

PART3

SAFETY SWITCH

SAFETY SWITCH

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SAFETY SWITCH

KSD / KS2D Series

Shape	Model	Contact Configuration	Control Key Type	Certification
	KSD-AB □	1NO 1NC	H: Horizontal Type V: Vertical Type C: Adjustable Type	
	KSD-2NC □	2NC		
	KSD-A □	1NO		
	KSD-B □	1NC		
	KS2D-3B □	3NC	H: Horizontal Type V: Vertical Type C: Adjustable Type	
	KS2D-2NC □	2NC		
	KS2D-2NCA □	2NC 1NO		
	KS2D-AB □	1NO 1NC		
	KS2D-B □	1NC		
	KS2D-A □	1NO		

KSKG Series

Shape	Contact Configuration	Solenoid Presence	Operating Unit	Certification
	2B 2A (2NC / 2NO)	No Solenoid – Key Locking Not Possible	LCR	
	3B 1A (3NC / 1NO)		LCL	
	4B 2A (4NC / 2NO)	Solenoid	LCLR	
	5B 1A (5NC / 1NO)		RCR	

NS22-MK Series

Shape	Model Name	Contact Configuration	Operating Unit	Certification
	NS22-MK NS22-MKP	2NC 1NO	LL	
		2NC 2NO	RL	
		3NC	LR	
		3NC 1NO	RR	

SAFETY SWITCH

KESD Series

Shape	Door Lock/Release Method	Contact Configuration	OperationKey	Certification
	M: Mechanical Lock S: Solenoid Lock	A : 2NC + 2NO B : 3NC + 1NO C : 3NC + 1NO	H	  
			V	
			C	

KSE Series

Shape	Model	Mounting Diameter	Product Type	Ingress Protection	Certification
	KSEP-224 KSEP-226	Ø22 Ø25 Ø30	Lamp Applicability P: Non-illuminated B: Illuminated	IP 66 (Front panel)	  
	KSEB-224 KSEB-226				

KEPB Series

Shape	Model	Mounting Diameter	Product Type	Ingress Protection	Certification
	KEPB160ER	Ø 16	S: White Arrow Marking No Marking : No Arrow Marking	IP 65 (Front panel)	 
	KEPB22ER	Ø 22 Ø 25 Ø 30			  
	KEPB22ERK				

A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

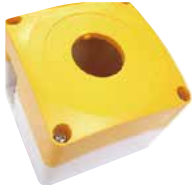
H Terminal block

I Control box

J Cover

SAFETY SWITCH

KSE Enclosure Box Series

Shape	Model	Number of hole	Hole Diameter	Ingress Protection
	KSE-221	1 hole	Ø22	IP 65
	KSE-251		Ø25	
	KSE-301		Ø30	
	KSE-221S		Ø22	
	KSE-251S		Ø25	
	KSE-301S		Ø30	

Creative Passion



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SAFETY SWITCH

KSD SERIES KS2D SERIES

Safety Door Switch

Features

- IP67 (when using cable gland)
- Max. surrounding air temperature 40°C

KSD Certification

-  CAN/CSA-C C22.2 NO. 14-13
UL 508
-  EN ISO 14119:2013
EN ISO 13849-2:2012 Annex A & D
EN ISO 60204-1:2018
EN ISO 60947-5-1:2017/AC:2020
-  S1-G-1-2009
KS C IEC 60947-5-1
-  GB/T14048.5



KS2D Certification

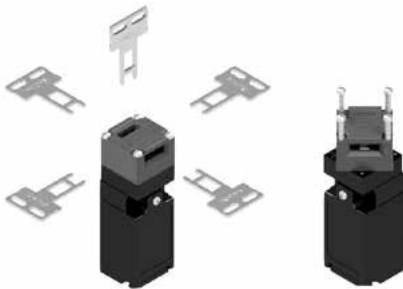
-  UL 60947-1, UL 60947-5-1
CSA-C C22.2 NO. 60947-1-13
No. 60947-5-1-14
-  EN ISO 14119:2013
EN ISO 13849-2:2012 Annex A & D
EN ISO 60204-1:2018
EN ISO 60947-5-1:2017/AC:2020
-  S1-G-1-2009
KS C IEC 60947-5-1

Classification

KSD – ☐ ☐
① ② ③

① Product Classification	Composition	
② Contact Configuration	AB	1NO 1NC
	2B	2NC
	A	1NO
	B	1NC
③ Control Key Type	H	Horizontal
	V	Vertical
	C	Adjustable Type

* NO contact configuration A is a configuration without Direct Opening. (Common to KSD, KS2D)



KS2D – ☐ ☐
① ② ③

① Product Classification	Composition	
② Contact Configuration	3B	3NO
	2B	2NC
	2BA	2NC, 1NO
	AB	1NO 1NC
	B	1NC
	A	1NO
③ Control Key Type	H	Horizontal
	V	Vertical
	C	Adjustable Type

Head Rotation and Key Insertion

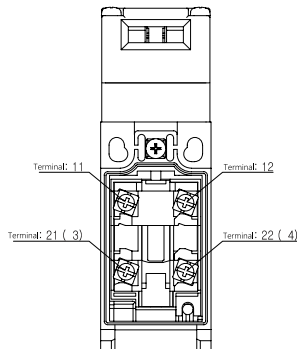
※ Supports key insertion from 5 directions

SAFETY SWITCH

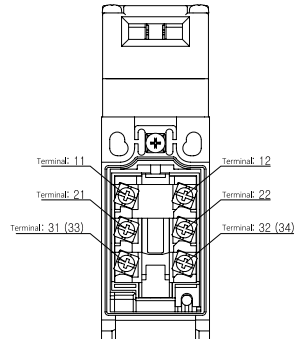


■ Terminal Arrangement Diagram

KSD, KS2D (2NC, 1NO 1NC)



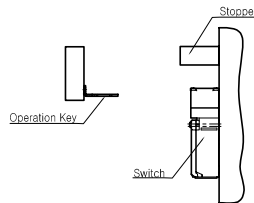
KS2D (3NC, 2NC 1NO)



Recommended Tightening Torque (Nm)

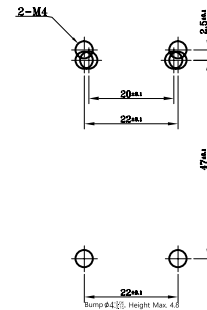
Terminal Screw (M3)	0.6–0.8Nm
Cover Installation Screw	0.5–0.7Nm
Head Installation Screw	0.5–0.6Nm
Main body installation screw (M4)	0.5–0.7Nm
Control Key installation screw	2.4–2.8Nm

■ Stopper Installation Method



- * Do not use the main body as a stopper.
 - * Ensure the end of the Control Key does not touch the head section.
- Be sure to install the stopper before use.

■ Mounting Dimensions



■ Precautions

- The above are initial values.
- Using the control key when the head is detached may cause malfunction; please refrain from doing so.
- The IP67 protection rating is based on testing methods according to the standard (IEC 60947–5–1).
- The main unit is protected against dust and moisture. However, use it in locations where the key insertion port is not exposed to metal dust, oil, moisture, chemicals, etc. This may result in malfunction.
- Durability conditions apply at ambient temperatures of 5 to 35°C and humidity of 40 to 70% RH.
- When the temperature exceeds 40°C, ensure the humidity does not exceed 50%RH.
- Store, transport, and use the product without applying any load that could cause deformation or deterioration. Avoid fire and direct heat.
- Do not apply AC250V 3A to two min. circuits simultaneously.
- Use an appropriate fuse for short-circuit protection (IEC 60269 6A, gG or gL, Icc=1kA at 500V). The wire length to the SCPD must be less than 3m. This product does not have a built-in fuse.
- When connecting wiring, strip 6mm of insulation from the wire ends before use.
- This product must be classified as industrial waste.
- Cable gland: PG13.5
(Cable Range: 6–11mm, Screw O.D.: 20.4mm, Screw Length: 10mm, Spanner Wrench Size: A&E: 27/24mm)
- This interlock switch does not have a guard Locking device; therefore, the product's engagement time must be longer than the overall system's stopping performance.
- The product's MTTFd is 1388.9 years.
(ISO 13849–1:2023–C4.2, B10d=100K cycles derived from nop=720 cycles/year, Parameters: dop=240 days, hop=0.25 hours, tcycle=300 seconds)
- Use a minimum applied load of 5Vdc and 1mA min.. The switch contacts are rated for both general and micro loads, but connect a small-capacitance load to the contact that has been opened or closed. (KS2D product)

- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

SAFETY SWITCH

KSKG SERIES

Terminal Angle Type Mode Key Selector Switch

CE IEC/EN 60947-5-1

S S1-G-1-2017

KS C IEC 60947-5-1:2009

UL 60947-5-1 / UL 60947-1,

CSA C22.2 NO. 60947-5-1 / 60947-1



Features

- Optional built-in solenoid forcibly opens all contacts with a single key operation.
- The maintenance key switch adds a lock function to the product, ensuring operator safety and preventing equipment malfunctions.
- Uses 250 VAC, 10 A rated NO contacts, enabling safe use for a wide range of electrical control applications.
- Various types* with different functions are available.

* Mode Conversion: A mode change switch to initiate maintenance work.

* Multi-person external: External control switch to permit entry into the work area for maintenance by multiple personnel.

* Internal use for multiple users: Internal control switch for final maintenance check.

Classification

KSKG — — —
 ① ② ③

① Contact Configuration	Model	Configuration
	22	2B 2A (2NC / 2NO)
	31	3B 1A (3NC / 1NO)
	42	4B 2A (4NC / 2NO)
	51	5B 1A (5NC / 1NO)

※ Safety certification is only guaranteed for the 4 specified contact configurations.
 Quality assurance is void if the customer arbitrarily changes the configuration.

② Solenoid Presence	Model	Configuration
	None	No Solenoid — KEY Locking Not Possible.
	S	Solenoid

③ Actuator	Code		Location	NC contact closed position		KEY disconnection position		KEY lock position	
	Solenoid	Non-sol							
	LCR	LC	Exterior		L		C		R
	LCL								L
	LCLR								LR
	RCR	RC	Interior		R		C		R

NO contacts can be configured up to a Max. of 2, and NC contacts up to a Max. of 5. (You can configure up to six circuit combinations within this range.)

Model Example) 2 NC contact blocks (2B) + 2 NO contact blocks (2A) + Solenoid installed + Key release on right + NC energized on left + Key lock position on right = KSKG-22S-LCR

SAFETY SWITCH

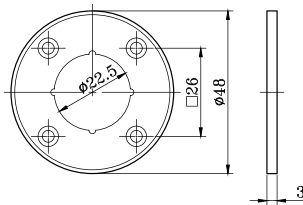


Specifications

Model	KSKG
Contact Rating	AC 250V 10A, DC 24V 10A (Resistive Load)
Insulation Resistance	100M Ω (DC500V Insulation Resistance Meter)
Withstand Voltage	2,500VAC (1 minute at 50Hz/60Hz)
Contact Resistance	50m Ω max. (initial value)
Minimum Operating Load	AC 5V 500mA min. / DC 5V 100mA min.
Vibration Resistance	10 to 55 Hz, double amplitude 1.5 mm, X, Y, Z axes, 1 hour each
Shock Resistance	300m/s ² (durability), 100m/s ² (malfunction)
Operating Ambient Temperature	-25°C – +70°C (S-type: -15°C – +70°C) (without freezing)
Storage Ambient Temperature	-45°C – +80°C (without freezing)
Operating ambient humidity	45 – 85% RH
Rated Insulation Voltage (Ui)	500V
Rated Impulse Withstand Voltage (Uimp)	4kV
Pollution Degree	Grade 3
Electrical Life	100,000 cycles min.(Max. switching frequency: 15 cycles/min)
Mechanical life	100,000 cycles min.
Ingress Protection	IP66 (Front Panel)
Fuse Specification (gG)	Breaking capacity: 10kA at AC500V, In=10 A
Conditional Short-Circuit Current (Icc)	1kA (AC 250V)

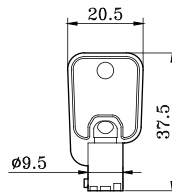
※ UL-approved operating ambient temperature: 65°C

Accessories



Front Panel KSKG-MTP

※ Accessories are included in the standard product package.



