

▼  
Creative Passion

**Koino**<sup>®</sup>

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# KH-5012 Series



## CLASSIFICATION

**KH-5012- A 1 1 \_ R**

① ② ③ ④

① SHAPE	A: SQUARE
	C: ROUND
② FUNCTION	0: LED PILOT LAMP
	1: ILLUMINATE PUSHBUTTON SWITCH (MOMENTARY)
	2: ILLUMINATED PUSHBUTTON SWITCH(MAINTAINED)
	3: PUSHBUTTON SWITCH (MOMENTARY)
	4: PUSHBUTTON SWITCH (MAINTAINED)
③ CONTACTS	0: NO CONTACTS(LED PILOT LAMP)
	1: 1C (1A1B)
④ COLOR	R: RED
	G:GREEN
	Y: YELLOW
	O: ORANGE
	W: WHITE

Lamp operating voltage is under 2V. Connecting resistor is needed.  
Please connect resistor [6V: 270Ω(0.5W), 12V: 680Ω(1W), 24V: 1.3KΩ(1W), 48V: 3.9KΩ(1W)] directly to the terminal.

	LED(Ø3) RATINGS				
COLOR	RED	GREEN	YELLOW	OREANGE	WHITE
VOLTAGE	1.75V	2.1V	2.0V	2.0V	2.0V
CURRENT	25mA				
AVERAGE VOLT.	15~20mA				
REVERSE VOLT.	4V				

**KH-5012-C00**



**KH-5012-A00**



**KH-5012-C11**  
**KH-5012-C21**  
**KH-5012-C31**  
**KH-5012-C41**



**KH-5012-A11**  
**KH-5012-A21**  
**KH-5012-A31**  
**KH-5012-A41**



**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

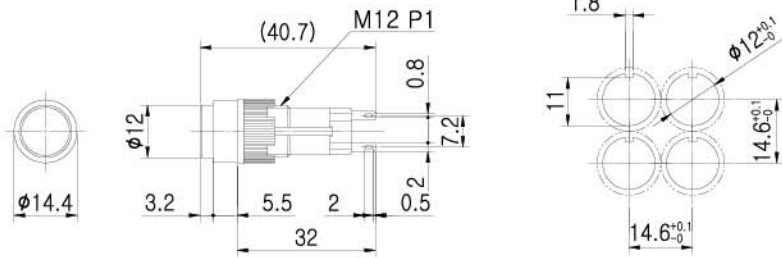
SOCKETS

TERMINAL BLOCK

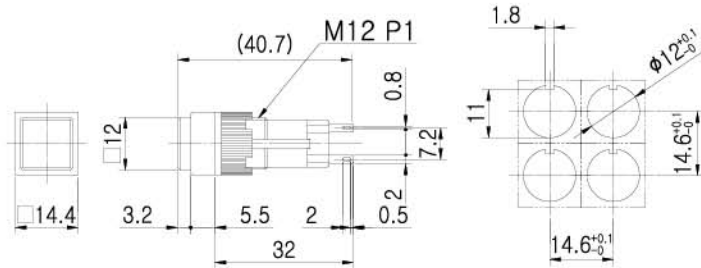
CONTROL BOX

PID TEMP. CONTROLLER

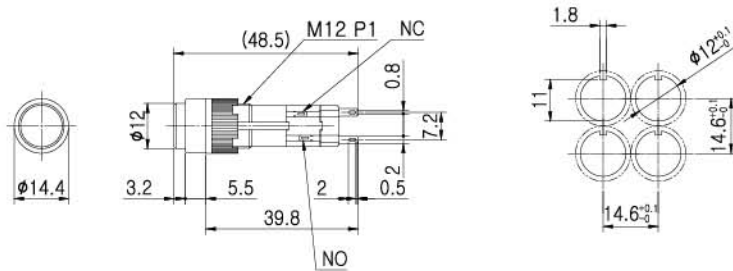
**KH-5012-C00**



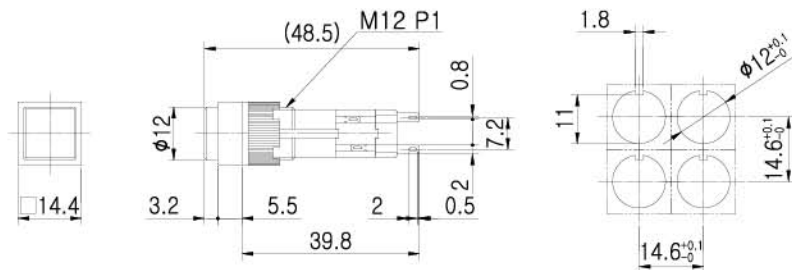
**KH-5012-A00**



**KH-5012-C11**  
**KH-5012-C21**  
**KH-5012-C31**  
**KH-5012-C41**



**KH-5012-A11**  
**KH-5012-A21**  
**KH-5012-A31**  
**KH-5012-A41**



## CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KH-5012 is equipped with normally open contact and normally closed contact.

1C contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

PC

#### Buttons

PC

### Mechanical Characteristics

#### Mechanical Lifetime

Momentary type: 500,000 Cycles of operation

Maintained type: 200,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 1A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

70,000 cycles of operation

**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

**Lamp Ratings**

LED LAMP: DC2V 20mA

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 100G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

KC

**Declaration of Conformity**

None

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# KH-516 Series



## CLASSIFICATION

**KH-516-A 1 2-R (12)**

① ② ③ ④ ⑤

① SHAPE	A: SQUARE
	B: RECTANGLE
	C: ROUND
	D: EMERGENCY STOP
② FUNCTION	0: PILOT LAMP
	1: ILLUMINATE PUSHBUTTON SWITCH (MOMENTARY)
	2: ILLUMINATED PUSHBUTTON SWITCH(MAINTAINED)
	3: PUSHBUTTON SWITCH (MOMENTARY)
③ CONTACTS	4: PUSHBUTTON SWITCH (MAINTAINED)
	0: NO CONTACTS(PILOT LAMP)
	1: 1C (1A1B)
	2: 2C (2A2B)
④ COLOR	R: RED
	G:GREEN
	Y: YELLOW
	O: ORANGE
	W: WHITE
	B: BLUE
⑤ INPUT VOLTAGE	6: 6V
	12:12V
	24: 24V



PILOT LAMPS

**KH-516-C00**  
**KH-516L-C00**



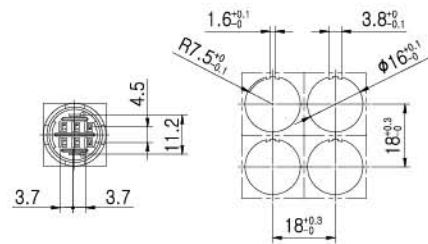
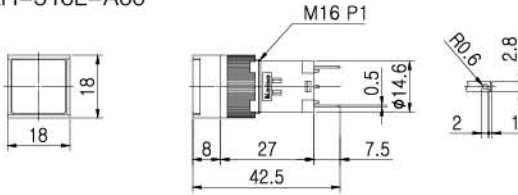
**KH-516-A00**  
**KH-516L-A00**



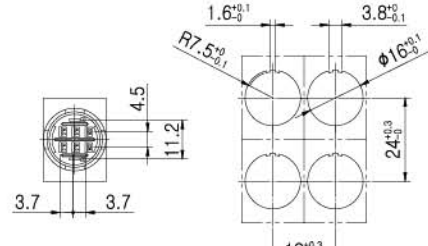
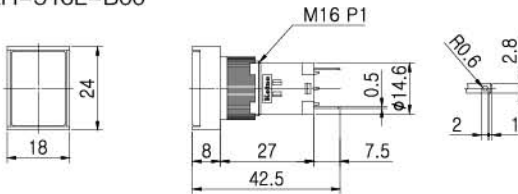
**KH-516-B00**  
**KH-516L-B00**



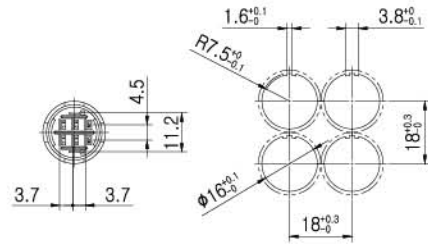
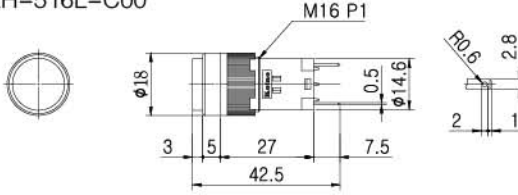
**KH-516-A00**  
**KH-516L-A00**



**KH-516-B00**  
**KH-516L-B00**



**KH-516-C00**  
**KH-516L-C00**



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

ILLUMINATED PUSHBUTTON SWITCH(MOMENTARY)

KH-516-C11,12  
KH-516L-C11,12



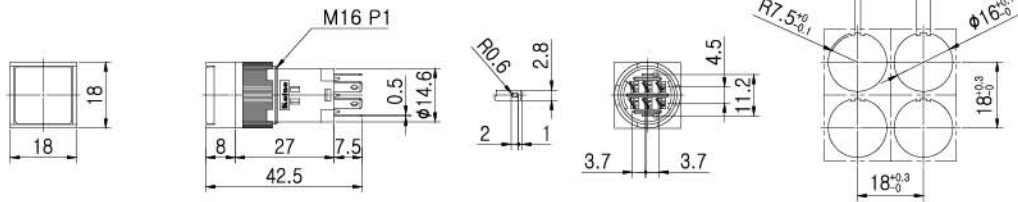
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KH-516L-A11,12



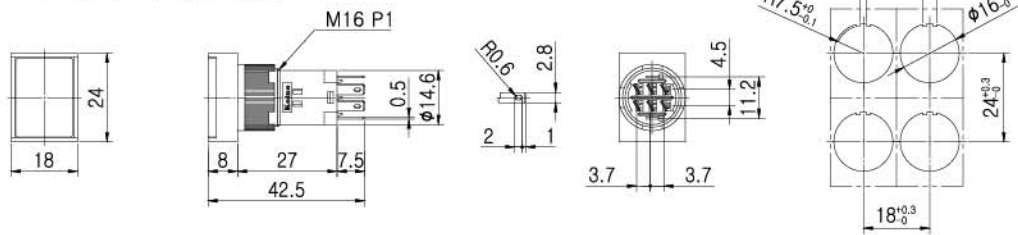
KH-516-B11,12  
KH-516L-B11,12



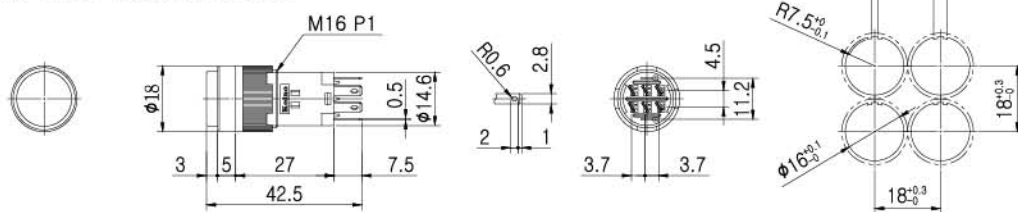
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KH-516L-A11(1c),A12(2c)



KH-516-B11(1c),B12(2c)  
KH-516L-B11(1c),B12(2c)



KH-516-C11(1c),C12(2c)  
KH-516L-C11(1c),C12(2c)



ILLUMINATED PUSHBUTTON SWITCH(MAINTAINED)

KH-516-C21,22  
KH-516L-C21,22



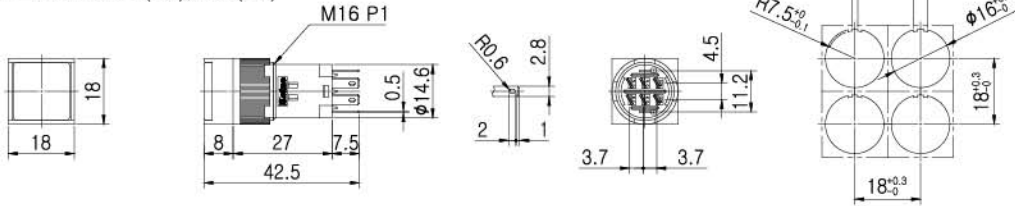
KH-516-A21,22  
KH-516L-A21,22



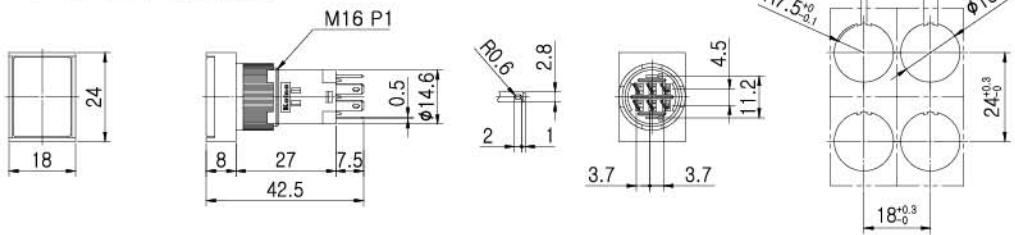
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KH-516L-B21,22



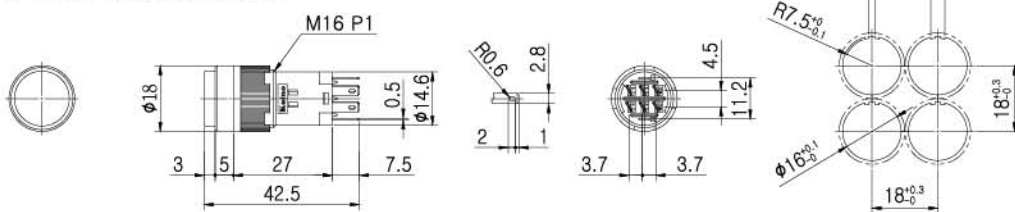
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KH-516L-A21(1c),A22(2c)



KH-516-B21(1c),B22(2c)  
KH-516L-B21(1c),B22(2c)



KH-516-C21(1c),C22(2c)  
KH-516L-C21(1c),C22(2c)



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

PUSHBUTTON SWITCH(MOMENATRY)

KH-516-C31,32



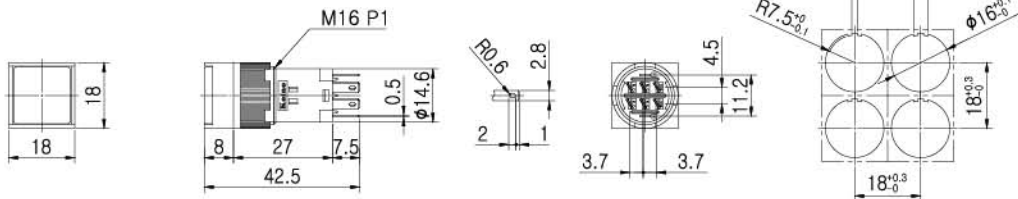
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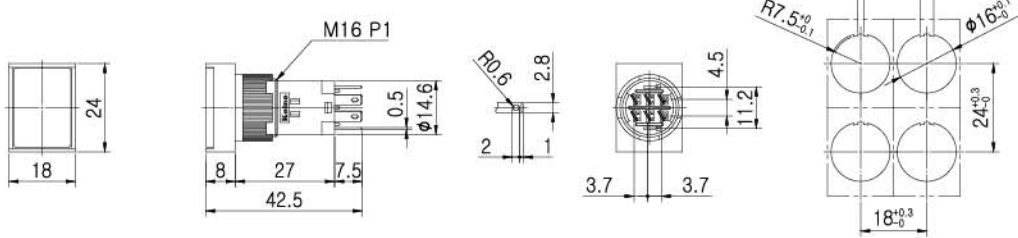
KH-516-B31,32



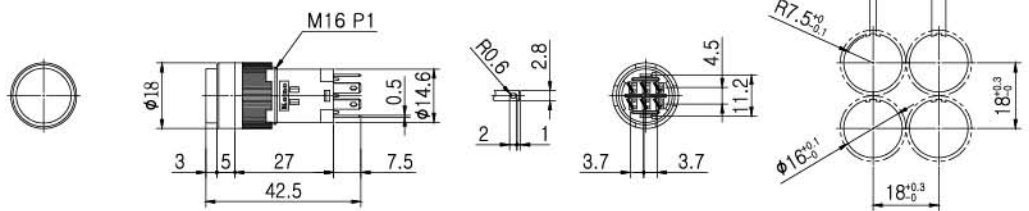
KH-516-A31(1c),A32(2c)



KH-516-B31(1c),B32(2c)



KH-516-C31(1c),C32(2c)



PUSHBUTTON SWITCH(MAINTAINED)

KH-516-C41,42



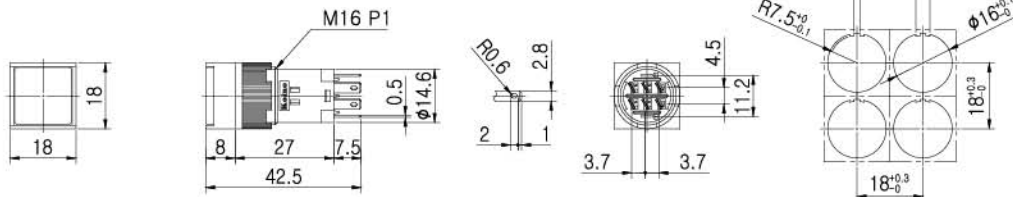
KH-516-A41,42



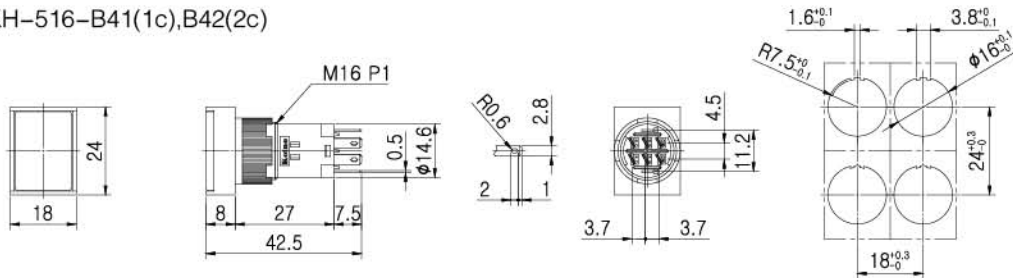
KH-516-B41,42



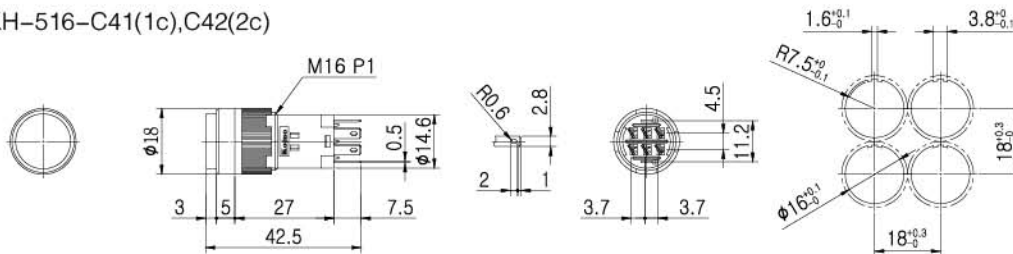
KH-516-A41(1c),A42(2c)



KH-516-B41(1c),B42(2c)



KH-516-C41(1c),C42(2c)



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

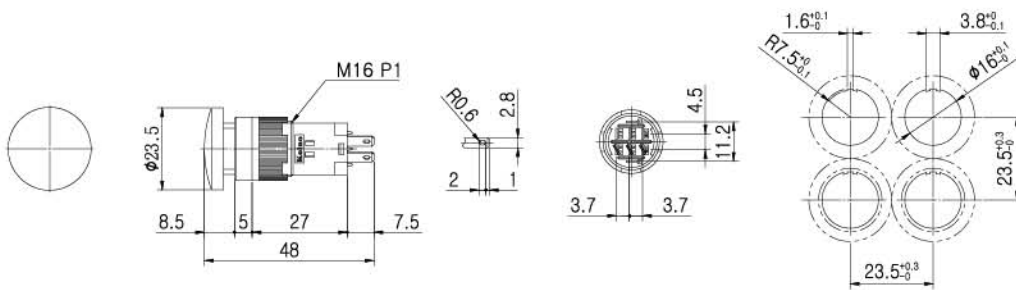
PID TEMP. CONTROLLER

PUSHBUTTON SWITCH(MUSHROOM HEAD TYPE)

**KH-516-D31,32  
MOMENTARY**



**KH-516-D41,42  
MAINTAINED**



ACCESSORIES

KA-16  
SAFETY COVER FOR KH-516



LAMP REMOVAL TOOL  
FOR KH-516



ANTI-ROTATION RING



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KH-516 is equipped with normally open contact and normally closed contact.

1C and 2C contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

Nylon galss

#### Buttons

PC

### Mechanical Characteristics

#### Mechanical Lifetime

Momentary type: 500,000 Cycles of operation

Maintained type: 200,000 Cycles of operation

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 1A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

70,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

**Lamp Ratings**

FILAMENT LAMP: 6V(60mA), 12V(40mA), 24V(24mA)

LED LAMP: DC6V(40mA), DC12V(20mA), DC24V(20mA)

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 100G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

KC

**Declaration of Conformity**

None

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## PUSHBUTTON SWITCH

**KPB16 Series****CLASSIFICATION**KPB-16 S M - R 1

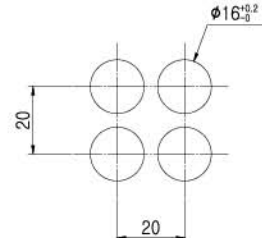
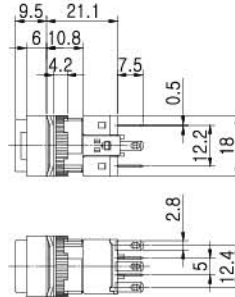
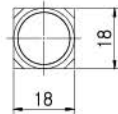
① ② ③ ④

① SHAPE	NONE	ROUND	NONE	Ø18mm Head
			0	Ø25mm Head Flush Mounting Type
			1	Ø25mm Head
② ACTUATOR	S	SQUARE		
	R	RECTANGULAR		
③ COLOR	M	MOMENTARY		
	AT	MAINTAINED		
④ CONTACTS	R	RED		
	G	GREEN		
	Y	YELLOW		
	O	ORANGE		
	W	WHITE		
	B	BLUE		
④ CONTACTS	1	1C		
	2	2C		



**KPB16M  
KPB16AT**

KPB16M  
KPB16AT



Panel Cut Size

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

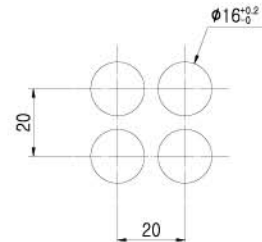
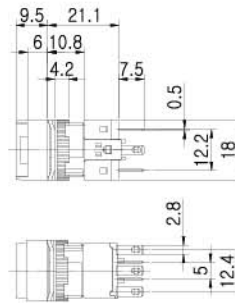
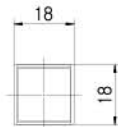
CONTROL BOX

PID TEMP. CONTROLLER



**KPB16SM  
KPB16SAT**

KPB16SM  
KPB16SAT

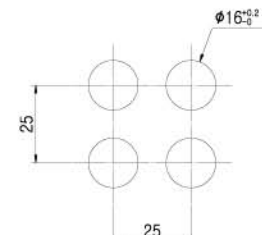
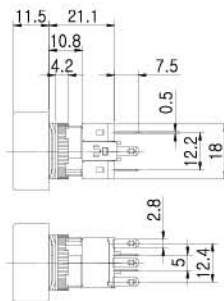


Panel Cut Size



**KPB160M  
KPB160AT**

KPB160M  
KPB160AT

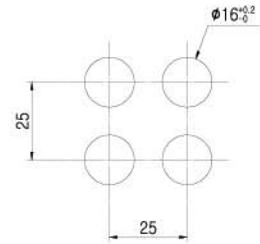
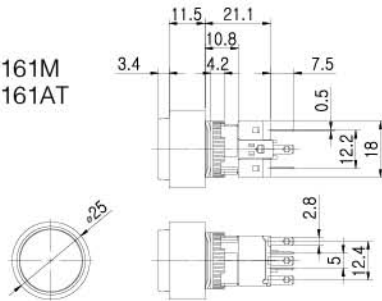


Panel Cut Size



**KPB161M  
KPB161AT**

KPB161M  
KPB161AT

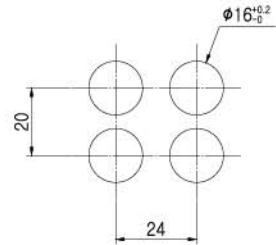
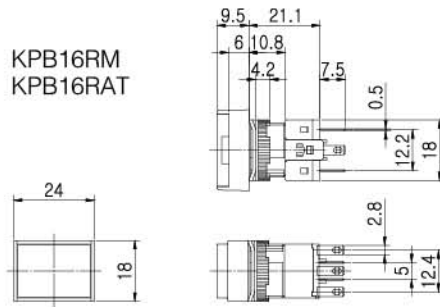


Panel Cut Size



**KPB16RM  
KPB16RAT**

KPB16RM  
KPB16RAT



Panel Cut Size

**ACCESSORIES**

**KA-16  
SAFETY COVER FOR KH-516**



**ANTI-ROTATION RING**





## Technical Information

### Switching System

The switching element of KPB16 is equipped with normally open contact and normally closed contact.

