

承認書

FOR APPROVAL

客戶名稱

MICROS

Customer: _____

機種

Product: _____

客戶料號

Part No.: _____

客戶確認回覆:
Customer Approval Status: /

簽核:
Signature: _____

合格 PASSED

拒收 REJECTED

昇威資料 SOUNDWELL'S INFORMATION

機種類別

V. R

Product: _____

品號

SA10005NOA0A-HA1-011

Part No.: _____

規格

B103-Q1-M13A140 (送货单标签只写流水号)

Specification: _____

樣辦批號

22071707056V

Samples lot No.: _____

圖號

C-SA10XX-0012

Drawing No.: _____

摘要

貼防尘盖, 用136-B10X-02弹簧

Note: _____

承辦 Prepared By	校對 Proofed By	審核 Checked By	營業部 Sales Department
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東南亞首家榮獲TUV & SQCC ISO9002證書之電位器製造商

The First Potentiometers Manufacturer in South Eastern Asia Certified By ISO9000
ISO14001 TS16949認證企業

ISO14001 TS16949 Approved Company



香港公司: 昇威電子元件有限公司

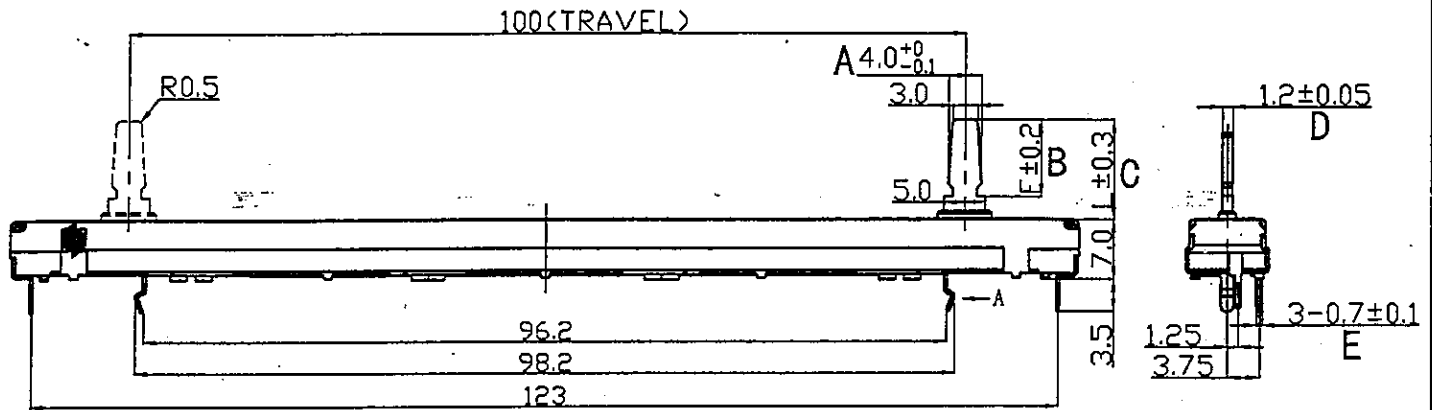
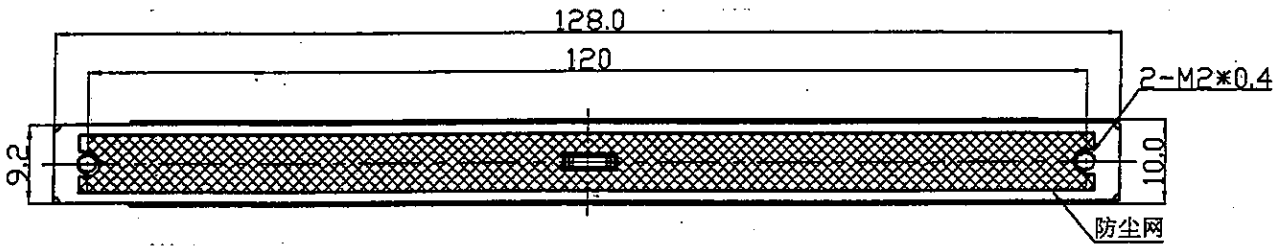
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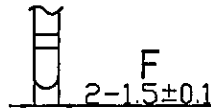
大陸工廠: 廣東昇威電子製品有限公司

