

Attenuator Type-D

Low contact resistance

Au-plated contact materials.

4 types attenuation circuits

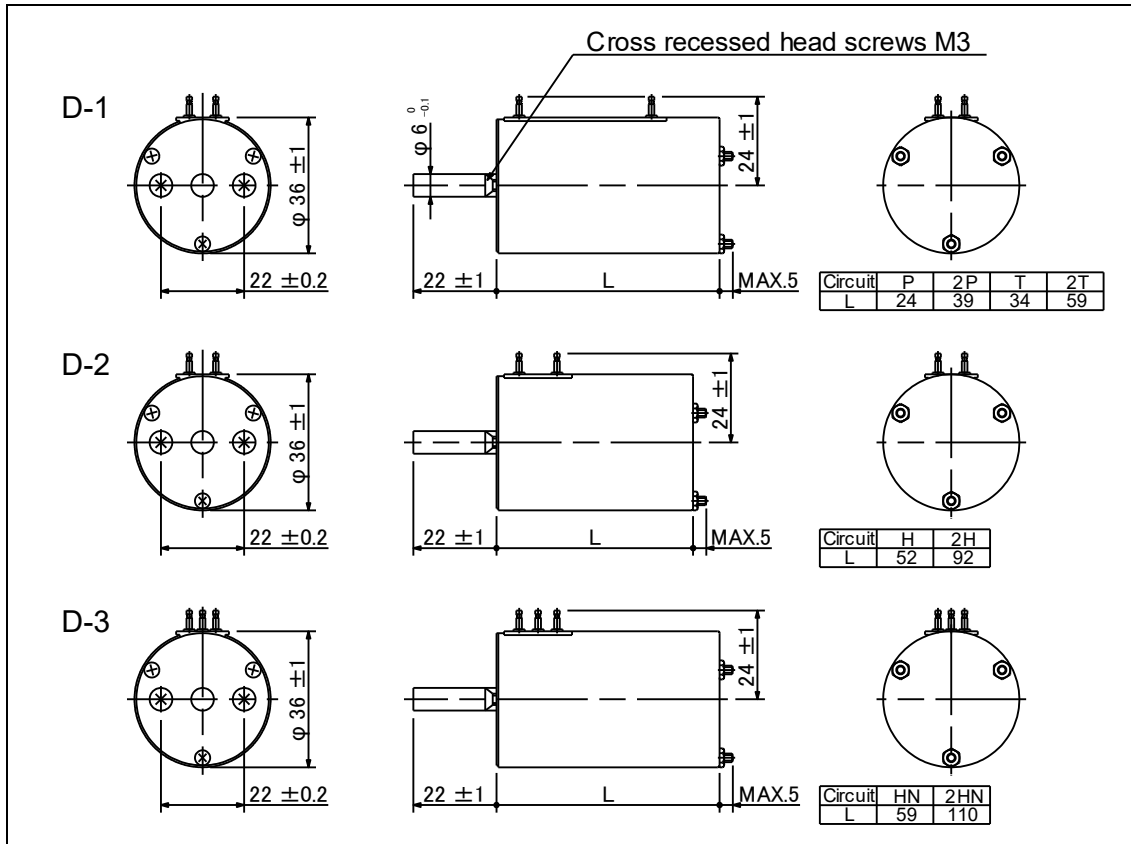
Potentiometer, B-T, B-H, B-HN

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-202102

ATTENUATOR

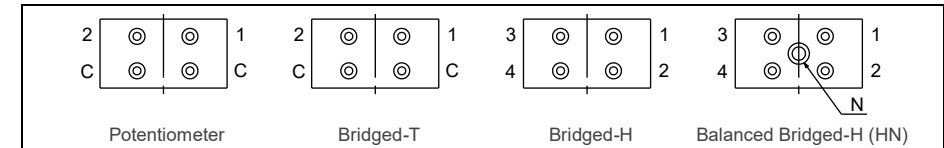
Model number

2 **P** **50** **D** **S** - **10kohm**

*A Max attenuation *B Product type *C Impedance

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

Terminations



Electrical specifications

Type-D			
Attenuation	BTS-50dB 0, 2, 4, ... (2dB step) ..., 30, 32, 34, 37, 42, 50, cut off		
Attenuation accuracy	Attenuation step	Error in step	Max. Attenuation
	0.5dB or less	Less than ± 0.05	Less than ± 0.1
	1~2dB	Less than ± 0.1	Less than ± 0.2
Accuracy of Impedance	3dB or more	Less than ± 0.2	Less than ± 0.4
	$\pm 2\%$ (Impedance 600ohm), $\pm 5\%$ (other Impedance)		
Cut off (15kHz)	Cut off	Max. Attenuation	Impedance
	80dB Min.	50dB	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-D	
Operating angle	(Step angle) x (Number of steps) ± 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-D	
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.
D-P001	P20DS-50kohm	P	20dB	1dB x 20	50kohm	DC~50kHz	15degs	21	With	With	CCW	D-1
D-P002	P20D-50kohm	P	20dB	1dB x 20	50kohm	DC~50kHz	15degs	21	-	With	CCW	D-1
D-P003	P42DS-50kohm	P	42dB	2dB x 21	50kohm	DC~50kHz	15degs	21	With	-	CCW	D-1
D-P004	P42D-50kohm	P	42dB	2dB x 21	50kohm	DC~50kHz	15degs	21	-	-	CCW	D-1
D-P005	P42DS-250kohm	P	42dB	2dB x 21	250kohm	DC~15kHz	15degs	21	With	-	CCW	D-1
D-P006	P42D-250kohm	P	42dB	2dB x 21	250kohm	DC~15kHz	15degs	21	-	-	CCW	D-1
D-P007	P50DS-50kohm	P	50dB	BTS-50dB	50kohm	DC~50kHz	15degs	21	With	With	CCW	D-1
D-P008	P50D-50kohm	P	50dB	BTS-50dB	50kohm	DC~50kHz	15degs	21	-	With	CCW	D-1
D-P009	P50DS-1kohm	P	50dB	BTS-50dB	1kohm	DC~100kHz	15degs	21	With	With	CCW	D-1
D-P010	P50D-1kohm	P	50dB	BTS-50dB	1kohm	DC~100kHz	15degs	21	-	With	CCW	D-1
D-P011	P50DS-10kohm	P	50dB	BTS-50dB	10kohm	DC~50kHz	15degs	21	With	With	CCW	D-1
D-P012	P50D-10kohm	P	50dB	BTS-50dB	10kohm	DC~50kHz	15degs	21	-	With	CCW	D-1
D-P013	P50DS-100kohm	P	50dB	BTS-50dB	100kohm	DC~20kHz	15degs	21	With	With	CCW	D-1
D-P014	P50D-100kohm	P	50dB	BTS-50dB	100kohm	DC~20kHz	15degs	21	-	With	CCW	D-1
D-T001	T20DS-600ohm	T	20dB	1dB x 20	600ohm	DC~20kHz	15degs	21	With	With	CCW	D-1
D-T002	T20D-600ohm	T	20dB	1dB x 20	600ohm	DC~20kHz	15degs	21	-	With	CCW	D-1
D-T003	T20DS-600ohm	T	20dB	1dB x 20	600ohm	DC~20kHz	15degs	21	With	With	CW	D-1
D-T004	T20D-600ohm	T	20dB	1dB x 20	600ohm	DC~20kHz	15degs	21	-	With	CW	D-1
D-T005	T20DS-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	20	With	-	CCW	D-1
D-T006	T20D-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	20	-	-	CCW	D-1
D-T007	T40DS-600ohm	T	40dB	2dB x 20	600ohm	DC~20kHz	15degs	21	With	With	CCW	D-1
D-T008	T40D-600ohm	T	40dB	2dB x 20	600ohm	DC~20kHz	15degs	21	-	With	CCW	D-1
D-T009	T40DS-600ohm	T	40dB	2dB x 20	600ohm	DC~150kHz	15degs	20	With	-	CCW	D-1
