SANNI

" *SANNI* " STILL SHARE CONDUCIVE HEART

2017

尚利

Дистрибьютор в России: ООО "ЭЛСАП"
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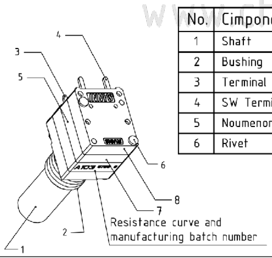
email: sales@elsup.ru

Potentiometers
Sensors
Encoders
Switches

SANNI 东莞市尚利电子科技有限公司 Potentiometers Sensors Encoders Switches 2017

8mm metal shaft sealed potentiometer

Photo/Structure



No.	Cimponent	Material	No.	Cimponent	Material
1	Shaft	Aluminium alloy	7	Molded case	PBT
2	Bushing	Zinc alloy	8	SW Noumenon	PBT
3	Terminal	SPCC Sn			
4	SW Terminal	Yellow Cu-Ag			
5	Noumenon	PBT			
6	Rivet	Aluminium alloy			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	√
	Medical equipment	√		Aoto	√

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

How to order

RV	8	5	1	1	N	S	-	FE	15	D	7.0	-	A	103	-	000
A	B	C	D	E	F	G		H	I	J	K		L	M		N

A:Rotary potentiometers

B:8mm Product series

C:Controlled code

D:Product fixed type

E:Product installation type(Pin change)

F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)

I:Shaft installation length(see dimensions L size)

J: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

K:Shaft of operation size length (Dimensions A size)

L:Resistance curve(Rerernece catalogof the curve)

M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV8□□□□□******	Tray	430*305*140	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	16V DC 1A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV8511NS******

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10~~150gf.cm CC:click torque:60 ~~400gf.cm
Rotation stopper srtength	MIN:3Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max. Timbre:-40dB to 0dB 2dB max.

Durability

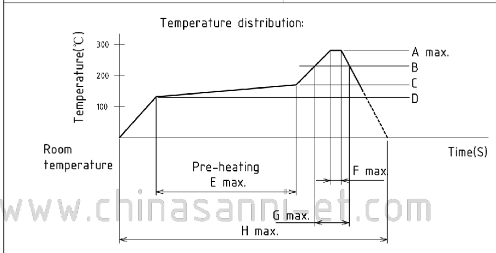
Operating life	30,000 cycles(Or designated)

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

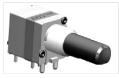
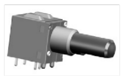
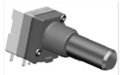
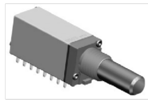
Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

8mm metal shaft sealed potentiometer

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

Series		RV8511NS	RV8181NS	RV8110NM	RV8312NO	RV8111FO	RV8203GS
Photo							
Terminal mounting		Horizontal type	Horizontal type	Horizontal type	Vertical type	Horizontal type	Horizontal type
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	Screw
Acailable for automotive use		※	※	※	※	※	※
Operating temperature range		-40℃ to +85℃					
Switch performance	Circuit number	SPST	SPST	PUSH			SPST
	Rated power	1A 16V DC	1A 16V DC	0.1A 5V DC			1A 16V DC
	Switching torque	500gf.cm max	500gf.cm max	500±200gf.cm			500gf.cm max
	Switching angle	40° max	40° max	0.5±0.3			40° max
	Operating life without load	30, 000cycles 100mΩ max	30, 000cycles 100mΩ max	100, 000cycles 100mΩ max			30, 000cycles 100mΩ max
	Operating life with load load:as rating	30, 000cycles 200mΩ max	30, 000cycles 200mΩ max	100, 000cycles 200mΩ max			30, 000cycles 200mΩ max
	Initial contact resistance	100mΩ max	100mΩ max	100mΩ max			100mΩ max
	Insulation resistance	100mΩ min.250V DC	100mΩ min.250V DC	100mΩ min.250V DC			100mΩ min.250V DC
	Voltage proof	300V AC for 1 minute	300V AC for 1 minute	300V AC for 1 minute			300V AC for 1 minute
Electrical performance	Total resistance (KΩ)	100Ω-3MΩ					
	Total resistance tolerance	50Ω～1KΩ:±30% 1KΩ～500KΩ:±20% 500KΩ～3MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max. (Vehicle-compatible:-60dB to 0 dB 1.5dB max.)					
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	0～20	0～20	0～20	0～20	0～20	0～20
	Stopper strength	Zinc alloy: 3Kgf.max/Aluminum: 3.5Kgf.max/Brass: 4.0Kgf.max/Stainless steel: 5.0Kgf.max "※"					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					-10℃±2℃ for 96h
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					70℃±2℃ for 96h
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3^{+1}_{0}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)		3	3	3	3	3	3
Page		3	6	4	3	5	6

Notes

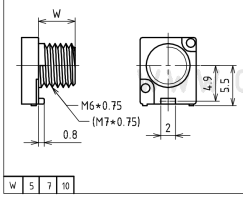
- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

8mm metal shaft sealed potentiometer

Bushing type

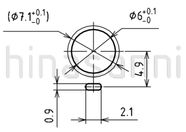
Dimensions (Unit:mm)

A

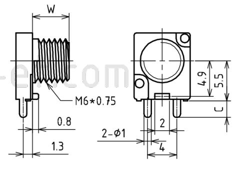


W	5	7	10

A fixed size

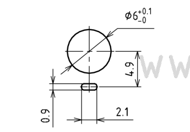


B

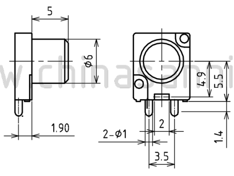


W	5	7	10	C	1.4	2.3

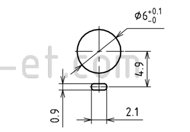
B fixed size



C



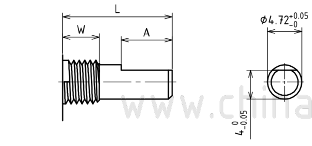
C fixed size



Shaft specifications

FE-Shaft

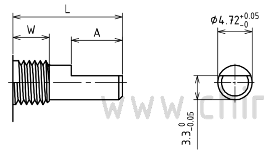
Detail dimensions



L	15.0	18.0	20.0
A/W=5	7.0	9.0	
A/W=7	7.0	9.0	
A/W=10		6.0	7.0

FK-Shaft

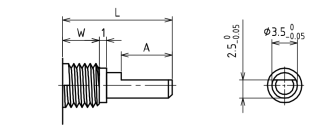
Detail dimensions



L	15.0	18.0	20.0
A/W=5	7.0	9.0	
A/W=7	7.0	9.0	
A/W=10		6.0	7.0

FD-Shaft

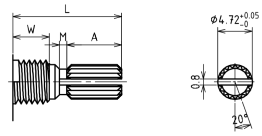
Detail dimensions



L	15.0
A/W=5	7.0
A/W=7	7.0
A/W=10	

KP-Shaft

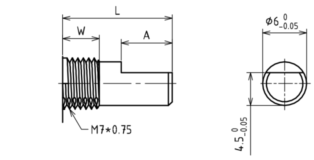
Detail dimensions



L	15.0	20.0
A/W=5	6.0	12.0
M/W=5	1.0	2.0
A/W=7	6.0	10.0
M/W=7	1.0	2.0
A/W=10	3.5	6.0
M/W=10	0.5	1.0

FB-Shaft

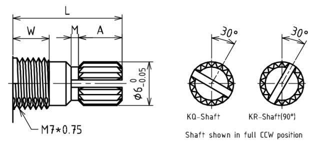
Detail dimensions



L	15.0	20.0	25.0
A/W=5	7.0	12.0	12.0
A/W=7	7.0	12.0	12.0
A/W=10	4.0	7.0	12.0

KQ-Shaft KR-Shaft(90°)

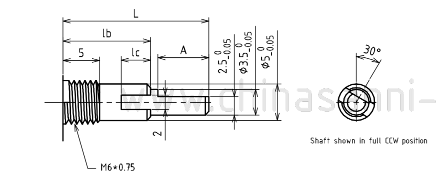
Detail dimensions



L	15.0	20.0	25.0	30.0
A/W=5	6.0	12.0	12.0	12.0
M/W=5	1.0	2.0	2.0	2.0
A/W=7	6.0	10.0	12.0	12.0
M/W=7	1.0	2.0	2.0	2.0
A/W=10	3.5	6.0	10.0	12.0
M/W=10	0.5	1.0	2.0	2.0

FF-Shaft

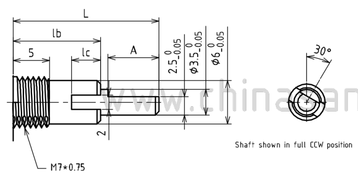
Detail dimensions



L	15.0	20.0	25.0
A	4.0	5.0	8.0
lb	10.0	12.5	15.0
lc	3.0	4.0	5.0

FF-Shaft

Detail dimensions



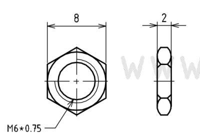
L	15.0	20.0	25.0
A	4.0	5.0	8.0
lb	10.0	12.5	15.0
lc	3.0	4.0	5.0

Annex size chart (optional)

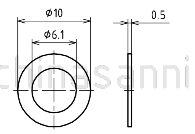
Unit:mm

M6

Nut

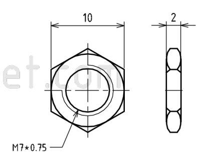


Gasket

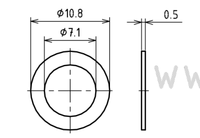


M7

Nut

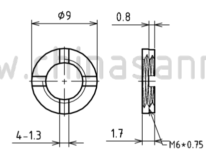


Gasket

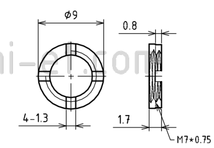


Turning brass nut

M6



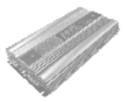
M7

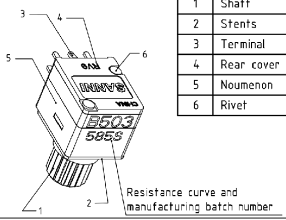


9mm Rotary potentiometer

9mm insulated shaft sealed potentiometer

Photo/Structure





No.	Cimponent	Material	No.	Cimponent	Material
1	Shaft	PC Insulated			
2	Stents	SPCC Sn			
3	Terminal	SPCC Sn			
4	Rear cover	PBT			
5	Noumenon	PBT			
6	Rivet	Aluminium alloy			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	√		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	×
	Medical equipment	√		Aoto	√

How to order

RV	9	8	R	0	G	O	-	TB	10	B	7.0	-	B	503	-	000
A	B	C	D	E	F	G		H	I	J	K		L	M		N

A:Rotary potentiometers
B:8mm Product series
C:Controlled code
D:Product fixed type
E:Product installation type(Pin change)
F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)
I:Shaft installation length(see dimensions L size)
J: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

K:Shaft of operation size length (Dimensions A size)
L:Resistance curve(Rerernece catalogof the curve)
M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV98□□□□******	Tray	310*260*260	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	16V DC 3A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV415GO******

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10~150gf.cm CC:click torque:60~400gf.cm
Rotation stopper srtength	MIN:3Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max. Timbre:-40dB to 0dB 2dB max.

Durability

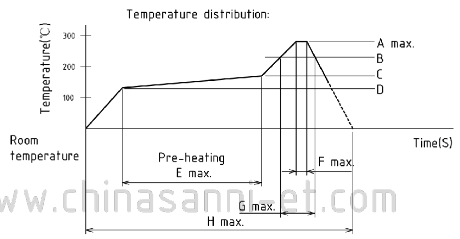
Operating life	15,000 cycles(Or designated)

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

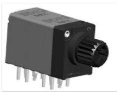
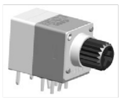
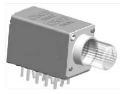
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

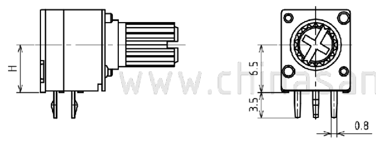
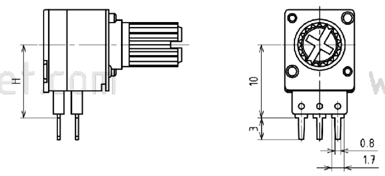
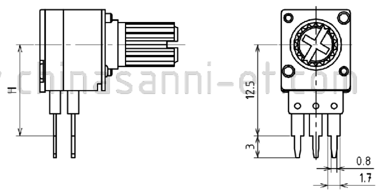
9mm insulated shaft sealed potentiometer

Series		RV98P0B0	RV8445G0	RV98P5G0	RV98P2G0	RV98P0GS	RV9L16B0
Photo							
Terminal mounting		Horizontal type	Horizontal type	Horizontal type	Vertical type	Horizontal type	Horizontal type
Shaft material		Insulated shaft	Insulated shaft	Insulated shaft	Insulated shaft	Insulated shaft	Insulated shaft
Acailable for automotive use		※	※	※	※	※	※
Operating temperature range		10℃ to +70℃ ※(-40℃ to +85℃)					
Switch performance	Circuit number					SPST	
	Rated power					1A 16V DC	
	Switching torque					500gf.cm max	
	Switching angle					40° max	
	Operating life without load					30. 000cycles 100mΩ max	
	Operating life with load load:as rating					30. 000cycles 200mΩ max	
	Initial contact resistance					100mΩ max	
	Insulation resistance					100mΩ min.250V DC	
	Voltage proof					300V AC for 1 minute	
Electrical performance	Total resistance (KΩ)	100Ω-3MΩ					
	Total resistance tolerance	50Ω～1KΩ:±30% 1KΩ～500KΩ:±20% 500KΩ～3MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max. (Vehicle-compatible:-60dB to 0 dB 1.5dB max.)					
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent						
	Stopper strength	Zinc alloy: 3Kgf.max/Aluminum: 3.5Kgf.max/Brass: 4.0Kgf.max/Stainless steel: 5.0Kgf.max "※"					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					-10℃±2℃ for 96h
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					70℃±2℃ for 96h
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3^{+1}_{0}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)		3	3	3	3	3	3
Page		7	4	4	3	5	6

Notes

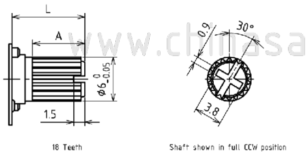
- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

Annex size chart(optional) RV94

H=6.5(RV941***)	H=10(RV944***)	H=12.5(RV945***)
		

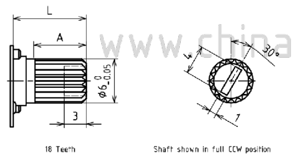
Shaft specifications RV94

TS-Shaft — Detail dimensions



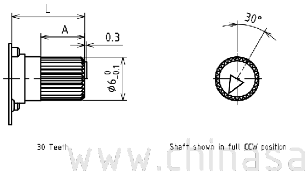
L	7.0	8.0	10.0	12.0	15.0	20.0
A	5.0	6.0	7.0	7.0	7.0	7.0

TB-Shaft — Detail dimensions



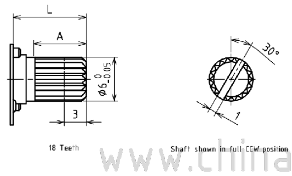
L	10.0	15.0
A	7.0	7.0

AA-Shaft — Detail dimensions



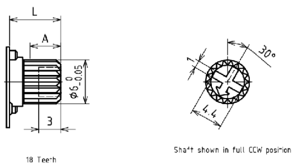
L	8.0	12.5
A	6.0	7.0

TA-Shaft — Detail dimensions



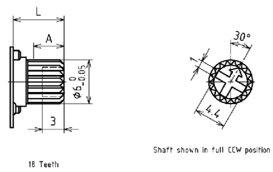
L	10.0	15.0
A	7.0	7.0

TC-Shaft — Detail dimensions



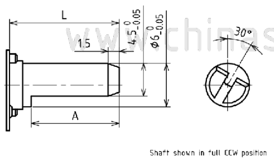
L	7.0
A	5.0

TR-Shaft — Detail dimensions



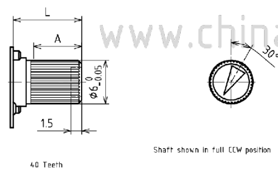
L	7.0
A	5.0

FA-Shaft — Detail dimensions



L	15	20	25
A	7.0	12	12

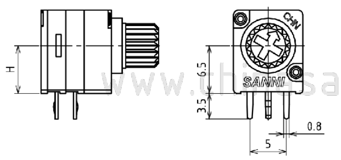
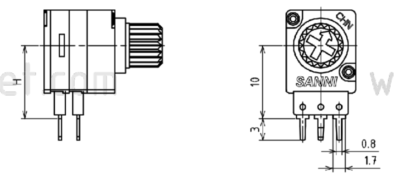
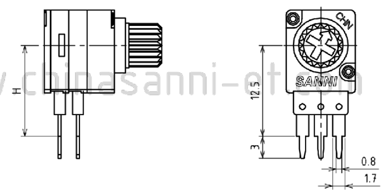
PC-Shaft — Detail dimensions



L	10.0	15.0
A	7.0	7.0

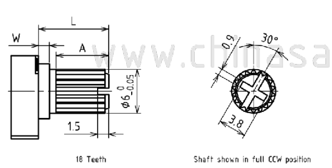
9mm insulated shaft sealed potentiometer

Annex size chart(optional) RV98

H=6.5(RV98***)	H=10(RV98*A**)	H=12.5(RV98*B**)
		

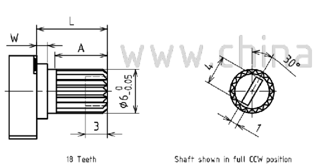
Shaft specifications RV94

TS-Shaft — Detail dimensions



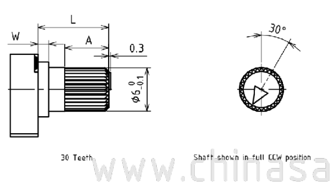
L	6.5	7.5	9.5	11.5	14.5	19.5
A	5.0	6.0	7.0	7.0	7.0	7.0
W	1.5	1.5	1.5	1.5	5.0	5.0

TB-Shaft — Detail dimensions



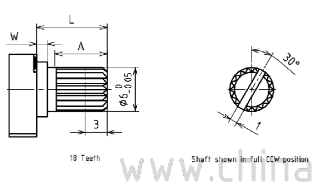
L	6.5	7.5	9.5	11.5	14.5	19.5
A	5.0	6.0	7.0	7.0	7.0	7.0
W	1.5	1.5	1.5	1.5	5.0	5.0

AA-Shaft — Detail dimensions



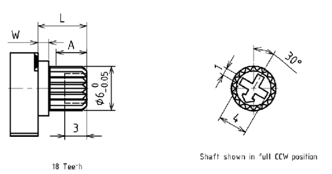
L	7.5	12.0
A	6.0	7.0
W	1.5	1.5

TA-Shaft — Detail dimensions



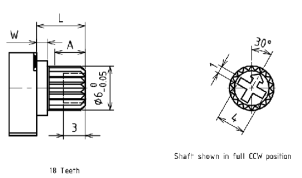
L	6.5	7.5	9.5	11.5	14.5	19.5
A	5.0	6.0	7.0	7.0	7.0	7.0
W	1.5	1.5	1.5	1.5	5.0	5.0

TC-Shaft — Detail dimensions



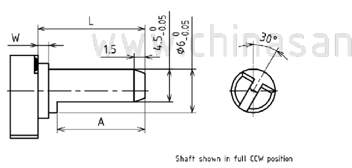
L	6.5	7.5	9.5	11.5	14.5	19.5
A	5.0	6.0	7.0	7.0	7.0	7.0
W	1.5	1.5	1.5	1.5	5.0	5.0

