

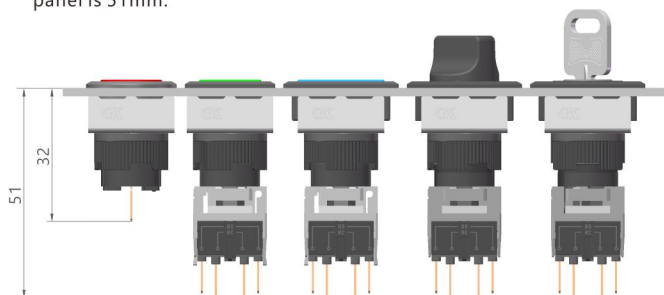
Flush Silhouette AF16B series

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

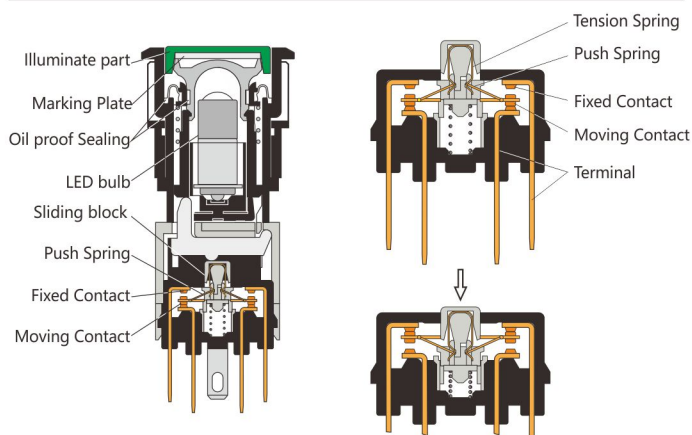
Removable contact blocks ideal for single board mounting.

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

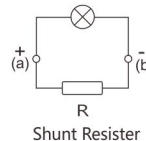
Rated Insulation Voltage U_i	250 V			
Rated Thermal Current I_{th}	5 A			
Type	Rated Voltage U_e	24 V	110 V	220 V
AC-15	Rated Current I_e	2 A	1 A	0.5 A
DC-13		0.7 A	0.2 A	0.1 A

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

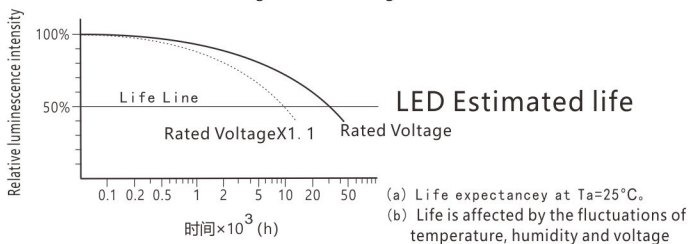
- Pilot lamp & Illuminated Pushbuttons

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)

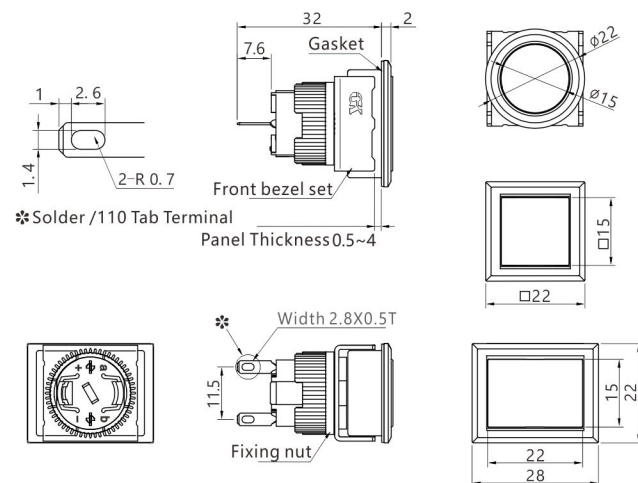
- Pilot lamp, Pushbuttons & Selector Switch

Round	Square	Rectangular

□ Product Shape

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

□ Outline Dimensional drawing (mm)



