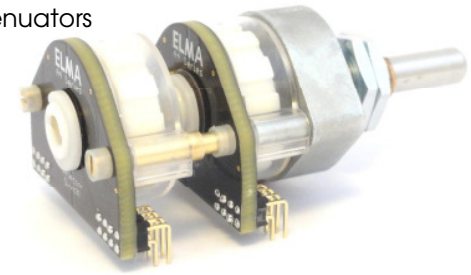
A4 Series

High performance audio selector switches, series and ladder type attenuators



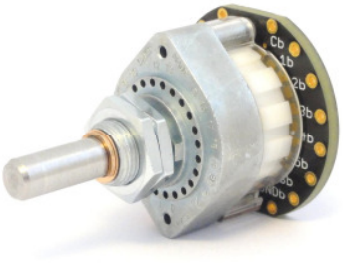
Two-wafer horizontal selector

General Features

- Exceptional sonic clarity, precise switch feel
- Low-bounce contact system with 3 micron gold plating
- Motorized versions available

Selector Switches

- Horizontal: 1 x 12 to 4 x 3 poles/position per wafer, shorting or non-shorting
- Vertical: 1 x 24 to 4 x 6 poles/positions per wafer, shorting, and 1 x 12 to 4 x 3 poles/positions, shorting or non-shorting
- With selectable end-stops, up to 8 wafers



Single-wafer vertical selector

Series and Ladder Type Attenuators

- 24 positions, with selectable end-stops
- Up to 8 channels with series type and 4 channels with ladder type
- Available with pre-populated thin-film SMT resistors or non-populated THT version to be populated by the customer
- 10k, 25k, 50k oder 100k Ohms standard input impedance values
- Free Excel resistor calculator available

Possible Customization

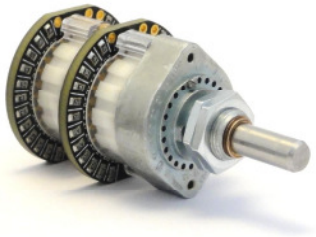
- PCB design and tapers
- Shafts, concentric construction

Applications

- Mixing desks and outboard studio equipment
- Home audio and home theater

RoHS (2002/95/EC)

Two-channel THT
lader type attenuator



Two-channel SMT
series type attenuator

Description

The A4 audio switch series offers a comprehensive range of selector switches, as well as series and ladder type attenuators. These high performance audio switches incorporate a PCB based switch contact system that is specifically designed to meet audiophile requirements for superb sonic performance.

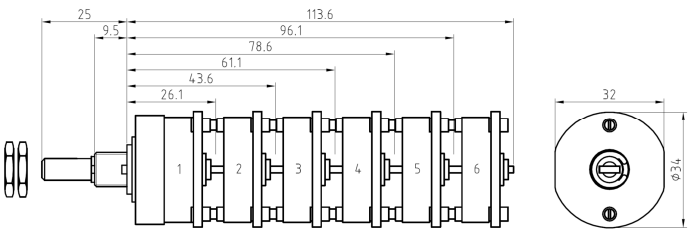
The selector switches are available in horizontal or vertical orientation, and feature switch torques from 1.5 to 15 Ncm and are available in up to 8 wafer versions. The switch functionalities range from 1 pole x 24 positions to 4 x 6 per wafer at 15 degrees indexing with shorting contacts, or from 1 x 12 to 4 x 3 per wafer at 30 degree indexing with shorting or non-shorting contacts. All switches feature selectable end-stops.

The series and ladder type attenuators feature switch torques from 1.5 to 15 Ncm and are available either populated with low-noise, high precision SMT resistors (standard input impedances are 10k, 25k, 50k or 100k), or non-populated THT versions which can be populated by the customer. The series type attenuators are available from 1 to 8 channels and the ladder types are available up to 4 channels.

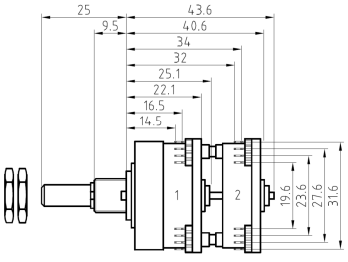
All switches feature Elma's hallmark indexing feel for superior tactile feedback.

