

# IDEC

## INSTRUCTION MANUAL

### EU2B Flameproof and Increased Safety Control Units

B-1044(2)

Confirm that the delivered product is what you have ordered. Read this instruction manual to make sure of correct operation. Make sure that the instruction manual is kept by the end user.

**Safety Precautions**  
In this operation instruction manual, safety precautions are categorized in order of importance to Warning and Caution:

**WARNING**  
Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

**CAUTION**  
Caution notices are used where inattention might cause personal injury or damage to equipment.

**WARNING**

(General requirements)  
● Use the EU2B control units that are applicable for use in hazardous areas, otherwise explosion or fire hazard may result. (Hazardous area: potentially explosive atmosphere where explosive gas or vapor may exist) Because the EU2B control unit is an Ex component, it cannot be used as an explosion-proof equipment on its own. To use the EU2B control units in Japan, it should be certified by TIIS (Technology Institution of Industrial Safety) as a finished product.

● EU2B control units can be installed only in zones 1 and 2. Do not use in zone 0.  
● Turn power off to the EU2B control units before installation, removal, wiring, maintenance, or inspection, otherwise explosion, fire hazard, or electric shock may result.  
● Special expertise is required to install, wire, operate, maintain, and inspect the EU2B control units. People without such expertise must not use the EU2B control units, otherwise damage or accident may result.  
● Do not disassemble, repair, or modify the EU2B control units, otherwise damage or accident may result.  
● Do not use a damaged the EU2B control units, otherwise damage or accident may result.

(Wiring and operation)  
● When connecting with 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. Tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Incorrect wiring may cause abnormal temperature rise and lead to fire hazard and explosion.  
● Operate the EU2B control units under the rated current and voltage specified in this instruction manual, otherwise short-circuiting, fire hazard, or explosion may result.

(Maintenance and inspection)  
● When measuring the insulation resistance of the control units, make sure that potentially explosive atmosphere of explosive gas or vapor does not exist in the vicinity, otherwise explosion or fire hazard may result. Do not touch the terminal carelessly. Otherwise, electric shock may result.

**CAUTION**

(General requirements)  
● The EU2B control units are exclusively designed for the EC2B flameproof and increased safety control box. When using the EU2B control units for other purposes, make sure that the operating conditions are appropriate.  
● When using the emergency stop switch for safety-related equipment in a control system, to make sure of correct operation, refer to the safety standards and regulations in each country and region depending on the application purpose of the actual machines and installations. Before using the emergency stop switch, perform risk assessment to make sure of safety.

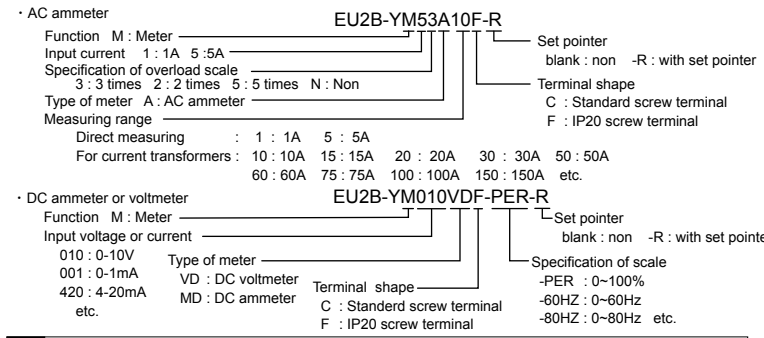
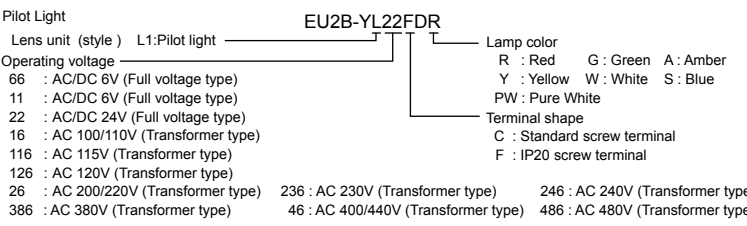
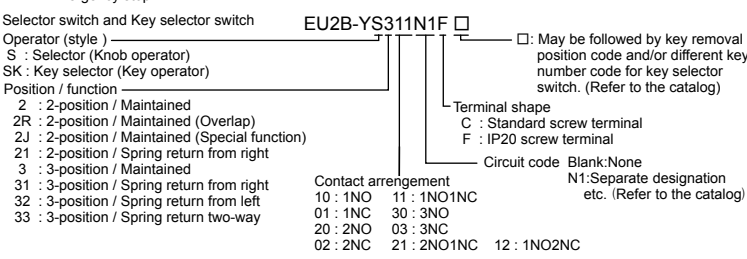
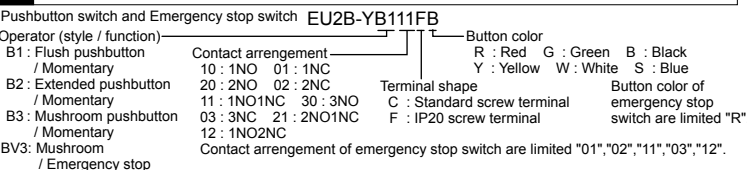
(Opening the shipping carton)  
● Check that the product is what you have ordered. Using an incorrect model might result in malfunction or accident.

(Installation)  
● Read this instruction manual to make sure of correct installation of the EU2B control units. Install the EU2B control units without getting in the substances such as dust, concrete powder, or metal powder, otherwise contact failure or insulation failure may result.

(Operation)  
● Stop operation immediately if abnormal operation occurs. Otherwise, a secondary accident may occur.

