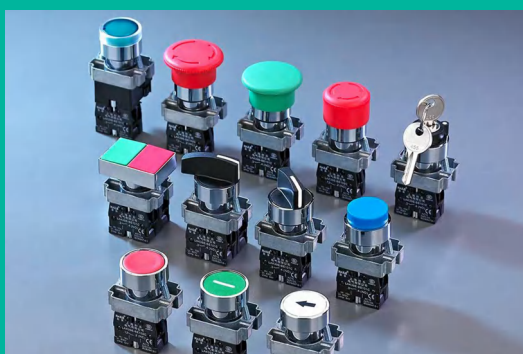




## ZHEJIANG NAILE ELECTRIC CO., LTD

### PRODUCT SELECTION GUIDE >>>



Leading the industry and exploring the future

#### CUSTOMER SERVICE:

- +86 180 2731 9583
- info@znaile.com
- Shangchi Industrial Zone, Liushi Town, Yueqing, Zhejiang

#### LEARN MORE ON:

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

- WeChat: 1044843221
- Instagram: Elena Yilan Deng
- linkedin.com/in/Naile Electric
- YouTube.com/@Naile-manufacture

# METAL PUSH BUTTON SWITCH



MOUNTING HOLE DIAMETER

Φ16(NL-16),Φ19(NL19),Φ22(NL22),Φ25mm(NL25).

SWITCH CHARACTERISTICS

Fast-acting/single knife double-throw.

PRODUCT FEATURES

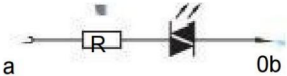
The series is a three-color light structure,configuration options are abundant The whole series of synchronousquick-connect sockets withbuckle bit more solid.

PROTECTION GRADE

IP65/IK10.

Symbol	Symbol name	Specify
★	Mounting hole diameter	16:Φ16mm /19:Φ19mm /22:Φ22mm/25:Φ25mm
□	Contact Structure	11:1NO1NC/22:2NO2NC(For 22and 25mm only)/Noletter means indicator
Operation type		Z:Latching/M:Mushroom button/No letter means momentary
※	IP Degree	No letter means IP67 / IK10
△	Color	R:Red/G:Green/Y:Yellow/B:Blue/W:White
▲	Voltage	6V/12V/24V/110V/220V other voltage levels can be customized
◎	Housing Material	S:Stainless steel/A:Aluminium alloy(Black)

LED SPECIFICATIONS

LEDife	Current	Allowable voltage fuctuation range	Circuit diagram
≥40000 hours	≤24Vabout 15mA ≥110Vabout 2mA	DC:±10%	 The product hasbut-o s008 0etneeop050ea0a00g9me po8s
		AC:±20%	

PERFORMANCE CHARACTERISTIC

Operating Temp	25°C~+55°C (Non freezing) Keep the switch air circulating well
Operating Humidity	45~85% RH(Non condensing)
Contact Resistance	≤50mΩ
Insulation Resistance	≥100MΩ(500VDC)
Max. withstanding voltage	1500VAC, 50Hz, 1min
Vibration resistance	50Hz, The amplitude is about 1.2mm
Solder heat resistance	320°C 3s
Switch rating	2A/36VDC 1A/220V
Mechanical Life	1,000,000 cycles
Electrical Life	50, 000 cycles
Base material	PA
Nut torque	About 0. 6Nm
Torque	About 4N(1NO 1NC) About 7.5N(2NO 2NC)
Operation Travel	About 3mm
Protection class	IP67,IK10



BUTTON SWITCH  
按钮开关

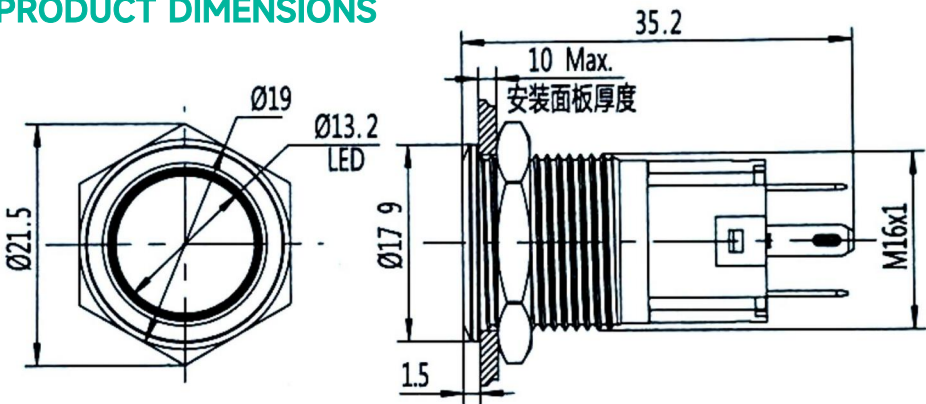
R G Y B W K

PARAMETERS



Model	NL16-11P
Size	Φ16mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



LIGHTED BUTTON  
带灯按钮

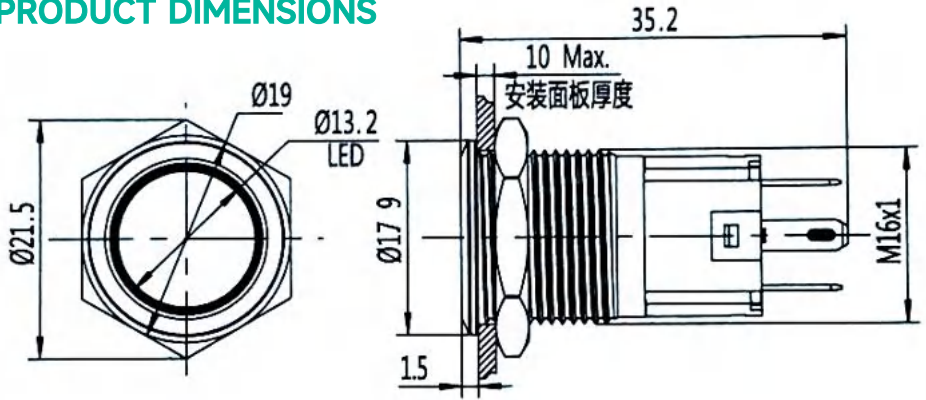
R G Y B W

PARAMETERS



Model	NL16-11EP
Size	Φ16mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



LIGHTED SELF-LOCK BUTTON

带灯自锁按钮

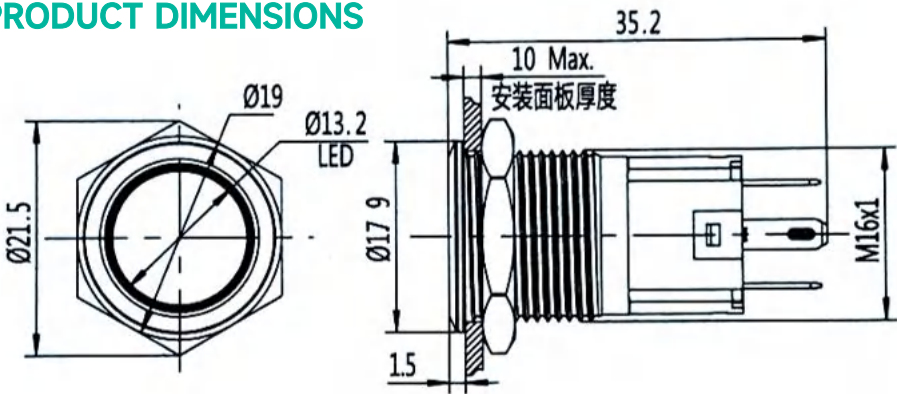
R G Y B W



PARAMETERS

Model	NL16-11ZEP
Size	Φ16mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



KNOB SWITCH

旋钮开关

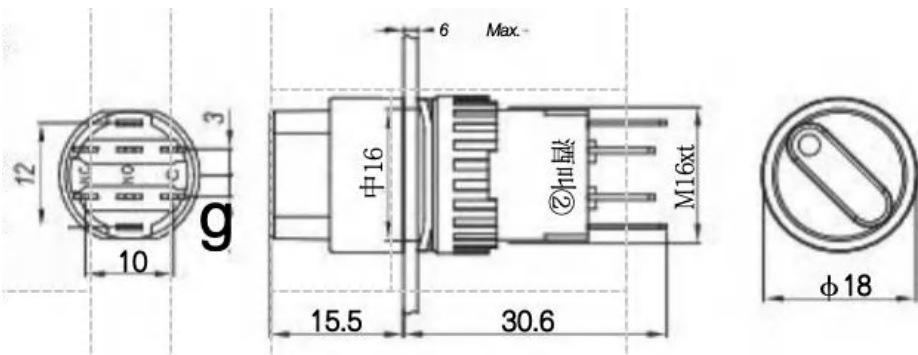
R G Y B W



PARAMETERS

Model	NL16-11X/2
Size	Φ16mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



EMERGENCY STOP  
紧急停止钮

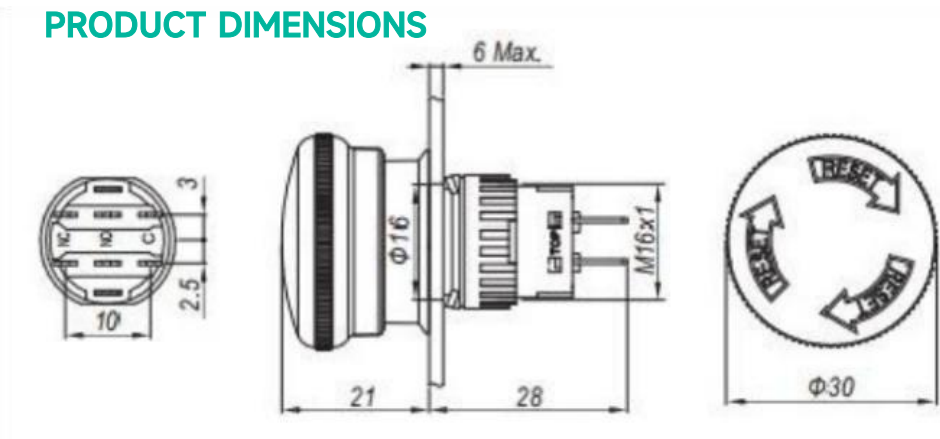
R

PARAMETERS

Model	NL16-11ZS
Size	Φ16mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10



PRODUCT DIMENSIONS



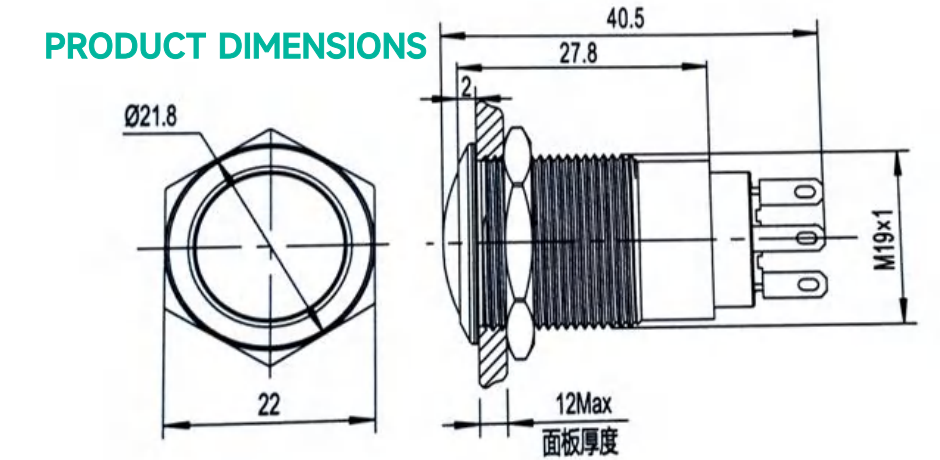
BUTTON SWITCH  
按钮开关

PARAMETERS

Model	NL19-11P
Size	Φ19mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC/2NO 2NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10



