

# Control Switch

K16 Series

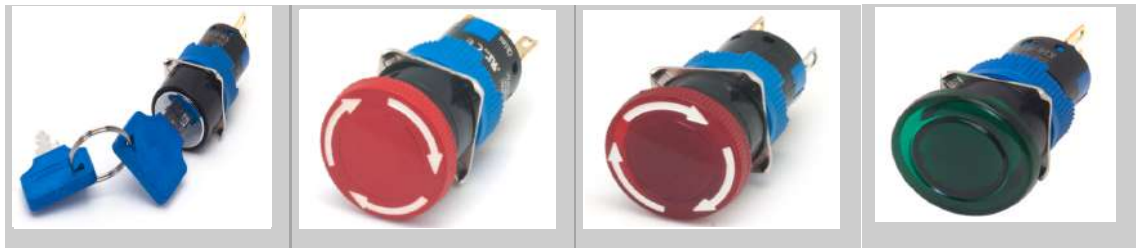


Pilot Light

Non-Illuminated  
Push Button Switch

Illuminated  
Push Button Switch

Selector Switch



Key Switch

Non-Illuminated  
Emergency Stop Switch

Illuminated  
Emergency Stop Switch

Non-Illuminated  
Mushroom Push Button Switch



Illuminated  
Mushroom Push Button Switch

Non-Illuminated  
Buzzer

Illuminated  
Buzzer

# Control Switch

## K16 Series

### Part Number Description

K16		1	2	3	4	5
Model	K16 Control Switch					
<b>1 Operator Type</b>	1 : Pilot Light	2 : Momentary	3 : Maintained	4 : 2 Position selector	5 : 3 Position selector	6 : 2 Position key
	7 : 3 Position key	8 : Emergency Stop (nominal)	9 : Push mushroom			
<b>2 Illumination &amp; Shape</b>	1 : Non - Illuminated Round	2 : Non - Illuminated Square	3 : Non - Illuminated Rectangular	4 : Non-Illuminated Round(Ø20 Metal)	5 : Illuminated Round(Ø20 Flush Type)	
	7 : Illumination Round (LED)	8 : Illumination Square (LED)	9 : Illumination Rectangular (LED)			
<b>3 Contact Form</b>	0 : No Contact	1 : 1C	2 : 2C			
<b>4 Color</b>	R : Red	G : Green	Y : Yellow	B : Blue	W : White	K : Black
<b>5 Rated Voltage</b>	No mark : Standard (no voltage)	6VDC	12VDC	24VDC	220VAC	
<b>Illuminated Buzzer</b>	K16-CZL (Round - continuous sound)	K16-BZL (Rectangular - continuous sound)	K16-CZL2 (Ø20 Flush Type - continuous sound)			
<b>Non-Illuminated Buzzer</b>	K16-CZ (Round - continuous sound)	K16-BZ (Rectangular - continuous sound)	K16-CZ2 (Ø20 Flush Type - continuous sound)			



## General Specification

Contact Ratings	Contact Form	1C, 2C			
	Contact Material	Ag Alloy (24K gold plate)			
	Maximum Switching Current	3A			
	Maximum Rated Voltage	250VAC, 110VDC			
	Rated Current	1A 24VDC / 120VAC			
		0.5A 250VAC			
LED Module Ratings	Minimum Switching Current	1mA 5VDC			
	Color	Red, Green, Yellow, Blue, White, Black			
	Rated Voltage	6VDC, 24VDC, 12VDC, 220VAC			
	Rated Current	Approx. 10mA			
Buzzer Ratings	Life Cycle <sup>1)</sup>	50,000 hrs			
	Tone	Continuous			
	Amplitude	80dB(phon) / 0.1m		65dB(phon) / 1m	
		Rated Voltage			24VDC
	Rated Current	Approx. 15mA			
Life Cycle	1,000 hours				
General Ratings	Contact Resistance	Max. 50mΩ			
	Insulation Resistance	Min. 100MΩ (500VDC)			
	Dielectric Strength	2,000VAC (1minute)			
	Vibration Resistance	5 ~ 55Hz dual amplitude : 0.75mm			
	Shock Resistance	Endurance : 500m/s <sup>2</sup> , Operation : 200m/s <sup>2</sup>			
	Life Cycle	Push button (release) : Min. 1,000,000			
		Mechanical	Selector, key : Min. 250,000		
		Electrical	Maintained : Min 50,000 (frequency of on/off 1,200 times / hour)		
	Ambient Temperature	Others : Min. 100,000			
		Others : Min. 100,000			
	Ambient Humidity	-25°C ~ +55°C (with no icing or condensing )			
	Degree Of Protection	45% ~ 85%RH			
	Termination	IP65 waterproof		IP40 : Key, Selector	
		#110 quick-fit / solder			
Terminal Soldering Temperature	260°C 3sec				
Operating Characteristic	Operator Type	1C	2C	2 Position 3 Position	
	OF	250g	450g	1,000g-cm	
	RF	30g		-	
	PT	2.5mm		-	
	SP	-		90 degree	45 degree