□ Model Specifications

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

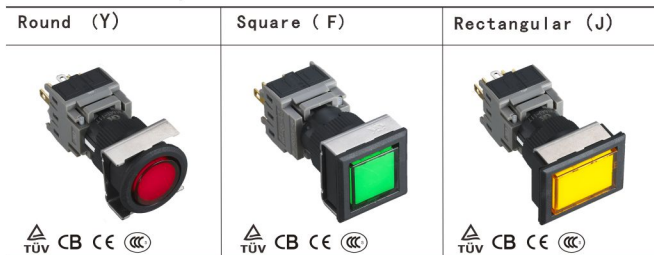
(Note) Protection degree IP67

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

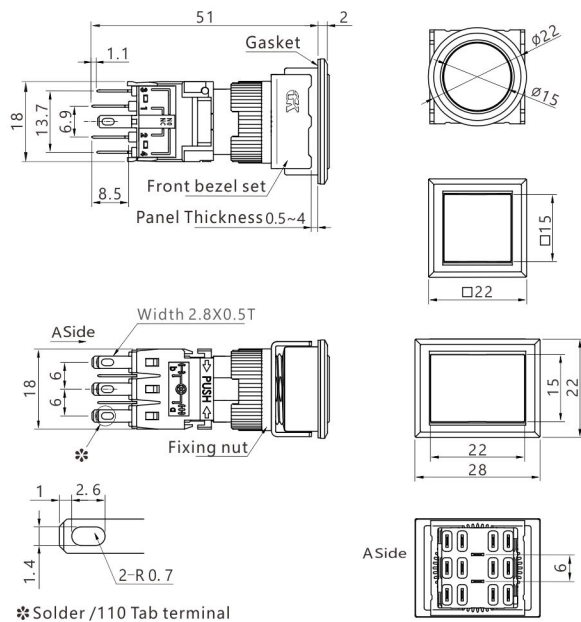
1.For part numbers specify:

- 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)

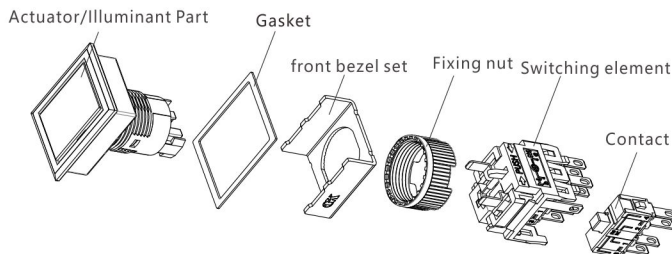
Product Shape



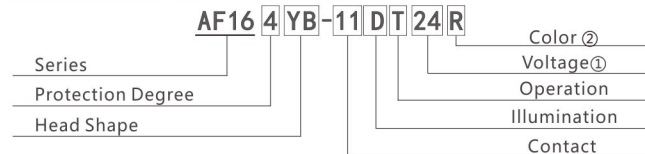
Outline Dimensional drawing (mm)



