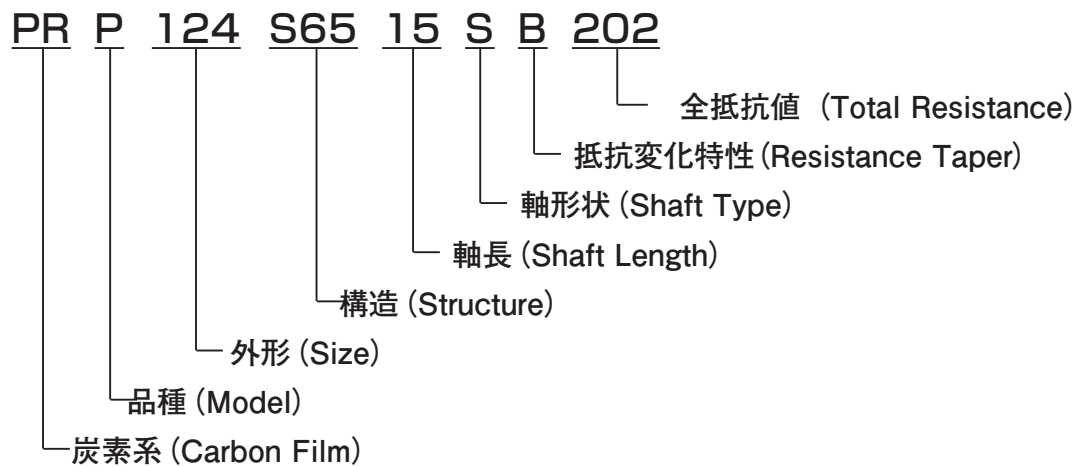


12形ボリューム 12mm SIZE SERIES

RoHS 指令対応 RoHS compliant

■品名構成 PART NUMBER COMPOSITION



| 品 種 Model | 外 形 Size | 構 造 Structure |
|---|---|---|
| 無記載 : ラグタイプ No descr. : Solder lug type | 123 : φ12.5mm, M6取付ネジ Bushing | G : 一軸二連 Single shaft, dual unit |
| P : プリントタイプ PC pin type | 124 : φ12.5mm, M7取付ネジ Bushing | S65 : ロータリースイッチ Rotary switch |
| Q : 高回転寿命形 Long-life type | | PS118 : プッシュオンスイッチ Push-on switch |
| J : センタークリック付き With center detent | | -5L : 単独直線性±5% Independent linearity±5%(Max.) |

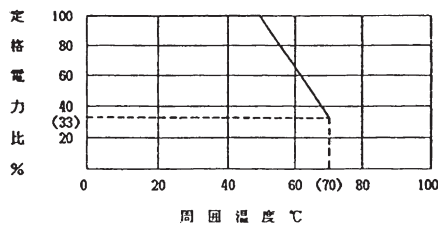
12形ボリューム 12mm SIZE SERIES

RoHS 指令対応 RoHS compliant

仕様

電気的性能

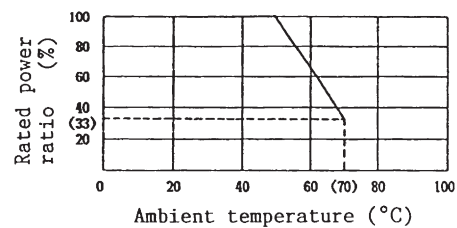
- 公称全抵抗値 1, 2, 5, 10, 20, 50
100, 200, 500 (kΩ)
- 全抵抗値許容差 ±20%
- 抵抗変化特性 A · B · C · D · W
- 残留抵抗値 3 Ω以下: 300° 回転
20 Ω以下: その他
- 定格電力 0.05W
- しゅう動雑音 100mV以下
- 絶縁抵抗 DC300Vにて100MΩ以上
- 耐電圧 AC300Vにて1分間
- 最高使用電圧 100V: Bカーブ
50V: その他
- 相互偏差 音量用: 0 ~ -40dBにて3 dB
音質用: 回転角度の50%にて
2 dB以内
- 軽減曲線



Specifications

Electrical

- Nominal total resistance 1, 2, 5, 10, 20, 50
100, 200, 500 (kΩ)
- Resistance tolerance ±20%
- Resistance taper A · B · C · D · W
- End resistance 3 Ω max.: 300° rotation type
20 Ω max.: For others
- Power rating 0.05W
- Noise 100mV max.
- Insulation resistance 100MΩ min. at DC300V
- Withstanding voltage 1 minute at AC300V
- Max. operating voltage 100V: B curve
50V: For others
- Tracking error Volume cont: 3 dB at 0 to -40dB
Tone cont: 2 dB at 50% of rotational angle
- Derating curve



機械的性能

- 全回転角度 (機械角度) 120°, 300°
- 全回転角度許容差 ±5°
- 回転トルク 常温20°Cにて2~24.5mN·m (20~250gf·cm)
-20°Cにて49.1mN·m (500gf·cm以下)
- シャフトの曲り及びガタ ラジアル方向 0.5mm P-P 軸の先端、加圧2.45N (250gf)
スラスト方向 0.5mm以下
- クリック位置 センター
- クリック脱出トルク 回転トルク+2.9~29.4mN·m (30~300gf·cm)
- 軸回転止め強度 0.4N·m (4 Kgf·cm以上)
- 軸押し引き強度 49.1N (5 Kgf以上)
- ナット締付強度 0.5N·m (5 Kgf·cm以上)

Mechanical

- Total rotational angle (Mechanical) 120°, 300°
- Tolerance for total rotational angle ±5°
- Rotational torque 2~24.5mN·m(20to250gf·cm) at 20°C
49.1mN·m(500gf·cm max.) at -20°C
- Shaft wobble and bend Radial direction 0.5mm P-P
tip of the shaft applied 2.45N(250gf)
Thrust direction 0.5mm max.
- Detent position Center
- Detent torque Normal torque + 3~29.4mN·m(30to300gf·cm)
- Shaft stopper strength 0.4N·m(4 Kgf·cm min.)
- Shaft push-pull strength 49.1N(5 Kgf min.)
- Nut tightening strength 0.5N·m(5 Kgf·cm min.)

