

ø22 Switches & Pilot Lights

TW Series








General-purpose switches & pilot lights for various applications.
Heavy-duty type for high-level protection against harsh environment.








• See website for details on approvals and standards.



TW Series Selection Guide

Function	Pushbutton				
Category	Flush	Extended	Extended w/Full Shroud	ø29mm Mushroom	ø40mm Mushroom
	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained
Shape					
Model	ABW1 AOW1	ABW2 AOW2	ABFW2 AOFW2	ABW3 AOW3	ABW4 AOW4
Page	B-238	B-238	B-238	B-238	B-239

Function	Pushbutton				
Category	ø40mm Mushroom w/Full Shroud	ø29mm Mushroom Pushlock Turn Reset	ø40mm Mushroom Pushlock Turn Reset	ø40mm Mushroom Push Turn Lock	ø29mm Mushroom Pushlock Key Reset
	Momentary				
Shape					
Model	ABGW4	AVW3	AVW4	AJW4	AXW3
Page	B-239	B-239	B-239	B-239	B-239

Function	Pushbutton			
Category	ø40mm Mushroom Pushlock Key Reset	ø40mm Mushroom Push Pull	Square Flush	Square Extended
			Momentary/Maintained	Momentary/Maintained
Shape				
Model	AXW4	AYW4	ABQW1 AOQW1	ABQW2 AOQW2
Page	B-240	B-240	B-240	B-240

Function	Pilot Light		
Category	Flush (Non-marking/Marking)	Round	Square Flush (Marking)
	Shape		
Model	APW1 APW1B	APW2	UPQW1B
Page	B-241	B-241	B-241

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

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Sensors

AUTO-ID

Flush Silhouette

ø16

ø22

ø30

Miniature






Pilot Lights

HW

TW

YW

TW Series Selection Guide

Function	Illuminated Pushbutton				
	Extended (Non-marking/Marking)	Extended w/Full Shroud (Non-marking/Marking)	Square Flush (Marking)	ø29mm Mushroom Pushlock Turn Reset (Non-marking/Marking)	ø40mm Mushroom Pushlock Turn Reset (Non-marking/Marking)
Category	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained		
Shape					
Part No.	ALW2, ALW2B, AOLW2, AOLW2B	ALFW2, AOLFW2 ALFW2B, AOLFW2B	ALQW2B AOLQW2B	AVLW3 AVLW3B	AVLW4 AVLW4B
Page	B-243	B-244	B-245	B-246	B-246

Function	Selector Switch			Illuminated Selector Switch
	Knob	Lever	Key	
Category	Knob	Lever	Key	Knob
Shape				
Part No.	ASW	ASW□L	ASW□K	ASLW
Page	B-249	B-250	B-251	B-252

ø22 TW Series Switches & Pilot Lights

General-purpose switches & pilot lights for various applications.
Heavy-duty type for high-level protection against harsh environment.

- Easy wiring for crimping terminal. (except for full voltage pilot lights).
- UL, CSA, TÜV, CCC compliant.
- High-voltage type LED bulbs are now supported, allowing the direct type to support rated operating voltages up to 240V.



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Specifications and Ratings

Contact Ratings

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

Contact Ratings by Utilization Category

HW-U10 (NO contact), HW-U01 (NC contact)

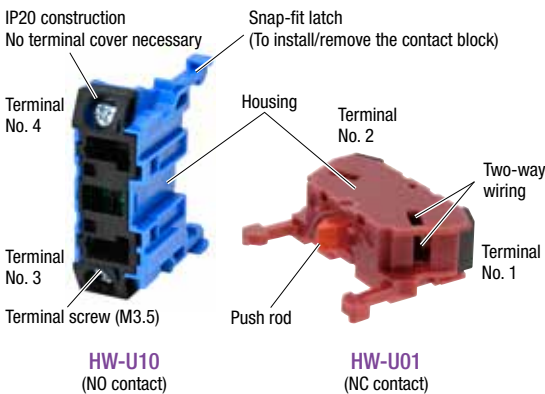
Operating Voltage			24V	48V	50V	110V	220V	440V
Operating Current	AC 50/60 Hz	AC-12 Control of resistive loads and solid state loads	10A	—	10A	10A	6A	2A
		AC-15 Control of electromagnetic loads (> 72 VA)	10A	—	7A	5A	3A	1A
	DC	DC-12 Control of resistive loads and solid state loads	10A	5A	—	2.2A	1.1A	—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

HW-U10R (EM contact/NO contact), HW-U01R (LB contact/NC 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	5A	—	5A	5A	3A	1A
		AC-15 Control of electromagnetic loads (> 72 VA)	5A	—	3.5A	2.5A	1.5A	0.5A
	DC	DC-12 Control of resistive loads and solid state loads	5A	2.5A	—	1.1A	0.55A	—
		DC-13 Control of electromagnets	2.5A	1A	—	0.55A	0.3A	—

- The operating current represents the classification by 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 and load types)

HW-U Contact Block



Part No.	HW-U10	HW-U01	HW-U10R	HW-U01R
Contact				
Contact No.	1NO	1NC	EM (NO) (early make)	LB (NC) (late break)
Contact No.	3-4	1-2	3-4	1-2
Housing	Blue	Purple red	Blue	Purple red
Push Rod	Green	Red	Black	White
Weight	Approx. 11g			

- Up to 2 layers (4 blocks) can be attached. AYW: 2 blocks (1 layer) maximum.
- Gold contacts available (gold-plated silver)

ø22 TW Series Switches & Pilot Lights

LED Illuminated Part Specifications

Illuminated Pushbuttons and Illuminated Selector Switches



Rated Voltage	Operating Voltage		LED lamp	
			Lamp 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 to 250V		LSRD-M4

Pilot Lights

Rated Voltage	Operating Voltage		LED lamp	
			Lamp 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 to 250V		LSRD-M4
380V AC	380V AC	±10%		LSRD-6
400/440V AC	400/440V AC			
480V AC	480V AC			

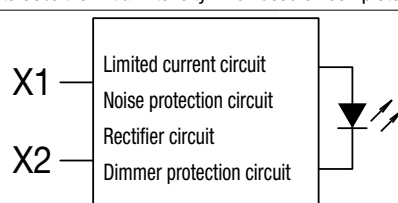

• For details on the built-in LED lamp, see "LED Lamp Ratings" below.

Illuminated Part Type and Shape

	Illuminated Unit		Pilot Light	
	Full voltage adapter	Full voltage adapter (integrated)	Transformer	
Power Unit	Full voltage adapter	Full voltage adapter (integrated)	Transformer	
Rated Voltage	6V AC/DC, 12V AC/DC, 24V AC/DC, 100 to 120V AC/DC, 200 to 240V AC	6V AC/DC, 12V AC/DC, 24V AC/DC, 100 to 120V AC/DC, 200 to 240V AC	380 to 480V AC	
Polarity	None	None	None	
Shape/Terminal				

LED Lamp Ratings

LSRD

Part No.	LSRD-6	LSRD-1	LSRD-2	LSRD-H2	LSRD-M2	LSRD-M4
Lamp 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 to 250V
Current Draw	DC	10mA	7mA	7mA	2mA	—
	AC	14mA	8mA	8mA	2mA	2mA
Life (reference value)	Approx. 50,000 hours (The luminance is reduced to 50% the initial intensity when used on complete DC at 25°C.)					
Internal Circuit				Example: LSRD-2 		
Weight	Approx. 2g					

• Only one color is available for LSRD so there are no codes to specify the color in the part no.

Attention: Customers who are using previous models

TW series products not listed in this catalog are not compatible with high-voltage lamps. Improper use of these products may cause serious accidents. If you are unsure, please check the part number and contact an IDEC sales representative.

Specifications

Operating Temperature		-25 to +50°C (no freezing)	
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 with stand voltage		4.0kV (2.5kV for illumination unit)	
Dielectric Strength		Between live and dead metal parts: 2500V AC, 1 minute	
Vibration Resistance	Operating extremes	5 to 55 Hz, amplitude 0.5 mm	
	Damage limits	30 Hz, amplitude 1.5 mm	
Shock Resistance	Operating extremes	100m/s ²	
	Damage limits	1000m/s ²	
Recommended tightening torque for lock nut		2.0 N·m	
Terminal style		Screw (SS terminal)	
Mechanical Life (minimum operations)	Pushbutton	Momentary	5,000,000
		Maintained	500,000 (3 contact blocks and over: 250,000)
		Push-to-lock, Turn-to-reset	500,000
		Other	500,000
	Illuminated pushbutton	Momentary	5,000,000
		Maintained	500,000 (3 contact blocks and over: 250,000)
		Push-to-lock, Turn-to-reset	500,000
	Selector switch		500,000
	Key selector switch		500,000
	Illuminated selector switch		500,000
Electrical Life (*4) (minimum operations)	Pushbutton	Momentary	500,000 (*1)
		Maintained	500,000 (3 contact blocks and over: 250,000) (*3)
		Push-to-lock, Turn-to-reset	500,000 (*3)
		Other	500,000
	Illuminated pushbutton	Momentary	500,000 (*1)
		Maintained	500,000 (3 contact blocks and over: 250,000) (*3)
		Push-to-lock, Turn-to-reset	500,000 (*3)
	Selector switch		500,000 (*2)
	Key selector switch		500,000 (*2)
	Illuminated selector switch		250,000 (*2)
Weight (Apporox.)		68g (ABW122) 33g (APW122D) 89g (ALW22222D) 68g (ASW222) 107g (ASW2K22) 90g (ASLW22222D) 95g (APW126D)	

*1) Switching frequency 1800 operations/h, duty ratio 40%
 *2) Switching frequency 1200 operations/h, duty ratio 40%
 *3) Switching frequency 900 operations/h, duty ratio 40%
 *4) Load condition 220V AC, 3A (AC-15)

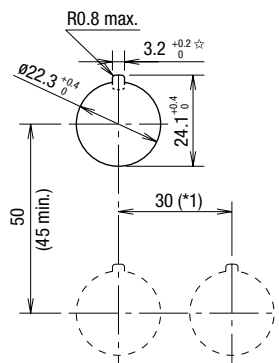
Degree of Protection

	Unit	IEC 60529
A□□□□ (Part number that starts with "A")	Pushbutton Pilot light Illuminated pushbutton with round lens Selector switch	IP65
	Pushlock key reset pushbutton Illuminated selector switch Key selector switch	IP54
UXXX (Part number that starts with "U")	Square Flush Pilot Light	IP40

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- Enabling Switches
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- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
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- Flush Silhouette
- ø16
- ø22
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- Pilot Lights
- HW
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- YW

Mounting Hole Layout

Panel Cut (IEC 60947-5-1)



All dimensions in mm.

- The minimum mounting centers are applicable to switches with one layer of contact blocks (one to two contact blocks). When two layers of contact blocks are mounted, determine the minimum mounting centers in consideration of convenience for wiring.
 - 1*) ø40 mm mushroom button type: 40 mm minimum
 - 1*) 2-position, 3-position lever selector switch: 39 mm minimum
 - 1*) 4-position, 5-position lever selector switch: 50 mm minimum
- When high temperature is expected, take necessary measures such as securing sufficient mounting centers or using a cooling fan.
- The ☆3.2^{+0.2} mm recess is for preventing rotation and is not necessary when the nameplate or anti-rotation ring is not used.

Ordering Information

Standard models

- Specify a button or lens color code in place of *.
- An LED lamp is installed in pilot lights, illuminated pushbuttons, and illuminated selector switches unless otherwise specified.
- Pilot light of full voltage adapter type is equipped with a terminal cover.
- Nameplates and accessories are ordered separately. See **B-256** to **B-259**.

For harsh environment such as torrid/frigid area

TW series for harsh environment such as torrid/frigid area is also available (not approved by standards). Contact IDEC for details.

Pushbuttons (B-238 to B-240)

When specifying gold-plated silver contact and contact configuration:

ABW 1 11 R - MAU

Optional contact
Contact configuration

MAU: Gold contact

10: 1NO
01: 1NC
11: 1NO1NC
20: 2NO
02: 2NC
22: 2NO2NC
40: 4NO
04: 4NC
13: 1NO3NC
31: 3NO1NC
30: 3NO
03: 3NC
12: 1NO2NC
21: 2NO1NC

- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- Push-pull type AYW4 (B-240) can have a maximum of two contact blocks.

Pilot Lights (B-241)

When specifying LED operating voltage:

APW 2 QH2 DR

Operating voltage

66: 6V AC/DC
11: 12V AC/DC
22: 24V AC/DC
QH2: 100/120V AC/DC
QM: 200/220V AC
QM4: 230/240V AC
386: 380V AC
46: 400/440V AC
486: 480V AC

APEM

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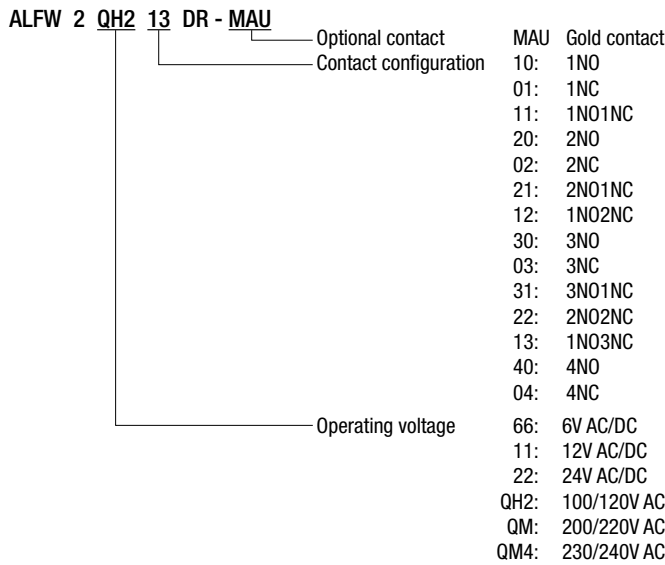
TW

YW

Ordering Information

Illuminated Pushbuttons (B-243 to B-246)

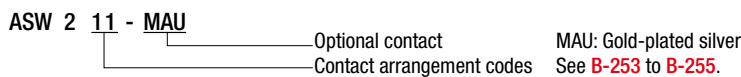
When specifying gold-plated silver contact, contact configuration, and LED operating voltage:



Note: dummy blocks are built into 2-contact and 4-contact.

