

A.P. 100320 Q-METER

(Inter-Services Designation:- Q-Meter)

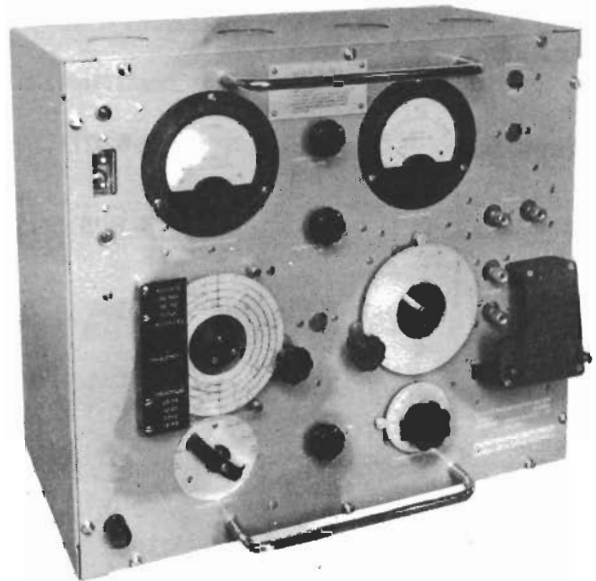
SUMMARY OF DATA

PURPOSE

Used for the measurement of the Q-factor of inductors and tuned circuits and for determining values of inductance and capacitance within the ranges set forth below. It may also be used to measure loss in insulating materials and R.F. resistance using special adaptors, which are not normally supplied to ships.

DESCRIPTION

An R.F. oscillator (50 kc/s - 50 Mc/s) injects a signal of known level into a tuned circuit comprising a calibrated variable capacitor and an externally-connected inductor. A valve voltmeter measures the voltage developed across the capacitor at resonance and indicates by a direct reading the magnification factor, i.e. the ratio of the voltage across the capacitor to the voltage injected into the circuit. Capacitances are normally measured by substitution methods and inductances by measuring the resonance frequency for a known capacitance; calculation (or a graph) is required in the latter case.



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PERFORMANCE

Magnification range:-	0 - 250 and 0 - 500 (accuracy ± 5 per cent ± 5 up to 10 Mc/s, less at higher frequencies).
Capacitance range:-	0 - 473 pF (without external standard capacitors); accuracy at least ± 2 per cent ± 2 pF, but capacitors may be matched to ± 0.1 pF. Larger capacitances may be measured if external standard capacitors are used.
Inductance range:-	0.2 microhenry to 250 millihenrys (accuracy about ± 3 per cent, but inductors may be matched to 0.1 per cent).
Tuning capacitance (main):-	40-470 pF (accuracy of indication ± 1 per cent ± 1 pF).
Incremental tuning capacitance:-	± 3 pF (accuracy of indication ± 0.15 pF).
Frequency range of oscillator:-	50 kc/s - 50 Mc/s.

POWER REQUIREMENTS AND CONSUMPTION

Power Supply:-	200 - 250V at 40 - 100 c/s.
Power Consumption:-	55 watts (approx).

PHYSICAL DATA

Weight 68 lb	Height 16 in
Width 19 in	Depth 16 in (including guard rails)

REMARKS

This instrument is supplied as part of Testing Outfits TKA, TKD - TKG.

ACCESSORIES

Mains connector TM2560C
 Insulating platform TM3809
 Case of 18 standard inductors:- A.P.100387.

SPARES

Diode CV.1092 (selected) mounted in instrument.

Thermocouple T1254: " " "

OTHER SERVICE AND COMMERCIAL DESIGNATIONS

Inter-Services designation: Q-Meter.

Air Ministry: 108/16320.

Marconi Instruments Ltd.: Circuit Magnification Meter Type 3290.

HANDBOOK

B.R.1771(3)

ESTABLISHMENT LIST

E.1015

PRODUCTION SPECIFICATION

13562