1C and 2C contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: PBT

#### Buttons

PC

### Mechanical Characteristics

#### Mechanical Lifetime

Momentary type: 1,000,000 Cycles of operation

Maintained type: 200,000 Cycles of operation

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 3A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-15°C~+50°C

### Operational Humidity

45~85%RH

### Protection Degree

IP40

### Shock Resistance

Approximately 10G(1,000m/s<sup>2</sup>)

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

▼  
Creative Passion

**Koino**<sup>®</sup>

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EMERGENCY STOP SWITCH

**KEPB16ER**

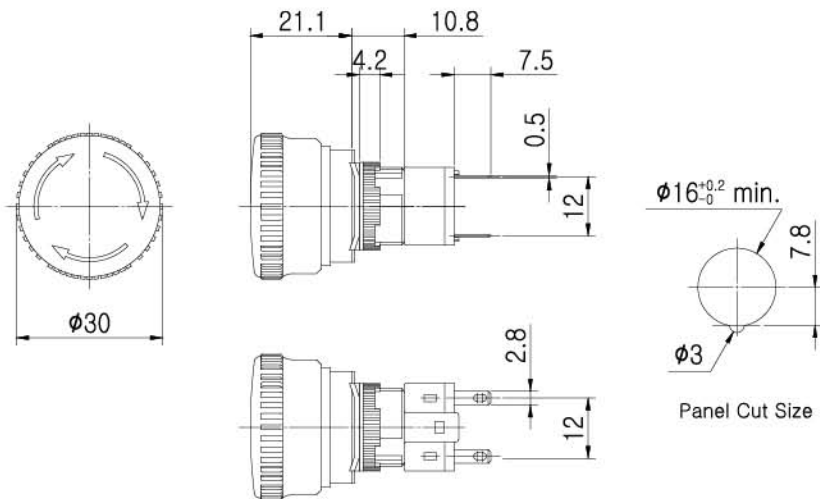


**CLASSIFICATION**

**KEPB-16ER - R 1B**

① ②

① COLOR	R	RED
	G	GREEN
	Y	YELLOW
② CONTACTS	1A	1A
	1B	1B
	2A	2A
	2B	2B
	1A1B	1A1B







CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KEPB16 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B, and 1A1B contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: PBT

#### Buttons

PC

### Mechanical Characteristics

#### Mechanical Lifetime

1,000,000 Cycles of operation

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 3A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 10G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

▼  
Creative Passion

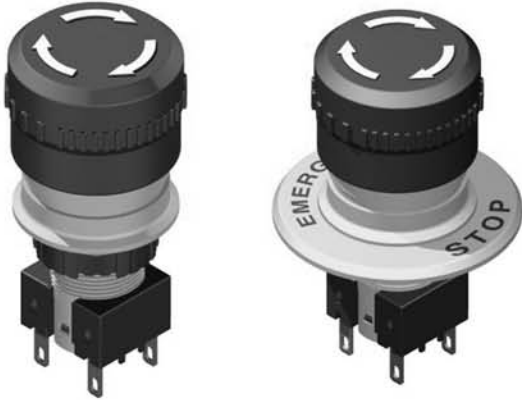
**Koino**<sup>®</sup>

[www.koino.com](http://www.koino.com)

EMERGENCY STOP SWITCH



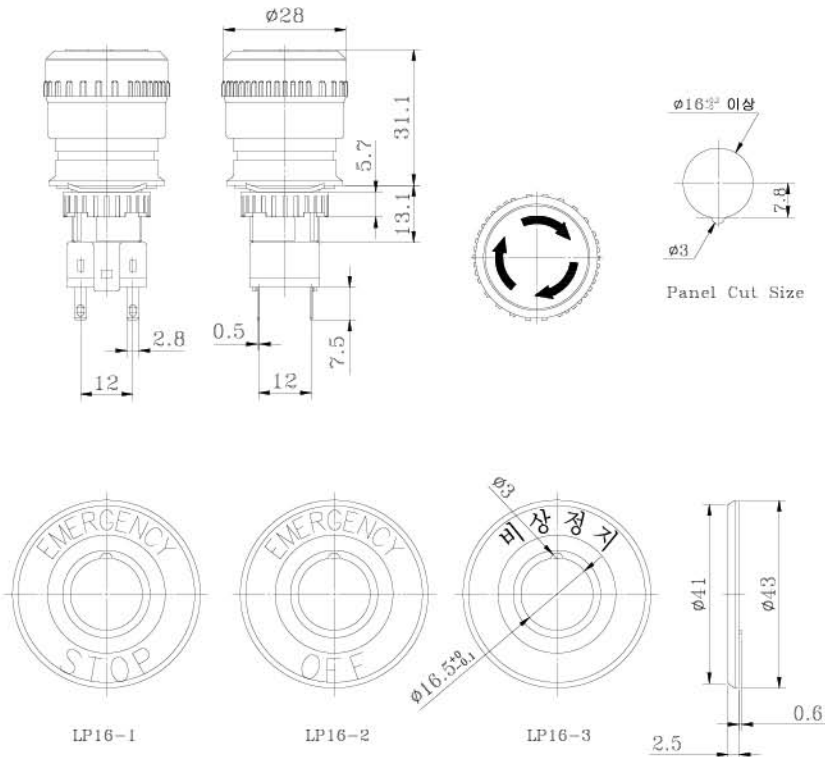
# KEPB160ER



**OVERVIEW**

- Mounting cut-out :  $\varnothing 16\text{mm}$
- Front dimension :  $\varnothing 28\text{mm}$
- Marking: Arrows
- IP-Rating : IP65
- Switching action : Maintained
- Function : Emergency STOP Switch
- Twist to unlock clockwise



**Dimensions**



# EMERGENCY STOP SWITCH

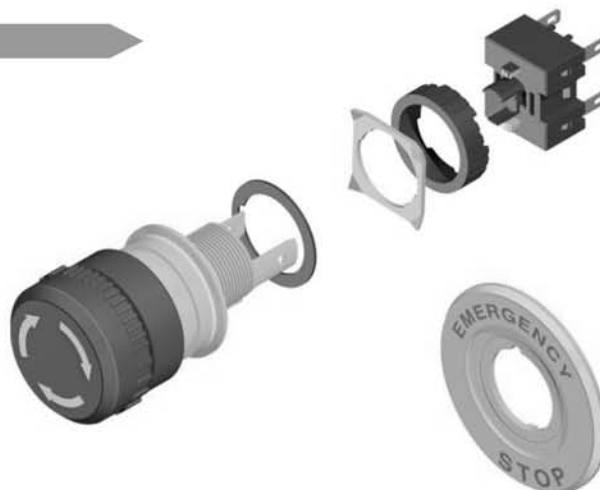


## Selection Guide

MODEL NUMBER	APPEARANCE	FEATURE
KEPB160ER		
KEPB160ERS		White arrows

※ For each model, 1A, 1B, 2A, 2B, 1A1B contacts are available.

## INSTALLATION



### CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

**Accessories**

LP16-1



LP16-2



## Technical Information

### Switching System

The switching element of KEPB160ERS is equipped with normally open contact or normally closed contact. The normally closed contact has direct opening or forced opening structure.

### Material

**Contact**

Silver alloy + Copper

**Housing**

Nylon

**Buttons**

PC

### Mechanical Characteristics

**Mechanical Lifetime**

150,000 Cycles of operation

### Electrical Characteristics

**Standards**

This product comply with "Standards for low-voltage switching devices" EN IEC 60947-5-1

**Contact Ratings**

250VAC 3A, 125VAC 5A (resistive load)

**Insulation Resistance**

Minimum 100M $\Omega$  (500VDC)

**Contact Resistance**

Maximum 30m $\Omega$



**Electrical Lifetime**

100,000 cycles of operation

**Insulation Resistance**

Minimum 100M $\Omega$  (500VDC)

**Contact Resistance**

Maximum 30m $\Omega$

**Environmental conditions**

**Operational Temperature**

-15 $^{\circ}$ C~+50 $^{\circ}$ C

**Protection Degree**

IP65

**Shock Resistance**

Approximately 15G

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL

**Declaration of Conformity**

CE

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

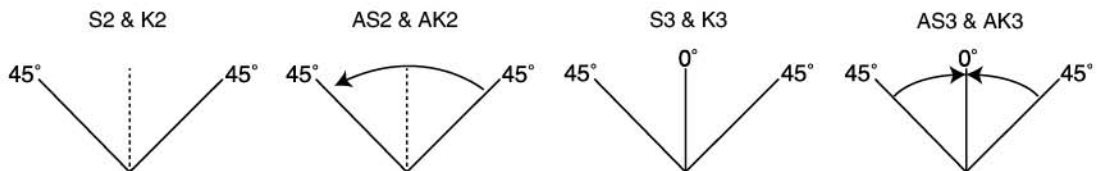


## SELECTOR SWITCH

**KSL16 Series****CLASSIFICATION****KSL - 16 S S2 - L 1C R 1**

① ② ③ ④ ⑤ ⑥

① SHAPE	NONE	ROUND
	S	SQUARE
	R	RECTANGULAR
② ACTUATOR	S2	2 STEPS MANUAL RETURN
	AS2	2 STEPS SPRING RETURN
	S3	3 STEPS MANUAL RETURN
	AS3	3 STEPS SPRING RETURN
	K2	2 STEPS MANUAL RETURN WITH KEY
	AK2	2 STEPS SPRING RETURN WITH KEY
	K3	3 STEPS MANUAL RETURN WITH KEY
	AK3	3 STEPS SPRING RETURN WITH KEY
③ LAMP	NONE	NO LAMP
	F	FILAMENT LAMP
	L	LED LAMP
④ INPUT VOLTAGE	1C	6V
	2C	12V
	3C	24V
⑤ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	O	ORANGE
	W	WHITE
	B	BLUE
⑥ CONTACTS	1	1C
	2	2C







**KSL16S2  
KSL16AS2  
KSL16S3  
KSL16AS3**



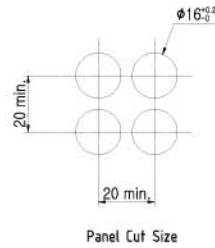
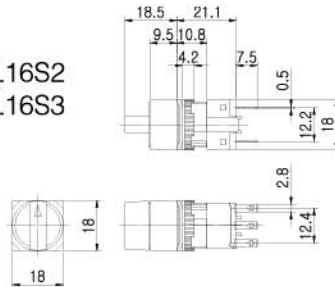
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KSL16SAS2  
KSL16SS3  
KSL16SAS3**



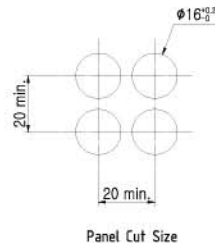
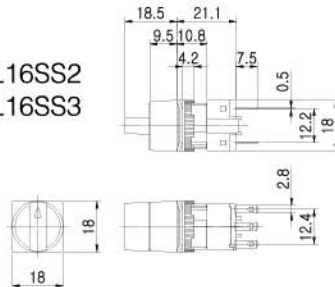
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KSL16RAS2  
KSL16RS3  
KSL16RAS3**



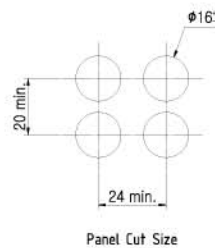
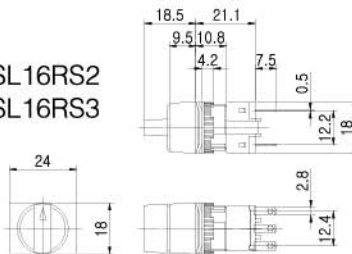
**KSL16S2  
KSL16S3**



**KSL16SS2  
KSL16SS3**



**KSL16RS2  
KSL16RS3**



**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



**KSL16K2  
KSL16AK2  
KSL16K3  
KSL16AK3**



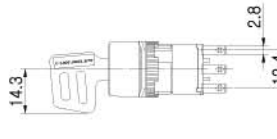
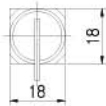
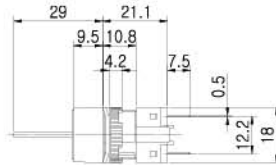
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KSL16SAK2  
KSL16SK3  
KSL16SAK3**



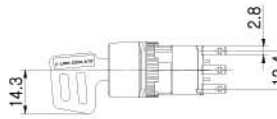
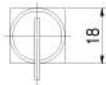
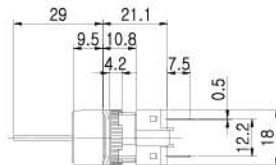
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KSL16RAK2  
KSL16RK3  
KSL16RAK3**



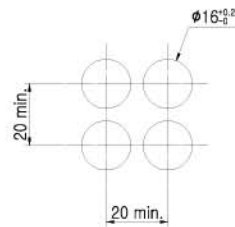
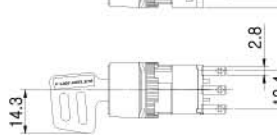
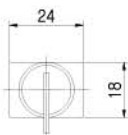
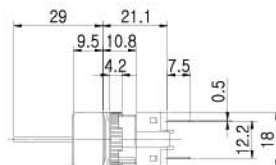
**KSL16K2  
KSL16K3**



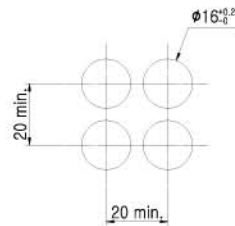
**KSL16SK2  
KSL16SK3**



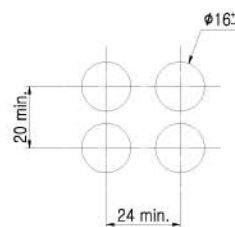
**KSLR16K2  
KSLR16K3**



Panel Cut Size



Panel Cut Size



Panel Cut Size



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KSL16 is equipped with normally open contact and normally closed contact.

1C and 2C contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: PBT

#### Knob

Nylon glass

### Mechanical Characteristics

#### Mechanical Lifetime

100,000 Cycles of operation

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 3A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-15°C~+55°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 10G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

▼  
Creative Passion

**Koino**<sup>®</sup>

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## PILOT LAMP

**KPL16 Series****CLASSIFICATION**

**KPL-16** R - L 1C R  
 ① ② ③ ④

① SHAPE	NONE	ROUND	NONE	Ø18mm Head
			0	Ø25mm Head FlushType
			1	Ø25mm Head
	S	SQUARE		
	R	RECTANGULAR		
② LAMP	NONE	FILAMENT LAMP		
	L	LED LAMP		
③ INPUT VOLTAGE	1C	6V		
	2C	12V		
	3C	24V		
④ COLOR	R	RED		
	G	GREEN		
	Y	YELLOW		
	O	ORANGE		
	W	WHITE		
	B	BLUE		



**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

**KPL16**



**KPL160**



**KPL161**



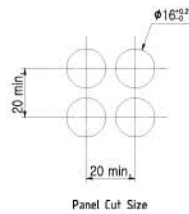
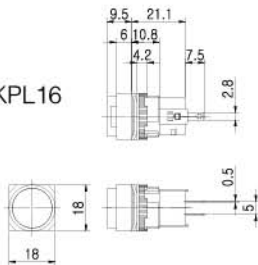
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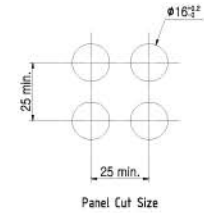
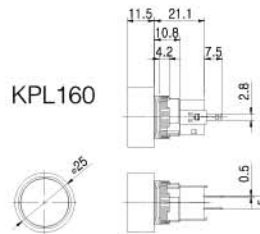
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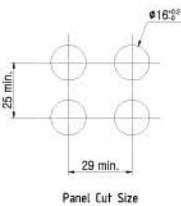
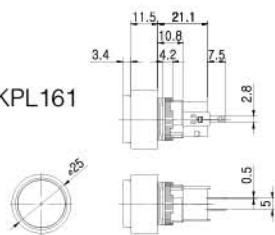
**KPL16**



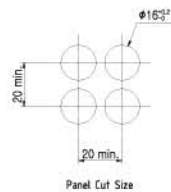
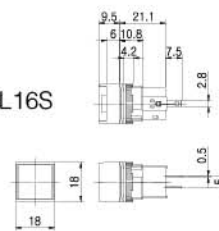
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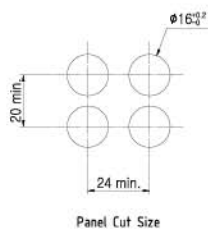
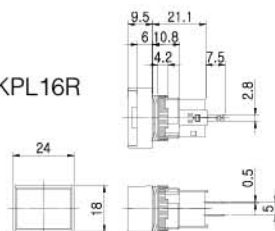
**KPL161**



**KPL16S**



**KPL16R**





## Technical Information

### Material

#### Housing

BODY: Nylon glass

RING: Nylon glass

#### Cap

PC

### Mechanical Characteristics

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

15,000 hours (for LED lamp)

#### Dielectric Strength

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute





**Environmental conditions**

**Operational Temperature**

-15°C~+55°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 10G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## ILLUMINATED PUSHBUTTON SWITCH

**KBL16 Series****CLASSIFICATION****KBL-16 S M - L 1C R 1**

① ② ③ ④ ⑤ ⑥

① SHAPE	NONE	ROUND	NONE	Ø18mm Head
			0	Ø25mm Head FlushType
			1	Ø25mm Head
② ACTUATOR	S	SQUARE		
	R	RECTANGULAR		
	M	MOMENTARY		
③ LAMP	AT	MAINTAINED		
	NONE	FILAMENT LAMP		
	L	LED LAMP		
④ INPUT VOLTAGE	1C	6V		
	2C	12V		
	3C	24V		
⑤ COLOR	R	RED		
	G	GREEN		
	Y	YELLOW		
	O	ORANGE		
	W	WHITE		
	B	BLUE		
⑥ CONTACTS	1	1C		
	2	2C		



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

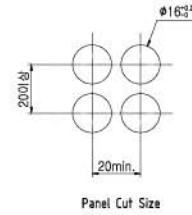
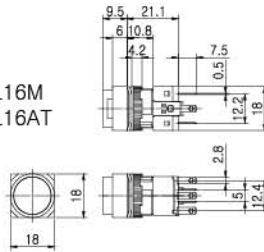
CONTROL BOX

PID TEMP. CONTROLLER

**KBL16**



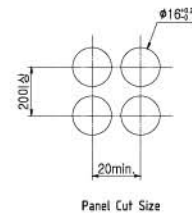
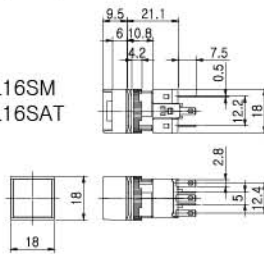
KBL16M  
KBL16AT



**KBL16S**



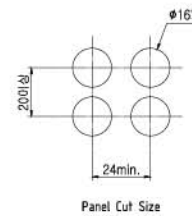
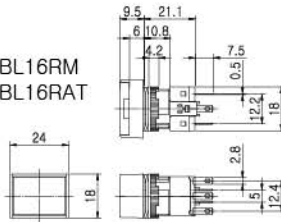
KBL16SM  
KBL16SAT



**KBL16R**



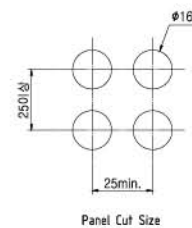
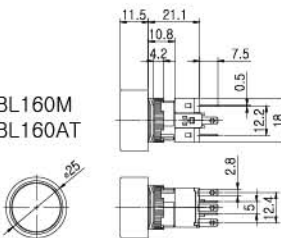
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**KBL160**



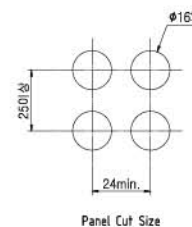
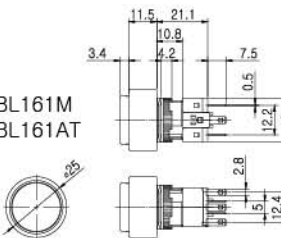
KBL160M  
KBL160AT



**KBL161**



KBL161M  
KBL161AT





## Technical Information

### Switching System

The switching element of KPB16 is equipped with normally open contact and normally closed contact.