環境性能

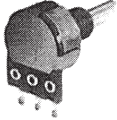
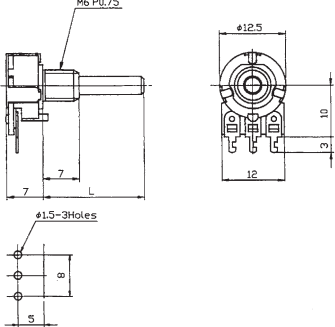

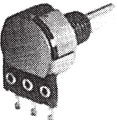
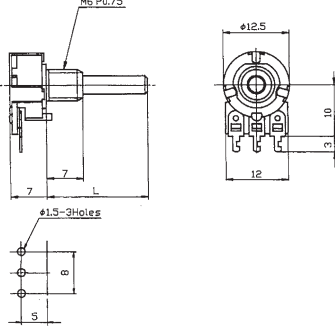

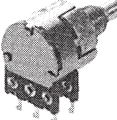
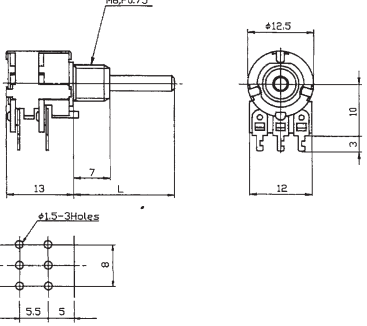
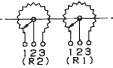
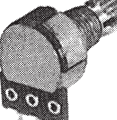
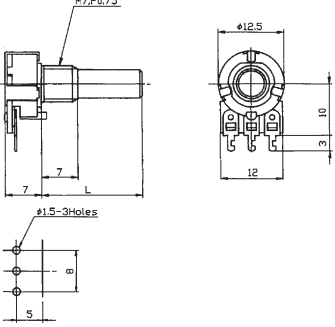

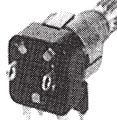
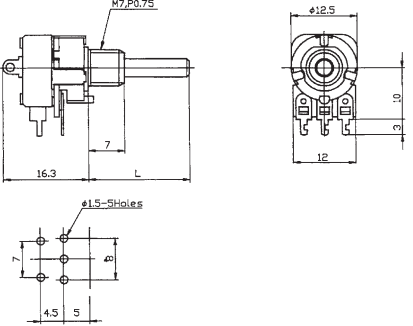

- 使用温度範囲 -20~+70°C
- はんだ耐熱性 350±5°Cで3秒間
- 回転寿命 (標準) 無負荷にて毎時600回の速さで
15,000±200回転後の抵抗値変化は
±15%以下
- 回転寿命 (高寿命) 無負荷にて毎時600回の速さで
100,000±200回転後の抵抗値変化は
±15%以下

Environmental

- Soldering heat resistance -20 to + 70°C
- Operating temperature range 350±5°C at 3 sec.
- Rotational life (Standard) Permissible resistance change after
15,000±200cycles on 600r.p.h without
load : ±15% max.
- Rotational life (Long life) Permissible resistance change after
100,000±200 cycles on 600r.p.h. without
load : ±15% max.

12形ボリューム 12mm SIZE SERIES

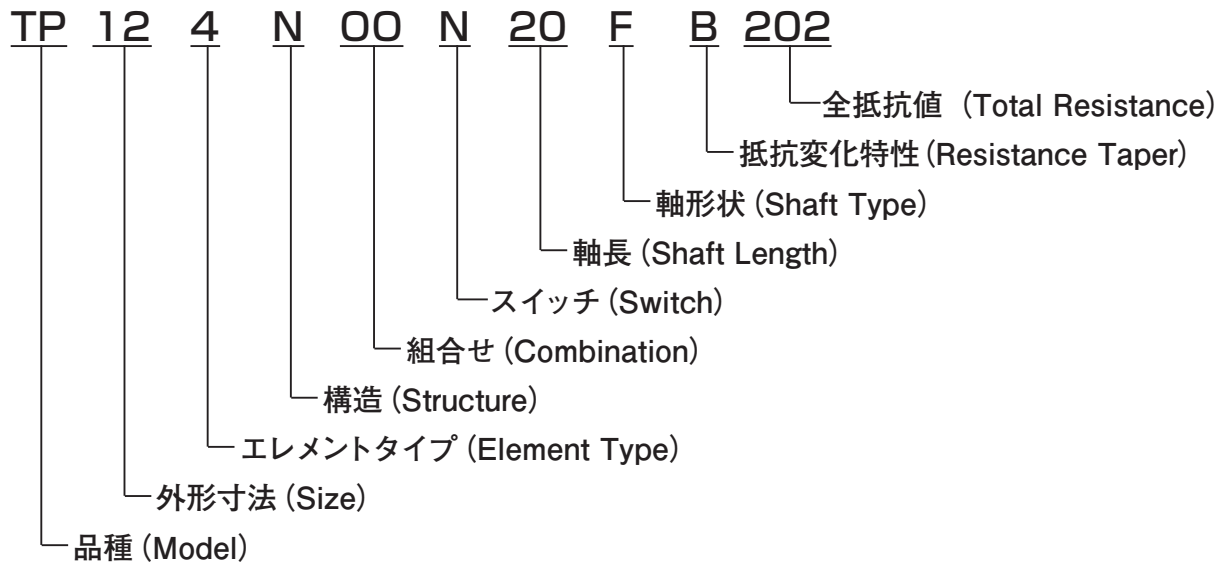
(Unit : mm)

