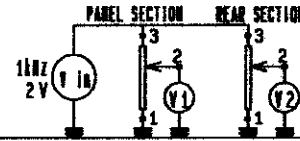
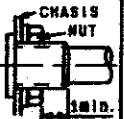


ELECTRICAL	Outer shaft (R1, R2)	Inner shaft (R3)
1. Total resistance:	10 kΩ ± 20 %	10 kΩ ± 20 %
2. Rated power:	0.05W	0.05W
3. Rated voltage:	See (4K09-16)	
4. Resistance taper:	See (K09-A01)	See (K09-A01)
5. Tap position:		
6. Tap resistance between terminals:		
7. Residual resistance between terminals:	1&2, 2&3 : 20 Ω max.	1&2, 2&3 : 20 Ω max.
8. Sliding noise : (Measured by JIS C 6443)	Less than 100 mV	Less than 100 mV
9. Insulation resistance :	More than 100 MΩ at 250V D.C.	
10. Withstand voltage:	300V A.C. for 1 minute.	
11. Gang error :	3 dB max. at 150°	
12. switch rating:(Resistor load)		
13. Switch contact resistance: (Measured by the 0.5A 5V D.C. voltage drop method.)		
14. Circuit:		



MECHANICAL		
1. Total rotational angle :	300° ± 5°	300° ± 5°
2. Rotational torque: (Rotational speed 60°/sec.)	2-25 mN·m	2-25 mN·m
3. Stopper strength :	No damage with an application of 0.5 N·m.	
4. Resistance to soldering heat :	See (5K09-8)	
5. Bushing nut tightening strength :	(M7) Tightening torque to be no greater than 1.0 N·m. (M9) Tightening torque to be no greater than 1.5 N·m.	*Pay attention otherwise the strength may not be assured.
6. Push / pull strength :	No damages with an application of Push or pull force 100 N for 10 s.	
7. Shaft wobble :	See (5K09-8)	
8. Operation force of shaft:		
9. Click position :		
10. Click torque:		
11. Rotation play at the click position:		
12. Contact arrangement :		
13. Switching stroke :		
14. Switch operation force :		



ENDURANCE		
1. Rotational life :	More than 15,000 cycles.	More than 15,000 cycles.
2. Switching life :		

NOTES

- The items except above mentioned items shall meet or exceed JIS C 6443.
- The shaft of this potentiometer is not perfectly grounded through its bushing because of its construction. If there are any problems on this matter. Please let us know in advance.
- This type is protected against sulfides.
- Operating temperature range: -20°C to +70°C
- Storage temperature range: -40°C to +85°C

4K09-16
5K09-8

ALPS ELECTRIC CO., LTD.