1C and 2C contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: PBT

#### Buttons

PC

### Mechanical Characteristics

#### Mechanical Lifetime

Momentary type: 1,000,000 Cycles of operation

Maintained type: 200,000 Cycles of operation

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 3A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-15° C~+55° C

### Operational Humidity

45~85%RH

### Protection Degree

IP40

### Shock Resistance

Approximately 10G(1,000m/s<sup>2</sup>)

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER



EMERGENCY STOP SWITCH

**KEBL16ER**

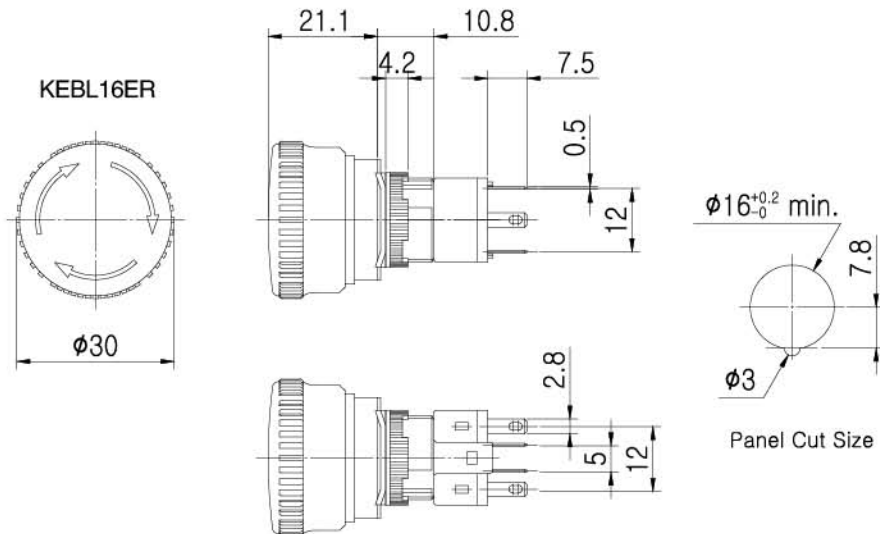
**CLASSIFICATION**

**KEBL-16ER - L 1C R 1B**

① ② ③ ④



① LAMP	NONE	FILAMENT LAMP
	L	LED LAMP
② INPUT VOLTAGE	1C	6V
	2C	12V
	3C	24V
③ COLOR	R	RED
	G	GREEN
	Y	YELLOW
④ CONTACTS	1A	1A
	1B	1B
	2A	2A
	2B	2B
	1A1B	1A1B





## CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KEPB16 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B, and 1A1B contact available.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: PBT

#### Buttons

PC

### Mechanical Characteristics

#### Mechanical Lifetime

1,000,000 Cycles of operation

#### Install

Tightening torque : Max. 6Kg/F.Cm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 3A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,000VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,000VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 10G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE



ACCESSORIES

CONTROL COMPONENTS

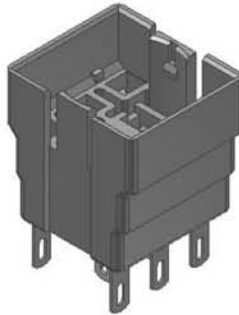
Terminal Socket

Terminal Socket For KPL16



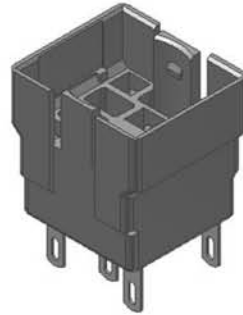
KPL16  
NF22-L

Terminal Socket for KPB16



KPB16  
KBL16  
NF22-P  
NF22-B  
NF22-S  
NF22-K

Terminal Socket for KEPB16



KEPB16  
KEBL16

Safety Cover



Separate Tool



SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

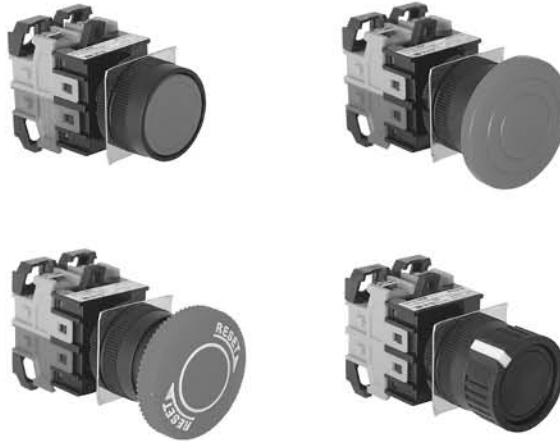
TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## PUSHBUTTON SWITCH

**KH-2201 Series****CLASSIFICATION**KH-2201 AT - 1 1 R

① ② ③ ④

① ACTUATOR	NONE	MOMENTARY
	AT	MAINTAINED
	EB	MUSHROOM SHAPE
	ER	EMERGENCY STOP
	S	SELECTABLE PUSHBUTTON
② CONTACT	NUMBER OF NO CONTACT	
③ CONTACT	NUMBER OF NC CONTACT	
④ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	MW	MILKY WHITE
	W	WHITE
	BK	BLACK



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

KH-2201



KH-2201EB



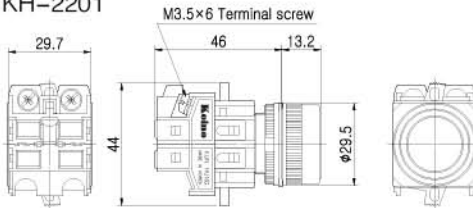
KH-2201ER



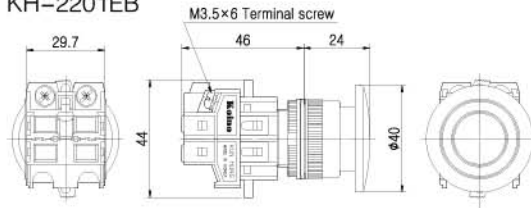
KH-2201S



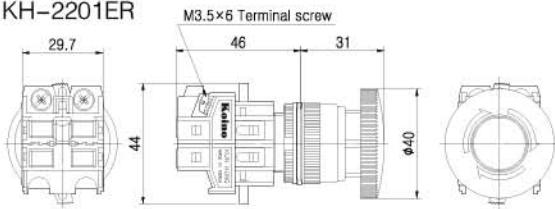
KH-2201



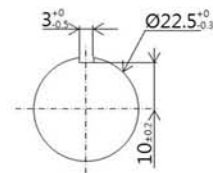
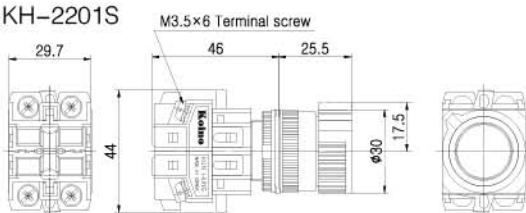
KH-2201EB



KH-2201ER



KH-2201S



Panel Cut



## Technical Information

### Switching System

The switching element of KH-2201 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Buttons

Acetal

### Mechanical Characteristics

#### Mechanical Lifetime

Momentary and maintained : 1,000,000 Cycles of operation

EB, ER and S type: 100,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

125VAC 10A, 250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-15°C~+50°C

### Operational Humidity

45~85%RH

### Protection Degree

IP56

ER and S type: IP50

### Shock Resistance

Approximately 50G

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER

## KEPB22ER

### OVERVIEW

Mounting cut-out :  $\varnothing 22.5\text{mm}$

Front dimension :  $\varnothing 36\text{mm}$

Marking: Arrows

Weight:

IP-Rating : IP65

Switching action : Maintained

Function : Emergency STOP Switch

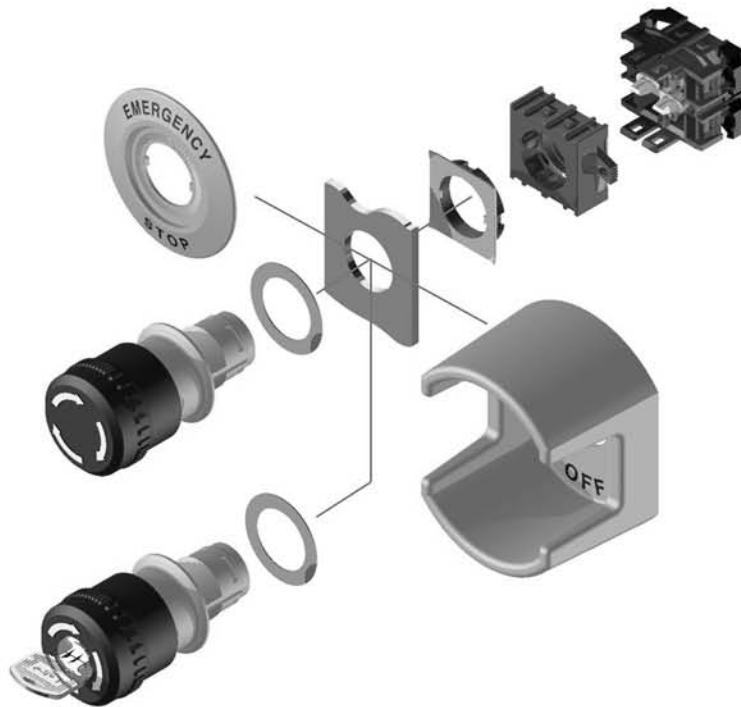
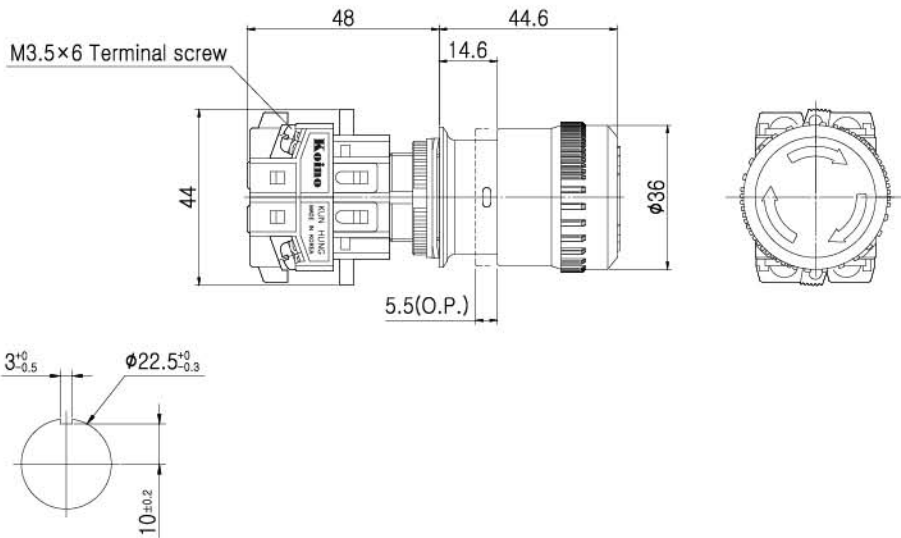
Twist to unlock clockwise



# EMERGENCY STOP SWITCH



## Dimensions



### CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK




CONTROL BOX

PID TEMP. CONTROLLER

EMERGENCY STOP SWITCH



**Selection Guide**

MODEL NUMBER	APPEARANCE	FEATURE
KEPB22ER-11		
KEPB22ERS-11		White arrows
KEPB22ERK-11		Rebound by key



# EMERGENCY STOP SWITCH



## Accessories

LP22-1



LP22-2



SC-22



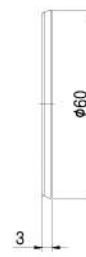
LP22-1



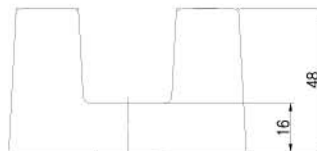
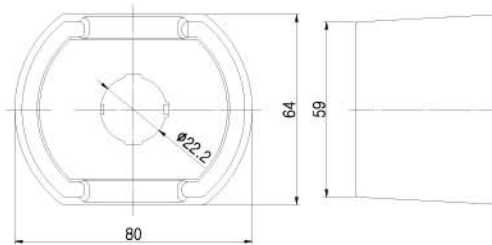
LP22-2



LP22-3



SC-22



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Technical Information

### Switching System

The switching element of KEPB22ER, KEPB22ERS and KEPB22ERK is equipped with normally open contact or normally closed contact. The normally closed contact has direct opening or forced opening structure.

### Material

#### Contact

Silver alloy + Copper

#### Housing

Nylon

### Mechanical Characteristics

#### Mechanical Lifetime

300,000 Cycles of operation

#### Terminals

Screw Terminals

Maximum wire cross section : 2.5 mm<sup>2</sup>

Tightening torque : 25–30 Ncm

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947–5–1

#### Contact Ratings

125VAC 10A, 250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$



**Electrical Lifetime**

100,000 cycles of operation

**Contact Ratings**

125VAC 10A, 250VAC 6A (resistive load)

**Insulation Resistance**

Minimum 100MΩ (500VDC)

**Contact Resistance**

Maximum 30mΩ

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Protection Degree**

IP65

**Shock Resistance**

Approximately 100G(1,000m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL

**Declaration of Conformity**

CE

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



SELECTOR SWITCH

# KH-2202 Series

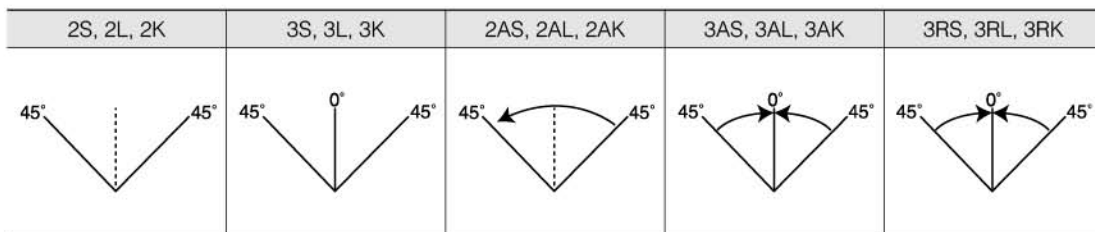


## CLASSIFICATION

**KH-2202 2S - 1 1**

① ② ③

① ACTUATOR	2S	2 STEP MAINTAINED / SHORT LEVER
	3S	3 STEP MAINTAINED / SHORT LEVER
	2L	2 STEP MAINTAINED / LONG LEVER
	3L	3 STEP MAINTAINED / LONG LEVER
	2AS	2 STEP SPRING RETURN / SHORT LEVER
	3AS	3 STEP SPRING RETURN / SHORT LEVER
	3RS	3 STEP/LEFT: MAINTAINED, RIGHT: SPRING RETURN/SHORT LEVER
	2AL	2 STEP SPRING RETURN / LONG LEVER
	3AL	3 STEP SPRING RETURN / LONG LEVER
	3RL	3 STEP/LEFT: MAINTAINED, RIGHT: SPRING RETURN/LONG LEVER
	2K	2 STEP MAINTAINED / KEY SWITCH
	3K	3 STEP MAINTAINED / KEY SWITCH
	2AK	2 STEP SPRING RETURN / KEY SWITCH
	3AK	3 STEP SPRING RETURN / KEY SWITCH
3RK	3 STEP/LEFT: MAINTAINED, RIGHT: SPRING RETURN/KEY SWITCH	
② CONTACT	NUMBER OF NO CONTACT	
③ CONTACT	NUMBER OF NC CONTACT	



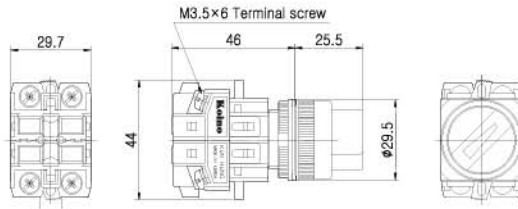
CONTROL COMPONENT



CONTROL COMPONENTS



KH-2202-2S  
KH-2202-3S  
KH-2202-2AS  
KH-2202-3AS  
KH-2202-3RS



SQUARE LIGHT

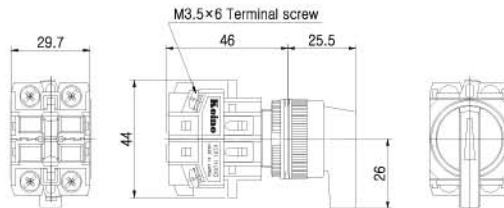
TOWER LIGHT

MICRO SWITCH

FOOT SWITCH



KH-2202-2L  
KH-2202-3L  
KH-2202-2AL  
KH-2202-3AL  
KH-2202-3RL



LIMIT SWITCH

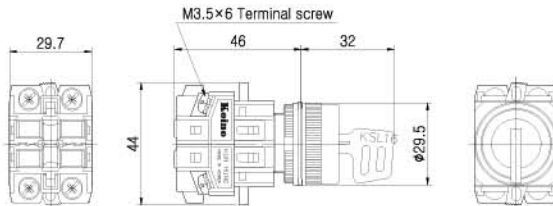
POWER SWITCH

HOIST SWITCH

CAM SWITCH



KH-2202-2K  
KH-2202-3K  
KH-2202-2AK  
KH-2202-3AK  
KH-2202-3RK



BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

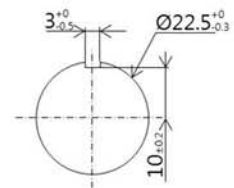
RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



Panel Cut



## Technical Information

### Switching System

The switching element of KH-2201 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Knobs

Acetal

### Mechanical Characteristics

#### Mechanical Lifetime

100,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

125VAC 10A, 250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-15°C~+50°C

### Operational Humidity

45~85%RH

### Protection Degree

IP50

### Shock Resistance

Approximately 50G

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER



PILOT LAMP

# KH-2203 Series



## CLASSIFICATION

KH-2203 L - 1 R

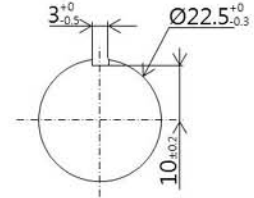
① ② ③

① LAMP	NONE	FILAMENT LAMP
① LAMP	L	LED LAMP
② INPUT VOLTAGE	1	110VAC 50/60 Hz
② INPUT VOLTAGE	2	220VAC 50/60 Hz
② INPUT VOLTAGE	3	230VAC 50/60 Hz
② INPUT VOLTAGE	TL	6, 12, 24 AC/DC
③ COLOR	R	RED
③ COLOR	G	GREEN
③ COLOR	Y	YELLOW
③ COLOR	O	ORANGE
③ COLOR	W	WHITE
③ COLOR	B	BLUE



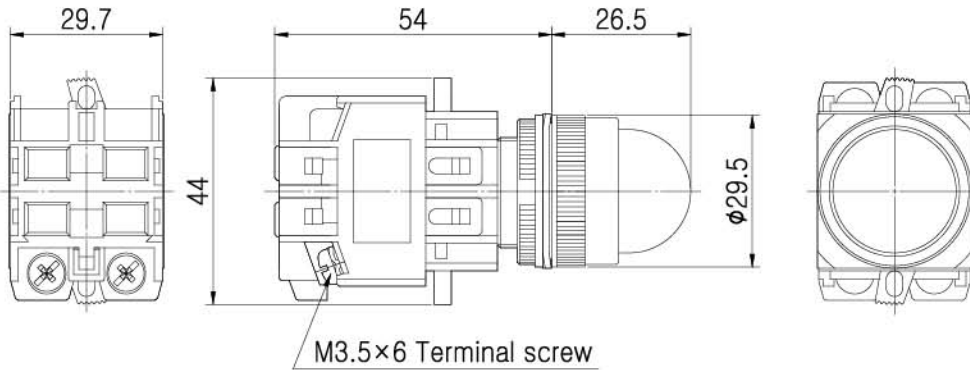


KH-2203-1  
 KH-2203-2  
 KH-2203-3  
 KH-2203L-1  
 KH-2203L-2  
 KH-2203L-3

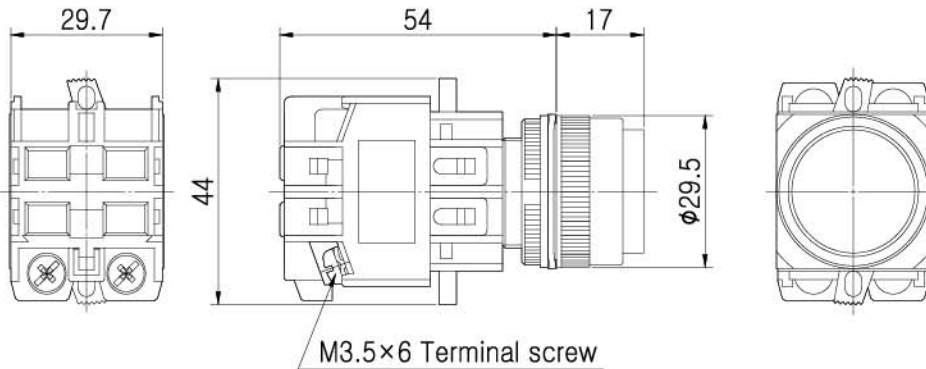


Panel Cut

KH-2203(R Cap)-Model



KH-2203(F Cap)-Model



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

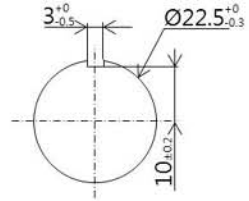
TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

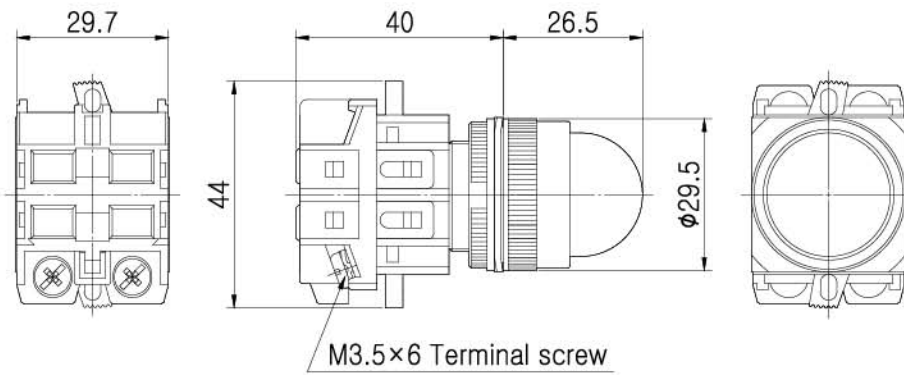


**KH-2203-TL**  
**KH-2203L-TL**

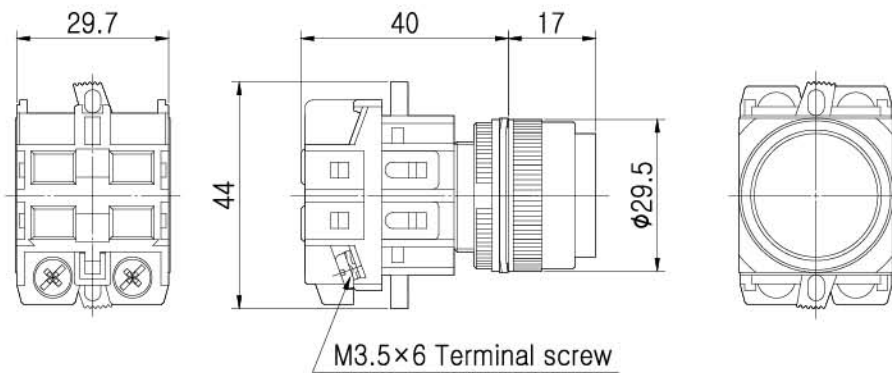


Panel Cut

KH-2203-TL(R Cap)-Model



KH-2203-TL(F Cap)-Model





## Technical Information

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

#### Ring

Nylon glass

#### Cap

AS

### Electrical Characteristics

#### Standards

This product comply with “Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER



**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP56

**Shock Resistance**

Approximately 50G

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

▼  
Creative Passion

**Koino**<sup>®</sup>

[www.koino.com](http://www.koino.com)



## ILLUMINATED PUSHBUTTON SWITCH

**KH-2204 Series****CLASSIFICATION****KH-2204 L P - 1 1 1 R**

① ② ③ ④ ⑤ ⑥

① LAMP	NONE	FILAMENT LAMP
	L	LED LAMP
② ACTUATOR	NONE	MOMENTARY
	AT	MAINTAINED
	P	MOMENTARY/PROTECTIVE RING
	AP	MAINTAINED/PROTECTIVE RING
	EB	MOMENTARY/MUSHROOM HEAD
	ER	MAINTAINED/TURN-TO-RESET/MUSHROOM HEAD
③ INPUT VOLTAGE	1	110VAC 50/60Hz
	2	220VAC 50/60Hz
	3	230VAC 50/60Hz
	TL	6, 12, 24 AC/DC
④ CONTACT	NUMBER OF NO CONTACT	
⑤ CONTACT	NUMBER OF NC CONTACT	
⑥ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	MW	MILKY WHITE
	W	WHITE
	BK	BLACK

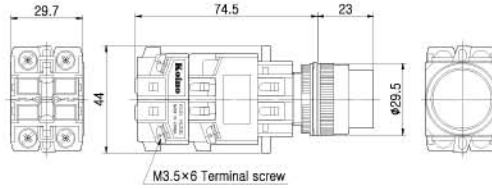
CONTROL COMPONENT



CONTROL COMPONENTS



KH-2204



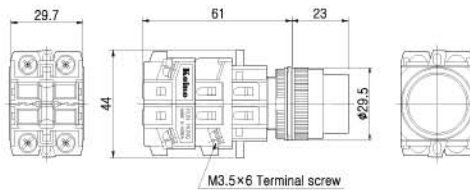
SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH



KH-2204-TL



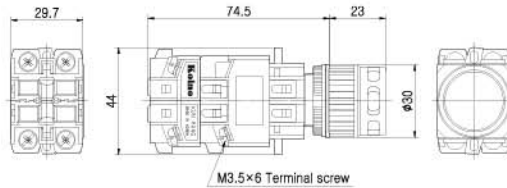
FOOT SWITCH

LIMIT SWITCH

POWER SWITCH



KH-2204P



HOIST SWITCH

CAM SWITCH

BUZZER



KH-2204P-TL

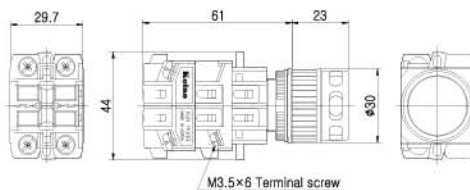


PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

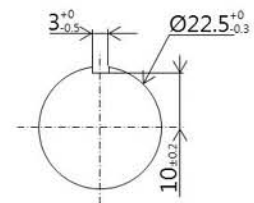
RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

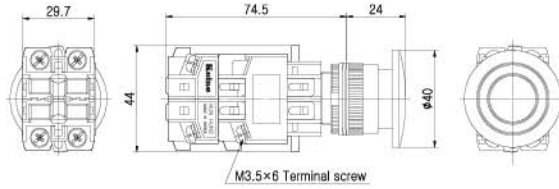


Panel Cut

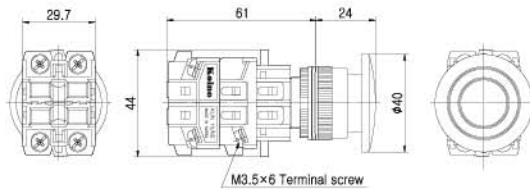
CONTROL COMPONENT



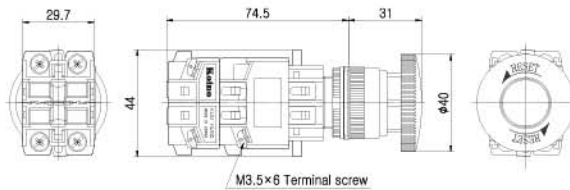
**KH-2204EB**



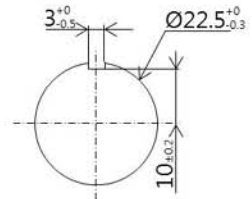
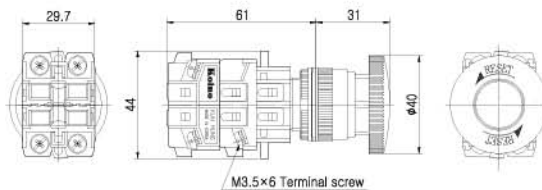
**KH-2204EB-TL**



**KH-2204ER**



**KH-2204ER-TL**



Panel Cut





## Technical Information

### Switching System

The switching element of KH-2201 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Buttons

Acetal

### Mechanical Characteristics

#### Mechanical Lifetime

Momentary and maintained : 1,000,000 Cycles of operation

EB and ER type: 100,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

125VAC 10A, 250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP56

ER type: IP50

**Shock Resistance**

Approximately 50G

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

▼  
Creative Passion

**Koino**<sup>®</sup>

[www.koino.com](http://www.koino.com)

# NF22 Series



## OVERVIEW

Mounting cut-out :  $\varnothing 22\text{mm}$

FLUSH MOUNTING TYPE

IP-Rating : IP40

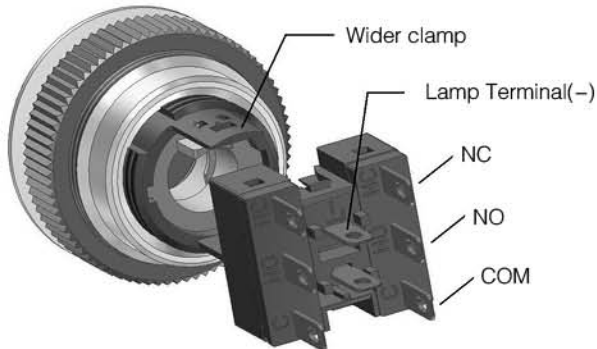
## CLASSIFICATION

**NF22 - L M 1C R 1**

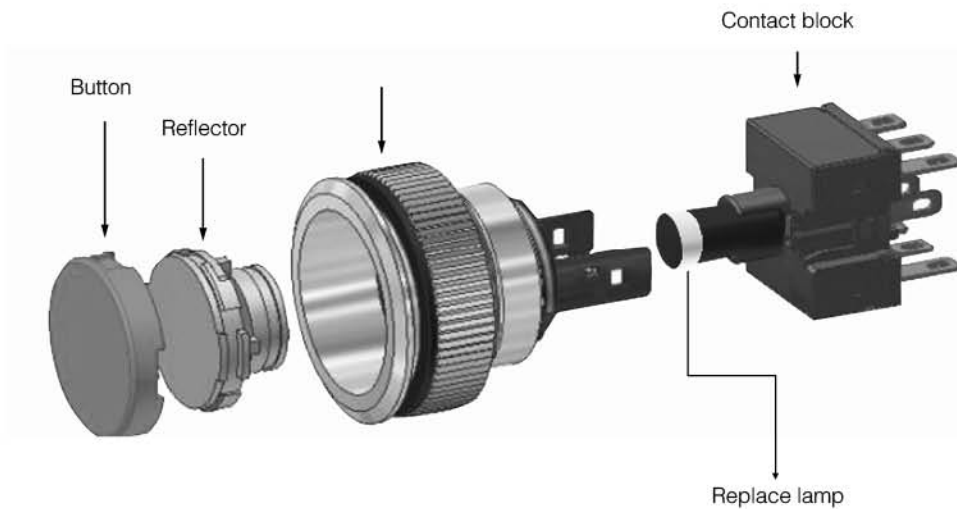
① ② ③ ④ ⑤

① CATEGORY	L	PILOT LAMP	
	P	PUSHBUTTON SWITCH	
	B	ILLUMINATED PUSHBUTTON SWITCH	
	S	SELECTOR SWITCH	
	K	KEY SWITCH	
② ACTUATOR	M	MOMENTARY	FOR PUSH BUTTON SWITCH
	A	MAINTAINED	
	2	2 STEP MAITAINED	FOR SELECTOR & KEY SWITCH
	3	3 STEP MAINTAINED	
	A2	2 STEP SPRING RETURN	
	A3	3 STEP SPRING RETURN	
③ INPUTVOLTAGE	1C	6V	
	2C	12V	
	3C	24V	
④ COLOR	R	RED	
	G	GREEN	
	Y	YELLOW	
	W	WHITE	
	B	BLUE	
	O	ORANGE	
⑤ CONTACTS	1	1C	
	2	2C	

**Terminals**



**How to replace lamp**



1. Widen the clamps which binds to contact block.
2. Detach contact block.
3. Detach lamp from contact block

\* Button can be detached by pushing button with shallow instrument like screw driver.

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

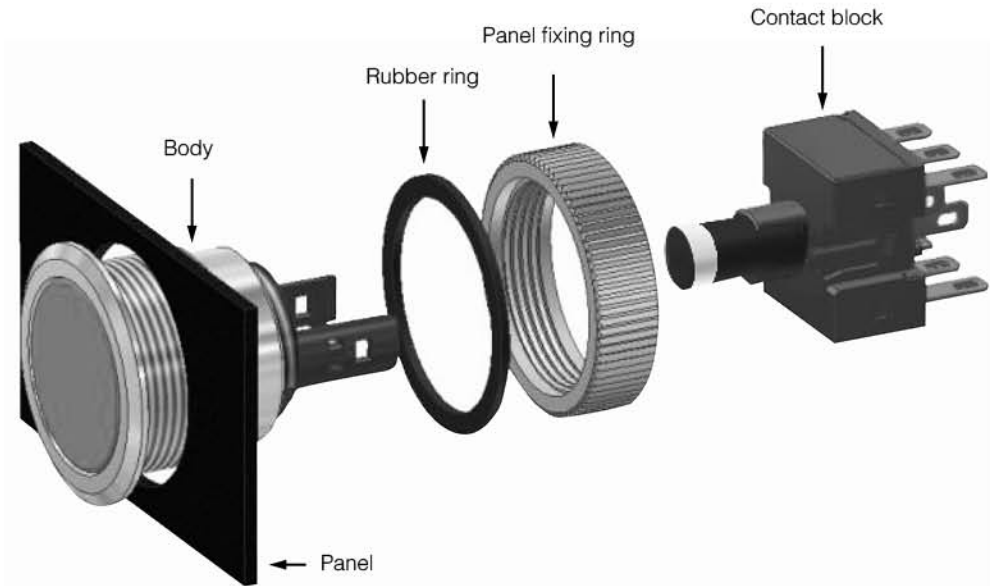
SOCKETS

TERMINAL BLOCK

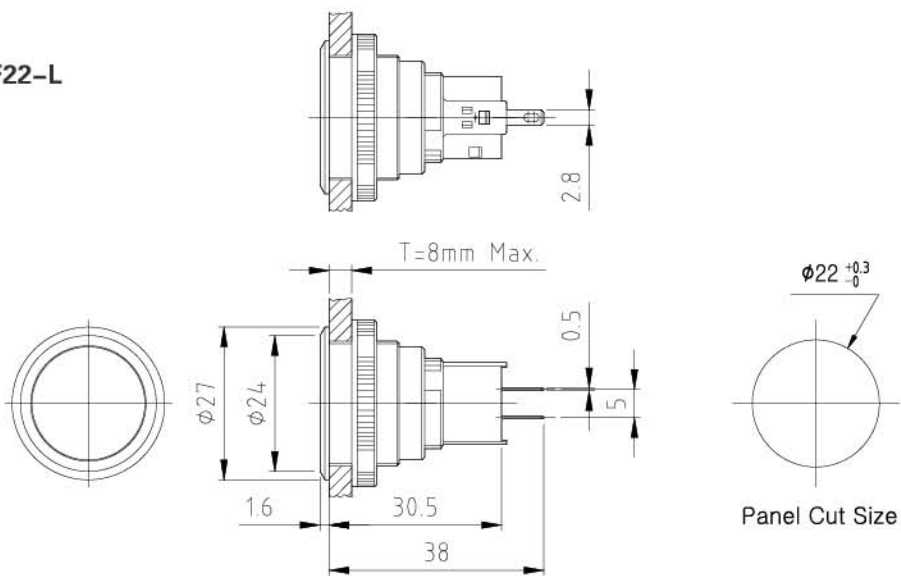
CONTROL BOX

PID TEMP. CONTROLLER

**Installation**

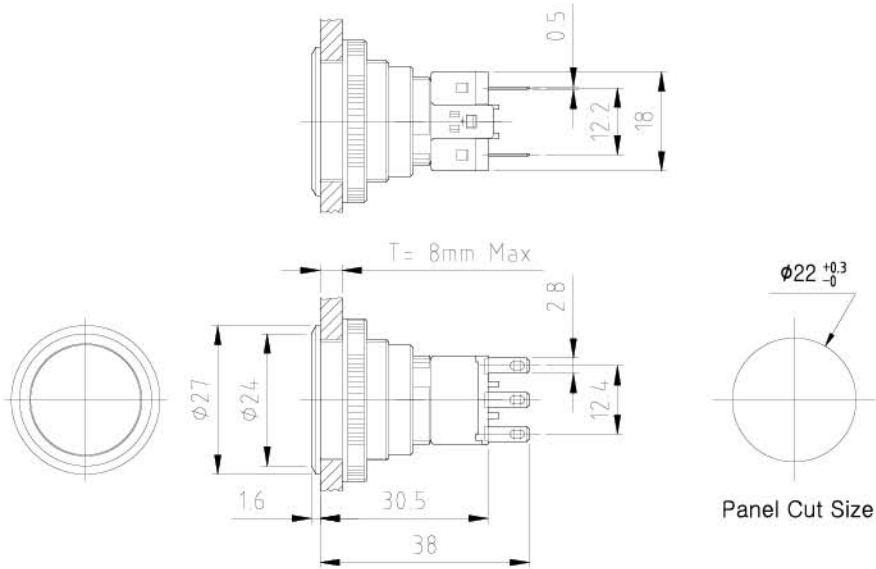


NF22-L

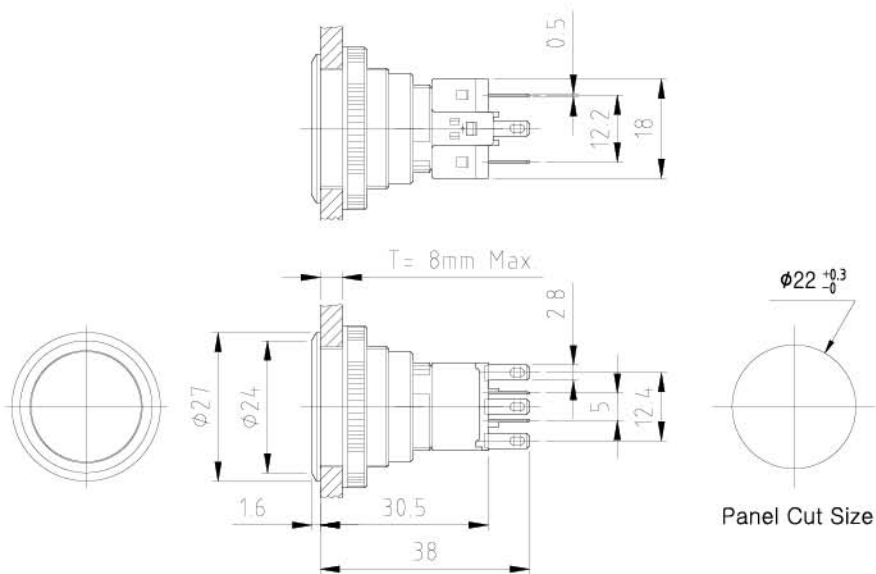




NF22-P



NF22-B



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

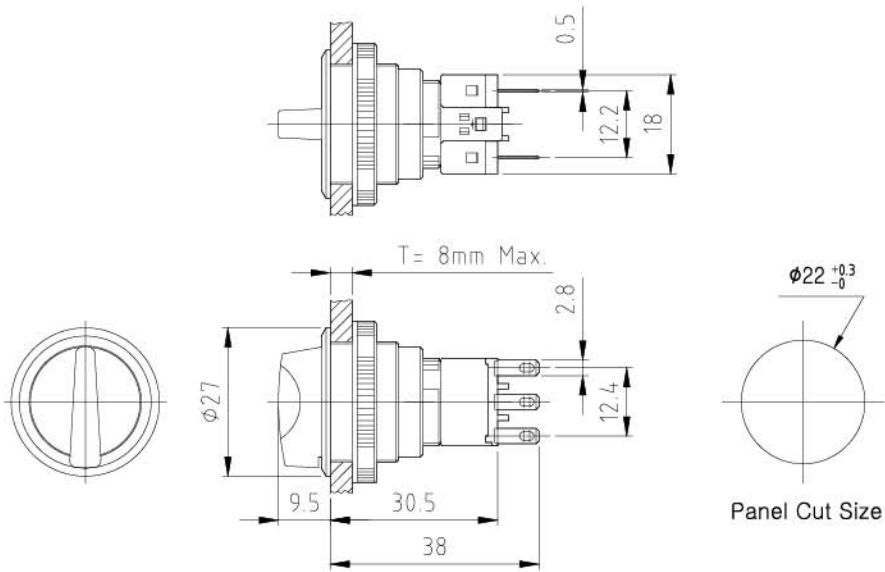
SOCKETS

TERMINAL BLOCK

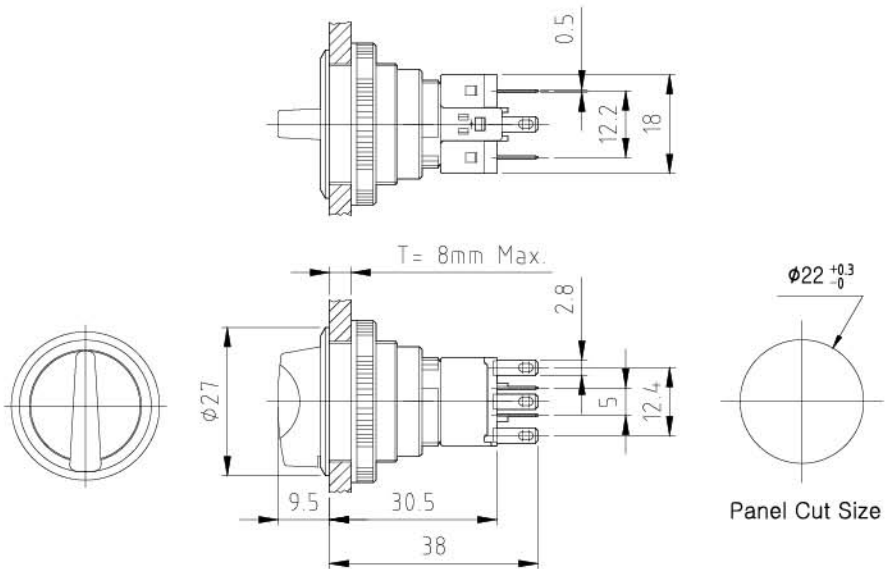
CONTROL BOX

PID TEMP. CONTROLLER

NF22-S

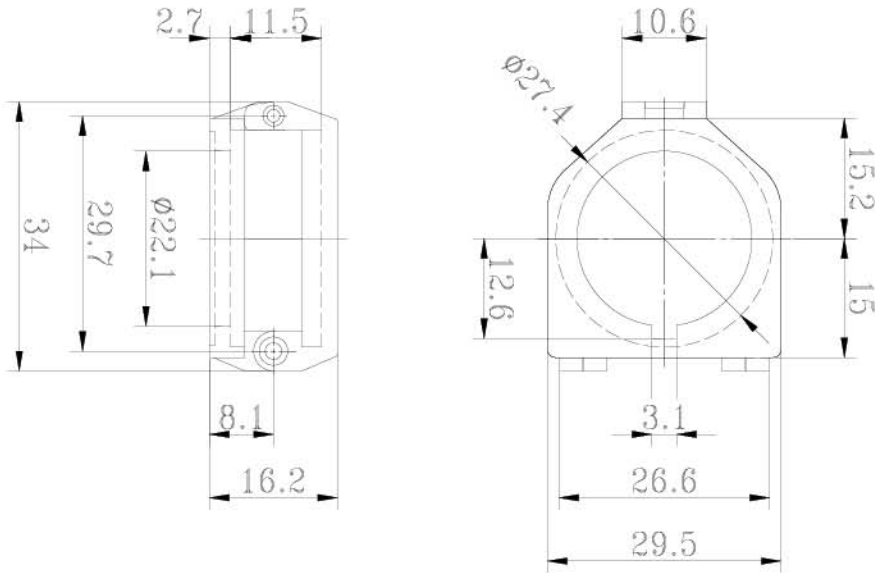


NF22-S (ILLUMINATED)





**SAFETY COVER**



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of NF22 SERIES is equipped with normally open contact or normally closed contact.

### Material

#### Contact

Silver alloy + Copper

#### Contact Housing

Nylon

#### Body

Aluminum

### Mechanical Characteristics

#### Mechanical Lifetime

PUSHBUTTON (momentary): 1,000,000 Cycles of operation

PUSHBUTTON (maintained): 200,000 Cycles of operation

SELECTOR: 100,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 3A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



**Environmental conditions**

**Operational Temperature**

-25° C~+55° C

**Protection Degree**

IP40

**Shock Resistance**

Approximately 10G

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis) for 1 hour

**Approvals**

**Approbations**

UL

**Declaration of Conformity**

CE

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

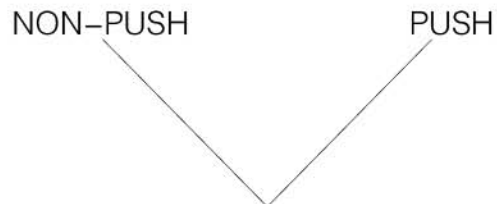


## PUSH BUTTON SWITCH

**KPB25 Series****CLASSIFICATION**KPB-25 W M - R 1 1

① ② ③ ④ ⑤

① PROTECTION	NONE	IP40
	W	IP65
② ACTUATOR	M	PUSH BUTTON, MOMENTARY
	MS	SELECTABLE PUSH BUTTON
	ML	SELECTABLE PUSH BUTTON
	AT	PUSH BUTTON, MAINTAINED
	EM	MUSHROOM HEADED PUSH BUTTON, MOMENTARY
	EA	MUSHROOM HEADED PUSH BUTTON, MAINTAINED
	ER	PUSH BUTTON, TURN TO RESET
	EP	PUSH BUTTON, PULL TO RESET
③ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	W	WHITE
	BK	BLACK
④ CONTACTS	NUMBER	NUMBER OF NO CONTACT
⑤ CONTACTS	NUMBER	NUMBER OF NC CONTACT

**KPB25MS****KPB25ML**

CONTROL COMPONENT



KPB25M  
KPB25WM  
KPB25AT  
KPB25WAT



KPB25EM  
KPB25WEM  
KPB25EA  
KPB25WEA



KPB25ER  
KPB25WER



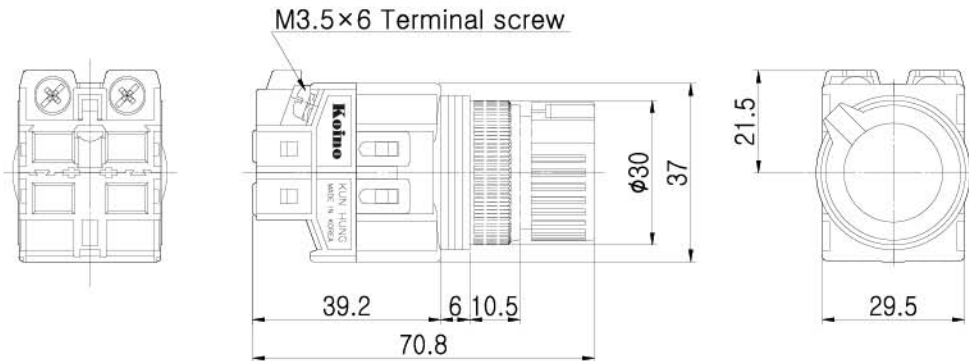
KPB25EP  
KPB25WEP



KPB25MS  
KPB25ML



KPB25MS, KPB25ML



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

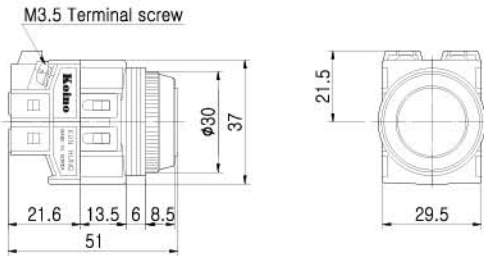
SOCKETS

TERMINAL BLOCK

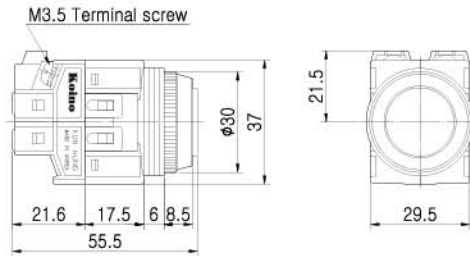
CONTROL BOX

PID TEMP. CONTROLLER

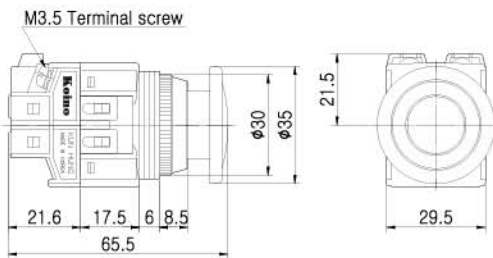
KPB25M, KPB25WM



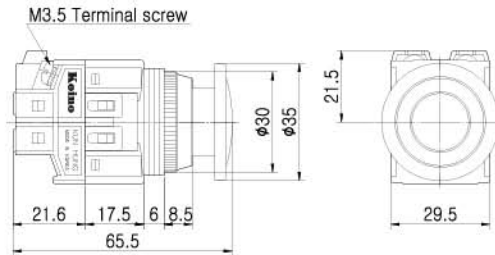
KPB25AT, KPB25WAT



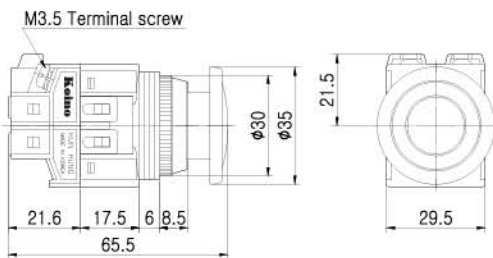
KPB25EP, KPB25WEP



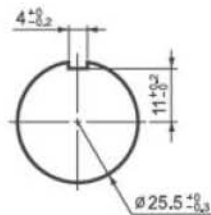
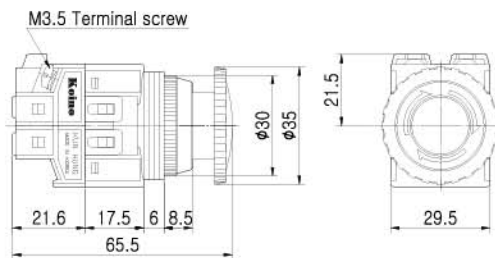
KPB25EM, KPB25WEM



