

# Attenuator Type-C

## Low contact resistance

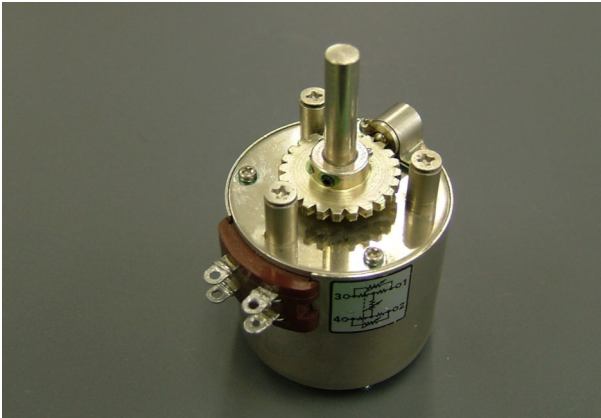
Au-plated contact materials.

## 4 types attenuation circuits

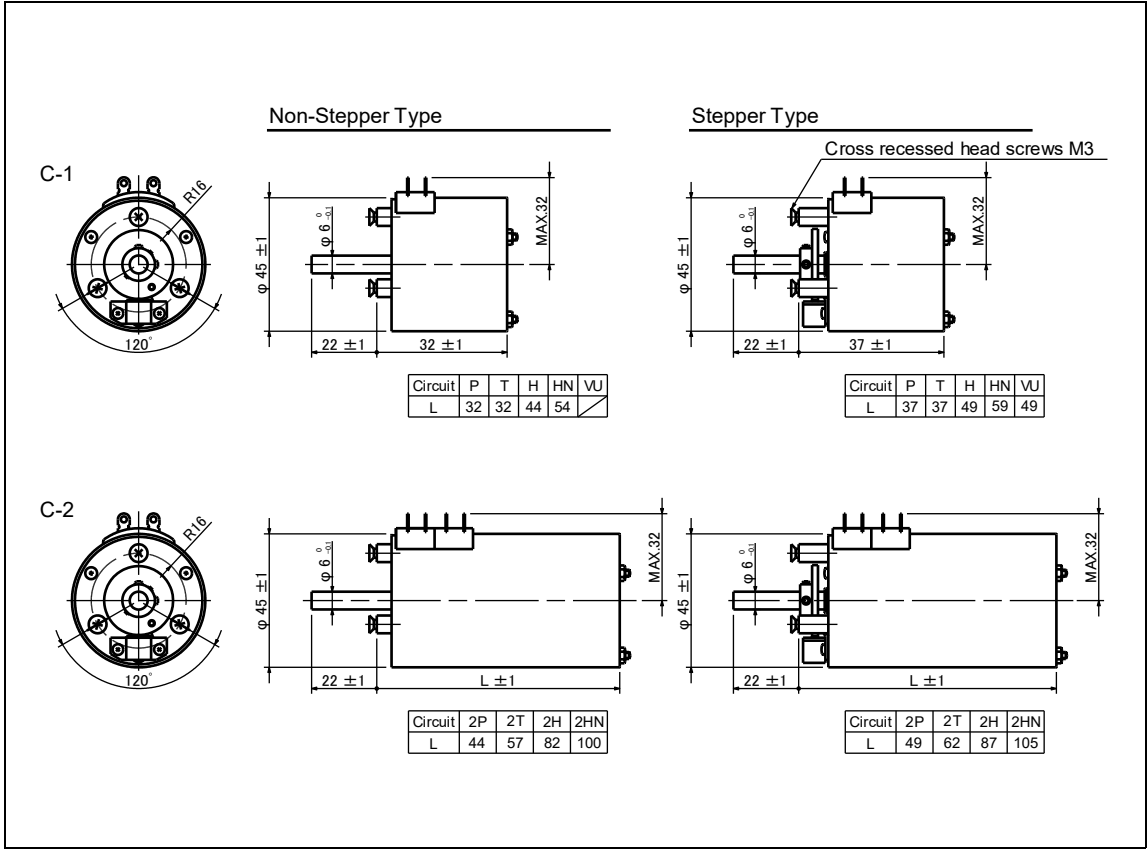
Potentiometer, B-T, B-H, B-HN

## High Accuracy

Used a highly precise resistor.