TITLE
SPECIFICATIONS

SYMB	DATE	APPD	CHKD	DSGN

APPD
DESIGN
04.11.22
AIZAWA

CHKD
DESIGN
04.11.25
YASHIDA

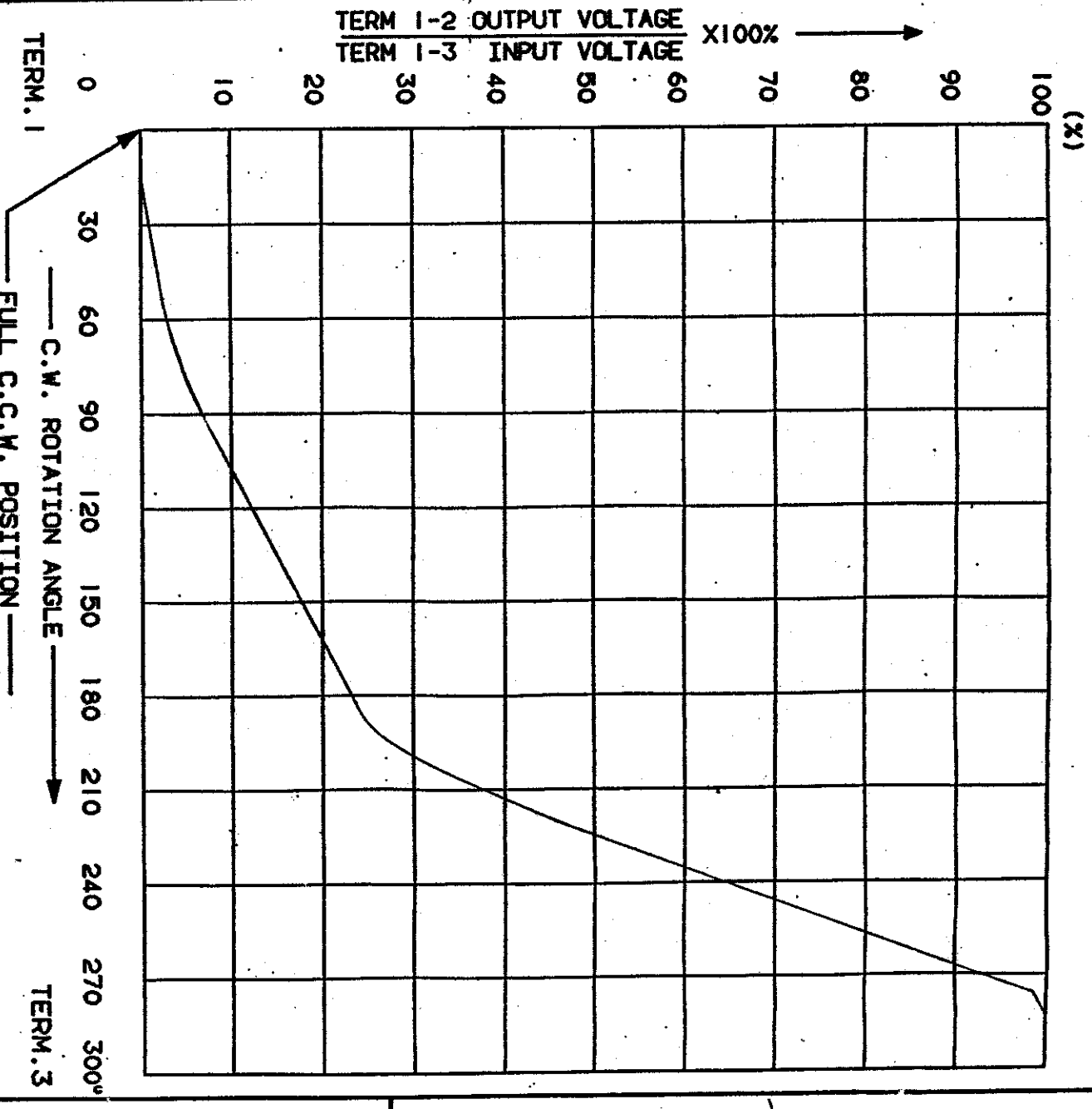
DSGN
DESIGN
04.11.22
Y.SAITO

No.
5K09CL0011

OR



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



AT 150° C.W. SHAFT ROTATION FROM FULL C.C.W. POSITION, VOLTAGE PERCENT SHALL FALL WITHIN THE LIMITS OF 10 - 25PERCENT.

Original	83-3-31	M.T. K.M. K.S.	APPD	APPD	UNIT	TITLE
SYMB	DATE	APPD	CHKD	DSGD	IN	RESISTANCE TAPER
					mm	DOCUMENT NO. K09-A01
				DSGD ELBY	SCALE	
				K. Angerer		
				Apr. 13 '89		
				CHKD		
				K. Morgan		
				Apr. 13 '89		
				APPD		
				Shiroe		
				Apr. 13 '89		

OR

CLASS. NO.	TITLE
	SPECIFICATIONS
<p>Rated voltage :</p> <p>The rated voltage shall be the voltage of D.C. or A.C. (commercial frequency , effective value) corresponding to the rated power (dissipation), and be obtained from the following formula. When the obtained rated voltage exceeds the maximum working voltage given in the following, however, the maximum working voltage of the following shall be the rated voltage.</p> $E = \sqrt{P \cdot R} \text{ (V)}$ <p>Where E : Rated voltage (V)</p> <p>P : Rated power (dissipation) (W)</p> <p>R : Nominal total resistance (Ω)</p> <p>Maximum working voltage : 50V A.C. 10V D.C.</p>	

ALPS ELECTRIC CO., LTD.				
APPD.	CHKD.	DSGD.	TITLE	
Jan. 15 '93	Jan. 14 '93	Jan. 12 '93		
SYMB. DATE APPD. CHKD. DSGD.			DOCUMENT NO.	
			4K09-16 (✓)	

