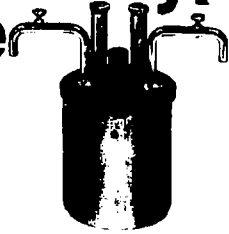
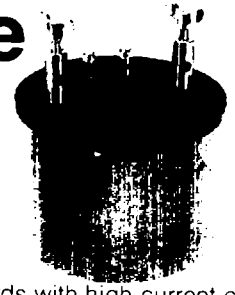


# 4221-B, 4222-B and 4223-B Reichsanstalt-Type Resistance Standards



Low-resistance comparison standards (0.001 to 0.1 ohm). Used in the accurate measurement of current with a potentiometer, and as standards for comparison in low-resistance measurements.

# 4224-B-A L&N- Type 0.0001-Ohm Resistance Standard



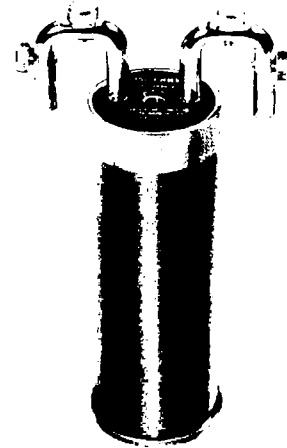
Four-terminal resistance standards with high current capacity. Similar to the Reichsanstalt resistors, these resistors are designed to be used in measuring relatively high currents, or as four-terminal resistance standards with high current capacity.

# 4015-Series NBS-Type Resistance Standards

Designed for use as standards in industrial, research and educational laboratories. Made from selected wire, stress-relieved and aged to assure stability, and constructed so as permit immersion of the complete unit in oil. An L&N Report of Calibration is supplied which gives (1) temperature coefficient data and (2) measured value at 25.0 C.

**HOW TO ORDER** Specify catalog number.

For more information, see Data Sheet A5.1111.



## SPECIFICATIONS

Type	Integral Standards			Intermediate Standards		Wattage Rating	Limit of Error**			Size		
	Catalog Number	Resistance (Ohms)	Current Rating (Amperes)	Catalog Number	Resistance (Ohms)		Adjustment to Nominal Value	Measured Value Stated to:	Accuracy of Measured Value***			
L&N	4224-B-A150	0.0001	150	—	—	—	±0.01%	±0.001%	±0.003%	7" x 7½" x 3½"†		
	4224-B-A300		300						±0.005%	10½" dia. x 12" (h)††		
Reichsanstalt	4223-B	0.001	30 100	—	—	1 Watt 10 Watts	±0.005%	±0.0001%	±0.002% (30 amps) ±0.05% (100 amps)	7" x 7½" x 3½"; 3 lb.†††		
	4222-B	0.01	10 30	4222-B-X □*	0.002, 0.005, 0.02 or 0.05				±0.003%	±0.0001%	±0.001% (for smaller current figure) ±0.05% (for larger current or wattage fig.)	7" x 6" x 3½"; 2 lb.*
	4221-B	0.1	3 10	4221-B-X □*	0.2, 0.5, 2.0, 5.0 or 10				±0.003%	±0.0001%	±0.001% (for smaller current figure) ±0.05% (for larger current or wattage fig.)	7" x 6" x 3½"; 2 lb.*
National Bureau of Standards	4015-B	0.1	3	—	—	1 Watt	±0.05%	±0.01%	±0.05%	7" (h) x 1½" dia. (179 x 48 mm)		
	4020-B	1	0.3 1.0	4020-B-X □	2 to 9 ohms in increments of 1 ohm	0.1 Watt 1 Watt	±0.003% ****	±0.0001%	±0.001%**** (for smaller current figure) ±0.02% (for larger current or wattage figure)			
	4025-B	10	0.1 0.3	4025-B-X □	15 to 95 ohms in increments of 5 ohms							
	4030-B	100	0.03 0.1	4030-B-X □	110 to 990 ohms in increments of 10 ohms							
	4035-B	1000	0.01 0.03	4035-B-X □	1100 to 9900 ohms in increments of 100 ohms							
	4040-B	10,000	0.003 0.01	4040-B-X □	11,000 to 99,000 ohms in increments of 1000 ohms	0.1 Watt	±0.005%	±0.0001%	±0.002%			
	4045-B	100,000	0.001 0.003	—	—							
	4050-B	1,000,000	0.0003	—	—							

\*To specify desired resistance, add the basic multiplier in the blank following the letter "X". Examples: 4020-B-X5 identifies a 5-ohm standard; 4030-B-X5 a 500-ohm standard, 4035-B-X7 5 a 7500 ohm standard, etc. For "intermediate" values, consult your nearest L&N office.

\*\*The value of resistance given is in terms of the U.S. Legal Unit and is traceable to a set of reference standards maintained by L&N and calibrated at regular intervals by the NBS.

\*\*\*At time of calibration. Measured value will remain stable for one year within 10 ppm for standards between 0.01 ohms and 10K ohms, 20 ppm below 0.01 ohms or above 10K ohms.

\*\*\*\*Applies to integral standards only. For intermediate values, adjustment is ±0.005%, and accuracy is ±0.002% for smaller wattage figure

†179 x 190 x 89 mm. ††267 x 305 mm. †††179 x 190 x 89 mm; 1.3 kg. \*179 x 152 x 92 mm; 0.9 kg.