KPB25EA, KPB25WEA



KPB25ER, KPB25WER



PANEL CUT-OUT



**DISASSEMBLING KPB25MS/ML**

	<p>1. Insert screw driver between knob and indicator</p>
	<p>2. Release lock by lifting indicator</p>
	<p>3. Place indicator on the 2nd lock position</p>
	<p>4. Release knob ring</p>
	<p>5. Twist installation ring</p>

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Technical Information

### Switching System

The switching element of KPB25 is equipped with normally open contact and normally closed contact.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Buttons

Acetal

#### Ring

ABS

### Mechanical Characteristics

#### Mechanical Lifetime

1,000,000 Cycles of operation

#### Install

Tightening torque : Max. 0.8N • m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation





**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-25° C~+50° C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40 / IP65(“W” type)

**Shock Resistance**

Approximately 50G(500m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

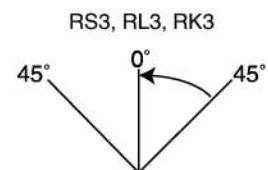
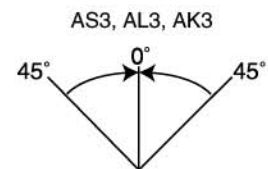
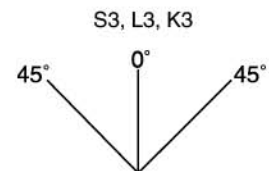
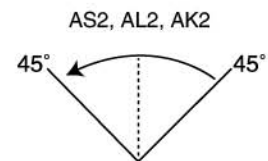
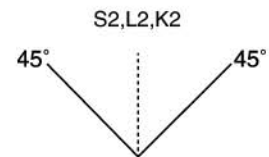


## SELECTOR SWITCH

**KSL25 Series****CLASSIFICATION****KSL – 25 W S2 – L 1C R 1 1**

① ② ③ ④ ⑤ ⑥ ⑦

① PROTECTION	NONE	IP40
	W	IP65 (except illuminated model)
② ACTUATOR	S2	2 STEPS MANUAL RETURN with short knob
	S3	3 STEPS MANUAL RETURN with short knob
	AS2	2 STEPS SPRING RETURN with short knob
	AS3	3 STEPS SPRING RETURN with short knob
	RS3	3 STEPS L: MANUAL, R: SPRING with short knob
	L2	2 STEPS MANUAL RETURN with long knob
	L3	3 STEPS MANUAL RETURN with long knob
	AL2	2 STEPS SPRING RETURN with long knob
	AL3	3 STEPS SPRING RETURN with long knob
	RL3	3 STEPS L: MANUAL, R: SPRING with long knob
RK3	3 STEPS L: MANUAL, R: SPRING with key	
③ LAMP	NONE	N/A
	L	LED LAMP
④ INPUT VOLTAGE	1A	110VAC AT 50/60 Hz
	2A	220VAC AT 50/60 Hz
	3A	230VAC AT 50/60 Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24 AC/DC
⑤ LAMP COLOR	R	RED
	G	GREEN
	Y	YELLOW
⑥ CONTACTS	No.	NUMBER OF NO CONTACT
⑦ CONTACTS	No.	NUMBER OF NC CONTACT





**CONTROL COMPONENTS**



KSL25S2	KSL25WS2	KSL25S3	KSL25WS3
KSL25AS2	KSL25WAS2	KSL25AS3	KSL25WAS3
KSL25RS3	KSL25WRS3		

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH



KSL25L2	KSL25WL2	KSL25L3	KSL25WL3
KSL25AL2	KSL25WAL2	KSL25AL3	KSL25WAL3
KSL25RL3	KSL25WRL3		

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH



KSL25K2	KSL25WK2	KSL25K3	KSL25WK3
KSL25AK2	KSL25WAK2	KSL25AK3	KSL25WAK3
KSL25RK3	KSL25WRK3		

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR



**ILLUMINATED SELECTOR**

KSL25S2	KSL25WS2	KSL25S3	KSL25WS3
KSL25AS2	KSL25WAS2	KSL25AS3	KSL25WAS3
KSL25RS3	KSL25WRS3		

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY



**ILLUMINATED SELECTOR - WITHOUT TRANSFORMER**

KSL25S2	KSL25WS2	KSL25S3	KSL25WS3
KSL25AS2	KSL25WAS2	KSL25AS3	KSL25WAS3
KSL25RS3	KSL25WRS3		

SOCKETS

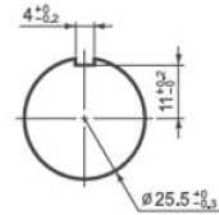
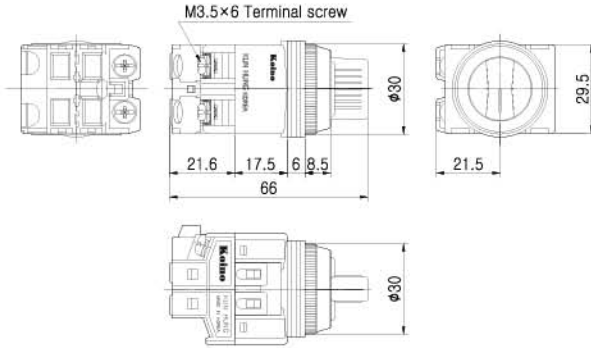
TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

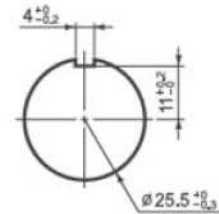
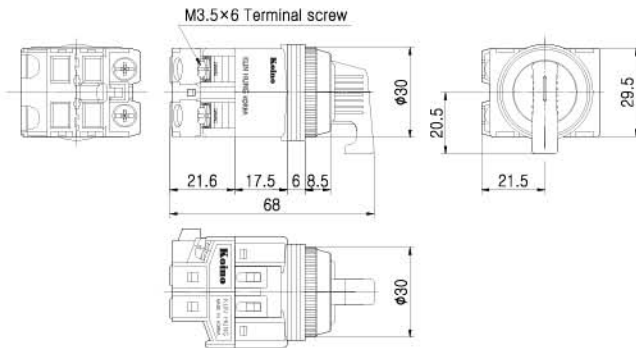


KSL25S2 KSL25S3 KSL25RS3 KSL25AS2 KSL25AS3  
 KSL25WS2 KSL25WS3 KSL25WRS3 KSL25WAS2 KSL25WAS3



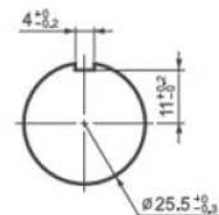
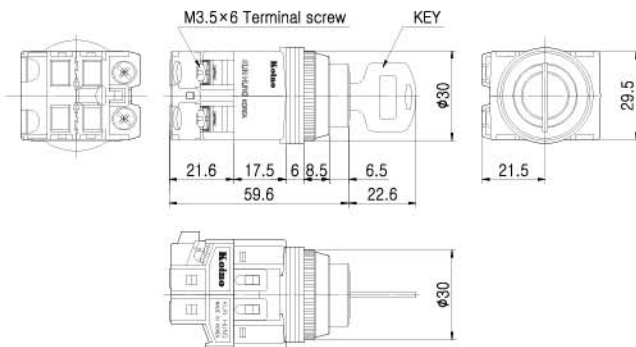
PANEL CUT-OUT

KSL25RL3 KSL25AL2 KSL25AL3 KSL25L2 KSL25L3  
 KSL25WRL3 KSL25WAL2 KSL25WAL3 KSL25WL2 KSL25WL3



PANEL CUT-OUT

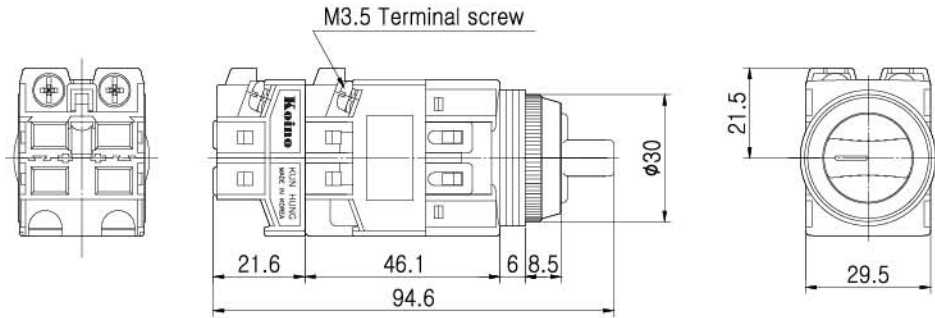
KSL25K2 KSL25K3 KSL25AK2 KSL25AK3 KSL25RK3  
 KSL25WK2 KSL25WK3 KSL25WAK2 KSL25WAK3 KSL25WRK3



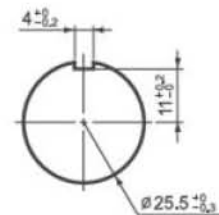
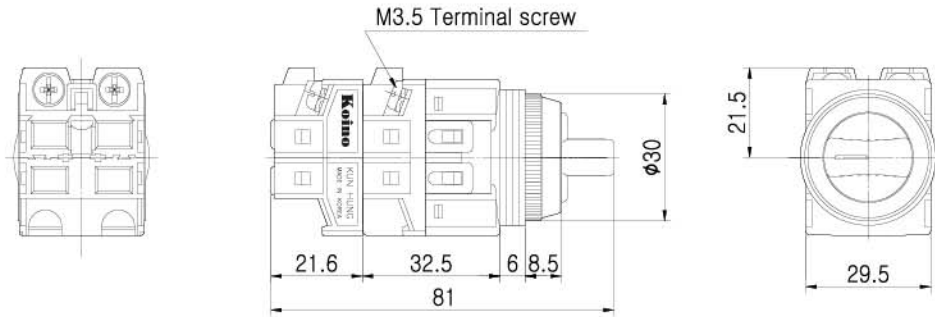
PANEL CUT-OUT



ILLUMINATED KSL25S2/S3



ILLUMINATED KSL25S2/S3 WITHOUT TRANSFORMER



PANEL CUT-OUT

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Technical Information

### Switching System

The switching element of KSL25 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Knob

Nylon glass

#### Ring

ABS

### Mechanical Characteristics

#### Mechanical Lifetime

100,000 & 30,000 Cycles of operation

#### Install

Tightening torque : Max. 0.8N · m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-25° C~+50° C

### Operational Humidity

45~85%RH

### Protection Degree

IP40 / IP65( "W" type)

### Shock Resistance

Approximately 50G(500m/s<sup>2</sup>)

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

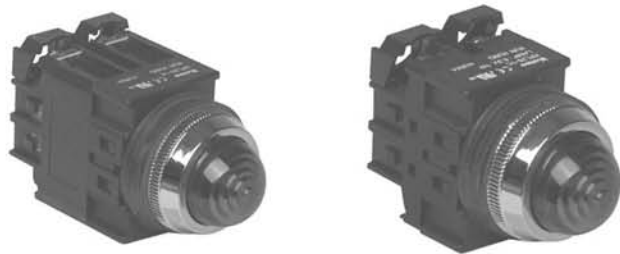
CONTROL  
BOX

PID TEMP.  
CONTROLLER



PILOT LAMP

# KPL25 Series



## CLASSIFICATION

**KPL-25 W - L 1C R**

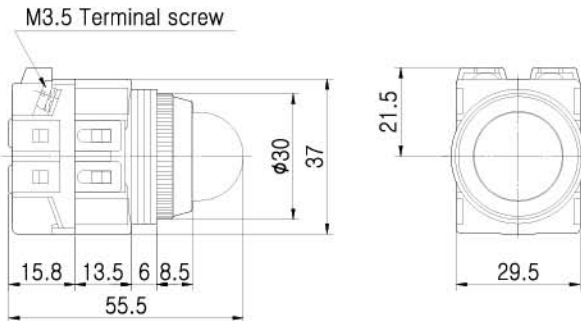
① ② ③ ④

① PROTECTION	NONE	IP40
	W	IP65
② LAMP	NONE	FILAMENT LAMP
	L	LED LAMP
③ INPUT VOLTAGE	1A	110VAC AT 50/60 Hz
	2A	220VAC AT 50/60 Hz
	3A	230VAC AT 50/60 Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24 AC/DC
④ LAMP COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	C	CLEAR
	W	WHITE
	M	MILKY WHITE
	O	ORANGE

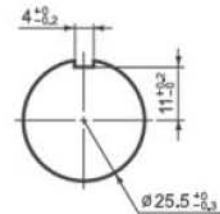
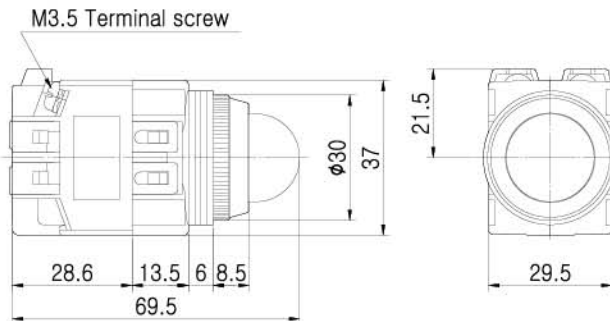




KPL25-1A KPL25-2A KPL5-3A  
 KPL25-L1A KPL25-L2A KPL25-L3A



KPL25-1C KPL25-2C KPL25-3C  
 KPL25-L1C KPL25-L2C KPL25-L3C



PANEL CUT-OUT

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Technical Information

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Cap

AS

#### Ring

ABS, AL(optional)

### Mechanical Characteristics

#### Mechanical Lifetime

N/A

#### Install

Tightening torque : Max. 0.8N · m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Resistance

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

N/A



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-25°C~+50°C

### Operational Humidity

45~85%RH

### Protection Degree

IP40 / IP65(“W” type)

### Shock Resistance

Approximately 50G(500m/s<sup>2</sup>)

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER



## ILLUMINATED PUSH BUTTON SWITCH

**KBL25 Series****CLASSIFICATION****KBL-25WM - L 1C R 1 1**

① ② ③ ④ ⑤ ⑥ ⑦

① PROTECTION	NONE	IP40
	W	IP65
② ACTUATOR	M	PUSH BUTTON, MOMENTARY
	MP	PUSH BUTTON WITH PROTECTIVE RING, MOMENTARY
	AT	PUSH BUTTON, MAINTAINED
	AP	PUSH BUTTON WITH PROTECTIVE RING, MAINTAINED
	EM	MUSHROOM HEADED PUSH BUTTON, MOMENTARY
	EA	MUSHROOM HEADED PUSH BUTTON, MAINTAINED
	ER	MUSHROOM HEADED PUSH BUTTON, TURN TO RESET
	EP	MUSHROOM HEADED PUSH BUTTON, PULL TO RESET
	③ LAMP TYPE	NONE
L		LED LAMP
④ INPUT VOLTAGE	1A	110VAC AT 50/60 Hz
	2A	220VAC AT 50/60 Hz
	3A	230VAC AT 50/60 Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24 AC/DC
⑤ LAMP COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	W	WHITE
	O	ORANGE
⑥ CONTACTS	NUMBER	NUMBER OF NO CONTACT
	NUMBER	NUMBER OF NC CONTACT



KBL25M - 1A  
KBL25M - 2A  
KBL25M - 3A

KBL25AT - 1A  
KBL25AT - 2A  
KBL25AT - 3A



KBL25MP - 1A  
KBL25MP - 2A  
KBL25MP - 3A

KBL25AP - 1A  
KBL25AP - 2A  
KBL25AP - 3A



KBL25M - 1C  
KBL25M - 2C  
KBL25M - 3C

KBL25A - 1C  
KBL25A - 2C  
KBL25A - 3C



KBL25MP - 1C  
KBL25MP - 2C  
KBL25MP - 3C

KBL25AP - 1C  
KBL25AP - 2C  
KBL25AP - 3C

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



KBL25EM-1A  
KBL25EM-2A  
KBL25EM-3A



KBL25EA-1A  
KBL25EA-2A  
KBL25EA-3A



KBL25EP-1A  
KBL25EP-2A  
KBL25EP-3A



KBL25ER-1A  
KBL25ER-2A  
KBL25ER-3A



**KBL25EM-1C**  
**KBL25EM-2C**  
**KBL25EM-3C**



**KBL25EA-1C**  
**KBL25EA-2C**  
**KBL25EA-3C**



**KBL25EP-1C**  
**KBL25EP-2C**  
**KBL25EP-3C**



**KBL25ER-1C**  
**KBL25ER-2C**  
**KBL25ER-3C**

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

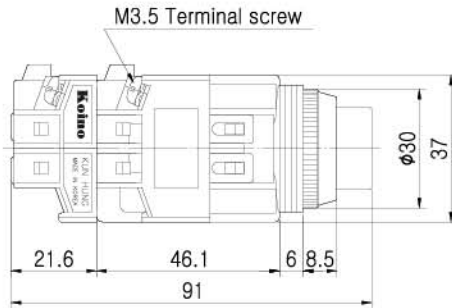
SOCKETS

TERMINAL BLOCK

CONTROL BOX

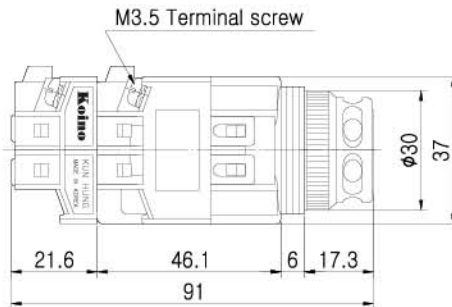
PID TEMP. CONTROLLER

KBL25M  
KBL25WM  
(With trans.)

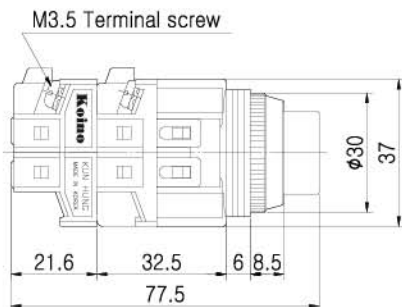


PANEL CUT-OUT

KBL25MP  
KBL25WMP  
(With trans.)



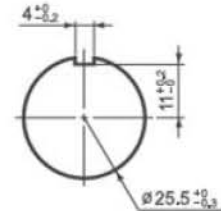
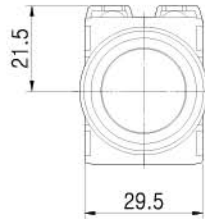
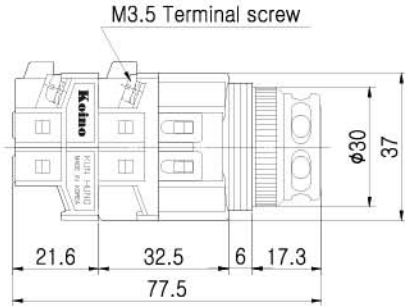
KBL25AT  
KBL25WAT  
(Without trans.)





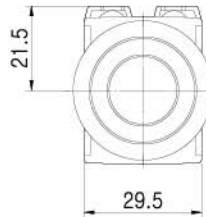
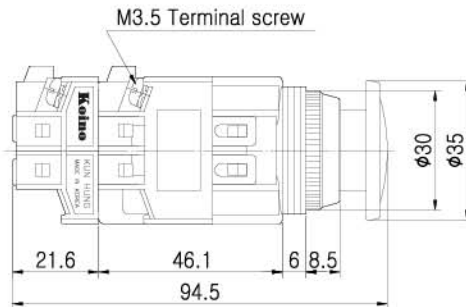


KBL25AP  
KBL25WAP  
(With trans.)

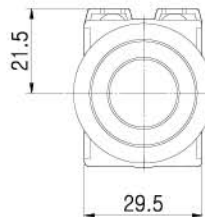
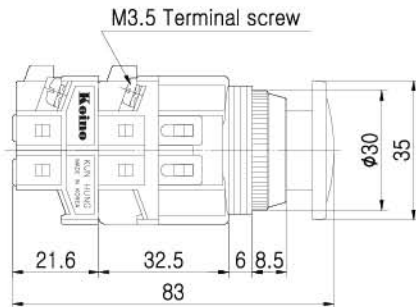


PANEL CUT-OUT

KBL25WEM KBL25EM  
KBL25WEA KBL25EA  
KBL25WEP KBL25EP  
(With trans.)



KBL25WEM KBL25EM  
KBL25WEA KBL25EA  
KBL25WEP KBL25EP  
(Without trans.)



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

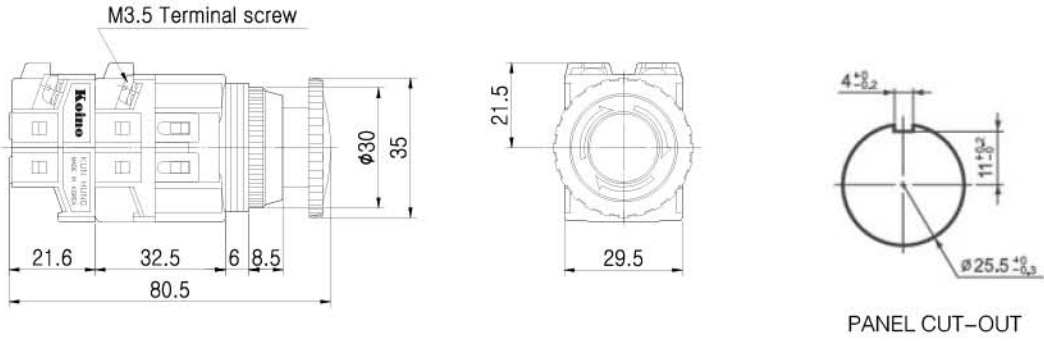
TERMINAL BLOCK

CONTROL BOX

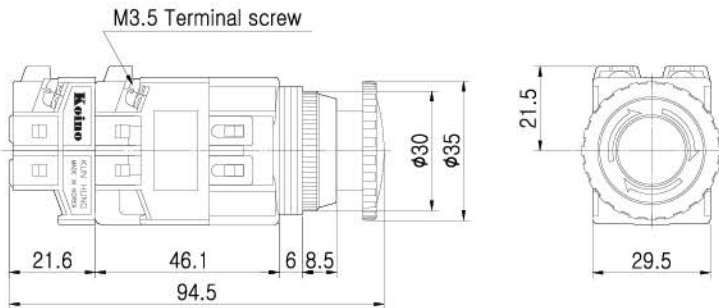
PID TEMP. CONTROLLER



KBL25ER  
KBL25WER  
(Without trans.)



KBL25ER  
KBL25WER  
(With trans.)





## CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KSL25 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Buttons

Acetal

#### Ring

ABS (Aluminum ring for KBL30M and KBL30AT is available)

### Mechanical Characteristics

#### Mechanical Lifetime

1,000,000 Cycles of operation

#### Install

Tightening torque : Max. 0.8N•m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-25° C~+50° C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40 / IP65( "W" type)

**Shock Resistance**

Approximately 50G(500m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

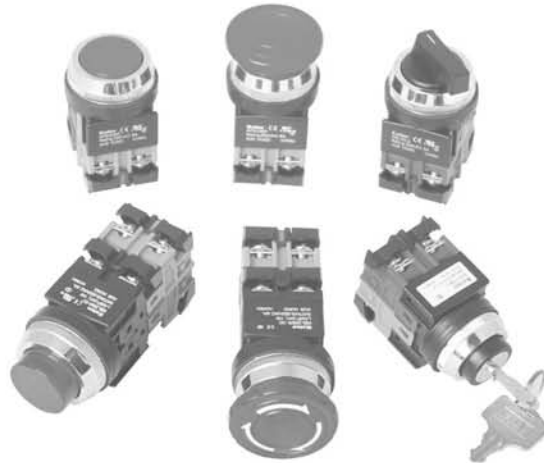
▼  
Creative Passion

**Koino**<sup>®</sup>

[www.koino.com](http://www.koino.com)



## PUSH BUTTON SWITCH

**KPB30****CLASSIFICATION****KPB-30 W M - R 1 1**

① ② ③ ④ ⑤

① PROTECTION	NONE	IP40
	W	IP65
② ACTUATOR	M	PUSH BUTTON, MOMENTARY
	AT	PUSH BUTTON, MAINTAINED
	EM	MUSHROOM HEADED PUSH BUTTON, MOMENTARY
	EA	MUSHROOM HEADED PUSH BUTTON, MAINTAINED
	ER	PUSH BUTTON, TURN TO RESET
	EP	PUSH BUTTON, PULL TO RESET
	③ COLOR	R
G		GREEN
Y		YELLOW
B		BLUE
W		WHITE
BK		BLACK
④ CONTACTS	NUMBER	NUMBER OF NO CONTACT
⑤ CONTACTS	NUMBER	NUMBER OF NC CONTACT

CONTROL COMPONENT



KPB30M  
KPB30WM  
KPB30AT  
KPB30WAT



KPB30EM  
KPB30WEM  
KPB30EA  
KPB30WEA



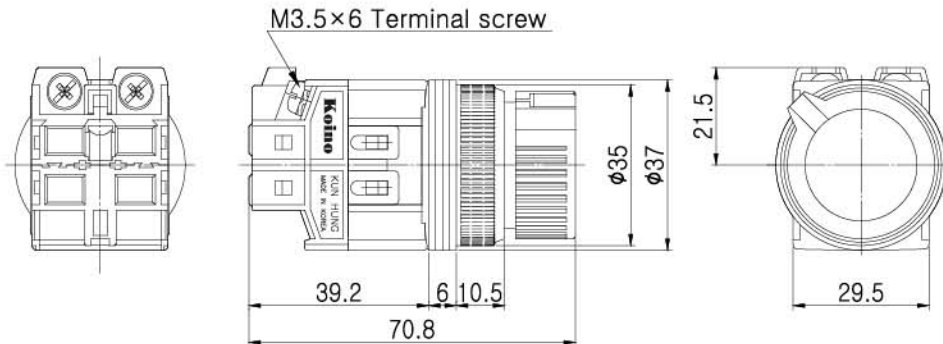
KPB30ER  
KPB30WER



KPB30EP  
KPB30WEP



KPB30MS, KPB30ML



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

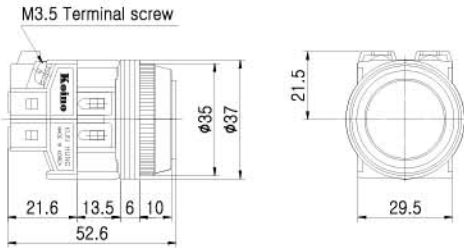
TERMINAL BLOCK

CONTROL BOX

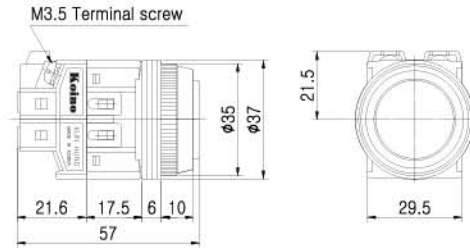
PID TEMP. CONTROLLER



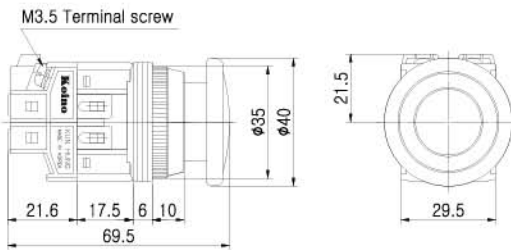
KPB30M KPB30WM



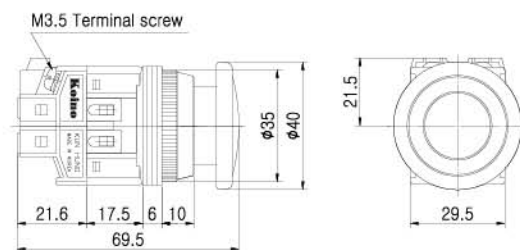
KPB30AT KPB30WAT



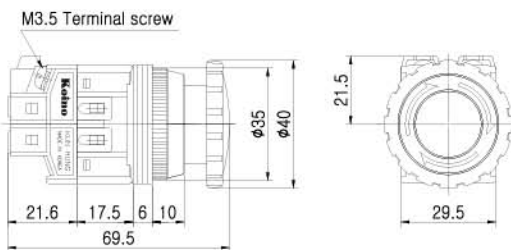
KPB30EM KPB30WEM



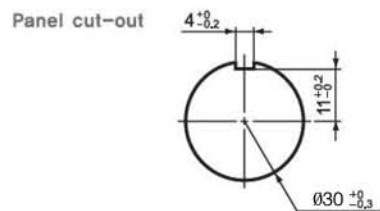
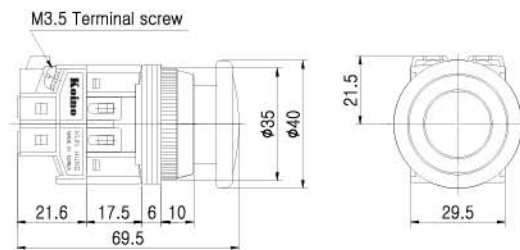
KPB30EA KPB30WEA



KPB30ER KPB30WER



KPB30EP KPB30WEP







## CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KPB30 is equipped with normally open contact and normally closed contact.

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Buttons

Acetal

#### Ring

ABS

### Mechanical Characteristics

#### Mechanical Lifetime

1,000,000 Cycles of operation

#### Install

Tightening torque : Max. 0.8N · m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100MΩ (500VDC)

#### Contact Resistance

Maximum 30mΩ

#### Electrical Lifetime

100,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-25° C~+50° C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40 / IP65( "W" type)

**Shock Resistance**

Approximately 50G(500m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

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## SELECTOR SWITCH

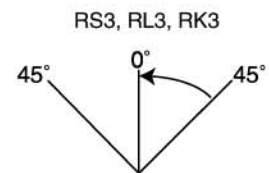
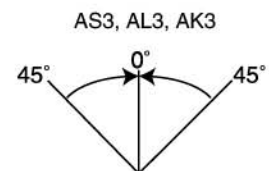
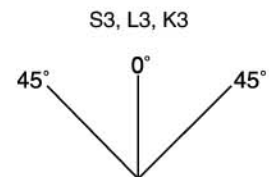
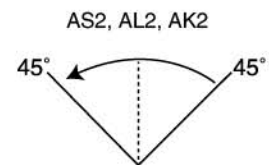
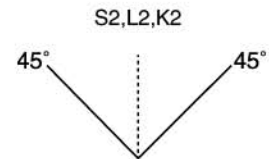
## KSL30 Series

## CLASSIFICATION

KSL – 30 W S2 – L 1C R 1 1

① ② ③ ④ ⑤ ⑥ ⑦

① PROTECTION	NONE	IP40
	W	IP65 (except illuminated model)
② ACTUATOR	S2	2 STEPS MANUAL RETURN with short knob
	S3	3 STEPS MANUAL RETURN with short knob
	AS2	2 STEPS SPRING RETURN with short knob
	AS3	3 STEPS SPRING RETURN with short knob
	RS3	3 STEPS L: MANUAL, R: SPRING with short knob
	L2	2 STEPS MANUAL RETURN with long knob
	L3	3 STEPS MANUAL RETURN with long knob
	AL2	2 STEPS SPRING RETURN with long knob
	AL3	3 STEPS SPRING RETURN with long knob
	RL3	3 STEPS L: MANUAL, R: SPRING with long knob
RK3	3 STEPS L: MANUAL, R: SPRING with key	
③ LAMP	NONE	N/A
	L	LED LAMP
④ INPUT VOLTAGE	1A	110VAC AT 50/60 Hz
	2A	220VAC AT 50/60 Hz
	3A	230VAC AT 50/60 Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24 AC/DC
⑤ LAMP COLOR	R	RED
	G	GREEN
	Y	YELLOW
⑥ CONTACTS	No.	NUMBER OF NO CONTACT
⑦ CONTACTS	No.	NUMBER OF NC CONTACT





**CONTROL COMPONENTS**



<b>KSL30S2</b>	<b>KSL30WS2</b>	<b>KSL30S3</b>	<b>KSL30WS3</b>
<b>KSL30AS2</b>	<b>KSL30WAS2</b>	<b>KSL30AS3</b>	<b>KSL30WAS3</b>
<b>KSL30RS3</b>	<b>KSL30WRS3</b>		

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH



<b>KSL30L2</b>	<b>KSL30WL2</b>	<b>KSL30L3</b>	<b>KSL30WL3</b>
<b>KSL30AL2</b>	<b>KSL30WAL2</b>	<b>KSL30AL3</b>	<b>KSL30WAL3</b>
<b>KSL30RL3</b>	<b>KSL30WRL3</b>		

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH



<b>KSL30K2</b>	<b>KSL30WK2</b>	<b>KSL30K3</b>	<b>KSL30WK3</b>
<b>KSL30AK2</b>	<b>KSL30WAK2</b>	<b>KSL30AK3</b>	<b>KSL30WAK3</b>
<b>KSL30RK3</b>	<b>KSL30WRK3</b>		

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR



**ILLUMINATED SELECTOR**

<b>KSL30S2</b>	<b>KSL30WS2</b>	<b>KSL30S3</b>	<b>KSL30WS3</b>
<b>KSL30AS2</b>	<b>KSL30WAS2</b>	<b>KSL30AS3</b>	<b>KSL30WAS3</b>
<b>KSL30RS3</b>	<b>KSL30WRS3</b>		

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY



**ILLUMINATED SELECTOR - WITHOUT TRANSFORMER**

<b>KSL30S2</b>	<b>KSL30WS2</b>	<b>KSL30S3</b>	<b>KSL30WS3</b>
<b>KSL30AS2</b>	<b>KSL30WAS2</b>	<b>KSL30AS3</b>	<b>KSL30WAS3</b>
<b>KSL30RS3</b>	<b>KSL30WRS3</b>		

SOCKETS

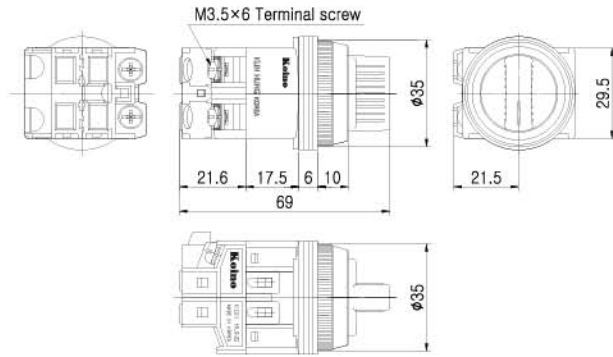
TERMINAL BLOCK

CONTROL BOX

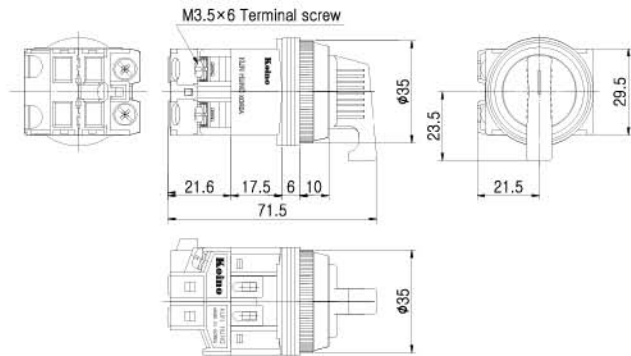
PID TEMP. CONTROLLER



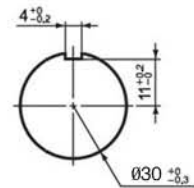
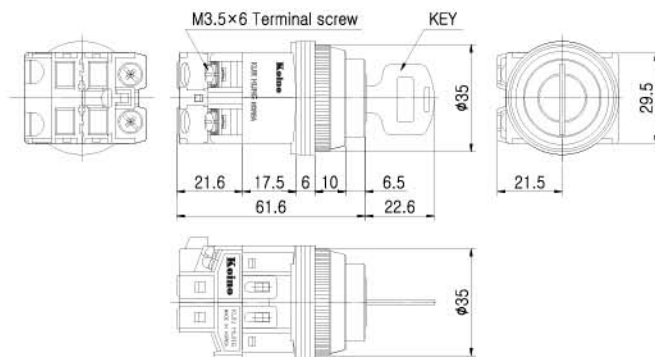
KSL30S2 KSL30S3 KSL30AS2 KSL30AS3 KSL30RS3  
 KSL30WS2 KSL30WS3 KSL30WAS2 KSL30WAS3 KSL30WRS3



KSL30L2 KSL30L3 KSL30WAL2 KSL30RL3  
 KSL30WL2 KSL30WL3 KSL30AL3 KSL30WRL3  
 KSL30WAL3



KSL30K2 KSL30K3 KSL30AK2 KSL30AK3 KSL30RK3  
 KSL30WK2 KSL30WK3 KSL30WAK2 KSL30WAK3 KSL30WRK3



Panel cut-out



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

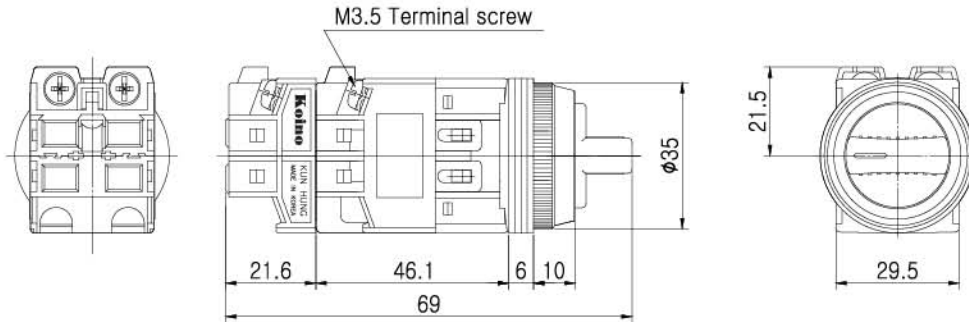
SOCKETS

TERMINAL BLOCK

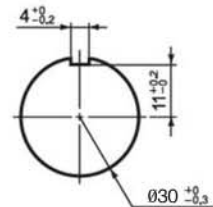
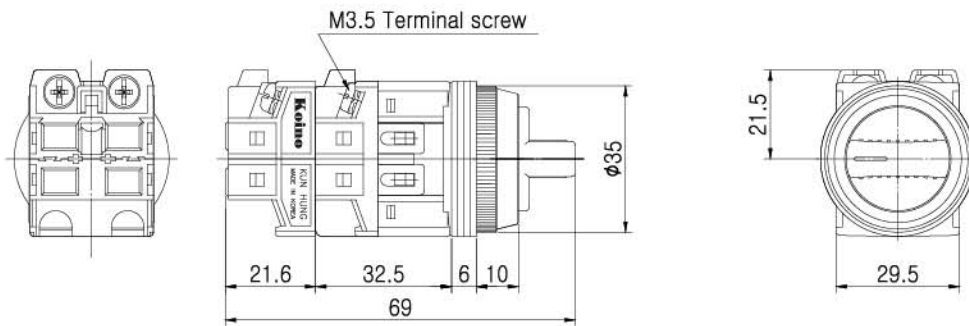
CONTROL BOX

PID TEMP. CONTROLLER

ILLUMINATED KSL30S2/S3



ILLUMINATED KSL30S2/S3 WITHOUT TRANSFORMER



Panel cut-out



## Technical Information

### Switching System

The switching element of KSL30 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Knob

Nylon glass

#### Ring

ABS

### Mechanical Characteristics

#### Mechanical Lifetime

100,000 & 30,000 Cycles of operation

#### Install

Tightening torque : Max. 0.8N · m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation





**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute  
 Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-25° C~+50° C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40 / IP65( "W" type)

**Shock Resistance**

Approximately 50G(500m/s<sup>2</sup>)

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

UL, CCC, KC

**Declaration of Conformity**

CE

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

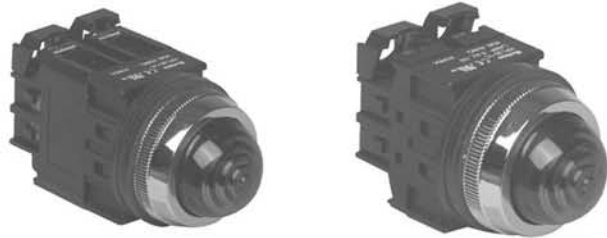
CONTROL BOX

PID TEMP. CONTROLLER



PILOT LAMP

# KPL30 Series



## CLASSIFICATION

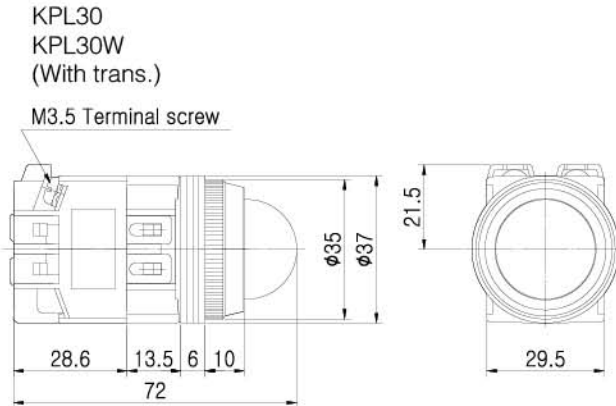
**KPL-30 W - L 1C R**

① ② ③ ④

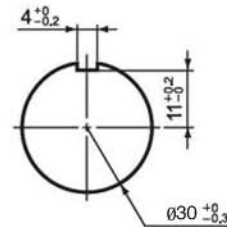
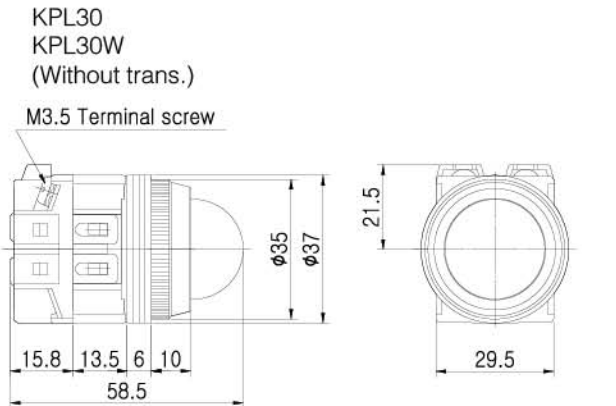
① PROTECTION	NONE	IP40
	W	IP65
② LAMP	NONE	FILAMENT LAMP
	L	LED LAMP
③ INPUT VOLTAGE	1A	110VAC AT 50/60 Hz
	2A	220VAC AT 50/60 Hz
	3A	230VAC AT 50/60 Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24 AC/DC
④ LAMP COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	C	CLEAR
	W	WHITE
	M	MILKY WHITE
	O	ORANGE



**KPL30-1A KPL30-2A KPL5-3A**  
**KPL30-L1A KPL30-L2A KPL30-L3A**



**KPL30-1C KPL30-2C KPL30-3C**  
**KPL30-L1C KPL30-L2C KPL30-L3C**



Panel cut-out

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Technical Information

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Cap

AS

#### Ring

ABS, AL(optional)

### Mechanical Characteristics

#### Mechanical Lifetime

N/A

#### Install

Tightening torque : Max. 0.8N · m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Resistance

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

N/A



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-25°C~+50°C

### Operational Humidity

45~85%RH

### Protection Degree

IP40 / IP65(“W” type)

### Shock Resistance

Approximately 50G(500m/s<sup>2</sup>)

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER



## ILLUMINATED PUSH BUTTON SWITCH

**KBL30 Series****CLASSIFICATION****KBL-30WM - L 1C R 1 1**

① ② ③ ④ ⑤ ⑥ ⑦

① PROTECTION	NONE	IP40
	W	IP65
② ACTUATOR	M	PUSH BUTTON, MOMENTARY
	MP	PUSH BUTTON WITH PROTECTIVE RING, MOMENTARY
	AT	PUSH BUTTON, MAINTAINED
	AP	PUSH BUTTON WITH PROTECTIVE RING, MAINTAINED
	EM	MUSHROOM HEADED PUSH BUTTON, MOMENTARY
	EA	MUSHROOM HEADED PUSH BUTTON, MAINTAINED
	ER	MUSHROOM HEADED PUSH BUTTON, TURN TO RESET
	EP	MUSHROOM HEADED PUSH BUTTON, PULL TO RESET
	③ LAMP TYPE	NONE
L		LED LAMP
④ INPUT VOLTAGE	1A	110VAC AT 50/60 Hz
	2A	220VAC AT 50/60 Hz
	3A	230VAC AT 50/60 Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24 AC/DC
⑤ LAMP COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	W	WHITE
	O	ORANGE
⑥ CONTACTS	NUMBER	NUMBER OF NO CONTACT
⑦ CONTACTS	NUMBER	NUMBER OF NC CONTACT



KBL30M - 1A  
KBL30M - 2A  
KBL30M - 3A

KBL30AT - 1A  
KBL30AT - 2A  
KBL30AT - 3A



KBL30MP - 1A  
KBL30MP - 2A  
KBL30MP - 3A

KBL30AP - 1A  
KBL30AP - 2A  
KBL30AP - 3A



KBL30M - 1C  
KBL30M - 2C  
KBL30M - 3C

KBL30A - 1C  
KBL30A - 2C  
KBL30A - 3C



KBL30MP - 1C  
KBL30MP - 2C  
KBL30MP - 3C

KBL30AP - 1C  
KBL30AP - 2C  
KBL30AP - 3C

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



KBL30EM-1A  
KBL30EM-2A  
KBL30EM-3A



KBL30EA-1A  
KBL30EA-2A  
KBL30EA-3A



KBL30EP-1A  
KBL30EP-2A  
KBL30EP-3A



KBL30ER-1A  
KBL30ER-2A  
KBL30ER-3A





**KBL30EM-1C**  
**KBL30EM-2C**  
**KBL30EM-3C**



**KBL30EA-1C**  
**KBL30EA-2C**  
**KBL30EA-3C**



**KBL30EP-1C**  
**KBL30EP-2C**  
**KBL30EP-3C**



**KBL30ER-1C**  
**KBL30ER-2C**  
**KBL30ER-3C**

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

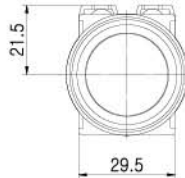
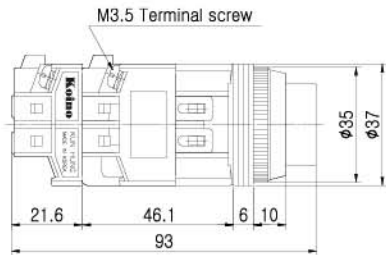
RELAY