1) After 50,000 hours of continuous lighting, the brightness decreases to 50%.

\* LED is to be used with DC only. Watch the polarity when using them.


## Products Selection

Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage
Ø 16 Illuminated LED Pilot Light 	Round	-	Red	K16-170R	6VDC 12VDC 24VDC 220VAC
			Green	K16-170G	
			Blue	K16-170B	
			Yellow	K16-170Y	
			White	K16-170W	
			Black	K16-170K	
	Square	-	Red	K16-180R	6VDC 12VDC 24VDC 220VAC
			Green	K16-180G	
			Blue	K16-180B	
			Yellow	K16-180Y	
			White	K16-180W	
			Black	K16-180K	
	Rectangular	-	Red	K16-190R	6VDC 12VDC 24VDC 220VAC
			Green	K16-190G	
			Blue	K16-190B	
			Yellow	K16-190Y	
			White	K16-190W	
			Black	K16-190K	
Ø 16 Momentary Non-Illuminated Push Button Switch 	Round	1C	Red	K16-211R	-
			Green	K16-211G	
			Blue	K16-211B	
			Yellow	K16-211Y	
			White	K16-211W	
			Black	K16-211K	
		2C	Red	K16-212R	-
			Green	K16-212G	
			Blue	K16-212B	
			Yellow	K16-212Y	
			White	K16-212W	
			Black	K16-212K	
	Square	1C	Red	K16-221R	-
			Green	K16-221G	
			Blue	K16-221B	
			Yellow	K16-221Y	
			White	K16-221W	
			Black	K16-221K	
		2C	Red	K16-222R	-
			Green	K16-222G	
			Blue	K16-222B	
			Yellow	K16-222Y	
			White	K16-222W	
			Black	K16-222K	
Rectangular	1C	Red	K16-231R	-	
		Green	K16-231G		
		Blue	K16-231B		
		Yellow	K16-231Y		
		White	K16-231W		
		Black	K16-231K		
	2C	Red	K16-232R	-	
		Green	K16-232G		
		Blue	K16-232B		
		Yellow	K16-232Y		
		White	K16-232W		
		Black	K16-232K		


# Control Switch

## K16 Series - Standard

### Products Selection

Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage
Ø 16 Momentary Illuminated Push Button Switch  	Round	1C	Red	K16-271R	6VDC 12VDC 24VDC 220VAC
			Green	K16-271G	
			Blue	K16-271B	
			Yellow	K16-271Y	
			White	K16-271W	
			Black	K16-271K	
		2C	Red	K16-272R	6VDC 12VDC 24VDC 220VAC
			Green	K16-272G	
			Blue	K16-272B	
			Yellow	K16-272Y	
			White	K16-272W	
			Black	K16-272K	
	Square	1C	Red	K16-281R	6VDC 12VDC 24VDC 220VAC
			Green	K16-281G	
			Blue	K16-281B	
			Yellow	K16-281Y	
			White	K16-281W	
			Black	K16-281K	
		2C	Red	K16-282R	6VDC 12VDC 24VDC 220VAC
			Green	K16-282G	
			Blue	K16-282B	
			Yellow	K16-282Y	
			White	K16-282W	
			Black	K16-282K	
Rectangular	1C	Red	K16-291R	6VDC 12VDC 24VDC 220VAC	
		Green	K16-291G		
		Blue	K16-291B		
		Yellow	K16-291Y		
		White	K16-291W		
		Black	K16-291K		
	2C	Red	K16-292R	6VDC 12VDC 24VDC 220VAC	
		Green	K16-292G		
		Blue	K16-292B		
		Yellow	K16-292Y		
		White	K16-292W		
		Black	K16-292K		


