

SPECIFICATIONS  
FOR

PRODUCT NAME : Automatically small horizontal Vibration detection switch  
TYPE NAME : D7A-3

ISSUED : S. Maeda April 21. 1999

CHECKED : S. Mori April 22. 1999

APPROVED : M. Yamada. Apr 22. '99

OMRON Corporation

## 1. Mechanism parameter

## (1) Dimensions

DRWG. No. 6421280-4

## (2) Structure

The contact of the built-in switch is mechanically opened and closed by the vibration of the earthquake wave and it is the mechanism which takes out the signal.

## (3) Protection structure

The switch is assumed to be IP40.

## (4) Set sensitivity

90-170  $\text{cm/s}^2$ (Gal) (Depend on the horizontal, continuous excitation method of 0.3, 0.5, and 0.7 cycle seconds).

The above-mentioned sensitivity is a value by which it is set to operate by the earthquake waves (80-250  $\text{cm/s}^2$ ) in the seismic intensity aiming.

## (5) Return mechanism

Automatic return type

## (6) Installation level allowance value

The installation level allowance value of the device which builds in this item while installed normal is assumed  $\pm 5$  degrees or less.

## (7) Point of contact form

Excite horizontally and turn ON in the range of set sensitivity.

## (8) The horizontal return time

Time from the fixation of the device which builds in this item in the installation level allowance value to the normal return of the switch circuit is made within 20 seconds.

(However, 10°C or more)

## (9) Circuit return time

Time until the switch circuit returns original after the vibration stops is made within one minute.

## (10) Installation specification

The lead wire point is made of the J.S.T Mfg.Co.,Ltd. (SMF-01T-1.0).

## (11) Installation method

**▲** Please execute the installation as shown in a right picture. Please tighten the installation screw with M4 or equal goods and conclude the tightening torque with 9.61-11.47N·m.

## 2. Electric specification

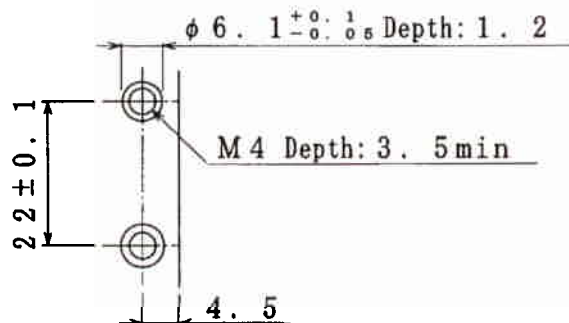
## (1) Electric ratings

DC3V, 5  $\mu$ A ~ DC3V, 1mA

## (2) Insulation resistance

100M $\Omega$  or more (DC250VM).

Between each terminal and earth terminal,  
between the same pole terminals.



- (3) Voltage  
AC250V, 50/60Hz 1 minute (between each terminal and earth terminal between the same pole terminals).
- (4) Contact resistance  
Below initial  $1\Omega$  (terminal)
3. Mechanical specification
- (1) Transportation vibration  
Satisfy an initial value after exciting in half amplitude 2.5mm, the vibration frequency 10Hz, and the direction of three axes for 20 minutes or more.
- (2) Endurance impact  
▲ Do not provide the obstacle as a function after impressing the acceleration of  $980\text{m/s}^2$  in the direction of three axes continuousness three times.
- (3) Transportation impact  
Satisfy an initial value after 1 corner, 3 angles, and 7 times per three in total are dropped from the height of 60cm to a concrete side freely while packed.
- (4) Terminal strength  
Satisfy an initial value after impressing the load of 9.8N in the direction of compression for one minute.
4. Environmental performance
- (1) Use surroundings temperatures  $-30\text{--}70^\circ\text{C}$  (However, there must be neither be dew nor freezing)
- (2) Use surroundings humidity. 25~95%RH.
- (3) Preservation surroundings temperatures  $-40\text{--}70^\circ\text{C}$  (However, there must be neither be dew nor freezing)
- (4) Preservation surroundings humidity. 25~95%RH.
5. Business-proof Business
- (1) Salt water atomization examination  
Do not generate rust on corrosion and externals remarkable depending on the salt water on atomization examination method which builds in and provides for the meter of the gas to JIS Z 2371 after testing for 100 hours.  
A voltage must satisfy AC250V, 50/60Hz 1 minute about the insulation resistance of the switch because of  $5\text{M}\Omega$  or more.  
However, measures under the dry state after the examination ends.
- (2) Wetproofing  
Do not provide the obstacle as a function after leaving for continuousness 96 hour in atmosphere of  $40\pm 2^\circ\text{C}$  and 90~98%RH.  
The insulation resistance is assumed to be  $10\text{M}\Omega$  or more.  
However, measures under the dry state after the examination ends.
- (3) Heat-humidity cycle  
Do not do the cycle by 10 cycles at each heat-humidity of showing in Figure 2 of regulations of the check of the meter of the microcomputer and do not provide the obstacle as a function.  
The insulation resistance is assumed to be  $10\text{M}\Omega$  or more.  
Moreover, do not bleach the final cycle in the state of the low temperature.  
However, measures under the dry state after the examination ends.