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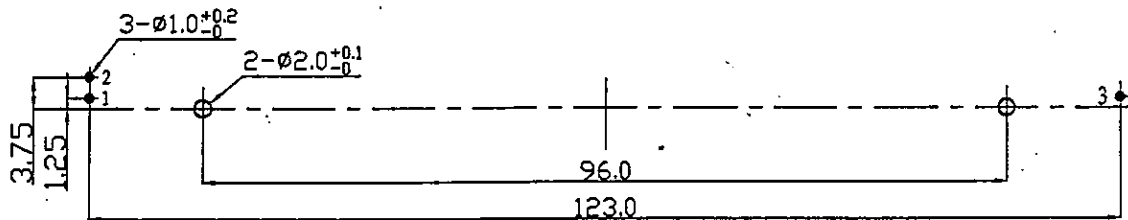
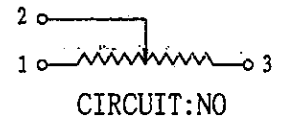




L	10	15	20	25	14
F	7	10	10	10	10



Terminal View: A
(2:1)



P. C. B MOUNTING HOLE DETAIL

注：1、重点管控尺寸A-F；
2、贴防尘网。

01			03	
00	ORIGINAL DRAWING	2013-04-26	02	
ISSU.	REVISION	DATE	ISSU.	
		SOUNDWELL ELECTRONICS		
		TITLE: 电位器		
		MODEL: SA10005NOA0A-HA1-MI3AXXX		
		DRAWING NO: C-SA10XX-0012		NO:
DSGD.	CHKD.	APPD.	TOL. UNLESS OTHERWISE SPEC.	
			BASIC DIMENSIONS	TOL.
			L ≤ 10	± 0.3
			10 < L	± 0.5
			100 ≤ L	± 0.8
			ANGLE	± 5°
		SCALE		
		UNIT	mm	

SA SERIES GENERAL SPECIFICATION

SA 系列 规格书

1/4

1、GENERAL 一般事项

1.1、Sscope 适用范围

The specification applies to model SA type mainly used for consumer products
此规格书适用于SA机型

1.2、Standard atmospheric conditions 标准状态

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

无特别规定外，测量应在以下状态下进行：

Ambient temperature 温度 :15°C to 35°C

Relative humidity 相对湿度 :25% to 85 %

Air pressure 气压 :86kpa to 106kpa

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

发生判定疑问或另有特别要求则以基准状态：

Ambient temperature 温度 :20±1°C

Relative humidity 相对湿度 :63% to 67 %

Air pressure 气压 :86kpa to 106kpa

1.3、Operating temperature range

使用温度范围 : -10°C to 70°C

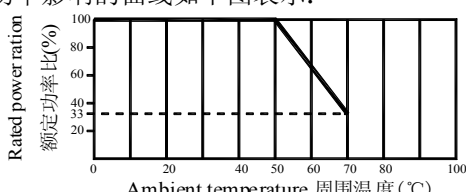
1.4、Storage temperature range

保存温度范围 : - 25°C to 70°C

2、Application Notes 使用上的事项

2.1、Avoid storing the products in a place at high temperature, high humidity and in corrosive gases. Please use this product as soon as possible with 12 months limitation . If any remainder left after packing is opened, please store it with proper moistureproofing, gasproofing etc. 避免储藏于高温,潮湿及腐蚀的场所，产品购入后尽可能在12个月内使用完。拆包装后未使用完的剩余产品需储藏于防潮防毒的环境下。

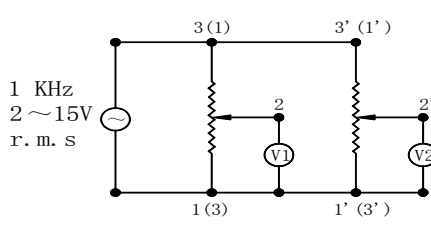
3 ELECTRICAL CHARACTERISTICS 电气性能





Item 项 目	Conditions 条 件	Specifications 规 格
3.1、Nominal total resistance and tolerance 公称全阻抗值	The resistance between terminals 1 and 3 shall be measured 端子1-3间阻值测定。	<u>10 K Ω</u> ■±20%
3.2、Resistance law 阻抗变化特性	Measurement shall be made by the resistance law method. For other procedures(refer JISC5261 standard) 用电压法测试，参照JISC5261标准	<u> </u> B Taper (Refer to the attached) <u> </u> B 线性 (参见附页)
3.3、Power rating 额定功率 (W)	Power rating is based on continuum 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1-3间连续负载后的最大功率。 环境温度对功率影响的曲线如下图表示： 	0.2 W