## Products Selection

Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage
Ø 16 Maintained Non-Illuminated Push Button Switch  	Round	1C	Red	K16-311R	-
			Green	K16-311G	
			Blue	K16-311B	
			Yellow	K16-311Y	
			White	K16-311W	
			Black	K16-311K	
		2C	Red	K16-312R	
			Green	K16-312G	
			Blue	K16-312B	
			Yellow	K16-312Y	
			White	K16-312W	
			Black	K16-312K	
	Square	1C	Red	K16-321R	-
			Green	K16-321G	
			Blue	K16-321B	
			Yellow	K16-321Y	
			White	K16-321W	
			Black	K16-321K	
		2C	Red	K16-322R	
			Green	K16-322G	
			Blue	K16-322B	
			Yellow	K16-322Y	
			White	K16-322W	
			Black	K16-322K	
Rectangular	1C	Red	K16-331R	-	
		Green	K16-331G		
		Blue	K16-331B		
		Yellow	K16-331Y		
		White	K16-331W		
		Black	K16-331K		
	2C	Red	K16-332R		
		Green	K16-332G		
		Blue	K16-332B		
		Yellow	K16-332Y		
		White	K16-332W		
		Black	K16-332K		



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### Products Selection

Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage
Ø 16 Maintained Illuminated Push Button Switch  	Round	1C	Red	K16-371R	6VDC 12VDC 24VDC 220VAC
			Green	K16-371G	
			Blue	K16-371B	
			Yellow	K16-371Y	
			White	K16-371W	
			Black	K16-371K	
		2C	Red	K16-372R	6VDC 12VDC 24VDC 220VAC
			Green	K16-372G	
			Blue	K16-372B	
			Yellow	K16-372Y	
			White	K16-372W	
			Black	K16-372K	
	Square	1C	Red	K16-381R	6VDC 12VDC 24VDC 220VAC
			Green	K16-381G	
			Blue	K16-381B	
			Yellow	K16-381Y	
			White	K16-381W	
			Black	K16-381K	
		2C	Red	K16-382R	6VDC 12VDC 24VDC 220VAC
			Green	K16-382G	
			Blue	K16-382B	
			Yellow	K16-382Y	
			White	K16-382W	
			Black	K16-382K	
Rectangular	1C	Red	K16-391R	6VDC 12VDC 24VDC 220VAC	
		Green	K16-391G		
		Blue	K16-391B		
		Yellow	K16-391Y		
		White	K16-391W		
		Black	K16-391K		
	2C	Red	K16-392R	6VDC 12VDC 24VDC 220VAC	
		Green	K16-392G		
		Blue	K16-392B		
		Yellow	K16-392Y		
		White	K16-392W		
		Black	K16-392K		

## Products Selection



Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage
Ø 16 Non-Illuminated Selector Switch (2 Position)  	Round	1C	Black	K16-411K	-
		2C		K16-412K	-
	Square	1C	Black	K16-421K	-
		2C		K16-422K	-
	Rectangular	1C	Black	K16-431K	-
		2C		K16-432K	-
Ø 16 Illuminated Selector Switch (2 Position)  	Round	1C	Red	K16-471R	6VDC
			Green	K16-471G	12VDC
			Blue	K16-471B	24VDC
			Yellow	K16-471Y	220VAC
			White	K16-471W	
	2C	Red	K16-472R	6VDC	
		Green	K16-472G	12VDC	
		Blue	K16-472B	24VDC	
		Yellow	K16-472Y	220VAC	
		White	K16-472W		
	Square	1C	Red	K16-481R	6VDC
			Green	K16-481G	12VDC
			Blue	K16-481B	24VDC
			Yellow	K16-481Y	220VAC
			White	K16-481W	
2C	Red	K16-482R	6VDC		
	Green	K16-482G	12VDC		
	Blue	K16-482B	24VDC		
	Yellow	K16-482Y	220VAC		
	White	K16-482W			
Rectangular	1C	Red	K16-491R	6VDC	
		Green	K16-491G	12VDC	
		Blue	K16-491B	24VDC	
		Yellow	K16-491Y	220VAC	
		White	K16-491W		
2C	Red	K16-492R	6VDC		
	Green	K16-492G	12VDC		
	Blue	K16-492B	24VDC		
	Yellow	K16-492Y	220VAC		
	White	K16-492W			
















