

Customer:

No. : SS-2015-0064

Date: Apr. 07, 2015

Attention:

Your ref. No.:

Your Part No.: ALBS

# SPECIFICATIONS

ALPS Model : RS6011DP6

ALPS Spec. No. :

ALPS Sample No.: 0 0 2 1 5 4 7 0 5 6

RECEIPT STATUS

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Title

**ALPS**<sup>®</sup>  
ALPS ELECTRIC CO., LTD.

DSG'D

APP'D

ENG. DEPT.

Sales

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B6523

ACY04-G03A (EA)

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

1. THIS SPECIFICATIONS APPLY TO RS6011DP6 POTENTIOMETER.

2. CONTENTS OF THIS SPECIFICATIONS.

5S602FP010,

4S0001-200, 4S0001-201

S602FP604

3. MARKING

• MARKING ON ALL UNITS

DATE CODE, RESIST. VALUE, TAPER

• CAUTION

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 MASTER TYPE POTENTIOMETER(SLIDE)
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1. General 一般事項

- 1.1 Operating temperature range 使用温度範囲 : -10~60°C
- 1.2 Storage temperature range 保存温度範囲 : -30~70°C
- 1.3 Test conditions 試験条件

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows,

- Ambient temperature : 5°C to 35°C
- Relative humidity : 45% to 85%
- Air pressure : 86kpa to 106kpa.

試験及び測定は特に規定がない限り温度5~35℃, 相対湿度45~85%, 気圧86~106kpaの標準状態のもとで行う。

ただし, 判定に疑義を生じた場合は温度20±2℃, 相対湿度60~70%, 気圧86~106kpaにて行う。

If there is any doubt about the results, measurements shall be made within the following limits,

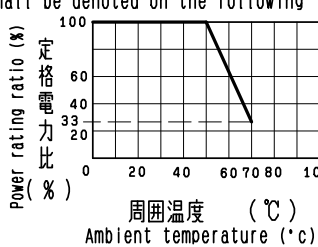
- Ambient temperature : 20±2°C
- Relative humidity : 60% to 70%
- Air pressure : 86kpa to 106kpa.



2. Appearance 外觀

The potentiometer shall be well done and not have any excessive rust, crack, split, poor plating and discolor in any portion.

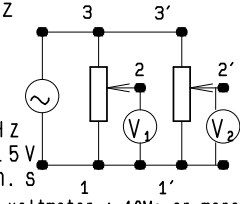
各部の仕上げは良好で機能上有害なサビ、キズ、フレ、メッキ不良及び剥離などがあってはならない。

3. Electrical characteristics 電気的性能

Item 項目	Conditions 条件	Specifications 規格
3.1 Nominal total resistance and tolerance 公称全抵抗値および許容差	Measurement shall be made by the resistance between terminal 1 and 3 with lever setted at terminal 1 or 3. レバーを端子1又は、3の終端におき、抵抗器の端子1-3間の抵抗値を測定する。	10kΩ±20%
3.2 Power rating 定格電力	Power rating is based on continuous full load operation at the maximum voltage between terminals 1 and 3. Power rating vs. ambient temperature shall be denoted on the following graph. 端子1と3の間に連続負荷することが出来る最大電力。周囲温度に対する、電力軽減曲線は右図とする。 	0.1W
3.3 Rated voltage 定格電圧	Rated voltage 定格電圧 $E = \sqrt{PR}$ (V) P: Power rating 定格電力 (W) R: Nominal total resistance 公称全抵抗値 (Ω) When the rated voltage exceeds the maximum operating voltage, the maximum operating voltage shall be the rated voltage. ただし、定格電圧が最高使用電圧を超える場合は、この最高使用電圧を定格電圧とする。	Maximum operating voltage 最高使用電圧 D. C. 10V A. C. 150V
3.4 Resistance law (Taper) 抵抗変化特性	Measurement shall be made by the resistance law method. 電圧法にて測定する。 Measurement shall be made at the position of right diagram from the edge at the side of terminal 1. When based on terminal 3, from the edge at the side of terminal 3. $\frac{\text{output voltage between terminals 1 and 2}}{\text{Applied voltage between terminals 1 and 3}} \times 100(\%)$ $\frac{1-2 \text{ 端子間出力電圧}}{1-3 \text{ 端子間印加電圧}} \times 100(\%)$	TAPERED CURVE ALPS "D" ( SDS26 )

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SYMB	DATE	APPD	CHKD	DSGD	55602FP010 (1/6)				