| <p>製品名 Model</p> | <p>外形図 Outline Drawing</p> | <p>特長・個別仕様 Features/Individual Specifications</p> |
|--|---|---|
| <p>1軸1連高寿命 Single unit, Single shaft Long Life PRPQ123-5L</p>  |  | <p>● 300° rotation, single unit</p>  |
| <p>1軸1連 Single unit, Single shaft PRP123</p>  |  | <p>● 300° rotation, single unit</p>  |
| <p>1軸2連 Dual unit, Single shaft PRP123G</p>  |  | <p>● 300° rotation, dual unit</p>  |
| <p>1軸1連 Single unit, Single shaft PRP124</p>  |  | <p>● 300° rotation, single unit</p>  |
| <p>1軸1連Ro.SW付 Single unit, Single shaft with Ro.SW PRP124S65</p>  |  | <p>● 300° rotation, single unit with Ro. SW</p>  |

12形多連ボリューム
12mm SIZE MULTI-GANG SERIES

RoHS 指令対応 RoHS compliant

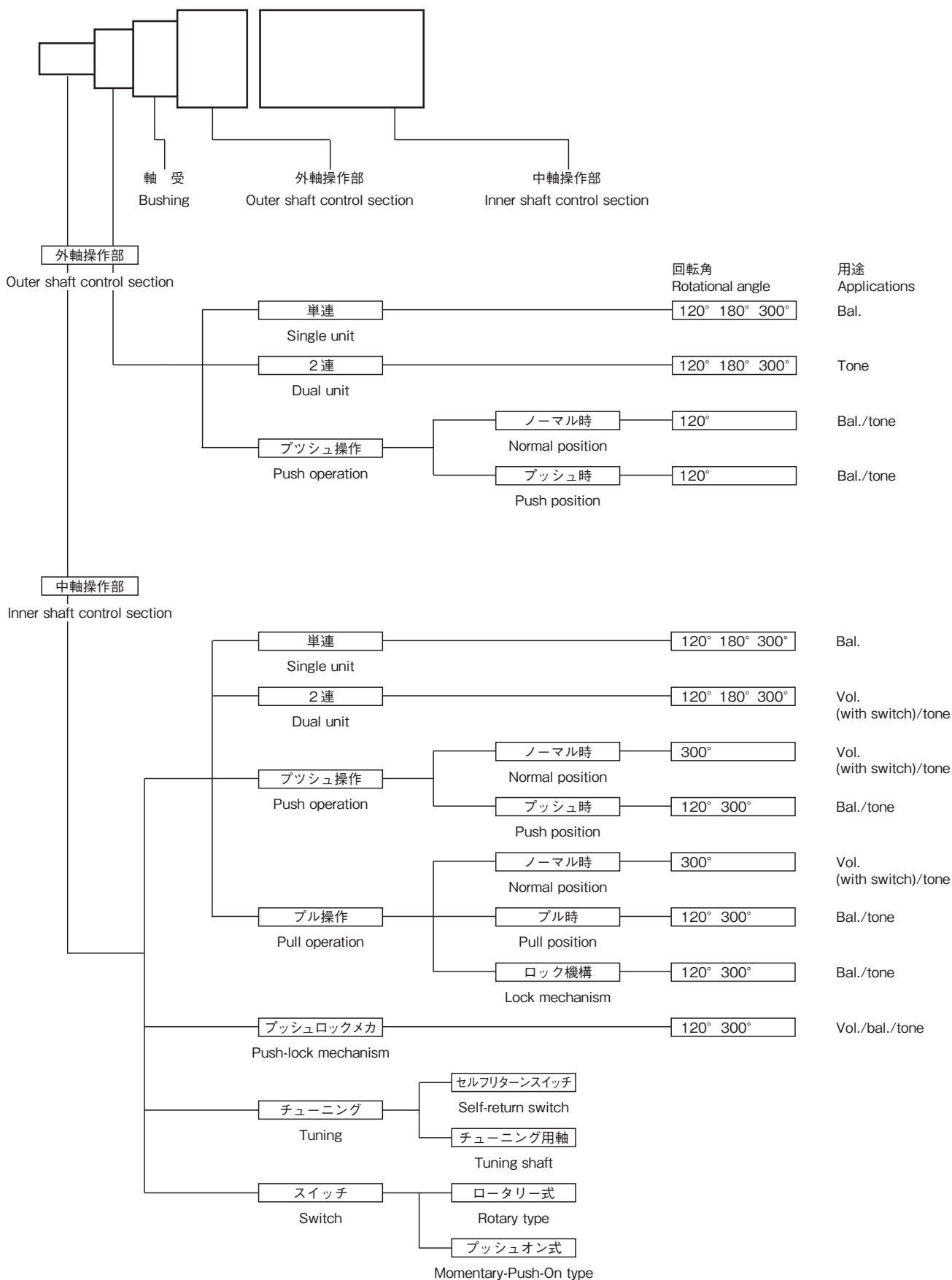
■品名構成 PART NUMBER COMPOSITION



| 品 種 Model | 外 形 Size | タ イ プ Element Type | 構 造 Structure | 組 合 せ Combination | ス イ ッ チ Switch |
|---|-------------|---|---|--|---|
| RP: プリントタイプ PC pin type | 12 | 0: 可変抵抗無し Non element | N: 一軸一連 Single shaft, single unit | 00: 組合せ無し Non Combination | A: プッシュオン式 (タクト形) Momentary Push-On type (Tactile type) |
| TL: ラグタイプ Solder lug type | | 4: 120° 平面2連形 (2端子共通) 120° type 1unit, 2element (2nd terminal: common) | G: 一軸二連 Single shaft, dual unit | 01: クリック付 (外軸) With detent (outer shaft) | B: ロータリー式 Rotary type |
| TP: プリントタイプ PC pin type 横形 Horizontal | | 5: 120° 平面2連形 (2端子独立) 120° type 1unit, 2element (2nd terminal: independent) | T: 一軸三連 Single shaft, triple unit | 02: タップ付 (標準形) With tap (standard type) | N: ロータリー式 Rotary type |
| RH: プリントタイプ PC pin type 縦形 (伏形) Vertical | | 6: 300° type | Q: 一軸四連 Single shaft, quad unit | 03: 内蔵タップ付 (3端子側) With layer tap (3rd terminal side) | P: ロータリー式 Rotary type |
| | | 7: 120° type | S: 一軸五連 Single shaft, 5-ganged unit | 04: 内蔵タップ付 (2端子短絡) With layer tap (connected 2nd terminal) | K: ロータリー式 Rotary type |
| | | 8: 180° type | P: 一軸六連 Single shaft, 6-ganged unit | 05: 120° 内蔵プリント 120° type/layer printing | L: ロータリー式 Rotary type |
| | | | E: 一軸八連 Single shaft, 8-ganged unit | 06: チューニング・シャフト Tuning shaft | T: プッシュオン式 Momentary push-on type |
