

Customer : AEE-DS

No. F3449781M

Date : Aug. 26, 1994

Attention:

Your ref. No:

Your Part. No: **401508**

SPECIFICATIONS

ALPS :

MODEL RK27112MC
(10kBX2)

Spec. No. :

Sample No. : F3449781M

RECEIPT STATUS
 RECEIVED
 By. Date _____
 Signature _____
 Name _____
 Title _____

DSG'D *G. Saito*

APP'D *M. Saito*

ENG. DEPT. DIVISION

Sales

SPECIFICATIONS

1. THIS SPECIFICATIONS APPLY TO RK27112MC POTENTIOMETERS.

2. CONTENTS OF THIS SPECIFICATIONS.

4K272AMS-5
K272AMC00Z

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

PRELIMINARY copy.

CLASS.NO.	TITLE	SPECIFICATIONS
<p>Note</p> <ol style="list-style-type: none"> 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. 2. Notice on motor <ul style="list-style-type: none"> 1) Motor terminals shall not be bent more than twice. 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. 3) If the flux flows into the motor, it may cause a poor contact. Motor terminal should not be pressed inside the motor. It may cause a poor contact in the motor. 4) Pay attention that a piece of iron and an alien substance are not crepted into the motor. 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. 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. 		

CLASS.NO.	TITLE	SPECIFICATIONS
<p>3. Power supply 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 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>		
SYMB	DATE	APPD

APPR. V. CHKD.	DSGD	TITLE
Apr. 18 '60		
S. Hirabayashi		
R. Kamada		
DOCUMENT NO.		

CLASS NO.	TITLE	SPECIFICATIONS
		<p>Feature</p> <p>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</p> <p>2. Operating temperature : -10 °C ~ +70 °C</p> <p>3. Storage temperature : -20 °C ~ +80 °C</p> <p>4. Motor : D.C. magnet motor (With 6V Disk Varistor)</p> <p>Mechanical specifications</p> <p>1. Operation : manual operation and motor drive</p> <p>2. Total rotational angle : 300° ± 5'</p> <p>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 : 150 ~ 450 gf.cm (Rotational speed 60°/sec.)</p> <p>7. Stopper strength of shaft with manual operation : 9 kgf.cm min. with motor drive : Shaft must be slipped at the both ends of manual rotation.</p> <p>8. Bushing nut tightening strength: Tightening torque to be no greater than 15 kgf.cm. *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 10 kgf 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 10kΩ</p> <p>1. Total resistance : Nominal total resistance ±20% (10kΩ ≤ R ≤ 2MΩ)</p> <p>2. Rated voltage : 30V A.C. This potentiometer is designed for A.C. voltage only.</p> <p>3. Resistance taper : See (HSB02)</p> <p>4. Maximum attenuation level at full C.C.W. (*C.W.) position : 1. Maximum attenuation level at full C.C.W. (*C.W.) position : 0.1 dB max.</p> <p>6. Gang error :</p> <table border="1"> <thead> <tr> <th>Total resistance</th> <th>Attenuation level</th> </tr> </thead> <tbody> <tr> <td>R ≥ 100kΩ</td> <td>100 dB min.</td> </tr> <tr> <td>100kΩ > R ≥ 50kΩ</td> <td>90 dB min.</td> </tr> <tr> <td>50kΩ > R ≥ 10kΩ</td> <td>80 dB min.</td> </tr> </tbody> </table> <p>5. Insertion loss at full C.W. (*C.C.W.) position : 0.1 dB max.</p> <p>6. Gang error :</p> <table border="1"> <thead> <tr> <th>Total resistance</th> <th>Gang error</th> </tr> </thead> <tbody> <tr> <td>R ≥ 100kΩ</td> <td>5 dB max. between -80 dB less than -70 dB</td> </tr> <tr> <td></td> <td>3 dB max. between -70 dB less than -60 dB</td> </tr> <tr> <td></td> <td>2 dB max. between -60 dB ~ 0 dB</td> </tr> <tr> <td>100kΩ > R ≥ 50kΩ</td> <td>3 dB max. between -70 dB less than -60 dB</td> </tr> <tr> <td></td> <td>2 dB max. between -60 dB ~ 0 dB</td> </tr> <tr> <td>50kΩ > R ≥ 20kΩ</td> <td>3 dB max. between -60 dB less than -50 dB</td> </tr> <tr> <td></td> <td>2 dB max. between -50 dB ~ 0 dB</td> </tr> <tr> <td>20kΩ > R ≥ 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> </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.</p> <p>10. Motor current (at 4.5V D.C. applied to motor) Normal operation : 100mA max. Slipping operation at both ends : 150mA max.</p> <p>12. Rated voltage for motor : 4.5V D.C. Endurance specifications 1. Rotational life : 15,000 cycles min.</p>	Total resistance	Attenuation level	R ≥ 100kΩ	100 dB min.	100kΩ > R ≥ 50kΩ	90 dB min.	50kΩ > R ≥ 10kΩ	80 dB min.	Total resistance	Gang error	R ≥ 100kΩ	5 dB max. between -80 dB less than -70 dB		3 dB max. between -70 dB less than -60 dB		2 dB max. between -60 dB ~ 0 dB	100kΩ > R ≥ 50kΩ	3 dB max. between -70 dB less than -60 dB		2 dB max. between -60 dB ~ 0 dB	50kΩ > R ≥ 20kΩ	3 dB max. between -60 dB less than -50 dB		2 dB max. between -50 dB ~ 0 dB	20kΩ > R ≥ 10kΩ	3 dB max. between -60 dB less than -40 dB		2 dB max. between -40 dB ~ 0 dB
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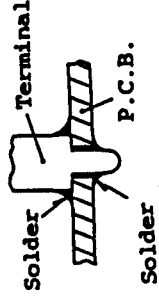
(B)