## Dimensions



The products and their specifications are subject to change without notice.  
TOKYO KO-ON DENPA CO., LTD. www.tkd-corp.com EDA-201506

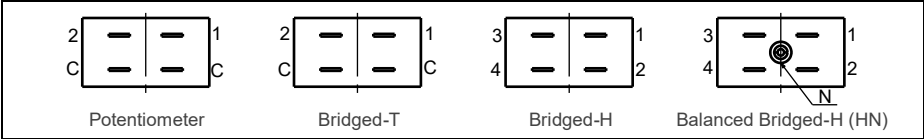
# ATTENUATOR

## Model number

**2** **P** **50** **C** **S** - **10kohm**  
\*A \*B Max attenuation Product type \*C Impedance

\*A Number of circuit  
\*B Circuit  
\*C Stepper Type  
**Blank**: single circuit, **2**: Dual circuits  
**P**: Potentiometer, **T**: Bridged-T, **H**: Bridged-H, **HN**: Balanced Bridged-H  
**Blank**: Non-stepper type (Without clicks), **S**: Stepper type (With clicks)  
\*Dimensions are different.

## Terminations



## Electrical specifications

Type-C			
Attenuation	BTS-50dB	0, 2, 4, ... (2dB step) ..., 30, 32, 34, 37, 42, 50, cut off	
	BTS-65dB	0, 1, 2, 3, ... (1dB step) ..., 24, 25.5, 27, 28.5, 30, 31.5, 33.5, 35.5, 37.5, 39.5, 42, 45, 48.5, 53, 58, 65, cut off	
Attenuation accuracy	Attenuation step	Error in step	Max. Attenuation
	0.5dB or less	Less than $\pm 0.05$	Less than $\pm 0.1$
	1~2dB	Less than $\pm 0.1$	Less than $\pm 0.2$
	3dB or more	Less than $\pm 0.2$	Less than $\pm 0.4$
Accuracy of Impedance	$\pm 2\%$ (Impedance 600ohm), $\pm 5\%$ (other Impedance)		
Cut off (15kHz)	Cut off	Max. Attenuation	Impedance
	80dB Min.	65dB	600ohm
	70dB Min.	50dB	7kohm
	58dB Min.	20dB	7kohm
Voltage proof	1 Min. at AC500V		
Insulation resistance	100Mohm or more at DC500V		
Input level	Max. 0.3W		
Rotational life	30,000 Cycles Min. (18cycles/min, Insertion loss: 1dB or less)		

## Mechanical specifications

Type-C		
Operating angle	(Step angle) x (Number of steps)	$\pm 2$ degrees
Strength of Nut-Attached	100Ncm	
Attached Parts	M3 screw (Length: Panel thickness + 3~5mm)	
Stopper strength	50Ncm	
Push-pull strength	50N	

## General specifications

Type-C	
Temp.range	-10 to +60 degrees C (Operating), -15 to +65 degrees C (Storage)
Relative humidity	80%RH (No condensation)

## Note

\* Solder heat resistance: 350degrees C max, 5sec max, to twice. (Manual soldering only)  
\* The solder please use the thing of the same composition. (Solder for wire lapping sticks to a terminal.)  
Use solder: SN100C (Sn-0.7Cu-0.05Ni-Ge) NIHON SUPERIOR CO.,LTD.

\* Cannot use this product for the signal line using phantom-48V.  
\* This product is an attenuator of the types to change resistance. Therefore, a switching noise may occur.



