

Table 1-2. Specifications

Specifications describe the instrument's warranted performance over the temperature range 0 to 55 deg C unless otherwise stated. Typical values describe typical, but non-warranted, performance. Nominal values are given as a guide to expected performance.

Measurement conditions: All specifications apply to measurements in a 50 ohm system and with frequency autoranging off, unless otherwise stated.

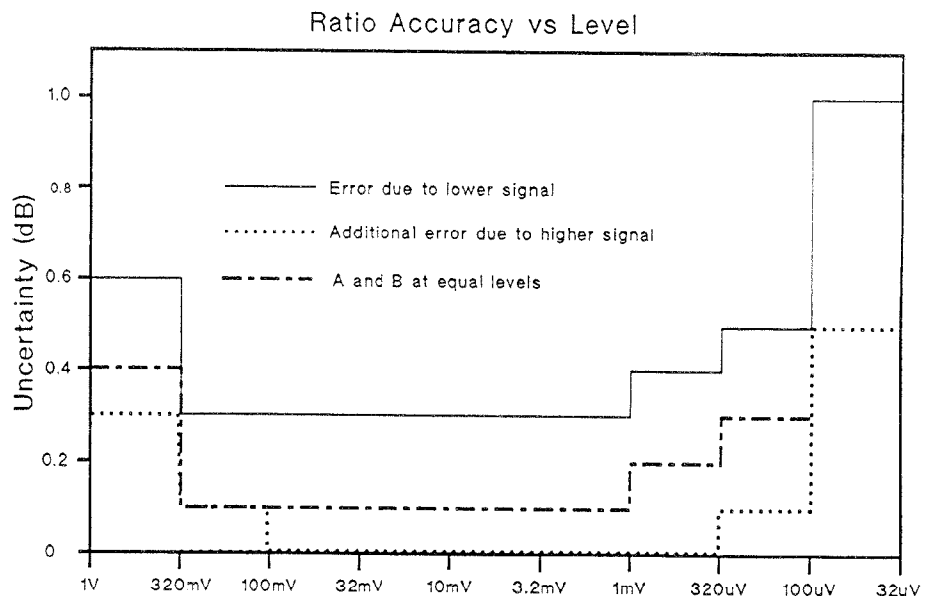
Frequency Range	300kHz-2GHz	
Maximum Input	16dBm, ± 50 Vdc	
Measurement Range		
A and B Channel maximum	Magnitude measurements	3dBm, 300kHz-1MHz, 1GHz-2GHz 13dBm, 1MHz-1GHz
	Phase measurements	3dBm, 300kHz-2GHz
A (Ref) Channel minimum		-47dBm, 300kHz-3MHz -57dBm, 3MHz-2GHz
B (Meas) Channel noise floor		-87dBm, 300kHz-2GHz
Measurement bandwidth	1kHz (nominal)	
Input Crosstalk	>100dB, 300kHz-500MHz >80dB, 500MHz-1GHz >70dB, 1GHz-2GHz	
Impedance	SWR<1.2, 300kHz-1.5GHz SWR<1.5, 1.5GHz-2GHz	
Magnitude Characteristics		
Resolution:	3 1/2 digits	
Accuracy:	Amplitude accuracy is specified for both ratio and absolute measurements. Each case has two components - accuracy vs level and accuracy vs frequency. Add either the ratio or the absolute uncertainty components from the following graphs, using the information on each graph to decide if the uncertainty applies to the particular measurement.	

