



ø22 SWITCHES & PILOT LIGHTS
HW SERIES



Push-in Switches & Pilot Lights

Simple wiring with Push-in technology



IDEC CORPORATION



All thoughts focused on the same goal

Since the late 1970s, IDEC has continued to instill and pursue “Save and Safe”, as part of our corporate DNA. Along with the rapid advancement in machine intelligence and demands for environmental resistance and high reliability in recent years, we need to face societal issues such as shortage in workforce.

To solve these issues, we have set as our goals “Safe, Simple & Smart=S³ (S cube)”, aiming to provide society with products and services that will bring about greater innovation and lasting quality.

Safe

Products anyone can use with safety and assurance, from a company seeking to be number one in safety

Simple

Products appreciated by all our customers for their ease of connection regardless of experience

Smart

Products that make labor-saving and space-saving a reality



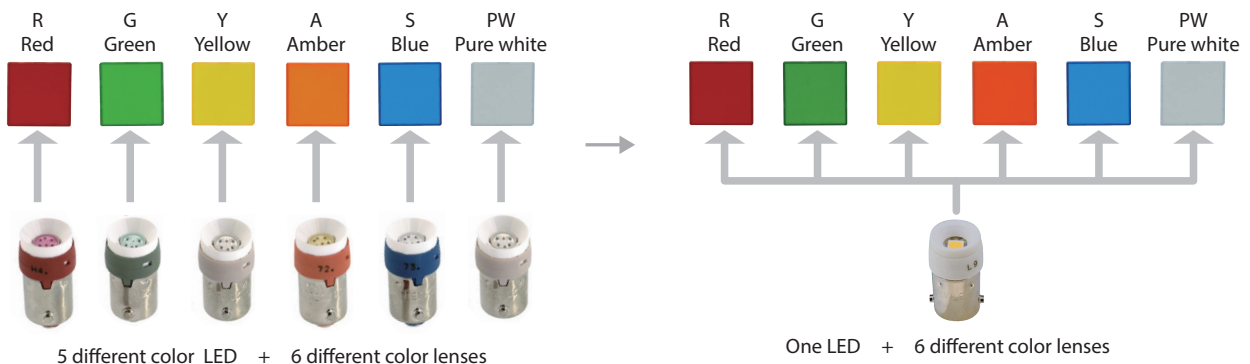
Useful

We provide easy and user-friendly products with new technology.

First in the industry Six different colors with a single LED

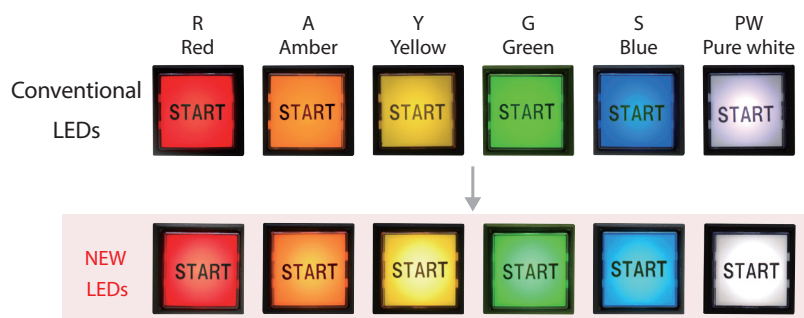
Previously, 5 different color LEDs were required but with the new illuminated LED unit, only a single LED is used. Only the lens needs to be replaced to change the illumination color.

The new LED reduces maintenance time, makes stock control easier, and is environmentally friendly.



High visibility with new LED

Brighter and clearer compared to conventional LEDs



ISO3864-4 Safety color compliant

Safety colors are defined with ISO standards.

The bright and clear colors are suited for emergency situations

*Except for products below

•Illuminated selector switches (illumination color: S (Blue), PW (Pure white))

•Illuminated pushbuttons (illumination color: S (Blue))



Push-in

Smart

Simple

Simple wiring for greater work efficiency

Ferrules and solid wires can be connected simply by push-in insertion, without a screwdriver. ^{(*)1}

To remove, a flat-blade screwdriver is inserted in a simple two-action process.

Since wiring can be performed regardless of operators' skill level, wiring time is reduced.

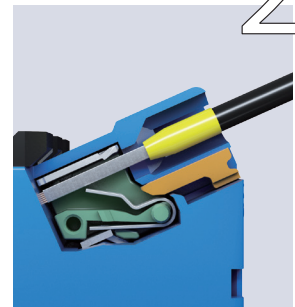
^{*}1) When connecting stranded wire, insert the wire while holding down the pusher with a flat-blade screwdriver.

Connecting



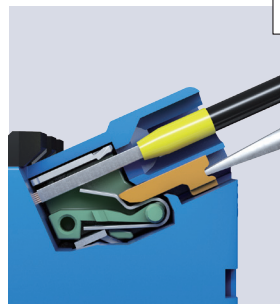
Push the wire straight in as far as it will go.

2



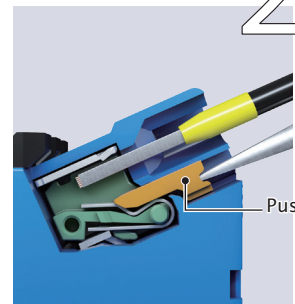
Connection is completed. Pull lightly to make sure it is firmly in place.

Removing



Hold down the pusher with a flat-blade screwdriver.

2



While holding down the pusher, pull out the wire. Release the flat-blade screwdriver.

Smart

Time saving and efficient

Push-in connections are made simple by inserting the wire, reducing wiring time by approximately 55% compared to conventional screw terminals.

[Conditions]

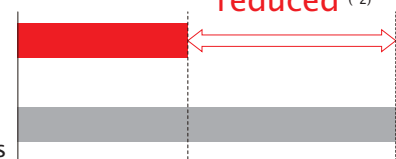
Push-in: Insert wire with ferrule.

Screw terminals: With screw loosened, insert wire, then tighten with electric driver.

Push-in
HW Series

Conventional
screw terminals

Approx. **55%**
reduced ^{(*)2}



^{*}2) As of IDEC research (as of January 2020)

Safe

Reliable and easy

Finger-safe structure and vibration resistance.
What's more, the space-saving design means better workability in a smaller space.

Stays firmly in place

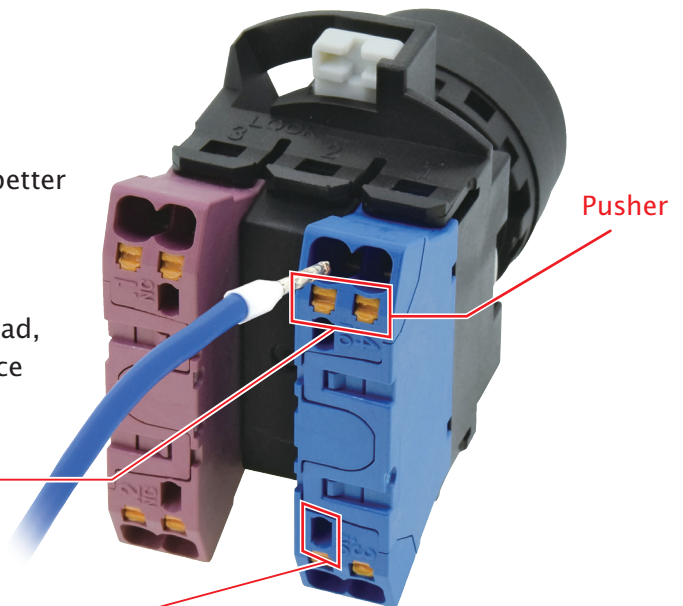
Since the ferrule is held in place by a spring load, the wiring remains taut and vibration resistance is improved.

Finger-safe structure

IP20 Finger-safe protection enables wiring to be performed without direct contact between screwdriver and conductive part.

Test point

A test point is available to check connectivity of the wiring.
Check connectivity easily using a tester.



Smart

Simple

Wiring procedure comparison

Work can be performed without using tools and regardless of operators' skill level.

*1) When ferrule is used.

Conventional screw terminal



Push-in terminal ^(*)



Smart

No additional tightening needed

Because screws are not used on push-in terminals, re-tightening of screws is not required.

Product Upgrade

The superior functions of the conventional HW Series still remain while improving ease of use.

Space-Saving

Smart

Contact block depth reduced

Saves space inside panel and enables downsizing of equipment.

Pilot light
full voltage type



Conventional HW Series

Panel depth
reduced by
**50%
DOWN**



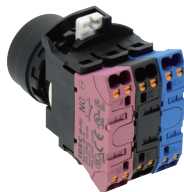
Push-in HW Series

Illuminated pushbuttons
6V, 12V, 24V AC/DC



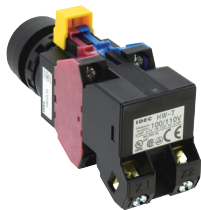
Conventional HW Series

Panel depth
reduced by
**30%
DOWN**



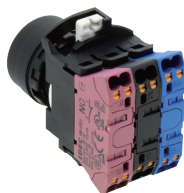
Push-in HW Series

Illuminated pushbuttons
100/120V AC/DC, 200/220V AC, 230/240V AC



Conventional HW Series

Panel depth
reduced by
**40%
DOWN**



Push-in HW Series

No transformers required for high voltage types

Smart

Smart

High-voltage pilot lights No transformer required

Applicable for a wide range of voltage
(100/120V AC/DC, 200/240V AC).

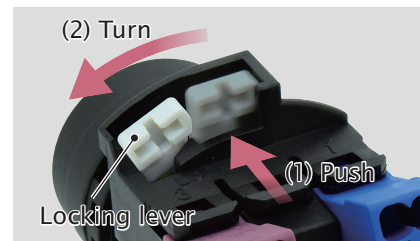
Mounts directly on control and power panels
without transformers.

Ideal for use in Europe and north America
for applications requiring high voltage.



Locking lever

Usability improved by easy mounting and removal.
The mounting status of the contact blocks can be
confirmed at a glance from the back of the switch.



The specifications are the same as the conventional series, enabling easy installation

Panel design

Push-in design does not change
the panel design.

Electrical rating and durability

Same electrical ratings and
durability with push-in
terminal contact blocks.

More compact, more user-friendly pushbuttons, selector switches, key selector switches (*1)

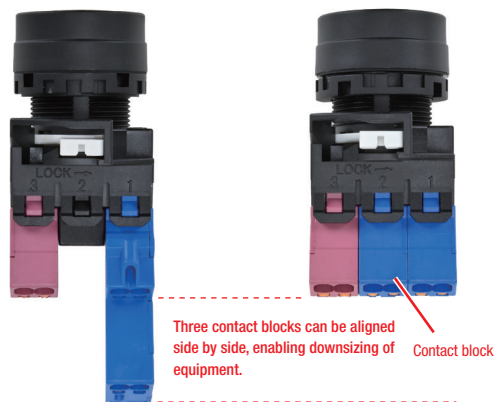
① Contact depth reduced for 3-contact configuration

② Up to 6-contact configurations available

Suitable for applications with complicated circuit operation.

Conventional

New



*1) Pushbuttons (round flush, round extended, square flush, square extended), selector switches, key selector switches.

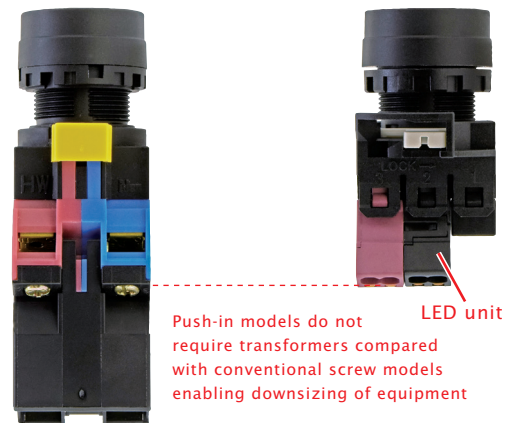
• The middle contact block may not operate depending on the operator that the customer may be using.

High voltage LED illuminated unit for illuminated pushbuttons

100/120V AC/DC, 200/220V AC, 230/240V AC types available. No transformers required and same depth behind the panel for all illuminated voltages. High voltage models do not require transformers enabling downsizing of equipment and panels. 1-contact types also available.

Conventional screw terminal

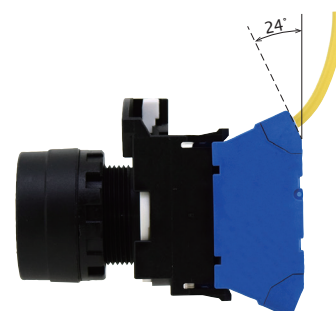
Push-in



100/120V AC/DC, 200/220V AC, 230/240V AC types

Angled connections

Angled connections make wiring easy even when switches are mounted on a panel. Also, 24-degree inclination faced to the panel improves the fit of the wires, and contributes to downsizing of the panel and equipment.



ø22 HW Series Push-in Switches & Pilot Lights

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



- See website for details on approvals and standards.

Note) Above approvals are for pushbuttons, selector switches, pilot lights only.
See page 33 for illuminated/non-illuminated buzzers.
See page 34 for emergency stop switches.

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 IEC 60947-5-1	AC-15 (A600) DC-13

- See website for approved contact ratings.

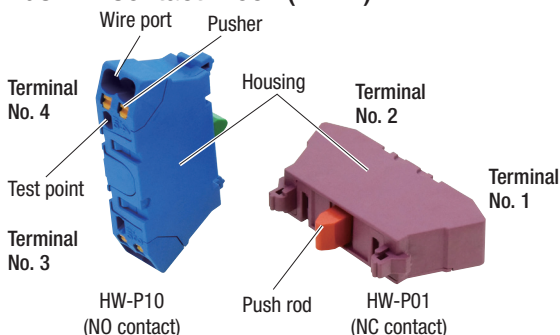
Rated Operating Voltage and Current by Utilization Category

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		

LED Illuminated Part Specifications

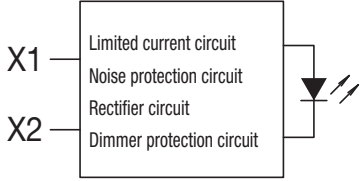
Illuminated Pushbuttons, Illuminated Selector Switches, Dual Pushbuttons (with pilot light)

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

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	100/120V AC/DC			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%	207~250V
Current Draw	DC	10mA	7mA	7mA	2mA	—
	AC	14mA	8mA	8mA	2mA	2mA
Life (reference value)	Approx. 100,000 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 46 are used.

(IP40 when other ø22 nameplates 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 46 are used.

*4) For dual pushbuttons, Type 4X is achieved when used with button covers (HW9Z-D7D).

Specifications

Switches (except for emergency stop switch)

Operating Temperature	–25 to +60°C (no freezing) Illuminated unit: –25 to +50°C
Operating Humidity	30 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)
Electrical Life (*5)	Monolever switches..... 250,000 (*5)
	 100,000 (*6)
	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)
Weight (approx.)	Selector pushbuttons 250,000 (*2)(*5)
	 50,000 (*2)(*6)
	Monolever switches 250,000 (*3)(*5)
	 50,000 (*3)(*6)
	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

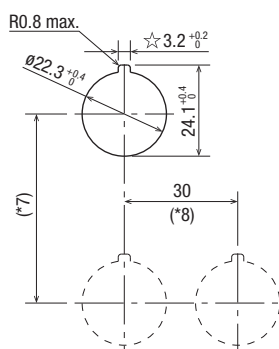
Pilot lights

Operating Temperature	–25 to +50°C (no freezing)
Operating Humidity	30 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-2JPD4)
	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 34.

- Determine the mounting centers in consideration of the operation, wiring, and testing terminals.

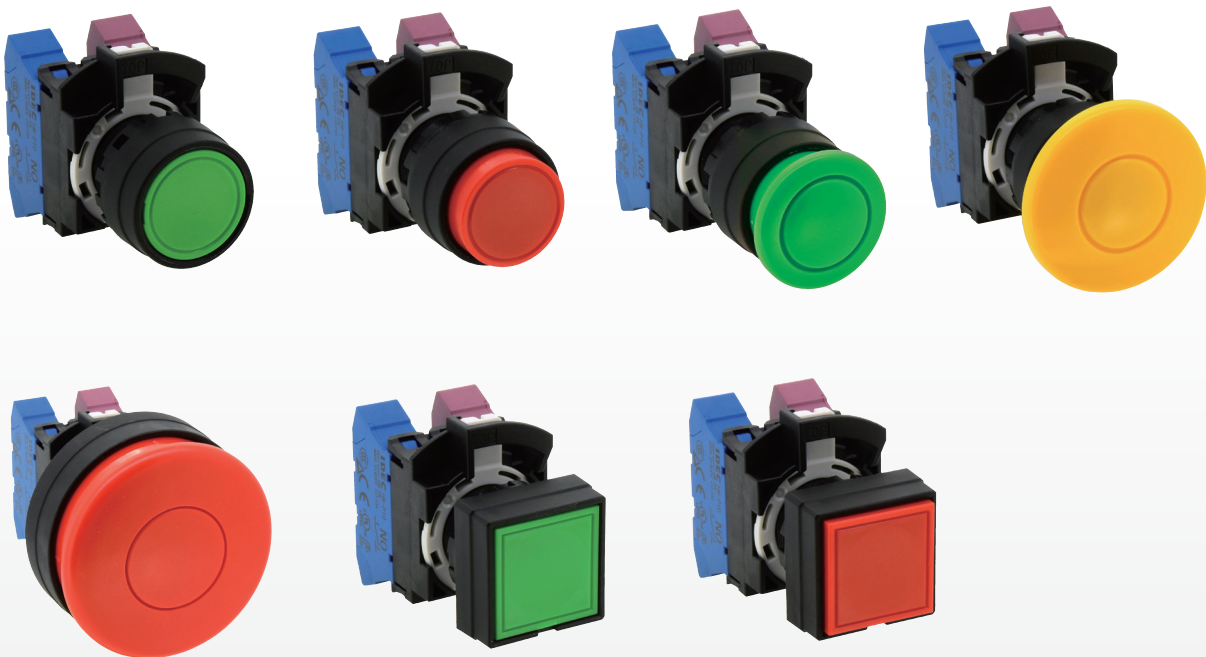
Ordering Information

Illuminated / non-illuminated buzzer specifications: see page 33

Emergency stop switch specifications: see page 34

ø22 HW Series

Assembled Products



ø22 HW Series Assembled Products

Pushbuttons

Quantity: 1

Name / Shape	Operation	Contact Configuration	Part No.
	Momentary	1NO	HW1B-M1P10 ^⑤ -U
		1NC	HW1B-M1P01 ^⑤ -U
		1NO-1NC	HW1B-M1P11 ^⑤ -U
		2NO	HW1B-M1P20 ^⑤ -U
		2NC	HW1B-M1P02 ^⑤ -U
	Maintained	2NO-2NC	HW1B-M1P22 ^⑤ -U
		1NO	HW1B-A1P10 ^⑤ -U
		1NC	HW1B-A1P01 ^⑤ -U
		1NO-1NC	HW1B-A1P11 ^⑤ -U
		2NO	HW1B-A1P20 ^⑤ -U
	Momentary	2NC	HW1B-A1P02 ^⑤ -U
		2NO-2NC	HW1B-A1P22 ^⑤ -U
	Maintained	1NO	HW1B-M2P10 ^⑤ -U
		1NC	HW1B-M2P01 ^⑤ -U
		1NO-1NC	HW1B-M2P11 ^⑤ -U
		2NO	HW1B-M2P20 ^⑤ -U
		2NC	HW1B-M2P02 ^⑤ -U
		2NO-2NC	HW1B-M2P22 ^⑤ -U
	Maintained	1NO	HW1B-A2P10 ^⑤ -U
		1NC	HW1B-A2P01 ^⑤ -U
		1NO-1NC	HW1B-A2P11 ^⑤ -U
		2NO	HW1B-A2P20 ^⑤ -U
		2NC	HW1B-A2P02 ^⑤ -U
	Momentary	2NO-2NC	HW1B-A2P22 ^⑤ -U
	Maintained	1NO	HW1B-M3P10 ^⑤ -U
		1NC	HW1B-M3P01 ^⑤ -U
		1NO-1NC	HW1B-M3P11 ^⑤ -U
		2NO	HW1B-M3P20 ^⑤ -U
		2NC	HW1B-M3P02 ^⑤ -U
		2NO-2NC	HW1B-M3P22 ^⑤ -U
	Maintained	1NO	HW1B-A3P10 ^⑤ -U
		1NC	HW1B-A3P01 ^⑤ -U
		1NO-1NC	HW1B-A3P11 ^⑤ -U
		2NO	HW1B-A3P20 ^⑤ -U
		2NC	HW1B-A3P02 ^⑤ -U
	Momentary	2NO-2NC	HW1B-A3P22 ^⑤ -U
	Maintained	1NO	HW1B-M4P10 ^⑤ -U
		1NC	HW1B-M4P01 ^⑤ -U
		1NO-1NC	HW1B-M4P11 ^⑤ -U
		2NO	HW1B-M4P20 ^⑤ -U
		2NC	HW1B-M4P02 ^⑤ -U
		2NO-2NC	HW1B-M4P22 ^⑤ -U
	Maintained	1NO	HW1B-A4P10 ^⑤ -U
		1NC	HW1B-A4P01 ^⑤ -U
		1NO-1NC	HW1B-A4P11 ^⑤ -U
		2NO	HW1B-A4P20 ^⑤ -U
		2NC	HW1B-A4P02 ^⑤ -U
		2NO-2NC	HW1B-A4P22 ^⑤ -U

- Specify a color code in place of ⑤ in the Part No.
*1) Only B (black), G (green), R (red) available for ø60mm mushroom.
- Up to 6 contacts can be used for round flush, round extended, square flush, and square extended pushbuttons.
- For sub-assembled units (operator type / contact unit), see page 37 to 44.