SOCKETS

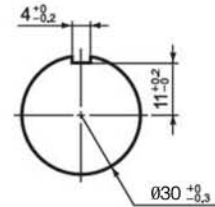
TERMINAL BLOCK

CONTROL BOX

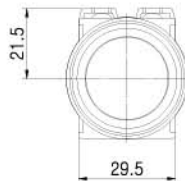
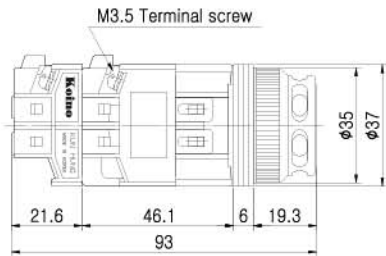
PID TEMP. CONTROLLER



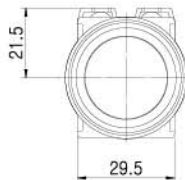
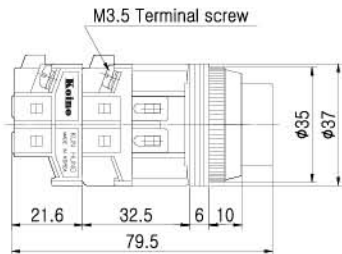
KBL30M  
KBL30WM



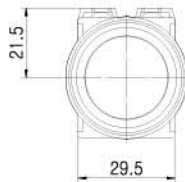
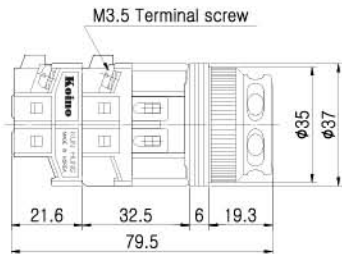
Panel cut-out



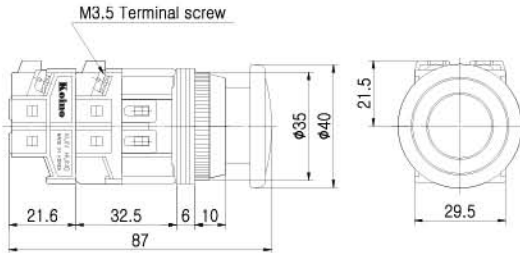
KBL30MP  
KBL30WMP



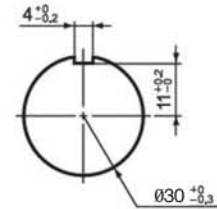
KBL30AT  
KBL30WAT



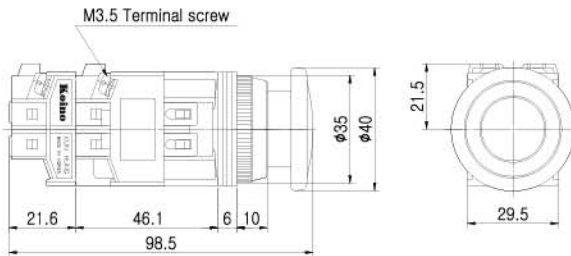
KBL30AP  
KBL30WAP



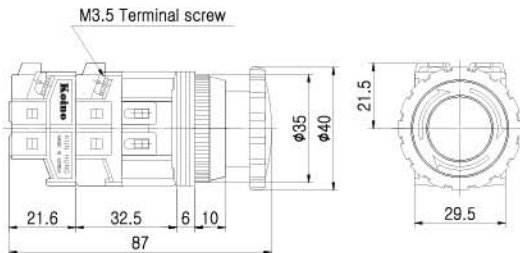
KBL30WEM KBL30EM  
KBL30WEA KBL30EA  
KBL30WEP KBL30EP  
(Without trans.)



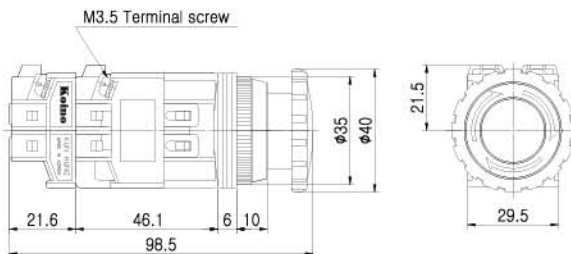
Panel cut-out



KBL30WEM KBL30EM  
KBL30WEA KBL30EA  
KBL30WEP KBL30EP  
(With trans.)



KBL30ER  
KBL30WER  
(Without trans.)



KBL30ER  
KBL30WER  
(With trans.)

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



## Technical Information

### Switching System

The switching element of KSL25 is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Material

#### Contact

Silver alloy + Copper

#### Housing

BODY: Nylon glass

CONTACT HOUSING: Nylon glass

#### Buttons

Acetal

#### Ring

ABS (Aluminum ring for KBL30M and KBL30AT is available)

### Mechanical Characteristics

#### Mechanical Lifetime

1,000,000 Cycles of operation

#### Install

Tightening torque : Max. 0.8N·m

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



## Electrical Characteristics—continues

### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

## Environmental conditions

### Operational Temperature

-25°C~+50°C

### Operational Humidity

45~85%RH

### Protection Degree

IP40 / IP65(“W” type)

### Shock Resistance

Approximately 50G(500m/s<sup>2</sup>)

### Vibration Resistance

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

## Approvals

### Approbations

UL, CCC, KC

### Declaration of Conformity

CE

CONTROL  
COMPONENTS

SQUARE  
LIGHT

TOWER  
LIGHT

MICRO  
SWITCH

FOOT  
SWITCH

LIMIT  
SWITCH

POWER  
SWITCH

HOIST  
SWITCH

CAM  
SWITCH

BUZZER

PHOTO  
SENSOR

PROXIMITY  
SENSOR

FLOATLESS  
LEVEL SWITCH

TIMER &  
COUNTER

RELAY

SOCKETS

TERMINAL  
BLOCK

CONTROL  
BOX

PID TEMP.  
CONTROLLER

## NF30 SERIES

### OVERVIEW

Mounting cut-out :  $\varnothing 30\text{mm}$

FLUSH MOUNTING TYPE

IP-Rating : IP40



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

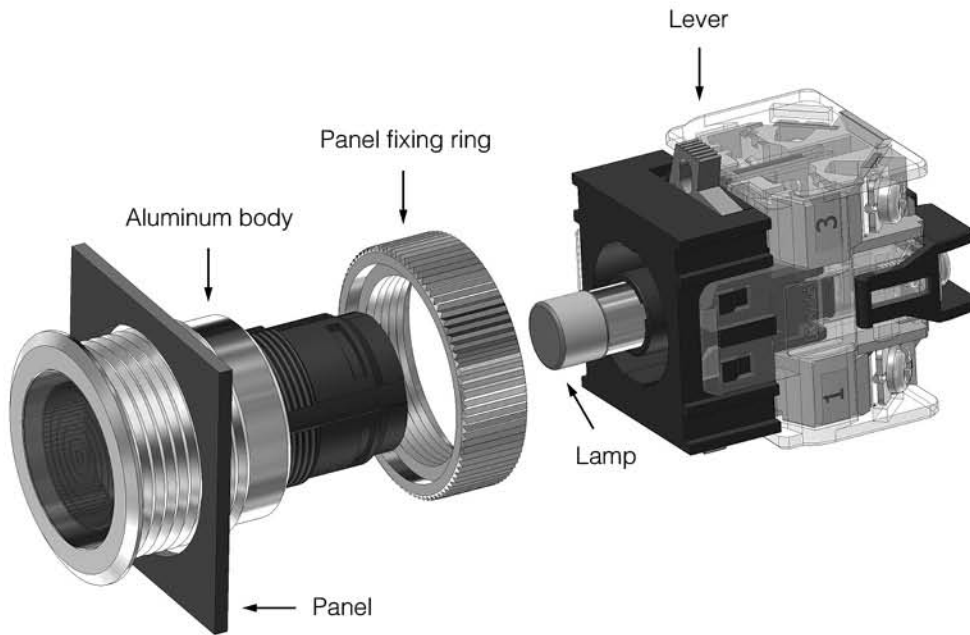
## CLASSIFICATION

NF30 – L M 1C R 11 Z

① ② ③ ④ ⑤ ⑥

① Category	L	Pilot lamp
	P	Pushbutton switch
	B	Illuminated pushbutton switch
	S	Selector switch
	K	Key selector switch
② Actuator	M	Momentary
	A	Maintained
	2S	2 step maintained, short lever
	3S	3 step maintained, short lever
	A2S	2 step spring return, short lever
	A3S	3 step spring return, short lever
	3RS	3 step (Left: maintained, Right: spring return), short lever
	2L	2 step maintained, long lever
	3L	3 step maintained, long lever
	A2L	2 step spring return, long lever
	A3L	3 step spring return, long lever
	3RL	3 step (Left: maintained, Right: spring return), long lever
	2K	2 step maintained, key switch
	3K	3 step maintained, key switch
	A2K	2 step spring return, key switch
	A3K	3 step spring return, key switch
	3RK	3 step (Left: maintained, Right: spring return), key switch
③ Input voltage	1A	110VAC 50/60Hz
	2A	220VAC 50/60Hz
	3A	230VAC 50/60Hz
	1C	6V AC/DC
	2C	12V AC/DC
	3C	24V AC/DC
④ Color	R	Red
	G	Green
	Y	Yellow
	W	White
	B	Blue
	O	Orange
⑤ Contact	Number	Numbers of NO contact
	Number	Numbers of NC contact
⑥ Contact block	none	General type contact block
	Z	Snap action type contact block

How to replace lamp



1. Push the lever to arrow direction
2. Detach contact block.
3. Turn the lamp counter clockwise and pull from contact block

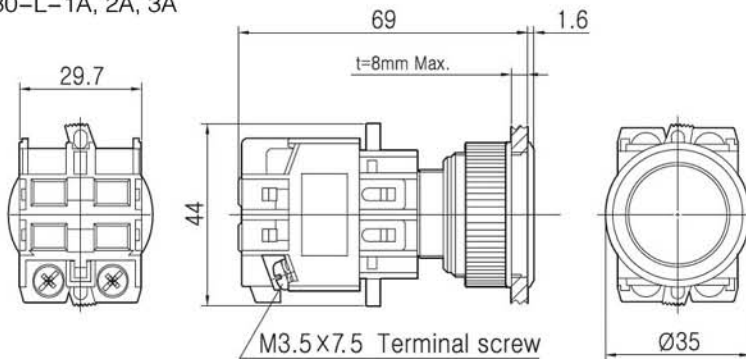


**Dimensions**

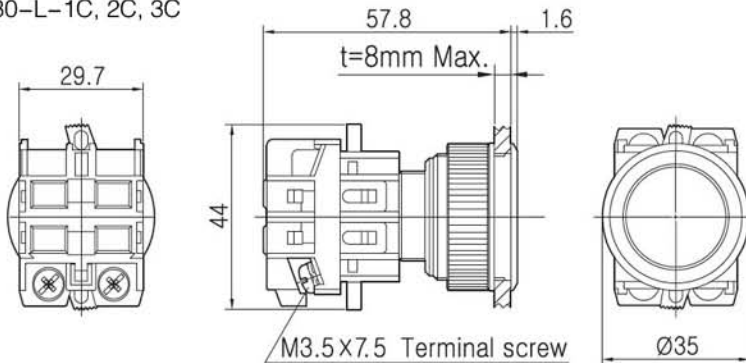
NF30-L



NF30-L-1A, 2A, 3A



NF30-L-1C, 2C, 3C



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

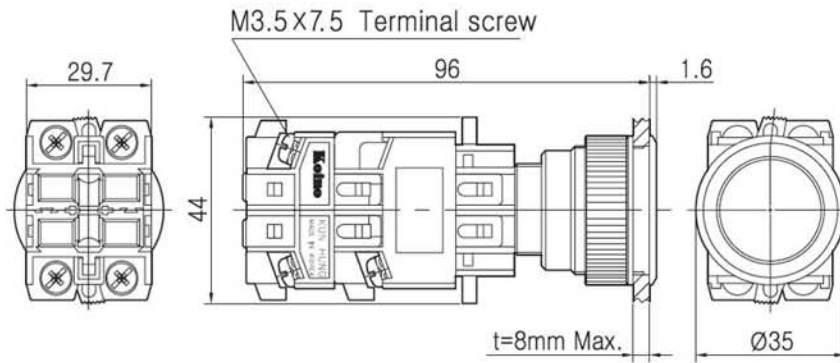
PID TEMP. CONTROLLER

Dimensions

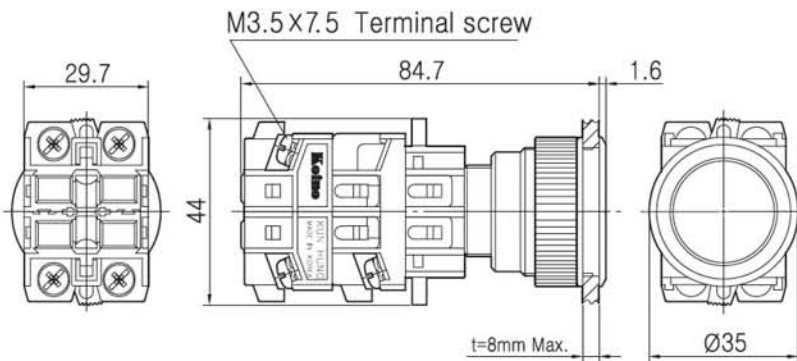
NF30-B



NF30-B-1A, 2A, 3A



NF30-B-1C, 2C, 3C

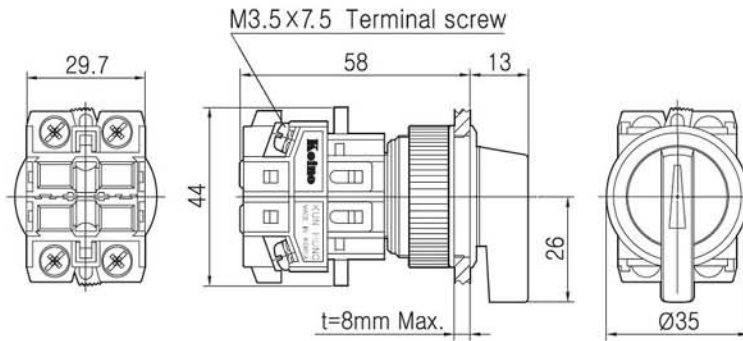


Dimensions

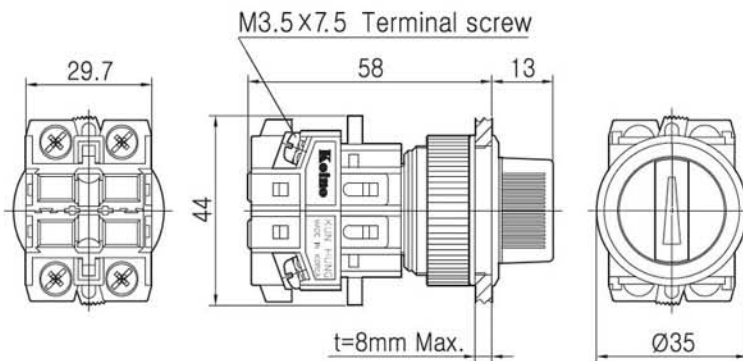
NF30-S



NF30-S (long lever)



NF30-S (short lever)



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

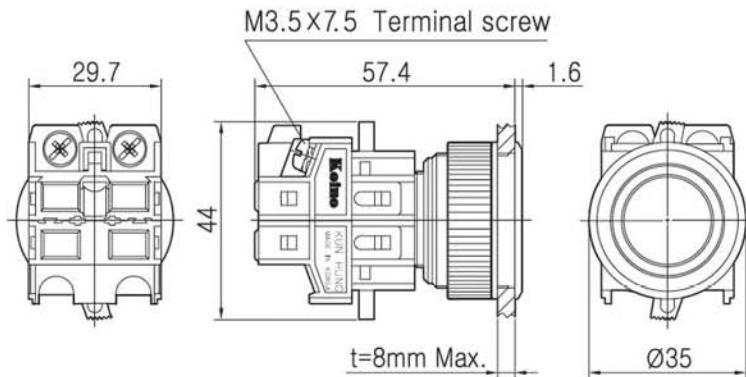
PID TEMP. CONTROLLER

Dimensions

NF30-P



NF30-P, PA

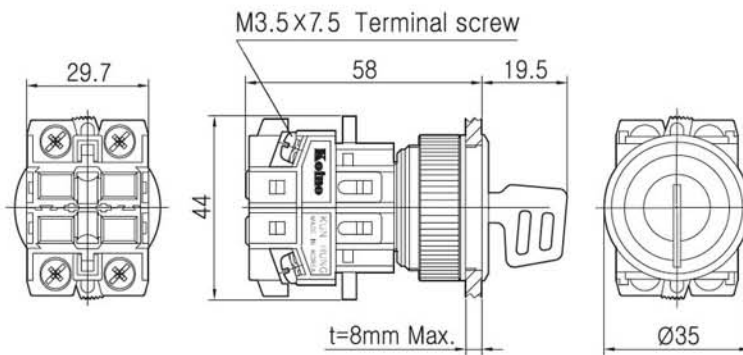


**Dimensions**

NF30-K



NF30-K



**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

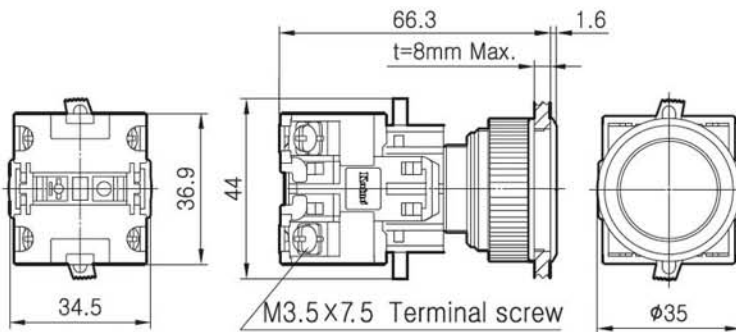
PID TEMP. CONTROLLER

Dimensions

NF30-PZ, PAZ



NF30-PZ, PAZ



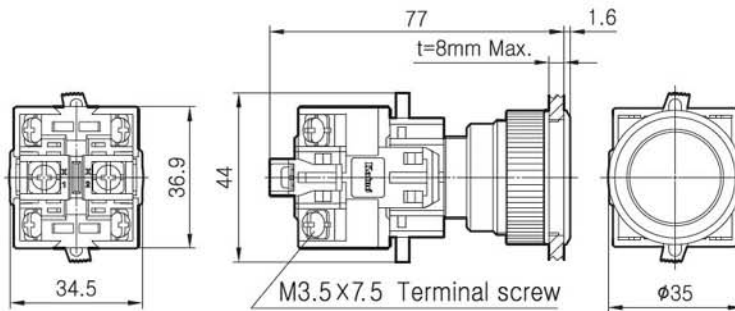


**Dimensions**

NF30-B-1C, 2C, 3C, 1A, 2A Z  
 NF30-BA-1C, 2C, 3C, 1A, 2A Z



NF30-B-1C, 2C, 3C, 1A, 2A Z  
 NF30-BA-1C, 2C, 3C, 1A, 2A Z



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

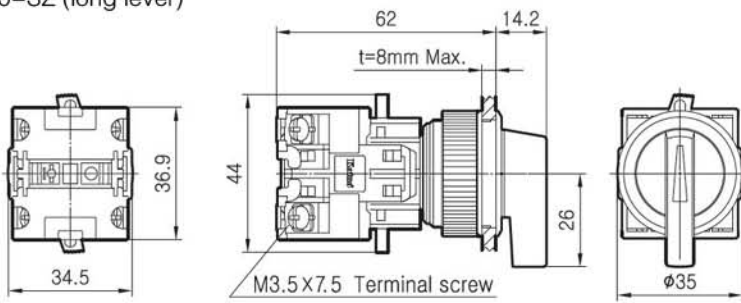
PID TEMP. CONTROLLER

Dimensions

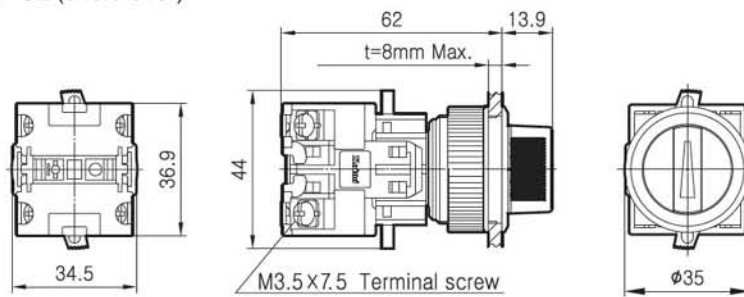
NF30-SZ



NF30-SZ (long lever)



NF30-SZ (short lever)





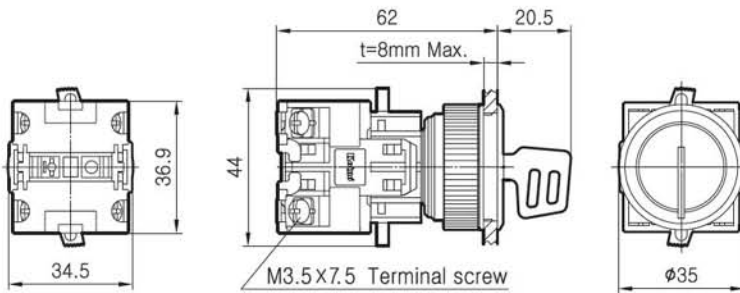


Dimensions

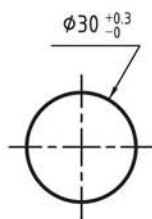
NF30-KZ



NF30-KZ



Panel CUT



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of NF30 SERIES is equipped with normally open contact or normally closed contact.

