

## 98 Series Thermal Circuit Breaker

### Single Pole Push to Reset



#### •Technical data

- Current rating range 3~50A
- Input voltage rating 125/250VAC; 32/50VDC
- Interrupting Capacity 125/250VAC x 1,000A(UL 1077)
- Typical life 1,000 operations at 200% overload.
- Insulation co-ordination Rated impulse withstand voltage 2.5kV
- Dielectric Strength > 1,500VAC/min.
- Insulation Resistance >100MOHM (DC 500V)
- Degree of protection Terminal area IP00, operating area IP40



#### •Mechanical/Environmental Data

- Operating Ambient Temperature: -10°C to +60°C
- Termination: 250"(6.35mm) quick connects or solder terminals
- Mounting: Various options. See Ordering Information and drawings

#### •Compliance with Rohs

The product accords with the requirement of ROHS( 2011/65/EU)  
 Contacts use Exempted item of RoHS Directive 2010/571/EU 8(b)

#### •Compliance with REACH, PAHS, PH1, PH2, PH3

- Ignition Proof Yes, UL PEQZ2.E155159

#### •Typical applications

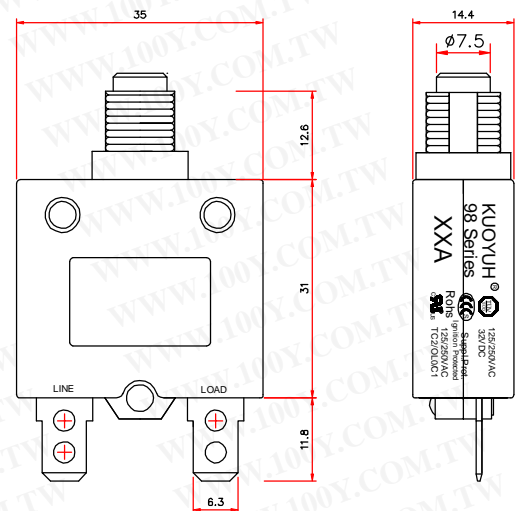
Transforms, Motors, Battery chargers, Power supplies, appliances, extra low voltage systems, machinery.

#### •Calibration(at25°C)

- 100% of Rated Current: Hold , No Trip
- 150% of Rated Current: Trip Within 1 Hour.
- 200% of Rated Current: 5-30 sec Trip
- 300% of Rated Current: 1.5-5.0 sec Trip

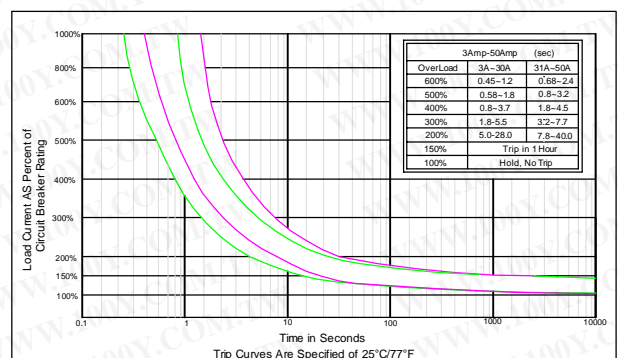
#### •Approval

Approval & File No.	Rated current	Rated voltage
•CUL UL E155159	3-50A	125/250VAC; 50VDC
•TUV SUD B15 09 58611 007	3-30A	125/250VAC; 32VDC
•CCC 201101030752058	3-30A	125/250VAC.
•VDE 40036160	3-16A	125/250VAC
•CSA 102199	3-30A	125VAC



\* Dimension in mm:

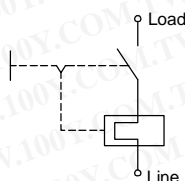
#### •98 Series 3A-50A Trip Time Curves



#### •Max.Internal Resistance

Amp rating	Max resistance
3-5 A	<0.225 Ohms
6-8 A	<0.175 Ohms
9-11 A	<0.125 Ohms
12-13 A	<0.050 Ohms
14-17 A	<0.040 Ohms
18-24 A	<0.030 Ohms
25-35 A	< 0.020 Ohms
36-50 A	< 0.010 Ohms