文控编号: SA-001	编制时间:				
版本号: 08	2003-11-1				
REVISION变更记事:	变更时间:	DSGD.主办	CHKD.审查	APPD.核准	TITLE标题: Slide Series Potentiometer
8、重新整理	2016-9-25				DOCUMENT NO.文号:
6、变更格式、内容	2006-3-6	SA			
7、变更格式、内容	2007-5-30				

SA SERIES GENERAL SPECIFICATION

SA 系列 规格书

3 ELECTRICAL CHARACTERISTICS 电气性能		
Item 项 目	Conditions 条 件	Specifications 规 格
3.4、 Rated voltage 额定电压	Rated voltage 额定电压: $E = \sqrt{PR}$ Power rating P: 额定功率 (W) Nominal total resistance R: 公称全阻抗值 (Ω) When the rated voltage exceeds the maximum operating voltage. the maximum operating voltage shall be the rated voltage 额定电压大于最高使用电压时,最高使用电压作为额定电压.	Maximum operating voltage 最高使用电压 200V AC 10V DC
3.5、 Residual resistance 残留电阻	The resistance at each end of the (A). Resistance between terminals 1 and 2, terminal 2and 3 shall be measured. A: Angle of effective rotation 接触刷停留在(A)终端位置,在端子1-2间,端子2-3间测定之电阻值. A:有效回转角度	R1,2: $\leq 20 \Omega$ R2,3: $\leq 30 \Omega$
3.6、 Slide noise 滑动噪音	Apply DC 20V between terminals 1-3 to measure the noise voltage . (rated voltage $\leq 20V$.apply by rated voltage) 在端子1-3间加直流电压20V(额定电压 $\leq 20V$,则以额定电压值测试)后,测定的杂音电压. Speed : 20mm/sec 滑动速度: 每秒20mm	68mVp-p or less $\leq 68mVp-p$
3.7、 Tracking error 连动误差	The voltage of 2~15 V r.m.s. Shall be applied between terminals 1 and 3 and between terminals 1' to 3' by measuring frequency at 1KHz. The output voltage shall be measured between terminals 1 and 2 and between terminal 1' and 2'(for the 15C and 25C taper. the measurement shall be made between terminals 2 and 3 and between terminals 2'and 3') 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. 在端子1-3间,1'-3'间,输入频率1KHz,电压2~15V的正弦波实值,测量端子1-2间,端子1'-2'间的输出电压(适用于15C和25C线型,端子2-3间,2'-3'间也应测量输出电压)结合第一次的测量结果,应为同一标准. 如对测量结果没有质疑, 则将此电压作为测试电压值. Input impedance of the voltmeter: 10M Ω or more 电压表输入阻抗 10M Ω 以上	<p style="color: blue;">此项不适用</p> 
3.8、 Insulation resistance 绝缘阻抗	Measurement shall be made under the condition which a voltage of DC 250V 60s \pm 5s is applied between individual terminals and bracket. 在端子和安装支架间施加电压 DC250V 60 s \pm 5s.	Between individual terminals and bracket 100M Ω MIN. 端子与安装支架间电阻 100M Ω 以上
3.9、 Dielectric strength 耐电压	A voltage of 250V AC shall be applied for 60s \pm 5s between individual terminals and bracket. 在端子和安装支架间施加 AC 250V 电压60s \pm 5s	Without arcing or breakdown. 不得有漏电、绝缘破坏。

4 Mechanical characteristics 机械性能					
Item 项 目	Conditions 条 件				Specifications 规 格
4.1、 Total travel slide 全滑动行程	Travel fo effective slide. 有效滑动行程				<u>100</u> $\pm 0.5mm$
文控编号: SA-001	编制时间:	 SOUNDWELL ELECTRONIC			
版本号: 08	2003-11-1				
REVISION变更记事:	变更时间:	DSGD 主办	CHKD 审查	APPD 核准	TITLE标题: Slide Series Potentiometer
8、重新整理	2016-9-25				DOCUMENT NO. 文号: SA
6、变更格式、内容	2006-3-6				
7、变更格式、内容	2007-5-30				

