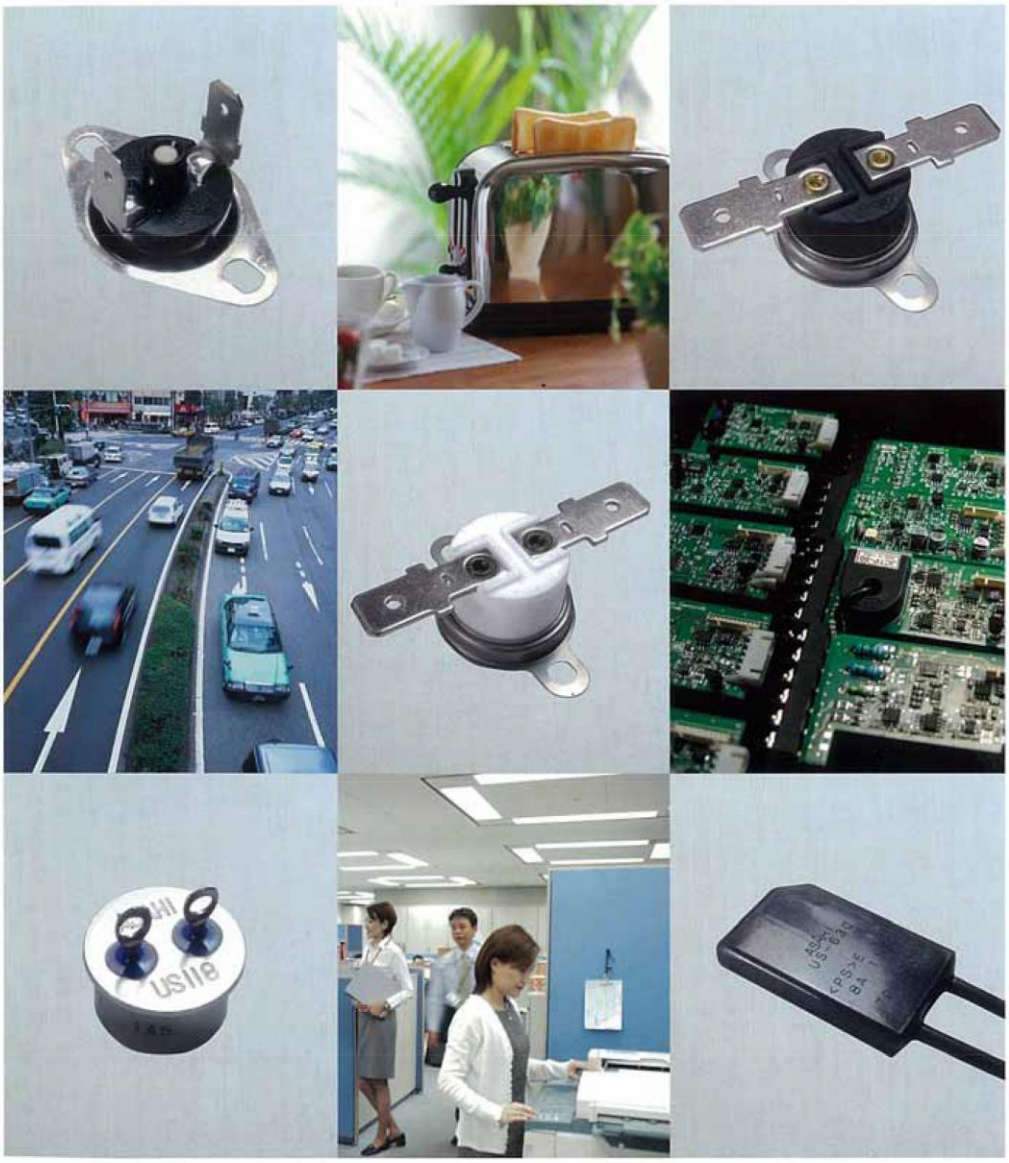
General Catalog of THERMOSTAT



ASAHI KEIKI CO., LTD.

www.asahikeiki.co.jp

ISO9001 ISO14001
JET-0058 E03-394

Contents

Products line up for each function

Thermostats for household goods


Kettle /Jar pot


Oven


Coffeemakers


Electronic stove/
Ceramic heater


Microwave oven


Humidifier


Refrigerator


Vacuum Cleaner


Washing machine
with dryer /
Clothes drying machine


Collection


Sandwich maker/
Crape maker


Hotplate/Deep fryer


Air Conditioner


Dish Drier machine


IH cooking heater


IH rice cooker


Steamer


Iron

ASAHI KEIKI CO., LTD.

Products line up for each function

Thermostats for Gas oil appliance

Gas oil stove/
Fan heater

Rapid water-heaters/
Eco cute

Bath furnaces

Built-in cooking stove

Thermostats for home appliance

Electric boiler

Douches and
Air dryers for
attachments to
a toilet

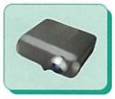
Floor heating

Electric mat/
Kitchen mat

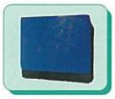
Thermostats for commercial appliance

Vending machine/
Freezing display case

Copying machine/
Printer/
Razor multifunction
printer



Liquid crystal projector



Rear projection

ASAHI KEIKI CO., LTD.

Products line up for each function

Thermostats for vehicle

Car seat

Automobile handle heater

Electric motor cart

Extra motors for boat

Thermostats for OA machine

OA machine

Another category's thermostat

Working machine

Electric source device

Print circuit board

Alkali ion water cleaning device

ASAHI KEIKI CO., LTD.

1/2 Disc, Automatic Reset type thermostat

US-118

US-118CXIL

Specification

Electrical rating	Type B:125 VAC, 3A max., resistive load Type C:24V DC, 1A max., resistive load 40V DC, 500mA max., resistive load
Operating temp range	One point fixed between 0 to 250℃
Differential	10 to 25K
Temp tolerance	150℃ or less:Operating temp. ±4℃/Returning temp. ±7℃ 151℃ or more:Operating temp. ±5℃/Returning temp. ±8℃ 200℃ or more:Operating temp. ±8℃/Returning temp. ±10℃
Circuit resistance (initial value)	Type B:70 mΩ or less Type C:10 mΩ or less
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	Type B:1,200 VAC/1 minute Type C:1,000 VAC/1 minute
Heat durability	250℃
Switching durability	10,000 times or more (at rated load)

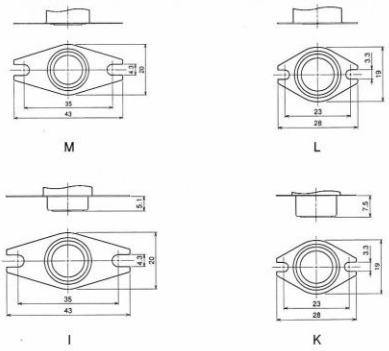
＊The differential varies slightly with the operating temperature.

