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IDEC

S3 CONNECT

FLUSH SILHOUETTE SWITCHES
ø22 SWITCHES & PILOT LIGHTS
CW SERIES



Push-in Switches & Pilot Lights

Smart design, simple wiring

IDEC CORPORATION

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S³ CONNECT

All thoughts focused on the same goal

Since the late 1970s, IDEC has continued to instill and pursue “Save and Safe”, as part of our corporate DNA. Along with the rapid advancement in machine intelligence and demands for environmental resistance and high reliability in recent years, we need to face societal issues such as shortage in workforce.
To solve these issues, we have set as our goals “Safe, Simple & Smart=S³ (S cube)”, aiming to provide society with products and services that will bring about greater innovation and lasting quality.

Safe

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

Simple

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

Smart

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

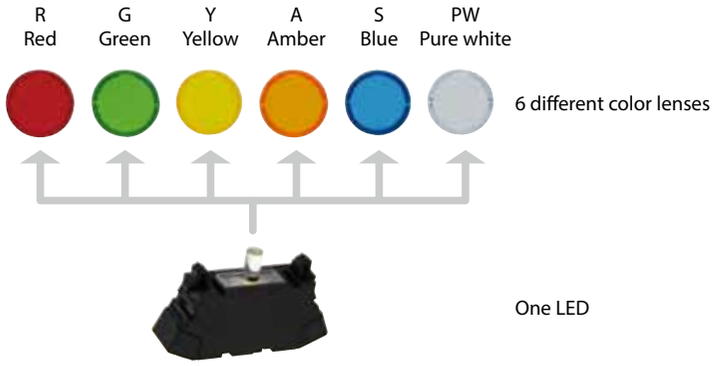


Useful NEW

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

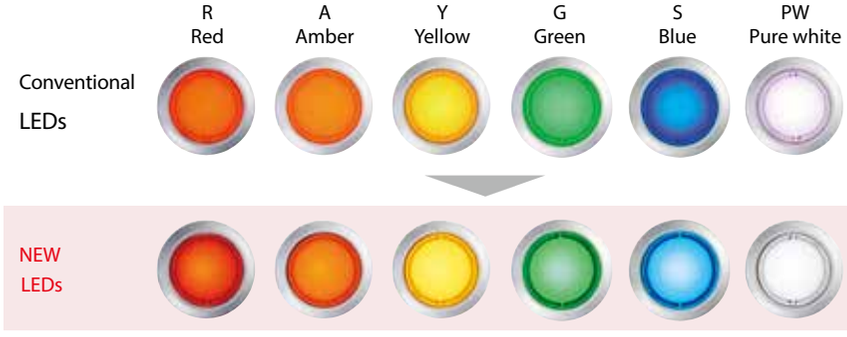
First in the industry
Six different colors with a single LED

Previously, 5 different color LEDs were required but with the new illuminated unit, only a single LED is used.
Only the lens needs to be replaced to change the illumination color.
The new LED reduces maintenance time, makes stock control easier, and is environmentally friendly.



High visibility with new LED

Brighter and clearer compared to conventional LEDS



ISO3864-4
Safety color compliant

(Corresponding colors: R (Red), Y (Yellow), G (Green), PW (Pure white))

Safety colors are defined with ISO standards.
The bright and clears colors are suited for emergency situations

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Push-in

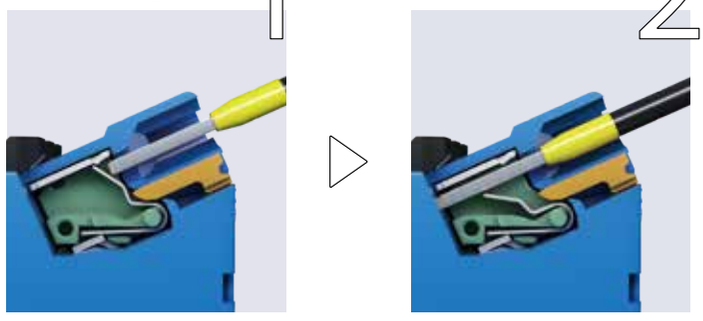
Smart Simple

Simple wiring for greater work efficiency

Ferrules and solid wires can be connected simply by push-in insertion, without a screwdriver. (*1)
To remove, a flat-blade screwdriver is inserted in a simple two-action process.
Since wiring can be performed regardless of operators' skill level, wiring time is reduced.

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

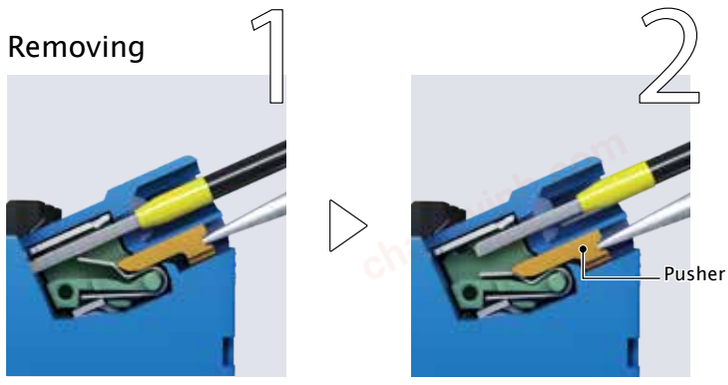
Connecting



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

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

Removing



Hold down the pusher with a flat-blade screwdriver.

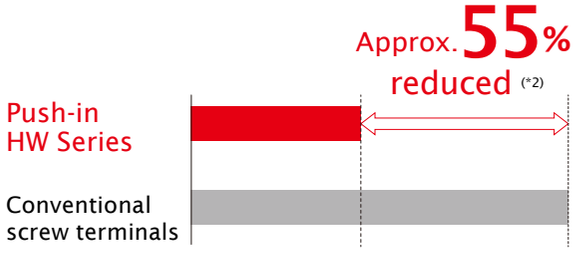
While holding down the pusher, pull out the wire. Release the flat-blade screwdriver.

Smart

Time saving and efficient

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

[Conditions]
Push-in: Insert wire with ferrule.
Screw terminals: With screw loosened, insert wire, then tighten with electric driver.



*2) As of IDEC research (as of January 2020)

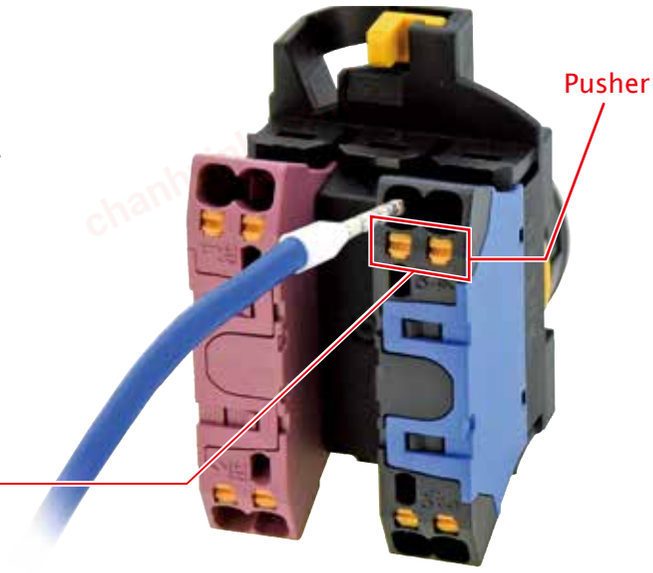
Safe

Reliable and easy

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

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

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



Smart Simple

Wiring procedure comparison

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

*1) When ferrule is used.

Conventional screw terminal

Remove screw → Pass wire through crimping terminal → Tighten screw → Check

Push-in terminal (*1)

Insert wire → Simple one-step operation → Pull lightly to confirm

Smart

No additional tightening needed

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

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Product Upgrade

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

Contact block depth reduced

Smart

Saves space inside panel and enables downsizing of equipment.

Pushbuttons

Single contact block

Panel depth

36.4mm



NEW

Double contact block

Panel depth

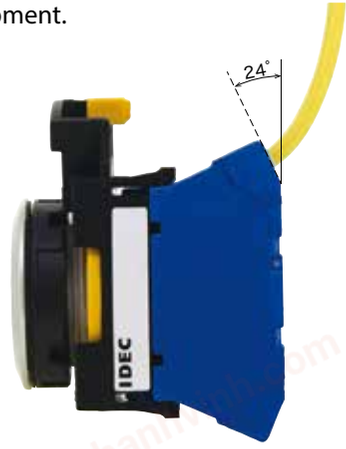
59.6mm



Angled Connections

Smart

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



NEW

4-contact configuration available with double contact blocks

Double contact blocks



Single contact blocks





Double contact blocks available for all models including pushbuttons, illuminated pushbuttons, selector switches, and key selector switches.

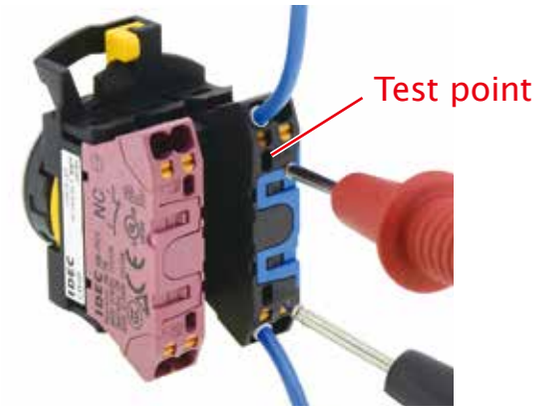
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Added Value

Our aim is to create products that enable customers to experience the utmost usability.

Test point

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



Sub-Assembled Units

Sub-assembled units can be ordered for flexible use, such as sudden changes in design.



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Flush Silhouette Switches
ø22 CW Series Push-in Switches & Pilot Lights

Products
- Pushbuttons: see page 10
- Illuminated pushbuttons: see page 13
- Pilot lights: see page 16
- Selector Switches: see page 18
- Key Selector Switches: see page 23

• See website for details on approvals and standards.

Contact Ratings

Rated Insulation Voltage	300V
Rated Thermal Current	10A

Rated Operating Voltage and Current by Utilization Category

[Specification 1] (*1)

Rated Operating Voltage (Ue)			24V	48V	50V	110V	220V
Rated Operating Current (Ie)	AC 50/60 Hz	Resistive Load (AC-12)	10A	—	10A	10A	6A
		Inductive Load (AC-15)	10A	—	7A	5A	3A
	DC	Resistive Load (DC-12)	10A	5A	—	2.2A	1.1A
		Inductive Load (DC-13)	5A	2A	—	1.1A	0.6A

• The operational current represents the classification by making and breaking currents (IEC60947-5-1).

[Specification 2] (*2)

Rated Operating Voltage (Ue)			24V	48V	50V	110V	220V
Rated Operating Current (Ie)	AC 50/60 Hz	Resistive Load (AC-12)	5A	—	5A	5A	3A
		Inductive Load (AC-15)	5A	—	3.5A	2.5A	1.5A
	DC	Resistive Load (DC-12)	5A	2.5A	—	1.1A	0.55A
		Inductive Load (DC-13)	2.5A	1A	—	0.55A	0.3A

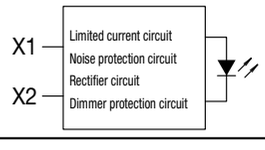
• The operational current represents the classification by making and breaking currents (IEC60947-5-1).
• Minimum applicable load: 3V AC/DC, 5 mA (applicable range may vary with operating conditions)
*1) See electrical life specification on page 9.
UL, c-UL rating: A300, CCC rating: A300, TUV rating: A300

Degree of Protection (Table 1)

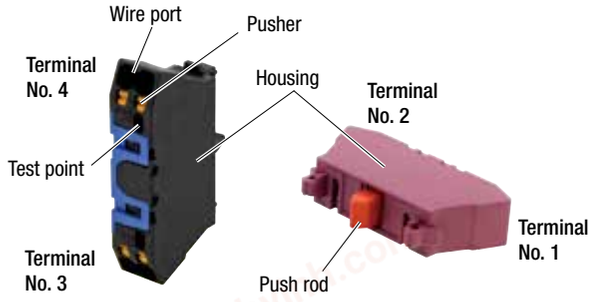
Type	IP65	IP66	IP67	UL Type 4X
Illuminated Pushbutton	Yes	No (*2)	No (*2)	No (*2)
Pilot lights	Yes	Yes	No	Yes
Pushbutton	Yes	No (*2)	No (*2)	No (*2)
Selector Switch	Yes	Yes	Yes	Yes
Key Selector Switch	Yes	Yes	No	Yes

*2) Yes when used with rubber boot (CW9Z-D11, -D12)

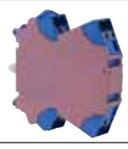
LED Specifications

Rated Insulation Voltage		250V		
Rated Operating Voltage		6V AC/DC	12V AC/DC	24V AC/DC
Operating Voltage Range		6V AC/DC ±10%	12V AC/DC ±10%	24V AC/DC ±10%
LED Module Part No.		**CW-PAQ2**	**CW-PAQ3**	**CW-PAQ4**
Current Draw	AC	16 mA	7 mA	6 mA
	DC	12 mA	6 mA	6 mA
Life (reference value)		Approx. 30,000 hours (the illuminance is reduced to 50% of the initial intensity when used on complete DC at 25°C.)		
Internal Circuit				

Push-in Contact Block (HW-P)



