Attenuator Type-E

Low contact resistance

Au-plated contact materials.

3 types attenuation circuits
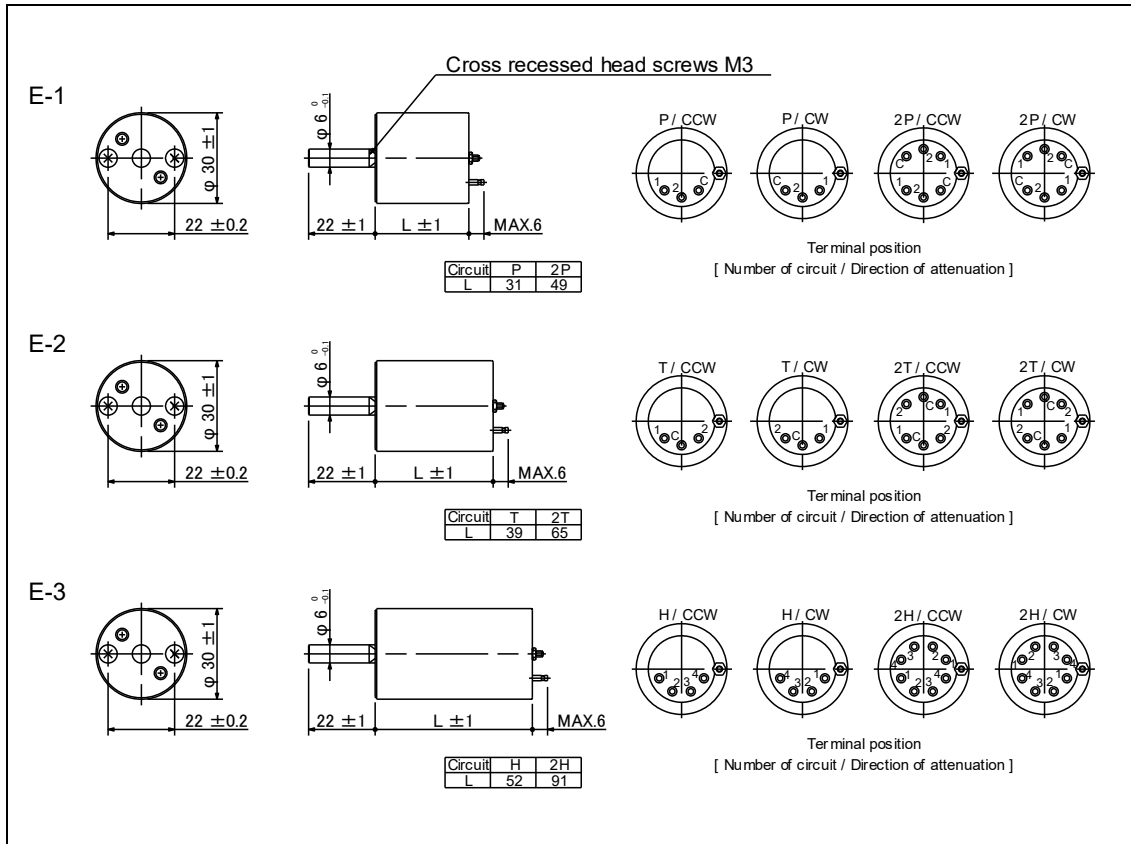
Potentiometer, B-T, B-H

High Accuracy

Used a highly precise resistor.

Model number

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

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

Dimensions

E-1

Cross recessed head screws M3

φ 6 0 -0.1

φ 30 ±1

22 ±0.2   22 ±1   L ±1   MAX.6

P / CCW   P / CW   2P / CCW   2P / CW

Terminal position
[Number of circuit / Direction of attenuation]

Circuit	P	2P
L	31	49

E-2

φ 6 0 -0.1

φ 30 ±1

22 ±0.2   22 ±1   L ±1   MAX.6

T / CCW   T / CW   2T / CCW   2T / CW

Terminal position
[Number of circuit / Direction of attenuation]

Circuit	T	2T
L	39	65

E-3

φ 6 0 -0.1

φ 30 ±1

22 ±0.2   22 ±1   L ±1   MAX.6

H / CCW   H / CW   2H / CCW   2H / CW

Terminal position
[Number of circuit / Direction of attenuation]

Circuit	H	2H
L	52	91

Electrical specifications

	Type-E		
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
	3dB or more	Less than ±0.2	Less than ±0.4
Accuracy of Impedance	±2% (Impedance 600ohm), ±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-E
Operating angle	(Step angle) x (Number of steps) ±2degrees
Strength of Nut-Attached	100Ncm
Attached Parts	M3 screw (Length: Panel thickness + 3~5mm)
Stopper strength	50Ncm
Push-pull strength	50N

General specifications

	Type-E
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 phontom-48V.
* This product is an attenuator of the types to change resistance. Therefore, a switching noise may occur.