General Information

Ratio Accuracy vs Level (1) (3)

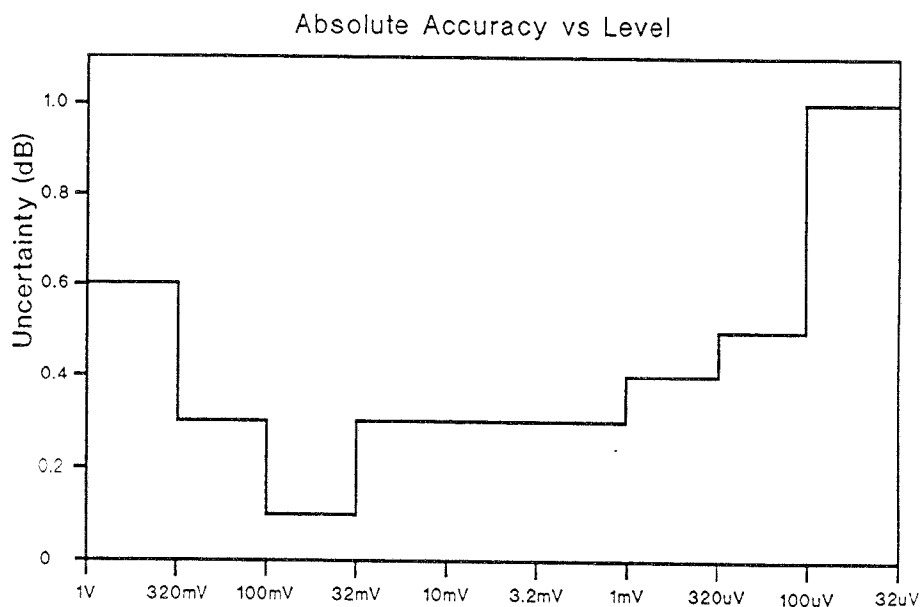
Add this term when making:
Ratio measurements at any single frequency.

(Accuracy vs level is normally determined by the lower level signal. Noise ($<320\mu\text{V}$) and compression ($>100\text{mV}$) effects cause additional errors.)



Absolute Accuracy vs Level (1) (2) (3)

Add this term when making:
Absolute measurements.



Amplitude Accuracy vs Frequency(1) (4) (A and B 100mV nominal)

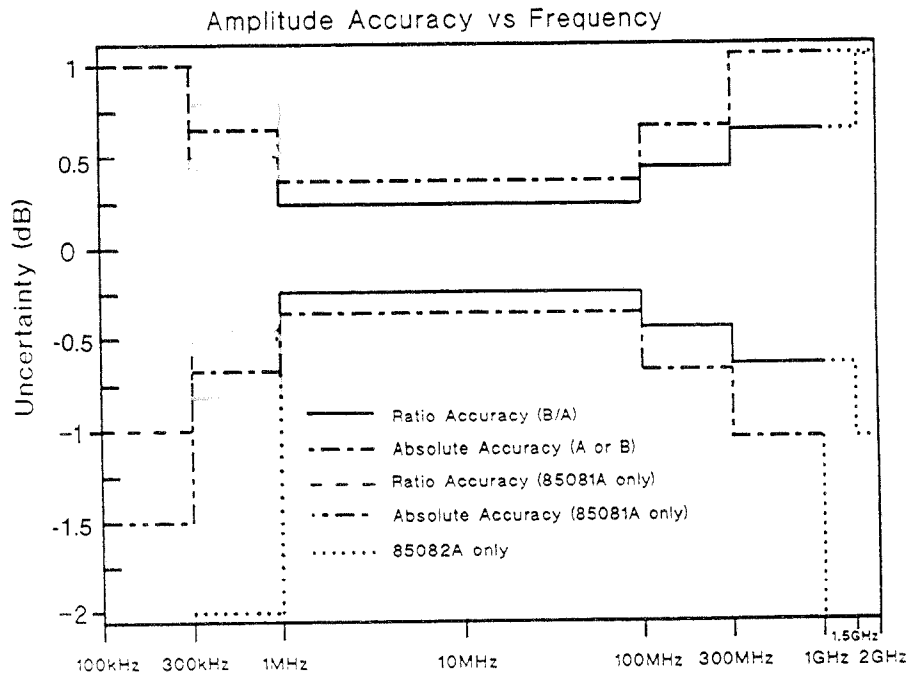
Add this term when making:

Absolute measurements.

Ratio measurements over a frequency range.

Ignore this term when making:

Ratio measurements where the measurement is normalized to a reference at each new frequency.