(4) High temperature leaving

Do not provide the obstacle as a function after leaving in the constant temperature tank of  $70 \pm 2^\circ\text{C}$  for 96 hours.

(5) Heatproof impact

Do not provide the obstacle assuming 30  $\rightarrow$   $70^\circ\text{C}$ , minutes of  $30^\circ\text{C}$  and 30 minutes one cycle as a function after leaving for 10 cycles.

(6) Electric longevity

Do not provide the obstacle 10,000 times every DC3V, 1mA and the resistance load and 10-20 times of the operation frequency/the minute as a function after opening and shutting. However, the insulation resistance is assumed to be  $10\text{M}\Omega$  or more.

(7) Corroded gas

$\text{H}_2\text{S}5 \pm 1\text{ppm}$ ,  $40^\circ\text{C}$  and 65%RH and leaving for 96 hours.  
The contact resistance after examining is assumed to be  $1\text{k}\Omega$  or less.

Note 1. Among the judgment standards, the meaning of 'An initial value is satisfied' is as follows.

- ① Operation characteristic operates by 90-170  $\text{cm/s}^2$  (0.3, 0.5, and 0.7 cycle seconds).
- ② Contact resistance Below  $1\Omega$ .
- ③ Insulation resistance  $100\text{M}\Omega$  or more.
- ④ Voltage AC250V 50/60Hz 1 minute.

Moreover, the meaning of 'The obstacle is not provided as a function' is as follows.

- ① Operation characteristic operate by 80-250  $\text{cm/s}^2$  (0.3, 0.5, and 0.7 cycle seconds).
- ② Contact resistance Below  $100\Omega$ .
- ③ Insulation resistance  $100\text{M}\Omega$  or more.
- ④ Voltage AC250V 50/60Hz 1 minute.

Note 2. Guaranteed term and range of guarantee

(1) Guaranteed term

It will be assumed one year after the commodity is delivered.

(2) Range of guarantee

Only when the breakdown is caused during the above-mentioned guaranteed term by the responsibility of our company, the breakdown part of this commodity is exchanged or is repaired.

The guarantee is a guarantee of the delivery goods units and pardon expenditure (work pay and damage amends, etc.) because of the exchange work, please.