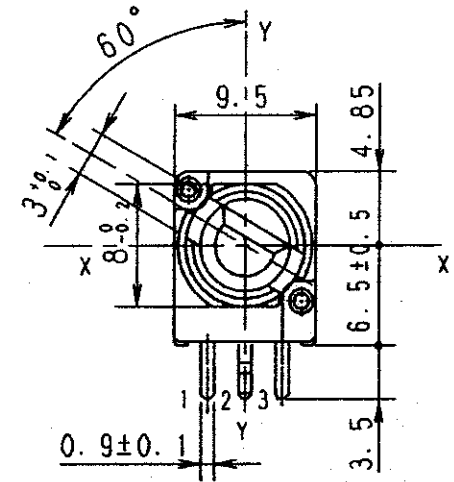
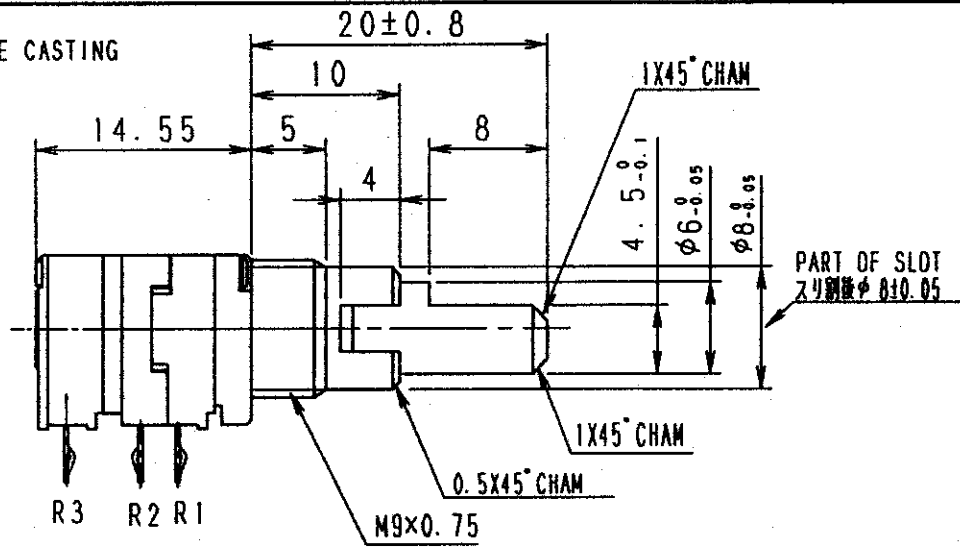


SPECIFICATIONS												
<p>Resistance to soldering heat : There shall be no evidence of poor contact between resistance element and terminals, or any physical damages as a result of soldering.</p> <p>*Dip soldering : Condition of soldering : Soldering shall be certified with following condition.</p> <p>Substrate to be soldered : Copper clad laminated phenol board in one surface of 1.6mm thickness.</p> <p>Solder flux : Flux of 0.82 specific weight in bubbling type solder fluxcoating apparatus shall be used and bubbling surface height shall be defined substantially as half thickness of substrate. Flux shall not flow up on substrate surface.</p> <p>Preheating Surface temperature of substrate shall be settled within 100°C in 2 minutes.</p> <p>Dip soldering : To be performed in 260±5°C . 5±1 sec.</p> <p>Please use the above process only 1 or 2 times.</p> <p>*Manual soldering : To be performed in 3 seconds within 300°C ^{350°C}</p> <p>Shaft wobble : The shaft play of the both sides with the moment 50 mN·m at the point of 30mm from the mounting surface shall assure followings. (if the shaft length is less than 30mm, the value shall be calculated proportionally.)</p>												
<table border="1"> <thead> <tr> <th>Bushing length</th> <th>Outer shaft</th> <th>Inner shaft</th> </tr> </thead> <tbody> <tr> <td>5 mm</td> <td>0.6 mmp-p max.</td> <td>0.8 mmp-p max.</td> </tr> <tr> <td>7 mm</td> <td>0.5 mmp-p max.</td> <td>0.8 mmp-p max.</td> </tr> <tr> <td>10 mm min.</td> <td>0.4 mmp-p max.</td> <td>0.7 mmp-p max.</td> </tr> </tbody> </table>	Bushing length	Outer shaft	Inner shaft	5 mm	0.6 mmp-p max.	0.8 mmp-p max.	7 mm	0.5 mmp-p max.	0.8 mmp-p max.	10 mm min.	0.4 mmp-p max.	0.7 mmp-p max.
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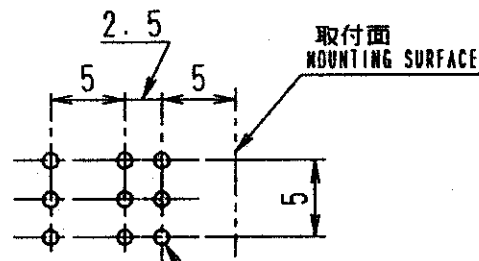
ALPS ELECTRIC CO., LTD.				
APPD.	CHKD.	DSGD.	TITLE	
999.01		35 & 25		
SYMB. DATE APPD. CHKD. DSGD.			DOCUMENT NO.	
			5K09-8	



NOTES
 BUSHING MATERIAL ----- ZINC ALLOY DIE CASTING
 OUTER SHAFT MATERIAL --- BRASS
 INNER SHAFT MATERIAL --- BRASS



上図は軸を反時計方向に
 回し切った状態を示す。
 SHAFT SHOWN IN
 FULL CCW POSITION



端子取付穴寸法図 (挿入側より見た図)
 (許容差±0.1)
 MOUNTING HOLE DETAIL
 (TOLERANCE±0.1)
 VIEWED FROM
 MOUNTING SIDE

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°

SYMB	DATE	APPD	CHKD	DSGD
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ALPS ELECTRIC CO., LTD.

DSGN. 1-1G 2000-09-20
 T. YAMAGUCHI

SCALE
 X

CHKD.



TITLE
 9形2軸3連 VR 組立図

APPD.
G. Asahida 2000-09-21

UNIT
 m m

DOCUMENT NO.
 K09CL001E