HW-P10R (NO contact) HW-P01 (NC contact)

	Single contact block		Double contact block		
Contact	1NO	1NC	2NO	2NC	1NO-1NC
Part No.	**HW-P10R**	**HW-P01**	**HW-PW2R0**	**HW-PW02**	**HW-PW1R1**
					
Housing	Blue / Black	Purple red	Blue / Black	Purple red	Purple red / Blue
Push Rod	Black	Red	Black	Red	Gray
Contact No.	3-4	1-2	1st stage: 13-14 2nd stage: 23-24	1st stage: 11-12 2nd stage: 21-22	1st stage: 13-14 2nd stage: 21-22
Weight (approx.)	8g		16g		

Specifications

Operating Temperature		Non-illuminated: –25 to +60°C (no freezing) LED illuminated: –25 to +55°C (no freezing)
Operating Humidity		45 to 85% RH (no condensation)
Storage Temperature		–40 to +80°C (no freezing)
Contact Resistance		50 mΩ maximum (initial value)
Insulation Resistance		100 MΩ minimum (500V DC megger)
Overvoltage Category		II (IEC60664-1)
Impulse Withstand Voltage		2.5kV (IEC60664-1 / IEC60947-5-1)
Pollution Degree		3 (IEC60947-5-1)
Vibration Resistance		Operating extremes: 5 to 55Hz, amplitude 0.5 mm
		Damage limits: 30 Hz, amplitude 1.5 mm
Shock Resistance		Operating extremes: 100 m/s^2
		Damage limits: 1000 m/s^2
Mechanical Life (minimum operations)		Pushbutton/Illuminated pushbutton Momentary: 2,000,000 (single contact block) 1,000,000 (double contact block) Maintained: 250,000(single contact block) 100,000(double contact block) Selector switch: 250,000 (single contact block) 100,000 (double contact block) Key selector switch: 250,000 (single contact block) 100,000 (double contact block)
Electrical Life (*1) (minimum operations)	Specification 1	Single contact block: 50,000 Double contact block: 25,000
	Specification 2	Single contact block: 100,000 Double contact block: 50,000
Degree of Protection		Panel front: See Degree of Protection table on page 8 Terminal: IP20 (IEC 60529)
Electrical Shock Protection		Class II (IEC61140)
Terminal Style		Push-in terminal
Bezel Material		Polyamide
Recommended Tightening Torque for Locking Ring		1.2 N·m

*1) Switching frequency
Momentary: 1800 operations/h
Maintained: 900 operations/h

Direct Opening of Key Selector Switch

Applicable Type	2-position (3NC)	3-position (2NC)
Minimum Operator Angle for Direct Opening Action	90°	45°
Minimum Operator Torque for Direct Opening Action	0.2 N·m	0.3 N·m
Maximum Operator Angle	90°	45°

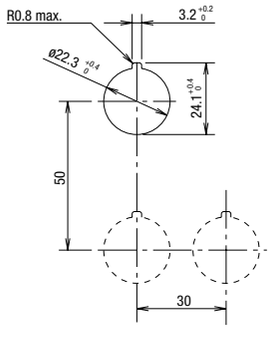
Weight (Examples)

Weight (approx.)	Illuminated Pushbutton	: 38g (CW1L-M1P20Q4, 2 contacts)
	Pushbutton	: 37g (CW1B-M1P30, 3 contacts)
		: 61g (CW1B-M1P33, 6 contacts)
	Pilot light	: 24g (CW1P)
	Selector Switch	: 40g (CW1S-2P30, 3 contacts)
		: 64g (CW1S-2P33, 6 contacts)
	Key Selector Switch	: 49g (CW1K-2AP30, 3 contacts)
		: 73g (CW1K-2AP33, 6 contacts)

Mounting Hole Layout

(Dimensions in mm)

Panel Cut (IEC60947-5-1)



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

Pushbuttons

Assembled



Package Quantity: 1

Operator Style	Bezel Color	Operation	Contact Configuration	Part No. (Ordering No.)	⑤ Button Color Code
Round Flush 	Black	Momentary	1NO	CW1B-M1P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
			1NC	CW1B-M1P01⑤	
			1NO-1NC	CW1B-M1P11⑤	
			2NO	CW1B-M1P20⑤	
			2NC	CW1B-M1P02⑤	
			3NO	CW1B-M1P30⑤	
	Metallic	Momentary	1NO	CW4B-M1P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
			1NC	CW4B-M1P01⑤	
			1NO-1NC	CW4B-M1P11⑤	
			2NO	CW4B-M1P20⑤	
			2NC	CW4B-M1P02⑤	
			3NO	CW4B-M1P30⑤	
Round Extended 	Black	Momentary	1NO	CW1B-M2P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
			1NC	CW1B-M2P01⑤	
			1NO-1NC	CW1B-M2P11⑤	
			2NO	CW1B-M2P20⑤	
	Metallic	Momentary	1NO	CW4B-M2P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
			1NC	CW4B-M2P01⑤	
			1NO-1NC	CW4B-M2P11⑤	
			2NO	CW4B-M2P20⑤	

- Pushbuttons with 1 contact block contain 2 dummy blocks. Pushbuttons with 2 contact blocks contain 1 dummy block.
- For maintained pushbuttons, select from sub-assembled units.

• For other specifications, select from sub-assembled units (P11).

Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

CW ① B - ② ③ P ④ ⑤

①Bezel color code
1: Black
4: Metallic

②Operation code
M: Momentary
A: Maintained

③Operator style code
1: Round Flush
2: Round Extended

④Contact configuration code
10: NO
01: NC
11: 1NO1NC
12: 1NO2NC
20: 2NO
02: 2NC
21: 2NO1NC
22: 2NO2NC
30: 3NO
03: 3NC

⑤Button color code
(see table above)

*For available assembled products, see table above.

Sub-Assembled Operator unit

CW ① B - ② ③ ⑤ - PS

①Bezel color code
1: Black
4: Metallic

②Operation code
M: Momentary
A: Maintained

③Operator style code
1: Round Flush
2: Round Extended

⑤Button color code
(see table above)

Sub-Assembled Contact unit

CW - CN P 10

④Contact configuration code
(See page 11)

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Pushbuttons

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 10 for available assembled products.

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



<Sub-Assembled> Ordering No.

Package Quantity: 1

Name / Shape	Operation	Contact Configuration	<Reference> Assembled Part No. Example	⑤ Button Color Code
Round Flush (Black) (Metallic)	Momentary	1NO	CW①B-M1P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	CW①B-M1P01⑤	
		1NO-1NC	CW①B-M1P11⑤	
		1NO-2NC	CW①B-M1P12⑤	
		2NO	CW①B-M1P20⑤	
		2NC	CW①B-M1P02⑤	
		2NO-1NC	CW①B-M1P21⑤	
		2NO-2NC	CW①B-M1P22⑤	
		3NO	CW①B-M1P30⑤	
		3NC	CW①B-M1P03⑤	
	Maintained	1NO	CW①B-A1P10⑤	
		1NC	CW①B-A1P01⑤	
		1NO-1NC	CW①B-A1P11⑤	
		1NO-2NC	CW①B-A1P12⑤	
		2NO	CW①B-A1P20⑤	
		2NC	CW①B-A1P02⑤	
		2NO-1NC	CW①B-A1P21⑤	
		2NO-2NC	CW①B-A1P22⑤	
		3NO	CW①B-A1P30⑤	
		3NC	CW①B-A1P03⑤	
Round Extended (Black) (Metallic)	Momentary	1NO	CW①B-M2P10⑤	B (black) G (green) R (red) Y (yellow) S (blue) W (white)
		1NC	CW①B-M2P01⑤	
		1NO-1NC	CW①B-M2P11⑤	
		1NO-2NC	CW①B-M2P12⑤	
		2NO	CW①B-M2P20⑤	
		2NC	CW①B-M2P02⑤	
		2NO-1NC	CW①B-M2P21⑤	
		2NO-2NC	CW①B-M2P22⑤	
		3NO	CW①B-M2P30⑤	
		3NC	CW①B-M2P03⑤	
	Maintained	1NO	CW①B-A2P10⑤	
		1NC	CW①B-A2P01⑤	
		1NO-1NC	CW①B-A2P11⑤	
		1NO-2NC	CW①B-A2P12⑤	
		2NO	CW①B-A2P20⑤	
		2NC	CW①B-A2P02⑤	
		2NO-1NC	CW①B-A2P21⑤	
		2NO-2NC	CW①B-A2P22⑤	
		3NO	CW①B-A2P30⑤	
		3NC	CW①B-A2P03⑤	

Operator Unit	
Name / Shape	Part No.(Ordering No.)
Round Flush (Black) (Metallic)	CW①B-M1⑤-PS
	CW①B-A1⑤-PS
Round Extended (Black) (Metallic)	CW①B-M2⑤-PS
	CW①B-A2⑤-PS

Contact unit		
Shape	Contact Configuration	Part No. (Ordering No.)
	1NO	CW-CNP10
	1NC	CW-CNP01
	1NO-1NC	CW-CNP11
	1NO-2NC	CW-CNP12
	2NO	CW-CNP20
	2NC	CW-CNP02
	2NO-1NC	CW-CNP21
	2NO-2NC	CW-CNP22
	3NO	CW-CNP30
	3NC	CW-CNP03

- Specify a bezel color in place of ① in the part no.

Color Code	Bezel Color
1	Black
4	Metallic

- Specify a button color code in place of ⑤ in the part no.
  B (black), G (green), R (red), Y (yellow), S (blue), W (white)

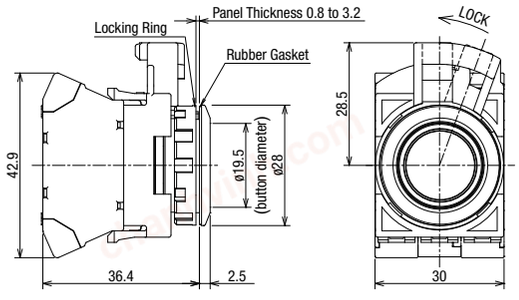
Part No. (Ordering No.)/ mounting positions of contact units: page 30.

Pushbuttons Dimensions

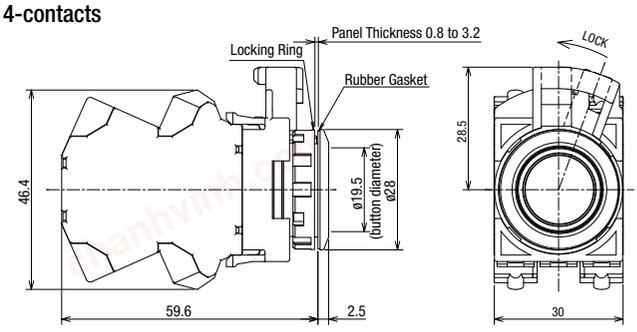
All dimensions in mm

Round Flush

1 to 3-contacts

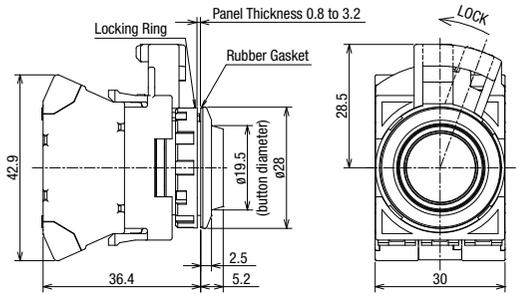


4-contacts

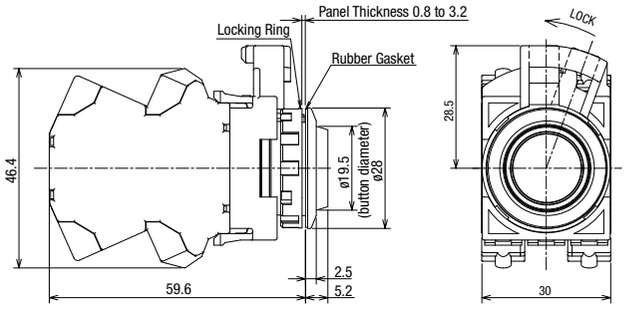


Round Extended

1 to 3-contacts



4-contacts



• See page 9 for mounting hole layout.

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Illuminated Pushbuttons (Round Flush / Round Extended)

Assembled



Package Quantity: 1

Operator Style	Bezel Color	Operation	Rated Operating Voltage	Contact Configuration	Part No. (Ordering No.)	⑥ Illumination Color Code
Round Flush 	Black	Momentary	12V AC/DC	1NO	CW1L-M1P10Q3⑥	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
			24V AC/DC	1NO	CW1L-M1P10Q4⑥	
				1NC	CW1L-M1P01Q4⑥	
				1NO-1NC	CW1L-M1P11Q4⑥	
				2NO	CW1L-M1P20Q4⑥	
	Metallic	Momentary	12V AC/DC	1NO	CW4L-M1P10Q3⑥	
			24V AC/DC	1NO	CW4L-M1P10Q4⑥	
				1NC	CW4L-M1P01Q4⑥	
				1NO-1NC	CW4L-M1P11Q4⑥	
				2NO	CW4L-M1P20Q4⑥	
		Maintained	24V AC/DC	1NO	CW4L-A1P10Q4⑥	
				1NC	CW4L-A1P01Q4⑥	
				1NO-1NC	CW4L-A1P11Q4⑥	
				2NO	CW4L-A1P20Q4⑥	
Round Extended 	Black	Momentary	12V AC/DC	1NO	CW1L-M2P10Q3⑥	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
			24V AC/DC	1NO	CW1L-M2P10Q4⑥	
				1NC	CW1L-M2P01Q4⑥	
				1NO-1NC	CW1L-M2P11Q4⑥	
				2NO	CW1L-M2P20Q4⑥	
	Metallic	Momentary	24V AC/DC	1NO	CW4L-M2P10Q4⑥	
				1NC	CW4L-M2P01Q4⑥	
				1NO-1NC	CW4L-M2P11Q4⑥	
				2NO	CW4L-M2P20Q4⑥	

- Specify an illumination color code in place of ⑥ in the part no.
- Illuminated pushbuttons are built-in with an LED unit. For maintenance LED units, see page 32.
- Illuminated pushbuttons with 1 contact block contain1 dummy block.
- Printed film can be inserted. For size details, see page 36.