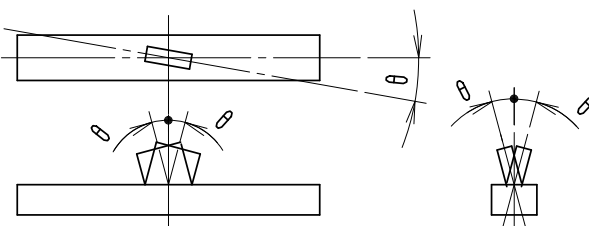
CLASS No.	TITLE MASTER TYPE POTENTIOMETER(SLIDE)	
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Item 項目	Conditions 条件	Specifications 規格
3. 5 Attenuation and insertion loss 最大減衰量と挿入損失	<p>The attenuation and insertion loss at each end of lever travel shall be measured. しゅう動子を移動距離の各終端に置いたとき 最大減衰量、挿入損失を測定する。</p> <p>The voltage of 2V r.m.s. to 15V r.m.s shall be applied between terminal 1 and 3 by measuring frequency at 1kHz. The output voltage shall be measured between terminals 1 and 2, and terminals 2 and 3. If there is not any doubt about the results, D.C. voltage shall be used as the test voltage.</p> <p>端子1-3間に1kHzで2~15V (正弦波実効値)の電圧を加え、端子1-2間、端子2-3間の出力電圧を測定する。なお、判定に疑義が生じなければ、試験電圧として直流を用いても良い。</p> <p>Input impedance of the voltmeter : 10M<math>\Omega</math> or more. 電圧計の入力インピーダンスは10M<math>\Omega</math>以上</p> 	<p>Attenuation 最大減衰量 70dB or more 以上</p> <p>Insertion loss 挿入損失 within 0.1dB 以内</p>
3. 6 Noise しゅう動雑音	<p>20 V d.c., when the rated voltage is 20 V or less, its rated voltage shall be applied to the terminals between 1 and 3. And then the noise shall be measured by the specified speed. For other procedures, refer to IEC 393-1-4.15 . Traveling speed:20 mm/sec.</p> <p>端子1-3間に直流電圧20V (定格が20V以下の時は、その電圧)を加え、レバーを20mm/秒の速さで移動させ、このときに発生する雑音電圧を測定する。その他 JIS C 5261 A 法による。</p>	Less than 47 mV p-p 未満
3. 7 Insulation resistance 絶縁抵抗	<p>A voltage of 250 V d.c. shall be applied for 1 min., after which measurement shall be made. D. C. 250Vの電圧を1分間印加して測定。</p>	<p>Between individual terminals and frame/lever Between adjacent terminals 100 M<math>\Omega</math> or more.</p> <p>端子-レバー間、端子-枠間 独立した抵抗素子の端子間 100 M<math>\Omega</math> 以上</p>
3. 8 Dielectric strength 耐電圧	<p>Trip current : 2 mA Measuring frequency : 50/60 Hz 250 V a.c. r.m.s. for 1 min.</p> <p>A. C. 250V r. m. s. 1分間。 感度電流 : 2 mA (周波数 : 50/60 Hz)</p>	<p>Between individual terminals and frame/lever Between adjacent terminals Without damage to parts, arcing or breakdown etc. 端子-レバー間、端子-枠間 独立した抵抗素子の端子間 損傷、アークおよび絶縁破壊を生じないこと。</p>
3. 9 Tracking error 相互偏差	<p>The voltage of 2 to 15V r.m.s. shall be applied between terminals 1 and 3 and between terminals 1' to 3' by measuring frequency at 1 kHz. The output voltage shall be measured between terminals 1 and 2 and between terminal 1' and 2' units the first of these shall be the standard one. If there is not any doubt about the results, d.c. voltage shall be used as the test voltage.</p> <p>端子1-3間、端子1'-3'間にそれぞれ1kHzで2~15V (正弦波実効値)の電圧を加え、前段を基準として端子1-2間、端子1'-2'間の出力電圧を測定する。 なお、判定に疑義が生じなければ、試験電圧として直流を用いてもよい。</p> <p>Input impedance of the voltmeter : 10M<math>\Omega</math> or more. 電圧計の入力インピーダンスは10M<math>\Omega</math>以上</p> 	-40dB ~ 0dB $\pm$ 3dB

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'15-04-07	'15-04-07	'15-04-07	DOCUMENT NO.	
漆原	佐々木(勲)	清水	55602FP010 (2/6)	
SYMB	DATE	APPD	CHKD	DSGD

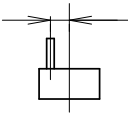
CLASS No.	TITLE MASTER TYPE POTENTIOMETER(SLIDE)
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4. Mechanical characteristics 機械的性能