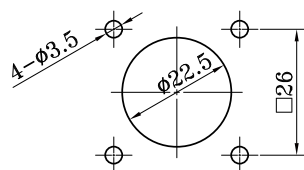
Control Key KSKG-KCW

Accessory Part Numbers

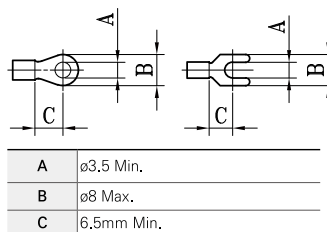
Mode Selection Switch Label		General-purpose Switch Label	Accessories	
KSKG-AT-ON	KSKG-TA-IN	KSKG-NN-GN	KSKG-MTP	KSKG-KCW
Multi-user Switch Label (External)			Multi-user Switch Label (Internal)	
KSKG-MP1-ON	KSKG-MP2-ON	KSKG-MP1-IN	KSKG-MP2-IN	KSKG-MP3-IN
다인수 스위치(1)	다인수 스위치(2)	다인수 스위치(1)	다인수 스위치(2)	다인수 스위치(3)

SAFETY SWITCH

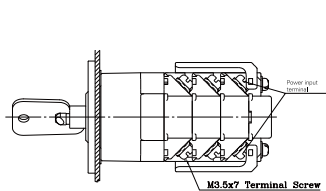
Panel Hole Dimensions



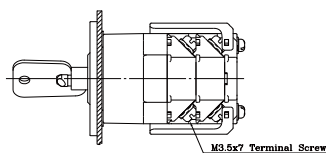
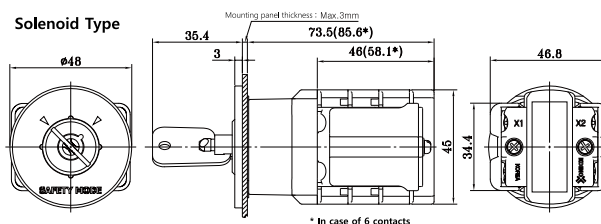
Applicable terminals for wiring



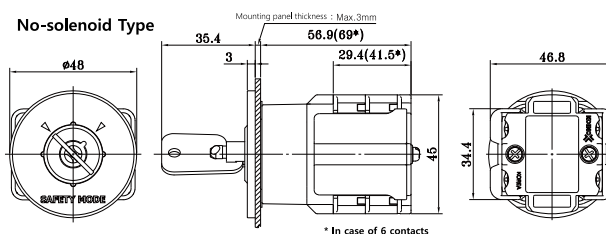
Dimensions



Solenoid Type



No-solenoid Type



Contact Rating

* IEC/EN 60947-5-1

Voltage	AC-12(R)	AC-15(L)
125V	15A	7.5
250V	10A	3A

(R: Resistive load, L: Inductive load)

Voltage	DC-12(R)	DC-13(L)
24V	10A	6
250V	0.8A	0.5A

* UL508

A300		Current (A)	
Voltage	Current	Input	Cut-off
AC120V	10A	60	6
AC240V		30	3

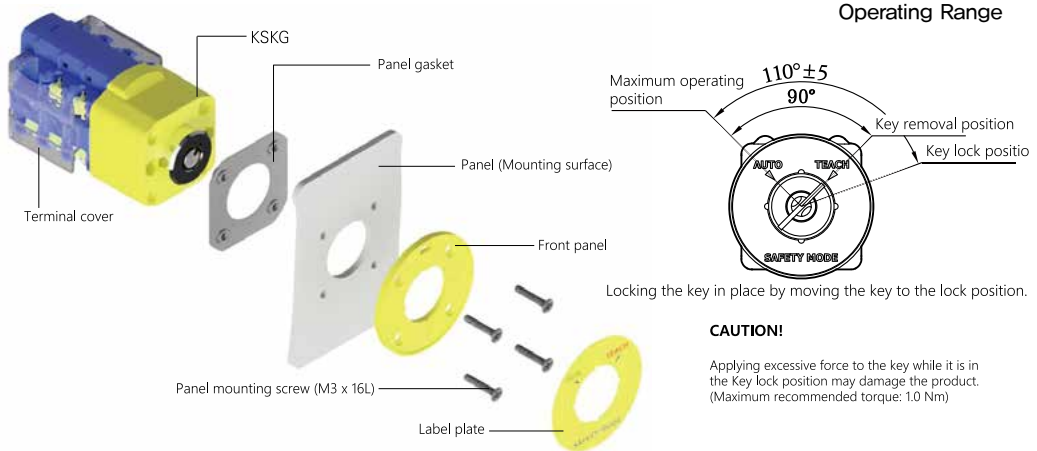
P300		Current (A)	
Voltage	Current	Input	Cut-off
DC125V	5A	1.1	1.1
DC250V		0.55	0.55

※ The minimum contact operating specification is 5VAC 500mA min., or 5VDC 100mA min.,.

SAFETY SWITCH



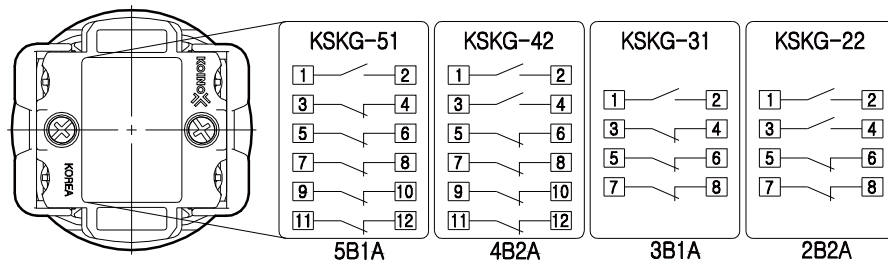
Panel Mounting Method



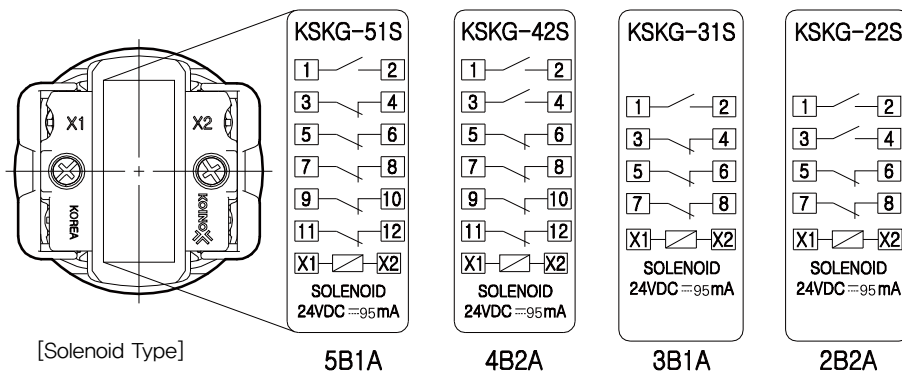
Contact Arrangement

Products without a solenoid do not have terminals X1 and X2

Solenoid Power Supply: DC24V (Terminals X1, X2 non-polarized, Current Consumption: 95mA)



[Non-Solenoid Type]



[Solenoid Type]

SAFETY SWITCH

NS22-MK SERIES

Mode Key Selector Switch

CE IEC/EN 60947-5-1

S S1-G-1-2017

KS C IEC 60947-5-1:2009



Features

- AUTO TEACH function selection is available.
- Supports key disengagement prevention function.
- Supports various configurations including forced-break contacts.
- Supports left key separation and right key separation functions.
- Stability is enhanced when used in conjunction with the KESD interlock switch.

Classification

NS22 –
 ① ② ③

① Product Form	Model	Configuration
	MK	Mode Key Selector Switch
	MKP	Mode Key Selector Switch (Panel Type)

② Contact Configuration	Model	Configuration
	1B1B1A	2NC 1NO
	2B02A	2NC 2NO
	1B1B1B	3NC
	1B2B1A	3NC 1NO

※ Safety certification is only guaranteed for the 4 specified contact configurations.
 Quality assurance is void if the customer arbitrarily changes the configuration.

③ Actuator	Code	Key separation position	NC contact closed position
	LL		
	RL		
	LR		
	RR		

Model Example) 2 NC contact blocks (1B+1B) + 1 NO contact block (1NO) + Key separation on right + NC energized on left

NS22-MK-1B1B1A RL

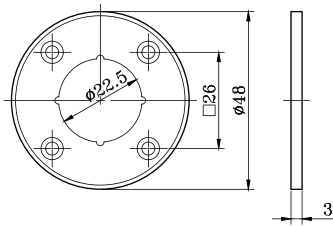
SAFETY SWITCH



Specifications

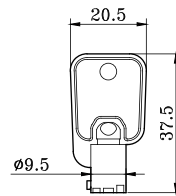
Model	Product	
	NS22-MK	NS22-MKP
Contact Rating	125VAC 6A, 250VAC 3A, (Resistive load)	
Insulation Resistance	100M Ω (DC500V Insulation Resistance Meter)	
Withstand Voltage	2,500VAC (1 minute at 50Hz/60Hz)	
Contact Resistance	30m Ω max. (initial value)	
Minimum Operating Load	DC5V 5mA min.	
Electrical Life	100,000 cycles min. (Max. switching frequency 30 cycles/min)	
Mechanical life	100,000 cycles min. (Max. switching frequency 30 cycles/min)	
Vibration resistance	10 – 55 Hz, double amplitude 1.5 m in X, Y, and Z directions for 1 hour (within 1 ms)	
Shock resistance	Durability: 50G min., Malfunction: 10G min. (within 1ms)	
Ingress Protection	IP 66 (Panel front operation section)	
Operating Ambient Temperature	-25°C – +70°C (without freezing)	
Storage Ambient Temperature	-45°C – +80°C	
Operating Ambient Humidity	45–85% RH	
Rated Insulation Voltage (Ui)	600V	
Rated Impulse Withstand Voltage (Uimp)	6KV	
Encapsulated Thermal Current (Ith)	10A	

Accessories



Front Panel MK-MTP

※ Accessories are included in the standard product package.



Operating Key MK-KCW

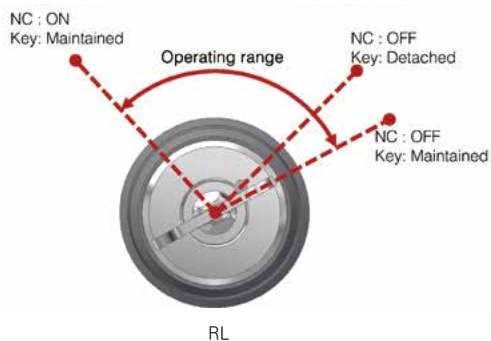
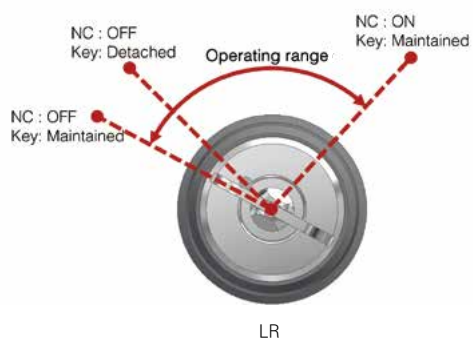
Accessory Part Numbers

Mode Selection Switch Label		General-purpose Switch Label	Accessories	
MK-AT-ON	MK-TA-IN	MK-NN-GN	MK-MTP	MK-KCW
Multi-user Switch Label (External)			Multi-user Switch Label (Internal)	
MK-MP1-ON	MK-MP2-ON	MK-MP1-IN	MK-MP2-IN	MK-MP3-IN

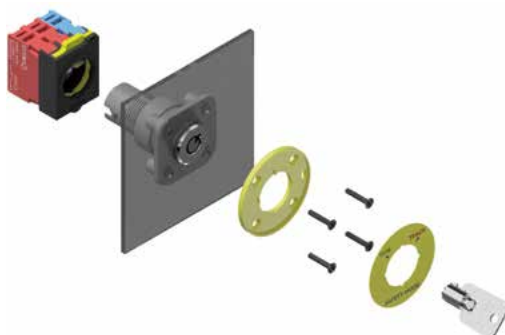
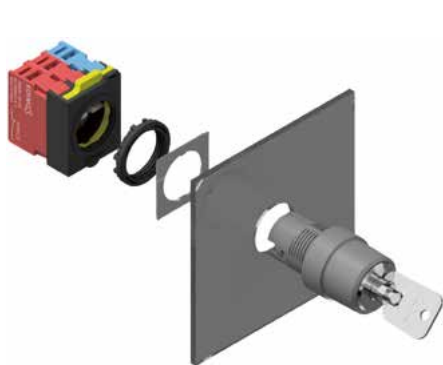
- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