Selector Switches (B-249 to B-251)

When specifying gold-plated silver contact, key removal position, and key number:



How to specify key removal/retained position

Position	Removable Position	Code	Part No. Example
2-position	Maintained	Removable in all positions	— ASW2K20
		Removable in left only	B ASW2K20B
		Removable in right only	C ASW2K20C
	Spring return from right	Removable in left only	— ASW21K20
	Spring return from left	Removable in right only	— ASW22K20
3-position	Maintained	Removable in all positions	— ASW3K20
		Removable in left and center only	B ASW3K20B
		Removable in right and center only	C ASW3K20C
		Removable in center only	D ASW3K20D
		Removable in right and left only	E ASW3K20E
		Removable in left only	G ASW3K20G
		Removable in right only	H ASW3K20H
		Spring return from right	Removable in left and center only
	Removable in center only		D ASW31K20D
	Removable in left only		G ASW31K20G
	Spring return from left	Removable in right and center only	— ASW32K20
		Removable in center only	D ASW32K20D
		Removable in right only	H ASW32K20H
	Spring return two-way	Removable in center only	— ASW33K20

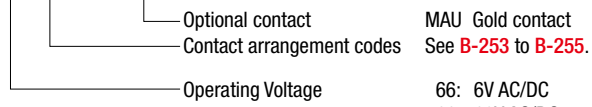
• The key cannot be removed in a spring returned position.

Ordering Information

Illuminated selector switches (B-252)

When specifying gold-plated silver contact, contact configuration, and LED operating voltage:

ASLW 2 QH2 22 DR - MAU



66: 6V AC/DC
11: 12V AC/DC
22: 24V AC/DC
QH2: 100/120V AC/DC
QM: 200/220V AC
QM4: 230/240V AC

Note: dummy blocks are built into 2-contact and 4-contact.

APEM

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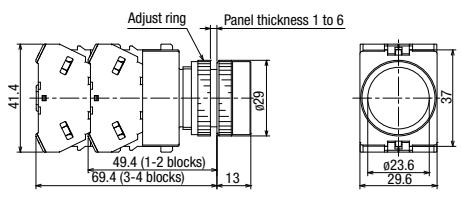

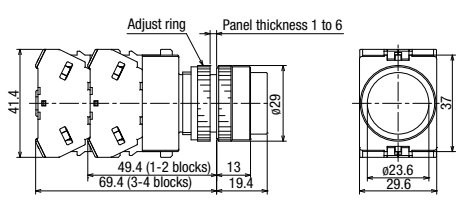

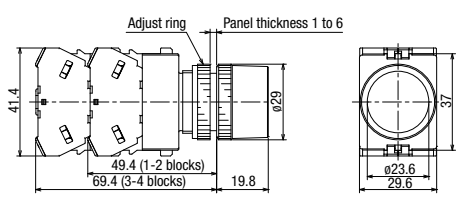

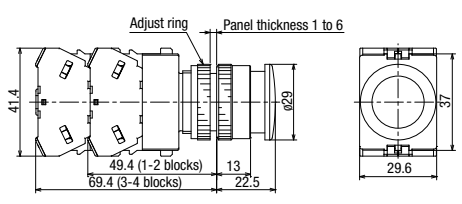
HW

TW

YW

Flush / Extended / Mushroom Pushbuttons

Quantity: 1

Shape	Operation	Contact	Part No.	Color Code	Dimensions (mm)
Flush ABW1 AOW1 	Momentary	1NO	ABW110*	B G R Y S W	
		1NC	ABW101*		
		1NO-1NC	ABW111*		
		2NO	ABW120*		
		2NC	ABW102*		
	Maintained	1NO	AOW110*		
		1NC	AOW101*		
		1NO-1NC	AOW111*		
		2NO	AOW120*		
		2NC	AOW102*		
Extended ABW2 AOW2 	Momentary	1NO	ABW210*	B G R Y S W	
		1NC	ABW201*		
		1NO-1NC	ABW211*		
		2NO	ABW220*		
		2NC	ABW202*		
	Maintained	1NO	AOW210*		
		1NC	AOW201*		
		1NO-1NC	AOW211*		
		2NO	AOW220*		
		2NC	AOW202*		
Extended with Full Shroud ABFW2 AOFW2 	Momentary	1NO	ABFW210*	B G R Y S W	
		1NC	ABFW201*		
		1NO-1NC	ABFW211*		
		2NO	ABFW220*		
		2NC	ABFW202*		
	Maintained	1NO	AOFW210*		
		1NC	AOFW201*		
		1NO-1NC	AOFW211*		
		2NO	AOFW220*		
		2NC	AOFW202*		
ø29mm Mushroom ABW3 AOW3 	Momentary	1NO	ABW310*	B G R Y S W	
		1NC	ABW301*		
		1NO-1NC	ABW311*		
		2NO	ABW320*		
		2NC	ABW302*		
	Maintained	1NO	AOW310*		
		1NC	AOW301*		
		1NO-1NC	AOW311*		
		2NO	AOW320*		
		2NC	AOW302*		

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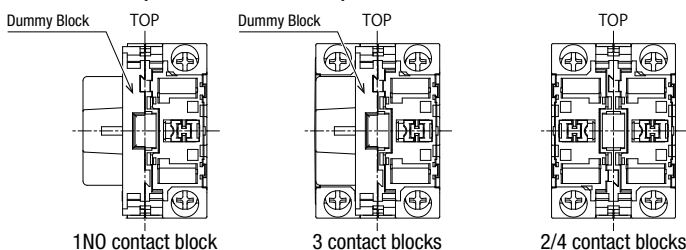
TW

YW

- Specify a color code in place of * in Part No.
B: black, G: green, R: red, Y: yellow, S: blue, W: white
- Round bezel: Mat aluminum color

- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-235 for other contact configurations and gold-plated silver contacts.
- Terminal screw: M3.5, Terminal cover: Integrated type


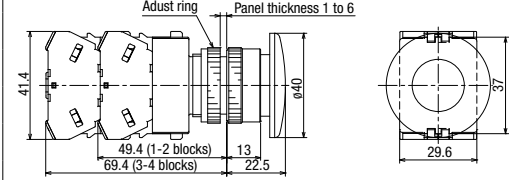

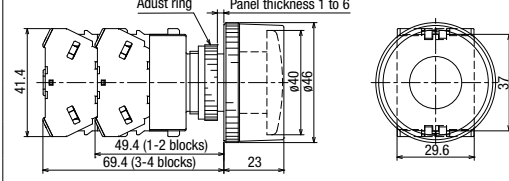

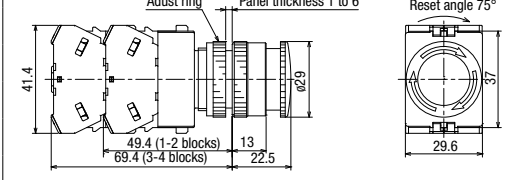

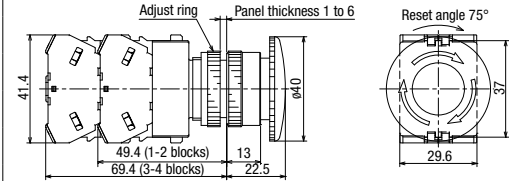

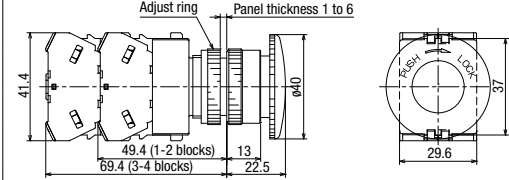

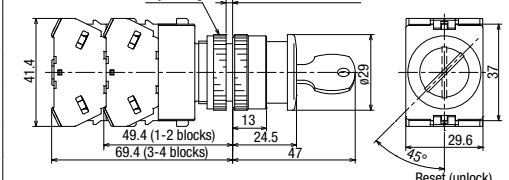
Bottom View (non-illuminated)



- For 1 NC contact, the contact block will mount on the opposite side.
- See B-267 for wiring.

Mushroom / Pushlock Turn Reset / Push Turn Lock / Pushlock Key Reset

Quantity: 1

Shape	Operation	Contact	Part No.	Color Code	Dimensions (mm)
ø40mm Mushroom ABW4 AOW4 	Momentary	1NO	ABW410*	B G R Y S W	
		1NC	ABW401*		
		1NO-1NC	ABW411*		
		2NO	ABW420*		
		2NC	ABW402*		
	Maintained	1NO	AOW410*		
		1NC	AOW401*		
		1NO-1NC	AOW411*		
		2NO	AOW420*		
		2NC	AOW402*		
ø40mm Mushroom w/Full Shroud ABGW4 	Momentary	1NO	ABGW410*	B G R Y S W	
		1NC	ABGW401*		
		1NO-1NC	ABGW411*		
		2NO	ABGW420*		
		2NC	ABGW402*		
		2NO-2NC	ABGW422*		
ø29mm Mushroom Pushlock Turn Reset (*1) AVW3 	Momentary	1NO	AVW310*	R Y	
		1NC	AVW301*		
		1NO-1NC	AVW311*		
		2NO	AVW320*		
		2NC	AVW302*		
		2NO-2NC	AVW322*		
ø40mm Mushroom Pushlock Turn Reset (*1) AVW4 	Momentary	1NO	AVW410*	R Y	
		1NC	AVW401*		
		1NO-1NC	AVW411*		
		2NO	AVW420*		
		2NC	AVW402*		
		2NO-2NC	AVW422*		
ø40mm Mushroom Push Turn Lock AJW4 	Momentary	1NO	AJW410*	B G R Y	
		1NC	AJW401*		
		1NO-1NC	AJW411*		
		2NO	AJW420*		
		2NC	AJW402*		
		2NO-2NC	AJW422*		
ø29mm Mushroom Pushlock Key Reset (*1) AXW3 	Momentary	1NO	AXW310R	R	
		1NC	AXW301R		
		1NO-1NC	AXW311R		
		2NO	AXW320R		
		2NC	AXW302R		
		2NO-2NC	AXW322R		

- Specify a color code in place of * in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
- Round bezel (metal): Mat aluminum color
- Pushbuttons with one or three contact blocks contain a dummy block.
- See **B-235** for other contact configurations and gold-plated silver contacts.
- Terminal screw: M3.5, Terminal cover: Integrated type
- See **B-238** for bottom view.


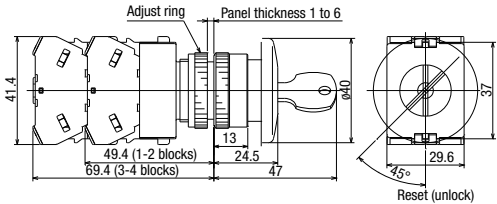

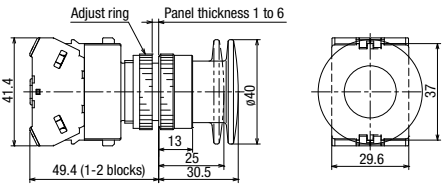

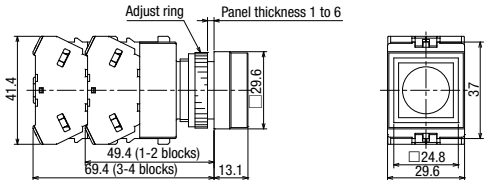

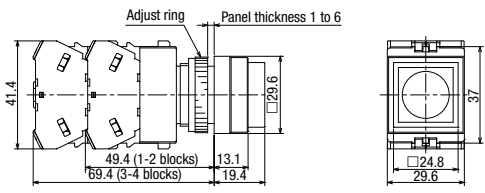
*1) AVW3, AVW4, and AXW3 pushbuttons cannot be used as emergency stop switches. When emergency stop switches are required, use XW series pushbuttons (ISO 13850 and IEC 60947-5-5 compliant).

Pushbutton operation**Push Turn Lock**

Button is locked when turned clockwise in the depressed position and is reset when turned counterclockwise.