Item 項目	Conditions 条件	Specifications 規格
4.1 Lever travel レバ'-移動距離		Specified in particular figure. 組立図による。
4.2 Operating force 作動力	Traveling speed : 20mm/s. Operating position : Tip of the lever 移動速度は20mm/秒とする。 操作位置はレバ'-先端部とする。	$0.5 \begin{matrix} +2.0 \\ -0.4 \end{matrix}$ N
Starting force 始動力	Traveling speed : 20mm/s. Operating position : Tip of the lever 移動速度は20mm/秒とする。 操作位置はレバ'-先端部とする。	Operating force + 1N MAX. 作動力 + 1N 以下
4.3 Lever travel stop strength レバ'-の移動止強度	A static load of 100N shall be applied at the point 5mm from top surface of the case for both ends in the direction of lever travel for 10s. しゅう動距離の両末端において、枠上面より5mmの位置に100Nの力を10秒間加える。	Without excessive play or poor contact. 著しい力* 及び接触不良を生じないこと。
4.4 Side thrust of the lever レバ'-の横押し強度	A static load of 20N shall be applied at the point 5mm from top surface of the case in a direction perpendicular to the axial direction for 10s, with the potentiometer mounted in assembly conditions. 本体をシャーシに固定し、枠上面より5mmの位置にレバ'-移動方向に対して直角方向に20Nの力を10秒間加える。	Without deformation or breaks in the sliding part and contact part. 操作部及び関連部品に変形、破損がないこと
4.5 Thrust and tensile lever レバ'-の押し引き強度	Thrust and tensile static load of 50N shall be applied to the potentiometer in the lever direction for 10s. レバ'-の押し方向及び引張り方向に、50Nの力を10秒間加える。	Without damage such as bad sliding and braking or play in the lever. Electrical characteristics shall be satisfied. レバ'-の力* 及び破損、しゅう動ムラ等なく、電気的性能を満足すること。
4.6 Displacement of lever レバ'-の横振れ	A torsion moment of 25mN·m shall be applied at the lever in a direction perpendicular to the axial direction and then the displacement shall be measured. レバ'-に25mN·mの曲げモーメントを移動方向に対して、直角に加えレバ'-先端で測定する。	$2(2 \times L / 25) \text{mmP-P}$ or less 以下 L=Length of lever レバ'-長さ
4.7 Lever inclination and torsion レバ'-の傾き及びねじれ		$\theta$ shall be $2^\circ$ or less. $\theta$ は2度以下。

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					DOCUMENT NO. 5S602FP010 (3/6)			
SYMB	DATE	APPD	CHKD	DSGD				

CLASS No.	TITLE MASTER TYPE POTENTIOMETER(SLIDE)
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Item 項目	Conditions 条件	Specifications 規格
4.8 Distance from the center of the lever レバーのセンタースレ	After sliding lever as far as it will go in each direction, the distance from the center of the lever to the middle of the mounting screw hole shall be measured at the both ends. 取付けネジ穴中心に対するレバーのセンターからのずれを、片側ごとに測定する。 	0.5mm or less on each end. 片側 0.5mm以下
4.9 Resistance to soldering heat はんだ耐熱	Bit temperature : 350°C or less Application time of soldering iron : 5 s or less Extensive pressure must not be applied to the terminal. 温度350°C以下。時間5秒以内。 をだし、端子に異常加圧のないこと。	Change in total resistance is relative to the value before test: 5% without excessive looseness of terminals and failure contact 全抵抗値の変化は初期値の±5%以内。 著しいカタ、接触不良を生じないこと。

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					'15-04-07	'15-04-07	'15-04-07	DOCUMENT NO.	
					漆原	佐々木(勲)	清水	5S602FP010 (4/6)	
SYMB	DATE	APPD	CHKD	DSGD					

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5. Endurance 耐久性能

Measurement of the endurance characteristics shall be made after 5 cycles' slide of moving contact

耐久性能後の測定は、レハ' -を5サイクルしゅう動後とする。

Item 項目	Conditions 条件	Specifications 規格
5.1 Endurance without load 無負荷しゅう動寿命	The moving contact, without electrical load, shall be slid from one end stop to the other and returned to its original position extended over 90% or more effective distance. This procedure constitutes 1 cycle. And the moving contact shall be subjected to 600 cycles per hour, a total of 30,000±200 cycles (5,000 to 8,000 continuous cycles for 24 hours.) 無負荷にてレハ' -を600サイクル/時の速さで有効移動距離の90%以上を行わせ、1日連続5,000~8,000サイクル、合計30,000±200サイクル移動させる。	Change in total resistance is relative to the value before test:±15% Noise: Less than 150mVp-p Operating force: 0.1~2N Clause(3), (4) shall be satisfied. 全抵抗値の変化は、初期値の±15%以内しゅう動雑音は、150mVp-p未満作動力は、0.1~2N その他は、(3項)(4項)を満足すること。
5.2 Cold 耐寒性	The potentiometer shall be stored at a temperature of -30±2°C for 96 hours in a thermostatic chamber. Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed And then the potentiometer shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made. -30±2°Cの恒温槽中に96時間放置し、常温常湿中に1時間放置後1時間以内に測定する。ただし、水滴は取り除くものとする。	Change in total resistance is relative to the value before test:±20% Clause(3), (4) shall be satisfied. 全抵抗値の変化は、初期値の±20%以内 その他は、(3項)(4項)を満足すること。
5.3 Dry heat 耐熱性	The potentiometer shall be stored at a temperature of 70±2°C for 240±8 hours in a thermostatic chamber. Then the potentiometer shall be maintained at standard atmospheric conditions for 1 hour, after which measurements shall be made. 70±2°Cの恒温槽中に240±8時間放置し、常温常湿中に1時間放置後、1時間以内に測定する。	Change in total resistance is relative to the value before test: +5/-30% Noise: Less than 150mVp-p Operating force: 0.1~2N Clause(3), (4) shall be satisfied. 全抵抗値の変化は、初期値の+5~-30%以内しゅう動雑音は、150mVp-p未満作動力は、0.1~2N その他は、(3項)(4項)を満足すること。
5.4 Damp heat 耐湿性	The potentiometer shall be stored at a temperature of 40±2°C with relative humidity of 90% to 95% for 96±4 hours in a thermostatic chamber. And its surface moisture shall be removed. And then the potentiometer shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made. 40±2°C相対湿度90~95%の恒温恒湿槽中に96±4時間放置し、常温常湿中に1時間放置後1時間以内に測定する。 但し水滴は、取り除くものとする。	Change in total resistance is relative to the value before test: +35/-5% Noise: Less than 150mVp-p Operating force: 0.1~2N Clause(3), (4) shall be satisfied. 全抵抗値の変化は、初期値の+35~-5%以内しゅう動雑音は、150mVp-p未満作動力は、0.1~2N その他は、(3項)(4項)を満足すること。