Installation Method



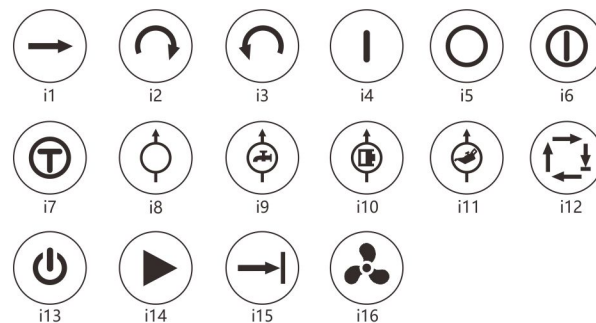
Model Specifications



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	

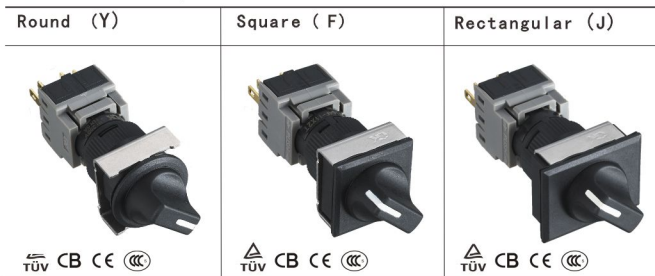
- For part numbers specify:
 - Protection degree in place of □: 4(IP54); 5(IP65)
 - LED voltage in place of ②: 6(06VACDC); 12(12VACDC);48(48VACDC); 110(110VACDC); 220(220VACD)
 - Lens /LED in place of ②: R(Red);G(Green);Y(Yellow);B(Blue);W(White),A(Ambe); BL(Black),only for non-illumination.
- Lens can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

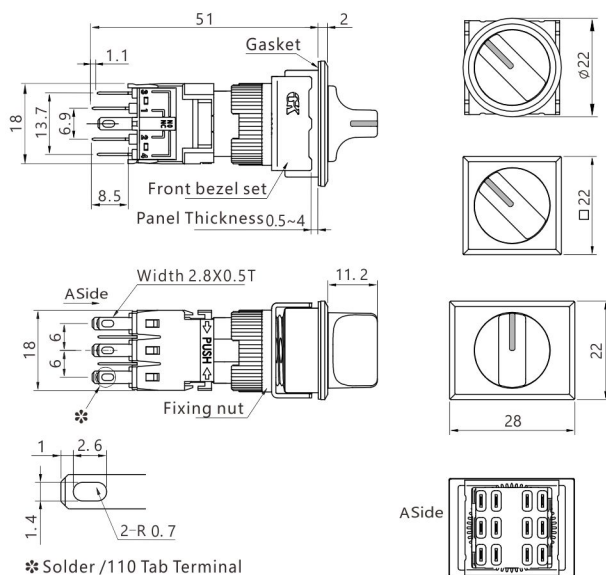


(Note) : All ISO Symbols and special Symbols can be made by order

Product Shape



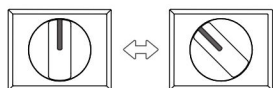
Outline Dimensional drawing (mm)