#### •Internal connection diagram



#### •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.

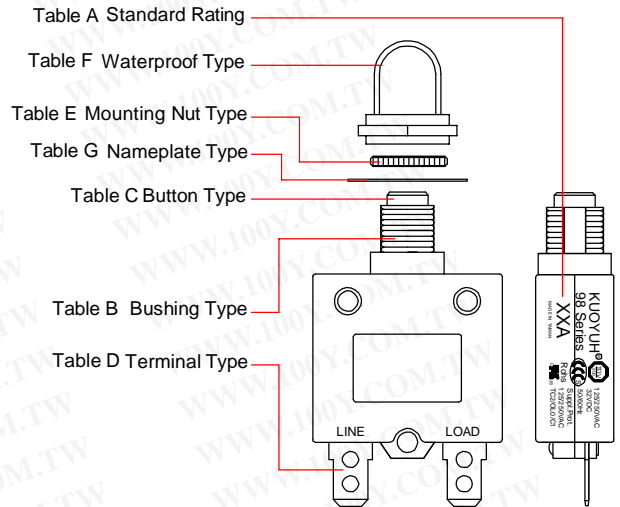
Example : Normal Continuous Current = 10A  
 Ambient Temperature = 45°C  
 Multiplication Factor = 0.85  
 Recommended Rating= 10A/0.85=11.8A  
 Select the Nearest Rating = 12A

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

Order Guide	<b>98- 20- A1 B 1 4- P 0 0 N B</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 O=No plate
Body Type.	B=Black W=White

03= 3.0A	13= 13.0A
3.5= 3.5A	15= 15.0A
04= 4.0A	16= 16.0A
05= 5.0A	17= 17.0A
06= 6.0A	18= 18.0A
07= 7.0A	20= 20.0A
08= 8.0A	25= 25.0A
09= 9.0A	30= 30.0A
10= 10.0A	35= 35.0A
11= 11.0A	40= 40.0A
12= 12.0A	50= 50.0A

<b>A1</b> Metal M11XP1.0	<b>B1</b> Metal M11XP1.0	<b>A2</b> Metal M12XP1.0	<b>A3</b> Metal 3/8"-27T
<b>B3</b> Metal 3/8"-27T	<b>B7</b> Metal 7/16"-27T	<b>P1</b> Plastic M11XP1.0	<b>P2</b> Plastic M12XP1.0
<b>P3</b> Plastic 3/8"-27T	<b>PS</b> Plastic Snap in	<b>KF</b> Plastic Snap in	
<b>P1,A1,B1</b>		<b>A2,P2</b>	
<b>P3,A3,B3</b>		<b>PS,KF</b>	
<b>B7</b>			



<b>0</b> None	<b>P</b> Plastic Integrated Knurl nut	<b>Q</b> Plastic Knurl nut	<b>A</b> Metal Knurl nut	<b>B</b> Metal Hex nut M11 H=14 M12 H=15	<b>C</b> Metal	<b>4</b> Plastic	<b>5</b> Metal	<b>6</b> Plastic
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<b>B</b> = Black button (黑推桿)	<b>W</b> = White button (白推桿)	<b>R</b> = Red button (紅推桿)
1	5	6
7	8	9
X	Y	Z

<b>0</b> None	<b>R</b>	<b>M</b>	<b>V</b>	<b>F</b>	<b>U</b>
	$\phi 12.0 \pm 0.5$	$\phi 10.5 \pm 0.5$	$\phi 12.0 \pm 0.5$	$\phi 13.0 \pm 0.5$	$\phi 8.5 \pm 0.5$
	19.5±1.0	19.5±1.0	18.0±1.0	16.0±1.0	15.5±1.0
	18.0±1.0	18.0±1.0	18.0±1.0	18.0±1.0	15.5±1.0
	R11-M11xP1.0 Clean R12-M12xP1.0 Clean	M3-3/8"-27T Clean Only	V11-M11xP1.0 Clean Only	F11-M11xP1.0 Clean F12-M12xP1.0 Clean F3-3/8"-27T Clean	U3-3/8"-27T Black U5-3/8"-27T Clean

<b>0</b> None	<b>B</b> Black plate	<b>A</b> Black plate	<b>S</b> Black plate	<b>L</b> Black plate
	<b>W</b> White plate		<b>X</b> White plate	For Waterproof
	$\phi 24$	$\phi 24$	$\phi 24$	$\phi 26$

<b>1</b> Straight 11.8mm	<b>2</b> 90° bend	<b>3</b> 90° bend	<b>4</b> Line pin 90° bend Load pin Straight	<b>5</b> Line pin Straight Load pin 90° bend	<b>8</b> 45° bend up	<b>9</b> 45° bend down	<b>F</b> Screw #8-32 Straight	<b>L</b> Screw #8-32 90° bend up	<b>J</b> Screw #8-32 90° bend down	<b>G</b> Line pin Screw 90° bend Load pin SO.25 Straight	<b>K</b> Line pin SO.25 Straight Load pin Screw 90° bend	<b>H</b> Line pin Screw 90° bend Load pin Screw Straight
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