SA SERIES GENERAL SPECIFICATION

SA 系列规格书

4 Mechanical characteristics 机械性能		
Item 项 目	Conditions 条 件	Specifications 规 格
4.2、Sliding force 滑动力	Measured at standard atmospheric conditions 标准状态下测定 Speed : 20mm/sec 滑动速度: 每秒20mm Operating position: Tip of the lever 操作位置: 滑柄顶端	65±55 gf
4.3、Number of Detemts Click定位数目		<input type="checkbox"/> without Detent <input checked="" type="checkbox"/> 1C (Center Detent中段功能) <input type="checkbox"/> Other其它 C
4.4、Click slip out force定位推动力	Measured at standard atmospheric conditions 标准状态下测定 Speed : 20mm/sec 滑动速度: 每秒20mm	145±105 gf
4.5、stop trength 止档强度	The following torsion moment load of 30 N(3Kgf) shall be applied to the shaft for 5sec at both ends (after fixation) 固定后于旋转前后两端末加30 N(3Kgf) 力保持5秒	Electrical characteristics shall be satisfied with specification. 电气性能符合规定要求
4.6、Lever wobble 滑柄偏摆量	A torsion moment of 2.5 N(250 gf) shall be applied at the lever in a direction perpendicular to the axial direction and then the displacement shall be measured 固定后, 垂直于滑柄顶端施加2.5 N (250 gf) 的力	2(2×L/25) mm p-p or less 以下 L=Length of lever 滑柄的长度
4.7 Push-pull strength of the lever 滑柄推拉强度	Thrust and tensile static load 1r 30N shall be applied to the potentiometer in the lever direction ro 10s (after fixation) 固定后于滑柄方向施加30 N (3kgf) 静负荷力推和拉各10秒	Electrical characteristics shall be satisfied with specification. 电气性能符合规定要求

5 ENDURANCE CHARACTERISTICS 耐久性能		
Item 项 目	Conditions 条 件	Specifications 规 格
5.1、Solder ability 焊锡性	The terminals shall be stored at a temperature of 40°C with relative humidity of 90%~95% and measured in 168h. 温度40°C, 湿度90%~95%RH, 168小时测定。 The terminals shall be immersed into solder bath at 260°C±5°C for 3s±1s. 端子在260°C±5°C温度的焊锡槽内浸锡3±1秒	A new uniform coating of solder shall cover a minimum of 75% of the surface being immersed. 浸渍面须有75%以上焊锡附着
5.2、Resistance to soldering heat 焊锡耐热性	Manual soldering 手工焊接 Bit temperature of soldering iron: 350°C less than Application time of soldering iron: within 3 s. 温度350°C以下, 时间3秒以内。 Dip soldering 槽焊 1. Printed wiring board : copper clad laminate board with thickness of 1.6mm; 使用基板: t=1.6mm的覆铜板。 2. Solder flux: Flux of 0.82 specific weight in bubbling type, solder flux coating apparatus shall be used and bubling surface height shall be defined substantially as half thickness of substrate. Flux shall not flow up on substrate surface; 助焊剂: 使用发泡式比重0.82以上的焊剂, 发泡面高大致在基板厚度一半的位置, 而且助焊剂不可流入基板表面上。 3. Preheating : Surface temperature of board: 100°C or less; Preheating time : within 2 min. 预热: 基板表面温度100°C以下, 时间2分钟以内。 4. Soldering : Solder temperature : 260°C±5°C less Immersion time: within 5±1 s 焊接: 温度260°C±5°C, 时间5±1 s。 Apply the above soldering process for 1 or 2 times. 以上工程适用1至2次。	Electrical characteristics shall be satisfied. No mechanical abnormality. 不得有绝缘体的破损、变形、接触无异常。

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SA SERIES GENERAL SPECIFICATION

