13850

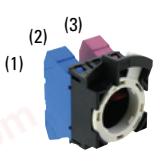
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Contact Unit

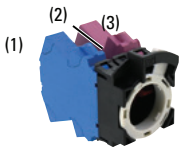
Contact Unit Part No. / Contact Configuration

Package Quantity: 1

Shape / Contact Block Mounting Position



1 to 2 contacts



3 to 4 contacts

Note) (2) can only be mounted with a dummy block.

Contact Configuration (Code)	Part No. (Ordering No.)	Mounting Position	Contact	Component Part No.
1NO (10)	HW-CNP10	(1)	1NO	HW-P10
		(2)	Dummy	CW-DB
		(3)	Dummy	CW-DB
1NC (01)	HW-CNP01	(1)	Dummy	CW-DB
		(2)	Dummy	CW-DB
		(3)	1NC	HW-P01
1NO-1NC (11)	HW-CNP11	(1)	1NO	HW-P10
		(2)	Dummy	CW-DB
		(3)	1NC	HW-P01
1NO-1NC (11N1)	HW-CNP11N1	(1)	1NC	HW-P01
		(2)	Dummy	CW-DB
		(3)	1NO	HW-P10
2NO (20)	HW-CNP20	(1)	1NO	HW-P10
		(2)	Dummy	CW-DB
		(3)	1NO	HW-P10
2NC (02)	HW-CNP02	(1)	1NC	HW-P01
		(2)	Dummy	CW-DB
		(3)	1NC	HW-P01
2NO-2NC (22)	HW-CNP22	(1)	1NO-1NC	HW-PW11
		(2)	Dummy	CW-DB
		(3)	1NO-1NC	HW-PW11
2NO-2NC (22N1)	HW-CNP22N1	(1)	2NO	HW-PW20
		(2)	Dummy	CW-DB
		(3)	2NC	HW-PW02
2NO-2NC (22N2)	HW-CNP22N2	(1)	2NC	HW-PW02
		(2)	Dummy	CW-DB
		(3)	2NO	HW-PW20

Contact Configuration (Code)	Part No. (Ordering No.)	Mounting Position	Contact	Component Part No.
3NO (30N1)	HW-CNP30N1	(1)	2NO	HW-PW20
		(2)	Dummy	CW-DB
		(3)	1NO	HW-P10
3NC (03N2)	HW-CNP03N2	(1)	2NC	HW-PW02
		(2)	Dummy	CW-DB
		(3)	1NC	HW-P01
1NO-2NC (12N1)	HW-CNP12N1	(1)	1NO-1NC	HW-PW11
		(2)	Dummy	CW-DB
		(3)	1NC	HW-P01
1NO-3NC (13)	HW-CNP13	(1)	1NO-1NC	HW-PW11
		(2)	Dummy	CW-DB
		(3)	2NC	HW-PW-02
2NO-1NC (21N3)	HW-CNP21N3	(1)	1NO-1NC	HW-PW11
		(2)	Dummy	CW-DB
		(3)	1NO	HW-P10
3NO-1NC (31)	HW-CNP31N1	(1)	1NO-1NC	HW-PW11
		(2)	Dummy	CW-DB
		(3)	2NO	HW-PW20
1NO-3NC (13)	HW-CNP13	(1)	1NO-1NC	HW-PW11
		(2)	Dummy	CW-DB
		(3)	2NC	HW-PW02
4NO (40)	HW-CNP40	(1)	2NO	HW-PW20
		(2)	Dummy	CW-DB
		(3)	2NO	HW-PW20
4NC (04)	HW-CNP04	(1)	2NC	HW-PW02
		(2)	Dummy	CW-DB
		(3)	2NC	HW-PW02

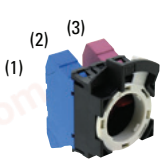
- Contact unit includes a contact block(s), and a connecting unit.
- Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy block.

Contact Unit

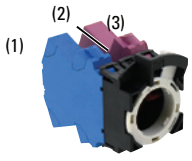
Contact Unit (illuminated) Part No. / Contact Configuration

Package Quantity: 1

Shape / Contact Block Mounting Position



1 to 2 contacts



3 to 4 contacts

Note) (2) can only be mounted with a dummy block.

Contact Configuration (Code)	Part No. (Ordering No.)	Mounting Position	Contact	Component Part No.
1NO (10)	HW-CNP10Q0	(1)	1NO	HW-P10
		(2)	Full voltage adapter	HW-DP
		(3)	Dummy	CW-DB
1NC (01)	HW-CNP01Q0	(1)	Dummy	CW-DB
		(2)	Full voltage adapter	HW-DP
		(3)	1NC	HW-P01
1NO-1NC (11)	HW-CNP11Q0	(1)	1NO	HW-P10
		(2)	Full voltage adapter	HW-DP
		(3)	1NC	HW-P01
1NO-1NC (11N1)	HW-CNP11N1Q0	(1)	1NC	HW-P01
		(2)	Full voltage adapter	HW-DP
		(3)	1NO	HW-P10
2NO (20)	HW-CNP20Q0	(1)	1NO	HW-P10
		(2)	Full voltage adapter	HW-DP
		(3)	1NO	HW-P10
2NC (02)	HW-CNP02Q0	(1)	1NC	HW-P01
		(2)	Full voltage adapter	HW-DP
		(3)	1NC	HW-P01
2NO-2NC (22)	HW-CNP22Q0	(1)	1NO-1NC	HW-PW11
		(2)	Full voltage adapter	HW-DP
		(3)	1NO-1NC	HW-PW11
2NO-2NC (22N1)	HW-CNP22N1Q0	(1)	2NO	HW-PW20
		(2)	Full voltage adapter	HW-DP
		(3)	2NC	HW-PW02
2NO-2NC (22N2)	HW-CNP22N2Q0	(1)	2NC	HW-PW02
		(2)	Full voltage adapter	HW-DP
		(3)	2NO	HW-PW20

