![Chipsmall logo]

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

30mm XN E-Stops

Key features:

- Plastic bezel, metallic padlock and flush bezel available
- Install up to 20 padlocks (XN4E)
- ø40, ø44 or ø60mm Mushroom heads available
- IDEC's original "safe break action" ensures that the contacts stay open when the contact block is detached from the operator.
- Safety-lock mechanism (IEC60947-5-5, 6.2)
- 2-in-1: Push-to-lock, Pull/Turn-to-Reset
- Push-ON LED model allows E-Stops to be illuminated only when latched
- Direct Opening Action mechanism (IEC60947-5-5, 5.2, IEC60947-5-1, Annex K)
- Very short panel depth
- Degree of protection IP65 (IEC60529)
- RoHS compliant (EU directive 2002/95/EC).
- XN4E series complies with OSHA and ISO 12100-2:2003 standards
- UL, c-UL listed, EN compliant
- UL NISD category emergency type device (File# E305148)

File No. E68961

Specifications

Applicable Standards	IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5, UL508, UL991, CSA C22.2 No. 14	
Operating Temperature	Non-illuminated: −25 to +60°C (no freezing), Illuminated: −25 to +55°C (no freezing)	
Operating Humidity	45 to 85% RH (no condensation)	
Storage Temperature	−45 to +80°C	
Operating Force	**XN1E, XN5E** Push-to-lock: 32N Pull-to-reset: 21N Turn-to-reset: 0.27 N·m	**XN4E** Push-to-lock: 32N Pull-to-reset: N/A Turn-to-reset: 0.4 N·m
Minimum Force Required for Direct Opening Action	80N	
Min Operator Stroke Required for Direct Opening Action	4mm	
Maximum Operator Stroke	4.5mm	
Contact Resistance	50mΩ maximum (initial value)	
Contact Material	Gold plated silver	
Insulation Resistance	100MΩ minimum (500V DC megger)	
Impulse Withstand Voltage	2.5kV	
Pollution Degree	3	
Operation Frequency	900 operations/hour	
Shock Resistance	Operating extremes: 150m/s² (15G), Damage limits: 1000m/s² (100G)	
Vibration Resistance	Operating extremes: 10 to 500Hz, amplitude 0.35mm acceleration 50m/s² Damage limits: 10 to 500Hz, amplitude 0.35mm acceleration 50m/s²	
Mechanical Life	250,000 operations minimum	
Electrical Life	100,000 operations minimum, (250,000 operations minimum @ 24V AC/DC, 100mA)	
Degree of Protection	Operator: IP65 (IEC60529) Terminal: IP20 (when XW9Z-VL2MF is installed)	
Terminal Style	M3.0 screw terminal	
Recommended Tightening Torque for Locking Ring	2.5N·m	
Wire Size	16 AWG max	
Weight	XN1E: Plastic bezel: 83g (ø40 mm), 93g (ø60 mm) XN5E: Flush bezel: 89g XN4E: Padlock type: 20g	

IDEC

Part Numbers

XN1E Plastic Bezel Type E-Stops (push-pull/twist reset)

Style	Operator Type	Main Contact	Monitor Contact	Part Number
Non-Illuminated	40mm Mushroom	1NC	1NO	XN1E-BV411MR
		2NC	–	XN1E-BV402MR
		2NC	2NO	XN1E-BV422MR
		3NC	1NO	XN1E-BV413MR
		4NC	–	XN1E-BV404MR
	60mm Mushroom	1NC	1NO	XN1E-BV511MR
		2NC	–	XN1E-BV502MR
		2NC	2NO	XN1E-BV522MR
		3NC	1NO	XN1E-BV513MR
		4NC	–	XN1E-BV504MR
Illuminated	40mm Mushroom LED (24V AC/DC)	1NC	1NO	XN1E-LV411Q4MR
		2NC	–	XN1E-LV402Q4MR
		2NC	2NO	XN1E-LV422Q4MR
		3NC	1NO	XN1E-LV413Q4MR
		4NC	–	XN1E-LV404Q4MR
	40mm Mushroom Push-ON LED (24V AC/DC)	2NC	1NO	XN1E-TV412Q4MR

XN4E Padlock Type E-Stops (push twist reset only)