TR-Shaft — Detail dimensions



L	6.5	7.5	9.5	11.5	14.5	19.5
A	5.0	6.0	7.0	7.0	7.0	7.0
W	1.5	1.5	1.5	1.5	5.0	5.0

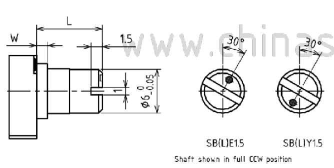
FA-Shaft — Detail dimensions



L	15.0	20.0	25.0	30.0	35.0	40.0
A	7.0	12	12	12	12	12
W	1.5	5.0	5.0	5.0	5.0	5.0

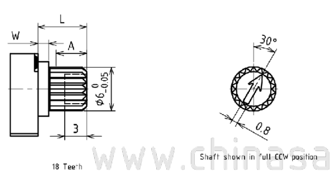
L	10.0	17.5	22.5	27.5	32.5	37.5
A	7.0	12	12	12	12	12
W	1.5	5.0	5.0	5.0	5.0	5.0

SB-Shaft — Detail dimensions



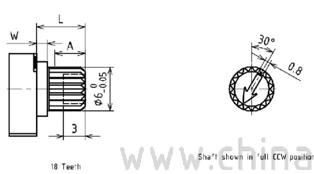
L	10.0	15.0
W	1.5	5.0

TJ-Shaft — Detail dimensions



L	6.5	9.5	14.5
A	5.0	7.0	7.0
W	1.5	1.5	5.0

TG-Shaft — Detail dimensions

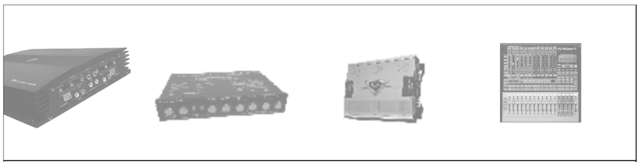


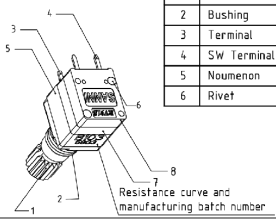
L	6.5	9.5	14.5
A	5.0	7.0	7.0
W	1.5	1.5	5.0

9mm metal shaft sealed potentiometer

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

Photo/Structure





No.	Cimponent	Material	No.	Cimponent	Material
1	Shaft	Aluminium alloy	7	Molded case	PBT
2	Bushing	Zinc alloy	8	SW Noumenon	PBT
3	Terminal	SPCC Sn			
4	SW Terminal	Yellow Cu+Ag			
5	Noumenon	PBT			
6	Rivet	Aluminium alloy			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	√
	Medical equipment	√		Aoto	√

How to order

RV	9	F	1	0	N	S	-	FB	15	A	7.0	-	B	103	-	000
A	B	C	D	E	F	G		H	I	J	K		L	M		N

A:Rotary potentiometers

B:9mm Product series

C:Controlled code

D:Product fixed type

E:Product installation type(Pin change)

F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)

I:Shaft installation length(see dimensions L size)

J: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

K:Shaft of operation size length (Dimensions A size)

L:Resistance curve(Rerernece catalogof the curve)

M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV9□□□□□******	Tray	430*305*140	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	16V DC 3A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV9F10NS******

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10～150gf.cm CC:click torque:60～400gf.cm
Rotation stopper srtength	MIN:4Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max. Timbre:-40dB to 0dB 2dB max.

Durability

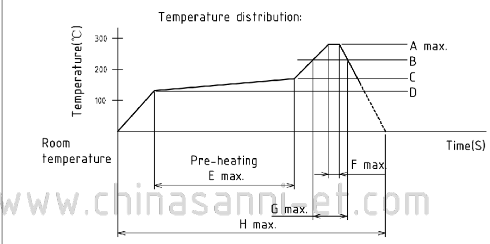
Operating life	15,000 cycles(Or designated)

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

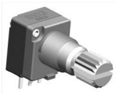
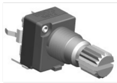
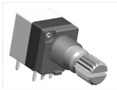
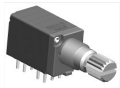
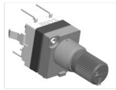
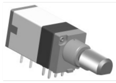
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

9mm metal shaft sealed potentiometer

Series		RV9110N0	RV9316N0	RV9F10NS	RV9110B0	RV9E12NM	RV9A10GP
Photo							
Terminal mounting		Horizontal type	Vertical type	Horizontal type	Horizontal type	Vertical type	Horizontal type
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft
Acailable for automotive use		Screw	Screw	Screw	Screw	Screw	Screw
Operating temperature range		10℃ to +70℃ ※(-40℃ to +85℃)					
Switch performance	Circuit number			SPST		PUSH SW	DPDT
	Rated power			1A 16V DC		0.1A 16V DC	0.1A 16V DC
	Switching torque			500gf.cm max		200～800gf.cm	200～800gf.cm
	Switching angle			40° max		0.5±0.3mm/1.5±0.5mm	0.5±0.3mm/1.5±0.5mm
	Operating life without load			30. 000cycles 100mΩ max		100. 000cycles 100mΩ max	100. 000cycles 100mΩ max
	Operating life with load load:as rating			30. 000cycles 200mΩ max		100. 000cycles 200mΩ max	100. 000cycles 200mΩ max
	Initial contact resistance			100mΩ max		100mΩ max	100mΩ max
	Insulation resistance			100mΩ min.250V DC		100mΩ min.250V DC	100mΩ min.250V DC
	Voltage proof			300V AC for 1 minute		300V AC for 1 minute	300V AC for 1 minute
Electrical performance	Total resistance (KΩ)	100Ω-3MΩ					
	Total resistance tolerance	50Ω～1KΩ:±30% 1KΩ～500KΩ:±20% 500KΩ～3MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max. (Vehicle-compatible:-60dB to 0 dB 1.5dB max.)					
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent						
	Stopper strength	Zinc alloy: 3Kgf.max/Aluminum: 3.5Kgf.max/Brass: 4.0Kgf.max/Stainless steel: 5.0Kgf.max "※"					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3$^{+1}_{0}$S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)		3	3	3	3	3	3
Page		3	3	4	9	5	5

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

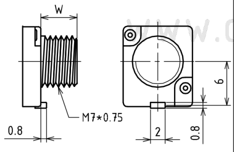
9mm metal shaft sealed potentiometer

Dimensions

Bushing type

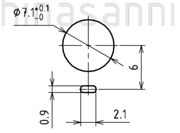
Dimensions (Unit:mm)

A

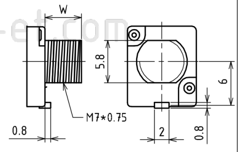


W	5	7	10	15
□	1	2	3	4

A fixed size

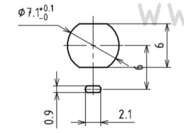


B

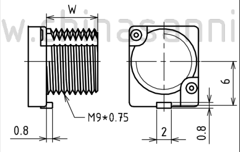


W	5	7	10	15
□	5	6	7	8

B fixed size

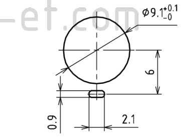


C

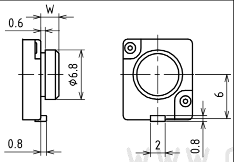


W	5	7	10	15
□	A	B	C	D

C fixed size

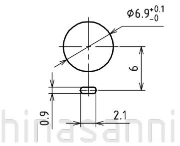


D

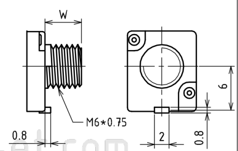


W	1.0	2.5	5.0
□	X	P	Q

D fixed size

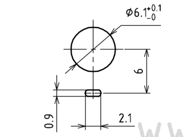


E

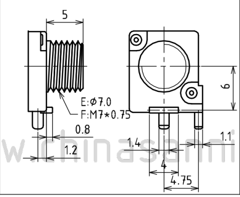


W	5	7	10
□	H	I	J

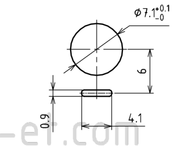
E fixed size



E/F



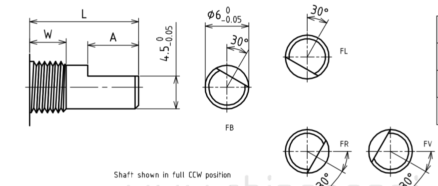
F fixed size



Shaft specifications(No push switch)

FB-Shaft (FR/FL/FV)

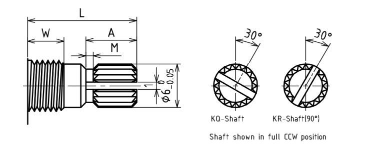
Detail dimensions



L	10.0	15.0	20.0	25.0
A/W=5	4.0	7.0	12.0	12.0
A/W=7		7.0	12.0	12.0
A/W=10		4.0	7.0	12.0

KQ-Shaft (KR)

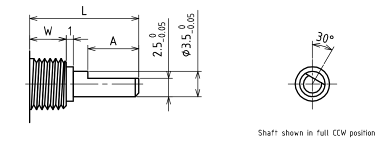
Detail dimensions



L	10.0	15.0	20.0	25.0
A/W=5	3.5	6.0	12.0	12.0
M/W=5	0.5	1.0	2.0	2.0
A/W=7		6.0	10.0	12.0
M/W=7		1.0	2.0	2.0
A/W=10		3.5	6.0	10.0
M/W=10		0.5	1.0	2.0

FD-Shaft

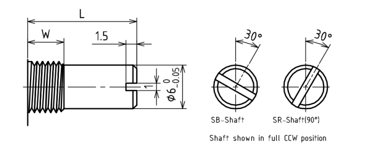
Detail dimensions



L	15.0	20.0
A/W=5	7.5	8.0
A/W=7	7.0	

SB-Shaft (SR)

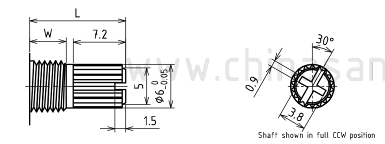
Detail dimensions



L	8.0	10.0	12.0	15.0

TS-Shaft (Insulater)

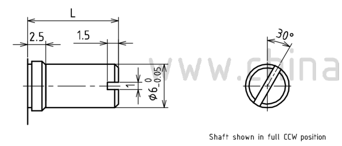
Detail dimensions



L	12.0	15.0	18.0	20.0

SR-Shaft (Insulater)

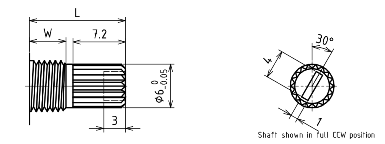
Detail dimensions



L	6.0	8.0	12.0	15.0

TB-Shaft (Insulater)

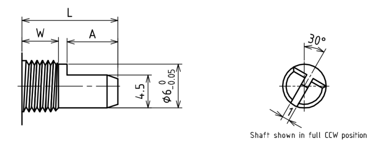
Detail dimensions



L	12.0	15.0	18.0	20.0

FA-Shaft (Insulater)

Detail dimensions



L	16.0	20.0

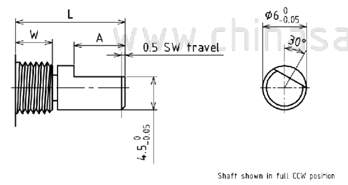
9mm metal shaft sealed potentiometer

Dimensions

Shaft specifications(push-on 0.5mm switch)

Dimensions (Unit:mm)

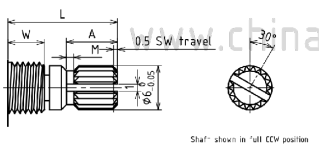
FB-Shaft



Detail dimensions

L	10.0	15.0	20.0	25.0
A/W=5	4.0	7.0	12.0	12.0
A/W=7		7.0	12.0	12.0
A/W=10		4.0	7.0	12.0

KQ-Shaft



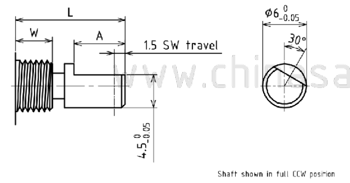
Detail dimensions

L	10.0	15.0	20.0	25.0
A/W=5	3.0	6.0	12.0	12.0
M/W=5	0.5	0.5	1.0	2.0
A/W=7		5.0	10.0	12.0
M/W=7		0.5	1.0	2.0
A/W=10		3.0	6.0	10.0
M/W=10		0.5	0.5	2.0

Shaft specifications(push-on 1.5mm switch)

Dimensions (Unit:mm)

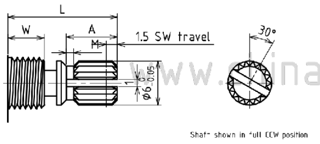
FB-Shaft



Detail dimensions

L	15.0	20.0	25.0
A/W=5	7.0	12.0	12.0
A/W=7	6.0	10.0	12.0
A/W=10		7.0	12.0

KQ-Shaft



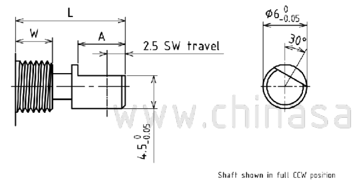
Detail dimensions

L	15.0	20.0	25.0
A/W=5	6.0	10.0	12.0
M/W=5	0.5	1.0	2.0
A/W=7	3.5	6.0	12.0
M/W=7	0.5	1.0	2.0
A/W=10		6.0	10.0
M/W=10		0.5	1.0

Shaft specifications(pull 2.5mm switch)

Dimensions (Unit:mm)

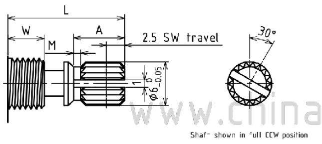
FB-Shaft



Detail dimensions

L	15.0	20.0	25.0
A/W=5	6.0	10.0	12.0
A/W=7	4.0	10.0	12.0
A/W=10		6.0	10.0

KQ-Shaft

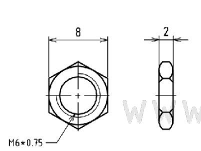
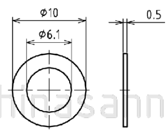
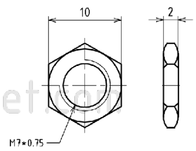
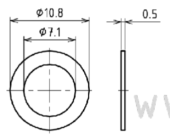
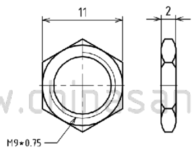
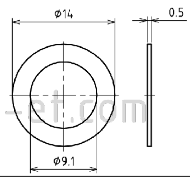


Detail dimensions

L	15.0	20.0	25.0
A/W=5	5.0	10.0	12.0
M/W=5	0.5	1.0	2.0
A/W=7		6.0	10.0
M/W=7		1.0	2.0
A/W=10		5.0	10.0
M/W=10		0.5	1.0

Annex size chart (optional)

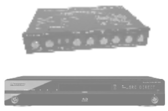
Unit:mm

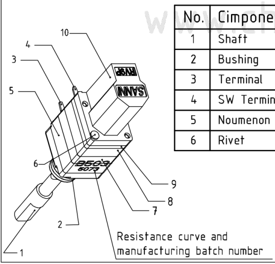
M6		M7		M9	
Nut	Gasket	Nut	Gasket	Nut	Gasket
					

9mm knob operating sealed potentiometer

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

Photo/Structure





No.	Cimponent	Material	No.	Cimponent	Material
1	Shaft	Aluminium alloy	7	Molded case	PBT
2	Bushing	Zinc alloy	8	SW Noumenon	PBT
3	Terminal	SPCC Sn	9	Partition	PBT
4	SW Terminal	Yellow Cu+Ag	10	Shell	PBT
5	Noumenon	PBT			
6	Rivet	Aluminium alloy			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

Player	√	Instrument equipment	√
Sound	√	Meter	√
Sound console	√	Navigation/Auto AV	×
Walkie-talkie	×	White goods	×
Medical equipment	×	Aoto	√

How to order

RV	9	P	1	0	G	0	-	KB	25	A	4.5	-	B	103	-	000
A	B	C	D	E	F	G		H	I	J	K		L	M		N

A:Rotary potentiometers

B:9mm Product series

C:Controlled code

D:Product fixed type

E:Product installation type(Pin change)

F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)

I:Shaft installation length(see dimensions L size)

J: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

K:Shaft of operation size length (Dimensions A size)

L:Resistance curve(Rerernece catalogof the curve)

M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV9□ □ □ □ □ ******	Tray	430*305*140	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	16V DC 3A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV9P10G0******

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10～150gf.cm CC:click torque:60～400gf.cm
Rotation stopper srtength	MIN:4Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max. Timbre:-40dB to 0dB 2dB max.

Durability

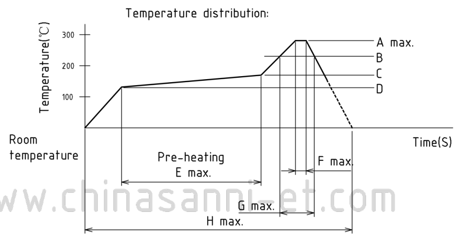
Operating life	15,000 cycles(Or designated)

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

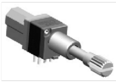
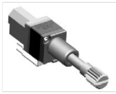
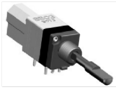
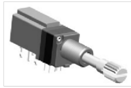
Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

9mm Rotary potentiometer

9mm knob operating sealed potentiometer

Series		RV9P10G0	RV9P12G0	RV9PA0NS	RV9P10GQ		
Photo							
Terminal mounting		Horizontal type	Vertical type	Horizontal type	Horizontal type		
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft		
Acailable for automotive use		Screw	Screw	Screw	Screw		
Operating temperature range		10℃ to +70℃ ※(-40℃ to +85℃)					
Switch performance	Circuit number			SPST	DPDT		
	Rated power			1A 16V DC	0.1A 30V DC		
	Switching torque			500gf.cm max	500gf.cm max		
	Switching angle			40° max			
	Operating life without load			30. 000cycles 100mΩ max	10. 000cycles 40mΩ max		
	Operating life with load load:as rating			30. 000cycles 200mΩ max	5. 000cycles 40mΩ max		
	Initial contact resistance			100mΩ max	100mΩ max		
	Insulation resistance			100mΩ min.250V DC	100mΩ min.250V DC		
	Voltage proof			300V AC for 1 minute	300V AC for 1 minute		
Electrical performance	Total resistance (KΩ)	100Ω-3MΩ					
	Total resistance tolerance	50Ω～1KΩ:±30% 1KΩ～500KΩ:±20% 500KΩ～3MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max. (Vehicle-compatible:-60dB to 0 dB 1.5dB max.)					
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without		
Mechanical performance	Detent						
	Stopper strength	Zinc alloy: 3Kgf.max/Aluminum: 3.5Kgf.max/Brass: 4.0Kgf.max/Stainless steel: 5.0Kgf.max "※"					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3_{0}^{+1}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※		
Life cycle (availability)		3	3	3	3		
Page		3	3	3	3		

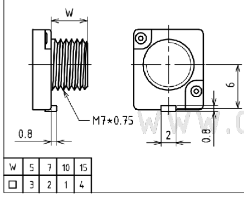
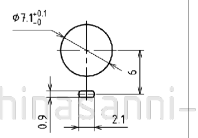
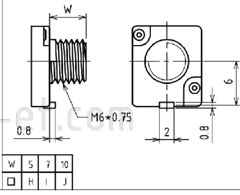
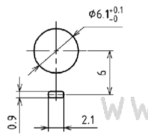
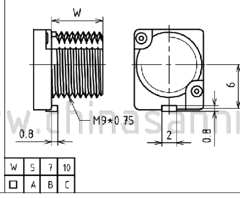
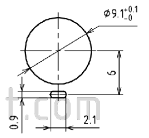
Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