| | | | A: 二軸一連 (チューニング用) Dual shaft, single unit (for Tuning) | 09: 内蔵タップ付 (1端子側) With layer tap (1st terminal side) | Z: プッシュロックメカニズム Push-Lock mechanism |
| | | | B: 二軸二連 (チューニング用) Dual shaft, dual unit (for Tuning) | 10: クリック付 (中軸) With Detent (Inner Shaft) | Y: セルフリターン Self-return type |
| | | | D: 二軸二連 Dual shaft, dual unit | 11: 外軸クロストーク・バランス付 Outer shaft with cross-talk bal. | *-L: ブル・ロック機構付 With pull-lock mechanism |
| | | | F: 二軸三連 Dual shaft, triple unit | 12: クラッチ段平面2連 (2端子独立) Clutch section/dual unit single section (2nd terminal: independence) | |
| | | | H: 二軸四連 Dual shaft, quad unit | 13: 36点クリック付 with 36-detent | |
| | | | C: 二軸五連 Dual shaft, 5-ganged unit | 14: クラッチ段2連 Clutch section/dual unit dual section | |
| | | | R: 二軸六連 Dual shaft, 6-ganged unit | 15: 中軸ダミーユニット付 Inner shaft: Dummy unit | |
| | | | J: 二軸プル・クラッチ付 Dual shaft with pull clutch | 16: 中軸120° 回転 Inner shaft: Rotational angle 120° | |
| | | | K: 二軸プッシュ・クラッチ付 Dual shaft with push clutch | 17: 高トルク Hight torque | |
| | | | V: 一軸三連プル/プッシュ・クラッチ Single shaft, triple unit with pull/push clutch | * 上記以外の組合せも対応可能です。 詳しくは当社営業へお問合わせ願います。 Other combinations are available. Please call our sales staff for further information. | |
| | | | W: 一軸四連プル/プッシュ・クラッチ Single shaft, quad unit with pull/push clutch | | |
| | | | U: 外軸プッシュ・クラッチ付/ 中軸プル・クラッチ付 Outer shaft: Push clutch/ Inner shaft: Pull clutch | | |
| | | | Y: 外軸プッシュ・クラッチ付/ 中軸プッシュ・クラッチ付 Outer shaft: Push clutch/ Inner shaft: Push clutch | | |
| | | | Z: 外軸プッシュ・クラッチ付/ 中軸ノン・クラッチ付 Outer shaft: Push clutch/ Inner shaft: Non clutch | | |

12形多連ボリューム製品構成表 12mm SIZE MULTI-GANG SERIES

RoHS 指令対応 RoHS compliant



備考

※1 1軸付加機能は、中軸付加機能に準じます。

Note

※1 For single shaft type, refer to inner shaft variation

12形多連ボリューム 12mm SIZE MULTI-GANG SERIES

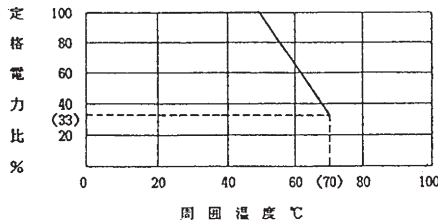
RoHS 指令対応 RoHS compliant

仕様

電気的性能

- 公称全抵抗値 1, 2, 5, 10, 20, 50
100, 200, 500(k Ω)
- 全抵抗値許容差 $\pm 20\%$
- 抵抗変化特性 A · B · C · D · W
- 残留抵抗値 5 Ω 以下 : 300° 回転
20 Ω 以下 : その他
- タップ位置 有効回転角度の50%位置
- タップ抵抗許容差 $\pm 30\%$
- タップ残留抵抗 200 Ω 以下
- 定格電力 0.05W
- しゅう動雑音 100mV以下
- 絶縁抵抗 DC500Vにて100M Ω 以上
- 耐電圧 AC500Vにて1分間
- 最高使用電圧 100V : Bカーブ
50V : その他
- 相互偏差 音量用 : 0 ~ -40dBにて3 dB以内
音質用 : 回転角度の50%にて2 dB以内