(Maintenance and inspection)  
● The surface temperature of the EU2B control units may become extremely high during operation. Before maintenance or inspection of the EU2B control units, be sure to wear gloves to prevent burn on your hand.

## 1 Type Numbers



## 2 Product Specifications

(1) General Specifications

Applicable Standards	IEC/EN 60079-0, IEC/EN 60079-1, IEC/EN 60079-7 IEC/EN 61241-0, IEC/EN 61241-1, IEC/EN 60079-31 IEC/EN 60947-1, IEC/EN 60947-5-1 IEC/EN 60947-5-5 (Emergency stop switch) IEC/EN 60051-1, IEC/EN 60051-2, IEC/EN 60051-9(Meter)
Explosion protection	
Group and category	Ex II2GD
Type of Explosion protection	Ex de IIC, Ex td A21 IP65 Ex de IIC Gb, Ex tb IIC Db IP65(Meter)
Test certified	PTB 08 ATEX 1053 U / PTB 08 ATEX 1003 U / PTB**ATEX***U
Degree of protection (IEC/EN 60529)	IP65
From panel front	IP65
Terminal	IP20 (EU2B-Y**F), None (EU2B-Y**C)
Standard operating environment	
Ambient temperature	-20 to +50°C (no freezing)
Relative humidity	45 to 85%RH (no condensation)
Altitude	2,000m maximum
Pollution degree	3
Shock resistance	Operating extremes 100 m/s <sup>2</sup> , Emergency stop switch: 150 m/s <sup>2</sup> (Without Meter) Damage limits 1,000 m/s <sup>2</sup>
Vibration resistance	Operating extremes 5 to 55 Hz, amplitude 0.5 mm Emergency stop switch: 5 to 500 Hz, amplitude 0.35 mm, acceleration 50 m/s <sup>2</sup> (Without Meter) Damage limits 30 Hz, amplitude 1.5 mm Emergency stop switch: 5 to 500 Hz, amplitude 0.35 mm, acceleration 50 m/s <sup>2</sup>

(2) Pushbutton switch, Selector switch, Key selector switch and Emergency stop switch (Type EU2B-YB/ EU2B-YS/ EU2B-YSK/ EU2B-YBV)

Contact Rating

Rated Insulation Voltage (Ui)	600V
Thermal Current (Ith)	10A
Rated Operating Voltage (Ue)	
Rated Operating Current (Ie)	
AC	Resistive load (AC12) 10A(*) 10A(*) 6A 2.8A
50/60Hz	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

(\*)10A (< 2 contact blocks by one control unit, 9A (= 3 contact blocks by one control unit)  
Minimum switching capacity: 5 mA at 3V AC/DC  
(applicable range may vary with operating conditions and load types)

Specifications

Contact resistance	50 mΩ maximum (initial value)
Impulse Withstand Voltage (Uimp)	6kV
Insulation Resistance	100 MΩ minimum (500V DC megger)
Mechanical Life	Pushbutton switch: 1,000,000 operations minimum Selector switch: 500,000 operations minimum Key selector switch: 500,000 operations minimum Emergency stop switch: 50,000 operations minimum
Electrical Life	Pushbutton switch: 250,000 operations minimum (Operating Frequency: 1,800 operations/hour) Selector switch: 250,000 operations minimum (Operating Frequency: 900 operations/hour) Key selector switch: 250,000 operations minimum (Operating Frequency: 900 operations/hour) Emergency stop switch: 50,000 operations minimum (Operating Frequency: 900 operations/hour)
Contact block	3 contacts maximum.
Short-circuit Protective Device	250V/10A fuse (Type aM IEC60269-1/IEC6026-9-2)
Conditional Short-circuit Current	1000A
Minimum Direct Opening Force	Emergency stop switch: 60 N
Minimum Direct Opening Travel	Emergency stop switch: 7.0 mm
Maximum Travel	Emergency stop switch: 9.0 mm
Weight (approx.)	EU2B-YB111C: 92g, EU2B-YS211C: 98g EU2B-YSK211C: 120g, EU2B-YBV302C: 120g

Notes for Operation  
- Contact bouncing  
When the control unit is operating, the contacts will bounce. When designing a control circuit, take the contact bounce time into consideration (reference value: 20 ms).

(3) Pilot Light (Type EU2B-YL)

Rated insulation voltage (Ui)	500 V
Rated Operating Voltage (Ue)	AC/DC 6, 12, 24V (Full voltage type) AC 100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V (Transformer type)
Impulse Withstand Voltage (Uimp)	4kV
Insulation Resistance	100 MΩ minimum (500V DC megger)
Light source	LED lamp (Type LSTD by IDEC)
Colors	Amber, Blue, Green, Pure White, Red, White, Yellow
Frequency (AC)	50/60 Hz
Rated Power Consumption (approx.)	0.3W (Full voltage type), 1.5VA (Transformer type)
life (reference value)	Approx 40,000 hours
Weight (approx.)	108g (Full voltage type), 150g (Transformer type)

