

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

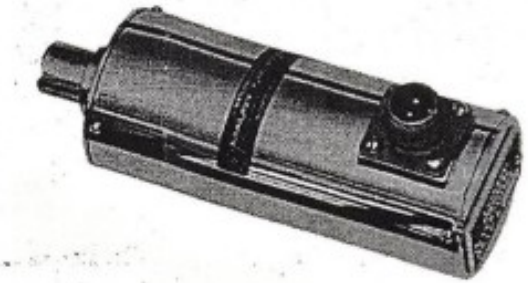
All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

COAXIAL THERMAL VOLTMETERS

Description

Maury's coaxial thermal voltmeters are precision laboratory instruments for accurate voltage measurements. They are available in six voltage ranges from 0.1 to 20.4 volts and are useful from DC to 100 MHz. Basic design and development of these devices was conducted at the National Institute of Standards and Technology (NIST) [1]. U.S. Navy Metrology Engineering Center (Pomona, California) drawings were utilized as the basis for manufacturing these units and engineering circular EC4 [2] provides further information relative to the application and uses of these units.



These instruments are constructed in a coaxial in-line configuration. A uhf thermocouple (isolated heater type with a reversal error of 0.04% maximum), having minimum AC-DC differences, is used as the converter. The heater of the thermoelement is connected in series with a low reactance film type resistor which terminates in a G.R. type 874-PB58 coaxial input connector. The thermoelement junction output is via a two-pin AN3102-10SI-4P connector. Rigid coaxial mounting serves to positively maintain the mechanical position of both components as well as to provide shielding between circuits The heavy case and high exterior reflectivity provide isolation from rapid thermal gradients.

The accuracy of Maury coaxial thermal voltmeters is dependent only on two factors; (a) its AC-DC difference as certified by NIST and, (b) the accuracy of the DC reference voltage. Calibration of these instruments is normally not performed because the transfer technique is dependent only upon flatness of response with frequency change. DC is generally used as the comparison frequency because of the general availability of high accuracy DC instrumentation. Several advantages of a direct 1:1 transfer technique are: a) no periodic calibration required; b) no calibration is lost in the event of thermocouple burn-out; c) no allowance is necessary for drift; and d) no compensation for temperature change is necessary. Maury coaxial thermal voltmeters are guaranteed suitable for calibration by the NIST.

Application

Maury's coaxial thermal voltmeters are wide range devices for high accuracy voltage measurements using transfer techniques or for precise voltage comparison over a range of frequencies. They are ideal for use as a secondary standard and are useful in a variety of applications such as calibration of direct reading RF voltmeters, checking frequency response of detectors and AC-DC instruments, and checking the response characteristics of signal generators and amplifiers.

Model	Voltage Range	TDO [3]
LT101	0.1 – 0.25V	D-8-A
LT102	0.5 – 1.4	D-8-1V
LT103	1.1 – 3.3	D-8-3V
LT104	1.9 – 5.2	D-8-5V
LT105	3.6 – 10.4	D-8-10V
LT106	7.4 – 20.4	D-8-20V

[1] Thermal converters as AC-DC Transfer Standards for Current and Voltage Measurements at Audio Frequencies, F. L. Hermach, J. Research N.B.S., Vol. 48, pp. 121-138, 1952.

[2] Coaxial Thermal Voltmeter Elements, K. H. Klarer, Engineering Circular 4, 27 March, 1961, Metrology Dept., Bureau of Naval Weapons Representative, Pomona, California.

[3] U.S.N. Metrology Engineering Center, Pomona, California, part number.

2900 Inland Empire Blvd. • Ontario, California 91764-4804
Tel: 909-987-4715 • Fax: 909-987-1112 • http://www.maurymw.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP