

Customer: ALPS EUROPE DISTRIBUTION

No. KK-2011-1284

Date: Oct. 28, 2011

Attention:

Your ref. No.:

Your Part No.: RK27112MC01P

SPECIFICATIONS

ALPS' ;

MODEL: RK27112MC01P
(50kAX2)

Spec. No.:

Sample No.: G 3 8 3 8 5 4 3 M

RECEIPT STATUS

RECEIVED

By Date

Signature

Name

Title

ALPS[®]
ALPS ELECTRIC CO., LTD.

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B6523

Q1003#03A (EA)

S P E C I F I C A T I O N S

1. THIS SPECIFICATIONS APPLY TO RK27112MCO1P POTENTIOMETER.

2. CONTENTS OF THIS SPECIFICATIONS.

5K272AMS-4

4K16M-1

4K-1

K272AMCO2Z

3. MARKING

- MARKING ON ALL UNITS

DATE CODE, RESIST. VALUE, TAPER

4. REMARKS

- FURNISH PACKAGE

NUT:1 WASHER:1

- NOTES

- Silver printed patterns are coated with carbon as a protection against sulphuration.

- Marking ⇒ in specifications shows standard and condition for application.

- CAUTION

There is a possibility that might be affected by contact resistance of resistive element and wiper in case of low impedance of output side in voltage regulation circuit.

For this reason, we require that you adjust to impedance of output side more than 100 times of total resistance.

1. For the export of products which are controlled items subject to foreign and domestic export laws and regulations, you must obtain approval and/or follow the formalities of such laws and regulations.

2. Products must not be used for military and/or antisocial purposes such as terrorism, and shall not be supplied to any party intending to use the products for such purposes.

3. Unless provided otherwise, the products have been designed and manufactured for application to equipment and devices which are sold to end-users in the market, such as AV (audio visual) equipment, home electric equipment, office and commercial electronic equipment, information and communication equipment or amusement equipment. The products are not intended for use in, and must not be used for, any application of nuclear equipment, driving control equipment for aerospace or any other unauthorized use.

With the exception of the above mentioned banned applications, for applications involving high levels of safety and liability such as medical equipment, burglar alarm equipment, disaster prevention equipment and undersea equipment, please contact an Alps sales representative and/or evaluate the total system on the applicability. Also, implement a fail-safe design, protection circuit, redundant circuit, malfunction protection and/or fire protection into the complete system for safety and reliability of the total system.

4. Before using products which were not specifically designed for use in automotive applications, please contact an Alps sales representative.

5. The products shall be stored in the original packaging and kept at room temperature and humidity, out of direct sunlight, and away from any and all corrosive gas. The products shall be completely used as soon as possible, but no later than 6 months from the date of delivery.

Once product packaging is opened, the complete quantity of such products shall be promptly used.

CLASS.NO.	TITLE	SPECIFICATIONS
		<p>Feature This is a potentiometer with D.C. magnet motor and it is adjustable by both manual shaft and motor.</p> <p>Temperature for operating and storage</p> <p>1. Dimensions : See attached drawing 2. Operating temperature : -10 °C ~ +70 °C 3. Storage temperature : -20 °C ~ +80 °C 4. Motor : D.C. magnet motor (With 6V Disk Varistor)</p> <p>Mechanical specifications</p> <p>1. Operation : manual operation and motor drive 2. Total rotational angle : 300° ± 5° 3. Rotational speed : 12 ± 3 sec/300° (at 4.5V D.C. applied to motor)</p> <p>4. Direction of rotation : C.W. rotation at normal polarity. (When the potentiometer is looked at from the shaft side.)</p> <p>5. Mechanical noise : Continuous, monotonous, not unpleasant sound to be heard. To be mutually discussed when questionable.</p> <p>6. Rotational torque : 15~45 mN·m at 60°/sec (Rotational speed 60°/sec.)</p> <p>7. Stopper strength of shaft with manual operation : No damage with an application of 0.9N·m at 60°/sec. Shaft must be slipped at the both ends of manual rotation.</p> <p>8. Bushing nut tightening strength: Δ Tightening torque to be no greater than 15 N·m at 60°/sec. (Pay attention: otherwise the strength may not be assured.)</p> <p>9. Push / pull strength : No damages with an application of push or pull force 100N at 10 sec for 10 sec.</p> <p>10. Resistance to soldering heat : After soldering there shall be no evidence of poor contact between resistance element and terminals, or any physical damage as a result of the test. The terminal of the potentiometer less than 350 °C and within 5 sec. The terminal of the motor less than 350 °C and within 2 sec.</p>