Name / Shape	Operation	Contact Configuration	Part No.
ø60mm Mushroom 	Momentary	1NO	HW1B-M5P10 ^⑤ -U
		1NC	HW1B-M5P01 ^⑤ -U
		1NO-1NC	HW1B-M5P11 ^⑤ -U
		2NO	HW1B-M5P20 ^⑤ -U
		2NC	HW1B-M5P02 ^⑤ -U
		2NO-2NC	HW1B-M5P22 ^⑤ -U
Square flush 	Momentary	1NO	HW2B-M1P10 ^⑤ -U
		1NC	HW2B-M1P01 ^⑤ -U
		1NO-1NC	HW2B-M1P11 ^⑤ -U
		2NO	HW2B-M1P20 ^⑤ -U
		2NC	HW2B-M1P02 ^⑤ -U
	Maintained	2NO-2NC	HW2B-M1P22 ^⑤ -U
		1NO	HW2B-A1P10 ^⑤ -U
		1NC	HW2B-A1P01 ^⑤ -U
		1NO-1NC	HW2B-A1P11 ^⑤ -U
		2NO	HW2B-A1P20 ^⑤ -U
Square extended 	Momentary	2NC	HW2B-A1P02 ^⑤ -U
		2NO-2NC	HW2B-A1P22 ^⑤ -U
		1NO	HW2B-M2P10 ^⑤ -U
		1NC	HW2B-M2P01 ^⑤ -U
		1NO-1NC	HW2B-M2P11 ^⑤ -U
	Maintained	2NO	HW2B-M2P20 ^⑤ -U
		2NC	HW2B-M2P02 ^⑤ -U
		2NO-2NC	HW2B-M2P22 ^⑤ -U
		1NO	HW2B-A2P10 ^⑤ -U
		1NC	HW2B-A2P01 ^⑤ -U
	Maintained	1NO-1NC	HW2B-A2P11 ^⑤ -U
		2NO	HW2B-A2P20 ^⑤ -U
		2NC	HW2B-A2P02 ^⑤ -U
		2NO-2NC	HW2B-A2P22 ^⑤ -U

Part number structure

HW1B-M1P10B-U	
Bezel shape	Button color
1: Round	B (black)
2: Square	G (green)
4: Metal	R (red)
Operation	Y (yellow)
M: Momentary	S (blue)
A: Maintained	W (white)
Button type	*1) Only B (black), G (green), R (red) available for ø60mm mushroom.
1: Flush	Contact configuration
2: Extended	10: 1NO
3: ø29mm Mushroom	01: 1NC
4: ø40mm Mushroom	11: 1NO-1NC
5: ø60mm Mushroom	20: 2NO
	02: 2NC
	22: 2NO-2NC

Note: The square bezel can only be used with two button types:
1) Flush and 2) Extended.

Note: The ø60mm mushroom can only be used with "1:Plastic Round(Bezel)".

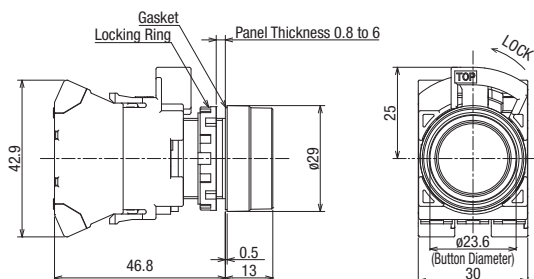
Pushbutton Dimensions

All dimensions in mm.

Flush

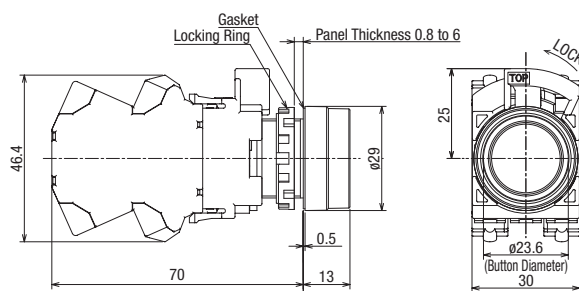
Single contact block

HW1B-□1P



Double contact block

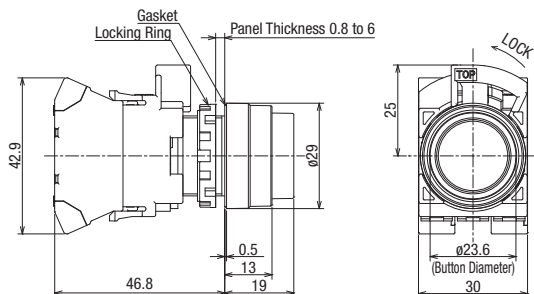
HW1B-□1P



Extended

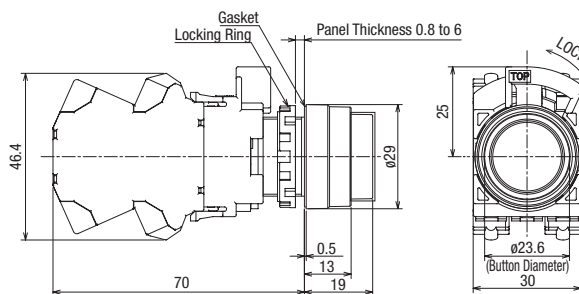
Single contact block

HW1B-□2P



Double contact block

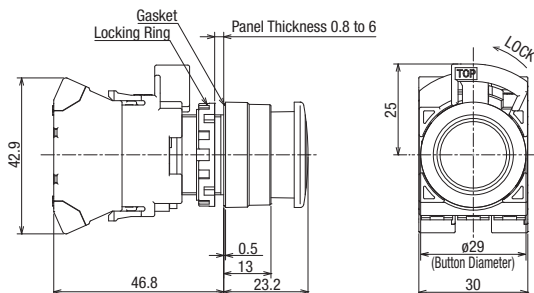
HW1B-□2P



ø29mm Mushroom

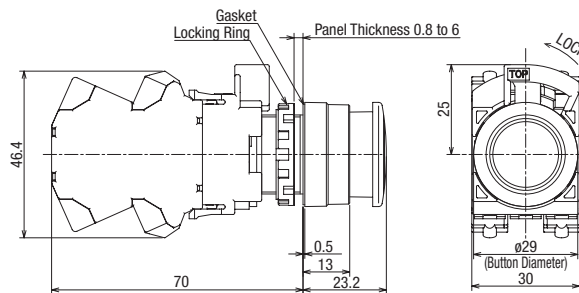
Single contact block

HW1B-□3P



Double contact block

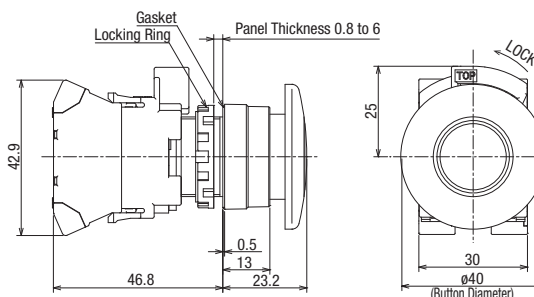
HW1B-□3P



ø40mm Mushroom

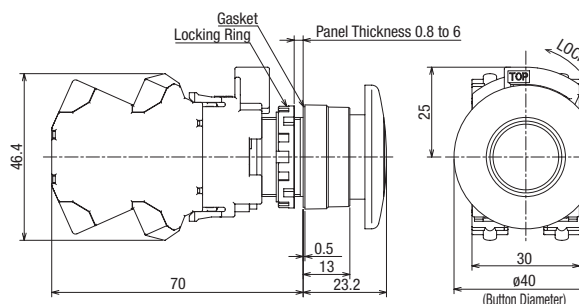
Single contact block

HW1B-□4P



Double contact block

HW1B-□4P



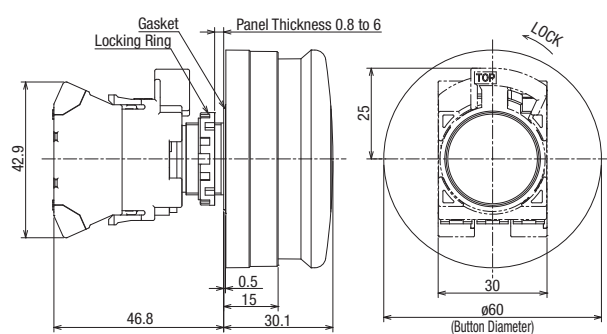
Pushbutton Dimensions

All dimensions in mm.

ø60mm Mushroom

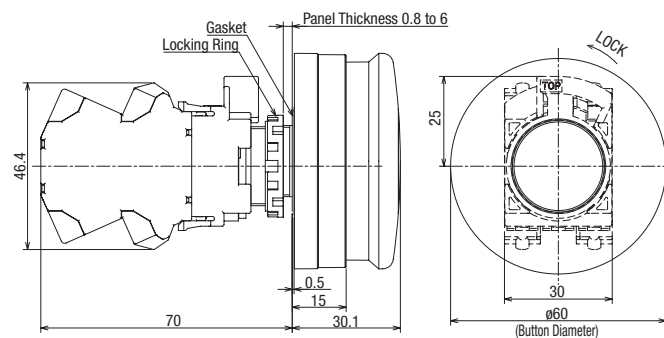
Single contact block

HW1B-M5P



Double contact block

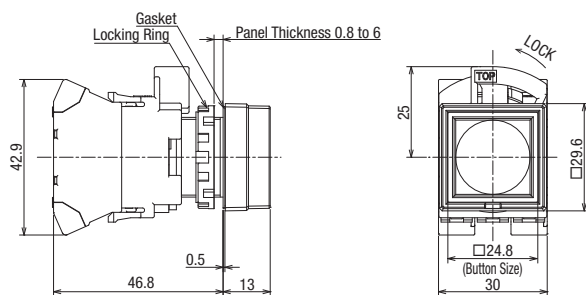
HW1B-M5P



Square Flush

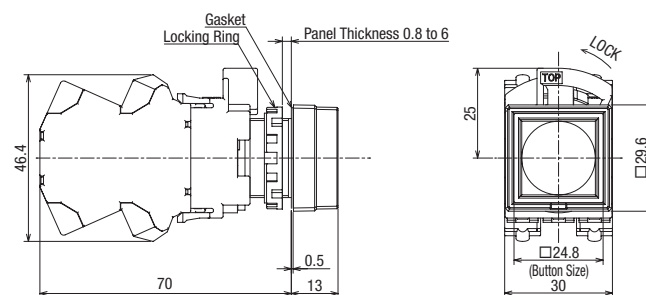
Single contact block

HW2B-□1P



Double contact block

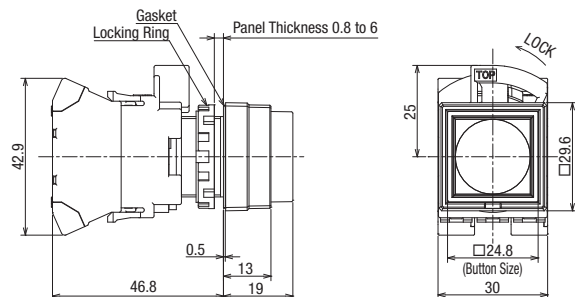
HW2B-□1P



Square Extended

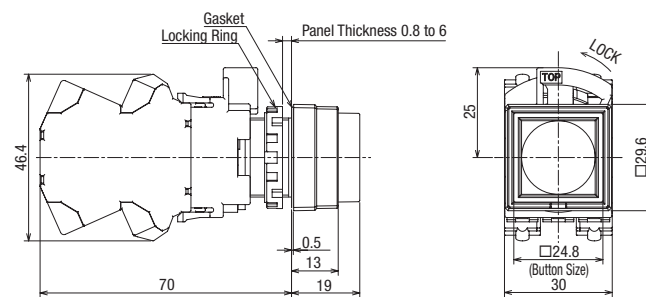
Single contact block

HW2B-□2P



Double contact block

HW2B-□2P



Illuminated Pushbuttons

Quantity: 1

Name / Shape	Operation	Contact Configuration	Part No.
	Momentary	1NO	HW1L-M1P10⑤⑥-U
		1NC	HW1L-M1P01⑤⑥-U
		1NO-1NC	HW1L-M1P11⑤⑥-U
		2NO	HW1L-M1P20⑤⑥-U
		2NC	HW1L-M1P02⑤⑥-U
		2NO-2NC	HW1L-M1P22⑤⑥-U
	Maintained	1NO	HW1L-A1P10⑤⑥-U
		1NC	HW1L-A1P01⑤⑥-U
		1NO-1NC	HW1L-A1P11⑤⑥-U
		2NO	HW1L-A1P20⑤⑥-U
		2NC	HW1L-A1P02⑤⑥-U
		2NO-2NC	HW1L-A1P22⑤⑥-U
	Momentary	1NO	HW1L-M2P10⑤⑥-U
		1NC	HW1L-M2P01⑤⑥-U
		1NO-1NC	HW1L-M2P11⑤⑥-U
		2NO	HW1L-M2P20⑤⑥-U
		2NC	HW1L-M2P02⑤⑥-U
		2NO-2NC	HW1L-M2P22⑤⑥-U
	Maintained	1NO	HW1L-A2P10⑤⑥-U
		1NC	HW1L-A2P01⑤⑥-U
		1NO-1NC	HW1L-A2P11⑤⑥-U
		2NO	HW1L-A2P20⑤⑥-U
		2NC	HW1L-A2P02⑤⑥-U
		2NO-2NC	HW1L-A2P22⑤⑥-U
	Momentary	1NO	HW1L-MF2P10⑤⑥-U
		1NC	HW1L-MF2P01⑤⑥-U
		1NO-1NC	HW1L-MF2P11⑤⑥-U
		2NO	HW1L-MF2P20⑤⑥-U
		2NC	HW1L-MF2P02⑤⑥-U
		2NO-2NC	HW1L-MF2P22⑤⑥-U
	Maintained	1NO	HW1L-AF2P10⑤⑥-U
		1NC	HW1L-AF2P01⑤⑥-U
		1NO-1NC	HW1L-AF2P11⑤⑥-U
		2NO	HW1L-AF2P20⑤⑥-U
		2NC	HW1L-AF2P02⑤⑥-U
		2NO-2NC	HW1L-AF2P22⑤⑥-U

Name / Shape	Operation	Contact Configuration	Part No.
	Momentary	1NO	HW2L-M1P10⑤⑥-U
		1NC	HW2L-M1P01⑤⑥-U
		1NO-1NC	HW2L-M1P11⑤⑥-U
		2NO	HW2L-M1P20⑤⑥-U
		2NC	HW2L-M1P02⑤⑥-U
		2NO-2NC	HW2L-M1P22⑤⑥-U
	Maintained	1NO	HW2L-A1P10⑤⑥-U
		1NC	HW2L-A1P01⑤⑥-U
		1NO-1NC	HW2L-A1P11⑤⑥-U
		2NO	HW2L-A1P20⑤⑥-U
		2NC	HW2L-A1P02⑤⑥-U
		2NO-2NC	HW2L-A1P22⑤⑥-U
	Momentary	1NO	HW1L-M3P10⑤⑥-U
		1NC	HW1L-M3P01⑤⑥-U
		1NO-1NC	HW1L-M3P11⑤⑥-U
		2NO	HW1L-M3P20⑤⑥-U
		2NC	HW1L-M3P02⑤⑥-U
		2NO-2NC	HW1L-M3P22⑤⑥-U
	Maintained	1NO	HW1L-A3P10⑤⑥-U
		1NC	HW1L-A3P01⑤⑥-U
		1NO-1NC	HW1L-A3P11⑤⑥-U
		2NO	HW1L-A3P20⑤⑥-U
		2NC	HW1L-A3P02⑤⑥-U
		2NO-2NC	HW1L-A3P22⑤⑥-U
	Momentary	1NO	HW1L-M4P10⑤⑥-U
		1NC	HW1L-M4P01⑤⑥-U
		1NO-1NC	HW1L-M4P11⑤⑥-U
		2NO	HW1L-M4P20⑤⑥-U
		2NC	HW1L-M4P02⑤⑥-U
		2NO-2NC	HW1L-M4P22⑤⑥-U
	Maintained	1NO	HW1L-A4P10⑤⑥-U
		1NC	HW1L-A4P01⑤⑥-U
		1NO-1NC	HW1L-A4P11⑤⑥-U
		2NO	HW1L-A4P20⑤⑥-U
		2NC	HW1L-A4P02⑤⑥-U
		2NO-2NC	HW1L-A4P22⑤⑥-U

- Specify an illumination color code in place of ⑤ in the Part No.
- Specify a rated voltage code in place of ⑥ in the Part No.
- Up to 4 contacts can be used.
- For sub-assembled units (operator type / contact unit / LED lamp), see page 37 to 44.

Part number structure

HW1L-M1P11⑤⑥-U	
Bezel shape	Illumination color
1: Round	R: red A: amber
2: Square	G: green S: blue
4: Metal	Y: yellow PW: pure white
Operation	Rated voltage
M: Momentary	Q2: 6V AC/DC QH2: 100/120V AC/DC
A: Maintained	Q3: 12V AC/DC QM: 200/220V AC
Button style	Q4: 24V AC/DC QM4: 230/240V AC
1: Flush	Contact configuration
2: Extended	10: 1NO
F2: Round Extended with full Shroud	01: 1NC
3: ø29mm Mushroom	11: 1NO1NC
4: ø40mm Mushroom	20: 2NO
	02: 2NC
	22: 2NO-2NC

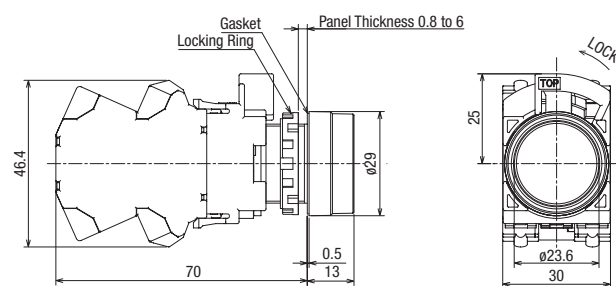
Note: The Plastic Square can only be used with "1: Flush(Button)".

Note: The square bezel can only be used with two button types: 1) Flush and 2) Extended.

All dimensions in mm.

HW1L-□1P

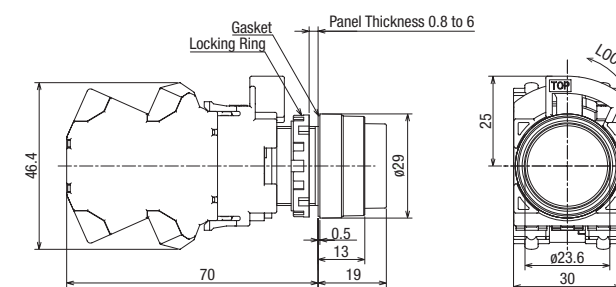
HW1L-□1P



HW1L-□2P

HW1L-□2P

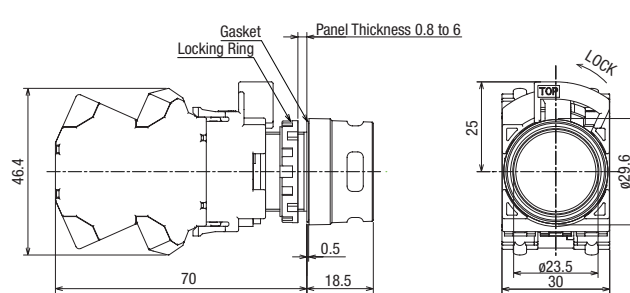
HW1L-□2P



HW1L-□F2P

HW1L-□F2P

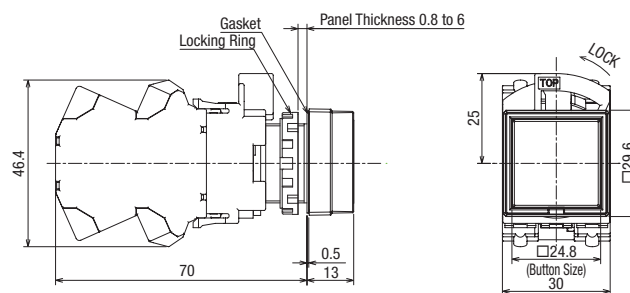
HW1L-□F2P



HW2L-□1P

HW2L-□1P

HW2L-□1P



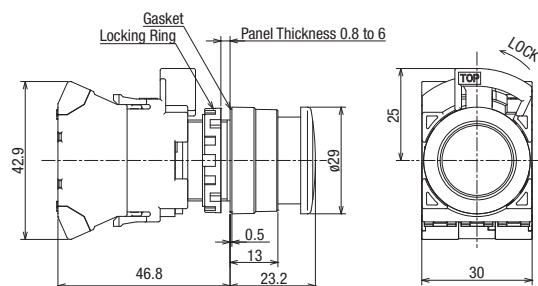
Illuminated Pushbuttons Dimensions

All dimensions in mm.

