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 **Goto Electrical**

Product Overviews 2023~2024



The Company reserves the right to change the specifications without prior notice.

AF16 Series, 16mm Minature & 19/22mm Flush Mount Control Units. The full range of products are divided into AF16S standard type , AF16B Flush Silhouette type, AF16L big OP Flush silhouette type and Raised style. Customers can select more reasonable products according function, use-method and design etc.

AF16S standard type, Combination type, maintenance wiring operation is simple. reasonable structure, miniature size, full varieties. which has a very positive effect on the miniaturization of automation equipment.

Standard type is suitable for all kinds of CNC control panel.

AF16B Flush type, Flush bezel projects only2mm from front of panel, they are ideal for single board mounting. Eliminate convex and concave face.

Flush type is most suitable of frequent operation for panel.

AF16L Flush type , operation button is larger, improve the accuracy of operation, effectively prevent misoperation, more comfortable and fast operation. AF16L is suitable for all kinds of high-end precision equipment, and the Raised type is more suitable for use of the control equipment which has strict requirements for misoperation.

Feature:

- Compact design ,removable contact blocks ideal for single board mounting.
- Silver Contact (90: 8),Rated Thermal Current 5A(24VAC-DC/5mins).in same time, Contact resistance $\leq 20m\Omega$.
- Pushbuttons, Illuminated pushbuttons, Selector switches key selector switches with up to 3PDT contacts.
- 2-position and 3-position selector switches. Maintained and spring return available.
- Key selectors with keys that are difficult to duplicate.
- Bright and clear LED illuminated face.
- Pushbuttons can be printed with legend marking plate which is placed in the lens.

The product has passed CE,TUV,CB,CCC certification etc, Product design, raw production and quality management is strict implementation of in accordance with EN60947-5-1 and GB14085.5.



- AF16 compact E-stop switch is the shortest in the industry, Only 19.5mm deep behind the panel accommodate smaller machines and panels.
- Installation Hole: $\Phi 16/22\text{mm}$
- Two sizes for mushroom available: 27mm and 32mm.
- Secure locking structure
- Direct open-circuit action function \ominus
- Degree of protection: IP65

Specifications

Degree of Protection		IP65, IP40	
Action stroke		1.5 ~ 3 mm	
Life	Mechanical	Momentary: $\geq 10 \times 10^5$ Maintained: $\geq 25 \times 10^4$	Momentary: $\geq 25 \times 10^4$ Maintained: $\geq 25 \times 10^4$ Mixed: $\geq 25 \times 10^4$
	Electrical	220V AC 0.5A $\geq 10 \times 10^4$	
	Operating Frequency	1200 operations/hr	
Power Frequency		2000 V AC	
Insulation Resistance		$\geq 100 \text{ M}\Omega$	
Contact Resistance		$< 25 \text{ M}\Omega$	
Vibration Resistance	Damage limits	5 ~ 55Hz, Amplitude 0.5mm	
	Operating Extremes	5 ~ 55Hz, Amplitude 0.5mm	
Operating Temperature		$-25^\circ\text{C} \sim +55^\circ\text{C}$ (No Freezing)	
Storage Temperature		$-40^\circ\text{C} \sim +70^\circ\text{C}$ (No Freezing)	
Operating Humidity		40 ~ 85%RH (No Condensation)	
Action Mode	Press lock		
	Rotation reset (Bilateral rotation, clockwise 45°)		
Action stroke		3.5 mm	
Operating Force	Maintained	About 6N	
	Spring-return	About 0.25 N·m	

Contact Ratings

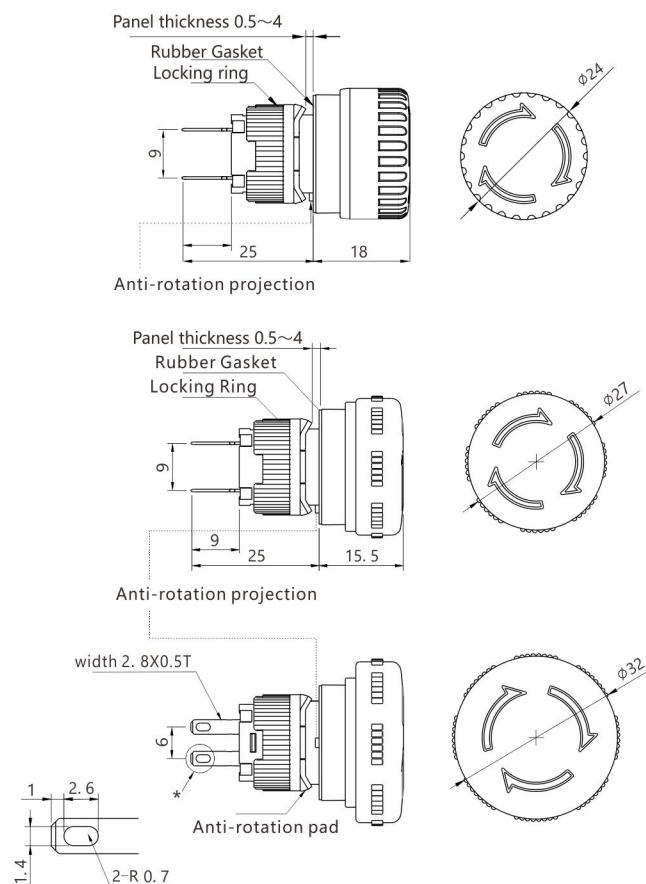
Rated Insulation Voltage U_i		250 V		
Rated Thermal Current I_{th}		5 A		
Item	Rated Voltage U_e	24 V	110 V	220 V
AC-15	Rated Current I_e	2 A	1 A	0.5 A
DC-13		0.7 A	0.2 A	0.1 A



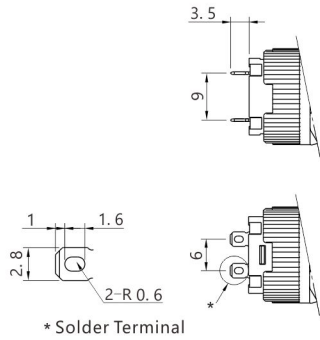
Product Shape



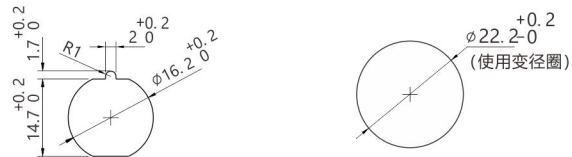
Dimensions (mm)



* Solder/Tab terminal#110



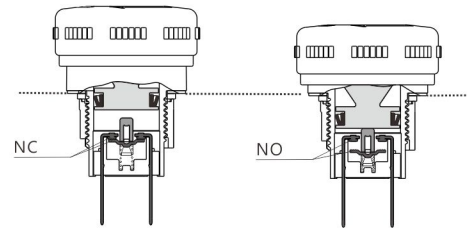
Mounting hole Layout



Order code

Shape	Terminal	Contact	Part No.	Note
Mushroom (Ø24mm)	Solder / Tab Terminal #110 2.8*0.5 T	1NO+1NC	AF1651-11ZL	
		2NC	AF1651-02ZL	
	Solder Terminal 2.8*3.5	1NO+1NC	AF1651-11ZS	
		2NC	AF1651-02ZS	
Mushroom (Ø27mm)	Solder / Tab Terminal #110 2.8*0.5 T	1NO+1NC	AF1652-11ZL	
		2NC	AF1652-02ZL	
	Solder Terminal 2.8*3.5	1NO+1NC	AF1652-11ZS	
		2NC	AF1652-02ZS	
Mushroom (Ø32mm)	Solder / Tab Terminal #110 2.8*0.5 T	1NO+1NC	AF1653-11ZL	
		2NC	AF1653-02ZL	
	Solder Terminal 2.8*3.5	1NO+1NC	AF1653-11ZS	
		2NC	AF1653-02ZS	

Contact and Terminal Arrangement



Code: 11



Code: 02



Accessories/Maintenance

Description/Shape	Part No.	Specifications	Dimensions
	F6-3	<ul style="list-style-type: none"> 用于Z2/Z3头部 防止误动作 	
	F6-4	<ul style="list-style-type: none"> 用于Z2/Z3紧急按钮头部 警示标志 	
	F6-16	<ul style="list-style-type: none"> 适用于安装孔径为Ø22mm设备 用安装 	

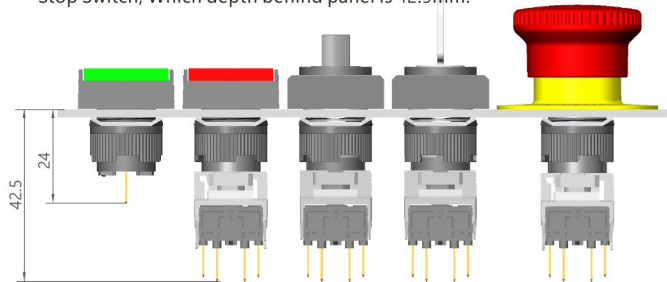
AF16S series Miniature Switches and Pilot lamps
(Standard Bezel)
Removable contact blocks ideal for single board mounting.

Features

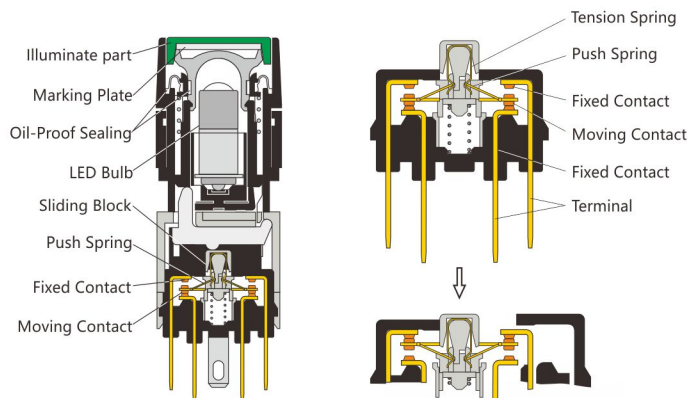
- Pushbuttons, Selector switch, Mushroom-head switch and Keylock switch with up to 3PDT contacts
- High brightness LED illumination.
- High-capacity silver contacts. Gold-clad contact are available
- Key selectors with keys that are difficult to duplicate. three key numbers to choose from.
- Protection degree:IP65(IEC60947)

Panel Depth

- Pilot lamp, Buzzer & Unit Emergency stop Switch, Which depth behind panel is only 24mm.
- Pushbuttons, Mushroom Switch, Selector Switch, Key Switch & Emergency Stop Switch, Which depth behind panel is 42.5mm.



Oil Proof Type and Contact Structure Chart



Specifications

- Pilot lamp, Pushbuttons, Selector Switch & Emergency Stop Switch

Item	Pushbutton	Selector Switch	E-Stop Switch	Pilot lamp
Protection Degree	IP65, IP40			IP65
Stroke	1.5 ~ 3 mm			—
Life	Mechanical	Momentary: $\geq 10 \times 10^5$	Momentary: $\geq 25 \times 10^4$	—
		Maintained: $\geq 25 \times 10^4$	Maintained: $\geq 25 \times 10^4$	
Electrical	220V AC 0.5A $\geq 10 \times 10^4$		—	
	Operating Frequency		1200 operations/hr	
Power Frequency	2000 V AC			
Insulation Resistance	$\geq 100 \text{ M}\Omega$			
Contact Resistance	$< 25 \text{ M}\Omega$			
Vibration Resistance	Damage Limits			—
	Operating Extremes			5~55Hz, Amplitude 0.5mm
Operating Temperature	-25°C ~ +55°C (No Freezing)			
Storage Temperature	-40°C ~ +70°C (No Freezing)			
Operating Humidity	40~85%RH (No Condensation)			

Contact Ratings

- Pushbuttons, Selector Switch & Emergency Switch

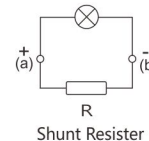
Rated Insulation Voltage U_i	250 V			
Rated Thermal Current I_{th}	5 A			
Type	Rated Voltage U_e	24 V	110 V	220 V
AC-15	Rated Current I_e	2 A	1 A	0.5 A
DC-13		0.7 A	0.2 A	0.1 A

Rated Voltage and Working Current

- Pilot lamp & Illuminated Pushbuttons

Model	LED Voltage	Working Current
Full Voltage	5V AC/DC	—
	12V AC/DC	6.2~6.8mA
	24V AC/DC	7~7.5 mA
	Specific	110V AC/DC
220V AC/DC		1.2~1.7mA

LED Countermeasures against Dim lighting



Shunt Resistor

- LED Dim Lighting
Leakage Currents through transistors or a contact protection circuit may cause the LED lamp to illuminate dimly even when the output is off

- Countermeasures
When the LED lamps is illuminated by a transistor output, take the following measure, leakage current shunt resistor allotment table

□ Lens and LED Color

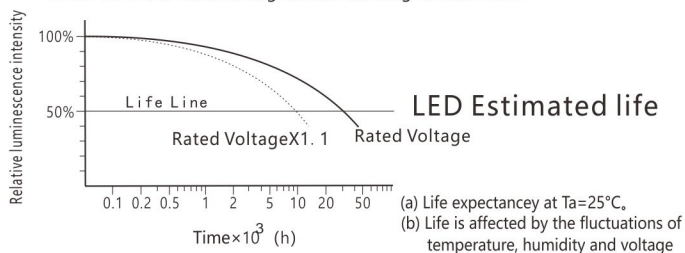
- Pilot lamp & illuminated Pushbuttons

Lens color		Code	LED Color		Code
Red		R	Red		R
Green		G	Green		G
Yellow		Y	Yellow		Y
Blue		B	Blue		B
White		W	White		W
Amber		A	Amber		A

□ Lamp Life

Model	Life	Judgement Criterion
LED Bulb	30000h	The brightness reduce to 50% of the initial value

- When Lit at the rated voltage under working environment



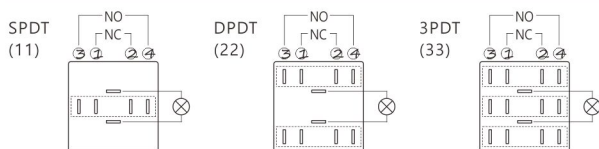
□ Mini Mounting spacing and hole layout (mm)

- Pilot lamp, Pushbuttons & Selector Switch

Round	Square	Rectangular

(Note): When the installation spacing is determined, it should be considered of convenient operation and easy wiring job.