PRODUCT DIMENSIONS



LIGHTED BUTTON  
带灯按钮

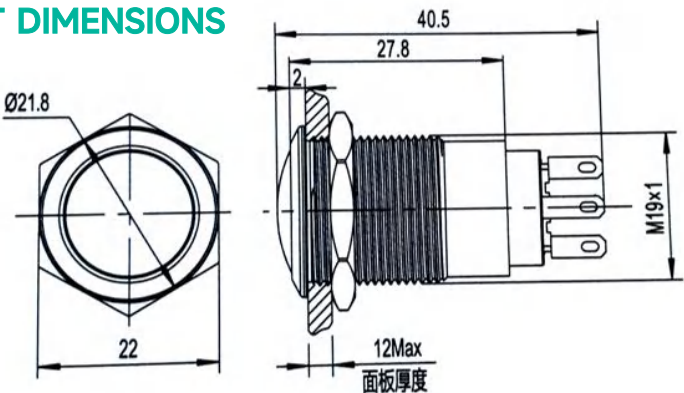
R G Y B W

PARAMETERS



Model	NL19-11EP
Size	Φ19mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC/2NO 2NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



LIGHTED SELF-LOCK BUTTON  
带灯自锁按钮

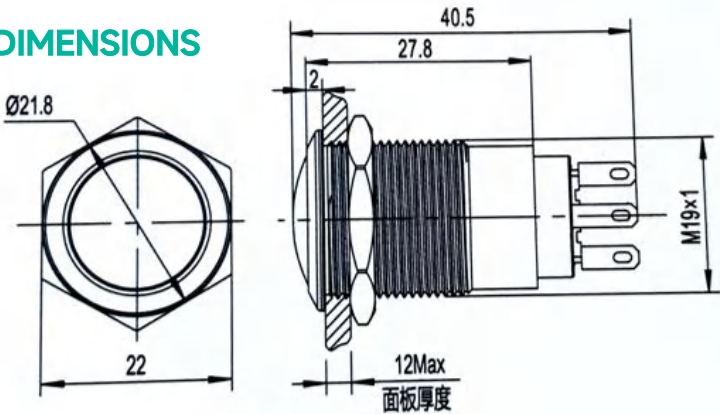
R G Y B W

PARAMETERS



Model	NL19-11ZEP
Size	Φ19mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC/2NO 2NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



KNOB SWITCH  
 旋钮开关

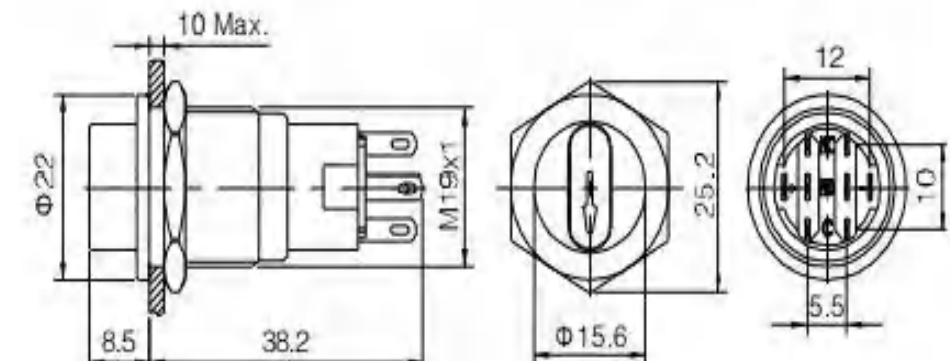


R
G
Y
B
W

PARAMETERS

Model	NL19-11X/2
Size	Φ19mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



LIGHTED KNOB  
 带灯旋钮

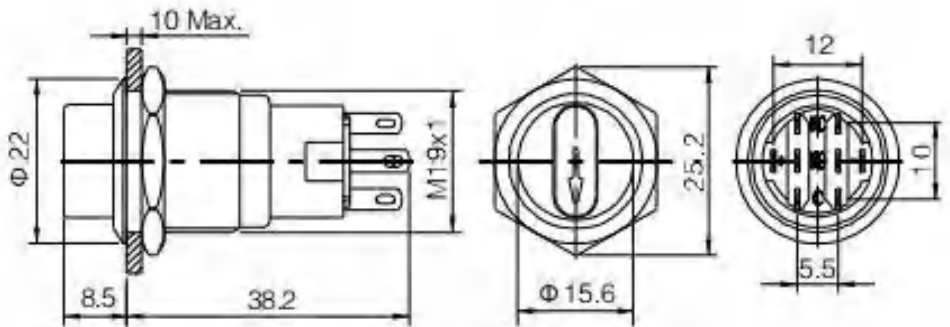


R
G
Y
B
W

PARAMETERS

Model	NL19-11XD/2 Two-position knob
Size	Φ19mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10
Voltage	ACDC6V/12V/24V/36V/48V/110V/220V

PRODUCT DIMENSIONS





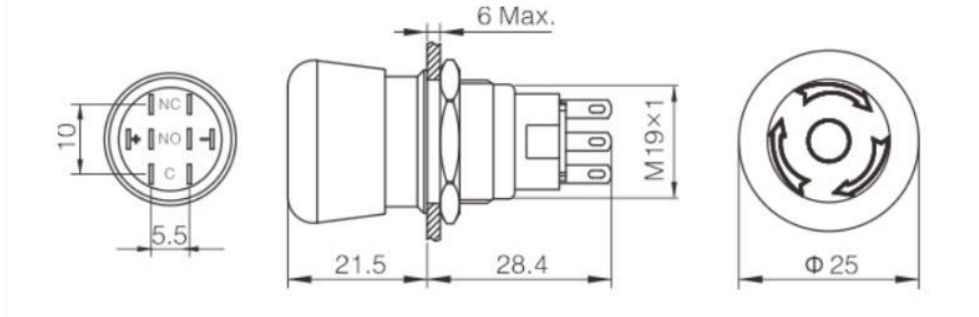
EMERGENCY STOP R  
紧急停止钮



PARAMETERS

Model	NL19-11ZS
Size	Φ19mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



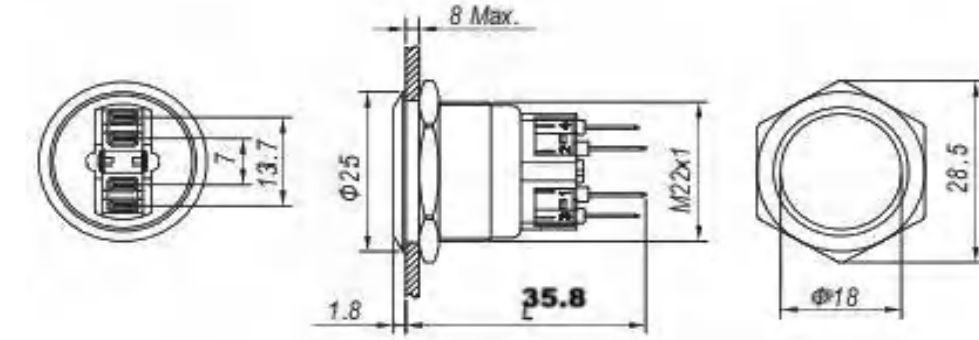
BUTTON SWITCH  
按钮开关



PARAMETERS

Model	NL22-11P
Size	Φ22mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC/2NO 2NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



LIGHTED SELF-LOCK BUTTON  
带灯按钮

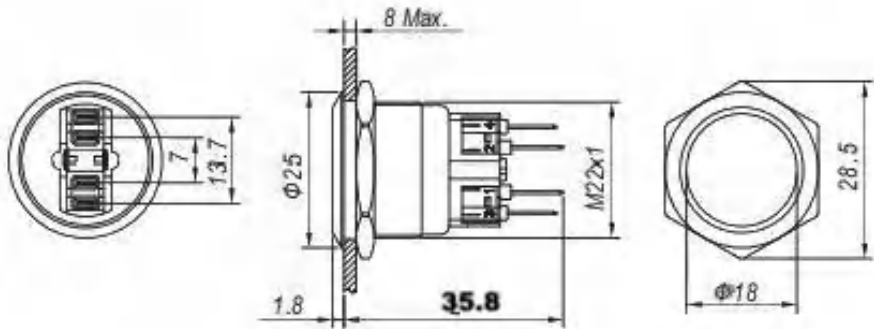
R G Y B W



PARAMETERS

Model	NL22-11ZEP
Size	Φ22mm
Switch rating	3A/250VAC
Contact Structure	1NO 1NC/2NO 2NC
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



KNOB SWITCH  
旋钮开关

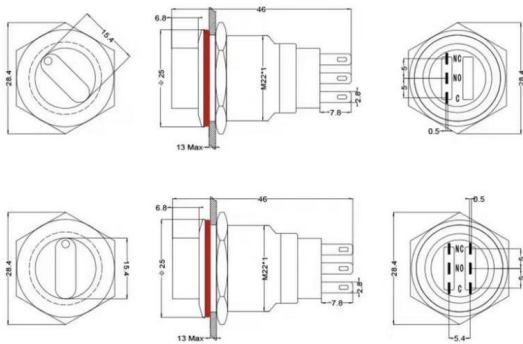
R G Y B W



PARAMETERS

Model	NL22-11X/2 Two-position knob
Size	Φ22mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



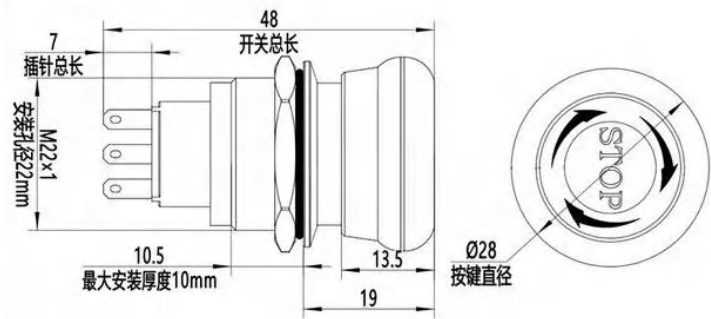
EMERGENCY STOP R  
紧急停止钮



PARAMETERS

Model	NL22-11ZS
Size	Φ22mm
Switch rating	3A/250VAC
Contact Structure	1NO
Operation type	Momentary/Latching
Housing Material	Stainless
Protection class	IP67, IK10

PRODUCT DIMENSIONS



# BUTTON SWITCH LAK39C SERIES





## LAK39C (LA39/LA38) BUTTON SWITCH SERIES

LAK39C Button Switch is suitable for remote control of electromagnetic starter contactors, relays and other electrical circuits with AC 50Hz (or 60Hz) below 660V and DC 440V and below. Those with indicator light find use in occasions for light signal indication.

### Working Conditions and Installation

Ambient temperature	No. more than +40°C. The average temperature of 24h should not exceed +35°C, and the lower limit stands at -5°C;
Altitude	No more than 2,000m
Atmospheric conditions	When the maximum temperature reaches +40°C, the relative humidity of the air should not exceed 50%. Higher relative humidity comes at lower temperatures, such as 90% at 20°C; special measures should be taken for occasional condensation due to temperature changes;
Pollution level	3
Installation category	Category II

## STRUCTURE AND FEATURES

- The contact system adopts a lever-type supercritical flip mechanism. Even if the pressing stroke is not enough during operation, as long as it exceeds the critical flip position, it acts quickly and reliably, contact or disconnect. The tension spring ensures that the necessary contact pressure and self-cleaning function make the contact reliable and the arc extinguishing performance good. When the switch is on and off, the metal sheet vibrates and emits a crisp sound, giving the user a signal to let him know whether the command is executed or not;
- Combined installation: Flexible, convenient and reliable installation and disassembly; access to two-section switch elements and 1-4 pairs of contacts for 1-14
- Normally open and normally closed are electrically insulated and work with different poles;
- The wiring part is equipped with a partition plate to form a screw pressure wire. Its tile-shaped washer rises or falls as the screw is screwed out or in, making wiring convenient;
- Oblique screw fixing is not only convenient but also safe and reliable.

