ø22mm HW Series

Dual Pushbutton Switches

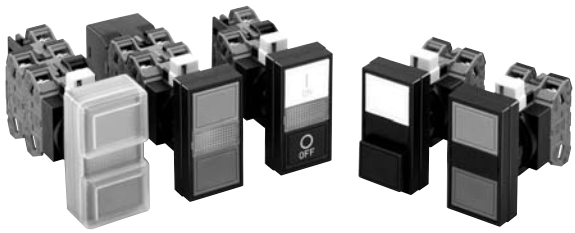
IDEC IZUMI CORPORATION

ø22 HW Series Dual Pushbutton Switches

Two pushbuttons and a pilot light are integrated into one space-saving ø22 mm control unit.

- Momentary and interlock types are available for pushbuttons. Interlock type prevents both buttons from being pressed at the same time.
- Pilot lights are available in full voltage and transformer types illuminated with LED or incandescent lamps.
- HW-G contact blocks feature spring-up screw terminals to ensure safety and save wiring time.
- UL, CSA approved, and EN compliant

Safety Standards	Mark	File No. or Organization
UL508	UL LISTED	UL Listing File No. E68961
CSA C22.2 No. 14	SA	166730 (LR92374)
EN60947-1 EN60947-5-1	TÜV	TÜV Rheinland R50054316
	CE	European Low Voltage Directives



Applications:

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

Specifications and Ratings

Contact Ratings

Contact Block	Type HW-G (HW series)
Rated Insulation Voltage	600V
Rated Continuous Current	10A

Characteristics

- **Contact Ratings by Utilization Category**

Operational Voltage			24V	48V	50V	110V	220V	440V
Operational 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	8A	4A	—	2.2A	1.1A	—
		DC-13 Control of electromagnets	4A	2A	—	1.1A	0.6A	—

Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1).

- Minimum applicable load: 3V AC/DC, 5 mA (applicable range may vary with operating conditions and load types)

LED Lamp Ratings (LSTD Type)

Rated Voltage	Type No.	Operating Voltage
6V AC/DC	LSTD-6②	6V AC/DC ±10%
12V AC/DC	LSTD-1②	12V AC/DC ±10%
24V AC/DC	LSTD-2②	24V AC/DC ±10%

Note: Specify a color code in place of ② in the Type No.

Incandescent Lamp Ratings (LS Type)

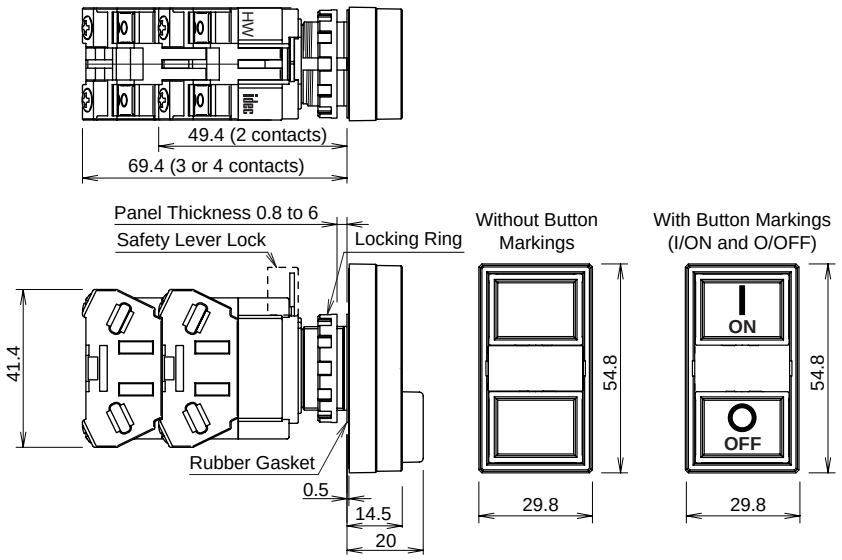
Rated Voltage	Type No.	Operating Voltage	Lamp Ratings
6V AC/DC	LS-6	6V AC/DC ±10%	1W (6.3V)
12V AC/DC	LS-8	12V AC/DC ±10%	1W (18V)
24V AC/DC	LS-3	24V AC/DC ±10%	1W (30V)

Specifications

Operating Temperature	–25 to +60°C (no freezing) (LED illuminated type: –25 to +55°C)
Storage Temperature	–40 to +80°C
Operating Humidity	45 to 85% RH (no condensation)
Contact Resistance	50 mΩ maximum (initial value)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Without pilot light: 2,500V AC, 1 minute (between live and dead metal parts) With pilot light Full voltage type: 1,000V AC, 1 minute (between live and dead metal parts) Transformer and DC-DC converter types: 2,000V AC, 1 minute (between live and dead metal parts)
Shock Resistance	Damage limits: 1,000 m/s^2 Operating extremes: 100 m/s^2
Vibration Resistance	Operating extremes: 5 to 55 Hz, amplitude 0.5 mm
Mechanical Life	500,000 operations minimum
Electrical Life	500,000 operations minimum
Degree of Protection	IP40 (IP65 when using HW9Z-D7D rubber boot)

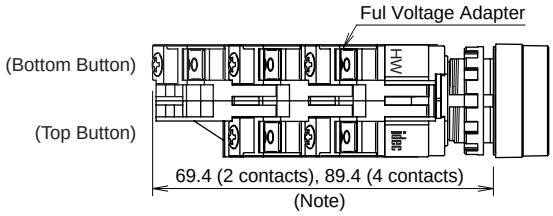
Dimensions

Without Pilot Light



With Pilot Light

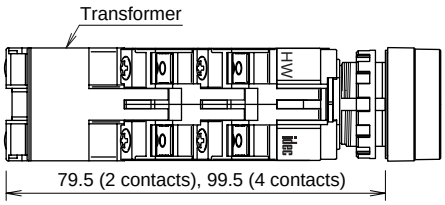
• Full Voltage



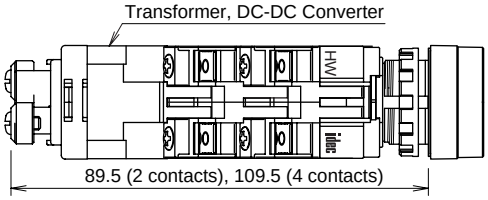
Note: The depth of 3-contact type depends on the combination of contact blocks at top and bottom pushbutons.

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

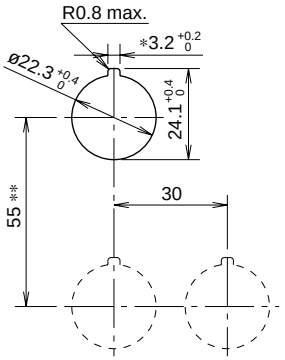
• Transformer (240V maximum)



• Transformer (380V minimum)
• DC-DC Converter



Mounting Hole Layout



* The 3.2 mm recess is for preventing rotation and is not necessary when a nameplate or anti-rotation ring is not used.

** When using the safety lever lock, determine the vertical spacing in consideration of convenience for installing and removing the safety lever lock.
Recommended vertical spacing: 100 mm

• The minimum mounting centers are applicable to switches with one layer of contact blocks (two contact blocks). When two layers of contact blocks are mounted, determine the minimum mounting centers in consideration of convenience for wiring.

All dimensions in mm.

Ordering Information

The Type No. development charts shown below can be used to specify control units other than those listed on the following pages. Gold-plated silver contacts are also available.

