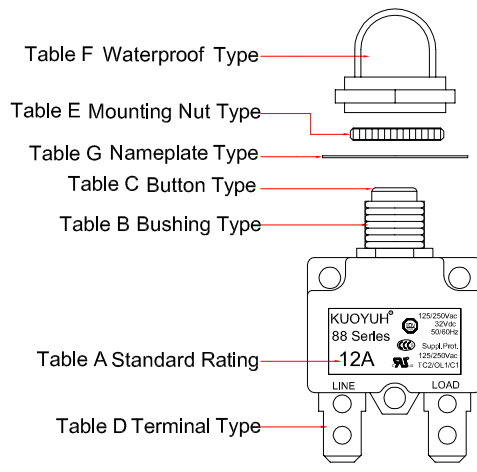


Order Guide	88- 12- A1 B 1 4- P 0 0 N B
Series No.	
Amp Rating.	(Table A)
Bushing Type.	(Table B)
Color of Button.	(Table C)
Terminal Type.	(Table D)
Voltage.	1=UL& CSA 125Vac, 2=TUV & CCC 250Vac, 3=1+2 125/250Vac, 4=UL+TUV+CCC 125/250Vac;32Vdc, 5=Client designation 6=UL 125/250Vac;50Vdc, 8=VDE 125/250Vac, 9=CSA 125Vac U3 type
Mounting Nut Type.	(Table E)
Waterproof Type.	(Table F)
Nameplate Type.	(Table G)
Terminal Finish.	S=Plate with Tin N=Plate with Nickel 0=No plate
Body Type.	B=Black W=White

03= 3.0A	12= 12.0A
3.5= 3.5A	13= 13.0A
04= 4.0A	15= 15.0A
05= 5.0A	16= 16.0A
06= 6.0A	17= 17.0A
07= 7.0A	18= 18.0A
08= 8.0A	20= 20.0A
09= 9.0A	22= 22.0A
10= 10.0A	25= 25.0A
11= 11.0A	30= 30.0A

P1 Plastic M11XP1.0	P2 Plastic M12XP1.0	P3 Plastic 3/8"-27T	PL Plastic No thread
KF Plastic Snap in	PS Plastic Snap in	AW (White) Plastic No thread	P0 Plastic No thread
A1 Metal M11XP1.0	B1 Metal M11XP1.0	A3 Metal 3/8"-27T	B3 Metal 3/8"-27T
Panel Hole			
P1,A1,B1	A2,P2	P3,A3,B3	AW/AB
P0	PS,KF		



None	P Plastic	A Metal	B Metal	C Metal	4 Plastic	5 Metal	6 Metal	7 Metal
	Integrated Knurl nut	Knurl nut	Hexnut M11 H=14 M12 H=15	Metal	Plastic	Metal	Metal	Metal

None	R	F	T	V	U or C
	R11=M11xP1.0 Clean R12=M12xP1.0 Clean R38=3/8"-27 Clean	F11=M11xP1.0 Clean F12=M12xP1.0 Clean F38=3/8"-27 Clean	T11=M11xP1.0 Clean	V11=M11xP1.0 Clean V12=M12xP1.0 Clean	U38=3/8"-27 Black C38=3/8"-27 Clean

1 Straight 11.8mm	2 90° bend	3 90° bend	4 Line pin Straight Load pin 90° bend	5 Line pin 90° bend Load pin Straight	6 Straight 8.0mm	7 Line pin 90° bend Load pin bend up	8 45° bend up	9 45° bend down	X Straight 4.0mm	F Screw #8-32 Straight	L Screw #8-32 90° bend up	J Screw #8-32 90° bend down	K Line pin SQ .25 Straight Load pin Screws 90° bend	G Line pin Screws 90° bend Load pin SQ .25 Straight	H Line pin Screws Straight Load pin Screws 90° bend
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B = Black button (黑推桿)	W = White button (白推桿)	R = Red button (紅推桿)
Normal Amp stamp Amps=white	Normal Amp stamp Amps=black	NORMAL AMP STAMP Amps=white
1	5	6
7	8	9
X	Y	Z

0 None	B Black plate	A Black plate	S Black plate	L Black plate
	W White plate		X White plate	For Waterproof
	$\phi 24$	$\phi 22.5$	$\phi 24$	$\phi 26$
	CIRCUIT BREAKER PRESS TO RESET	CIRCUIT BREAKER PRESS TO RESET	CIRCUIT BREAKER PRESS TO RESET	CIRCUIT BREAKER PRESS TO RESET

* The specification subject to change without notice. The drawing is for reference only.