Style	Operator Type	Main Contact	Monitor Contact	Part Number
Non-Illuminated	44mm Mushroom	1NC	1NO	XN4E-BL411MR
		2NC	-	XN4E-BL402MR
		2NC	2NO	XN4E-BL422MR
		3NC	1NO	XN4E-BL413MR
		4NC	-	XN4E-BL404MR
Illuminated	44mm Mushroom LED (24V AC/DC)	1NC	1NO	XN4E-LL411Q4MR
		2NC	-	XN4E-LL402Q4MR
		2NC	2NO	XN4E-LL422Q4MR
		3NC	1NO	XN4E-LL413Q4MR
		4NC	-	XN4E-LL404Q4MR
	44mm Mushroom Push-ON LED (24V AC/DC)	2NC	1NO	XN4E-TL412Q4MR

XN5E Flush Bezel Type E-Stops (push-pull/twist reset)

Style	Operator Type	Main Contact	Monitor Contact	Part Number
Non-Illuminated	40mm Mushroom	1NC	1NO	XN5E-BV411MR
		2NC	-	XN5E-BV402MR
		2NC	2NO	XN5E-BV422MR
		3NC	1NO	XN5E-BV413MR
		4NC	-	XN5E-BV404MR
Illuminated	40mm Mushroom LED (24V AC/DC)	1NC	1NO	XN5E-LV411Q4MR
		2NC	-	XN5E-LV402Q4MR
		2NC	2NO	XN5E-LV422Q4MR
		3NC	1NO	XN5E-LV413Q4MR
		4NC	-	XN5E-LV404Q4MR
	40mm Mushroom Push-ON LED (24V AC/DC)	2NC	1NO	XN5E-TV412Q4MR

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Contact Ratings

Rated Insulation Voltage (Ui)		250V		
Rated Current (Ith)		5A		
Rated Operating Voltage (Ue)		30V	125V	250V

				30V	125V	250V
Rated Operating Current	Main Contacts (NC)	AC 50/60Hz	Resistive Load (AC-12)	–	5A	3A
			Inductive Load (AC-15)	–	3A	1.5A
		DC	Resistive Load (DC-12)	2A	0.4A	0.2A
			Inductive Load (DC-13)	1A	0.22A	0.1A
	Monitor Contacts (NO)	AC 50/60Hz	Resistive Load (AC-12)	–	1.2A	0.6A
			Inductive Load (AC-14)	–	0.6A	0.3A
		DC	Resistive Load (DC-12)	2A	0.4A	0.2A
			Inductive Load (DC-13)	1A	0.22A	0.1A

ℹ 1. Minimum applicable load: 5V AC/DC, 1mA (reference value).
2. The rated operating currents are measured at resistive/inductive load types specified in IEC 60947-5-1.
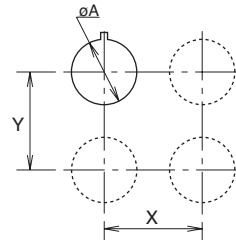
Illuminated Unit LED Ratings

Model	Operating Voltage	Current
XN	24V AC/DC ±10%	15mA

Depth Behind the Panel

Model	Depth (mm)	Description
XN1E	47.7	1 - 4 contacts, plastic bezel
XN5E	60.4	1 - 4 contacts, flush bezel
XN4E	61.4	1 - 4 contacts, padlock

Mounting Hole Layout

Measurements

Size	øA	X & Y
XN1E, XN5E	30.5$^{+0.5}$	70mm min
XN4E	30.5	For XN4E, determine the values according to the size and number of padlocks and hasp.

Panel Cutout
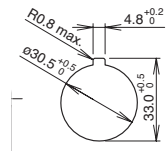
Part Numbers

XN1E - L V 4 02 Q4 MR

Bezel
1: Plastic Bezel
4: Padlock
5: Flush Bezel

Illumination
XN1E, XN5E
  BV: Non-Illuminated
  LV: Illuminated LED
  TV: Illuminated Push-ON LED
XN4E
  BL: Non-Illuminated
  LL: Illuminated LED
  TL: Illuminated Push-ON LED

**Mushroom Size**
4: ø40mm: XN1E, XN5E
  ø44mm: XN4E
5: ø60mm
  (XN1E non-illuminated only)

Contact Configuration*
11: 1NO - 1NC
02: 2NC
13: 1NO - 3NC
22: 2NO - 2NC
04: 4NC
12: 1NO-2NC (Push-ON LED only)

Voltage Code
Blank: Non-Illuminated
Q4: 24V AC/DC (Illuminated & Push-ON LED type)

*Contact IDEC for additional configurations.