Model Code

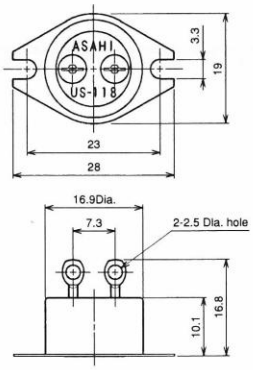
US-118□□□□□

- Attached terminal type (Terminal type : Only P)
  - A : Attached
  - No symbol : Without attachment
- Bracket type
  - M : Surface bracket
  - L : Surface bracket
  - I : Air stream bracket
  - K : Air stream bracket
  - O : No bracket
- Terminal type
  - Contact material:B
    - H : For soldering (with φ2 hole)
  - Contact material:C
    - P : Pin terminal
    - W : For welding
    - I : For soldering (with φ2.5 hole)
- Contact type
  - X : Open on temperature rise
  - Y : Close on temperature rise
- Contact material
  - B : Ag contact
  - C.Q : Au cross bar contact

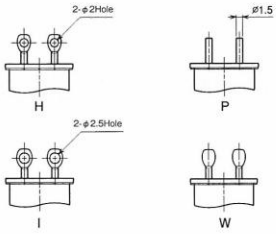
Bracket type



Dimensional drawings



Terminal type



ASAHI KEIKI CO., LTD.

1/2 Disc, Automatic Reset type thermostat

US-602

US-602SXRLQE

Specification

Electrical rating	Type S:125 VAC, 15A max., resistive load 250 VAC, 8A max., resistive load Type K:30 VDC, 1A max., resistive load 120 VAC, 125VA (Pilot Duty)
Operating temp range	10 to 160℃ (50 Degrees F to 320 Degrees F)
Differential	10 to 25K (50 Degrees F to 77 Degrees F)
Temp tolerance	Operating temp. ±4℃/Returning temp. ±7℃
Circuit resistance (initial value)	Type S:50 mΩ or less Type K:10 mΩ or less
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	S type AC1,500V/ 1 minute K type AC1,200V/ 1 minute
The maximum override temperature	195℃ (383 Degrees F)
Switching durability	100,000 times or more (at rated load)

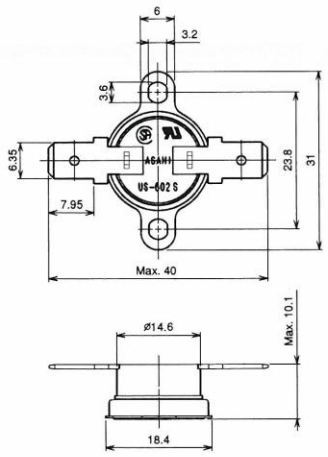
* The differential varies slightly with the operating temperature.
* Low-temperature use products (anti freezing type) are also available.
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

Model Code

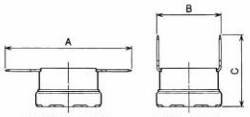
US-602□□□□□□

- Cover material and mounting bracket type
  - AS:Stainless steel, Stationary Surface bracket
  - FF:Stainless steel, Movable surface bracket
  - QE:Aluminum, Movable surface bracket
  - QL:Aluminum, Movable surface bracket
  - QM:Aluminum, Movable surface bracket
  - QN:Aluminum, Movable surface bracket
  - QD:Aluminum, Movable surface bracket
  - FO:Stainless steel, No bracket
  - RO:Stainless steel, No bracket, 20φ round flange
  - QO:Aluminum, No bracket
  - DO:Aluminum, No bracket, Exposed type
  - NO:Aluminum, No bracket, 20φ round flange
  - IO:Stainless steel, Air stream bracket(Depth/4.6mm)
  - CO:Stainless steel, Air stream bracket(Depth/4.2mm), Exposed type
  - JO:Stainless steel, Air stream bracket(Depth/5.2mm)
  - KO:Aluminum, Air stream bracket (Depth/4.8mm)
  - SO:Stud mounting [6-32 UNC/8-32UNC/10-32UNF/M3×0.5/M4×0.7/M5×0.8]
- Terminal type
  - L:Equivalent to Positive Lock Connector 250 series
  - M:Equivalent to Positive Lock Connector 187 series (t0.5)
  - S:For soldering
  - V:Equivalent to IEC 730-1 (Terminal size:4.8) (DIN46244A4.8-0.8)
- Terminal angle
  - R:Horizontal (See the figure shown to the follows)
  - T:Vertical (See the figure shown to the follows)
- Contact type
  - X:Open on temperature rise
  - Y:Close on temperature rise
- Contact material
  - S:Ag alloy contact
  - K:Au (Gold) cross bar contact

Dimensional drawings



Terminal type and angle



R (Horizontal) T (Vertical)

Terminal type	A	B	C
L	38.0	16.5	21.0
M	35.5	16.0	19.5
S	27.0	16.0	15.0
V	32.0	16.5	18.0

[Unit : mm]

1/2 Disc, Automatic Reset type thermostat

US-622

Specification

Electrical rating Switching durability	1) 125 VAC, 15A max., resistive load 250 VAC, 10A max., resistive load 100,000 times or more 2) 250 VAC, 16A max., resistive load 30,000 times or more 3) 250 VAC, 6(6)A Cos ϕ 0.6, Inductive load 10,000 times
Operating temp range	10 to 185℃ (50 Degrees F to 365 Degrees F)
Differential	10 to 25K (50 Degrees F to 77 Degrees F)
PTI	250V
Temp tolerance	150℃ or less; Operating temp. ±4℃/Returning temp. ±7℃ 151℃ or more; Operating temp. ±5℃/Returning temp. ±8℃
Circuit resistance (initial value)	50 mΩ or less
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	1,500 V/1 minute
The maximum override temperature	235℃ (455 Degrees F)

* The differential varies slightly with the operating temperature.
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