9mm knob operating sealed potentiometer

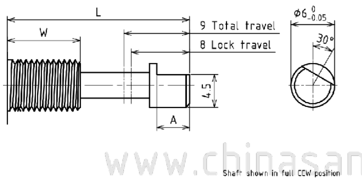
Bushing type

Dimensions (Unit:mm)

A		B		C	
	A fixed size 		B fixed size 		C fixed size 

Shaft specifications

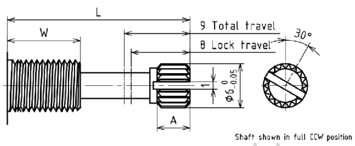
FB-Shaft



Detail dimensions

L	25.0	30.0	35.0
A/W=10	4.5	7.0	12.0

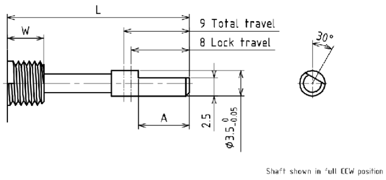
KB-Shaft



Detail dimensions

L	20.0	25.0	30.0	35.0
A/W=5	4.5	7.0	/	/
A/W=10	/	4.5	7.0	12.0

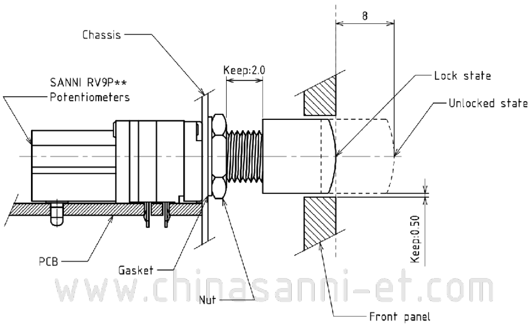
FF-Shaft

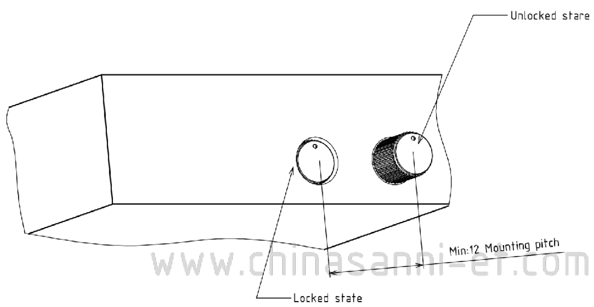


Detail dimensions

L	20.0	25.0	19.0
A/W=5	4.5	7.0	3.5
A/W=10	/	4.5	/

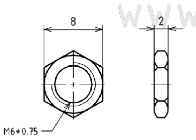
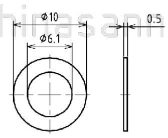
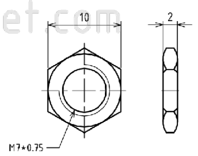
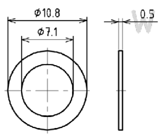
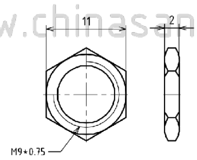
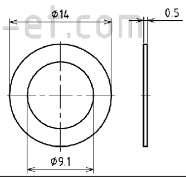
Example of uses with push-lock mechanism





Annex size chart (optional)

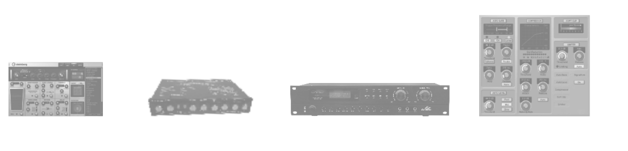
Unit:mm

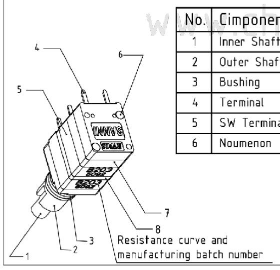
M6		M7		M9	
Nut	Gasket	Nut	Gasket	Nut	Gasket
					

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

9mm double metal shaft sealed potentiometer

Photo/Structure





No.	Cimponent	Material	No.	Cimponent	Material
1	Inner Shaft	Brass	7	Rivet	Aluminium alloy
2	Outer Shaft	Brass	8	Molded case	PBT
3	Bushing	Zinc alloy	9	SW Noumenon	PBT
4	Terminal	SPCC Sn			
5	SW Terminal	Yellow Cu+Ag			
6	Noumenon	PBT			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	×
	Medical equipment	√		Aoto	√

How to order

RV	9	2	0	1	G	S	-	KB	25	C	4.5	-	B	103	-	000	/	B	103	-	000
A		B	C	D	E	F	G	H	I	J	K		L	M		N		L	M		N

A:Rotary potentiometers

B:9mm Product series

C:Controlled code

D:Product fixed type

E:Product installation type(Pin change)

F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)

I:Shaft installation length(see dimensions L size)

J: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

K:Shaft of operation size length (Dimensions A size)

L:Resistance curve(Rerernece catalogof the curve)

M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV9□□□□□******	Tray	430*305*140	1, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	16V DC 3A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV9201GS******

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10~150gf.cm CC:click torque:60~400gf.cm
Rotation stopper srtength	MIN:4Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max. Timbre:-40dB to 0dB 2dB max.

Durability

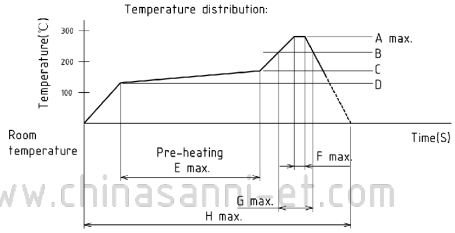
Operating life	15,000 cycles(Or designated)

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

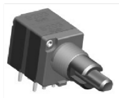
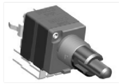
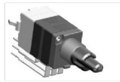
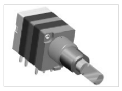
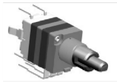
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

9mm double metal shaft sealed potentiometer

Series		RV9205G0	RV9246G0	RV9205GS	RV9264GS	RV9B01GM	RV9B03GM
Photo							
Terminal mounting		Horizontal type	Vertical type	Horizontal type	Vertical type	Horizontal type	Vertical type
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft
Acailable for automotive use		Screw	Screw	Screw	Screw	Screw	Screw
Operating temperature range		10℃ to +70℃ ※(-40℃ to +85℃)					
Switch performance	Circuit number			SPST	SPST	PUSH ON	PUSH ON
	Rated power			1A 16V DC	1A 16V DC	0.1A 12V DC	0.1A 12V DC
	Switching torque			500gf.cm max	500gf.cm max	200～800gf.cm max	200～800gf.cm max
	Switching angle			40° max	40° max	0.5±0.3mm/1.5±0.3mm	0.5±0.3mm/1.5±0.3mm
	Operating life without load			30. 000cycles 100mΩ max	30. 000cycles 100mΩ max	100. 000cycles 100mΩ max	100. 000cycles 100mΩ max
	Operating life with load load:as rating			30. 000cycles 200mΩ max	30. 000cycles 200mΩ max	100. 000cycles 200mΩ max	100. 000cycles 200mΩ max
	Initial contact resistance			100mΩ max	100mΩ max	100mΩ max	100mΩ max
	Insulation resistance			100mΩ min.250V DC	100mΩ min.250V DC	100mΩ min.250V DC	100mΩ min.250V DC
	Voltage proof			300V AC for 1 minute	300V AC for 1 minute	300V AC for 1 minute	300V AC for 1 minute
Electrical performance	Total resistance (KΩ)	100Ω-3MΩ					
	Total resistance tolerance	50Ω～1KΩ:±30% 1KΩ～500KΩ:±20% 500KΩ～3MΩ:±30%					
	Residual resistance	R≤10KΩ：10Ω max. 10KΩ＜R＜500KΩ：20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max. (Vehicle-compatible:-60dB to 0 dB 1.5dB max.)					
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent						
	Stopper strength	Zinc alloy：3Kgf.max/Aluminum：3.5Kgf.max/Brass：4.0Kgf.max/Stainless steel：5.0Kgf.max “※”					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3_0^{+1}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)							
Page		3	3	3	3	3	4

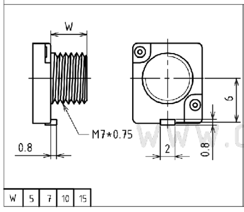
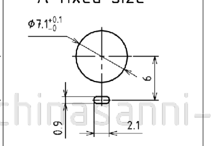
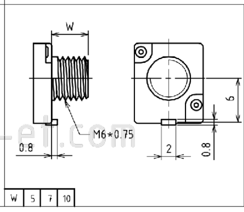
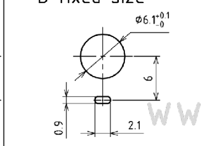
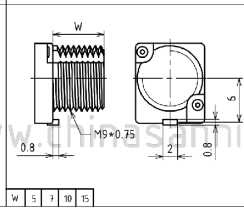
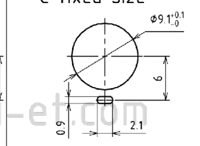
Notes

- Please with “※” Standard Specification for the representation of choice.
- Please with “--” refrain from using

9mm double metal shafts sealed potentiometer

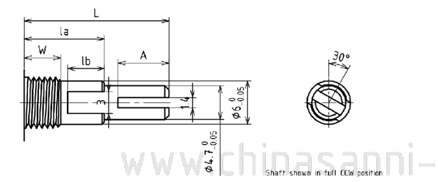
Bushing type

Dimensions (Unit:mm)

A		B		C	
	A fixed size 		B fixed size 		C fixed size 

Shaft specifications

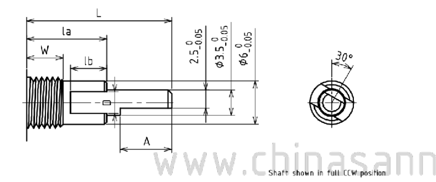
RB-Shaft



Detail dimensions

W	5.0/7.0/10.0
L	20/25
A	6.0/7.0
lb	4.0/5.0
la	10/12/15

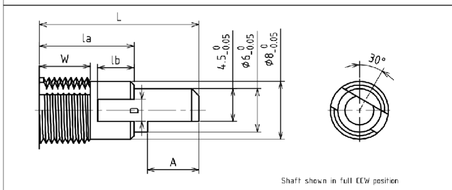
FF-Shaft



Detail dimensions

W	5.0/7.0/10.0
L	20/25
A	6.0/7.0
lb	4.0/5.0
la	10/12/15
D	2.0/3.0

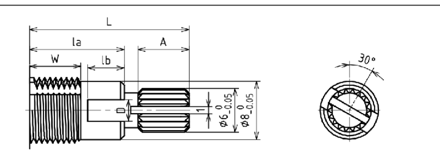
FB-Shaft



Detail dimensions

W	5.0/7.0/10.0
L	15/20/25
A	6.0/7.0
lb	2.0/4.0/5.0
la	8/10/12/15
D	3.0

KB-Shaft

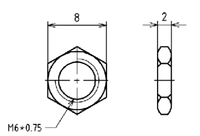
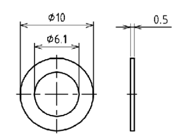
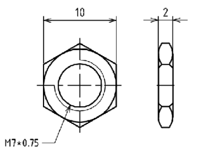
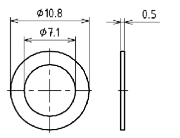
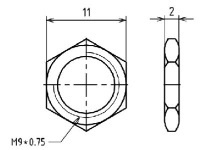
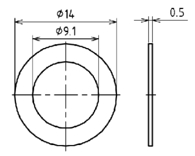


Detail dimensions

W	5.0/7.0/10.0
L	15/20/25
A	4.0/6.0/7.0
lb	4.0/5.0
la	8/10/12/15
D	3.0

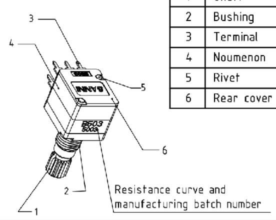
Annex size chart (optional)

Unit:mm

M6		M7		M9	
Nut	Gasket	Nut	Gasket	Nut	Gasket
					

12/27mm metal/insulated shaft sealed potentiometer

Photo/Structure



No.	Cimponent	Material	No.	Cimponent	Material
1	Shaft	Aluminium alloy			
2	Bushing	Zinc alloy			
3	Terminal	SPCC Sn			
4	Noumenon	PBT			
5	Rivet	Aluminium alloy			
6	Rear cover	PBT			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	×		White goods	√
	Medical equipment	√		Aoto	√

How to order

RV	12	8	2	0	G	O	-	FB	15	A	7.0	-	B	103	-	000
A	B	C	D	E	F	G		H	I	J	K		L	M		N

A:Rotary potentiometers

B:12mm Product series

C:Controlled code

D:Product fixed type

E:Product installation type(Pin change)

F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	O	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)

I:Shaft installation length(see dimensions L size)

J: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

K:Shaft of operation size length (Dimensions A size)

L:Resistance curve(Rerernece catalogof the curve)

M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV12- □ □ □ □ ******	Tray	430*305*140	2, 000

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV12820******

Mechanical characteristics

Total rotational angle	RV124/RV128: 300°±5° RV271: 300°/360°
Rotational torque	10～150gf.cm CC:click torque:60～400gf.cm
Rotation stopper srtength	MIN:4Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max. Timbre:-40dB to 0dB 2dB max.

Durability

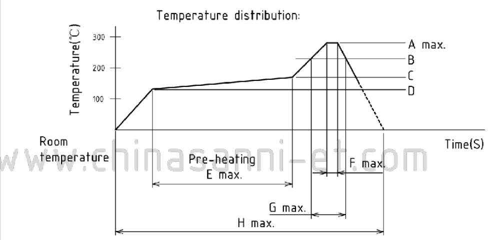
Operating life	15,000 cycles(Or designated)

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

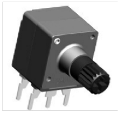
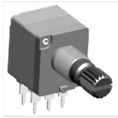
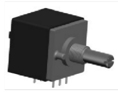
Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

12/27mm Rotary potentiometer

12/27mm metal/insulated shaft sealed potentiometer

Series		RV12426G0	RV12822G0	RV27111G0			
Photo							
Terminal mounting		Horizontal type	Horizontal type	Horizontal type			
Shaft material		Metal shaft	Metal shaft	Metal shaft			
Acailable for automotive use		Screw	Screw	Screw			
Operating temperature range		10℃ to +70℃ ※(-40℃ to +85℃)					
Switch performance	Circuit number						
	Rated power						
	Switching torque						
	Switching angle						
	Operating life without load						
	Operating life with load load:as rating						
	Initial contact resistance						
	Insulation resistance						
	Voltage proof						
Electrical performance	Total resistance (KΩ)	100Ω-3MΩ					
	Total resistance tolerance	50Ω～1KΩ:±30% 1KΩ～500KΩ:±20% 500KΩ～3MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ＜R＜500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes	-40dB to 0dB 3dB max. (Vehicle-compatible:-60dB to 0 dB 1.5dB max.)					
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With			
Mechanical performance	Detent						
	Stopper strength	RV124: 3Kgf.max/RV128: 4.0Kgf.max/RV271: 5.0Kgf.max "※"					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3$^{+1}_{0}$S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※			
Life cycle (availability)		3	3	3			
Page		3	4	6			

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

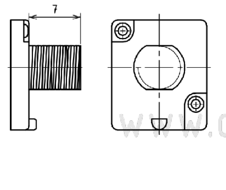
Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

12mm metal/insulated shaft sealed potentiometer

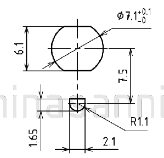
Bushing type

Dimensions (Unit:mm)

A



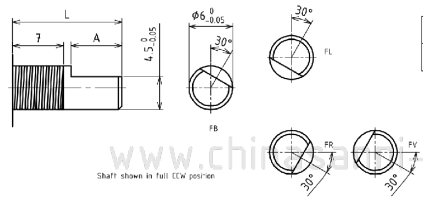
A fixed size



Shaft specifications(RV128)

FB-Shaft (FR/FL/FV)

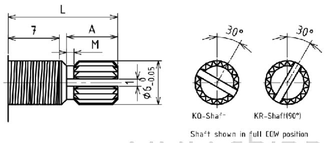
Detail dimensions



L	15.0	20.0	25.0	30.0
A	7.0	12.0	12.0	12.0

KQ-Shaft (KR)

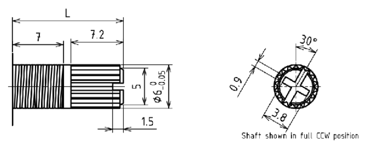
Detail dimensions



L	15.0	20.0	25.0	30.0
A/W=7	6.0	10.0	12.0	12.0
M/W=7	1.0	2.0	2.0	2.0

TS-Shaft (Insulater)

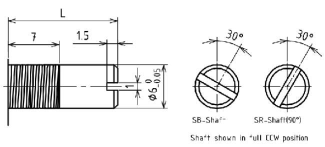
Detail dimensions



L	15.0	18.0	20.0	

SB-Shaft (SR)

Detail dimensions

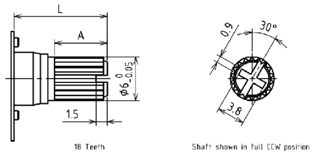


L	10.0	12.0	15.0	

Shaft specifications(RV124)

TS-Shaft

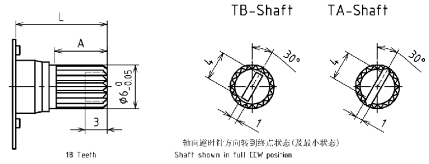
Detail dimensions



L	7.0	8.0	10.0	12.0	15.0	20.0
A	5.0	5.0	7.0	7.0	7.0	7.0

TB-Shaft TA-Shaft

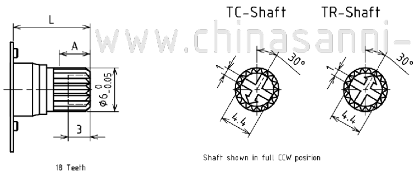
Detail dimensions



L	10.0	15.0
A	7.0	7.0

TC-Shaft TR-Shaft

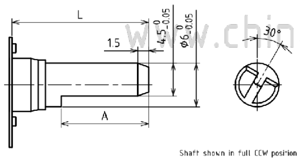
Detail dimensions



L	7.0
A	5.0

FA-Shaft

Detail dimensions



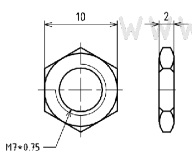
L	15	20	25
A	7.0	12	12

Annex size chart (optional)

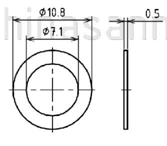
Unit:mm

M7

Nut



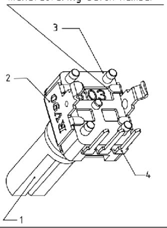
Gasket



9/11/14 size insulated shaft snap-in type

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

Photo/Structure



No.	Cimponent	Material
1	Shaft	PC
2	Stents	SPCC Sn
3	Noumenon	PBT
4	Terminal	SPCC Sn

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	×		White goods	×
	Medical equipment	√		Aoto	×

How to order

RV	9	0	1	2	N	0	-	FB	15	B	7.0	-	B	103	-	000
A	B	C	D	E	F	G		H	I	J	K		L	M		N

A:Rotary potentiometers

B:9mm Product series

C:Controlled code

D:Product fixed type

E:Product installation type(Pin change)

F:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

G:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

H:Shaft type(see shaft specifications)

I:Shaft installation length(see dimensions L size)

J: Shaft materials

Code	B
Materials	Insulated

K:Shaft of operation size length (Dimensions A size)

L:Resistance curve(Rerernece catalogof the curve)

M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RV90□□□□******	Tray	430*305*140	2, 000

Mechanical characteristics

Total rotational angle	280°±5°/300°±5°
Rotational torque	10~150gf.cm CC:click torque:60 ~400gf.cm
Rotation stopper srtength	MIN:3Kgf
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Total resistance	101-305 (100Ω-3MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less
Rated Power	0.05W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	300V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Gang error applicable to Dual-unit parts for audio volume control purposes	Volume:-40dB to 0dB 3dB max.