Contact Configuration (Code)	Part No. (Ordering No.)	Mounting Position	Contact	Component Part No.
3NO (30N1)	HW-CNP30N1Q0	(1)	2NO	HW-PW20
		(2)	Full voltage adapter	HW-DP
		(3)	1NO	HW-P10
3NC (03N2)	HW-CNP03N2Q0	(1)	2NC	HW-PW02
		(2)	Full voltage adapter	HW-DP
		(3)	1NC	HW-P01
1NO-2NC (12N1)	HW-CNP12N1Q0	(1)	1NO-1NC	HW-PW11
		(2)	Full voltage adapter	HW-DP
		(3)	1NC	HW-P01
1NO-3NC (13)	HW-CNP13Q0	(1)	1NO-1NC	HW-PW11
		(2)	Full voltage adapter	HW-DP
		(3)	2NC	HW-PW02
2NO-1NC (21N3)	HW-CNP21N3Q0	(1)	1NO-1NC	HW-PW11
		(2)	Full voltage adapter	HW-DP
		(3)	1NO	HW-P10
3NO-1NC (31)	HW-CNP31Q0	(1)	1NO	HW-P10
		(2)	Full voltage adapter	HW-DP
		(3)	1NO-1NC	HW-PW11
1NO-3NC (13)	HW-CNP13Q0	(1)	1NO-1NC	HW-PW11
		(2)	Full voltage adapter	HW-DP
		(3)	2NC	HW-PW02
4NO (40)	HW-CNP40Q0	(1)	2NO	HW-PW20
		(2)	Full voltage adapter	HW-DP
		(3)	2NO	HW-PW20
4NC (04)	HW-CNP04Q0	(1)	2NC	HW-PW02
		(2)	Full voltage adapter	HW-DP
		(3)	2NC	HW-PW02

- Contact unit (illuminated) includes a contact block(s), full voltage adapter, and a connecting unit.
- Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy block.

Note) LED lamp is not installed. When ordering a contact unit (illuminated), select a LED lamp from below.

LED lamp (package quantity:1)

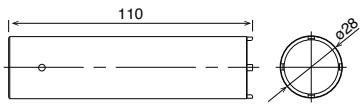
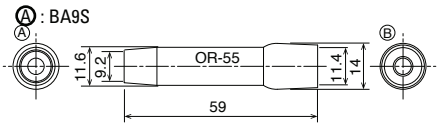
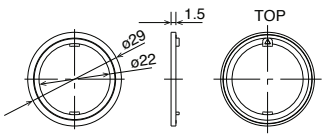
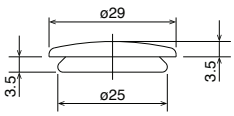
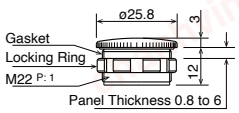
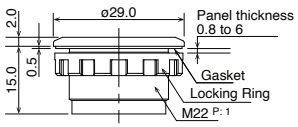
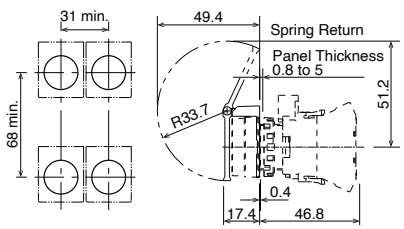
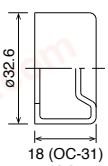


Rated Voltage	Part No. (Ordering No.)
6V AC/DC	LSRD-6
12V AC/DC	LSRD-1
24V AC/DC	LSRD-2
100/120V AC/DC	LSRD-H2
200/220V AC	LSRD-M2
230/240V AC	LSRD-M4

Accessories

All dimensions in mm

When ordering, specify the Ordering No.

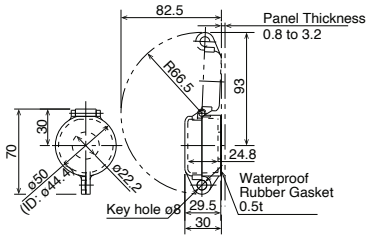
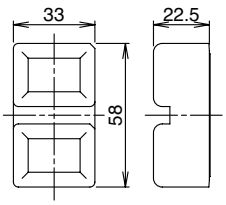
Name / Shape		Material	Part No.	Remarks
Tool — Locking Ring Wrench 		Metal (nickel-plated brass) Weight: approx. 150g	**MW9Z-T1**	• Used to tighten the locking ring when installing the HW switch onto a panel. 
Tool — Lamp Holder Tool 		Nitrile rubber (black)	**OR-55**	• Used to install and remove the LED lamps. See page **789** for how to install. 
Anti-rotation Ring 		Ring: polyamide Gasket: nitril rubber	**HW9Z-RL**	• Used to prevent the operator from turning. Generally used when using no nameplates on selector switches and pushbutton selectors. 
Rubber Mounting Hole Plug 		Nitril rubber (black)	**OB-31**	• Degree of protection: IP65 (round hole), IP40 (with anti-rotation function) 
Mounting Hole Plug 		Plug: Metal (Zinc diecast) Locking nut: Polyamide Gasket: Nitrile rubber	**LW9Z-BM**	• Degree of protection: IP66 (round hole), IP40 (with anti-rotation function) • Tightening torque: 1.2 N·m 
Mounting Hole Plug 		Polyamide	**LW9Z-BP1**	• Degree of protection: IP65 • Tightening torque: 2.0 N·m 
Switch Guard 	Spring Return	Guard: Polyacetal Cover: polyarylate Gasket: Nitrile rubber	**HW9Z-K1**	• Used to prevent inadvertent operation for flush pushbuttons. Degree of protection: IP65 • Maintained type stops at 90° and 180°. 
	Maintained		**HW9Z-K11**	
Button Clear Boot	For flush pushbuttons	Rubber (EPDM)	**OC-31**	• Used to cover and protect pushbuttons where units are subject to watersplash. Not suitable for outdoor use or where the units are subject to oil splash. • Cannot be used with nameplates HWAM, HWAQ, HWAS, or HWAV. 
	For extended pushbuttons		**OC-32**	

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Accessories

All dimensions in mm

When ordering, specify the Ordering No.