## KEY TECHNICAL PARAMETERS

### Key Performance Indicators

Rated insulation voltage $U_i$	AC 600V, 50Hz					
Power frequency withstand voltage	AC2500V, 50Hz 1min					
Conventional thermal current	10A					
Contact resistance	$\leq 50m\Omega$					
Protection level	IP40					
Use category	AC-15			DC-13		
Rated working voltage	220V	380V	660V	110V	220V	440V
Rated working current	4.5A	2.5A	1.5A	0.5A	0.5A	0.2A

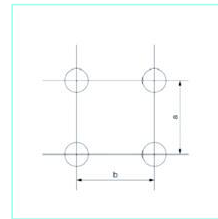
### Service life

Name	Item	
	Mechanical life	Electrical life
General button, lighted button	3 million times	600,000 times
Knob	300,000 times	100,000 times
Key button, self-locking button	50,000 times	50,000 times

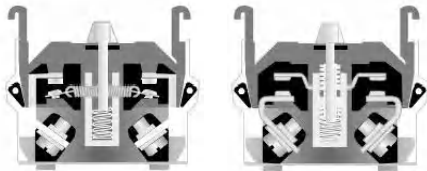
## APPEARANCE AND INSTALLATION DIMENSIONS (MM)

- It takes  $\Phi 22$  to install. The button head should be inserted into the installation hole from the front of the panel, and then screwed into the middle seat behind the panel. The set screws at both ends then should be tightened at the same time (Note: Do not use excessive force, the maximum torque is 25N.cm). Next connect the switch element or lamp holder directly, no other tools are needed. Press the button after installation. Possible stuck is caused by the uneven tightness or over-tightening of the two set screws during installation. Check whether the switch element is fully buckled to address the problem.
- In case several buttons are installed side by side on the control panel, the distance between the center lines of the copper bar button and the center line distance between the spare row buttons must be less than the values listed in the table below.

Name	Size	
	a	b
General button, lighted button, knob, key button	30	50
Mushroom button, long handle knob, emergency stop button	45	50



## SWITCH ELEMENT CONTACT



## STATUS

Contact code	01	10	02	20	11
	One closed	One open	Two closed	Two open	One open and one closed

Open-press contacts are a product launched by our factory, which withstands greater current than spring-type contacts.

## LIGHTED BUTTON INDICATOR SPECIFICATIONS



Light source	LED									
Code	21	22	23	24	25	26	27	28	31	32
Power supply	AC/DC								AC	
Voltage (V)	6	12	24	36	48	110	127	220	220	380

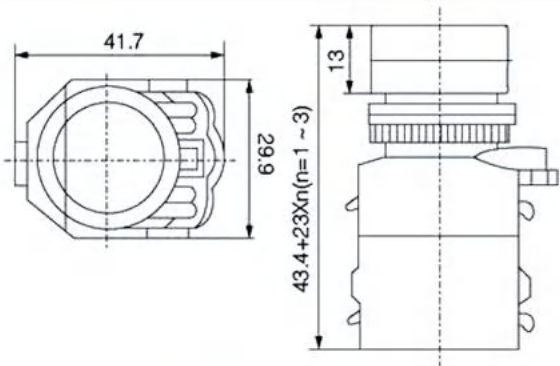
BUTTON SWITCH

R G Y B W K

PARAMETERS

Model	LAK39C-11 Transient LAK39C-11T Self-locking
Size	Φ22mm
Switch combination	NO+NC
Protection level	IP40

PRODUCT DIMENSIONS



Φ22.3或Φ25.5

LAK39C-11  
Transient

LAK39C-11T  
Self-locking

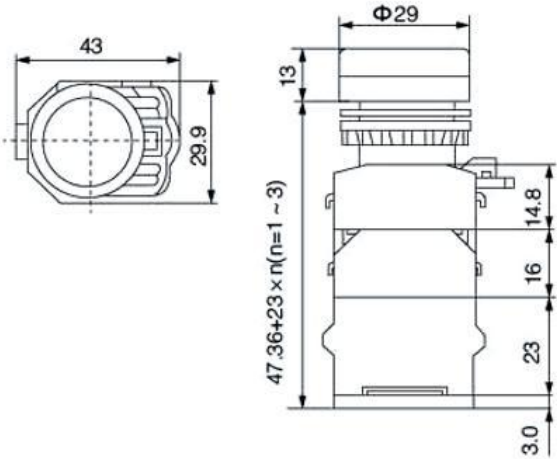
LIGHTED BUTTON (TRANSIENT)

R G Y B W

PARAMETERS

Model	LAK39C-11D Lighted Button (Transient)
Size	Φ22mm
Switch combination	NO+NC
Protection level	IP40

PRODUCT DIMENSIONS



KNOB SWITCH

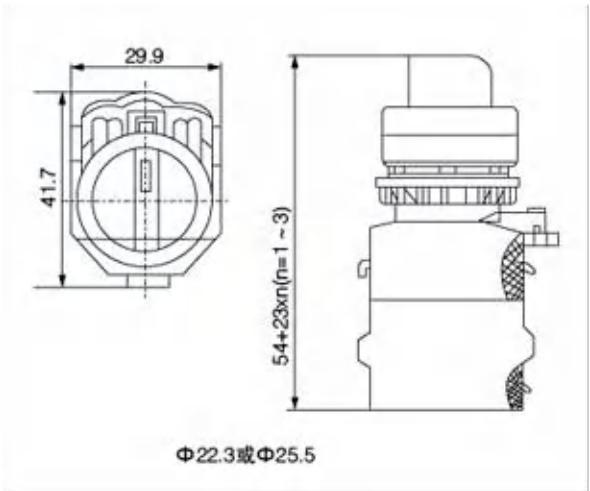
R G Y K



PARAMETERS

Model	LAK39C-11X/2 Two-position knob
Size	Φ22mm
Protection level	IP40

PRODUCT DIMENSIONS



KNOB SWITCH

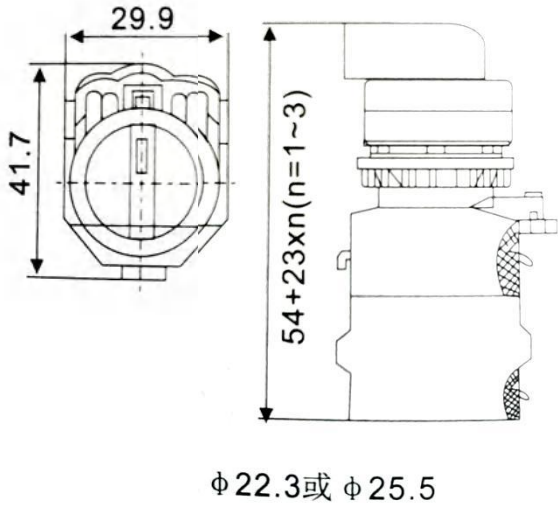
R G Y K



PARAMETERS

Model	LAK39C-20CX/3 Three-position knob with handle
Size	Φ22mm
Protection level	IP40

PRODUCT DIMENSIONS





LIGHTED KNOB

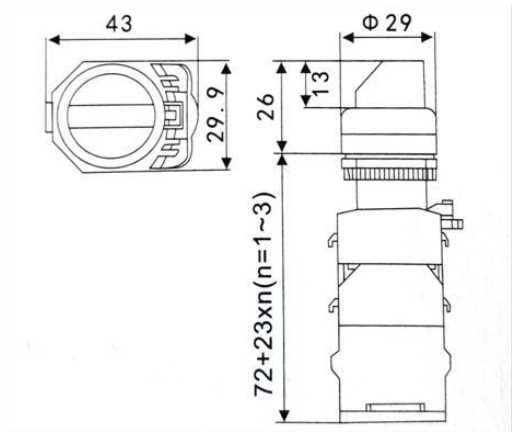
R G Y W



PARAMETERS

Model	LAK39C-11XD/3	Three-position self-locking
Size	Φmm	
Protection level	IP40	

PRODUCT DIMENSIONS



MUSHROOM BUTTON

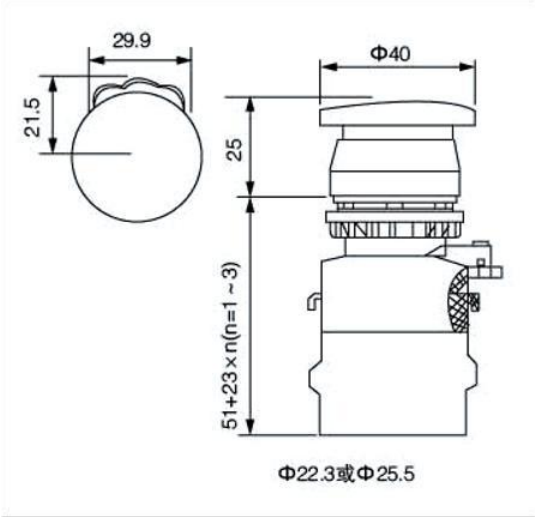
R G Y



PARAMETERS

Model	LAK39C-11M	Transient
Size	Φ22mm	
Switch combination	NO+NC	
Protection level	IP40	

PRODUCT DIMENSIONS



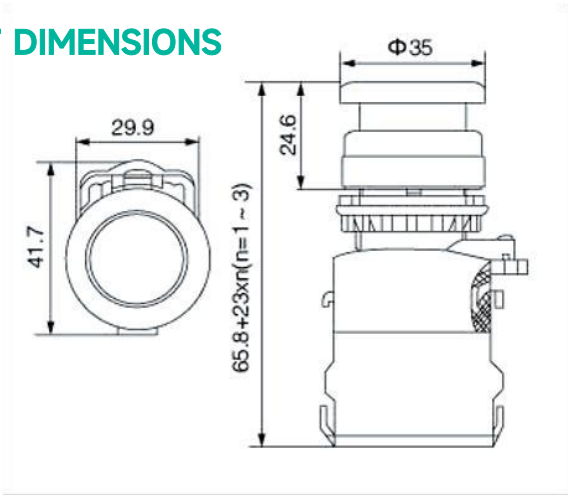
EMERGENCY STOP R



PARAMETERS

Model	LAK39C-11ZS
Size	Φmm
Switch combination	NO+NC
Protection level	IP40
Press to lock. Turn clockwise to reset	

PRODUCT DIMENSIONS



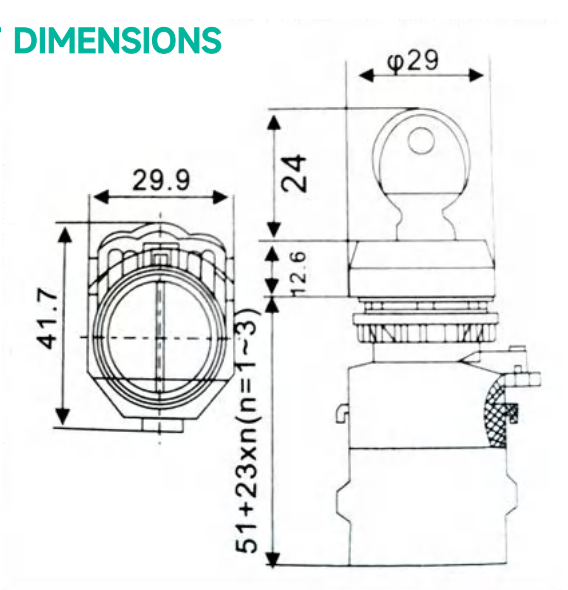
KEY BUTTON



PARAMETERS

Model	LAK39C-11Y/2 Two-position self-locking
Size	Φmm
Protection level	IP40

PRODUCT DIMENSIONS



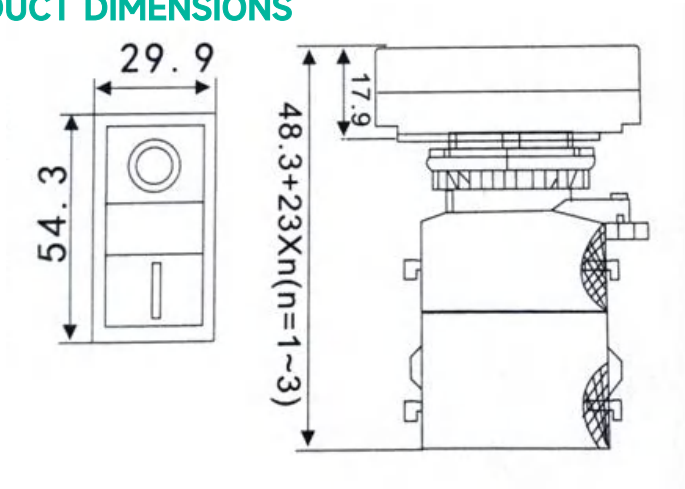
DOUBLE-POSITION PUSH BUTTON R G Y W



PARAMETERS

Model	LAK39C-11RG
Size	Φmm
Switch combination	NO+NC
Protection level	IP40

PRODUCT DIMENSIONS



BUTTON SWITCH LAK39E  
SERIES



## LAK39E SERIES

LAK39E push button switch is suitable for industrial control circuits with AC 50Hz (or 60Hz), rated working voltage up to 380V and DC working voltage 220V. It can be used as remote control in electromagnetic starter contactors, relays and other electrical circuits. Those with indicator light are for occasions where light signals are indicated.