Dual Pushbutton Switches without Pilot Light

HW7D-B 1 1 10 02 GR 1 - MAU

- Optional contact
  - MAU: Gold-plated silver contact
- Button legends
  - Blank: Without legend
  - 1: I/ON + O/OFF
- Button color code
  - GR: Green (top) Red (bottom)
  - WB: White (top) Black (bottom)
- Contact arrangement code (bottom button)
  - 10: 1NO
  - 01: 1NC
  - 11: 1NO-1NC
  - 20: 2NO
  - 02: 2NC
- Contact arrangement code (top button)
  - 10: 1NO
  - 01: 1NC
  - 11: 1NO-1NC
  - 20: 2NO
  - 02: 2NC
- Button style
  - 1: Flush + Flush
  - 2: Flush + Extended
- Operating type
  - 1: Momentary
  - 2: Interlock

Dual Pushbutton Switches with Pilot Light

HW7D-L 1 1 11 20 H 2 R - GR 1 - MAU

- Operating type
  - 1: Momentary
  - 2: Interlock
- Button style
  - 1: Flush + Flush
  - 2: Flush + Extended
- Contact arrangement code (top button)
  - 10: 1NO
  - 01: 1NC
  - 11: 1NO-1NC
  - 20: 2NO
  - 02: 2NC
- Contact arrangement code (bottom button)
  - 10: 1NO
  - 01: 1NC
  - 11: 1NO-1NC
  - 20: 2NO
  - 02: 2NC
- Operating voltage code
  - Q: Full voltage
  - H: Transformer (100/110V AC)
  - H2: Transformer (115/120V AC)
  - M: Transformer (200/220V AC)
  - M4: Transformer (230/240V AC)
  - S: Transformer (380V AC)
  - T: Transformer (400/440V AC)
  - T8: Transformer (480V AC)
  - D: DC-DC converter (110V DC)
- Lamp color code
  - A: Amber (LED only)
  - G: Green (LED only)
  - R: Red (LED only)
  - S: Blue (LED only)
  - W: White (LED/incandescent)
  - Y: Yellow (LED only)
- Lamp code
  - 0: Without lamp
  - 2: LED (6V: LSTD-6)
  - 3: LED (12V: LSTD-1)
  - 4: LED (24V: LSTD-2)
  - 5: Incandescent (6V: LS-6)
  - 6: Incandescent (12V: LS-8)
  - 7: Incandescent (24V: LS-3)
- Button color code
  - GR: Green (top) Red (bottom)
  - WB: White (top) Black (bottom)
- Button legends
  - Blank: Without legend
  - 1: I/ON + O/OFF
- Optional contact
  - MAU: Gold-plated silver contact

Notes:
- Full voltage type is not supplied with a lamp.
- Transformer and DC-DC converter types contain an LED lamp (LSTD-6③) or incandescent lamp (LS-6).
- Transformer and DC-DC converter types can have two or four contact blocks only.

Types

• Without Pilot Light

Operation Type	Button Style	Contact Arrangement: Top Button	Contact Arrangement: Bottom Button	Type No.	④ Button Color Code	⑤ Legend Code
Momentary	Flush (top) Flush (bottom) 	1NO	1NC	HW7D-B111001④⑤	GR: Green (top) Red (bottom) WB: White (top) Black (bottom)	Blank: Without legend 1: I/ON (top) O/OFF (bottom)
		1NO	1NO	HW7D-B111010④⑤		
		1NO-1NC	1NO-1NC	HW7D-B111111④⑤		
		2NO	2NC	HW7D-B112002④⑤		
		2NO	2NO	HW7D-B112020④⑤		
	Flush (top) Extended (bottom) 	1NO	1NC	HW7D-B121001④⑤		
		1NO	1NO	HW7D-B121010④⑤		
		1NO-1NC	1NO-1NC	HW7D-B121111④⑤		
		2NO	2NC	HW7D-B122002④⑤		
		2NO	2NO	HW7D-B122020④⑤		
Interlock	Flush (top) Flush (bottom) 	1NO	1NC	HW7D-B211001④⑤		
		1NO	1NO	HW7D-B211010④⑤		
		1NO-1NC	1NO-1NC	HW7D-B211111④⑤		
		2NO	2NC	HW7D-B212002④⑤		
		2NO	2NO	HW7D-B212020④⑤		
	Flush (top) Extended (bottom) 	1NO	1NC	HW7D-B221001④⑤		
		1NO	1NO	HW7D-B221010④⑤		
		1NO-1NC	1NO-1NC	HW7D-B221111④⑤		
		2NO	2NC	HW7D-B222002④⑤		
		2NO	2NO	HW7D-B222020④⑤		