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					C2#(G) '15-04-07 漆原	C2# '15-04-07 佐々木(勲)	C2# '15-04-07 清水	SPECIFICATIONS
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								5S602FP010 (5/6)
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CLASS No.	TITLE MASTER TYPE POTENTIOMETER(SLIDE)
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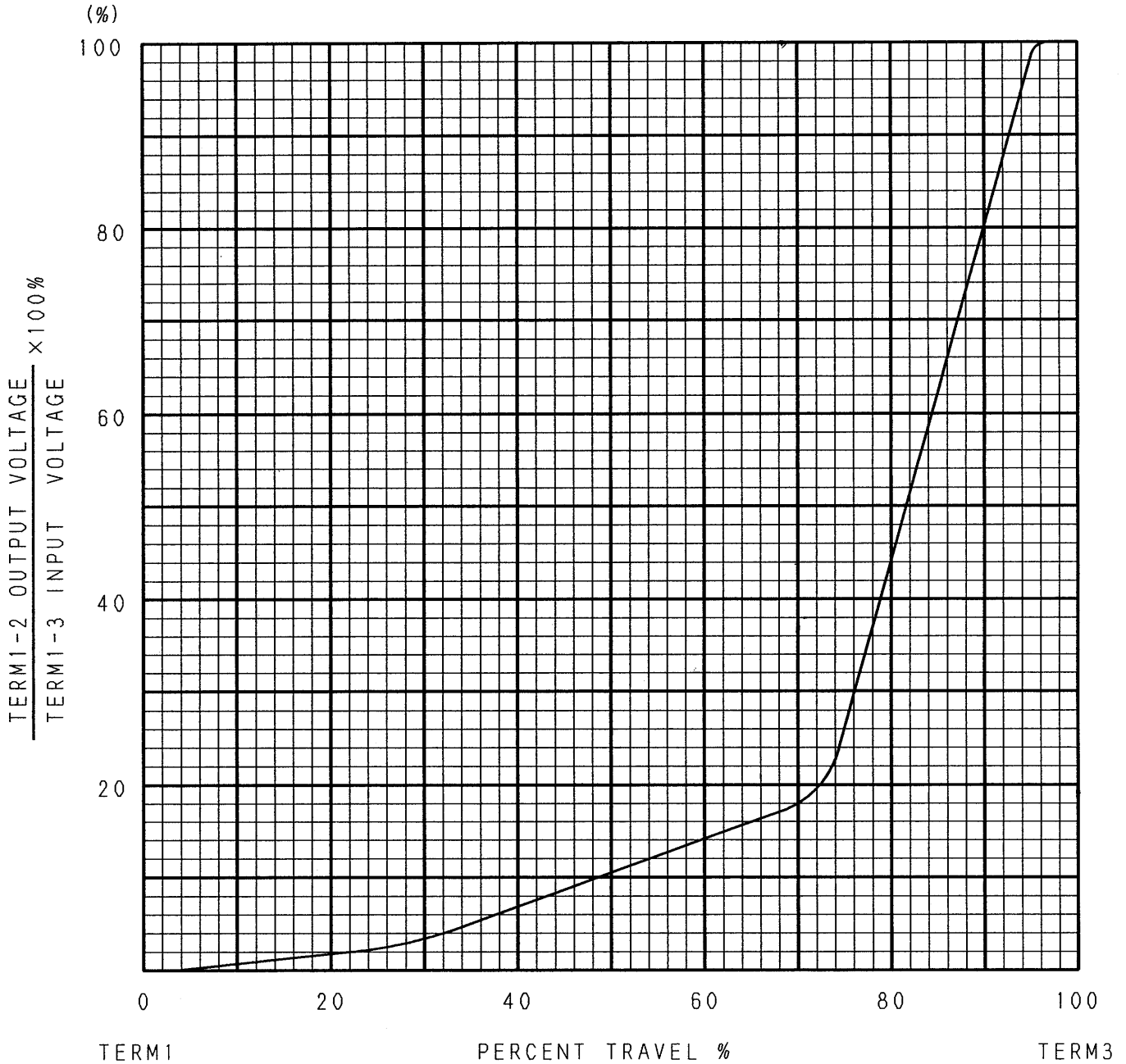
Item 項目	Conditions 条件	Specifications 規格															
5.5 Change of temperature 温度サイクル	<p>The potentiometer shall be subjected to 5 successive change of temperature cycles, each as shown in table below. Then its surface moisture shall be removed. And then the potentiometer shall be subjected to standard atmospheric conditions for 1 hour, after which measurements shall be made.</p> <p>下記条件で5サイクル試験後、常温常湿中に1時間放置後1時間以内に測定する。但し水滴は、取り除くものとする。</p> <table border="1"> <thead> <tr> <th>Step 段階</th> <th>Temperature 温度</th> <th>Duration 時間</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-10±3°C</td> <td>30 Min. 30分</td> </tr> <tr> <td>2</td> <td>Standard atmospheric conditions 常 温</td> <td>10~15 Min. 10~15分</td> </tr> <tr> <td>3</td> <td>70±2°C</td> <td>30 Min. 30分</td> </tr> <tr> <td>4</td> <td>Standard atmospheric conditions 常 温</td> <td>10~15 Min. 10~15分</td> </tr> </tbody> </table>	Step 段階	Temperature 温度	Duration 時間	1	-10±3°C	30 Min. 30分	2	Standard atmospheric conditions 常 温	10~15 Min. 10~15分	3	70±2°C	30 Min. 30分	4	Standard atmospheric conditions 常 温	10~15 Min. 10~15分	<p>Change in total resistance is relative to the value before test: ±20% Noise: Less than 150mVP-P Operating force: 0.1N~2N Clause(3), (4) shall be satisfied. 全抵抗値の変化は、初期値の±20%以内 しゅう動雑音は、150mVp-p未満 作動力は、0.1N~2N その他は、(3項)(4項)を満足すること。</p>
Step 段階	Temperature 温度	Duration 時間															
1	-10±3°C	30 Min. 30分															
2	Standard atmospheric conditions 常 温	10~15 Min. 10~15分															
3	70±2°C	30 Min. 30分															
4	Standard atmospheric conditions 常 温	10~15 Min. 10~15分															