## STANDARD LINEUPS

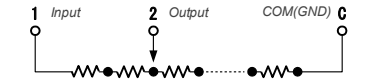
Order Number	Model number	Circuit	Max. Attenuation	Attenuation types	Impedance	Frequency Range	1step angle	Total Number of steps	Stepper option	Cut off	Direction of attenuation	Dim.
C-P001	P50CS-1kohm	P	50dB	BTS-50dB	1kohm	DC~100kHz	15degs	21	With	With	CCW	C-1
C-P002	P50CS-50kohm	P	50dB	BTS-50dB	50kohm	DC~50kHz	15degs	21	With	With	CCW	C-1
C-P003	P50CS-250kohm	P	50dB	BTS-50dB	250kohm	DC~15kHz	15degs	21	With	With	CCW	C-1
C-P004	P50CS-10kohm	P	50dB	BTS-50dB	10kohm	DC~50kHz	15degs	21	With	With	CCW	C-1
C-P005	P50C-10kohm	P	50dB	BTS-50dB	10kohm	DC~50kHz	15degs	21	-	With	CCW	C-1
C-P006	P65CS-100kohm	P	65dB	BTS-65dB	100kohm	DC~20kHz	8degs	40	With	With	CCW	C-1
C-P007	P65CS-250kohm	P	65dB	BTS-65dB	250kohm	DC~15kHz	8degs	40	With	With	CCW	C-1
C-T001	T10CS-600ohm	T	10dB	1dB x 10	600ohm	DC~500kHz	15degs	10	With	-	CCW	C-1
C-T002	T10CS-600ohm	T	10dB	1dB x 10	600ohm	DC~500kHz	30degs	10	With	-	CCW	C-1
C-T003	T20CS-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	21	With	With	CCW	C-1
C-T004	T20C-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	21	-	With	CCW	C-1
C-T005	T20CS-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	20	With	-	CW	C-1
C-T006	T20C-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	20	-	-	CW	C-1
C-T007	T21CS-600ohm	T	21dB	1dB x 21	600ohm	DC~200kHz	15degs	21	With	-	CCW	C-1
C-T008	T21C-600ohm	T	21dB	1dB x 21	600ohm	DC~200kHz	15degs	21	-	-	CCW	C-1
C-T009	-	-	-	-	-	-	-	-	-	-	-	-
C-T010	T40CS-600ohm	T	40dB	2dB x 20	600ohm	DC~20kHz	15degs	21	With	With	CCW	C-1
C-T011	T40C-600ohm	T	40dB	2dB x 20	600ohm	DC~20kHz	15degs	21	-	With	CCW	C-1
C-T012	T42CS-600ohm	T	42dB	2dB x 21	600ohm	DC~150kHz	15degs	21	With	-	CCW	C-1
C-T013	T42C-600ohm	T	42dB	2dB x 21	600ohm	DC~150kHz	15degs	21	-	-	CCW	C-1
C-T014	T50CS-3kohm	T	50dB	BTS-50dB	3kohm	DC~15kHz	15degs	21	With	With	CCW	C-1
C-T015	T50C-3kohm	T	50dB	BTS-50dB	3kohm	DC~15kHz	15degs	21	-	With	CCW	C-1
C-T016	T50CS-600ohm	T	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	C-1
C-T017	T50C-600ohm	T	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	C-1
C-T018	T50CS-600ohm	T	50dB	5dB x 10	600ohm	DC~100kHz	30degs	10	With	-	CCW	C-1
C-T019	T50CS-600ohm	T	50dB	10dB x 5	600ohm	DC~100kHz	30degs	5	With	-	CCW	C-1
C-T020	T65CS-600ohm	T	65dB	BTS-65dB	600ohm	DC~20kHz	8degs	40	With	With	CCW	C-1
C-T021	T65C-600ohm	T	65dB	BTS-65dB	600ohm	DC~20kHz	8degs	40	-	With	CCW	C-1
C-T022	2T50CS-600ohm	T x 2	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	C-2
C-T023	2T50C-600ohm	T x 2	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	C-2
C-T024	2T65CS-600ohm	T x 2	65dB	BTS-65dB	600ohm	DC~20kHz	8degs	40	With	With	CCW	C-2
C-T025	2T65C-600ohm	T x 2	65dB	BTS-65dB	600ohm	DC~20kHz	8degs	40	-	With	CCW	C-2
C-T026	-	-	-	-	-	-	-	-	-	-	-	-
C-T027	-	-	-	-	-	-	-	-	-	-	-	-
C-H001	H50CS-600ohm	H	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	C-1
C-H002	H50C-600ohm	H	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	C-1
C-HN001	HN50CS-600ohm	HN	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	C-1
C-HN002	HN50C-600ohm	HN	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	C-1
C-HN003	HN65CS-600ohm	HN	65dB	BTS-65dB	600ohm	DC~20kHz	8degs	40	With	With	CCW	C-1
C-HN004	HN65C-600ohm	HN	65dB	BTS-65dB	600ohm	DC~20kHz	8degs	40	-	With	CCW	C-1