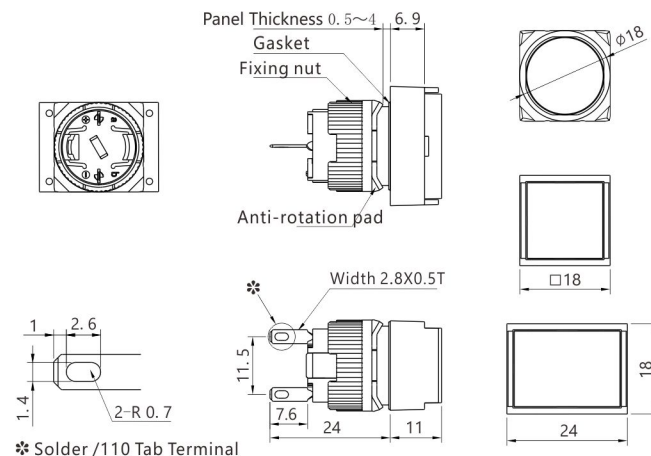
□ Contact Type and Terminal Arrangement



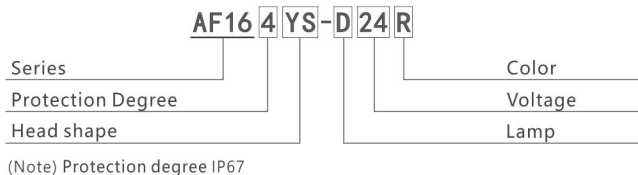
□ Product Shape

Round (Y)	Square (F)	Rectangular (J)
CE	CE	CE

□ Outline Dimensional drawing (mm)

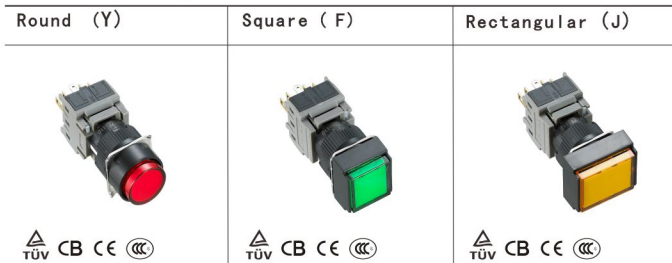


□ Model Specification

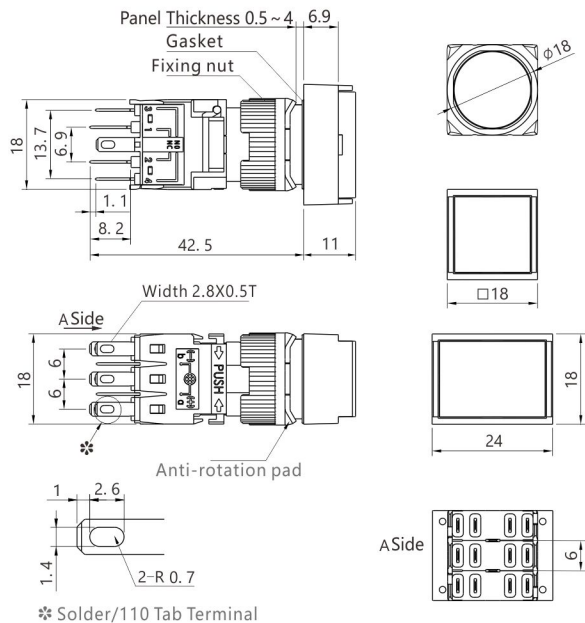


Shape	Part No.	Voltage①	Color②
	IP67		
Round	AF165YS-D①②	详见下列表格	详见下列表格
Square	AF165FS-D①②		
Rectangular	AF165JS-D①②		

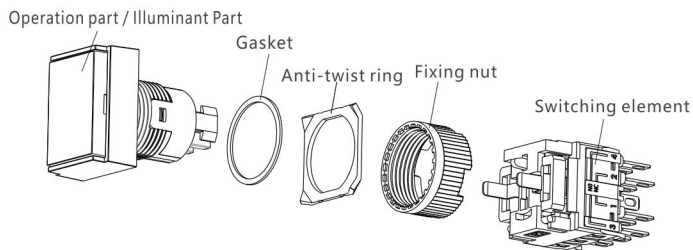
Product Shape



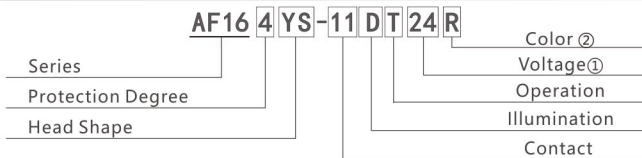
Outline Dimensional drawing (mm)



Installation Method



Model Specifications



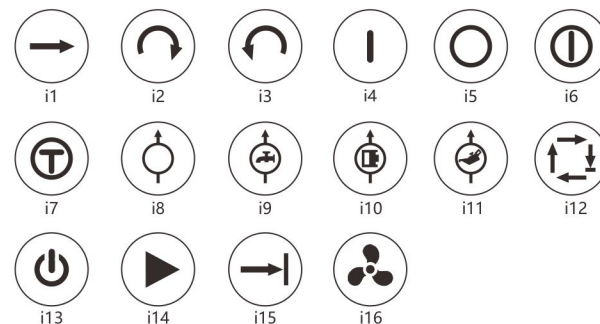
Style	Operation	Contact	Part No.		Note
			No-Illumination	Illumination	
Round (YS)	Momentary	SPDT	AF16□YS-11/②	AF16□YS-11D②②	
		DPDT	AF16□YS-22/②	AF16□YS-22D②②	
		3PDT	AF16□YS-33/②	AF16□YS-33D②②	
	Maintained	SPDT	AF16□YS-11T/②	AF16□YS-11DT②②	
		DPDT	AF16□YS-22T/②	AF16□YS-22DT②②	
		3PDT	AF16□YS-33T/②	AF16□YS-33DT②②	
Square (FS)	Momentary	SPDT	AF16□FS-11/②	AF16□FS-11D②②	
		DPDT	AF16□FS-22/②	AF16□FS-22D②②	
		3PDT	AF16□FS-33/②	AF16□FS-33D②②	
	Maintained	SPDT	AF16□FS-11T/②	AF16□FS-11DT②②	
		DPDT	AF16□FS-22T/②	AF16□FS-22DT②②	
		3PDT	AF16□FS-33T/②	AF16□FS-33DT②②	
Rectangular (JS)	Momentary	SPDT	AF16□JS-11/②	AF16□JS-11D②②	
		DPDT	AF16□JS-22/②	AF16□JS-22D②②	
		3PDT	AF16□JS-33/②	AF16□JS-33D②②	
	Maintained	SPDT	AF16□JS-11T/②	AF16□JS-11DT②②	
		DPDT	AF16□JS-22T/②	AF16□JS-22DT②②	
		3PDT	AF16□JS-33T/②	AF16□JS-33DT②②	

1. For part numbers specify:

- Protection degree in place of □: 4(IP54); 5(IP65)
- LED voltage in place of ①: 6(06VACDC); 12(12VACDC); 48(48VACDC); 110(110VACDC); 220(220VACD)
- Lens /LED in place of ②: R(Red); G(Green); Y(Yellow); B(Blue); W(White); A(Ambe); BL(Black), only for non-illumination.

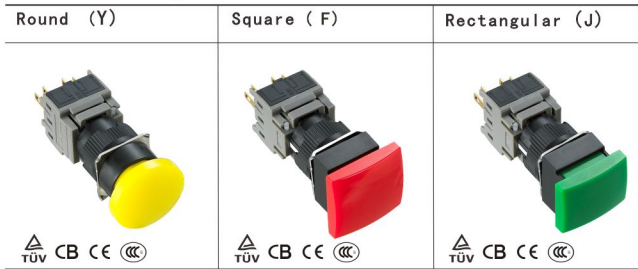
2. Lens can be used with legend markings. Engraving can be done on a marking plate which is placed into the lens, or a clear film can be printed and placed under the lens. For details on the marking plate and film.

Printing Symbol list for Pilot lamp and Pushbuttons

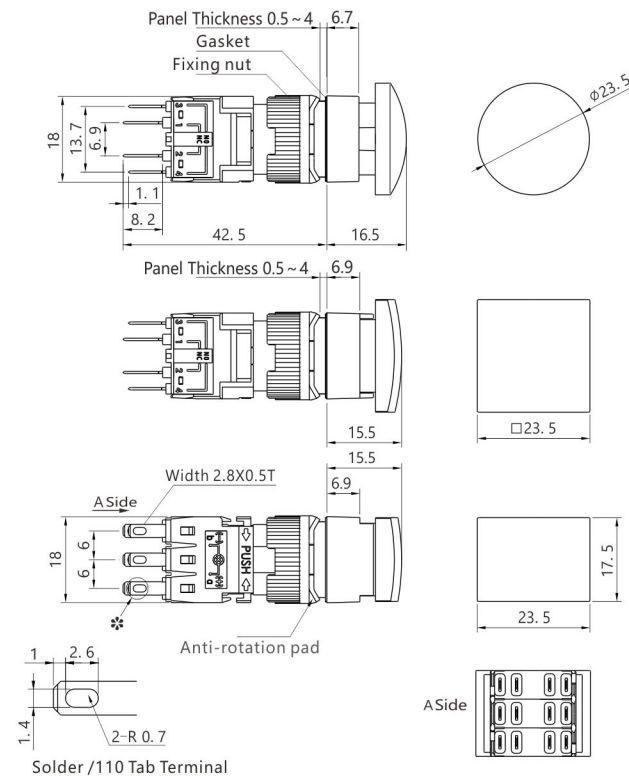


(Note): All ISO Symbols and special Symbols can be made by order.

Product Shape

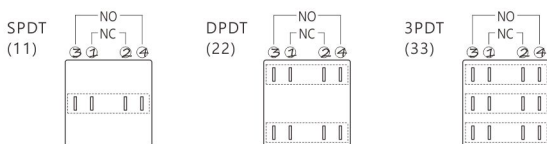


Outline Dimensional drawing (mm)

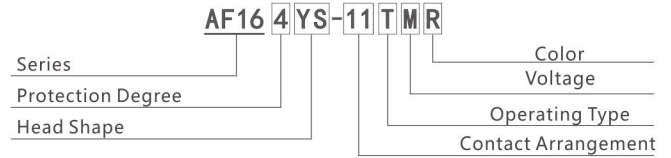


Contact Type and Terminal Arrangement

- Mushroom Switch, Selector Switch & Key Switch



Model Specifications

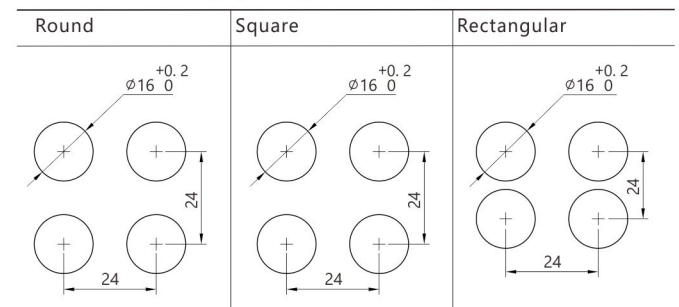


Style	Operation	Contact	Part No.	Note
Round (YS)	Momentary	SPDT	AF16□YS-11M/②	
		DPDT	AF16□YS-22M/②	
		3PDT	AF16□YS-33M/②	
	Maintained	SPDT	AF16□YS-11MT/②	
		DPDT	AF16□YS-22MT/②	
		3PDT	AF16□YS-33MT/②	
Square (FS)	Momentary	SPDT	AF16□FS-11M/②	
		DPDT	AF16□FS-22M/②	
		3PDT	AF16□FS-33M/②	
	Maintained	SPDT	AF16□FS-11MT/②	
		DPDT	AF16□FS-22MT/②	
		3PDT	AF16□FS-33MT/②	
Rectangular (JS)	Momentary	SPDT	AF16□JS-11M/②	
		DPDT	AF16□JS-22M/②	
		3PDT	AF16□JS-33M/②	
	Maintained	SPDT	AF16□JS-11MT/②	
		DPDT	AF16□JS-22MT/②	
		3PDT	AF16□JS-33MT/②	

1. For part numbers specify:

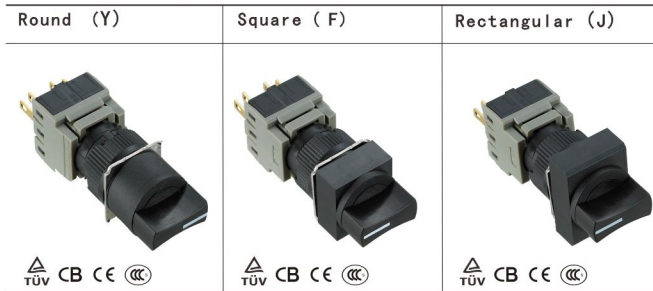
- Protection degree in place of □: 4(IP54); 5(IP65)
- Mushroom color in place of ②: R(Red);G(Green);Y(Yellow);B(Blue);W(White), A(Ambe);BL(Black).

Mini Mounting spacing and hole layout mm

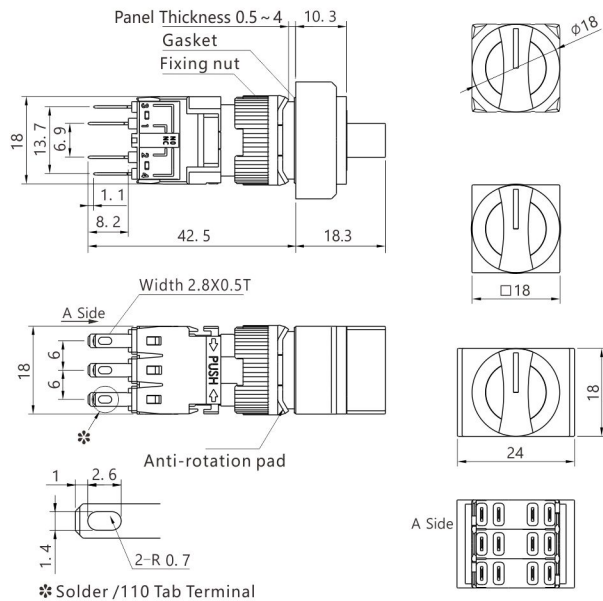


(Note) When the installation spacing is determined, It should be considered of convenient operation and easy wiring job.

Product Shape

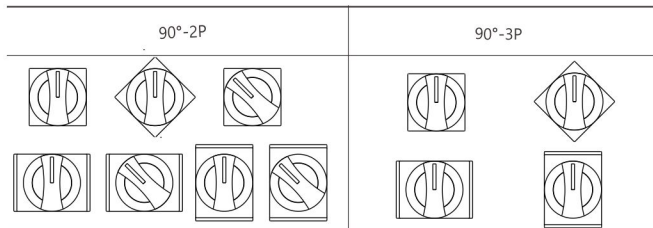


Outline Dimensional drawing (mm)

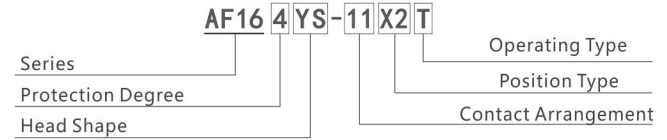

















Handle Position

- Selector Switch & Key Switch



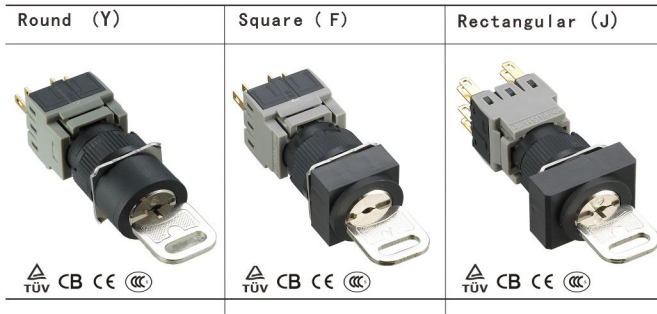
Model Specifications



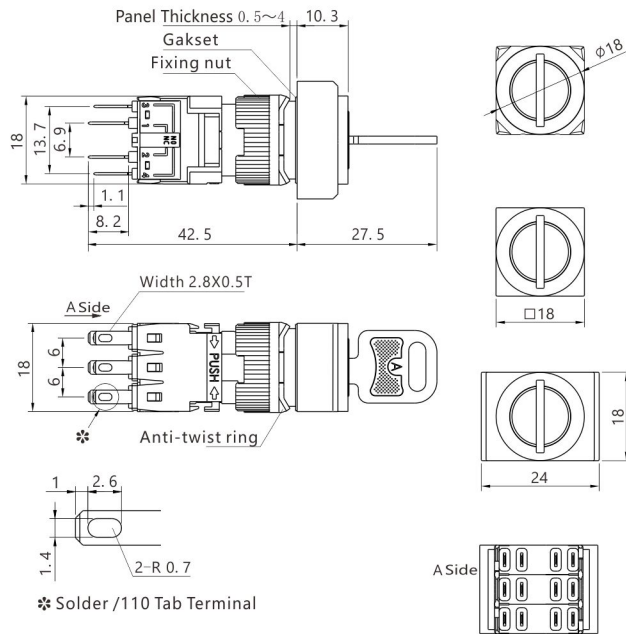
Style	Operator position	contact	Part No.	
Round (YS)	90°-2	Maintained 	SPDT AF16□YS-11X2T	
			DPDT AF16□YS-11X2T	
			3PDT AF16□YS-11X2T	
		Spring return 	SPDT AF16□YS-11X2	
			DPDT AF16□YS-11X2	
			3PDT AF16□YS-11X2	
	45°-3	Maintained 	DPDT AF16□YS-22X3T	
			3PDT AF16□YS-33X3T	
			DPDT AF16□YS-22X3	
		Spring-return two-way 	3PDT AF16□YS-33X3	
			DPDT AF16□YS-22X3TR	
			3PDT AF16□YS-22X3TR	
Left return right Maintained 		DPDT AF16□YS-22X3TL		
		3PDT AF16□YS-33X3TL		
		DPDT AF16□YS-22X3TL		
Square (FS)		90°-2	Maintained 	SPDT AF16□FS-11X2T
				DPDT AF16□FS-11X2T
				3PDT AF16□FS-11X2T
	Spring return 		SPDT AF16□FS-11X2	
			DPDT AF16□FS-11X2	
			3PDT AF16□FS-11X2	
	45°-3	Maintained 	DPDT AF16□FS-22X3T	
			3PDT AF16□FS-33X3T	
			DPDT AF16□FS-22X3	
		Spring-return two-way 	3PDT AF16□FS-33X3	
			DPDT AF16□FS-22X3TR	
			3PDT AF16□FS-22X3TR	
Left return right Maintained 	DPDT AF16□FS-22X3TL			
	3PDT AF16□FS-33X3TL			
	DPDT AF16□FS-22X3TL			
Rectangular (JS)	90°-2	Maintained 	SPDT AF16□JS-11X2T	
			DPDT AF16□JS-11X2T	
			3PDT AF16□JS-11X2T	
		Spring return 	SPDT AF16□JS-11X2	
			DPDT AF16□JS-11X2	
			3PDT AF16□JS-11X2	
	45°-3	Maintained 	DPDT AF16□JS-22X3T	
			3PDT AF16□JS-33X3T	
			DPDT AF16□JS-22X3	
		Spring-return two-way 	3PDT AF16□JS-33X3	
			DPDT AF16□JS-22X3TR	
			3PDT AF16□JS-22X3TR	
Left return right Maintained 	DPDT AF16□JS-22X3TL			
	3PDT AF16□JS-33X3TL			
	DPDT AF16□JS-22X3TL			

1. For part numbers specify:
-Protection degree in place of □: 4(IP54); 5(IP65)

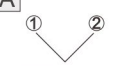
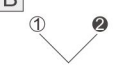
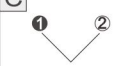

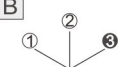

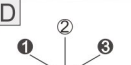

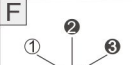

Product Shape



Outline Dimensional drawing (mm)





















Key removable position

Position Type	Code	Not: ①, ②, ③ Key removable position.		
2-P	A		B	
	C			
3-P	A		B	
	C			
	D		E	
	F		G	

Model Specifications




AF16 4 YS - 11 Y2 T A



Style	Operator position	Contact	Part No.
Round (YS)	90°-2	Maintained 	SPDT AF16□YS-11Y2T▲
			DPDT AF16□YS-11Y2T▲
			3PDT AF16□YS-11Y2T▲
		Spring return 	SPDT AF16□YS-11Y2▲
			DPDT AF16□YS-11Y2▲
			3PDT AF16□YS-11Y2▲
	45°-3	Maintained 	DPDT AF16□YS-22Y3T▲
			3PDT AF16□YS-33Y3T▲
			DPDT AF16□YS-22Y3▲
		Spring-return two-way 	3PDT AF16□YS-33Y3▲
			DPDT AF16□YS-22Y3TR▲
			3PDT AF16□YS-22Y3TR▲
Left return right Maintained 	DPDT AF16□YS-22Y3TL▲		
	3PDT AF16□YS-33Y3TL▲		
Left Maintained right return 	DPDT AF16□YS-22Y3TL▲		
	3PDT AF16□YS-33Y3TL▲		
Square (FS)	90°-2	Maintained 	SPDT AF16□FS-11Y2T▲
			DPDT AF16□FS-11Y2T▲
			3PDT AF16□FS-11Y2T▲
		Spring return 	SPDT AF16□FS-11Y2▲
			DPDT AF16□FS-11Y2▲
			3PDT AF16□FS-11Y2▲
	45°-3	Maintained 	DPDT AF16□FS-22Y3T▲
			3PDT AF16□FS-33Y3T▲
			DPDT AF16□FS-22Y3▲
		Spring-return two-way 	3PDT AF16□FS-33Y3▲
			DPDT AF16□FS-22Y3TR▲
			3PDT AF16□FS-22Y3TR▲
Left return right Maintained 	DPDT AF16□FS-22Y3TL▲		
	3PDT AF16□FS-33Y3TL▲		
Left Maintained right return 	DPDT AF16□FS-22Y3TL▲		
	3PDT AF16□FS-33Y3TL▲		
Rectangular (JS)	90°-2	Maintained 	SPDT AF16□JS-11Y2T▲
			DPDT AF16□JS-11Y2T▲
			3PDT AF16□JS-11Y2T▲
		Spring return 	SPDT AF16□JS-11Y2▲
			DPDT AF16□JS-11Y2▲
			3PDT AF16□JS-11Y2▲
	45°-3	Maintained 	DPDT AF16□JS-22Y3T▲
			3PDT AF16□JS-33Y3T▲
			DPDT AF16□JS-22Y3▲
		Spring-return two-way 	3PDT AF16□JS-33Y3▲
			DPDT AF16□JS-22Y3TR▲
			3PDT AF16□JS-22Y3TR▲
Left return right Maintained 	DPDT AF16□JS-22Y3TL▲		
	3PDT AF16□JS-33Y3TL▲		
Left Maintained right return 	DPDT AF16□JS-22Y3TL▲		
	3PDT AF16□JS-33Y3TL▲		

1. For part numbers specify:
-Protection degree in place of □: 4(IP54); 5(IP65)

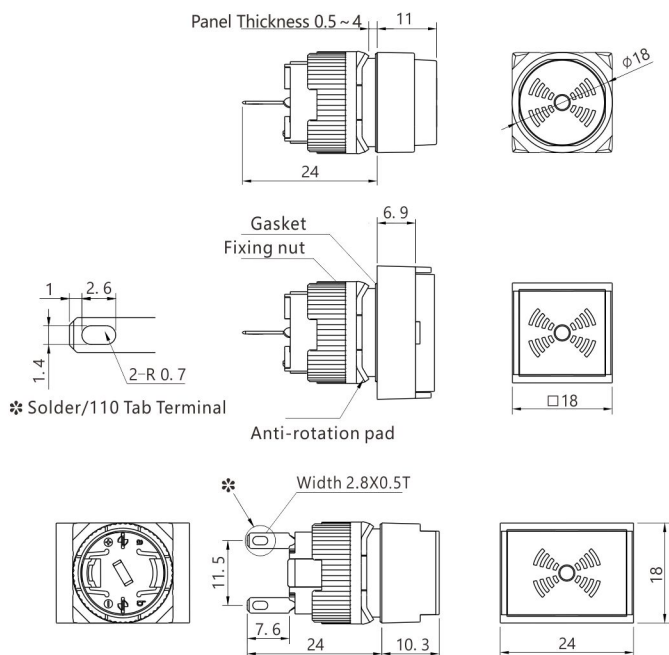
Product Shape

Round (Y)	Square (F)	Rectangular (J)
		
CE	CE	CE

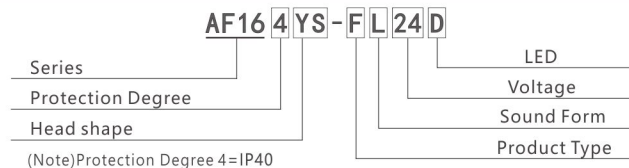
Specifications

Rated Insulation Voltage	30V DC
Rated Operating Voltage	12V DC \pm 10%, 24V DC \pm 10%
Current Draw	40 mA
Insulation Resistance	\geq 100 M Ω
Sound Pressure (at 0.1m)	Steady sound: 80dB minium (at the rated voltage)
Operating Temperature	-25°C ~ +55°C (no freezing)
Storage Temperature	-40°C ~ +70°C (no freezing)
Operating Humidity	40 ~ 85%RH (no condensation)

Outline Dimensional drawing (mm)



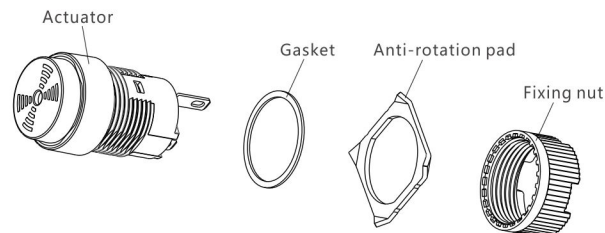
Model Specifications



Style	Sound	Part No.		Voltage①	Color②
		without LED	with LED		
Round (YS)	Continuous	AF164YS-FC①	AF164YS-FIC①②	6: 6VAC/DC 12: 12VAC/DC 24: 24VAC/DC	R
	Interrupt	AF164FS-FP①	AF164YS-FIP①②		
Square (FS)	Continuous	AF164FS-FC①	AF164FS-FIC①②		Y
	Interrupt	AF164FS-FP①	AF164FS-FIP①②		
Rectangular (JS)	Continuous	AF164JS-FC①	AF164JS-FIC①②		
	Interrupt	AF164JS-FP①	AF164JS-FIP①②		

1. For part numbers specify:
- Voltage in place of ①. 6(06VACDC); 12(12VACDC); 24(24VACDC);
- LED in place of ②. R(Red); G(Green)

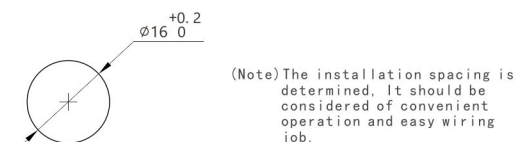
Installation Method



Contact Type and Terminal Arrangement



Mounting Size



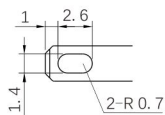
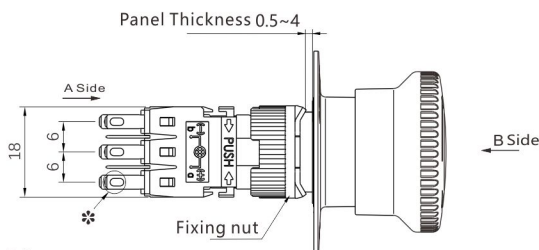
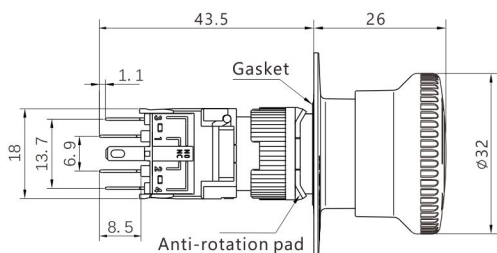
Product Shape

Round with Ring (Y)

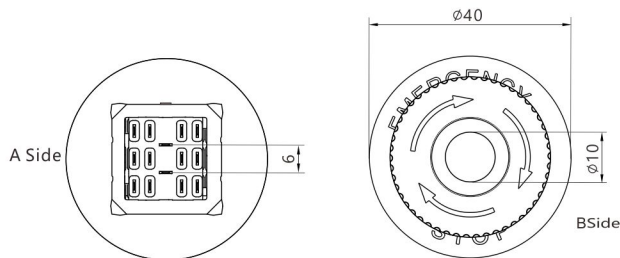
Round without ring (Q)



Outline Dimensional drawing (mm)