Note 3. The terms of validity of this specifications

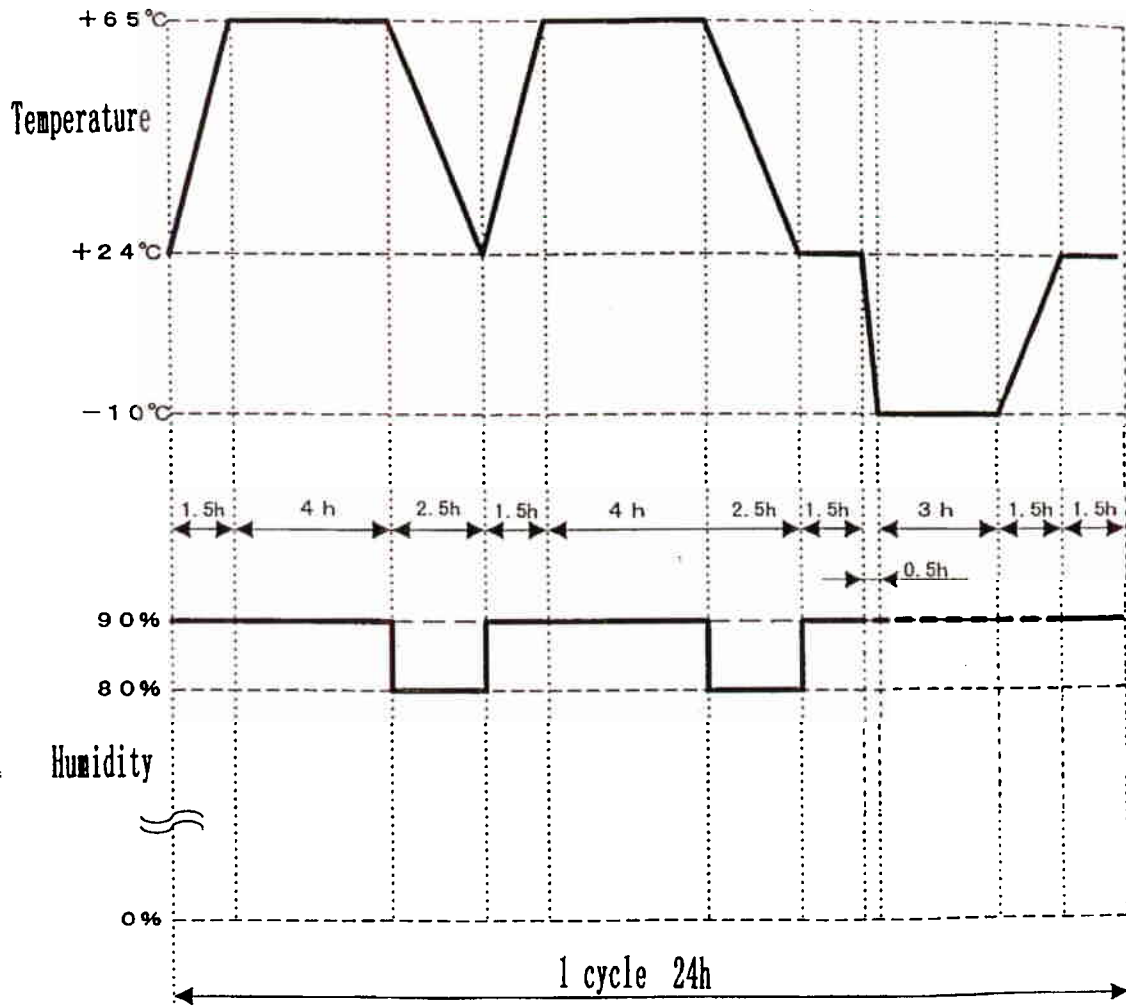
One year after the day of issue.