• With Pilot Light

Operation Type	Lamp	Input Type	Contact Arrangement		Type No.
			Top Button	Bottom Button	
Momentary	Without Lamp	Full Voltage	1NO	1NC	HW7D-L1①1001Q0W④⑤
			1NO	1NO	HW7D-L1①1010Q0W④⑤
			1NO-1NC	1NO-1NC	HW7D-L1①1111Q0W④⑤
			2NO	2NC	HW7D-L1①2002Q0W④⑤
			2NO	2NO	HW7D-L1①2020Q0W④⑤
	LED	Transformer	1NO	1NC	HW7D-L1①1001②2③④⑤
			1NO	1NO	HW7D-L1①1010②2③④⑤
			1NO-1NC	1NO-1NC	HW7D-L1①1111②2③④⑤
			2NO	2NC	HW7D-L1①2002②2③④⑤
			2NO	2NO	HW7D-L1①2020②2③④⑤
		DC-DC Converter	1NO	1NC	HW7D-L1①1001D2③④⑤
			1NO	1NO	HW7D-L1①1010D2③④⑤
			1NO-1NC	1NO-1NC	HW7D-L1①1111D2③④⑤
			2NO	2NC	HW7D-L1①2002D2③④⑤
			2NO	2NO	HW7D-L1①2020D2③④⑤
	Incandescent	Transformer	1NO	1NC	HW7D-L1①1001②5W④⑤
			1NO	1NO	HW7D-L1①1010②5W④⑤
			1NO-1NC	1NO-1NC	HW7D-L1①1111②5W④⑤
			2NO	2NC	HW7D-L1①2002②5W④⑤
			2NO	2NO	HW7D-L1①2020②5W④⑤
Interlock	Without Lamp	Full Voltage	1NO	1NC	HW7D-L2①1001Q0W④⑤
			1NO	1NO	HW7D-L2①1010Q0W④⑤
			1NO-1NC	1NO-1NC	HW7D-L2①1111Q0W④⑤
			2NO	2NC	HW7D-L2①2002Q0W④⑤
			2NO	2NO	HW7D-L2①2020Q0W④⑤
	LED	Transformer	1NO	1NC	HW7D-L2①1001②2③④⑤
			1NO	1NO	HW7D-L2①1010②2③④⑤
			1NO-1NC	1NO-1NC	HW7D-L2①1111②2③④⑤
			2NO	2NC	HW7D-L2①2002②2③④⑤
			2NO	2NO	HW7D-L2①2020②2③④⑤
		DC-DC Converter	1NO	1NC	HW7D-L2①1001D2③④⑤
			1NO	1NO	HW7D-L2①1010D2③④⑤
			1NO-1NC	1NO-1NC	HW7D-L2①1111D2③④⑤
			2NO	2NC	HW7D-L2①2002D2③④⑤
			2NO	2NO	HW7D-L2①2020D2③④⑤
	Incandescent	Transformer	1NO	1NC	HW7D-L2①1001②5W④⑤
			1NO	1NO	HW7D-L2①1010②5W④⑤
			1NO-1NC	1NO-1NC	HW7D-L2①1111②5W④⑤
			2NO	2NC	HW7D-L2①2002②5W④⑤
			2NO	2NO	HW7D-L2①2020②5W④⑤

• Designation Codes

Specify designation codes ① to ⑤ in the Type No.