SAFETY SWITCH

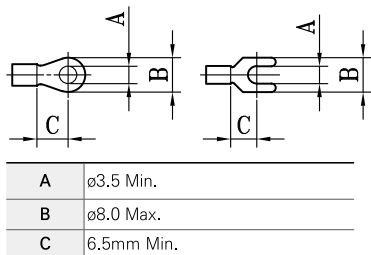
Mode Key Selector Switch



Panel Mounting Method

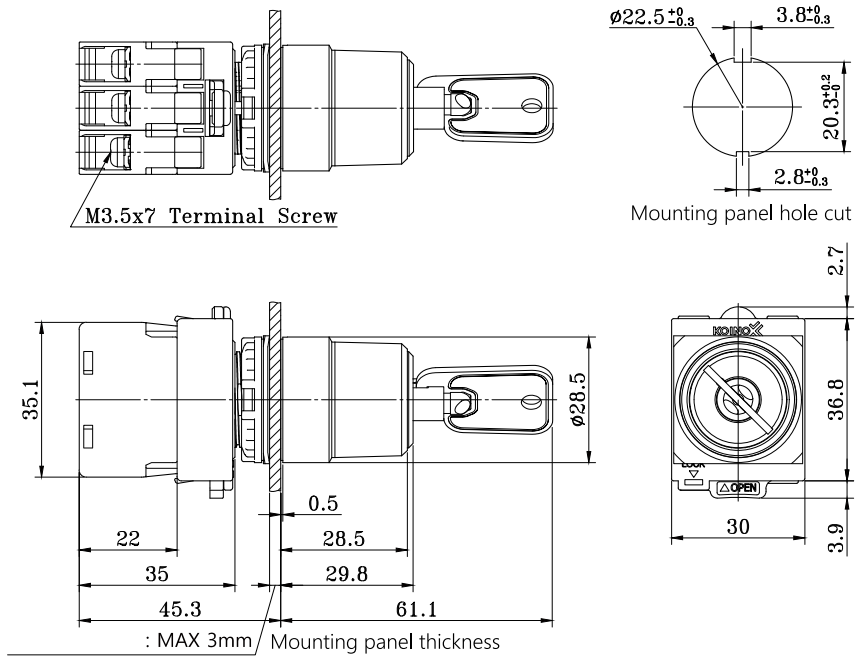


■ Wiring Terminal

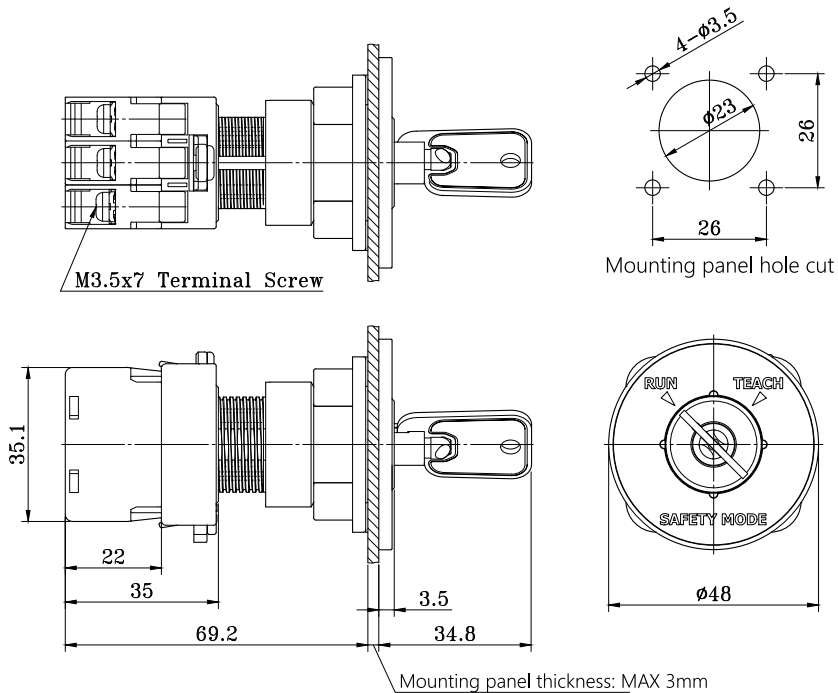


Dimensions

NS22-MK Mode Key Selector Switch



NS22-MKP Mode Key Selector Switch (Panel type)



- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

SAFETY SWITCH

KESD SERIES

Safety Interlock Switch

Features

- Electronic safety door switch with built-in solenoid
- Lock and monitoring functions enable door status indication
- Manual emergency release available
- The key head shutter prevents unauthorized key operation.
- The key insertion slot can be adjusted in 5 directions.



UL 60947-5-1, UL 60947-1
CSA C22.2 NO. 60947-5-1-14 NO. 60947-1

EN 60947-5-1

S1-G-1-2009
KS C IEC 60947-5-1

Classification

KESD - □ □ - □ □

Classification	Code	Code Description
Manufacturer	K	KUN HUNG ELECTRIC CO., LTD.
Product Name	ESD	Electric Safety Door Switch
Door Lock / Release Method	M	Mechanical Lock Method / DC 24V Solenoid Release Method
	S	DC 24V Solenoid Lock Method / Mechanical Release Method
Contact Configuration (Locked state after key insertion)	A	2NC (Locking) + 1NO (Door) + 1NO (Solenoid)
	B	2NC (Locking) + 1NC (Door) + 1NO (Solenoid)
	C	2NC (Locking) + 1NC/1NO (Door)
Rear Emergency Release	No Marking	Not provided
	R	Standard length, Rotary knob – 40.9 mm
	RS	No length, Tool-operated rotary head
	RL	Extended length, Rotary knob – 79.9 mm
Control Key	H	Horizontal Control Key
	V	Vertical Control Key
	C	Adjustable Control Key (Up/Down/Left/Right Type: C-1)

SAFETY SWITCH

Accessory Classification

K ESD - □ □ - □

Classification	Code	Code Description
Manufacturer	K	Kun Hung Electric Co., Ltd.
Product Name	ESD	Electric Safety Door Switch
Sliding Unit	SU	Sliding Unit
	SKU	Key Shutter Sliding Unit
Release Lever	No Marking	Release Lever Not Installed
	L	Release Lever Installed
Rear Release Button	No Marking	No Emergency Release
	R	Bracket Options For Emergency Release

※ When using the sliding unit, you must use the horizontal control key (H).

K ESD - □

Classification	Code	Code Description
Manufacturer	K	KUN HUNG ELECTRIC CO., LTD.
Product Name	ESD	Electric Safety Door Switch
Key Shutter Unit	KU	Sliding Unit

※ Includes a dedicated key (KSKG-KCW).

K ESD - □

Classification	Code	Code Description
Manufacturer	K	KUN HUNG ELECTRIC CO., LTD.
Product Name	ESD	Electric Safety Door Switch
Release Lever	L	Release Lever



Product Type

Model	Lock method	Contact configuration (Locked state after inserting the control key)	Indicator	Inlet
KESD-MA	M: Mechanical lock / Solenoid release	A TYPE: 2NC ➡ (Lock monitoring) 1NO (Door monitoring) 1NO (Solenoid monitoring)	Solenoid DC24V / LED(Green) DC24V	G1/2
KESD-SA	S: Solenoid lock / Mechanical release			
KESD-MB	M: Mechanical lock / Solenoid release	B TYPE: 2NC ➡ (Lock monitoring) 1NC ➡ (Door monitoring) 1NO (Solenoid monitoring)		
KESD-SB	S: Solenoid lock / Mechanical release			
KESD-MC	M: Mechanical lock / Solenoid release	C TYPE: 2NC ➡ (Lock monitoring) 1NC ➡ (Door monitoring) 1NO (Door monitoring)		
KESD-SC	S: Solenoid lock / Mechanical release			

A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

H Terminal block

I Control box

J Cover

SAFETY SWITCH

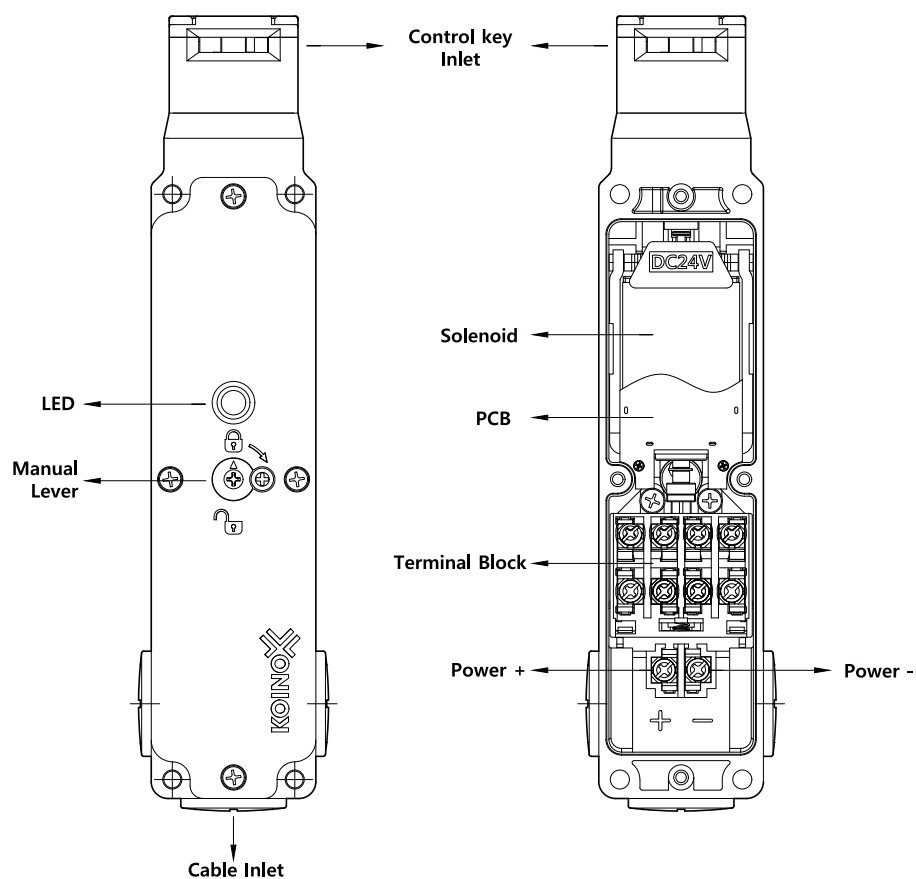
Specifications

Model		KESD Series
Contact Rating		250VAC 3A, 125VDC 0.55A (AC-15, DC-13)
Insulation Resistance		100M Ω min. (DC500V Insulation Resistance Meter)
Contact Resistance		25m Ω (Initial Value) max.
Rated Insulation Voltage		250V
Vibration Resistance		10–50Hz, 0.35mm peak-to-peak amplitude, X, Y, Z directions
Shock Resistance (Durability)		30G min.
Operating Ambient Temperature		–10 to +55° C
Operating Ambient Humidity		95% RH max.
Lifespan		Mechanical: 1,000,000 cycles min. Electrical: 500,000 cycles min.
Operation (Opening/Closing) Frequency		30 cycles/min max.
Lock Retention Force		600N min.
Minimum Operating Force		60N
Direct Opening Operating Distance		13mm min.
Rated Open Thermal Current		2.5A (EN 60947–5–1)
Ingress Protection		IP67 (main body), IP00 (control unit)
Electrical Shock Protection Class		Class II
Pollution Degree (Operating Environment)		Pollution Degree 3
Impulse Withstand Voltage	Between Terminals Of The Same Pole	2.5KV
	Between Each Terminal And Non-Charged Metal Parts	2.5KV
Conditional Short-Circuit Current		100A
*Solenoid Overcurrent Protection		Overcurrent limit of 800mA min.
*Recommended Short-Circuit Protection Device (Scpd)		5A
Altitude		Max. 2,000m
Solenoid	Rated Voltage	DC 24V $\pm$ 10%
	Current Consumption	Power ON: 300mA $\pm$ 10%,
		Normal operation (10 seconds after power-on): 150mA
	Insulation Class	Class E
Indicator Light		DC24V, 18mA, Green

- * Solenoid Overcurrent Protection: When overcurrent exceeds 500mA, the product power is cut off via current limiting. After clearing the fault, the product can be restarted after resetting the power.
(Note: Overcurrent limit consumption may vary depending on temperature)
- * Recommended Short-Circuit Protection Device (SCPD): Use a gG or gL fuse compliant with IEC 60269 as the short-circuit protection equipment.
The main unit does not contain a built-in fuse.
- * Solenoid including LED indicator – 24VDC, approx. 300mA, Class 2 Max.
surrounding air temperature 55°C .