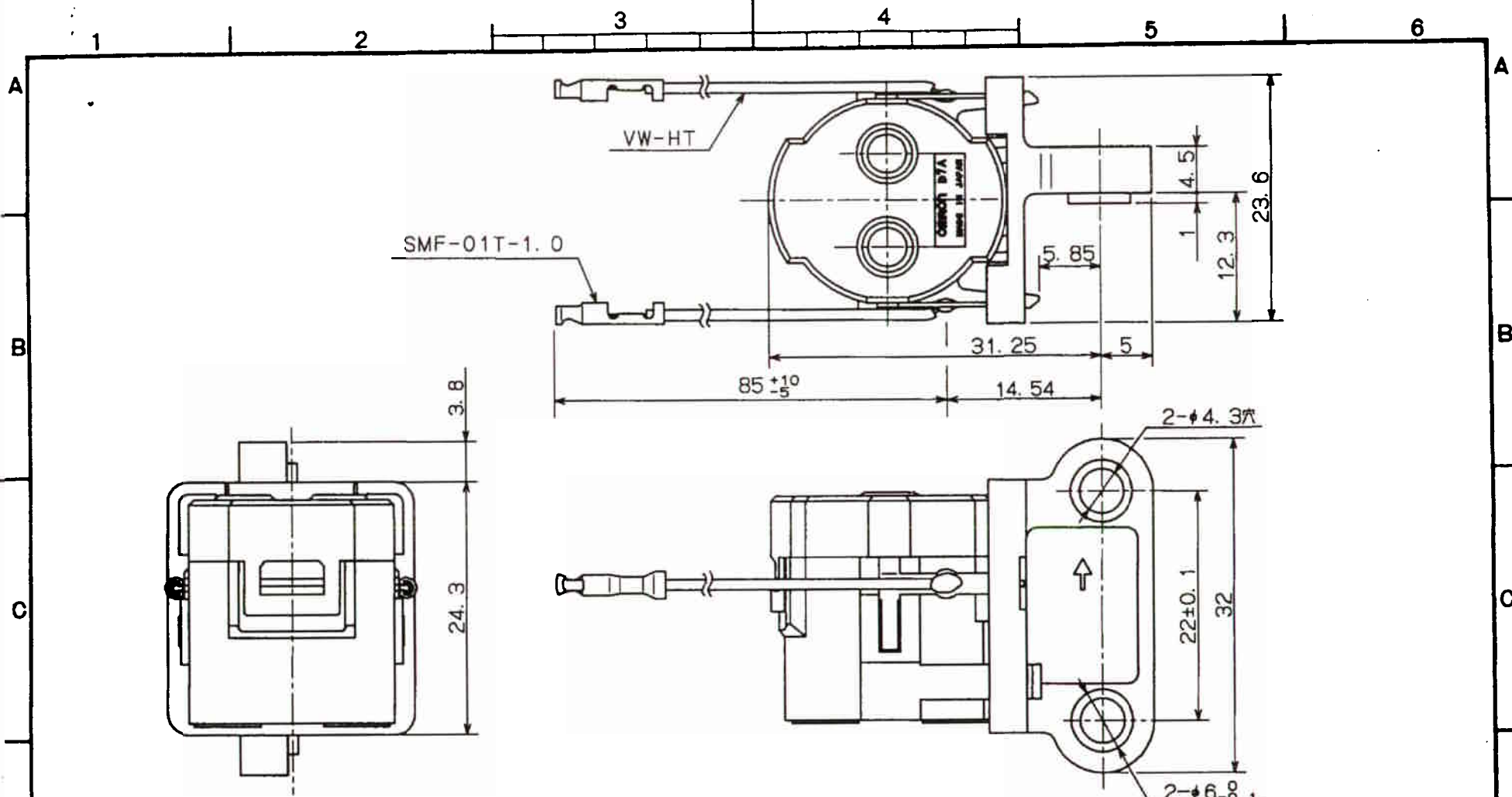
If we have not had any orders for one year, we will make this specifications invalid.

SYM	DATE	E/C CONTENTS	SIGN	SYM	DATE	E/C CONTENTS	SIGN
A 1	990421	changed to SI d' Unites	<i>B. Kondo</i>				

Inspecting regulations for microcomputer

Figure 2





					MATERIAL			SCALE		TYPE D7A-3	
					FINISH			2:1		OUTLINE DRAWING	
					TOLERANCES UNLESS SPECIFIED			3RD ANGLE		DRWG NO. 6421280-4 A	
					± 0.4			SHEET		DESIGNED FOR	
					DESIGNED						
					CHECKED						
					APPROVED						
					SIGNATURES						
					DATE						
					E/C. CONTENTS						
					E/C NO.						
					SIGN						

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