① Button Style Code	② Operating Voltage Code	③ Lamp Color Code	④ Button Color Code	⑤ Legend Code
 1: Flush (top) Flush (bottom)  2: Flush (top) Extended (bottom)	H: 100/110V AC H2: 115/120V AC M: 200/220V AC M4: 230/240V AC S: 380V AC T: 400/440V AC T8: 480V AC	A: amber G: green R: red S: blue W: white Y: yellow The lens is white only.	GR: Green (top) Red (bottom) WB: White (top) Black (bottom)	Blank: Without legend 1: I/ON (top) O/OFF (bottom)

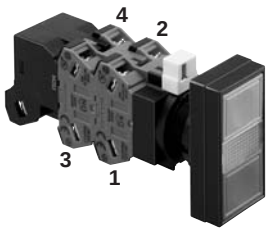
Note: Full voltage types do not contain a lamp. Order LED or incandescent lamps separately. For lamps, see page 9.
LED illuminated transformer and DC-DC converter types contain an LED lamp (LSTD-6③, rated voltage 6V AC/DC).
Incandescent illuminated transformer types contain an incandescent lamp (LS-6, rated voltage 6V AC/DC).

Contact Arrangement Chart

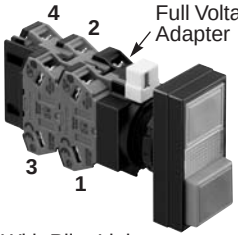
Contact Arrangement			Contact Block		Top Button		Bottom Button	
Top Button	Bottom Button	Contact Code	Mounting Position	Type	Normal	Push	Normal	Push
1NO	1NO	1010	1	NO		●		
			2	NO				●
1NO	1NC	1001	1	NO		●		
			2	NC			●	
1NC	1NO	0110	1	NC	●			
			2	NO				●
1NC	1NC	0101	1	NC	●			
			2	NC			●	
1NO	2NO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

- Transformer and DC-DC converter types can have two or four contact blocks only.
- Contact blocks 1 and 3 are actuated by the top button. Contact blocks 2 and 4 are actuated by the bottom button.

• Contact Block Mounting Position and Contact Arrangement Chart



Without Pilot Light
With Pilot Light
(transformer type)



With Pilot Light
(full voltage type)

Contact Block		Top Button		Bottom Button	
		Normal	Push	Normal	Push
1	NO		●		
2	NO				●
3	NC	●			
4	NC			●	

• Type No. Development

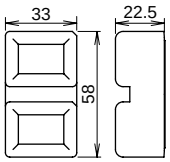
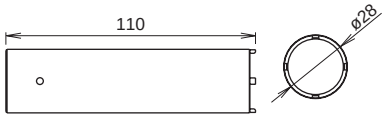
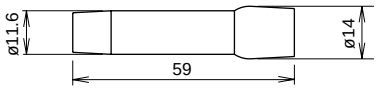
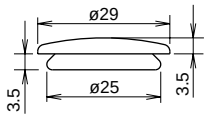
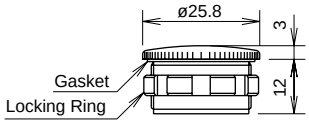
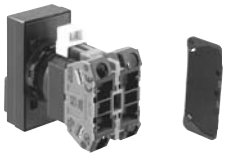
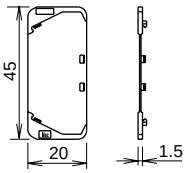
HW7D - B 12 11 11 GR

- 11 (underlined): Contact code (1NO-1NC) of bottom button
- 11 (underlined): Contact code (1NO-1NC) of top button