SAFETY SWITCH

Internal and External Structure



- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

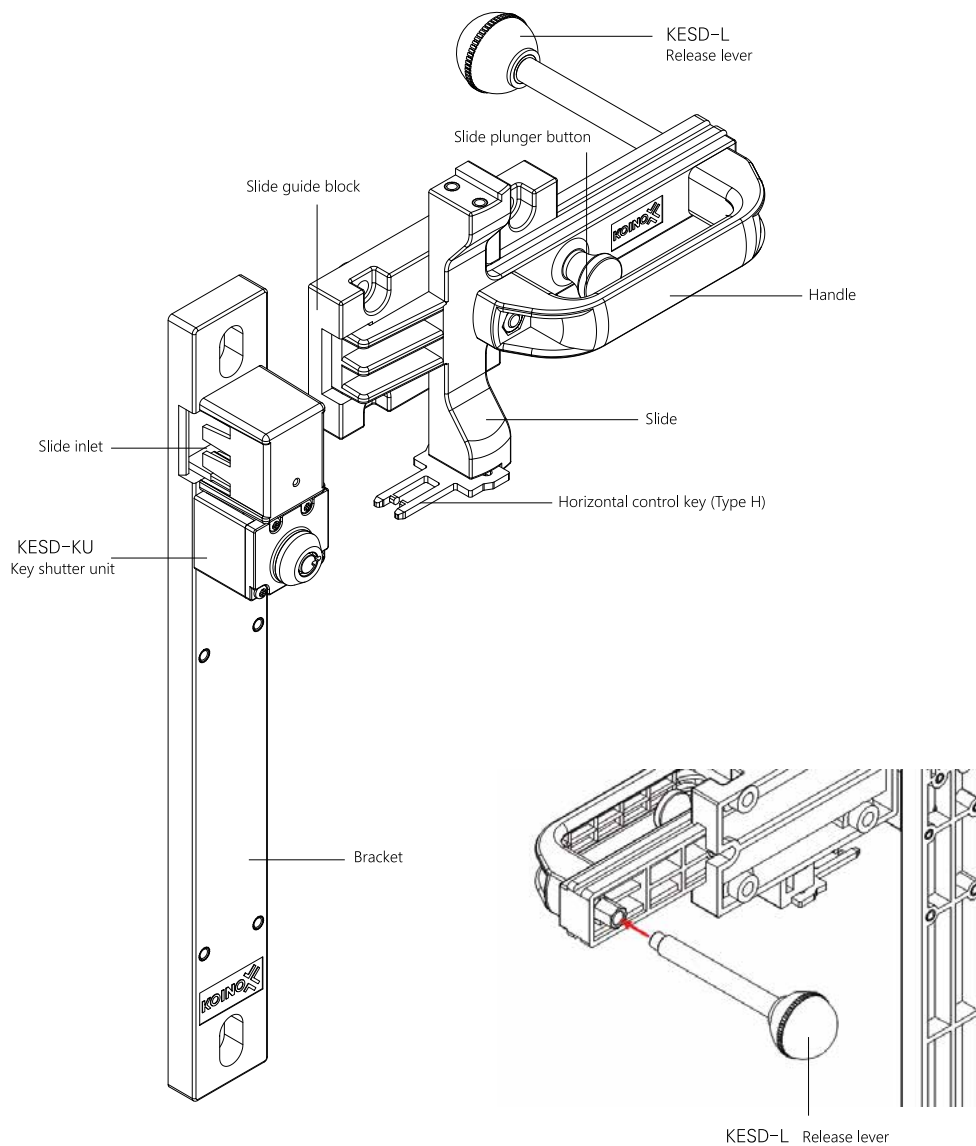
Terminal arrangement

A Type	B Type	C Type																																				
<table><tr><td>11</td><td>12</td><td>21</td><td>22</td></tr><tr><td>33</td><td>34</td><td>43</td><td>44</td></tr><tr><td>+</td><td>-</td><td></td><td></td></tr></table>	11	12	21	22	33	34	43	44	+	-			<table><tr><td>11</td><td>12</td><td>21</td><td>22</td></tr><tr><td>31</td><td>32</td><td>43</td><td>44</td></tr><tr><td>+</td><td>-</td><td></td><td></td></tr></table>	11	12	21	22	31	32	43	44	+	-			<table><tr><td>11</td><td>12</td><td>21</td><td>22</td></tr><tr><td>33</td><td>34</td><td>41</td><td>42</td></tr><tr><td>+</td><td>-</td><td></td><td></td></tr></table>	11	12	21	22	33	34	41	42	+	-		
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SAFETY SWITCH

Internal and External Structure

KESD-SKUL (Slide Unit + Key Shutter Unit + Release Lever)

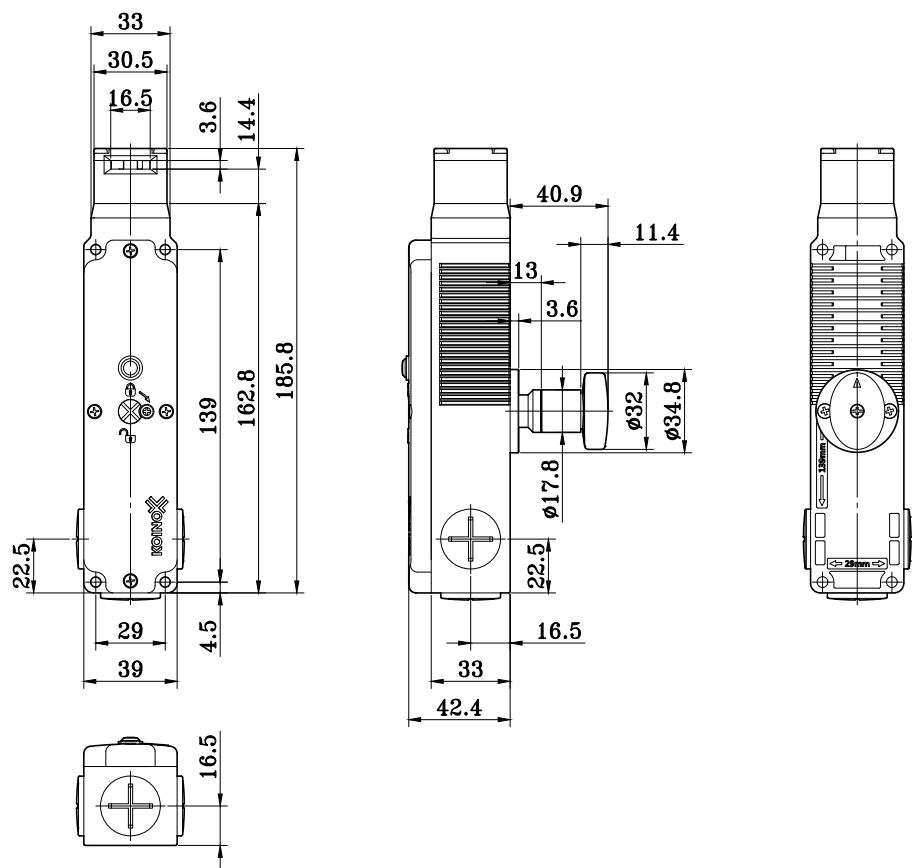


- ※ When using the slide unit, the horizontal Control Key (H) must be used.
- ※ The slide knob can also be installed on the left side.
- ※ When using the release lever, assemble it onto the bolt opposite the Knob.

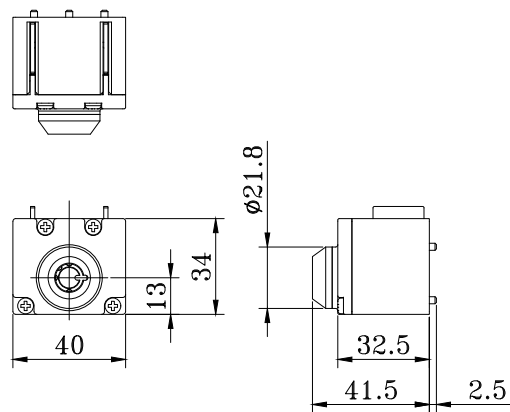
SAFETY SWITCH

Dimension

KESD-M □ -S □ -R (Rear Emergency Release Button)



KESD-KU (Key Shutter Unit)

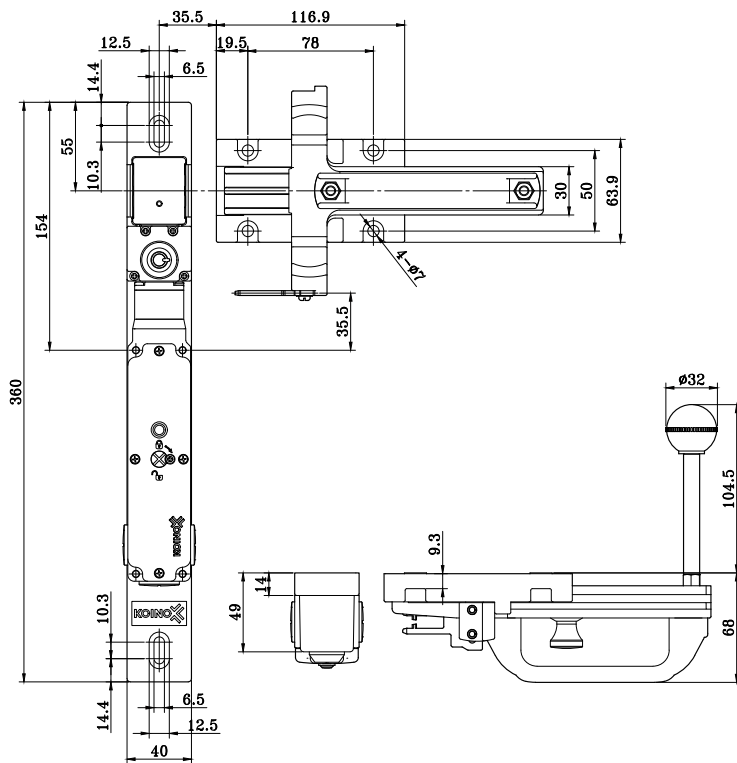


A	Power switch
B	Cam switch
C	Safety switch
D	Control switch
E	Limit switch
F	Micro switch
G	Foot switch
H	Terminal block
I	Control box
J	Cover

SAFETY SWITCH

Dimension

KESD-M, S + KESD-SKUL (Safety Door Switch + Key Shutter Slide Unit + Release Lever)



Control Key Type

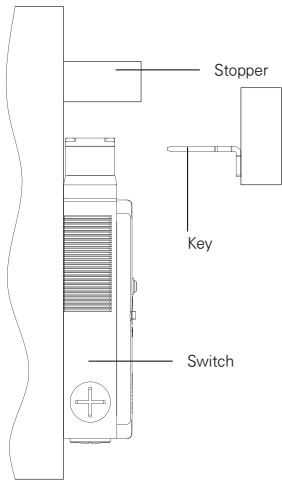
H Type	V Type
C Type	C-1 Type

SAFETY SWITCH

Mounting Processing Method and Mounting Processing Dimension

KESD-M □ , S □	KESD-SU
KESD-M □ , S □ -R, RL	KESD-SU-R, RL

Stopper Installation Method



Control Key Attachment Machining Drawing

H,V Type	C, C-1 Type

- ※ Do not use the main body as a stopper.
- ※ Install the Stopper as shown in the figure above to prevent the end of the control key from touching the head unit.

A	Power switch
B	Cam switch
C	Safety switch
D	Control switch
E	Limit switch
F	Micro switch
G	Foot switch
H	Terminal block
I	Control box
J	Cover

SAFETY SWITCH

Circuit Diagram

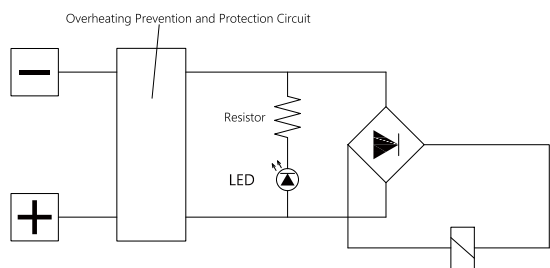
	Terminal layout	Circuit diagram	Circuit description												
A	<table border="1"> <tr><td>11</td><td>12</td><td>21</td><td>22</td></tr> <tr><td>33</td><td>34</td><td>43</td><td>44</td></tr> <tr><td colspan="2">+</td><td colspan="2">-</td></tr> </table>	11	12	21	22	33	34	43	44	+		-			2NC $\leftrightarrow$ 11-12,21-22 (Locking monitoring) 1NO 33-34 (Door monitoring) 1NO 43-44 (Solenoid monitoring)
11	12	21	22												
33	34	43	44												
+		-													
B	<table border="1"> <tr><td>11</td><td>12</td><td>21</td><td>22</td></tr> <tr><td>31</td><td>32</td><td>43</td><td>44</td></tr> <tr><td colspan="2">+</td><td colspan="2">-</td></tr> </table>	11	12	21	22	31	32	43	44	+		-			2NC $\leftrightarrow$ 11-12,21-22 (Locking monitoring) 1NC $\leftrightarrow$ 31-32 (Door monitoring) 1NO 43-44 (Solenoid monitoring)
11	12	21	22												
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C	<table border="1"> <tr><td>11</td><td>12</td><td>21</td><td>22</td></tr> <tr><td>33</td><td>34</td><td>41</td><td>42</td></tr> <tr><td colspan="2">+</td><td colspan="2">-</td></tr> </table>	11	12	21	22	33	34	41	42	+		-			2NC $\leftrightarrow$ 11-12,21-22 (Locking monitoring) 1NC $\leftrightarrow$ 41-42 (Door monitoring) 1NO 33-34 (Door monitoring)
11	12	21	22												
33	34	41	42												
+		-													

+ and - are the solenoid power terminals

$\rightarrow$ Direct opening symbol

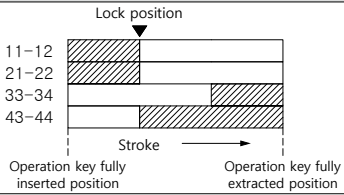
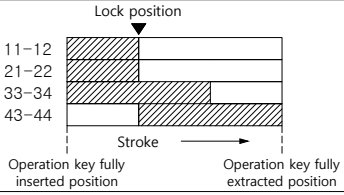
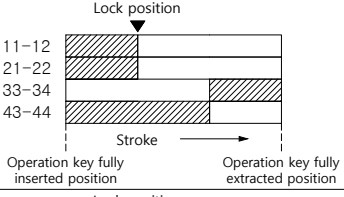
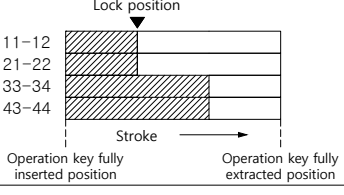
The circuit diagram showing the circuit in the locked state after the key is inserted.