ø29 Mushroom

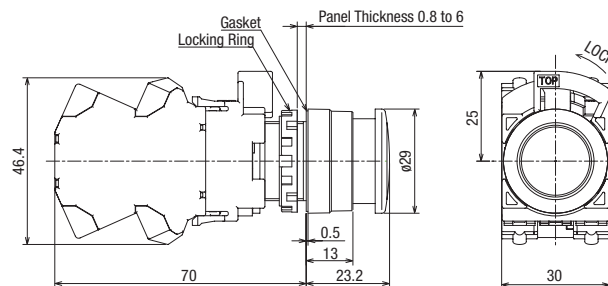
Single contact block

HW1L-□3P



Double contact block

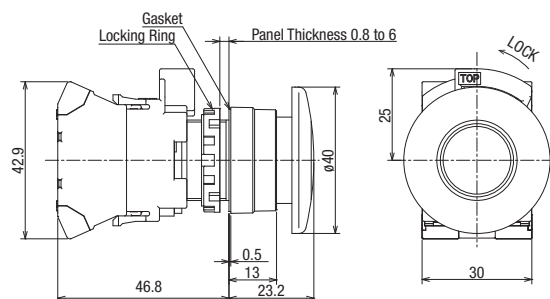
HW1L-□3P



ø40 Jumbo Mushroom

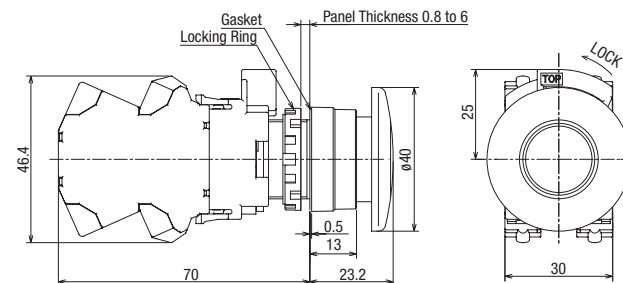
Single contact block

HW1L-□4P



Double contact block

HW1L-□4P



Dual Pushbuttons

Without Pilot Light

Quantity: 1

Shape / Button type	Operation	Contact Configuration		Part No
		Top Button	Bottom Button	
	Momentary	1NO	1NC	HW7D-B11P1001⑥⑦-U
		1NO	1NO	HW7D-B11P1010⑥⑦-U
		1NO-1NC	1NO-1NC	HW7D-B11P1111⑥⑦-U
		2NO	2NC	HW7D-B11P2002⑥⑦-U
		1NO	1NC	HW7D-B12P1001⑥⑦-U
		1NO	1NO	HW7D-B12P1010⑥⑦-U
	Interlocking (*)	1NO-1NC	1NO-1NC	HW7D-B12P1111⑥⑦-U
		2NO	2NC	HW7D-B12P2002⑥⑦-U
		1NO	1NC	HW7D-B21P1001⑥⑦-U
		1NO	1NO	HW7D-B21P1010⑥⑦-U
		1NO-1NC	1NO-1NC	HW7D-B21P1111⑥⑦-U
		2NO	2NC	HW7D-B21P2002⑥⑦-U
	Interlocking (*)	1NO	1NC	HW7D-B22P1001⑥⑦-U
		1NO	1NO	HW7D-B22P1010⑥⑦-U
		1NO-1NC	1NO-1NC	HW7D-B22P1111⑥⑦-U
		2NO	2NC	HW7D-B22P2002⑥⑦-U
		1NO	1NC	HW7D-B22P1001⑥⑦-U
		1NO	1NO	HW7D-B22P1010⑥⑦-U
	Interlocking (*)	1NO-1NC	1NO-1NC	HW7D-B22P1111⑥⑦-U
		2NO	2NC	HW7D-B22P2002⑥⑦-U

Part number structure (without pilot light)

H W 7 D - B 1 1 P 10 10 GR 1-U

Operation
1: Momentary
2: Interlocking

Button type code
1: Flush-Flush
2: Flush-Extended

Contact configuration (top button)
Contact configuration (bottom button)

Button legend
Blank: Blank
1: I & ON / O & OFF

Button color
GR: Top button: Green
Bottom button: Red
WB: Top button: White
Bottom button: Black

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

With Pilot Light

Quantity: 1

Shape / Button type	Operation	Contact Configuration		Part No
		Top Button	Bottom Button	
	Momentary	1NO	1NC	HW7D-L11P1001⑤PW⑥⑦-U
		1NO	1NO	HW7D-L11P1010⑤PW⑥⑦-U
		1NO-1NC	1NO-1NC	HW7D-L11P1111⑤PW⑥⑦-U
		2NO	2NC	HW7D-L11P2002⑤PW⑥⑦-U
		1NO	1NC	HW7D-L12P1001⑤PW⑥⑦-U
		1NO	1NO	HW7D-L12P1010⑤PW⑥⑦-U
	Interlocking (*)	1NO-1NC	1NO-1NC	HW7D-L12P1111⑤PW⑥⑦-U
		2NO	2NC	HW7D-L12P2002⑤PW⑥⑦-U
		1NO	1NC	HW7D-L21P1001⑤PW⑥⑦-U
		1NO	1NO	HW7D-L21P1010⑤PW⑥⑦-U
		1NO-1NC	1NO-1NC	HW7D-L21P1111⑤PW⑥⑦-U
		2NO	2NC	HW7D-L21P2002⑤PW⑥⑦-U
	Interlocking (*)	1NO	1NC	HW7D-L22P1001⑤PW⑥⑦-U
		1NO	1NO	HW7D-L22P1010⑤PW⑥⑦-U
		1NO-1NC	1NO-1NC	HW7D-L22P1111⑤PW⑥⑦-U
		2NO	2NC	HW7D-L22P2002⑤PW⑥⑦-U
		1NO	1NC	HW7D-L22P1001⑤PW⑥⑦-U
		1NO	1NO	HW7D-L22P1010⑤PW⑥⑦-U
	Interlocking (*)	1NO-1NC	1NO-1NC	HW7D-L22P1111⑤PW⑥⑦-U
		2NO	2NC	HW7D-L22P2002⑤PW⑥⑦-U

Part number structure (with pilot light)

H W 7 D - L 1 1 P 11 20 QH2 PW GR 1-U

Operation
1: Momentary
2: Interlocking

Button type
1: Flush-Flush
2: Flush-Extended

Contact configuration (top button)
Contact configuration (bottom button)

Button legend code:
Blank: Blank
1: I & ON / O & OFF

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

Rated 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

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

*1) Interlocking: 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.

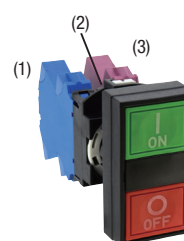
- Specify a rated voltage code in place of ⑤ in the Part No.
- Specify a button color code in place of ⑥ in the Part No.
- Specify a button legend code in place of ⑦ in the Part No.
- Up to 4 contacts can be used.
- For sub-assembled units (operator type / contact unit / LED lamp), see page 37 to 44.

Contact Configuration

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

← Button position
← Pushbutton operation

Contact Block Mounting Position



Note) For illuminated units, (2) can only be mounted with a full voltage adapter.
For non-illuminated units, (2) can only be mounted with a dummy block.

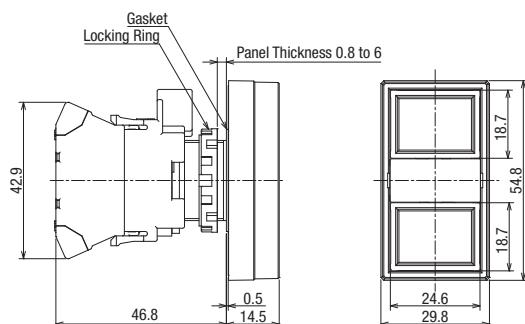
Dual Pushbutton Dimensions

All dimensions in mm.

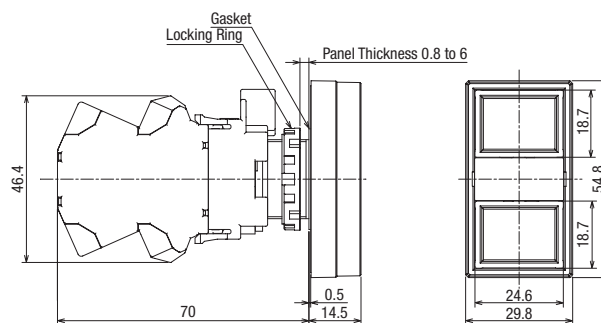
Without Pilot Light

Flush-Flush

Single contact block

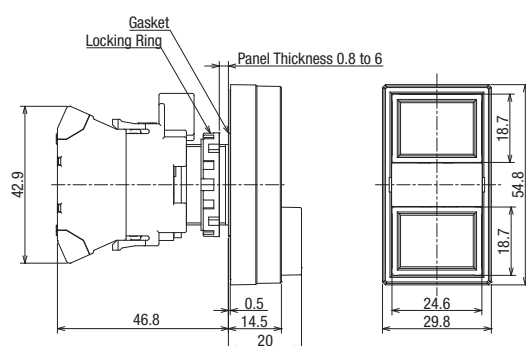


Double contact block

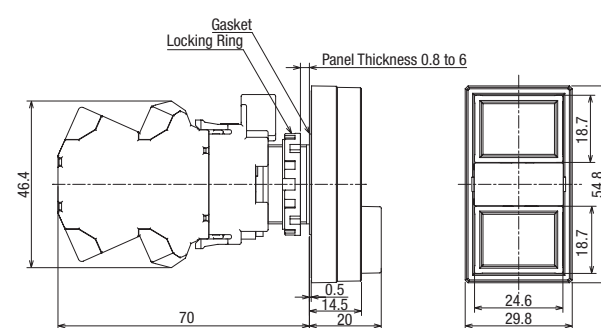


Flush-Extended

Single contact block



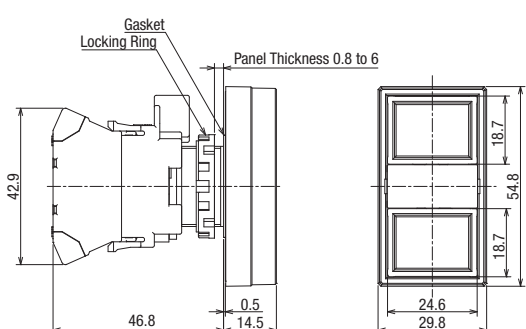
Double contact block



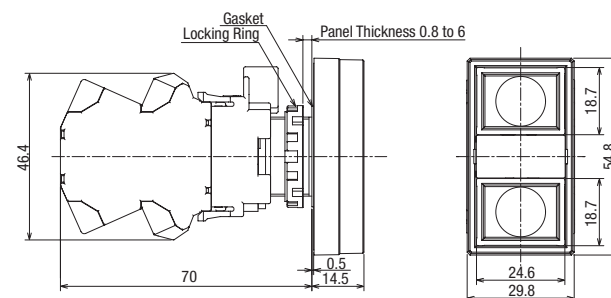
With Pilot Light

Flush-Flush

Single contact block

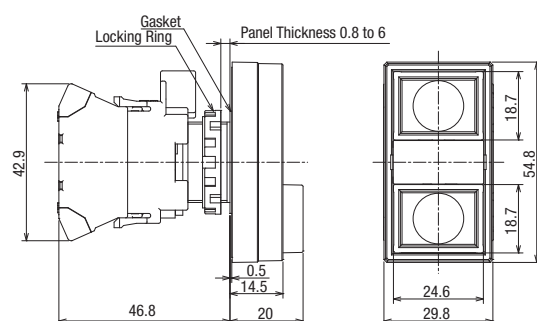


Double contact block

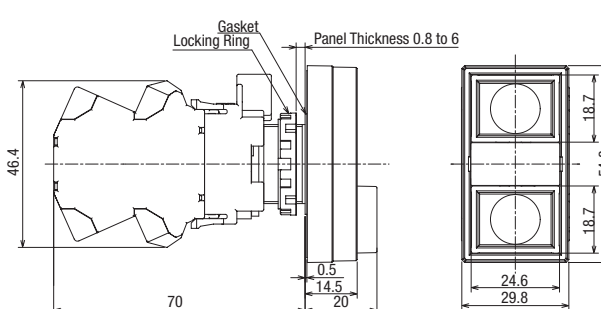


Flush-Extended

Single contact block



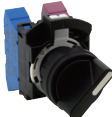
Double contact block



Selector Switches (Knob / Lever Operator) 2-Position

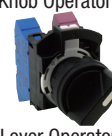
2-position

Quantity: 1

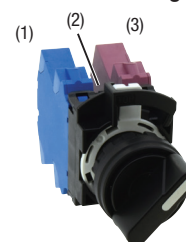
Name / Shape	No. of Positions	Contact configuration (Code)	Contact block		Operator position		Cam Code	Maintained (90° 2-position)	Spring Return (60° 2-position)
			Mounting position	Contact	1	2		1	2
									
Part No.									
 	2-position	1NO (10)	(1)	NO		●	—	HW1S-2④P10-U	HW1S-21④P10-U
			(3)	—	Dummy			HW1S-2④P01-U	HW1S-21④P01-U
		1NC (01)	(1)	—	Dummy			HW1S-2④P11-U	HW1S-21④P11-U
			(3)	NC	●			HW1S-2④P20-U	HW1S-21④P20-U
		1NO-1NC (11)	(1)	NO		●		HW1S-2④P02-U	HW1S-21④P02-U
			(3)	NC	●			HW1S-2④P30-U	HW1S-21④P30-U
		2NO (20)	(1)	NO		●		HW1S-2④P03-U	HW1S-21④P03-U
			(3)	NO		●		HW1S-2④P21-U	HW1S-21④P21-U
		2NC (02)	(1)	NC	●			HW1S-2④P22-U	HW1S-21④P22-U
			(3)	NC	●			HW1S-2④P31-U	HW1S-21④P31-U
		3NO (30)	(1)	NO		●		HW1S-2④P40-U	HW1S-21④P40-U
			(2)	NO		●			
			(3)	NO		●			
			(1)	NC	●				
		3NC (03)	(2)	NC	●				
			(3)	NC	●				
		2NO-1NC (21)	(1)	NO		●			
			(2)	NO		●			
			(3)	NC	●				
			2NO-2NC (22)	(1)	NONC	NO			●
				(3)	NONC	NO			●
				(3)	NONC	NC		●	
		3NO-1NC (31)		(1)	2NO	NO			●
				(3)	NONC	NO			●
				(3)	NONC	NC		●	
			4NO (40)	(1)	2NO	NO			●
	(3)	2NO		NO		●			
		(3)	2NO	NO		●			
		(3)	2NO	NO		●			

90° 2-position Reversed Cam

Quantity: 1

Name / Shape	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position		Cam Code	Maintained (90° 2-position)
			Mounting Position	Contact	2	1		2 1
 	2-position	2NC (02)	(1)	NC		●	J	Part No.
			(3)	NC		●		
		3NC (03)	(1)	NC		●		HW1S-2J④P03-U
			(2)	NC		●		
			(3)	NC		●		

Contact Block Mounting Position



- Specify an operator type code in place of ④ in the Part No. T: Knob operator L: Lever operator
 - Up to 6 contacts can be used.
 - Other configurations available. See below for part number structure.
 - For sub-assembled units (operator type / contact unit), see page 37 to 44.
- Note: Turn the operator to each position accurately.

Part number structure

HW1S-2J④TP10-U

- 1: Plastic Bezel
- 2: Metal Bezel
- Operator position
- 2: 2-position, maintained
- 21: 2-position, spring return from right

- Contact configuration (See table above)
- Operator type
- T: Knob operator
- L: Lever operator
- Cam code:
- J: Specified (Operator position: 2 only)
- Blank: Not specified

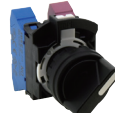
Operator position

Maintained (90° 2-position)	Spring Return (60° 2-position)
1 2	2 1
Cam code: blank	Cam code: J
	Spring Return from Right
	1 2
	Cam code: blank

Selector Switches (Knob / Lever Operator) 3-Position

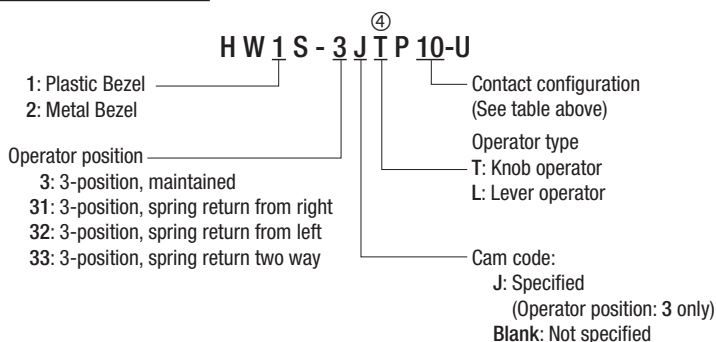
3-position

Quantity: 1

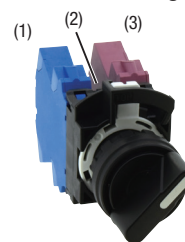
Name / Shape	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			Cam Code	Maintained	Spring return from right	Spring return from left	Spring return two-way	
			Mounting Position	Contact	1	0	2						
Part No.													
	3-position	1NO-1NC (11)	(1)	NO				—	HW1S-3④P11-U	HW1S-31④P11-U	HW1S-32④P11-U	HW1S-33④P11-U	
			(3)	NC					HW1S-3④P11N1-U	HW1S-31④P11N1-U	HW1S-32④P11N1-U	HW1S-33④P11N1-U	
		1NO-1NC (11N1)	(1)	NC						HW1S-3④P20-U	HW1S-31④P20-U	HW1S-32④P20-U	HW1S-33④P20-U
			(3)	NO						HW1S-3④P02-U	HW1S-31④P02-U	HW1S-32④P02-U	HW1S-33④P02-U
		2NO (20)	(1)	NO						—	—	—	
			(3)	NO									
		1NO-1NC (11N1) ★☆	(1)	NC				J	HW1S-3J④P11N1-U				
			(3)	NO									
		1NO-2NC (12N1)	(1)	NC					HW1S-3④P12N1-U	HW1S-31④P12N1-U	HW1S-32④P12N1-U	HW1S-33④P12N1-U	
			(2)	NO					HW1S-3④P21N1-U	HW1S-31④P21N1-U	HW1S-32④P21N1-U	HW1S-33④P21N1-U	
				(3)	NC								
		2NO-1NC (21N1)	(1)	NO					HW1S-3④P30-U	HW1S-31④P30-U	HW1S-32④P30-U	HW1S-33④P30-U	
			(2)	NC					HW1S-3④P22-U	HW1S-31④P22-U	HW1S-32④P22-U	HW1S-33④P22-U	
				(3)	NO					HW1S-3④P22N2-U	HW1S-31④P22N2-U	HW1S-32④P22N2-U	HW1S-33④P22N2-U
		3NO (30)	(1)	NO					HW1S-3④P04-U	HW1S-31④P04-U	HW1S-32④P04-U	HW1S-33④P04-U	
			(2)	NO									
				(3)	NO								
		2NO-2NC (22)	(1)	NONC	NO				—				
			(3)	NONC	NO								
		2NO-2NC (22N2)	(1)	2NC	NO				—				
			(3)	2NO	NO								
		4NC (04)	(1)	2NC	NC				—				
			(3)	2NC	NC								

- 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.
 - Specify an operator type code in place of ④ in the Part No. T: Knob operator L: Lever operator
 - Up to 6 contacts can be used.
 - Other configurations available. See below for part number structure.
 - For sub-assembled units (operator type / contact unit), see page 37 to 44.
- Note: Turn the operator to each position accurately.

Part number structure



Contact Block Mounting Position



Operator position

Maintained (45° 3-position)	Spring Return (45° 3-position)		
			
Cam code: Blank, J	Cam code: blank		

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

2-position

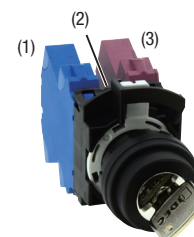
Quantity: 1

Name / Shape	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position		Cam Code	Maintained (90° 2-position)	Spring Return (60° 2-position)		
			Mounting Position	Contact	1	2		1	2		
											
Part No.											
	2-position	1NO (10)	(1)	NO		●	—	HW1K-2③AP10-U	HW1K-21③AP10-U		
			(3)	—	Dummy			HW1K-2③AP01-U	HW1K-21③AP01-U		
		1NC (01)	(1)	—	Dummy			●		HW1K-2③AP11-U	HW1K-21③AP11-U
			(3)	NC							
		1NO-1NC (11)	(1)	NO		●		●	HW1K-2③AP02-U	HW1K-21③AP02-U	
			(3)	NC	●						HW1K-2③AP30-U
		2NO (20)	(1)	NO		●		●	HW1K-2③AP03-U	HW1K-21③AP03-U	
			(3)	NO		●					HW1K-2③AP21-U
		2NC (02)	(1)	NC	●			●	HW1K-2③AP22-U	HW1K-21③AP22-U	
			(3)	NC	●						HW1K-2③AP31-U
3NO (30)		(1)	NO		●	●		HW1K-2③AP40-U	HW1K-21③AP40-U		
		(2)	NO		●					HW1K-2③AP01-U	HW1K-21③AP01-U
3NC (03)		(1)	NC	●		●		HW1K-2③AP11-U	HW1K-21③AP11-U		
		(2)	NC	●						HW1K-2③AP21-U	HW1K-21③AP21-U
2NO-1NC (21)		(1)	NO		●	●		HW1K-2③AP31-U	HW1K-21③AP31-U		
		(2)	NO		●					HW1K-2③AP41-U	HW1K-21③AP41-U
2NO-2NC (22)		(1)	NONC	NO	●	●		HW1K-2③AP51-U	HW1K-21③AP51-U		
		(3)	NONC	NO	●					HW1K-2③AP61-U	HW1K-21③AP61-U
3NO-1NC (31)		(1)	2NO	NO	●	●		HW1K-2③AP71-U	HW1K-21③AP71-U		
		(3)	NONC	NO	●					HW1K-2③AP81-U	HW1K-21③AP81-U
4NO (40)	(1)	2NO	NO	●	●	HW1K-2③AP91-U	HW1K-21③AP91-U				
	(3)	2NO	NO	●				HW1K-2③AP02-U	HW1K-21③AP02-U		

2-position Reversed Cam

Name / Shape	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position		Cam Code	Maintained
			Mounting Position	Contact	2	1		2 1
Disc tumbler Pin tumbler	2-position	2NC (02)	(1)	NC		●	J	Part No.
			(3)	NC		●		
		3NC (03)	(1)	NC		●		
			(2)	NC		●		
			(3)	NC		●		

Contact Block Mounting Position



- Each selector key switch is supplied with two keys. Different key numbers are available. See part number structure.
- Up to 6 contacts can be used.
- Specify the key type code in ③ in the Part No.
- Other configurations available. See below for part number structure.
- For sub-assembled units (operator type / contact unit), see page 37 to 44.