Contact Arrangement Chart

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

Accessories

Shape	Material	Type No.	Ordering Type No.	Package Quantity	Dimensions (mm)
Rubber Boot	Clear Silicon Rubber	HW9Z-D7D	HW9Z-D7D	1	• Degree of protection: IP65 
Locking Ring Wrench 	Metal (weight: approx. 150g)	MW9Z-T1	MW9Z-T1	1	• Used to tighten the locking ring when installing the HW switch onto a panel. • Tighten the locking ring to a torque of 2.0 N·m. 
Lamp Holder Tool 	Rubber	OR-55	OR-55	1	• Used to install and remove the LED/incandescent lamps. 
Rubber Mounting Hole Plug 	Rubber (black)	OB-31	OB-31PN05	5	• Used to plug unused ø22.2mm mounting holes. 
Metallic Mounting Hole Plug 	Diecast Metal (locking ring: plastic)	LW9Z-BM	LW9Z-BM	1	• Used to plug unused ø22.2mm mounting holes. • Tighten the locking ring to a torque of 1.2 N·m. • IP66 (when the mounting hole does not have a ø3.2 mm hole for anti-rotation) • Mounting panel thickness: 0.8 to 6 mm 
Barrier 	Plastic	HW-VG1	HW-VG1PN10	10	• Used to prevent contact between adjacent lead wires when units are mounted closely. Barriers should always be used in close mounting. 
Ring Adapter 	Rubber	HW9Z-A25	HW9Z-A25PN05	5	• Used to install the HW/TW units into ø25mm mounting holes. • Cannot be used with the HW9Z-D7D rubber boot.
Safety Lever Lock 	Plastic	HW9Z-LS	HW9Z-LSPN10	10	• Yellow

Maintenance Parts

LED Lamps (LSTD Type)

Operating Voltage	Rated Current AC	Rated Current DC	Type No.	Ordering Type No.	Illumination Color Code	Package Quantity	Base
6V AC/DC ±10% 	17 mA (A, R, W, Y) 8 mA (G, S)	14 mA (A, R, W, Y) 5.5 mA (G, S)	LSTD-6③	LSTD-6③	Specify a color code in place of ③ in the Ordering Type No. A: amber G: green R: red S: blue W: white Y: yellow	1	BA9S/13
				LSTD-6③PN10		10	
12V AC/DC ±10% 	11 mA	10 mA	LSTD-1③	LSTD-1③		1	
				LSTD-1③PN10		10	
24V AC/DC ±10% 	11 mA	10 mA	LSTD-2③	LSTD-2③		1	
				LSTD-2③PN10		10	

Incandescent Lamps (LS Type)

Rated Operating Voltage	Lamp Ratings	Type No.	Package Quantity
6V AC/DC 	1W (6.3V)	LS-6	1
12V AC/DC 	1W (18V)	LS-8	
24V AC/DC 	1W (30V)	LS-3	

Transformer

Shape	Primary Voltage	Secondary Voltage	Type No.	Applicable Load
Separate Mounting Type 	100/110V AC	5.5V	TWR516	One full voltage type containing LSTD-6 LED lamp (6V AC/DC) or LS-6 incandescent lamp (6.3V AC/DC, 1W).
	200/220V AC		TWR526	
	400/440V AC		TWR546	

Safety Precautions

- Turn off power to HW series control units before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid the possibility of burning yourself, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet voltage and current requirements. Tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Failure to tighten terminal screws may cause overheating and fire.