Durability

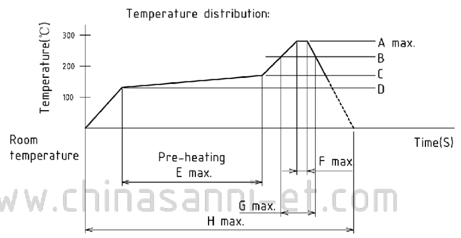
Operating life	10,000 cycles(Or designated)

Environmental performance

Cold	-10℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

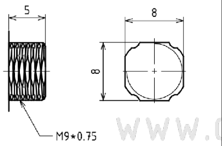
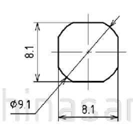
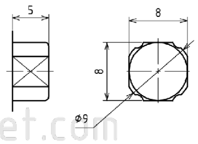
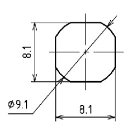
Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV9012N0******

9 size insulated shaft snap-in type

Bushing type

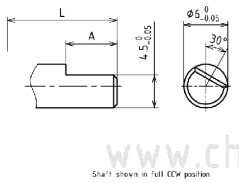
Dimensions (Unit:mm)

A	A fixed size	B(Insulation)	B fixed size		
					

Shaft specifications(No push switch)

FB-Shaft

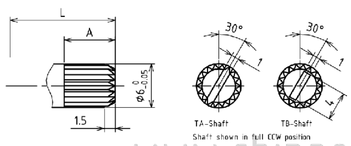
Detail dimensions



L	15.0	20.0	25.0	30.0	35.0
A	6.0	7.0	12.0	12.0	12.0

TA/TB-Shaft

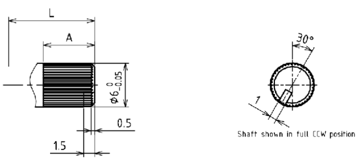
Detail dimensions



L	15.0	20.0	25.0	30.0
A	6.0	7.0	12.0	12.0

PB-Shaft

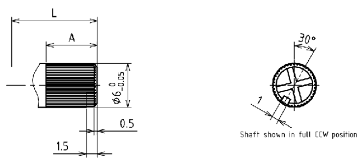
Detail dimensions



L	15.0	20.0	25.0	30.0
A	6.0	7.0	7.0	7.0

PA-Shaft

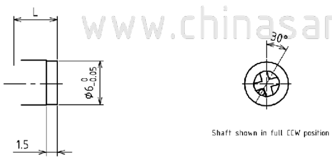
Detail dimensions



L	15.0	20.0	25.0	30.0
A	6.0	7.0	7.0	7.0

SA-Shaft

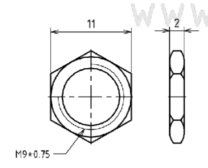
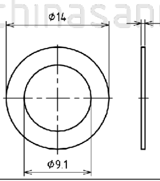
Detail dimensions



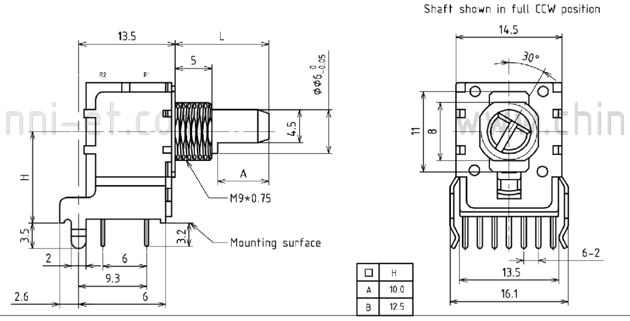
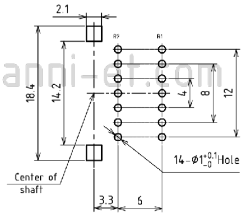
L	8.0

Annex size chart (optional)

Unit:mm

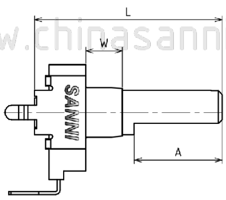
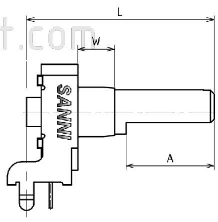
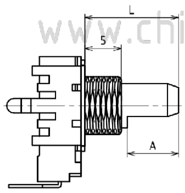
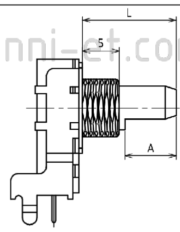
M9					
Nut	Gasket				
					

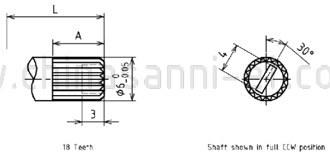
Dimensions

Model/Photo	Dimensions (Unit:mm)	Circuit/Features
RV141□1B0 Horizontal type, rotary potentiometer 		PC board mounting hole dimensions (Viewed from mounting side) 

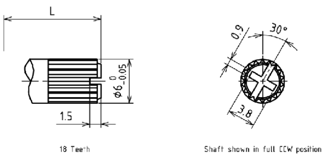
□	H
A	10.0
B	12.5

Shaft specifications(No push switch)

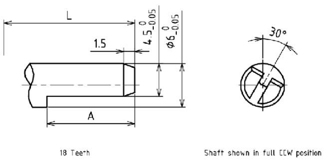
Vertical type	Horizontal type	Vertical type	Horizontal type
			
No.1	No.2	No.3	No.4



L(No.4)		12.5	15.0	17.5	20.0	22.5
L(No.3)		12.5	15.0	17.5	20.0	22.5
L(No.2)	15.0	20.0	22.5	25.0	27.5	30.0
L(No.1)	15.0	20.0	22.5	25.0	27.5	30.0
A	4.5	7.0	7.0	12.0	12.0	12.0
Specifications	15.0	20.0	22.5	25.0	27.5	30.0



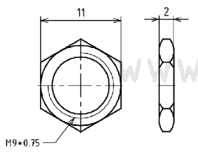
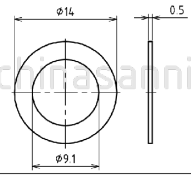
L(No.4)		12.5	15.0	17.5	20.0	22.5
L(No.3)		12.5	15.0	17.5	20.0	22.5
L(No.2)	15.0	20.0	22.5	25.0	27.5	30.0
L(No.1)	15.0	20.0	22.5	25.0	27.5	30.0
A	4.5	7.0	7.0	12.0	12.0	12.0
Specifications	15.0	20.0	22.5	25.0	27.5	30.0



L(No.4)		12.5	15.0	17.5	20.0	22.5
L(No.3)		12.5	15.0	17.5	20.0	22.5
L(No.2)	15.0	20.0	22.5	25.0	27.5	30.0
L(No.1)	15.0	20.0	22.5	25.0	27.5	30.0
A	4.5	7.0	7.0	12.0	12.0	12.0
Specifications	15.0	20.0	22.5	25.0	27.5	30.0

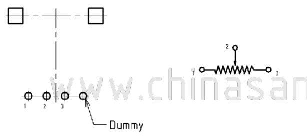
Annex size chart (optional)

Unit:mm

M9					
Nut	Gasket				
					

Circuit

Unit:mm

NO	RO	GO
		
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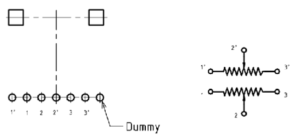	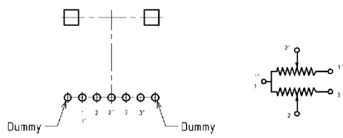	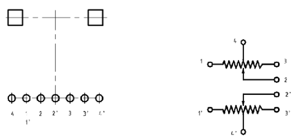
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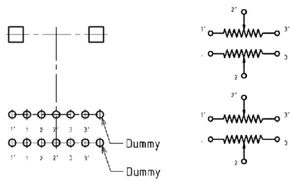
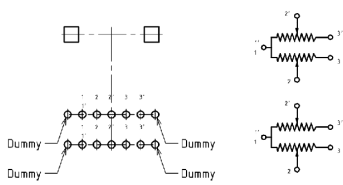
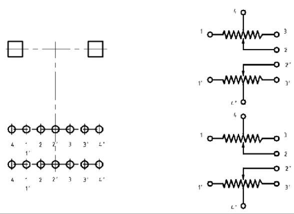
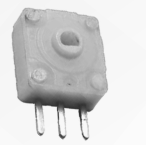
		

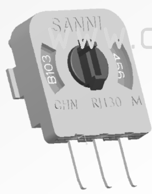
SANNI

Play station adjusting potentiometer

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches



RV0709N0



RJ09001

RV9612N0

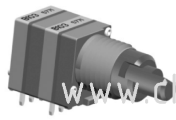
RV9022N0

RV1021N0

RV10322N0

RV1303N0

RV81A1N0



RV8201G0

RV17111N0

RJ1302

RJ1601

RJ06K1

RVJXY10

25 size shaft snap-in type

Photo

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	√		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	×
	Medical equipment	×		Aoto	×

How to order

RM	258	1	2	G	0	-	FB	20	A	12	-	B	103	-	000
A	B	C	D	E	F		G	H	I	J		K	L		M

A:Motor potentiometers

B:16mm Product series

C:Product fixed type

D:Product installation type(Pin change)

E:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

F:Switch type

Code	0
Type	None switch

G:Shaft type(see shaft specifications)

H:Shaft installation length(see dimensions L size)

I: Shaft materials

Code	A	C	D	G
Materials	Aluminium	Copper alloy	Zinc alloy	Stainess steel

J:Shaft of operation size length (Dimensions A size)

K:Resistance curve(Rerernece catalogof the curve)

L:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

M:Special marks company conrtolld

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	15~45gf.cm
Rotation stopper srtength	MIN:1Kgf
Key push-pull strength	MIN:10Kgf

Electrical characteristics

Total resistance	102-105 (10KΩ-1MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 3% or less
Rated Power	0.02W
Insulation resistance	100MΩ min. 500V DC
Voltage proof	500V AC for 1minute
Maximum operating voltage	50V AC, 20V DC
Slider noise	Less tham 100mv
Motor Operation Voltage	4V -6V DC(4.5V DC Standard标准)
Motor Max Operation Current	100mA

Durability

Operating life	10,000 cycles(Or designated)

Environmental performance

Cold	-10℃±3℃ for 96h
Dry heat	70℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	260±10℃/3+1/0s
Reference for Dip Soldering	240±5℃/10±1s

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RM168******

161/169/20/24 size insulated/vertical shaft snap-in type

Photo

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	×		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	×
	Medical equipment	√		Aoto	×

How to order

RV	166	0	0	N	S	-	KA	6.5	D	5.3	-	B	103	-	000
A	B	C	D	E	F		G	H	I	J		K	L		M

A:Rotary potentiometers

B:16mm Product series

C:Product fixed type

D:Product installation type(Pin change)

E:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

F:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

G:Shaft type(see shaft specifications)

H:Shaft installation length(see dimensions L size)

I: Shaft materials

Code	A	C	D	G
Materials	Aluminium	Copper alloy	Zinc alloy	Stainess steel

J:Shaft of operation size length (Dimensions A size)

K:Resistance curve(Rerernece catalogof the curve)

L:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

M:Special marks company conrtolld

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10~80gf.cm
Rotation stopper srtength	MIN:3Kgf
Key push-pull strength	MIN:5Kgf

Electrical characteristics

Total resistance	102-105 (10KΩ-1MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 3% or less
Rated Power	0.025W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	250V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Slider noise	Less tham 100mv

Durability

Operating life	20,000 cycles(Or designated)

Environmental performance

Cold	-40℃±3℃ for 96h
Dry heat	60℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

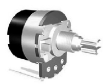
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV166******

161/169/20/24 size insulated/vertical shaft snap-in type

Series		RV166□□NS	RV169□□NS	RV24□□□S	RV200120	RV24YN1	
Photo							
Terminal mounting		Vertical/Horizontal type	Vertical type	Vertical type	Horizontal type	Horizontal type	
Shaft material		Metal /Insulated shaft	Insulated shaft	Metal shaft	Metal shaft	Metal shaft	
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	– –
Acailable for automotive use		– –	– –	– –	– –	– –	– –
Operating temperature range		-10℃ to +70℃					
Switch performance	Circuit number	S P S T	S P S T	S P S T			
	Rated power	12V DC 1A	12V DC 0.5A	1A at AC/DC 125V			
	Switching torque	50～150gf.cm	50～150gf.cm	150～450gf.cm			
	Switching angle	50° ±5°	50° ±5°	50° ±5°			
	Operating life without load	10.000cycles 100mΩ max	10.000cycles 100mΩ max	10.000cycles 100mΩ max			
	Operating life with load as rating	10.000cycles 200mΩ max	10.000cycles 200mΩ max	10.000cycles 200mΩ max			
	Initial contact resistance	Max:100mΩ	Max:100mΩ	Max:100mΩ			
	Insulation resistance	Min:100mΩ at250V DC	Min:100mΩ at250V DC	Min:100mΩ at250V DC			
	Voltage proof	1 minute at250V DC	1 minute at250V DC	1 minute at250V DC			
Electrical performance	Total resistance (KΩ)	500Ω-2MΩ					
	Total resistance tolerance	500Ω～10KΩ:±30%	10KΩ～500KΩ:±20%	500KΩ～2MΩ:±30%			
	Residual resistance	R≦10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≧500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes						
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	250V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	
Mechanical performance	Detent	Without	Without	Without	Without	Without	
	Stopper strength	6Kgf.max	8Kgf.max	5Kgf.max	8Kgf.max	8Kgf.max	
	Push-pull strength	8Kgf.max	3.5Kgf.max	6Kgf.max	10Kgf.max	10Kgf.max	
	Rotational torque	20～200gf.cm	10～100gf.cm	20～200gf.cm	10～80gf.cm	10～80gf.cm	
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h	-20℃±2℃for 96h	-40℃±2℃for 96h			
	Dry heat	70℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	260°C~280℃±10℃/3_0^{+1}S	260°C~280℃±10℃/3_0^{+1}S	260°C~280℃±10℃/3_0^{+1}S	260°C~280℃±10℃/3_0^{+1}S	260°C~280℃±10℃/3_0^{+1}S	
	Reference for dip soldering		240°C~260℃±10℃/3_0^{+1}S	240°C~260℃±10℃/3_0^{+1}S			
	Reflow soldering condition	– –	– –	– –	– –	– –	– –
Life cycle (availability)		★ 1	★★★ 3	★ 1	★★★ 3	★★★ 3	
Page							

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

86/106/120/160/130 size metal shaft snap-in type

Photo

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

Player	√	Instrument equipment	√
Sound	√	Meter	×
Sound console	√	Navigation/Auto AV	√
Walkie-talkie	×	White goods	×
Medical equipment	√	Aoto	×

How to order

RV	160	1	1	N	S	-	FH	6.5	C	5.3	-	B	103	-	000
A	B	C	D	E	F		G	H	I	J		K	L		M

A:Rotary potentiometers
B:16mm Product series
C:Product fixed type
D:Product installation type(Pin change)
E:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

F:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

G:Shaft type(see shaft specifications)
H:Shaft installation length(see dimensions L size)
I: Shaft materials

Code	A	C	D	G
Materials	Aluminium	Copper alloy	Zinc alloy	Stainess steel

J:Shaft of operation size length (Dimensions A size)
K:Resistance curve(Rerernece catalogof the curve)
L:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

M:Special marks company conrtolld

Mechanical characteristics

Total rotational angle	260°±5°
Rotational torque	5~50gf.cm
Rotation stopper srtength	MIN:2Kgf
Key push-pull strength	MIN:1Kgf

Electrical characteristics

Total resistance	102-105 (10KΩ-1MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 3% or less
Rated Power	0.025W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	250V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Slider noise	Less tham 100mv

Durability

Operating life	10,000 cycles(Or designated)

Environmental performance

Cold	-40℃±3℃ for 96h
Dry heat	60℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	260±10℃/3+1/0s
Reference for Dip Soldering	240±5℃/10±1s

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV160******

Mold shell rotary potentiometer

86/106/120/160/130 size metal shaft snap-in type

Series		RV8610N0	RV106N0	RV12011NS	RV16011NS	RV3502N0	
Photo							
Terminal mounting		Vertical type	Horizontal/Vertical type	Horizontal/Vertical type	Horizontal/Vertical type	Vertical type	
Shaft material		Insulation shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	
Acailable for automotive use		--	--	--	--	--	
Operating temperature range		-10℃ to +70℃					
Switch performance	Circuit number			SPST	SPST		
	Rated power			12V DC 0.5A	12V DC 1A		
	Switching torque			50～300gf.cm	70～400gf.cm		
	Switching angle			30° ±10°	30° ±10°		
	Operating life without load			10.000cycles 100mΩ max	10.000cycles 100mΩ max		
	Operating life with load load:as rating			10.000cycles 200mΩ max	10.000cycles 200mΩ max		
	Initial contact resistance			Max:100mΩ	Max:100mΩ		
	Insulation resistance			Min:100mΩ at250V DC	Min:100mΩ at250V DC		
	Voltage proof			1 minute at250V DC	1 minute at250V DC		
Electrical performance	Total resistance (KΩ)	500Ω-2MΩ					
	Total resistance tolerance	500Ω～10KΩ:±30% 10KΩ～500KΩ:±20% 500KΩ～2MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R≤500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes						
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	250V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	
Mechanical performance	Detent	Without	Without	Without	Without	Without	
	Stopper strength	2Kgf.max	2Kgf.max	2Kgf.max	2Kgf.max	2Kgf.max	
	Push-pull strength	1Kgf.max	1Kgf.max	1Kgf.max	1Kgf.max	1Kgf.max	
	Rotational torque	20～200gf.cm	20～200gf.cm	20～200gf.cm	20～200gf.cm	20～200gf.cm	
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h	-20℃±2℃for 96h	-40℃±2℃for 96h	-20℃±2℃for 96h	-20℃±2℃for 96h	
	Dry heat	70℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	
	Reference for dip soldering	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	
	Reflow soldering condition	--	--	--	--	--	
Life cycle (availability)		☆1	☆1	☆1	☆1	☆1	
Page		63～65					

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

12/16 size metal/ insulated shaft snap-in type

Photo

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	√		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	×
	Medical equipment	×		Aoto	×

How to order

RV	122	1	1	N	S	-	KQ	15	A	6.0	-	B	103	-	000
A	B	C	D	E	F		G	H	I	J		K	L		M

A:Rotary potentiometers
B:12mm Product series
C:Product fixed type
D:Product installation type(Pin change)
E:Product lines(see ciruit diagram)

Code	N	G	A	B	D	F
Type	Single-unit	Dual-unit	Three-unit	Quad-unit	Six-unit	Eight-unit

F:Switch type

Code	0	S	M	L
Type	None switch	Rotaly switch	Push sw 0.5 travel	Push sw 1.5 travel

G:Shaft type(see shaft specifications)
H:Shaft installation length(see dimensions L size)
I: Shaft materials

Code	A	C	D	G
Materials	Aluminium	Copper alloy	Zinc alloy	Stainess steel

J:Shaft of operation size length (Dimensions A size)
K:Resistance curve(Rerernece catalogof the curve)
L:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

M:Special marks company conrtolld

Mechanical characteristics

Total rotational angle	300°±5°
Rotational torque	10~100gf.cm
Rotation stopper srtength	MIN:3Kgf
Key push-pull strength	MIN:8Kgf