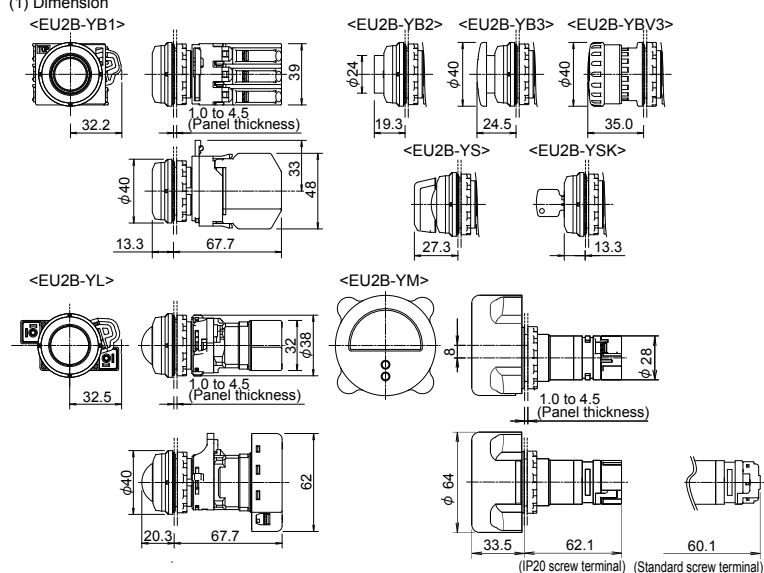
Notes for Operation  
- The LED built-in lamp is super bright type. Note that the LED lamp may turn on even when the power is turned off because of induction.  
- IDEC does not guarantee exchange of an LED lamp, because it will affect explosion protection characteristics. Call IDEC when you need to replace LED lamps.

(4) Meter (EU2B-YM)

Accuracy Class	2.5
Insulation Resistance	100MΩ minimum(500V DC megger)
AC ammeter	Rated Insulation Voltage(Ui) 300V Principle of action Moving-iron instrument Impulse Withstand Voltage(Uimp) 4kV Power Consumption 1VA Specification of Measuring Range 5A, 10A, 30A, 50A etc. Specification of Input Current 1A, 5A Specification of Overload Scale 3 times etc.
DC ammeter DC voltmeter	Rated Insulation Voltage(Ui) 150V Principle of action Permanent-magnet moving-coil instrument Impulse Withstand Voltage(Uimp) 2.5kV Specification of Input DC ammeter 0 to 1mA DC, 4 to 20mA DC etc. DC voltmeter 0 to 10V DC etc. Power Consumption 0.15W max.
Weight(approx.)	270g

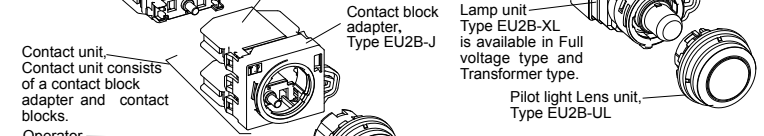
Notes for Operation  
- For AC ammeter of measuring range of 10A or above, use a current transformer commercially available. Install the current transformer in the non-hazardous area.  
- Terminal polarity of meter.  
Note that the upper terminal is positive (No.1) and the lower terminal is negative (No.2) when installed on the control box.  
- Zero-setting the pointer and setting the set pointer.  
Using a flat screwdriver with the tip of 0.8t×5w or smaller, adjust the pointer and the set pointer by turning the shafts as shown at the right. Do not apply excessive force on the shaft, otherwise the shaft will be damaged.  
- DC voltmeter and DC ammeter do not require zero adjustment.

## 3 Arrangement and Mounting



## (3) Panel thickness/ Mounting hole layout

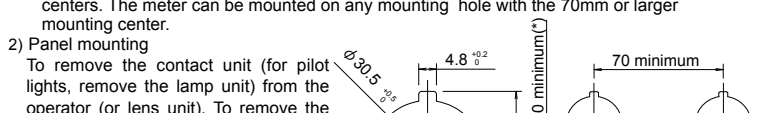
1) Panel thickness: 1.0 to 4.5 mm  
Mounting hole layout: See the right figures.  
(\*The meter can be mounted on the top mounting holes of the standard 50mm mounting centers. The meter can be mounted on any mounting hole with the 70mm or larger mounting center.



## 2) Panel mounting

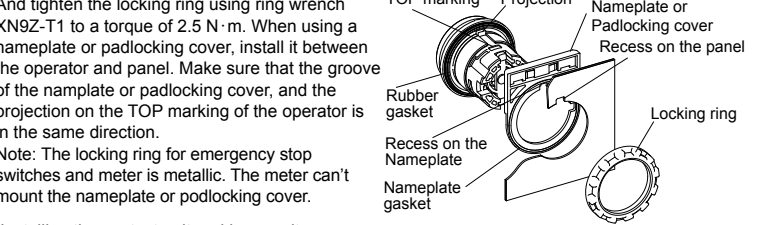
To remove the contact unit (for pilot lights, remove the lamp unit) from the operator (or lens unit). To remove the locking ring from the operator. To insert the operator into the panel cut-out from the front, tighten the locking ring from the back, then install the contact unit to the operator.

Removing the contact unit and lamp unit  
To remove the contact unit or the lamp unit from the operator, pull the protruding part of the locking lever outwards as shown in the diagram (using a screwdriver etc.) and turn it to the left. The contact unit or lamp unit can be pulled out.



Note: 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 on the right). Otherwise, the switch may be damaged.

Panel mounting for the operator, lens unit and meter  
To remove the locking ring from the operator and check that the rubber gasket is in place. To insert the operator from panel front into the panel hole. To place the projection on the operator with TOP marking and the recess on the mounting panel in the same direction. (The meter has no projection.)



Installing the contact unit and lamp unit  
To install the contact unit, place the TOP marking on the operator and the TOP marking on the contact block adapter in the same direction, and then attach the contact unit to the operator. Then turn the locking lever to the right. Follow the same procedure when installing the lamp unit.

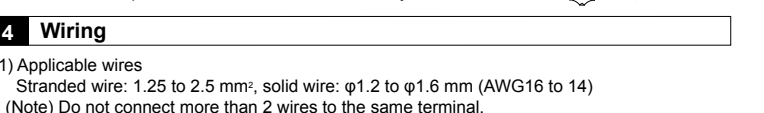
Removing the Contact block  
To remove the contact block, insert a flat screwdriver under the latch of the contact block adapter and disengage the latch. (See the figure below)  
Note: When reinstalling the contact block after maintenance or wiring, make sure that the contact configuration is correct. Installing the contact block in the incorrect position or incomplete installation may cause malfunction of the switch.