●軽減曲線

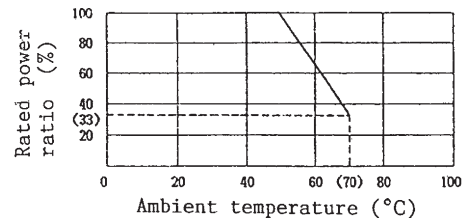


Specifications

Electrical

- Nominal total resistance 1, 2, 5, 10, 20, 50
100, 200, 500(k Ω)
- Resistance tolerance $\pm 20\%$
- Resistance taper A · B · C · D · W
- End resistance 5 Ω max. : 300° rotation type
20 Ω max. : For others
- Tap position 50% of effective rotational angle
- Tap resistance tolerance $\pm 30\%$
- Tap minimum resistance 200 Ω max.
- Power rating 0.05W
- Noise 100mV max.
- Insulation resistance 100M Ω min. at DC500V
- Dielectric strength 1 minute at AC500V
- Max operating voltage 100V : B curve
50V : For others
- Tracking error Volume cont : 3dB max. at 0 to -40dB
Tone cont : 2dB max. at 50% of rotational angle

● Derating curve



機械的性能

- 全回転角度 (機械角) 120°, 180°, 300°
- 全回転角度許容差 $\pm 5^\circ$, $+10^\circ$
 -5° : 軸移動形
- 回転トルク 常温20°Cにて2~24.5mN·m (20~250gf·cm)
-20°Cにて49.1mN·m (500gf·cm以下)
- シャフトの曲り及びガタ
ラジアル方向 0.5mm P-P
軸の先端、加圧2.45N (250gf) 1.5mm P-P : 軸移動形
スラスト方向 0.5mm以下
- クリック位置 センター, 11点, 36点, 41点
- クリック脱出トルク
センタークリック 回転トルク+2.9~29.4mN·m (30~300gf·cm)
多点クリック 2.9~29.4mN·m (30~300gf·cm)
- 軸回転止め強度 0.5N·m (5Kg·cm以上)
0.4N·m (4Kg·cm以上) ; 軸移動形
- 軸押し引き強度 98.1 (10Kg以上)
- ナット締付強度 1.47N·m (15Kg·cm以上)

環境性能

- はんだ耐熱性 350 \pm 5°Cで3秒間
- 使用温度範囲 -20~+70°C
- 回転寿命 無負荷にて毎時600回の速さで
15,000 \pm 200回転後の抵抗値変化は
 $\pm 15\%$ 以下
- プッシュロックメカ 10,000回以上
動作寿命