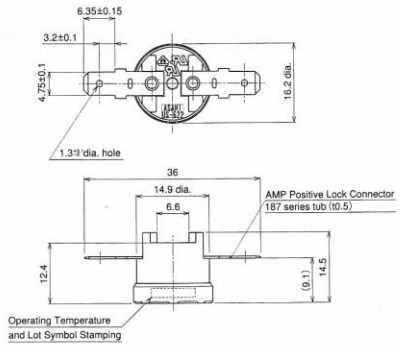
RoHS

Model Code

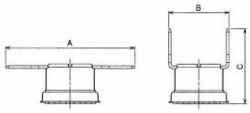
US-622□□□□□□

- Cover material and mounting bracket type
  - LS: Stainless steel, Stationart surface bracket
  - FF: Stainless steel, Movable surface bracket
  - QE: Aluminum, Movable surface bracket
  - QL: Aluminum, Movable surface bracket
  - QM: Aluminum, Movable surface bracket
  - QN: Aluminum, Movable surface bracket
  - QD: Aluminum, Movable surface bracket
  - FO: Stainless steel, No bracket
  - RO: Stainless steel, No bracket, 20ϕ round flange
  - QO: Aluminum, No bracket
  - DO: Aluminum, No bracket, Exposed type
  - NO: Aluminum, No bracket, 20ϕ round flange
  - IO: Stainless steel, Air stream bracket (Depth/4.6mm)
  - CO: Stainless steel, Air stream bracket (Depth/4.2mm), Exposed type
  - JO: Stainless steel, Air stream bracket (Depth/5.2mm)
  - KO: Aluminum, Air stream bracket (Depth/4.8mm)
  - GO: Aluminum, Air stream bracket (Depth/5.4mm)
  - SO: Stud mounting
    [6-32UNE/8-32UNC/10-32UNF/M3×0.5/M4×0.7/M5×0.8]
- Terminal type
  - L: Equivalent to Positive Lock Connector 250 series
  - M: Equivalent to Positive Lock Connector 187 series (t0.5)
  - S: For soldering
  - V: Equivalent to IEC 730-1 (size: 4.8)
  - D: Equivalent to DIN46244 (Brass/size: 4.8)
  - J: Equivalent to DIN46244 (Steel/size: 6.3)
- Terminal angle
  - R: Horizontal (See the figure shown to the follows)
  - T: Vertical (See the figure shown to the follows)
- Contact type
  - X: Open on temperature rise
  - Y: Close on temperature rise
- Application type
  - A: Ag contact/Standard case
  - P: Ag contact/4 post case
  - K: Au cross bar contact/Standard case

Dimensional drawings



Terminal type and angle



R (Horizontal) T (Vertical)

Terminal type	A	B	C
L	40.0	19.0	23.5
M	36.0	18.0	21.0
S	23.0	15.5	15.5
V	36.5	19.0	21.5

[Unit : mm]

*Above dimention is applied for US-622A and K

1/2 Disc, Automatic Reset type thermostat

US-621

US-621AXRIMO

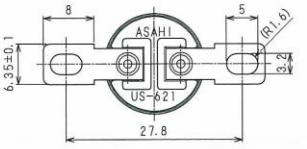
RoHS

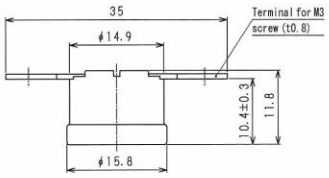
Specification

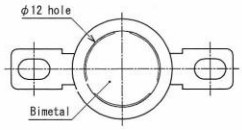
Electrical rating	125VAC, 15A max, resistive load 250VAC, 10A max, resistive load
Operating temp range	0～200℃ (32 Degrees F to 392 Degrees F)
Temp tolerance	150℃ or less: Operating temp. ±4℃ 151℃ or more: Operating temp. ±5℃
Circuit resistance (initial value)	50 mΩ or less
Insulation resistance	100MΩ or more (with 500VDC megger)
Dielectric strength	1,500V / 1minute
Heat resistance	200℃
Cold resistance	-20℃
Switching durability	1time (at rated load)

* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

Dimensional drawings





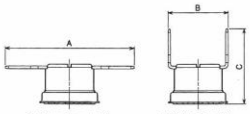


Model Code

US-621□□□□□□

- Cover material and mounting bracket type
  - QE: Aluminum, Movable surface bracket
  - QL: Aluminum, Movable surface bracket
  - QM: Aluminum, Movable surface bracket for M3 Tapping screw
  - QN: Aluminum, Movable surface bracket
  - QD: Aluminum, Movable surface bracket
  - RO: Stainless steel, No bracket, 20φ flange
  - MO: Stainless steel, No bracket, Exposed type
  - QO: Aluminum, No bracket
  - DO: Aluminum, No bracket, Exposed type
  - NO: Aluminum, No bracket, 20φ flange
  - IO: Stainless steel, Air stream bracket (Depth/4.6mm)
  - CO: Stainless steel, Air stream bracket (Depth/4.2mm), Exposed type
  - JO: Stainless steel, Air stream bracket (Depth/5.2mm)
  - KO: Aluminum, Air stream bracket (Depth/5.2mm)
  - GO: Aluminum, Air stream bracket (Depth/5.4mm)
  - SO: Stud mounting
    [6-32 UNC/8-32 UNC/10-32 UNC/M3×0.5/M4×0.7/M5×0.8]
- Terminal type
  - G: Equivalent to AMP Positive Lock Connector 250 series (Steel, Nickel plating, t0.8)
  - H: Equivalent to AMP Positive Lock Connector 187 series (Steel, Nickel plating, t0.5)
  - E: Equivalent to IEC 730-1 (Terminal size:4.8, Steel, Nickel plating, t0.8)
  - I: For M3 screw (Steel, Nickel plating t0.8)
    ※Horizontal is available.
- Terminal angle
  - R: Horizontal (See the figure shown to the follows)
  - T: Vertical (See the figure shown to the follows)
- Contact type
  - X: Open on temperature rise
  - Y: Close on temperature rise
- Contact material
  - A: Ag alloy contact

Terminal type and angle



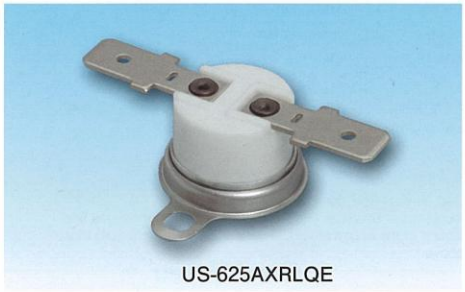
R (Horizontal) T (Vertical)

Terminal type	A	B	C
G	40.0	19.0	23.5
H	36.0	18.0	21.0
I	35.0	—	—
E	36.5	19.0	21.5

[Unit : mm]