Pushlock Key Reset / Push-Pull / Square Flush / Square Extended

Quantity: 1

Shape	Operation	Contact	Part No.	Color Code	Dimensions (mm)
ø40mm Mushroom Pushlock Key Reset (*1) AXW4 		1NO	AXW410R	R	
		1NC	AXW401R		
		1NO-1NC	AXW411R		
		2NO	AXW420R		
		2NC	AXW402R		
ø40mm Mushroom Push-Pull AYW4 		1NO	AYW410*	B G R Y S W	
		1NC	AYW401*		
		1NO-1NC	AYW411*		
		2NO	AYW420*		
		2NC	AYW402*		
Square Flush ABQW1 AOQW1 	Momentary	1NO	ABQW110*	B G R Y S W	
		1NC	ABQW101*		
		1NO-1NC	ABQW111*		
		2NO	ABQW120*		
		2NC	ABQW102*		
		2NO-2NC	ABQW122*		
	Maintained	1NO	AOQW110*		
		1NC	AOQW101*		
		1NO-1NC	AOQW111*		
		2NO	AOQW120*		
		2NC	AOQW102*		
		2NO-2NC	AOQW122*		
Square Extended ABQW2 AOQW2 	Momentary	1NO	ABQW210*	B G R Y S W	
		1NC	ABQW201*		
		1NO-1NC	ABQW211*		
		2NO	ABQW220*		
		2NC	ABQW202*		
		2NO-2NC	ABQW222*		
	Maintained	1NO	AOQW210*		
		1NC	AOQW201*		
		1NO-1NC	AOQW211*		
		2NO	AOQW220*		
		2NC	AOQW202*		
		2NO-2NC	AOQW222*		

- Specify a color code in place of * in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
- Round bezel (metal): Mat aluminum color
- Square bezel (plastic): Black
- Pushbuttons with one or three contact blocks contain a dummy block.
- See **B-235** for other contact configurations and gold-plated silver contacts.
- Push-pull switch can have a maximum of two contact blocks.
- Terminal screw: M3.5, Terminal cover: Integrated type
- See **B-238** for bottom view.











*1) AXW4 pushbuttons with red operator cannot be used as emergency stop switches. When emergency stop switches are required, use XW series pushbuttons (ISO 13850 and IEC 60947-5-5 compliant).

Pushbutton operation

Push-Pull

2-position switches with button maintained in both depressed and reset positions.

Push-Pull contact operation

Contact	AYW4	
	Push	Pull
1NO		
1NC		
1NO-1NC		
2NO		
2NC		

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TW

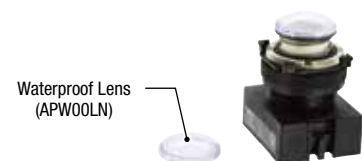
YW

Round Flush / Dome / Square Flush Pilot Lights

Quantity: 1

Shape	Illumination	Rated Voltage	Part No.	Color Code
Flush APW1 	LED	24V AC/DC	APW122D*	R G Y A S PW
		100/120V AC/DC	APW1QH2D*	
		200/220V AC	APW1QMD*	
Flush (Marking) APW1B 	LED	24V AC/DC	APW1B22D*	R G Y A S PW
		100/120V AC/DC	APW1BQH2D*	
		200/220V AC	APW1BQMD*	
Round (Dome) APW2 	LED	24V AC/DC	APW222D*	R G Y A S PW
		100/120V AC/DC	APW2QH2D*	
		200/220V AC	APW2QMD*	
Square Flush (Marking) UPQW1B 	LED	24V AC/DC	UPQW1B22D*	R G Y A S PW
		100/120V AC/DC	UPQW1BQH2D*	
		200/220V AC	UPQW1BQMD*	

- Specify a color code in place of * in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- An LED lamp is installed in pilot lights unless otherwise specified.
- The PW (pure white) lens of marking type consists of a clear lens and a white marking plate.
- See **B-265** for marking plate size and engraving area.
- Round bezel (metal): Mat aluminum color
- Square bezel (plastic): Black
- When using UPQW models as jet-proof type, use the optional waterproof lens (APW00LN).
- For illumination voltages other than those listed, see page **B-235**.
- For electric shock protection, terminal covers are included with the product.
- For 380V AC and above, the terminal cover is integrated.



Waterproof Lens (APW00LN)

For lens installation instructions, see page **B-265**.

Model	Included Terminal Cover	Quantity
6V AC/DC, 12V AC/DC, 24V AC/DC, 100/120V AC/DC, 200/220V AC, 230/240V AC	APS-PVL	1

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Dimensions

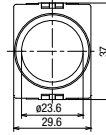
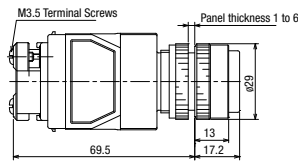
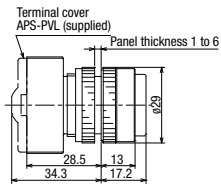
Round Flush

Terminal screws: M3.5

APW1/APW1B

6 to 120V AC/DC, 200 to 240V AC
(Terminal cover: APS-PVL)

380V AC and above



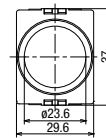
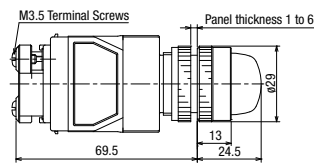
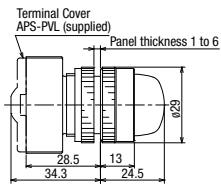
Dome

Terminal screws: M3.5

APW2

6 to 120V AC/DC, 200 to 240V AC
(Terminal cover: APS-PVL)

380V AC and above

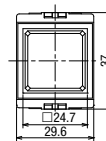
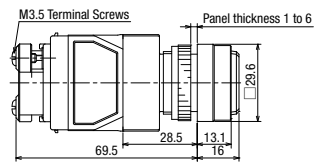
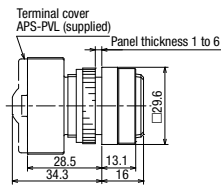


Square Flush (Marking Type)

APQW1B

6 to 120V AC/DC, 200 to 240V AC
(Terminal cover: APS-PVL)

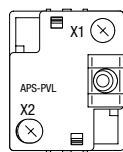
380V AC and above



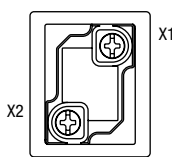
Bottom View

6 to 120V AC/DC, 200 to 240V AC

380V AC and above



With terminal cover (APS-PVL)



(Terminal cover: Integrated type)



- See **B-268** for wiring.

ø22 TW Series Illuminated Pushbuttons

LED

Round Extended / Round Extended (Marking Type)

Quantity: 1

Shape	Illumination	Operation	Rated Voltage	Contact Configuration	Part No.	Color Code	
Round Extended ALW2 AOLW2 	LED	Momentary	24V AC/DC	1NO	ALW22210D*	R G Y A S P W	
				1NC	ALW22201D*		
				1NO-1NC	ALW22211D*		
				2NO	ALW22220D*		
				2NO-2NC	ALW22222D*		
			100/120V AC/DC	1NO	ALW2QH210D*		
				1NC	ALW2QH201D*		
				1NO-1NC	ALW2QH211D*		
				2NO	ALW2QH220D*		
				2NO-2NC	ALW2QH222D*		
				200/220V AC	1NO		ALW2QM10D*
					1NC		ALW2QM01D*
		1NO-1NC	ALW2QM11D*				
		2NO	ALW2QM20D*				
		2NO-2NC	ALW2QM22D*				
		Maintained	24V AC/DC	1NO	AOLW22210D*	R G Y A S P W	
				1NC	AOLW22201D*		
				1NO-1NC	AOLW22211D*		
				2NO	AOLW22220D*		
			100/120V AC/DC	2NO-2NC	AOLW22222D*		
				1NO	AOLW2QH210D*		
				1NC	AOLW2QH201D*		
				1NO-1NC	AOLW2QH211D*		
			200/220V AC	2NO	AOLW2QH220D*		
2NO-2NC	AOLW2QH222D*						
1NO	AOLW2QM10D*						
1NC	AOLW2QM01D*						
200/220V AC	1NO-1NC	AOLW2QM11D*					
	2NO	AOLW2QM20D*					
	2NO-2NC	AOLW2QM22D*					
	Round Extended (Marking) ALW2B AOLW2B 	LED	Momentary	24V AC/DC	1NO	ALW2B2210D*	R G Y A S P W
1NC					ALW2B2201D*		
1NO-1NC					ALW2B2211D*		
2NO					ALW2B2220D*		
100/120V AC/DC				2NO-2NC	ALW2B2222D*		
				1NO	ALW2BQH210D*		
				1NC	ALW2BQH201D*		
				1NO-1NC	ALW2BQH211D*		
200/220V AC				2NO	ALW2BQH220D*		
				2NO-2NC	ALW2BQH222D*		
				1NO	ALW2BQM10D*		
				1NC	ALW2BQM01D*		
200/220V AC			1NO-1NC	ALW2BQM11D*			
			2NO	ALW2BQM20D*			
			2NO-2NC	ALW2BQM22D*			
			Maintained	24V AC/DC	1NO	AOLW2B2210D*	R G Y A S P W
1NC					AOLW2B2201D*		
1NO-1NC					AOLW2B2211D*		
2NO					AOLW2B2220D*		
100/120V AC/DC				2NO-2NC	AOLW2B2222D*		
				1NO	AOLW2BQH210D*		
				1NC	AOLW2BQH201D*		
				1NO-1NC	AOLW2BQH211D*		
200/220V AC				2NO	AOLW2BQH220D*		
	2NO-2NC	AOLW2BQH222D*					
	1NO	AOLW2BQM10D*					
	1NC	AOLW2BQM01D*					
200/220V AC	1NO-1NC	AOLW2BQM11D*					
	2NO	AOLW2BQM20D*					
	2NO-2NC	AOLW2BQM22D*					

- Specify a color code in place of * in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- The PW (pure white) lens of marking type consists of a clear lens and a white marking plate.
- See **B-265** for marking plate size and engraving area.
- An LED lamp is installed in illuminated pushbuttons unless otherwise specified.
- Round bezel (metal): Mat aluminum color
- See **B-236** for other operating voltage such as 6V AC/DC and 12V AC/DC.
- See **B-236** for other contact configurations and gold-plated silver contacts.
- Dummy blocks are built into 2-contact and 4-contact.

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LED

Round Extended with Full Shroud / Round Extended with Full Shroud (Marking Type)

Quantity: 1

Shape	Illumination	Operation	Rated Voltage	Contact Configuration	Part No.	Color Code	
Round Extended with Full Shroud ALFW2 AOLFW2 	LED	Momentary	24V AC/DC	1NO	ALFW22210D*	R G Y A S PW	
				1NC	ALFW22201D*		
				1NO-1NC	ALFW22211D*		
				2NO	ALFW22220D*		
				2NO-2NC	ALFW22222D*		
			100/120V AC/DC	1NO	ALFW2QH210D*		
				1NC	ALFW2QH201D*		
				1NO-1NC	ALFW2QH211D*		
				2NO	ALFW2QH220D*		
				2NO-2NC	ALFW2QH222D*		
			200/220V AC	1NO	ALFW2QM10D*		
				1NC	ALFW2QM01D*		
		1NO-1NC		ALFW2QM11D*			
		2NO		ALFW2QM20D*			
		2NO-2NC		ALFW2QM22D*			
		Maintained	24V AC/DC	24V AC/DC	1NO	A0LFW22210D*	R G Y A S PW
					1NC	A0LFW22201D*	
					1NO-1NC	A0LFW22211D*	
					2NO	A0LFW22220D*	
					2NO-2NC	A0LFW22222D*	
			100/120V AC/DC	100/120V AC/DC	1NO	A0LFW2QH210D*	
					1NC	A0LFW2QH201D*	
					1NO-1NC	A0LFW2QH211D*	
					2NO	A0LFW2QH220D*	
2NO-2NC	A0LFW2QH222D*						
200/220V AC	200/220V AC		1NO	A0LFW2QM10D*			
			1NC	A0LFW2QM01D*			
		1NO-1NC	A0LFW2QM11D*				
		2NO	A0LFW2QM20D*				
		2NO-2NC	A0LFW2QM22D*				
Round Extended with Full Shroud (Marking Type) ALFW2B AOLFW2B 	LED	Momentary	24V AC/DC	1NO	ALFW2B2210D*	R G Y A S PW	
				1NC	ALFW2B2201D*		
				1NO-1NC	ALFW2B2211D*		
				2NO	ALFW2B2220D*		
				2NO-2NC	ALFW2B2222D*		
			100/120V AC/DC	100/120V AC/DC	1NO		ALFW2BQH210D*
					1NC		ALFW2BQH201D*
					1NO-1NC		ALFW2BQH211D*
					2NO		ALFW2BQH220D*
					2NO-2NC		ALFW2BQH222D*
			200/220V AC	200/220V AC	1NO		ALFW2BQM10D*
					1NC		ALFW2BQM01D*
		1NO-1NC			ALFW2BQM11D*		
		2NO			ALFW2BQM20D*		
		2NO-2NC			ALFW2BQM22D*		
		Maintained	24V AC/DC	24V AC/DC	1NO	A0LFW2B2210D*	R G Y A S PW
					1NC	A0LFW2B2201D*	
					1NO-1NC	A0LFW2B2211D*	
					2NO	A0LFW2B2220D*	
					2NO-2NC	A0LFW2B2222D*	
			100/120V AC/DC	100/120V AC/DC	1NO	A0LFW2BQH210D*	
					1NC	A0LFW2BQH201D*	
					1NO-1NC	A0LFW2BQH211D*	
					2NO	A0LFW2BQH220D*	
2NO-2NC	A0LFW2BQH222D*						
200/220V AC	200/220V AC		1NO	A0LFW2BQM10D*			
			1NC	A0LFW2BQM01D*			
		1NO-1NC	A0LFW2BQM11D*				
		2NO	A0LFW2BQM20D*				
		2NO-2NC	A0LFW2BQM22D*				


- Specify a color code in place of * in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- The PW (pure white) lens of marking type consists of a clear lens and a white marking plate.
- See B-265 for marking plate size and engraving area.
- An LED lamp is installed in illuminated pushbuttons unless otherwise specified.
- Round bezel (metal): Mat aluminum color
- See B-236 for other operating voltage such as 6V AC/DC and 12V AC/DC.
- See B-236 for other contact configurations and gold-plated silver contacts.
- Dummy blocks are built into 2-contact and 4-contact.