STAB	DATE	APPD	CHKD	DSCD	APPD	CHKD	DSCD	TITLE
								4K272AMS-5

CLASS NO. _____ TITLE _____

Caution for soldering

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



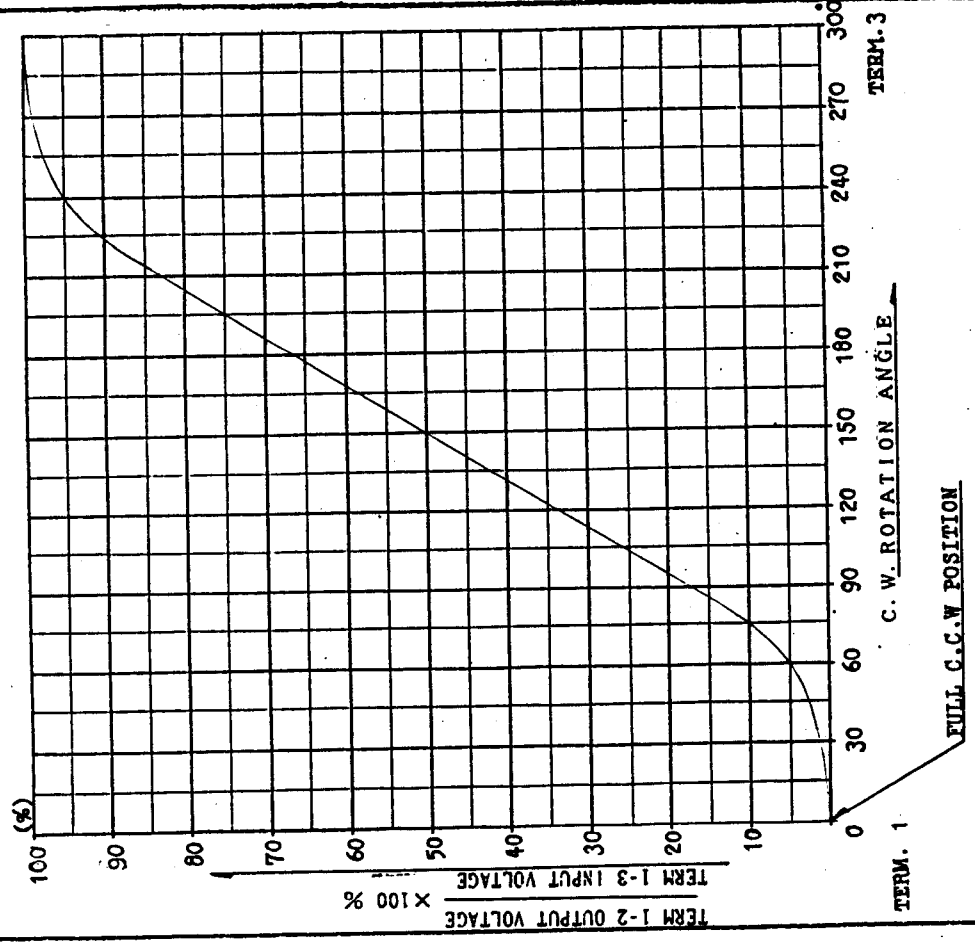
USED ON _____

NAME RESISTANCE TAPER

ALPS ELECTRIC CO., LTD
1-7 YUEIGAYA OTSUKA-CHO
OTA-KU TOKYO JAPAN

TITILE SPECIFICATIONS

TAPERED CURVE :



At 150° C.W. shaft rotation from full C.C.W. position voltage percent shall fall within limits of 40 ~ 60 percent.