Part number structure

HW 1 K - 2 J P A P 01 - 501-U	
Operator position	Key number
2: 2-position, maintained	Disc tumbler key
21: 2-position, spring return from right	Pin tumbler key
Cam	Blank: Standard (231)
J: Specified (Operator position: 2 only)	Blank: Standard (500)
Blank: Not specified	-501 to -515 (non-standard)
Key type	*For key numbers other than the standard key number, contact IDEC.
Blank: Disc tumbler key	Note: The key number is engraved on the key cylinder for non-standard keys.
P: Pin tumbler Key	Contact configuration (See table above)
	Key removal position
	A: Removable in all positions
	B: Removable in the left only
	C: Removable in the right only

Operator position

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

Key removal position

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

①②: Key removal position ①②: Key retained position

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

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

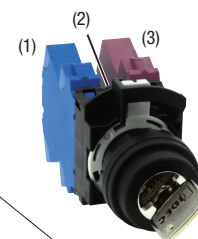
3-position

Quantity: 1

Name / Shape	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			Cam Code	Maintained	Spring return from right	Spring return from left	Spring return two-way		
			Mounting Position	Contact	1	0	2							
					Part No.									
	3-position	1NO-1NC (11)	(1)	NO				—	HW1K-3③AP11-U	HW1K-31③BP11-U	HW1K-32③CP11-U	HW1K-33③DP11-U		
			(3)	NC					HW1K-3③AP11N1-U	HW1K-31③BP11N1-U	HW1K-32③CP11N1-U	HW1K-33③DP11N1-U		
		1NO-1NC (11N1)	(1)	NC					—	HW1K-3③AP11N1-U	HW1K-31③BP11N1-U	HW1K-32③CP11N1-U	HW1K-33③DP11N1-U	
			(3)	NO						HW1K-3③AP20-U	HW1K-31③BP20-U	HW1K-32③CP20-U	HW1K-33③DP20-U	
		2NO (20)	(1)	NO						—	HW1K-3③AP20-U	HW1K-31③BP20-U	HW1K-32③CP20-U	HW1K-33③DP20-U
			(3)	NO							HW1K-3③AP02-U	HW1K-31③BP02-U	HW1K-32③CP02-U	HW1K-33③DP02-U
		2NC (02)	(1)	NC				J			HW1K-3J③AP11N1-U	—	—	—
			(3)	NC							HW1K-3③AP12N1-U	HW1K-31③BP12N1-U	HW1K-32③CP12N1-U	HW1K-33③DP12N1-U
		1NO-1NC (11N1) ★ ☆	(1)	NC					—		HW1K-3③AP12N1-U	HW1K-31③BP12N1-U	HW1K-32③CP12N1-U	HW1K-33③DP12N1-U
			(2)	NO							HW1K-3③AP21N1-U	HW1K-31③BP21N1-U	HW1K-32③CP21N1-U	HW1K-33③DP21N1-U
(3)			NC				HW1K-3③AP30-U			HW1K-31③BP30-U	HW1K-32③CP30-U	HW1K-33③DP30-U		
2NO-1NC (21N1)		(1)	NO				—			HW1K-3③AP22-U	HW1K-31③BP22-U	HW1K-32③CP22-U	HW1K-33③DP22-U	
		(2)	NC					HW1K-3③AP22N2-U		HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
		(3)	NO					HW1K-3③AP04-U		HW1K-31③BP04-U	HW1K-32③CP04-U	HW1K-33③DP04-U		
3NO (30)		(1)	NO					—	HW1K-3③AP22-U	HW1K-31③BP22-U	HW1K-32③CP22-U	HW1K-33③DP22-U		
		(2)	NO						HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
		(3)	NO						HW1K-3③AP04-U	HW1K-31③BP04-U	HW1K-32③CP04-U	HW1K-33③DP04-U		
2NO-2NC (22)		(1)	NONC	NO			—		HW1K-3③AP22-U	HW1K-31③BP22-U	HW1K-32③CP22-U	HW1K-33③DP22-U		
			NC						HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
		(3)	NONC	NO					HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
2NO-2NC (22N2)		(1)	2NC	NC				—	HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
			NC						HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
		(3)	2NO	NO					HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
4NC (04)		(1)	2NC	NC			—		HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
			NC						HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		
		(3)	2NC	NC					HW1K-3③AP22N2-U	HW1K-31③BP22N2-U	HW1K-32③CP22N2-U	HW1K-33③DP22N2-U		

- 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.
- Each selector key switch is supplied with two keys.
- Specify the key type code in ③ in the Part No.
- Other configurations available. See below for part number structure.
- For sub-assembled units (operator type / contact unit), see page 37 to 44.

Contact Block Mounting Position



Part number structure

HW 1 K - 3 J P A P 11 - 501-U

Operator position

- 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

Cam

- J: Specified (Operator position: 3 only)
- Blank: Not specified

Key type

- Blank: Disc tumbler key
- P: Pin tumbler Key

Key number

- Disc tumbler key
- Pin tumbler key
- Blank: Standard (231)
- Blank: Standard (500)
- 501 to -515 (non-standard)

*For key numbers other than the standard key number, contact IDEC.

Note: The key number is engraved on the key cylinder for non-standard keys.

Contact configuration

(See table above)

Key removal 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

Operator position

Maintained (45° 3-position)	Spring Return (45° 3-position)		
			
Cam code: Blank, J	Cam code: blank		

Key removal 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 	

①②③ : Key removal position ①②③ : Key retained position

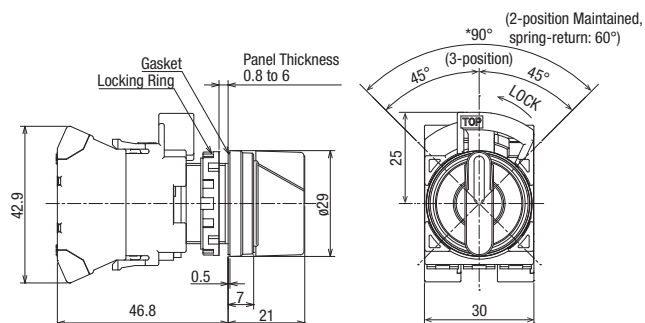
Note: The key cannot be removed in a spring return position.

Selector Switches Dimensions

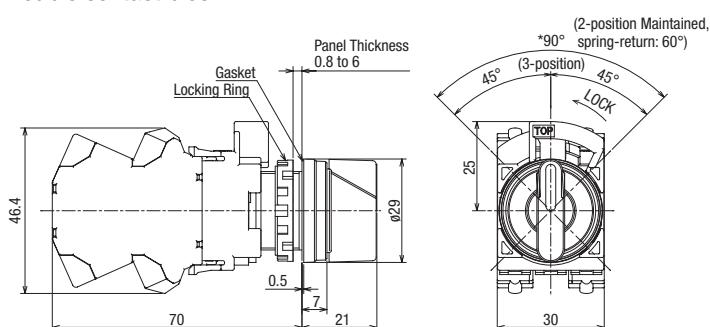
Dimensions

All dimensions in mm.

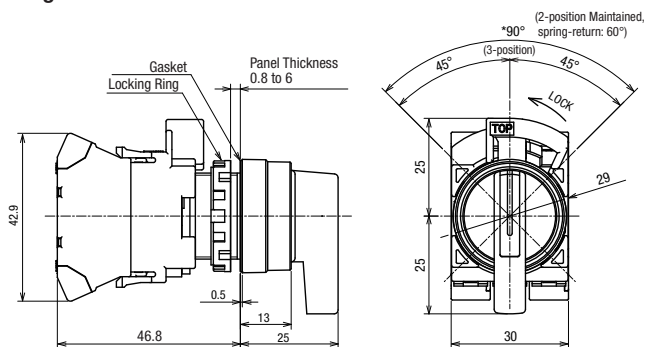
Knob Operator Single contact block



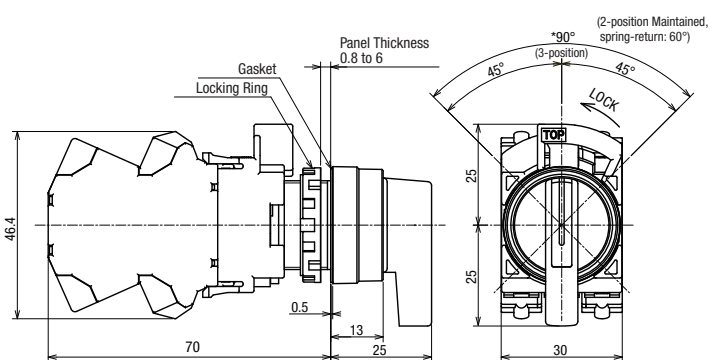
Double contact block



Lever Operator Single contact block



Double contact block

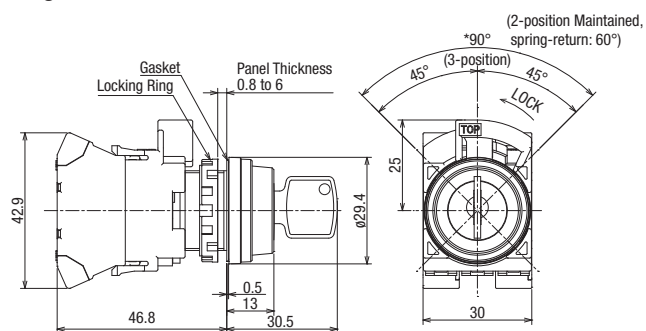


Key Selector Switch Dimensions

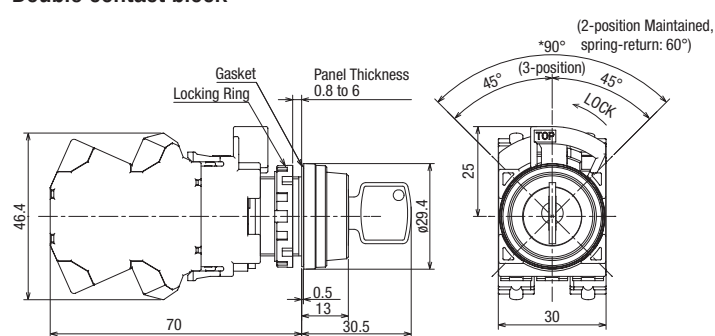
Dimensions

All dimensions in mm.

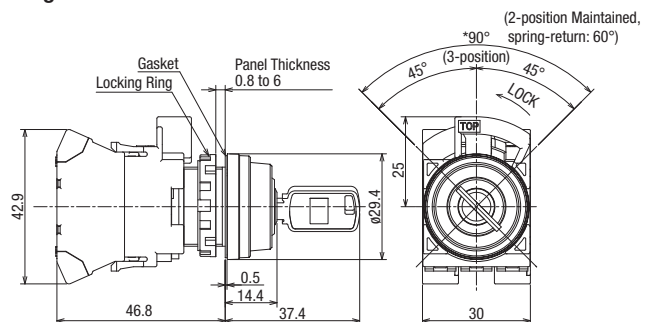
Disc tumbler key Single contact block



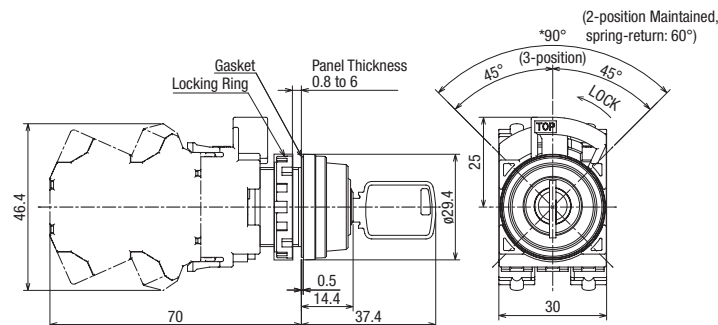
Double contact block



Pin tumbler key Single contact block



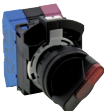
Double contact block



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

2-position

Quantity: 1

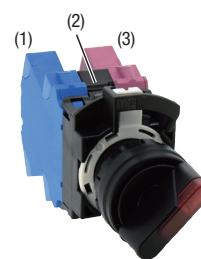
Name / Shape	No. of Positions	Contact Configuration	Contact Block		Operator Position		Maintained (90° 2-position)	Spring Return (60° 2-position)
			Mounting Position	Contact	1	2		
							Part No.	
Knob operator 	2-position	1NO (10)	(1)	NO		●	HW1F-2③P10⑤⑥-U	HW1F-21③P10⑤⑥-U
			(3)	—	Dummy			
		1NC (01)	(1)	—	Dummy		HW1F-2③P01⑤⑥-U	HW1F-21③P01⑤⑥-U
			(3)	NC	●			
		1NO-1NC (11)	(1)	NO		●	HW1F-2③P11⑤⑥-U	HW1F-21③P11⑤⑥-U
			(3)	NC	●			
		2NO (20)	(1)	NO		●	HW1F-2③P20⑤⑥-U	HW1F-21③P20⑤⑥-U
			(3)	NO		●		
		2NC (02)	(1)	NC	●		HW1F-2③P02⑤⑥-U	HW1F-21③P02⑤⑥-U
			(3)	NC	●			
2NO-2NC (22)		(1)	NONC	NO		●	HW1F-2③P22⑤⑥-U	HW1F-21③P22⑤⑥-U
		(3)	NONC	NC	●			
				NO		●		
				NC	●			
3NO-1NC (31)		(1)	2NO	NO		●	HW1F-2③P31⑤⑥-U	HW1F-21③P31⑤⑥-U
		(3)	NONC	NO		●		
				NO		●		
				NC	●			
4NO (40)		(1)	2NO	NO		●	HW1F-2③P40⑤⑥-U	HW1F-21③P40⑤⑥-U
		(3)	2NO	NO		●		
	NO				●			
	NO				●			
3NC (03N2)	(1)	2NC	NC	●		HW1F-2③P03N2⑤⑥-U	HW1F-21③P03N2⑤⑥-U	
	(3)	NC	NC	●				
			NC	●				
2NO-1NC (21N14)	(1)	2NO	NO		●	HW1F-2③P21N14⑤⑥-U	HW1F-21③P21N14⑤⑥-U	
	(3)	NC	NO		●			
			NC	●				

- Specify an operator type code in place of ③ in the Part No.
- Specify a rated voltage code in place of ⑤ in the Part No.
- Specify an illumination color code in place of ⑥ in the Part No.
- Up to 4 contacts can be used.
- Other configurations available. See below for part number structure.
- For sub-assembled units (operator type / contact unit / LED lamp), see page 37 to 44.

Part number structure

HW 1 F - 2 J L P 10 Q 4 R - U	
Operator position	③
2: 2-position, maintained	
21: 2-position, spring return from right	
Cam	⑤ ⑥
J: Specified (Operator position: 2 only)	
Blank: Not specified	
Operator type	
Blank: Knob Operator	
L: Lever Operator	
Illuminated color	
R: red A: amber	
G: green S: blue	
Y: yellow PW: pure white	
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	
Contact configuration	
(See table above)	

Contact Block Mounting Position



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

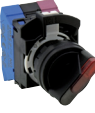
Operator position

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

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

3-position

Quantity: 1

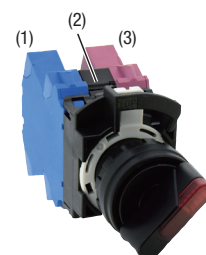
Name / Shape	No. of Positions	Contact Configuration		Contact Block		Operator Position			Maintained	Spring return from right	Spring return from left	Spring return two-way
				Mounting Position	Contact	1	0	2	1 0 2	1 0 2	1 0 2	1 0 2
Part No.												
	3-position	1NO-1NC (11)	(1)	NO	●			HW1F-3③P11⑤⑥-U	HW1F-31③P11⑤⑥-U	HW1F-32③P11⑤⑥-U	HW1F-33③P11⑤⑥-U	
			(3)	NC	■							
		1NO-1NC (11N1)	(1)	NC			■	HW1F-3③P11N1⑤⑥-U	HW1F-31③P11N1⑤⑥-U	HW1F-32③P11N1⑤⑥-U	HW1F-33③P11N1⑤⑥-U	
			(3)	NO			●					
2NO (20)		(1)	NO	●			HW1F-3③P20⑤⑥-U	HW1F-31③P20⑤⑥-U	HW1F-32③P20⑤⑥-U	HW1F-33③P20⑤⑥-U		
		(3)	NO			●						
		2NC (02)	(1)	NC			■	HW1F-3③P02⑤⑥-U	HW1F-31③P02⑤⑥-U	HW1F-32③P02⑤⑥-U	HW1F-33③P02⑤⑥-U	
			(3)	NC	■							
1NO-1NC (11N1) ★☆		(1)	NC		●		HW1F-3J③P11N1⑤⑥-U	—	—	—		
		(3)	NO			●						
2NO-1NC (21N3) ★☆		(1)	NONC	NO	●		HW1F-3J③P21N3⑤⑥-U	—	—	—		
			NC		●							
		(3)	NO			●						
2NO-2NC (22)		(1)	NONC	NO	●		HW1F-3③P22⑤⑥-U	HW1F-31③P22⑤⑥-U	HW1F-32③P22⑤⑥-U	HW1F-33③P22⑤⑥-U		
			NC		■							
(3)		NONC	NO			●						
			NC	■								
2NO-2NC (22N2)		(1)	2NC	NC			HW1F-3③P22N2⑤⑥-U	HW1F-31③P22N2⑤⑥-U	HW1F-32③P22N2⑤⑥-U	HW1F-33③P22N2⑤⑥-U		
			NC		■							
(3)	2NO	NO			●							
		NO			●							
4NO (40)	(1)	2NO	NO	●		HW1F-3③P40⑤⑥-U	HW1F-31③P40⑤⑥-U	HW1F-32③P40⑤⑥-U	HW1F-33③P40⑤⑥-U			
		NO		●								
(3)	2NO	NO			●							
		NO			●							
4NC (04)	(1)	2NC	NC			HW1F-3③P04⑤⑥-U	HW1F-31③P04⑤⑥-U	HW1F-32③P04⑤⑥-U	HW1F-33③P04⑤⑥-U			
		NC		■								
(3)	2NC	NC		■								
		NC	■									

- Specify an operator type code in place of ③ in the Part No.
- Specify a rated voltage code in place of ⑤ in the Part No.
- Specify an illumination color code in place of ⑥ in the Part No.
- Up to 4 contacts can be used.
- Other configurations available. See below for part number structure.
- For sub-assembled units (operator type / contact unit / LED lamp), see page 37 to 44.

Part number structure

HW1F-3JLP11Q4R-U	
Operator position	③
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	
Cam	J
J: Specified (Operator position: 3 only)	
Blank: Not specified	
Operator type	L
Blank: Knob operator	
L: Lever operator	
Illumination color	⑥
R: red	
G: green	
Y: yellow	
A: amber	
S: blue	
PW: pure white	
Operating voltage	⑤
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	
Contact configuration	④
(See table above)	

Contact Block Mounting Position



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

Operator position

Maintained (45° 3-position)	Spring Return (45° 3-position)		
			
Cam code: Blank, J	Cam code: blank		

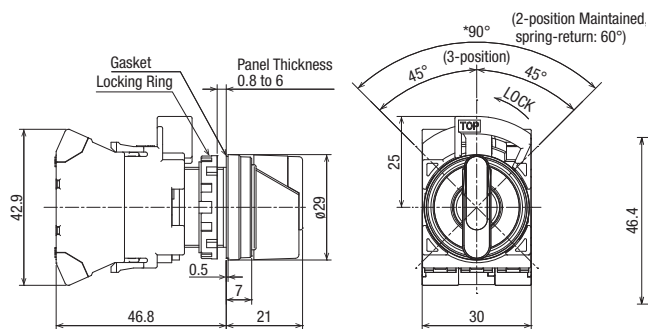
Illuminated Selector Switches (Knob / Lever Operator) (LED)

Dimensions

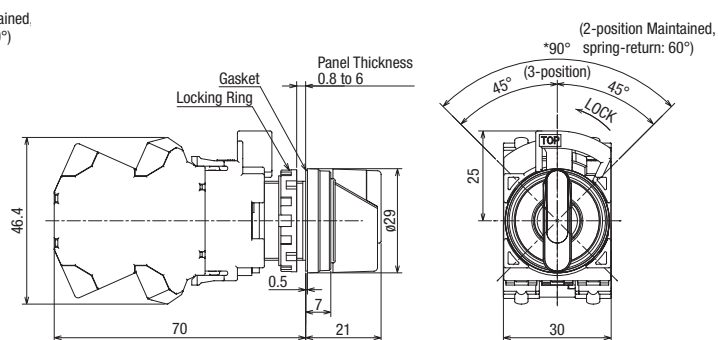
All dimensions in mm.