### Working Conditions and Technical Reference

Air temperature	-5°C ~ +40°C
Withstand voltage	2500V,1min
Ui Rated insulation voltage	660v
Electrical life	50 x10
Contact resistance	45°C ~ +85°C
Contact resistance	≤50mΩ
Ith	10A
Protection level	IP40
Rated working voltage	380V 220V 110V 48V 24V
Rated working current	AC - 15 2.5A 4.5A 6A 8A - DC - 13 - 0.3A 0.6A 1.3A 2.5

Rated voltage Electric light source	Direct						Resistor		Transformer	
	6V	12V	24V	48V	110V	220V	380V	220V	220V	380V
LED light	✓	✓	✓	-	-	-	-	-	✓	✓
Neon light	-	-	-	-	✓	✓	✓	✓	-	-
Incandescent light	✓	✓	✓	✓	✓	✓	✓	-	✓	✓

## STRUCTURE AND PERFORMANCE

- The metal button adopts an anti-movement head and cannot be removed from the front;
- All contacts have the dual functions of switching circuits and self-cleaning, and can still maintain contact reliability when used at low voltage and low current (5V.5mA);
- Normally open and normally closed contact groups are independent of each other and can be combined as needed.
- Concealed wiring terminals are safer and more reliable. The metal button operating head and base are made of zinc alloy, with beautiful and sturdy appearance.
- The illuminated buttons and signal lights agree to use BA9S lamp holders, and different light sources can be selected as needed.



BUTTON SWITCH

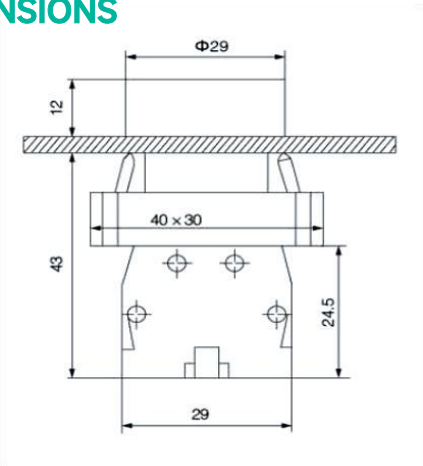
R G Y B W K



PARAMETERS

Model	LAK39E-BA31
Size	Φmm
Swith combination	NO
Protection level	IP40

PRODUCT DIMENSIONS



HIGH POSITION BUTTON SWITCH

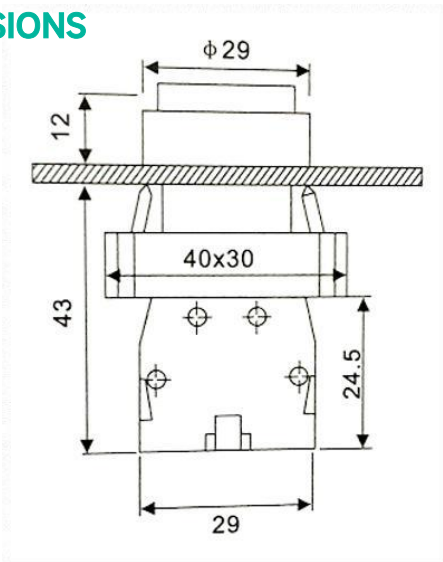
R G Y B W K



PARAMETERS

Model	LAK39E-BL61
Size	Φmm
Swith combination	NO
Protection level	IP40

PRODUCT DIMENSIONS



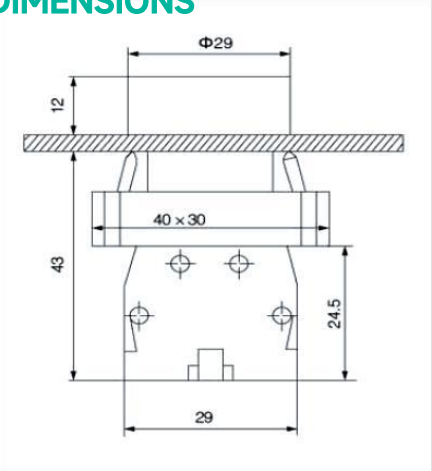
MARKED BUTTON SWITCH



PARAMETERS

Model	LAK39E-BA3341
Size	Φmm
Swith combination	NO
Protection level	IP40

PRODUCT DIMENSIONS



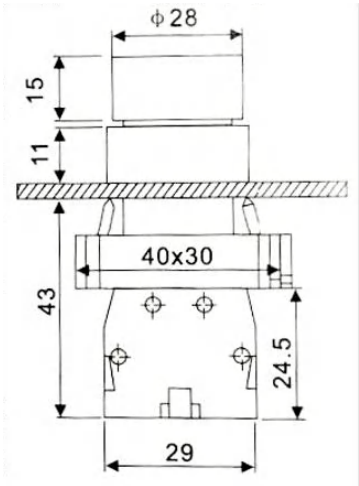
KNOB SWITCH



PARAMETERS

Model	LAK39E-BD21 Two-position lock
Size	Φmm
Swith combination	NO
Protection level	IP40

PRODUCT DIMENSIONS



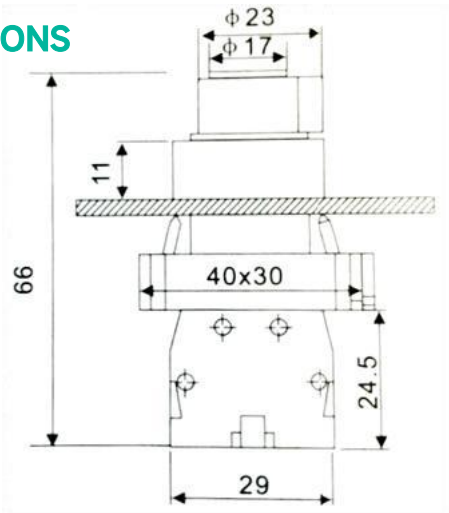
KNOB SWITCH WITH HANDLE
 R
G
Y



PARAMETERS

Model	LAK39E-BJ33 Three-position lock 
Size	Φmm
Swith combination	2NO+NO
Protection level	IP40

PRODUCT DIMENSIONS



MUSHROOM BUTTON

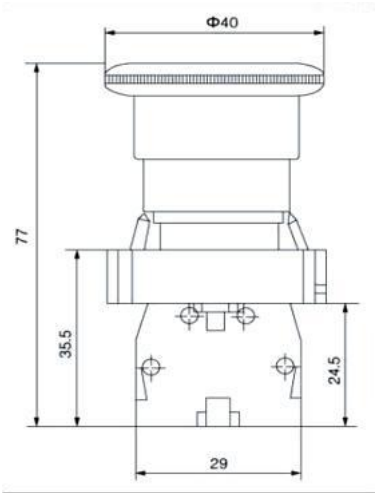
R
G
Y



PARAMETERS

Model	LAK39E-BC31
Size	Φ40mm
Switch combination	NO
Protection level	IP40

PRODUCT DIMENSIONS



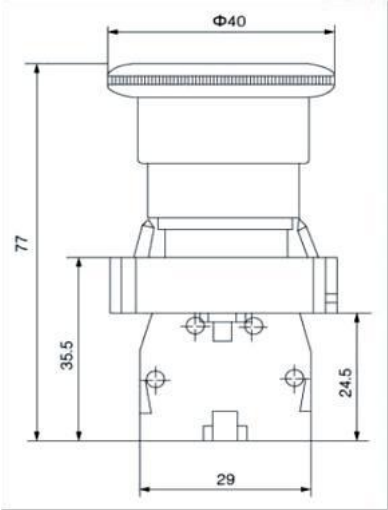
EMERGENCY STOP R



PARAMETERS

Model	LAK39E-BS542
Size	Φ40mm
Switch combination	NC
Protection level	IP40

PRODUCT DIMENSIONS



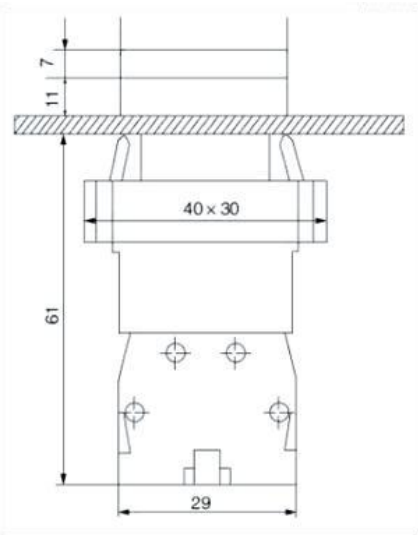
LIGHTED BUTTON R G Y B W



PARAMETERS

Model	LAK39E-BW3361
Size	Φmm
Switch combination Contact Structure	NO
Protection level	IP40

PRODUCT DIMENSIONS





KEY BUTTON

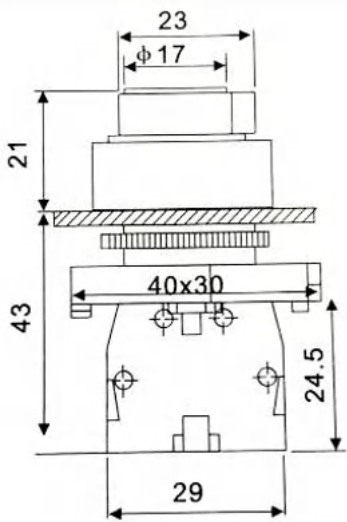
R G Y



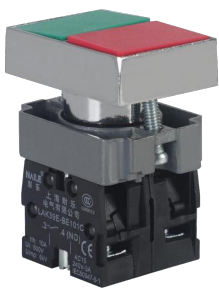
PARAMETERS

Model	LAK39E-BG21 Two-position lock
Size	Φmm
Swith combination	NC
Protection level	IP40

PRODUCT DIMENSIONS



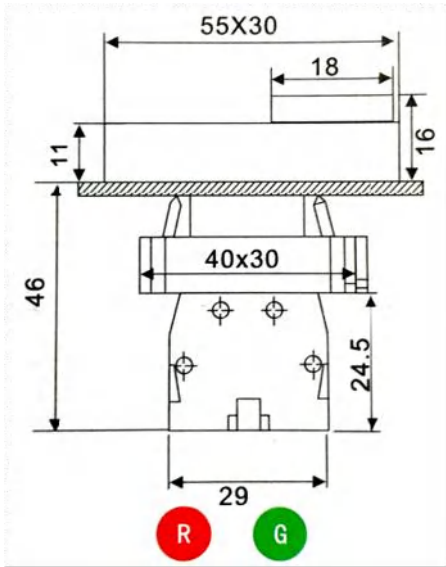
DOUBLE POSITION BUTTON R G



PARAMETERS

Model	LAK39E-BL8325
Size	Φmm
Switch combination	NO+NC
Protection level	IP40

PRODUCT DIMENSIONS



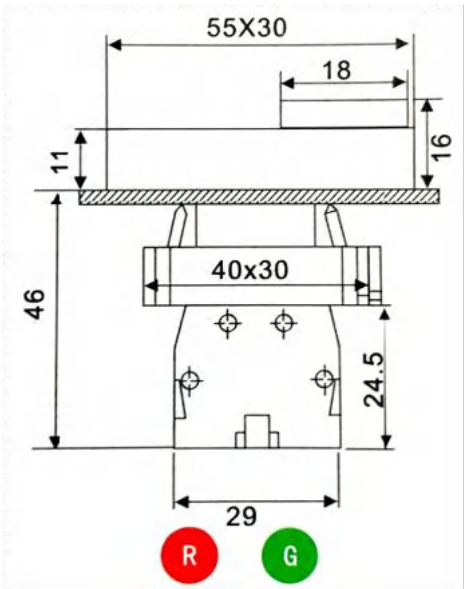
DOUBLE-POSITION LIGHTED BUTTON R G



PARAMETERS

Model	LAK39E-BL8425
Size	Φ40mm
Switch combination	NO+NC
Protection level	IP40

PRODUCT DIMENSIONS



# INDICATOR LIGHT



## ADK16(AD16)

### INDICATOR SERIES

ADK16 series indicator lights are suitable for electrical circuits with rated working voltage of 380V and below at AC 50Hz (60Hz) and rated working voltage of 220V and below for command signals, warning signals, accidents and other indication signals.