CLASS.NO.	TITLE	SPECIFICATIONS																				
		<p>Electrical specifications 50 KΩ</p> <p>1. Total resistance : Nominal total resistance $\pm 20\%$ (10KΩ \leq R \leq 2MΩ) 2. Rated voltage : 30V A.C. This potentiometer is designed for A.C. voltage only. 3. Resistance taper : See (HSA02) 4. Maximum attenuation level at full C.C.W. position :</p> <table border="1"> <thead> <tr> <th>Total resistance</th> <th>Attenuation level</th> </tr> </thead> <tbody> <tr> <td>R \geq 100kΩ</td> <td>100 dB min.</td> </tr> <tr> <td>100kΩ > R \geq 50kΩ</td> <td>90 dB min.</td> </tr> <tr> <td>50kΩ > R \geq 10kΩ</td> <td>80 dB min.</td> </tr> </tbody> </table> <p>5. Insertion loss at full C.W. position : 0.1 dB max. Measure between (r1, r2) term 1-2 output V 6. Gang error : (term 1-3 in out V)</p> <table border="1"> <thead> <tr> <th>Total resistance</th> <th>Gang error</th> </tr> </thead> <tbody> <tr> <td>R \geq 50kΩ</td> <td>3 dB max. between -70 dB less than -60 dB</td> </tr> <tr> <td>50kΩ > R \geq 20kΩ</td> <td>2 dB max. between -60 dB ~ 0 dB</td> </tr> <tr> <td>20kΩ > R \geq 10kΩ</td> <td>3 dB max. between -60 dB less than -40 dB</td> </tr> <tr> <td></td> <td>2 dB max. between -40 dB ~ 0 dB</td> </tr> <tr> <td></td> <td>3 dB max. between -60 dB ~ 0 dB</td> </tr> </tbody> </table> <p>7. Sliding noise : Less than 47mV measured by JIS C 6443. (Neglected a impulsive noise at the C.W. and C.C.W. ends of position.)</p> <p>8. Insulation resistance Potentiometer section : More than 100MΩ at 500V D.C. Motor section : More than 1MΩ at 100V D.C.</p> <p>9. Withstand voltage Potentiometer section : 500V A.C. for 1 minute. Supply voltage of motor : 4~6V D.C. Motor current (at 4.5V D.C. applied to motor) Normal operation : 100mA max. Slipping operation : 150mA max. at both ends : 4.5V D.C.</p> <p>Endurance specifications 1. Rotational life : 15,000 cycles min.</p>	Total resistance	Attenuation level	R \geq 100k Ω	100 dB min.	100k Ω > R \geq 50k Ω	90 dB min.	50k Ω > R \geq 10k Ω	80 dB min.	Total resistance	Gang error	R \geq 50k Ω	3 dB max. between -70 dB less than -60 dB	50k Ω > R \geq 20k Ω	2 dB max. between -60 dB ~ 0 dB	20k Ω > R \geq 10k Ω	3 dB max. between -60 dB less than -40 dB		2 dB max. between -40 dB ~ 0 dB		3 dB max. between -60 dB ~ 0 dB
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APPR.	CHKD.	DSGD.	TITLE
Aug. 10, 57	Aug. 6, 59		
Y. S.			
DATE	CHKD.	DSGD.	DOCUMENT NO.
			5K272AMS-4

ALPS ELECTRIC CO., LTD.