Phase Characteristics

Display Range: -179.9 to +180.0 degrees

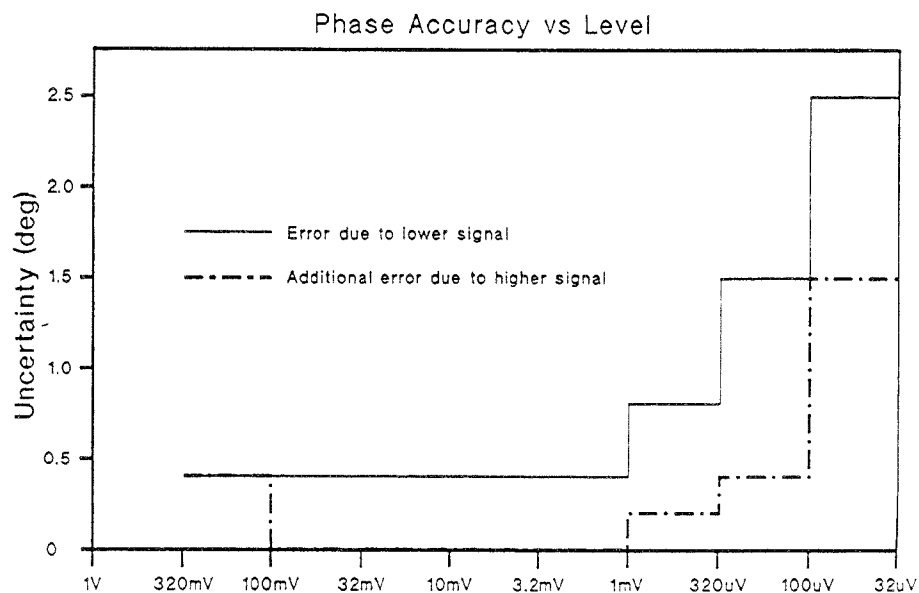
Display Resolution: 0.1 degrees

Accuracy: Phase accuracy has two components - phase accuracy vs level and phase accuracy vs frequency. Add the uncertainty components from the following graphs using the information on each graph to decide if the uncertainty applies to the particular measurement.

General Information

Phase Accuracy vs Level (5) (6) (7)

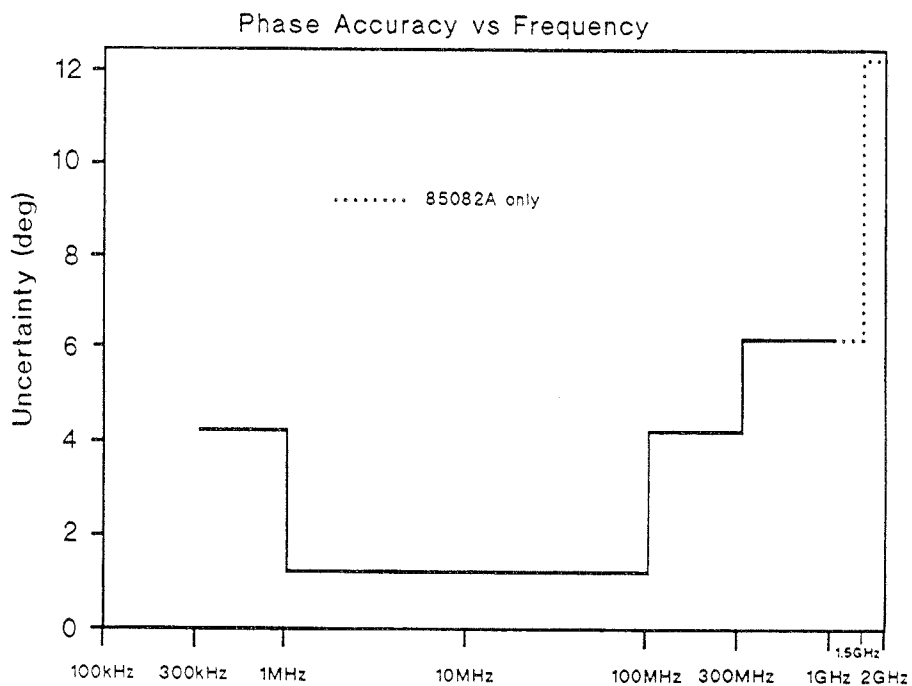
Add this term when making:
Phase measurements at any single frequency.