Installing the Contact block  
Before installing the contact block, remove the contact block adapter from the operator, and install the contact block on the contact block adapter definitely.  
Note: Do not install the contact block with the control block adapter attached to the operator. Otherwise, malfunction may result.

## 4 Wiring

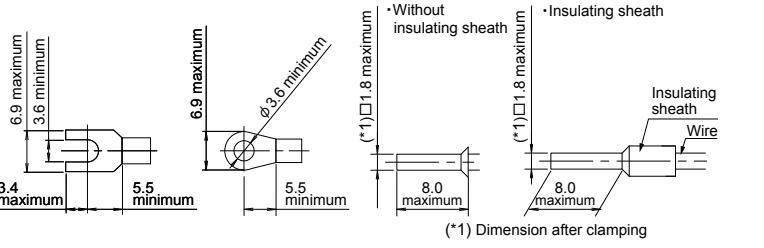
(1) Applicable wires  
Stranded wire: 1.25 to 2.5 mm<sup>2</sup>; solid wire: φ1.2 to φ1.6 mm (AWG16 to 14)  
(Note) Do not connect more than 2 wires to the same terminal.

(2) Applicable crimping terminal  
(Note) Do not use ring terminals for EU2B control units with IP20 protection.  
(Note) When connecting 2 ferrules to the EU2B control unit, use ferrules without insulating sheath.



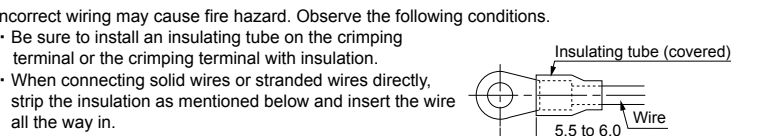
(3) Recommended crimping terminal (WAGO)  
Ferrule with insulating sheath: 216-204,  
Ferrule without insulating sheath: 216-104, Crimping plier: 206-204

(3) Recommended tightening torque  
EU2B control units (M3.5): 1.0 to 1.3Nm



## WARNING

Incorrect wiring may cause fire hazard. Observe the following conditions.  
- Be sure to install an insulating tube on the crimping terminal or the crimping terminal with insulation.  
- When connecting solid wires or stranded wires directly, strip the insulation as mentioned below and insert the wire all the way in.  
EU2B Control units: 8.6 mm maximum  
- When using stranded wires, make sure that there are no wire whiskers.  
- Make sure that the spade and ferrules are inserted all the way in.



## 5 Commissioning

Before commissioning, ensure that:  
- wires are correctly connected,  
- the EU2B control unit is installed been fitted in accordance with this instruction manual,  
- the EU2B control unit is not damaged.

## 6 Maintenance and Inspection

(1) Notes for inspecting the EU2B control units

- 1) Observe the laws and regulations set by each country.
- 2) Never disassemble the control units.
- 3) Do not use tools that cause impact sparks during maintenance and inspection.
- 4) When using measuring devices, use explosion-protected types.
- 5) Do not carry out under the explosion-hazardous environment.

(2) Maintenance and inspection

Perform daily or periodical maintenance and inspection for items listed in the below table.

Table. Maintenance and Inspection Example

Inspection Items	Inspection method	Inspections	Actions
Unit	Visual	<ul style="list-style-type: none"> <li>• No damages</li> <li>• No rusting</li> <li>• No loosening of the locking ring</li> </ul>	<ul style="list-style-type: none"> <li>• Exchange</li> <li>• Cleaning</li> <li>• Tightening</li> </ul>
Packings	Visual	<ul style="list-style-type: none"> <li>• No cracks</li> <li>• No apparent deformation</li> </ul>	<ul style="list-style-type: none"> <li>• Replacement</li> </ul>
Terminal	Visual Tactile	<ul style="list-style-type: none"> <li>• No loosening of screws</li> <li>• No dirt on the insulation materials</li> </ul>	<ul style="list-style-type: none"> <li>• Tightening</li> <li>• Cleaning</li> </ul>

## 7 Accessories and spare parts

1) Color buttons for Pushbutton switch :

Flush/ HW1A-B1□, Extended/ HW1A-B2□, Mushroom/ HW1A-B4□

Note: Specify a color code in place of □.

( R: red, G: green, B: black, Y: yellow, W: white, S: blue )

2) Color lens for Pilot light: EU9Z-L□ (Install tool TW-KC1)

Note: Specify a color code in place of □.

( R: red, G: green, A: amber, Y: yellow, W: white, S: blue )

Note: Use a white (W) color lens for pure white illumination.

3) Nameplate: EU9Z-NM□

Marking plate for nameplate: EU9Z-NP□

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

• Installing the marking plate to a nameplate  
(See fig. 1)

• Removing the marking plate from a nameplate  
(See fig. 2)

To remove the marking plate, insert a flat screwdriver between the marking plate and nameplate.

• When using a nameplate, the mounting panel thickness is decreased by 1.5 mm. (1.0 to 3.0 mm)

4) Nameplate sticker for Emergency stop switch:

EU9Z-NVS27

Legend "EMERGENCY STOP"

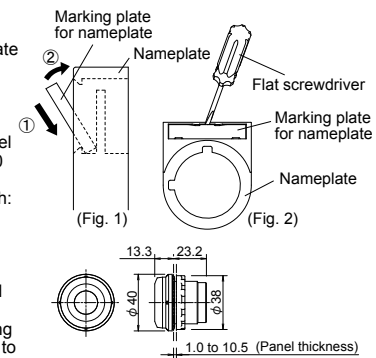
5) Padlocking cover:

for Emergency stop switch/ EU9Z-PCE  
for Pushbutton switch (Flush, Extended) and  
Key selector switch/ EU9Z-PC

• When using a padlocking cover, the mounting panel thickness is decreased by 1.5 mm. (1.0 to 3.0 mm)

6) Mounting hole plug: EU9Z-BP (See the right figures)

(Note) Only use accessories and spare parts specified by IDEC. Use of any other accessories and spare parts will void the warranty.