# Control Switch

## K16 Series - Standard

### Products Selection

Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage
Ø 16 Non-Illuminated Selector Switch (3 Position) 	Round	2C	Black	K16-512K	-
	Square	2C	Black	K16-522K	-
	Rectangular	2C	Black	K16-532K	-
Ø 16 Illuminated Selector Switch (3 Position) 	Round	2C	Red	K16-572R	6VDC
			Green	K16-572G	12VDC
			Blue	K16-572B	24VDC
			Yellow	K16-572Y	220VAC
			White	K16-572W	
	Square	2C	Red	K16-582R	6VDC
			Green	K16-582G	12VDC
			Blue	K16-582B	24VDC
			Yellow	K16-582Y	220VAC
White			K16-582W		
Rectangular	2C	Red	K16-592R	6VDC	
		Green	K16-592G	12VDC	
		Blue	K16-592B	24VDC	
		Yellow	K16-592Y	220VAC	
		White	K16-592W		






## Products Selection

Operator Type	Shape	Contact Form	Color	Operator Function	Part Number	Rated Voltage	
Ø 16 Key Switch (2 Position) 	Round	1C	Black		K16-611	-	
		2C	Black		K16-612	-	
	Square	1C	Black		K16-621	-	
		2c	Black		K16-622	-	
	Rectangular	1C	Black		K16-631	-	
		2C	Black		K16-632	-	
	Ø 16 Key Switch (3 Position) 	Round	2C	Black		K16-712	-
		Square	2C	Black		K16-722	-
		Rectangular	2C	Black		K16-732	-
Ø 16 Emergency Non-Illuminated Stop switch 	Round	1C	Red	-	K16-811	-	
		2C	Red	-	K16-812	-	
Ø 16 Emergency Illuminated Stop switch 	Round	1C	Red	-	K16-871	6VDC 24VDC 220VAC	
		2C	Red	-	K16-872	6VDC 24VDC 220VAC	














# Control Switch

## K16 Series

### Products Selection

Operator Type	Shape	Contact Form	Color	Part Number	Rated Voltage	
Ø 16 Momentary Non-Illuminated Mushroom Push Button Switch 	Round	1C	Red	K16-911R	-	
			Green	K16-911G	-	
			Yellow	K16-911Y	-	
Ø 16 Momentary Illuminated Mushroom Push Button Switch 	Round	1C	Red	K16-971R	6VDC	
			Green	K16-971G	12VDC	
			Yellow	K16-971Y	24VDC	
	Square	2C	Red	K16-972R	220VAC	
			Green	K16-972G	6VDC	
			Yellow	K16-972Y	12VDC	
		1C	Red	K16-981R	24VDC	
			Green	K16-981G	220VAC	
			Yellow	K16-981Y	6VDC	
2C	Red	K16-982R	12VDC			
	Green	K16-982G	24VDC			
	Yellow	K16-982Y	220VAC			
	Ø 16 Maintained Illuminated Mushroom Push Button Switch 	Round	1C	Red	K16-971RH	6VDC
				Green	K16-971GH	12VDC
				Yellow	K16-971YH	24VDC
Square		2C	Red	K16-972RH	220VAC	
			Green	K16-972GH	6VDC	
			Yellow	K16-972YH	12VDC	
		1C	Red	K16-981RH	24VDC	
			Green	K16-981GH	220VAC	
			Yellow	K16-981YH	6VDC	
2C	Red	K16-982RH	12VDC			
	Green	K16-982GH	24VDC			
	Yellow	K16-982YH	220VAC			
Ø 16 Non-Illuminated Buzzer 	Round	-	-	K16-CZ	12VDC	
	Square	-	-	K16-BZ	24VDC	
Ø 16 Illuminated Buzzer 	Round	-	-	K16-CZL	24VDC	
	Square	-	-	K16-BZL	24VDC	