• For other specifications, select from sub-assembled units (page 14).

Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

CW ① L - ② ③ P ④ ⑤ ⑥

①Bezel color code
1: Black
4: Metallic

②Operation code
M: Momentary
A: Maintained

③Operator style
1: Round Flush
2: Round Extended

④Contact configuration code
10: NO
01: NC
11: 1NO1NC
20: 2NO
02: 2NC
22: 2NO2NC

⑤Rated operating voltage
Q2: 6V AC/DC
Q3: 12V AC/DC
Q4: 24V AC/DC

⑥Illumination color code
(see table above)

*For available assembled products, see table above.

Sub-Assembled Operator unit

CW ① L - ② ③ ⑥ - PS

①Bezel color code
1: Black
4: Metallic

②Operation code
M: Momentary
A: Maintained

③Operator style code
1: Round Flush
2: Round Extended

⑥Illumination color code
(see table above)

Sub-Assembled Contact Unit (Illuminated unit)

CW - CN P ④ ⑤

④Contact configuration code
10: NO
01: NC
11: 1NO1NC
20: 2NO
02: 2NC
22: 2NO2NC

⑤Rated operating voltage
Q2: 6V AC/DC
Q3: 12V AC/DC
Q4: 24V AC/DC

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Illuminated Pushbuttons (Round Flush / Round Extended)

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 13 for available assembled products.

Assembled = Operator unit + Contact unit for illuminated units (Contact block, LED unit, dummy block (1 block), connecting unit)



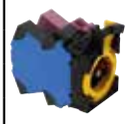
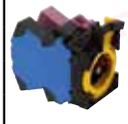



Package Quantity: 1

Name / Shape	Operation	Contact Configuration	<Reference> Assembled Part No. Example	⑥ Illumination Color Code
Round Flush (Black) 	Momentary	1NO	CW①L-M1P10Q4⑥	R G Y A S PW
		1NC	CW①L-M1P01Q4⑥	
		1NO-1NC	CW①L-M1P11Q4⑥	
		2NO	CW①L-M1P20Q4⑥	
		2NC	CW①L-M1P02Q4⑥	
		2NO-2NC	CW①L-M1P22Q4⑥	
(Metallic) 	Maintained	1NO	CW①L-A1P10Q4⑥	
		1NC	CW①L-A1P01Q4⑥	
		1NO-1NC	CW①L-A1P11Q4⑥	
		2NO	CW①L-A1P20Q4⑥	
		2NC	CW①L-A1P02Q4⑥	
		2NO-2NC	CW①L-A1P22Q4⑥	
Round Extended (Black) 	Momentary	1NO	CW①L-M2P10Q4⑥	R G Y A S PW
		1NC	CW①L-M2P01Q4⑥	
		1NO-1NC	CW①L-M2P11Q4⑥	
		2NO	CW①L-M2P20Q4⑥	
		2NC	CW①L-M2P02Q4⑥	
		2NO-2NC	CW①L-M2P22Q4⑥	
(Metallic) 	Maintained	1NO	CW①L-A2P10Q4⑥	
		1NC	CW①L-A2P01Q4⑥	
		1NO-1NC	CW①L-A2P11Q4⑥	
		2NO	CW①L-A2P20Q4⑥	
		2NC	CW①L-A2P02Q4⑥	
		2NO-2NC	CW①L-A2P22Q4⑥	

<Sub-Assembled> Ordering No.

Operator Unit	
Name / Shape	Part No. (Ordering No.)
Round Flush (Black) 	CW①L-M1⑥-PS
	CW①L-A1⑥-PS
Round Extended (Black) 	CW①L-M2⑥-PS
	CW①L-A2⑥-PS

Contact Unit for illuminated units		
Shape	Contact Configuration	Part No. (Ordering No.)
	1NO	CW-CNP10⑤
	1NC	CW-CNP01⑤
	1NO-1NC	CW-CNP11⑤
	2NO	CW-CNP20⑤
	2NC	CW-CNP02⑤
	2NO-2NC	CW-CNP22⑤
	1NO	CW-CNP10⑤
	1NC	CW-CNP01⑤
	1NO-1NC	CW-CNP11⑤
	2NO	CW-CNP20⑤
	2NC	CW-CNP02⑤
	2NO-2NC	CW-CNP22⑤

- Specify a bezel color in place of ① in the part no.

Color Code	Bezel Color
1	Black
4	Metallic

- Specify an illumination color code in place of ⑥ in the Part No.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)
- The assembled part no. above is when the operating voltage is 24V AC/DC.

- Specify an operating voltage code in place of ⑤ in the part no. Select from the table below.

Operating voltage code	Operating voltage
Q2	6V AC/DC
Q3	12V AC/DC
Q4	24V AC/DC

Part No. (Ordering No.)/ mounting positions of contact units: page 31.

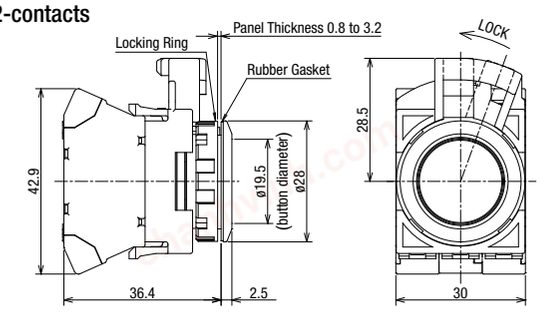
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Illuminated Pushbuttons (Round Flush / Round Extended) Dimensions

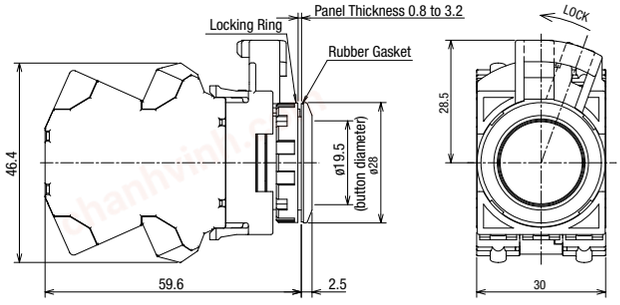
All dimensions in mm

Round Flush

1 to 2-contacts

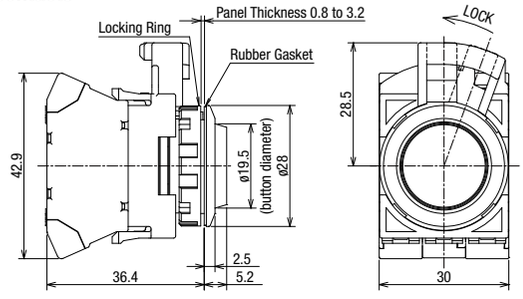


3 to 4-contacts

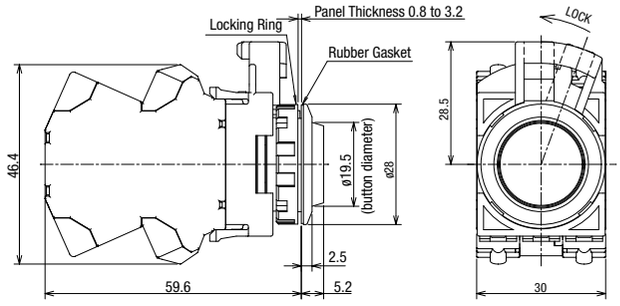


Round Extended

1 to 2-contacts



3 to 4-contacts



• See page 9 for mounting hole layout.

Pilot Lights (Round Flush / Round Extended)

Assembled



Package Quantity: 1

Operator Style	Bezel Color	Rated Operating Voltage	Part No. (Ordering No.)	④ Illumination Color Code
Round Flush  Black bezel  Metallic bezel	Black	12V AC/DC	CW1P-1PQ3④	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
		24V AC/DC	CW1P-1PQ4④	
	Metallic	12V AC/DC	CW4P-1PQ3④	
		24V AC/DC	CW4P-1PQ4④	
Round Extended  Black bezel  Metallic bezel	Black	12V AC/DC	CW1P-2PQ3④	**R** (red) **G** (green) **Y** (yellow) **A** (amber) **S** (blue) **PW** (pure white)
		24V AC/DC	CW1P-2PQ4④	
	Metallic	12V AC/DC	CW4P-2PQ3④	
		24V AC/DC	CW4P-2PQ4④	

- Specify an illumination color code in place of ④ in the part no.
- Pilot lights are built-in with an LED unit. For maintenance LED units, see page 32.
- Pilot lights contain 2 dummy blocks.
- Printed film can be inserted. For size details, see page 36.

- For other specifications, select from sub-assembled units (P17).

Part No. Example

Assembled and sub-assembled unit

Assembled Part No. Example

CW ① P - ② P ③ ④

①Bezel color code
1: Black
4: Metallic

②Operator style code
1: Round Flush
2: Round Extended

④Illumination color code (see table above)

⑤Rated operating voltage
Q2: 6V AC/DC
Q3: 12V AC/DC
Q4: 24V AC/DC

*For available assembled products, see table above.

Sub-Assembled Operator unit

CW ① P - ② ④ - PS

①Bezel color code
1: Black
4: Metallic

②Operator style code
1: Round Flush
2: Round Extended

④Illumination color code (see table above)

Sub-Assembled Contact unit

CW - CN P ③

⑤Rated operating voltage
Q2: 6V AC/DC
Q3: 12V AC/DC
Q4: 24V AC/DC

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Pilot Lights (Round Flush / Round Extended)

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 16 for available assembled products.

Assembled = Operator unit + Contact unit for pilot light (LED unit, dummy block, connecting unit)





<Sub-Assembled> Ordering No. — Package Quantity: 1

Name / Shape	Rated Operating Voltage (AC/DC)	<Reference> Assembled Part No. Example	④ Illumination Color Code
Round Flush (Black) 	6V	CW①P-1PQ2④	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
	12V	CW①P-1PQ3④	
(Metallic) 	24V	CW①P-1PQ4④	
Round Extended (Black) 	6V	CW①P-2PQ2④	R (red) G (green) Y (yellow) A (amber) S (blue) PW (pure white)
	12V	CW①P-2PQ3④	
(Metallic) 	24V	CW①P-2PQ4④	

Operator Unit		Contact Unit for Pilot Lights		
Name / Shape	Part No. (Ordering No.)	Shape	Rated Operating Voltage	Part No. (Ordering No.)
Round Flush (Black) 	CW①P-1④-PS		6V	CW-CNPQ2
			12V	CW-CNPQ3
(Metallic) 			24V	CW-CNPQ4
Round Extended (Black) 	CW①P-2④-PS		6V	CW-CNPQ2
			12V	CW-CNPQ3
(Metallic) 			24V	CW-CNPQ4

- Specify a bezel color in place of ① in the part no.

Color Code	Bezel Color
1	Black
4	Metallic

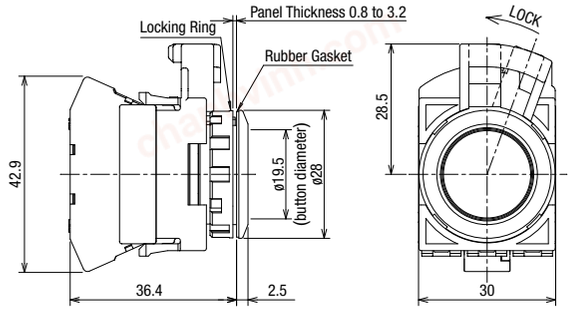
- See page 31 for contact details and mounting position.

- Specify an illumination color code in place of ④ in the part no.
  R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

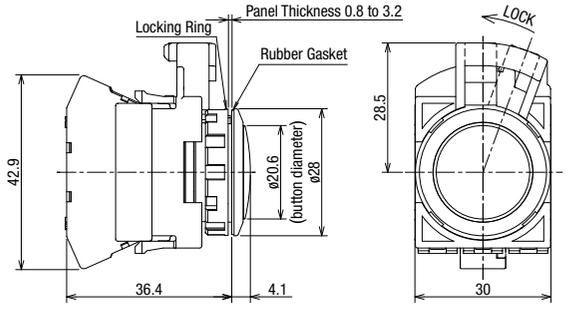
Dimensions

All dimensions in mm

Round Flush



Round Extended



- See page 9 for mounting hole layout.

Part No. (Ordering No.)/ mounting positions of contact units: page 31.

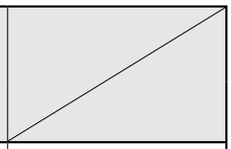
Selector Switches (Knob Operator)

Assembled



Lever operators are available as sub-assembled units only.