*Solder /110 Tab Terminal



Model Specifications

AF16 4 YS-11 Z 24

Series: AF16
Protection Degree: 4
Head Shape: YS
Voltage: 24
Switch action: Z
Contact Mode: 11

(Note1) Protection Degree 4=IP40

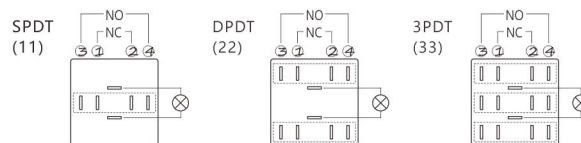
Style	Name-plate	Contact	Part No.	
			No-Illumination	Illumination
Round	with	SPDT	AF164YR-11Z	AF164YR-11ZD①②
		DPDT	AF164YR-22Z	AF164YR-22ZD①②
		3PDT	AF164YR-33Z	AF164YR-33ZD①②
	without	SPDT	AF164YS-11Z	AF164YS-11ZD①②
		DPDT	AF164YS-22Z	AF164YS-22ZD①②
		3PDT	AF164YS-33Z	AF164YS-33ZD①②

1.For part numbers specify:

- LED voltage in place of ①: 6(06VACDC); 12(12VACDC); 48(48VACDC); 110(110VACDC); 220(220VACD)

- LED in place of ②: R(Red); G(Green)

Contact Type and Terminal Arrangement

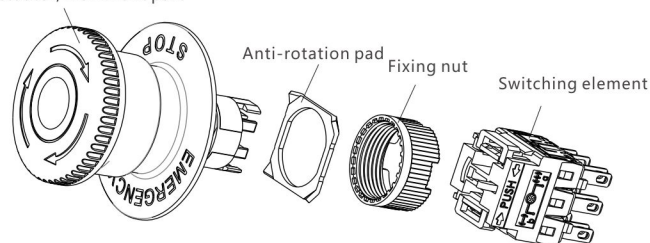


Technical Parameter

Action Mode	Press Lock	
	Rotation reset (clockwise rotation 60°)	
Stroke	3.5 mm	
Operating force	Maintained	About 1.7 N
	Spring-return	About 0.5 N-m

Installation Method

Actuator/Illuminant part



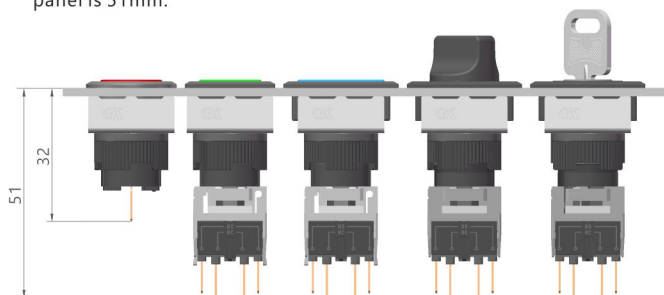
Flush Silhouette AF16B series

Flush bezel projects only 2mm from front of panel (Flush design)

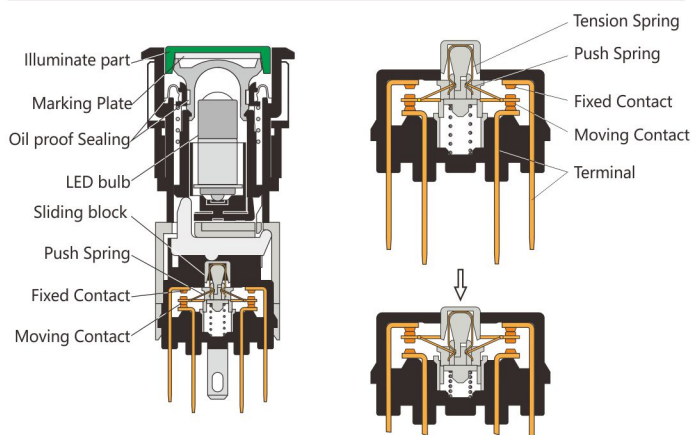
Removable contact blocks ideal for single board mounting.

Panel Depth

- Pilot lamp, Buzzer, Which depth behind panel is only 32mm.
- Pushbuttons, Selector Switch, Key Switch Which depth behind panel is 51mm.



Oil Proof Type and Contact Structure Chart



Specifications

- Pilot lamp, Pushbuttons, Selector Switch & Emergency Stop Switch

Item	Pushbutton	Selector Switch	E-Stop Switch	Pilot lamp
Protection Degree	IP65, IP40			IP67
Stroke	1.5 ~ 3 mm			—
Life	Mechanical	Momentary: $\geq 10 \times 10^5$	Momentary: $\geq 25 \times 10^4$	—
		Maintained: $\geq 25 \times 10^4$	Maintained: $\geq 25 \times 10^4$	
	Electrical	220V AC 0.5A $\geq 10 \times 10^4$		—
Operating Frequency	1200 operations/hr			—
Power Frequency	2000 V AC			
Insulation Resistance	$\geq 100 \text{ M}\Omega$			
Contact Resistance	$< 25 \text{ M}\Omega$			
Vibration Resistance	Damage Limits	5~55Hz, Amplitude 0.5mm		—
	Operating Extremes	5~55Hz, Amplitude 0.5mm		
Operating Temperature	-25°C ~ +55°C (No Freezing)			
Storage Temperature	-40°C ~ +70°C (No Freezing)			
Operating Humidity	40~85%RH (No Condensation)			

Contact Ratings

- Pushbuttons, Selector Switch & Emergency Switch

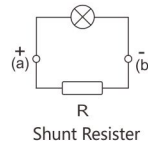
Rated Insulation Voltage U_i	250 V			
Rated Thermal Current I_{th}	5 A			
Type	Rated Voltage U_e	24 V	110 V	220 V
AC-15	Rated Current I_e	2 A	1 A	0.5 A
DC-13		0.7 A	0.2 A	0.1 A

Rated Voltage and Working Current

- Pilot lamp & Illuminated Pushbuttons

Model	LED Voltage	Working Current	
Full Voltage	5V AC/DC	—	
	12V AC/DC	6.2~6.8mA	
	24V AC/DC	7~7.5 mA	
	Specific	110V AC/DC	1.4~1.7mA
		220V AC/DC	1.2~1.7mA

LED Countermeasures against Dim lighting



Shunt Resistor

- LED Dim Lighting
Leakage Currents through transistors or a contact protection circuit may cause the LED lamp to illuminate dimly even when the output is off

- Countermeasures
When the LED lamps is illuminated by a transistor output, take the following measure, leakage current shunt resistor allotment table

□ Lens and LED Color

- Pilot lamp & illuminated Pushbuttons

Lens color		Code	LED Color		Code
Red		R	Red		R
Green		G	Green		G
Yellow		Y	Yellow		Y
Blue		B	Blue		B
White		W	White		W
Amber		A	Amber		A

□ Rated Voltage and Working Current

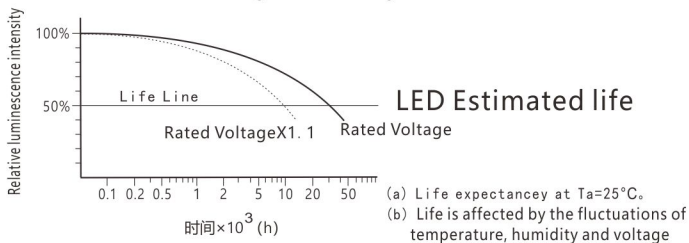
- Pilot lamp & Illuminated Pushbuttons

Model	LED Voltage	Working Current	
Full Voltage	5V AC/DC	—	
	12V AC/DC	6.2~6.8mA	
	24V AC/DC	7~7.5 mA	
	Specific	110V AC/DC	1.4~1.7mA
		220V AC/DC	1.2~1.7mA

□ Lamp Life

Model	Life	Judgement Criterion
LED Bulb	30000h	The brightness reduce to 50% of the initial value

- When Lit at the rated voltage under working environment



□ Mini Mounting spacing and hole layout (mm)

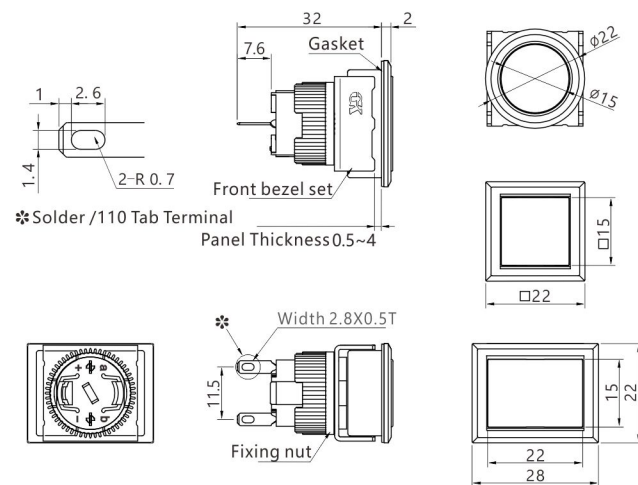
- Pilot lamp, Pushbuttons & Selector Switch

Round	Square	Rectangular

□ Product Shape

Round (Y)	Square (F)	Rectangular (J)
CE	CE	CE

□ Outline Dimensional drawing (mm)



□ Model Specifications

AF16 5 YB-D 24 R	
Series	Color
Protection Degree	Voltage
Head shape	Lamp

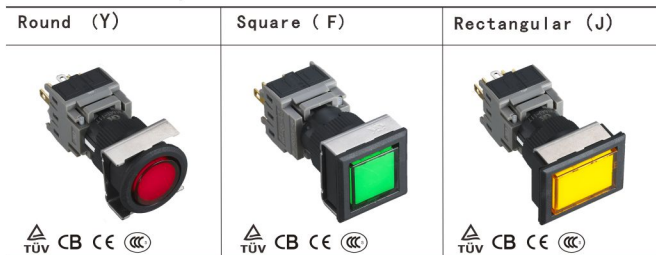
(Note) Protection degree IP67

Shape	Part No.	Voltage①	Color②
	IP67		
Round(YB)	AF165YB-D①②		
Square(FB)	AF165FB-D①②		
Rectangular(JB)	AF165JB-D①②		

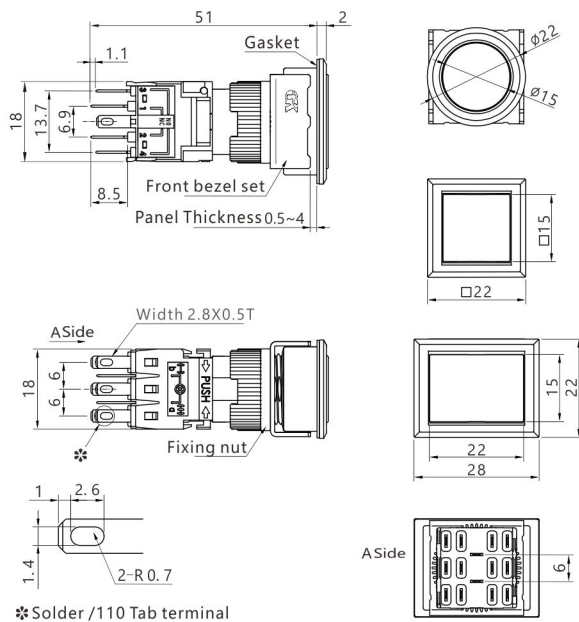
1. For part numbers specify:

- LED voltage in place of ①: 6(06VACDC); 12(12VACDC); 24(24VACDC) 48(48VACDC); 110(110VACDC); 220(220VACD)
- Lens /LED in place of ②: R(Red); G(Green); Y(Yellow); B(Blue); W(White); A(Ambe)

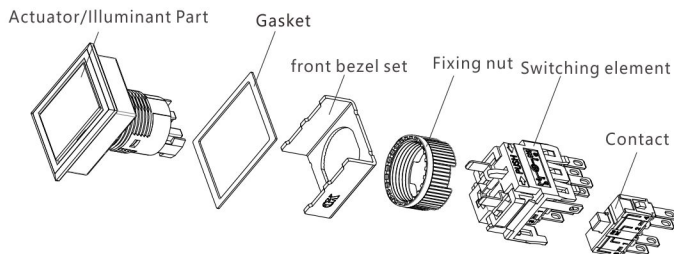
Product Shape



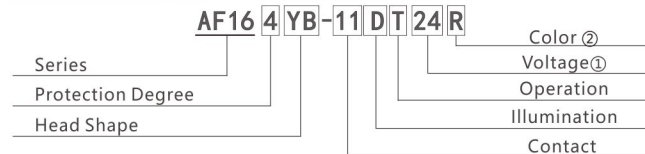
Outline Dimensional drawing (mm)



Installation Method



Model Specifications



Style	Operation	Contact	Part No.		Note
			No-Illumination	Illumination	
Round (YS)	Momentary	SPDT	AF16□YB-11/②	AF16□YB-11D②②	
		DPDT	AF16□YB-22/②	AF16□YB-22D②②	
		3PDT	AF16□YB-33/②	AF16□YB-33D②②	
Square (FS)	Momentary	SPDT	AF16□YB-11T/②	AF16□YB-11DT②②	
		DPDT	AF16□YB-22T/②	AF16□YB-22DT②②	
		3PDT	AF16□YB-33T/②	AF16□YB-33DT②②	
Rectangular (JS)	Momentary	SPDT	AF16□FB-11/②	AF16□FB-11D②②	
		DPDT	AF16□FB-22/②	AF16□FB-22D②②	
		3PDT	AF16□FB-33/②	AF16□FB-33D②②	
	Maintained	SPDT	AF16□FB-11T/②	AF16□FB-11DT②②	
		DPDT	AF16□FB-22T/②	AF16□FB-22DT②②	
		3PDT	AF16□FB-33T/②	AF16□FB-33DT②②	
Rectangular (JS)	Momentary	SPDT	AF16□JB-11/②	AF16□JB-11D②②	
		DPDT	AF16□JB-22/②	AF16□JB-22D②②	
		3PDT	AF16□JB-33/②	AF16□JB-33D②②	
	Maintained	SPDT	AF16□JB-11T/②	AF16□JB-11DT②②	
		DPDT	AF16□JB-22T/②	AF16□JB-22DT②②	
		3PDT	AF16□JB-33T/②	AF16□JB-33DT②②	

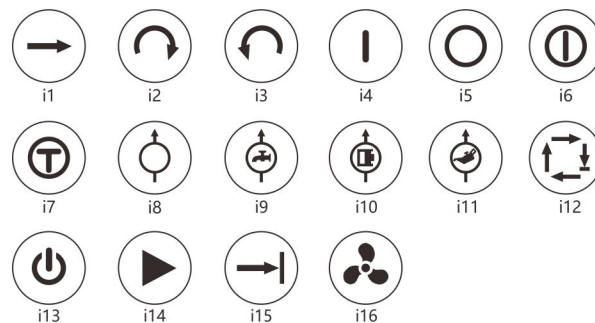
1. For part numbers specify:

- Protection degree in place of □: 4(IP54); 5(IP65)
- LED voltage in place of ②: 6(06VACDC); 12(12VACDC); 48(48VACDC); 110(110VACDC); 220(220VACDC)

- Lens /LED in place of ②: R(Red); G(Green); Y(Yellow); B(Blue); W(White); A(Ambe); BL(Black), only for non-illumination.

