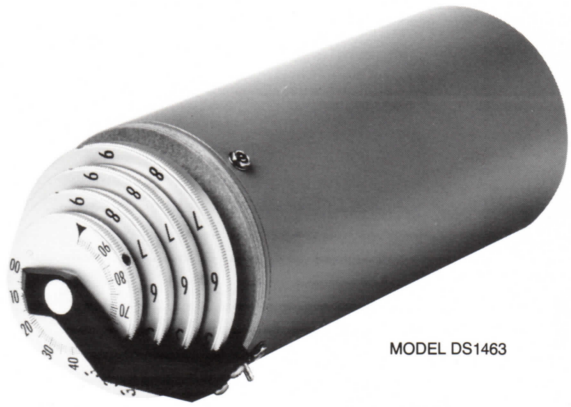
DS1463, DS1464

Dekastat Coaxial-Dial Decade Resistors

- **Stacked dials minimize panel space**
- **Rapid setting, convenient in-line reading**
- **Precision wire-wound resistors throughout**
- **Silicone-treated ceramic switch wafers**
- **Stainless steel shafting and detents**



MODEL DS1463

MODEL DS1464

These Dekastat coaxial-dial decade resistors are highly accurate and stable. They contain three or four decades of precision resistors. Dekastats are designed for use at DC and audio frequencies and can be used even at higher frequencies with slightly reduced accuracy.

High accuracy is assured by the use of ESI precision resistor elements. These resistors are single continuous filament wound on mica cards using wire having a very low temperature coefficient*. All are adjusted to extremely close tolerances after a special aging process.

All units feature the exclusive ESI Dekadial coaxial dial arrangement, combining exceptionally fast, simple dial setting with convenient in-line reading of the resistance value. The dials operate independently with continuous 360-degree rotation in either direction. A special detent design provides crisp location of dial position. The exclusive use of stainless steel for shafting and detents assures long and trouble-free mechanical life.

The ceramic switch wafers are silicone-treated for improved insulating qualities. The dual switch contacts are of solid silver-alloy for long life, corrosion resistance and low contact resistance. The interpolating rheostat used on some models is selected for its long life, precision adjustment and mechanical terminations. A precious metal slide provides for smooth contact rotation.

All resistors and switches are insulated from case, while a terminal is provided for connection to case. The case itself can be guard-driven for higher voltage applications. A rigid support structure shock-mounted within a heavy-wall extruded aluminum dust cover protects the unit against mechanical injury and vibration, assuring outstanding performance even under severe operating conditions. The dust cover can be sealed for moisture-proof applications.

Standard values of these Dekastat decade resistors are listed in the specifications, and the accompanying table gives ratings for individual decades. Other resistance values for most models are available on special order. Consult the factory for prices and availability of these special order items.

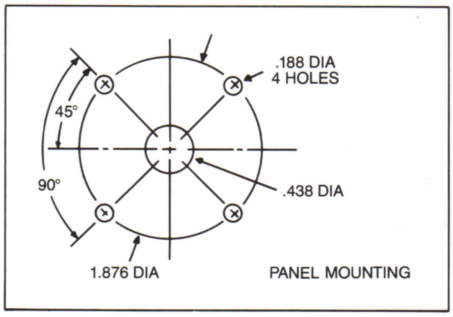
*100kΩ and 1MΩ values are bobbin wound on ceramic forms with alternate pies reversed for inductance cancellation.

Specifications

Ratings per step for each decade

Models DS1463 and DS1464

SMALLEST STEP (Ω)	INCREMENTAL ACCURACY		COEFFICIENTS		MEASUREMENT DUTY** MAXIMUM RATINGS		PEAK VOLTAGE (V/step)
	INITIAL (%)	LONG-TERM (%)	TEMPER-ATURE (ppm/°C)	POWER (ppm/mW/ step)	POWER (mW/step)	CURRENT (mA)	
1 M	0.02	0.03	5	0.3	22	0.15	300
100 k	0.02	0.03	5	0.3	220	1.5	300
10 k	0.02	0.03	5	0.3	500	7	
1 k	0.02	0.03	5	0.3	500	23	
100	0.02	0.03	5	0.3	500	71	
10	0.03	0.03	15	0.9	500	230	
1	0.1	0.12	20	1.2	500	710	
0.1	1.0	1.0	60	6	250	1600	
0.01	10	10	400	60	160	4000	
10*	0.5 div	1 div			40	60	
1*	0.5 div	1 div			40	200	
0.1*	1 div	1.5 div			5	230	



*Interpolating rheostat (Ω/dial division)
**Intermittent use such that temperature rise of the resistor will not appreciably exceed that which would occur in free air.