88 Series Thermal Overcurrent Circuit Breaker

Description

- *Single Pole Push to Reset.
- *Easy and quick reset after tripping due to overcurrent.
- *With ablocked actuator button.
- *Very cost effective design to meet international requirements.
- *Extremely small and lightweight.
- *UL 1077, CCC, TUV and EN 60934 (IEC60934) approved.

Typical applications

Transformers, Motors, Battery chargers, Power supplies, Appliances, extra low voltage systems, machinery.

Technical data

Voltage rating	AC 125/250V, DC32V, DC50V (UL)		
Current ratings	3.....15A inductive load		
	16....30A resistive load		
Typical life	1,000 operations at 1.5xIn resistive load AC 125V.		
Endurance	Operat.	In	Un
	40	5...15 A	AC 250V 6 x In
	40	16...30 A	DC 32V 4 x In
Ambient temperature	-10°C to +60°C		
Insulation co-ordination	2.5Kv/2 reinforced insulation in operation area		
Dielectronic strenght	Test voltage AC 2,000 V 1 minute operating area		
Insulation resistance	>500M Ohms		
Interrupting capacity (UL 1077)	In	Un	
	3.....30A	AC125V	1,000A
	3.....30A	AC250V	200A
	3.....30A	DC50V	300A
Degree of protection	operating area IP40		
	terminal area IP00		
Vibration	57Hz acceleration 30m/s ² (3g) in X.Y.Z. direction (2 times/min.)		
Shock	300m/s ² (30g) in X.Y.Z. direction		
Mass	approx. 14 g		

* The specification subject to change without notice. The drawing is for reference only.

88 Series Thermal Overcurrent Circuit Breaker

Approval

CUL UL E155159

3.....30A AC 125/250V TC2,OL0 or 1, SC C1,1KA 125VAC or 1KA 250VAC

3.....30A DC 50V TC2,OL0, SC C1,300A 50VDC

3.....20A AC 125/250V TC2,OL0 or 1, SC U3,400A 125VAC or 400A 250VAC

Supplementary Protector Type codes (Type): OC- Overcurrent type

Use Group (UG): A

Terminals (FW): 0

TUV SUD B16 06 58611 008

3.....20A AC 125/250V; DC 32V

CCC 201101030752058

3.....20A AC 125/250V

VDE 40036160

3.....16A AC 125/250V

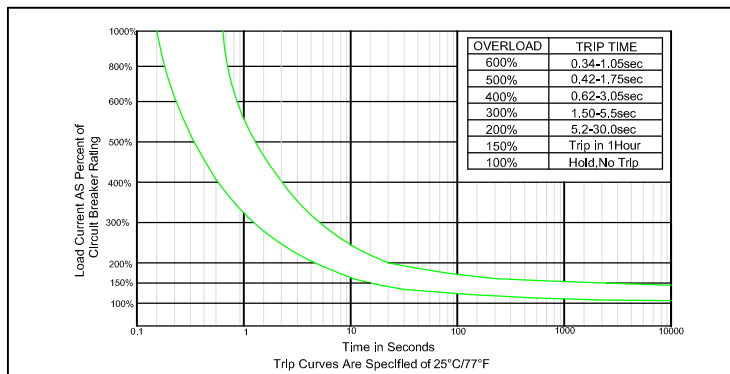
CSA 102199

3.....16A AC 125 TC1,OL1, SC U3,0.4KA 125VAC

Max.Internal Resistance

Amp rating	Max resistance	Amp rating	Max resistance
3.0 - 5.0Amp	<0.225 Ohms	17.0 - 20.0Amp	<0.040 Ohm
6.0 - 8.0Amp	<0.175 Ohm	21.0 - 25.0Amp	<0.030 Ohm
9.0 - 12.0Amp	<0.125 Ohm	26.0 - 30.0Amp	< 0.020 Ohm
13.0 - 16.0Amp	<0.050 Ohm		

