



Fig. 1-2. AM 503 controls and connectors.

SPECIFICATION AND PERFORMANCE CHECK

Performance Conditions

The electrical characteristics are valid only if the AM 503 has been calibrated at an ambient temperature between +20°C and +30°C and is operating at an ambient temperature between 0°C and +50°C, unless otherwise stated.

Items listed in the Performance Characteristics column of the Electrical Characteristics are verified by completing the Performance Check in this section of the manual. Items listed in the Supplemental Information column are not verified in this manual. The items are either explanatory notes or performance characteristics for which no limits are specified.

SPECIFICATION

Table 2-1
ELECTRICAL CHARACTERISTICS

Characteristics	Performance Characteristics	Supplemental Information
Bandwidth (–3 dB) Full		OUTPUT terminated into 50 Ω , DC function
Amplifier Only	DC to at least 100 MHz.	
with P6303	DC to at least 15 MHz.	
with P6302	DC to at least 50 MHz.	
5 MHz	5 MHz, ± 1 MHz	
ac coupled, lower limit	≤ 7 Hz	
Rise time (full bandwidth)	≤ 3.5 ns	
Noise		BANDWIDTH Full, function in CAL DC LEVEL; dc level adjusted for zero dc out
Ampl random (1st two cw positions of CURRENT/DIV switch)	≤ 4 mV	
Ampl random (CURRENT/DIV switch ranges except 1st two cw positions)	≤ 0.8 mV	BANDWIDTH Full, function in DC; CURRENT/DIV full cw; DC LEVEL adjusted for zero dc out
Random (typical probes) P6302	≤ 0.3 mA (Tangentially measured)	
P6303	≤ 3 mA (Tangentially measured)	
Attenuator Accuracy	Within 3% of indicated Current/Division	

Table 2-1 (cont)

ELECTRICAL CHARACTERISTICS

Characteristics	Performance Characteristics	Supplemental Information
Deflection Factor (typical probes)		
P6302	1 mA to 5 A/div in a 1, 2, 5 sequence	
P6303	10 mA to 50 A/div in a 1, 2, 5 sequence	
Thermal Drift Amplifier Only		In first two cw positions; 2 mV/°C or less at OUTPUT (from +15°C to +35°C ambient) In all but first two cw positions; ≤ 0.4 mV/°C at OUTPUT (from +15°C to +35°C ambient)
OUTPUT dynamic range	+80 mV and -80 mV with less than 5% compression (into 50 Ω)	CURRENT/DIV set to 5 mA/Div. Monitor oscilloscope set for 20 mV/div
POWER CONSUMPTION		
Standard Instrument		≈17 W

Table 2-2

ENVIRONMENTAL CHARACTERISTICS

Characteristics	Information
Temperature	Test to procedures of MIL-STD-810C Methods 502.1 and 501.1 using Procedure I as specified in MIL-T-28800B paragraph 4.5.5.1.3 and 4.5.5.1.4.
Operating	0°C to +50°C.
Non-operating	-55°C to +75°C.
Humidity	
Operating	+50°C to 95% relative humidity.
Non-operating	+60°C to 95% relative humidity. Test to MIL-STD-810C Method 507.1 Procedure IV, modified as specified in MIL-T-28800B paragraph 4.5.5.1.1.2.
Altitude	Test to MIL-STD-810C Method 500.1 Procedure I as specified in MIL-T-28800B paragraph 4.5.5.2.
Operating	To 15,000 feet.
Non-operating	To 50,000 feet.

Table 2-2 (cont)

ENVIRONMENTAL CHARACTERISTICS

Characteristics	Information
Vibration Operating and Non-operating	With the instrument operating, the vibration frequency is swept from 10 to 55 to 10 Hz. Vibrate 15 minutes in each of the three major axes at 0.015" total displacement. Hold 10 minutes at any major resonance, or if none, at 55 Hz. Total time, 75 minutes.
Shock Non-operating	30 g's 1/2 sine, 11 ms duration, 3 shocks in each direction along 3 major axes, for a total of 18 shocks.
Transportation	Qualified under National Safe Transit Committee Test Procedure 1A, Category II.

Table 2-3

PHYSICAL CHARACTERISTICS

Characteristics	Information
Maximum Overall Dimensions	
Height	≈5 inches (12.7 cm)
Width	≈2.6 inches (6.7 cm)
Length	≈11.7 inches (29.8 cm)
Front Panel	
Finish	Anodized aluminum
Net Weight	≈2 lbs.

PERFORMANCE CHECK**Introduction**

This procedure checks the electrical characteristics of the AM 503 that appear in the Specification section of this manual. If the instrument fails to meet the requirements given in this performance check, the adjustment procedure should be performed. This procedure can also be used by an incoming inspection facility to determine acceptability of performance.

The electrical characteristics in Section 2 are valid only if the AM 503 is calibrated at an ambient temperature of +20°C to +30°C and operated at an ambient temperature of 0°C to +50°C.

Tolerances that are specified in this Performance Check procedure apply to the instrument under test and do not include test equipment error.

Test Equipment Required

The following test equipment, or equivalent, is required to perform the performance check. Test equipment characteristics listed are the minimum required to verify the performance of the equipment under test. Substitute equipment must meet or exceed the stated requirements. All test equipment is assumed to be operating within tolerances.