

Customer: ALPS EUROPE DISTRIBUTION

No. KK-2006-2228

Date: Nov. 10, 2006

Attention:

Your ref. No.:

Your Part No.: RK27112MC015

SPECIFICATIONS

ALPS' ;

MODEL: RK27112MC015
(10kBX2)

Spec. No.:

Sample No.: F 3 5 3 2 7 2 7 M

RECEIPT STATUS

RECEIVED

By Date

Signature

Name

Title

ALPS
ALPS ELECTRIC CO., LTD.

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Sales

B6523

Q1003#03A (EA)

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

1. THIS SPECIFICATIONS APPLY TO RK27112MC015 POTENTIOMETER.

2. CONTENTS OF THIS SPECIFICATIONS.

5K272AMS-5

K272AMC00Z

4K16M-1

4K-1

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 $\Rightarrow$ in specifications shows standard and condition for application.

- CAUTION

Regardless of the suggested applications of these products being introduced in the specifications, when using them for equipment and devices requiring a high degree of safety, respective manufacturers will please preserve safety of the planned equipment and devices by providing necessary protective circuits and redundancy circuits and reconfirm if safety is being duly preserved.

Products being introduced in the specifications have been designed and manufactured for applications to ordinary electronic equipment and devices such as the AV equipment, electric home appliances, office machines and communications equipment. Consequently, when employing these products for applications requiring a high degree of safety and reliability such as the medical equipment, aviation and aircraft equipment, space equipment and burglar alarm equipment, the using manufacturers will please thoroughly study the proprieties of these products for the planned applications.

Although we are exerting our best efforts to maintain the quality of these products, we cannot guarantee that they will never cause short circuiting and open circuitry. Therefore, when designing an equipment or device with which the priority is given to the safety, you will please carefully study the influences to the whole equipment of a single function failure of Potentiometers and Encoders in advance to make out a fail-safe design providing.

CLASSNO.	TITLE	SPECIFICATIONS
Feature		
This is a potentiometer with D.C. magnet motor and it is adjustable by both manual shaft and motor.		
Temperature for operating and storage		
1.Dimensions : See attached drawing		
2.Operating temperature : -10℃~+70℃		
3.Storage temperature : -20℃~+80℃		
4.Motor : D.C. magnet motor (With 6V Disk Varistor)		
Mechanical specifications		
1.Operation : manual operation and motor drive		
2.Total rotational angle : 300°±3°		
3.Rotational speed : 12±3 sec/300° (at 4.5V D.C. applied to motor)		
4.Direction of rotation : C.W. rotation at normal polarity. (When the potentiometer is looked at from the shaft side.)		
5.Mechanical noise : Continuous,monotonous,not unpleasant sound to be heard. To be mutually discussed when questionable.		
6.Rotational torque : 15~45mN·m (Rotational speed 60°/sec.)		
7.Stopper strength of shaft with manual operation : No damage with an application of 0.9 N·m. with motor drive : Shaft must be slipped at the both ends of manual rotation.		
8.Bushing nut tightening strength : Tightening torque to be no greater than 1.5 N·m. (Pay attention otherwise the strength may not be assured.)		
9.Push / pull strength : No damages with an application of push or pull force 100N for 10 sec		
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℃ and within 5 sec. The terminal of the motor less than 350℃ and within 2 sec.		