Trip Time Curves



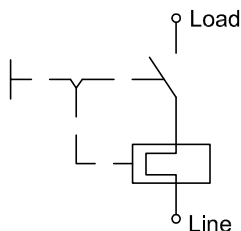
Ambient Temperature Correction Factor

Ambient temperature	-10°C	0°C	10°C	25°C	35°C	40°C	50°C	60°C
Multiplication factor	*1.30	*1.20	*1.10	*1.00	*0.94	*0.85	*0.73	*0.68

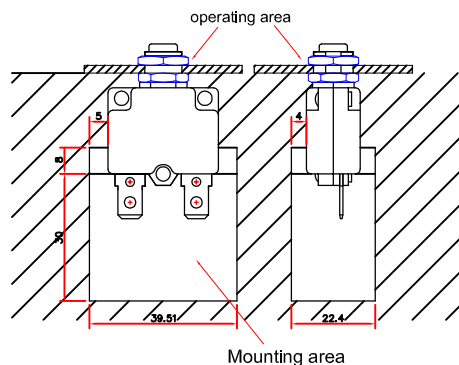
The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping. Please multiply the circuit breaker current ratings by the derating factor shown below.

Example : Normal Continuous Current = 10A
 Ambient Temperature = 45°C
 Multiplication Factor = 0.85
 Recommended Rating = 10A/0.85=11.8A
 Select the Nearest Rating = 12A

Internal connection diagram



Internal connection diagram



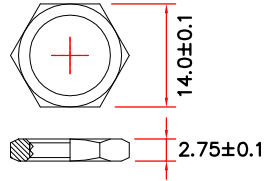
* The specification subject to change without notice. The drawing is for reference only.

KUOYUH®

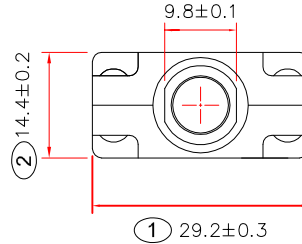
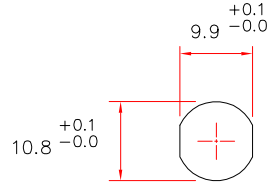
88-XX-A1B14-BT0-NB

Mounting Nut Type.

Metal Hexnut

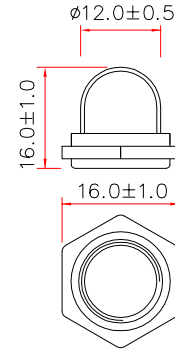


Panel Cutout



Waterproof Type

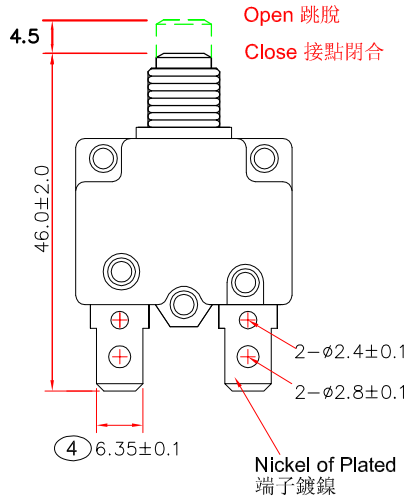
FSM-S1C



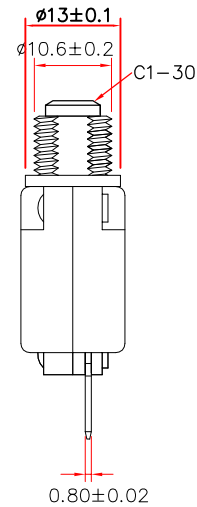
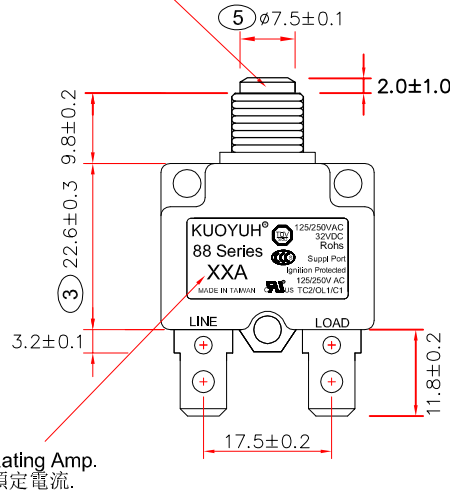
NO.	Dimensions
①	29.2±0.3
②	14.4±0.2
③	22.6±0.3
④	6.35±0.1
⑤	ø7.5±0.1