### Material

#### Contact

Silver alloy + Copper

#### Contact Housing

Nylon

#### Body

Aluminum

### Mechanical Characteristics

#### Mechanical Lifetime

PUSHBUTTON (momentary): 1,000,000 Cycles of operation

PUSHBUTTON (maintained): 300,000 Cycles of operation

SELECTOR: 200,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

250VAC 6A, 125VAC 10A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

200,000 cycles of operation



**Environmental conditions**

**Operational Temperature**

-15° C~+55° C

**Protection Degree**

Pushbutton switch : IP56

Selector switch: IP50

**Shock Resistance**

Approximately 30G

**Vibration Resistance**

10~55Hz double amplitude 0.75mm (at X, Y and Z axis) for 1 hour

**Approvals**

**Approbations**

UL (non applicable to snap action contact block type)

**Declaration of Conformity**

CE (non applicable to snap action contact block type)

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



Ø30 PUSHBUTTON SWITCH

## KH-30XX Series



### CLASSIFICATION

**KH-30XX - 1 1 R**

① ②③④

① SHAPE	08	PROTECTIVE GUARD
	81	PUSHBUTTON
	81EB	MUSHROOM HEAD
	40	Ø40 HEADPUSHBUTTON
	46ER	MUSHROOM HEAD/MAINTAINED/TURN TO RETURN
	65EB	Ø75 HEAD PUSHBUTTON
	66EB	Ø75 HEAD PUSHBUTTON/PROTECTIVE RING
② CONTACT	NUMBER OF NO CONTACT	
	NUMBER OF NC CONTACT	
④ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	BK	BLACK



**KH-3008**



- Protective guard for avoiding mal-operation
- Momentary action
- Materials
  - Body: Nylon glass
  - Contact housing: Nylon glass
  - Ring: ABS (chrome plated)

**KH-3081, -3081EB**



- Momentary action
- Materials
  - Body: Phenol
  - Contact housing: Nylon glass
  - Ring: ABS (chrome plated)

**KH-3040**



- Protective guard for avoiding mal-operation
- Momentary action
- Ø40 big head
- Materials
  - Body: Phenol
  - Contact housing: Nylon glass
  - Ring: Aluminum die-casting (chrome plated)

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER



### KH-3046ER



- Body is made of Zinc alloy die-casting
- Maintained action (turn to reset)
- Materials
  - Body: Zinc alloy die-casting
  - Contact housing: Nylon glass
  - Ring: Aluminum

### KH-3065EB



- Ø75 big head
- Momentary action
- Materials
  - Body: Zinc alloy die-casting
  - Contact housing: Nylon glass
  - Ring: Zinc alloy die-casting (chrome plated)
  - Button: Phenol

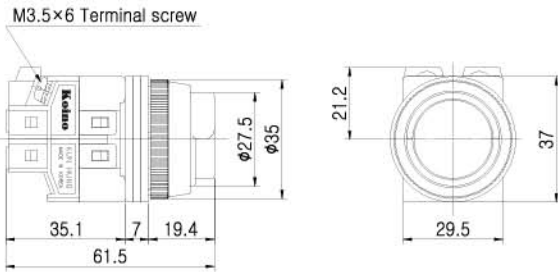
### KH-3066EB



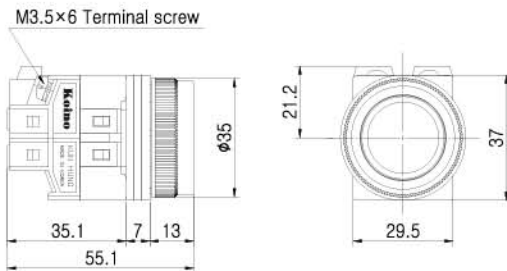
- Ø75 big head
- Protective guard for avoiding mal-operation
- Momentary action
- Materials
  - Body: Zinc alloy die-casting
  - Contact housing: Nylon glass
  - Ring: Zinc alloy die-casting (chrome plated)
  - Button: Phenol



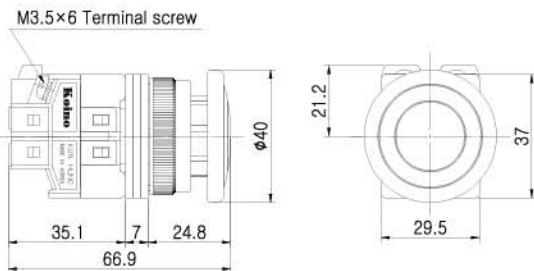
KH-3008



KH-3081



KH-3081EB



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

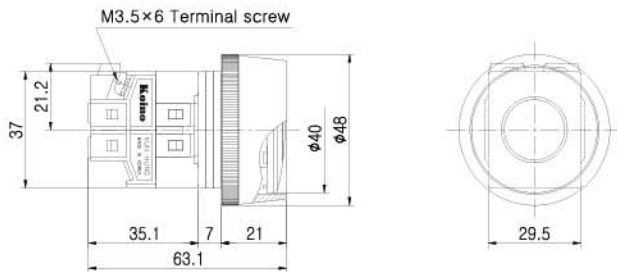
TERMINAL BLOCK

CONTROL BOX

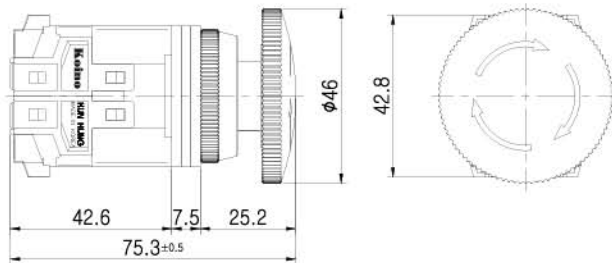
PID TEMP. CONTROLLER



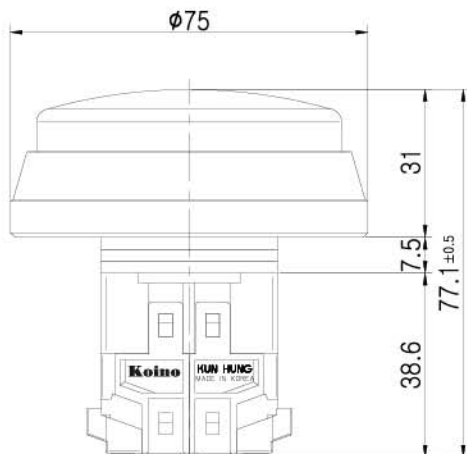
KH-3040



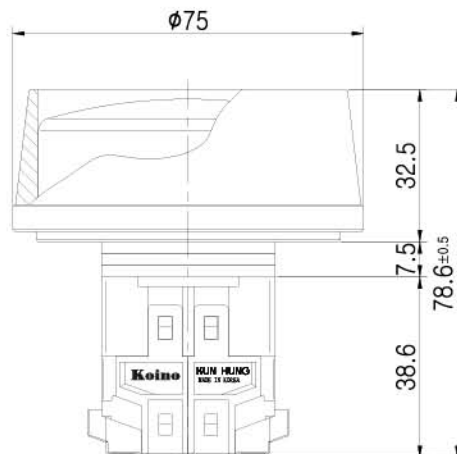
KH-3046ER



KH-3065EB



KH-3066EB







## CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER &amp; COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Switching System

The switching element of KH-30XX is equipped with normally open contact and normally closed contact.

1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled

### Mechanical Characteristics

#### Mechanical Lifetime

KH-3008 : 1,000,000 Cycles of operation

KH-3081, -3081EB: 1,000,000 Cycles of operation

KH-3040: 250,000 Cycles of operation

KH-3046ER: 250,000 Cycles of operation

KH-3065EB: 250,000 Cycles of operation

KH-3066EB: 250,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Contact Ratings

125VAC 10A, 250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Electrical Lifetime

100,000 cycles of operation



**Electrical Characteristics—continues**

**Dielectric Strength**

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-25°C~+50°C(NOT FREEZING CONDITION)

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

KH-3008, KH-3081, KH-3081EB: Approximately 50G

KH-3040, KH-3046, KH-3065EB, KH-3066EB: Approximately 20G

**Vibration Resistance**

10~55Hz double amplitude 1.5mm (at X, Y and Z axis)

**Approvals**

**Approbations**

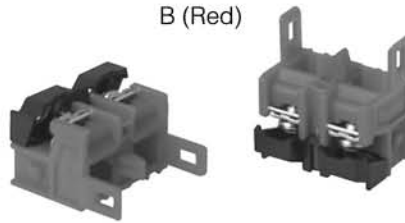
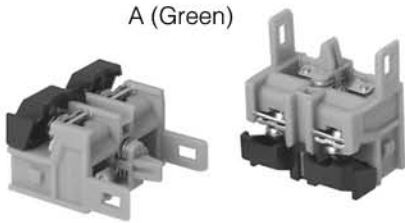
CCC

**Declaration of Conformity**

NONE

ACCESSORIES

Contact Block



Dummy Block



Contact Block Guard



Anti-rotating Ring



Ø22, Ø25, Ø30

Aluminum Ring



Ø25, Ø30

Safety Cover



KA-005 (Ø25), KA-22(Ø252)  
KA-25 (Ø25), KA-30(Ø30)



PC-25(Ø25)  
PC-30(Ø30)



SC-022(Ø22)  
SC-025(Ø25)  
SC-030(Ø30)

CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## PILOT LAMP

**KH-50X Series****CLASSIFICATION**

	INPUT VOLTAGE	FILAMENT LAMP		LED LAMP		DIAMETER
		VOLTAGE	POWER CONSUMPTION	VOLTAGE	POWER CONSUMPTION	
KH-501, 501L	110VAC	6.3V	1.0W	6V	40mA	Ø25
	120VAC	-	-	6V	40mA	
KH-501TL		6.3V, 12V, 24V	1.0W	-	-	
KH-501DL* KH-503DL*	6VDC	-	-	6V	40mA	KH-501DL: Ø25 KH-503DL: Ø30
	12VDC	-	-	12V	20mA	
	24VDC	-	-	24V	20mA	
	48VDC	-	-			
	100VDC	-	-			
	125VDC	-	-			
	200VDC	-	-			
KH-502, 502L	220VAC	6.3V	1.0W	6V	40mA	Ø25
KH-503, 503L	110VAC	6.3V	1.0W	6V	40mA	Ø30
KH-503TL		6.3V, 12V, 24V	1.0W			Ø30
KH-504, 504L	220VAC	6.3V	1.0W	6V	40mA	Ø30
KH-505, 505L	380VAC	6.3V	1.0W	6V	40mA	Ø30
KH-505-25, 505L-25	380VAC	6.3V	1.0W	6V	40mA	Ø25
KH-506, 506L	440VAC	6.3V	1.0W	6V	40mA	Ø30
KH-506-25, 506L-25	440VAC	6.3V	1.0W	6V	40mA	Ø25

※Red, green, yellow, white, blue and orange color available

# CONTROL COMPONENT

<p>KH-501, KH-502 KH-501L, KH-502L KH-501DL(110VDC)</p> <p>LAMP: E10/14</p>	<p>M3.5x7 Terminal screw</p> <p>3, 33.5, 13.5, 6, 8.5, 73.6, 3, 37, 29.5, <math>\phi 30</math></p>	<p><b>CONTROL COMPONENTS</b></p> <p>SQUARE LIGHT</p> <p>TOWER LIGHT</p> <p>MICRO SWITCH</p> <p>FOOT SWITCH</p>
<p>KH-501TL KH-501DL(6, 12, 24VDC)</p> <p>LAMP: BA9s</p>	<p>M3.5x7 Terminal screw</p> <p>18.3, 13.5, 6, 8.5, 58.4, 21.2, 37, 29.5, <math>\phi 30</math></p>	<p>LIMIT SWITCH</p> <p>POWER SWITCH</p> <p>HOIST SWITCH</p> <p>CAM SWITCH</p>
<p>KH-503, KH-504 KH-505, KH-506 KH-503L, KH-503DL(110VDC) KH-504L, KH-505L, KH-506L</p> <p>LAMP: E10/14</p>	<p>M3.5x7 Terminal screw</p> <p>3, 33.5, 13.5, 6, 10, 75.5, 3, 37, 29.5, <math>\phi 35</math></p>	<p>BUZZER</p> <p>PHOTO SENSOR</p> <p>PROXIMITY SENSOR</p> <p>FLOATLESS LEVEL SWITCH</p> <p>TIMER &amp; COUNTER</p>
<p>KH-503TL KH-503DL(6, 12, 24VDC)</p> <p>LAMP: BA9s</p>	<p>M3.5x7 Terminal screw</p> <p>18.3, 13.5, 6, 10, 60.3, 21.5, 37, 29.5, <math>\phi 35</math></p>	<p>RELAY</p> <p>SOCKETS</p> <p>TERMINAL BLOCK</p> <p>CONTROL BOX</p> <p>PID TEMP. CONTROLLER</p>

## Technical Information

### Material

#### Housing

ABS

#### Ring

ABS (chrome PLATED)

#### Cap

AS

### Electrical Characteristics

#### Standards

This product comply with “ Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Electrical Lifetime

Filament lamp: 1,000 hours

LED lamp: 15,000 hours

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-15°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP50

**Shock Resistance**

Approximately 50G

**Vibration Resistance**

10~55Hz double amplitude 0.75mm (at X, Y and Z axis)

**Approvals**

**Approbations**

KC

**Declaration of Conformity**

NONE

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## ILLUMINATED PUSHBUTTON SWITCH

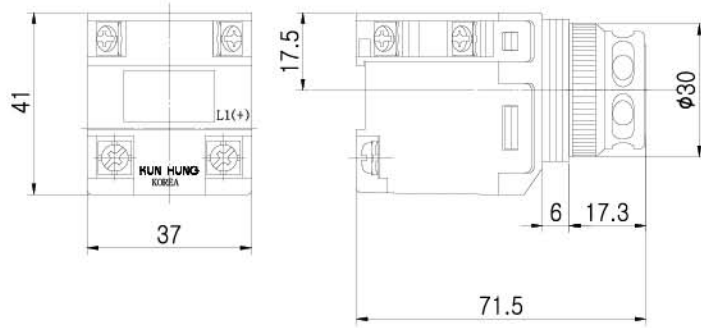
**KH-51X Series****CLASSIFICATION**

	INPUT VOLTAGE	FILAMENT LAMP		LED LAMP		DIAMETER
		VOLTAGE	POWER CONSUMPTION	VOLTAGE	POWER CONSUMPTION	
KH-511	110VAC	6.3VAC	1.0W	-	-	Ø25
KH-512	220VAC	6.3VAC	1.0W	-	-	Ø25
KH-511L	110VAC	-	-	6V	40mA	Ø25
KH-511L	220VAC	-	-	6V	40mA	Ø25
KH-512L	220VAC	-	-	6V	40mA	Ø25
KH-511TL	6.3V	6.3V	1.0W	-	-	Ø25
KH-511TL	12V	12V	1.0W	-	-	Ø25
KH-511TL	24V	24V	1.0W	-	-	Ø25
KH-511DL	6VDC	-	-	6V	20mA	Ø25
KH-511DL	12VDC	-	-	12V	20mA	Ø25
KH-511DL	24VDC	-	-	24V	20mA	Ø25
KH-511DL	48VDC	-	-	24V	20mA	Ø25
KH-511DL	100VDC	-	-	24V	20mA	Ø25
KH-511DL	125VDC	-	-	24V	20mA	Ø25
KH-511DL	200VDC	-	-	24V	20mA	Ø25
KH-513	110VAC	6.3VAC	1.0W	-	-	Ø30
KH-514	220VAC	6.3VAC	1.0W	-	-	Ø30
KH-513L	110VAC	-	-	6V	40mA	Ø30
KH-514L	220VAC	-	-	6V	40mA	Ø30
KH-513TL	6.3V	6.3V	1.0W	-	-	Ø30
KH-513TL	12V	12V	1.0W	-	-	Ø30
KH-513TL	24V	24V	1.0W	-	-	Ø30
KH-513DL	6VDC	-	-	6V	20mA	Ø30
KH-513DL	12VDC	-	-	12V	20mA	Ø30
KH-513DL	24VDC	-	-	24V	20mA	Ø30
KH-513DL	48VDC	-	-	24V	20mA	Ø30
KH-513DL	100VDC	-	-	24V	20mA	Ø30
KH-513DL	125VDC	-	-	24V	20mA	Ø30
KH-513DL	200VDC	-	-	24V	20mA	Ø30

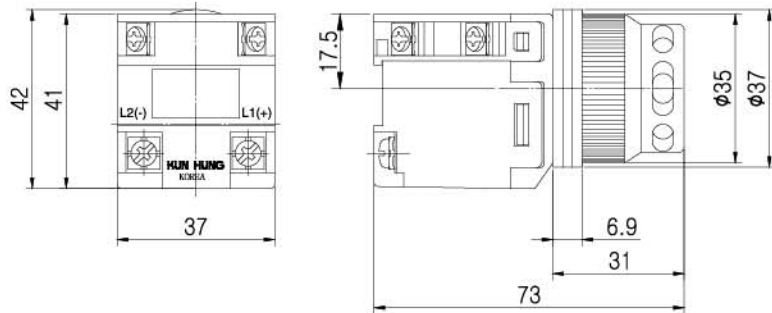
※Red, green, yellow, white, blue and orange color available



**KH-511, KH-512**



**KH-513, KH-514**



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

## Technical Information

### Material

#### Contact

Silver alloy + Copper

#### Housing

ABS

#### Ring

ABS (chrome PLATED)

#### Cap

AS

### Mechanical Characteristics

#### Mechanical Lifetime

250,000 Cycles of operation

### Electrical Characteristics

#### Standards

This product comply with “Standards for low-voltage switching devices” EN IEC 60947-5-1

#### Electrical Lifetime

100,000 Cycles of peration

#### Contact Ratings

250VAC 6A (resistive load)

#### Insulation Resistance

Minimum 100M $\Omega$  (500VDC)

#### Contact Resistance

Maximum 30m $\Omega$

#### Dielectric Strength

Between Live Parts: 1,500VAC(50/60Hz) for 1 minute

Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute

**Environmental conditions**

**Operational Temperature**

-25°C~+50°C

**Operational Humidity**

45~85%RH

**Protection Degree**

IP40

**Shock Resistance**

Approximately 50G

**Vibration Resistance**

10~55Hz double amplitude 0.75mm (at X, Y and Z axis)

**Approvals**

**Approbations**

KC

**Declaration of Conformity**

NONE

**CONTROL COMPONENTS**

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

TERMINAL BLOCK

CONTROL BOX

PID TEMP. CONTROLLER

# KTS Series

## OVERVIEW

Sensitive touch pad

FLUSH MOUNTING TYPE

Dual color type is available



Quick Selection Guide

CONTROL COMPONENTS

Size	Action	Color	Color	Input Voltage	Model Number
Square 25mm	Alternate	Mono	Red	24V	KTS-S25AR
				12V	KTS-S25ARL
			Green	24V	KTS-S25AG
		12V	KTS-S25AGL		
		Yellow	24V	KTS-S25AY	
		12V	KTS-S25AYL		
		Dual Color	Red/Yellow	24V	KTS-S25A1
				12V	KTS-S25A1L
			Green/Red	24V	KTS-S25A2
	12V	KTS-S25A2L			
	Yellow/Green	24V	KTS-S25A3		
	12V	KTS-S25A3L			
	Momentary	Mono	Red	24V	KTS-S25MR
				12V	KTS-S25MRL
			Green	24V	KTS-S25MG
		12V	KTS-S25MGL		
		Yellow	24V	KTS-S25MY	
		12V	KTS-S25MYL		
Dual Color		Red/Yellow	24V	KTS-S25M1	
			12V	KTS-S25M1L	
		Green/Red	24V	KTS-S25M2	
12V	KTS-S25M2L				
Yellow/Green	24V	KTS-S25M3			
12V	KTS-S25M3L				
Square 40mm	Alternate	Mono	Red	24V	KTS-S40AR
				12V	KTS-S40ARL
			Green	24V	KTS-S40AG
		12V	KTS-S40AGL		
		Yellow	24V	KTS-S40AY	
		12V	KTS-S40AYL		
		Dual Color	Red/Yellow	24V	KTS-S40A1
				12V	KTS-S40A1L
			Green/Red	24V	KTS-S40A2
	12V	KTS-S40A2L			
	Yellow/Green	24V	KTS-S40A3		
	12V	KTS-S40A3L			
	Momentary	Mono	Red	24V	KTS-S40MR
				12V	KTS-S40MRL
			Green	24V	KTS-S40MG
		12V	KTS-S40MGL		
		Yellow	24V	KTS-S40MY	
		12V	KTS-S40MYL		
Dual Color		Red/Yellow	24V	KTS-S40M1	
			12V	KTS-S40M1L	
		Green/Red	24V	KTS-S40M2	
12V	KTS-S40M2L				
Yellow/Green	24V	KTS-S40M3			
12V	KTS-S40M3L				

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

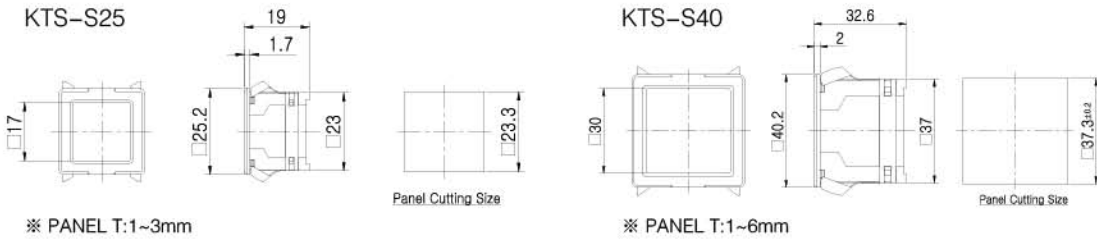
SOCKETS

TERMINAL BLOCK

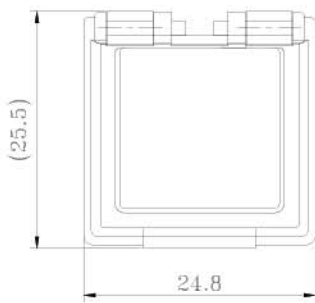
CONTROL BOX

PID TEMP. CONTROLLER

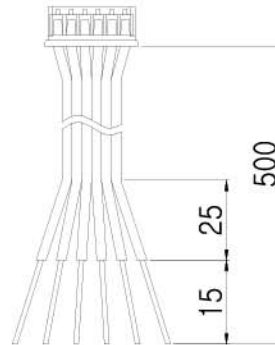
Dimensions



KTS-S25 SAFETY COVER



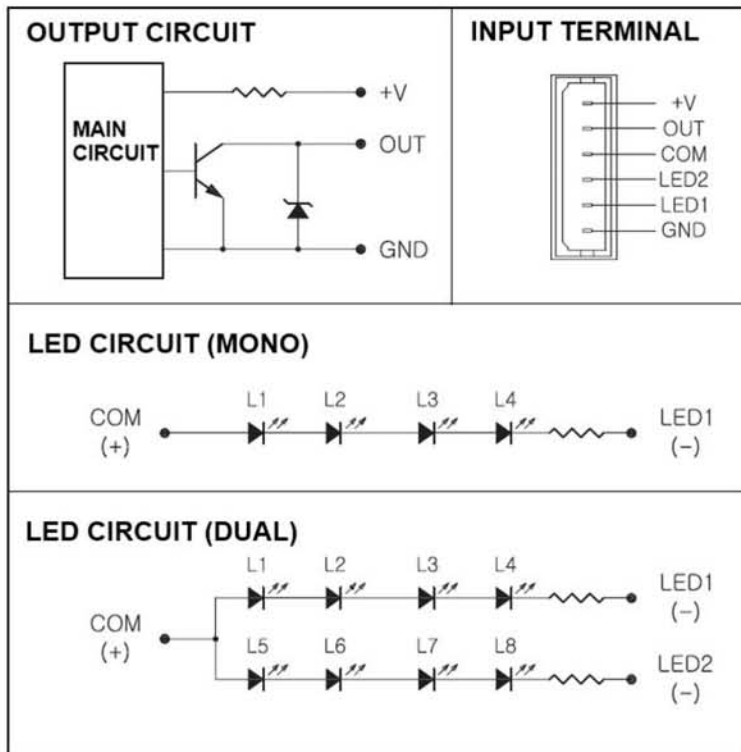
Connector Cable



SPECIFICATION

Model Number	KTS-S25/S40 Series
Input Voltage	DC24V/DC12V(± 10%)
Current	Max. 100mA
Output	NPN Open Collector TR output DC35V 200mA Max.
Insulation Resistance	min. 100MΩ(DC500V)
Dielectric Strength	50/60Hz AC500V for 1min.
Ambient Temperature	-10°C ~ +55°C
Ambient Humidity	10~80%RH

Circuit Diagrams



CONTROL COMPONENTS

SQUARE LIGHT

TOWER LIGHT

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

BUZZER

PHOTO SENSOR

PROXIMITY SENSOR

FLOATLESS LEVEL SWITCH

TIMER & COUNTER

RELAY

SOCKETS

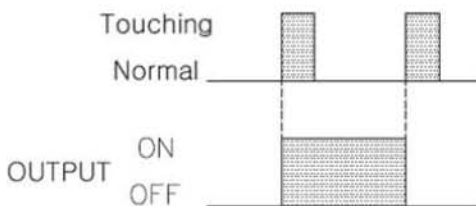
TERMINAL BLOCK

CONTROL BOX

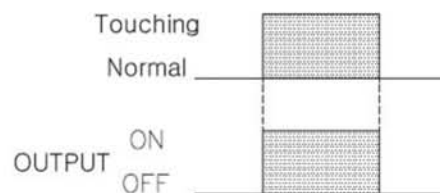
PID TEMP. CONTROLLER

Characteristic Curves

ALTERNATE



MOMENTARY



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