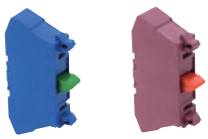
Name / Shape	Material	Part No.	Remarks
Padlock Cover 	Polyarylate Gasket: Nitrile rubber	**HW9Z-KL1**	• Used to protect pushbuttons, selector switches, and key selector switches. 
Rubber Boot for Dual Pushbutton Switches 	Clear Silicon Rubber	**HW9Z-D7D**	• IP65 
Ring Adapter 	Nitryl rubber	**HW9Z-A25**	• Used to install the HW series units into ø25 mm mounting holes. Degree of protection: IP65 • Cannot be used with anti-rotation and nameplate. • Mounting panel thickness: 1.2 to 6.0 mm • See page 792 for details.
Ring Adapter 	Gasket: polyamide Washer: metal (brass)	**HW9Z-A30**	• Used to install the HW series units (round type) into ø30 mm mounting holes (except HW1P-5, HW1E, HW1B-M5/V5, HW7D). Degree of protection: IP65 • Cannot be used with anti-rotation ring and nameplate. Cannot be used on full shroud illuminated pushbuttons, selector pushbuttons, and mono-lever switches. • Mounting panel thickness: 1.6 to 4.0 mm
For Illuminated Buzzer Terminal Rubber Boot 	Nitrile rubber	**HW9Z-CZ1**	• Applicable cable: ø4.5 to 8.5 mm • Cut the end of rubber boot to fit the cable size (see dimensions on page 796). • Weight: 10 g (approx.)

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Accessories

All dimensions in mm

When ordering, specify the Ordering No.

Name / Shape	Material	Part No.	Remarks
Contact Block 	NO contact Housing color: blue	**HW-P10**	Terminal no.: 1st deck 3-4
	NC contact Housing color: reddish purple	**HW-P01**	Terminal no.: 1st deck: 1-2
	NO (Early Make) contact Housing color: blue / black	**HW-P10R**	Terminal no.: 1st deck: 1-2
	2NO contact Housing color: blue	**HW-PW20**	Terminal no.: 1 deck: 13-14 2 deck: 23-24
	2NC contact Housing color: reddish purple	**HW-PW02**	Terminal no.: 1 deck: 11-12 2 deck: 21-22
	NONC contact Housing color: blue / reddish purple	**HW-PW11**	Terminal no.: 1 deck: 13-14 2 deck: 21-22
	NONC (Early Make)contact Housing color: blue / reddish purple	**HW-PW1R1**	Terminal no.: 1 deck: 13-14 2 deck: 21-22
	2NO (Early Make) contact Housing color: blue / black	**HW-PW2R0**	Terminal no.: 1 deck: 13-14 2 deck: 21-22
Full voltage adapter 	Nylon (black)	**HW-DP**	Terminal No: X1, X2
Connecting unit 	Weight: approx. 9g	**HW-CNP**	Connecting unit for Push-in terminal
Dummy Block 	Polyamide (black)	**CW-DB**	Note) Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy block.

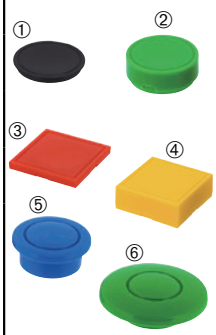
Note) Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy block.

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Maintenance Parts

All dimensions in mm

When ordering, specify the Ordering No.

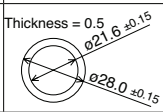
Name / Shape		Material/Dimensions	Part No.	Color Code *
Lens 	①Round flush	Polyarylate ø23.5 H4.2	**HW1A-L1-***	R (red), G (green), Y (yellow), A (amber), C (clear), S (blue)
	②Square flush	Polyarylate ø24.6 H4	**HW2A-L1-***	
	③Round extended	Polyarylate ø23.3 H10	**HW1A-L2-***	
	④ø29 mushroom	AS, marking type ø29 H12.7	**ALW31LD-***	
	⑤ø40 mushroom	AS, marking type ø40 H12.7	**ALW41LD-***	
	⑥Dome for pilot light	AS ø23.5 H15.1	**HW1A-P2-***	R (red), G (green), Y (yellow), A (amber), W (white), S (blue)
Button 	①Round flush with round or square bezel	Polyacetal ø23.6 H3	**HW1A-B1-***	• Use ① for Selector pushbuttons B (black), G (green), R (red), Y (yellow), S (blue), W (white)
	②Round extended with round or square bezel	Polyacetal ø23.6 H9.2	**HW1A-B2-***	
	③Square flush	Polyacetal □24.8 H3	**HW2A-B1-***	
	④Square extended	Polyacetal □24.5 H9.2	**HW2A-B2-***	
	⑤ø29 mushroom	Polyacetal ø29 H12.7 (M18P1.0)	**HW1A-B3-***	
	⑥ø40 mushroom	Polyacetal ø40 H12.7 (M18P1.0)	**HW1A-B4-***	
Marking Plate	Round flush	Acrylic ø21.5 Thickness = 1	**HW9Z-P11**	• White • See page 63 for dimensions and engraving area.
	Round extended 	Acrylic ø21.3 Thickness = 6.5	**HW9Z-P12**	
	Square flush	Acrylic 22.7 Thickness = 1	**HW9Z-P21**	
	ø29/40 mm mushroom 	Acrylic ø15.7 H3.4	**ALW3B**	
Operator Knob for Illuminated Selector Switch 		AS resin	**HW9Z-FDY***	R (red), G (green), Y (yellow), A (amber), W (white), S (blue)
Operator Lever for Illuminated Selector Switch 			**HW9Z-FDL***	
Spare Key (Disc Tumber Key) 		Metal (nickel-plated brass)	**HW9Z-SKP**	

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Maintenance Parts

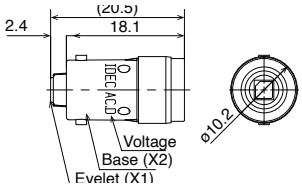
All dimensions in mm

When ordering, specify the Ordering No.

Name / Shape		Material/Dimensions	Part No.	Remarks
Spare Key (Pin Tumber Key) 		Metal (nickel-plated brass)	**LW9Z-SK-500**	• Standard key number
			LW9Z-SK-□	• Key number □: 501 to 515
Lockig Ring 		Polyamide (black) ø28.4 H5 M22P1	**HW9Z-LN**	
Cap for Mono-lever Switch 	Standard	Nitryl rubber ø10 L20	**HW9Z-CPM**	
Boot for Mono-lever Switch 	Standard	Nitryl rubber ø29.2 L34.4	**HW9Z-BLM**	
Gasket 		Nitryl rubber (black)	**HW9Z-WM**	Thickness = 0.5 

HW Series LED Lamps

When ordering, specify the Ordering No.