CLASS.NO.	TITLE	SPECIFICATIONS
3.	Power supply	<p>Regulated D.C. power supply shall be used. (ripple to be 1% max.) Motor terminal shall not be connected with fixed resistors in series. And supply current is to be 350mA min.</p> <p>4. Knob</p> <p>The material of the knob shall be insulation material. As potentiometer is not grounded, conductive material of the knob may cause a earth noise.</p> <p>5. The items except above mentioned items shall meet or exceed JIS C 6443.</p>

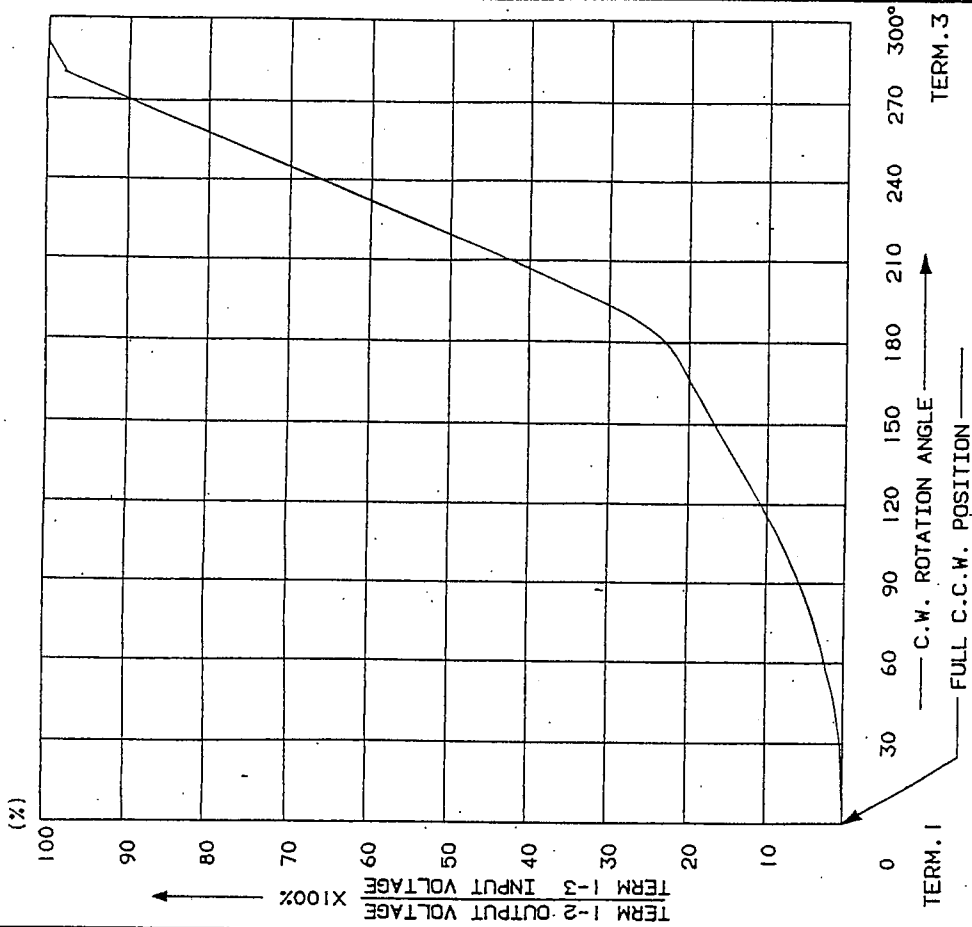
APPROV.	CHKD.	DSGD.	TITLE
APR 19 1990	APR 18 1990		
DATE	APPD.	CHKD.	DSGD.
ALPS ELECTRIC CO., LTD.			
DOCUMENT NO.			4K16M-1

CLASS.NO.	TITLE	SPECIFICATIONS
Note		<p>1. The standard test shall be subject to a temperature from 5 °C to 35 °C and relative humidity from 45% to 85%. Test shall be done under environmental requirements of a temperature of 20 ± 2 °C and relative humidity of 65 ± 5% if a decision is in question.</p> <p>2. Notice on motor</p> <p>1) Motor terminals shall not be bent more than twice.</p> <p>2) Soldering to the motor terminals shall be within a few second, not to cause the transformation of terminal base plastics. And, avoid that the flux flows into the motor. Pay special attention to the terminals when they are wave soldered.</p> <p>If the flux flows into the motor, it may cause a poor contact.</p> <p>3) Motor terminal should not be pressed inside the motor. It may cause a poor contact in the motor.</p> <p>4) Pay attention that a piece of iron and an alien substance are not crept into the motor.</p> <p>5) In operation, temperature around the motor produce an effect on the performance and life. Pay special attention in high temperature and humidity. Storage in high temperature and humidity, and in corrosive gas, shall be avoided.</p> <p>6) In case, using the adhesive agent and the seal agent etc. for fit up, make sure that there is no generation of the harmful gas for motor. (including all chemicals around the motor.) Pay special attention to cyanogen system adhesive agent and organically system silicone.</p>



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1-7 YUKIGAYA OTSUKA-CHO OTA-KU TOKYO JAPAN



TERM. 1 → FULL C.C.W. POSITION ———
 TERM. 3 → C.W. ROTATION ANGLE →

AT 180° C.W. SHAFT ROTATION FROM FULL C.C.W. POSITION, VOLTAGE PERCENT SHALL FALL WITHIN THE LIMITS OF 15 - 30PERCENT.

DSGD	SCALE	
CHKD.	K. Chonan Jan. 22 '96	
APPD.	S. Senachi Jan. 22 '96	TITLE
DATE	85-05-31	RESISTANCE TAPER
SYMB	M.I. I.K. S.S.	DOCUMENT NO.
	APPD/CHKD/DSGD	UNIT
	Y. Ohno Jan. 22 '96	mm
		HSA02

FOR

CLASS NO.