Knob operator

Single contact block

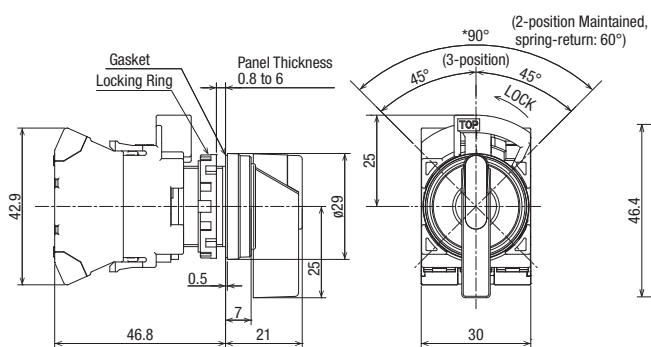


Double contact block

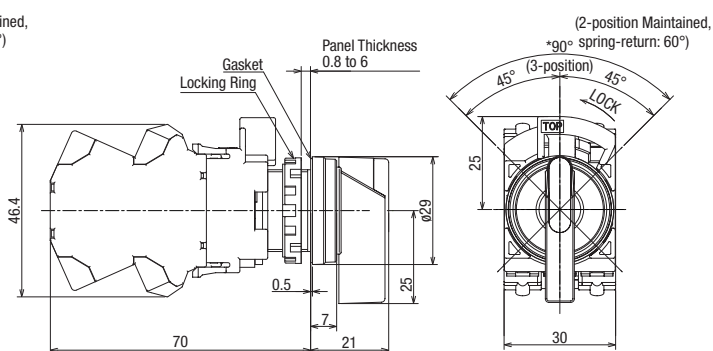


Lever operator

Single contact block



Double contact block



Selector Pushbuttons

Quantity: 1

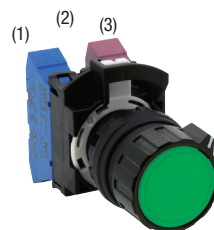
Name / Shape	Circuit Code	Contact Configuration (Code)	Contact Block		Left		Right		Part No.
			Mounting Position	Contact	Normal	Push	Normal	Push	
	A	1NO-1NC (11)	(1)	NO		●		●	HW1R-2AP11③-U
			(3)	NC	●				
		2NO (20)	(1)	NO		●		●	HW1R-2AP20③-U
			(3)	NO		●	■		
		2NO-2NC (22N1)	(1)	2NO	NO	●		●	HW1R-2AP22N1③-U
				NO		●		●	
			(3)	2NC	NC	●			
				NC	●				
	D	2NO (20)	(1)	NO		●			HW1R-2DP20③-U
			(3)	NO				●	
		2NO-2NC (22)	(1)	NONC	NO	●			HW1R-2DP22③-U
			(3)	NONC	NC	●	■		
	E	2NO-2NC (22)★	(1)	NONC	NO		■		HW1R-2EP22③-U
			(3)	NONC	NO			●	
		2NO-2NC (22)★☆	(1)	NONC	NO		■		HW1R-2FP22③-U
			(3)	NONC	NO	●			
	F	2NO-2NC (22)★☆	(1)	NONC	NC		●		HW1R-2NP22N2③-U
			(3)	NONC	NC	●			
	N	2NO-2NC (22N2)★☆	(1)	2NC	NC		●		HW1R-2TP22③-U
			(3)	2NO	NO	●		●	
		2NO-2NC (22)	(1)	NONC	NO	●	●		
			(3)	NONC	NO	●	●		

- 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.
- Up to 4 contacts can be used.
- For sub-assembled units (operator type / contact unit), see page 37 to 44.

Part number structure

HW1R - 2 D P 20 B-U		③
Circuit		Button color
(See table above)		R: red
Contact configuration		G: green
11: 1NO1NC	11N1: 1NO-1NC	Y: yellow
20: 2NO	22N2: 2NO-2NC	S: blue
22: 2NO-2NC	22N1: 2NO-2NC	W: White
		B: Black

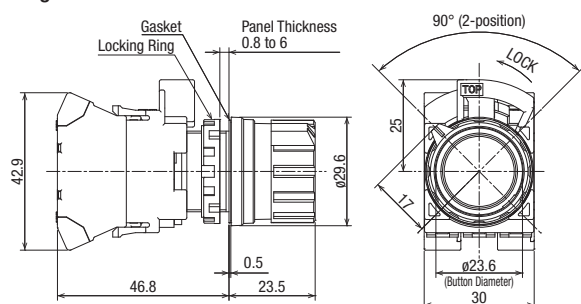
Contact Block Mounting Position



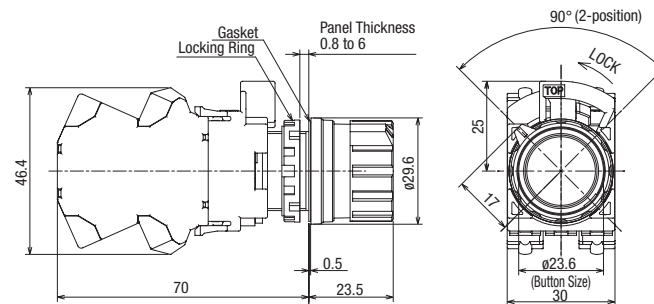
Note) (2) can only be mounted with a dummy block.

Dimensions

Single contact block



Double contact block



All dimensions in mm.

Monolever Switches

Quantity: 1

Name / Shape	Positions	Part No.
HW1M Standard 	2-position	HW1M-P1010-20-U
		HW1M-P2020-20-U
		HW1M-P0101-20-U
		HW1M-P0202-20-U
		HW1M-P0101-40-U
		HW1M-P0202-40-U
	4-position	HW1M-P1111-22-U
		HW1M-P2222-22-U

Name / Shape	Positions	Part No.
HW1M-L Interlocking 	2-position	HW1M-LP1010-20-U
		HW1M-LP2020-20-U
		HW1M-LP0101-20-U
		HW1M-LP0202-20-U
		HW1M-LP0101-40-U
		HW1M-LP0202-40-U
	4-position	HW1M-LP1111-22-U
		HW1M-LP2222-22-U

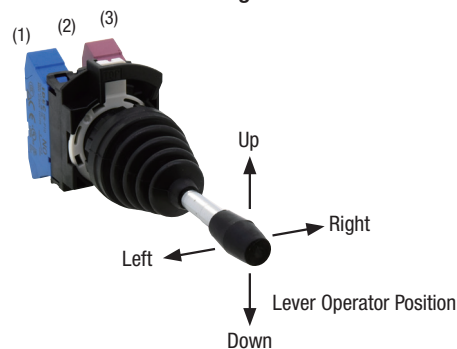
- On all mono-lever switches, the rated current (load switching current) is reduced to a half of the rated current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.
- Up to 4 contacts can be used.
- Other configurations available. See below for part number structure.
- For sub-assembled units (operator type / contact unit), see page 37 to 44.

Part number structure

HW1M-LP1010-20-U	
Type	Up Right Down Left
HW1M: Standard	
HW1M-L: Interlocking	
Lever operation	
Order of Entry	
Up - Right - Down - Left	
1: Maintained	
2: Spring returned	
0: Blocked	

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

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.

Contact Configuration

2-position (Right/Left)

Contact code	Contact block		Lever operator position		
	Mounting position	Contact	Left	Center	Right
20	(1)	NO	●		
	(3)	NO			●
40	(1)	2NO	NO	●	
		NO	●		
	(3)	2NO	NO		●
		NO			●

2-position (Up/Down)

Contact code	Contact block		Lever operator position		
	Mounting Position	Contact	Down	Center	Up
20	(1)	NO	●		
	(3)	NO			●
40	(1)	2NO	NO	●	
		NO	●		
	(3)	2NO	NO		●
		NO			●

4-position

Contact code	Contact block		Lever operator position				
	Mounting position	Contact	Down	Left	Center	Up	Right
22	(1)	NONC	NO	NC	●		
	(3)	NONC	NO	NC			●

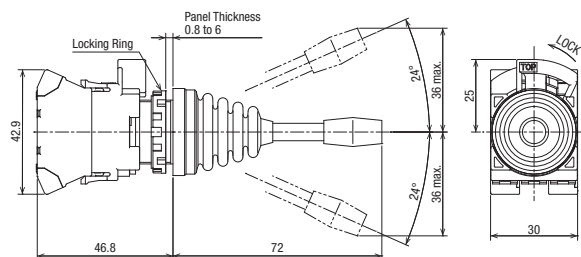
Monolever Switches

Dimensions

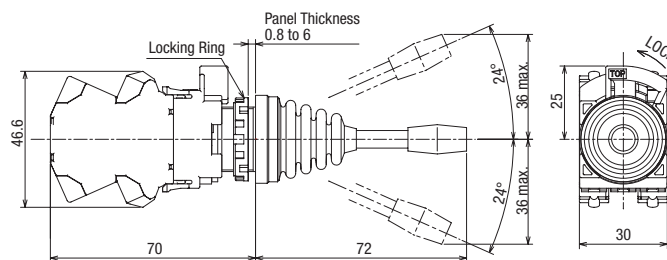
All dimensions in mm.

Standard

Single contact block

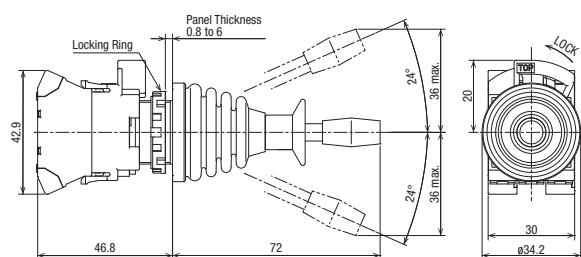


Double contact block

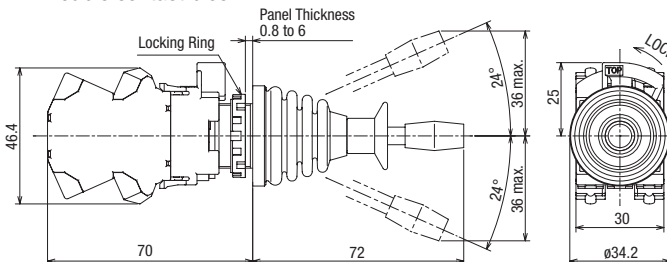


Interlocking

Single contact block



Double contact block



Short Body Pilot Lights

Short-body 100V AC/DC and 200V AC types with a panel depth of 30.5 mm.
6V, 12V, and 24V AC/DC types are also available with a panel depth of 21.5mm.



Quantity: 1

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

- Built-in BA9S base LED lamp. See page 51 for LED Lamps.
- For round flush and 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 57. Engraving and films must be prepared by the customer.
- Specify a lens color code in place of ① in the Part No.

Part number structure

H W 1 P- 1 J P Q2 R

Bezel shape

1: Round

2: Square

Lenz style

1: Flush

2: Extended

Illumination color

R: red A: amber

G: green S: blue

Y: yellow PW: pure white

Operating voltage

Q2: 6V AC/DC RH2: 100/120V AC/DC

Q3: 12V AC/DC CM2: 200/240V AC

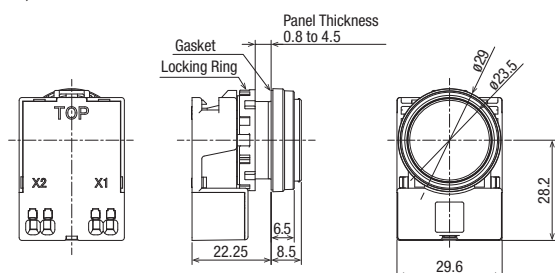
Q4: 24V AC/DC

Short Body Pilot Lights

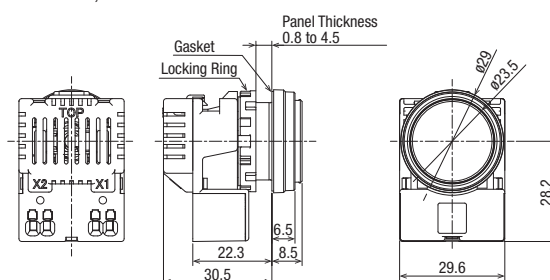
All dimensions in mm.

Dimensions

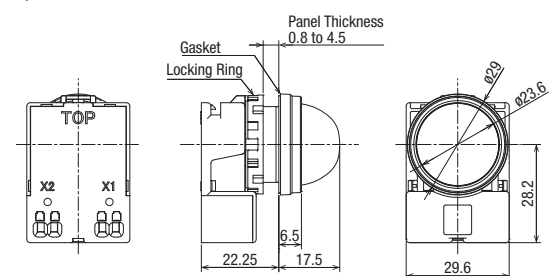
Round Flush 6V, 12V, 24V AC/DC



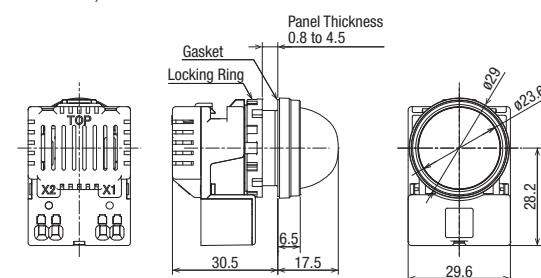
100/120V AC/DC, 200/240V AC



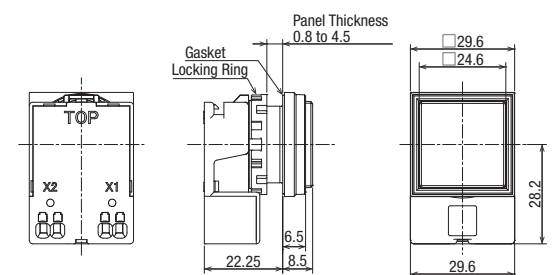
Extended (Dome) 6V, 12V, 24V AC/DC



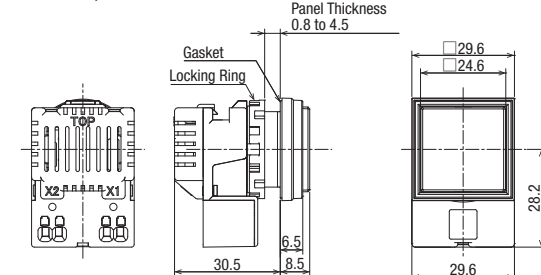
100/120V AC/DC, 200/240V AC



Square Flush 6V, 12V, 24V AC/DC



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



Illuminated / Non-Illuminated Buzzers

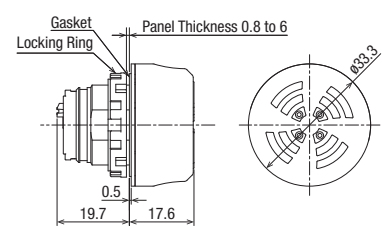
Easy installation of buzzers and lamps

- 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.	Illumination Color	Sound Type	Quantity	Dimensions (All dimensions in mm.)
	HW1Z-P1F2PQ4R	Red	Intermittent	1	
	HW1Z-P1F2PQ4Y	Yellow			
	HW1Z-2PQ4B	—	Steady	1	
	HW1Z-F2PQ4B	—	Intermittent		

- See page 48 for details on terminal rubber boot.

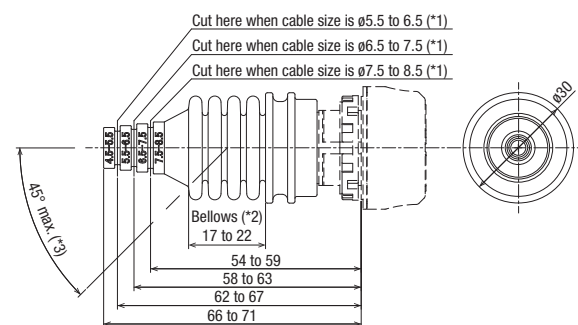
Specifications and Ratings

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 Flash Cycle (at 25°C)
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/s ² Damage limits: 1,000 m/s ²
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 mm ² , AWG24-16 Ferrule (with insulation cover): 0.2 to 0.75 mm ² , AWG24-18
Weight (approx.)		17g

Dimensions

All dimensions in mm.

With terminal rubber boot

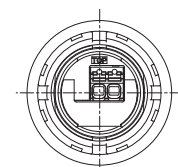


*1: ø4.5-5.5 cable needs no cutting.

*2: The bellows must be 17 to 22mm long after installing the terminal rubber boot.

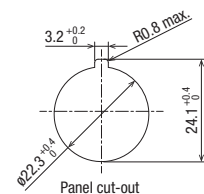
*3: Maintain a cable angle of 45° max. to the HW1Z axis.

Terminal Arrangement (bottom 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 60

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)



- See website for details on approvals and standards.

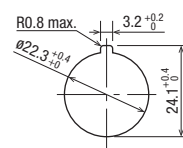
Specifications

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 (Pushlock switches) 50N (Push-pull switches)
Minimum Operator Stroke Required for Direct Opening Action	6.0mm
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
	Between terminals of the same poles: 2500V AC, 1 minute
Vibration Resistance	Damage limits
	Operating extremes
Shock Resistance	
Operation Frequency	
Life	Mechanical
	Electrical
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)

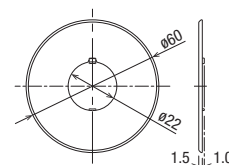
	Vertical Spacing	Horizontal Spacing
HW1B-V3 HW1B-V4 HW1B-Y2	50 mm minimum	50 mm minimum
HW1B-V5	60 mm minimum	60 mm minimum

- 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)

Quantity: 1

Shape	Legend	Part No.	Remarks
	(blank)	HWAV-0-Y	HWAV-27-Y Nameplate color: yellow Legend color: black Panel thickness: 0.8 to 4.5 mm Material: Polyamide
	EMERGENCY STOP	HWAV-27-Y	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 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.

Emergency Stop Switches

Pushlock Turn Reset

Name / Shape	Contact Configuration	Part No.
ø29mm Mushroom HW1B-V3 	1NC	HW1B-V3P01④-U
	1NO-1NC	HW1B-V3P11④-U
	2NC	HW1B-V3P02④-U
	1NO-2NC	HW1B-V3P12N2④-U
	3NC	HW1B-V3P03N2④-U
	2NO-2NC	HW1B-V3P22④-U
ø40mm Mushroom HW1B-V4 	1NC	HW1B-V4P01④-U
	1NO-1NC	HW1B-V4P11④-U
	2NC	HW1B-V4P02④-U
	1NO-2NC	HW1B-V4P12N2④-U
	3NC	HW1B-V4P03N2④-U
	2NO-2NC	HW1B-V4P22④-U
ø60mm Mushroom HW1B-V5 	1NC	HW1B-V5P01④-U
	1NO-1NC	HW1B-V5P11④-U
	2NC	HW1B-V5P02④-U
	1NO-2NC	HW1B-V5P12N2④-U
	3NC	HW1B-V5P03N2④-U
	2NO-2NC	HW1B-V5P22④-U

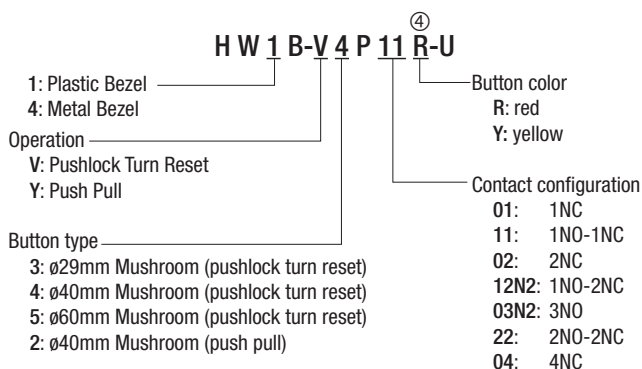
Push Pull

Quantity: 1

Name / Shape	Contact Configuration	Part No.
ø40mm Mushroom HW1B-Y2 	1NC	HW1B-Y2P01④-U
	1NO-1NC	HW1B-Y2P11④-U
	2NC	HW1B-Y2P02④-U

- Pushlock turn reset – Button is maintained when pressed and is reset when turned clockwise.
- Push-Pull – 2-position switches with button maintained in both depressed and reset positions.
- Up to 4 contacts can be used.
- For emergency stop purposes, these switches must contain at least one NC contact block.
- For sub-assembled units (operator type / contact unit), see page 37 to 44.

Part number structure



Emergency Stop Switch Dimensions

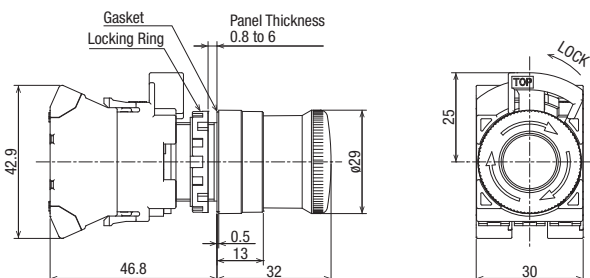
Dimensions

All dimensions in mm.