Shape/Dimensions	Operating Voltage	Current Draw		Part No.	Base
		DC	AC		
	6V AC/DC	10mA	14mA	**LSRD-6**	BA9S/13
	12V AC/DC	7mA	8mA	**LSRD-1**	
	24V AC/DC	7mA	8mA	**LSRD-2**	
	100/120V AC/DC	2mA	2mA	**LSRD-H2**	
	200/220V AC	2mA	2mA	**LSRD-M2**	
	230/240V AC	2mA	2mA	**LSRD-M4**	

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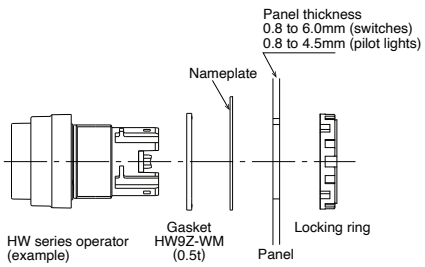
Safety Precautions

- Turn off the power to the HW series switches & pilot lights before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid a burn on your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage, current requirements, and the number of connectable wires (page 795). Failure to tighten the terminal screws may cause overheating and fire.
- Avoid using in places mentioned below to maintain performance of the product.
  -Exposed to direct sunlight
  -Subject to corrosive or flammable gases

Instructions

Panel Mounting

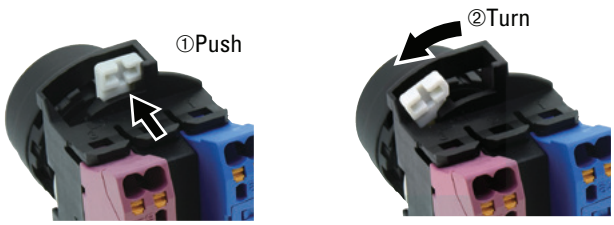
1. Remove the contact block from the operator.
2. Remove the locking ring from the operator
3. Insert the operator into the panel cut-out from the front.
   When mounting the nameplate, insert between the operator and panel.
4. Tighten the locking ring from the back.



Mounting panel thickness is reduced by 1.5 mm when using a nameplate.

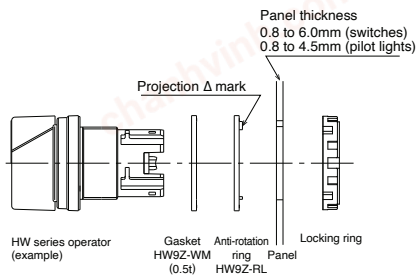
Removing the Contact Block

1. Remove the operator from the contact block by pushing and turning the locking lever in the direction of the arrow shown below. Then the operator can be pulled out.
2. To reinstall, place the TOP marking on the operator and the lock lever in the same direction, and insert the operator into the contact block mounting adapter. Then turn the locking lever in the opposite direction.

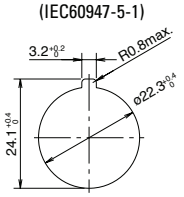


Anti-rotation Ring and Mounting Panel

Turn the TOP marking on the operator and the ▲ mark on the anti-rotation ring to the recess on the mounting panel.



Panel Cut
(IEC60947-5-1)

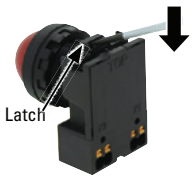


Installing the Pilot Light

Detach the operator unit from the LED unit. After mounting the operator from the front of the panel, attach the LED unit.

Installing / Removing the LED Unit

1. Detach the LED unit by lifting the latch using a small flat blade screwdriver width 0.5mm max.



2. To install, align the TOP marking on the operator with the TOP marking on the LED unit.



Notes for Panel Mounting

Locking ring wrench recommended torque
Tighten the bezel to a tightening torque of 2.0 N·m.

Locking ring wrench (MW9Z-T1) can be used to tighten the bezel. Do not use pliers. Excessive tightening will damage the locking ring.



Locking ring wrench (MW9Z-T1)

Panel Thickness

HW series can be mounted on a panel with thickness of 0.8 to 6.0 mm (switches) and 0.8 to 4.5 mm (pilot lights). Take the thickness of nameplate and/or switch guard into consideration.

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Instructions

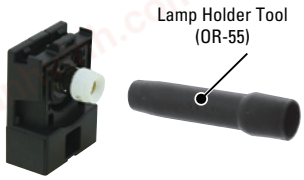
Replacing LED Lamps

Lamps can be replaced using the lamp holder tool (OR-55) from the front of the panel, or by removing the contact block from the operator unit.
(See page **783** for lamp holder tool.)

Removing the LED lamp from the front of the panel

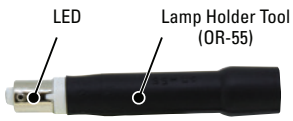
Removing

To remove, slip the lamp holder tool onto the lamp head lightly. Then push slightly, and turn the lamp holder tool counterclockwise.



Installing

Insert the lamp head into the lamp holder tool.

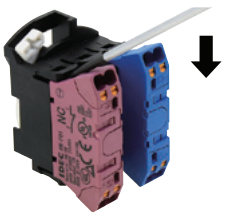


Place the pins on the lamp base to the grooves in the lamp socket. Insert the lamp and turn it clockwise.

Removing and Installing the Contact Blocks, Dummy Blocks, and LED Units

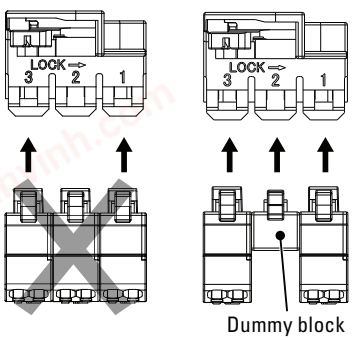
Removing

To remove the contact block and dummy block, insert into the flat blade screwdriver latch and move in the direction of the arrow.