ø22 TW Series Illuminated Pushbuttons

LED

Square Extended (Marking Type)

Quantity: 1

Shape	Illumination	Operation	Rated Voltage	Contact Configuration	Part No.	Color Code
Square Extended (Marking Type) ALQW2B AOLQW2B 	LED	Momentary	24V AC/DC	1NO	ALQW2B2210D*	R G Y A S PW
				1NC	ALQW2B2201D*	
				1NO-1NC	ALQW2B2211D*	
				2NO	ALQW2B2220D*	
				2NO-2NC	ALQW2B2222D*	
				1NO	ALQW2BQH210D*	
			1NC	ALQW2BQH201D*		
			1NO-1NC	ALQW2BQH211D*		
			2NO	ALQW2BQH220D*		
			2NO-2NC	ALQW2BQH222D*		
			1NO	ALQW2BQM10D*		
			1NC	ALQW2BQM01D*		
		1NO-1NC	ALQW2BQM11D*			
		2NO	ALQW2BQM20D*			
		2NO-2NC	ALQW2BQM22D*			
		Maintained	24V AC/DC	1NO	AOLQW2B2210D*	R G Y A S PW
				1NC	AOLQW2B2201D*	
				1NO-1NC	AOLQW2B2211D*	
				2NO	AOLQW2B2220D*	
				2NO-2NC	AOLQW2B2222D*	
				1NO	AOLQW2BQH210D*	
			1NC	AOLQW2BQH201D*		
			1NO-1NC	AOLQW2BQH211D*		
			2NO	AOLQW2BQH220D*		
2NO-2NC	AOLQW2BQH222D*					
1NO	AOLQW2BQM10D*					
1NC	AOLQW2BQM01D*					
1NO-1NC	AOLQW2BQM11D*					
2NO	AOLQW2BQM20D*					
2NO-2NC	AOLQW2BQM22D*					

- Specify a color code in place of * in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- The PW (pure white) lens of marking type consists of a clear lens and a white marking plate.
- See **B-265** for marking plate size and engraving area.
- An LED lamp is installed in illuminated pushbuttons unless otherwise specified.
- Square bezel (plastic): Black
- See **B-236** for other operating voltage such as 6V AC/DC and 12V AC/DC.
- See **B-236** for other contact configurations and gold-plated silver contacts.
- Dummy blocks are built into 2-contact and 4-contact.

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Circuit Protectors

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Pilot Lights

HW





TW

YW

LED

Mushroom ø29 / ø40 Pushlock Turn Reset

Quantity: 1

Shape	Illumination	Rated Voltage	Contact Configuration	Part No.	Color Code
ø29mm Mushroom Pushlock Turn Reset AVLW3 (*1) 	LED	24V AC/DC	1NO	AVLW32210D*	R
			1NC	AVLW32201D*	
			1NO-1NC	AVLW32211D*	
			2NO	AVLW32220D*	
			2NO-2NC	AVLW32222D*	
		100/120V AC/DC	1NO	AVLW3QH210D*	
			1NC	AVLW3QH201D*	
			1NO-1NC	AVLW3QH211D*	
			2NO	AVLW3QH220D*	
			2NO-2NC	AVLW3QH222D*	
		200/220V AC	1NO	AVLW3QM10D*	
			1NC	AVLW3QM01D*	
			1NO-1NC	AVLW3QM11D*	
			2NO	AVLW3QM20D*	
			2NO-2NC	AVLW3QM22D*	
ø29mm Mushroom Pushlock Turn Reset (Marking type) AVLW3B (*1) 	LED	24V AC/DC	1NO	AVLW3B2210D*	R
			1NC	AVLW3B2201D*	
			1NO-1NC	AVLW3B2211D*	
			2NO	AVLW3B2220D*	
			2NO-2NC	AVLW3B2222D*	
		100/120V AC/DC	1NO	AVLW3BQH210D*	
			1NC	AVLW3BQH201D*	
			1NO-1NC	AVLW3BQH211D*	
			2NO	AVLW3BQH220D*	
			2NO-2NC	AVLW3BQH222D*	
		200/220V AC	1NO	AVLW3BQM10D*	
			1NC	AVLW3BQM01D*	
			1NO-1NC	AVLW3BQM11D*	
			2NO	AVLW3BQM20D*	
			2NO-2NC	AVLW3BQM22D*	
ø40mm Mushroom Pushlock Turn Reset AVLW4 (*1) 	LED	24V AC/DC	1NO	AVLW42210D*	R
			1NC	AVLW42201D*	
			1NO-1NC	AVLW42211D*	
			2NO	AVLW42220D*	
			2NO-2NC	AVLW42222D*	
		100/120V AC/DC	1NO	AVLW4QH210D*	
			1NC	AVLW4QH201D*	
			1NO-1NC	AVLW4QH211D*	
			2NO	AVLW4QH220D*	
			2NO-2NC	AVLW4QH222D*	
		200/220V AC	1NO	AVLW4QM10D*	
			1NC	AVLW4QM01D*	
			1NO-1NC	AVLW4QM11D*	
			2NO	AVLW4QM20D*	
			2NO-2NC	AVLW4QM22D*	
ø40mm Mushroom Pushlock Turn Reset (Marking type) AVLW4B (*1) 	LED	24V AC/DC	1NO	AVLW4B2210D*	R
			1NC	AVLW4B2201D*	
			1NO-1NC	AVLW4B2211D*	
			2NO	AVLW4B2220D*	
			2NO-2NC	AVLW4B2222D*	
		100/120V AC/DC	1NO	AVLW4BQH210D*	
			1NC	AVLW4BQH201D*	
			1NO-1NC	AVLW4BQH211D*	
			2NO	AVLW4BQH220D*	
			2NO-2NC	AVLW4BQH222D*	
		200/220V AC	1NO	AVLW4BQM10D*	
			1NC	AVLW4BQM01D*	
			1NO-1NC	AVLW4BQM11D*	
			2NO	AVLW4BQM20D*	
			2NO-2NC	AVLW4BQM22D*	

- Specify a color code in place of * in Part No. R (red)
- See **B-265** for marking plate size and engraving area.
- An LED lamp is installed in illuminated pushbuttons unless otherwise specified.
- Round bezel (metal): Mat aluminum color
- See **B-236** for other operating voltage such as 6V AC/DC and 12V AC/DC.
- See **B-236** for other contact configurations and gold-plated silver contacts.
- Dummy blocks are built into 2-contact and 4-contact.

*1) AVLW illuminated pushbuttons cannot be used as emergency stop switches. When emergency stop switches are required, use XW series pushbuttons (ISO 13850 and IEC 60947-5-5 compliant).

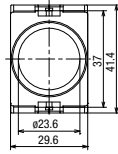
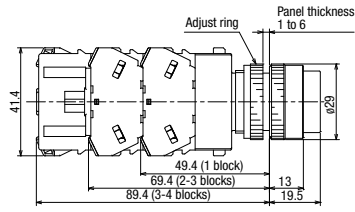
Ø22 TW Series Illuminated Pushbuttons

Dimensions

All dimensions in mm.

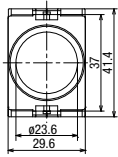
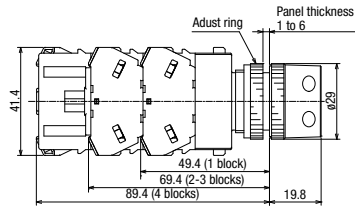
Round Extended

Terminal Screw: M3.5, integrated terminal



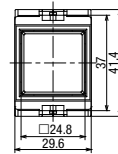
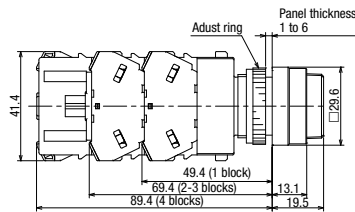
Round Extended with Full Shroud

Terminal Screw: M3.5, integrated terminal



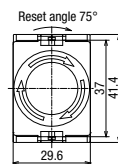
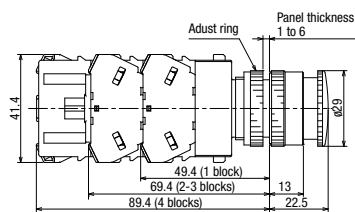
Square Extended

Terminal Screw: M3.5, integrated terminal



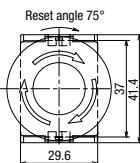
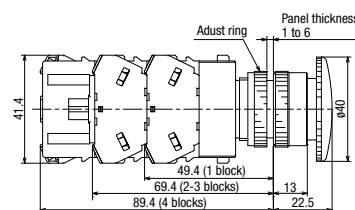
Ø29mm Pushlock Turn Reset

Terminal Screw: M3.5, integrated terminal



Ø40mm Pushlock Turn Reset

Terminal Screw: M3.5, integrated terminal



APEM

Switches &
Pilot Lights

Control Boxes

Emergency
Stop SwitchesEnabling
Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit
Protectors

Power Supplies

LED Illumination

Controllers

Operator
Interfaces

Sensors

AUTO-ID

Flush Silhouette

Ø16

Ø22

Ø30

Miniature

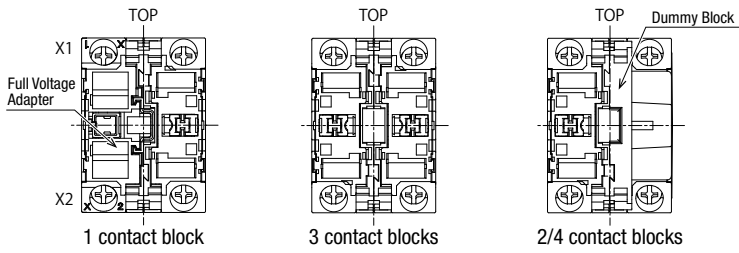
Pilot Lights

HW

TW

YW

Bottom View (illuminated)



• See **B-267** for wiring.

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

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Controllers

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Flush Silhouette

ø16

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Miniature

Pilot Lights


HW

TW

YW

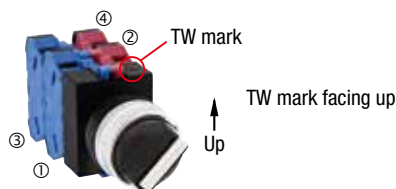
Selector Switches (Knob Operator)

Quantity: 1

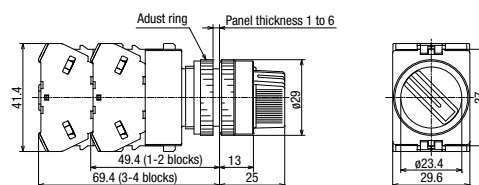
Shape	Knob Operator ASW											
	Contact Configuration					Maintained	Spring Return from Right	Spring Return from Left				
	Contact Code	Contact Block		Operator Position		1 2	1 2	Contact Block		Operator Position		1 2
Mounting Position		Contact	1	2	Mounting Position			Contact	1	2		
90° 2-position	1NO (10)	①	NO		●	ASW210	ASW2110	①	NO	●		ASW2210
		②	—	Dummy Block				②	—	—		
	1NO-1NC (11)	①	NO		●	ASW211	ASW2111	①	NO	●		ASW2211
		②	NC	●				②	NC		●	
	2NO (20)	①	NO		●	ASW220	ASW2120	①	NO	●		ASW2220
		②	NO		●			②	NO	●		
	2NO-2NC (22)	①	NO		●	ASW222	ASW2122	①	NO	●		ASW2222
		②	NC	●				②	NC		●	
③		NO		●	③			NO	●			
④		NC	●		④			NC		●		
45° 3-position	2NO (20)	①	NO	●		ASW320	ASW3120	ASW3220				ASW3320
		②	NO		●							
	2NC (02)	①	NC		●	ASW302	ASW3102	ASW3202				ASW3302
		②	NC	●								
	2NO-2NC (22)	①	NO	●		ASW322	ASW3122	ASW3222				ASW3322
		②	NO		●							
		③	NC		●							
		④	NC	●								
	4NO (40)	①	NO	●		ASW340	ASW3140	ASW3240				ASW3340
		②	NO		●							
		③	NO	●								
		④	NO		●							
	4NC (04)	①	NC		●	ASW304	ASW3104	ASW3204				ASW3304
		②	NC	●								
		③	NC		●							
		④	NC	●								
	3S☆	①	NO	●		ASW33S-243☆	—	—				—
		②	NO		●							
③		NC		●								
④		—	Dummy Block									

- HW • Knob operator: white indicator on black body
 • Cylinder: Mat aluminum color
- TW • Selector switches with one or three contact blocks contain a dummy block.
 • Spring return is not available with contact code 3S.
- YW • On the contact arrangement marked with ☆ in the table above, the rated current (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.
 • Other contact arrangements are also available. See **B-253** to **B-255**.
 • Optional selector operators and color inserts are available.
 • See **B-236** for gold-plated silver contacts.
 • Turn the operator to each position accurately.