Internal Circuit Diagram (Solenoid and Indicator Light)



SAFETY SWITCH

Operating Characteristics

	Contact configuration	Operation
Type A	2NC 11-12,21-22  (Locking monitoring) 1NO 33-34 (Door monitoring) 1NO 43-44 (Solenoid monitoring)	
Type B	2NC 11-12,21-22  (Locking monitoring) 1NC 31-32  (Door monitoring) 1NO 43-44 (Solenoid monitoring)	
Type C	2NC 11-12,21-22  (Locking monitoring) 1NO 33-34 (Door monitoring) 1NC 41-42  (Door monitoring)	
Type D	2NC 11-12, 21-22  (Locking monitoring) 2NC 31-32, 41-42  (Door monitoring)	

■ Forced Release Using Manual Lever

During a power outage or emergency, the lock can be manually released using the manual lever, regardless of the solenoid's state. Manual unLocking must be performed only by authorized personnel using the manual lever.

For solenoid lock types, there is a risk of internal component damage. Do not attempt forced release using the manual lever while the lock is engaged (solenoid ON state).

- After releasing the manual lever screw, rotate the manual lever 180 degrees.
- After forced release using the manual lever, it must be restored to its original state.

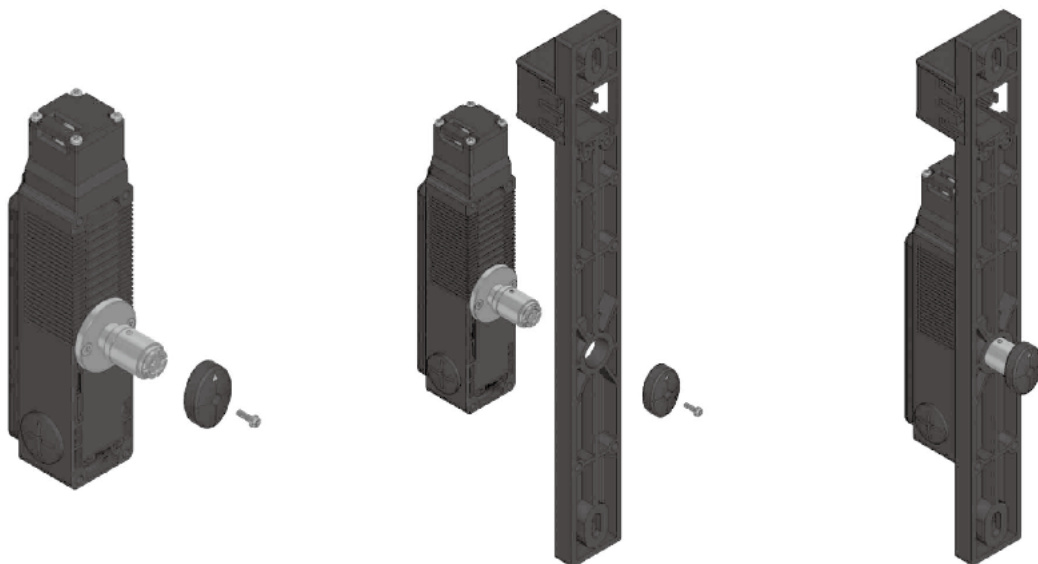


Manual Lever

A	Power switch
B	Cam switch
C	Safety switch
D	Control switch
E	Limit switch
F	Micro switch
G	Foot switch
H	Terminal block
I	Control box
J	Cover

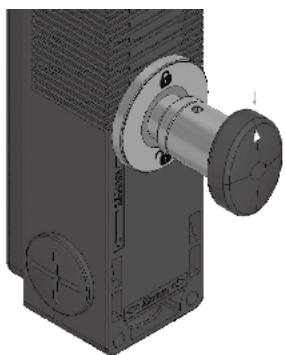
SAFETY SWITCH

Rear Emergency Release Button Installation Method

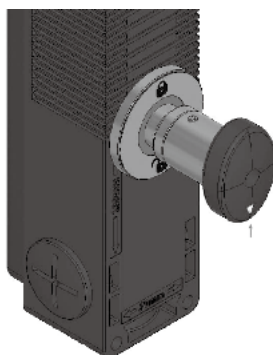


- Loosen the screw on the red knob of the release button assembled on the back of the product and separate it.
- Assemble the separated product onto the bracket or mounting hole so that the release button is facing outward.
- Insert the red knob that was previously detached into the release button located opposite the bracket or mounting hole, then secure it with a screw. Ensure the knob's arrow points toward the main unit's control key head.
- Before use, turn the button to check for any product abnormalities.

Rear Emergency Release Button Operation Method



Knob arrow position when locked

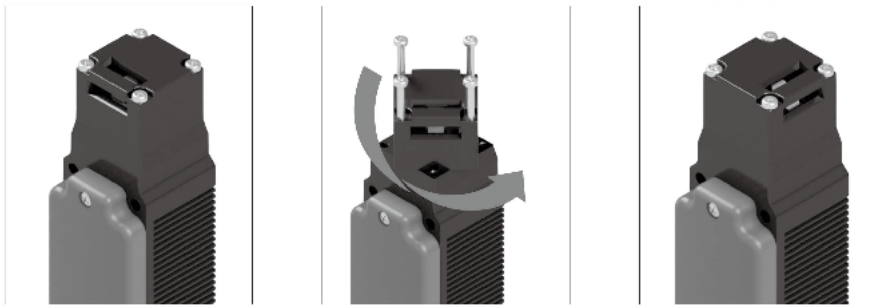


Knob arrow position when unlocked

If the knob arrow is pointing upward, the lock is engaged. To disengage the lock, rotate the knob 180 ° so the arrow points downward.

SAFETY SWITCH

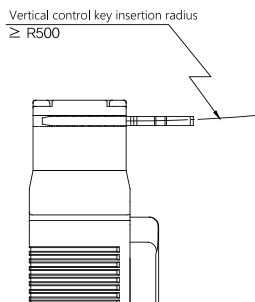
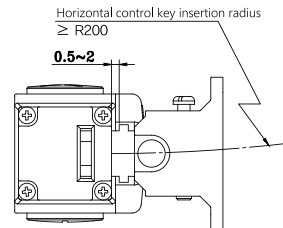
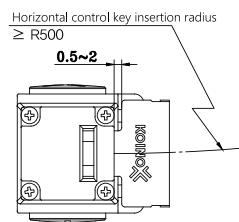
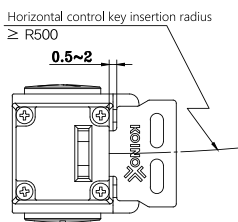
Control Key Mechanism



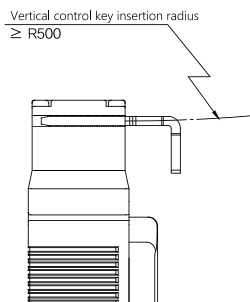
- Loosening the head screw allows the head direction to be changed in four directions. Please take care to prevent foreign objects from becoming lodged.
- Do not disassemble the head interior when changing the head direction. This may cause the lock function to malfunction.
- When tightening the head screws, ensure the head is level. The internal Locking mechanism may bear load.
- When tightening the head screws, ensure they are fully tightened to the end of the thread.
- Change the head direction only after switching the manual lever to unlock. After changing the head direction, switch the manual lever back to lock.
- When replacing the head direction, take care to prevent the Control Key cover from detaching.

Control Key Installation Method

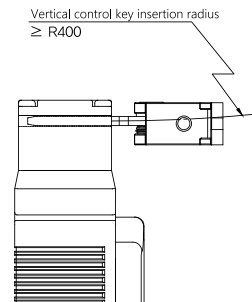
Maintain a gap of 0.5 to 2 mm between the Control Key and the Control Key insertion slot. Issues may occur during contact operation.



H Type
Horizontal control key



V Type
Vertical control key



C,C-1 Type
Adjustable control key

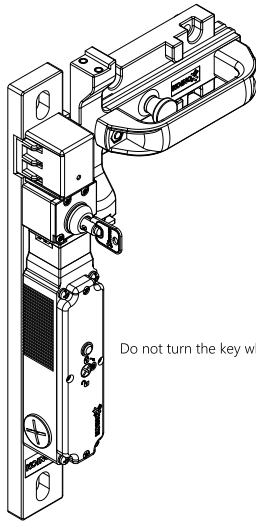
- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

SAFETY SWITCH

Operating Characteristics

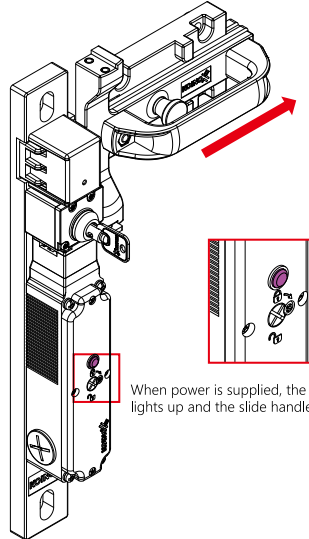
Preventing Entrapment Using the Lock-Out Key.

1. Door close & lock (Solenoid Off),
slide handle close



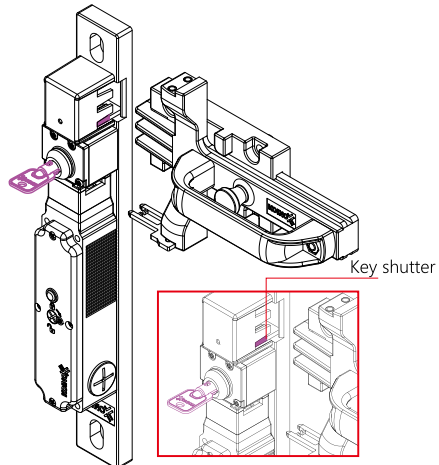
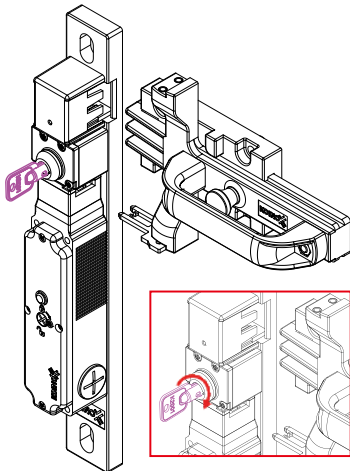
Do not turn the key while the slide handle is closed.

2. Door close & lock (Solenoid On),
slide handle close



When power is supplied, the LED indicator lights up and the slide handle can be opened.

3. Door open, slide handle open



- When the slide knob is open, you can turn the lock-out key.
- Turning the lock-out key in the direction of the arrow shown in the left illustration raises the key shutter (LOCK state), blocking the slide insertion port and preventing key insertion.
- If you remove the lockout key and carry it inside the fence, the door cannot be locked from the outside.

SAFETY SWITCH

Precautions

Usage Environment

- KESD is designed for indoor use; outdoor use may cause malfunction.
- Avoid locations with extreme temperature fluctuations, high humidity, or risk of condensation. Also avoid areas affected by chemicals, metal dust, or machining chips, locations affected by solvents such as thinners or detergents, or locations with explosive or flammable gases.
- Do not use in oil or water, or in environments where it is constantly exposed to oil or water. Water or oil may enter the interior.
- The main unit is protected against dust, oil, and moisture ingress, but the key insertion slot and key unit may be affected by metal dust, oil, moisture, or chemicals. This may cause wear, damage, or malfunction.
- Attach the control key in a location where it will not come into contact with the body when opening or closing the door. There is a risk of injury.
- Avoid open flames and direct heat.
- Store KESD away from toxic gases, dust, and high-temperature, humid locations.

Installation Precautions

- Do not drop the product, as this may impair switch functionality and pose a risk of injury.
- Do not use the KESD main unit as a stopper.
- After wiring, install the cover with the KOINO logo facing downward. Failure to do so may cause internal components to break.
- Do not use metal connectors or metal piping. There is a risk of product damage and electric shock.
- When changing the head direction, always move the manual lever to the unlock position.
- For hinged doors, install it near the handle. Installing it near the hinge, excessive force beyond normal operation may be applied to the Locking mechanism, potentially causing damage to the lock function.