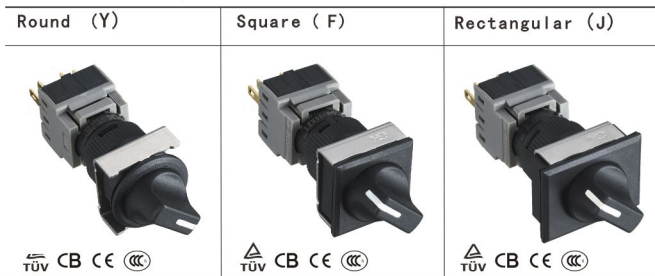
2. Lens can be used with legend markings. Engraving can be done on a marking plate which is placed into the lens, or a clear film can be printed and placed under the lens. For details on the marking plate and film.

Printing Symbol list for Pilot lamp and Pushbuttons

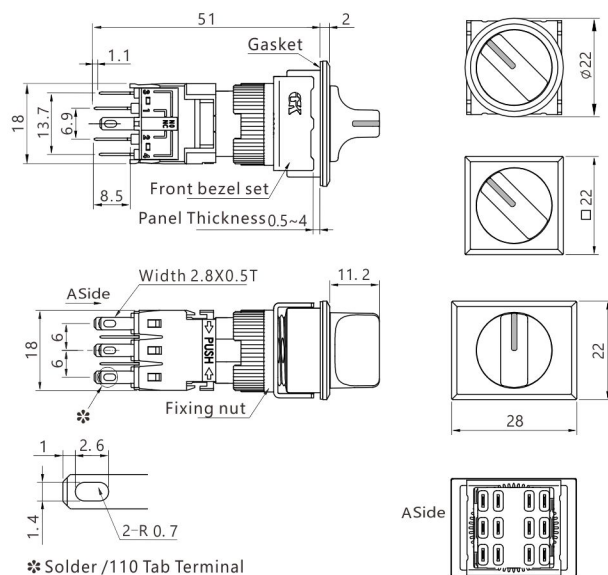


(Note) : All ISO Symbols and special Symbols can be made by order

Product Shape

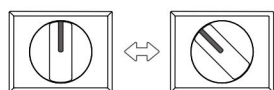


Outline Dimensional drawing (mm)

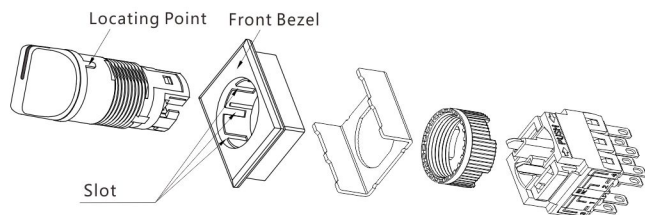


Handle Position

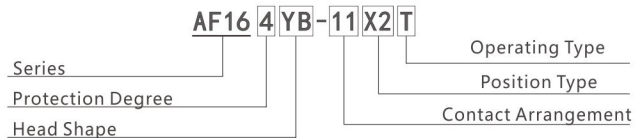
- Selector Switch & Key Switch


















• 由于头部框架与旋钮（钥匙）部为分离式结构，因此可以45°角的间距任意变换操作角度的位置（仅限方形和矩形）。



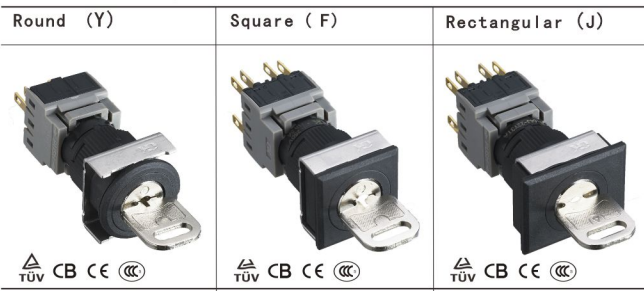
Model Specifications



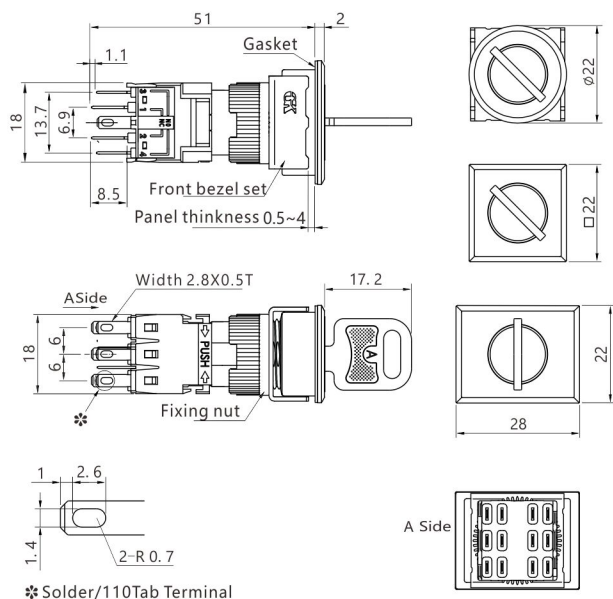
(Note1) Protection Degree 4=IP54 5=IP65

Style	Operator position	contact	Part No.
Round (YS)	90°-2	Maintained 	SPDT AF16□YB-11X2T
		DPDT AF16□YB-11X2T	
		3PDT AF16□YB-11X2T	
	Spring return 	SPDT AF16□YB-11X2	
		DPDT AF16□YB-11X2	
		3PDT AF16□YB-11X2	
45°-3	Maintained 	DPDT AF16□YB-22X3T	
		3PDT AF16□YB-33X3T	
		DPDT AF16□YB-22X3	
	Spring-return two-way 	3PDT AF16□YB-33X3	
		DPDT AF16□YB-22X3TR	
		3PDT AF16□YB-22X3TR	
Left return right Maintained 	DPDT AF16□YB-22X3TL		
	3PDT AF16□YB-22X3TL		
	DPDT AF16□YB-33X3TL		
Square (FS)	90°-2	Maintained 	SPDT AF16□FB-11X2T
		DPDT AF16□FB-11X2T	
		3PDT AF16□FB-11X2T	
	Spring return 	SPDT AF16□FB-11X2	
		DPDT AF16□FB-11X2	
		3PDT AF16□FB-11X2	
45°-3	Maintained 	DPDT AF16□FB-22X3T	
		3PDT AF16□FB-33X3T	
		DPDT AF16□FB-22X3	
	Spring-return two-way 	3PDT AF16□FB-33X3	
		DPDT AF16□FB-22X3TR	
		3PDT AF16□FB-22X3TR	
Left return right Maintained 	DPDT AF16□FB-22X3TL		
	3PDT AF16□FB-22X3TL		
	DPDT AF16□FB-33X3TL		
Rectangular (JS)	90°-2	Maintained 	SPDT AF16□JB-11X2T
		DPDT AF16□JB-11X2T	
		3PDT AF16□JB-11X2T	
	Spring return 	SPDT AF16□JB-11X2	
		DPDT AF16□JB-11X2	
		3PDT AF16□JB-11X2	
45°-3	Maintained 	DPDT AF16□JB-22X3T	
		3PDT AF16□JB-33X3T	
		DPDT AF16□JB-22X3	
	Spring-return two-way 	3PDT AF16□JB-33X3	
		DPDT AF16□JB-22X3TR	
		3PDT AF16□JB-22X3TR	
Left return right Maintained 	3PDT AF16□JB-22X3TR		
	DPDT AF16□JB-22X3TL		
	DPDT AF16□JB-33X3TL		

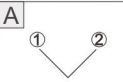
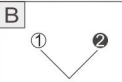
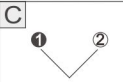
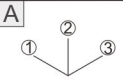
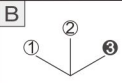
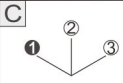
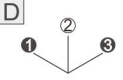
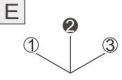
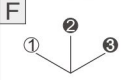
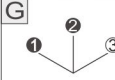
Product Shape



Outline Dimensional drawing (mm)



Key removable position

Position Type	Code	Note: ①, ②, ③ Key removable position.
2-Position	A	
	B	
	C	
3-Position	A	
	B	
	C	
	D	
	E	
	F	
	G	

Model Specifications

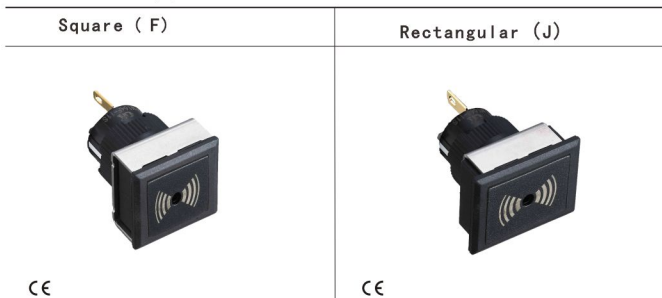
AF16 4 YB-11 Y2 T A

Series: AF16
Protection Degree: 4
Head Shape: YB
Key removable Positions: 11
Operating Type: Y2
Position Pattern: T
Contact Arrangement: A

(Note1) Protection Degree 4=IP40 5=IP65

Style	Operator position	Contact	Part No.	
Round (YB)	90°-2	Maintained	SPDT AF16□YB-11Y2T▲ DPDT AF16□YB-11Y2T▲	
		Spring return	3PDT AF16□YB-11Y2T▲ DPDT AF16□YB-11Y2▲ 3PDT AF16□YB-11Y2▲	
			45°-3	Maintained
	Spring-return two-way	DPDT AF16□YB-22Y3▲ 3PDT AF16□YB-33Y3▲		
		Left return right Maintained		DPDT AF16□YB-22Y3TR▲ 3PDT AF16□YB-22Y3TR▲
	Left Maintained right return		DPDT AF16□YB-22Y3TL▲ 3PDT AF16□YB-33Y3TL▲	
Square (FB)		90°-2	Maintained	SPDT AF16□FB-11Y2T▲ DPDT AF16□FB-11Y2T▲ 3PDT AF16□FB-11Y2T▲
	Spring return		SPDT AF16□FB-11Y2▲ DPDT AF16□FB-11Y2▲ 3PDT AF16□FB-11Y2▲	
			45°-3	Maintained
	Spring-return two-way	DPDT AF16□FB-22Y3▲ 3PDT AF16□FB-33Y3▲		
		Left return right Maintained		DPDT AF16□FB-22Y3TR▲ 3PDT AF16□FB-22Y3TR▲
	Left Maintained right return		DPDT AF16□FB-22Y3TL▲ 3PDT AF16□FB-33Y3TL▲	
		Rectangular (JB)	90°-2	Maintained
	Spring return			SPDT AF16□JB-11Y2▲ DPDT AF16□JB-11Y2▲ 3PDT AF16□JB-11Y2▲
				45°-3
	Spring-return two-way		DPDT AF16□JB-22Y3▲ 3PDT AF16□JB-33Y3▲	
			Left return right Maintained	
	Left Maintained right return			DPDT AF16□JB-22Y3TL▲ 3PDT AF16□JB-33Y3TL▲

Product Appearance

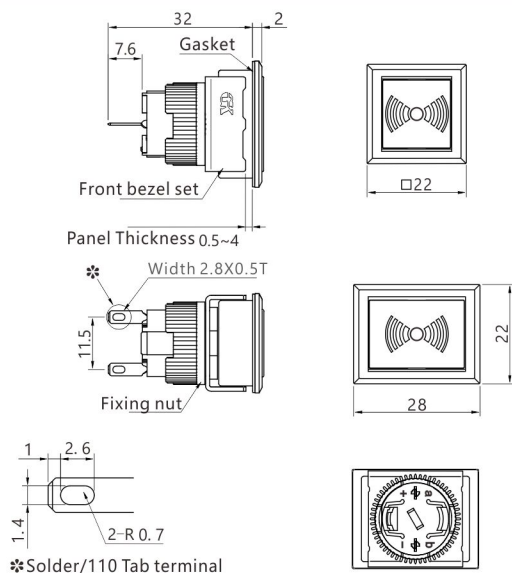


Specifications

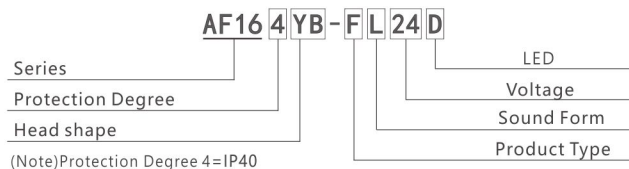
Rated Insulation Voltage	30V DC
Rated Operating Voltage	12V DC \pm 10%、24V DC \pm 10%、
Current Draw	40 mA
Insulation Resistance	\geq 100 M Ω
Sound Pressure (at0.1m)	Steady sound: 80dB minium (at the rated voltage)
Operating Temperature	-25°C ~ +55°C (no freezing)
Storage Temperature	-40°C ~ +70°C (no freezing)
Operating Humidity	40~85%RH (no condensation)

Outline Dimensional Drawing (mm)

- Continuous Tone



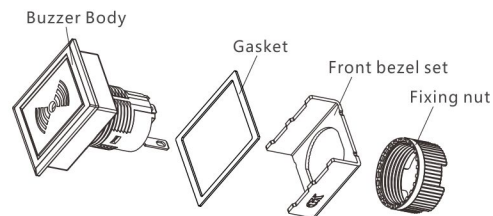
Model Specifications



Style	Sound	Part No.		Voltage①	Color②
		without LED	with LED		
Round (YS)	Continuous	AF164YS-FC①	AF164YS-FIC①②	6: 6VAC/DC 12: 12VAC/DC 24: 24VAC/DC	R Y
	Interrupt	AF164FS-FP①	AF164YS-FIP①②		
Square (FS)	Continuous	AF164FS-FC①	AF164FS-FIC①②		
	Interrupt	AF164FS-FP①	AF164FS-FIP①②		
Rectangular (JS)	Continuous	AF164JS-FC①	AF164JS-FIC①②		
	Interrupt	AF164JS-FP①	AF164JS-FIP①②		

- 1.For part numbers specify:
 - Voltage in place of ①. 6(06VACDC); 12(12VACDC);24(24VACDC);
 -LED in place of ②.R(Red);G(Green)

Installation Method



Contact Type and Terminal Arrangement



Large surface AF16L series

Smart appearance with Large surface for secure operation (Flush design and Raised design)

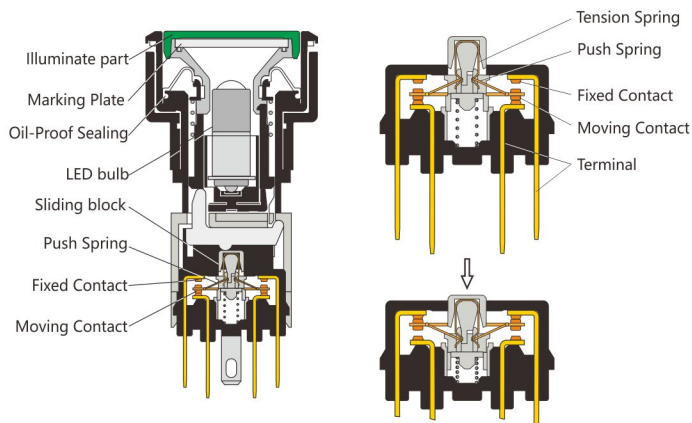
Large button surface for easy usability. Ideal for frequently used switches such as STOP and START
Removable contact blocks ideal for single board mounting.