SA 系列规格书

5 ENDURANCE CHARACTERISTICS 耐久性能

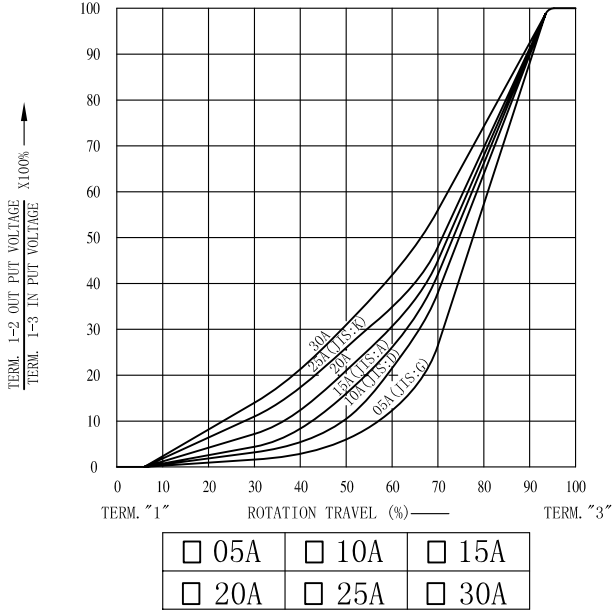
Item 项 目	Conditions 条 件	Specifications 规 格
5.3、Resistance to heat 耐热性	The potentiometer shall be stored at a temperature of 70±2°C for 240±8h in a thermostatic chamber. Then the potentiometer shall be measured after maintaining at standard atmospheric conditions for 1h . 温度70±2°C恒温槽中240±8小时放置后,置于常温常湿1小时除去水滴后测定。	Change in total resistance is relative to the value before test : ±20% 总阻变化值: 初期值的±20%
5.4、Resistance to cold 耐寒性	The potentiometer shall be stored at a temperature of -25±3°C for 96±4h in a thermostatic chamber. Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed. And measure the potentiometer which shall be subjected to standard atmospheric conditions for 1h . 温度-25±3°C恒温槽中96±4小时放置后,置于常温常湿1小时除去水滴后,1小时内测定。	Change in total resistance is relative to the value before test : ±20% 总阻变化值: 初期值的±20%
5.5、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±4h in a thermostatic chamber. Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed and measure the potentiometer which shall be subjected to standard atmospheric conditions for 1h. 温度40±2°C,湿度90-95%,恒温恒湿槽中放置96±4小时后,置于常温常湿1小时除去水滴后,1小时内测定。	Change in total resistance is relative to the value before test : +35%~-5% 总阻变化值:初期值的+35%~-5% Insulation resistance: 50MΩ or more 绝缘阻抗: ≥50MΩ Noise : 150mV p-p or less 转动噪音: ≤150mV p-p
5.6、temperature 温度循环试验	The potentiometer shall be subjected to 5 successive change of temperature cycles as shown in table below. Then is surface moisture shall be removed. And measure the potentiometer which shall be subjected to standard atmospheric conditions for 1hour . 以下条件温度连续5个周期的试验后,置于常温常湿1小时除去水滴后,1小时内测定。	
		Temperature 温度
	1	-10±3°C
	2	standard atmospheric conditions 常温
	3	70±2°C
	Duration 放置时间	
1	30 min (分)	
2	10 to 15 min(分)	
3	30 min (分)	
4	10 to 15 min(分)	
		Change in total resistance is relative to the value before test : ±30% 总阻变化值: 初期值的±30% Insulation resistance: 100MΩ or more 绝缘阻抗 : ≥100MΩ 。 Dielectric strength : Without damage to parts arcing or breakdown etc. 耐电压:无损伤,变形,绝缘破坏等情形。 Appearance: There shall be no deformation or cracks of molded part. 外观: 塑胶部分无形成破裂
5.7、Endurance 耐久性	The moving contact without electrical load shall be rotated from one end stop to the other and returned to its original position exceeds 90% of effective angle. This procedure constitutes 1 cycle. And the moving contact shall be subjected to 600 cycles per hour. total 15000±200 cycles. (5000 to 8000 continuous cycles for 24h). 推柄以600周/小时(来回算1周)的速度推动,24小时推动5000~8000周,有效滑动行程超过90%,共15000±200周。	Change in total resistance is relative to the value before test : ±15% 总阻变化值: 初期值的±15% Slide noise: 150mVp-p less than 滑动噪音: 150mVp-p 以下 Slided force : No less than 50% of the initial torque . 滑动力矩: 不低于初期规格值的50%。 Residual resistance 残留电阻: R1,2: < 40 Ω ; R2,3: < 60 Ω

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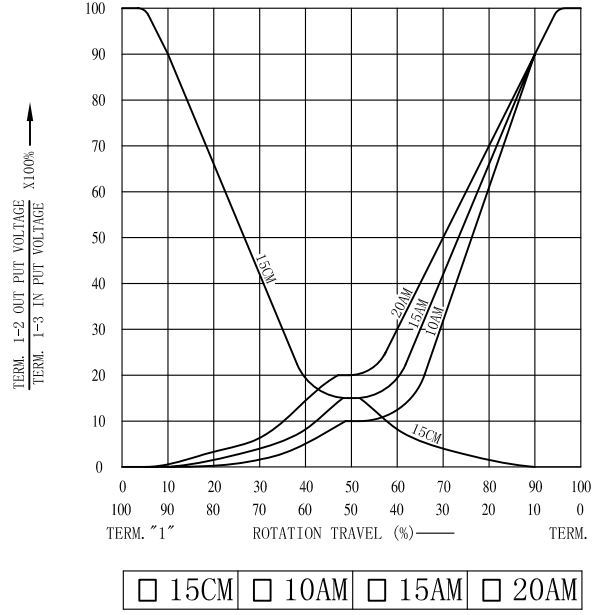
STANDARD RESISTANCE TAPER (電位器専用)