Function Check Items

- Before performing functional checks, ensure no personnel are present in hazardous areas.
- Mechanical Function Check: Verify that the operating key inserts easily into the head.
- Electrical Function Check: When the Control Key is inserted, the mechanism inside the door should automatically activate, but the Control Key must not come out.
- Solenoid Check.
 - Mechanical lock type: When the door is locked and the solenoid power is OFF, the key must not come out.
 - Solenoid lock type: When the door is locked and the solenoid power is ON, the key must not come out.
- Please perform the Control Key insertion and contact point operation check 3 to 4 cycles.
- If the sealing rubber is misaligned or foreign matter is attached, sealing performance will be reduced. Please check for any issues.
- KESD durability varies depending on pull strength and opening travel distance. Ensure it matches usage conditions and performance specifications.

A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

H Terminal block

I Control box

J Cover

SAFETY SWITCH

Precautions for Use

- Due to wiring errors, setting errors, or switch malfunctions, the safety function may not operate normally and the device may continue to operate. Therefore, always verify that the safety functions are operational before starting operation.
- Do not disassemble or modify the product. Doing so may cause the product to malfunction.
- Do not forcefully move the slide knob when the lockout key is removed or the door is locked.
Mechanical Lock Type: The solenoid must be energized to open the door.
- Mechanical lock type: The solenoid must be energized to open the door. Opening the door when the solenoid is de-energized, opening the door may cause malfunction.
- Solenoid Lock Type: For the solenoid lock type, always lock the door (after inserting the Control Key) before energizing the solenoid. Closing the door after energizing the solenoid may prevent the key from Locking.
- The solenoid energization current is converted to a pulse mode via the internal circuit 10 seconds after energization begins, reducing the current. During the pulse mode state, the Locking operation may not function correctly.
- Since the solenoid lock type locks only when energized, the lock will release. Therefore, do not use the solenoid lock type on machinery where the interior of the door remains in a hazardous state even after the machine stops.
- Do not convert the manual lever from LOCK to UNLOCK while the solenoid lock type is in the locked state (solenoid ON). This may damage the product or cause operational issues.
- Do not attempt repairs or maintenance yourself. Please contact us.

Proper Tightening Torque

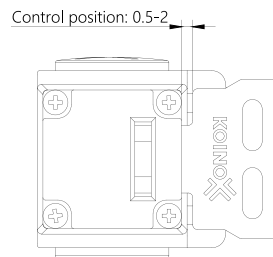
- Loose screws can cause malfunctions, so tighten each screw to the specified torque.

Screw Type	Recommended Tightening Torque
Terminal Screw (M3)	0.5 to 0.7 N · m
Cover fixing screw (M3)	0.5–0.7Nm
Control Key Head Fixing Screw (M3)	0.5 to 0.7 N · m
Main Unit Mounting Screw (M4)	0.5 to 0.7 N · m
Key Shutter Unit Fixing Screw (M3)	0.5 to 0.7 N · m

Part Installation Method and Precautions

■ KESD Switch and Control Key Installation

- Use M4 bolts for installing the KESD switch and control key, and washers, ensuring proper tightening torque.
- Using keys other than the dedicated Control Key may damage the product.
- Insert the key vertically into the key slot within the specified insertion radius.
- When the key is attached to the switch body, avoid applying excessive force to the front of the key or dropping it, as this may cause.
- If pressure is applied to the control key when unLocking, the lock may not release.



SAFETY SWITCH

■ Door Locking

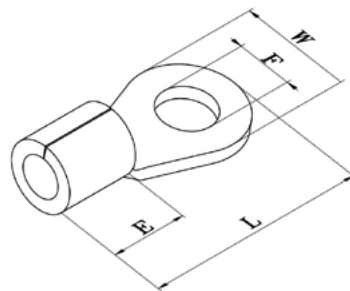
- When the door is closed (with the key inserted), attempting to push the door(control key) beyond the operating position due to the door's weight, machine vibration, or rubber buffers, it may cause malfunction. Secure the door within the operating position.

■ Solenoid

- Do not touch the solenoid as it generates heat when energized.
- The solenoid has polarity. Verify terminal polarity before wiring.
- Do not open or close the solenoid diode cover. Risk of electric shock.

■ Wiring

- Do not energize during wiring work as there is a risk of electric shock.
- Risk of electric shock: After completing wiring work, be sure to install the cover.
Do not energize with the cover open.
- During wiring, take care to prevent foreign objects from entering the switch body.
- The appropriate lead wire size is AWG 22–16. Also, ensure the lead wire does not protrude and contact the cover,.
- Do not pull the lead wires excessively tight, as this can cause the cover to lift and may lead to disconnection.
- When replacing or maintaining the KESD, always work with the power disconnected. Connected external devices may operate unexpectedly.
- Do not insert crimp terminals or similar components into empty spaces inside the case, as this may cause case damage or deformation.
- Verify terminal polarity before connecting wiring. (E1: Positive terminal, E2: Negative terminal)
- Use the recommended crimp terminals listed below.



KS standard: R1,5–3
W: 5,5
F: 3,2(+0,2, –0)
E: 4,1(Minimum value)
L: 12,5(Max. value)

Crimp Terminal Manufacturer Model	W	F	E	L
JOR 1,5–3	5,5	3	5	12,5
KSTR 1,5–3	5,6	3,5	5,5	15
ESTE 1,5–3M	5,6	3	5,5	15

A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

H Terminal block

I Control box

J Cover

SAFETY SWITCH

Part Installation Method and Precautions

■ Inlet

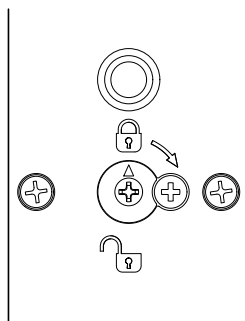
- Excessive tightening torque may cause case damage. Please tighten to the specified torque.
- For unused input ports, use the included accessory cap screws and tighten them to the appropriate torque.
- Use cables with the appropriate outer diameter required by the respective connector.

■ Recommended Connectors

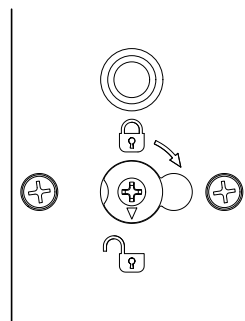
- Use connectors with a screw length of 9–10mm to avoid affecting internal wiring within the switch case.
- Use the recommended connectors (G1/2, M20) to ensure IP67

■ Manual Lever

- Used to release the lock during power outages or emergencies.
- The manual lever is positioned in the Lock position at product shipment.
- Do not use the manual lever to stop or start the machine.
- Only authorized personnel should perform lock release using the manual lever.
- When the arrow on the manual lever changes direction from Lock to Unlock, the lock is released and the door can be opened. (Applies only to mechanical lock type)
- After changing the manual lever to the Unlock position, be sure to return it to the Lock position before use.
- To prevent easy unLocking using the manual lever, keep the manual lever in the Lock position and tighten the Screw to prevent movement of the manual lever.
- Do not apply excessive force to the manual lever key. Doing so may damage the key and manual lever, potentially rendering them inoperable.
- If the manual lever is in the Unlock position while the door is locked, it may cause the product to malfunction. Do not remove the cover.
- For solenoid lock types, if the operating key does not disengage after the solenoid voltage is released, the manual lever can be used to unlock the door to release the lock.



Lock position



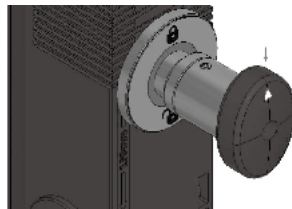
Unlock position

SAFETY SWITCH

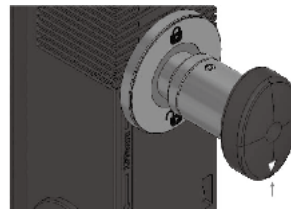
■ Rear Emergency Release Button

- Use this when a person is trapped inside the danger zone.
- At shipment, the rear emergency release button is positioned in the Lock state.
- The emergency lock release button unlocks the door when the arrow direction changes from Lock to Unlock. (Applies only to mechanical lock type)
- After changing the emergency lock release button to the Unlock position, please ensure it is returned to the Lock position before use.
- After installing the safety switch, please hold the body section that is assembled when attaching the rear red button and turn the screw.
- When assembling the button, position the arrow pointing toward the keyhead.
- Do not turn the rear emergency release button after removing the red knob to install the safety door switch. This may cause malfunction.

※ For more information, please refer to the user manual included with the product.



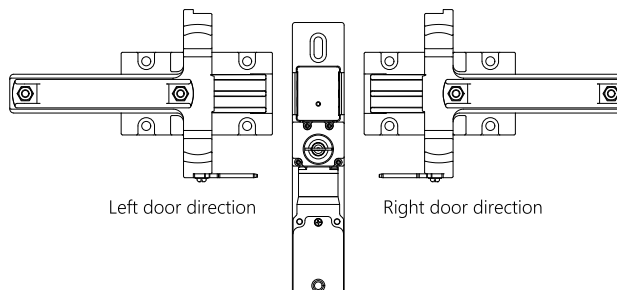
LOCK



UNLOCK

■ Interlock Key Head and Slide Unit

- When using the slide unit, the key head can be adjusted in both the right and left directions.
- KESD-SU is a dedicated product for the KESD series and cannot be used in combination with door switches from other manufacturers.
- Use the sliding knob only in the left door direction or right door direction, as shown in the figure below.
- Loose screws can cause premature failure, so tighten them to the proper torque using spring washers.
- Secure the slide guide block with four screws.



A	Power switch
B	Cam switch
C	Safety switch
D	Control switch
E	Limit switch
F	Micro switch
G	Foot switch
H	Terminal block
I	Control box
J	Cover

EMERGENCY STOP SWITCH

KSE SERIES

Emergency Stop Switch

Features

- Available in illuminated and non-illuminated types
- Maximum panel thickness for product mounting: 5mm
- Contacts (NO/NC) feature a direct open (forced break) structure
- Ingress Protection: IP66 (Panel Front), IP20 (Screw Terminal Section)
- Push-to-lock, twist-to-release mechanism
- Forced disengagement structure ()



Engraved markings are available upon request



UL 508

IEC 60947-5-5

CSA-C 22.2 No. 14-13

Listed NISD



EN ISO 13850:2015

EN ISO 13849-2:2012 Annex A & D

EN 60204-1:2018

EN 60947-5-1:2017/AC:2020

EN 60947-5-5:1997/A2:2017



S1-G-1-2009

IEC 60947-5-5

Classification

KSE ☐ - ☐ ☐ ☐ ☐ ☐ ☐

① ② ③ ④ ⑤ ⑥ ⑦

Specifications

① Product Name	Composition	
② Lamp Applicability.	P	Non-illuminated
	B	Illuminated
③ Mounting Hole.	22	Ø22mm
	25	Ø25mm
	30	Ø30mm
④ Button	4	Ø40mm
	6	Ø60mm
⑤ Lamp Input Voltage	1C	DC 6V
	2C	DC 12V
	3C	DC 24V
	1A	AC 110V
	2A	AC 220V
⑥ NO CONTACT configuration	0	None
	1	1a
⑦ NC CONTACT configuration	2	2a
	1	1b
	2	2b
	3	3b
	4	4b

* Up to 2 NO contacts and up to 4 NC contacts are possible, and can be configured with up to 4 circuits.