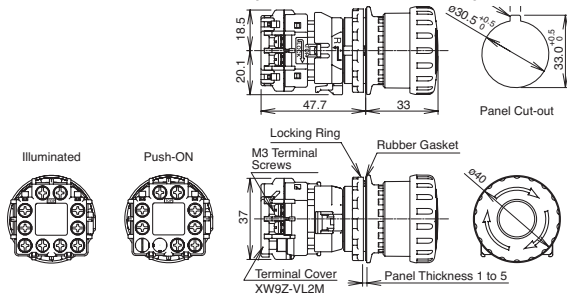## Terminal Arrangements (Bottom View)

| 4NC | 1NO-3NC | 2NC | 1NO-1NC | 2NO-2NC | 1NO-2NC |

Non-Illuminated

Illuminated

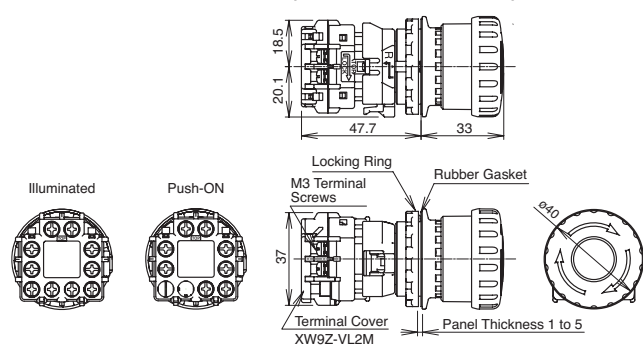Push-ON
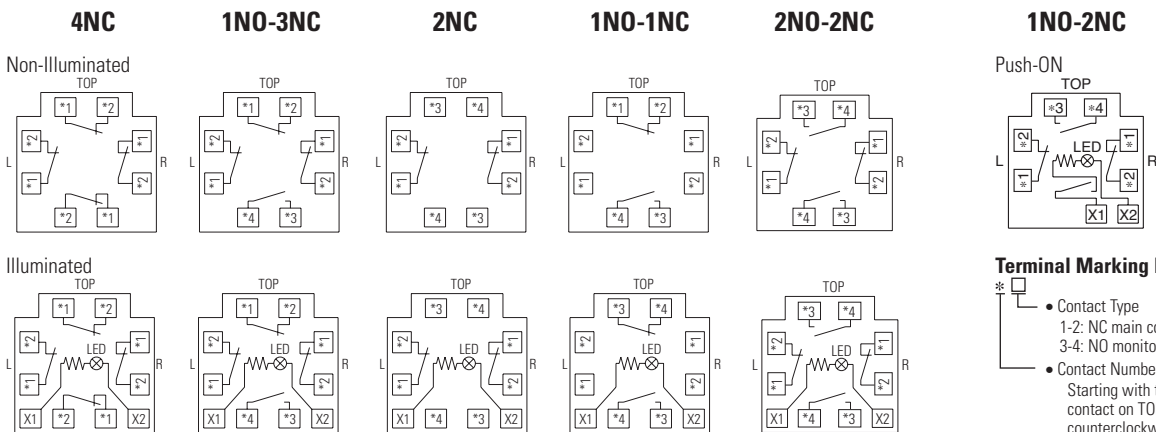
Terminal Marking Description

* ☐
  • Contact Type
    1-2: NC main contact
    3-4: NO monitor contact
  • Contact Number (1-4)
    Starting with the contact on TOP in a counterclockwise direction.
    Note:
    1: contact on the TOP
    2: contact on the Left
    3: contact on the Bottom
    4: contact on the Right

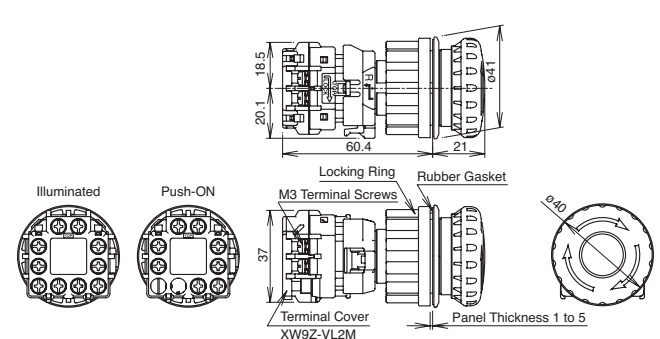
(Example: 1NO-3NC contact)

IDEC

Dimensions (mm)