## Accessory

	Operator Type	Rated Voltage	Color	Part number
	LED	24VAC/DC	Red Green Yellow White Blue	K16-S115R 24V K16-S115G 24V K16-S115Y 24V K16-S115W 24V K16-S115B 24V
		12VAC/DC	Red Green Yellow White Blue	K16-S115R 12V K16-S115G 12V K16-S115Y 12V K16-S115W 12V K16-S115B 12V
		6VAC/DC	Red Green Yellow White Blue	K16-S115R 6V K16-S115G 6V K16-S115Y 6V K16-S115W 6V K16-S115B 6V
	Ø 22 Protection Cover (Ø 20 only)		Clear	T22-C
	Square Protection Cover - Box Type		Black Red Green Yellow	K16-S111 K16-S111R K16-S111G K16-S111Y
	Rectangular Protection Cover - Box Type		Black Red Green Yellow	K16-S112 K16-S112R K16-S112G K16-S112Y
	Square Protection Cover - Side Open / Spring Type		Black Red Green Yellow	K16-S221 K16-S221R K16-S221G K16-S221Y
	Rectangular Protection Cover - Side Open / Spring Type		Black Red Green Yellow	K16-S222 K16-S222R K16-S222G K16-S222Y
	Safety Guard (Ø16 only)		Yellow	K16-G1
	Safety Guard - Emergency Stop (Ø16 only)		Yellow	K16-G2
	Ø16 Hole Cover (Ø16 only)		Black	K16-S117
	Mounting Ring Wrench		Black	K16-W1
	Bulb Remove Tool		Black	K16-LR1
	Socket(Soldering)		Black	K16-S113
	Socket(PCB)		Black	K16-S114

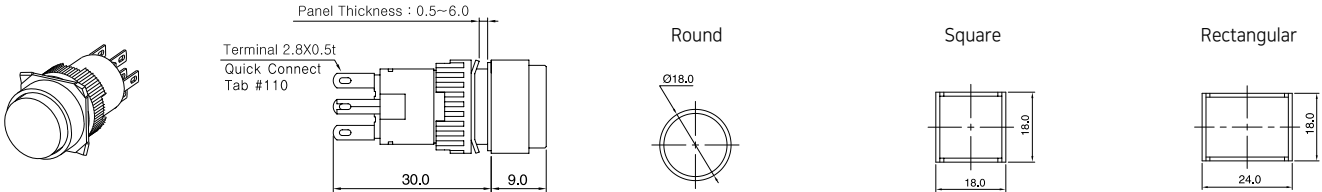
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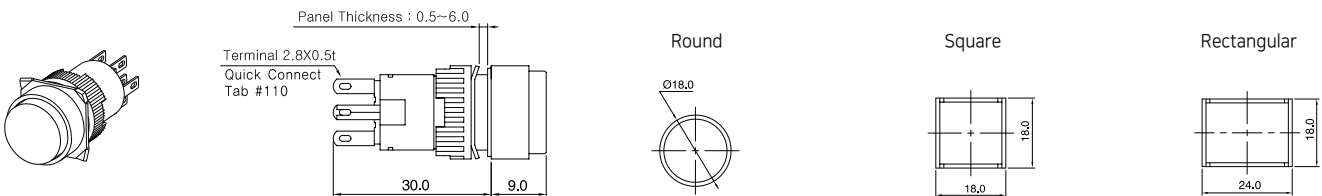
### Dimension