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

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.
E-P001	P50ES-1kohm	P	50dB	BTS-50dB	1kohm	DC~100kHz	15degs	21	With	With	CCW	E-1
E-P002	P50ES-50kohm	P	50dB	BTS-50dB	50kohm	DC~50kHz	15degs	21	With	With	CCW	E-1
E-P003	P50ES-250kohm	P	50dB	BTS-50dB	250kohm	DC~15kHz	15degs	21	With	With	CCW	E-1
E-P004	P50ES-500kohm	P	50dB	BTS-50dB	500kohm	DC~15kHz	15degs	21	With	With	CCW	E-1
E-P005	2P50ES-50kohm	P x 2	50dB	BTS-50dB	50kohm	DC~50kHz	15degs	21	With	With	CCW	E-1
E-T001	T10ES-600ohm	T	10dB	1dB x 10	600ohm	DC~500kHz	15degs	10	With	-	CCW	E-2
E-T002	T10ES-600ohm	T	10dB	1dB x 10	600ohm	DC~200kHz	15degs	11	With	With	CCW	E-2
E-T003	T20ES-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	21	With	With	CCW	E-2
E-T004	T20E-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	21	-	With	CCW	E-2
E-T005	T20ES-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	21	With	With	CW	E-2
E-T006	T20E-600ohm	T	20dB	1dB x 20	600ohm	DC~200kHz	15degs	21	-	With	CW	E-2
E-T007	T40ES-600ohm	T	40dB	2dB x 20	600ohm	DC~150kHz	15degs	20	With	-	CCW	E-2
E-T008	T40E-600ohm	T	40dB	2dB x 20	600ohm	DC~150kHz	15degs	20	-	-	CCW	E-2
E-T009	T42ES-600ohm	T	42dB	2dB x 21	600ohm	DC~150kHz	15degs	21	With	-	CCW	E-2
E-T010	T42E-600ohm	T	42dB	2dB x 21	600ohm	DC~150kHz	15degs	21	-	-	CCW	E-2
E-T011	T50ES-3kohm	T	50dB	BTS-50dB	3kohm	DC~15kHz	15degs	21	With	With	CCW	E-2
E-T012	T50E-3kohm	T	50dB	BTS-50dB	3kohm	DC~15kHz	15degs	21	-	With	CCW	E-2
E-T013	T50ES-600ohm	T	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	E-2
E-T014	T50E-600ohm	T	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	E-2
E-T015	T50ES-600ohm	T	50dB	5dB x 10	600ohm	DC~100kHz	30degs	10	With	-	CCW	E-2
E-T016	T50ES-600ohm	T	50dB	10dB x 5	600ohm	DC~100kHz	30degs	5	With	-	CCW	E-2
E-T017	2T50ES-600ohm	T x 2	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	E-2
E-T018	2T50E-600ohm	T x 2	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	E-2
E-H001	H50ES-600ohm	H	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	With	With	CCW	E-3
E-H002	H50E-600ohm	H	50dB	BTS-50dB	600ohm	DC~20kHz	15degs	21	-	With	CCW	E-3

*The standard lineups are added or removed without notice.

Specification Information

Order Number	Standard products with a simple number.
Circuit	

POTENTIOMETER
Unbalanced circuit

1 Input　　2 Output　　COM(GND) C

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

Input 1　　　Output 2
COM(GND)
C　　　　　C

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

Input (Hot) 1　　Output (Hot) 3
Input (Cold) 2　　Output (Cold) 4

Max. Attenuation	Maximum attenuation without Cut off point.
Attenuation types	BTS-50dB: Look at specifications. Ex) "1dBx10": 0, 1, …(1dB step)…, 9, 10dB
Impedance	Total resistance (Potentiometer), Input / Output Impedance (other circuits)
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.