SYMB	DATE	APPR.	CHKD.	DSGD.	TITLE
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APPR. R3R 33R-1 大谷

CHKD. W3R 33R-1 浅田

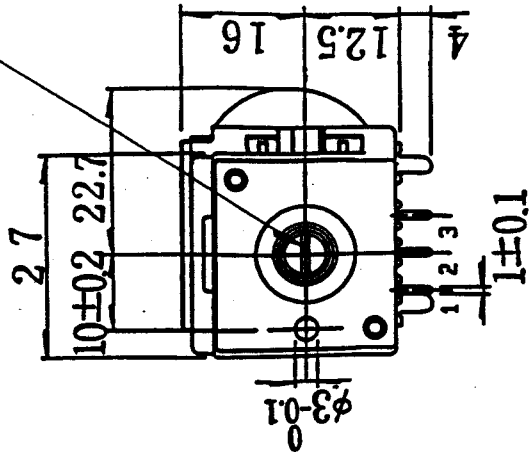
DSGD. R3 33R-1 藤原

DOCUMENT NO. (/)

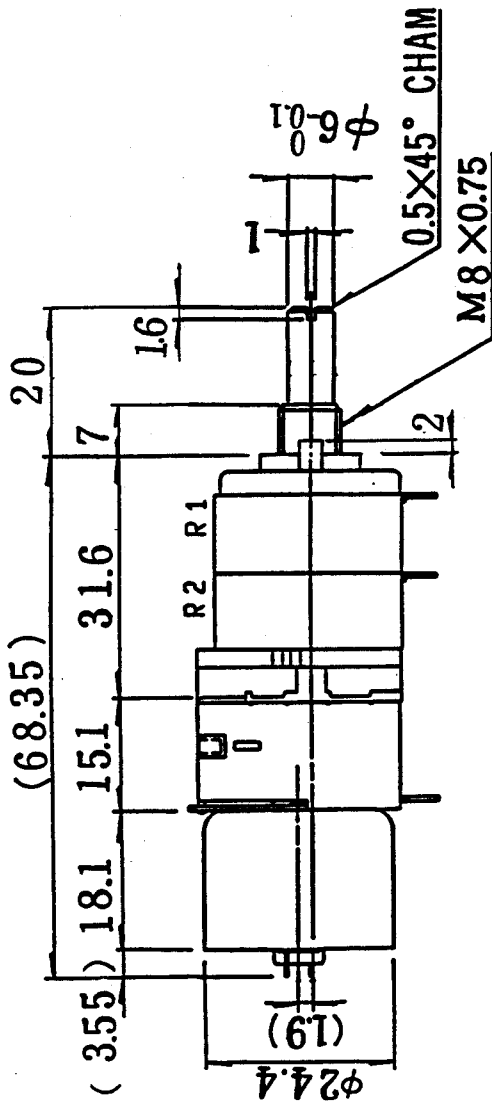
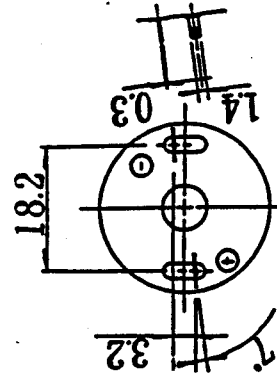
DATE	APPROVED	NAME	DSGD	NAME	RESISTANCE TAPER
Jan. 22. 81	Jan. 22. 81	Shoji	Jan. 22. 81	ENG. INC	HSB 02
..
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スリ割角度は任意とする。

SHAFT SLOT IS OPTIONAL ANGLE

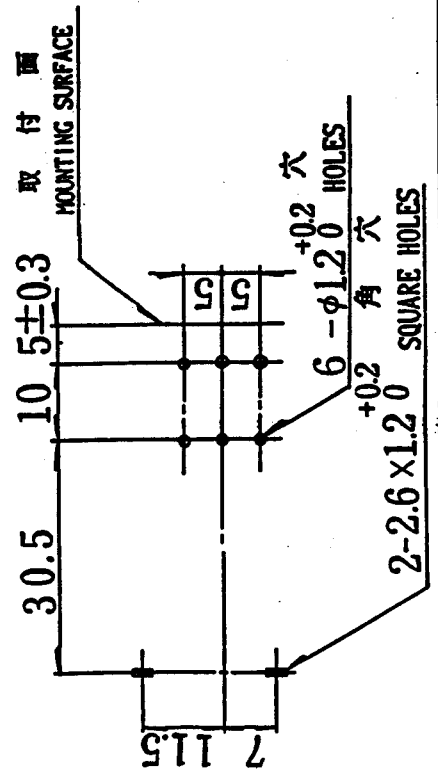


背面図
BACK VIEW



取付穴寸法図 許容差±0.1
P.W.B.MOUNTING DETAIL
TOLERANCE±0.1

VIEWED FROM MOUNTING SIDE
挿入側より



許容差の指定なき寸法の公差
TOLERANCES UNLESS OTHERWISE SPEC
BASIC DIMENSIONS TOLERANCE
L ≤ 10 ±0.3
10 < L ≤ 100 ±0.5
100 ≤ L ±0.8
角度 ANGULAR DIMENSION ±5°

PART NO.		NAME		MATERIAL NAME & CODE		FINISH	
							4.5 V
							TITLE 27形1軸2連 モータ駆動ボリューム組立図
							DOCUMENT NO. K272AMC00Z

APPD. WRI 91.9.11 佐藤

UNIT mm SCALE :
CHKD. 日下 91.9.11

DSGD. 菅原 91.9.10 設5

2380

88.0g

OR