Mechanical

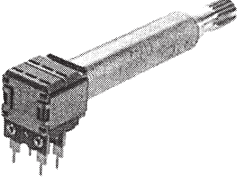
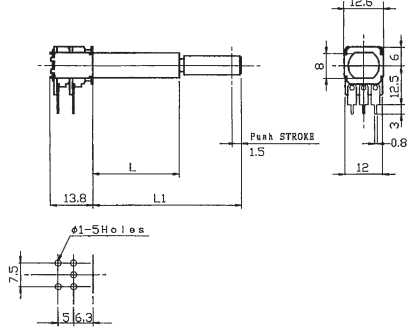
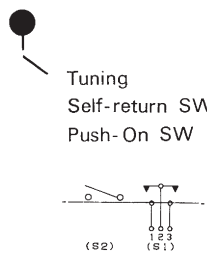
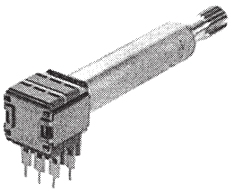
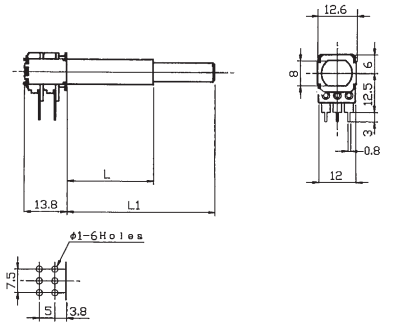
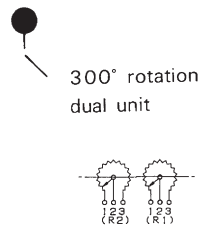
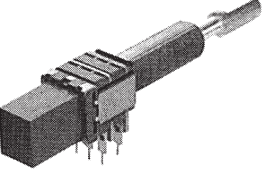
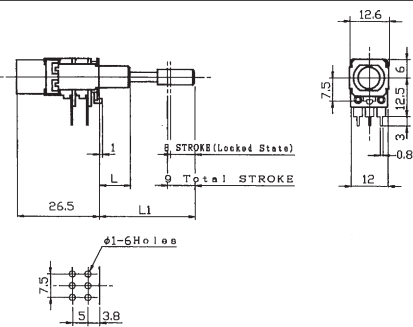
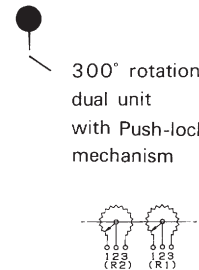
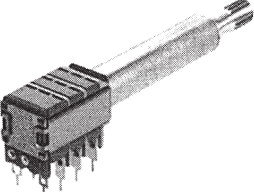
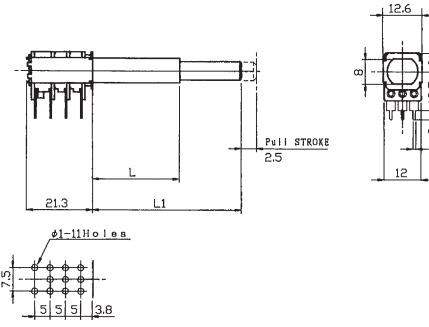
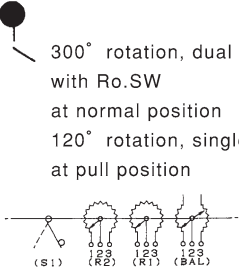
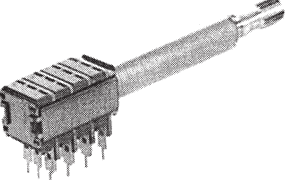
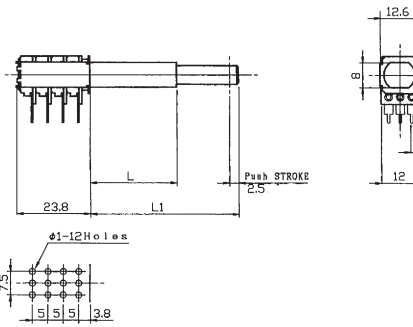
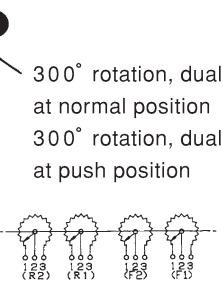
- Total rotational angle (Mechanical) 120°, 180°, 300°
- Tolerance for total rotational angle $\pm 5^\circ$, $+10^\circ$
 -5° : Push and pull drive shaft type
- Rotational torque 2~24.5mN·m(20to250gf·cm) at 20°C
49.1mN·m(500gf·cm max.) at -20°C
- Shaft wobble and bend
Radial direction 0.5mm P-P
tip of the shaft 1.5mm P-P : Push and pull
applied 2.45N(250gf) drive shaft type
Thrust direction 0.5mm max.
- Detent position Center, 11 detent,
36detent, 41 detent
- Detent torque
Center detent Normal torque +2.9~29.4mN·m(30to300gf·cm)
For others 2.9~29.4mN·m(30to300gf·cm)
- Shaft stopper strength 0.5N·m(5Kg·cm min.)
0.4N·m(4Kg·cm min.) ; Push and pull
drive shaft type
- Shaft push- pull strength 98.1N(10Kg min.)
- Nut tightening strength 1.47N·m(15Kg·cm min.)

Environmental

- Soldering heat resistance 350 \pm 5°C at 3 sec
- Operating temperature range -20 to +70°C
- Rotational life Permissible resistance change
after 15,000 \pm 200 cycles
on 600r.p.h. without load :
 $\pm 15\%$ max.
10,000 cycles
- Push-lock mechanism operating life

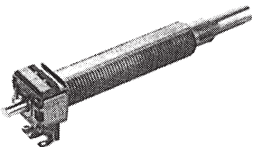
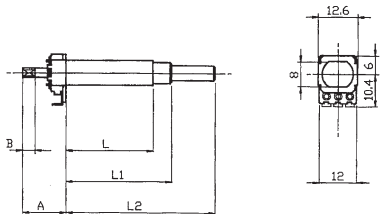



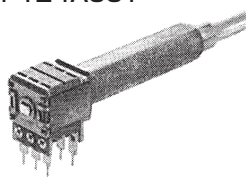
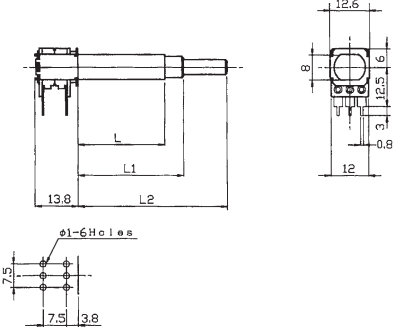

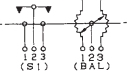
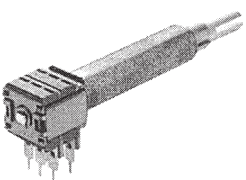
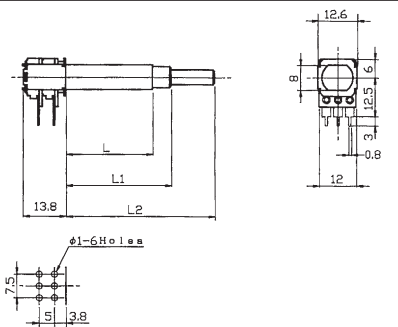


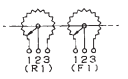
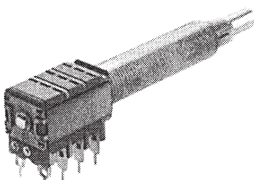
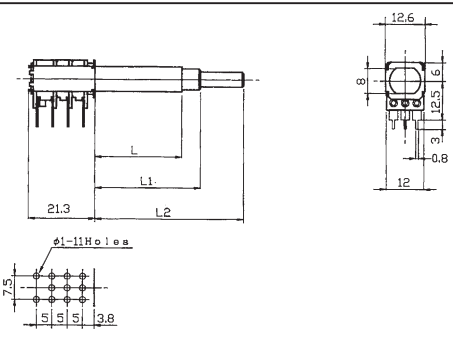