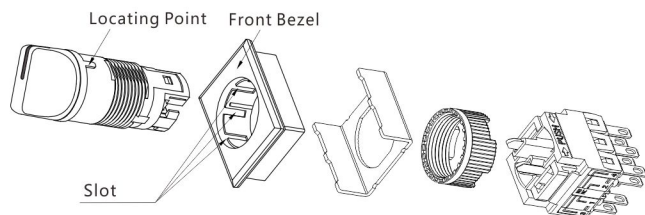
* Solder /110 Tab Terminal

Handle Position

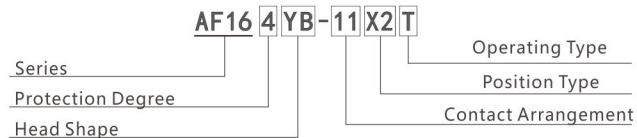
- Selector Switch & Key Switch

















• 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）。



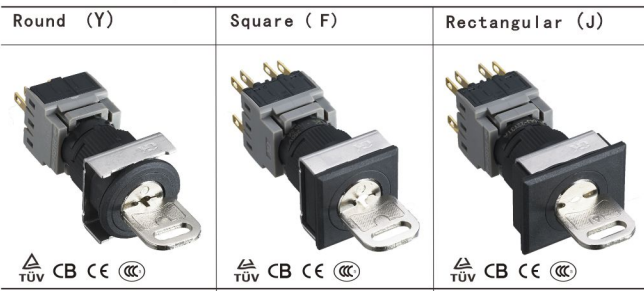
Model Specifications



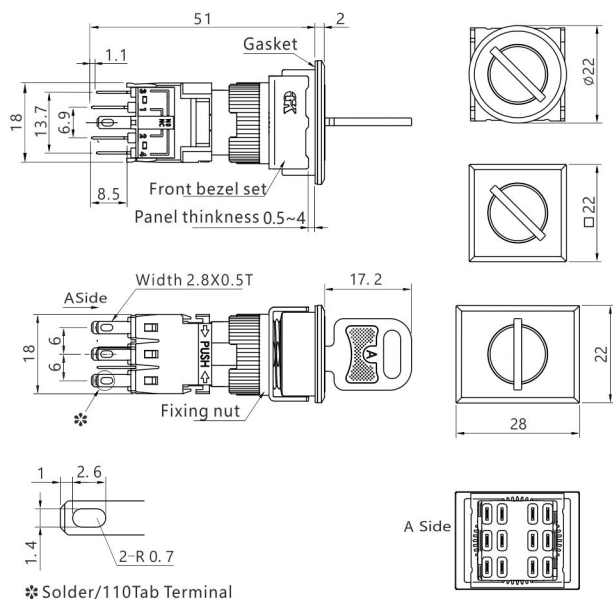
(Note1) Protection Degree 4=IP54 5=IP65

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
Square (FS)	90°-2	Maintained 	DPDT AF16□YB-22X3TL
			3PDT AF16□YB-33X3TL
			DPDT AF16□YB-22X3TL
	45°-3	Left return right 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	
Rectangular (JS)	90°-2	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
	45°-3	Left return right 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 	3PDT AF16□YB-22X3TR		
	DPDT AF16□YB-22X3TL		
	3PDT AF16□YB-33X3TL		

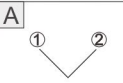
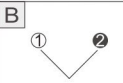
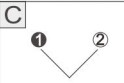
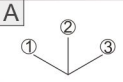
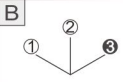
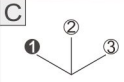
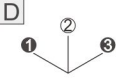
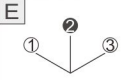
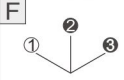
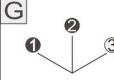
Product Shape