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					C2技(G)	C2技	C2技	SPECIFICATIONS
					'15-04-07	'15-04-07	'15-04-07	DOCUMENT NO.
					漆 原	佐々木(勲)	清 水	5S602FP010 (6/6)
SYMB	DATE	APPD	CHKD	DSGD				



USED ON	60 mm TRAVEL TYPE	NAME	RESISTANCE TAPER
	ALPS ELECTRIC CO., LTD. 1-7 YUKIGAYA OTSUKA-CHO OTA-KU TOKYO JAPAN	TITLE	SPECIFICATIONS

TAPERED CURVE: ALPS "D"



NOTES: PERCENT VOLTAGE  
CHECK POINT

TOLERANCE

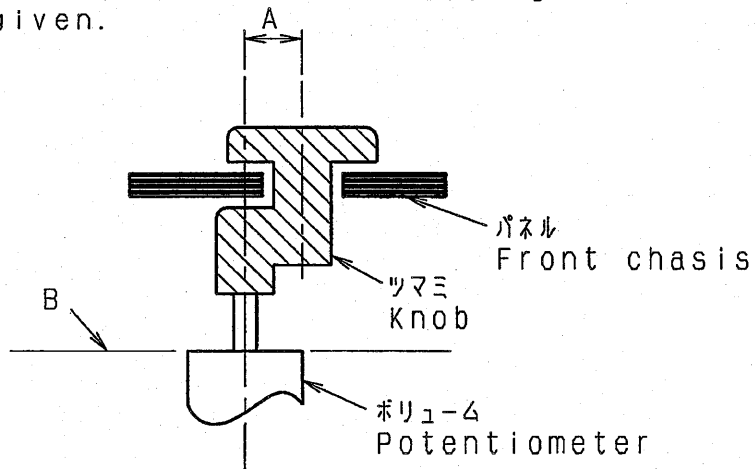
50% TRAVEL FROM TERM. 1

6~15%

					APPD.	CHKD.	DSGD.	NAME
					Sep. 20 '96		Sep 19 '96	RESISTANCE TAPER
					J. Sasaki		H. Matsubara	DOCUMENT NO.
SYMB.	DATE.	APPD.	CHKD.	DSGD.				SDS26