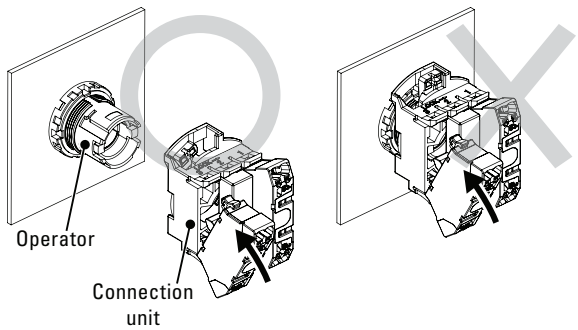


Installing

When installing the contact block or dummy block, make sure that it snaps on to the operator.
For No. 1 and 3 only a contact block or dummy block can be installed.
For No. 2, only a dummy block can be installed.



Note) Make sure to attach a correctly assembled connection unit to the operator.
Note) When attaching the contact block to the connection unit, make sure that the connection is detached from the operator. If a contact block is installed with the operator attached to the connection unit, malfunction of the switch may occur.
Note) Full voltage adapters cannot be removed or atached with contact blocks attached.
Note) Attach the full voltage adapter vertically to the connection unit.

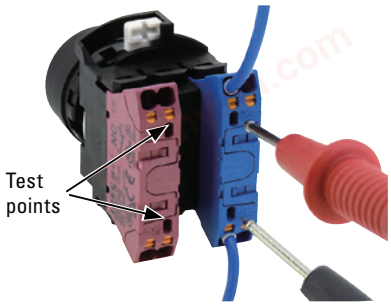


Test Points

Note) Do not insert wires into the test point.

Single contact block

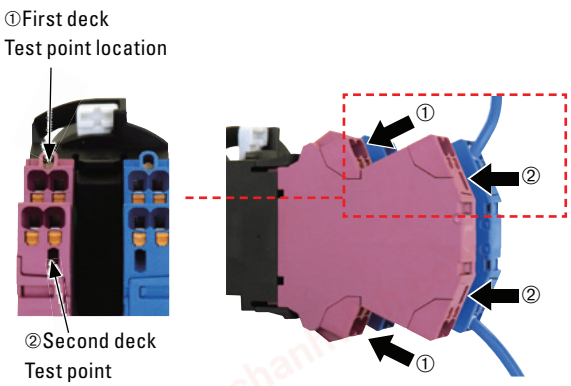
Note) When conducting a continuity test on the contact block, make sure that probes (ø2.0 maximum) of the tester are inserted vertically to the panel.



Double contact block

When conducting a continuity test on the first deck, make sure that probes (ø2.0 maximum) of the tester are inserted in an angle of the contact block, in two places as shown below.

When conducting a continuity test on the second deck, make sure that probes (ø2.0 maximum) of the tester are inserted vertically to the panel.



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Instructions

Installing/Removing the Buttons and Lenses

<To install> <To remove>

Pushbutton Button

• Flush/Extended

Push in the button to install.



Insert a flat screwdriver between the button and the bezel to remove the button.

• Mushroom/Jumbo Mushroom

Button has threads. Turn clockwise to install the button.



Turn the button counterclockwise to remove.

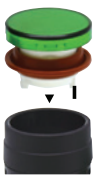
Note: Jumbo mushroom button cannot be removed.



Illuminated Pushbutton Lens

• Flush/Extended

Push in the lens holder into the operator unit.



Insert a flat screwdriver between the button and the bezel to remove the lens holder.



• Mushroom/Jumbo Mushroom

Lens has threads. Turn clockwise to install the lens.



Lens has threads. Turn counterclockwise to remove the lens.



Pilot Light Lens

• Extended

Lens has threads. Turn clockwise to install the lens.



Turn the lens counterclockwise to remove.



• Square Flush

Push in the lens holder into the operator unit.



Insert a flat screwdriver between the lens and the bezel to remove.



Installing/Removing the Lenses and Marking Plates

Removing

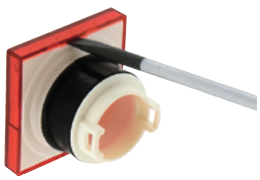
Removing the lens unit

Insert a flat screwdriver in groove of the lens (TOP mark side of the operator or opposite side) to remove the lens unit (lens/marking plate/ lens holder).



Removing the lens

Remove the lens by pushing the lens from the rear to disengage the latches between the lens and the lens holder, using a flat screwdriver as shown below.

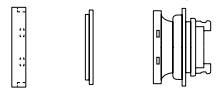


Note: The translucent filter in the lens holder cannot be removed because this filter is sealed to make the unit waterproof and oiltight.

Installing

1. Place the marking plate on the lens holder with the anti-rotation projection engaged and press the lens onto the lens holder to engage the latches.
2. Place the marking plate in the correct orientation.

For Square Lens (square flush lens)
*Note the orientation of the parts.



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Instructions

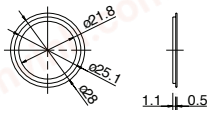
Using a Ring Adapter

HW9Z-A25

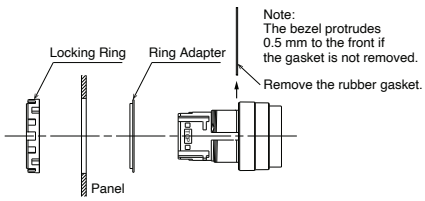
Install the ring adapter between the HW series unit and panel. Make sure that the side with ridges face the panel.



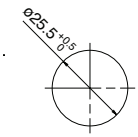
Dimensions



Installation

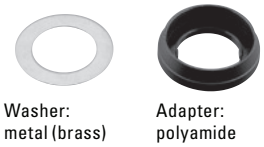


Panel Cut-out

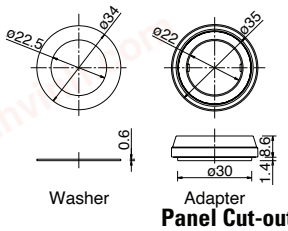


HW9Z-A30

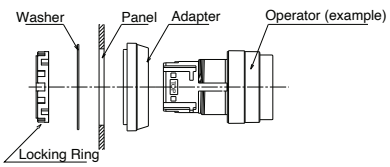
The ring adapter HW9Z-A30 consists of a washer and adapter. Install adapter between the HW series unit and panel. Install washer between the locking ring and panel.