Contact Block Mounting Position



Dimensions






All dimensions in mm.

Terminal screw: M3.5
Integrated terminal cover

- See **B-238** for bottom view.

Key Selector Switches

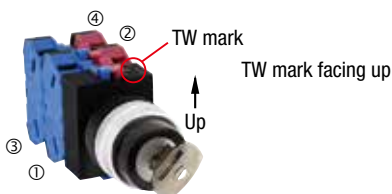
Quantity: 1

Shape	Key Selector Switch ASW□K (Key No. 0)					Maintained 		Spring Return from Right 		Spring Return from Left				
	Contact Code	Contact Block		Operator Position						Contact Block		Operator Position		
		Mounting Position	Contact	1	2					Mounting Position	Contact	1	2	
90° 2-position	1NO (10)	①	NO		●	ASW2K10	ASW21K10	①	NO	●		ASW22K10		
		②	—	Dummy Block				②	—					
	1NO-1NC (11)	①	NO		●	ASW2K11	ASW21K11	①	NO	●		ASW22K11		
		②	NC	●				②	NC		●			
	2NO (20)	①	NO		●	ASW2K20	ASW21K20	①	NO	●		ASW22K20		
		②	NO		●			②	NO	●				
	2NO-2NC (22)	①	NO		●	ASW2K22	ASW21K22	NO	●		ASW22K22			
			NC	●				NC		●				
		②	NO		●			NO	●			●		
			NC	●				NC		●				
	45° 3-position	2NO (20)	①	NO	●		ASW3K20	ASW31K20	ASW32K20		ASW33K20			
			②	NO		●			ASW32K20					
2NC (02)		①	NC		●	ASW3K02	ASW31K02	ASW32K02		ASW33K02				
		②	NC	●				ASW32K02						
2NO-2NC (22)		①	NO	●		ASW3K22	ASW31K22	ASW32K22		ASW33K22				
			NC		●			ASW32K22						
		②	NO		●			NO			●			
			NC	●				NC	●					
4NO (40)		①	NO	●		ASW3K40	ASW31K40	ASW32K40		ASW33K40				
		②	NO		●			ASW32K40						
		③	NO	●				NO			●			
		④	NO		●			NO			●			
4NC (04)		①	NC		●	ASW3K04	ASW31K04	ASW32K04		ASW33K04				
		②	NC	●				ASW32K04						
		③	NC		●			NC			●			
		④	NC	●				NC	●					
3S ☆		①	NO	●		ASW3K3S-243 ☆	—	—		—				
		②	NO		●			—						
		③	NC		●			—						
		④	—	Dummy Block				—						

- Cylinder cover: black
- Cylinder: Mat aluminum color
- On the spring-returned types, the key can be released only from the maintained position. On the maintained types, the key can be released from every position. Other key retained positions are also available. See **B-236**.
- Selector switches with one or three contact blocks contain a dummy block.
- On the contact arrangement marked with ☆ in the table above, the rated current (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.

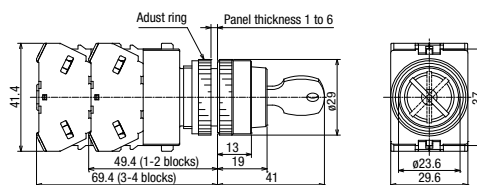
- For models with ☆, contacts may overlap when the operator position is changed.
- Other contact arrangements are also available. See **B-253** to **B-255**.
- See **B-236** for gold-plated silver contacts.
- Key selector switch is supplied with two standard keys.
 - (1) Insert the key completely before turning the key, otherwise failure may result.
 - (2) Turn the operator to each position accurately.
- Different key number is available upon request. Contact IDEC.

Contact Block Mounting Position



Dimensions

All dimensions in mm.

Terminal screw: M3.5
Integrated terminal cover• See **B-238** for bottom view.

LED | **Illuminated Selector Switches**

Quantity: 1

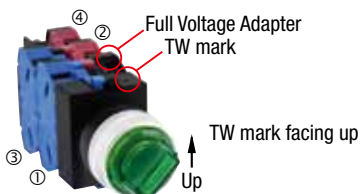


90° 2-position	Contact Code	Contact Block		Operator Position		Rated Voltage	Maintained 1 2	Spring Return from Right 1 2	Spring Return from Left				Color Code				
		Mounting Position	Contact	1	2				Contact Block		Operator Position						
									Mounting Position	Contact	1	2					
1NO (10)	①	NO	●	●	●	24V AC/DC	ASLW22210D*	ASLW212210D*	①	NO	●	ASLW222210D*	R G Y A S P W				
						100/120V AC/DC	ASLW2QH210D*	ASLW21QH210D*						②	—	●	ASLW222H210D*
						200/220V AC	ASLW2QM10D*	ASLW21QM10D*									
	②	—	●	●	●	24V AC/DC	ASLW22211D*	ASLW212211D*	①	NO	●	ASLW222211D*					
						100/120V AC/DC	ASLW2QH211D*	ASLW21QH211D*						②	NC	●	ASLW222H211D*
						200/220V AC	ASLW2QM11D*	ASLW21QM11D*									
2NO (20)	①	NO	●	●	●	24V AC/DC	ASLW22220D*	ASLW212220D*	①	NO	●	ASLW222220D*					
						100/120V AC/DC	ASLW2QH220D*	ASLW21QH220D*					②	NO	●	ASLW222H220D*	
						200/220V AC	ASLW2QM20D*	ASLW21QM20D*									
2NO-2NC (22)	①	NO	●	●	●	24V AC/DC	ASLW22222D*	ASLW212222D*	①	NO	●	ASLW222222D*					
						100/120V AC/DC	ASLW2QH222D*	ASLW21QH222D*					②	NC	●	ASLW222H222D*	
						200/220V AC	ASLW2QM22D*	ASLW21QM22D*									
						②	NC	●									●
4NO (40)	①	NO	●	●	●	24V AC/DC	ASLW32220D*	ASLW312220D*	①	NO	●	ASLW322220D*	R G Y A S P W				
						100/120V AC/DC	ASLW3QH220D*	ASLW31QH220D*						②	NO	●	ASLW332H220D*
						200/220V AC	ASLW3QM20D*	ASLW31QM20D*									
						②	NO	●						●	●	24V AC/DC	ASLW32202D*
100/120V AC/DC	ASLW3QH202D*	ASLW31QH202D*	②	NC	●				ASLW332H202D*								
200/220V AC	ASLW3QM02D*	ASLW31QM02D*															
2NO-2NC (22)	①	NO	●	●	●	24V AC/DC	ASLW32222D*	ASLW312222D*	①	NO	●	ASLW332222D*					
						100/120V AC/DC	ASLW3QH222D*	ASLW31QH222D*						②	NC	●	ASLW332H222D*
						200/220V AC	ASLW3QM22D*	ASLW31QM22D*									
						②	NC	●									
4NO (40)	①	NO	●	●	●	24V AC/DC	ASLW32240D*	ASLW312240D*	①	NO	●	ASLW332240D*					
						100/120V AC/DC	ASLW3QH240D*	ASLW31QH240D*						②	NO	●	ASLW332H240D*
						200/220V AC	ASLW3QM40D*	ASLW31QM40D*									
						②	NO	●						●	●	24V AC/DC	ASLW32204D*
100/120V AC/DC	ASLW3QH204D*	ASLW31QH204D*	②	NC	●				ASLW332H204D*								
200/220V AC	ASLW3QM04D*	ASLW31QM04D*															
4NC (04)	①	NC	●	●	●	24V AC/DC	ASLW32204D*	ASLW312204D*	①	NO	●	ASLW332204D*					
						100/120V AC/DC	ASLW3QH204D*	ASLW31QH204D*					②	NC	●	ASLW332H204D*	
						200/220V AC	ASLW3QM04D*	ASLW31QM04D*									
						②	NC	●									●

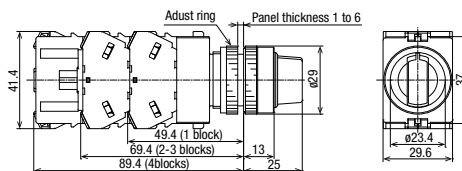
- Specify a color code in place of * in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- An LED lamp is installed in illuminated selector switches unless otherwise specified.
- Round bezel (metal): Mat aluminum color
- See B-237 for other operating voltage such as 6V AC/DC and 12V AC/DC.

- Dummy blocks are built into 2-contact and 4-contact.
- Turn the operator to each position accurately.
- See B-253 to B-255 for other contact arrangements.
- See B-237 for gold-plated silver contacts.

Contact Block Mounting Position



Dimensions



All dimensions in mm.

Terminal screw: M3.5
Integrated terminal cover

See B-248 for bottom view.

ø22 TW Series Selector Switch Contact Arrangement Chart

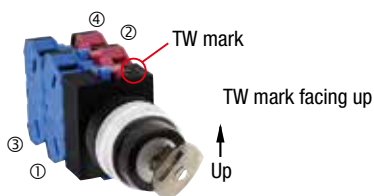
Selector Switch Contact Arrangement

90° 2-position

Contact Code	Circuit No.	Contact Block		Operator Operation and Circuit Availability								
				Maintained 1 2			Spring return from right 1 2			Spring return from left 1 2		
		Mounting Position	Contact	Knob/ Lever	Key	Illuminated	Knob/ Lever	Key	Illuminated	Knob/ Lever	Key	Illuminated
				1 	2 	1 	2 	1 	2 			
10	—	①	NO		●		●	●				
		②	—	Dummy Block			Dummy Block			Dummy Block		
01	—	①	NC	●		●				●		
		②	—	Dummy Block			Dummy Block			Dummy Block		
11	—	①	NO		●		●	●				
		②	NC	●		●				●		
20	—	①	NO		●		●	●				
		②	NO		●		●	●				
02	—	①	NC	●		●				●		
		②	NC	●		●				●		
22	—	①	NO		●		●	●				
		②	NC	●		●				●		
		③	NO		●		●	●				
		④	NC	●		●				●		
31	107	①	NC	●		●				●		
		②	NO		●		●	●				
		③	NO		●		●	●				
		④	NO		●		●	●				
40	—	①	NO		●		●	●				
		②	NO		●		●	●				
		③	NO		●		●	●				
		④	NO		●		●	●				
2R	☆ 118	①	EM	—————			—————					
		②	LB	—————			—————					
☆ 168	☆	①	EM							—————		
		②	LB							—————		

- On the contact arrangement marked with ☆ in the table above (contact code: 2R), the rated current (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 is changed.
- Product prices may vary depending on the circuit configuration, even with the same number of contacts.

Contact Block Mounting Position



Ordering Information

ASW 2 L 31 - 107

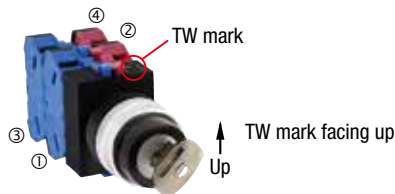
- Circuit No.
- Contact Code
- Operator Type
Blank: Knob
L: Lever
K: Key
- No. of positions/operator operation
2: 2-position/maintained
21: 2-position/spring return from right
22: 2-position/spring return from left

45° 3-position <Maintained / Spring Return from Right / Spring Return from Left / Spring Return Two-way>

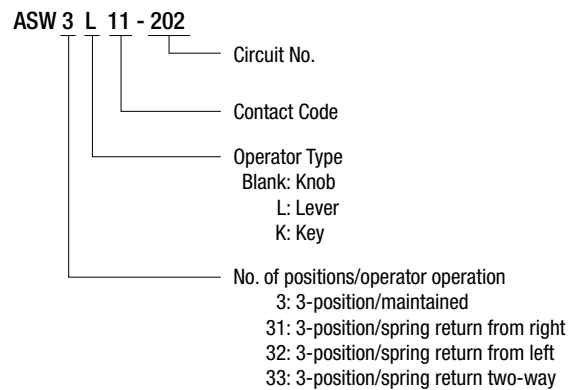
Contact Code	Circuit No.	Contact Block		Operator Operation			Circuit Availability		
		Mounting Position	Contact	1	0	2	Knob/ Lever	Key	Illuminated
11	202	①	NO	●	—	—	○	○	○
		②	NC	—	—	—			
	203	①	NC	—	—	—			
		②	NO	—	—	●			
	303	①	NC	—	●	—			
		②	NO	—	—	●			
20	—	①	NO	●	—	—	○	○	
		②	NO	—	—	●	○	○	
02	—	①	NC	—	—	—	○	○	
		②	NC	—	—	—	○	○	
22	—	①	NO	●	—	—	○	○	
		②	NO	—	—	●			
		③	NC	—	—	—			
		④	NC	—	—	—			
	210	①	NC	—	—	—	○	○	
		②	NO	—	—	●			
		③	NC	—	—	—			
		④	NO	—	—	●			
	310	①	NC	—	●	—	○	○	
		②	NO	—	—	●			
		③	NC	—	●	—			
		④	NO	—	—	●			
31	207	①	NC	—	—	—	○	○	
		②	NO	—	—	●			
		③	NO	●	—	—			
		④	NO	—	—	●			
40	—	①	NO	●	—	—	○	○	
		②	NO	—	—	●			
		③	NO	●	—	—			
		④	NO	—	—	●			
04	—	①	NC	—	—	—	○	○	
		②	NC	—	—	—			
		③	NC	—	—	—			
		④	NC	—	—	—			

• Product prices may vary depending on the circuit configuration, even with the same number of contacts.