Phase Accuracy vs Frequency (5) (6) (A and B 100mV nominal)

Add this term when making:
Phase measurements over a frequency range.

Ignore this term when making:
Phase measurements where the measurement is normalized to a reference at each new frequency.



Footnotes

- (1) 15 to 30 degrees C. Add ± 0.1 dB per 5 deg C outside this range.
- (2) A minimum input level depends on frequency. See Measurement Range.
- (3) Add ± 0.5 dB for signals above 100mV at frequencies greater than 500MHz.
- (4) A and B absolute value includes ± 0.15 dB source traceability error.
- (5) 15 to 30 degrees C. Add 1 deg per 5 deg C outside this range.
- (6) Add ± 3 deg for signals above 100mV at frequencies greater than 500MHz.
- (7) Add ± 0.4 deg phase non-linearity for measurements other than 0 deg.

General

Search and lock time

Automatic tuning starts from lowest frequency and searches consecutive bands. Total search and lock time depends on the number of bands to be scanned and the lockup time within the selected band.

Process start time:	50ms after lock is lost.
Lockup (within 1 range):	40ms, frequencies up to 3MHz 20ms, frequencies greater than 3MHz
Ranges (MHz):	0.1-0.2, 0.2-0.6, 0.6-1, 1-3, 3-5, 5-8, 8-15, 15-25, 25-50, 50-80, 80-150, 150-250, 250-500, 500-1000, 1000-2000

Rear Panel Outputs:

Normal Operation: Provides an analog representation of the digital display values, including internal instrument correction factors.

OUTPUT 1 corresponds to DISPLAY 1, OUTPUT 2 corresponds to DISPLAY 2.

Range: 0 to ± 1999 display counts.

Sensitivity: 1mV represents 1 display count (nominal).

For readings greater than ± 1999 counts, the rear panel output voltage will remain fixed at ± 2.0 Volts.

Display resolution can be controlled by manual ranging.

Update rate: Approximately 3 readings per second.

Direct Analog Output: Provides continuous direct output from the internal magnitude and phase detectors through 800Hz low-pass filters. No internal correction is applied.

OUTPUT 1 corresponds to linear magnitude (A or B selected by front panel control).

Sensitivity: 1V equals displayed full scale deflection (nominal). Can be controlled by manual ranging.

OUTPUT 2 corresponds to B-A phase.

Sensitivity: 10mV per degree (nominal).

Phase Jitter: < 3 deg rms (typical, A=100mV, B=100uV)

HP-IB Capability

Interface functions:

SH1 AH1 T6 TE0 L4 LE0 SR1 RL1 PP0 DC1 DT1 C0

Transfer Rate:

Normal Operation: Approximately 12 readings per second.

Measurement Conditions: Triggered measurement, default averaging.

Maximum Rate: Approximately 1 reading per 18ms.

Measurement conditions: Continuous output, averaging count 0, system format FP64, display rate off, equal steady state signals at A and B inputs, single output of phase or linear A or B voltage.

General Information

Probe Power Supply

Supplies: +12 and -12 volts and ground

This supply is sufficient to operate 1 HP 85024A High Impedance Probe.

Environment

Temperature: 0 to 55 deg C (operating), -40 to 70 deg C (storage)

Humidity: 0 to 95%, non-condensing

Altitude: 0 to 4500m (operating), 0 to 15000m (storage)

RFI: Conducted and radiated interference is within the requirements of
Messemphaenger-Postverfuegung 526/527/79.

Power: 100, 120, 220 or 240V +5/-10%, 48 to 440 Hz, 40VA

Size: Std: 133mm (5.25in) H x 425.5mm (16.75in) W x 473.3mm (18.65in) D

Weight: Std: 8.1kg (net) 11kg (shipping)