1/2 Disc, Automatic Reset type thermostat

US-625



US-625AXRLQE

Specification

Electrical rating	Type A: 125 VAC, 15A max., resistive load 250 VAC, 10A max., resistive load 250 VAC, 6(6)A Cos 0.6, Inductive load 10,000 times Type K: 30 VDC, 1A max., resistive load 120 VAC, 125 VA (Pilot Duty)
Operating temp range	0 to 260℃ (104 Degrees F to 500 Degrees F)
Differential	15 to 40K (59 Degrees F to 104 Degrees F)
Temp tolerance	150℃ or less; Operating temp. ±4℃/Returning temp. ±7℃ 151℃ or more; Operating temp. ±5℃/Returning temp. ±8℃ 200℃ or more; Operating temp. ±7℃/Returning temp. ±10℃
Circuit resistance (initial value)	50 mΩ or less
Insulation resistance	100 mΩ or more (with a 500 VDC megger)
Dielectric strength	1,200 V/1 minute
Over shoot temp for drip type coffee maker	260℃ (Max operating temp. 200℃) 500 Degrees F (Max operating temp. 392 Degrees F)
Switching durability	100,000 times or more (at rated load)

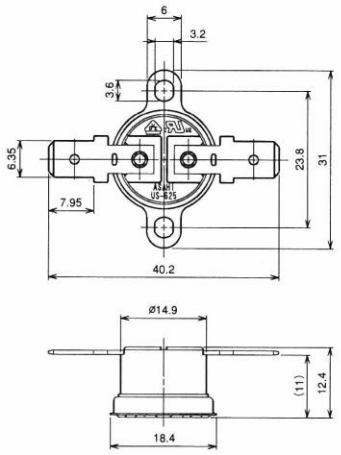
* The differential differ in different operating temperature.
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

Model Code

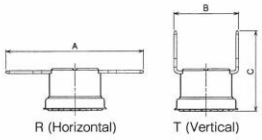
US-625□□□□□

- Cover material and mounting bracket type
  - QE: Aluminum, Movable surface bracket
  - QL: Aluminum, Movable surface bracket
  - QM: Aluminum, Movable surface bracket
  - QN: Aluminum, Movable surface bracket
  - QD: Aluminum, Movable surface bracket
  - MO: Stainless steel, No bracket, Exposed type
  - QO: Aluminum, No bracket
  - DO: Aluminum, No bracket, Exposed type
  - NO: Aluminum, No bracket, 20φ round flange
  - JO: Stainless steel, Air stream bracket (Depth/5..2mm)
  - KO: Aluminum, Air stream bracket (Depth/4.8mm)
  - GO: Aluminum, Air stream bracket (Depth/5.4mm)
- Terminal type
  - L: Equivalent to Positive Lock Connector 250 series
  - M: Equivalent to Positive Lock Connector 187 series
  - S: For soldering
  - V: Equivalent to IEC 730-1 (size: 4.8)
  - D: Equivalent to DIN46244 (Brass/size: 4.8)
  - J: Equivalent to DIN46244 (Steel/size: 6.3)
- Terminal angle
  - R: Horizontal (See the figure shown to the follows)
  - T: Vertical (See the figure shown to the follows)
- Contact type
  - X: Open on temperature rise
  - Y: Close on temperature rise
- Application type
  - A: Ag alloy contact/Standard case
  - K: Au cross bar contact/Standard case

Dimensional drawings



Terminal type and angle



R (Horizontal) T (Vertical)

Terminal type	A	B	C
L	40.0	19.0	23.5
M	36.0	19.0	21.0
S	23.0	15.5	15.5
V	36.5	19.0	21.5

[Unit : mm]

* Above dimention is applied for US-622A and K

1/2 Disc, Manual Reset type thermostat

US-603

US-603AXRMQE

Specification

Electrical rating	Type A-U: 125 VAC, 15A max., resistive load 250 VAC, 10A max., resistive load 120 VAC, 12A max., inductive load 120 VAC, FLA 5.8A, LRA 34.8A 240 VAC, FLA 2.9A, LRA 17.4A Type K: 30 VDC, 1A max., resistive load 120 VAC, 125 VA (Pilot Duty)
Operating temp range	One point fixed between 50 to 160℃ (104 Degrees F to 320 Degrees F)
Temp tolerance	Operating temp. ±5℃
Circuit resistance (initial value)	50 mΩ or less
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	A·U type:1,500 V/1 minute K type:1,200 V/1 minute
Switching durability	6,000 times or more (at rated load)

* Type K (Au contact type) for micro currents.
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

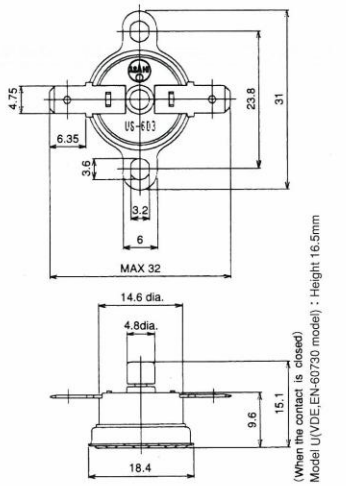
RoHS

Model Code

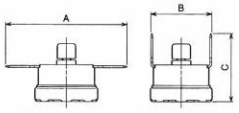
US-603□X□□□□−□

- H: VDE, EN 60730 model (for U type only)
- Cover material and mounting bracket type
  - AS: Stainless steel, Stationary Surface bracket
  - FF: Stainless steel, Movable surface bracket
  - QE: Aluminum, Movable surface bracket
  - QL: Aluminum, Movable surface bracket
  - QM: Aluminum, Movable surface bracket
  - QN: Aluminum, Movable surface bracket
  - QD: Aluminum, Movable surface bracket
  - FO: Stainless steel, No bracket
  - RO: Stainless steel, No bracket, 20ϕ round flange
  - QO: Aluminum, No bracket
  - DO: Aluminum, No bracket, Exposed type
  - NO: Aluminum, No bracket, 20ϕ round flange
  - IO: Stainless steel, Air stream bracket (Depth/4.6mm)
  - CO: Stainless steel, Air stream bracket (Depth/4.6mm), Exposed type
  - JO: Stainless steel, Air stream bracket (Depth/5.2mm)
  - KO: Aluminum, Air stream bracket (Depth/4.8mm)
  - SO: Stud mounting
    [6-32UNC/8-32UNC/10-32UNF/M3×0.5/M4×0.7/M5×0.8]
- Terminal type
  - L: Equivalent to Positive Lock Connector 250 series
  - M: Equivalent to Positive Lock Connector 187 series (t0.5)
  - S: For Soldering
  - V: Equivalent to IEC730-1 (Terminal size: 4.8)
- Terminal angle
  - R: Horizontal (See the figure shown to the follows)
  - T: Vertical (See the figure shown to the follows)
- Contact type
  - X: Open on temperature rise
- Application type
  - A: Ag contact
  - K: Au cross bar contact
  - U: Ag contact, apply EN 60730