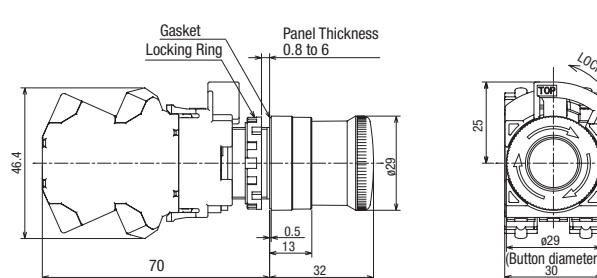
ø29mm Mushroom Pushlock Turn Reset

HW1B-V3

Single contact block



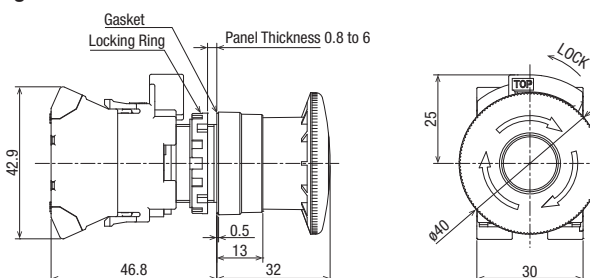
Double contact block



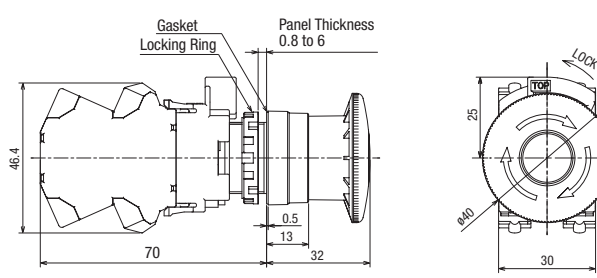
ø40mm Mushroom Pushlock Turn Reset

HW1B-V4

Single contact block



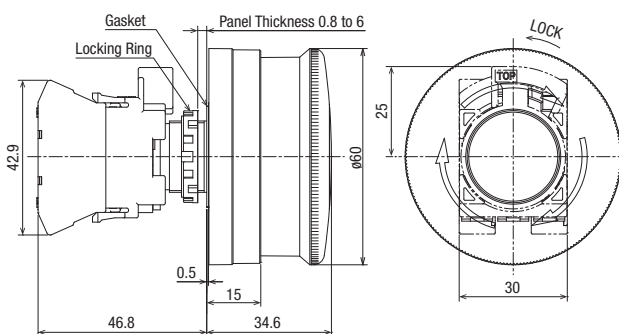
Double contact block



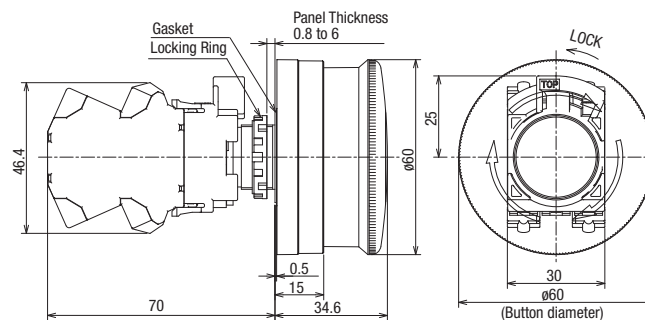
ø60mm Mushroom Pushlock Turn Reset

HW1B-V5

Single contact block



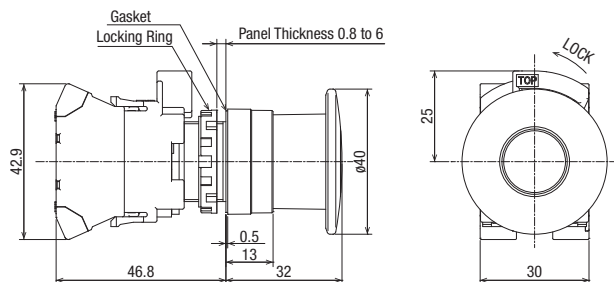
Double contact block



ø40mm Mushroom Push Pull (2-position)

HW1B-Y2

Single contact block



ø22 HW Series

Sub-Assembled Products



ø22 HW Series Sub-Assembled Products

Operator Type

Pushbutton operator

Quantity: 1

Name / Shape	Plastic Bezel	Metal Bezel
	Part No.	
Round Flush 	HW1B-M1④-PS-U	HW4B-M1④-PS-U
	HW1B-A1④-PS-U	HW4B-A1④-PS-U
Round Extended 	HW1B-M2④-PS-U	HW4B-M2④-PS-U
	HW1B-A2④-PS-U	HW4B-A2④-PS-U
ø29mm Mushroom 	HW1B-M3④-PS-U	HW4B-M3④-PS-U
	HW1B-A3④-PS-U	HW4B-A3④-PS-U
ø40mm Mushroom 	HW1B-M4④-PS-U	HW4B-M4④-PS-U
	HW1B-A4④-PS-U	HW4B-A4④-PS-U

• Specify the button color code in place of ④ in the Part No.

Name / Shape	Part No.
ø60mm Mushroom 	HW1B-M5④-PS-U
Square Flush 	HW2B-M1④-PS-U
	HW2B-A1④-PS-U
Square Extended 	HW2B-M2④-PS-U
	HW2B-A2④-PS-U

Part number structure

HW1B-M1B-PS-U Bezel shape ———— 1: Plastic Round 2: Plastic Square 4: Metal Round Operation ———— M: Momentary A: Maintained Button type ———— 1: Flush 2: Extended 3: ø29mm Mushroom 4: ø40mm Mushroom 5: ø60mm Mushroom		Button color ———— B: black Y: yellow G: green S: blue R: red W: white Note: Only B (black), G (green), and R (red) available for ø60mm mushroom. Note: The ø60mm mushroom can only be used with "1: Plastic Round(Bezel)". Note: The square bezel can only be used with two button types: 1) Flush and 2) Extended.
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Illuminated Pushbutton operator

Name / Shape	Plastic Bezel	Metal Bezel
	Part No.	
Round Flush (marking) 	HW1L-M1④-PS-U	HW4L-M1④-PS-U
	HW1L-A1④-PS-U	HW4L-A1④-PS-U
Round Extended (marking) 	HW1L-M2④-PS-U	HW4L-M2④-PS-U
	HW1L-A2④-PS-U	HW4L-A2④-PS-U
Round Extended with Full Shroud (marking) 	HW1L-MF2④-PS-U	HW4L-MF2④-PS-U
	HW1L-AF2④-PS-U	HW4L-AF2④-PS-U
ø29 Mushroom (marking) 	HW1L-M3④-PS-U	HW4L-M3④-PS-U
	HW1L-A3④-PS-U	HW4L-A3④-PS-U
ø40 Jumbo Mushroom (marking) 	HW1L-M4④-PS-U	HW4L-M4④-PS-U
	HW1L-A4④-PS-U	HW4L-A4④-PS-U
Square Flush (marking) 	HW2L-M1④-PS-U	—
	HW2L-A1④-PS-U	—

• Specify the button color code in place of ④ in the Part No.

Part number structure

HW1L-M1G-PS-U Bezel shape ———— 1: Plastic Round 2: Plastic Square 4: Metal Round Operation ———— M: Momentary A: Maintained Button type ———— 1: Flush 2: Extended F2: Round Extended with full Shroud 3: ø29mm Mushroom 4: ø40mm Mushroom		Illumination button color ———— G: green A: Amber R: red S: blue Y: yellow PW: Pure white Note: The Plastic Square can only be used with "1: Flush(Button)". Note: The square bezel can only be used with two button types: 1) Flush and 2) Extended.
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Operator Type

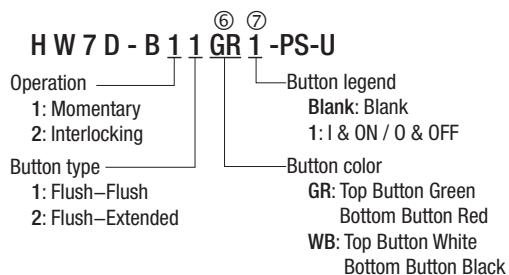
Quantity: 1

Dual pushbutton operator (without pilot light)

Shape	Part No.
	HW7D-B11⑥⑦-PS-U
	HW7D-B12⑥⑦-PS-U
	HW7D-B21⑥⑦-PS-U
	HW7D-B22⑥⑦-PS-U

• Specify a code in place of ⑥ and ⑦ in the Part No.

Part number structure

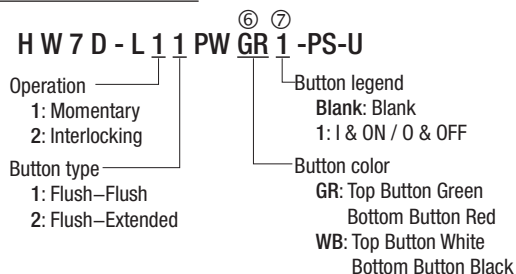


Dual pushbutton operator (with pilot light)

Shape	Part No.
	HW7D-L11PW⑥⑦-PS-U
	HW7D-L12PW⑥⑦-PS-U
	HW7D-L21PW⑥⑦-PS-U
	HW7D-L22PW⑥⑦-PS-U

• Specify a code in place of ⑥ and ⑦ in the Part No.

Part number structure

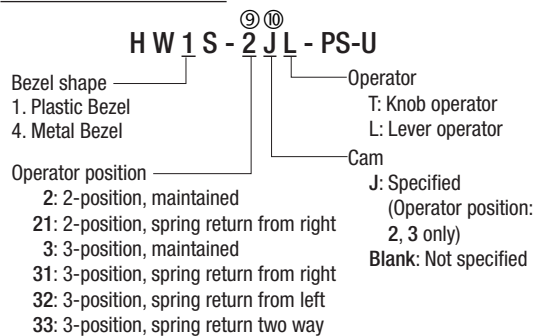


Selector switch operator

Name / Shape	Plastic Bezel	Metal Bezel
	Part No.	
Knob 	HW1S-⑨⑩T-PS-U	HW4S-⑨⑩T-PS-U
Lever 	HW1S-⑨⑩L-PS-U	HW4S-⑨⑩L-PS-U

• Specify a code in place of ⑨ and ⑩ in the Part No.

Part number structure



Operator position

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

Maintained (45° 3-position)	Spring Return (45° 3-position)		
			
Cam code: Blank, J	Cam code: blank		

Operator Type

Quantity: 1

Key selector switch operator

Name / Shape	Plastic Bezel	Metal Bezel
	Part No.	
Disc tumbler 	HW1K-⑨⑩⑪-⑥-PS-U	HW4K-⑨⑩⑪-⑥-PS-U

• Specify a code in place of ⑨, ⑩, ⑪, and ⑥ the Part No.

Part number structure

Bezel shape 1. Plastic Bezel 4. Metal Bezel		Key number Disc tumbler key Blank: Standard (231)	
Operator position 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		Key removal position 2-position A: Removable in all positions B: Removable in the left only C: Removable in the right only	
Cam J: Specified (Operator position: 2, 3 only) Blank: Not specified		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	

Operator position code

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

Maintained (45° 3-position)	Spring Return (45° 3-position)		
			
Cam code: Blank, J	Cam code: blank		

Key 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 	

①①② : Key removal position ①①② : Key retained position

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

Operator Type

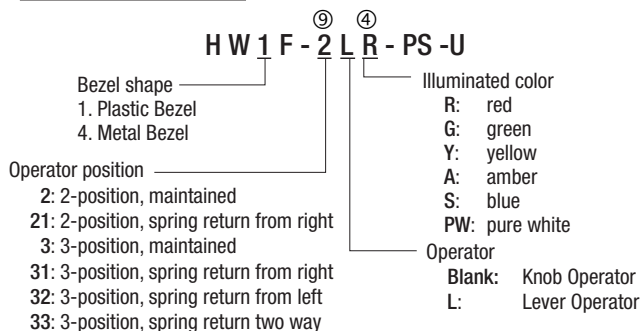
Quantity: 1

Illuminated selector switch operator

Name / Shape	Plastic Bezel	Metal Bezel
	Part No.	
Knob 	HW1F-③④-PS-U	HW4F-③④-PS-U
Lever 	HW1F-③L④-PS-U	HW4F-③L④-PS-U

• Specify a code in place of ③ and ④ in the Part No.

Part number structure

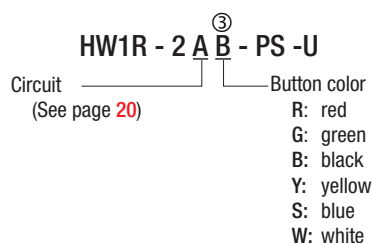


Selector pushbutton switch operator

Shape	Part No.
	HW1R-2A③-PS-U
	HW1R-2D③-PS-U
	HW1R-2E③-PS-U
	HW1R-2F③-PS-U
	HW1R-2N③-PS-U
	HW1R-2T③-PS-U

• Specify a code in place of ③ in the Part No.

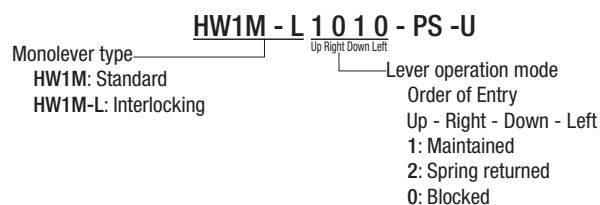
Part number structure



Monolever switch operator

Name / Shape	Part No.
HW1M Standard 	HW1M-1010-PS-U
	HW1M-2020-PS-U
	HW1M-0101-PS-U
	HW1M-0202-PS-U
	HW1M-1111-PS-U
	HW1M-2222-PS-U
HW1M-L Interlocking 	HW1M-L1010-PS-U
	HW1M-L2020-PS-U
	HW1M-L0101-PS-U
	HW1M-L0202-PS-U
	HW1M-L1111-PS-U
	HW1M-L2222-PS-U

Part number structure



Operator Type

Quantity: 1

Non-Illuminated E-Stop Pushbutton switch operator

Pushlock Turn Reset

Name / Shape	Part No.	
	Plastic	Metal
	HW1B-V3④-PS-U	HW4B-V3④-PS-U
	HW1B-V4④-PS-U	HW4B-V4④-PS-U
	HW1B-V5R-PS-U	—

Part number structure

HW1B - V 3 R - PS - U

Bezel shape _____
 1: Plastic Round
 4: Metal Round

Button color _____
 R: red
 Y: yellow

Operation _____
 V: Pushlock Turn Reset
 Y: Push Pull

Button type _____
 3: ø29mm Mushroom (pushlock turn reset)
 4: ø40mm Mushroom (pushlock turn reset)
 5: ø60mm Mushroom (pushlock turn reset)
 2: ø40mm Mushroom (push pull)

Note: The ø60mm mushroom can only be used with "1:Plastic Round(Bezel)".

Push Pull

Name / Shape	Part No.	
	Plastic	Metal
	HW1B-Y2④-PS-U	HW4B-Y2④-PS-U

Head EMO Pushlock Turn Reset

Name / Shape	Part No.	
	Plastic	Metal
	HW1B-V4R-EMO-2-PS-U	HW4B-V4R-EMO-2-PS-U

Pushlock Key Reset

Name / Shape	Part No.	
	Plastic	Metal
	HW1B-X4R-PS-U	HW4B-X4R-PS-U

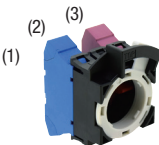
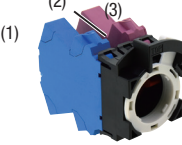
- Specify the button color code in place of ④ in the Part No.
- *Available in red only.
- All E-Stop buttons are not removable.

Note: Determine mounting centers to ensure proper spacing.

Contact Unit

Contact Unit Part No. / Contact Configuration

Quantity: 1

Shape / Contact Block Mounting Position			
 Single contact block  Double contact block  Dummy block			
Contact Configuration (Code)	Part No.	Mounting Position	Contact
1NO (10)	HW-CNP10	(1)	1NO
		(2)	Dummy
		(3)	Dummy
1NC (01)	HW-CNP01	(1)	Dummy
		(2)	Dummy
		(3)	1NC
1NO-1NC (11)	HW-CNP11	(1)	1NO
		(2)	Dummy
		(3)	1NC
1NO-1NC (11N1)	HW-CNP11N1	(1)	1NC
		(2)	Dummy
		(3)	1NO
2NO (20)	HW-CNP20	(1)	1NO
		(2)	Dummy
		(3)	1NO
2NC (02)	HW-CNP02	(1)	1NC
		(2)	Dummy
		(3)	1NC
2NO-2NC (22)	HW-CNP22	(1)	1NO-1NC
		(2)	Dummy
		(3)	1NO-1NC
2NO-2NC (22N1)	HW-CNP22N1	(1)	2NO
		(2)	Dummy
		(3)	2NC
2NO-2NC (22N2)	HW-CNP22N2	(1)	2NC
		(2)	Dummy
		(3)	2NO
3NO (30)	HW-CNP30 (*1)	(1)	1NO
		(2)	1NO
		(3)	1NO
3NO (30N1)	HW-CNP30N1	(1)	2NO
		(2)	Dummy
		(3)	1NO
3NC (03)	HW-CNP03 (*1)	(1)	1NC
		(2)	1NC
		(3)	1NC
3NC (03N2)	HW-CNP03N2	(1)	2NC
		(2)	Dummy
		(3)	1NC
1NO-2NC (12)	HW-CNP12 (*1)	(1)	1NO
		(2)	1NC
		(3)	1NC
1NO-2NC (12N1)	HW-CNP12N1 (*1)	(1)	1NC
		(2)	1NO
		(3)	1NC
1NO-2NC (12N2)	HW-CNP12N2	(1)	1NC
		(2)	Dummy
		(3)	1NO-1NC
1NO-3NC (13)	HW-CNP13	(1)	1NO-1NC
		(2)	Dummy
		(3)	2NC
2NO-1NC (21)	HW-CNP21 (*1)	(1)	1NO
		(2)	1NO
		(3)	1NC
2NO-1NC (21N1)	HW-CNP21N1 (*1)	(1)	1NO
		(2)	1NC
		(3)	1NO
2NO-1NC (21N3)	HW-CNP21N3	(1)	1NO-1NC
		(2)	Dummy
		(3)	1NO
2NO-1NC (21N14)	HW-CNP21N14	(1)	2NO
		(2)	Dummy
		(3)	1NC
3NO-1NC (31)	HW-CNP31	(1)	2NO
		(2)	Dummy
		(3)	1NO-1NC
1NO-3NC (13)	HW-CNP13	(1)	1NO-1NC
		(2)	Dummy
		(3)	2NC
4NO (40)	HW-CNP40	(1)	2NO
		(2)	Dummy
		(3)	2NO
4NC (04)	HW-CNP04	(1)	2NC
		(2)	Dummy
		(3)	2NC

• Contact unit includes a contact block, connecting unit.

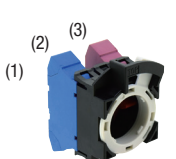
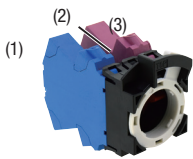
• Switches with 1 contact block contain 2 dummy blocks.
Switches with 2 contact blocks contain 1 dummy block.

*1: For pushbuttons (round flush, round extended, square flush, square extended) selector switches, and key selector switches only.

Contact Unit with Full Voltage Adapter

Contact Unit (illuminated) Part No. / Contact Configuration

Quantity: 1

Shape / Contact Block Mounting Position			
  Note) (2) can only be mounted with a full voltage adapter. Single contact block Double contact block Full voltage adapter			
Contact Configuration (Code)	Part No.	Mounting Position	Contact
1NO (10)	HW-CNP10Q0	(1)	1NO
		(2)	Full voltage adapter
		(3)	Dummy
1NC (01)	HW-CNP01Q0	(1)	Dummy
		(2)	Full voltage adapter
		(3)	1NC
1NO-1NC (11)	HW-CNP11Q0	(1)	1NO
		(2)	Full voltage adapter
		(3)	1NC
1NO-1NC (11N1)	HW-CNP11N1Q0	(1)	1NC
		(2)	Full voltage adapter
		(3)	1NO
2NO (20)	HW-CNP20Q0	(1)	1NO
		(2)	Full voltage adapter
		(3)	1NO
2NC (02)	HW-CNP02Q0	(1)	1NC
		(2)	Full voltage adapter
		(3)	1NC
2NO-2NC (22)	HW-CNP22Q0	(1)	1NO-1NC
		(2)	Full voltage adapter
		(3)	1NO-1NC
2NO-2NC (22N1)	HW-CNP22N1Q0	(1)	2NO
		(2)	Full voltage adapter
		(3)	2NC
2NO-2NC (22N2)	HW-CNP22N2Q0	(1)	2NC
		(2)	Full voltage adapter
		(3)	2NO
3NO (30N1)	HW-CNP30N1Q0	(1)	2NO
		(2)	Full voltage adapter
		(3)	1NO
3NC (03N2)	HW-CNP03N2Q0	(1)	2NC
		(2)	Full voltage adapter
		(3)	1NC
1NO-2NC (12N2)	HW-CNP12N2Q0	(1)	1NC
		(2)	Full voltage adapter
		(3)	1NO-1NC
1NO-3NC (13)	HW-CNP13Q0	(1)	1NO-1NC
		(2)	Full voltage adapter
		(3)	2NC
2NO-1NC (21N3)	HW-CNP21N3Q0	(1)	1NO-1NC
		(2)	Full voltage adapter
		(3)	1NO
3NO-1NC (31)	HW-CNP31Q0	(1)	2NO
		(2)	Full voltage adapter
		(3)	1NO-1NC
1NO-3NC (13)	HW-CNP13Q0	(1)	1NO-1NC
		(2)	Full voltage adapter
		(3)	2NC
4NO (40)	HW-CNP40Q0	(1)	2NO
		(2)	Full voltage adapter
		(3)	2NO
4NC (04)	HW-CNP04Q0	(1)	2NC
		(2)	Full voltage adapter
		(3)	2NC

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

Note) LED lamp is not installed. When ordering a contact unit (illuminated), select a LED lamp from the options listed on page 51.