ご使用上の注意  
**PRECAUTION IN USE**

1. 偏心ツマミをご使用になる場合  
 レハバーの中心より離れたところを作用点としてご使用になる場合、可能な限り下図A寸法を短くしてご使用下さい。  
 If it will be used the operating point away from the center line of the lever, it should be shorter as possible.
2. レハバー長さについて  
 レハバー長さについては、ツマミを含めて、下図B面より極力短いものをご使用願います。レハバー長さについては、作用点までの距離が短いほどしゅう動感触が良好となり、長いほど好ましくない感触になります。  
 About the length of lever  
 If conditions permit, it is advisable to use the shortest possible lever.  
 The longer the length up to operating point, the more unfavorable slide feeling will be given.



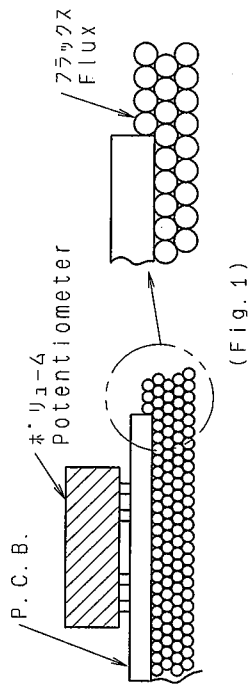
3. レハバーの駆動に関しては上記内容を考慮の上、セット実装を行いあらかじめ異常のないことをご確認願います。  
 Regarding the operation of the lever, please consider the above mentioned, and make sure nothing is wrong with the operation under installing in your appliance that you plan to use our products actually.
4. ツマミ挿入及びレハバー操作は、ホリウムマウント基板にソリ(曲がり)のない状態で行って下さい。  
 Knob assembly on the lever and functioning the lever to be performed under the condition of P.C.B. without warp.
5. 電圧調整形回路において出力側のインピーダンスが低い場合には抵抗体と摺動子の間の接触抵抗の影響を受けることがありますのでインピーダンスを公称全抵抗値の100倍以上に設定願います。  
 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.

					<b>ALPS ELECTRIC CO., LTD.</b>			
					APPD.	CHKD.	DSGD.	TITLE
								スライトホリウム仕様書 SPECIFICATIONS
ORIGINAL	1991-07-03	Y·Y	K·N	S·A				DOCUMENT NO.
SYMB	DATE	APPD	CHKD	DSGD				450001-200

はんだ付け条件

FOLLOW THE NEXT CONDITIONS FOR SOLDERING

1. はんだ SOLDER  
JIS Z 3282に規定のA30C5はんだを使用  
JIS Z 3282, A30C5  
使用基板 BOARD IN USE  
両面スルーホール基板又は、片面銅箔層板 板厚  $t=1.6\text{mm}$   
Double-faces through-hole board or single-face.  
Copper laid laminate board.  
Plate thickness ( $t$ ) = 1.6mm
3. 自動はんだ<DIP条件>  
(1)レバ - 位置 センター付近に設定願います。  
(2)フラックス比重  $0.83 \pm 0.01$  (発泡式)  
(3)フラックス高さ フリント基板の板厚の半分の位置にフラックスの上面が接するレベル (図1)  
又、ホリウム挿入面への溶れ及びのりいこと。(フラックス上及び、飛散に注意)  
(4)フリント温度  $100^\circ\text{C}$  max. 時間1分以内。(フリント基板のホリウム挿入側の温度)  
(5)はんだ温度  $260^\circ\text{C}$  max. 時間5秒以内。 はんだ回数は1回までとする。  
IN THE CASE OF DIP SOLDERING  
(1) State of potentiometer  
Position a lever in the vicinity of center.  
(2) Specific Gravity of Flux  
 $0.83 \pm 0.01$  (foaming type)  
(3) Height of Flux face  
A level of the upper face of flux for reaching the position at a half of the plate thickness of printed board. (Fig.1)  
Further, no flow of flux invading on the surface of printed board on the side of installing potentiometer is allowed.  
(4) Preheat condition  
 $100^\circ\text{C}$  max. within 1 minute  
(Temperature on the side of installing printed board is designated.)  
(5) Soldering condition  
Solder temperature:  $260^\circ\text{C}$  max.  
Soldering period : within 5 seconds  
Time of soldering : only one time is permitted



4. 手はんだ IN THE CASE OF MANUAL SOLDERING  
はんだ温度  $350^\circ\text{C}$  max. 時間3秒以内 はんだ回数は1回までとする。  
Solder temperature :  $350^\circ\text{C}$  max.  
Soldering period : within 3 seconds  
Time of soldering : only one time is permitted

ALPS ELECTRIC CO., LTD.