Dimensional drawings



Terminal type and angle



R (Horizontal) T (Vertical)

用途型式	Type A・K			Type U
Terminal type	A	B	C	C
L	38.0	16.5	21.0	22.4
M	35.5	16.0	19.5	20.9
S	27.0	16.0	15.0	16.4
V	32.0	16.5	18.0	19.4

[Unit : mm]

1/2 Disc, Manual Reset type thermostat

US-623

US-623AXRGQL

Specification

Electrical rating	125VAC, 15A max, resistive load 250VAC, 16A max, resistive load
Operating temp range	One point fixed between 50 to 205℃ (50 Degrees F to 401 Degrees F)
Temp tolerance	Operating temp. ±8℃ (4%)
Circuit resistance (initial value)	50 mΩ or less
Insulation resistance	100MΩ or more (with 500VDC megger)
Dielectric strength	1,500V / 1minute
Switching durability	6,000 times or more (at rated load)

* The differential varies slightly with the operating temperature.
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

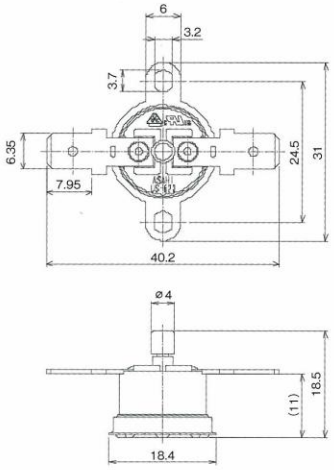
RoHS

Model Code

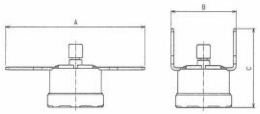
US-623□□□□□□

- Cover material and mounting bracket type
  - AS: Stainless steel, Stationary surface bracket, Hole pitch 23.8mm
  - QE: Aluminum, Movable surface bracket, Hole pitch 23.8mm
  - QL: Aluminum, Movable surface bracket
  - QD: Aluminum, Movable surface bracket
  - FO: Stainless steel, No bracket
  - FF: Stainless steel, Movable surface bracket
  - RO: Stainless steel, No bracket, 20φ flange
  - MO: Stainless steel, No bracket, Exposed type
  - QO: Aluminum, No bracket
  - DO: Aluminum, No bracket, Exposed type
  - NO: Aluminum, No bracket, 20φ flange
  - IO: Stainless steel, Air stream bracket (Depth/4.6mm)
  - CO: Stainless steel, Air stream bracket (Depth/4.2mm), Exposed type
  - JO: Stainless steel, Air stream bracket (Depth/5.2mm)
  - KO: Aluminum, Air stream bracket (Depth/5.2mm)
  - GO: Aluminum, Air stream bracket (Depth/5.4mm)
  - UO: Aluminum, Air stream bracket (Depth/5.0mm) Hole pitch 23.8mm
  - VO: Stinless steel, Air stream bracket (Depth/4.6mm) Hole pitch 23.8mm
  - SO: Stud mounting [6-32 UNC/8-32 UNC/10-32 UNC/M3×0.5/M4×0.7/M5×0.8]
- Terminal type
  - L: Equivalent to AMP Positive Lock Connector 250 series (Brass, 6.3×t0.8)
  - G: Equivalent to AMP Positive Lock Connector 250 series (Steel, Nickel plating, 6.3×t0.8)
  - J: Equivalent to DIN 46244 (Steel, Nickel plating, 6.3×t0.8)
  - M: Equivalent to AMP Positive Lock Connector 187 series (Brass, 4.8 ×t0.5)
  - H: Equivalent to AMP Positive Lock Connector 187 series (Steel, Nickel plating, 4.8×t0.5)
  - D: Equivalent to DIN 46244 (Brass, 4.8×t0.8)
  - V: Equivalent to IEC730-1 (Brass, 4.8×t0.8)
  - S: For Soldering (Brass, t0.5)
- Terminal angle
  - R: Horizontal (See the figure shown to the follows)
  - T: Vertical (See the figure shown to the follows)
- Contact type — X: Open on temperature rise
- Contact material — A: Ag alloy contact

Dimensional drawings



Terminal type and angle



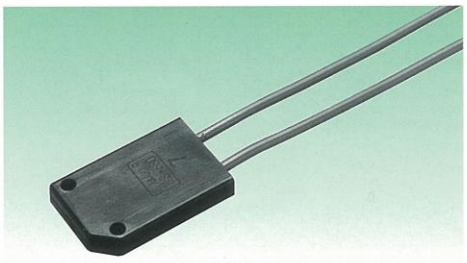
R (Horizontal) T (Vertical)

Terminal type	A	B	C
J	40.0	19.0	23.5
H	36.0	18.0	21.0
V	36.5	19.0	21.5
S	23.0	15.5	15.5

[Unit : mm]

Square type thermostat

US-630



US-630AXOSR

Specification

Electrical rating	125 VAC, 8A max., resistive load 250 VAC, 4A max., resistive load
Operating temp range	Products without thermal fuse One point fixed between 0 to 120℃ Products with thermal fuse One point fixed between 0 to 90℃
Differential	8 to 15K
Temp tolerance	Operating temp. ±5℃/Returning temp. ±5℃
Circuit resistance (initial value)	70 mΩ or less (The value varies depending on the type of the thermal fuse and lenght of the lead wire)
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	1,200 V/1 minute
Heat durability	130℃/24 hours (Except for the thermal fuse and the lead wire)
Switching durabilit	100,000 times or more (at rated load)

* The differential varies slightly with the operating temperature.
* Please contact the Overseas Sec for the length of the lead wires, lead wires with Various terminals, and multiple types with two to six elements.
* The operating temp. of Thermal fuse must be fixed higher 30℃ against operating temperature of thermostat.
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