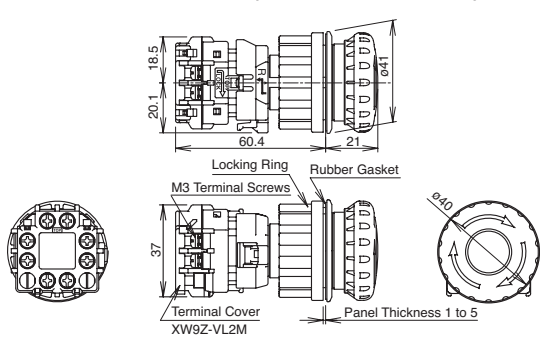### XN1E Non-Illuminated (with terminal cover)

Illuminated Push-ON

Panel Cut-out

Locking Ring
M3 Terminal Screws
Rubber Gasket
Terminal Cover XW9Z-VL2M
Panel Thickness 1 to 5

XN1E Illuminated/Push-ON (with terminal cover)

Illuminated Push-ON

Locking Ring
M3 Terminal Screws
Rubber Gasket
Terminal Cover XW9Z-VL2M
Panel Thickness 1 to 5

XN5E Illuminated (with terminal cover)

Illuminated Push-ON

Locking Ring
M3 Terminal Screws
Rubber Gasket
Terminal Cover XW9Z-VL2M
Panel Thickness 1 to 5

XN5E Non-Illuminated (with terminal cover)

Locking Ring
M3 Terminal Screws
Rubber Gasket
Terminal Cover XW9Z-VL2M
Panel Thickness 1 to 5

XN4E Illuminated (with terminal cover)

Illuminated Push-ON

Locking Ring
M3 Terminal Screws
Rubber Gasket
Terminal Cover XW9Z-VL2M
Panel Thickness 1 to 6

XN4E Non-Illuminated (with terminal cover)

Locking Ring
M3 Terminal Screws
Rubber Gasket
Terminal Cover XW9Z-VL2M
Panel Thickness 1 to 6

Nameplates

Item	Part No.	Legend	Mounting Panel Thickness
ø60mm ø30mm	HNAV-0	(blank)	XN4E: 1.0 to 4.5 mm
EMERGENCY STOP	HNAV-27	EMERGENCY STOP	XN1E, XN5E: 1.0 to 3.5 mm

Accessories

Item	Description	Part Number
	Locking Ring Wrench	XN9Z-T1
	Locking Ring Twist Wrench	TWST-T1
	Lockout Hasp	XN9Z-HASP421

Item	Description	Part Number
	Terminal Cover for Contact Block	XW9Z-VL2M
	IP20 Fingersafe Cover	XW9Z-VL2MF

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Operating Instructions

Removing the Contact Block

First unlock the operator button. Grab the yellow bayonet ring ① and pull back the bayonet ring until the latch pin clicks ②, then turn the contact block counterclockwise and pull out ③.

③ Turn counterclockwise

Bayonet Ring (yellow)

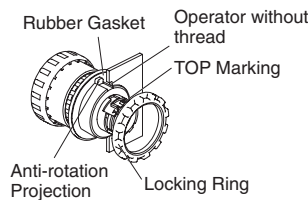① Grab

② Pull

① Grab
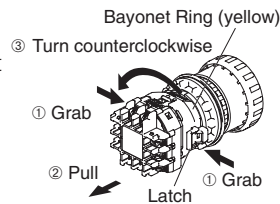
Latch

Notes for removing the contact block

1. Do not attempt to remove the contact block while the operator is latched, otherwise the switch may be damaged.

2. When the contact block is removed, the monitor contact (NO contact) is closed.

3. While removing the contact block, do not use excessive force, otherwise the switch may be damaged.

4. An LED lamp is built into the contact block for illuminated pushbuttons. When removing the contact block, pull the contact block straight to prevent damage to the LED lamp. If excessive force is used, the LED lamp may be damaged and fail to light.

Panel Mounting

Remove the locking ring from the operator and check that the rubber gasket is in place. Insert the operator from panel front into the panel hole. Face the side without thread on the operator with TOP marking upward, and tighten the locking ring using ring wrench XN9Z-T1 or TWST-T1 to a torque of 2.5 N·m maximum.

Rubber Gasket

Operator without thread

TOP Marking

Anti-rotation Projection

Locking Ring

When using a nameplate

When using a nameplate HNAV-□, break the projection from the nameplate using pliers.

EMERGENCY STOP

Projection

Installing the Contact Block

First unlock the operator button. Align the small ▼ marking on the edge of the operator with the small ▲ marking on the yellow bayonet ring. Hold the contact block, not the bayonet ring. Press the contact block onto the operator and turn the contact block clockwise until the bayonet ring clicks.