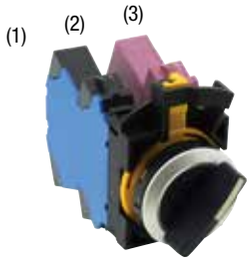
Package Quantity: 1

Shape	No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 2	Operator Position:	① Bezel Color	Maintained 	
Knob Operator (Black) 	90° 2-position	1NO (10)	(1)	NO		●		1: Black 4: Metallic	CW①S-2P10	—
			(2)	—	Dummy					
			(3)	—	Dummy					
		1NO-1NC (11)	(1)	NO		●			CW①S-2P11	—
			(2)	—	Dummy					
			(3)	NC	●					
		2NO (20)	(1)	NO		●			CW①S-2P20	—
			(2)	—	Dummy					
			(3)	NO		●				
(Metallic) 	No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 0	Operator Position: 2	① Bezel Color	Maintained 	Spring return two-way 
	45° 3-position	2NO (20)	(1)	NO	●			1: Black 4: Metallic	CW①S-3P20	CW①S-33P20
			(2)	—	Dummy					
			(3)	NO			●			
		2NO-1NC (21)	(1)	NO	●				CW①S-3P21	—
			(2)	NO	●		●			
			(3)	NC	▬	▬				
		2NO-1NC (21N1)	(1)	NO	●				—	CW①S-33P21N1
			(2)	NC		●				
			(3)	NO			●			

• Specify a bezel color in place of ① in the part no.
• Selector switches with 1 contact block contain 2 dummy blocks. Selector switches with 2 contact blocks contain 1 dummy block.
Note: Turn the operator to each position accurately.

• For other contact configuration or operation, select from sub-assembled units (page 19 to 21).

Contact Block Mounting Position



Selector Switches (Knob / Lever Operator) 2-position

Sub-Assembled When ordering, specify the sub-assembled ordering no. See page 18 for available assembled products.

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



90° 2-position

Package Quantity: 1

<Reference> Assembled Part No.								
No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			Operator position code	
		Mounting Position	Contact	1	2		Maintained 1 2	
							<Reference> Assembled Part No.	
90° 2-position	1NO (10)	(1)	NO		●		CW①S-2③P10	
		(2)	—	Dummy				
		(3)	—	Dummy				
	1NC (01)	(1)	—	Dummy			CW①S-2③P01	
		(2)	—	Dummy				
		(3)	NC	●				
	1NO-1NC (11)	(1)	NO		●		CW①S-2③P11	
		(2)	—	Dummy				
		(3)	NC	●				
	2NO (20)	(1)	NO		●		CW①S-2③P20	
		(2)	—	Dummy				
		(3)	NO		●			
	2NC (02)	(1)	NC	●			CW①S-2③P02	
		(2)	—	Dummy				
		(3)	NC	●				
	2NO-1NC (21)	(1)	NO		●		CW①S-2③P21	
		(2)	NO		●			
		(3)	NC	●				
	1NO-2NC (12)	(1)	NO		●		CW①S-2③P12	
		(2)	NC	●				
		(3)	NC	●				
	3NO (30)	(1)	NO		●		CW①S-2③P30	
		(2)	NO		●			
		(3)	NO		●			
	3NC (03)	(1)	NC	●			CW①S-2③P03	
		(2)	NC	●				
		(3)	NC	●				
	2NO-2NC (22)	(1)	NONC	NO		●	CW①S-2③P22	
				NC	●			
		(2)	—	Dummy				
		(3)	NONC	NO		●		
				NC	●			
	4NO (40)	(1)	2NO	NO		●	CW①S-2③P40	
				NO		●		
		(2)	—	Dummy				
		(3)	2NO	NO		●		
				NO		●		

Sub-Assembled Ordering No.

Operator Unit Ordering No.		Contact Unit	
Name / Shape	Operator position code: Maintained 1 2 / Part No. (Ordering No.)	Contact Configuration (Code)	Part No. (Ordering No.)
Knob Operator (Black) 	CW①S-2③-PS	1NO (10)	CW-CNP10
		1NC (01)	CW-CNP01
(Metallic) 		1NO-1NC (11)	CW-CNP11
		2NO (20)	CW-CNP20
Lever operator (Black) 		2NC (02)	CW-CNP02
		2NO-1NC (21)	CW-CNP21
		1NO-2NC (12)	CW-CNP12
(Metallic) 		3NO (30)	CW-CNP30
		3NC (03)	CW-CNP03
		2NO-2NC (22)	CW-CNP22
		4NO (40)	CW-CNP40

- Specify a bezel color in place of ① in the part no.
- Specify an operator style code in place of ③ in the part no.

①Bezel color code

Code	Color
1	Black
4	Metallic

③Operator style code

Code	Shape
Blank	Knob
L	Lever

- For part no. other than maintained position, see Part No. Example on page 21.
- For contact block mounting position, see page 30.
- White indicator on black body

Note: Turn the operator to each position accurately.

Part No. (Ordering No.)/ mounting positions of contact units: page 30.

Selector Switches (Knob / Lever Operator) 3-position

Sub-Assembled When ordering, specify the sub-assembled ordering no. See page 18 for available assembled products.

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



45° 3-position

Sub-Assembled Ordering No.

Package Quantity: 1

<Reference> Assembled Part No.								
No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			Operator position code	
		Mounting Position	Contact	1	0	2	Maintained 1 0 2	<Reference> Assembled Part No.
45° 3-position	1NO-1NC (11)	(1)	NO	●				CW①S-3③P11
		(2)	—	Dummy				
		(3)	NC	■				
	1NO-1NC (11N1)	(1)	NC			■		CW①S-3③P11N1
		(2)	—	Dummy				
		(3)	NO			●		
	1NO-1NC (11N2)	(1)	NO	●				CW①S-3③P11N2
		(2)	NC		●			
		(3)	—	Dummy				
	1NO-1NC (11N3)	(1)	—	Dummy				CW①S-3③P11N3
		(2)	NC		●			
		(3)	NO			●		
	1NO-1NC (11N4)	(1)	—	Dummy				CW①S-3③P11N4
		(2)	NO	●		●		
		(3)	NC	■				
	2NO (20)	(1)	NO	●				CW①S-3③P20
		(2)	—	Dummy				
		(3)	NO			●		
	2NO (20N1)	(1)	—	Dummy				CW①S-3③P20N1
		(2)	NO	●		●		
		(3)	NO			●		
	2NC (02)	(1)	NC			■		CW①S-3③P02
		(2)	—	Dummy				
		(3)	NC	■				
	2NC (02N1)	(1)	—	Dummy				CW①S-3③P02N1
		(2)	NC		●			
		(3)	NC	■				
	2NO-1NC (21)	(1)	NO	●				CW①S-3③P21
		(2)	NO	●		●		
		(3)	NC	■				
	2NO-1NC (21N1)	(1)	NO	●				CW①S-3③P21N1
		(2)	NC		●			
		(3)	NO			●		
	1NO-2NC (12)	(1)	NO	●				CW①S-3③P12
		(2)	NC		●			
		(3)	NC	■				
	1NO-2NC (12N1)	(1)	NC			■		CW①S-3③P12N1
		(2)	NO	●		●		
		(3)	NC	■				
	3NO (30)	(1)	NO	●				CW①S-3③P30
		(2)	NO	●		●		
		(3)	NO			●		

Operator Unit Ordering No.		
Name / Shape	Operator position code: Maintained 1 0 2	Part No. (Ordering No.)
Knob Operator (Black) 		CW①S-3③-PS
(Metallic) 		
Lever operator (Black) 		
(Metallic) 		

Contact Unit	
Contact Configuration (Code)	Part No. (Ordering No.) 
1NO-1NC (11)	CW-CNP11
1NO-1NC (11N1)	CW-CNP11N1
1NO-1NC (11N2)	CW-CNP11N2
1NO-1NC (11N3)	CW-CNP11N3
1NO-1NC (11N4)	CW-CNP11N4
2NO (20)	CW-CNP20
2NO (20N1)	CW-CNP20N1
2NC (02)	CW-CNP02
2NC (02N1)	CW-CNP02N1
2NO-1NC (21)	CW-CNP21
2NO-1NC (21N1)	CW-CNP21N1
1NO-2NC (12)	CW-CNP12
1NO-2NC (12N1)	CW-CNP12N1
3NO (30)	CW-CNP30

- Specify a bezel color in place of ① in the part no.
- Specify an operator style code in place of ③ in the part no.

- For Part No. other than maintained position, see Part No. Example on page 21.
- For contact block mounting position, see page 30.
- White indicator on black body

Note: Turn the operator to each position accurately.

①Bezel color code

Code	Color
1	Black
4	Metallic

③Operator style code

Code	Shape
Blank	Knob
L	Lever

Part No. (Ordering No.)/ mounting positions of contact units: page 30.

Selector Switches (Knob / Lever Operator) 3-position

45° 3-position

Sub-Assembled Ordering No.

Package Quantity: 1

<Reference> Assembled Part No.

No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 0	Operator Position: 2	Operator position code: Maintained 1 0 2 — <Reference> Assembled Part No.
45° 3-position	3NC (03)	(1)	NC			●	CW①S-3③P03
		(2)	NC		●		
		(3)	NC	●			
	2NO-2NC (22)	(1)	NONC NO	●			CW①S-3③P22
			NONC NC			●	
		(2)	—	Dummy			
		(3)	NONC NO			●	
			NONC NC	●			
	4NO (40)	(1)	2NO NO	●			CW①S-3③P40
			2NO NO	●			
		(2)	—	Dummy			
		(3)	2NO NO			●	
			2NO NO			●	
	2NO-2NC (22N2)	(1)	2NC NC			●	CW①S-3③P22N2
			2NC NC			●	
		(2)	—	Dummy			
		(3)	2NO NO			●	
			2NO NO			●	

Operator Unit Ordering No.

Name / Shape	Operator position code: Maintained 1 0 2 — Part No. (Ordering No.)
Knob Operator (Black) 	CW①S-3③-PS
(Metallic) 	
Lever operator (Black) 	
(Metallic) 	

Contact Unit

Contact Configuration (Code)	Part No. (Ordering No.) 
3NC (03)	CW-CNP03
2NO-2NC (22)	CW-CNP22
4NO (40)	CW-CNP40
2NO-2NC (22N2)	CW-CNP22N2

- Specify a bezel color in place of ① in the part no.
- Specify an operator style code in place of ③ in the part no.

- For Part No. other than maintained position, see Part No. Example below.
- For contact block mounting position, see page 30.
- White indicator on black body

Note: Turn the operator to each position accurately.

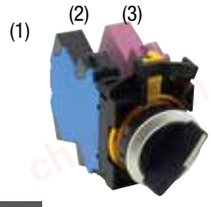
①Bezel color code

Code	Color
1	Black
4	Metallic

③Operator style code

Code	Shape
Blank	Knob
L	Lever

Contact Block Mounting Position



Part No. Example / Part No. Development

Assembled and sub-assembled unit

Assembled

CW ① S - ② ③ P ④

①Bezel Color
1: Black
4: Metallic

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

③Operator style code
Blank: Knob Operator
L: Lever Operator

④Contact configuration code (see page 19 to 21)

* For available assembled products, see table on page 18.

Sub-Assembled Operator unit

CW ① S - ② ③ - PS

①Bezel color
1: Black
4: Metallic

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

③Operator style code
Blank: Knob Operator
L: Lever Operator

②Operator position code

(90° -2-position)	
2 Maintained 	21 Spring Return from Right 

(45° -3-position)			
3 Maintained 	31 Spring Return from Right 	32 Spring Return from left 	33 Spring Return two way 

Sub-Assembled Contact unit

CW - CN P ④

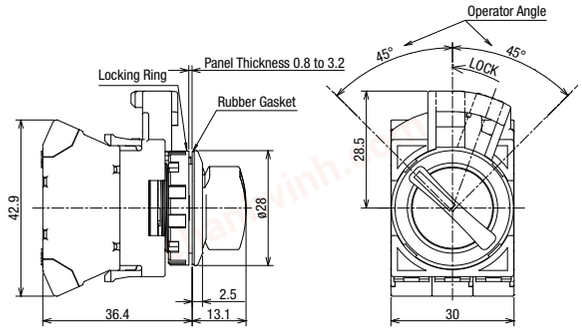
④Contact configuration code (see page 19 to 21)

Selector Switches (Knob / Lever Operator) Dimensions

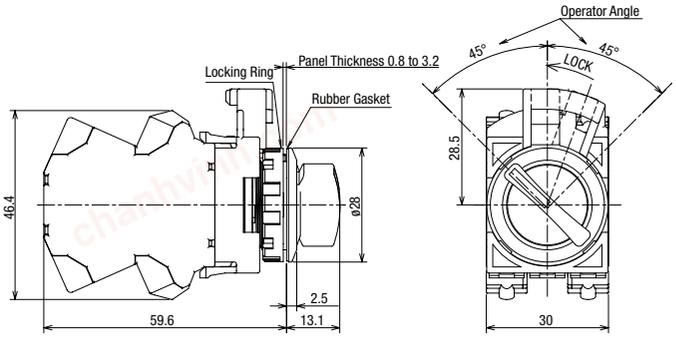
All dimensions in mm

Knob Operator

1 to 3-contacts

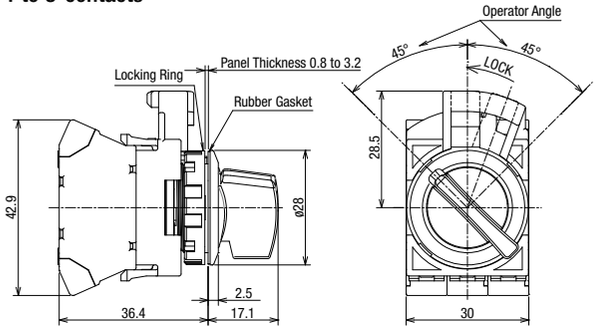


4-contacts

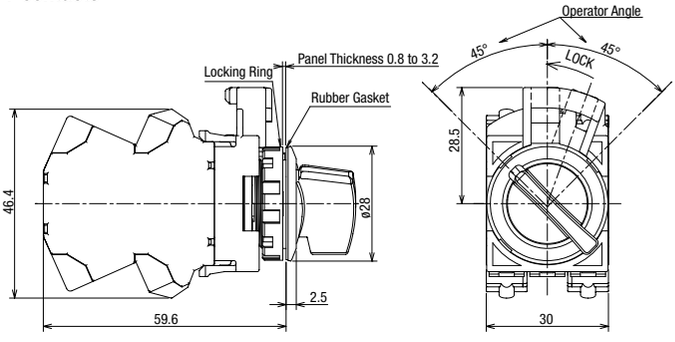


Lever Operator

1 to 3-contacts



4-contacts



• See page 9 for mounting hole layout.