CLASSNO.	TITLE	SPECIFICATIONS																				
Electrical specifications 10 k Ω																						
1.Total resistance : Nominal total resistance $\pm 20\%$ (10k Ω $\leq$ R $\leq$ 2M Ω)																						
2.Rated voltage : 30V A.C. This potentiometer is designed for A.C. voltage only.																						
3.Resistance taper : See (HSB02)																						
4.Maximum attenuation level at full C.C.W. (*C.W.) position :																						
<table><tr><td>Total resistance</td><td>Attenuation level</td></tr><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></table>			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.												
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5.Insertion loss at full C.W. (*C.C.W.) position : 0.1 dB max.																						
6.Gang error :																						
<table><tr><td>Total resistance</td><td>Gang error</td></tr><tr><td>R $\geq$ 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>100kΩ > R $\geq$ 50kΩ</td><td>2 dB max. between -60 dB ~ 0 dB</td></tr><tr><td></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></td><td>3 dB max. between -60 dB less than -50 dB</td></tr><tr><td>20kΩ > R $\geq$ 10kΩ</td><td>2 dB max. between -50 dB ~ 0 dB</td></tr><tr><td></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></table>			Total resistance	Gang error	R $\geq$ 100k Ω	5 dB max. between -80 dB less than -70 dB		3 dB max. between -70 dB less than -60 dB	100k Ω > R $\geq$ 50k Ω	2 dB max. between -60 dB ~ 0 dB		3 dB max. between -70 dB less than -60 dB	50k Ω > R $\geq$ 20k Ω	2 dB max. between -60 dB ~ 0 dB		3 dB max. between -60 dB less than -50 dB	20k Ω > R $\geq$ 10k Ω	2 dB max. between -50 dB ~ 0 dB		3 dB max. between -60 dB less than -40 dB		2 dB max. between -40 dB ~ 0 dB
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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.)																						
8.Insulation resistance																						
Potentiometer section : More than 100M Ω at 500V D.C.																						
Motor section : More than 1M Ω at 100V D.C.																						
9.Withstand voltage																						
Potentiometer section : 500V A.C. for 1 minute.																						
10.Supply voltage of motor : 4~6V D.C.																						
11.Motor current (at 4.5V D.C. applied to motor)																						
Normal operation : 100mA max.																						
Slipping operation																						
at both ends : 150mA max.																						
12.Rated voltage for motor : 4.5V D.C.																						
Endurance specifications																						
1.Rotational life : 15,000 cycles min.																						

ALPS ELECTRIC CO., LTD.

TITLE

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DOCUMENT NO.

5K272AMS-5

4.1.1.99

Oct. 1. '99

Oct. 4. '99

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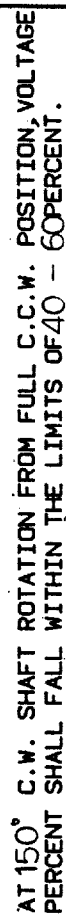
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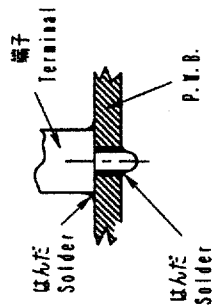
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		K. Chanon Proj. 11'96			TITLE
		CKD.			RESISTANCE TAPER
				UNIT	DOCUMENT NO.
		S.S	T.K W.S	m m	H S B02
		APPD CKD DSCD	APPD CKD DSCD	m m	
		Original 8-10-21	DATE		
		SMB			

OR

図のようにP. W. Bの上面に ほんだ付けをする配線は、お避け下さい。

Caution for soldering

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

[illegible]

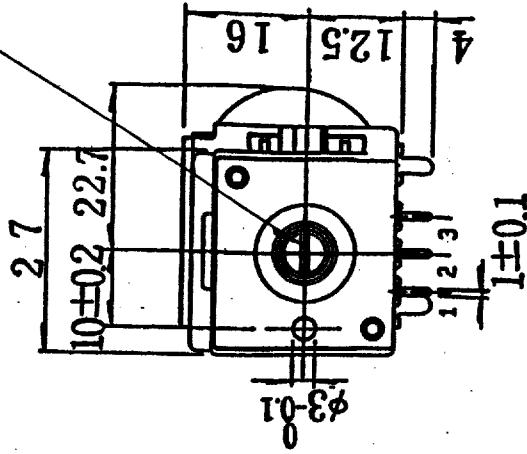
UR

CLASSNO.	TITLE	SPECIFICATIONS
	Note	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 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. If the flux flows into the motor, it may cause a poor contact. 3)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.