▼ Marking

▲ Marking

② Turn clockwise

① Push

TOP Marking
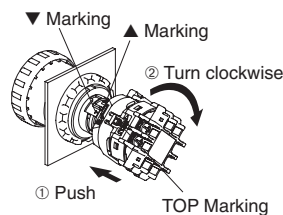
Notes for installing the contact block

1. Do not attempt to install the contact block when the operator is latched, otherwise the switch may be damaged.

2. Make sure that the bayonet ring is in the locked position.

Installing & Removing Terminal Covers

XW9Z-VL2M

To install the terminal cover, align the TOP marking on the terminal cover with the TOP marking on the contact block. Place the two projections on the bottom side of the contact block into the slots in the terminal cover. Press the terminal cover toward the contact block.
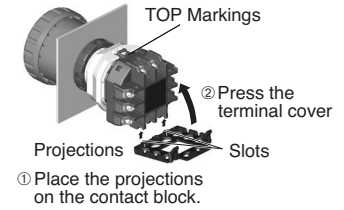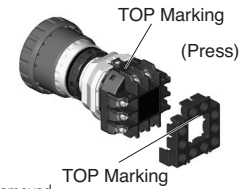
To remove the terminal cover, pull out the two latches on the top side of the terminal cover. Do not exert excessive force to the latches, otherwise the latches may break.
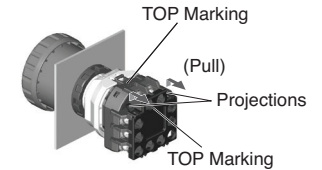
IP20 Fingersafe Terminal Cover XW9Z-VL2MF

To install the IP20 fingersafe terminal cover, align the TOP marking on the cover with the TOP marking on the contact block, and press the cover toward the contact block.

TOP Markings

② Press the terminal cover

Projections

Slots

① Place the projections on the contact block.

TOP Marking

(Pull)

Projections

TOP Marking

TOP Marking

(Press)

TOP Marking

1. Once installed, the XW9Z-VL2MF cannot be removed.
2. With the XW9Z-VL2MF installed, crimping terminals cannot be used.
3. The XW9Z-VL2MF cannot be installed after wiring.
4. Make sure that the XW9Z-VL2MF is securely installed. IP20 cannot be achieved when installed loosely, and electric shock may occur.

Notes for Operation

When using the XN emergency stop switches in safety-related part of a control system, observe safety standards and regulations of the relevant country or region. Also be sure to perform a risk assessment before operation.

Wiring

Tighten the M3 terminal screws to a torque of 0.6 to 1.0 N·m.

Contact Bounce

When the button is reset by pulling or turning, the NC main contacts will bounce. When pressing the button, the NO monitor contacts will bounce.

When designing a control circuit, take the contact bounce time into consideration (reference value: 20 ms).

LED Illuminated Switches

LED lamp is built into the contact block and cannot be replaced.

Handling

Do not expose the switch to excessive shocks and vibrations, for example by operating the switch with tools. Otherwise the switch may be deformed or damaged, causing malfunction or operation failure.
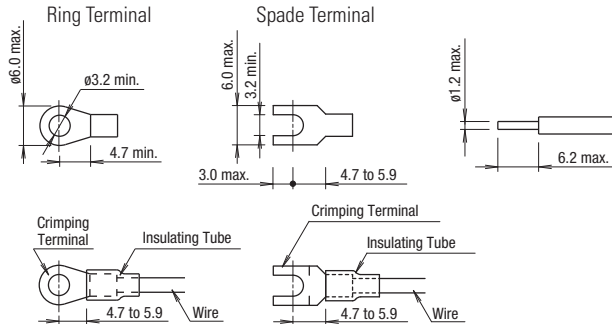
Screw Terminal Type

1. AWG18 to 16

2. Tighten the M3 terminal screw to a tightening torque of 0.6 to 1.0 N·m.

Operating Instructions, continued

Screw Terminal Type

1. Wire thickness: 0.75 to 1.25 mm² (AWG18 to 16)

Applicable Crimping Terminals **Solid Wire**

Ring Terminal   Spade Terminal

ø6.0 max.   ø3.2 min.   4.7 min.

6.0 max.   3.2 min.   3.0 max.   4.7 to 5.9

ø1.2 max.   6.2 max.