unit : mm

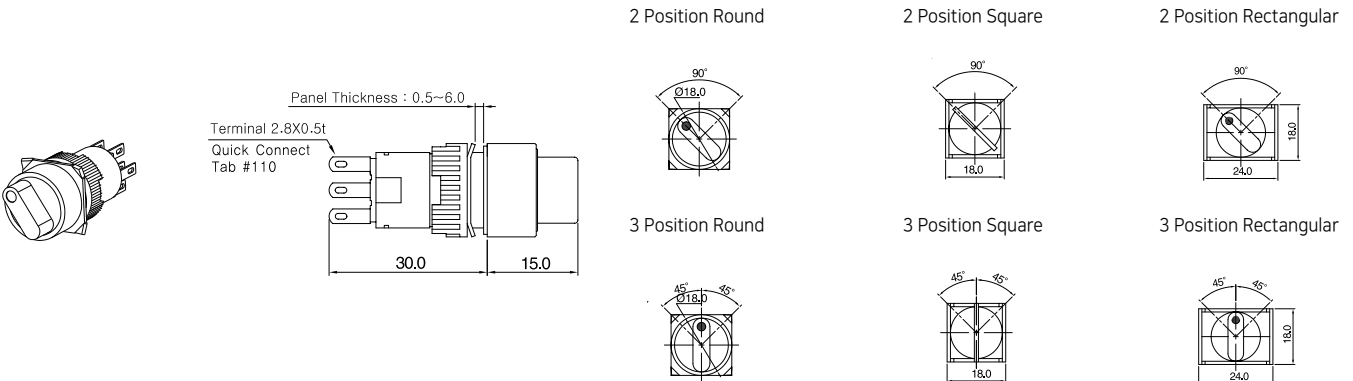
#### Pilot Light



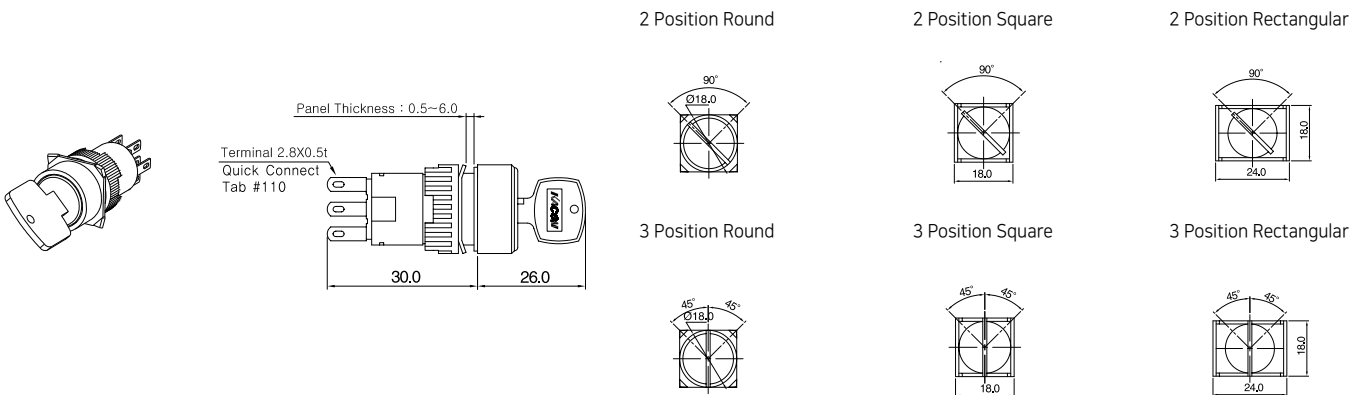
#### Momentary & Maintained Push Button Switch