Electrical characteristics

Total resistance	102-105 (10KΩ-1MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 3% or less
Rated Power	0.025W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	250V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Slider noise	Less tham 100mv

Durability

Operating life	10,000 cycles(Or designated)

Environmental performance

Cold	-40℃±3℃ for 96h
Dry heat	60℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

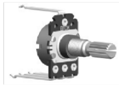
Welding heat resistance

Reference for Hand Soldering	260±10℃/3+1/0s
Reference for Dip Soldering	240±5℃/10±1s

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RV122******

126/122/160/162/163 size metal/insulated shaft snap-in type

Series		RV12212GS	RV12612N0	RV16A10R0	RV16311N0		
Photo							
Terminal mounting		Horizontal/Vertical type	Horizontal/Vertical type	Horizontal/Vertical type	Horizontal/Vertical type		
Shaft material		Metal shaft	Metal shaft	Metal shaft	Insulated shaft		
Fixing method of bushing		Screw	Screw	Screw	Screw		
Acailable for automotive use		– –	– –	– –	– –		
Operating temperature range		-10℃ to +70℃					
Switch performance	Circuit number	S P S T					
	Rated power	12V DC 0.5A					
	Switching torque	50～300gf.cm					
	Switching angle	30° ±10°					
	Operating life without load	10.000cycles 100mΩ max					
	Operating life with load load:as rating	10.000cycles 200mΩ max					
	Initial contact resistance	Max:100mΩ					
	Insulation resistance	Min:100mΩ at250V DC					
	Voltage proof	1 minute at250V DC					
Electrical performance	Total resistance (KΩ)	500Ω-2MΩ					
	Total resistance tolerance	500Ω～10KΩ:±30% 10KΩ～500KΩ:±20% 500KΩ～2MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes						
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	250V AC for 1 minute					
	Center-taps	With	With	With	Without		
Mechanical performance	Detent	Without	Without	Without	Without		
	Stopper strength	3Kgf.max	3Kgf.max	3Kgf.max	3Kgf.max		
	Push-pull strength	5Kgf.max	5Kgf.max	5Kgf.max	5Kgf.max		
	Rotational torque	10～200gf.cm	10～200gf.cm	10～200gf.cm	10～200gf.cm		
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h	-20℃±2℃for 96h	-40℃±2℃for 96h	-20℃±2℃for 96h		
	Dry heat	70℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S		
	Reference for dip soldering	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S		
	Reflow soldering condition	– –	– –	– –	– –		
Life cycle (availability)		☆1	☆1	☆1	☆1		

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

06/09/10/158 Thin snap-in type

Photo

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	×		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	×
	Medical equipment	√		Aoto	×

How to order

RK	10	0	1	N	S	-	B	A	14	B	2.0	-	B	103	-	000
A	B	C	D	E	F		G	H	I	J	K		L	M		N

A:Thin Rotary potentiometers
B:10mm Product series
C:Product fixed type
D:Product feets type(Pin change)
E:Product lines(see ciruit diagram)

Code	N	G	H	L
Type	Single-unit	Dual-unit	A total of one end of the double	A total of three end of the double

F:Switch type

Code	0	S
Type	None switch	Rotaly switch

G:Disk type

Code	B	G	C	R	L	P	W
Materials	Black plastic	Gray	Computer color	Deep Red	Warm red	Pink	White

H:Set of teeth

Code	A	B	C
Teeths	90T	72T	60T

I:Disk diameter
J:Mounting height

Code	A	B
Height	1.2	1.4

K:Disk thickness
L:Resistance curve
M:Resistance total resistance value

Code	501	102	502	103	203	503	104	205
Value	500Ω	1KΩ	5KΩ	10KΩ	20KΩ	50KΩ	100KΩ	2MΩ

N:Special marks company conrtolld

Mechanical characteristics

Total rotational angle	270°±5°
Rotational torque	10～100gf.cm
Rotation stopper srtength	MIN:0.8Kgf
Key push-pull strength	MIN:0.5Kgf

Electrical characteristics

Total resistance	102-105 (10KΩ-1MΩ)
Total resistance tolerance	10KΩ-100KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 3% or less
Rated Power	0.025W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	250V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Slider noise	Less tham 100mv

Durability

Operating life	10,000 cycles(Or designated)

Environmental performance

Cold	-40℃±3℃ for 96h
Dry heat	60℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	260±10℃/3+1/0s
Reference for Dip Soldering	240±5℃/10±1s

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RK100******

06/09/10/158 Thin snap-in type

Series		RK0602N0	RK0992N0	RK1582N0	RK1001N0	RK1002N0	RK1002H0
Photo							
Terminal mounting		Horizontal type	Vertical type	Horizontal type	Vertical type	Horizontal type	Horizontal type
Shaft material							
Fixing method of bushing							
Acailable for automotive use		– –	– –	– –	– –	– –	– –
Operating temperature range		-10℃ to +70℃					
Electrical performance	Total resistance (KΩ)	500Ω-2MΩ					
	Total resistance tolerance	500Ω～10KΩ:±30% 10KΩ～500KΩ:±20% 500KΩ～2MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R≤500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes						
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	250V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	Without	Without	Without	Without	Without	Without
	Stopper strength	0.8Kgf.max	0.8Kgf.max	0.8Kgf.max	0.8Kgf.max	0.8Kgf.max	0.8Kgf.max
	Push-pull strength	0.5Kgf.max	0.5Kgf.max	0.5Kgf.max	0.5Kgf.max	0.5Kgf.max	0.5Kgf.max
	Rotational torque	10～100gf.cm	10～150gf.cm	10～100gf.cm	10～100gf.cm	10～100gf.cm	10～100gf.cm
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h	-40℃±2℃for 96h	-40℃±2℃for 96h	-40℃±2℃for 96h	-40℃±2℃for 96h	-40℃±2℃for 96h
	Dry heat	70℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S
	Reference for dip soldering	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S
	Reflow soldering condition	– –	– –	– –	– –	– –	– –
Life cycle (availability)		☆1	☆1	☆1	☆1	☆1	☆1

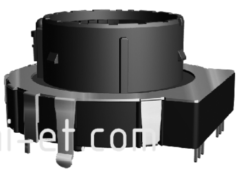
Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

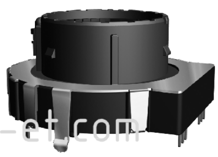
SANNI

Ring potentiometer



RR45B01

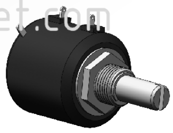
RR39A01



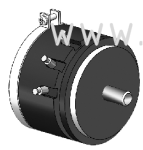
RR45C01

SANNI

play station adjusting potentiometer

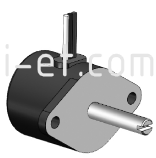


R022001



RCW22002

RCW11001



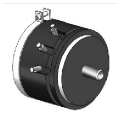
RCW15001

RCW15002

RCW22001

Precision potentiometer

Precision single-turn/multiturn potentiometer

Series		R022001	RCW22002	RCW11001	RCW15001	RCW15002/RCW15003	RCW22001
Photo							
Terminal mounting		Horizontal type	Horizontal type	Horizontal type	Horizontal type	Horizontal type	Horizontal type
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	Screw
Acailable for automotive use							
Operating temperature range		-10℃ to +70℃					
Electrical performance	Range of nominal resistance	100 Ω -50k Ω	1k Ω -10k Ω	1k Ω -10k Ω	1k Ω -10k Ω	1k Ω -10k Ω	1k Ω -10k Ω
	resistance tolerance	5%	10%(micron order) 15%	10%(micron order) 15%	10%(micron order) 15%	10%(micron order) 15%	10%(micron order) 15%
	Independent linearity	≤±0.25%	≤±0.5%	≤±0.5% ≤±1%	≤±0.5%	≤±0.5%	≤±0.5%
	Effective angle	3600°±4°	320°±5°	60°~100°	60°~320°	60°~100°	60°~330°
	Output Smoothness		≤0. 1%	≤0. 1%	≤0. 1%	≤0. 1%	≤0. 1%
	Insulation resistance	500m Ω min.500V DC					
	Voltage proof	250V AC for 1 minute					
Mechanical performance	Rotational torque	≤10mN. m	≤5mN. m	≤5mN. m	≤5mN. m	≤5mN. m	≤5mN. m
	operating angle	3600°±4°	360°	360°	360°	360°	360°
Environment Characteristics	temperature range	-55℃~125℃	-55℃~125℃	-55℃~125℃	-55℃~125℃	-40℃~125℃	-55℃~125℃
	Rate power	2W @70°C	1W @70°C 0W @125°C		0.5W @70°C 0W @125°C	0.25W @70°C 0W @125°C	2W @70°C 0W @125°C
Life cycle (availability)							

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

Dimensions

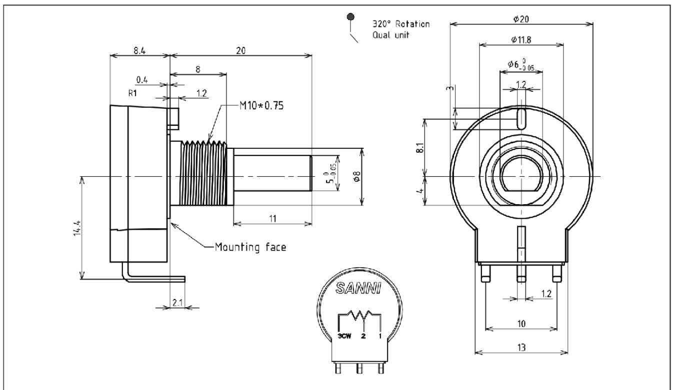
Model/Photo

Dimensions (Unit:mm)

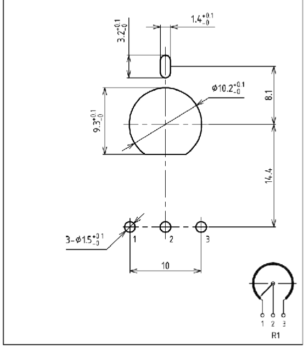
Circuit/Features

RO20012

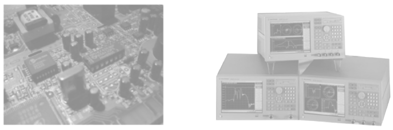
Precision Potentiometer,Single-turn

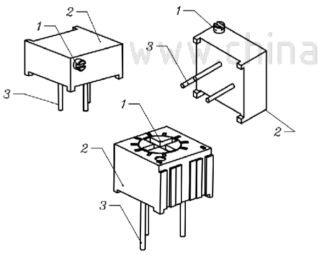


PC board mounting hole dimensions
(Viewed from mounting side)



Photo/Structure





No.	Cimponent	Material
1	Shaft	H59 or PBT
2	Bushing	PBT
3	Noumenon	Cu+Sn

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	√
	Medical equipment	√		Aoto	√

How to order

RWT	10	F	1	1	-	Φ	1.6	-	103	-	00
A	B	C	D	E	F	G	H	I	J	K	L

A:Wire-wound Trimmer
- RWT(Wire wound potentiometer) • RCT(Ceramic preset potentiometer)
- RTS(Ceramic Trimming Potentiometer)

B:Size and shape

C:Shape structure
- F(Square potentiometer) • Y(Cylindrical potentiometer)

D:Product fixed type
- 1 (Vertical type) • 2(Horizontal type) • 3(Screw fixing structure)

E:Product feets type
- P (Terminal output) • W(Line output) • M(SMD Pin output)

F:Separate

G:Shaft type
- Φ Metal cylinder shaft core • TS ("╪"Plastic shaft core) • TB ("—"Plastic shaft core)
- TF (The semicircle hole plastic shaft core)

H:Shaft core size

I:Separate

J:Resistance:

Code	Resistance(Ω)	Code	Resistance(Ω)
100	10	103	10K
200	20	203	20K
500	50	253	25K
101	100	503	50K
201	200	104	100K
501	500	254	250K
102	1K	504	500K
202	2K	105	1M
502	5K	205	2M

K:Separate

L:Special marks company conrtolld

Mechanical characteristics

Effective Eletrical travel	11/12/15/18/20/21/25 (circle)
Rotation torque	50±20mN.m
Rotation Life	200 cycles △R≤15%R

Electrical characteristics

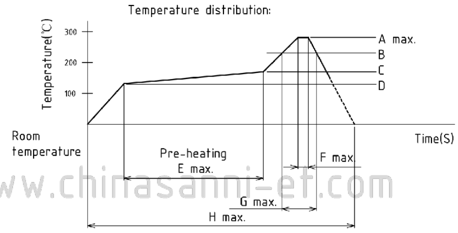
range of nominal resistrance	100Ω~2MΩ
Resistance tolerance	±3%~±30%
Terminal resistrance	≤2%R or 2Ω
contact resistance variation	CRV≤3%R or 10Ω
Voltage proof	600V AC for 1 minute
Insulation resistance	1GΩ min.500V DC.

Environmental performance

Rated Power (300V Max)	0.3W @ 40℃ ,0W @ 150℃
Temperature range	-55℃~+150℃
TCR	$\pm150\times10^{-6}$ /℃
Moisture Proof	-65℃~+125℃ 5 times △R≤±5%R, Insulation resistance ≥100MΩ
High frequency vibration	10~2KHZ 0.75mm , 12h △R≤±3%R, △(Uab/Uac)≤±5%
Temperature Shock	GJB360A-96 △R≤±3%R, △(Uab/Uac)≤±5%
high temperature Life	40℃ , 0.33W , 1000h △R≤±5%R, △(Uab/Uac)≤±3%
Storage at high temperature	+125℃ , 250h △R≤±5%R, △(Uab/Uac)≤±3%
Operation at low temperature	-55℃ , 0.33W △R≤±3%R, △(Uab/Uac)≤±3%

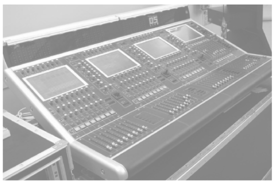
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Photo/Structure



Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	×
	Medical equipment	√		Aoto	√

How to order

RA	30	6	1	N	-	D	15	-	B	103	-	0	00
A	B	C	D	E		F	G		H	I		J	K

A: Slide potentiometer

Type	Explanation
RB	No Shell Slide
RA	Iron Shell Slide

B: Product sliding stroke

C: Controlled code

D: Product installation type(Pin change)

E: Product lines(see ciruit diagram)

Code	N	G
Type	Single-unit	Dual-unit

F: Material and mark the stem a little color

Code	A	B	C	D	E	F	G
Materials	With white spots	Black plastic	Marked with a red dot	Ron handle	With red LED	With a yellow LED	With Blue LED

G: Installation of the length of the stem (L size outline drawing)

H: Resistance curve (Reference directory of the curve)

I: Resistance total resistance

Code	501	102	103	203	473	503	504	105	......
total resistance	500 Ω	1K Ω	10K Ω	20K Ω	47K Ω	50K Ω	500K Ω	1M Ω	......

J: Detent code

Code	0	1
No.of detents	None	1CC

K: Special marks company conrtolld

Mechanical characteristics

For power	10~120gf.cm
Sliding stop strength	3Kgf.cm(2mm point from mounting surface)
Lever wobble	1.6mm max(both sides)
Centering force	Operating force +20~150gf.cm

Electrical characteristics

Total resistance	501-105 (500Ω-1MΩ)
Total resistance tolerance	1KΩ-500KΩ:±20% other:±30%
Residual resistance	R≦100kΩ 20Ω max. 50kΩ≦R Nominal total resistance of 3% or less
Rated Power	0.01W
Insulation resistance	100MΩ min. 250V DC
Voltage proof	250V AC for 1minute
Maximum operating voltage	50V AC, 10V DC
Slider noise	Less tham 100mv

Durability

Operating life	10,000 cycles(Or designated)

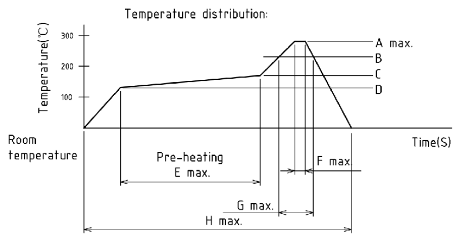
Environmental performance

Cold	-40℃±3℃ for 96h
Dry heat	60℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	260±10℃/3+1/0s
Reference for Dip Soldering	240±5℃/10±1s

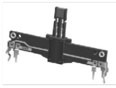
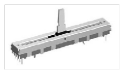
Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RA3061N******

Series		RB□□81N	RA2031N	RB□□5□N	RB□□B1G	RB□□A1G	RA□□81G
Photo							
Terminal mounting		Vertical type	Vertical type	Vertical type	Vertical type	Vertical type	Vertical type
Shaft material		Insulated shaft	Insulated shaft	Metal/Insulated shaft	Metal shaft	Metal shaft	Metal/Insulated shaft
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	- -
Acailable for automotive use		- -	- -	- -	- -	- -	- -
Operating temperature range		-10℃ to +70℃					
Electrical performance	Total resistance (KΩ)	500Ω～1MΩ					
	Total resistance tolerance	500Ω～10KΩ:±30% 10KΩ～500KΩ:±20% 500KΩ～2MΩ:±30%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes						
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	250V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	Without	Without	Without	Without	Without	Without
	Sliding Stop strength	3Kgf.max	5Kgf.max	5Kgf.max	5Kgf.max	5Kgf.max	5Kgf.max
	Click slip-out force	20～150gf.cm	20～200gf.cm	20～200gf.cm	20～200gf.cm	20～200gf.cm	20～200gf.cm
	Rotational torque	10～120gf.cm	30～250gf.cm	30～250gf.cm	30～250gf.cm	30～250gf.cm	30～250gf.cm
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h	-20℃±2℃for 96h	-40℃±2℃for 96h			
	Dry heat	70℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S	260°C~280℃±10℃/3^{+1}_{0}S
	Reference for dip soldering	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S	240°C~260℃±10℃/3^{+1}_{0}S
	Reflow soldering condition	- -	- -	- -	- -	- -	- -
Life cycle (availability) ※		☆1	☆1	☆1	☆1	☆1	☆1

Notes

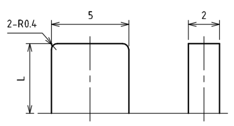
- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

RB□□ Shaft Illustration

Shaft illustration A Insulated Lever Type

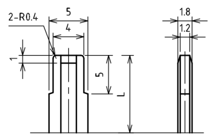
A



L	4	5	7

Shaft illustration C Insulated Lever Type

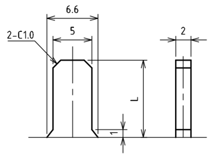
C



L	8.5	9.5	12	15

Shaft illustration B Insulated Lever Type

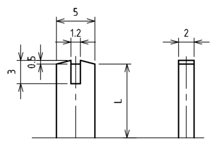
B



L	5	10	15

Shaft illustration D Insulated Lever Type

D

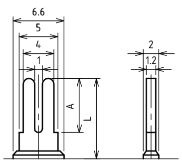


L	10	15	20

RA□□5、RA□□6、RA□□8、RA□□9 Shaft Illustration

RB□□4N/G
Shaft illustration
CH Metal Lever Type

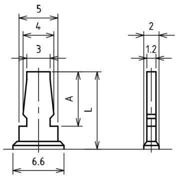
CH



L	10.4
A	7

RB□□4N/G
Shaft illustration
DE Metal Lever Type

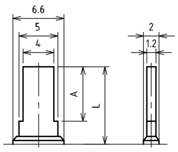
DE



L	10	15	20
A	7	12	12

RB□□4N/G
Shaft illustration
CE Metal Lever Type

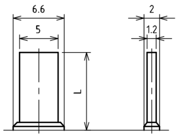
CE



L	10	15	17.3	20	25
A	7	10	10	10	10

RB□□4N/G
Shaft illustration
BE Metal Lever Type

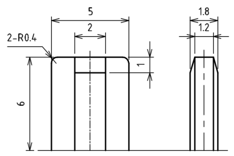
BE



L	10	15

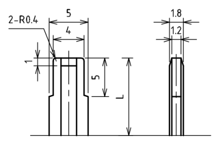
RA□□5N/G、RA□□6N/G
Shaft illustration
B Insulated Lever Type