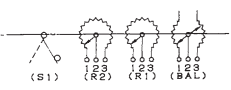
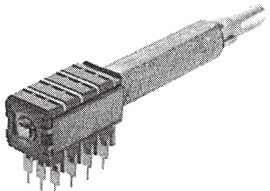
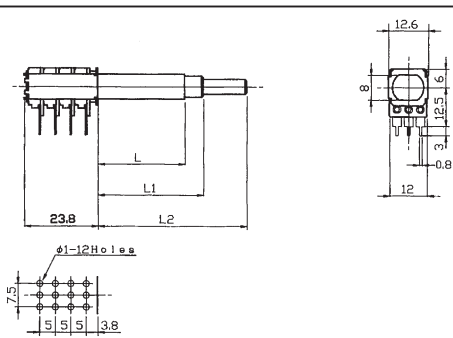

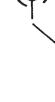
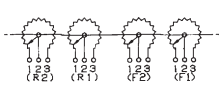
12形1軸多連シリーズ 12mm SIZE SINGLE-SHAFT, MULTI-GANG SERIES

(Unit : mm)

| 製品名 Model | 外形図 Outline Drawing | 特長・個別仕様 Features/Individual Specifications |
|---|---|---|
| <p>1軸1連Push-On/Self-return SW付 Single unit, Single shaft with Push-On/Self-return SW TP120N00YT</p>  |  |  <p>Tuning Self-return SW Push-On SW</p> |
| <p>1軸2連 Dual unit, Single shaft TP126G00</p>  |  |  <p>300° rotation, dual unit</p> |
| <p>1軸2連プッシュロックメカ付 Dual unit, Single shaft with Push-lock mechanism TP126G00Z</p>  |  |  <p>300° rotation, dual unit with Push-lock mechanism</p> |
| <p>1軸3連 Ro.SW付 Triple unit, Single shaft with Ro. SW TP124V00N</p>  |  |  <p>300° rotation, dual unit with Ro.SW at normal position 120° rotation, single unit at pull position</p> |
| <p>1軸4連 Quad unit, Single shaft TP126W00</p>  |  |  <p>300° rotation, dual unit at normal position 300° rotation, dual unit at push position</p> |

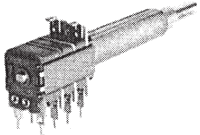
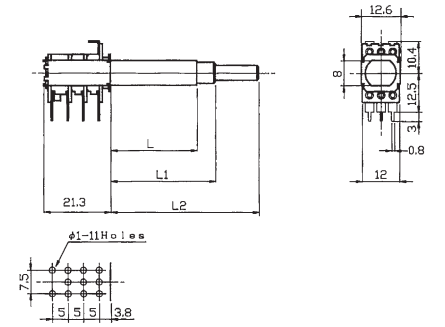
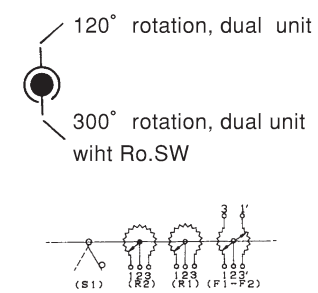
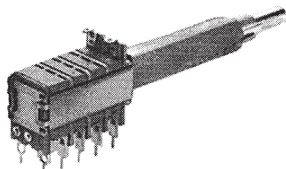
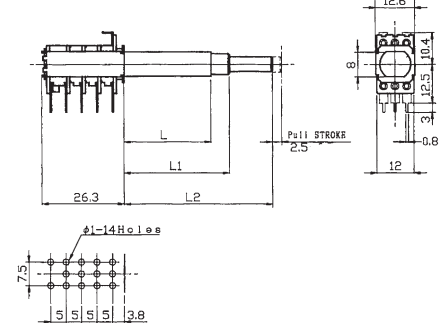
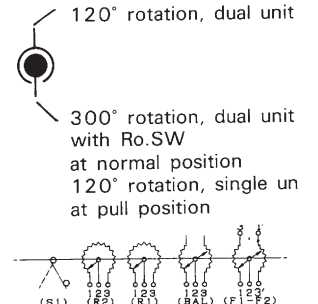
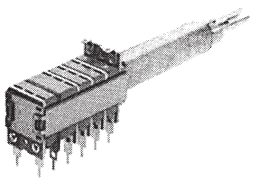
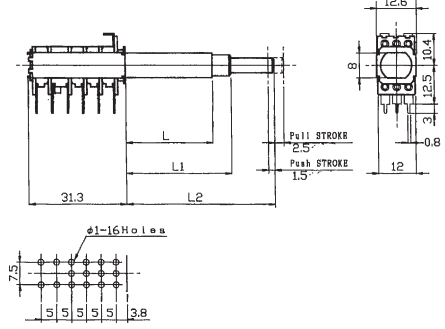
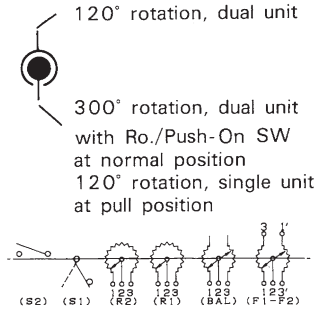
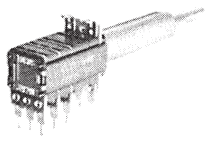
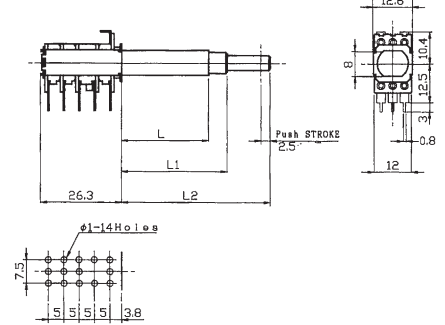
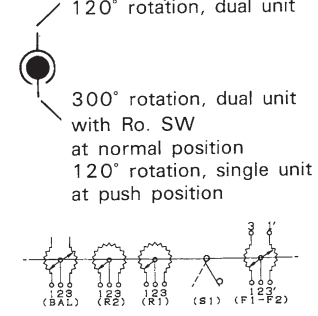
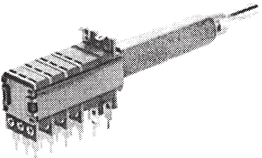
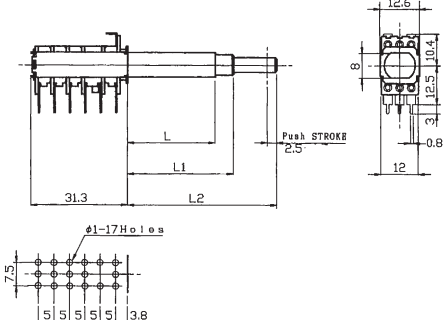
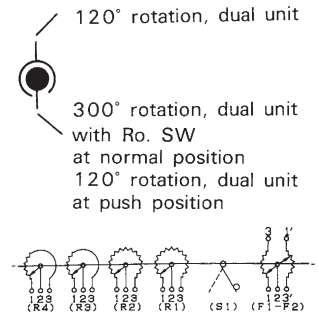
12形2軸多連シリーズ
12mm SIZE DUAL-SHAFT, MULTI-GANG SERIES