D-T010	T40D-600ohm	T	40dB	2dB x 20	600ohm	DC~150kHz	15degs	20	-	-	CCW	D-1
D-T011	T50DS-3kohm	T	50dB	BTS-50dB	3kohm	DC~15kHz	15degs	21	With	With	CCW	D-1
D-T012	T50D-3kohm	T	50dB	BTS-50dB	3kohm	DC~15kHz	15degs	21	-	With	CCW	D-1
D-T013	T50DS-7kohm	T	50dB	BTS-50dB	7kohm	DC~15kHz	15degs	21	With	With	CCW	D-1
D-T014	T50D-7kohm	T	50dB	BTS-50dB	7kohm	DC~15kHz	15degs	21	-	With	CCW	D-1
D-T015	T50DS-600ohm	T	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	D-1
D-T016	T50D-600ohm	T	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	D-1
D-T017	T50DS-600ohm	T	50dB	5dB x 10	600ohm	DC~20kHz	30degs	10	With	-	CCW	D-1
D-T018	T10DS-600ohm	T	10dB	1dB x 10	600ohm	DC~500kHz	15degs	10	With	-	CCW	D-1
D-T019	T10D-600ohm	T	10dB	1dB x 10	600ohm	DC~500kHz	30degs	10	With	-	CCW	D-1
D-T020	T30DS-600ohm	T	30dB	3dB x 10	600ohm	DC~150kHz	15degs	10	With	-	CCW	D-1
D-T021	T30D-600ohm	T	30dB	3dB x 10	600ohm	DC~150kHz	30degs	10	With	-	CCW	D-1
D-T022	2T50DS-600ohm	T x 2	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	D-1
D-T023	2T50D-600ohm	T x 2	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	D-1
D-H001	H50DS-600ohm	H	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	D-2
D-H002	H50D-600ohm	H	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	D-2
D-HN001	HN50DS-600ohm	HN	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	D-3
D-HN002	HN50D-600ohm	HN	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	D-3

Specification Information

Order Number

Circuit

Standard products with a simple number.

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

The diagrams illustrate four circuit types: 1. Potentiometer (Unbalanced): A single resistor with a wiper, Input (1), Output (2), and COM(GND) (C). 2. Bridged-T (Unbalanced): Two resistors in series with a wiper, Input (1), Output (2), and COM(GND) (C). 3. Bridged-H (Balanced): Two resistors in series with a wiper, Input (Hot) (1), Output (Hot) (3), Input (Cold) (2), and Output (Cold) (4). 4. Bridged-HN (Balanced): Two resistors in series with a wiper, Input (Hot) (1), Output (Hot) (3), Input (Cold) (2), and Output (Cold) (4), with a ground point (N).

- Max. Attenuation

Attenuation types

Impedance

Frequency Range

1step angle

Total Number of steps

Stepper option

Cut off

Direction of attenuation

Dimension

Maximum attenuation without Cut off point.

BTS-50dB: Look at specifications.
Ex) "1dBx10": 0, 1, ... (1dB step) ..., 9, 10dB
Total resistance (Potentiometer), Input / Output Impedance (other circuits)

Operating frequency range.

The angle to the next decrement point.
Total rotational angle = (Number of steps) x (1step angle)

Determined by the Circuit and Attenuation types.
Total number of contacts = Total number of steps + 1
With: With Clicks

Cut off attenuation.
Please see the cut-off attenuation specification.

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

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.