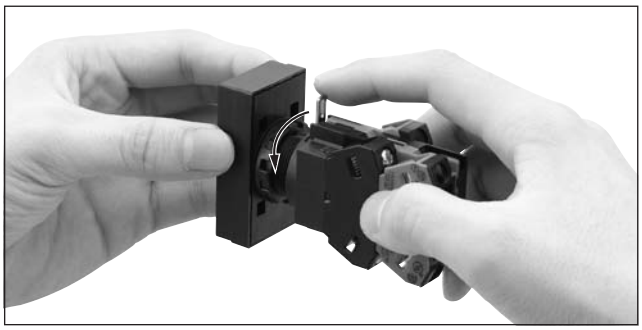
Instructions

Panel Mounting

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

- **Removing and Installing the Contact Block Assembly**

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



- **Notes for Panel Mounting**

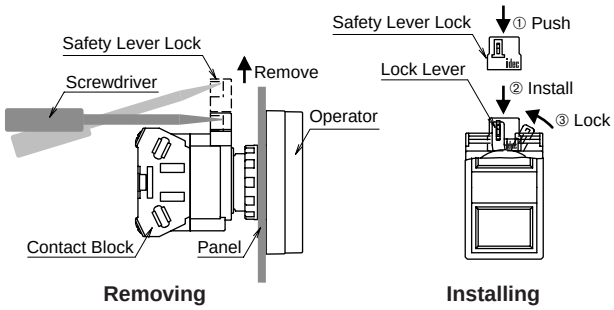
1. When mounting the operator onto a panel, use the optional locking ring wrench (MW9Z-T1) to tighten the locking ring. Tightening torque must not exceed 2.0 N·m. Do not use pliers. Excessive tightening will damage the locking ring.
2. For the contact blocks and transformers housing LED and incandescent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

Safety Lever Lock

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

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

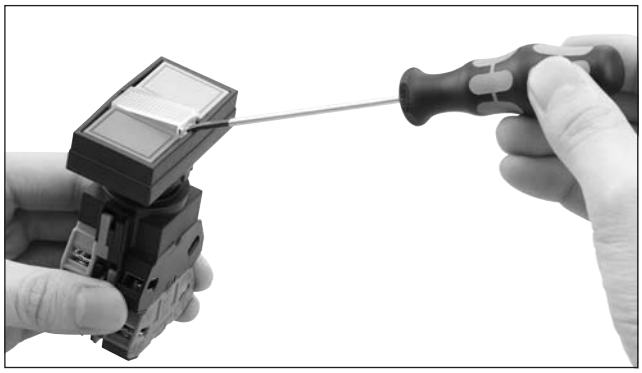
Removing and Installing the Safety Lever Lock



Replacement of Lens

- **Removing**

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



- **Installing**

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

Instructions

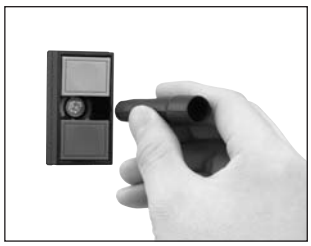
Replacement of Lamps

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

• Removing the Lamps from the Front of the Panel

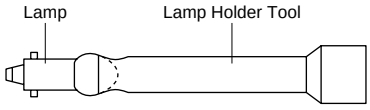
[How to Remove]

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

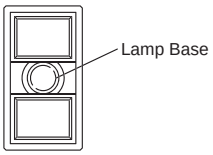


[How to Install]

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



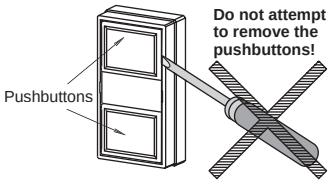
2. Place the pins on the lamp base to the grooves in the lamp socket. Insert the lamp and turn it clockwise.



About Pushbutton Switches

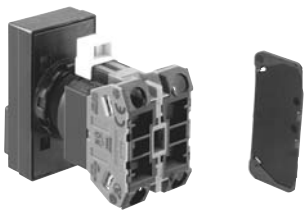
The pushbuttons cannot be removed or replaced!

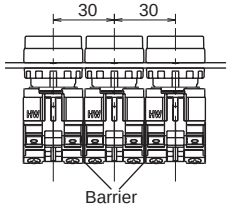
Do not attempt to remove using a flat screwdriver or pincers, otherwise the pushbuttons may be damaged.



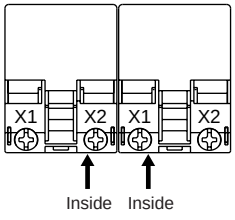
Narrow Mounting

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





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



Tightening Torque for Terminal Screws

Tighten the M3.5 terminal screws to a torque of 1.0 to 1.3 N·m.

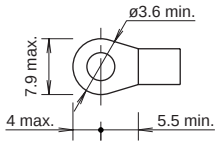
Installation of LED Illuminated Units

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

Applicable Wiring

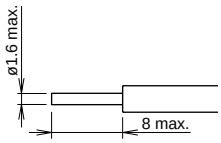
The applicable wire size is 2 mm^2 maximum. (solid wire ø1.6 mm maximum) One or two wires can be connected.