ø22 HW Series

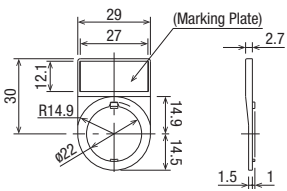
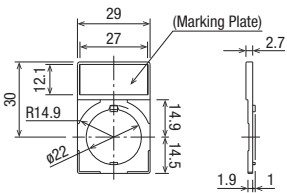
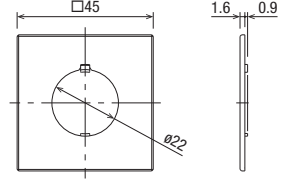
Accessories and Maintenance Parts



$\varnothing 22$ HW Series Accessories and Maintenance Parts

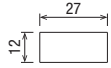
Nameplates

All dimensions in mm

Description	Legend	Material	Part No.	Quantity	Dimensions (mm)
HWAM	Order marking plate (round) separately.	Plastic (black)	HWAM	10	HWNP-□ marking plate (sold separately) is necessary. 
HWAQ	Order marking plate (square) separately.	Plastic (black)	HWAQ	10	HWNP-□ marking plate (sold separately) is necessary. 
HWAS	Blank	Plastic (black)	HWAS-0	10	

- Nameplates cannot be used on HW series control stations (HW1X).

Marking Plates for HWAM/HWAQ

Description	Material	Part No.	Quantity	Dimensions (mm)
HWNP	Aluminum (black) Thickness = 1.0mm	HWNP-□	10	White legend on black background. Engraving area: W25×H7 

- Specify a legend code in place of □ in the Part No.

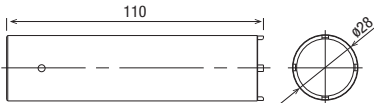
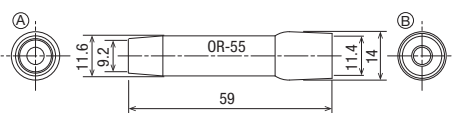
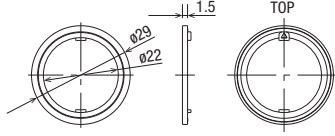
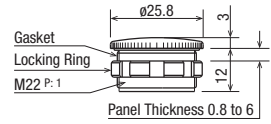
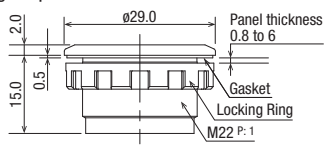
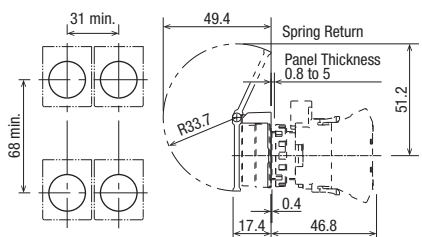
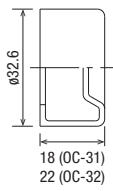
Legends

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

- See page 57 on how to install nameplates/markings plates, and on how to remove marking plates.

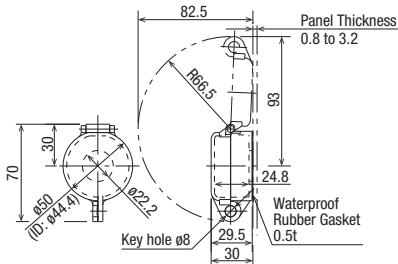
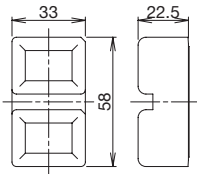
Accessories

All dimensions in mm

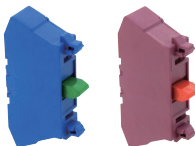
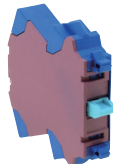
Name / Shape		Material	Part No.	Quantity	Remarks
Tool	Locking Ring Wrench	Metal (brass) Weight: approx. 150g	MW9Z-T1	1	Used to tighten the locking ring when installing the HW switch onto a panel. 
	Lamp Holder Tool	Nitrile rubber (black)	OR-55	1	- Used to install and remove the LED lamps. See page 54 for how to install. Ⓐ : BA9S 
Anti-rotation Ring		Ring: polyamide Gasket: nitril rubber	HW9Z-RL	10	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	5	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	1	- Degree of protection: IP66 (round hole), IP40 (with anti-rotation function) - Tightening torque: 1.2 N·m 
Mounting Hole Plug		Polyamide	LW9Z-BP1	1	- Degree of protection: IP65 - Tightening torque: 2.0 N·m 
Switch Guard	Spring Return	Guard: Polyacetal Cover: polyarylate	HW9Z-K1	1	- Used to prevent inadvertent operation for flush pushbuttons. Degree of protection: IP65 - Maintained type stops at 90° and 180°. 
	Maintained	Gasket: Nitrile rubber	HW9Z-K11	1	
Button Clear Boot	For flush pushbuttons	Rubber (EPDM)	OC-31	1	- Used to cover and protect pushbuttons where units are subject to water splash. 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	1	

Accessories

All dimensions in mm

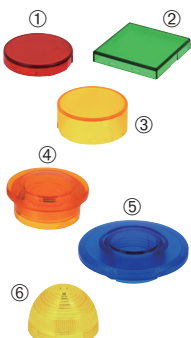
Name / Shape	Material	Part No.	Quantity	Remarks
Padlock Cover 	Polyarylate Gasket: Nitrile rubber	HW9Z-KL1	1	Used to protect pushbuttons, selector switches, and key selector switches. 
Rubber Boot for Dual Pushbutton Switches 	Clear Silicon Rubber	HW9Z-D7D	1	IP65 
Ring Adapter 	Nitrile rubber	HW9Z-A25	5	- 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 56 for details.
Ring Adapter 	Gasket: polyamide Washer: metal (brass)	HW9Z-A30	2	- Used to install the HW series units (round type) into ø30 mm mounting holes (except HW1P-5, HW1B-M5/V5, HW7D, and HW1Z). - 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	1	- Applicable cable: ø4.5 to 8.5 mm - Cut the end of rubber boot to fit the cable size (see dimensions on page 60). - Weight: 10 g (approx.)

Maintenance Parts

Name / Shape	Material	Part No.	Quantity	Remarks	
	NO contact Housing color: blue	HW-P10	5	Terminal no.: 1st deck 3-4	Note) Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy block.
	NC contact Housing color: reddish purple	HW-P01	5	Terminal no.: 1st deck: 1-2	
	2NO contact Housing color: blue	HW-PW20	5	Terminal no.: 1 deck: 13-14 2 deck: 23-24	
	2NC contact Housing color: reddish purple	HW-PW02	5	Terminal no.: 1 deck: 11-12 2 deck: 21-22	
	NONC contact Housing color: blue / reddish purple	HW-PW11	5	Terminal no.: 1 deck: 13-14 2 deck: 21-22	
		HW-DP	1	Applicable model: Illuminated pushbuttons Illuminated selector switches Dual pushbutton (with pilot light) Applicable load (LED lamp) LSRD-6 (6V AC/DC) LSRD-1 (12V AC/DC) LSRD-2 (24V AC/DC) LSRD-H2 (100/120V AC/DC) LSRD-M2 (200/220V AC) LSRD-M4 (230/240V AC)	
	Weight: approx. 9g	HW-CNP	1	Connecting unit for Push-in terminal	
	Polyamide (black)	CW-DB	5	Note) Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy block.	

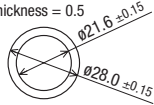
Maintenance Parts

All dimensions in mm

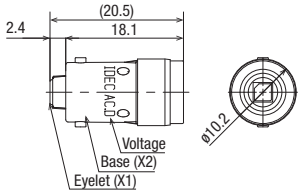
Name / Shape		Material/Dimensions	Part No.	Quantity	Color Code *
Lens 	①Round flush	Polyarylate ø23.5 H4.2	HW9Z-L11*-K	5	R (red), G (green), Y (yellow), A (amber), C (clear), S (blue)
	②Square flush	Polyarylate ø24.6 H4	HW9Z-L21*-K	5	
	③Round extended	Polyarylate ø23.3 H10	HW9Z-L12*-K	5	
	④ø29 mushroom	AS, marking type ø29 H12.7	ALW31LD*-K	2	
	⑤ø40 mushroom	AS, marking type ø40 H12.7	ALW41LD*-K	1	
	⑥Dome for pilot light	AS ø23.5 H15.1	HW1A-P2*-K	5	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*	5	• 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*	5	
	③Square flush	Polyacetal □24.8 H3	HW2A-B1*	5	
	④Square extended	Polyacetal □24.5 H9.2	HW2A-B2*	5	
	⑤ø29 mushroom	Polyacetal ø29 H12.7 (M18P1.0)	HW1A-B3*	2	
	⑥ø40 mushroom	Polyacetal ø40 H12.7 (M18P1.0)	HW1A-B4*	2	
Marking Plate 	Round flush	Acrylic ø21.5 Thickness = 1	HW9Z-P11	5	• White • See page 57 for dimensions and engraving area.
	Round extended	Acrylic ø21.3 Thickness = 6.5	HW9Z-P12	5	
	Square flush	Acrylic 22.7 Thickness = 1	HW9Z-P21	5	
	ø29/40 mm mushroom	Acrylic ø15.7 H3.4	ALW3B	5	
Operator Knob for Illuminated Selector Switch		AS resin	HW9Z-FDY*-K	1	R (red), G (green), Y (yellow), A (amber), W (white), S (blue)
Operator Lever for Illuminated Selector Switch			HW9Z-FDL*-K	1	
Spare Key (Disc Tumbler Key)		Metal (nickel-plated brass)	HW9Z-SK-231	2	

Maintenance Parts

All dimensions in mm

Name / Shape	Material/Dimensions	Part No.	Quantity	Remarks
Locking Ring 	Polyamide (black) ø28.4 H5 M22P1	HW9Z-LN	5	
Cap for Mono-lever Switch 	Standard Nitril rubber ø10 L20	HW9Z-CPM	1	
Boot for Mono-lever Switch 	Standard Nitril rubber ø29.2 L34.4	HW9Z-BLM	1	
Gasket 	Nitril rubber (black)	HW9Z-WM	10	Thickness = 0.5 

HW Series LED Lamps

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

Accessory for green dual pushbutton (with pilot light)

Quantity: 5

Shape	Part No.	Dimensions
Attachment lens 	LSRD-L*	- For PW (pure white) illumination, use only a LSRD lamp and not an attachment lens. - The attachment lens is available with 5 pieces connected as shown on the right. - Color Code *: R (red), G (green), A (amber), S (blue) 

• See page 59 for the installation method.

ø22 HW Series Instructions

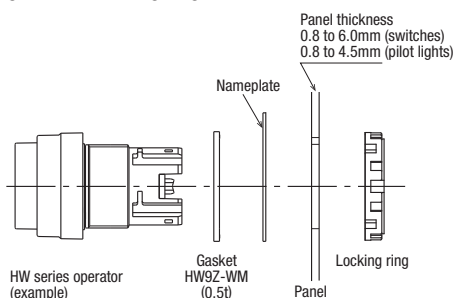
⚠ Safety Precautions

- 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 57). 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

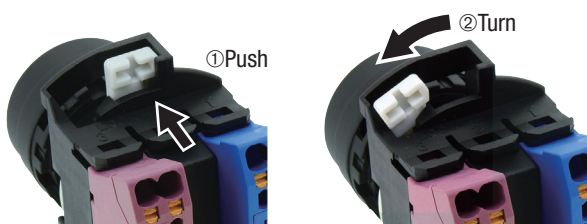
1. Remove the contact block from the operator.
2. Remove the locking ring from the operator
3. Insert the operator into the panel cut-out from the front.
When mounting the nameplate, insert between the operator and panel.
4. Tighten the locking ring from the back.



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

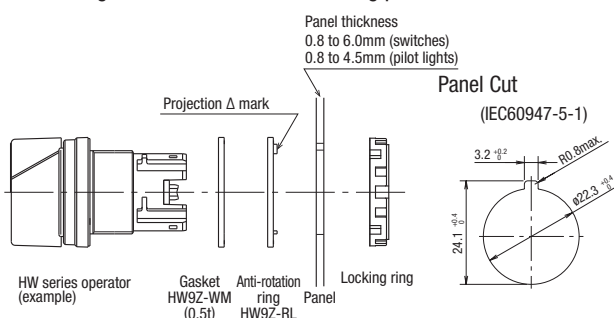
Removing the Contact Block

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.

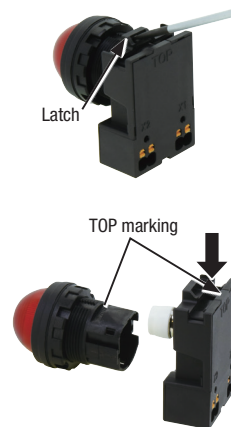


Installing the Pilot Light

Detach the operator type 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.

Instructions

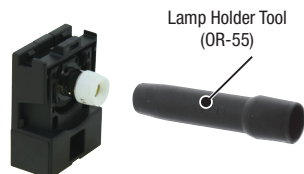
Replacing LED Lamps

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 type. (See page 47 for lamp holder tool.)

Removing the LED lamp from the front of the panel

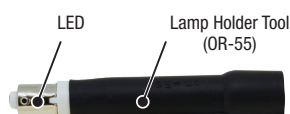
Removing

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.

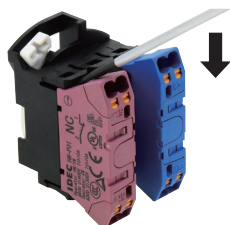


Place the pins on the lamp base to the grooves in the lamp socket. Insert the lamp and turn it clockwise.

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

Removing

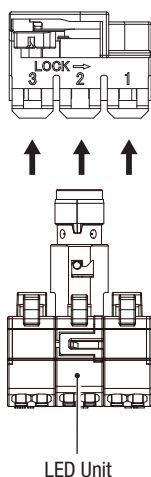
To remove the contact block and dummy block, insert into the flat blade screwdriver latch and move in the direction of the arrow.



Installing

When installing the contact block or dummy block, make sure that it snaps on to the operator.

LED unit can only be installed on No.2.

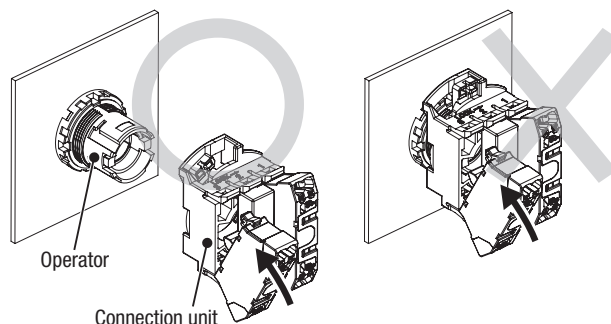


Note) Make sure to attach a correctly assembled connection unit to the operator.

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 attached with contact blocks attached.

Note) Attach the full voltage adapter vertically to the connection unit.

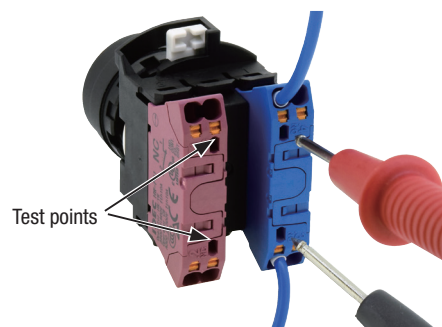


Test Points

Note) Do not insert wires into the test point.

Single contact block

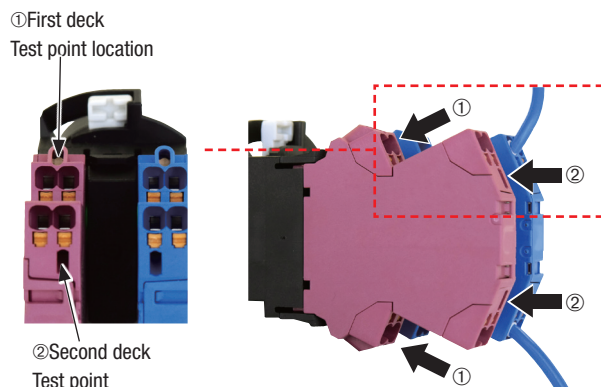
Note) When conducting a continuity test on the contact block, make sure that probes (ø2.0 maximum) of the tester are inserted vertically to the panel.



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.



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.

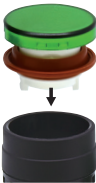
Note: Jumbo mushroom button cannot be removed.



Illuminated Pushbutton Lens

• Flush/Extended

Push in the lens holder into the operator type.



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.



• Round Flush/Square Flush

Push in the lens holder into the operator type.



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

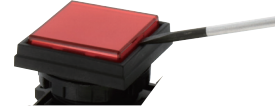


Installing/Removing the Lenses and Marking Plates

Removing

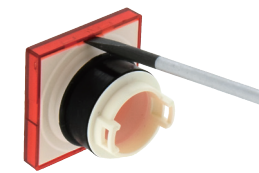
Removing the lens unit

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



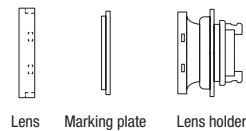
Note: The translucent filter in the lens holder cannot be removed because this filter is sealed to make the unit waterproof and oiltight.

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.



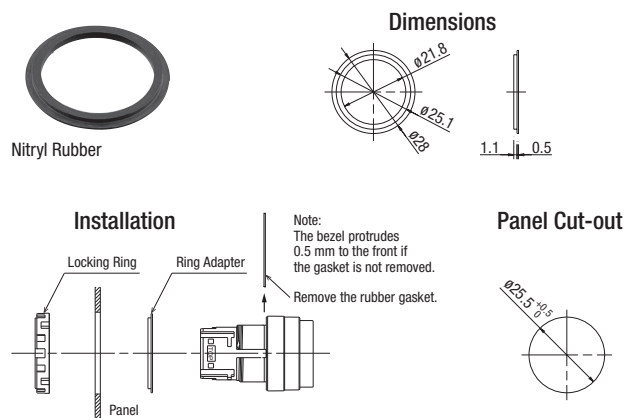
Lens Marking plate Lens holder

Instructions

Using a Ring Adapter

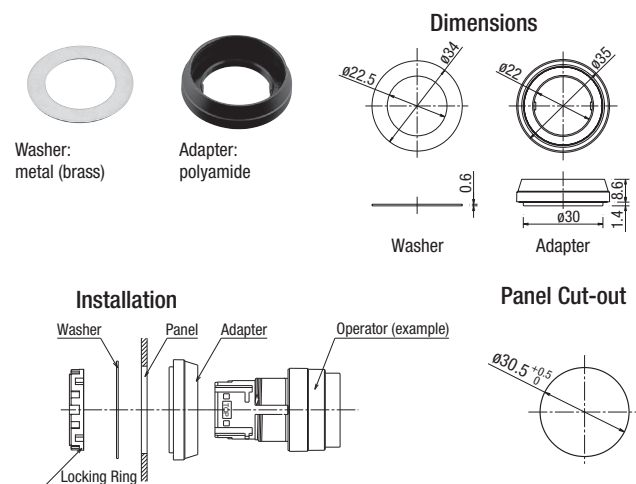
HW9Z-A25

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



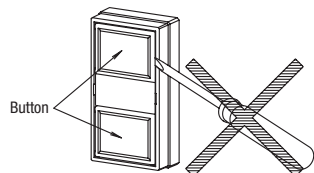
HW9Z-A30

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.



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.

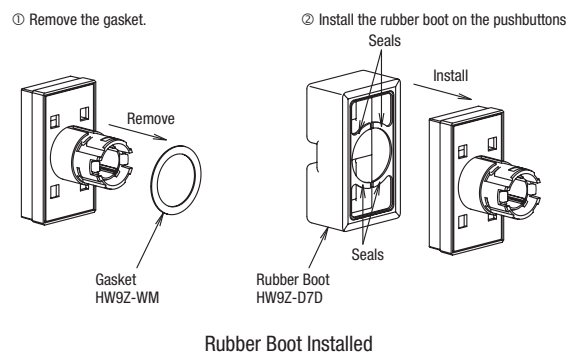


Installing the Rubber Boot for Dual Pushbuttons

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.



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

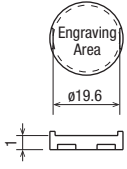
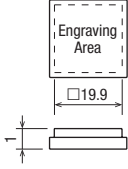
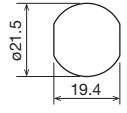
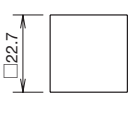
Observe the following instructions to prevent malfunction or damage.

- 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.

Instructions

Marking

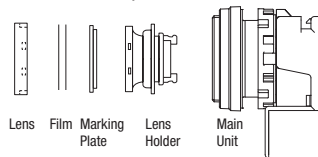
For HW series illuminated pushbuttons and pilot lights, legends and symbols can be engraved on the built-in marking plates, or printed film can be inserted under the lens for labeling purposes. Films are not supplied with illuminated pushbuttons, and may be provided by the user.

Lens Style	Round Lens (Round Flush/Round Flush with Square Bezel)	Square Lens (Square Flush)
Built-in Marking Plate	 Outside diameter ø21.5	 Outside diameter □22.7
	- Engraving must be made on the engraving area within 0.5 mm deep. - The marking plate is made of white acrylic resin.	
Applicable Marking Film	 Outside diameter ø21.5	 Outside diameter □22.7
	- Two 0.1 mm-thick films or one 0.2 mm-thick film can be installed in the lens (marking film is not supplied and must be provided by the user). - Recommended marking film: polyester	

*Marking films are not supplied.

Insertion Order of Marking Plate and Film

Square Lens (Square flush lens)



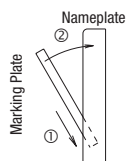
Note: Films are not supplied. When inserting a film, make sure that the marking plate is installed with its uneven side facing the lens holder.