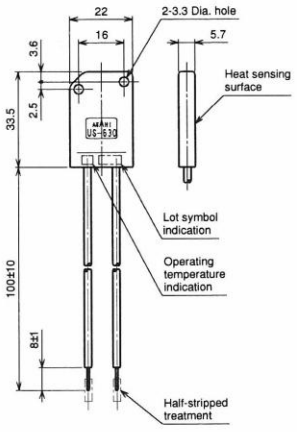
Model Code

US-630A□□□□-□□□□

- Special specification
- Lead wire type
  - R:Black heat resisting wires (0.5mm², 100, 500, 1000mm length)
  - L:Black heat resisting wires (0.75mm², 200, 500, 1000mm length)
  - F:Equivalent to Faston 187 series
  - T:Single element version (with special lead wires)
  - 2:Dual element version
  - 3:Triple element version
  - ⋮ ⋮
- Case type
  - S:Case mounting type (without the thermal fuse)
  - W:Heavy load case type (Available with/without the thermal fuse)
- Thermal fuse type
  - A:100℃ 2A
  - B:112℃ 2A
  - C:129℃ 2A
  - K:100℃ 5A
  - L:112℃ 5A
  - M:129℃ 5A
  - F:99℃ 8A
  - G:113℃ 8A
  - H:130℃ 8A
  - O:Without the thermal fuse
- Contact type
  - X:Open on temperature rise
  - Y:Close on temperature rise
- Contact material
  - A:Ag contact

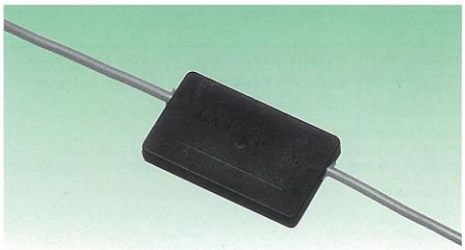
Dimensional drawings

Case mounting type



Square type thermostat

US-631



US-631AXBL

Specification

Electrical rating	125 VAC, 8A max., resistive load 250 VAC, 4A max., resistive load
Operating temp range	Products without thermal fuse One point fixed between 0 to 120℃ Products with thermal fuse One point fixed between 0 to 75℃
Differential	8 to 15K
Temp tolerance	Operating temp. ±5℃/Returning temp. ±5℃
Circuit resistance (initial value)	80 mΩ or less (The value varies depending on the type of the thermal fuse and lenght of the lead wire)
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	1,200 V/1 minute
Heat durability	130℃/24 hours (Except for the thermal fuse and the lead wire)
Switching durabilit	100,000 times or more (at rated load)

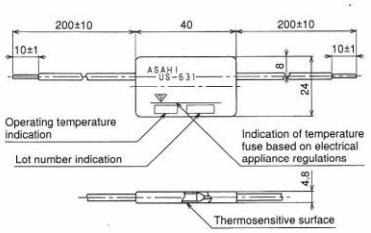
* The differential varies slightly with the operating temperature.
* Please contact the Overseas Sec for the length of the lead wires, lead wires with various terminals, and multiple types with two to six elements.

Model Code

US-631B□□□-□□□□

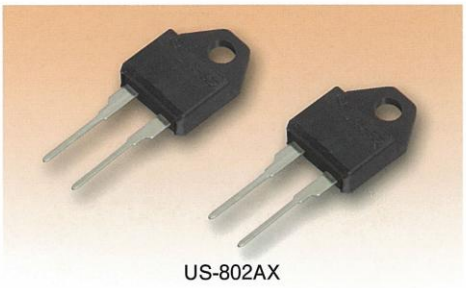
- Special specification
- Lead wire type
  - L:Black heat resisting wires (0.75mm², 200mm long)
  - U:Black heat resisting wires (AWG 20, 200mm long)
  - T:Single element version (with special lead wires)
  - 2:Dual element version
  - ⋮ ⋮
- Thermal fuse type
  - A:100℃ 2A
  - B:112℃ 2A
  - C:129℃ 2A
  - K:100℃ 5A
  - L:112℃ 5A
  - M:129℃ 5
  - O:Without the thermal fuse
- Contact type
  - X:Open on temperature rise
  - Y:Close on temperature rise
- Contact material
  - B:Ag alloy contact

Dimensional drawings



Small type thermostat

US-802



US-802AX

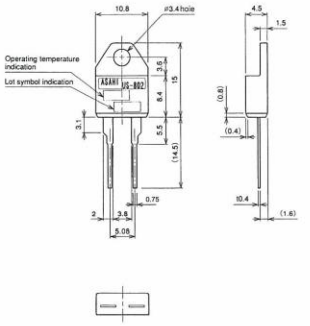
Specification

Electrical rating	1) 48 VDC, 1A max., resistive load 125 VAC, 1A max., esistive load 30,000 cycles 2) 5 VDC, 20mA max., resistive load 100,000 cycles
Operating temp range	One point fixed between 40 to 120℃
Differential	15K
Temp tolerance	Operating temp. ±5℃/Returning temp.±7℃
Circuit resistance (initial value)	50 mΩ or less
Insulation resistance	100 MΩ or more (with a 500 VDC megger)
Dielectric strength	1,200 V/1 minute between terminals and cover 1,500 V/1 second

* Ultra-compact design, easy to mount on a PC Board
* Please contact the Overseas Sec for the details since the types and specifications of the approved models are slightly different from those shown above.

RoHS

Dimensional drawings



Model Code

US-802□□□□□

- Operating temperature — Ex) 085:85℃
- Contact type — X:Open on temperature rise / Y:Close on temperature rise
- Application type — A:Standard

Standard Calibrations

US-802AX Type (Open on temperature rise) /Limit

MODL CODE	Operate Temp. ℃ OFF ±5K	Reset Temp. ℃ ON ±7K
802AX040	40	25
802AX045	45	30
802AX050	50	35
802AX055	55	40
802AX060	60	45
802AX065	65	50
802AX070	70	55
802AX075	75	60
802AX080	80	65
802AX085	85	70
802AX090	90	75
802AX095	95	80
802AX100	100	85
802AX105	105	90
802AX110	110	95
802AX115	115	100
802AX120	120	105

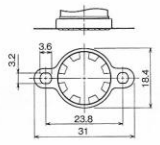
US-802AY Type (Close on temperature rise) /Fan

MODL CODE	Reset Temp. ℃ OFF ±7K	Operate Temp. ℃ ON ±5K
802AY040	25	40
802AY045	30	45
802AY050	35	50
802AY055	40	55
802AY060	45	60
802AY065	50	65
802AY070	55	70
802AY075	60	75
802AY080	65	80
802AY085	70	85
802AY090	75	90
802AY095	80	95
802AY100	85	100
802AY105	90	105
802AY110	95	110
802AY115	100	115
802AY120	105	120