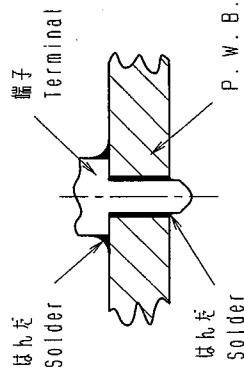
TITLE

<はんだ付け時の注意事項>

Caution for soldering

図のようにP.W.Bの上面にはんだを付けをする配線はお避け下さい。

Please avoid soldering on upper surface of P.W.B. as shown



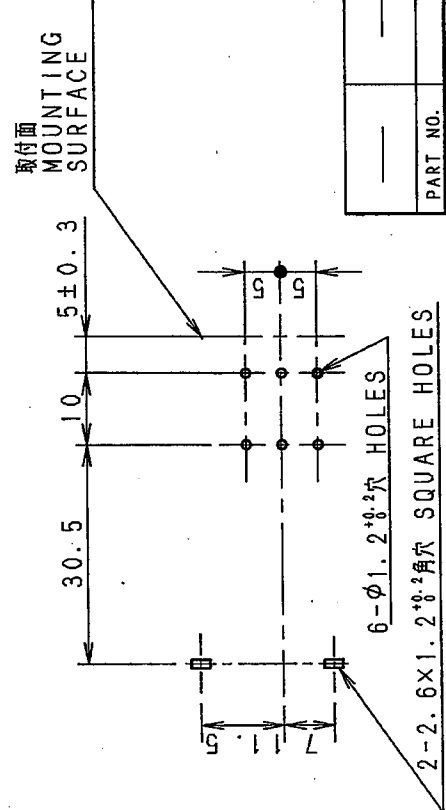
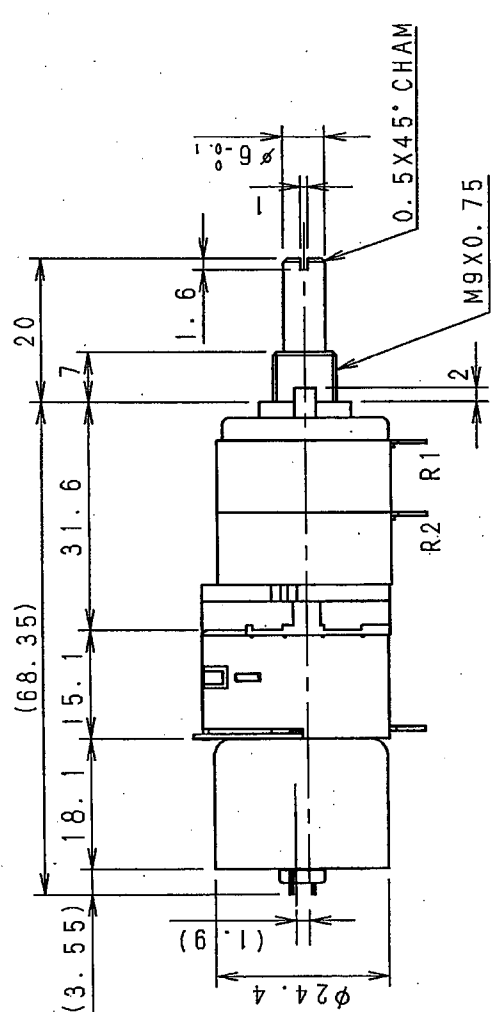
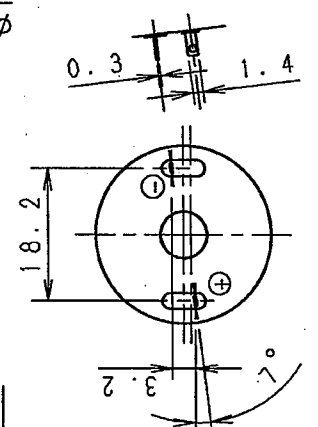
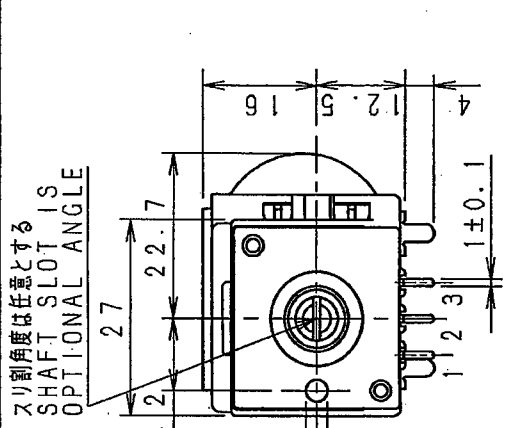
△ 基板に挿入される金属足はんだを付けてご使用願います。

Solder all metal inserted fixing including terminals & metal lugs into a substrate.



ALPS ELECTRIC CO., LTD.

SYMB	DATE	APPD	CHKD	DSGD	TITLE	DOCUMENT NO.
△	85-05-31	M.I. I.K. S.S.	Y. OHNO	Y. SATO	Y. OYA	4K-1 (1/1)



指定なき部分の許容差 TOLERANCES UNLESS OTHERWISE SPEC	
L ≤ 10	±0.3
10 < L ≤ 100	±0.5
100 < L	±0.8
角度 ANGULAR DIMENSION	±5°

取付寸法図許容差±0.1
挿入側よりみた図
P. W. B. MOUNTING DETAIL
TOLERANCE 0.1
VIEWED FROM MOUNTING SIDE

PART NO.	MATERIAL NAME / CODE	FINISH
ALPS ELECTRIC CO., LTD.		
DSGN. 1-77771 906011	SCALE	1:1
Y. SAITOH 95-12-11	CHKD.	Y. Ohya 95-12-12
27形1軸2速モーター-VR組立図	TITLE	27形1軸2速モーター-VR組立図
1995.3.22	DOCUMENT NO.	K272AMC02Z
SYMB	DATE	APPD
		Y. Yoshida 95-12-12
APPD	CHKD	DSGD
UNIT	UNIT	UNIT
m m	m m	m m

OR