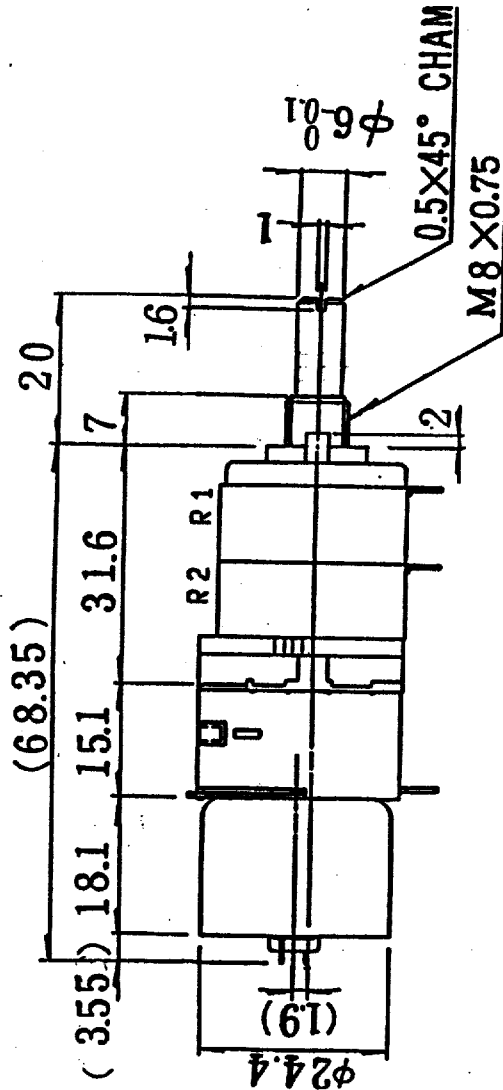
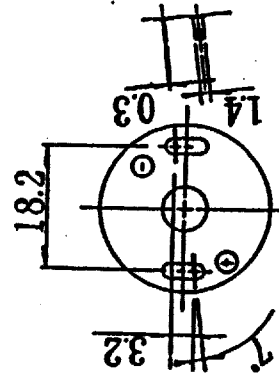
CLASSNO.	TITLE	SPECIFICATIONS
	3.Power supply	Regulated D.C. power supply shall be used. (ripple to be 1% max.)Motor terminal shall not be connected with fixed resistors in series. And supply current is to be 350mA min.
	4.Knob	The material of the knob shall be insulation material. As potentiometer is not grounded, conductive material of the knob may cause a earth noise.
	5.The items except above mentioned items shall meet or exceed	JIS C 6443.

ALPS ELECTRIC CO., LTD.			
APPRO.	CHKD.	DSGD.	TITLE
APPRO.	CHKD.	DSGD.	4K16M-1
DATE	APPD	CHKO	DSGD
SYMB	DATE	APPD	CHKO
DOCUMENT NO			

SHAFT SLOT IS OPTIONAL ANGLE



背面图
BACK VIEW



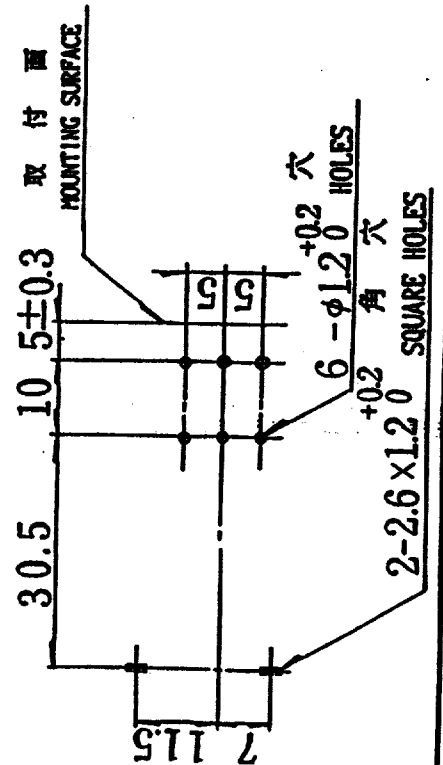
取付穴寸法圖 許容差 ± 0.1

P.W.B.MOUNTING DETAIL

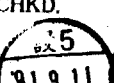
TOLERANCE ± 0.1

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	
					 ALPS ELECTRIC CO., LTD.			
						UNIT mm	SCALE :	4.5 V
					APPD. 	CHKD. 	DSGD. 	
SYMB.	DATE	APPD.	CHKD.	DSGD.	TITLE 27形1軸2速 モータ駆動ボリュウム組立図			DOCUMENT NO. K272AMC00Z