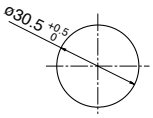
Dimensions



Installation

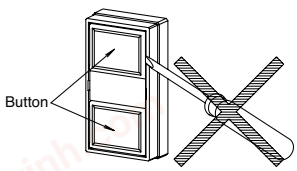


Panel Cut-out



Dual Pushbutton Switches

The pushbuttons cannot be removed or replaced. Do not attempt to remove using a flat screwdriver or pincers, otherwise the pushbuttons may be damaged.

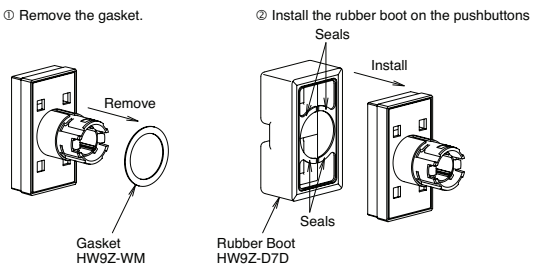


Installing the Rubber Boot for Dual Pushbuttons

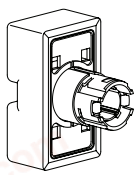
When using the HW7D pushbuttons in places where the pushbuttons are subject to water splash or an excessive amount of dust, make sure to use the HW9Z-D7D rubber boot (IP65) which is ordered separately. Remove the rubber gasket pre-installed on the operator, and install the rubber boot from the front of the button.

Notes for Installing the Rubber Boot

Remove the gasket from the operator, and install the rubber boot on the operator. Pull out the seals of the rubber boot and place them around the operator sleeve as shown. Make sure that the seals are not twisted or tucked inside and that the gasket does not remain, otherwise the normal waterproof and dustproof characteristics are not ensured.



Rubber Boot Installed



Selector Switches

Turn the operator such as knob, lever, and key to each position accurately. Releasing halfway may cause the operator to return to the former position, or to get stuck between. On spring return two-way types, the center of operators may be misaligned slightly.

Key Selector Switches

Observe the following instructions to prevent malfunction or damage.

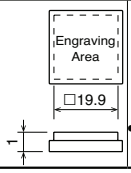
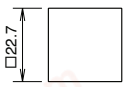
- Turn the key securely to each position.
- Insert the key to the bottom of the key hole.
- Do not remove the key from any key retained position.
- Use a key that matches with the number on the key cylinder. However, for standard keys, the key number is engraved on the key but not on the key cylinder.

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Marking

For HW series pilot lights, legends and symbols can be engraved on the built-in marking plates, or printed film can be inserted under the lens for labeling purposes.

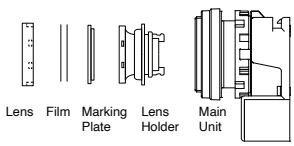
Marking plate and marking film size (mm)

Built-in marking plate and engraving area	Applicable marking film size
Outside diameter: □22.7 Engraving depth: 0.5mm max. 	 • Two 0.1 mm-thick films or one 0.2 mm-thick film

*Marking films are not supplied.

Insertion Order of Marking Plate and Film

Square Lens (Square flush lens)



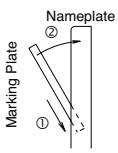
Note: Films are not supplied. When inserting a film, make sure that the marking plate is installed with its uneven side facing the lens holder.

Nameplate

Mounting panel thickness is reduced by 1.5 mm when using a nameplate.

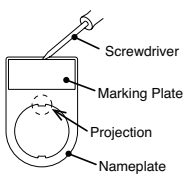
Installing a Marking Plate

Insert a marking plate tin the direction of the arrow ①, and press in as shown ②.



Removing a Marking Plate

Insert a flat screwdriver into the upper middle part of the marking plate and remove. When anti-rotation is not required, remove the projection from the nameplate using pliers.



Applicable Wire

When wiring, use the applicable wires shown below.

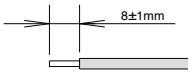
Applicable Wire and Specifications

Applicable Wire (*1)	0.25 to 1.5mm² (AWG16 to 24)
Wire Strip Length (*2)	8 ± 1mm (*3)
Ferrule Size (*3) (Weidmüller)	H0.25 to H1.5 (without insulated cover)
	H0.25 to H1.5 (with insulated cover)

*1) For applicable wires confirmed by IDEC, see website.

*2) For details on ferrules, see "Wire Size and Recommended Ferrules" table below.

*3) Strip the sheath of the wire 8±1mm from the end.



Note: Make sure that the stranded wires do not loosen when using wiring without ferrules.

Wire Size and Recommended Ferrules

Ferrules without insulated covers

Applicable Wire (Stranded Wire)		Wire Strip Length	Weidmüller Recommended Part No.
AWG	mm²		
24	0.25	5 to 6mm	**H0.25/5**
20	0.50	10 to 11mm	**H0.5/10**
18	0.75	10 to 11mm	**H0.75/10**
18	1.00	10 to 11mm	**H1.0/10**
16	1.50	10 to 11mm	**H1.5/10**

Ferrules with insulated covers

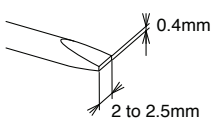
Applicable Wire (Stranded Wire)		Wire Strip Length	Weidmüller Recommended Part No.
AWG	mm²		
24	0.25	10 to 11mm	**H0.25/12 HBL**
22	0.34	10 to 11mm	**H0.34/12 TK**
20	0.50	10 to 11mm	**H0.5/14 OR**
18	0.75	10 to 11mm	**H0.75/14 W**
18	1.00	10 to 11mm	**H1.0/14 GE**
16	1.50	10 to 11mm	**H1.5/14 R**

Recommended Tools (Optional)

Name	Weidmüller Recommended Part No.
Crimping tool	**PZ 6 ROTO L**
Flat blade screwdriver	**SDS 0.4×2.0×60**
	SDS 0.4×2.5×75

Note 1)Note the crimping dimensions When using tools other than the recommended crimping tool. For details, see page 793.

Note 2)Use a flat blade screwdriver with a blade size of 0.4×2 to 2.5 mm.