## 8 Disposal

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

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



## 6 Maintenance et inspection

- Remarques sur l'inspection des blocs de commande EU2B
  - Respecter les lois et réglementations en vigueur dans chaque pays.
  - Ne jamais démonter les blocs de commande.
  - Pendant la maintenance et l'inspection, ne pas utiliser d'outils pouvant causer des étincelles lors des chocs.
  - Lors de l'utilisation de dispositifs de mesure, ceux-ci doivent être protégés contre l'explosion.
  - Ne pas emporter dans un environnement à risque d'explosion.
- Maintenance et inspection
 

Effectuer régulièrement la maintenance et l'inspection des pièces énumérées dans le tableau ci-dessous.

Tableau: Exemple de maintenance et d'inspection

Pièces à inspecter	Méthode d'inspection	Inspections	Actions
Unité	Visuelle	<ul style="list-style-type: none"> <li>Pas de dommages</li> <li>Pas de rouille</li> <li>Bague de verrouillage bien serrée</li> </ul>	<ul style="list-style-type: none"> <li>Remplacement</li> <li>Nettoyage</li> <li>Serrage</li> </ul>
Garnitures	Visuelle	<ul style="list-style-type: none"> <li>Pas de fissures</li> <li>Pas de déformation visible</li> </ul>	<ul style="list-style-type: none"> <li>Remplacement</li> </ul>
Borne	Visuelle Tactile	<ul style="list-style-type: none"> <li>Pas de vis desserrées</li> <li>Pas de saletés sur les matériaux isolants</li> </ul>	<ul style="list-style-type: none"> <li>Serrage</li> <li>Nettoyage</li> </ul>

## 7 Accessoires et pièces de rechange

- Boutons de couleur pour interrupteur à bouton-poussoir:
 

Vidange/ HW1A-B1□, Étendu/ HW1A-B2□, Coup de poing/ HW1A-B4□

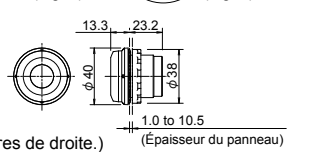
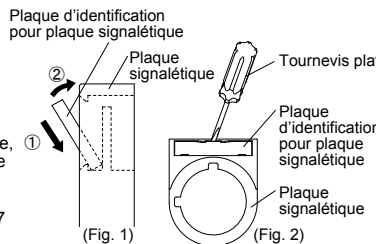
Remarque: Spécifier un code de couleur au lieu de □.  
(R: rouge, G: vert, B: noir, Y: jaune, W: blanc, S: bleu)
- Lentille de couleur pour voyant lumineux: EU9Z-L□ (Outil d'installation TW-KC1)
 

Remarque: Spécifier un code de couleur au lieu de □.  
(R: rouge, G: vert, A: ambre, Y: jaune, W: blanc, S: bleu)

Remarque: Utiliser une lentille de couleur blanche (W) pour un éclairage d'un blanc pur.
- Plaque signalétique: EU9Z-NM□  
Plaque d'identification pour plaque signalétique: EU9Z-NP□

Code(□)	Légende
0	(vide)
1	ACTIVÉ
2	DÉSACTIVÉ
3	DÉMARRAGE
4	ARRÊT
31	ACTIVÉ/DÉSACTIVÉ
35	MANUEL-AUTO
53	MANUEL-DÉSACTIVÉ-AUTO

- Installation de la plaque d'identification sur une plaque signalétique (Voir Fig. 1.)
- Retrait de la plaque d'identification d'une plaque signalétique (Voir Fig. 2.)
- Pour retirer la plaque d'identification, insérer un tournevis plat entre la plaque d'identification et la plaque signalétique.
- Lors de l'utilisation d'une plaque signalétique, l'épaisseur du panneau de montage diminue de 1,5 mm (1,0 à 3,0 mm).
- Étiquette de plaque signalétique pour interrupteur d'arrêt d'urgence: EU9Z-NVS27  
Légende « ARRÊT D'URGENCE »
- Couvercle-cadenas:
  - pour interrupteur d'arrêt d'urgence/ EU9Z-PCE
  - pour interrupteur à bouton-poussoir (Vidange, Étendu) et sélecteur à clé/ EU9Z-PC
  - Lors de l'utilisation d'un couvercle-cadenas, l'épaisseur du panneau de montage diminue de 1,5 mm (1,0 à 3,0 mm).
- Fiche du trou de montage: EU9Z-BP (Voir les figures de droite.)



(Remarque) Utiliser uniquement les accessoires et pièces de rechange spécifiés par IDEC. L'utilisation de tout autre accessoire ou pièce de rechange annulera la garantie.

## 8 Élimination

Respecter les lois et réglementations en vigueur dans chaque pays en matière de traitement des ordures. Les spécifications et autres descriptions de ce manuel sont sujettes à modification sans préavis.

# MANUEL D'INSTRUCTIONS

## Blocs de commande EU2B Inscrits aux répertoires UL et c-UL (Antidéflagrants et à sécurité augmentée)

Ce manuel d'instructions décrit les produits inscrits aux répertoires UL et c-UL. Pour les pièces autres que celles décrites dans ce manuel, voir le manuel d'instructions de bloc de commande EU2B « B-1044 ».