B



RA□□5N/G、RA□□6N/G
Shaft illustration
D Insulated Lever Type

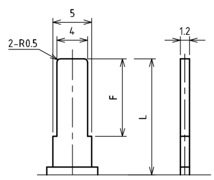
D



L	5	10	15	20

RA□□5N/G、RA□□6N/G
Shaft illustration
CE Insulated Lever Type

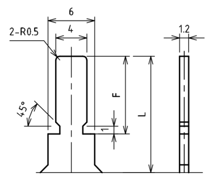
CE



L	10	15	20	25	27
F	5	10	10	10	10

RA□□5N/G、RA□□6N/G
Shaft illustration
DE Insulated Lever Type

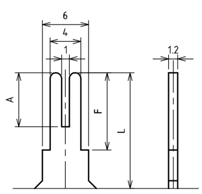
DE



L	10	15	20	25	27
F	5	10	10	10	10

RB□□8□N/G
Shaft illustration
AE Metal Lever Type

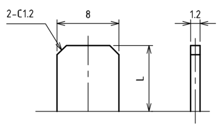
AE



L	10	15	25
F	7	10	10
A	6	7	7

RB□□8□N/G
Shaft illustration
BE Metal Lever Type

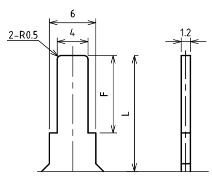
BE



L	8.5	9.5	12	14.5

RB□□8□N/G
Shaft illustration
CE Metal Lever Type

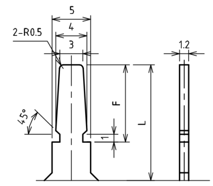
CE



L	10	15	20	25	27
F	5	10	10	10	10

RB□□8□N/G
Shaft illustration
DE Metal Lever Type

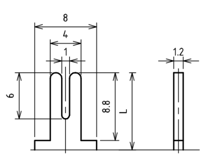
DE



L	15	20	25
F	10	10	10

RB□□9□N/G
Shaft illustration
AE Metal Lever Type

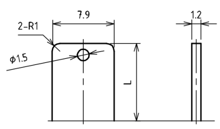
AE



L	10

RB□□9□N/G
Shaft illustration
BE Metal Lever Type

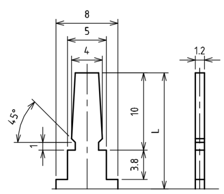
BE



L	8	10	12	15	20

RB□□9□N/G
Shaft illustration
DE Metal Lever Type

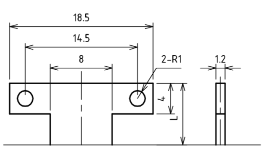
DE



L	15	17	20

RB□□9□N/G
Shaft illustration
HE Metal Lever Type

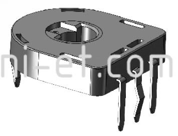
HE



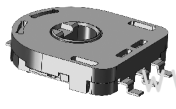
L	8

SANNI

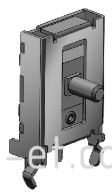
Resistive Position Sensors



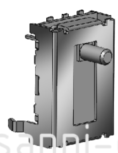
RDC5011



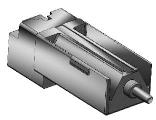
RDC5031



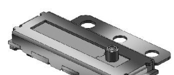
RDC708A



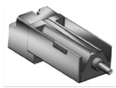
RD7091



RDC4001



RDC1014

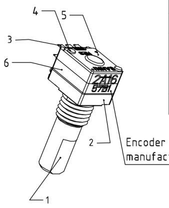
Series		RDC5011	RDC5031	RD708A RD712A	RD7091	RDC4001	RDC1014
Photo							
Terminal mounting		Horizontal type	Reflow type	Vertical type	Vertical type		Vertical type
Shaft material		Insulated shaft	Insulated shaft	Insulated shaft	Insulated shaft	Insulated shaft	Insulated shaft
Fixing method of bushing		--	--	--	--	--	--
Acailable for automotive use		Sure					
Operating temperature range		-40℃ to +120℃	-40℃ to +120℃	-40℃ to +105℃	-40℃ to +105℃	-30℃ to +80℃	-30℃ to +80℃
Electrical performance	Total resistance (KΩ)	1kΩ-100kΩ	1kΩ-100kΩ	5kΩ-30kΩ	5kΩ-30kΩ	10kΩ	10kΩ
	Total resistance tolerance	1KΩ～100KΩ:±20%					
	Residual resistance	R≤10KΩ: 10Ω max. 10KΩ<R<500KΩ: 20Ω max. R≥500KΩ Nominal total resistance of 0.1% or less					
	Gang error applicable to Dual-unit parts for audio volume control purposes						
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	250V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	Without	Without	Without	Without	Without	Without
	Stop strength			5Kgf.max	5Kgf.max	5Kgf.max	5Kgf.max
	Push-pull strength	30N.3sec/5N.3sec	30N.3sec/5N.3sec	5Kg Min/2Kg Min	5Kg Min/2Kg Min		5Kg Min/2Kg Min
	Rotational torque	20mN·m	20mN·m	< 120gf.cm	< 120gf.cm	< 120gf.cm	2mN·m
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h					
	Dry heat	70℃±2℃for 96h/85℃±2℃for 96h					
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	260°C/280℃±10℃/3^{+1}_{0}S					
	Reference for dip soldering	240°C/260℃±10℃/3^{+1}_{0}S					
	Reflow soldering condition	--	--	--	--	--	--
Life cycle (availability)		☆☆☆ 3	☆☆☆ 3	☆☆☆ 3	☆☆☆ 3	☆☆☆ 3	☆☆☆ 3

Notes

- Please with "※" Standard Specification for the representation of choice.
- Please with "--" refrain from using

8mm metal shaft sealed encoder

Photo/Structure



No.	Cimponent	Material
1	Shaft	Aluminium alloy
2	Bushing	Zinc alloy
3	Terminal	Copper plating
4	Rivet	Copper plating
5	Back cover	SPCC Sn
6	Noumenon	PBT

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	×
	Medical equipment	√		Aoto	√

How to order

RE	8	1	1	0	M	–	KQ	15	A	6.0	–	P	9	–	2	00
A	B	C	D	E	F		G	H	I	J		K	L		M	N

A:Rotary encoders
B:8mm Product series
C:Controlled code
D:Product fixed type
E:Product installation type(Pin change)
F:Switch type

Code	0	M	L
Type	None	Push:0.5mm travel	Push:1.5mm travel

G:Shaft type(see shaft specifications)
H:Shaft installation length(see dimensions L size)
I: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

J:Shaft of operation size length (Dimensions A size)
K:Phase difference code(Internal company controlled)

P:Incremental type positive encoders
C:Absolute type reverse encoders

L:Decomposition ability(Internal company controlled)
M:Detent code

Code	0	1	2
Detents No.	None	Detents=Pulser	Detents=Pulser x 2

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements（mm）	Number of packages（pcs.）
RE8□□□□□******	Tray	430*305*140	2，000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	Rotary SW:16V DC 3A Push SW:5V DC 0.1A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Mechanical characteristics

Total rotation alangle	Incremental:360°
	Logic:300°±5°
Rotation torque	150～350gf.cm
Rotation stopper strength	3Kgf. min.
Shaft push-pull strength	8Kgf. max.
Shaft wobble	0.6*L/20mm p-p max.

Electrical characteristics

Retings power	0.025W
Insulation resistance	100mΩ min.250V DC.
Voltage proof	300V AC for 1 minute

Durability

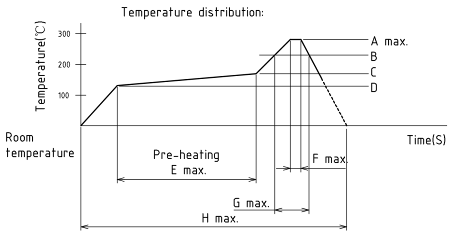
Operating life without load	20，000cycles 100mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution

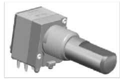
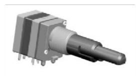
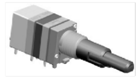
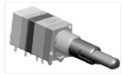


A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RE81*********.

8mm metal shaft sealed encoder

Series		RE81A10	RE8312M	RE814F0	RE8207N0	RE8203NS	RE8209N0
Photo							
Output		Incremental	Incremental	Logic	Incremental	Logic	Incremental
Terminal mounting		Horizontal type	Vertical type	Horizontal type	Horizontal type	Horizontal type	Vertical type
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal dual-shaft	Metal dual-shaft	Metal dual-shaft
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	Screw
Rotary angle		360°	360°	300°/360° ※	RE:360°/RV:300°	RE:300°/360°※/RV:300°	RE:360°/RV:300°
Operating temperature range		-40℃ to +85℃					
Switch performance	Circuit number		PUSH			SPST	
	Rated power		0.1A 5V DC			1A 16V DC	
	Switching torque		500±200gf.cm			500gf.cm max	
	Switching angle		0.5±0.3			40° max	
	Operating life without load		100. 000cycles 100mΩ max			30. 000cycles 100mΩ max	
	Operating life with load load:as rating		100. 000cycles 200mΩ max			30. 000cycles 200mΩ max	
	Initial contact resistance		100mΩ max			100mΩ max	
	Insulation resistance		100mΩ min.250V DC			100mΩ min.250V DC	
	Voltage proof		300V AC for 1 minute			300V AC for 1 minute	
Electrical performance	Number of pulse/ Number of detent	9/18	9/18	16/16	9/18	16/16	9/18
	Features	With push switch	With push switch		With push switch &rotay switch	With push switch &rotay switch	With push switch &rotay switch
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	18	18	16	18	16	18
	Stopper strength	Zinc alloy：3Kgf.max/Aluminum：3.5Kgf.max/Brass：4.0Kgf.max/Stainless steel：5.0Kgf.max “※”					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					-10℃±2℃ for 96h
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					70℃±2℃ for 96h
	Damp heat	+40℃±2℃, 90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3^{+1}_{0}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)		3	3	3	3	3	3
Page		3	3	4	5	5	5

Notes

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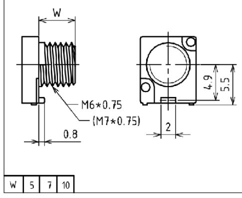
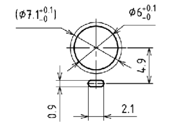
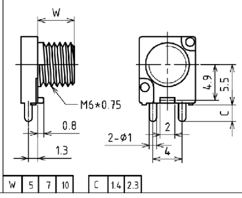
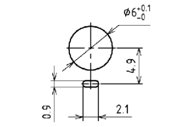
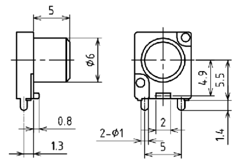
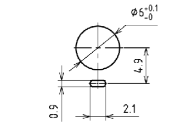
- Please with “--” refrain from using

8mm metal shaft sealed encoder

Bushing type

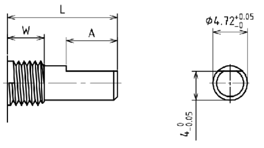
Dimensions (Unit:mm)

A	A fixed size	B	B fixed size	C	C fixed size
					

Shaft specifications

FE-Shaft

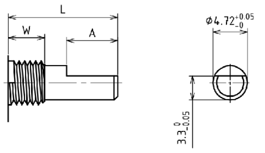
Detail dimensions



L	10.0	15.0	18.0	20.0
A/W=5	4.0	7.0	9.0	/
A/W=7	/	7.0	9.0	/
A/W=10	/	/	6.0	7.0

FK-Shaft

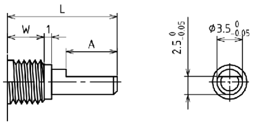
Detail dimensions



L	10.0	15.0	18.0	20.0
A/W=5	4.0	7.0	9.0	/
A/W=7	/	7.0	9.0	/
A/W=10	/	/	6.0	7.0

FD-Shaft

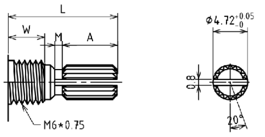
Detail dimensions



L	15.0
A/W=5	7.0
A/W=7	7.0
A/W=10	/

KP-Shaft

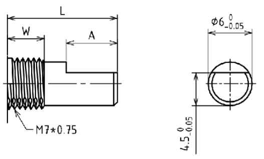
Detail dimensions



L	15.0	20.0
A/W=5	6.0	12.0
M/W=5	1.0	2.0
A/W=7	6.0	10.0
M/W=7	1.0	2.0
A/W=10	3.5	6.0
M/W=10	0.5	1.0

FB-Shaft

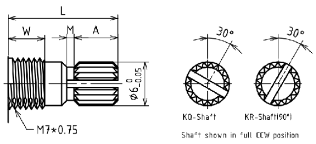
Detail dimensions



L	15.0	20.0	25.0
A/W=5	7.0	12.0	12.0
A/W=7	7.0	12.0	12.0
A/W=10	4.0	7.0	12.0

KQ-Shaft KR-Shaft(90°)

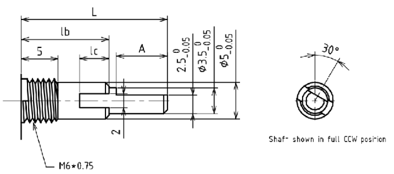
Detail dimensions



L	15.0	20.0	25.0	30.0
A/W=5	6.0	12.0	12.0	12.0
M/W=5	1.0	2.0	2.0	2.0
A/W=7	6.0	10.0	12.0	12.0
M/W=7	1.0	2.0	2.0	2.0
A/W=10	3.5	6.0	10.0	12.0
M/W=10	0.5	1.0	2.0	2.0

FF-Shaft

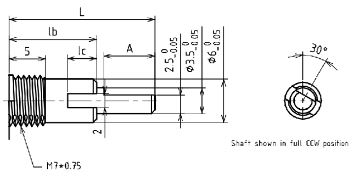
Detail dimensions



L	15.0	20.0	25.0
A	4.0	5.0	8.0
lb	10.0	12.5	15.0
lc	3.0	4.0	5.0

FF-Shaft

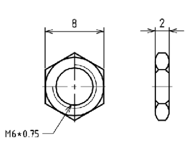
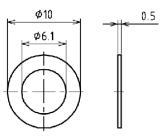
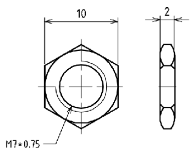
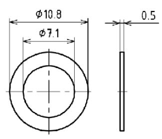
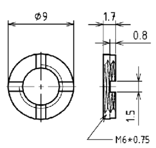
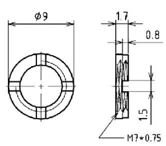
Detail dimensions



L	15.0	20.0	25.0
A	4.0	5.0	8.0
lb	10.0	12.5	15.0
lc	3.0	4.0	5.0

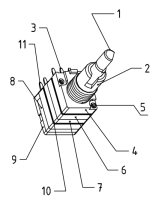
Annex size chart (optional)

Unit:mm

M6		M7		Turning brass nut	
Nut	Gasket	Nut	Gasket	M6	M7
					

9/10mm metal shaft sealed encoder

Photo/Structure



No.	Cimponent	Material	No.	Cimponent	Material
1	Inner shaft	Copper alloy	7	Bushing	Zinc alloy
2	Outer shaft	Copper alloy	8	Noumenon	PBT
3	Terminal	SPCC+Sn	9	Noumenon	PBT
4	Bushing	Zinc alloy	10	Partition	Stainless steel
5	Rivet	Copper plating	11	SW terminal	Copper plating
6	Noumenon	PBT			

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	×
	Medical equipment	√		Aoto	√

How to order

RE	9	1	1	0	M	-	KQ	15	A	6.0	-	P	10	-	2	00
A	B	C	D	E	F		G	H	I	J		K	L		M	N

A:Rotary encoders
B:9mm Product series
C:Controlled code
D:Product fixed type
E:Product installation type(Pin change)
F:Switch type

Code	0	M	L
Type	None	Push:0.5mm travel	Push:1.5mm travel

G:Shaft type(see shaft specifications)
H:Shaft installation length(see dimensions L size)
I: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

J:Shaft of operation size length (Dimensions A size)
K:Phase difference code(Internal company controlled)

P:Incremental type positive encoders
C:Absolute type reverse encoders

L:Decomposition ability(Internal company controlled)
M:Detent code

Code	0	1	2
Detents No.	None	Detents=Pulser	Detents=Pulser x 2

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements（mm）	Number of packages（pcs.）
RE9□ □ □ □ □ ******	Tray	430*305*140	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	Rotary SW:16V DC 3A Push SW:5V DC 0.1A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Mechanical characteristics

Total rotation alangle	Incremental:360°
	Logic:300°±5°
Rotation torque	150～350gf.cm
Rotation stopper strength	3Kgf. min.
Shaft push-pull strength	8Kgf. max.
Shaft wobble	0.6*L/20mm p-p max.

Electrical characteristics

Retings power	0.025W
Insulation resistance	100mΩ min.250V DC.
Voltage proof	300V AC for 1 minute

Durability

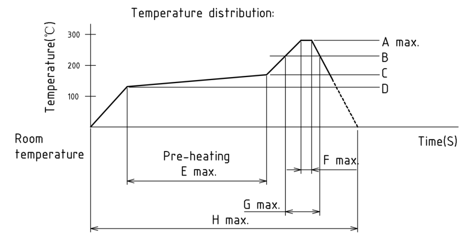
Operating life without load	20，000cycles 100mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution

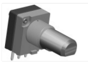
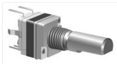
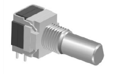
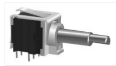
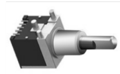


A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RE91*********.

9/10mm metal shaft sealed encoder

Series		RE91110	RE931AM	RE9E01M	RE103010	RE104010	RE9A010
Photo							
Output		Incremental	Incremental	Incremental	Logic	Logic	Logic
Terminal mounting		Horizontal type	Vertical type	Vertical type	Horizontal type	Horizontal type	Horizontal type
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	Screw
Rotary angle		360°	360°	360°	300°	300°	337.5°
Operating temperature range		-40℃ to +85℃					
Switch performance	Circuit number		PUSH	PUSH			
	Rated power		0.1A 5V DC	0.1A 5V DC			
	Switching torque		500±200gf.cm	500±200gf.cm			
	Switching angle		0.5±0.3	0.5±0.3/1.5±0.5			
	Operating life without load		100. 000cycles 100mΩ max	100. 000cycles 100mΩ max			
	Operating life with load load:as rating		100. 000cycles 200mΩ max	100. 000cycles 200mΩ max			
	Initial contact resistance		100mΩ max	100mΩ max			
	Insulation resistance		100mΩ min.250V DC	100mΩ min.250V DC			
	Voltage proof		300V AC for 1 minute	300V AC for 1 minute			
Electrical performance	Number of pulse/ Number of detent	10/20	10/20	16/16	15/30	16/16	16/16
	Features	With push switch &rotay switch	With push switch &rotay switch	With push switch			
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	20	20	30	16	16	16
	Stopper strength	Zinc alloy：3Kgf.max/Aluminum：3.5Kgf.max/Brass：4.0Kgf.max/Stainless steel：5.0Kgf.max “※”					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					-10℃±2℃ for 96h
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					70℃±2℃ for 96h
	Damp heat	+40℃±2℃，90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3^{+1}_{0}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)		3	3	3	3	3	3
Page		3	3	5	5	5	5

Notes

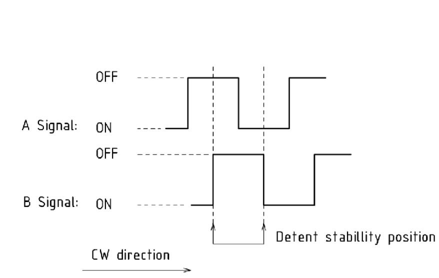
- Please with “※” Standard Specification for the representation of choice.
- Please with “--” refrain from using

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

9/10mm metal shaft sealed encoder

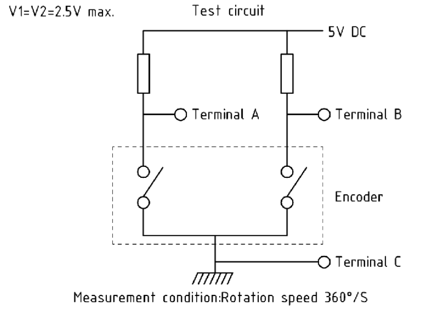
Output wave

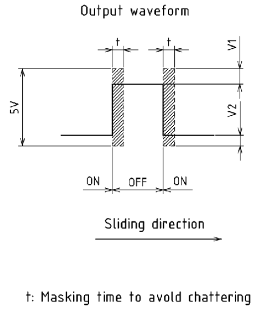
Detent stability position cannot be specified for B signal



Sliding noise

V1=V2=2.5V max.