Contact Block Mounting Position



Ordering Information



- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID
- Flush Silhouette
- ø16
- ø22
- ø30
- Miniature
- Pilot Lights

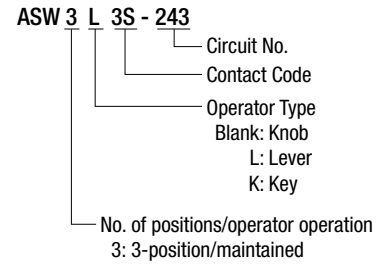
- HW
- TW
- YW

ø22 TW Series Selector Switch Contact Arrangement Chart

45° 3-position (Maintained)

Contact Code	Circuit No.	Contact Block		Operator Operation and Circuit			Operator Availability		
				Maintained					
				Mounting Position	Contact	1	0	2	Knob/ Lever
3S ☆	243	①	NO	●					○
		②	NO			●			
		③	NC		●				
		④	—	Dummy Block					
4S ☆	234	①	NO	●				○	
		②	LB	—————					
		③	NC		●				
		④	LB	—————					
4S ☆	237	①	NO	●				○	
		②	NO			●			
		③	NC		●				
		④	NO			●			
4S ☆	240	①	LB	—————				○	
		②	LB	—————					
		③	NC		●				
		④	NO			●			

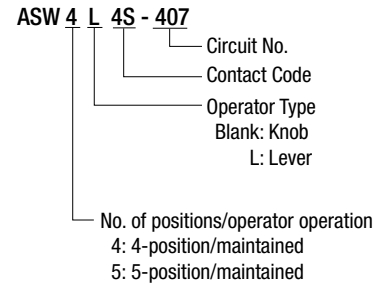
Ordering Information



45° 4-position (Maintained)

Contact Code	Circuit No.	Contact Block		Operator Operation and Circuit				Operator Availability	
				Maintained					
				Mounting Position	Contact	1	2	3	4
4S ☆	407	①	LB	—————				○	
		②	NC		●				
		③	NC			●			
		④	NO				●		
4S ☆	411	①	NO	●				○	
		②	NC		●				
		③	NC			●			
		④	NO				●		

Ordering Information

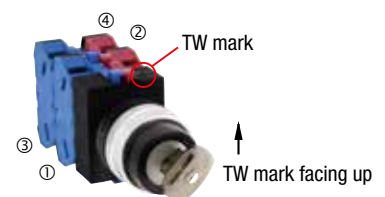


30° 5-position (Maintained)

Contact Code	Circuit No.	Contact Block		Operator Operation and Circuit					Operator Availability	
				Maintained						
				Mounting Position	Contact	1	2	3	4	5
4S ☆	501	①	NO	●					○	
		②	NC		●					
		③	NC				●			
		④	NO					●		

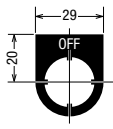
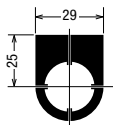
- Product prices may vary depending on the circuit configuration, even with the same number of contacts.
- On the contact arrangement marked with ☆ in the table above (contact code: 3S, 4S), the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.
- For models with ☆, contacts may overlap when the operator is changed.

Contact Block Mounting Position



APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
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Terminal Blocks
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AUTO-ID
Flush Silhouette
ø16
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Miniature
Pilot Lights
HW
TW
YW

Nameplates


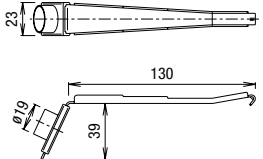

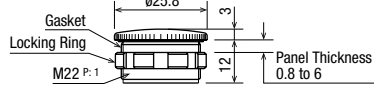

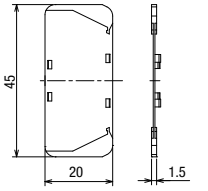
Shape	Legend	Material	Part No.	Quantity
NWA  0.8 mm thick	Blank	Aluminum (black) (Legend: white)	NWA-0	10
	With Legend		NWA-□	10
NWAQ  0.8 mm thick	Blank	Aluminum (black) (Legend: white)	NWAQ-0	10
	With Legend		NWAQ-□	10
NWAS  0.8 mm thick	Blank	Aluminum (black)	NWAS-0	10
NWAL  0.8 mm thick	Blank	Aluminum (black)	NWAL-0	10
NWAQL  0.8 mm thick	Blank	Aluminum (black)	NWAQL-0	10

- Specify a legend code in place of □ in the Part No.
- The nameplates are used for TW series only.

Legends

Code	Legend
1	ON
2	OFF
3	START
4	STOP
31	OFF ON
35	HAND AUTO
53	HAND OFF AUTO

Accessories

Shape	Material	Part No.	Quantity	Remarks/Dimensions (mm)
	Nitril rubber	OR-14	1	<ul style="list-style-type: none"> Used to tighten the round bezel when installing the TW switch onto a panel.  <p>For ø25 series For ø22 series</p>
	Nitril rubber	OR-55	1	<ul style="list-style-type: none"> Used to install and remove the LED lamps. See B-266 for how to install. Ⓐ : BA9S 
	Zinc-plated metal Nitril rubber	TW-KC1	1	<ul style="list-style-type: none"> Enables easy lens replacement and panel thickness adjustment (1, 1.6, 2, 2.3, 3.2, 5 mm) for waterproof and pilot light lenses. 
	Metal (nickel-plated)	TW-KQ2	1	<ul style="list-style-type: none"> Used to tighten the locking nuts inside of the square bezel. This tool can be inserted into the OR-14 locking ring wrench. 
	Metal (zinc-plated)	OGL-31	10	<ul style="list-style-type: none"> Used to prevent the operator from turning. Generally used when using no nameplates on selector switches. Installed on the front of panel. 
	Nitril rubber (black)	OB-31	5	<ul style="list-style-type: none"> Used to plug unused ø22.2mm mounting holes. Degree of protection: <ul style="list-style-type: none"> IP65 (round mounting hole) IP40 (with anti-rotation function) 
	Plug: chrome-plated zinc diecast Locking ring: polyamide	LW9Z-BM	1	<ul style="list-style-type: none"> Used to plug the unused ø22.2 mm mounting holes. Degree of protection: <ul style="list-style-type: none"> IP66 (round hole) IP40 (with anti-rotation function) Tightening torque: 1.2 N·m 
	Polyamide (black)	LW9Z-BP1	1	<ul style="list-style-type: none"> Used to plug the unused ø22.2 mm mounting holes. Degree of protection: IP65 Tightening torque: 2.0 N·m 
	Polyamide	HW-VU1	10	<ul style="list-style-type: none"> Used to prevent contact between adjacent lead wires when units are mounted closely (see B-266 for details). Barriers should always be used in close mounting. 

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Control Boxes

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Enabling Switches

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Circuit Protectors

Power Supplies

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Controllers

Operator Interfaces

Sensors

AUTO-ID

Flush Silhouette

ø16

ø22

ø30

Miniature


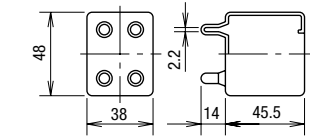
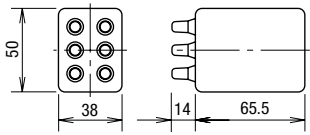

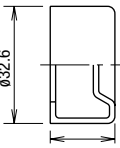

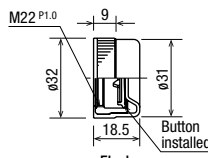
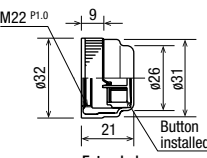

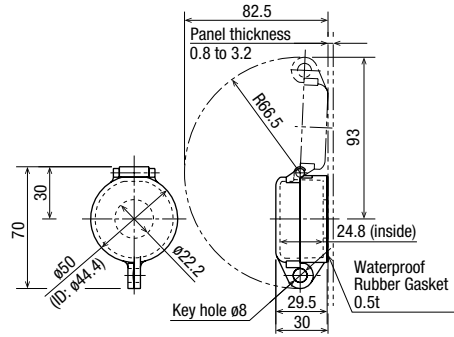

Pilot Lights

HW



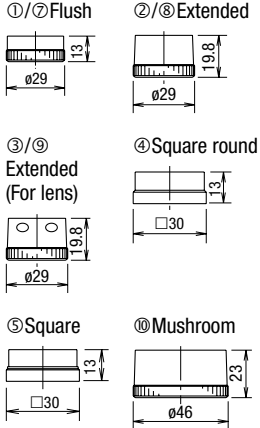



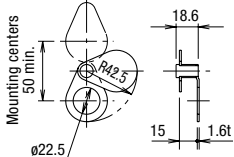
TW

YW

Accessories

Shape	Material	Part No.	Quantity	Remarks/Dimensions (mm)
<p>Contact Rubber Boot</p> 	Nitril rubber (black)	OCW-99	1	<ul style="list-style-type: none"> Oiltight rubber boot used for the contact blocks of pushbuttons and selector switches. Temperature range: -5 to +60°C  
		OCW-299	1	
<p>Button Clear Boot</p> 	Rubber (EPDM)	OC-31	1	<ul style="list-style-type: none"> 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 NWA, NWAQ, NNAS, NNAW, or NNAQL. 
		OC-32	1	
<p>Button Cover</p> 	Nitril rubber	OCW-10*	1	<ul style="list-style-type: none"> Used to cover the bezels to enhance waterproof characteristics of pushbuttons. Button is installed in the cover. Remove the button from the pushbutton before using the button cover. Make sure to align the button with the axis on the switch. Using the button cover enhances oilproof characteristics. Specify a color code in place of * in Ordering No. B (black), G (green), R (red), Y (yellow) Operating temperature: -5 to +60°C  
		OCW-11*	1	
<p>Padlock Cover</p> 	Polyarylate (gasket: nitril rubber)	HW9Z-KL1	1	<ul style="list-style-type: none"> Used to protect momentary and maintained pushbuttons, illuminated pushbuttons, knob and key selector switches. 
<p>Padlock Cover for Key Selector Switches</p> 	Metal (steel)	HS9Z-PC22	1	Used for ASW□K key selector switches.

Accessories

Shape	Material	Part No.	Quantity	Remarks/Dimensions (mm)
	Nitril rubber	HW9Z-A25	5	<ul style="list-style-type: none"> Used to install the TW series units into ø25 mm mounting holes. IP65 Cannot be used with anti-rotation and nameplate. Mounting panel thickness: 1.2 to 5.5 mm See B-265 for details.
	Polyacetal (black)	① Flush	5	Supplied with base plate and locking ring 
② Extended		AW-FP1B	1	
③ Extended (for illuminated pushbuttons)		AW-FP2B	1	
④ Square round (for round buttons)		AW-H1B	1	
⑤ Square		AW-Q1B	1	
	Aluminum	⑦ Flush	5	Aluminum color
⑧ Extended		AW-R1B	1	Black
⑨ Extended (illuminated)		AW-F1	1	Aluminum color
⑩ Mushroom		AW-F2	1	Aluminum color
		AW-G4	1	Aluminum color
	Polyacetal	① Knob	2	Specify a color code in place * in Ordering No. B (black), G (green), R (red) ø23.4, H19
② Lever		ASWHHL-*	2	Specify a color code in place * in Ordering No. B (black), G (green), R (red) ø23.4, H19
③ Round		ASWHHM-B	2	Black only, ø23.4, H18.5
④ Color Insert	Polyacetal	TW-HC1*	5	Specify a color code in place * in Ordering No. B (black), G (green), R (red), Y (yellow), S (blue), W (white) W21, H18, D5
⑤ Illuminated Selector	AS resin O-ring: nitril rubber	ASLWDDY-*K	1	Specify a color code in place * in Ordering No. R (red), G (green), Y (yellow), A (amber), S (blue) W (white) ø20.6, H19.6
	Metal (zinc coated steel)	OLW-C	1	Used to protect flush pushbuttons from inadvertent operation. Weight: 36.5g 