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Key Selector Switches

Assembled



Package Quantity: 1

Shape	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			① Bezel Color	Maintained
			Mounting Position	Contact	1	2			
CW1K Black  Metallic 	90° 2-position	1NO (10)	(1)	NO		●		1: Black 4: Metallic	CW①K-2AP10
			(2)	—	Dummy				
			(3)	—	Dummy				
		1NO-1NC (11)	(1)	NO		●			CW①K-2③P11
			(2)	—	Dummy				
			(3)	NC	●				
		2NO (20)	(1)	NO		●			CW①K-2③P20
			(2)	—	Dummy				
			(3)	NO		●			
		2NO-1NC (21)	(1)	NO		●			CW①K-2③P21
			(2)	NO		●			
			(3)	NC	●				
	No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			① Bezel Color	Maintained
			Mounting Position	Contact	1	0	2		
	45° 3-position	2NO-1NC (21)	(1)	NO	●			1: Black 4: Metallic	CW①K-3③P21
			(2)	NO	●		●		
			(3)	NC	▬				

- For contact block mounting position, see the figure on the right.
- Two keys are supplied. Key cylinder material: Metal
- Key selector switches with 1 contact block contain 2 dummy blocks. Key selector switches with 2 contact blocks contain 1 dummy block.
- Specify a bezel color in place of ① in the part no.
- Specify a key removal position in place of ③ in the part no.
- Besides the standard key (key number 0H), six other keys are also available. See page 27 for details.

- For other contact configuration or operation, select from sub-assembled units (P24 to 26).

③ Key removal position

90° 2-position

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

- ①②: Key retained position ❶❷: Key retained position

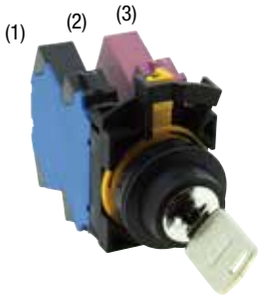
45° 3-position

Key Retained Position		
A: Key removable in all positions 	B: Key removable at left / center 	H: Key removable at right 

- ⓪①②: Key retained position ❶❶❷ : Key retained position

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

Contact Block Mounting Position



Key Selector Switches

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 23 for available assembled products.

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



90° 2-position

Sub-Assembled Ordering No.

Package Quantity: 1

<Reference> Assembled Part No.										Operator Unit Ordering No.		Contact Unit	
No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact	Operator Position: 1	Operator Position: 2		① Bezel Color	Operator position code: Maintained 1 2 / <Reference> Assembled Part No.		Name / Shape	Operator position code: Maintained 1 2 / Part No. (Ordering No.)	Contact Configuration (Code)	Part No. (Ordering No.)
90° 2-position	1NO (10)	(1)	NO		●		1: Black 4: Metallic	CW①K-2③P10		Black  Metallic 	CW①K-2③⑤-PS	1NO (10)	CW-CNP10
		(2)	—	Dummy									
		(3)	—	Dummy									
	1NC (01)	(1)	—	Dummy				CW①K-2③P01				1NC (01)	CW-CNP01
		(2)	—	Dummy									
		(3)	NC	●									
	1NO-1NC (11)	(1)	NO		●			CW①K-2③P11				1NO-1NC (11)	CW-CNP11
		(2)	—	Dummy									
		(3)	NC	●									
	2NO (20)	(1)	NO		●			CW①K-2③P20				2NO (20)	CW-CNP20
		(2)	—	Dummy									
		(3)	NO		●								
	2NC (02)	(1)	NC	●				CW①K-2③P02				2NC (02)	CW-CNP02
		(2)	—	Dummy									
		(3)	NC	●									
	2NO-1NC (21)	(1)	NO		●			CW①K-2③P21				2NO-1NC (21)	CW-CNP21
		(2)	NO		●								
		(3)	NC	●									
	1NO-2NC (12)	(1)	NO		●			CW①K-2③P12				1NO-2NC (12)	CW-CNP12
		(2)	NC	●									
		(3)	NC	●									
	3NO (30)	(1)	NO		●			CW①K-2③P30				3NO (30)	CW-CNP30
		(2)	NO		●								
		(3)	NO		●								
	3NC (03)	(1)	NC	●				CW①K-2③P03				3NC (03)	CW-CNP03
		(2)	NC	●									
		(3)	NC	●									
	2NO-2NC (22)	(1)	NONC	NO		●		CW①K-2③P22				2NO-2NC (22)	CW-CNP22
				NC	●								
		(2)	—	Dummy									
		(3)	NONC	NO		●							
				NC	●								
	4NO (40)	(1)	2NO	NO		●		CW①K-2③P40				4NO (40)	CW-CNP40
				NO		●							
		(2)	—	Dummy									
		(3)	2NO	NO		●							
				NO		●							

- Two keys are supplied. Key cylinder material: Metal
- For part no. other than maintained position, see Part No. Example on page 27.
- Specify a bezel color in place of ① in the part no.
- Specify a desired key removal position in place of ③ in the part no.
- Specify a key number in place of ⑤ in the part no.

See page 27 Part No. Example for details.

- 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.
  Key retained positions are also available. See page 27 for details.

Part No. (Ordering No.)/ mounting positions of contact units: page 30.

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Key Selector Switches

Sub-Assembled

When ordering, specify the sub-assembled ordering no. See page 23 for available assembled products.

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



45° 3-position

Sub-Assembled Ordering No.

Package Quantity: 1

<Reference> Assembled Part No.									Operator Unit Ordering No.		Contact Unit	
No. of Positions	Contact Configuration (Code)	Contact Block		Operator Position			① Bezel Color	Operator position code	Name / Shape	Operator position code	Contact Configuration (Code)	Part No. (Ordering No.)
		Mounting Position	Contact	1	0	2		Maintained (1 0 2) <Reference> Assembled Part No.		Maintained (1 0 2) Part No. (Ordering No.)		
45° 3-position	1NO-1NC (11)	(1)	NO	●			1: Black 4: Metallic	CW①K-3③P11	Black  Metallic 	CW①K-3③⑤-PS	1NO-1NC (11)	CW-CNP11
		(2)	—	Dummy								
		(3)	NC	▬								
	1NO-1NC (11N1)	(1)	NC			▬		CW①K-3③P11N1			1NO-1NC (11N1)	CW-CNP11N1
		(2)	—	Dummy								
		(3)	NO			●						
	1NO-1NC (11N2)	(1)	NO	●				CW①K-3③P11N2			1NO-1NC (11N2)	CW-CNP11N2
		(2)	NC		●							
		(3)	—	Dummy								
	1NO-1NC (11N3)	(1)	—	Dummy				CW①K-3③P11N3			1NO-1NC (11N3)	CW-CNP11N3
		(2)	NC		●							
		(3)	NO			●						
	1NO-1NC (11N4)	(1)	—	Dummy				CW①K-3③P11N4			1NO-1NC (11N4)	CW-CNP11N4
		(2)	NO	●		●						
		(3)	NC	▬								
	2NO (20)	(1)	NO	●				CW①K-3③P20			2NO (20)	CW-CNP20
		(2)	—	Dummy								
		(3)	NO			●						
	2NO (20N1)	(1)	—	Dummy				CW①K-3③P20N1			2NO (20N1)	CW-CNP20N1
		(2)	NO	●		●						
		(3)	NO			●						
	2NC (02)	(1)	NC			▬		CW①K-3③P02			2NC (02)	CW-CNP02
		(2)	—	Dummy								
		(3)	NC	▬								
	2NC (02N1)	(1)	—	Dummy				CW①K-3③P02N1			2NC (02N1)	CW-CNP02N1
		(2)	NC		●							
		(3)	NC	▬								
	2NO-1NC (21)	(1)	NO	●				CW①K-3③P21			2NO-1NC (21)	CW-CNP21
		(2)	NO	●		●						
		(3)	NC	▬								
	2NO-1NC (21N1)	(1)	NO	●				CW①K-3③P21N1			2NO-1NC (21N1)	CW-CNP21N1
		(2)	NC		●							
		(3)	NO			●						
	1NO-2NC (12)	(1)	NO	●				CW①K-3③P12			1NO-2NC (12)	CW-CNP12
		(2)	NC		●							
		(3)	NC	▬								
	1NO-2NC (12N1)	(1)	NC			▬		CW①K-3③P12N1			1NO-2NC (12N1)	CW-CNP12N1
		(2)	NO	●		●						
		(3)	NC	▬								
	3NO (30)	(1)	NO	●				CW①K-3③P30			3NO (30)	CW-CNP30
		(2)	NO	●		●						
		(3)	NO			●						
	3NC (03)	(1)	NC			▬		CW①K-3③P03			3NC (03)	CW-CNP03
		(2)	NC		●							
		(3)	NC	▬								

- Two keys are supplied. Key cylinder material: Metal
- For part no. other than maintained position, see Part No. Example on page 27.
- Specify a bezel color in place of ① in the part no.
- Specify a desired key removal position in place of ③ in the part no.
- Specify a key number in place of ⑤ in the part no.

} See page 27 Part No. Example for details.

- 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. Key retained positions are also available. See page 27 for details.

Part No. (Ordering No.)/ mounting positions of contact units: page 30.

Key Selector Switches

Sub-Assembled When ordering, specify the sub-assembled ordering no. See page 23 for available assembled products.

45° 3-position

<Reference> Assembled Part No.

No. of Positions	Contact Configuration (Code)	Contact Block: Mounting Position	Contact Block: Contact		Operator Position: 1	Operator Position: 0	Operator Position: 2	① Bezel Color	Operator position code: Maintained (1 0 2) / <Reference> Assembled Part No.
45° 3-position	2NO-2NC (22)	(1)	NONC	NO	●			1: Black 4: Metallic	CW①K-3③P22
				NC		▬			
		(2)	—		Dummy				
		(3)	NONC	NO			●		
				NC	▬				
	4NO (40)	(1)	2NO	NO	●				CW①K-3③P40
				NO	●				
		(2)	—		Dummy				
		(3)	2NO	NO			●		
				NO			●		
	2NO-2NC (22N2)	(1)	2NC	NC		▬			CW①K-3③P22N2
				NC		▬			
		(2)	—		Dummy				
		(3)	2NO	NO			●		
				NO			●		

Sub-Assembled Ordering No. Package Quantity: 1

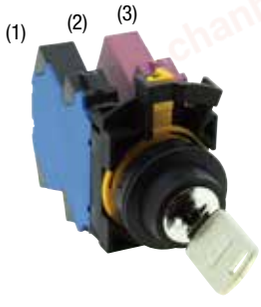
Operator Unit Ordering No.		Contact Unit	
Name / Shape	Operator position code: Maintained (1 0 2) / Part No. (Ordering No.)	Contact Configuration (Code)	Part No. (Ordering No.)
Black 	CW①K-3③⑤-PS	2NO-2NC (22)	CW-CNP22
Metallic 		4NO (40)	CW-CNP40
		2NO-2NC (22N2)	CW-CNP22N2

- Two keys are supplied. Key cylinder material: Metal
- For part no. other than maintained position, see Part No. Example on page 27.
- Specify a bezel color in place of ① in the part no.
- Specify a desired key removal position in place of ③ in the part no.
- Specify a key number in place of ⑤ in the part no.

See page 27 Part No. Example for details.

- 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.
  Key retained positions are also available. See page 27 for details.

Contact Block Mounting Position



Part No. (Ordering No.)/ mounting positions of contact units: page 30.

Key Selector Switches

Part No. Example / Part No. Development

Assembled and sub-assembled unit

Assembled Part No. Example

CW ① K - ② ③ P ④ - ⑤

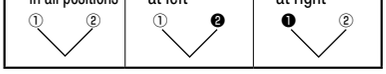
*For available assembled products, see table on page 23.