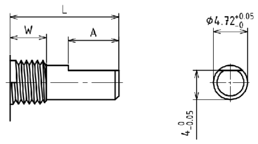




At R=5K Ω
Chattering:5ms max. Bounce:2ms max.

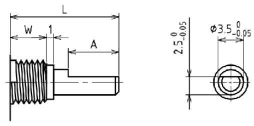
Shaft specifications

FE-Shaft — Detail dimensions



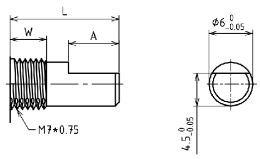
L	15.0	18.0	20.0
A/W=5	7.0	9.0	
A/W=7	7.0	9.0	
A/W=10		6.0	7.0

FD-Shaft — Detail dimensions



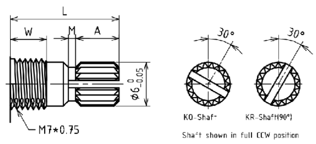
L	15.0
A/W=5	7.0
A/W=7	7.0
A/W=10	

FB-Shaft — Detail dimensions



L	15.0	20.0	25.0
A/W=5	7.0	12.0	12.0
A/W=7	7.0	12.0	12.0
A/W=10	4.0	7.0	12.0

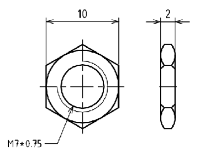
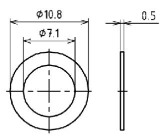
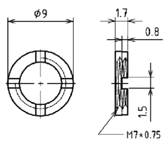
KQ-Shaft KR-Shaft(90°) — Detail dimensions



L	15.0	20.0	25.0	30.0
A/W=5	6.0	12.0	12.0	12.0
M/W=5	1.0	2.0	2.0	2.0
A/W=7	6.0	10.0	12.0	12.0
M/W=7	1.0	2.0	2.0	2.0
A/W=10	3.5	6.0	10.0	12.0
M/W=10	0.5	1.0	2.0	2.0

Annex size chart (optional)

Unit:mm

<table>
<tr><th colspan="2">M7</th><th>Turning brass nut</th></tr>
<tr><th>Nut</th><th>Gasket</th><th>M7</th></tr>
<tr><td></td><td></td><td></td></tr>
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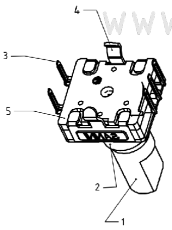
11mm metal shaft sealed encoder

Photo/Structure



No.	Cimponent	Material
1	Shaft	Aluminium alloy
2	Bushing	Zinc alloy
3	Terminal	Copper plating
4	Back cover	SPCC Sn
5	Noumenon	PBT

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

Player	√		Instrument equipment	√
Sound	√		Meter	√
Sound console	√		Navigation/Auto AV	√
Walkie-talkie	√		White goods	×
Medical equipment	√		Aoto	√

How to order

RE	11	B	1	6	M	-	FB	15	A	7.0	-	P	8	-	2	00
A	B	C	D	E	F		G	H	I	J		K	L		M	N

A:Rotary encoders
B:11mm Product series
C:Controlled code
D:Product fixed type
E:Product installation type(Pin change)
F:Switch type

Code	0	M	L
Type	None	Push:0.5mm travel	Push:1.5mm travel

G:Shaft type(see shaft specifications)
H:Shaft installation length(see dimensions L size)
I: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

J:Shaft of operation size length (Dimensions A size)
K:Phase difference code(Internal company controlled)

P:Incremental type positive encoders
C:Absolute type reverse encoders

L:Decomposition ability(Internal company controlled)
M:Detent code

Code	0	1	2
Detents No.	None	Detents=Pulser	Detents=Pulser x 2

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RE11□ □ □ □ □ ******	Tray	430*305*140	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	Rotary SW:16V DC 3A Push SW:5V DC 0.1A
Switch working algle	Rotary SW:50° Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T Push SW:S.P.D.T

Mechanical characteristics

Total rotation alangle	Incremental:360° Logic:300°±5°
Rotation torque	150~350gf.cm
Rotation stopper strength	3Kgf. min.
Shaft push-pull strength	8Kgf. max.
Shaft wobble	0.6*L/20mm p-p max.

Electrical characteristics

Retings power	0.025W
Insulation resistance	100mΩ min.250V DC.
Voltage proof	300V AC for 1 minute

Durability

Operating life without load	20, 000cycles 100mΩ max.

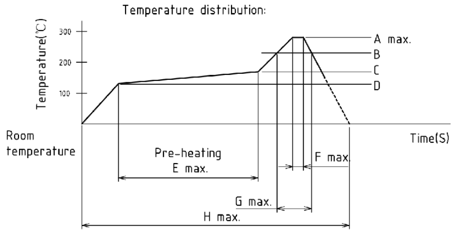
Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution

Temperature distribution:

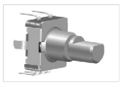
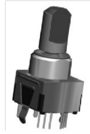


A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RE11*********.

11mm metal shaft sealed encoder

Series		RE11311M	RE112A1M	RE11J11M	RE11E01L	RM11B16S	
Photo							
Output		Incremental	Incremental	Incremental	Incremental	Logic	
Terminal mounting		Vertical type	Horizontal type	Vertical type	Vertical type	Vertical type	
Shaft material		Metal shaft	Metal shaft	Metal shaft	Metal shaft	Metal shaft	
Fixing method of bushing		Screw	Screw	Screw	Screw	Screw	
Rotary angle		360°	360°	360°	360°	360°	
Operating temperature range		-40℃ to +85℃					
Switch performance	Circuit number		PUSH	PUSH			
	Rated power		0.1A 5V DC	0.1A 5V DC			
	Switching torque		500±200gf.cm	500±200gf.cm			
	Switching angle		0.5±0.3	0.5±0.3/1.5±0.5			
	Operating life without load		100. 000cycles 100mΩ max	100. 000cycles 100mΩ max			
	Operating life with load load:as rating		100. 000cycles 200mΩ max	100. 000cycles 200mΩ max			
	Initial contact resistance		100mΩ max	100mΩ max			
	Insulation resistance		100mΩ min.250V DC	100mΩ min.250V DC			
	Voltage proof		300V AC for 1 minute	300V AC for 1 minute			
Electrical performance	Number of pulse/ Number of detent	10/20	10/20	16/16	15/30	16/16	16/16
	Features	With push switch &rotay switch	With push switch &rotay switch	With push switch			
	Insulation resistance	100mΩ min.250V DC					
	Voltage proof	300V AC for 1 minute					
	Center-taps	With	With	With	Without	Without	Without
Mechanical performance	Detent	20	20	30	16	16	16
	Stopper strength	Zinc alloy：3Kgf.max/Aluminum：3.5Kgf.max/Brass：4.0Kgf.max/Stainless steel：5.0Kgf.max “※”					
	Push-pull strength	8Kgf.max					
	Rotational torque	20～200gf.cm CC:click torque:60～400gf.cm					
	Vibration	10 to 55 to 10Hz/min.the amplitude is 1.5mm for all the frequencies. in the 3 direction of X.Y and Z and for 2 hours respectively					
Environmental performance	Cold	-40℃±2℃for 96h/-40℃±2℃for 96h					-10℃±2℃ for 96h
	Dry heat	85℃±2℃for 96h/85℃±2℃for 96h					70℃±2℃ for 96h
	Damp heat	+40℃±2℃，90 to 95%RH for 96h					
Welding heat resistance	Reference for hand soldering	350℃±10℃/3^{+1}_{0}S					
	Reference for dip soldering	260℃±5℃/10±1S					
	Reflow soldering condition	※	※	※	※	※	※
Life cycle (availability)		3	3	3	3	3	3
Page		3	3	5	5	5	5

Notes

- Please with “※” Standard Specification for the representation of choice.
- Please with “--” refrain from using

Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches

12/16mm insulated shaft sealed encoder

Photo/Structure

Features

- RoHS compliant
- Seal type
- Small volume
- Structural diversification
- High Quality

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	×		White goods	×
	Medical equipment	√		Aoto	√

How to order

RE	12	1	1	2	M	-	FB	15	B	7.0	-	P	24	-	1	00
A	B	C	D	E	F		G	H	I	J		K	L		M	N

A:Rotary encoders
B:12mm Product series
C:Controlled code
D:Product fixed type
E:Product installation type(Pin change)
F:Switch type

Code	0	M	L
Type	None	Push:0.5mm travel	Push:1.5mm travel

G:Shaft type(see shaft specifications)
H:Shaft installation length(see dimensions L size)
I: Shaft materials

Code	A	C	D	G
Materials	Aluminium alloy	Copper alloy	Zinc alloy	Stainless steel

J:Shaft of operation size length (Dimensions A size)
K:Phase difference code(Internal company controlled)

P:Incremental type positive encoders
C:Absolute type reverse encoders

L:Decomposition ability(Internal company controlled)
M:Detent code

Code	0	1	2
Detents No.	None	Detents=Pulser	Detents=Pulser x 2

N:Special marks company conrtolld

Packing Specifications

Products No.	Manner of packing	Export package measurements（mm）	Number of packages（pcs.）
RE12□ □ □ □ □ ******	Tray	430*305*140	2, 000

Switch characteristics

Switch contact resistance	100mΩ max.
Switch ratings power	Rotary SW:16V DC 3A　Push SW:5V DC 0.1A
Switch working algle	Rotary SW:50°　Push SW:0.5mm/1.5mm
Switch working torque	Rotary SW:150-450gf.cm Push SW:200-1000gf.cm
Switch circuit	Rotaty SW:S.P.S.T　Push SW:S.P.D.T

Mechanical characteristics

Total rotation alangle	Incremental:360°
Rotation torque	150～350gf.cm
Rotation stopper strength	3Kgf. min.
Shaft push-pull strength	8Kgf. max.
Shaft wobble	0.6*L/20mm p-p max.

Electrical characteristics

Retings power	0.025W
Insulation resistance	100mΩ min.250V DC.
Voltage proof	300V AC for 1 minute

Durability

Operating life without load	20，000cycles 100mΩ max.

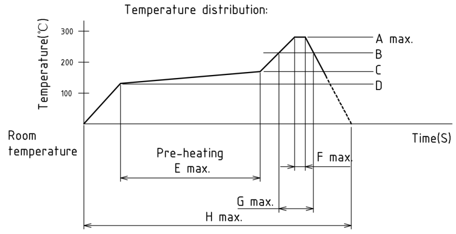
Environmental performance

Cold	-40℃±2℃　for 96h
Dry heat	85℃±2℃　for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution

Temperature distribution:



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

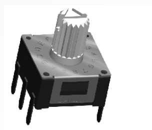
Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RE12*********.

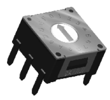
SANNI

Tiny /specialized encoder

RE7010



RE7012



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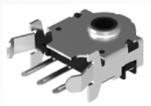
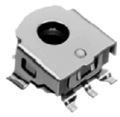
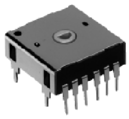


RE5E110



RE5E020

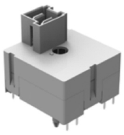
RE5E010



RE180020

RE18A020

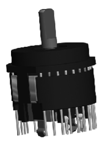
RD20B010



RP30A010

RP24A00L

RD20B01M

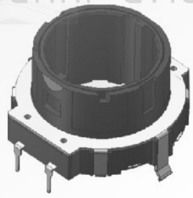


RD20B01D

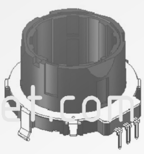
SANNI

Ring type encoder

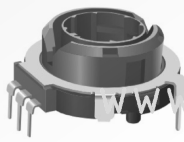
Rotary Potentiometers
Ring Potentiometers
Precision Potentiometers
Trimming Potentiometers
Slide Potentiometers
Resistance Sensors
Rotary Encoders
Tiny/Special Encoders
Ring Encoders
Rotary Switches
Foot Switches
Special Switches



RE200020

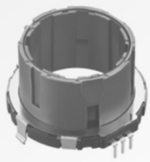


RE280020

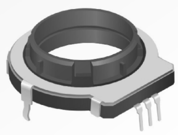


RE220020

RE210020



RE35A000



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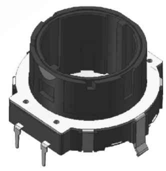
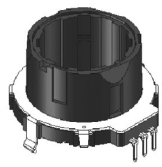


RE280220



RE280120

RE35AH10

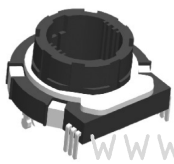
RE35H000

RE35B020

RE35A010

RE60A000

RE50A000

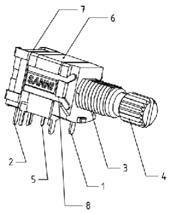


RE450020

RE400020

Photo/Structure





No.	Cimponent	Material
1	Fixed terminal	SPCC Sn
2	Push terminal	Yellow Cu
3	Bushing	Zinc alloy
4	Shaft	Aluminium alloy
5	Terminal	Yellow Cu
6	Noumenon	PBT
7	SW noumenon	PBT
8	Bracket	SPCC Sn

Features

- RoHS compliant
- Seal type
- A variety of switch function selection
- Gear clear
- Horizontal type

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	√
	Walkie-talkie	√		White goods	√
	Medical equipment	√		Aoto	√

How to order

RS	10	1	2	1	-	2	4	-	FB	15	A	7.0	-	00
A	B	C	D	E		F	G		H	I	J	K		L

A:Rotary switch
B:Size and shape
C:Model series
D:Product fixed type
E:Product feets type(Figure H size)
F:Line terminal number

Code	1	2
Contact	1	2

G:Switch gear number see "Standard Circuit Diagram"
H:Shaft type(see note 1)
I:Shaft length Product Dimensions(L)position(see note 1)
J:Shaft marerials and color

Code	A	C
Materials	Aluminium alloy	Copper alloy

K:Shaft of operation (A) length position(see note 1)
L:Internal code

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RS101□1******	Tray	400*270*180	1, 000
PS101□1******	Tray	400*270*180	1, 000
PS101□1M******	Tray	420*270*180	1, 000

Mechanical characteristics

Total rotation alangle	N*30° N=2/3/4/5/6 N:Gear
	PS101:360°
Switching angle	RS101:30°±3° PS101:18°±2°
Rotation torque	40±15mN.m
Rotation stopper srtength	Min:5Kgf
Shaft push-pull strength	MIN:8Kgf
Shaft wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating (max.) /(min.) (Resistive load)	0.1A 16V DC/50uA 3V DC
Contact resistance(Initial/After operating life)	100mΩ max.
Voltage proof	100V AC for 1 minute
Insulation resistance	100mΩ min.100V DC.

Durability

Operating life without load	10，000cycles 100mΩ max.
Operating life with load Load:as rating	10，000cycles 150mΩ max.

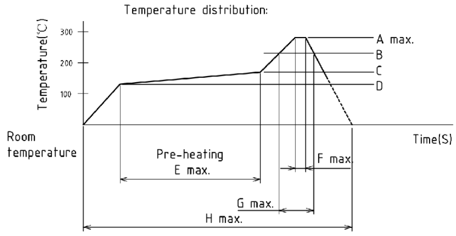
Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution

Temperature distribution:

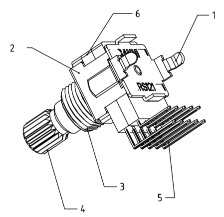


A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RS10121****** /PS10121******
PS10121M******

Photo/Structure



No.	Cimponent	Material
1	Fixed terminal	SPCC Sn
2	Bracket	SPCC Sn
3	Bushing	Zinc alloy
4	Shaft	Aluminium alloy
5	Terminal	Yellow Cu
6	Noumenon	PBT

Features

- RoHS compliant
- Seal type
- A variety of switch function selection
- Gear clear
- Horizontal type

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	√		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	√
	Medical equipment	√		Aoto	√

How to order

RS	12	1	A	1	5	-	2	4	-	FB	15	A	7.0	-	00
A	B	C	D	E	F		G	H		I	J	K	L		M

A:Rotary switch

B:Size and shape

C:Model series

D:Product fixed type

E:Product feets type(Figure H size)

F:A number of foot

G:Line terminal number

Code	1	2
Contact	1	2

H:Switch gear number see “Standard Circuit Diagram”

I:Shaft type(see note 1)

J:Shaft length Product Dimensions(L)position(see note 1)

K:Shaft marerials and color

Code	A	C
Materials	Aluminium alloy	Copper alloy

L:Shaft of operation (A) length position(see note 1)

M:Internal code

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RS121□□□******	Tray	400*270*180	1, 000
RS12B□□******	Tray	506*455*147	2, 000

Mechanical characteristics

Total rotation alangle	RS121:30°±3°
	RS12B:40°±3°
Rotation torque	30±15mN.m
Rotation stopper srtength	Min:5Kgf
Shaft push-pull strength	MIN:8Kgf
Shaft wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating (max.) /(min.) (Resistive load)	0.1A 16V DC/50uA 3V DC
Contact resistance(Initial/After operating life)	100mΩ max.
Voltage proof	100V AC for 1 minute
Insulation resistance	100mΩ min.100V DC.