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

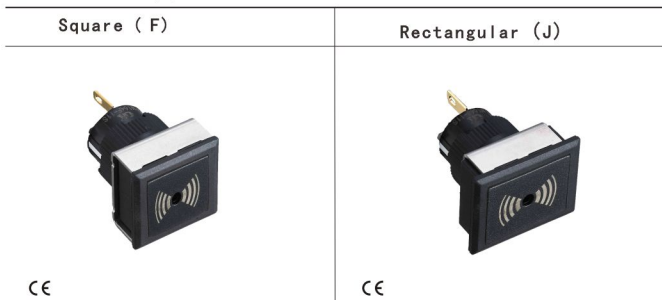
AF16 4 YB-11 Y2 T A

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▲
			3PDT AF16□YB-11Y2T▲
		Spring return 	SPDT AF16□YB-11Y2▲
			DPDT AF16□YB-11Y2▲
			3PDT AF16□YB-11Y2▲
	45°-3	Maintained 	DPDT AF16□YB-22Y3T▲
			3PDT AF16□YB-33Y3T▲
			3PDT AF16□YB-33Y3▲
		Spring-return two-way 	DPDT AF16□YB-22Y3▲
			3PDT AF16□YB-33Y3TR▲
			3PDT AF16□YB-22Y3TR▲
Square (FB)	90°-2	Maintained 	DPDT AF16□YB-22Y3TL▲
			3PDT AF16□YB-33Y3TL▲
			3PDT AF16□YB-33Y3TL▲
	Spring return 	SPDT AF16□FB-11Y2T▲	
		DPDT AF16□FB-11Y2T▲	
		3PDT AF16□FB-11Y2T▲	
45°-3	Maintained 	DPDT AF16□FB-22Y3T▲	
		3PDT AF16□FB-33Y3T▲	
		3PDT AF16□FB-33Y3▲	
	Spring-return two-way 	DPDT AF16□FB-22Y3▲	
		3PDT AF16□FB-33Y3▲	
		3PDT AF16□FB-33Y3▲	
Rectangular (JB)	90°-2	Maintained 	DPDT AF16□FB-22Y3TR▲
			3PDT AF16□FB-22Y3TR▲
			3PDT AF16□FB-22Y3TR▲
	Spring return 	SPDT AF16□JB-11Y2T▲	
		DPDT AF16□JB-11Y2T▲	
		3PDT AF16□JB-11Y2T▲	
45°-3	Maintained 	DPDT AF16□JB-22Y3T▲	
		3PDT AF16□JB-33Y3T▲	
		3PDT AF16□JB-33Y3▲	
	Spring-return two-way 	DPDT AF16□JB-22Y3▲	
		3PDT AF16□JB-33Y3▲	
		3PDT AF16□JB-33Y3▲	
Rectangular (JB)	90°-2	Left return right Maintained 	DPDT AF16□JB-22Y3TL▲
			3PDT AF16□JB-22Y3TL▲
			3PDT AF16□JB-22Y3TL▲
	Left Maintained right return 	DPDT AF16□JB-11Y2T▲	
		DPDT AF16□JB-11Y2T▲	
		3PDT AF16□JB-11Y2T▲	
Rectangular (JB)	45°-3	Left return right Maintained 	DPDT AF16□JB-11Y2▲
			3PDT AF16□JB-11Y2▲
			3PDT AF16□JB-11Y2▲
	Left Maintained right return 	DPDT AF16□JB-22Y3T▲	
		3PDT AF16□JB-33Y3T▲	
		3PDT AF16□JB-33Y3TL▲	

Product Appearance

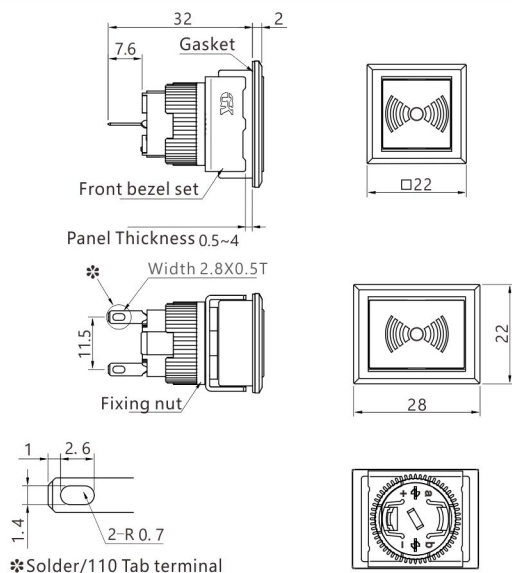


Specifications

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)

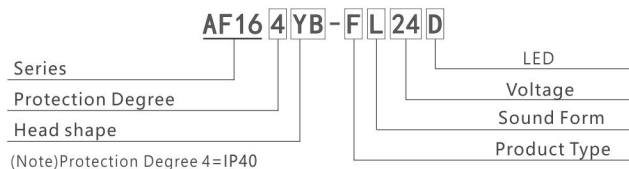
Outline Dimensional Drawing (mm)

- Continuous Tone



*Solder/110 Tab terminal

Model Specifications

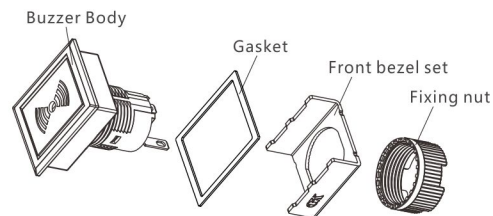


Style	Sound	Part No.		Voltage①	Color②
		without LED	with LED		
Round (YS)	Continuous	AF164YS-FC①	AF164YS-FIC①②	6: 6VAC/DC 12: 12VAC/DC 24: 24VAC/DC	R Y
	Interrupt	AF164FS-FP①	AF164YS-FIP①②		
Square (FS)	Continuous	AF164FS-FC①	AF164FS-FIC①②		
	Interrupt	AF164FS-FP①	AF164FS-FIP①②		
Rectangular (JS)	Continuous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