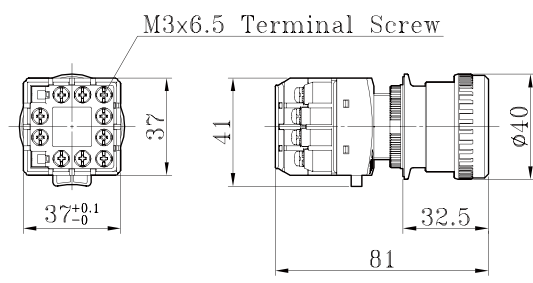
Model	KSE Series
Contact Rating	250VAC 3A (Resistive Load)
Insulation Resistance	100M Ω min. (DC500V insulation resistance tester)
Contact Resistance	50m Ω (initial value) max.
Withstand Voltage	Between same-pole terminals: 2,500VAC (50/60Hz) for 1 minute
Vibration resistance	10-55 Hz, double amplitude 1.5 mm, 1 hour in each X, Y, Z direction
Shock resistance	Durability: 100G (1,000 $\frac{1}{6}$) min., Malfunction: 15G (150 $\frac{1}{6}$) min.
Operating Frequency	900 cycles/hour
Electrical Life	100,000 cycles min. (opening/closing frequency 15/min)
Mechanical life	250,000 cycles min.
Ingress Protection	Panel front: IP66, Terminal screw section: IP20
Operating ambient temperature	-25°C to +50°C (without freezing)
Storage ambient temperature	-25°C to +80°C (without freezing)
Operating ambient humidity	45-85% RH
Contact opening/closing structure	NO/NC direct open circuit type (Forced open circuit structure)
Operating Mechanism	Press-and-hold with turn-back or pull-back mechanism
Minimum Operating Load	5 kgf (49 N)
Product Operating Distance	Minimum: 3.8mm, Max. : 4.5mm

EMERGENCY STOP SWITCH

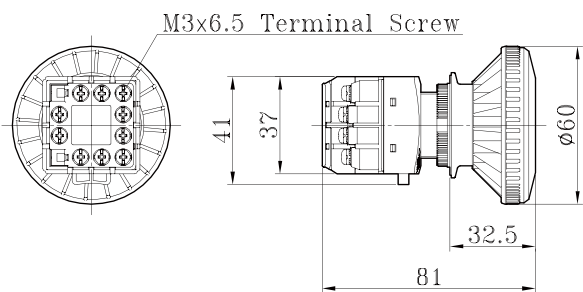


Dimensions

KSE □ - □ 4 □ □ □

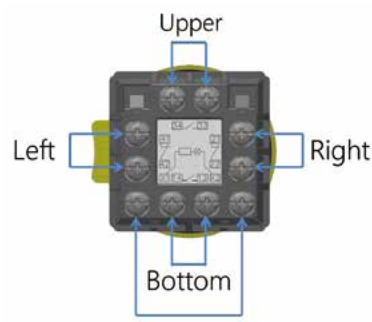


KSE □ - □ 6 □ □ □



Contact Arrangement

Bottom View of Arrangement Position
Based on Contact Configuration



* Lamp input dedicated terminal
(Non-illuminated products have no terminal)

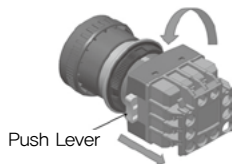
Classifi- cation	Top	Bottom	Left	Right	Remarks
1A		●			
2A	●	●			
1B				●	
2B			●	●	
3B	●		●	●	
4B	●	●	●	●	
1NO 1NC		●		●	Bottom NO CONTACT
1NO 1NC		●	●	●	Bottom NO CONTACT
1NO 1NC	●	●	●	●	Bottom NO CONTACT
2A1B	●	●		●	Upper, Bottom NO CONTACT
2A2B	●	●	●	●	Upper, Bottom NO CONTACT

- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

EMERGENCY STOP SWITCH

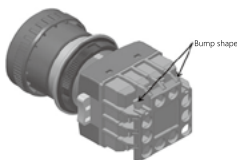
Usage Instructions

■ Control Unit Disassembly Method



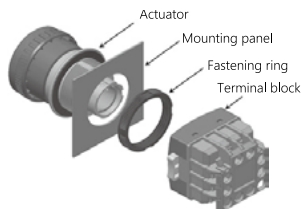
Hold the terminal block on the bottom of the product. Press the push lever and rotate it counterclockwise. Pull it out at the stop position to separate.

■ Terminal Cover Removal Method



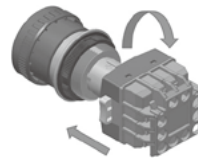
The protrusions on both sides of the terminal cover. Lift the terminal cover high enough to disengage it from the catch hook.

■ Product Mounting Method



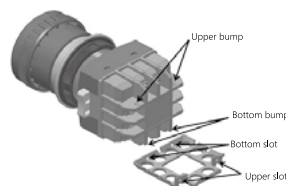
As shown in the figure above, separate the product into the control unit, clamping ring, and terminal block. Then, slide the control unit into the front of the mounting panel, tighten the clamping ring from the back of the mounting panel, and assemble the terminal block with the control unit.

■ Control Unit Assembly Method



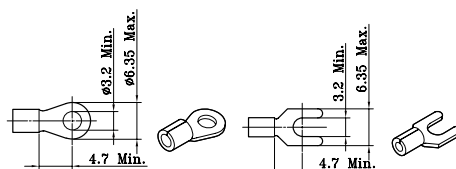
Insert the control unit shaft into the central hole of the product's lower terminal block section at the appropriate position. Then, rotate the terminal block section clockwise. Assembly is complete when it engages at the stop position.

■ Terminal Cover Assembly Method



Align the lower groove of the terminal cover with the lower protrusion of the terminal block, then rotate it to snap the upper groove of the terminal cover onto the upper protrusion of the terminal block to complete the assembly.

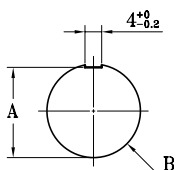
■ Wiring Terminal



Ring Terminal

Spade Terminal

Panel Cutting



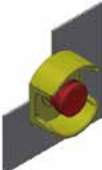
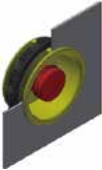
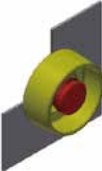
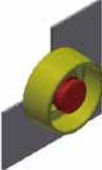
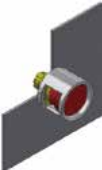
Classification	A	B
KSE22	21.5–21.7mm	22.2–22.5mm
KSE25	24–24.3mm	25.2–25.5mm
KSE30	29–29.3mm	30.2–30.5mm

Precautions

- Switch Operation Always verify the wiring connections before operation.
- To prevent the risk of electric shock or fire, always inspect the wiring connections before applying power.
- Using wiring that does not meet voltage and current requirements may cause a fire. Therefore, use wiring that meets the requirements.
- If terminals are connected too loosely, it may cause over-heating and fire. **Tighten with the appropriate torque.** (Recommended terminal tightening torque is 0.6–1.0 N · m.)
- The product's MTTFd is 1388.9 years.
(ISO 13849-1:2023-C4.2, B10d=100K cycles derived from nop=720 cycles/year, parameters : dop=240 days, hop=0.25 hours, tcycle=300 seconds)

EMERGENCY STOP SWITCH

Protective Cover Model Summary

Shape	Model	Installation Example	Sticker Name (sold separately)
	Open-type KSE22-A-P0(Yellow) KSE25-A-P0(Yellow) KSE30-A-P0(Yellow) KSE22-A-P0-1(White) KSE25-A-P0-1(White) KSE30-A-P0-1(White)		EMERGENCY STOP KSE-A-S1 EMERGENCY OFF KSE-A-S2
	Flush-mounted SE22-A-U1 (Yellow) SE25-A-U1 (Yellow) SE30-A-U1 (Yellow) SE22-A-U2 (White) SE25-A-U2 (White) SE30-A-U2 (White)		EMERGENCY STOP SE-A-S1 EMERGENCY OFF SE-A-S2
	Raised - Plastic SE22-90 SE25-90 SE30-90		EMERGENCY STOP 22-90-1 EMERGENCY OFF 22-90-2
	Raised - Aluminum SE22-90AL SE25-90AL SE30-90AL		EMERGENCY STOP SE22-90AL-1 EMERGENCY OFF SE22-90AL-2
	Aluminum SE-22 SE-25 SE-30		
	Plastic KSE22-A-L1(STOP) KSE25-A-L1(STOP) KSE30-A-L1(STOP) KSE22-A-L2(OFF) KSE25-A-L2(OFF) KSE30-A-L2(OFF) KSE22-A-L3 (EMS) KSE25-A-L3 (EMS) KSE30-A-L3 (EMS)		
	Plastic KSE-224-A-P1 KSE-254-A-P1 KSE-304-A-P1		

A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

H Terminal block

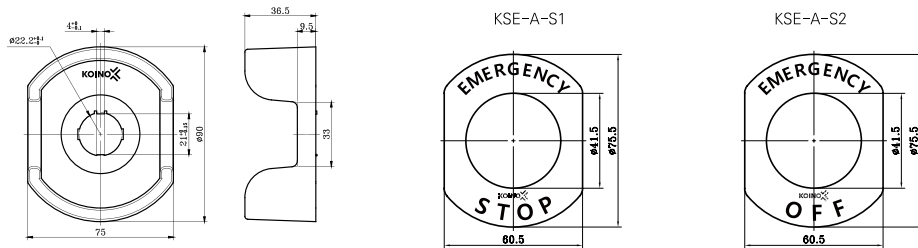
I Control box

J Cover

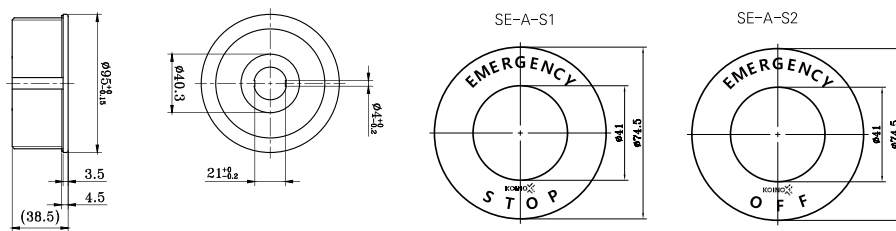
EMERGENCY STOP SWITCH

Dimensions

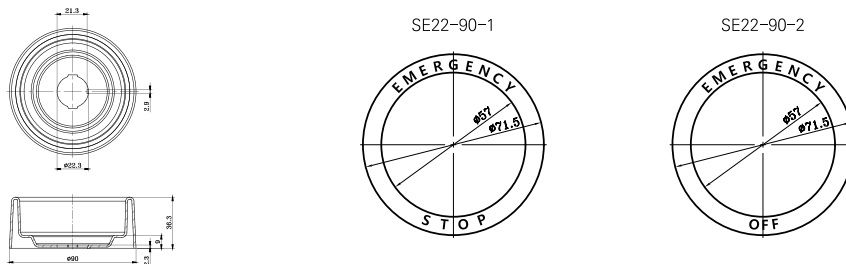
■ KSE22-A-PO



■ SE22-A-U1



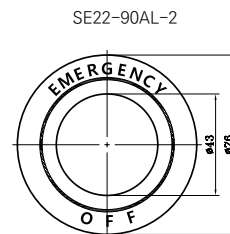
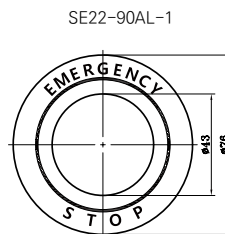
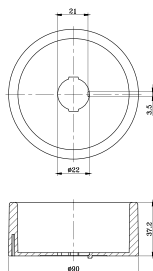
■ SE22-90



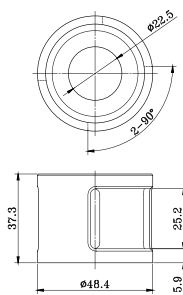
EMERGENCY STOP SWITCH

Dimensions

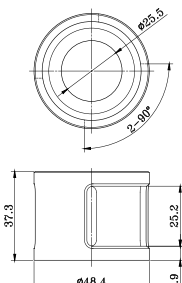
■ SE22-90AL



■ SE22 & SE25



SE-22



SE-25

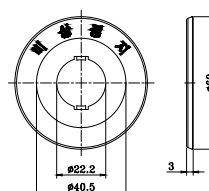
■ KSE-A-L

KSE22(25, 30)-A-L1

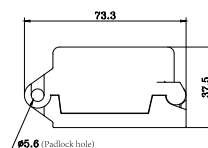
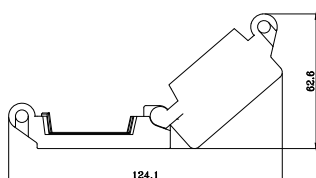
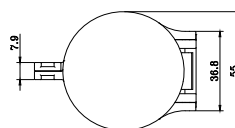
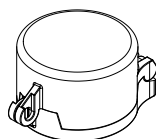
KSE22(25, 30)-A-L2



KSE22(25, 30)-A-L3



■ KSE-224-A-P1 / KSE-254-A-P1 / KSE-304-A-P1



A	Power switch
B	Cam switch
C	Safety switch
D	Control switch
E	Limit switch
F	Micro switch
G	Foot switch
H	Terminal block
I	Control box
J	Cover

EMERGENCY STOP SWITCH

KEPB SERIES

Emergency Stop Switch

Features

-  "For use on a flat surface of a type 1 enclosure"
- The enclosure material is made of a heat-resistant, oil-resistant material with high mechanical strength.
- The mounting panel thickness can accommodate up to 5mm when installing the label plate.
- Ingress Protection: IP65
- The NC side contact features a structure that allows forced separation during contact welding.
- Safety lock structure to prevent misoperation.