Vérifier que le produit livré correspond à celui qui a été commandé. Lire ce manuel d'instructions pour s'assurer d'utiliser correctement le produit. S'assurer que l'utilisateur final conserve le manuel d'instructions.

### Consignes de sécurité

Dans ce manuel d'instructions d'utilisation, les consignes de sécurité sont classées par ordre d'importance sous les termes Avertissement et Attention:

#### Avertissement

Le terme Avertissement est utilisé pour souligner qu'une utilisation inadéquate peut entraîner une blessure grave ou le décès.

#### Attention

Le terme Attention est utilisé lorsqu'une inattention peut entraîner une blessure ou des dommages matériels.

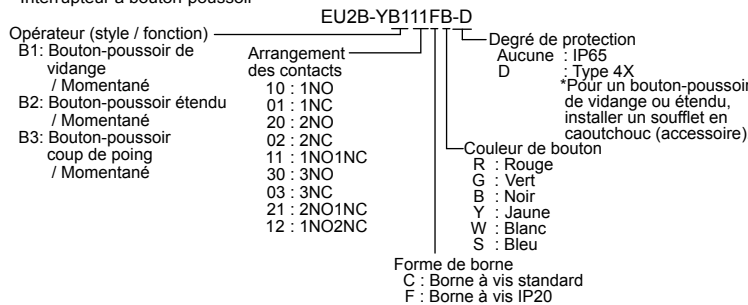
#### Avertissement

(Exigences générales)

- Utiliser des blocs de commande EU2B conçus pour l'utilisation dans les zones dangereuses, sinon il y a risque d'explosion ou d'incendie. (Zone dangereuse: atmosphère potentiellement explosive où il peut y avoir des gaz explosifs ou des vapeurs explosives) Pour utiliser le bloc de commande EU2B comme équipement électrique de protection contre l'explosion, l'EU2B doit être inscrit en tant qu'équipement de protection contre l'explosion.
- Les blocs de commande EUB2 peuvent être installés dans les zones 1 et 2 et dans la division 2. Ne pas les utiliser dans la zone 0 et dans la division 1.

### 1 Numéros de type

· Interrupteur à bouton-poussoir



### 2 Spécifications du produit

(1) Spécifications générales

Normes applicables	UL 60079-0, UL 60079-1, UL 60079-7 CAN/CSA C22.2 No. 60079-0 CAN/CSA C22.2 No. 60079-1 CAN/CSA C22.2 No. 60079-7										
Protection contre l'explosion	<table border="1"> <tr> <td>Type de protection contre l'explosion (Remarque 1)</td> <td>UL</td> <td>Classe I, Zone 1, AEx de IIC T6 Gb Classe I, Div2, Groups A,B,C and D</td> </tr> <tr> <td></td> <td>c-UL</td> <td>attendre Voyant lumineux Classe I, Zone 1, Ex de IIC T6 Gb Classe I, Div2, Groups A,B,C and D</td> </tr> <tr> <td></td> <td></td> <td>Voyant lumineux Classe I, Zone 1, Ex de IIB T6 Gb Classe I, Div2, Groups C and D</td> </tr> </table>		Type de protection contre l'explosion (Remarque 1)	UL	Classe I, Zone 1, AEx de IIC T6 Gb Classe I, Div2, Groups A,B,C and D		c-UL	attendre Voyant lumineux Classe I, Zone 1, Ex de IIC T6 Gb Classe I, Div2, Groups A,B,C and D			Voyant lumineux Classe I, Zone 1, Ex de IIB T6 Gb Classe I, Div2, Groups C and D
Type de protection contre l'explosion (Remarque 1)	UL	Classe I, Zone 1, AEx de IIC T6 Gb Classe I, Div2, Groups A,B,C and D									
	c-UL	attendre Voyant lumineux Classe I, Zone 1, Ex de IIC T6 Gb Classe I, Div2, Groups A,B,C and D									
		Voyant lumineux Classe I, Zone 1, Ex de IIB T6 Gb Classe I, Div2, Groups C and D									
Certifié par essai	E347230										
Degré de protection	<table border="1"> <tr> <td>De l'avant du panneau (Remarque 2)</td> <td>Type 4X(l'interrupteur de type vidange ou étendu est fixé au soufflet en caoutchouc)</td> </tr> <tr> <td></td> <td>IP65</td> </tr> </table>		De l'avant du panneau (Remarque 2)	Type 4X(l'interrupteur de type vidange ou étendu est fixé au soufflet en caoutchouc)		IP65					
De l'avant du panneau (Remarque 2)	Type 4X(l'interrupteur de type vidange ou étendu est fixé au soufflet en caoutchouc)										
	IP65										

- Remarque 1: Inscrit pour l'utilisation en Zone 1, 2 et Division 2.
- Remarque 2: Les boutons-poussoirs de types vidange et étendu ne sont pas certifiés PTB avec le soufflet en caoutchouc monté.
- Remarque 3: Monter le bloc de commande EU2B sur une enveloppe métallique mise à la terre.  
(Comprend les produits inscrits aux répertoires UL et c-UL, et certifiés ATEX)
- Remarque 4: Applications à degré de pollution 2 ou applications à degré de pollution 3 lors de l'installation dans une enveloppe de Type 4X ou IP65 ou meilleure, ou mention équivalente.