ORIGINAL	91-9-3	Y-Y	S-A	S-S	APPROD.	DESIGN	DESIGN	DESIGN	TITLE	スライト・ホリウム 仕様書	
SYMB	DATE	APPD	CHKD	DSGD	REWORK	08.02.25	08.02.25	08.02.25	SPECIFICATIONS	1/2	
										DOCUMENT NO.	450001-201

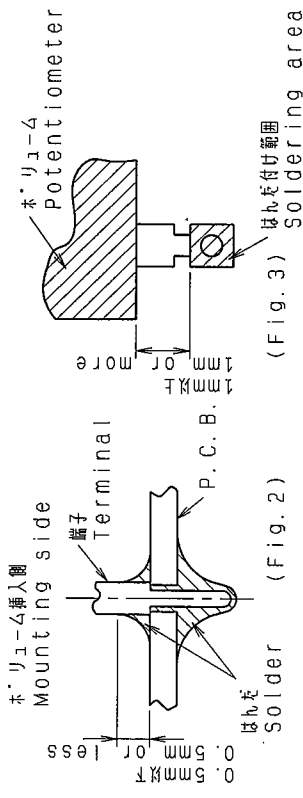
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5. 注意事項

- (1) はんだ付けの際に、端子にストレスを加えないで下さい。例えば、端子に熱を加えすぎると、端子が曲がり、及び電気的特性が劣化する恐れがあります。
- (2) 両面スルーホール基板を使用する場合は、ホリウム挿入側の端子取付穴に、はんだラントがのりいことにご注意願います。ホリウム挿入側の配線が必要な場合は端子取付穴からの直接取り出しを避けスルーホール配線用の穴を開けるなどのご配慮をお願いします。
- (3) ホリウム挿入面へのはんだ上りりは、はんだ熱による端子接触不良の発生原因となり得ますので(図2)を参照願います。
- (4) リント配線の場合、ホリウム本体と、はんだ付け部の距離を1mm以上開けてはんだ付け願います。(図3)
- (5) はんだ付けによるホリウムへの影響は、フリント基板の大きさ、ホリウムの取付位置、はんだ槽の大きさ、等により異なりますのであらかじめ実使用状態で実施し、異常のないことを確認の上、はんだ付けて下さい。

MATTERS TO BE NOTED

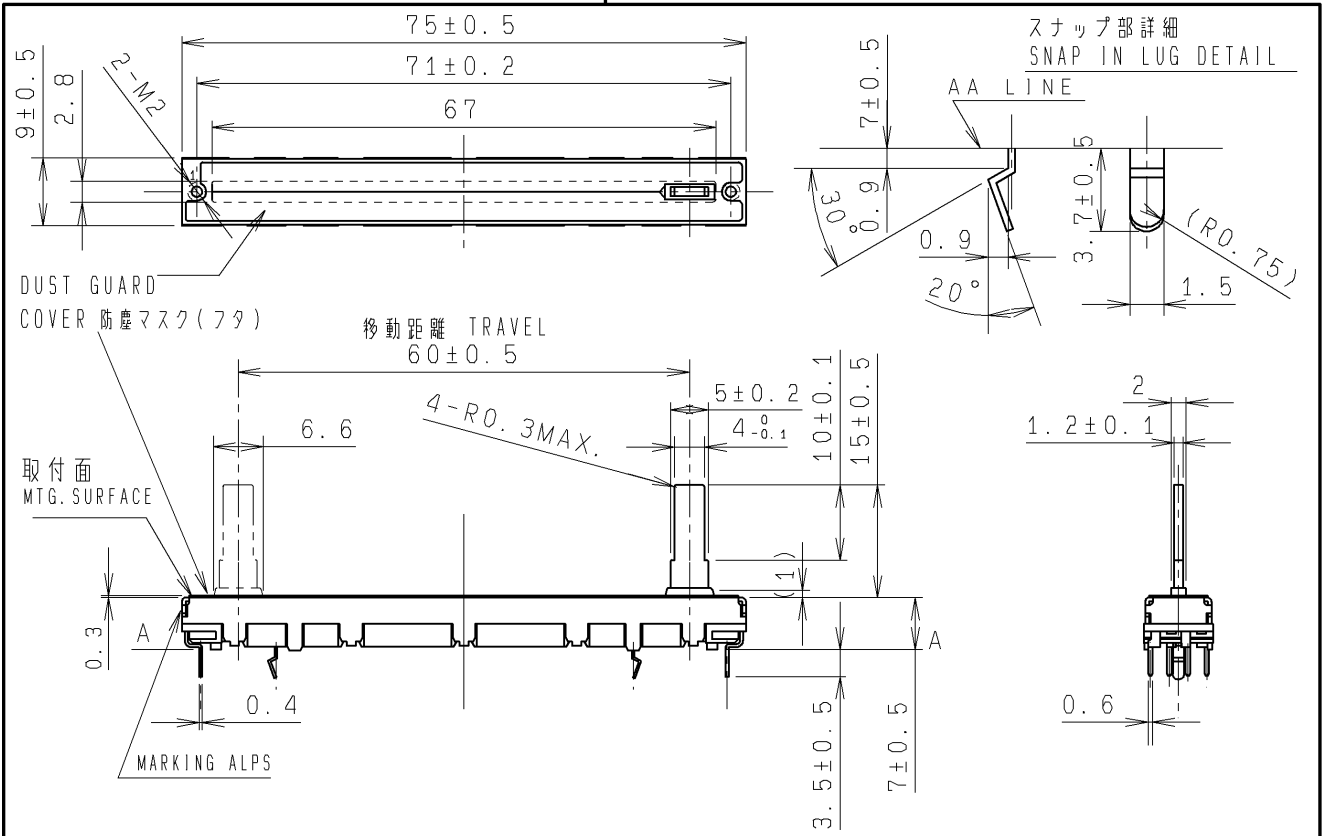
- (1) Do not add any stress on terminals in the case of soldering. For instance, forced movement of potentiometer with terminals being heated probably deteriorate the electric features due to generation of looseness in connection between resistant board and terminals.
- (2) Avoid use of double-faces through-hole board as much as possible. If it is necessary to use it, do not apply through-hole plating to a hole in which a potentiometer is inserted, and install a land to which terminals are soldered only on a face opposite to the face on the side of installing potentiometer.
- (3) Use caution to soldering process so as to prevent solder from rising up to the surface of printed board on the side of installing potentiometer, because defective contact may take place in terminal connecting part due to soldering heat. (Fig.2)
- (4) In the case of lead wiring, solder it so that a gap of 1 mm or more may be reserved between the potentiometer body and soldering part. (Fig.3)
- (5) The grade of influence of soldering exerted on the potentiometer depends upon the size of a printed board, installing position of the potentiometer, and the size of a solder bath etc. Therefore, make sure, in advance, of no abnormal state under the conditions of soldering to be carried out at present.