### Working Conditions and Installation

Ambient temperature	not more than +40°C, and its 24h average temperature value does not exceed +35°C, the lower limit of wrinkle air temperature is -5°C;
Altitude	no more than 2000m;
Atmospheric conditions	When the maximum temperature reaches +40°C, the relative humidity of the air should not exceed 50%. Higher relative humidity comes at lower temperatures, such as 90% at 20°C; special measures should be taken for occasional condensation due to temperature changes;
Pollution level	3
Installation category	Category III.

### STRUCTURE AND PERFORMANCE

- This series all use LED chips as light sources, which have low energy consumption, high brightness, low temperature rise and long service life;
- Wide power supply voltage, can work normally within the range of  $\pm 15\%$  of the rated voltage;
- Vibration and impact resistance. It can work normally under vibration conditions with vibration frequencies (sinusoidal) of 10~2000Hz, 1.5mm, and 10g, which solves the problem of easy breakage of tungsten filaments in bulbs and high maintenance costs, greatly improves the reliability of products and facilitates users;
- High safety performance, easy to use, the conductors are hidden in the shell, and the combination screws are used to press the wires, which is convenient and saves wiring time;
- Small size, light weight, good performance;
- The product selection is beautiful and diverse. The color is bright, the optical fiber is soft, and it can be installed on the equipment for indication, decoration, lighting and other functions;
- Good interchangeability. Due to its novel design, this product can be installed on the installation hole of  $\Phi 22$  or  $\Phi 25$ , which not only meets the supporting needs of the exporting country, but also meets the requirements for the maintenance of the original old equipment.

### KEY TECHNICAL PARAMETERS

- Continuous working life  $\geq 30,000$ h;
- Power frequency withstand voltage: 2.5kV (AC effective value);
- Insulation resistance  $\geq 2$ M $\Omega$ ;
- Brightness  $\geq 100$ cd/m<sup>2</sup>;
- Comparative tracking index CT $\geq 100$ ;
- Luminous color: red, green, yellow, white, blue (light blue, pure blue).

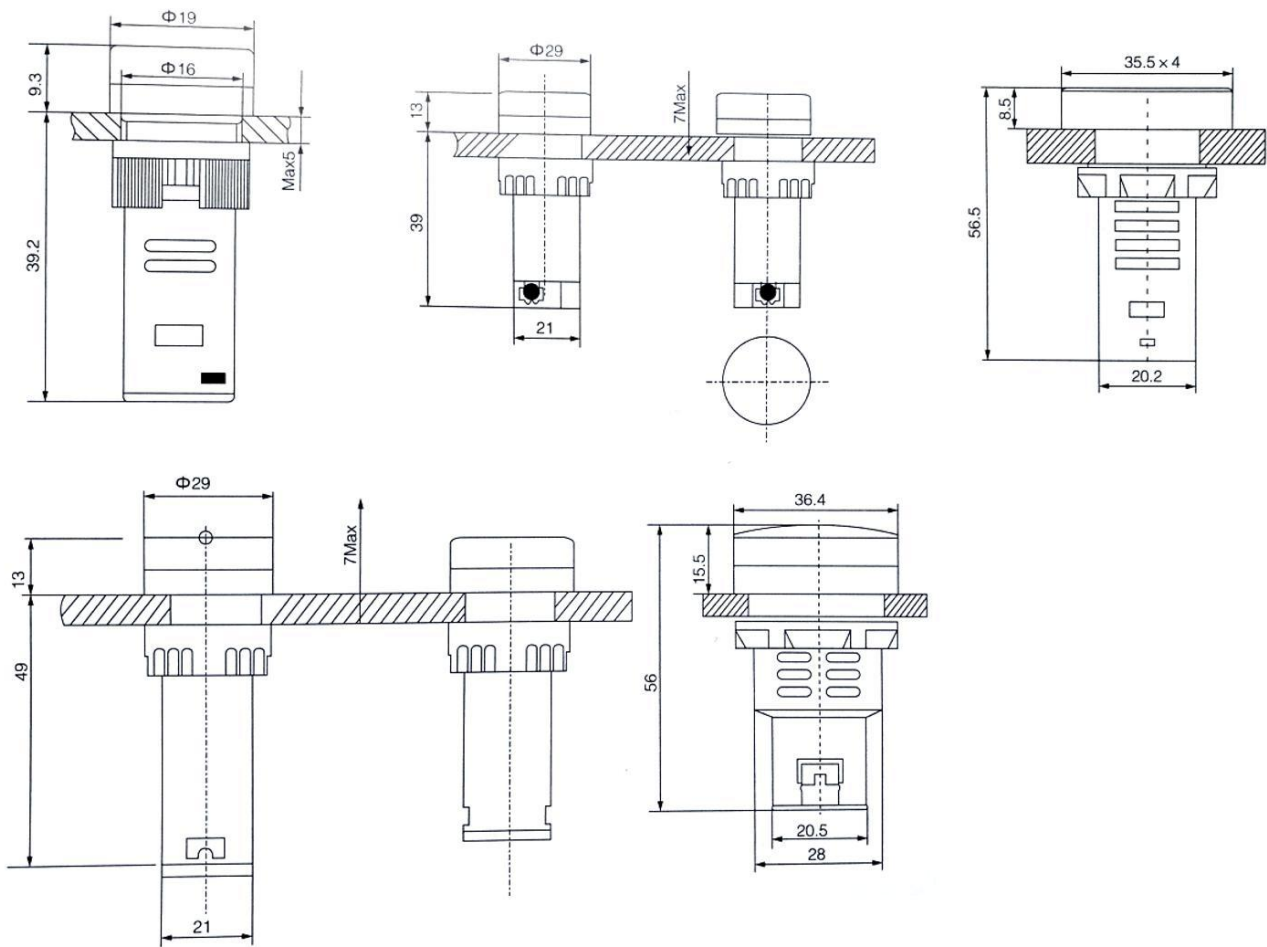
## DESCRIPTION

Ultra-short indicator lights are suitable for installation in places with relatively narrow space

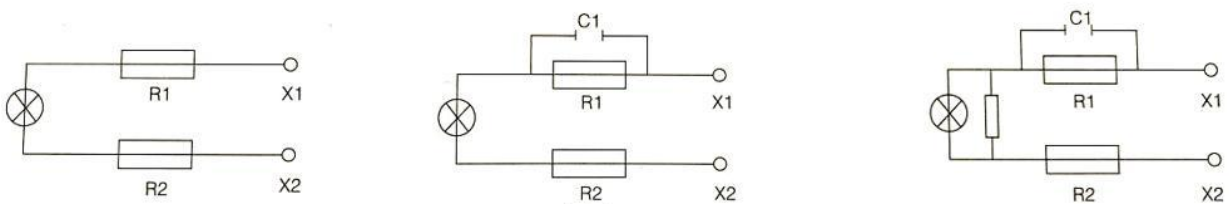
All ultra-short indicator lights are suitable for openings of  $\Phi 16$ ;  $\Phi 22$ ;  $\Phi 25$ ;  $\Phi 30$ , without the need for additional accessories;

Indicator lights for DC power supply can be used for AC current.

## APPEARANCE AND INSTALLATION (MM)



## ELECTRICAL SCHEMATIC



Resistive

Capacitive

Discharge



INDICATOR

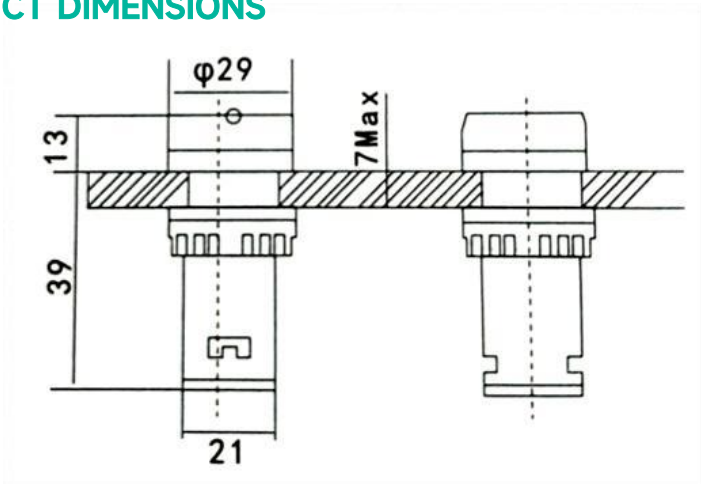


R G Y B W

PARAMETERS

Model	ADK16-22DS Samples (red, green, yellow, white, blue)
Size	Φ22mm
Shell material	environmentally friendly nylon material
Protection leve	IP45
Voltage specification	ACDC6V/12V/24V/36V/48V/110V/220V/380V

PRODUCT DIMENSIONS



INDICATOR

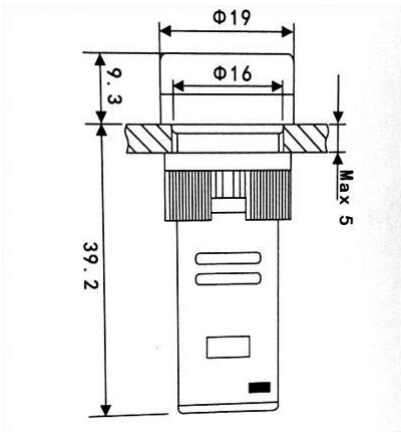


R G Y B W

PARAMETERS

Model	Model ADK16-16C Samples (red, green, yellow, and white)
Size	Φ16mm
Shell material	environmentally friendly nylon material
Protection leve	IP45
Voltage specification	ACDC6V/12V/24V/36V/48V/110V/220V/380V

PRODUCT DIMENSIONS



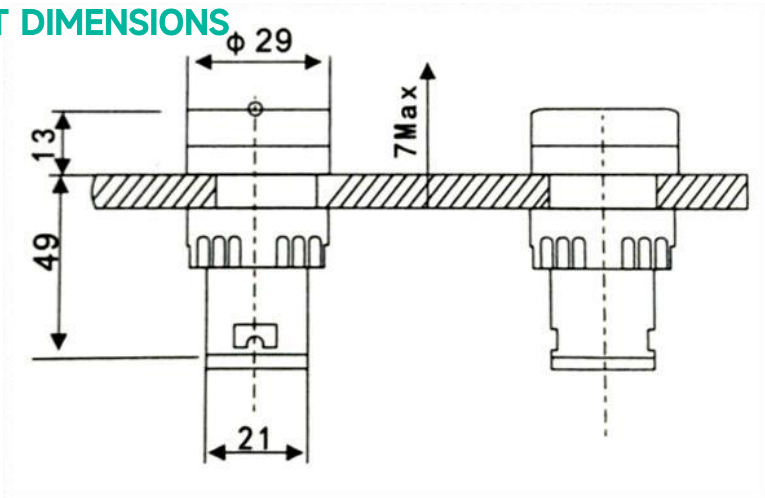
FLASH BUZZER



PARAMETERS

Model	ADK16-22SM
Size	Φ22mm
Shell material	environmentally friendly nylon material
Protection leve	IP45
Voltage specification	ACDC6V/12V/24V/36V/48V/110V/220V/380V