Panel Depth

- Pilot lamp, Buzzer, Which depth behind panel is only 35mm.
- Flush design, Pushbuttons, Selector Switch, Keylock Switch Which depth behind panel is 53.5mm.
- Raised design, Pushbuttons, Selector Switch, Key Switch Which depth behind panel is 48mm



Oil Proof Type and contact Structure Chart



Specifications

- Pilot lamp, Pushbuttons, Selector Switch & Emergency Stop Switch

Item	Pushbutton	Selector Switch	E-Stop Switch	Pilot lamp
Protection Degree	Ip67			Ip67
Stroke	1.5 ~ 3 mm			—
Life	Mechanical	Momentary: $\geq 10 \times 10^5$	Momentary: $\geq 25 \times 10^4$	—
		Maintained: $\geq 25 \times 10^4$	Maintained: $\geq 25 \times 10^4$	
	Electrical	220V AC 0.5A $\geq 10 \times 10^4$		—
Operating Frequency	1200 operations/hr			—
Power Frequency	2000 V AC			
Insulation Resistance	$\geq 100 \text{ M}\Omega$			
Contact Resistance	$< 25 \text{ M}\Omega$			
Vibration Resistance	Damage Limits	5 ~ 55Hz, Amplitude 0.5mm		—
	Operating Extremes	5 ~ 55Hz, Amplitude 0.5mm		
Operating Temperature	-25°C ~ +55°C (No Freezing)			
Storage Temperature	-40°C ~ +70°C (No Freezing)			
Operating Humidity	40 ~ 85%RH (No Condensation)			

Contact Ratings

- Pushbuttons, Selector Switch & Emergency Switch

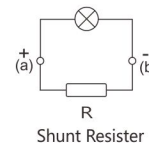
Rated Insulation Voltage U_i	250 V			
Rated Thermal Current I_{th}	5 A			
Type	Rated Voltage U_e	24 V	110 V	220 V
AC-15	Rated Current I_e	2 A	1 A	0.5 A
DC-13		0.7 A	0.2 A	0.1 A

Rated Voltage and Working Current

- Pilot lamp & Illuminated Pushbuttons

Model	LED Voltage	Working Current	
Full Voltage	5V AC/DC	—	
	12V AC/DC	6.2 ~ 6.8mA	
	24V AC/DC	7 ~ 7.5 mA	
	Specific	110V AC/DC	1.4 ~ 1.7mA
		220V AC/DC	1.2 ~ 1.7mA

LED Countermeasures against Dim lighting



Shunt Resistor

- LED Dim Lighting
Leakage Currents through transistors or a contact protection circuit may cause the LED lamp to illuminate dimly even when the output is off

- Countermeasures
When the LED lamps is illuminated by a transistor output, take the following measure, leakage current shunt resistor allotment table

□ Lens and LED Color

- Pilot lamp & illuminated Pushbuttons

Lens color		Code	LED Color		Code
Red		R	Red		R
Green		G	Green		G
Yellow		Y	Yellow		Y
Blue		B	Blue		B
White		W	White		W
Amber		A	Amber		A

□ Rated Voltage and Working Current

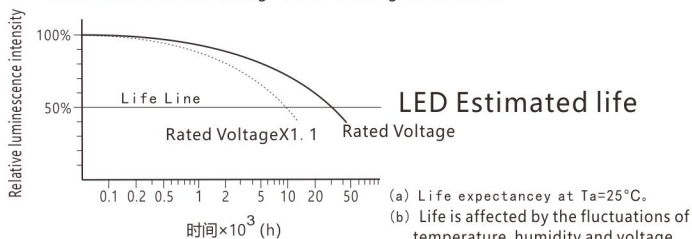
- Pilot lamp & illuminated Pushbuttons

Model	LED Voltage	Working Current	
Full Voltage	5V AC/DC	—	
	12V AC/DC	6.2~6.8mA	
	24V AC/DC	7~7.5 mA	
	Specific	110V AC/DC	1.4~1.7mA
		220V AC/DC	1.2~1.7mA

□ Lamp Life

Model	Life	Judgement Criterion
LED Bulb	30000h	The brightness reduce to 50% of the initial value

- When Lit at the rated voltage under working environment



□ Mounting (mm)

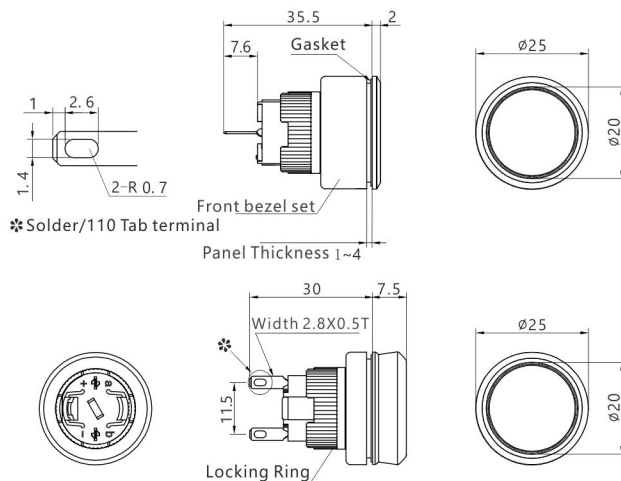
Pilot lamp, Pushbutton, Selector Switch, Key Switch	Emergency Switch

(Note): When the installation spacing is determined, it should be considered of convenient operation and easy wiring job

□ Product Shape

Flush style (F)	Extended style (E)
CE	CE

□ Outline Dimensional drawing (mm)



□ Model Specifications

Series	Protection Degree	Head shape	Color	Voltage	Lamp
AF16	7	LF-D	24	R	

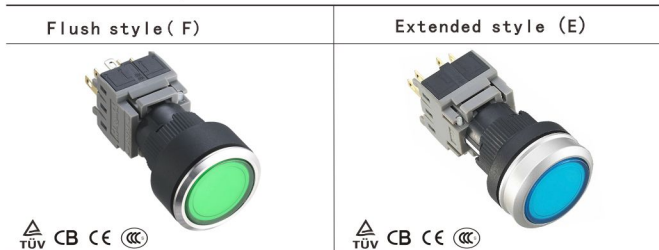
(Note) Protection degree IP67

Shape	Part No.	Voltage①	Color②
	IP67		
Flush(LF)	AF167LF-D①②		
Extend(LE)	AF165LF-D①②		

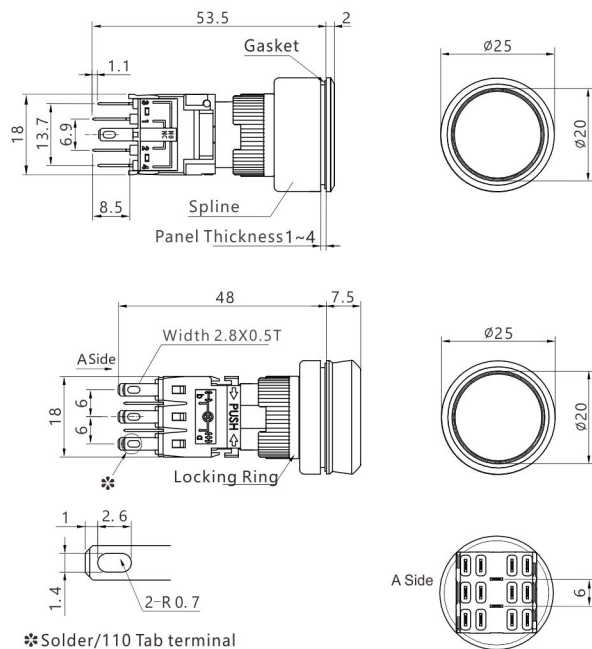
1. For part numbers specify:

- LED voltage in place of ①: 6(06VACDC); 12(12VACDC); 24(24VACDC); 48(48VACDC); 110(110VACDC); 220(220VACDC)
- Lens /LED in place of ②: R(Red); G(Green); Y(Yellow); B(Blue); W(White); A(Amber)

Product Shape

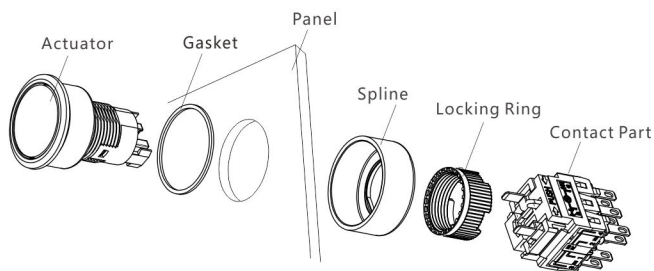


Outline Dimensional drawing (mm)



*Solder/110 Tab terminal

Installation Method



Model Specifications

	AF16	7	LF	-11	DT	24	R	
Series								Color ②
Protection Degree								Voltage ①
Head Shape								Operation
								Illumination
								Contact

Style	Operation	Contact	Part No.		Note
			No-Illumination	Illumination	
Flush (LF)	Momentary	SPDT	AF16□LF-11/②	AF16□LF-11D③②	
		DPDT	AF16□LF-22/②	AF16□LF-22D③②	
		3PDT	AF16□LF-33/②	AF16□LF-33D③②	
	Maintained	SPDT	AF16□LF-11T/②	AF16□LF-11DT③②	
		DPDT	AF16□LF-22T/②	AF16□LF-22DT③②	
		3PDT	AF16□LF-33T/②	AF16□LF-33DT③②	
Extend (LE)	Momentary	SPDT	AF16□LE-11/②	AF16□LE-11D③②	
		DPDT	AF16□LE-22/②	AF16□LE-22D③②	
		3PDT	AF16□LE-33/②	AF16□LE-33D③②	
	Maintained	SPDT	AF16□LE-11T/②	AF16□LE-11DT③②	
		DPDT	AF16□LE-22T/②	AF16□LE-22DT③②	
		3PDT	AF16□LE-33T/②	AF16□LE-33DT③②	

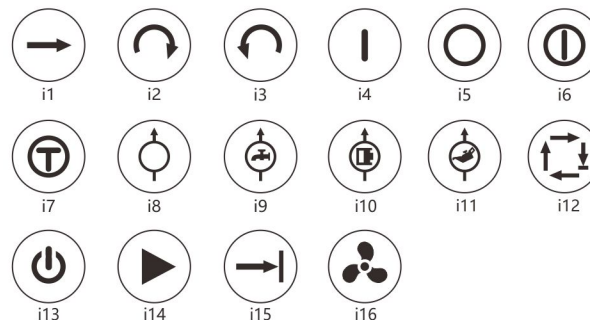
1. For part numbers specify:

- Protection degree in place of □: 4(IP54); 7(IP67)
- LED voltage in place of ③: 6(06VACDC); 12(12VACDC); 48(48VACDC); 110(110VACDC); 220(220VACD)

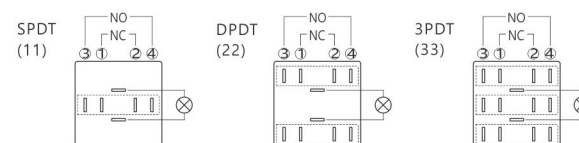
- Lens /LED in place of ②: R(Red); G(Green); Y(Yellow); B(Blue); W(White); A(Ambe); BL(Black), only for non-illumination.

2. Lens can be used with legend markings. Engraving can be done on a marking plate which is placed into the lens, or a clear film can be printed and placed under the lens. For details on the marking plate and film.