• Applicable Crimping Terminal

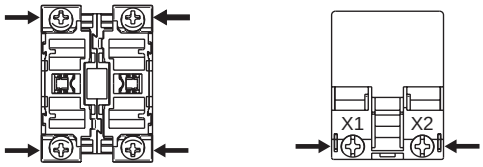


Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

• Solid Wire



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

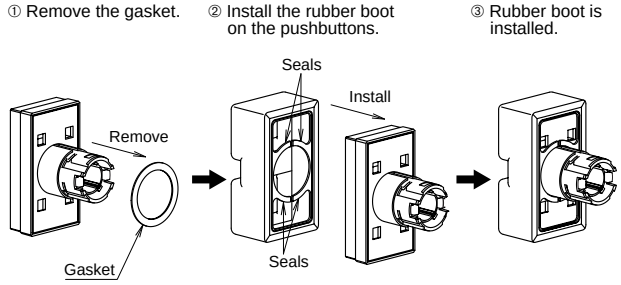


Installing the Rubber Boot

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

• Notes for Installing the Rubber Boot

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



Specifications and other descriptions in this catalog are subject to change without notice.

IDEC IZUMI CORPORATION

7-31, Nishi-Miyahara 1-Chome, Yodogawa-ku, Osaka 532-8550, Japan
Tel: +81-6-6398-2571, Fax: +81-6-6392-9731
www.idec.com

IDEC CORPORATION (USA)
1175 Elko Drive, Sunnyvale, CA 94089-2209, USA
Tel: +1-408-747-0550, Toll Free: (800) 262-IDEC, Fax: +1-408-744-9055
E-mail: opencontact@idec.com, www.idec.com

IDEC CANADA LIMITED
Unit 22-151, Brunel Road Mississauga, Ontario, L4Z 1X3, Canada
Tel: +1-905-890-8561, Toll Free: (888) 317-4332, Fax: +1-905-890-8562

IDEC ELECTRONICS LIMITED
Unit 2, Beechwood, Chineham Business Park, Basingstoke, Hampshire RG24 8WA, UK
Tel: +44-1256-321000, Fax: +44-1256-327755
E-mail: idec@uk.idec.com

IDEC ELEKTROTECHNIK GmbH
Wendenstrasse 331, D-20537 Hamburg, Germany
Tel: +49-40-25 30 54 10, Fax: +49-40-25 30 54 24
E-mail: service@idec.de, www.idec.de

IDEC AUSTRALIA PTY. LTD.
2/3 Macro Court, Rowville, Victoria 3178, Australia
Toll Free: 1-800-68-4332, Fax: +61-3-9763-3255
E-mail: sales@au.idec.com

IDEC IZUMI ASIA PTE. LTD.
No. 31, Tannery Lane #05-01, Dragon Land Building, Singapore 347788
Tel: +65-6746-1155, Fax: +65-6844-5995
E-mail: generalinfo@idecasia.com.sg

IDEC IZUMI (H.K.) CO., LTD.
Unit 1505-07, DCH Commercial Centre No. 25, Westlands Road, Quarry Bay, Hong Kong
Tel: +852-2803-8989, Fax: +852-2565-0171
E-mail: idec@idechk.com

IDEC IZUMI (Shanghai) Co., Ltd.
Room E, 15F, Majesty Building, No. 138 Pudong Avenue, Shanghai 200120, P.R.C.
Tel: +86-21-5887-9181, Fax: +86-21-5887-8930
E-mail: idec@cn.idec.com

IDEC TAIWAN CORPORATION
8F, No. 79, Hsin Tai Wu Road, Sec. 1, Hsi-Chih, Taipei County, Taiwan
Tel: +886-2-2698-3929, Fax: +886-2-2698-3931
E-mail: service@idectwn.com.tw

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