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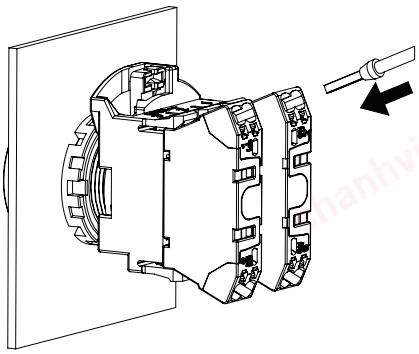
Wiring Procedure

Connecting the wire

Stranded wires with ferrules or solid wire

① Insert the wire to the back of the wire port.

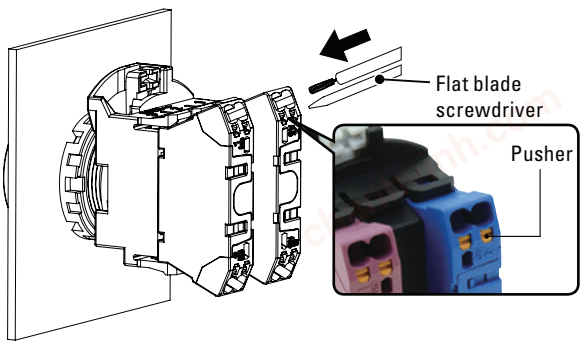
② After wiring, tug lightly to make sure that the wire is properly connected.



Stranded wire

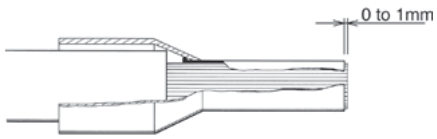
① While pressing the pusher (orange button) using a flat blade screwdriver (recommended: SDS 0.4×2.0×60 (optional). Insert the wire fully in the wiring port. Wire is connected when the pusher is released.

② After wiring, tug lightly to make sure that the wire is properly connected.



Crimping of Ferrules and Wiring

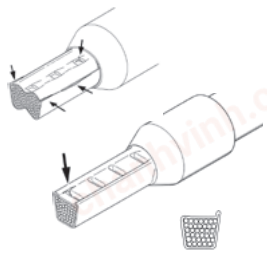
- Choose an appropriate ferrule for the wire.
- Cut the wire carefully to get a flat end.
- Make sure that ferrule sleeve is completely filled by the conductor. Depending on the cross section, the conductor should protrude approx. 0 to 1 mm from the ferrule sleeve.



- When crimping, refer to the instructions of the crimping tool.

Faults which can occur during crimping:

- Cracks along the sides and die impressions
- Splitting of the ferrules
- Asymmetrical crimping shape
- Extreme burrs formed along the sides
- Ferrule not filled by conductor
- Single conductors pushed back by protruding from the insulated cover
- Single conductors squeezed off
- Insulation cover damaged by the crimping jaw
- Conductor insulation not pushed into the insulated cover
- Ferrule bent longitudinally after crimping



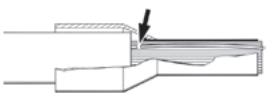
Formation of cracks at the sides.
Sides spilt open

Formation of cracks at the impressions of the crimping jaw

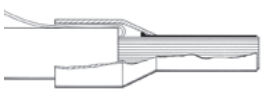
Asymmetrical crimping shape.
Burr formation on one side



Asymmetrical crimping shape.
Burr formation on one side



Single conductor squeezed off



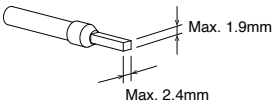
Single conductor pushed back

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Instructions

Crimping dimensions: W2.4×H1.9 mm

Maximum connectable crimping size is W2.4×H1.9. Make sure that the ferrule size will be smaller than this dimension. (Recommended crimping tool: PZ 6 Roto (optional) Weidmüller

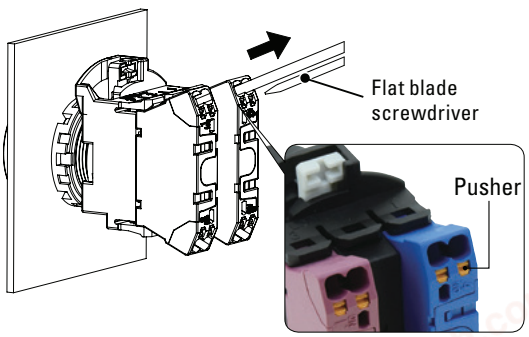


Note 1) If a tool other than the recommended crimping tool is used, the ferrule may not be crimped to the appropriate size and the clamp or spring inside the contact block may be deformed and may not operate normally.

Note 2) Pin crimp terminals cannot be used.

Removing the Wire

When removing the wire, push the pusher using a flat blade screwdriver (recommended: SDS 0.4×2.0×60) and pull wire out in the direction of the arrow.



<Notes>

- Operate the pusher with a force of 20N. Do not press excessively. Otherwise, the switch may be damaged.
- Do not pull the wire out without depressing the pusher. When pulling the wire, be sure to pull in a straight direction. Otherwise, the socket may be damaged.

Number of Connectable Wires

Unit	Connectable wires		No. of connectable wires
HW-P Contact block Pilot light	Solid wire	0.25 to 1.5mm^2 (AWG16 to 24)	2
	Stranded wire	0.25 to 1.5mm^2 (AWG16 to 24)	
	Ferrule	Without insulated cover 0.25mm^2: conductor length:5 to 10mm 0.5 to 1.0mm^2: conductor length: 6 to 10mm 1.5mm^2: conductor length 8 to 10mm With insulated cover 0.25 to 1.0mm^2: conductor length 6 to 10mm 1.5mm^2: conductor length 8 to 10mm Note) Pin terminals cannot be used	

Note) Only one wire can be inserted into one wire port.

Instructions (Emergency Stop Switches)

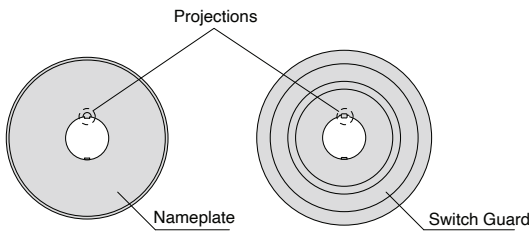
When using the HW series control units in a safety-related circuit of a control system, observe safety rules and regulations of each country concerning particular applications of the actual machines and facilities. Perform risk assessment before operation to ensure safety.