①Bezel color code
- **1**: Black
- **4**: Metallic

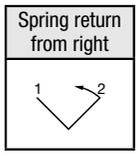
②Operator position code
- **2**: 90°- 2-position, maintained
- **21**: 90°- 2-position, spring return from right
- **3**: 45°- 3-position, maintained
- **31**: 45°- 3-position, spring return from right
- **32**: 45°- 3-position, spring return from left
- **33**: 45°- 3-position, spring return two way

③Key removal position code

(90° -2-position)		
A: Key removable in all positions	**B**: Key removable at left	**C**: Key removable at right

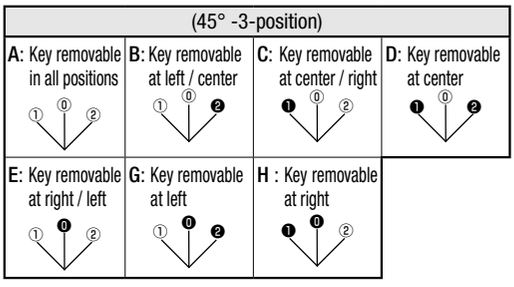


- Operator Position: ⓪①②: Key removal position ❶❷ : Key retained position

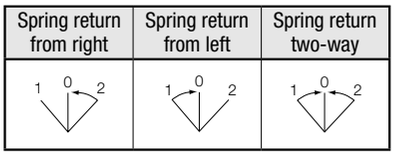


- The key cannot be removed at the return position.

(45° -3-position)			
A: Key removable in all positions	**B**: Key removable at left / center	**C**: Key removable at center / right	**D**: Key removable at center
E: Key removable at right / left	**G**: Key removable at left	**H** : Key removable at right	



- Operator Position: ⓪①②: Key removal position ❶❷: Key retained position



- The key cannot be removed at the return position.

Sub-Assembled Operator unit

CW ① K - ② ③ ⑤ - PS

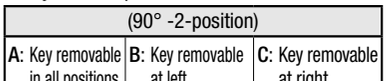
①Bezel color code
- **1**: Black
- **4**: Metallic

②Operator position code
- **2**: 90°- 2-position, maintained
- **21**: 90°- 2-position, spring return from right
- **3**: 45°- 3-position, maintained
- **31**: 45°- 3-position, spring return from right
- **32**: 45°- 3-position, spring return from left
- **33**: 45°- 3-position, spring return two way

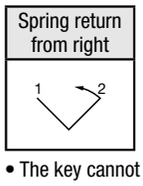
⑤Key number code
- **Blank:** Standard key (0H)
- **1H to 2H**: Reversible key
- **3H to 6H**: Non-reversible key

④Key removal position code

(90° -2-position)		
A: Key removable in all positions	**B**: Key removable at left	**C**: Key removable at right

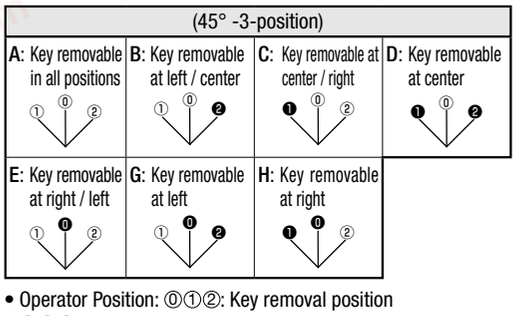


- Operator Position: ⓪①②: Key removal position ❶❷: Key retained position

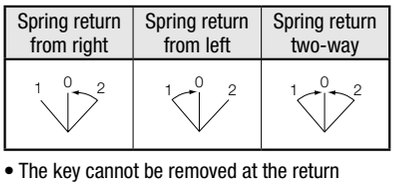


- The key cannot be removed at the return position.

(45° -3-position)			
A: Key removable in all positions	**B**: Key removable at left / center	**C**: Key removable at center / right	**D**: Key removable at center
E: Key removable at right / left	**G**: Key removable at left	**H**: Key removable at right	



- Operator Position: ⓪①②: Key removal position ❶❷: Key retained position



- The key cannot be removed at the return position.

Sub-Assembled Contact unit

CW - CN P ④

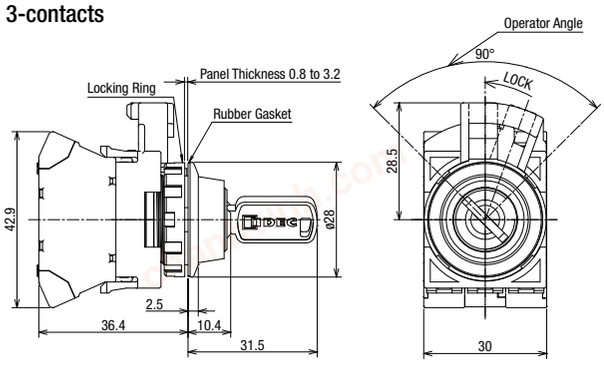
④Contact configuration code
(see page 24 to 26)

Key Selector Switches Dimensions

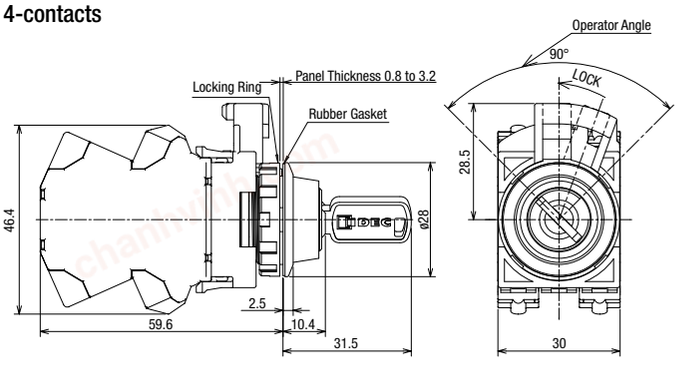
All dimensions in mm

Key Removal Position 2-position

1 to 3-contacts

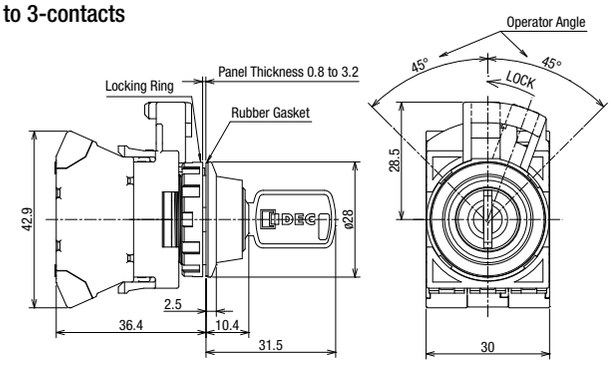


4-contacts

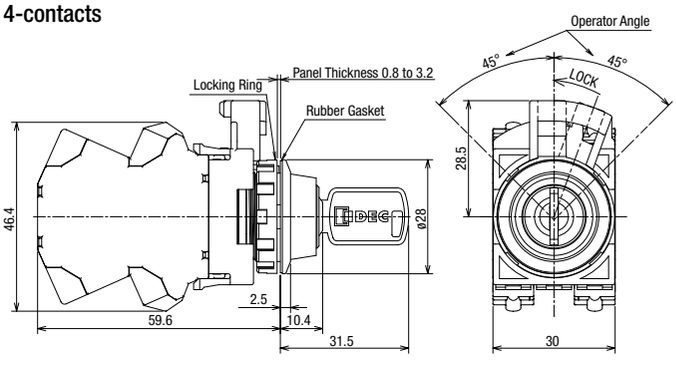


Key Removal Position 3-position

1 to 3-contacts

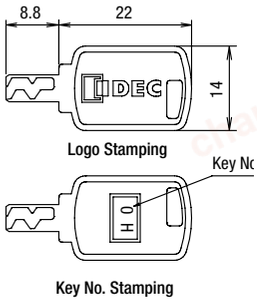


4-contacts

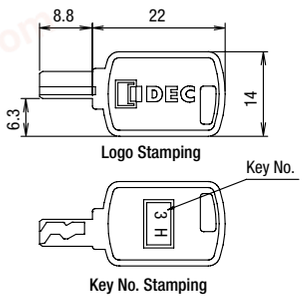


Key

- Reversible (0H to 2H)



- Non-reversible (3H to 6H)



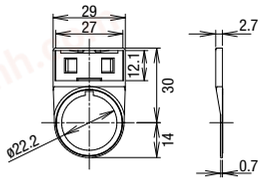
• See page 9 for mounting hole layout.

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Nameplates

All dimensions in mm

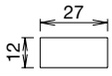
When ordering, specify the Ordering No.

Description		Material	Part No.(Ordering No.)	Package Quantity	Dimensions (mm)
	Legend				
CWAM 	Order marking plate (HWNP) separately.	Plastic (black)	CWAM	1	• Marking plate HWNP is necessary. • Degree of protection: IP65 • Do not remove the gasket on the operator. 

Note: Cannot be used with HW/FB series control box types.

Making Plate

When ordering, specify the Ordering No.

Description	Material	Part No.	Ordering No.	Package Quantity	Dimensions (mm)
HWNP  Image: HWNP-35	Aluminum (black)	HWNP-☐	HWNP-☐	1	• White legend on black background. • Engraving area: W25, H7  Thickness: 1.0 mm
			HWNP-☐PN10	10	

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

Legends

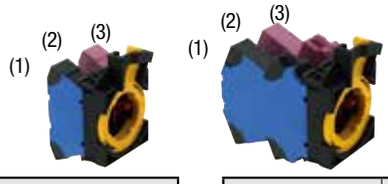
Code	Legend	Code	Legend
0	(blank)	4	STOP
1	ON	31	OFF-ON
2	OFF	35	HAND-AUTO
3	START	53	HAND-OFF-AUTO

Sub-Assembled

All dimensions in mm

Contact Unit Part No. / Contact Table

Package Quantity: 1



Contact Configuration (Code)	Part No. (Ordering No.)	Mounting Position	Contact
1NO (10)	CW-CNP10	(1)	1NO
		(2)	Dummy
		(3)	Dummy
1NC (01)	CW-CNP01	(1)	Dummy
		(2)	Dummy
		(3)	1NC
1NO1NC (11)	CW-CNP11	(1)	1NO
		(2)	Dummy
		(3)	1NC
1NO1NC (11N1)	CW-CNP11N1	(1)	1NC
		(2)	Dummy
		(3)	1NO
1NO1NC (11N2)	CW-CNP11N2	(1)	1NO
		(2)	1NC
		(3)	Dummy
1NO1NC (11N3)	CW-CNP11N3	(1)	Dummy
		(2)	1NC
		(3)	1NO
1NO1NC (11N4)	CW-CNP11N4	(1)	Dummy
		(2)	1NO
		(3)	1NC
2NO (20)	CW-CNP20	(1)	1NO
		(2)	Dummy
		(3)	1NO
2NO (20N1)	CW-CNP20N1	(1)	Dummy
		(2)	1NO
		(3)	1NO
2NC (02)	CW-CNP02	(1)	1NC
		(2)	Dummy
		(3)	1NC
2NC (02N1)	CW-CNP02N1	(1)	Dummy
		(2)	1NC
		(3)	1NC

Contact Configuration (Code)	Part No. (Ordering No.)	Mounting Position	Contact
2NO1NC (21)	CW-CNP21	(1)	1NO
		(2)	1NO
		(3)	1NC
2NO1NC (21N1)	CW-CNP21N1	(1)	1NO
		(2)	1NC
		(3)	1NO
1NO2NC (12)	CW-CNP12	(1)	1NO
		(2)	1NC
		(3)	1NC
3NO (30)	CW-CNP30	(1)	1NO
		(2)	1NO
		(3)	1NO
3NC (03)	CW-CNP03	(1)	1NC
		(2)	1NC
		(3)	1NC
2NO2NC (22)	CW-CNP22	(1)	1NO-1NC
		(2)	Dummy
		(3)	1NO-1NC
2NO2NC (22N2)	CW-CNP22N2	(1)	2NC
		(2)	Dummy
		(3)	2NO
4NO (40)	CW-CNP40	(1)	2NO
		(2)	Dummy
		(3)	2NO

• Contact unit includes a contact block, dummy block, and connecting unit.

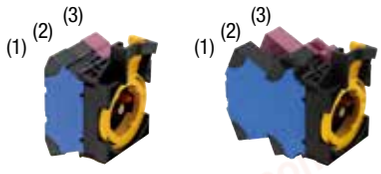
Note: Specify the same contact configuration as the reference assembled part no.

Sub-Assembled

All dimensions in mm

Illuminated Contact Unit Part No. / Contact Table

Package Quantity: 1



Contact Configuration (Code)	Rated Operating Voltage	Part No. (Ordering No.)	Mounting Position	Contact
1NO (10)	6V AC/DC	CW-CNP10Q2	(1)	1NO
	12V AC/DC	CW-CNP10Q3	(2)	LED unit
	24V AC/DC	CW-CNP10Q4	(3)	Dummy
1NC (01)	6V AC/DC	CW-CNP01Q2	(1)	Dummy
	12V AC/DC	CW-CNP01Q3	(2)	LED unit
	24V AC/DC	CW-CNP01Q4	(3)	1NC
1NO-1NC (11)	6V AC/DC	CW-CNP11Q2	(1)	1NO
	12V AC/DC	CW-CNP11Q3	(2)	LED unit
	24V AC/DC	CW-CNP11Q4	(3)	1NC
2NO (20)	6V AC/DC	CW-CNP20Q2	(1)	1NO
	12V AC/DC	CW-CNP20Q3	(2)	LED unit
	24V AC/DC	CW-CNP20Q4	(3)	1NO
2NC (02)	6V AC/DC	CW-CNP02Q2	(1)	1NC
	12V AC/DC	CW-CNP02Q3	(2)	LED unit
	24V AC/DC	CW-CNP02Q4	(3)	1NC

- Illuminated contact unit includes a contact block, LED unit, dummy block, and connecting unit.