PRODUCT DIMENSIONS



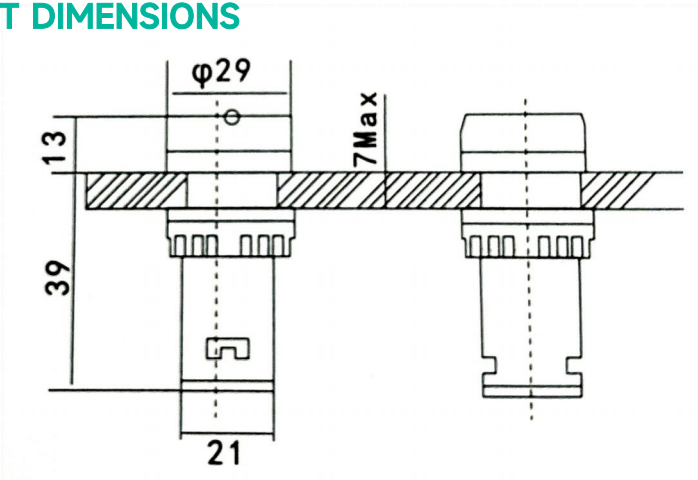
VOLTAGE INDICATOR - ROUND



PARAMETERS

Model	ADK16-22VM
Size	Φ22mm
Shell material	environmentally friendly nylon material
Protection leve	IP45
Voltage specification	AC60V~500V

PRODUCT DIMENSIONS



VOLTAGE INDICATOR-SQUARE

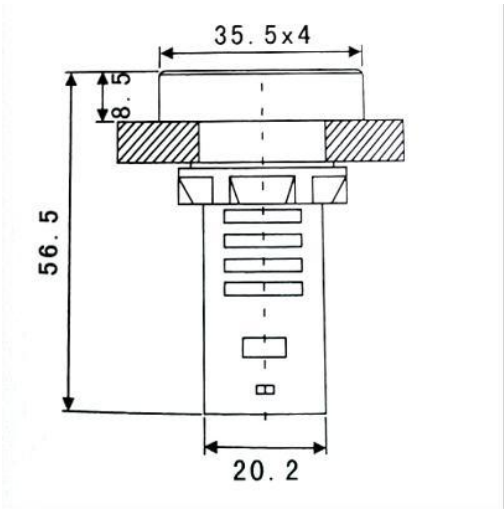
R G Y B W

PARAMETERS



Model	ADK16-22FVM
Size	Φ22mm
Shell material	environmentally friendly nylon material
Protection leve	IP45
Voltage specification	AC60V~500V

PRODUCT DIMENSIONS



# SURGE PROTECTOR

Quick respond! Instant lightning protection! Fault early warning



## SURGE PROTECTOR SERIES

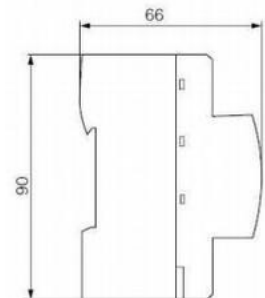
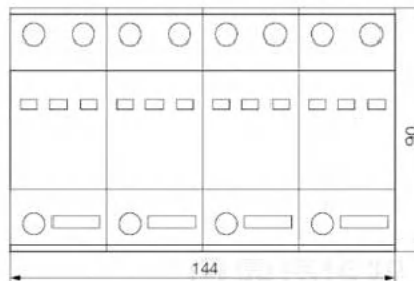
Large discharge energy, no leakage current, no continuous flow, modular installation, high safety factor.

Long service life, strong environmental resistance, voltage protection level is less than 2500V. The NALD series primary surge protector is designed according to the 1EC and GB standards. Apply to power supply system of the first level of surge protection, the product is the standard 35mm guide rail type way to install.

NALD series T1 surge protector has high lightning discharge capacity, single. The maximum shock current of the module can reach 50 kA (10 / 350  $\mu$ s), which can prevent direct lightning strikes. The power supply of the equipment system in areas with higher risk of lightning strike. Stage surge protection, which can be combined in single-phase / three-phase power supply lines. High efficiency 1 energy saving 1 precision 1 low carbon

- -Lightning protection level (T1)
- Remote signal or communication remote alarm
- Number of poles: 1P, 2P, 3P. 4P
- Nominal discharge current
- -Maximum discharge current
- Surge protector

## POWER SURGE PROTECTOR LEVEL 1 MODEL: NALD-A12.5/4P



Model	NALD-A12.5	NALD-A15	NALD-A25	NALD-A50
SPD port	One port	One port	One port	One port
SPD category	Voltage limiting type/voltage switch type	Voltage limiting type/voltage switch type	Voltage switch type	Voltage switch type
Test category	Class 1 test	Class 1 test	Class 1 test	Class 1 test
Rated voltage Un	220VAC50~60Hz	220VAC50~60Hz	220V AC50~60Hz	220VAC50~60Hz
Maximum continuous operating voltage Uc (AC)	275V、320V、385V、420V、440V	275V、320V、385V、420V、440V	275V、320V、385V、420V、440V	275V、320V、385V、420V、440V
Insulation resistance	>100M $\Omega$	>100M $\Omega$	>100M $\Omega$	>100M $\Omega$
Impulse discharge current light (10/350 $\mu$ s)	12.5kA	15kA	25kA	50kA
Protection level Up (1.2/50 $\mu$ s)	2.2kV	2.2kV	2.5kV	2.8kV
Response time tA	$\leq$ 100ns	$\leq$ 100ns	$\leq$ 100ns	$\leq$ 100ns
Size mm	144×90×66	144×90×66	144×90×66	144×90×66
Installation wire cross-sectional area mm <sup>2</sup>	6~25	6~25	6~25	6~25
Installation	35mm standard rail (EN50022/DIN46277-3)			
Working environment temperature $^{\circ}$ C	40~85			
Shell material	Plastic, compliant with UL94 V-0			
Protection level	IP20			

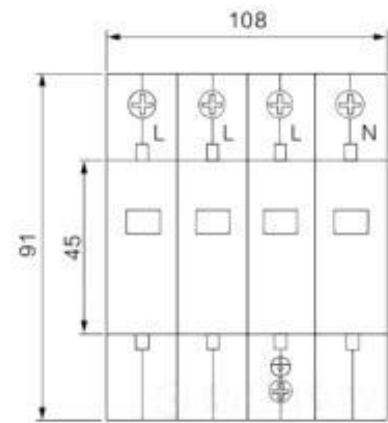
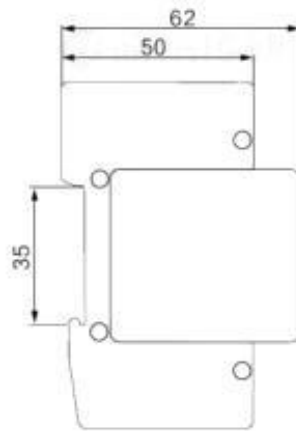


## SURGE PROTECTOR LEVEL 2

### MODEL:: NAL-C40/P

NAL-40C series surge protector is suitable for 1T, TT, TN-C, TNS, TN, TN-C-S, and other power supply systems of low-voltage AC distribution system to protect the influence of indirect lightning and direct lightning or other instantaneous overvoltage surge. Class 1 surge protector per IEC61643-1; 1998-02 standard. Class B surge protector. This product has a common mode (MC) and differential mode (MD) protection mode. This product is compliant with the GB/T18802.1/IEC61643-1

- Remote alarm with remote signal
- -Maximum continuous working voltage  $U_c(V)$  -2P refers to single phase, 4P refers to three phase
- Maximum discharge current
- -Surge protector



Specifications	NAL-80				NAL-100	
Maximum continuous working voltage Uc (VAC)	420	385	320	275	385	420
Voltage protection level Up (kV)	2.5	2.3	2.0	1.8	2.5	3.2
Maximum discharge current (8/20μs) max (kA)	80				60	
Nominal discharge current (8/20μs) In(kA)	40				100	
Response time ns	<25					
Protection level	IP20					
Failure indication	Aging failure: Green for normal, Red for failure					
Purpose	Secondary protection for incoming lines					
Remote signal function	Available as an additional item					
Note	Other maximum continuous working voltages Uc can be customized					

**MODEL:: NAL-B80**



# CURRENT TRANSFORMER SERIES



TAS-0.66 THREE-PHASE INTEGRATED TRANSFORMER  
COMBINED TRANSFORMER      MODEL TAS-250

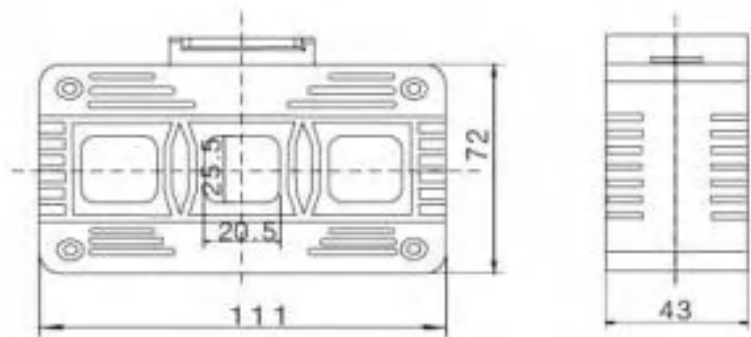
TAS-0.66 Three-phase integrated transformer

This series of molded case three-phase transformers can be installed with molded case circuit breakers to save space. It can be installed on a rail, which is convenient and fast.

TAS-0.66 three-phase integrated transformer

Product	Current ratio	Rated secondary load (VA)		Number of through-hole turns
		Level 1.0	Level 0.5	
 TAS-250	100/5	1		1
	150/5	1.5	1	1
	200/5	2.5	1	1
	250/5	2.5	1.5	1
	300/5	5	1.5	1

PRODUCT DIMENSIONS



BH-0.66 II TYPE CURRENT TRANSFORMER


Product Overview: BH-0.66 series current transformers are suitable for current, electric energy measurement or relay protection in AC lines with rated frequency of 50Hz, rated voltage of 0.66kV and below. The product is a molded case current transformer, which is widely used in complete cabinets. Its installation method can adopt busbar fixing and bottom plate fixing installation methods. It is suitable for installation in any direction. The primary conductor can be a busbar or a cable.

Working conditions and installation conditions	
Installation location	indoors
Ambient temperature	-5°C~+40°C, daily average not exceeding +30°C.
Altitude	no exceeding 1,000m.
Atmospheric conditions	When the maximum temperature is +40°C, the relative humidity of the air shall not exceed 50%. At lower temperatures, the relative humidity shall not exceed 80%.
There shall be no serious pollution in the atmosphere, and there shall be no gas or conductive dust in the medium that is sufficient to corrode metal and damage insulation.	
There shall be no severe vibration or bumps at the installation site.	