DS1463 Dekastat Decade Resistor

Accuracy
Accuracy of resistance increments is given in the accompanying table. Accuracy of resistance change from zero setting is given below.
Initial: ±(0.01% + 0.5 dial division); ±(0.01% + 1 dial division) with 10.5Ω rheostat
Long-Term:±(0.02% + 1 dial division); ±(0.02% + 1.5 dial division) with 10.5= rheostat

Short-term Switching Repeatability
±0.2 dial division; ±0.5 dial division with 10.5Ω rheostat (typical)

Number of Decades
Three plus rheostat

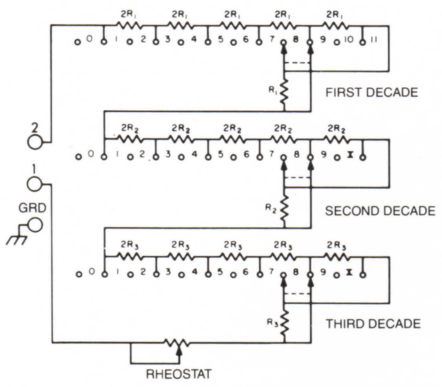
TOTAL R	SMALLEST STEP EACH DECADE			
12kΩ	Rheo 0.1Ω	10Ω	100Ω	1kΩ
120kΩ	Rheo 1Ω	100Ω	1kΩ	10kΩ

Breakdown Voltage
1000V peak to case

Resistance at Zero Setting
100mΩ maximum at 1.2kΩ; 50mΩ at 120kΩ

Dimensions
Diameter: 3 in. (7.6cm)
Depth: 8.5 in. (24cm)
Depth (behind panel): 6.9 in. (17.5cm)

Weight
2.2 lbs (1kg) net



DS 1464 Dekastat Decade Resistor

Accuracy
Accuracy of resistance increments is given in the accompanying table. Accuracy of resistance change from zero setting is given below.

Initial	±(0.01% + 7mΩ)
Long-Term	±(0.02% + 10mΩ)

Short-term switching repeatability
±0.6mΩ (typical)

Resistance at Zero Setting
Approximately 20mΩ

Breakdown Voltage
1000V peak to case

Number of Decades
Four

TOTAL R	SMALLEST STEP EACH DECADE			
1.2kΩ	0.1Ω	1Ω	10Ω	100Ω
12kΩ	1Ω	10Ω	100Ω	1kΩ

The following special values are also available with a 5 unit minimum order: 120Ω, 120kΩ, 1.2MΩ, and 12MΩ.

Dimensions
Diameter: 3 in. (7.6cm)
Depth: 8.5 in. (24cm)
Depth (behind panel): 6.9 in. (17.5cm)

Weight
2.2 lbs (1kg) net

Standard Equipment

Models DS1463 and DS1464 come complete with an 8893 Instruction Sheet.

Warranty

WARRANTY OF QUALITY

Electro Scientific Industries, Inc., warrants its products to be free from defects in material and workmanship. Rigorous quality control permits the following standard new equipment warranties:

1. One year on components and instruments utilizing active circuitry.
2. Two years on components and instruments exclusively utilizing passive circuitry.

During the warranty period, we will service or, at our option, replace any device that fails in normal use to meet its published specifications. Batteries, tubes and relays that have given normal service are excepted. Special systems will have warranty periods as listed in their quotation.

DISCLAIMER OF IMPLIED WARRANTIES

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In no event will ESI be liable for special or consequential damages. Purchaser's sole and exclusive remedy in the event any item fails to comply with the foregoing express warranties of ESI shall be to return the item to ESI, shipping charges prepaid, and at the option of ESI obtain a replacement item or a refund of the purchase price.

Where an ESI product will interconnect with components not supplied by ESI, ESI does not warrant the ESI product against failures caused by mismatch of the non-ESI product, nor will ESI be liable for damages to the non-ESI component resulting from the mismatch.

Unless specifically requested by the customer, ESI does not inspect or test an instrument for compliance with applicable safety, government or industry standard. Customers who desire an inspection or test for conformity to a standard should specify the standard with particularity. Not all instruments can be modified to conform with standards adopted after the instrument was manufactured, and such modifications are not repairs, nor is failure to comply with a standard adopted after the date of manufacture a defect.

For complete information regarding warranties, terms and conditions, contact ESI.

I2401-691-MLI2.5k

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