APEM

Switches & Pilot Lights

Control Boxes

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Enabling Switches

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AUTO-ID

Flush Silhouette

ø16

ø22

ø30







Miniature

Pilot Lights

HW





TW

YW

Maintenance Parts		Shape	Material	Part No.	Quantity	Color Code
Lens (for pilot lights) 	① Round flush	AS resin ① ø23.6, H12.7 ② ø23.6, H12.7 ③ ø23.6, H20.0 ④ □24.7, H12.3	APW1LD-**-K	5	R (red), G (green), S (blue), A (amber), Y (yellow), W (white)	
	② Round flush (marking type)		APW11LD-**-K		R (red), G (green), S (blue), C (clear), A (amber), Y (yellow) (*1)	
	③ Round (Dome)		APW2LD-**-K		R (red), G (green), S (blue), A (amber), Y (yellow), W (white)	
	④ Square flush (UPQW)		APQW11LD-**-K		R (red), G (green), S (blue), C (clear), A (amber), Y (yellow) (*1)	
Lens (for illuminated pushbuttons) 	① Round Extended	AS resin ① ø23.6, H8.6 ② ø23.6, H8.6 ③ □24.8, H9.6	ALW2LD-**-K	5	R (red), G (green), S (blue), A (amber), Y (yellow), W (white)	
	② Round Extended (marking type)		ALW21LD-**-K		R (red), G (green), S (blue), C (clear), A (amber), Y (yellow) (*1)	
	③ Square Extended		ALQW21LD-**-K		R (red), G (green), S (blue), C (clear), A (amber), Y (yellow) (*1)	
	④ ø29 Mushroom	④ ø29.0/ø23.6 H12.7	AVLW3LD-R-K AVLW31LD-R-K	2	Marking type	
	⑤ ø40 Mushroom	⑤ ø40.0/ø23.6 H12.7	AVLW4LD-R-K AVLW41LD-R-K		Marking type	
Button 	① Flush	Polyacetal ① ø23.6, H3 (4.8) ② ø23.6, H9.5 (11.5) ③ □24.8, H1.5 (3.0) ④ □24.8, H8 (9.5) ⑤ ø29 H12.5 ⑥ ø40 H12.5 ⑦ ø29.0/ø23.6, H12.7 ⑧ ø40.0/ø23.6, H12.5 ⑨ ø40/ø23.6, H20.2 ⑩ ø40/ø23.6, H14	ABW1B-*	5	B (black), G (green), R (red), Y (yellow), S (blue), W (white)	
	② Extended		ABW2B-*			
	③ Square Flush		ABQW1B-*			
	④ Square Extended		ABQW2B-*			
	⑤ ø29 Mushroom		ABW3B-*	2		R (red), Y (yellow)
	⑥ ø40 Mushroom		ABW4B-*			R (red), Y (yellow)
	⑦ ø29 Mushroom pushlock turn reset		AVW3B-*			B (black), G (green), R (red), Y (yellow), S (blue), W (white)
	⑧ ø40 Mushroom pushlock turn reset		AVW4B-*			
	⑨ ø40 Mushroom push pull		AYW4B-*			
	⑩ ø40 Mushroom Pushlock Key Reset		AXW4B-R			
Marking Plate (for pilot lights) 	① Round flush	Acrylic ① ø17.2, H8.5 ② □22.0, H2.6	APW2B	5	White See B-265 for dimensions.	
	② Square flush (UPQW)		APQW1B			
Marking Plate (for illuminated pushbuttons) 	① Extended/Extended with full shroud	Acrylic ① ø17.0, H6.4 ② □21.0, H4.4 ③ ø15.7, H3.4	ALW2B	5	White See B-265 for dimensions.	
	② Square Extended		ALQW2B			
	③ ø29 Mushroom ø40 Mushroom		ALW3B			
Waterproof Lens 	① UPQW	Acrylic ① ø21.8, H7.1 ② ø20.6, H5.6	APW00LN	5	Not supplied with UPQW.	
	② ALQW		APW00L			

*1) Use a C (clear) lens for PW (pure white) illumination.

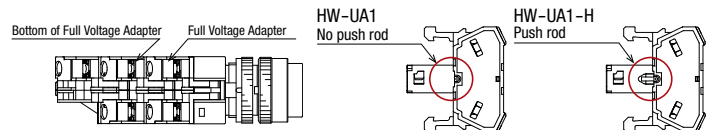
Maintenance Parts

Shape	Specification	Part No.	Quantity	Remarks
 Contact Block HW-U Weight: 11g (approx.)	1NO	HW-U10 HW-U10-MAU	1	Housing color: Blue, Push rod color: Green MAU has gold contacts
	1NC	HW-U01 HW-U01-MAU	1	Housing color: Reddish purple, Push rod color: Red MAU has gold contacts
	EM contact (early make contact)	HW-U10R HW-U10R-MAU	1	Housing color: Blue, Push rod color: Black MAU has gold contacts
	LB (late break contact)	HW-U01R HW-U01R-MAU	1	Housing color: Reddish purple, Push rod color: White MAU has gold contacts
	Dummy Block	Polyamide	HW-DB	10
 Full Voltage Adapter For illuminated unit (*1) (*2) HW-UA1 HW-UA1-H Weight: 11g (approx.)	For 1 contact only (see diagram below)	HW-UA1	1	Applicable model: Illuminated pushbuttons Illuminated selector switches Applicable load (LED lamp) LSRD-6, LSTD-6 (6V AC/DC) LSRD-1, LSTD-1 (12V AC/DC) LSRD-2, LSTD-2 (24V AC/DC) LSRD-H2 (100/120V AC/DC) LSRD-M2 (200/220V AC) LSRD-M4 (230/240V AC)
	For 2 or more contacts (see diagram below)	HW-UA1-H	1	
 Spare Key Length 39 Width 19.7 Thickness 1.8	Metal (nickel-plated brass)	TW-SK-0	2	Applicable model: Key selector switches Pushlock key reset
 Contact Block Plug	Polyamide	HW9Z-CBPL	10	Used to plug the hole in the center of contact block.


*1) For use as maintenance parts. Do not use for expansion or remodelling purposes.

*2) There are two types of full voltage adapter specifications. Please confirm your current contact configuration before placing an order.

- For configurations without a contact block mounted beneath the full voltage adapter (1 contact): Order model HW-UA1.
- For contact configurations with contact blocks mounted under the full voltage adapter (2 to 4 contacts): Order model HW-UA1-H.





LEDs

Shape/Dimensions (mm)	Operating Voltage	Current Draw		Part No.	Quantity	Base
		DC	AC			
 (20.5) 18.1 2.4 Voltage Indication Base (x2) Eyelet (x1)	AC/DC6V	10mA	14mA	LSRD-6	10	BA9S/13
	AC/DC12V	7mA	8mA	LSRD-1	10	
	AC/DC24V	7mA	8mA	LSRD-2	10	
	AC/DC100/120V	2mA	2mA	LSRD-H2	10	
	AC200/220V	—	2mA	LSRD-M2	10	
	AC230/240V	—	2mA	LSRD-M4	10	

- Only one color is available for LSRD so there are no codes to specify the color in the part no.
- Also available for purchase individually. Standard pricing differs in this case.
- When replacing a maintenance LED lamp with an LSRD lamp, the lens must also be changed (see B-260).
- When replacing the LED lamp, please check the part no. and voltage of the product currently in use.

Transformer

Quantity: 1

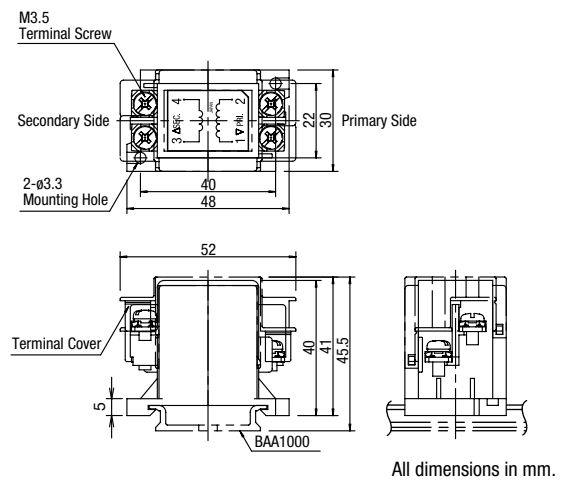
Shape	Rated Voltage	Operating Voltage Range	Part No.	Applicable Load
	100/110V AC	100/110V AC ±10%	TWR516	LSRD-6 (6V AC/DC, LED lamp)
	200/220V AC	200/220V AC ±10%	TWR526	
	380V AC	380V AC ±10%	TWR5386	
	400/440V AC	400/440V AC ±10%	TWR546	
	460/480V AC	460/480V AC ±10%	TWR5486	
	100/110V AC	100/110V AC ±10%	TWR512	LSRD-2 (24V AC/DC, LED lamp)
	200/220V AC	200/220V AC ±10%	TWR522	
	400/440V AC	400/440V AC ±10%	TWR542	

- Terminal cover (TWR-VL3) is installed on transformers as standard.
- Transformer is installed to one TW series unit.

Specifications

Part No.	TWR5□6	TWR5□2
Operating Voltage	100/110V AC 200/220V AC 380V AC 400/440V AC 460/480V AC (50/60Hz)	100/110V AC 200/220V AC 400/440V AC (50/60Hz)
Current Draw	2.4VA	
Rated Insulation Voltage	600V	
Insulation Resistance	100MΩ minimum (500V DC megger)	
Operating Temperature	-30 to +60°C (no freezing)	
Operating Humidity	35 to 85% RH (no condensation)	
Storage Temperature	-40 to +80°C (no freezing)	
Vibration Resistance	Damage limits: 30Hz, 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	
Dielectric Strength	2500V AC, 1 minute	
Terminal Screw	M3.5	
Applicable Wire	2mm ² maximum, 2 wires maximum	
Weight (approx.)	87g	

Dimensions



Accessories

Shape	Material	Part No.	Quantity	Dimensions (mm)
 Weight: 200g approx.	Aluminum Length: 1000mm	BAA1000	10	
 Weight: 15g approx.	Metal (zinc-plated steel) Applicable rail: BAA1000	BNL6	10	

 Safety Precautions

- Turn off the power to the TW series switches & pilot lights before starting installation, removal, wiring, maintenance, and starting installation, removing, 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 and current requirements. Tighten the terminal screws to the recommended tightening torque (see B-268). Failure to tighten terminal screws may cause overheat and fire.

Operating Instructions

Panel Mounting

Panel thickness adjustment ring is used for the TW series. To attach the TW series to the panel, follow the procedures below.

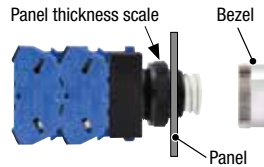
Panel Thickness Adjustment

See "Adjusting Panel Thickness" below.



Mounting the Unit onto the Panel

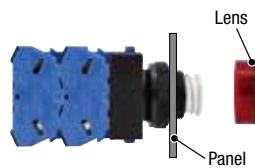
After adjusting the panel thickness, attach the unit to the panel with the panel thickness scale facing up, and attach the bezel. See "2. Installing the Round/Square Bezel" for installing the bezel.



Attach a nameplate before installing the bezel.

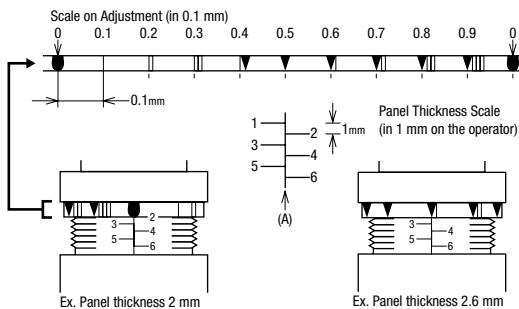
Attaching the Button, Lens, and Knob

See "3. Installing Buttons, Lenses, and Operators."



1. Adjusting Panel Thickness

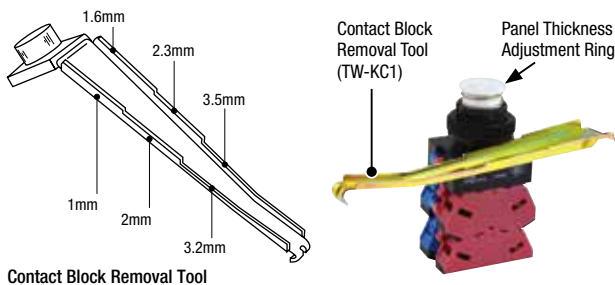
The panel thickness ring provides adjustment from 1 to 6 mm in 0.1-mm increments. Set the panel thickness to line A. Rotate the ring until the desired thickness indication around the periphery is aligned with line A, as shown below.



Note: When a nameplate or an anti-rotation ring is used, add 0.8 mm to the panel thickness.
Total thickness = Panel thickness + 0.8 mm (nameplate or anti-rotation ring thickness)

When the adjustment value is 1, 1.6, 2, 2.3, 3.2, or 3.5 mm.

Panel thickness can be adjusted easily to the values shown below by inserting the contact block removal tool between the adjustment ring and base.



2. Installing the Round/Square Bezel

Round bezel

All round bezels are screw-in type. Be sure to use the locking ring wrench (OR-14) to tighten the bezel to a torque of 2.0 N-m.

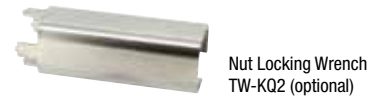


Use side B when mounting the units closely.

Square bezel

Install the TW series on the panel from the back, and follow the instructions below.

- (1) Insert the base plate from the front.
- (2) Insert the lock nut. For easy installation, use the nut locking wrench.
- (3) Mount the square bezel. The bezel will use the nut locking wrench. The bezel will snap onto the base plate.



Lock nut can be installed easily by using the nut locking wrench (TW-KQ2). Tightening torque is 2.0 N-m.

3. Installing Buttons, Lenses, and Operators

Pushbuttons

Flush/Extended/Square

Push in the button to install.



Mushroom

Button has threads. Turn clockwise to install the button.



Illuminated Pushbutton/Pilot Light Lens

Extended

Lens has threads. Turn clockwise to install the button.



Round/Flush

Lens has threads. Turn clockwise to install the button.



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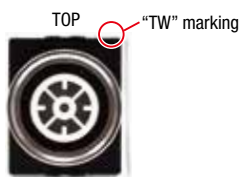
Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights

HW
TW
YW

Operating Instructions

Installing the Operator on Selector Switches

(1) Install the switch with TW marking facing upward, so that the operator can be installed on the switch in the correct direction.



(2) On non-illuminated models, install the color insert in the middle of operator. The color insert also serves to retain the operator.