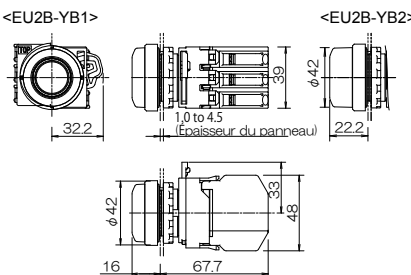
(2) Interrupteur à bouton-poussoir, sélecteur, sélecteur à clé et interrupteur d'arrêt d'urgence (Type EU2B-YB/ EU2B-YS/ EU2B-YSK/ EU2B-YBV)

· Valeurs nominales de contact

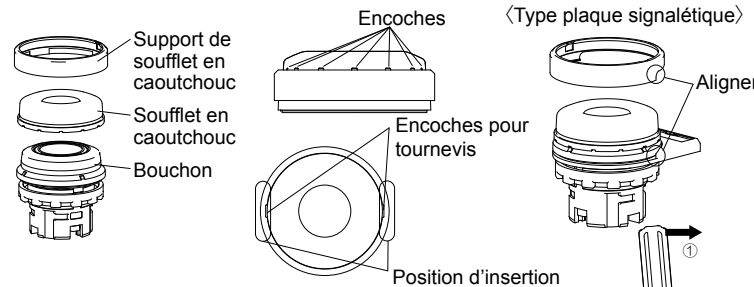
Désignation du code de valeurs nominales de contact	Ampères de courant d'épreuve thermique continue	Courant maximum, ampères								Voltampères maximum
		120 volts		240 volts		480 volts		600 volts		
		Fermer	Ouvrir	Fermer	Ouvrir	Fermer	Ouvrir	Fermer	Ouvrir	
A600	10	60	6.00	30	3.00	15	1.50	12	1.20	7200 720

### 3 Arrangement et montage

(1) Dimensions (Interrupteur à bouton-poussoir avec soufflet en caoutchouc)



- (2) Soufflet en caoutchouc sur boutons-poussoirs de types vidange et étendu  
<Installation du soufflet en caoutchouc sur les boutons-poussoirs de types vidange et étendu>  
Mettre le soufflet en caoutchouc sur le bouchon, et enfoncer bien droit le support de soufflet en caoutchouc. Les encoches autour du soufflet en caoutchouc doivent être uniformément visibles. Enfoncement davantage le support de soufflet en caoutchouc, à l'emplacement des deux encoches du support, de sorte que le support s'adapte parfaitement au bouchon. S'assurer d'installer bien droit le soufflet en caoutchouc et son support. Type plaque signalétique: l'EU2B et le support de soufflet en caoutchouc doivent être alignés de sorte que, une fois installés, la partie saillante anti-rotation de l'EU2B arrive au centre de la rainure sur le support. (Remarque) S'assurer que le soufflet en caoutchouc est parfaitement installé, sinon le degré de protection Type 4X ne pourra être obtenu. (Remarque) Il se peut que des gouttes d'eau pénétrant dans le soufflet en caoutchouc, mais l'eau ne pénétrera pas dans le boîtier de commande.



<Retrait du soufflet en caoutchouc des boutons-poussoirs de type vidange et étendu>  
Insérer doucement le tournevis plat (0,5t x 4w ou inférieur) dans une encoche du support de soufflet en caoutchouc, et incliner dans le sens de la flèche ①.  
Le soufflet en caoutchouc peut être retiré.  
(Remarque): Pour éviter tout dommage, ne pas appliquer une force excessive sur l'EU2B en retirant le soufflet en caoutchouc. Le degré de protection désiré ne peut être assuré si l'EU2B est endommagé.

### 4 Câblage

- (1) Câbles utilisables  
Fil multibrins: 1,5 à 2,5 mm<sup>2</sup>, fil plein: φ1,2 à φ1,6 mm (AWG 16 à 14)  
(Remarque) Ne pas connecter plus de 2 fils à la même borne.

### 5 Accessoires

- 1) Soufflet en caoutchouc sur bouton-poussoir (matériau: caoutchouc de silicone)  
Bouton-poussoir de vidange ..... EU9Z-DB1  
..... EU9Z-DB1N (Une plaque signalétique peut être appliquée)
- Bouton-poussoir étendu ..... EU9Z-DB2  
..... EU9Z-DB2N (Une plaque signalétique peut être appliquée)

# INSTRUCTION MANUAL

## EU2B Control Units UL and c-UL Listed (Flameproof and Increased Safety Construction)

This instruction manual describes UL and c-UL Listed products. For items other than described in this manual, see EU2B control unit instruction manual "B-1044".

Confirm that the delivered product is what you have ordered. Read this instruction manual to make sure of correct operation. Make sure that the instruction manual is kept by the end user.

### Safety Precautions

In this operation instruction manual, safety precautions are categorized in order of importance to Warning and Caution:

#### WARNING

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

#### CAUTION

Caution notices are used where inattention might cause personal injury or damage to equipment.

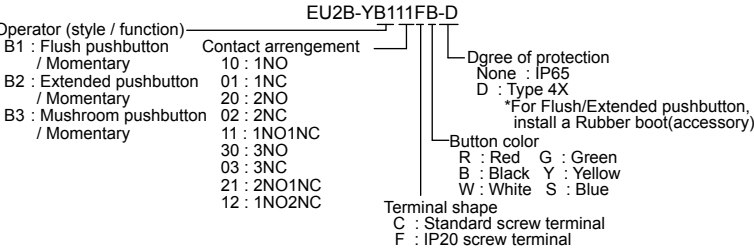
#### WARNING

(General requirements)

- Use the EU2B control units that are applicable for use in hazardous areas, otherwise explosion or fire hazard may result. (Hazardous area: potentially explosive atmosphere where explosive gas or vapor may exist) To use the EU2B control unit as explosion-protection electric equipment, the EU2B has to be Listed as an explosion-protection equipment.
- EU2B control units can be installed only in zones 1, 2 and division 2. Do not use in zone 0 and division 1.

