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Find the *IET / General Radio 1403-G* at our website: *Click HERE*

Type 1403 STANDARD AIR CAPACITOR (Three-Terminal)

USES: For measurement at 100 pF and below, a three-terminal connection increases the accuracy by eliminating the uncertainty in the measurement introduced by the capacitances between the capacitor terminals and ground. The TYPE 1403 Standard Air Capacitors are stable, three-terminal standards in decimal values from 0.001 to 1000 pF. Their terminals are arranged to plug directly into the UNKNOWN terminals of the TYPE 1615-A Capacitance Bridge.

DESCRIPTION: The three largest sizes are similar in construction to the TYPE 1401. The smaller capacitance units are made up of two plates, with a grounded plate between them; an aperture in the grounded plate determines the magnitude of the direct capacitance. Dielectric losses are not detectable; there is no solid dielectric in the direct-capacitance field. All have shielded terminals, both of which are insulated from the case.

SPECIFICATIONS

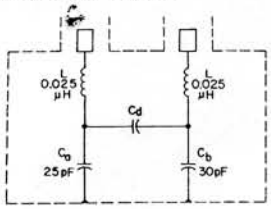
Calibration: A certificate of calibration is supplied with each unit giving the measured capacitance at 1 kc/s and at a specified temperature. The measured value is the direct capacitance between shielded terminals when the capacitor has at least one lead completely shielded and its case connected to a guard point. This value is obtained by comparison, to a precision better than $\pm(0.01\% + 0.00001$ pF), with working standards whose absolute values are known to an accuracy typically $\pm 0.01\%$, determined and maintained in terms of reference standards periodically certified by the National Bureau of Standards.

Stability: Capacitance change is less than 0.05% per year.

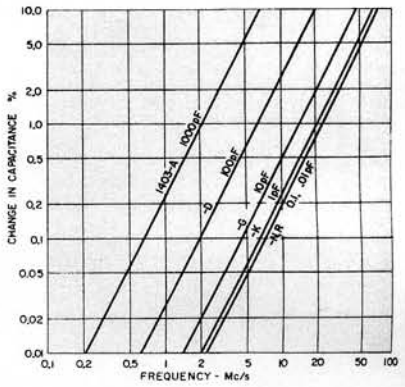
Residual Impedances: See equivalent circuit and plot.

Temperature Coefficient of Direct Capacitance: Typically 20 to 40 ppm per degree between 20° and 70°C. The larger coefficients apply to the smaller capacitance values.

Terminals: GR874 Coaxial Connectors, which provide complete shielding of the leads.



Equivalent circuit showing direct capacitance, C_d, and typical values of residual inductance, L, and terminal capacitances, C_a and C_b.



Change (percent) in effective direct capacitance, with frequency, produced by residual inductance.

Mounting: Aluminum panel and cylindrical case.

Accessories Supplied: Two TYPE 874-C58A Cable Connectors.

Dimensions: Diameter 3 1/16 in (78 mm), height 4 7/8 in (125 mm), over-all.

Net Weight: 1 lb (0.5 kg). **Shipping Weight:** 4 lb (1.9 kg).

Catalog Number		*Nominal Capacitance*	*Adjustment Accuracy*	*Peak Volts*	*Dissipation Factor*
1403-9701	**Type 1403-A**	1000 pF	0.1%	700	20×10^{-6}
1403-9704	**Type 1403-D**	100 pF	0.1%	1500	20×10^{-6}
1403-9707	**Type 1403-G**	10 pF	0.1%	1500	30×10^{-6}
1403-9711	**Type 1403-K**	1.0 pF	0.1%	1500	20×10^{-6}
1403-9714	**Type 1403-N**	0.1 pF	0.1%	1500	20×10^{-6}
1403-9718	**Type 1403-R**	0.01 pF	0.3%	1500	20×10^{-6}
1403-9722	**Type 1403-V**	0.001 pF	1.0%	1500	20×10^{-6}

PATENT NOTICE. See Note 4, page 11.



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