Dimensions (mm)

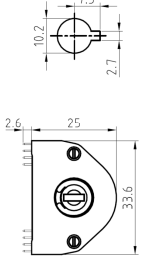
Vertical Selector Switch and Attenuators



Horizontal Selector Switch



Front Panel Cut-Out



Specifications

General

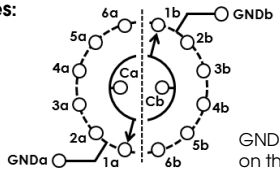
Indexing Resolution: 12 positions (30° indexing; 330° total switch travel) or 24 positions (15° indexing; 345° total switch travel)
Switching torque: 1.5, 4, 8 or 15 Ncm (+/- 30%, over temperature range and life)
Rotational life: 25k cycles (over temperature range, at 120 RPM)
Contact system: Low-bounce wiper with 3 micron hard gold plated PCB
SMT resistors: Attenuators only; 0805 package, thin-film, +/- 0.1%, TCR; +/-25 ppm/°C
Input impedance: Attenuators only; 10k, 25k, 50k or 100k Ohms
Electrical load: Selector switches only; 42 VDC max., 500 mA max. (resistive load, over temperature range and life)
Shaft strength: 1000 N push, 200 N pull, 500 N side force min. (all static, against housing, for 1 minute max.)
End stop strength: 250 Ncm min.
Mounting torque: 300 Ncm max.
Packaging: Single piece packed, two nuts are included

dB Attenuation (Series and Ladder Type Attenuators)

Switch Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Attenuation (dB)	Off	-62	-53	-46	-41	-37	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	-4	-2	0
Step size (dB)		9	7	5	4	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

Circuitries and Pin Allocation

Selector Switches:

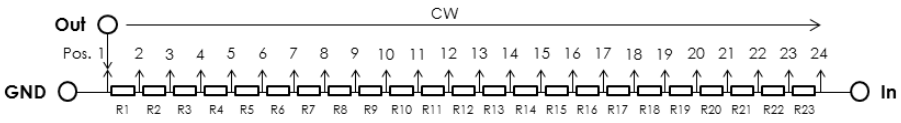


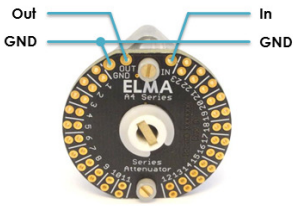
GND; GND-plane on the PCB

Single-wafer horizontal selector

Single-wafer vertical selector

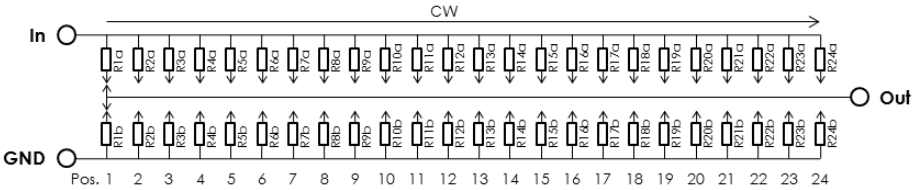
Series Type Attenuator:



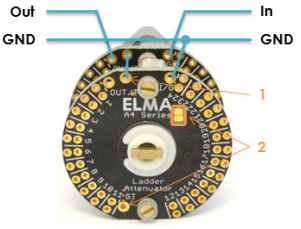


Single-channel THT series type attenuator

Ladder Type Attenuator:



The ladder attenuator needs a transit wire between the two wafers per channel (1)
The PCB's GND-plane can be connected by soldering the jumper and adding a GND transit wire (2)



Single-channel THT lader type attenuator

Ordering Code

A4	-	___	_	_	-	___	_

Type
SLH – Selector switch horizontal
SLV – Selector switch vertical
SER – Series type attenuator
LAD – Ladder type attenuator

Switching Torque
A – 1.5 Ncm (not recommended for >3 wafers)
B – 4 Ncm
C – 8 Ncm
D – 15 Ncm

Number of Wafers
x – x Wafers (max. 8, ladder type attenuator has one channel per two wafers)

Switching Mode
(For selector switches only, leave blank for attenuators)
S – Shorting
N – Non-shorting

Function (per Wafer)
Selector Switches;
206 – 2 poles, 6 positions (30° indexing)
Attenuators;
THT – THT, non-populated
010 – SMT, 10k Ohms impedance
050 – SMT, 50k Ohms impedance
100 – SMT, 100k Ohms impedance

Accessories to Order

- Spare nuts (10 pcs. pack): P/N 4124-41
- Stop screws (10 pcs. pack): P/N 4124-21
- Free Excel resistor calculator: Available from elma.com