## Specification Information

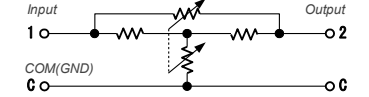
Order Number Standard products with a simple number.

Circuit

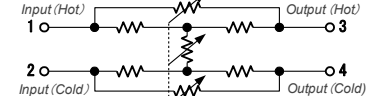
POTENTIOMETER  
Unbalanced circuit



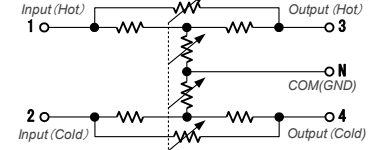
BRIDGED-T  
Insertion loss: 0dB  
Constant impedance  
Unbalanced circuit



BRIDGED-H  
Insertion loss: 0dB  
Constant impedance  
Balanced circuit



BRIDGED-HN  
Insertion loss: 0dB  
Constant impedance  
Balanced circuit  
With Ground point



Max. Attenuation Maximum attenuation without Cut off point.

Attenuation types BTS-50dB, BTS-65dB: Look at specifications.

Ex) "1dBx10": 0, 1, ..., (1dB step) ..., 9, 10dB  
Total resistance (Potentiometer), Input / Output Impedance (other circuits)

Impedance

Frequency Range Operating frequency range.

1step angle The angle to the next decrement point.

Total rotational angle = (Number of steps) x (1step angle)

Total Number of steps Determined by the Circuit and Attenuation types.

Total number of contacts = Total number of steps + 1

Stepper option With: With Clicks

Cut off Cut off attenuation.

Please see the cut-off attenuation specification.

Direction of attenuation CCW: Attenuation decreases with the clockwise (Up to Signal level).

CW: Attenuation increases with the clockwise (Down to Signal level).

Dimension Please see the Dimension and Dimension number.

## Method of ordering

1. Can estimate the standard lineup product only with the order number.

2. In the case of the specifications product which a standard lineup does not have, there are two ways of estimate methods.

a: Method to change a part of the standard lineup specifications

a-1: Please inform it of the order number and specifications change point.

Modifiable point: Cut off (With / Without), Stepper option (With / Without),

Impedance, Control shaft length

a-2: Examine production possibility with designated specifications before an estimate.

a-3: Inform it of the model number and an estimate.

b: Special order specifications

b-1: Please inform it of specifications of the hope.

(Cannot change the basic electric specifications such as input levels.)

Modifiable point: Cut off (With / Without), Stepper option (With / Without), Impedance,

Control shaft length, Circuit, Max.Attenuation, Attenuation type

b-2: Examine production possibility with designated specifications before an estimate.

b-3: Inform it of the model number and an estimate.

\*The standard lineups are added or removed without notice.