Contact Unit for Pilot Light Part No.

Package Quantity: 1



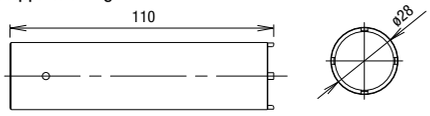
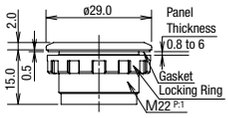
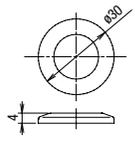
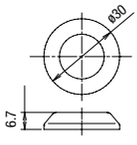
Rated Operating Voltage (Code)	Part No. (Ordering No.)	Mounting Position	Contact
6V (Q2)	CW-CNPQ2	(1)	Dummy
12V (Q3)	CW-CNPQ3	(2)	LED unit
24V (Q4)	CW-CNPQ4	(3)	Dummy

- Contact unit for pilot light includes one LED unit, two dummy blocks, and one connecting unit.

Note: Specify the same contact configuration as the reference assembled part no.

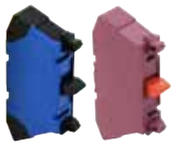
Accessories

All dimensions in mm

Shape		Material	Part No.	Part No. (Ordering No.)	Package Quantity	Remarks
Locking Ring Wrench 		Metal (Brass)	MW9Z-T1	MW9Z-T1	1	• Used to tighten the locking ring when installing the CW series control unit in a panel cut-out. • Weight: Approx 150 g 
Mounting Hole Plug 		Polyamide (black)	LW9Z-BP1	LW9Z-BP1	1	• Used to plug an unnecessary ø22.3 mm hole in the panel. • Degree of protection: IP65 • Panel thickness: 0.8 to 6.0 mm 
Rubber Boot ① 	① For round flush	Rubber (Transparent silicon rubber)	CW9Z-D11	CW9Z-D11	1	• Degree of protection: IP66/67 UL Type 4X • Panel thickness: 0.8 to 3.2 mm • Use with round flush illuminated pushbuttons/pushbuttons. 
② 	② For round extended		CW9Z-D12	CW9Z-D12	1	• Degree of protection: IP66/67 UL Type 4X • Panel thickness: 0.8 to 3.2 mm • Use with round extended illuminated pushbuttons/pushbuttons. 

Maintenance Parts (Used for replacement only. Do not use the maintenance parts to modify the CW series)

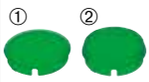
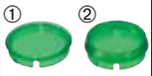
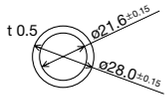
All dimensions in mm

Name / Shape	Material		Part No.	Part No. (Ordering No.)	Package Quantity	Remarks	
Contact Block 	1NO contact Housing color: blue		**HW-P10R**	HW-P10R	5	Contact No.: 1st stage: 3-4	Note: Switches with 1 contact block contain 2 dummy blocks. Switches with 2 contact blocks contain 1 dummy blocks
	1NC contact Housing color: reddish purple		**HW-P01**	HW-P01	5	Contact No.: 1st stage: 1-2	
Double contact block  (Image: **HW-PW2R0**)	2NO contact Housing color: blue		**HW-PW2R0**	HW-PW2R0	5	Contact No.: 1st stage: 13-14 2nd stage: 23-24	
	2NC contact Housing color: reddish purple		**HW-PW02**	HW-PW02	5	Contact No.: 1st stage: 11-12 2nd stage: 21-22	
	1NO1NC contact Housing color: reddish purple / blue		**HW-PW1R1**	HW-PW1R1	5	Contact No.: 1st stage: 13-14 2nd stage: 21-22	
Connection unit 	—		**CW-CN**	CW-CN	1	Connecting unit for Push-in terminal	
Dummy Block 	Polyamide (black)		**CW-DB**	CW-DBPN05	5	—	
LED module 	Rated Operating Voltage	6V AC/DC	**CW-PAQ2**	CW-PAQ2	1	Current draw	AC: 16 mA DC: 12 mA
		12V AC/DC	**CW-PAQ3**	CW-PAQ3			AC: 7 mA DC: 6 mA
		24V AC/DC	**CW-PAQ4**	CW-PAQ4			AC: 6 mA DC: 6 mA

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Maintenance Parts (Used for replacement only. Do not use the maintenance parts to modify the CW series)

All dimensions in mm

Name / Shape		Material	Part No.	Ordering No.	Package Quantity	Remarks
Button 	① Round flush	Polyarylate ø19.5 H3.5	**CW9Z-B11***	CW9Z-B11*PN05	5	For maintained pushbuttons. Specify a button color code in place of * in the Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)
	② Round extended	Polyarylate ø19.5 H6.2	**CW9Z-B12***	CW9Z-B12*PN05	5	
Lens 	① Round flush	Polyarylate ø19.5 H3.5	**CW9Z-L11*-K**	CW9Z-L11*-KPN05	5	For illuminated pushbuttons. Specify a button color code in place of * in the Part No. R (red), G (green), Y (yellow), A (amber), C (clear), S (blue) Note:If the illumination color is PW (pure white), use a C (clear) lens.
	② Round extended	Polyarylate ø19.5 H6.2	**CW9Z-L12*-K**	CW9Z-L12*-KPN05	5	
Locking Ring 		Polyamide (black)	**CW9Z-LN**	CW9Z-LNPN05	5	—
Gasket 		Nitrile rubber	**CW9Z-WM**	CW9Z-WMPN10	10	Waterproof gasket between CW control unit bezel and the mounting panel. 
Spare Key 		Zinc (nickel-plated)	**LA9Z-SK-0H**	LA9Z-SK-0HPN02	2	Specify a key No. in place of □. 0H: Standard key (reversible) 1H to 2H: Reversible key 3H to 6H: Non-reversible key • For dimensions, see page 28.
			LA9Z-SK-□	LA9Z-SK-□PN02		

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Safety Precautions

- Turn off the power to the CW series switches & pilot lights before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- For wiring, use wires of a proper size to meet the voltage and current requirements. and the number of connectable wires (page 39).

  Failure to tighten the terminal screws may cause overheating and fire.
- Avoid using in places mentioned below to maintain performance of the product.
  -Exposed to direct sunlight
  -Subject to corrosive or flammable gases

Instructions

Notes for Operation

- When using the CW series control units in a safety-related circuit of a control system, observe safety rules and regulations of each country concerning particular applications of the actual machines and facilities. Perform risk assessment before operation to ensure safety.

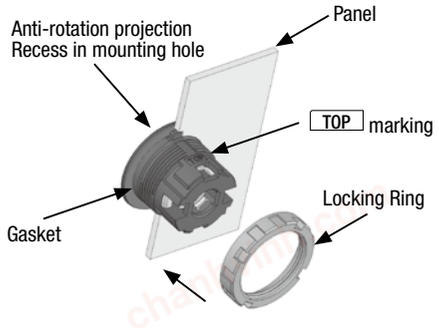
Operating Conditions

- In corrosive gas or high-temperature, high-humidity atmosphere, contact failure due to corrosion or color change or breakage of the housing may occur.
- Main parts of the CW series control units are made of plastic. Do not scratch the surface with a sharp object or apply excessive shocks or load, otherwise the control units may be damaged.
- In particular, keep the button, lens, and bezel from such damage, otherwise appearance and function may be impaired.
- Do not apply detergents, cutting oils, or chemicals which may impair the function and appearance of the CW series control units.

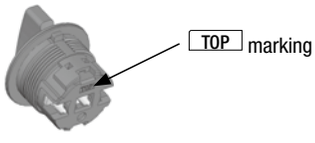
Installing the Contact Unit

1. Remove the contact block from the operator.
2. Remove the locking ring from the operator.
3. With the TOP marking of the operator facing upwards, align the anti-rotation projection on the operator with the recess in the mounting hole, insert the operator into the mounting hole. TOP When installing the nameplate, insert between the operator and the panel.
4. Tighten the locking ring from the rear of the panel.

Pushbuttons and Illuminated Pushbuttons

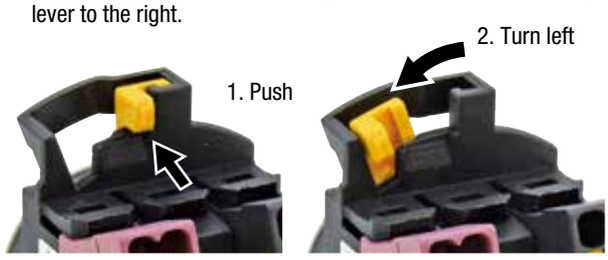


Selector and Key Selector Switches



Removing and Installing the Contact Unit

1. To remove the contact block from the operator, push the yellow locking lever and turn it to the left.
2. To install, align the TOP marking on the operator with the TOP marking on the contact block mounting adaptor, and turn the locking lever to the right.



Notes for Panel Mounting

Locking ring wrench recommended torque

Tighten the bezel to a tightening torque of 1.2 N·m

Locking ring wrench

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



Locking ring wrench (MW9Z-T1)

Mounting Hole

1. Mounting hole dimensions are in compliance with IEC 60947-5-1.
2. If the anti-rotation projection is removed from the bezel, CW series control units can be mounted in ø22.3 mm mounting holes.
   To remove the anti-rotation projection, remove the gasket and use cutting pliers to break the projection.
   Also, make sure not to damages other parts of the operator.



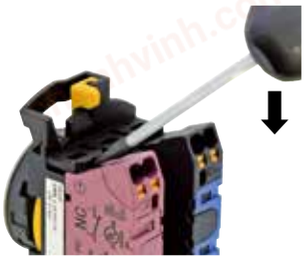
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Instructions

Removing and Installing Contact Blocks, Dummy Blocks and LED Unit

Removing

To remove the contact block, dummy block, and LED unit from the operator, insert a flat screwdriver under the latch and push down the screwdriver as shown below.

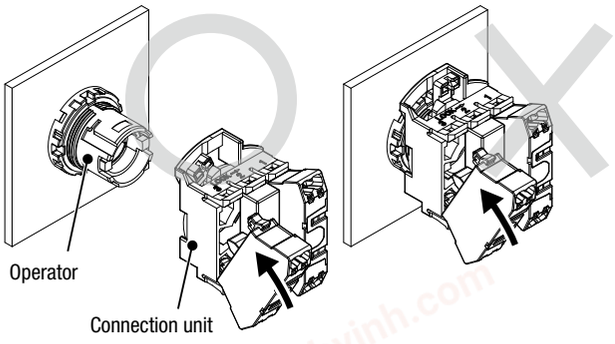


Installing

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

Note 1) Make sure to attach a correctly assembled connection unit to the operator.

Note 2) When attaching the contact block to the connection unit, make sure that the connection is detached from the operator.
If a contact block is installed with the operator attached to the connection unit, malfunction of the switch may occur.

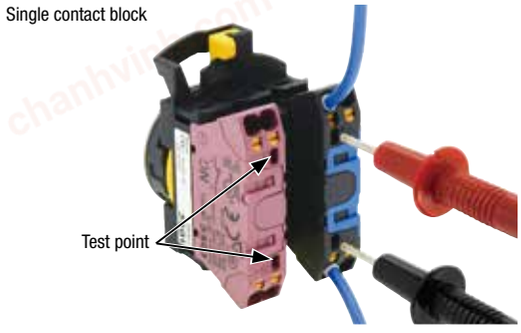


Test Point

Note) Do not insert wires to the test points.

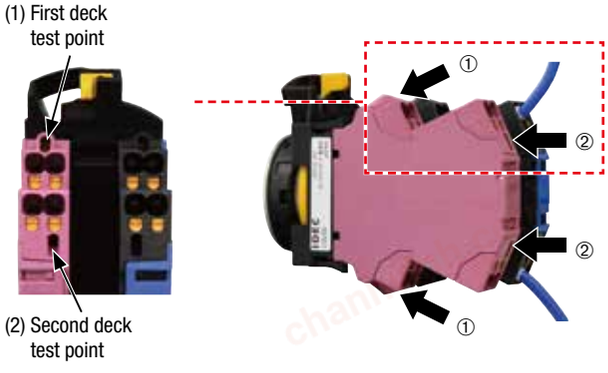
Single contact block

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



Double contact block

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



Instructions

Removing and Installing Lens and Buttons

Pushbuttons (momentary)

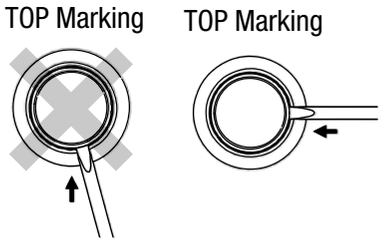
Momentary pushbutton caps cannot be removed.
Do not tamper with the pushbutton caps using a screwdriver or pliers, otherwise the pushbutton caps may be damaged.