ORDERING INSTRUCTIONS

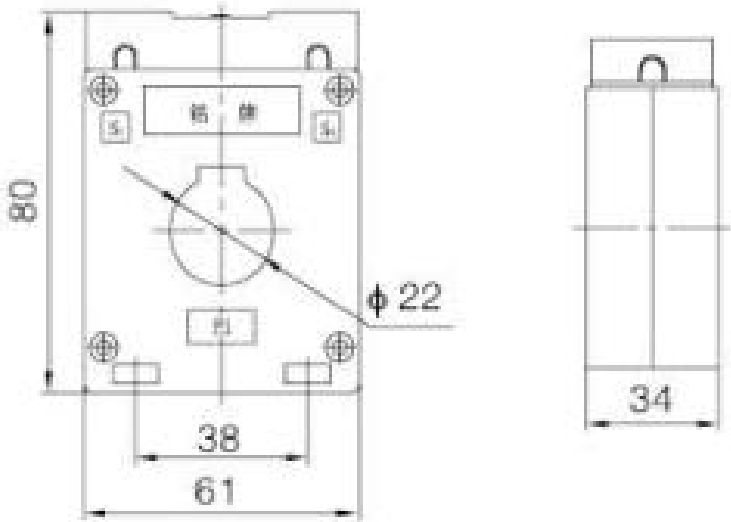
- Please specify the product model, window width, current ratio, rated output and corresponding accuracy level when ordering.
- For example: Order BH-1.0 type, window width is 40mm, rated current ratio is 600/5A, rated output is 5VA, accuracy level is 0.2 transformer
- System order description: BH-1.040600/50.2
- The default values for loads not marked in the system are the parameters in the table, and the default values for levels not marked in the system are 0.5.
- If you have other requirements, please indicate them in the contract.

MODEL BH-0.66 30I 200/5 0.5 LEVEL (SINGLE ROW)

Product	Current ratio	Rated secondary load (VA)					Number of through-hole turns
		Level 1.0	Level 0.5	Level 0.5S	Level 0.2	Level 0.2S	
	100/5	1.5					1
	150/5	2.5	2.5				1
	200/5	2.5	2.5				1
	250/5	5	5	2.5	2.5	2.5	1
	300/5	5	5	5	5	5	1
	400/5	5	5	5	5	5	1


BH-0.6630I

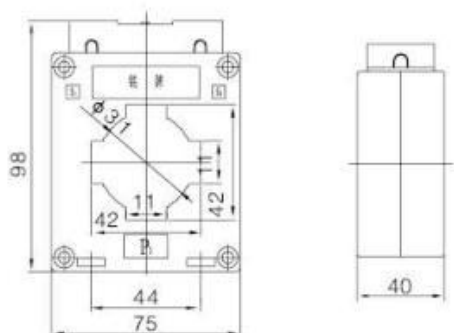
PRODUCT DIMENSIONS




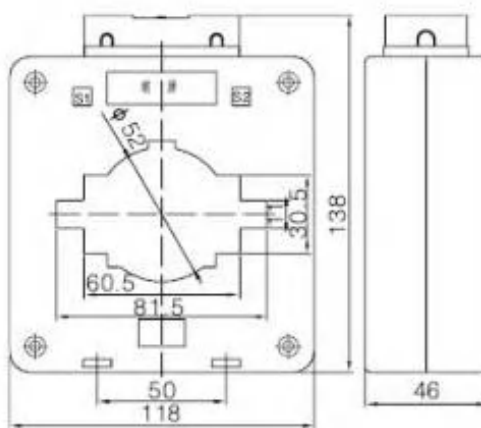


**MODEL BH-0.66 40I 300/5 0.5 LEVEL (SINGLE ROW)**


Product	Current ratio	Rated secondary load (VA)					Number of through-hole turns
		Level 1.0	Level 0.5	Level 0.5S	Level 0.2	Level 0.2S	
 BH-0.66 40I	150/5	5	2.5				1
	200/5	5	5	5	5	5	1
	250/5	5	5	5	5	5	1
	300/5	5	5	5	5	5	1
	400/5	5	5	5	5	5	1
	500/5	5	5	5	5	5	1
	600/5	5	5	5	5	5	1

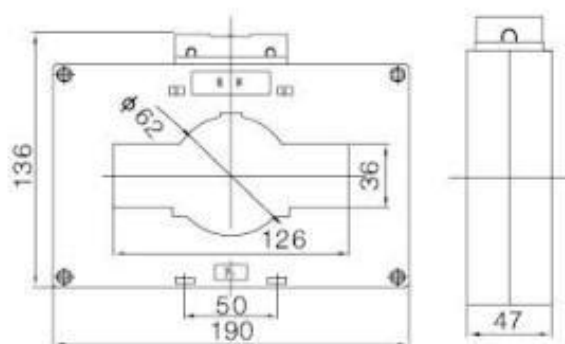
**PRODUCT DIMENSIONS****MODEL BH-0.66 80I 1200/5 0.5 LEVEL (SINGLE ROW)**


Product	Current ratio	Rated secondary load (VA)					Number of through-hole turns
		Level 1.0	Level 0.5	Level 0.5S	Level 0.2	Level 0.2S	
 BH-0.66 80I	300/5	2.5	2.5				
	400/5	5			5	5	
	500/5	5	5	5	5	5	
	600/5	5	5		5		
	750/5	10	10	10	10	10	
	800/5	10	10	10	10	10	
	1000/5	10	10	10	10	10	
	1200/5	10	10	10	10	10	
	1500/5	10	10	10	10	10	
	2000/5	20	20	20	20	20	

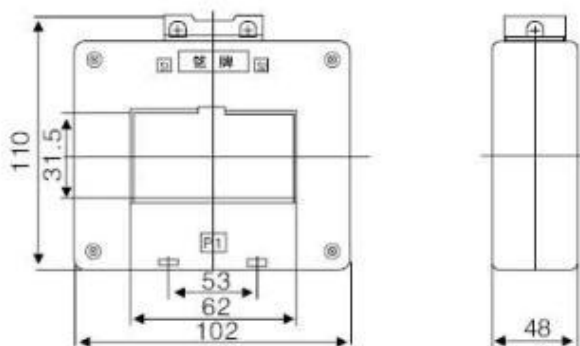
**PRODUCT DIMENSIONS**

**MODEL BH-0.66 120I 2000/5 0.5 LEVEL (SINGLE ROW)**

Product	Current ratio	Rated secondary load (VA)					Number of through-hole turns
		Level 1.0	Level 0.5	Level 0.5S	Level 0.2	Level 0.2S	
 BH-0.66120I	800/5	10	10				
	1000/5	10	10	10	10	10	1
	1500/5	10	10	10	10	10	1
	2000/5	10	10	10	10	10	
	2500/5	20	20	20	20	20	
	3000/5	20	20	20	20	20	1
	4000/5	30	30	30	30	30	1

**PRODUCT DIMENSIONS****MODEL BH-0.66 60II 600/5 0.5 LEVEL (DOUBLE ROW)**

Product	Current ratio	Rated secondary load (VA)					Number of through-hole turns
		Level 1.0	Level 0.5	Level 0.5S	Level 0.2	Level 0.2S	
 BH-0.6660II	400/5	5	5	5	5	5	1
	500/5	5	5	5	5	5	1
	600/5	5	5	5	5	5	1
	750/5	10	10	10	10	10	1
	800/5	10	10	10	10	10	1
	1000/5	10	10	10	10	10	1
	1200/5	10	10	10	10	10	1
	1500/5	10	10	10	10	10	1

**PRODUCT DIMENSIONS**

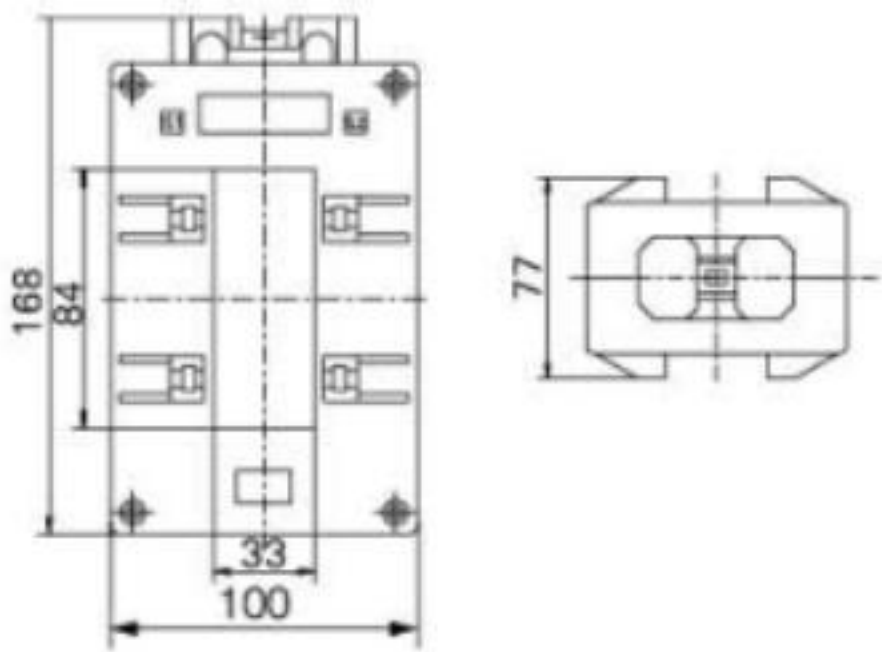
ORDERING INSTRUCTIONS

- Please specify the product model, window width, current ratio, rated output and corresponding accuracy level when ordering.
- For example: Order BH-0.66P type, window width is 60mm, rated current ratio is 800/5A, rated output is 5VA, composite error is 10P, protection multiple is 10 transformer
- System ordering description: BH-0.6660P 800/55VA10P10
- If you have other requirements, please indicate them in the contract.

MODEL BH-0.66 80P 1500/5 0.5 LEVEL

Product	Current ratio	Protective rated secondary load (VA)			Measuring rated secondary load (VA)			
		5P5	10P10	10P15	Level 0.5	Level 0.2	Level 0.5S	Level 0.2S
 BH-0.6680P	800/5	5	2.5		10	10	10	10
	1000/5	10	5	2.5	10	10	10	10
	1200/5	10	5	5	10	10	10	10
	1500/5	15	10	5	10	10	10	10
	2000/5	20	10	5	20	20	20	20

PRODUCT DIMENSIONS



BH-K SERIES

BH-K series split-type transformers are specially designed for easy installation in circuit or power grid transformation systems. They can be installed without disconnecting cables or buses. They are suitable for current and energy measurement in AC lines with a rated frequency of 50Hz and a rated working voltage of 0.66kV and below.

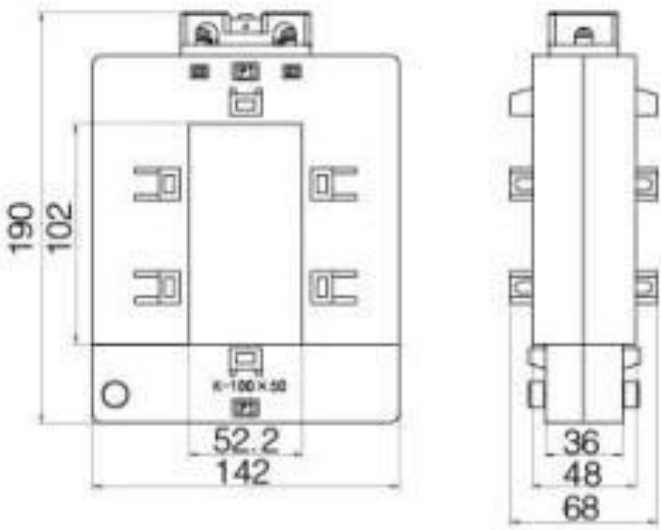
OPEN-AND-SHUT TYPE  
MODEL BH-100\*50K 2000/5 0.5 LEVEL



BH-100\*50K

1000/5	10	5	5
1200/5	10	5	5
1500/5	10	10	5
2000/5	15	10	10
2500/5	15	10	10
3000/5	20	10	10

PRODUCT DIMENSIONS



## LMZJ1-0.5 SERIES

LMZJ1-0.5 series current transformers are suitable for current, electric energy measurement or relay protection in AC lines with rated frequency of 50Hz and rated voltage of 0.5kV and below. The product is a cast-type current transformer, and its installation method adopts base plate fixed installation.

## Working conditions and installation conditions


Installation location	indoors
Ambient temperature	-5°C~+40°C, daily average not exceeding +30°C.
Altitude	no exceeding 1,000m.
Atmospheric conditions	When the maximum temperature is +40°C, the relative humidity of the air shall not exceed 50%. At lower temperatures, the relative humidity shall not exceed 80%.

