

### Features:

- 100 pF to 1.111  $\mu$ F
- $\pm 0.05\%$
- 2 or 3 terminal connection with < 1 pF change in value

This capacitor is a versatile tool for calibration laboratories and production-line testing. With it a bridge can be standardized to an accuracy exceeded only by that of the highest quality, individually certified laboratory standards such as the GR 1404 Reference Standard Capacitors.

When used with the GR/IET 1689 Digi-bridge, the 1423 facilitates fast and accurate production-line measurements of arbitrary capacitance values with minimum setup time.

Any value of capacitance from 100 pF to 1.111  $\mu$ F in steps of 100 pF, can be set on the four decades and will be known to an accuracy of  $\pm 0.05\%$ , see specifications. The terminal capacitance values are set precisely to the nominal value and can be readjusted later at calibration intervals, if necessary, without disturbance of the main capacitors. The 1423 consists of four decades of high-quality silvered-



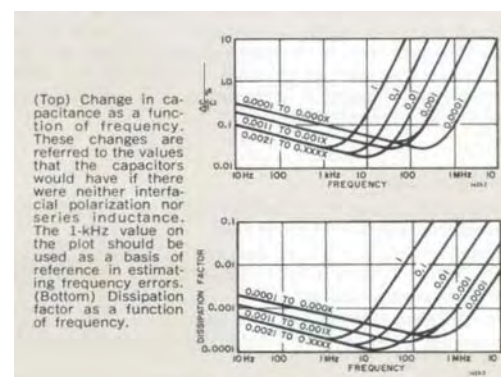
1423-A Decade Capacitor

mica capacitors similar to those used in the GR 1409 Standard Capacitors. The capacitors and associated switches are mounted in an insulated metal compartment, which in turn is mounted in a complete metal cabinet.

This double-shielded construction ensures that capacitance at the terminals is the same for either the three-terminal or the two-terminal method of connection (except for a constant difference of about one picofarad).

This external capacitance can be included in the two terminal calibration by the adjustment of a single trimmer values are known to an accuracy typically  $\pm 0.01\%$ , determined and maintained in terms of reference standards periodically calibrated by and SI.

Frequency: See curves for typical variation of capacitance and dissipation factor with frequency.



Frequency Curves

## SPECIFICATIONS

**Nominal Values:** 100 pF to 1.111  $\mu$ F in steps of 100 pF

### Accuracy:

100 pF per step decade:  $\pm(0.15\% + 0.5 \text{ pF})$

All other decades:  $\pm(0.05\% + 0.05 \text{ pF})$

**Stability:**  $\pm(0.01\% + 0.5 \text{ pF})$

**Calibration temperature:**  $23^\circ\text{C} \pm 1^\circ\text{C}$

**Dissipation Factor:** Not greater than 0.001, 0.0005, and 0.0003 for capacitances of 100 to 1000 pF, 1100 to 2000 pF, and 2100 pF to 1.1110  $\mu$ F respectively

### Temperature Coefficient of Capacitance:

Approximately + 20 ppm per degree between  $10^\circ\text{C}$  and  $50^\circ\text{C}$

**Maximum voltage:** 500 V peak, up to 10 kHz

### Dimensions:

483 x 184 x 267 mm

19 x 7.25 x 10.5 in

**Weight:** 12 kg (26 lbs), 18 kg (39 lbs) shipping weight

## ORDERING INFORMATION

1423-A Precision Decade Capacitor

Bench Model

1423-9801

Rack Model

1423-9811

### Includes:

Calibration Certificate

Instruction Manual



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