Nameplate

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

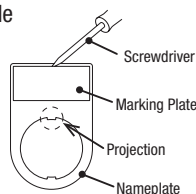
Installing a Marking Plate

Insert a marking plate in 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 1.5mm ² (AWG16 to 24)
Wire Strip Length (*2)	8 ± 1mm (*3)

*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 with insulated covers

Applicable Wire (Stranded Wire)		Wire Strip Length	IDEC Part No.
AWG	mm ²		
24	0.25	10 to 11mm	S3TL-H025-12WJ
22	0.34	10 to 11mm	S3TL-H034-12WT
20	0.50	10 to 11mm	S3TL-H05-14WA
18	0.75	10 to 11mm	S3TL-H075-14WW
18	1.00	10 to 11mm	S3TL-H10-14WY
16	1.50	10 to 11mm	S3TL-H15-14WR

Recommended Crimping Tool (Optional)

Item	IDEC Part No.
Crimping tool	S3TL-CR04T
	S3TL-CR06D

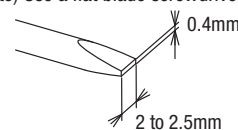
Note 1) Note the crimping dimensions when using tools other than the recommended crimping tool. For details, see page 49.

Note 2) The above crimping tool cannot be purchased from IDEC.

Recommended Screwdriver (Optional)

Item	IDEC Part No.
Flat blade screwdriver	S3TL-D04-20-60
	S3TL-D04-25-75

Note) Use a flat blade screwdriver with a blade size of 0.4×2 to 2.5 mm.



• For details on crimping tools, see page 47.

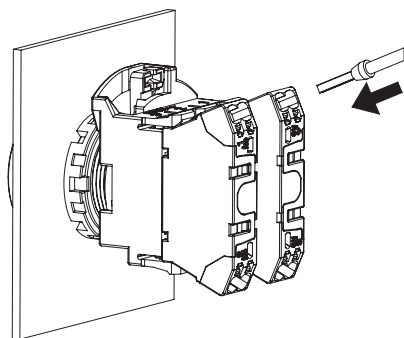
Instructions

Wiring Procedure

Connecting the wire

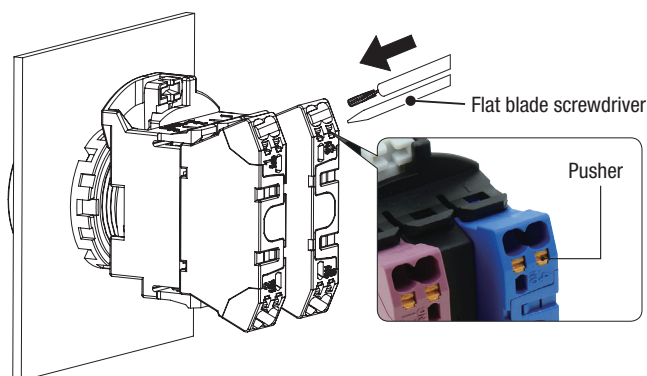
Stranded wires with ferrules or solid wire

- 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.



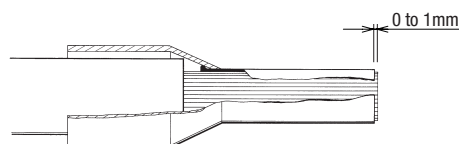
Stranded wire

- ① While pressing the pusher (orange button) using a flat blade screwdriver (recommended: S3TL-D04-20-60 (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

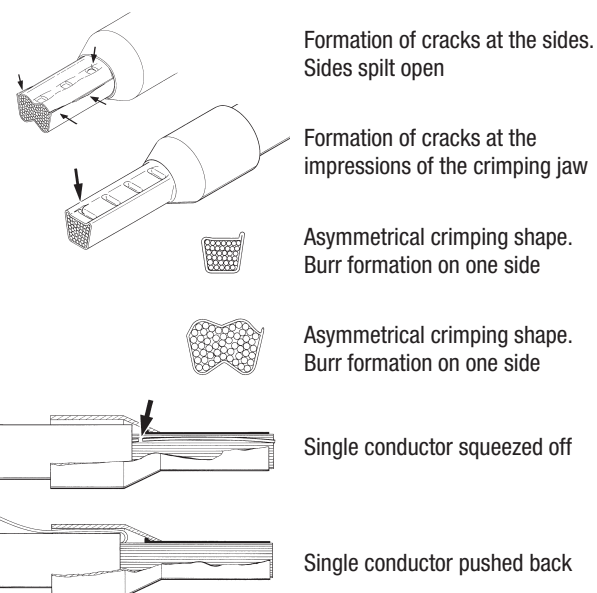
- Choose an appropriate ferrule for the wire.
- Cut the wire carefully to get a flat end.
- Make sure that ferrule sleeve is completely filled by the conductor. Depending on the cross section, the conductor should protrude approx. 0 to 1 mm from the ferrule sleeve.



- When crimping, refer to the instructions of the crimping tool.

Faults which can occur during crimping:

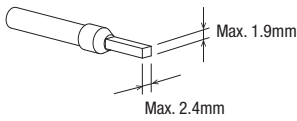
- Cracks along the sides and die impressions
- Splitting of the ferrules
- Asymmetrical crimping shape
- Extreme burrs formed along the sides
- Ferrule not filled by conductor
- Single conductors pushed back by protruding from the insulated cover
- Single conductors squeezed off
- Insulation cover damaged by the crimping jaw
- Conductor insulation not pushed into the insulated cover
- Ferrule bent longitudinally after crimping



Instructions

Crimping dimensions: W2.4×H1.9 mm

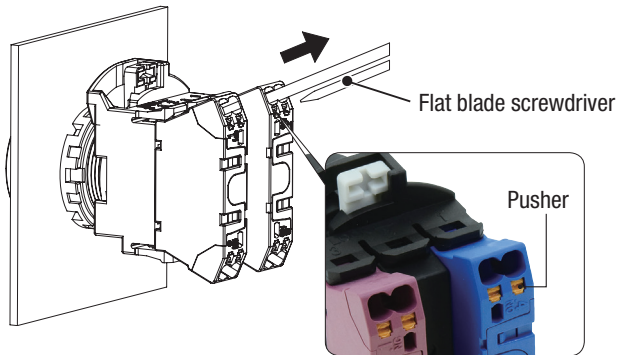
Maximum connectable crimping size is W2.4×H1.9. Make sure that the ferrule size will be smaller than this dimension. (See page 49 for recommended crimping tools)



- 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: S3TL-D04-20-60 (optional: see page 47)) 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.

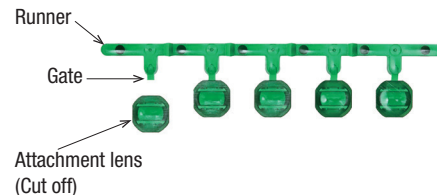
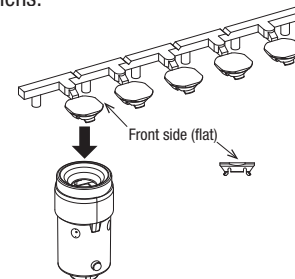
Number of Connectable Wires

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.

Installing the attachment lens

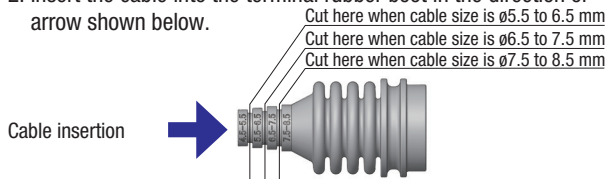
Install the lens on to the LED lamp with the lens remaining on the runner. (The lens will be cut off when installed). Note the front and back sides of the lens.



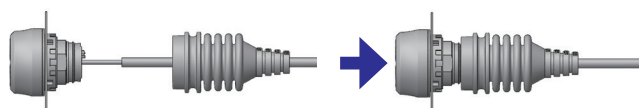
Instructions (Illuminated / Non-illuminated Buzzers)

Installing the terminal rubber boot

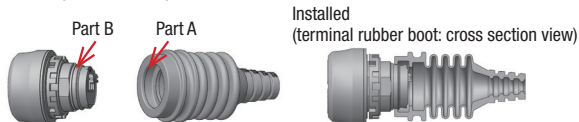
1. Cut the end of terminal rubber boot to fit the cable size.
2. Insert the cable into the terminal rubber boot in the direction of arrow shown below.



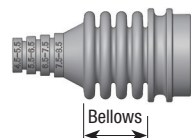
3. Strip the insulation of the cable 30 mm from the end and wire as instructed in "Wiring".
4. Install the terminal rubber boot as shown below.



5. Cover part B with part A.

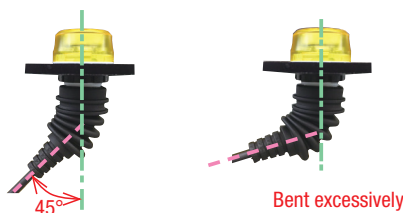


6. Make sure that the bellows is 17 to 22 mm long.



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.

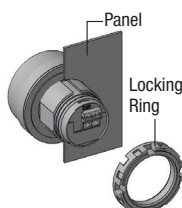


Panel Mounting

- 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

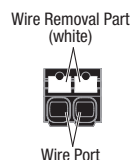
Crimp a ferrule with a conductor length of 8mm and insert to the back of the wire port. After wiring, tug lightly to make sure that the wire is properly connected.

Recommended ferrule

Item	Phoenix Contact Recommended Part No.	IEEC Part No.
Ferrule (without insulation cover)	A0,5-8	—
	A0,75-8	
	A1-8	
Ferrule (with insulation cover)	A10,25-8YE	S3TL-H025-12WJ
	A10,5-8WH	S3TL-H05-14WA
	A10,75-8GY	S3TL-H075-14WW

Stranded wire

Strip the wire insulation 8mm from the end and push in the wire removal part above the wire port using a small flat screwdriver. Release the wire removal part. Make sure that the wire does not loosen.



Wire removal

Push in the white wire removal part above the wire ports using a small flat screw driver, and pull out the wire.

Flat blade screwdriver

Use a optional flat blade screwdriver (SDS 0.4×2.5×75 (see page 44)) or a commercial screwdriver (blade shape: straight, 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.

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.

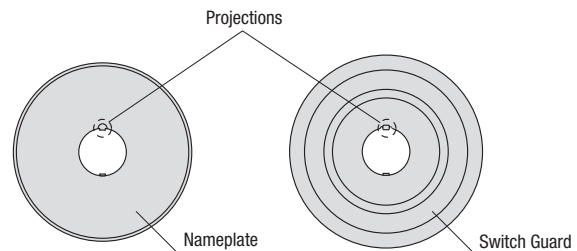
Chattering / Contact Bounce

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.

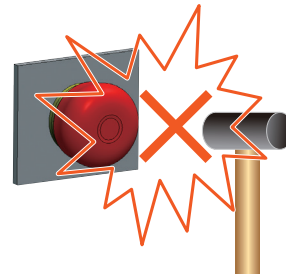
Nameplate or Switch Guard

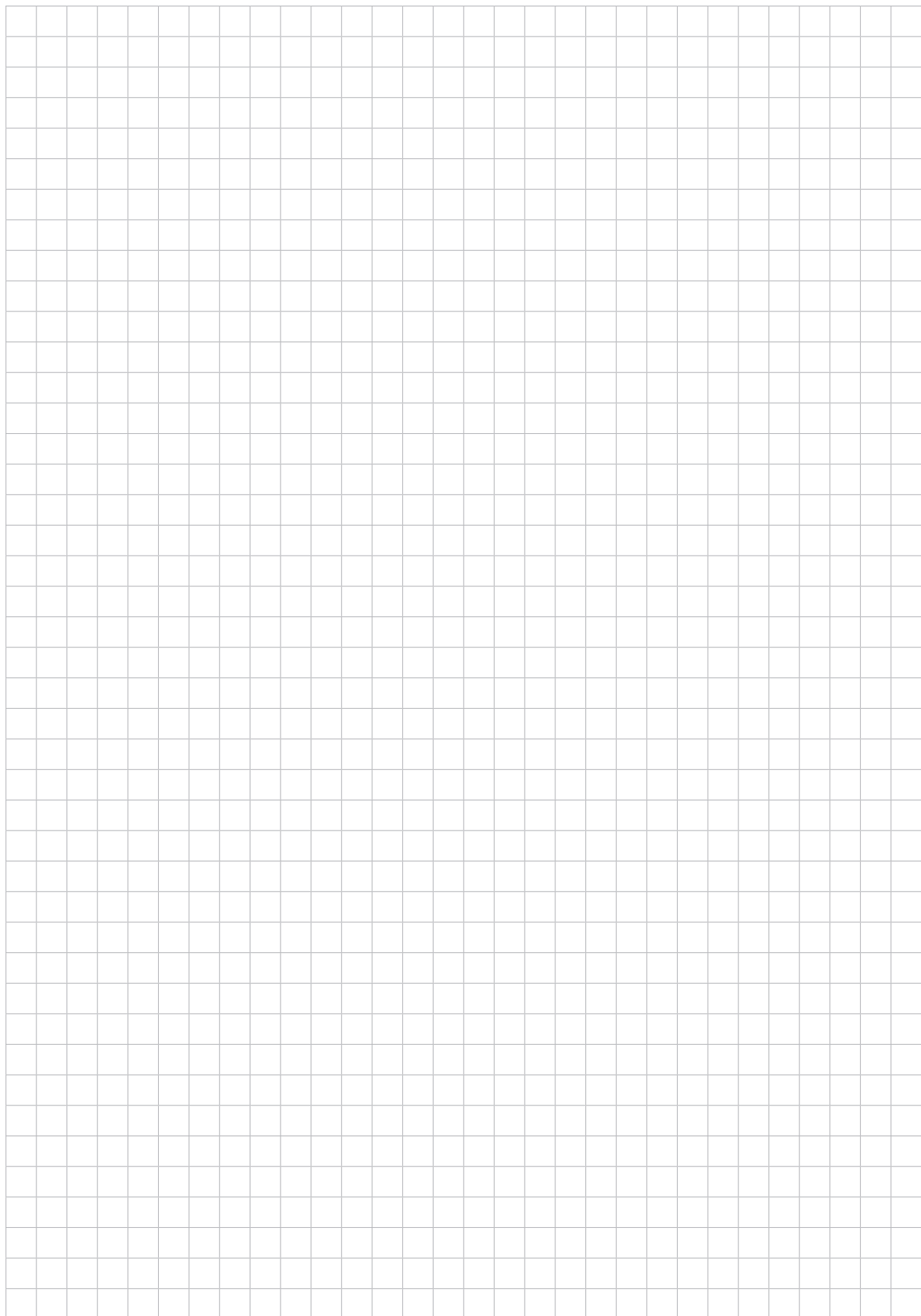
When anti-rotation is not required, remove the projection from the nameplate or switch guard using pliers. Mechanical indicator types have projections on the operator. Make sure to remove the projection on the nameplate or switch guard.

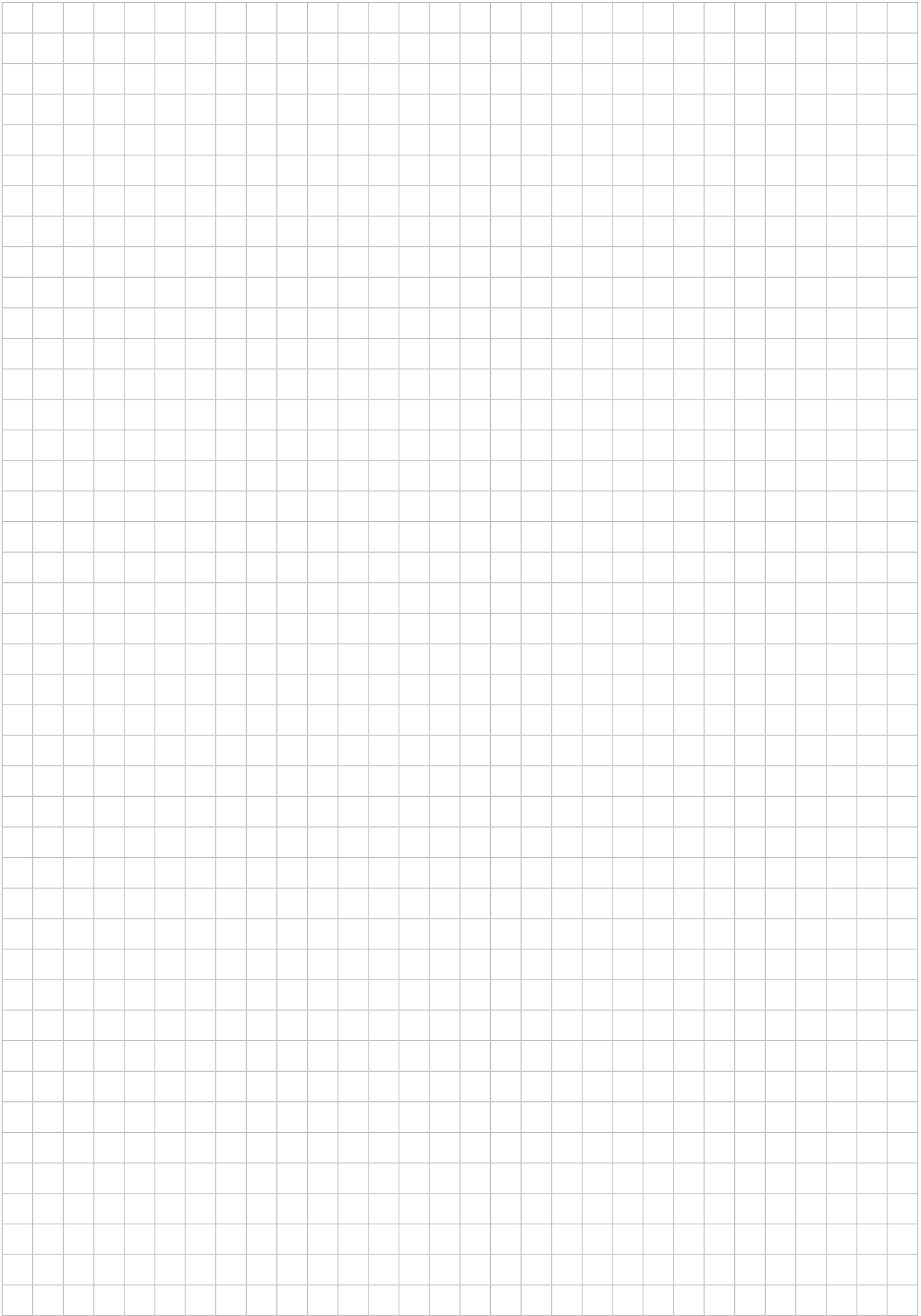


Handling

Do not expose the switch to excessive shocks and vibrations, otherwise the switch may be deformed or damaged, causing malfunction or operation failure.







Ordering Terms and Conditions

Thank you for using IDEC Products.

By purchasing products listed in our catalogs, datasheets, and the like (hereinafter referred to as "Catalogs") you agree to be bound by these terms and conditions. Please read and agree to the terms and conditions before placing your order.

1. Notes on contents of Catalogs

- (1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.
- (2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.
- (3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.
- (4) The content of Catalogs is subject to change without notice.

2. Note on applications

- (1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.
- (2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.
- (3) When using IDEC products, be cautious when implementing the following.
 - i. Use of IDEC products with sufficient allowance for rating and performance
 - ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails
 - iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications
- (4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.
- (5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.
 - i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health
 - ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems
 - iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

3. Inspections

We ask that you implement inspections for IDEC products you purchase without delay, as well as thoroughly keep in mind management/maintenance regarding handling of the product before and during the inspection.

4. Warranty

(1) Warranty period

The warranty period for IDEC products shall be one (1) year after purchase or delivery to the specified location. However, this shall not apply in cases where there is a different specification in the Catalogs or there is another agreement in place between you and IDEC.

(2) Warranty scope

Should a failure occur in an IDEC product during the above warranty period for reasons attributable to IDEC, then IDEC shall replace or repair that product, free of charge, at the purchase location / delivery location of the product, or an IDEC service base. However, failures caused by the following reasons shall be deemed outside the scope of this warranty.

- i. The product was handled or used deviating from the conditions / environment listed in the Catalogs
- ii. The failure was caused by reasons other than an IDEC product
- iii. Modification or repair was performed by a party other than IDEC
- iv. The failure was caused by a software program of a party other than IDEC
- v. The product was used outside of its original purpose
- vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs
- vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC.
- viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)

Furthermore, the warranty described here refers to a warranty on the IDEC product as a unit, and damages induced by the failure of an IDEC product are excluded from this warranty.

5. Limitation of liability

The warranty listed in this Agreement is the full and complete warranty for IDEC products, and IDEC shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to an IDEC product.

6. Service scope

The prices of IDEC products do not include the cost of services, such as dispatching technicians. Therefore, separate fees are required in the following cases.

- (1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)
- (2) Maintenance inspections, adjustments, and repairs
- (3) Technical instructions and technical training
- (4) Product tests or inspections specified by you

The above content assumes transactions and usage within your region. Please consult with an IDEC sales representative regarding transactions and usage outside of your region. Also, IDEC provides no guarantees whatsoever regarding IDEC products sold outside your region.

IDEC CORPORATION

USA Office 2200 Faraday Ave Suite 200, Carlsbad, CA 92008

Japan Head Office
EMEA APEM SAS

Singapore IDEC Izumi Asia Pte. Ltd.
Thailand IDEC Asia (Thailand) Co., Ltd.
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EP1740-0-US-HW-Push-in