There shall be no serious pollution in the atmosphere, and there shall be no gas or conductive dust in the medium that is sufficient to corrode metal and damage insulation.

There shall be no severe vibration or bumps at the installation site.

## LMZJ1-0.5 SERIES CURRENT TRANSFORMER

### CAST-IN-PLACE TYPE      MODEL LMZJ1-0.5   30I 100/5   0.5 LEVEL

Product	Current ratio	Rated secondary load (VA)				Number of through-hole turns	Appearance
		Level 0.5	Level 0.5S	Level 0.2	Level 0.2S		
	5/5	5		5	5	30	
	10/5	5	5	5	5	15	
	15/5	5	5	5	5	10	
	20/5	5	5	5	5	10	
	25/5	5	5	5	5	6	
	30/5	5	5	5	5	5	
	40/5	5	5	5	5	5	
	50/5	5	5			1	
	50/5	5	5	5	5	2	
	75/5	5	5	5	5	1	
	75/5	5	5	5	5	2	
	100/5	5	5	5	5	1	
	100/5	5	5	5	5	2	
	150/5	5	5	5	5	1	
	200/5	5	5	5	5		
	250/5	5	5	5	5	1	
	300/5	5	5	5	5	1	

MZJ1-0.5 30 I型



### CAST-IN-PLACE TYPE      MODEL LMZJ1-0.5 40I 300/5 0.5 LEVEL



# AC CONTACTOR



CJ19 CONDENSER CONTACTOR

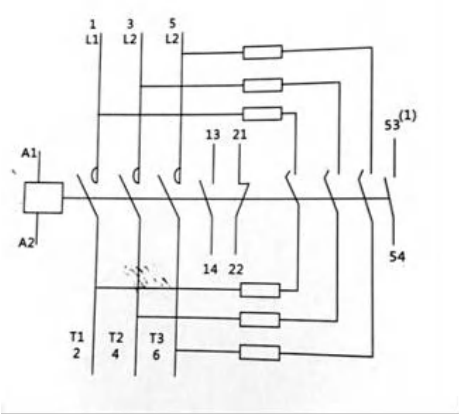
INDICATOR SERIES

CJ19 series switching condenser contactor (hereinafter referred to as contactor) is mainly used in power lines with AC 50Hz (or 60Hz) and rated working voltage up to 400V, for low-voltage reactive power compensation equipment to put into operation or cut off low-voltage parallel capacitors. The contactor is equipped with a surge suppression device, which can effectively reduce the impact of the closing surge on the capacitor and suppress the overvoltage during disconnection. '

Working conditions

Ambient temperature	-5°C~+40°C, the average value within 24 hours does not exceed +35°C;
Altitude	no more than 2,000m;
Atmospheric conditions	When the maximum temperature is +40°C, the relative humidity of the air does not exceed 50%; higher relative humidity can be allowed at lower temperatures, such as 90% at 20°C. Special measures should be taken for occasional condensation due to temperature changes;
Pollution level	3;
Installation category	Category III;
Installation conditions	The inclination between the installation surface and the vertical surface is not greater than ±5°;
Impact and vibration	The product should be installed and used in a place without significant shaking, impact and vibration.

WIRING DIAGRAM



KEY PARAMETERS AND PERFORMANCE

Parameters		CJ19-25	CJ19-32	CJ19-43	CJ19-63	CJ19-95	CJ19-115	CJ19-150	CJ19-170
Rated current Ie(AC-6b,380V)(A)		17	23	29	43	72.2(400V)	87(400V)	115(400V)	130(400V)
Controllable capacitor capacity (kvar)	220V	6	9	10	15	28.8(240V)	34.5(240V)	46(240V)	52(240V)
	380V	12	18	20	30	50(400V)	60(400V)	80(400V)	90(400V)
Rated insulation voltage (V)		500	500	500	500	500	690	690	690
Surge suppression capability				20Ie					
Action conditions		Pull-in: (85%~110%)Us; Release: (20%~75%)Us							
Coil power (VA) start/hold		70/8	110/11	110/11	200/20	200/20	660/85.5	660/85.5	660/85.5
Auxiliary contact control capacity		AC-15:Ie:0.95A 380V/400V DC-13:Ie:0.15A 220V/250V Ith:10A							
Weight (kg)		0.44	0.63	0.64	1.4	1.5	3.45	3.45	3.45

### CJ19-63-95 接触器外形及安装尺寸

CONDENSER CONTACTOR  
MODEL: CJ19-32



CJX2 AC CONTACTOR

CJX2 series AC contactors (hereinafter referred to as contactors) are mainly used in circuits with AC 50Hz or 60Hz, voltage up to 690V, rated working current up to 95A under AC-3, 400 (380)V use categories, for remote connection and disconnection of circuits, frequent starting and control of AC motors, and can be used with appropriate thermal relays to form electromagnetic starters to protect circuits that may be overloaded.

Compliance: GB/T14048.4, IEC 60947-4-1.



Working conditions and installation

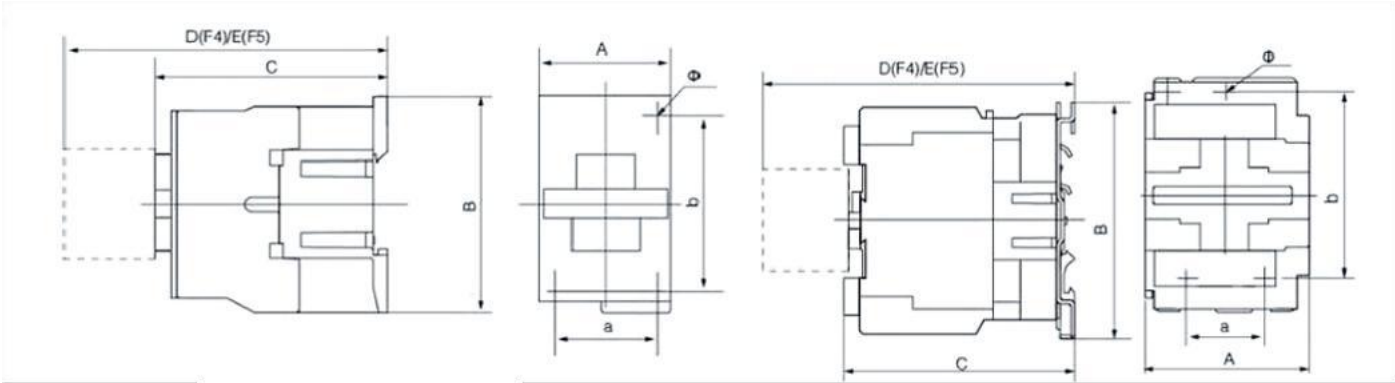
Ambient temperature	-5°C~+40°C, the average value within 24 hours does not exceed +35°C;
Altitude	no more than 2,000m;
Atmospheric conditions	When the maximum temperature is +40°C, the relative humidity of the air shall not exceed 50%; higher relative humidity can be allowed at lower temperatures, such as 90% at 20°C. Special measures should be taken for occasional condensation due to temperature changes;
Pollution level	3;
Installation category	Category III;
Installation conditions	The inclination between the installation surface and the vertical surface shall not exceed ±5°;
Impact and vibration	The product should be installed and used in a place without significant shaking, impact and vibration.

Model			CJxo -09	CJX2 -12	CJX2 -18	CJX2 -25	CJX2 -32	CJX2 -40	CN? -50	CJX2 -65	CJX2 - 80	CJX2 -95
Rated working current (A)	400(380)V	AC-3	9	12	18	25	32	40	50	65	80	95
		AC-4	3.5	5	7.7	8.5	12	8.5	24	28	37	44
	690(660)V	AC-3	6.6	8.9	12	18	21	34	39	42	49	49
		AC-4	1.5	2	3.8	4.4	7.5	9	12	14	17.3	21.3
Conventional free air heating current (A)			20	20	32	40	50	60	80	80	95	95
Rated insulation voltage (V)			690	690	690	590	690	690	690	690	690	690
Controllable three-phase Motor power (AC-3)kW		230(220)V	2.2	3		5.5	75	11	15	18.5	22	25
		400(380)V	4	5.5	7.5	11	15	18.5	22	30	37	45
		690(660)V	5.5	7.5	10	15	18.5	30	37	37	45	45
Operation frequency (times/h)	Electrical life Mechanical life	AC-3	1200	1200	1200	1200	600	600	600	600	600	600
		AC-4	300	300	300	300	300	300	300	300	300	300
			3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
			100	100	100	100	80	80	60	60	60	60
Electrical life (10,000 times)	AC-3		100	100	100	100	80	80	60	60	60	60
	AC-4		20	20	20	20	20	15	15	15	10	10

Model Mechanical life (10,000 times)			C.JX2 -09		C.JX2 -12		CJX2 -18		CJX 2-25		C.J.X 2-32		CJX 2-40		CJX2 -50		CJX2 -65		CJX2 -80		CJX2- 95	
			1000		1000		1000		1000		800		800		800		800		600		600	
Matching fuse model			RT16-20		RT16-20		RT16-32		RT16-40		RT16-50		RT16-63		RT16-80		RT16-80		RT16-100		RT16-125	
Cold pressed terminal	Non- prefabricate d terminal soft wire	Piece	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
		mm <sup>2</sup>	1	1	1	1	1.5	1.5	1.5	1.5	2.5	2.5	6	4	6	4	6	4	10	6	10	6
	mm <sup>2</sup>		2.5	2.5	2.5	2.5	4	4	4	4	6	6	25	10	25	10	25	10	35	16	35	16
		Prefabricate d terminal soft wire	mm <sup>2</sup>	1	1	1	1	1.5	1.5	1.5	1.5	2.5	2.5	6	4	6	4	6	4	10	6	10
	4			2.5	4	2.5	6	4	10	6	10	6	25	10	25	10	25	10	35	16	35	16
	Non- prefabricate d terminal hard wire	mm <sup>2</sup>	1	1	1	1	1.5	1.5	1.5	1.5	2.5	2.5	6	4	6	4	6	4	10	6	10	6
4			4	4	4	6	6	6	6	10	10	25	10	25	10	25	10	35	16	35	16	
AC Coil Power	50Hz	Pull-in (VA)	70		70		70		110		110		200		200		200		200		200	
		Hold (VA)	9.0		9.0		9.5		14.0		14.0		57.0		57.0		57.0		57.0		57.0	
		Power (W)	1.8~2.7		1.8~2.7		3~4		3~4		3~4		6~10		6~10		6~10		6~10		6~10	
Action range			Pull-in voltage: 85%Us~110%Us; Release voltage: 20%Us~75Us																			
Auxiliary contacts			AC-15:Ie:0.95A 380V/400V DC-13:Ie:0.15A 220V/250V Ith:10A																			



APPEARANCE AND INSTALLATION (MM)



CJX2-09~32 外形及安装尺寸

CJX2-80~95 外形及安装尺寸

Contractor	A max	B max	C max	D max	E max	a	b	Φ
CJX2-09~12	47	76	82	120.5	140.5	34/35	56/60	4.5
CJX2-18	47	76	87	125.5	145.5	34/35	50/60	4.5
CJX2-25	57	86	95	133.5	153.5	40	48	4.5
CJX2-32	57	86	100	138.5	158.5	40	48	4.5
CJX2-4008~6508	84	129	127	154.5	174.5	40	105	6.5
CJX2-8011~9511	87	129	127	165.5	185.5	40	105	6.5

MODEL CJX2-65



MODEL CJX2-32





## ZHEJIANG NAILE ELECTRIC CO., LTD

### CUSTOMER SERVICE:

- +86 180 2731 9583
- info@znaile.com
- Shangchi Industrial Zone, Liushi Town, Yueqing, Zhejiang

### LEARN MORE ON:

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

- WeChat: 1044843221
- Instagram: Elena Yilan Deng
- linkeddin.com/in/Naile Electric
- YouTube.com/@Naile-manufacture