OVERLOAD	TRIP TIME
600%	0.34-1.05sec
500%	0.42-1.75sec
400%	0.62-3.05sec
300%	1.50-5.5sec
200%	5.2-30.0sec
150%	Trip in 1Hour
100%	Hold, No Trip

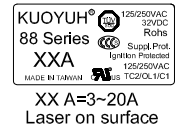
M11XP1.0 Metal Bushing
金屬(圓)螺栓 M11*P1.0



Push Button=Black
按鍵=黑色



Marking: Follow the rated, XXA is Rating Amp.



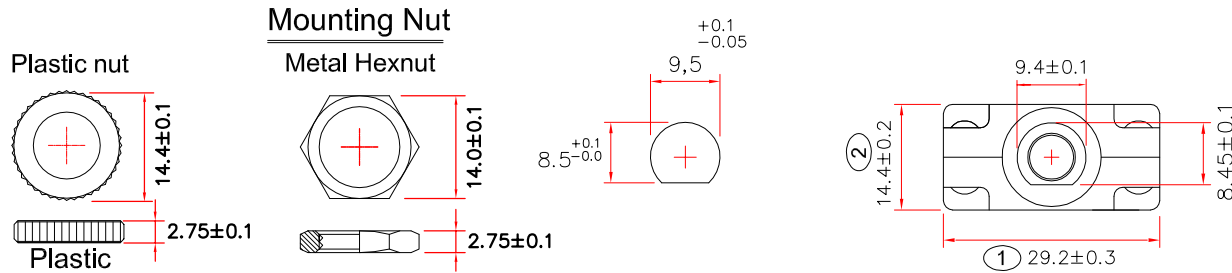
- 備註 Remark:
- 1.XXA 表示額定電流。 XXA is Rating Amp.
 - 2.安規 Approve mark:
CUL 3A~30A 125/250VAC;50VDC
TUV 3A~20A 125/250VAC; 32VDC
CCC 3A~20A 125/250VAC
CSA 10A ; 15A 125VAC
 - 3.過錫爐時,溫度為235±5°C,
60W烙鐵加熱時,溫度為350±5°C, 加熱時間為3秒內,最多不可超過5秒。
When the stove processing temperature is 235±5°C, time is 3-5sec;
60W wending iron processing, temp is 350±5°C, within 3 secs ,
can't over 5 sec.
 - 4.符合歐盟RoHS指令 2011/65/EU 要求。(按點使用排除條款)
The product accord with the requirement of ROHS(EU 2011/65/EU)
Contacts use Exempted item of RoHS Directive 2010/571/EU 8(b)
 - 5.ⓧ表示必檢尺寸,The size of the need to check
 - 6.已符合UL1500 點火保護 第三版。
The devices have been evaluated for Ignition Protection in accordance
with UL 1500, Third Edition

NO	DESCRIPTION	APPROVED	DATE	TOLERANCE	APPROVED	DESING	DRAWER	Unit(單位)	mm	
⑤				DIMENSION	TOLERANCE	總經理	品研部	Unit(單位)	mm	
④				XX.XX	±0.05	2019.01.01	品研部	Scale(比例)	1 : 1	
③				XX.X	±0.1	黃獻明	品研部	Rev(版本)	G/1	
②	UL1500 Ignition Protected Approved	黃獻明	2013.05.20	XX	±0.15	陳政作	黃威誠	Material(材質)	Thermal Circuit Breaker	
①	UL+CUL 21~30A TC2/OL0/C1 Approved	黃獻明	2012.10.10	ANGLE	TOLERANCE	國郁企業股份有限公司			Title(品名)	88 Series Thermal Circuit Breaker
				X	±1°	KUOYUH W.L. Enterprise Co.,Ltd.			Drawing no.(圖號,料號)	88-XX-A1B14-BT0-NB
				X.X	±0.5°					