#### Selector Switch



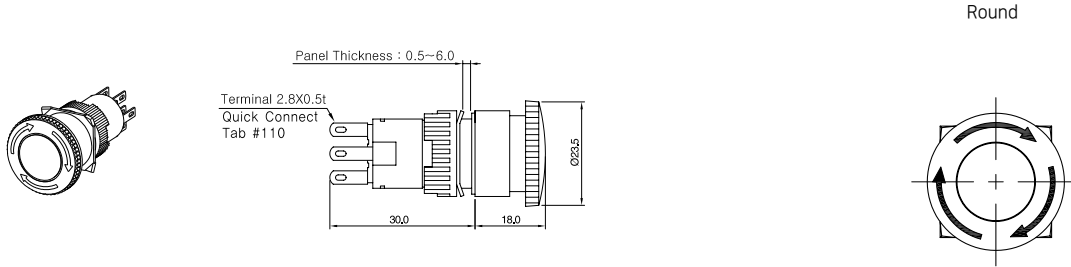
#### Key Switch



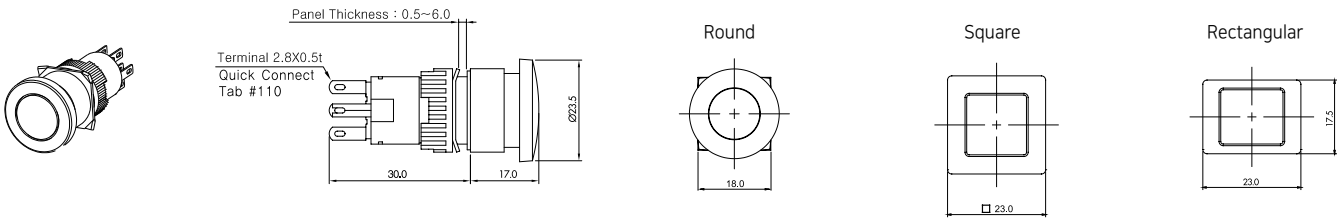
# Dimension

unit : mm

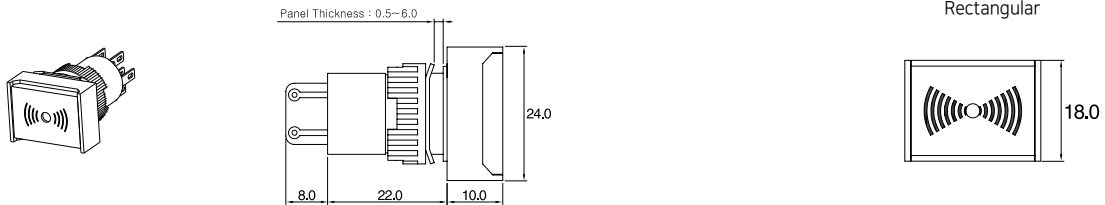
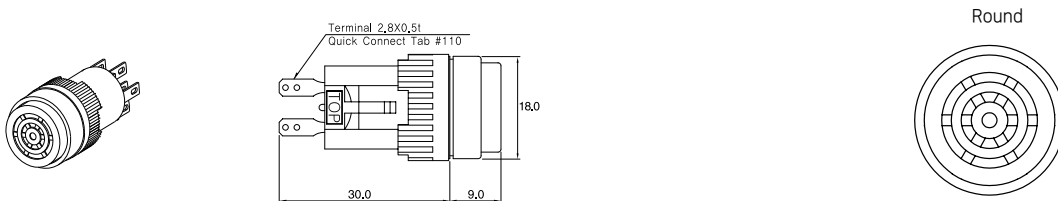
## Emergency Stop Switch



## Mushroom Push Button Switch



## Buzzer



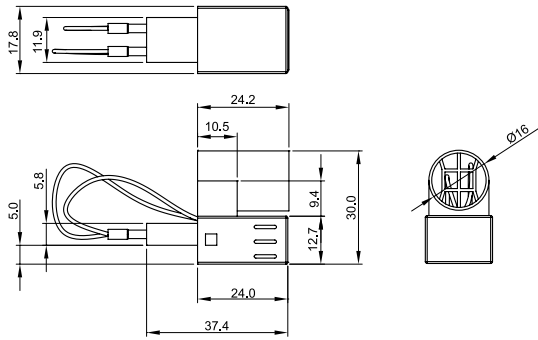
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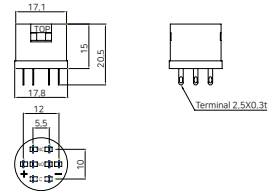
## Accessory