Holder model

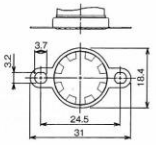
Movable bracket

Aluminum



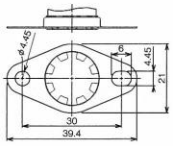
QE

Aluminum



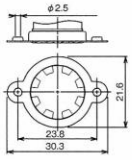
QL

Aluminum



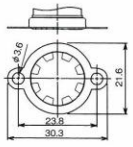
QD

Aluminum



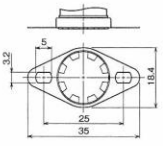
QM

Aluminum



QN

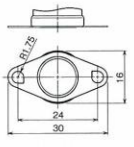
Stainless



FF

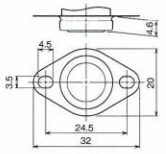
Fixed bracket (FIXED)

Stainless



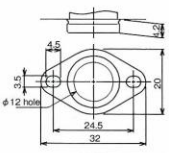
AS

Stainless



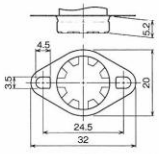
IO

Stainless (Expustd)



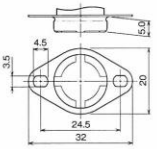
CO

Stainless



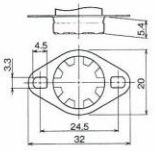
JO

Aluminum



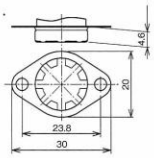
KO

Aluminum



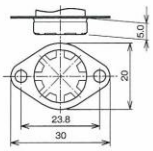
GO

Stainless-steel



VO

Aluminium



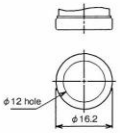
UO

No bracket

Aluminum

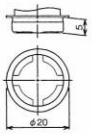
QO

Aluminum (Expustd)



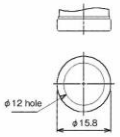
DO

Aluminum



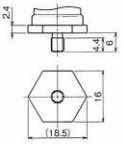
NO

Stainless



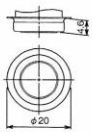
MO

Brass



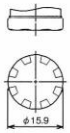
SO

Stainless



RO

Stainless



FO

The products with environmental care

Our Asahi-Keiki thermostat struggle with the products fir environmental care.

The list of the products with environmental care.			
Disc type	US-118	US-602S	US-621
	US-622	US-625	US-603
	US-623	US-630	US-631
Print circuit board	US-802		

The list of gas heating appliance parts inspections system registration

Code number	Type	Variety	Maximum temperature	Air tight specification	Voltage · Electric current	Remarks
Type, registration number : PC−1003						
001 002	118C	normally close · automatic recovery type	180℃	air tight specification	DC 24V 1A DC 40V 0.5A	stainless cover
005 006	118B				DC 125V 3A DC 25V 3A	
019 020	630A		120℃		DC 40V 2A	PBT
021 022	602S		150℃	without air tight	DC 40V 2A	stainless cover aluminum cover

Type, registration number : PC−1004						
002	603A	normally close · manuai reset type	150℃	without air tight	DC 40V 2A	stainless cover
003	603K				DC 40V 0.5A	

* This list is consisted of the registration number and contents for simple overview which passed the exam of "The parts for gas heating device inspection system" and registered.
* This table is a content that the recognition registration is done, and part differs As general use for this model.
* Please contact the Overseas Sec in detail,there is a special variation option which adoesn't register
* In the case of applying this registered products whose terminal apply with this list the test of "gas burning appliance type approval , thermostat test will be abbreviated so that please write down the above described [type authorization number and code number] (maker name [Asahi Keiki Co.,Ltd] [type name [US-＊＊＊].
* This system's examination and registration agency is Japan Gas Application Inspection Association (Nagoya examination office)

Overseas Safety Standards

MODEL (US-)	602S	602K	603U	603U-H	603K	622 include SOD	622K	621 include SOD	623	625 include SOD	625K
UL	●	●	●	●	●	●	●	●	●	●	
C-UL		●		●		●	●	●	●	●	
CSA	●										
VDE EN 60730	●			●		●	●	●		●	●
CQC	●		●	●		●				●	

MODEL (US-)	630U	631	802 include SOD
UL	●	●	●
C-UL			●
CSA			
VDE EN 60730			●
CQC			

ASAHI KEIKI CO., LTD.

RoHS directive [Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment]

Beginning in July 2006, following specific amount of toxic substances or more will become sales regulated products in the EU whole area.

Pb (Plumb)
Cd (cadmium)
Hg (Mercury)
Hexad chrome
PBB (polybrominated biphenyl
PBDE (polybrominated diphenyl ether)

CE marking [Abbreviation for Communaute Europeenne]

Mark shows that third party approved that applicable products apply with the European Union Directive's requested requirement
Target products (eliminate partially) is every device fixed to use electrical rating as AC50 to 1000V such as, electric device used in potential explosive environment, medecine des rayonnements and electric device for medical purpose, and personnel lift's electric device, electric meter, plug for during use and electric convenience receptacle ball cup, electric fence controller, radio transmission—electric wave hindrance as well as corresponded special electric instruments for ships, airborne or to be for railway are particularly adapted for safety code made by international authority which member countries took part in.

UL standard [Abbreviation for voluntary standard defined by Underwriters Laboratories Inc..]

The voluntary standard enacted Non profit organization's meeting of the National Association of fire Insurance Commissioners by American Association of insurance service founded in the year 1894.

To establish a standard and administer the test and certification aiming the secure the asset and life by fire disaster or electric shock by electric device.

Specification for UL Approval Products

File No.E52529
Standard:TEMPERATURE-INDICATING AND REGULATING EQUIPMENT.UL873
Product Classification:COMPONENT-TEMPERATURE INDICATING AND REGULATING EQUIPMENT (XAPX2)

UL Model	Rating	Maximum Temperature Rating	Durability
US-602S	AC125V 15A AC250V 8A Resistive Load	160℃	Limiting 100,000times
*US-602K	DC30V 1A Resistive AC120V 125VA Pilot Duty	160℃	Limiting 100,000times
US-603U (US-603U-H)	AC125V 15A AC250V 10A Resistive Load AC120V 12A Inductive Load 120VAC, FLA 5.8A, LRA34.8A 240VAC, FLA 2.9A, LRA 17.4A	160℃	Regulating 6,000times
US-603K	DC30V 1A Resistive AC120V 125VA Pilot Duty	160℃	Regulating 6,000times
*US-622	AC125V 15A AC250V 10A Resistive Load	185℃	Limiting 100,000times
		160℃	S.O.D (Single Operation Device) 1times
*US-622K	DC30V 1A Resistive Load	130℃	Limiting 100,000times
	AC120V 125VA Pilot Duty	160℃	
*US-621	AC125V 15A AC250V 10A Resistive Load	220℃	S.O.D (Single Operation Device) 1times
*US-623	AC125V 15A AC250V 16A	205℃	Regulating 6,000times
*US-625	AC125V 15A AC250V 10A Resistive Load	260℃	Limiting 100,000times
		220℃	S.O.D (Single Operation Device) 1times
*US-802	48VDC 1A 125VAC 1A	120℃	Regulating 30,000times
US-630U	AC120V 5A AC120V 2A Resistive Load	100℃	Limiting 100,000times
US-631U	AC120V 5A AC120V 2A Resistive Load	100℃	Limiting 100,000times

* We acquire the C-UL certification regarding the *mark moder.
* Please contact the Overseas Sec about the UL certified product's variation of cover·holder model and terminal model.