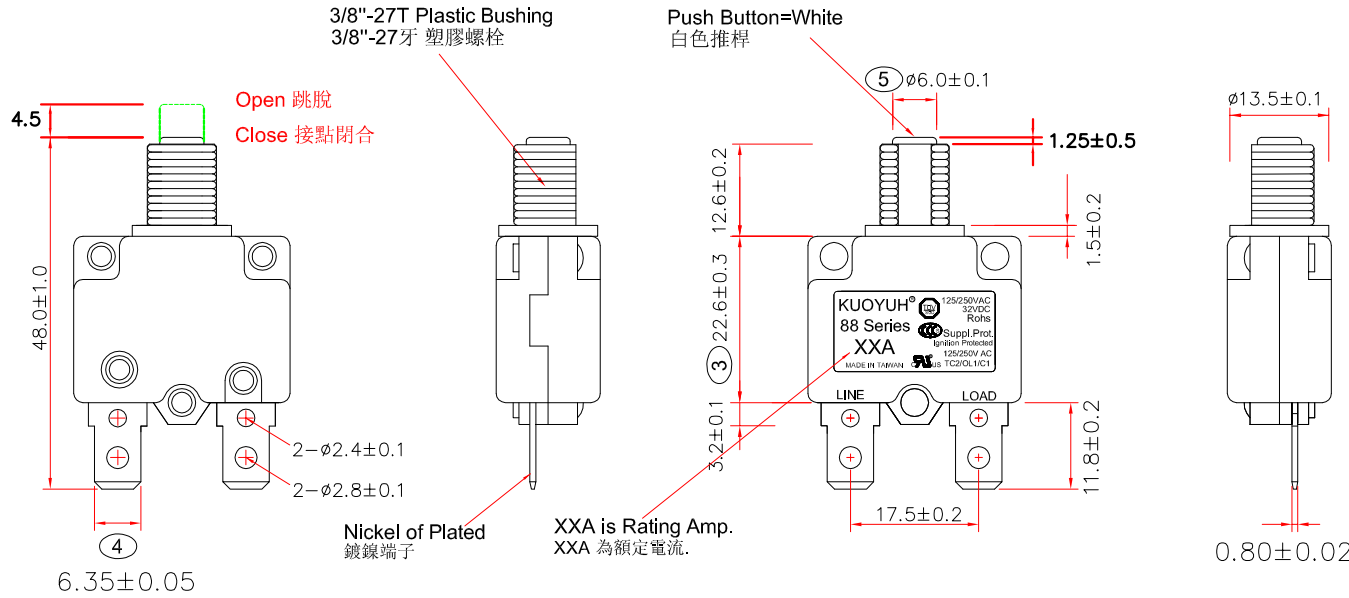
88-XX-P3W14-400-NB

NO.	Dimensions
①	29.2±0.3
②	14.4±0.2
③	22.6±0.3
④	6.35±0.1
⑤	ø6.0±0.1

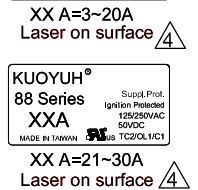
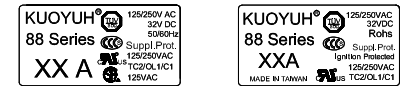
Panel Cutout



OVERLOAD	TRIP TIME
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400%	0.62-3.05sec
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200%	5.2-30.0sec
150%	Trip in 1Hour
100%	Hold, No Trip



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- 備註 Remark:
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 - 5.ⓧ表示必檢尺寸,The size of the need to check
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 The devices have been evaluated for Ignition Protection in accordance
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NO	DESCRIPTION	APPROVED	DATE	TOLERANCE		APPROVED	DESING	DRAWER	Unit(單位)	mm	
				DIMENSION	TOLERANCE				Scale(比例)	1 : 1	
⑤				XX.XX	±0.05				Rev(版本)	G1	
④			XX.X	±0.1	Material(材質)				Thermal Circuit Breaker		
③	標註(示) 改為使用雷射雕刻 (10A/15A模刻 除外)	黃獻明	2016.11.23	XX	±0.15				Title(品名)	88 Series Thermal Circuit Breaker	
②	UL1500 Ignition Protected Approved	黃獻明	2013.05.20	ANGLE	TOLERANCE	國郁企業股份有限公司		Drawing no.(圖號,料號)	88-XX-P3W14-400-NB		
①	UL+CUL 21~30A TC2/OL0/C1 Approved	黃獻明	2012.10.10	X	±1°	KUOYUH W.L. Enterprise Co.,Ltd.					
				X.X	±0.5°						