Chattering / Contact Bounce

When the button is reset by pulling or turning, the NC main contacts will bounce. When pressing the button, the NO monitor contacts will bounce. When designing a control circuit, take the contact bounce time into consideration (reference value: 20 ms).
Also, do not apply shock to the switch as chattering may occur.

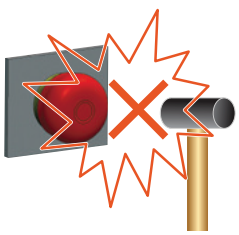
Nameplate or Switch Guard

When anti-rotation is not required, remove the projection from the nameplate or switch guard using pliers. Mechanical indicator types have projections on the operator. Make sure to remove the projection on the nameplate or switch guard.



Handling

Do not expose the switch to excessive shocks and vibrations, otherwise the switch may be deformed or damaged, causing malfunction or operation failure.

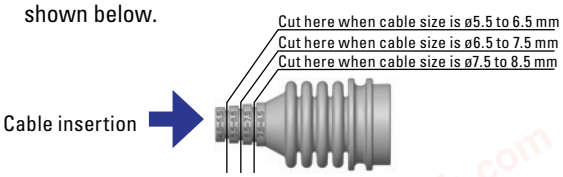


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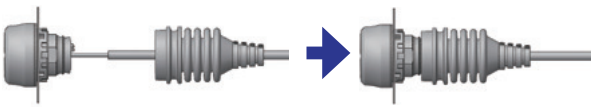
Instructions (Illuminated / Non-illuminated Buzzers)

Installing the terminal rubber boot

1. Cut the end of terminal rubber boot to fit the cable size.
2. Insert the cable into the terminal rubber boot in the direction of arrow shown below.



3. Strip the insulation of the cable 30 mm from the end and wire as instructed in "Wiring".
4. Install the terminal rubber boot as shown below.

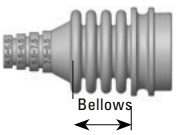


5. Cover part B with part A.

Installed
(terminal rubber boot: cross section view)

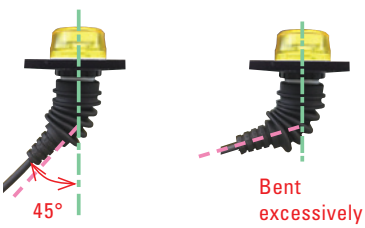


6. Make sure that the bellows is 17 to 22 mm long.



Note for terminal rubber boot

- Be sure to use bellows with an appropriate length. Otherwise, waterproof characteristics cannot be achieved.
- Maintain a cable angle of 45° maximum to the axis of the buzzer, otherwise the terminal rubber boot may come off.

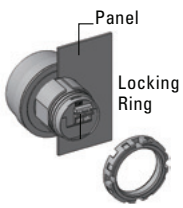


Panel Mounting

- Insert the buzzer into the panel cut-out from the front, and tighten the locking ring from the back.

Note for panel mounting

- Use the optional locking ring wrench (MW9Z-T1) to tighten the locking ring to a recommended tightening torque of 1.5 to 2.0 N·m.
- Do not use pliers and do not tighten excessively, otherwise the buzzer may be damaged.



Wiring Procedure

Connecting the wire

Solid wire

Strip the insulation of the cable from 8mm from the end and insert into the wire port.
After wiring, tug lightly to make sure that the wire is properly connected.

Stranded wire with ferrule

Crimp a ferrule with a conductor length of 8mm and insert to the back of the wire port. After wiring, tug lightly to make sure that the wire is properly connected.

Stranded wire

Strip the wire insulation 8mm from the end and push in the wire release pin above the wire port using a small flat screwdriver. Release the wire release pin. Make sure that the wire does not loosen.



Wire removal

Push in the orange color wire release pin above the wire ports using a small flat screw driver, and pull out the wire.

Flat blade screwdriver

Use a flat blade screwdriver blade size 2.5mm

Notes for wiring

- Make sure that the terminal is not constantly pulled by the wire.
- Wiring must be performed in environments of –5 to +50°C.
- Do not damage the conductor wire when stripping the wire insulation.
- Do not use wires with bent or deformed conductors wires. Deformed wiring may cause failures such as strength degradation and overheating. Connect one wire per terminal. Connecting two wires to a terminal may cause loose wiring and strength degradation.
- Do not solder the conductor lines. Connecting soldered stranded wires may loose wiring and strength degradation.
- If a stranded wire has loose wires, twist the conductor wires before connection. However be careful not to twist excessively.

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S³ Connect® Push-in Wiring Enabled Product Selection Guide

Switches		Relay Sockets		PLCs & Modules	Safety Control Module	
HW Series	CW Series	RU Series	RJ Series	FC6A Series	HR6S series	HR5S series
						
22mm Industrial Heavy-duty Switches	22mm Industrial Switches with Flush Mount Bezel	2 or 4 pole Din rail mount sockets for industrial relays and timers	Space-saving 1 or 2 pole Din rail mount sockets for industrial relays	Powerful and compact controller with industrial protocols and IIoT features	Safety control modules with diagnostic outputs	The first CAT 2 safety control module in the industry
Push buttons and dual pushbuttons	Push buttons with thin bezel	Fit RU series relays and GT5Y timers	Fit RJ or RF2 series relays	FC6A All-in-one models	Advanced diagnostic and output functions	Ideal for low risk applications
Illuminated push buttons	Illuminated push buttons	2 pole model P/N: SU2S-21L	1 pole model P/N: SJ1S-21L	FC6A Plus models	Connect to various safety input devices	Front access push-in wiring terminals
Selector switches	Selector switches	4 pole model P/N: SU4S-21L	2 pole model P/N: SJ2S-21L		Screw clamping or push-in wiring terminals	Slim body
Key switches	Key switches	IP20	IP20			
Pilot Lights	Pilot Lights					
Illuminated selector	USB & RJ45 Ports					
Selector push buttons	IP65 & Type 4X					
Monolever switches						
Emergency stop switches						
Illuminated buzzers						
IP65 & Type 4X						

RFID Reader & Tags	Tools & Accessories
KW2D	
	
RFID Solution for industrial authentication & access control	Crimping tool Wire stripping tool Ferrules
KW2D RFID Reader	
RFID Fobs and tags	
IP65/67	

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