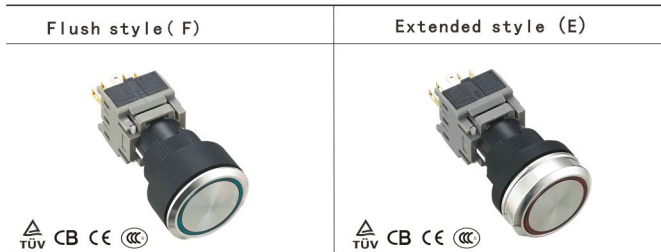
Printing Symbol list for Pilot lamp and Pushbuttons



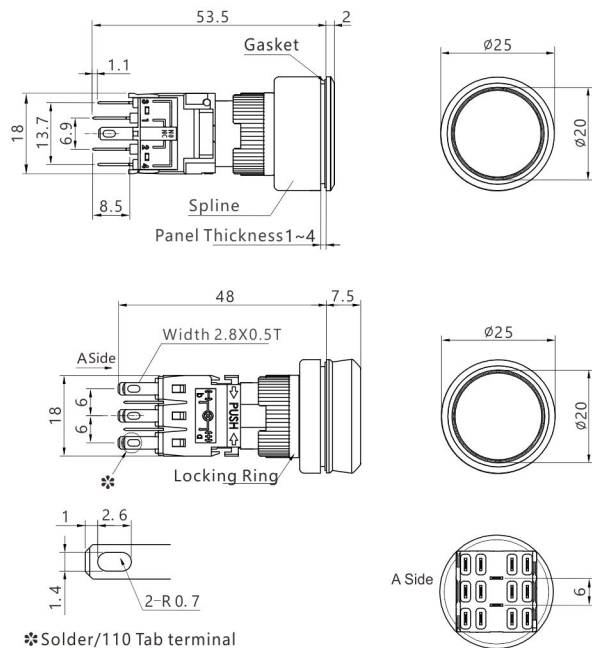
Contact Type and Terminal Arrangement



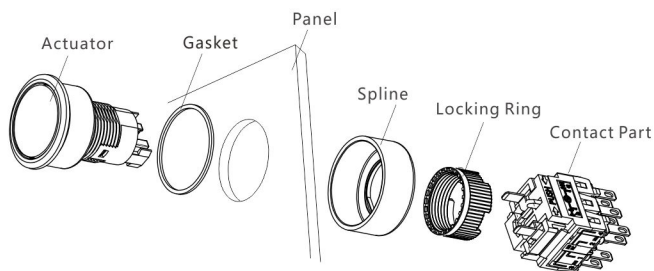
Product Shape



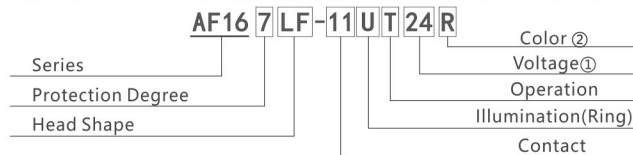
Outline Dimensional drawing (mm)



Installation Method



Model Specifications



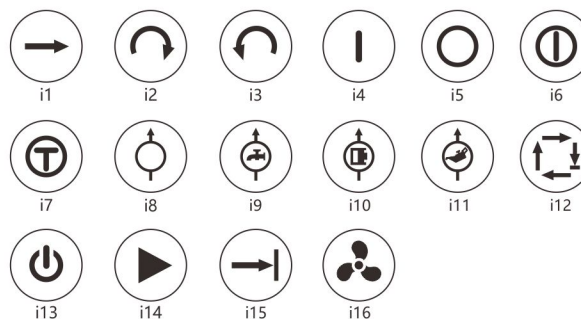
Style	Operation	Contact	Part No.		Note
			No-Illumination	Illumination	
Flush (LF)	Momentary	SPDT	AF16□LF-11/②	AF16□LF-11D①②	
		DPDT	AF16□LF-22/②	AF16□LF-22D①②	
		3PDT	AF16□LF-33/②	AF16□LF-33D①②	
	Maintained	SPDT	AF16□LF-11T/②	AF16□LF-11DT①②	
		DPDT	AF16□LF-22T/②	AF16□LF-22DT①②	
		3PDT	AF16□LF-33T/②	AF16□LF-33DT①②	
Extend (LE)	Momentary	SPDT	AF16□LE-11/②	AF16□LE-11D①②	
		DPDT	AF16□LE-22/②	AF16□LE-22D①②	
		3PDT	AF16□LE-33/②	AF16□LE-33D①②	
	Maintained	SPDT	AF16□LE-11T/②	AF16□LE-11DT①②	
		DPDT	AF16□LE-22T/②	AF16□LE-22DT①②	
		3PDT	AF16□LE-33T/②	AF16□LE-33DT①②	

1. For part numbers specify:

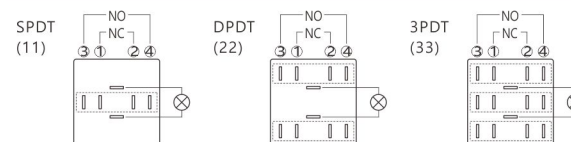
- Protection degree in place of □: 4(IP54); 7(IP67)
- LED voltage in place of ①: 6(06VACDC); 12(12VACDC); 48(48VACDC); 110(110VACDC); 220(220VACD)
- Lens /LED in place of ②: R(Red); G(Green); Y(Yellow); B(Blue); W(White); A(Ambe); BL(Black), only for non-illumination.

2. Lens can be used with legend markings. Engraving can be done on a marking plate which is placed into the lens, or a clear film can be printed and placed under the lens. For details on the marking plate and film.

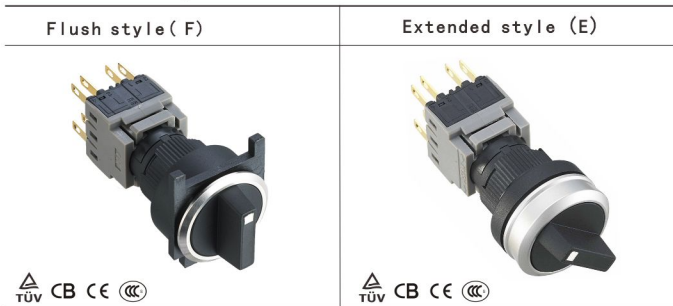
Printing Symbol list for Pilot lamp and Pushbuttons



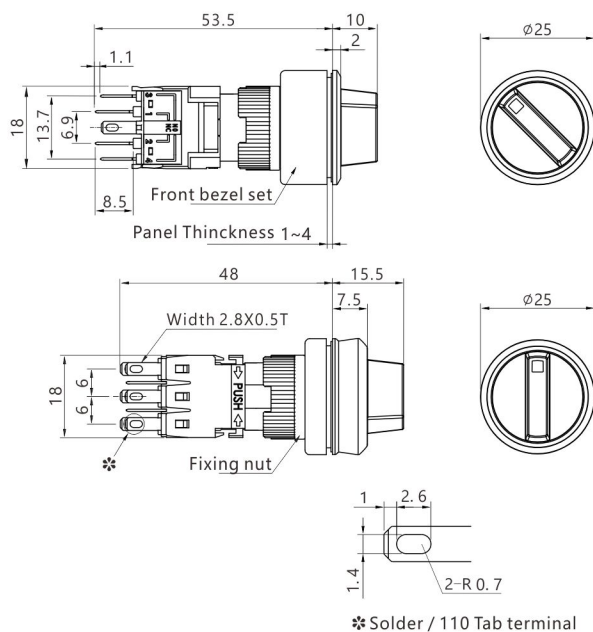
Contact Type and Terminal Arrangement



Product Shape

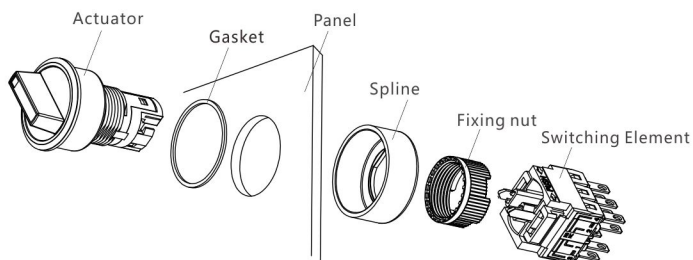


Outline Dimensional drawing (mm)

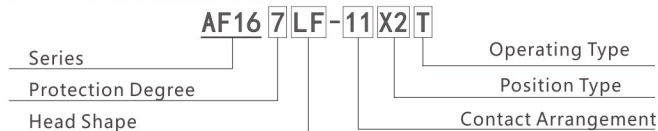














Installation Method

- Selector Switch & Key Switch





Model Specifications



Style	Operator position	contact	Part No.
Flush (LF)	90°-2	Maintained 	SPDT AF16□LF-11X2T DPDT AF16□LF-11X2T 3PDT AF16□LF-11X2T
		Spring return 	SPDT AF16□LF-11X2 DPDT AF16□LF-11X2 3PDT AF16□LF-11X2
	45°-3	Maintained 	DPDT AF16□LF-22X3T 3PDT AF16□LF-33X3T DPDT AF16□LF-22X3
		Spring-return two-way 	3PDT AF16□LF-33X3
		Left return right Maintained 	DPDT AF16□LF-22X3TR 3PDT AF16□LF-22X3TR
		Left Maintained right return 	DPDT AF16□LF-22X3TL 3PDT AF16□LF-33X3TL
Extend (LE)	90°-2	Maintained 	SPDT AF16□LE-11X2T DPDT AF16□LE-11X2T 3PDT AF16□LE-11X2T
		Spring return 	SPDT AF16□LE-11X2 DPDT AF16□LE-11X2 3PDT AF16□LE-11X2
	45°-3	Maintained 	DPDT AF16□LE-22X3T 3PDT AF16□LE-33X3T DPDT AF16□LE-22X3
		Spring-return two-way 	3PDT AF16□LE-33X3
		Left return right Maintained 	DPDT AF16□LE-22X3TR 3PDT AF16□LE-22X3TR
		Left Maintained right return 	DPDT AF16□LE-22X3TL 3PDT AF16□LE-33X3TL

Operator Position

- 2-Position & 3-Position Selector Switch

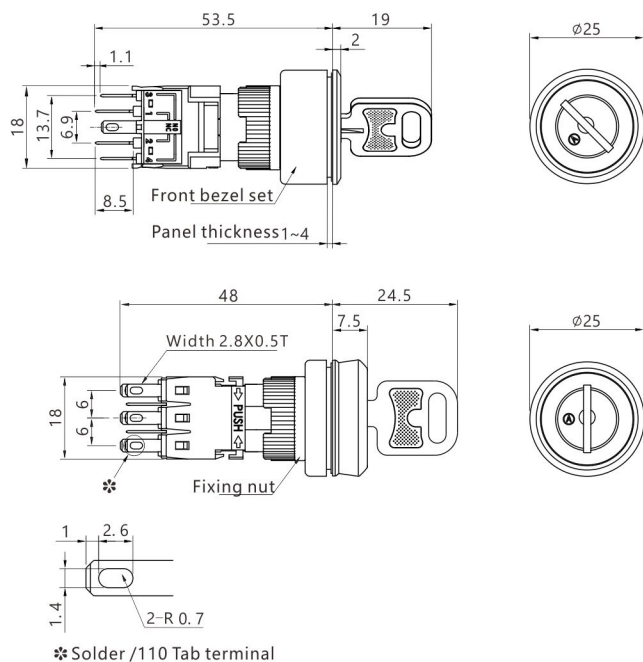
90°-2P	90°-3P
	

Note: other installation methods of the head can be operated conveniently according to the actual operation

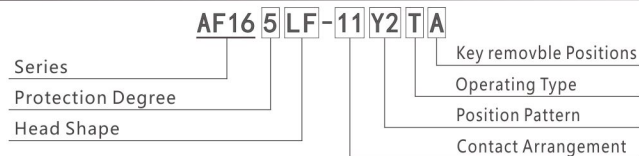
Product Shape













Outline Dimensional drawing (mm)

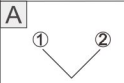
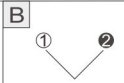
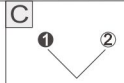
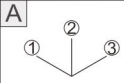
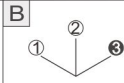
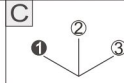
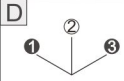
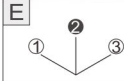
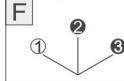
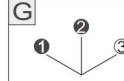


Model Specifications

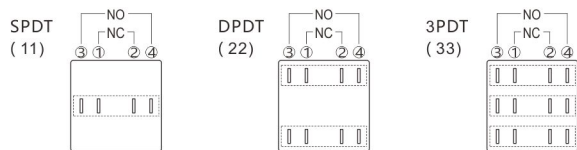


Style	Operator position	Contact	Part No.
Flush (LF)	90°-2	Maintained 	SPDT AF16□LF-11Y2T▲
			DPDT AF16□LF-11Y2T▲
			3PDT AF16□LF-11Y2T▲
		Spring return 	SPDT AF16□LF-11Y2▲
			DPDT AF16□LF-11Y2▲
			3PDT AF16□LF-11Y2▲
	45°-3	Maintained 	DPDT AF16□LF-22Y3T▲
			3PDT AF16□LF-33Y3T▲
			DPDT AF16□LF-22Y3▲
		Spring-return two-way 	3PDT AF16□LF-33Y3▲
			DPDT AF16□LF-22Y3TR▲
			3PDT AF16□LF-22Y3TR▲
Extend (LE)	90°-2	Maintained 	DPDT AF16□LE-11Y2T▲
			SPDT AF16□LE-11Y2T▲
			3PDT AF16□LE-11Y2T▲
	Spring return 	SPDT AF16□LE-11Y2▲	
		DPDT AF16□LE-11Y2▲	
		3PDT AF16□LE-11Y2▲	
45°-3	Maintained 	DPDT AF16□LE-22Y3T▲	
		3PDT AF16□LE-33Y3T▲	
		DPDT AF16□LE-22Y3▲	
	Spring-return two-way 	3PDT AF16□LE-33Y3▲	
		DPDT AF16□LE-22Y3TR▲	
		3PDT AF16□LE-22Y3TR▲	
Left return right Maintained 	DPDT AF16□LE-22Y3TL▲		
	3PDT AF16□LE-22Y3TL▲		
	DPDT AF16□LE-22Y3TL▲		
Left Maintained right return 	3PDT AF16□LE-33Y3TL▲		
	DPDT AF16□LE-22Y3TL▲		
	3PDT AF16□LE-33Y3TL▲		

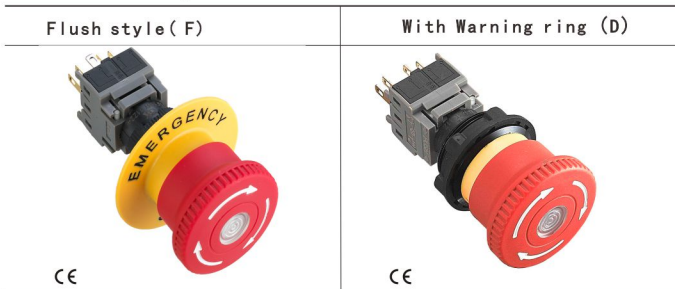
Key removable position

Position Type	Code	Note :①、②、③ Key removable position.
二位置	A	
	B	
	C	
三位置	A	
	B	
	C	
	D	
	E	
	F	
	G	