Crimping Terminal   Insulating Tube   4.7 to 5.9   Wire

Crimping Terminal   Insulating Tube   4.7 to 5.9   Wire

Be sure to install an insulating tube on the crimping terminal.

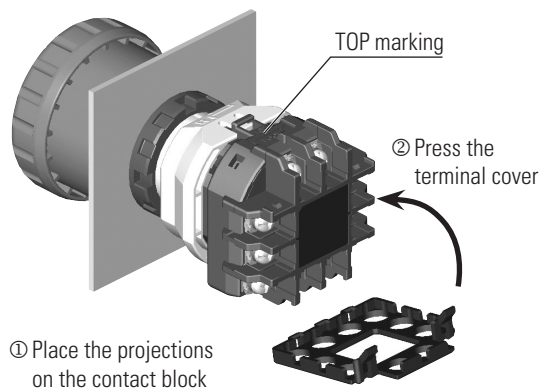2. Tighten the M3 terminal screw to a tightening torque of 0.6 to 1.0 N·m.

Connector Type

1. Connector shape
   Tyco Electronics, D-2000 series
   Part No. 1376009-1 (tab header, board mount)

2. Applicable connectors (to be supplied by user)
   Tyco Electronics, D-2000 series
   Part No. 1-1318119-4 (receptacle housing)
   Tyco Electronics, D-2000 series
   Part No. 1318107-1 (receptacle contact)

3. To prepare correct receptacles for the connector type, read the instruction sheet and catalog of Tyco Electronics and understand the installation and wiring method.

4. Fasten the cable so that the connector is not pulled.
   Otherwise the switch may be deformed and damaged, causing malfunction or operation failure.
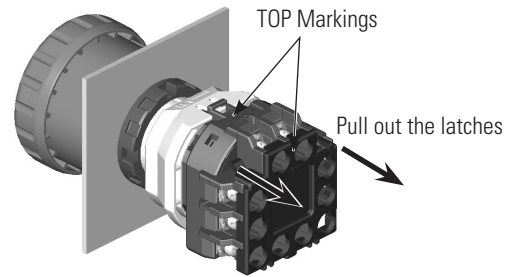
Installing and Removing Terminal Covers

XW9Z-VL2M

To install the terminal cover, align the TOP marking on the terminal cover with the TOP marking on the contact block. Place the two projections on the bottom side of the contact block into the slots in the terminal cover. Press the terminal cover toward the contact block.

TOP marking

② Press the terminal cover

① Place the projections on the contact block

To remove the terminal cover, pull out the two latches on the top side of the terminal cover. Do not exert excessive force to the latches, otherwise the latches may break.

TOP Markings

Pull out the latches

IP20 Protection Terminal Cover
XW9Z-VL2MF

To install the IP20 protection cover, align the TOP marking on the cover with the TOP marking on the contact block, and press the cover toward the contact block.

(Press)

TOP marking

TOP marking
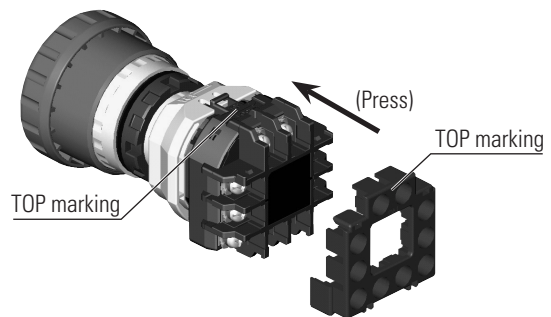
1. Once installed, the XW9Z-VL2MF cannot be removed.
2. The XW9Z-VL2MF cannot be installed after wiring.
3. With the XW9Z-VL2MF installed, crimping terminals cannot be used. Use solid wires.
4. Make sure that the XW9Z-VL2MF is securely installed. IP20 cannot be achieved when installed loosely, and electric shocks may occur.

Contact Bounce

When the button is reset by pulling or turning, the NC main contacts will bounce. When pressing the button, the NO monitor contacts will bounce.

When designing a control circuit, take the contact bounce time into consideration (reference value: 20 ms).

LED Illuminated Switches

An LED lamp is built into the contact block and cannot be replaced.

Installing the Anti-rotation Ring
HW9Z-RL

Align the side without thread on the operator with TOP marking, the small s marking on the anti-rotation ring, and the recess on the mounting panel.

Without thread   ▲ marking on the anti-rotation ring

TOP marking

Anti-rotation Ring (HW9Z-RL)

Signaling Lights | Relays & Sockets | Timers | Contactors | Terminal Blocks | Circuit Breakers