File No. E166395
Standard:THERMAL PROTECTORS FOR MOTORS. UL547
Product Classificatioin:COMPONENT—MOTOR PROTECTIVE DEVICES-INHERENT OVERHEATING TYPE (XEWR2)

US-602S	AC120V FLA5.8A/LRA34.8A AC240V FLA2.9A/LRA17.4A Inductive Load	160℃	Regulating 100,000times	Same as the File No.E52529

General cautions

〈Storage procedure〉

1) Please avoid direct sunlight and keep it in a long-term keeping, within the range of the temperature of -10+70℃ and in relative humidity of 60% or less.

2) Please preserve the product in the place have no dust, dirt, toxic dose of chemicals in electric parts and gas.

About the use of the bimetal thermostat

Precautions in handling

Snapper type

a) A deformed heat sensitive surface may result in changed thermal responses or disturbance of operating temperature.
   (1) Avoid the deformity of the sensitive surface from dropping or hitting with tools.
   (2) Do not apply excessive force to a terminal, especially while connecting lead wires if the product has a small body and a large terminal.
   (Example) Employ a procedure starting from the "Lead wire connection" to "Thermostat installation" When a reverse procedure is employed, use jigs.

b) Pay attention to storage to ensure that no dust enters from a case joint part although the problem is not serious as in leaf products. If there is an inadvertent drop or shock, it is recommended that you re-check the operating temperature.

Precautions in handling

Please use thermostat at below to electrical rating and current rating.

1. Thermal response

When the thermal response is slow, it can be apparently improved by bringing a part of the heater close to the thermostat or by utilizing self-heating with an excited current. Basically, however it is required that you reduce heating resistance from the heat source to the heat sensitive surface of the thermostat mainly to improve the following properties:

(1) Decrease temperature ripple in the steady stats.
(2) Reduce overshooting during initial operation.
   (Larger overshooting may result in fuse disconnection even if the thermostat functions.)
(3) Faster responses during abnormalities.
(4) Decreased influence by changing atmospheric temperatures.
(5) Greater differences from excessive rise protective temperatures can be obtained to avoid wrong operation during normal operation.
(6) Smaller variations in mass production.

In practical applications, please pay attention to the following.

a) Finish a counterpart surface of installation which comes into contact with a teat absorbing part of a thermostat as flat as possible (a rivet base surface in leaf products, a heat-sensitive surface in snapper products).
b) During installation, make sure that no dirt is caught in counterpart surface.
c) To decrease radiation from the rear, insulate the rear by using a cover or other measures.

2. Electrical cautions.

Unless otherwise specified, the rated voltage/current is indicated at the resistive load (power factor=1).
However, current-carrying capacities are reduced roughly as shown in Table 1 at the following loads:
In practice, considerable changes can be produced by different temperature conditions, vibrations atmospheres or environments. If you use the product in an area close to the limit of the rated values, it is recommended that you contact us or test it under actual
load conditions for verification.

[Table 1]

	Resistive load (power factor=1)	Inductive load (power factor=0.4)
AC 125V	100% of the rated value	50%
DC 30V	50%	20%

* In the case of inductive loads, a significantly high counter electromotive force is generated when contacts are open, to produce an arc between contacts. Especially in DC, this are is difficult to get rid of, leading to premature contact wear.
* While contact is made, a lash current larger that the steady state can be generated depending on the loads used. This results in severe damage to the contacts.

[Table 2]

Load	Lash current
Ramp Mercury lamp, Fluorescent light	10 to 15 times higher than steady state Approx. 3 Times
Solenoid	10 to 20 times
Magnet switch	3 to 10 times
Motor	5 to 10 times

In the case of resistive loads, a lash current is, normally, 1.0 to 1.2 times higher than the steady state, causing no serious problems, but resistive loads with even a slight inductivity (e.g,. a thin wire with a large number of windings) may affect a contact life.
Please check the nature of the load employed.

About the use of the bimetal thermostat

3. Operating temperature

Our measuring method.

The operating temperature data of our thermostat products are measured mainly under following conditions.
Which are widely used in the usual measuring method ;
(1) Air circulation thermostats are used.
(2) Temperature is increased or decreased by one degree C in one minute.
(3) No load current runs
(4) The first operating temperature (1st operation) is recorded

Determination of the operating temperature in practical application

When a product is actually used, the respective conditions described above are subjected to a significant change including:
(1) A product is often tightly mounted to an object.
(2) The rates of temperature rises or decrease vary greatly depending on the equipment,
(3) The actual load current flows.
(4) It is the first operation with an excessive temperature-rise protection device but for controls, operation each time is effective.

This may result in apparent changes in the operating temperatures. Therefore, obtain a correlation of a single thermostat measuring data item and the temperatures of the controlled object (place) according to experiments and the determine the appropriate operating temperature of the thermostat so that the controlled object has a specified temperature. Please specify the thermostat operating temperature to be set when you place an order.

Important

○The contents described in this book based on the data as of March 2007 so that it is likely to be going to change without a previous notice in the future. Please contact our sales department when you consider mass production.

○Please acknowledge that our company cannot carry by concerning directly and attaching to a structural manufacturing method of the product of our company besides the one when it concerns and problem occurs in third party's industrial property etc. by having used this product.

○Generally, the breakdown will occur in electronic parts at certain probability.
It is impossible to adjust the establishment to 0 percent probability though it works for the improvement of the quality of product and reliability as our company.
When the trouble breakdown occurs by any chance, we will exchange the Replacements free of charge.

○Our product is an intention of the thing used for "General usage" shown below.
So that if you have any ideas using our products for the devices or systems like special usage as below,
Please contact our company sales department prior because we could prospect special quality standard will be needed.

＊Common application :
computer, OA machines communication equipments measurement instruments, audio-visual devices home electric appliances, working machines Personal computers and industrial robot.

＊Special application :
transportation equipment (automobile, train, ships and etc.)'s Control unit, aircraft, Medical equipment for life maintenance, Etc.