unit : mm

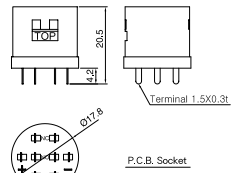
K16 - T1



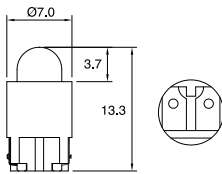
K16 - S113



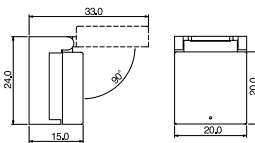
K16 - S114



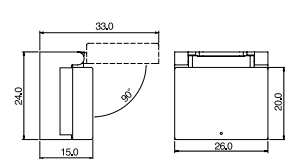
K16 - S115



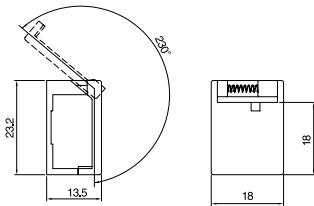
K16 - S111



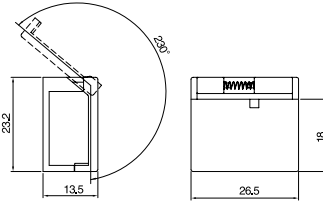
K16 - S112



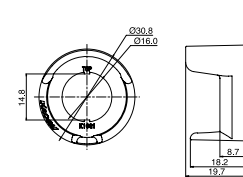
K16 - S221



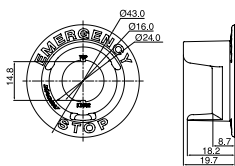
K16 - S222



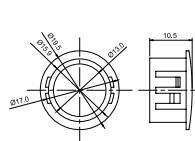
K16 - G1



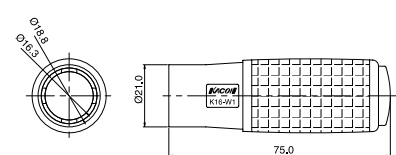
K16 - G2



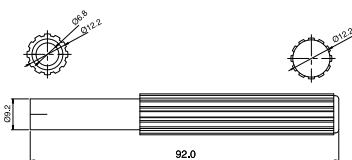
K16 - S117



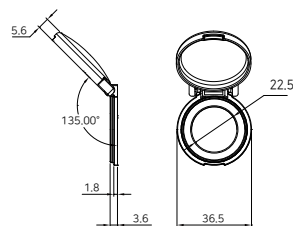
K16 - W1



K16 - LR1

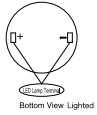


T22-C



## Wiring Diagram

Illuminated



1C



2C



Illuminated  
1C



Illuminated  
2C



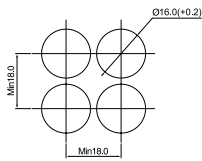
Buzzer



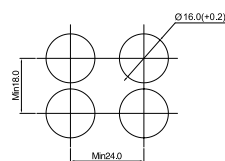
Non-polarity

## Panel Cut-Out

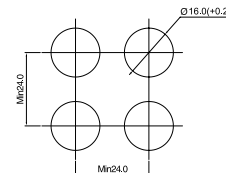
Round / Square (Ø16)



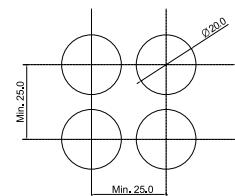
Rectangular (Ø16)



Emergency Stop / Mushroom (Ø16)



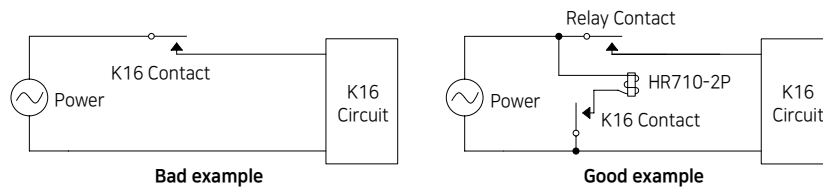
Round / Square (Ø20)



- Note. 1. When processing panels, determine the distance between holes considering the user's workability.  
 2. The hole processing dimension must be  $\text{Ø}16.0 \pm 0.2$  or  $\text{Ø}20.0 \pm 0.2$ .  
 (If the hole processing dimension is greater than the specified value, the product may not operate normally.)

## Caution

When using K16 small Control Switch as the power switch for the control unit, please follow the following instruction for longer product life span and reliability.



If you are using a DC power source which is regulated from an AC source, the ripple of the DC power source should be within 10%.  
 ⇨ If the power source does not have a stable voltage, the life span of the LED will be considerably shortened.

Do not use excessive force or strike the products, which could cause damages.  
 (Driving torque for fixing panels 0.6 ~ 1N·m or lower)

When soldering the wires, excessive heat or extensive use of soldering equipment can distort the shape of the product, which may result in damages.)

There is a built-in current limiting resistance in the product, so no more additional resistances are need to be connected.

The brightness of LED could be reduced up to 50% after rated life span.

K16-W1 : Do not tighten the fixing ring with an excessive force, because it may damage the product.

K16-LR1 : 1. Insert K16-LR1 and pull it to separate the LED from the product.  
 2. Rotate and pull K16-LR1 to mount the LED on the product..

※ The specification and the material of the products can be changed without notice for the improvement of the quality.