 UL 60947-4-1, UL 60947-1

CSA C22.2 NO. 60947-4-1, 60947-1

 IEC/EN 60947-5-1
IEC/EN 60947-5-5

 S1-G-1-2009
EN 60947-5-5

 KC 61058-1



Classification

KEPB ☐ ☐ ☐ - ☐

Classification	KEPB	Composition
Mounting Diameter	22	Ø22mm
	25	Ø25mm
	30	Ø30mm
Operation Method	ER	Push to Lock, Turn to Return
	ERK	Push to Lock, Key-Turn to Return
Direction Indicator	S	White Arrow Marking
	No Marking	No Arrow Marking
Contact Configuration	Number	Number of NO contacts
	Number	Number of NC contacts

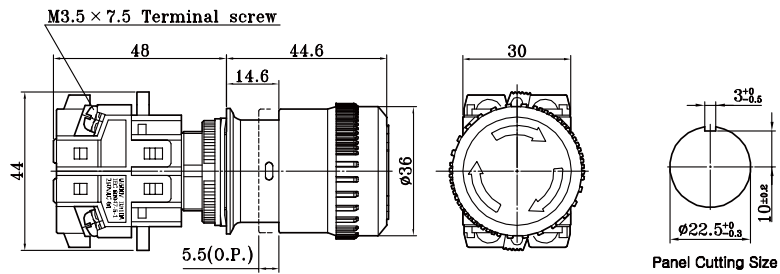
Specifications

Model		KEPB22/25/30 ER
Contact Rating		125VAC 10A, 250VAC 6A (Resistive Load)
Insulation Resistance		100 M Ω min. (DC 500 V Insulation Resistance Meter)
Contact Resistance		30m Ω (initial value) max.
Withstand Voltage		2,500VAC (50/60Hz) for 1 minute
Vibration resistance		10-55 Hz, double amplitude 1.5 mm in X, Y, and Z directions
Shock resistance		Approx. 100G (1,000 %g)
Operating Ambient Temperature		-15°C to +50°C (without freezing)
Operating ambient humidity		45-85% RH
Ingress Protection		IP 65
Operating frequency		30 cycles/min (1Cycle: Push & Return)
Lifespan	Electrical	100,000 cycles min.
	Mechanical	150,000 cycles min.
Material and Color		Body: Nylon (Yellow), Button: Nylon (Red)

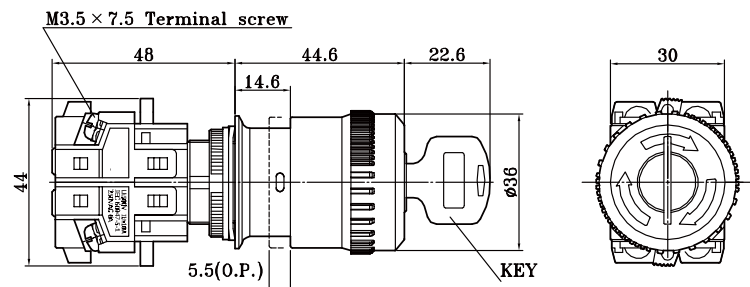
EMERGENCY STOP SWITCH

Dimensions

■ KEPB22ER



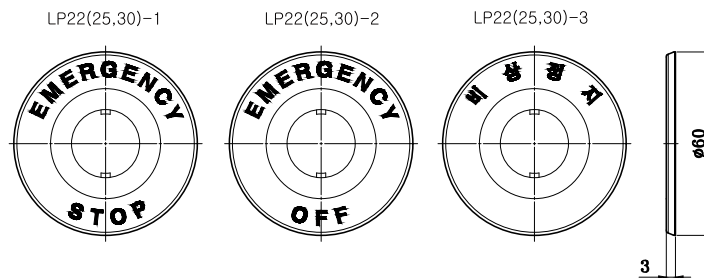
■ KEPB22ERK



The dimensions for Ø22, 25, and 30 are the same.

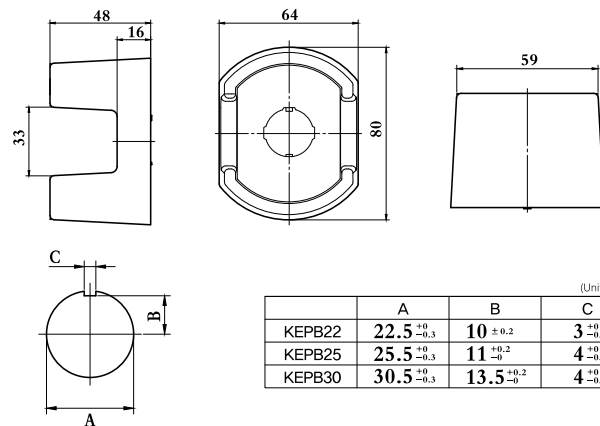
Optional Products

■ Label Plate



■ Protective Cover

SC-22(25,30)



- A Power switch
- B Cam switch
- C Safety switch
- D Control switch
- E Limit switch
- F Micro switch
- G Foot switch
- H Terminal block
- I Control box
- J Cover

EMERGENCY STOP SWITCH

KEPB SERIES

Emergency Stop Switch

Features

-  "For use on a flat surface of a type 1 enclosure"
- The enclosure material is made of a heat-resistant, oil-resistant material with high mechanical strength.
- Ingress Protection: IP65
- The NC side contact features a structure that allows forced separation during contact welding.
- Safety lock structure to prevent misoperation.
- Adopts a robust aluminum mounting ring

 UL 508
CSA C22.2 NO. 14-13

 EN 60947-1
EN 60947-5-1
EN 60947-5-5

 KC 61058-1



Classification

KEPB 160 ER ☐ ☐

Classification	KEPB	Composition
Mounting Diameter	160	Ø16mm
Operation Method	ER	Push to Lock, Turn to Return.
Direction Indicator	S	White Arrow Marking
	No Marking	No Arrow Marking
Contact Configuration	1A	1 NO contact
	2A	2 NO contacts
	1B	1 NC contact
	2B	2 NC contacts
	1A1B	1 NO contact, 1 NC contact

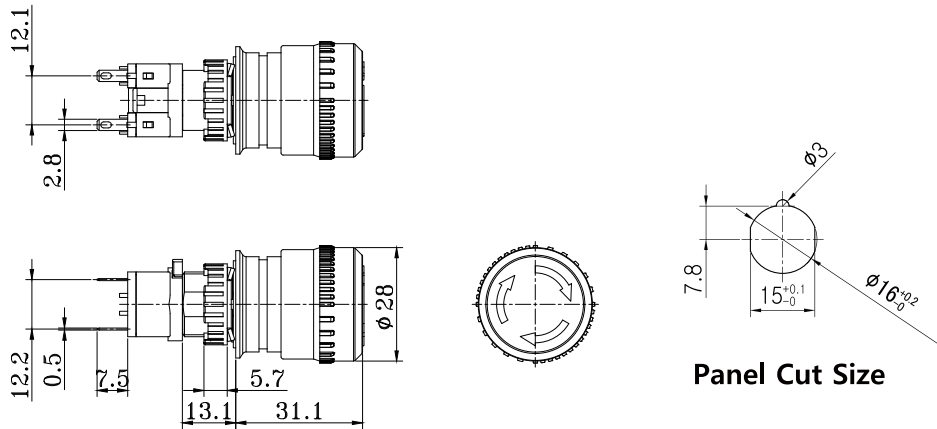
Specifications

Model		KEPB160ER
Contact Rating		250VAC 3A (Resistive Load)
Insulation Resistance		100MΩ min. (DC 500 V Insulation Resistance Meter)
Contact Resistance		30mΩ (initial value) max.
Withstand Voltage		1,000VAC (50/60Hz) for 1 minute
Vibration resistance		10-55 Hz, double amplitude 1.5 mm in X, Y, and Z directions
Shock resistance		Approx. 15G (150 %)
Operating Ambient Temperature		-15°C to +50°C
Operating ambient humidity		45-85% RH
Ingress Protection		IP 65
Operating frequency		30 cycles/min (1Cycle: Push & Return)
Lifespan	Electrical	100,000 cycles min.
	Mechanical	150,000 cycles min.
Material and Color		Body: Nylon (Yellow), Button: Nylon (Red)

EMERGENCY STOP SWITCH

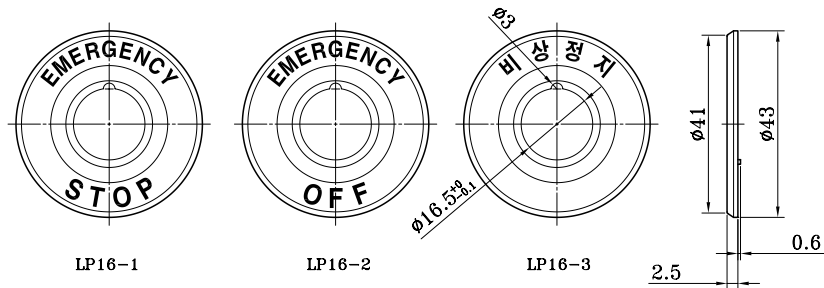
Dimensions

■ KEPB160ERS



Optional Products

■ Label Plate



A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

H Terminal block

I Control box

J Cover

EMERGENCY SWITCH CONTROL BOX

Accessory Enclosure Box

Features

- $\varnothing 22$, $\varnothing 25$, $\varnothing 30$ mounting hole options available.
- IP65 Ingress Protection
- Lightweight, high-strength plastic enclosure
- Made of flame-retardant (UL94-V0) material.



Classification

KSE 221 ☐ ☐

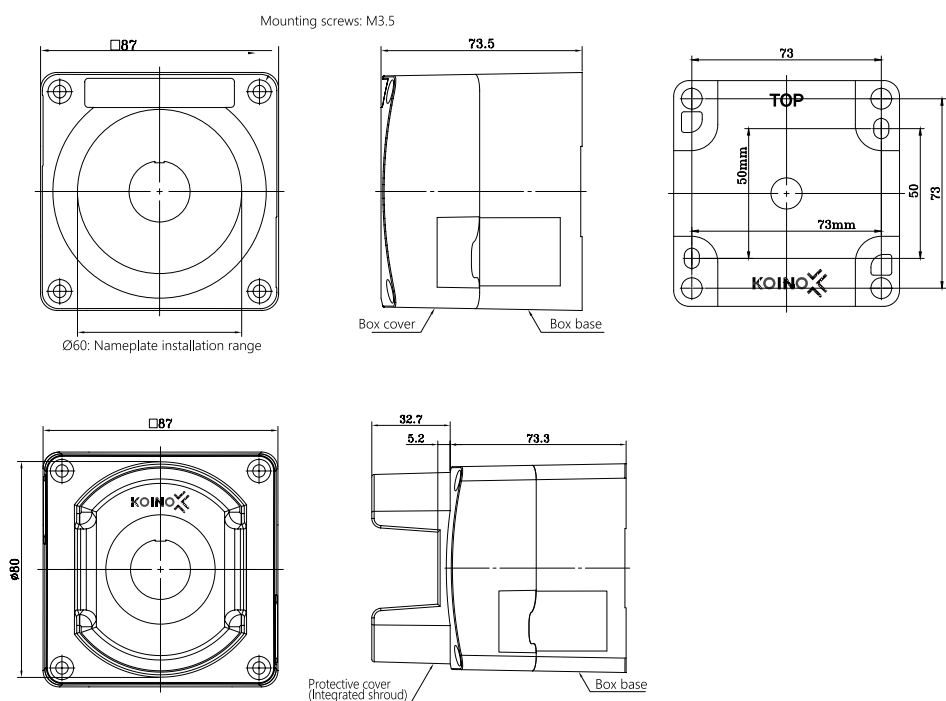
Classification	Composition
Product Name	Safety Enclosure Box
Mounting Hole	221: $\varnothing 22$ mm Single Hole Type
	251: $\varnothing 25$ mm Single Hole Type
	301: $\varnothing 30$ mm Single Hole Type
Protective Cover	No Marking: No Protective Cover
	S: Protective cover attached
Printing Classification	No Marking: Unmarked
	1: EMERGENCY STOP (Red)
	2: EMERGENCY OFF (Red)

Specifications

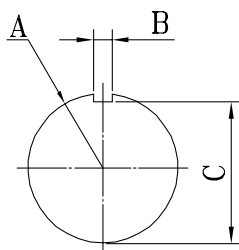
Category	Specifications
Material	ABS (UL94-V0)
Color	Box: Yellow (Standard), Printing: Red (Standard)
Operating Humidity	45 – 85% RH (provided there is no freezing)
Operating Ambient Temperature	-25 to +60°C (without freezing)
Storage Ambient Temperature	-40 to +80°C (without freezing)
Operating Environment	Pollution Degree 3
Ingress Protection	IP65
Electrical Shock Protection Class	Class II (when using a suitable switch)

EMERGENCY SWITCH CONTROL BOX

Dimensions



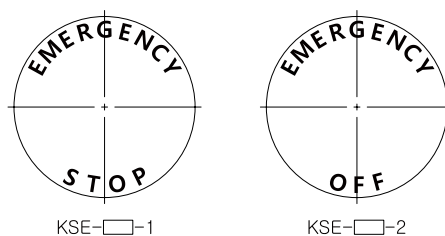
Mounting Hole Size



■ Mounting Hole Processing Size

Category	A	B	C
Model			
KSE-221	$\varnothing 22.3^{+0.3}_{-0}$	3.4 $^{+0}_{-0.2}$	$\varnothing 21.7^{+0.2}_{-0}$
KSE-251	$\varnothing 25.3^{+0.3}_{-0}$		$\varnothing 24.3^{+0.3}_{-0}$
KSE-301	$\varnothing 30.3^{+0.3}_{-0}$		$\varnothing 29.2^{+0.3}_{-0}$

Printing Type



A Power switch

B Cam switch

C Safety switch

D Control switch

E Limit switch

F Micro switch

G Foot switch

H Terminal block

I Control box

J Cover

Creative Passion



www.koino.com