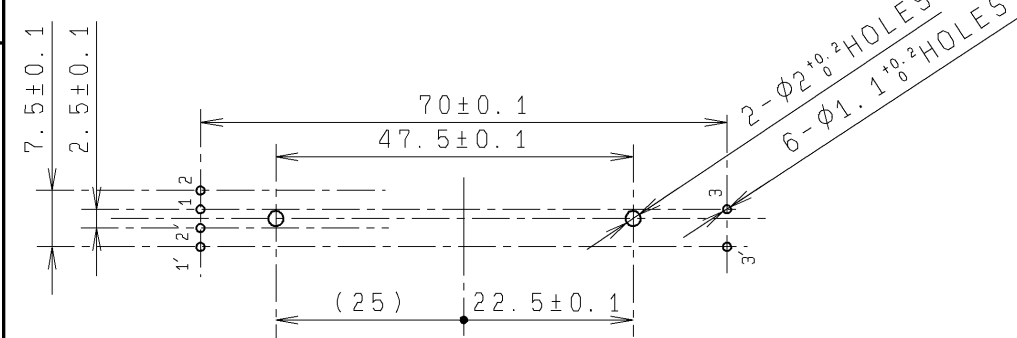
ALPS ELECTRIC CO., LTD.

ORIGINAL	91-9-3	Y-Y	S-A	S-S	APPROD.	DESIGN	DESIGN	DESIGN	TITLE	スライト・ホリウム 仕様書	
SYMB	DATE	APPD	CHKD	DSGD	REWORK	08.02.25	08.02.25	08.02.25	SPECIFICATIONS	2/2	
										DOCUMENT NO.	450001-201

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取付穴寸法図 MOUNTING HOLE DETAIL  
(挿入側より) (VIEWED FROM MOUNTING SIDE)



NOTES

1. MOUNTING SCREW THREAD LENGTH IS CHASSIS THICKNESS +2mmMAX.  
取付用ネジの首下長さは、シャーシ板厚 + 2mm以下とする。
2. TOP SIDE OF KNOB SHALL BE MOUNTED TO LEVER WITHIN 30mm LENGTH FROM LEVER MTG. SURFACE.  
取付面からツマミ先端まで 30mm以内でご利用願います。
3. SNAP PORTION IS DESIGNED BASED ON 1.6mm THICK P.C.B.  
スナップ部は、P.C.B. 板厚 1.6mm 基準にて設計してあります。

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

_____	_____	_____	_____
PART NO.	NAME	MATERIAL NAME / CODE	FINISH

					<b>ALPS ELECTRIC CO., LTD.</b>		
					DSGD. H. KIMURA	2012-07-23	SCALE 1:1
					CHKD. _____		TITLE SLIDE POTENTIOMETER DUAL UNIT
					APPD. S. MIZOBUCHI		2012-07-23
SYMB	DATE	APPD	CHKD	DSGD			