Durability

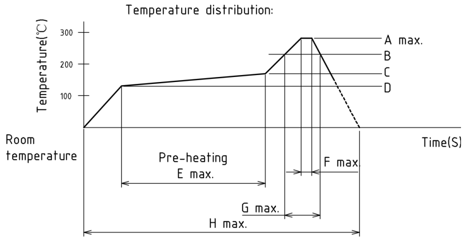
Operating life without load	10，000cycles 100mΩ max.
Operating life with load Load:as rating	10，000cycles 150mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflow
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

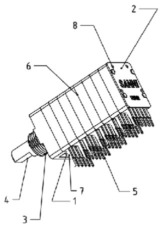
Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RS121A15****** /RS12B00******

16mm sealed hand switch

Photo/Structure





No.	Cimponent	Material
1	Steel ball	SUS
2	Back cover	SPCC Sn
3	Bushing	Zinc alloy
4	Shaft	Aluminium alloy
5	Terminal	Yellow Cu
6	Noumenon	PBT
7	Shrapnel	SUS
8	Rivet	Copper

Features

- RoHS compliant
- Seal type
- Assemble multiple line
- Gear clear
- Horizontal type

Use

	Player	√		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	√		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	√
	Medical equipment	×		Aoto	×

How to order

RS	16	1	1	1	-	8	4	-	KB	15	A	7.0	-	00
A	B	C	D	E		F	G		H	I	J	K		L

A:Rotary switch
B:Size and shape
C:Model series
D:Product fixed type
E:Product feets type(Figure H size)
F:Line number see "Standard Circuit Diagram"

Code	2	4	6	8	0
Layers	2	4	6	8	10

G:Switch gear number see "Standard Circuit Diagram"
H:Shaft type(see note 1)
I:Shaft length Product Dimensions(L)position(see note 1)
J:Shaft marerials and color

Code	A	C
Materials	Aluminium alloy	Copper alloy

K:Shaft of operation (A) length position(see note 1)
L:Internal code

Packing Specifications

Products No.	Manner of packing	Expert package measurements (mm)	Number of packages (pcs.)	Explain
RS1611□******	Tray	430*250*220	1, 000	2 layer
RS1611□******	Tray	430*250*220	800	4 layer
RS1611□******	Tray	430*250*220	600	6 layer
RS1611□******	Tray	430*250*220	400	8 layer

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RS161******

Mechanical characteristics

Total rotation alangle	RS161:N*30° N=2/3/4/5/6/7 N:Gear
	RS162:N*45° N=2/3/4/5/6/7/8
Switching angle	30°±3°
	45°±3°
Rotation torque	40±15mN.m
Rotation stopper srtength	Min:5Kgf
Shaft push-pull strength	MIN:8Kgf
Shaft wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating (max.) / (min.) (Resistive load)	0.1A 16V DC/50uA 3V DC
Contact resistance(Initial/After operating life)	100mΩ max.
Voltage proof	100V AC for 1 minute
Insulation resistance	100mΩ min.100V DC.

Durability

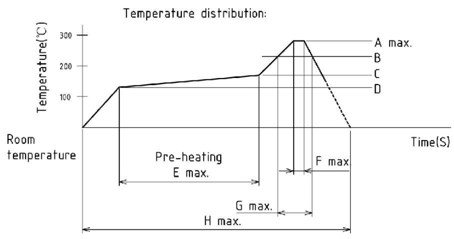
Operating life without load	10, 000cycles 100mΩ max.
Operating life with load Load:as rating	10, 000cycles 150mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

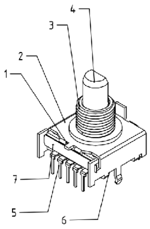
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Photo/Structure



No.	Cimponent	Material
1	Steel ball	SUS
2	Bracket	SPCC Sn
3	Bushing	Zinc alloy
4	Shaft	PC
5	Terminal	Yellow Cu
6	Noumenon	PBT
7	Shrapnel	SUS

Features

- RoHS compliant
- Seal type
- Insulating material
- Gear clear
- Vertical type

Use

Player	√		Instrument equipment	√
Sound	√		Meter	√
Sound console	√		Navigation/Auto AV	×
Walkie-talkie	×		White goods	√
Medical equipment	√		Aoto	√

How to order

RS	17	1	2	1	-	2	4	-	FB	15	A	7.0	-	00
A	B	C	D	E		F	G		H	I	J	K		L

A:Rotary switch
B:Size and shape
C:Model series
D:Product fixed type
E:Product feets type
F:Line number see "Standard Circuit Diagram"

Code	1	2	A	B
The rotation angle	30°	30°	45°	45°
Pole number	1	2	1	2

G:Switch gear number see "Standard Circuit Diagram"
H:Shaft type(see note 1)
I:Shaft length Product Dimensions(L)position(see note 1)
J:Shaft marerials and color

Code	B
Materials	Black plastic

K:Shaft of operation (A) length position(see note 1)
L:Internal code

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RS171□1******	Tray	400*270*270	1, 000

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RS17121******

Mechanical characteristics

Total rotation alangle	N*30° N=2/3/4/5/6/7/8/9N:Gear
	N*45° N=2/3/4/5/6 N:Gear
Switching angle	30°±2°/45°±3°
Rotation torque	40±15mN.m
Rotation stopper srtength	Min:5Kgf
Shaft push-pull strength	MIN:10Kgf
Shaft wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating (max.) / (min.) (Resistive load)	0.3A 16V DC/50uA 3V DC
Contact resistance(Initial/After operating life)	100mΩ max.
Voltage proof	100V AC for 1 minute
Insulation resistance	100mΩ min.100V DC.

Durability

Operating life without load	10, 000cycles 100mΩ max.
Operating life with load Load:as rating	10, 000cycles 150mΩ max.

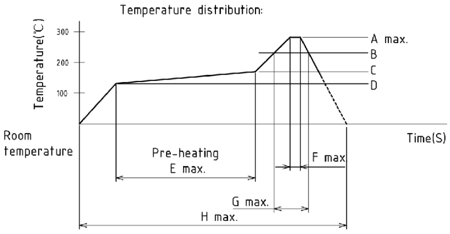
Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution

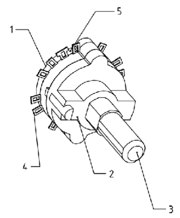
Temperature distribution:



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

19mm Sealed type 6-positions rotary band switch

Photo/Structure



No.	Cimponent	Material
1	Rear cover	SPCC Sn
2	Bushing	Zinc alloy
3	Shaft	Zinc alloy
4	Terminal	Yellow Cu
5	Noumenon	LCP

Features

- RoHS compliant
- Seal type
- Insulating material
- Gear clear
- Small volume Ø16mm

Use

	Player	×		Instrument equipment	√
	Sound	√		Meter	√
	Sound console	×		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	√
	Medical equipment	√		Aoto	×

How to order

RS	19	1	1	1	-	A	4	-	KQ	15	B	7.0	-	00
A	B	C	D	E		F	G		H	I	J	K		L

A:Rotary switch
B:Size and shape
C:Model series
D:Product fixed type
E:Product feets type
F:Line number see "Standard Circuit Diagram"
G:Switch gear number see "Standard Circuit Diagram"
H:Shaft type(see note 1)
I:Shaft length Product Dimensions(L)position(see note 1)
J:Shaft marerials and color

Code	B
Materials	Black plastic

K:Shaft of operation (A) length position(see note 1)
L:Internal code

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
RS19111******	Tray	369*349*367	600

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RS19111******

Mechanical characteristics

Total rotation alangle	N*30° N=2/3/4/5/6 N:Gear
Switching angle	30°±3°
Rotation torque	70±30mN.m
Rotation stopper srtength	Min:5Kgf
Shaft push-pull strength	MIN:10Kgf
Shaft wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating (max.) / (min.) (Resistive load)	0.15A 12V DC/50μA 3V DC
Contact resistance(Initial/After operating life)	50mΩ max.
Voltage proof	500V AC for 1 minute
Insulation resistance	100mΩ min.500V DC.

Durability

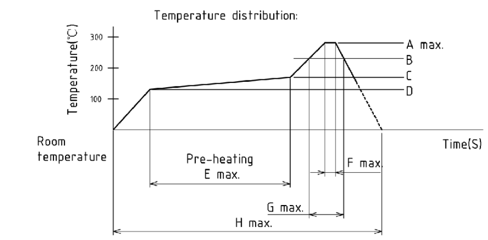
Operating life without load	10，000cycles 100mΩ max.
Operating life with load Load:as rating	10，000cycles 200mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

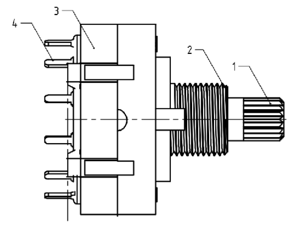
Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

26mm Sealed band switch

Photo/Structure



No.	Cimponent	Material
1	Shaft	PA66
2	Bushing	PA66
3	Noumenon	PA66
4	Terminal	Yellow Cu

Features

- RoHS compliant
- Seal type
- A variety of switch function selection
- Gear clear
- Horizontal type

Use

	Player	×		Instrument equipment	√
	Sound	√		Meter	×
	Sound console	×		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	√
	Medical equipment	√		Aoto	×

How to order

RS	26	6	1	1	-	A	4	-	TB	15	B	7.0	-	00
A	B	C	D	E		F	G		H	I	J	K		L

A:Rotary switch

B:Size and shape

C:Model series

D:Product fixed type

E:Product feets type

F:Line number see "Standard Circuit Diagram"

G:Switch gear number see "Standard Circuit Diagram"

H:Shaft type(see note 1)

I:Shaft length Product Dimensions(L)position(see note 1)

J:Shaft marerials and color

Code	B
Materials	Black plastic

K:Shaft of operation (A) length position(see note 1)

L:Internal code

Packing Specifications

Products No.	Manner of packing	Export package measurements（mm）	Number of packages（pcs.）
RS266******	Tray	400*230*180	1, 000

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:RS266******

Mechanical characteristics

Total rotation alangle	N=2/3/4/5/6/7/8/9/10/11/12 N:Gear
Switching angle	30°±2°
Rotation torque	50±20mN.m
Rotation stopper srtength	Min:4Kgf
Shaft push-pull strength	Min: 6Kgf
Shaft wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating（max.）/（min.）(Resistive load)	0.3A 16V DC/50uA 3V DC
Contact resistance(Initial/After operating life)	200mΩ max.
Voltage proof	500V AC for 1 minute
Insulation resistance	100mΩ min.500V DC.

Durability

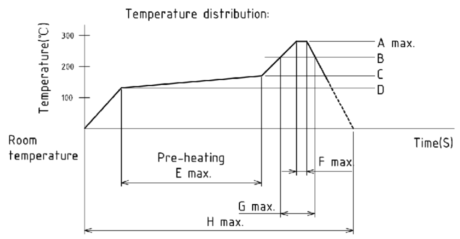
Operating life without load	15，000cycles 100mΩ max.
Operating life with load Load:as rating	10，000cycles 200mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

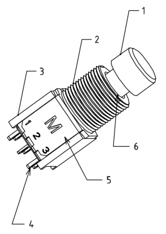
Welding heat resistance

Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

Photo/Structure



No.	Cimponent	Material
1	Key	Aluminium alloy
2	Bushing	Zinc alloy
3	Base	PA66
4	Terminal	Yellow Cu
5	Bracket	SPCC Sn
6	shaft	Copper alloy

Features

- RoHS compliant
- Seal type
- Foot switch
- High power switch
- Vertical type

Use

	Player	×		Instrument equipment	√
	Sound	×		Meter	×
	Sound console	√		Navigation/Auto AV	×
	Walkie-talkie	×		White goods	×
	Medical equipment	√		Aoto	×

How to order

SF	12	1	2	1	M	-	2	6	-	RO	20	D	5.0	-	00
A	B	C	D	E	F		G	H		I	J	K	L		M

A:Foot switch
B:Size and shape
C:Model series
D:Product fixed type
E:Product feets type
F:Switch type

Code	M	L
Type	Push-Free	Push-Push

G:Pin rows.
H:Pin number
I: Button shape
J:Kty length Product Dimensions(L)position(see note 1)
K:Key marerials and color

Code	A	C	D
Materials	Aluminium alloy	Copper alloy	Zinc alloy

L:Pressing stroke:(Tot.travel)
M:Internal code

Packing Specifications

Products No.	Manner of packing	Export package measurements (mm)	Number of packages (pcs.)
SF120□□□******	Bulk	400*320*100	1, 000

Notes

- Please with minimum packing unit(integer)times the N on orders.
- Order has to be marked special requirements.
- Shipping mark:SF12011M****** /SF17011L******

Mechanical characteristics

Rotation torque	M:1.7±0.7Kg.f
	L: 1.0±0.7Kg.f
Rotation stopper srtength	——————
Key push-pull strength	MIN:8Kgf
Key wobble	Max:0.6*L/20mm P-P
Terminal strength	5N for 1 minute

Electrical characteristics

Rating (max.) /(min.)(Resistive load)	6A 125V AC/250V AC 3A
Contact resistance(Initial/After operating life)	50mΩ max.
Voltage proof	1000V AC for 1 minute
Insulation resistance	100mΩ min.500V DC.

Durability

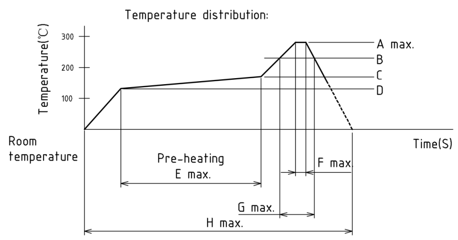
Operating life without load	M:20, 000cycles 50mΩ max.
	L: 10, 000cycles 50mΩ max.
Operating life with load Load:as rating	M:20, 000cycles 100mΩ max.
	L: 10, 000cycles 100mΩ max.

Environmental performance

Cold	-40℃±2℃ for 96h
Dry heat	85℃±2℃ for 96h
Damp heat	40±2℃, 90 to 95%RH for 96h

Welding heat resistance

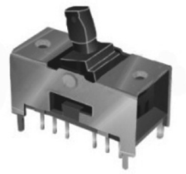
Reference for Hand Soldering	350±10℃/3+1/0s
Reference for Dip Soldering	260±5℃/10±1s
Reflow Soldering Condition	Temperature distribution



A	B	C	D	E	F	G	H	No.of reflows
260℃	230℃	180℃	150℃	2 min.	3s	40s	4 min.	2 time max

SANNI

Special switches



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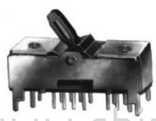

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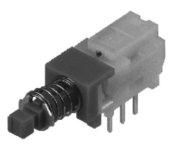
SP8001F



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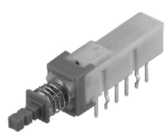


SP1001F

SKQM06B35H

RS32108

RS32108

SP7001G

SKQM06A35H

按照型号及应用检索
Retrieval according to the model and application .

按照相应产品体系表介绍我公司电子元器件产品。可根据产品详细型号对应其适用范围。
Introduce our product according to the product series. Customer can check the detailed part description to choose the needed parts.

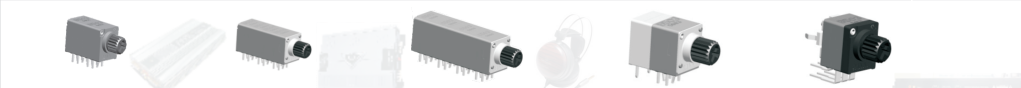
电位器 Potentiometers

旋转电位器 Rotary potentiometers

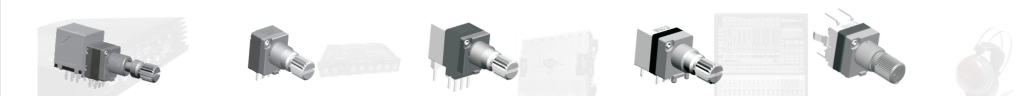
8型密封式金属轴电位器 8mm Metal shaft sealed potentiometer


RV854ANS RV8181NS RV8111NM RV8312NO RV8110FO

9型密封式绝缘轴电位器 9mm Insulated shaft sealed potentiometer


RV98P0B0 RV9415D0 RV9415FO RV9415GS RV98P2G0

9型密封式金属轴电位器 9mm Metal shaft sealed potentiometer


RV9110GT RV9110N0 RV9513GS RV9D11NS RV9E12NM

9型密封式带接钮锁定机构电位器 9mm Knob operating sealed potentiometer


RV9P10G0 RV9P12G0 RV9PA0NS RV9P10GQ

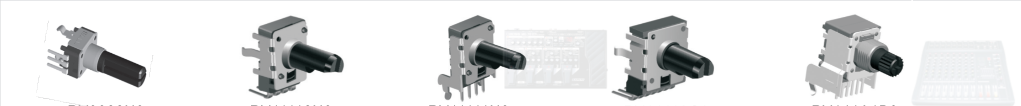
9型密封式双轴金属轴电位器 9mm Double metal shaft sealed potentiometer


RV9224G0 RV9224GS RV9217G0 RV9B01GM RV9B03GM

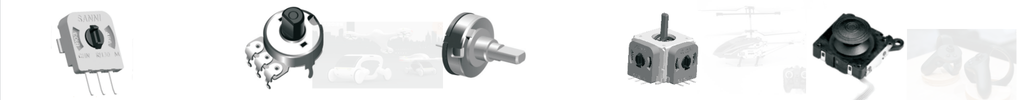
12/27型密封式金属轴/绝缘轴电位器 12/27mm Metal/insulated shaft sealed potentiometer


RV12422G0 RV12822G0 RV12822B0 RV27110G0 RV27110N0

9型/11型/14型标准式绝缘轴电位器 9/11/14mm Normalized insulated potentiometer


RV9022N0 RV11112N0 RV11111N0 RV14112G0 RV141A1B0

游戏机调节电位器 Play station adjusting potentiometer


RJ09001 RV9612N0 RV13011N0 RJ1302 RKJXY10

马达电位器 Motor potentiometer

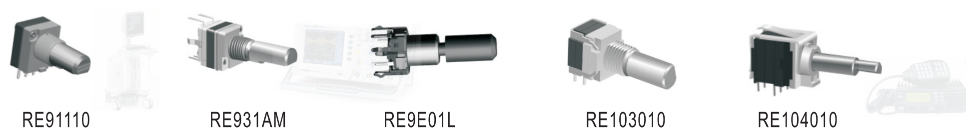

RM25812G0 RM25814B0

编码器 Encoders

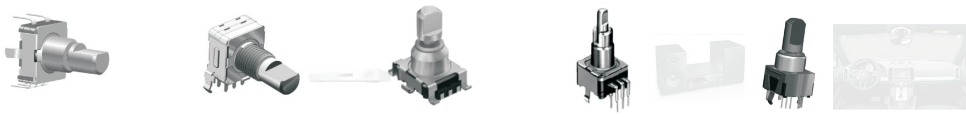
旋转编码器 Rotary encoders

系列名称 Series Name	页码 Page
产品代号及用途 Part # and description	

RE814A0 RE83120 RE814F0 RE8201N0 RE8203NS

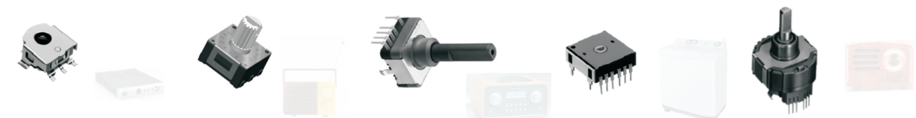


RE91110 RE931AM RE9E01L RE103010 RE104010



RE11301M RE11211M RE11J11M RE11E01L RM11B16S

RE121210 RE121220 RE12121M RE161210 RE16121M



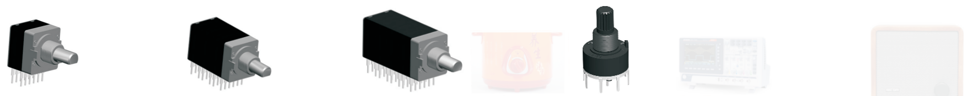
RE5E020 RE7010 RE18A020 RE180020 RD20B010

RE200020 RE210020 RE400020 RE50A000 RE60A00

波段开关 Switches

RS10120 RS10111 PS10120 PS10120M

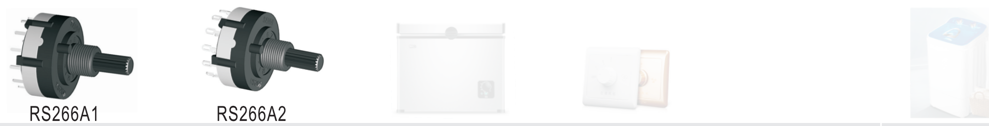
RS121AA5 RS121AB5 RS121AB7 RS121A35 RS121A37



RS16111-2 RS16111-6 RS16111-8 RS16211

RS17121

RS19111



RS266A1 RS266A2

SF12111M SF17011M SF12030F

SC1050F SP8001F SP1001F SP7001G RS32108