

NAIS**ECO-FRIENDLY SWITCHES****TIP (AHF1)
SWITCHES****FEATURES**

An eco-friendly switch-replacing a mercury switch with steel ball inside
High corrosive gas resistance-sealed construction by O ring assures high contact reliability

**TYPICAL APPLICATIONS**

- For detection of tip
 - Gas heaters
 - Electric air conditioners
 - Electric fans
- For criminal detection
 - Vending machines
 - Public phones
 - Amusement equipments

ORDERING INFORMATION

Vertical mounting type	Part number	Horizontal mounting type	Part number
<p>PC board</p> <p>Steel ball</p>	AHF11		AHF12

SPECIFICATIONS**1. Contact rating**

0.1A 30VDC

Applicable range: 1mA 5VDC to 0.1A 30VDC

2. Characteristics

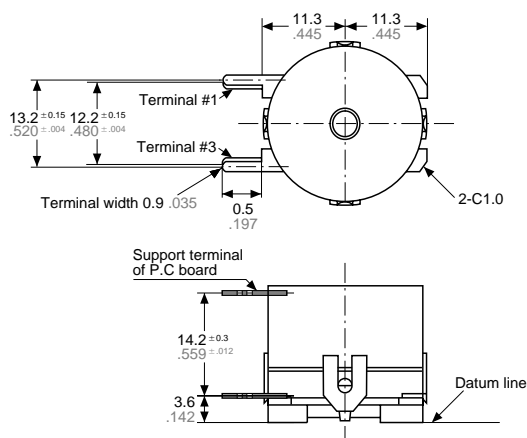
Expected electrical life (Min. operations)	0.1A 30VDC resistive	Min. 5×10^3
	1mA 5VDC resistive	Min. 10^6
Insulation resistance		Min. 100 m at 500 VDC
Dielectric strength		100 Vrms for 1 min.
Vibration resistance		2.9 m/s ² {0.3G} 40 to 400 Hz for 7 days 5 to 10 Hz at double amplitude of 10 mm, 5×10^6 cycles
Shock resistance		588 mm/s ² {60G}, 6 directions, 3 times/each direction
Ambient temperature		-25°C to +85°C, -13°F to +185°F (not freezing below 0°C 32°F)
Ambient humidity		Max. 85%RH
Initial contact resistance		Max. 100 m (by voltage drop, 0.1A 6 to 8 VDC)

3. Operating characteristics

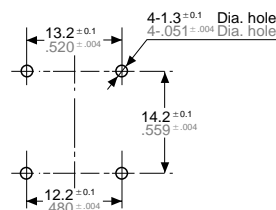
Operating angle (angle of turning off the circuit)	Goes off at more than 25 and less than 60 degrees in relation to the reference line (with an operation angle of 6 degrees/second in the X and Y directions)
Release angle (angle of turning on the circuit)	Goes on at 20 degrees or more (in the X and Y directions)

DIMENSIONS

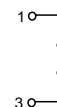
VERTICAL MOUNTING TYPE



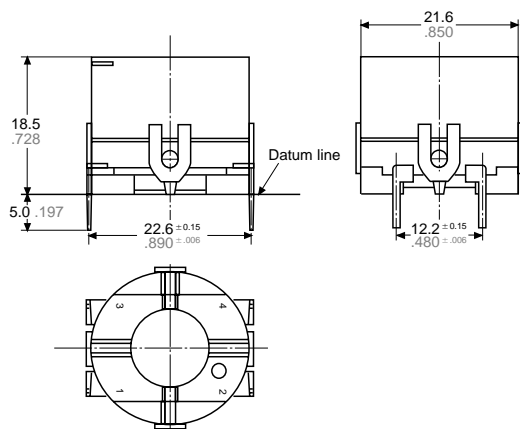
PC board pattern



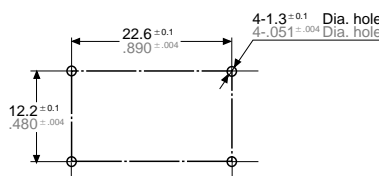
Schematic



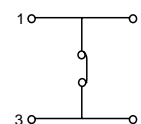
HORIZONTAL MOUNTING TYPE



PC board pattern



Schematic



NOTES

1. Soldering operations

1) for manual soldering

Soldering should be accomplished in less than 8 seconds with a 60 watt iron max.

(iron tip temperature: Max. 350°C 662°F)

2) For automatic soldering

Soldering should be done less than 10 seconds in 260°C 500°F solder bath or less than 3 seconds in 350°C 662°F solder bath.

2. Environment

Avoid using and keeping switches in the following conditions.

- In corrosive gases
- In a dusty environment
- Where silicon atmosphere prevails

3. Quality check under actual loading conditions

To assure reliability, check the switch under actual loading conditions.

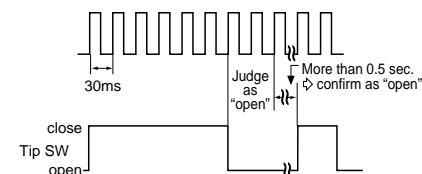
4. Recommended circuit for tip

Contact chattering may happen when vibration or shock is applied to the switch because of a leaf spring and steel ball inside. Please detect a signal by following procedure.

- 1) Read access by a microcomputer should be done every 30 msec. at 1mA 5VDC.
- 2) Two reading 'open' in succession should be judged as 'open' condition.
- 3) After the judgement, if the 'open' condition continues for more than 0.5 sec., the condition should be confirmed lastly.

<Example>

Microcomputer read access



5. Others

- Switch cover is set to the body through O-ring for sealing purpose. Do not disassemble the switch or the characteristics may change.
- For switching of inductive loads (relay, solenoids, buzzers, etc.), in order to prevent damage to contacts due to the occurrence of arcing, an arc absorbing circuit should be applied.