(Unit : mm)

| 製品名 Model | 外形図 Outline Drawing | 特長・個別仕様 Features/Individual Specifications |
|---|--|---|
| 2軸1連 Single unit, Dual shaft TL124A00  |  |  120° rotation, single unit  360° Endless Tuning Shaft  |
| 2軸2連 Dual unit, Dual shaft with Self-return SW TP124A00Y  |  |  120° rotation, single unit Tuning Self-return SW  |
| 2軸2連 Dual unit, Dual shaft TP126D00  |  |  300° rotation, single unit  300° rotation single unit  |
| 2軸3連Ro.SW付 Triple unit, Dual shaft with Ro.SW TP124F11N  |  |  120° rotation, single unit  300° rotation dual unit with Ro.SW  |
| 2軸4連 Quad unit, Dual shaft TP126H00  |  |  300° rotation, dual unit  300° rotation dual unit  |

12形2軸多連シリーズ 12mm SIZE DUAL-SHAFT, MULTI-GANG SERIES

(Unit : mm)

| 製品名 Model | 外形図 Outline Drawing | 特長・個別仕様 Features/Individual Specifications |
|---|--|---|
| 2軸4連Ro.SW付 Quad unit, Dual shaft with Ro.SW TP124H00N  |  |  |
| 2軸5連Ro.SW付 5-ganged unit, Dual shaft with Ro. SW TP124J00N  |  |  |
| 2軸5連Ro./Push-On SW付 5-ganged unit, Dual shaft with Ro./Push-On SW TP124J00NT  |  |  |
| 2軸5連Ro.SW付 5-ganged unit, Dual shaft with Ro.SW TP124K00P  |  |  |
| 2軸6連Ro.SW付 6-ganged unit, Dual shaft with Ro SW TP124K14P  |  |  |

12形2軸多連シリーズ 12mm SIZE DUAL-SHAFT, MULTI-GANG SERIES

(Unit : mm)

| 製品名 Model | 外形図 Outline Drawing | 特長・個別仕様 Features/Individual Specifications |
|---|------------------------|--|
| 2軸5連Push/Self-return SW付 5-ganged unit, Dual shaft with Push-On/Self-return SW TP125Z71YT | | <ul style="list-style-type: none"> 120° rotation, dual unit at normal position 120° rotation, dual unit at push position Tuning Self-return SW Push-On SW |
| 2軸6連Ro.SW付 6-ganged unit, Dual shaft with Ro. SW TP125Z00N | | <ul style="list-style-type: none"> 120° rotation, dual unit at normal position 120° rotation, dual unit at push position 300° rotation, dual unit with Ro. SW |
| 2軸7連Ro.SW付 7-ganged unit, Dual shaft with Ro.SW TP125Y00P | | <ul style="list-style-type: none"> 120° rotation, dual unit at push position 300° rotation, dual unit with Ro. SW at normal position 120° rotation, single unit at push position |
| 2軸7連Ro./Push-On SW付 7-ganged unit, Dual shaft with Ro. SW TR125U00N | | <ul style="list-style-type: none"> 120° rotation, dual unit at normal position 120° rotation, dual unit at push position 300° rotation, dual unit with Ro. SW at normal position 120° rotation, single unit at pull position |
| 2軸7連Ro./Push-On SW付 7-ganged unit, Dual shaft with Ro./Push-On SW TP125U00NT | | <ul style="list-style-type: none"> 120° rotation, dual unit at normal position 120° rotation, dual unit at push position 300° rotation, dual unit with Ro./Push-On SW at normal position 120° rotation, single unit at pull position |