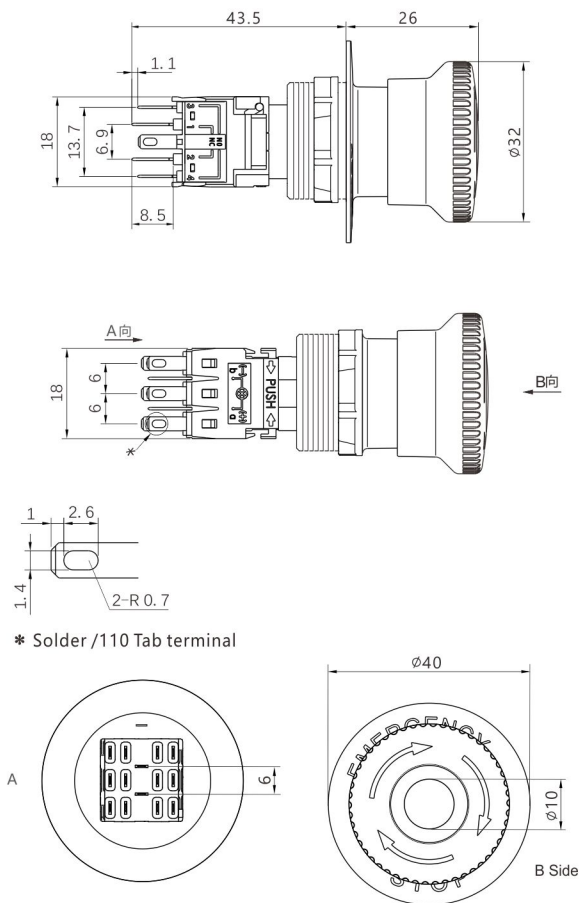
Contact type and Terminal Arrangement



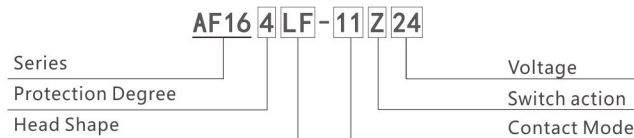
Product Shape



Outline Dimensional drawing (mm)



Model Specifications



Style	Name-plate	Contact	Part No.	
			No-Illumination	Illumination
Round	with	SPDT	AF164YR-11Z	AF164YR-11ZD①②
		DPDT	AF164YR-22Z	AF164YR-22ZD①②
		3PDT	AF164YR-33Z	AF164YR-33ZD①②
	without	SPDT	AF164YS-11Z	AF164YS-11ZD①②
		DPDT	AF164YS-22Z	AF164YS-22ZD①②
		3PDT	AF164YS-33Z	AF164YS-33ZD①②

1. For part numbers specify:

- LED voltage in place of ①: 6(06VACDC); 12(12VACDC); 48(48VACDC); 110(110VACDC); 220(220VACDC)

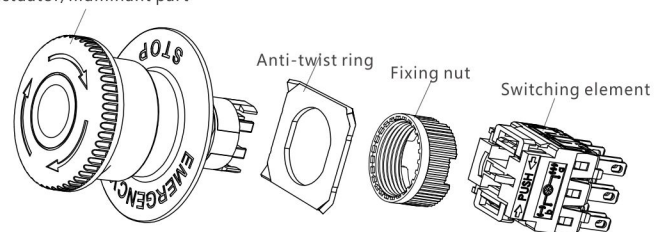
- LED in place of ②: R(Red); G(Green)

Technical Parameter

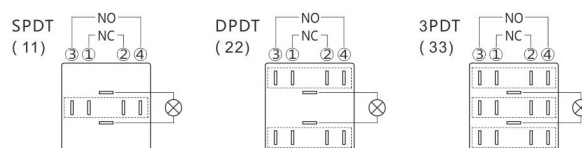
Action Mode	Press Lock	
	Rotation reset (clockwise rotation 60°)	
Stroke	3.5 mm	
Operating force	Maintained	About 1.7 N
	Spring-return	About 0.5 N·m

Installation Method

Actuator/Illuminant part



Contact type and Terminal Arrangement



□ Product Shape

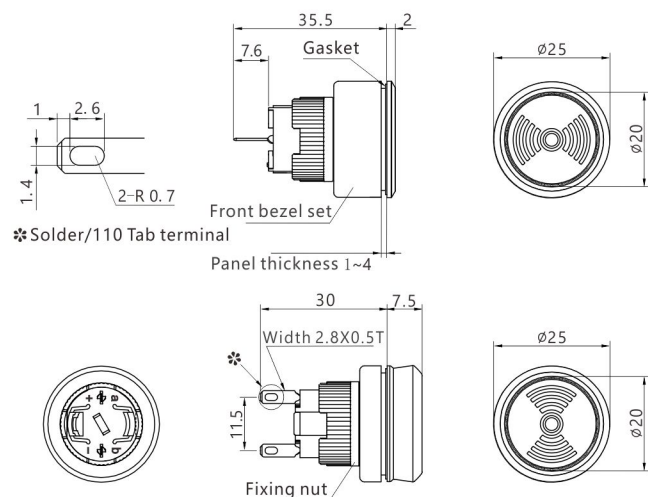


□ Specification

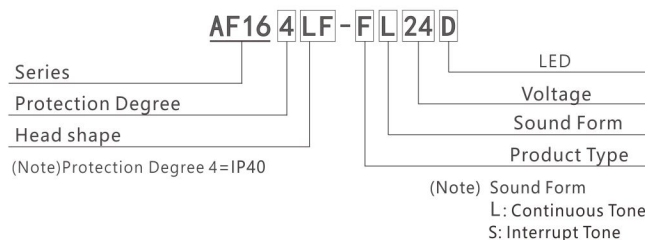
Rated Insulation Voltage	30V DC
Rated Operating Voltage	12V DC $\pm 10\%$ 、24V DC $\pm 10\%$ 、
Current Draw	40 mA
Insulation Resistance	≥ 100 M Ω
Sound Pressure (at0.1m)	Steady sound: 80dB minium (at the rated voltage)
Operating Temperature	-25°C ~ +55°C (no freezing)
Storage Temperature	-40°C ~ +70°C (no freezing)
Operating Humidity	40~85%RH (no condensation)

□ Outline Dimensional Drawing (mm)

- Continuous Tone



□ Model Specifications

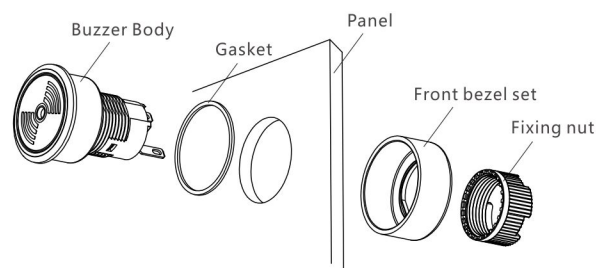


Style	Sound	Part No.		Voltage①	Color②
		without LED	with LED		
Round (YS)	Continuous	AF164YS-FC①	AF164YS-FIC①②	6: 6VAC/DC 12: 12VAC/DC 24: 24VAC/DC	R
	Interrupt	AF164FS-FP①	AF164YS-FIP①②		
Square (FS)	Continuous	AF164FS-FC①	AF164FS-FIC①②	24: 24VAC/DC	Y
	Interrupt	AF164FS-FP①	AF164FS-FIP①②		

1. For part numbers specify:

- Voltage in place of ①. 6(06VACDC); 12(12VACDC); 24(24VACDC);
- LED in place of ②. R(Red); G(Green)


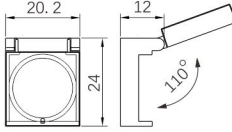

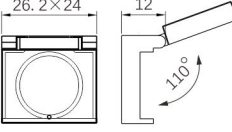

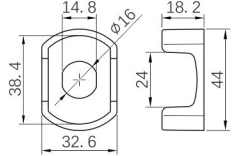

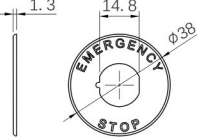

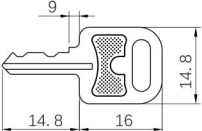

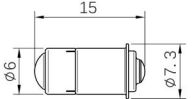

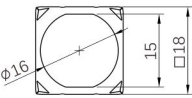

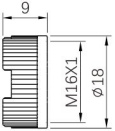
□ Installation Method




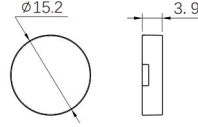

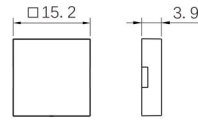

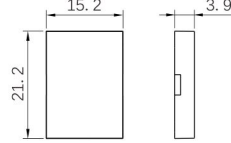

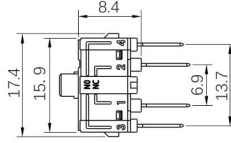

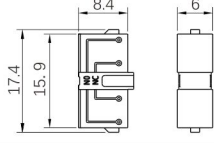
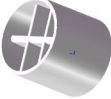
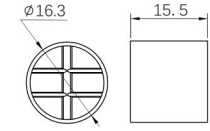
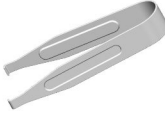
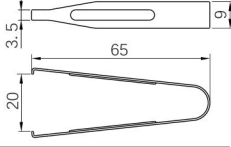

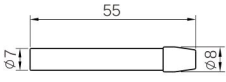
□ Contact Type and Terminal Arrangement



☐ Accessories/Maintenance

Name/Shape	Part No.	Specification	Outline Dimensions
	F6-1	<ul style="list-style-type: none"> For round/square units Prevent inadvertent operation 	
	F6-2	<ul style="list-style-type: none"> For rectangular units Prevent inadvertent operation 	
	F6-3	<ul style="list-style-type: none"> For Z2/Z3 units Prevent inadvertent operation 	
	F6-4	<ul style="list-style-type: none"> For Z2/Z3 units Emergency switch Warning and Signs 	
	F6-5	<ul style="list-style-type: none"> For key switch 	
	F6-D	<ul style="list-style-type: none"> Light Source Color code Voltage 	
	F6-6	<ul style="list-style-type: none"> All Series Prevent rotation 	
	F6-7	<ul style="list-style-type: none"> All Series Fastening 	

☐ Accessories/Maintenance

Name/Shape	Part No.	Specifications	Outline Dimensions
	F6-9	<ul style="list-style-type: none"> For Round pilot lamp or Round pushbuttons 	
	F6-9	<ul style="list-style-type: none"> For Square Pilot lamp or Square Pushbuttons 	
	F6-10	<ul style="list-style-type: none"> For Rectangular Pilot lamp or Rectangular Pushbuttons 	
	F6-11	<ul style="list-style-type: none"> Contact free combination 	
	F6-12		
	F6-13	<ul style="list-style-type: none"> Used to Z2/Z3 Emergency switch and 110 Tab Terminal Protect terminal and code wire 	
	F6-14	<ul style="list-style-type: none"> Used to removing the Lens and the Lens bracket. Prevent the lens broken 	
	F6-15	<ul style="list-style-type: none"> Used to removing LED Bulb Prevent the lamp cover and based from damage 	

❑ Safety Precautions

⚠ Damager

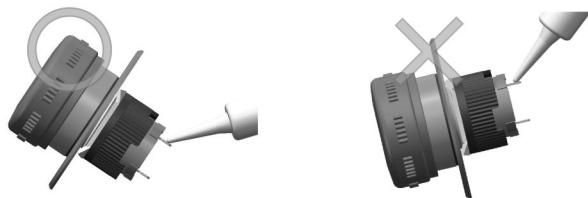
- Turn off the power before installation, removal, wiring, maintenance, and inspection. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid burning your hands, use the lamp holder tool. When replacing the lamps, turn off the power and cool the lamp base.
- For wiring, use wires of a proper size to meet voltage and current requirements. Solder correctly according to the instructions in Wiring and Notes on Terminal cover. Improper soldering may cause overheating and create a fire hazard.

❑ Operating Environment

- Do not use the AH series where corrosive gases exist or under an environment exceeding the operating temperature and humidity ranges. Otherwise, damages due to contact failure or change of surface color may occur.
- Major parts of the switch are plastic. Scratches or damages may occur when scraped with a sharp object or applied with excessive load or shock. Note that this may cause operation and appearance failure of the operator and bezel.
- Note that adherence of detergent, cutting oil, or special chemicals to the switch may result in operation failures and appearance failures such as change of surface color.

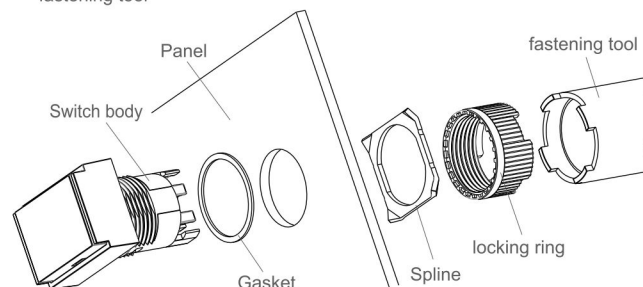
❑ Wiring

- Use the 110 connectors (2.8X0.5mm) series for terminal connection
- Note the following points of solder:
 - 1) Type: Use rosin core solder wire and non-corrosive flux
 - 2) Solder the terminals at 350°C within 3 seconds using a 60W soldering iron. When soldering, do not touch the switch with the soldering iron
 - 3) Do not bend the terminal or apply excessive force to the terminal
 - 4) In order not to make the flux injection switch, the terminal will be down and welding



❑ Panel Mounting

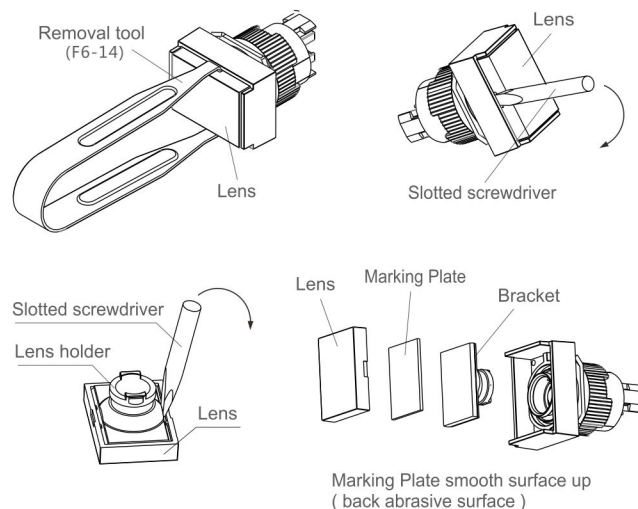
- The recommended tightening torque is 0.6 to 1 N/m. As shown below, insert the switch body into the panel cut-out from the front, and install the spline on the back panel, then fasten the locking ring by the fastening tool.



Do not use pliers for fastening with excessive torque, otherwise the locking ring will be broken or fail.

❑ Replacing the Lens, Marking Plate and Lens holder

- Removing the Lens and Marking Plate
The special removal tool is aimed at the notch of the lens, or is used for a small slotted screwdriver (wide 3mm, thick 0.5mm or less). When installing, the lens holder and the convex part of the body are aligned to press lightly.



❑ Replacing LED units

