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TECHNOLOGY GROUP

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Custom engineering
so your equipment works exactly as you specify.

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Expert team | Trust guarantee | 100% satisfaction

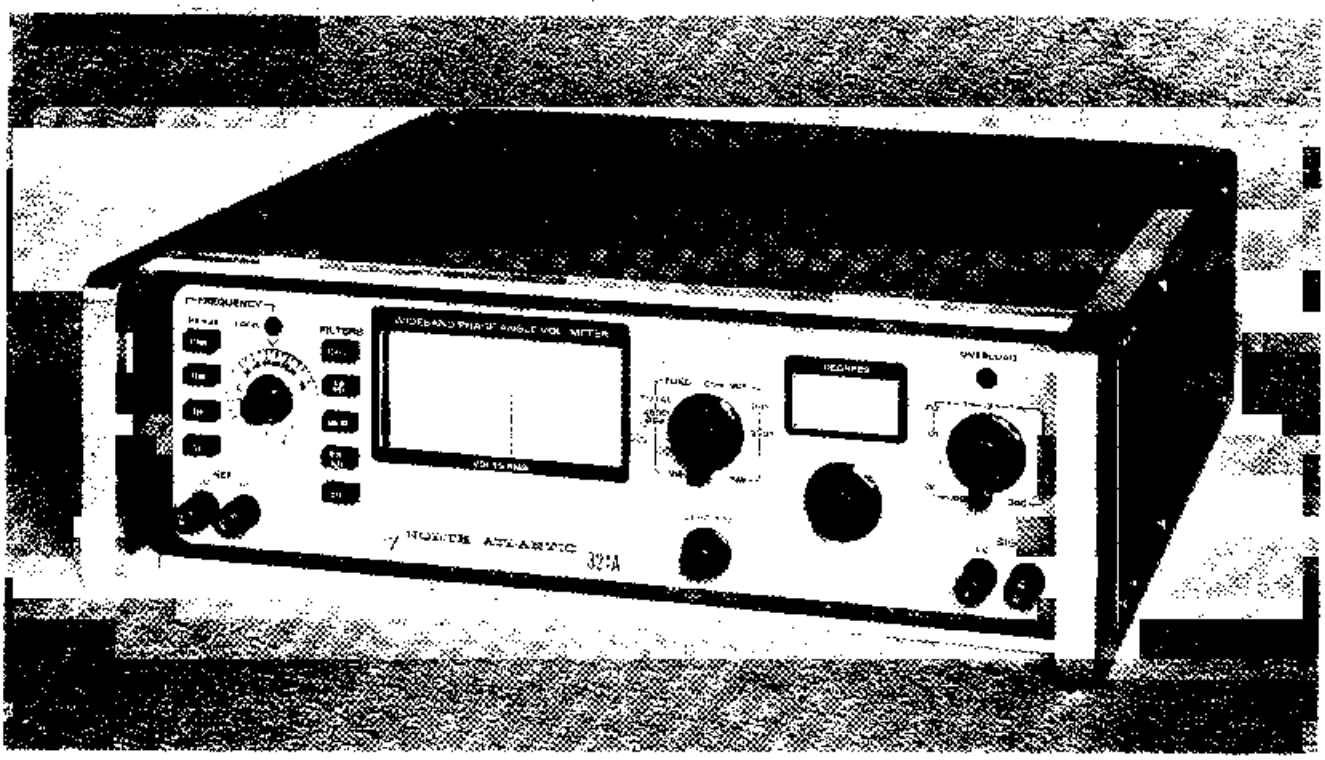
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PRELIMINARY DATA SHEET

BROADBAND PHASE ANGLE VOLTMETER

MODEL 321



- **DIRECT READING OF—**
  TOTAL VOLTAGE
  FUNDAMENTAL VOLTAGE
  QUADRATURE VOLTAGE
  PHASE ANGLE
- **±0.5° ACCURACY, 0° TO 360°**
- **2 μV NULLING SENSITIVITY**
- **DYNAMIC RANGE 10Hz TO 100KHz**
- **HIGH HARMONIC REJECTION**

The Model 321 combines in one instrument, a phase sensitive null detector, a phase sensitive voltmeter and a phase meter, operating over the frequency range of 10Hz to 100KHz. It's broadband characteristics make it ideally suited for use in amplifier and network design, vibration analysis, telemetry system measurements, biomedical research, and similar applications requiring the measurement of complex signals and their vector components over a broad range of frequencies.

The Model 321 incorporates proprietary circuit techniques that eliminate the use of reactive phase shifters and filters while maintaining accuracy, stability, and greater than 40db harmonic rejection. In addition to phase angle; total, fundamental, in-phase and quadrature voltages can be measured with respect to an arbitrary phase-shifted reference. The reference can vary from 150mv to 150 V without the need for calibration or adjustment. The 321's versatility, accuracy, and ease of use make it ideally suited for both laboratory and production line use.

Phase angle is displayed on a parallex-free scale, calibrated in 0.5° increments. High nulling sensitivity is provided by the instrument's ability to accommodate quadrature overloads up to ten times the full scale value of the in-phase voltage range in use.

PRELIMINARY

SPECIFICATIONS

MODEL 321

Voltage Range	300μV to 300V Full-Scale, 13 Ranges
Phase Angle Range	0° to 360° in 4 quadrants
Frequency Range	Total Voltage: 10Hz to 100KHz Phase Sensitive: 10Hz to 100KHz (Four decade ranges)
Meter Scale	3-0-3 (60 divisions) 10-0-10 (100 divisions) −14db to +2db
Phase Dial Resolution and Range	−2° to 92°, 0.5° Divisions
Accuracy	Voltage: ±2% full scale (over full frequency range) Phase Angle (using Phase Dial): ±1.5°, 10Hz to 31.6Hz ±0.8°, 31.6Hz to 50Hz ±0.5°, 50 Hz to 20KHz ±0.8°, 20KHz to 31.6KHz ±1.5°, 31.6KHz to 100KHz
Overload	10X full scale voltage range setting
Input Impedance	Reference 1MΩ, 47$\mu\mu$f nominal (all ranges) Signal 10MΩ, 47$\mu\mu$f nominal (all ranges)
Reference Level	0.15V to 150V
Noise	Less than 10 microvolts (Total Voltage)
Nulling Sensitivity	Less than 2 microvolts (Phase Sensitive)
Harmonic Rejection	40db minimum
Power	100/115/125/200/230/250 ±10%, 45Hz to 440Hz 50 VA
Dimensions and Weight	5¼" x 19" Panel x 12"D, 25lbs. nominal

subject to change without notice

NORTH ATLANTIC *industries, inc.*
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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.

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