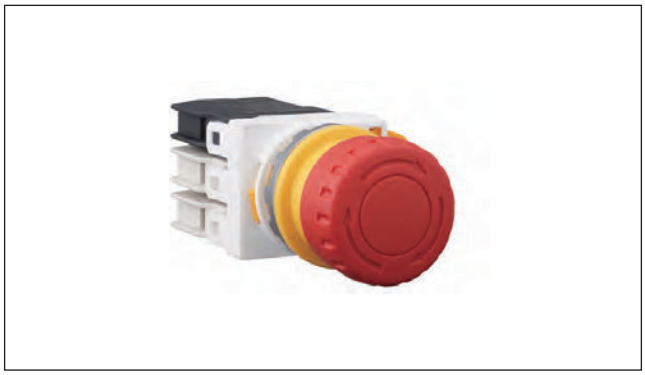
ø30 EU2B Series Hazardous location Switches

ø30 mm, up to 3 contacts for application in hazardous locations with explosive gases such as oil and gas, petrochemical, painting and more.

Complying with IECEx and ATEX Directives, UL for hazardous environments, new 30mm EU2B Hazardous Location Switches provide increased safety for your applications.

- Zone 1/Zone 21, Division 2
- Applicable in explosive gas atmospheres (Ex de IIC T6 Gb)
- Applicable in explosive dust atmospheres (Ex tb IIIC Db IP65)
- UL Type 4X rated
- Up to 3 contact blocks
- Exposed and finger-safe (IP20) screw terminals available



Standards compliance

IECEx	Ex de IIC Gb Ex tb IIIC Db
ATEX	II2G Ex de IIC Gb II2D Ex tb IIIC Db IP65
UL	Class I, Zone 1, AEx de IIC T6 Gb Class I, Div 2, Groups A, B, C and D
c-UL	Class I, Zone 1, Ex de IIC T6 Gb Class I, Div 2, Groups A, B, C and D

Certificate numbers

IECEx	PTB 15.0006u PTB 15.0007u
ATEX	PTB 08 ATEX 1053 U PTB 08 ATEX 1003 U
UL/cUL	E347230

Specifications

General Specifications

Applicable Standards	EN60947-5-5 TÜV SÜD / EU Low Voltage Directive	
Degree of Protection	IP65 (IEC60529), Type 4X	
Insulation Resistance	100 MΩ minimum (500V DC megger)	
Operating Temperature	–20 to +50°C (no freezing)	
Operating Humidity	45 to 85% (no condensation)	
Altitude	2,000m Maximum	
Pollution Degree	3	
Shock Resistance	Operating Extremes	150-m/s² (without Meter)
	Damage Limits	1000-m/s²
Vibration Resistance	Operating Extremes	5 to 500-Hz, amplitude 0.35-mm, acceleration 50-m/s² (without Meter)
	Damage Limits	5 to 500-Hz, amplitude 0.35-mm, acceleration 50-m/s²
Rated Insulation Voltage	600 V	
Contact Resistance	50 mΩ maximum (initial value)	
Impulse Withstand Voltage (Uimp)	6kV	
Insulation Resistance	100MΩ minimum (500V DC megger)	
Short-Circuit Protection	250V/10A fuse (Type aM IEC60269-1/IEC60269-2)	
Conditional Short-Circuit Current	1,000A	
Mechanical life	50,000 operations minimum	
Electrical Life	50,000 (switching frequency 900 operations/h)	
Minimum Operator Stroke Required for Direct Opening Action	7.0mm	
Maximum Operator Stroke	9.0mm	

Contact Rating

Rated Insulation Voltage (Ui)			600V			
Rated Thermal Current (Ith)			10A*			
Rated Operating Voltage (Ue)			24V	120V	240V	500V
Rated Operating Current (Ie)	AC 50/60Hz	Resistive Load (AC12)	10A*	10A*	6A	2.8A
		Inductive Load (AC15)	10A*	6A	3A	1.4A
	DC	Resistive Load (DC12)	8A	2.2A	1.1A	—
		Inductive Load (DC13)	4A	1.1A	0.55A	—

Note: Up to 2 contacts (per control unit): 10A , 3 contacts (per control unit): 9A
Minimum applicable load: 3V AC/DC, 5mA
Applicable operating locations may vary according to operating conditions and load types.

Contact Rating Code Designation	Thermal Continuous Test Current Amperes	Maximum current, Amperes								Maximum Volt-Amperes	
		120 Volt		240 Volt		480 Volt		600 Volt		600 Volt	
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A600	10	60	6.00	30	3.00	15	1.5	12	1.2	7200	720

Hazardous location Switches

Part Numbers

Part Number	Operator	Contact Arrangement	Weight (Approx.)	Button Color
EU2B-YBV301•R	ø40 Mushroom	1NC	96g	R : Red
EU2B-YBV311•R		1NO-1NC	120g	
EU2B-YBV302•R		2NC		
EU2B-YBV312•R		1NO-2NC	144g	
EU2B-YBV303•R		3NC		

Specify a terminal style in place of • in the part number: F (Finger-safe terminal), C (Exposed screw terminal)

Part Number Structure

EU2B - YBV3 11 F R

Operator (style / function)
BV3:40mm mushroom/push, pull or twist release

Contact arrangement
01:1NC
11:1NO-1NC
02:2NC
03:3NC
12:1NO-2NC

Button color
R:Red

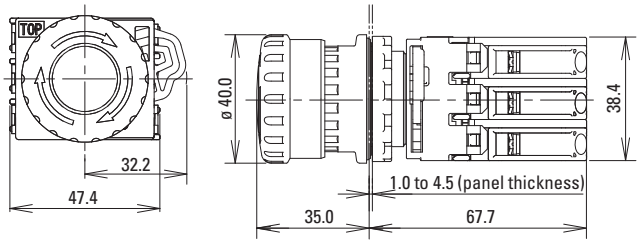
Terminals
F : Finger-safe terminal (IP20)
C:Exposed screw terminal

Dimensions

All dimensions in mm

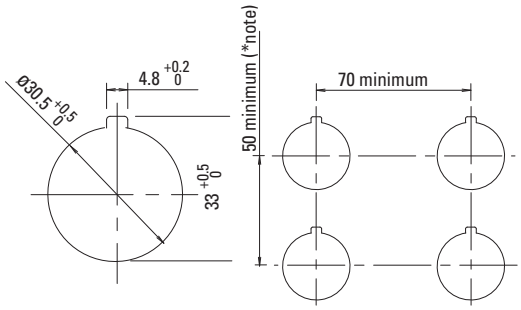
Emergency Stop Switches

Shown with finger-safe contacts



Mounting Hole Dimensions

Panel thickness: 1.0 to 4.5 mm.



*Note: The meter can be mounted on the top mounting holes of a standard 50mm mounting centers. The meter can be mounted on any mounting hole with a 70mm or larger mounting center.

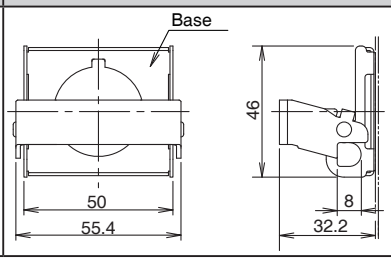
Accessories

All dimensions in mm

Emergency Stop Switch Padlock Cover

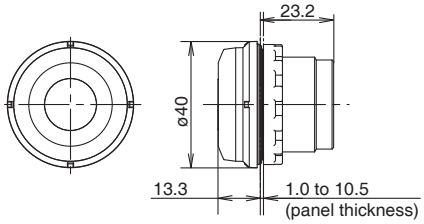
Used with EU2B-YBV emergency stop switch to maintain the switch in the latched status.

Coating: yellow
Material: Stainless Steel

Appearance	Part Number	Dimensions
	EU9Z-PCE	

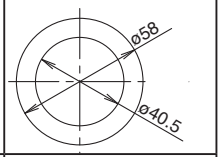
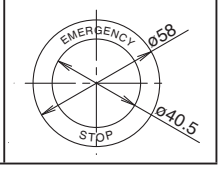
Mounting Hole Plug

Used to plug unused mounting holes (ø30.5) on the mounting panel.

Appearance	Part Number	Dimensions / Usage
	EU9Z-BP	

Emergency Stop Switch Nameplate Stickers

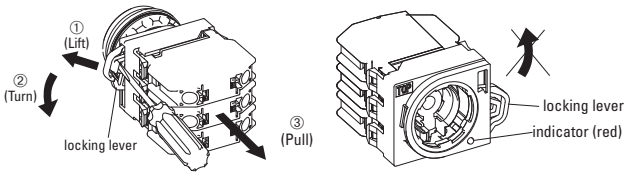
Material: yellow vinyl
Legend: black

Appearance	Legend	Part Number	Dimensions
	Blank	EU9Z-NVS0	
	Emergency Stop	EU9Z-NVS27	

Removing and Installing the Contact Unit / Lamp Unit

To remove the contact unit or the lamp unit from the operator, pull the protruding yellow part of the locking lever outwards as shown in the figure below using a screwdriver, and turn it to the left. The contact unit or lamp unit can be removed.