Rotary, Slide, Equalizer & Trimmer (Only be applicable to potentiometer)

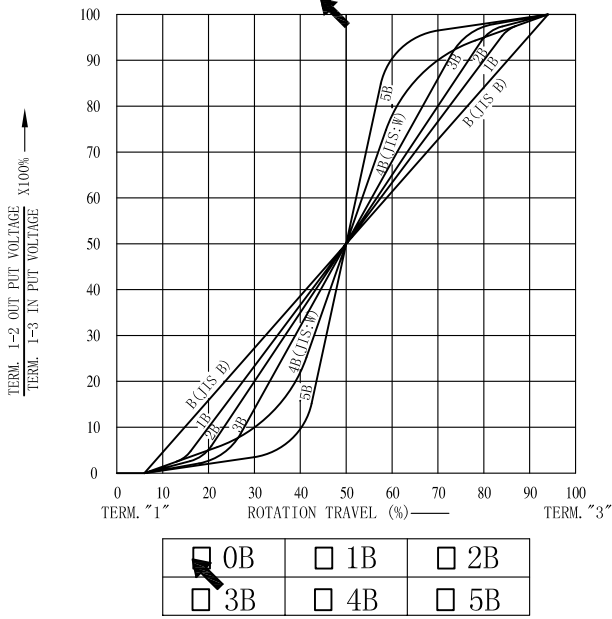
TAPERS (A) SERIES



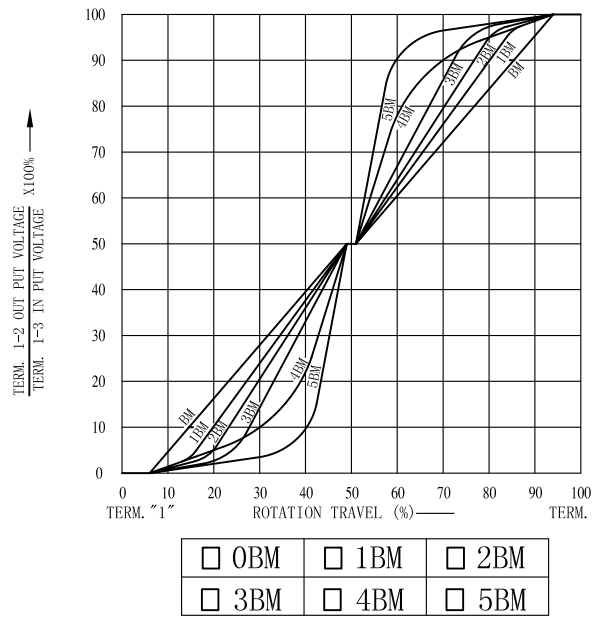
TAPERS (A&C) WITH 50% TAP



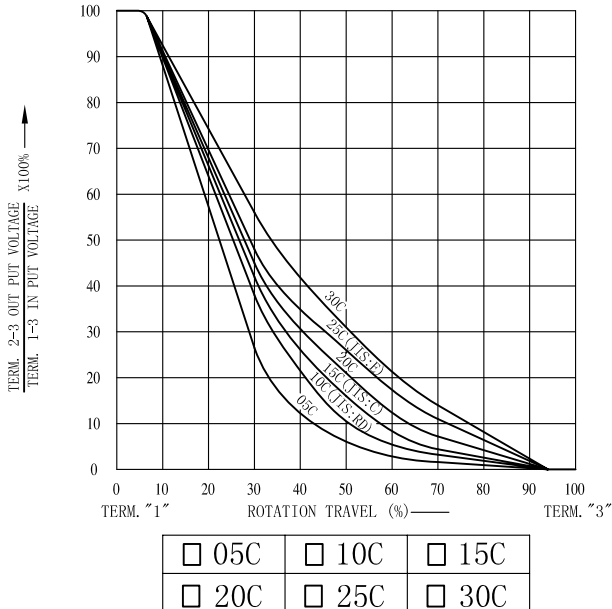
TAPERS (B) SERIES



TAPERS (B) WITH 50% TAP



TAPERS (C) SERIES



TAPERS (M & N)