### 1 Type Numbers

· Pushbutton switch



### 2 Product Specifications

(1) General Specifications

Applicable Standards	UL 60079-0, UL 60079-1, UL 60079-7 CAN/CSA C22.2 No. 60079-0 CAN/CSA C22.2 No. 60079-1 CAN/CSA C22.2 No. 60079-7										
Explosion protection	<table border="1"> <tr> <td>Type of Explosion protection (Note1)</td> <td>UL</td> <td>Class I, Zone 1, AEx de IIC T6 Gb Class I, Div2, Groups A,B,C and D</td> </tr> <tr> <td></td> <td>c-UL</td> <td>Except Pilot light Class I, Zone 1, Ex de IIC T6 Gb Class I, Div2, Groups A,B,C and D</td> </tr> <tr> <td></td> <td></td> <td>Pilot light Class I, Zone 1, Ex de IIB T6 Gb Class I, Div2, Groups C and D</td> </tr> </table>		Type of Explosion protection (Note1)	UL	Class I, Zone 1, AEx de IIC T6 Gb Class I, Div2, Groups A,B,C and D		c-UL	Except Pilot light Class I, Zone 1, Ex de IIC T6 Gb Class I, Div2, Groups A,B,C and D			Pilot light Class I, Zone 1, Ex de IIB T6 Gb Class I, Div2, Groups C and D
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		Pilot light Class I, Zone 1, Ex de IIB T6 Gb Class I, Div2, Groups C and D									

Test certificated	E347230
Degree of protection	
From panel front(Note2)	Type 4X(Flush and Extended type switch is attached to the rubber boot)
	IP65

- Note 1: Listed for use in Zone 1, 2 and Division 2.  
Note 2: Flush and extended pushbuttons are not PTB certified with the rubber boot mounted.  
Note 3: Mount the EU2B control unit to a grounded metal enclosure. (Includes UL and c-UL Listed, ATEX approved products)  
Note 4: Pollution Degree 2 applications or Pollution Degree 3 applications when installed in a Type 4X or IP65 or better enclosure or equivalent statement.

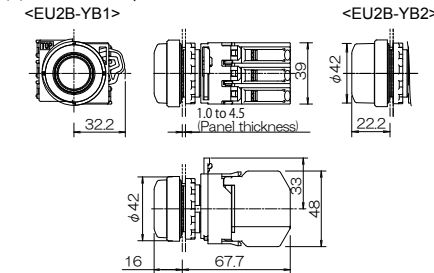
(2) Pushbutton switch, Selector switch, Key selector switch and Emergency stop switch  
(Type EU2B-YB/ EU2B-YS/ EU2B-YSK/ EU2B-YBV)

· Contact Rating

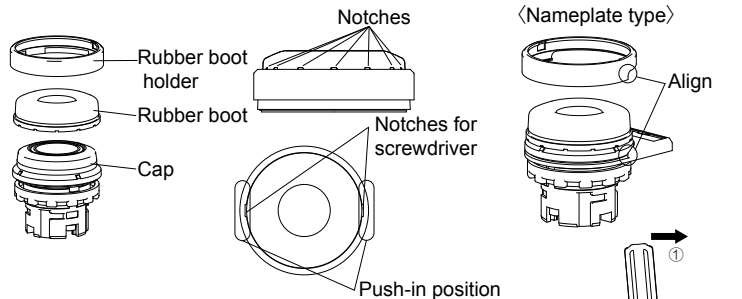
Contact Rating Code designation	Thermal Continuous Test Current Amperes	Maximum current, amperes								Maximum Volt-amperes	
		120 Volt Make Break		240 Volt Make Break		480 Volt Make Break		600 Volt Make Break		Make	Break
A600	10	60	6.00	30	3.00	15	1.50	12	1.20	7200	720

### 3 Arrangement and Mounting

(1) Dimension (Pushbutton switch with Rubber boot)



- (2) Rubber boot on flush and extended pushbuttons  
<Installing the rubber boot on flush and extended pushbuttons>  
Place the rubber boot on the cap, and push in the rubber boot holder straight. The notches around the rubber boot must show evenly. Push in the rubber boot holder further, around on the two notches on the holder, so that the holder fits the button completely. Make sure that the rubber boot and rubber boot holder are installed straight. Nameplate type: the EU2B and the rubber boot holder must be aligned so that when installed, the anti-rotation projection on the EU2B comes to the center of groove on the holder. (Note)Make sure that the rubber boot is installed completely, otherwise Type 4X degree of protection cannot be obtained. (Note)Water drops might enter the rubber boot, but no water will enter the control box.



<Removing the rubber boot from the flush and extended pushbuttons>  
Gently insert the slotted screwdriver (0,5t x 4w or below) inside a notch on the rubber boot holder, and tilt to the direction shown with arrow ①.  
The rubber boot can be removed.  
(Note): To prevent from damage, do not apply excessive force to the EU2B when removing the rubber boot. The desired degree of protection cannot be ensured with the damaged EU2B.

### 4 Wiring

- (1) Applicable wires  
Stranded wire: 1.5 to 2.5 mm<sup>2</sup>, solid wire: φ 1.2 to φ 1.6 mm (AWG16 to 14)  
(Note) Do not connect more than 2 wires to the same terminal.

### 5 Accessories

- 1) Rubber boot on pushbutton (Material : Silicone rubber)  
Flush push button ..... EU9Z-DB1  
..... EU9Z-DB1N (Nameplate can be applied)  
Extended push button ..... EU9Z-DB2  
..... EU9Z-DB2N (Nameplate can be applied)

# IDEC CORPORATION

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http://www.idec.com  
B-1529-1(3)

Draw. No. B-1529D

Oct. 29, 2014