Pushbuttons (maintained) / Illuminated Pushbuttons / Pilot Lights

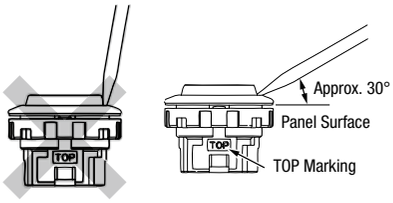
To remove the button or lens from a pushbutton, illuminated pushbutton or pilot light, insert a flat screwdriver under the flange of the lens at 90° from the TOP marking and twist the screwdriver.

Note) Insert the flat screwdriver by about an angle of 30°. Do not insert the screwdriver too deeply and do not apply excessive force to the lens, otherwise the bezel surface may be damaged.

Screwdriver Insertion Direction

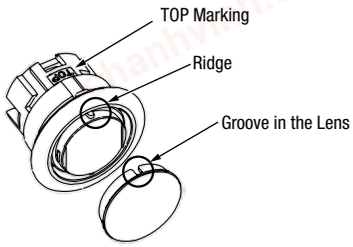


Screwdriver Insertion Angle



Installing the Lens

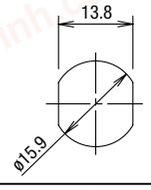
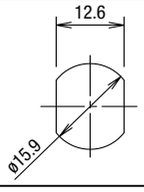
Turn the groove in the lens to the TOP marking on the operator housing. With the groove aligned with the ridge, press the lens in.



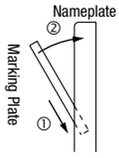
Marking

Marking plates are not available for CW series illuminated pushbuttons and pilot lights. Marking film can be inserted to indicate legends.

Applicable Marking Film Size All dimensions in mm

	Illuminated Pushbutton (Round Flush)	Illuminated Pushbutton (Round Extended)
Applicable marking film size		
Thickness: 0.2 mm maximum Note: Film is not supplied and must be prepared by the user. Film material:		

Nameplate / Marking Plate

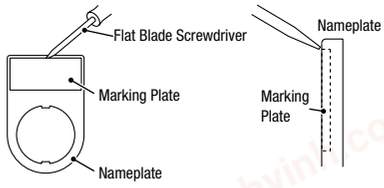


Installing the marking plate on a nameplate

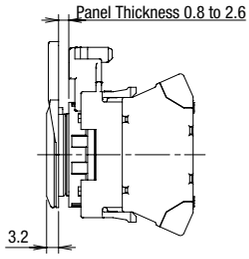
Insert a marking plate tin the direction of the arrow ①, and press in as shown ②.

Removing a Marking Plate

Insert a flat screwdriver into the upper middle part of the marking plate and remove. When anti-rotation is not required, remove the projection from the nameplate using pliers.



Note: When using a nameplate, the mounting panel thickness is 2.6 mm maximum.



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Instructions

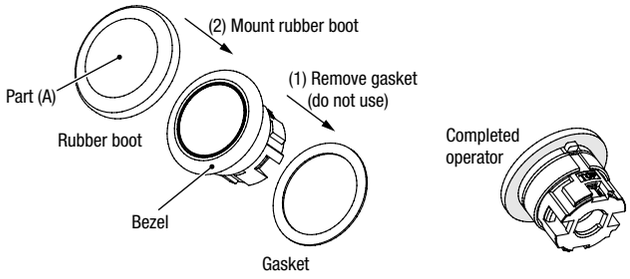
Installing the Rubber Boot

When using in places where the switches are subjected to water splash or an excessive amount of dust, make sure to use the optional rubber boot.

1. Remove the gasket from the operator, and mount the rubber boot to cover the bezel as shown in the below diagram (Do not use a washer).
2. Fit the rubber boot to the bezel of the operator as shown in the diagram of the completed operator below.

Notes

- Attach the rubber boot by making sure that the front round part (A) of the rubber boot is concentric with the lens and button. Otherwise the appearance may look different.
- Make sure that the rubber boot is properly fitted, otherwise, the waterproof and dustproof characteristics are not ensured.



Note: Install the rubber boot before mounting the unit to the panel.

Key Selector Switches

To prevent malfunctions and damage, take the following precautions.

- Insert the key to the bottom before turning.
- Do not remove the key while turning.
- Besides the standard key (0H), six other keys are available. Use a key with a key that matches with the number on the key cylinder. However, for standard keys, the key number is engraved on the key but not on the key cylinder.
- Keys are available in two shapes. Key numbers 0H (standard), 1H, and 2H are reversible keys. Key numbers 3H, 4H, 5H, and 6H are non-reversible keys. Make sure of correct insertion direction.

Maintained Switches

Do not replace the button/lens while the operator is latched. Otherwise the internal structure will be damaged.

Selector Switches

Turn the selector operator or key securely to each position.

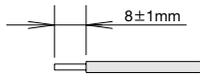
Applicable Wire

When wiring, use the applicable wires shown below.

Applicable Wire and Specifications

Applicable Wire (*1)	0.25 to 1.5mm^2 (AWG16 to 24)
Wire Strip Length (*2)	8 ± 1mm (*3)
Ferrule Size (*3) (Weidmüller)	H0.25 to H1.5 (without insulated cover)
	H0.25 to H1.5 (with insulated cover)

*1) For applicable wires confirmed by IDEC, see website.
*2) For details on ferrules, see "Wire Size and Recommended Ferrules" table below.
*3) Strip the sheath of the wire 8±1mm from the end.



Note: Make sure that the stranded wires do not loosen when using wiring without ferrules.

Wire Size and Recommended Ferrules

Ferrules without insulated covers

Applicable Wire (Stranded Wire)		Wire Strip Length	Weidmüller Recommended Part No.
AWG	mm^2		
24	0.25	5 to 6mm	**H0.25/5**
20	0.50	10 to 11mm	**H0.5/10**
18	0.75	10 to 11mm	**H0.75/10**
18	1.00	10 to 11mm	**H1.0/10**
16	1.50	10 to 11mm	**H1.5/10**

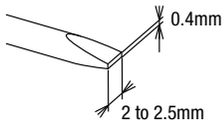
Ferrules with insulated covers

Applicable Wire (Stranded Wire)		Wire Strip Length	Weidmüller Recommended Part No.
AWG	mm^2		
24	0.25	10 to 11mm	**H0.25/5 HBL**
22	0.34	10 to 11mm	**H0.34/12 TK**
20	0.50	10 to 11mm	**H0.5/14 OR**
18	0.75	10 to 11mm	**H0.75/14 W**
18	1.00	10 to 11mm	**H1.0/14 GE**
16	1.50	10 to 11mm	**H1.5/14 R**

Recommended Tools (Optional)

Name	Weidmüller Recommended Part No.
Crimping tool	**PZ 6 Roto L**
Flat blade screwdriver	**SDS 0.4×2.0×60**
	SDS 0.4×2.5×75

Note 1) Note the crimping dimensions When using tools other than the recommended crimping tool. For details, see page 38.
Note 2) Use a flat blade screwdriver with a blade size of 0.4×2.5 mm.



- For details on crimping tools, see page 33.

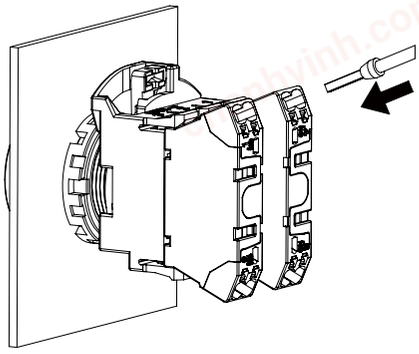
Instructions

Wiring Procedure

Connecting the wire

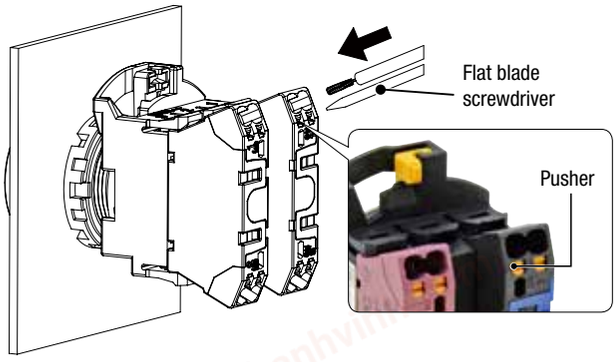
1) Stranded wires with ferrules or solid wire

① Insert the wire to the back of the wire port.
② After wiring, tug lightly to make sure that the wire is properly connected.



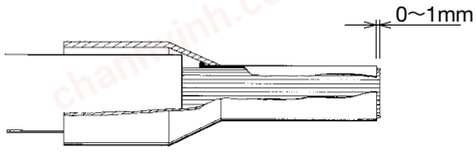
2) Stranded wire

① While pressing the pusher using a flat blade screwdriver (recommended optional screwdriver: SDS 0.4×2.0×60 or SDS 0.4×2.5×75), insert the wire fully in the wiring port. Wire is connected when the pusher is released.
② After wiring, tug lightly to make sure that the wire is properly connected.



Crimping of Ferrules and Wiring

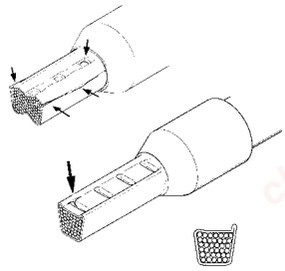
- Choose an appropriate ferrule for the wire.
- Cut the wire carefully to get a flat end.
- Make sure that ferrule sleeve is completely filled by the conductor. Depending on the cross section, the conductor should protrude approx. 0 to 1 mm from the ferrule sleeve.



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

Faults which can occur during crimping:

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



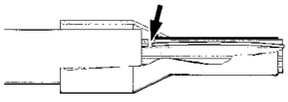
Formation of cracks at the sides. Slides split open

Formation of cracks at the impressions of the crimping jaw

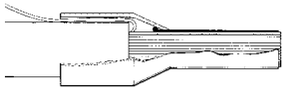
Asymmetrical crimping shape. Burr formation on one side



Asymmetrical crimping shape. Burr formation on one side



Single conductor squeezed off



Single conductor pushed back

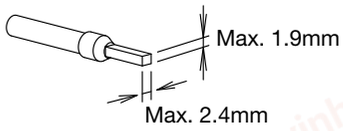
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Instructions

Crimping dimensions: W2.4×H1.9 mm

Maximum connectable crimping size is W2.4×H1.9. Make sure that the ferrule size will be smaller than this dimension.

(Recommended crimping tool: PZ 6 Roto (optional) Weidmüller)

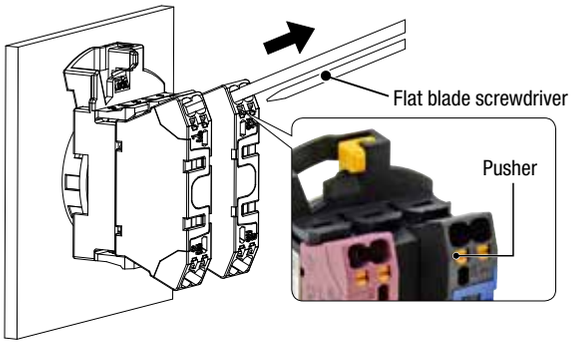


Note 1) If a tool other than the recommended crimping tool is used, the ferrule may not be crimped to the appropriate size and the clamp or spring inside the contact block may be deformed and may not operate normally.

Note 2) Pin crimp terminals cannot be used.

Removing the Wire

When removing the wire, push the pusher using a flat blade screwdriver (recommended optional screwdriver: SDS 0.4×2.0×60, see page 33) and pull wire out in the direction of the arrow.



<Notes>

- Operate the pusher with a force of 20N. Do not press excessively. Otherwise, the switch may be damaged.
- Do not pull the wire out without depressing the pusher. When pulling the wire, be sure to pull in a straight direction. Otherwise, the socket may be damaged.

Number of Connectable Wires

Unit	Connectable wires		No. of connectable wires
HW-P Contact block LED unit	Solid wire	0.25 to 1.5mm² (AWG16 to 24)	2
	Stranded wire	0.25 to 1.5mm² (AWG16 to 24)	
	Ferrule	Without insulated cover 0.25mm² :conductor length 5 to 10mm 0.5 to 1.0mm² :conductor length 6 to 10mm 1.5mm² :conductor length 8 to 10mm With insulated cover 0.25 to1.0mm² :conductor length 6 to 10mm 1.5mm² :conductor length 8 to 10mm Note) Pin terminals cannot be used	

Note) Only one wire can be inserted into one wire port.

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Ordering Terms and Conditions

Thank you for using IDEC Products.

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

1. Notes on contents of Catalogs

(1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.

(2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.

(3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.

(4) The content of Catalogs is subject to change without notice.

2. Note on applications

(1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.

(2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.

(3) When using IDEC products, be cautious when implementing the following.

i. Use of IDEC products with sufficient allowance for rating and performance

ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails

iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications

(4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.

(5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.

i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health

ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems

iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

3. Inspections

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

4. Warranty

(1) Warranty period

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

(2) Warranty scope

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

i. The product was handled or used deviating from the conditions / environment listed in the Catalogs

ii. The failure was caused by reasons other than an IDEC product

iii. Modification or repair was performed by a party other than IDEC

iv. The failure was caused by a software program of a party other than IDEC

v. The product was used outside of its original purpose

vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs

vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC.

viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)

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

5. Limitation of liability

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

6. Service scope

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

(1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)

(2) Maintenance inspections, adjustments, and repairs

(3) Technical instructions and technical training

(4) Product tests or inspections specified by you

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

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