When the contact unit is removed from the emergency stop switch operator, the NO contact closes and the NC contact opens.
Do not turn the locking lever when the contact unit is removed from the operator (the red indicator is protruding out. See the figure below) or the switch can be damaged.

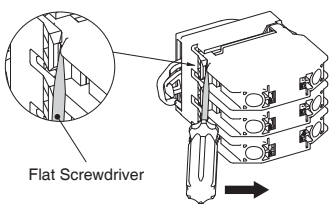


Panel mounting for the operator, lens unit and meter

Remove the locking ring from the operator and check that the rubber gasket is in place. Insert the operator from the panel front into the panel hole. Place the projection on the operator with TOP marking upward and the recess on the mounting panel in the same direction. (The meter has no projection.) Tighten the locking ring using ring wrench XN9Z-T1 to a torque of 2.5 Nm. When using a nameplate or padlocking cover, install it between the operator and panel. Make sure that the groove of the namplate or padlocking cover and the projection on the TOP marking of the operator are in the same direction.
Note: The locking ring for emergency stop switches and meter is metallic.

Removing the Contact Block

To remove the contact block, insert a flat screwdriver under the latch of the contact block adaptor and disengage the latch as shown in the figure below.



Installing the Contact block

When installing the contact block after maintenance or wiring, make sure that the contact configuration is correct. Installing the contact block in the incorrect position or incomplete installation may cause malfunction of the switch.
Remove the contact block from the operator before installing the contact block to the contact block adaptor. Also make sure that the contact block is correctly installed to the contact block adaptor before attaching the operator. Do not install the contact block adaptor with the operator attached. Otherwise, malfunction may result.

Accessories : Padlock Cover

The following padlocks and hasps can be used.

	(Padlock Size)
Emergency Stop Switch	ø5.5 to 7.0 mm

Recommended Hasp

Manufacturer	Part No.
Panduit	PSL-1, PSL-1A, PSL-1.5, PSL-1.5A, PSL-HD1
Master Lock	420, 421

Padlock and hasp are available in various shapes and sizes. Make sure that they do not interfere with the control units.
Note: Not supplied by IDEC.
Keep the total weight of padlock and hasp under 1500g max, otherwise the switch may malfunction or result in failure. No vibration should be applied when padlock or hasp are installed. When padlock or hasp are disfigured, stop usage immediately.
Ensure that no shock or electric sparks are generated.
When using the plate lock padlock cover with the extended push-button, the switch contact may turn on/off when the cover is being installed. Ensure to provide functional safety measure to prevent unexpected startup.
When using the padlock cover on the safety-related part of the control system, observe safety standards and regulations of the relevant country or region. Also be sure to perform risk assessment before operation.

Operating Instructions

Maintenance and Inspection

EU2B switches should be installed in an appropriate control box.

Maintenance and Inspection Method

Perform daily or periodical maintenance and inspection for items such as damage and temperature rise of the EU2B switches listed in the Maintenance and Inspection table below.

Maintenance and Inspection

Inspection Items	Inspection Method	Inspections	Measures
Enclosure base	Visual	No rusting No damages	Cleaning Rust-resistant treatment
Tightening bolt, screws	Visual, tactile	No loosening No rusting	Tightening Cleaning
Packings	Visual	No cracks No apparent deformation	Replacement
Connecting parts	Visual, tactile	No loosening of screws No dirt on insulation materials	Tightening Cleaning
Temperature rise	Thermometer, tactile	Surface temperature 80ºC max.	Investigate the cause

Disposal

Observe laws and regulations set by each country concerning refuse disposal.

Safety Precautions

Use EU2B switches that are applicable for use in hazardous areas (potentially explosive atmosphere where explosive gas or vapor may exist), otherwise explosion or fire hazard may result.

- EU2B switches can be installed only in zones 1 and 2. Do not use in zone 0.
- Turn power off to the EU2B switches before installation, removal, wiring, or maintenance, otherwise explosion, fire hazard, or electric shock may result.
- Do not disassemble, repair, or modify, otherwise damage or accident may result.
- Do not use damaged EU2B switches, otherwise damage or accident may result.
- When connecting external devices, make sure that each cable is connected to the correct terminal, otherwise electric shock, fire hazard, or explosion may result.
- Use wires of a proper size to meet voltage and current requirements. Incorrect wiring may cause abnormal temperature rise and lead to fire hazard and explosion.
- Connect the grounding terminal to a proper ground, otherwise electric shock, fire hazard, or explosion may result.
- Operate the EU2B switches at the rated current and voltage specified in this catalog, otherwise short-circuiting, fire hazard, or explosion may result.
- Stop operation immediately if abnormal operation occurs. Otherwise, a secondary accident may occur.