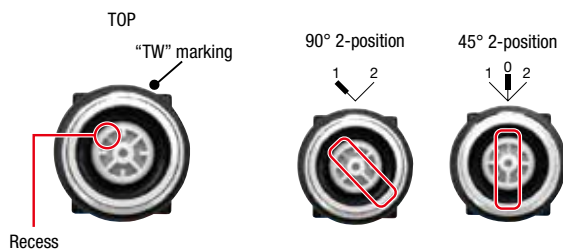
(3) On illuminated models, align the operator with the switch by confirming the TOP marking on the switch and also the switch operation. Then press in the operator into the switch.



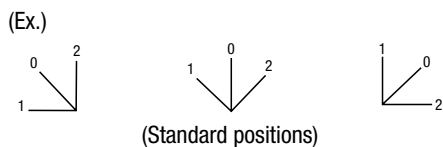
Installation of Selector Operators

The shaft of each non-illuminated selector switch has a recess to identify the direction to install the operator. Align the operator with the recess and press in the operator. Press a color insert (non-illuminated) into the operator (illuminated selector switches do not have a recess on the shaft).

Non-illuminated Selector Switches



In addition to the standard positions shown below, the non-illuminated operators can be installed 45° intervals.



Removing the Buttons and Lenses

Pushbuttons

Flush/Extended/Square

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



Mushroom

The button has threads. Turn the button counterclockwise to remove.



Illuminated Pushbutton/Pilot Light Lens

Extended

The lens has threads. Turn the lens counterclockwise to remove.



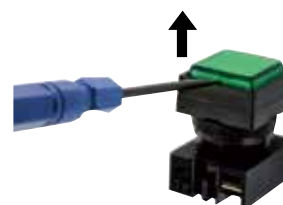
Round/Flush

The lens has threads. Turn the lens counterclockwise to remove.



Square Extended Lens

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



Notes

- The square lens of the illuminated pushbutton cannot be used without waterproof lens. Always use the waterproof lens.
- Be sure to use the marking plate even when marking is not required.

Non-illuminated Selector Switches



Insert a flat screwdriver with tip width 4.5 mm maximum into the recess under the color insert. Turn the screwdriver to push out the insert from the operator.



Pull out the operator sideways as shown in the left photo to remove the operator.

Illuminated Selector Switches



Insert a flat screwdriver with tip width 5 mm maximum into the recess opposite from the color insert and tilt. The operator is displaced slightly.

Operating Instructions

Removing the Contact Blocks/Full Voltage Adapters

Insert a flat screwdriver (4 to 6 mm) into the snap-fit latches of the contact block or full voltage adapter and lift to remove.



- Make sure to lift both latches. Contact blocks cannot be removed by lifting one latch only.
- Do not apply excessive force to the latches, otherwise damage may be caused.

⚠ Notes on Replacing Units

When replacing parts during maintenance (contact block, dummy block, full voltage adapter), make sure to reinstall them in the original positions. If changed, the product will not be covered under warranty.

Using a Ring Adapter

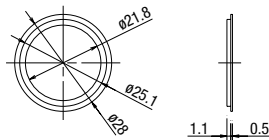
• HW9Z-A25

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

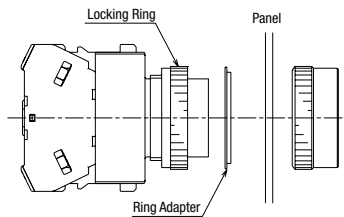


Nitryl Rubber

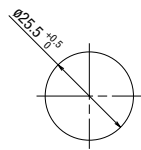
Dimensions



Installation

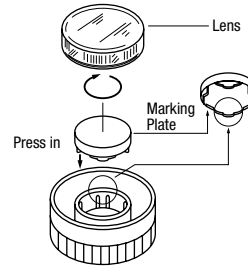


Panel Cut-out

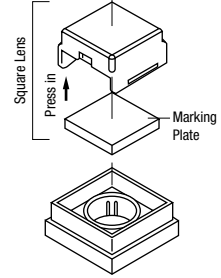


Marking Plate

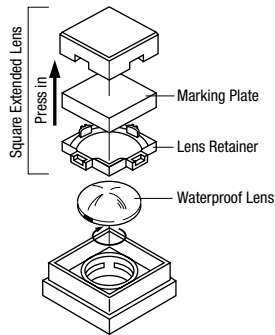
• Round Pilot Lights (Marking Type)



• Square Flush Pilot Lights (Marking Type)



• Square Extended Illuminated Pushbuttons



Marking Plate Engraving Area

Marking is possible on all square lens. To engrave, take out the marking plate inside the lens.

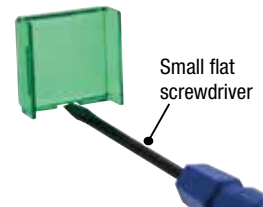
Round	Round (ø29/ø40)	Square Flush (Pilot Light)	Square Extended (Illuminated Pushbutton)

Note: The depth of the engraving must be within 0.5 mm.

Removing the Marking Plate

• Pilot Lights

Insert the screwdriver into the recess of the lens.



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ø22

ø30

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Pilot Lights

HW

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Flush Silhouette

ø16

ø22

ø30

Miniature

Pilot Lights

HW

TW

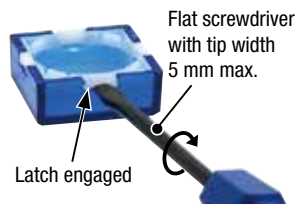
YW

Operating Instructions

Removing the Marking Plate

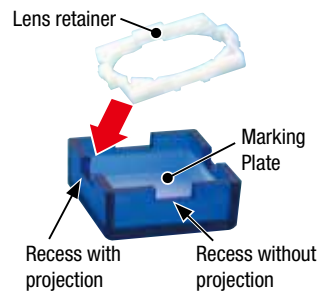
• Illuminated Pushbuttons

Remove the lens retainer by inserting a small flat screwdriver into a recess with a projection on the lens, and tilt lightly. Turn over the lens to remove the marking plate. Lightly tap the lens on a flat surface if necessary.



Installing the Lens Retainer

Install the marking plate into the lens, with flat surface facing the lens. Then install the lens retainer into the lens, by fitting a projection of the lens retainer into the recess with projection as shown at right.



Turn over and press as shown at right so that the lens retainer is installed securely.



⚠ Notes

The square extended lens of the illuminated pushbutton cannot be used without waterproof lens. Always use the waterproof lens. Be sure to use the marking plate even when it is not engraved.

• Installing Round Lens and Waterproof Lens



When installing or removing round lens of pilot lights and illuminated pushbuttons and waterproof lens of square extended pilot lights and illuminated pushbuttons, press the rubber part of the contact block removal tool onto the lens or waterproof lens for secure tightening and easy removal.

Replacement of LED Lamps

Lamps can be replaced by using the lamp holder tool (OR-55) from the front of the panel. (See B-257 for lamp holder tool.)

• How to Remove

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

To install, insert the lamp head into the lamp holder tool. Place the two pins on the lamp base to the grooves in the lamp socket. Inset the lamp and turn it clockwise.



Selector Switches

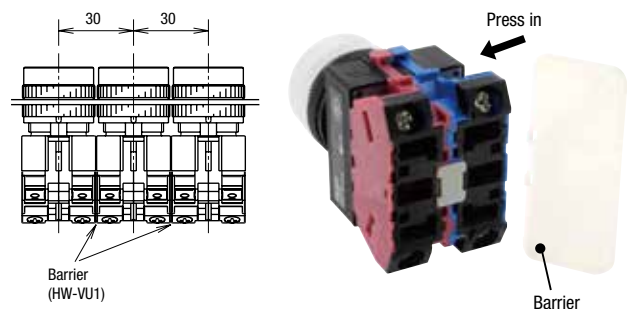
Turn the operator such as knob, lever, and key to each position accurately. Releasing halfway may cause the operator to return to the former position, or to get stuck between. On spring return two-way types, the center of operators may be misaligned slightly.

Key Selector Switches

Insert the key completely before turning. Failure to do so may cause failures.

Collective Mounting

When mounting the units closely in a horizontal row on 30-mm centers, use optional barriers (HW-VU1) to prevent interconnection between adjoining terminals. The barriers can be attached simply by pressing them onto the sides of contact blocks.



- Use a barrier (HW-VU1) between the contact blocks.
- Sufficient insulation distance cannot be obtained if barriers are not installed, or when other barriers such as HW-VG1 is used.
- When mounting multiple pilot lights (transformer type), use at ambient temperatures below 40°C.

Operating Instructions

Applicable Wiring

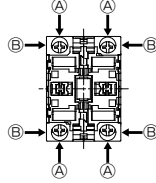
(1) Contact Block 0.3 to 3.5 mm² (solid wire ø0.5 to 2.0 mm)

Pushbutton, illuminated pushbutton, selector switch, key selector switch, illuminated selector switch

Ⓐ and Ⓑ show the wiring direction to the terminals.

<Contact Block>

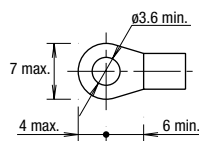
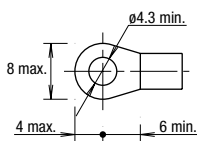
Terminal screws M3.5 (spring-up)



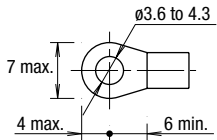
Applicable Crimping Terminal

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

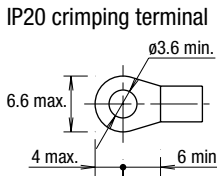
Crimping terminal for Ⓐ



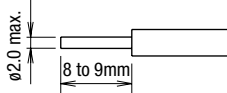
IP20 crimping terminal



Crimping terminal for Ⓑ



Solid wire



- Strip the wire insulation 8 to 9 mm from the end.
- Insert the wire until the insulation comes into contact with the terminal metal part.

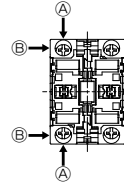
(2) Full Voltage Adapter 0.3 to 3.5 mm² (solid wire ø0.5 to 2.0 mm)

Illuminated pushbutton, illuminated selector switch

Ⓐ and Ⓑ show the wiring direction to the terminals.

<Full Voltage Adapter>

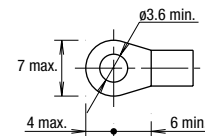
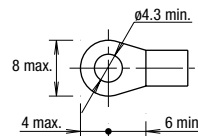
Terminal screws M3.5 (spring-up)



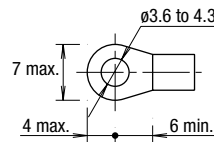
Applicable Crimping Terminal

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

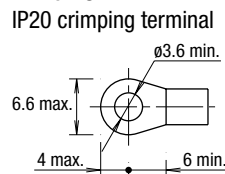
Crimping terminal for Ⓐ



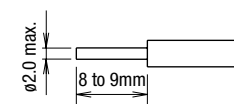
IP20 crimping terminal



Crimping terminal for Ⓑ



Solid wire



- Strip the wire insulation 8 to 9 mm from the end.
- Insert the wire until the insulation comes into contact with the terminal metal part.

(2)-1 IP20 Degree of Protection

The terminal of HW-U contact block and full voltage adapter has IP20 degree of protection. When IP20 is required for wiring, observe the followings.

Make sure to insert the crimping terminal or wire to the terminal straight and fully.

When using a crimping terminal

Use IP20 crimping terminals.

When using a solid wire

Strip the wire insulation 8 to 9 mm from the end and insert the wire to the terminal fully.

When using a stranded wire

Strip the wire insulation 8 to 9 mm from the end and insert the wire to the terminal fully. Make sure that the wires are not loosened.

Operating Instructions

(3) Pilot Light 0.3 to 2 mm² (solid wire ø0.5 to 1.6 mm)

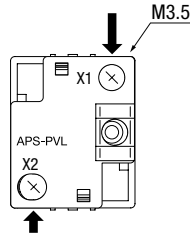
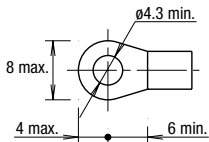
(Arrows show the wiring direction)

Applicable crimping terminal

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

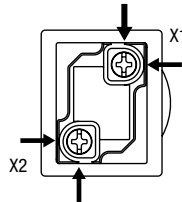
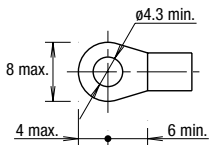
<Full Voltage Adapter>

6 to 120V AC/DC, 200 to 240V AC.
Terminal screws M3.5 (spring-up)

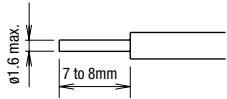


<Transformer>

380V AC and above.
Terminal screws M3.5 (spring-up)



Solid wire



- Strip the wire insulation 7 to 8 mm from the end.
- Insert the wire until the insulation comes into contact with the terminal metal part.

- For 6V AC/DC, 12V AC/DC, 24V AC/DC, 100/120V AC/DC, 200/220V AC, and 230/240V AC types, use with a terminal cover. Terminal connections are not IP20 compliant.
- The transformer unit has an integrated terminal cover, but the terminal connections are not IP20 compliant.
- For panel mounting pitch and crimp terminal selection, follow relevant standards to ensure adequate insulation distance.

Recommended Tightening Torque
Number of Wires

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

*1) Lamp terminal of illuminated pushbuttons and illuminated selector switches

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Operator Interfaces

Sensors

AUTO-ID

Flush Silhouette

ø16

ø22

ø30

Miniature

Pilot Lights

HW

TW

YW

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- (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

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