

Specifications

For additional probe specifications, refer to the probe's *Instructions*.

These specifications are valid only under the following conditions:

- The probe and amplifier have been calibrated at an ambient temperature of $23^{\circ}\pm 5^{\circ}$ C.
- The probe and amplifier are operating in an environment whose limits are described in Table 4-4 (the operating temperature limits are 0° C to $+50^{\circ}$ C, unless otherwise stated).
- The probe and amplifier have had a warm-up period of at least 20 minutes.
- The probe degauss/autobalance routine has been performed after the 20-minute warm-up period, and thereafter whenever the PROBE DEGAUSS/AUTOBALANCE light blinks.
- The Amplifier output is properly terminated into 50 Ω .

Specifications are separated into two categories: warranted specifications and nominal or typical characteristics.

Because of a change in the probe input connector, the performance specifications are guaranteed only for probes having the following serial numbers:

A6312		All
A6302		B050000 and above
A6303		B022000 and above
A6302XL	...	All
A6303XL	...	All
A6304XL	...	All

Probes with earlier serial numbers can be updated; contact your nearest Tektronix Service Center.

Warranted Specifications

Warranted specifications, Table 4–1, are guaranteed performance specifications unless specifically designated as typical or nominal.

Table 4–1: Warranted AM 503B and AM 5030 Specifications

Parameter	Installed Probe					
	A6312	A6302	A6303	A6302XL	A6303XL	A6304XL
Bandwidth	DC to 100 MHz, –3 dB	DC to 50 MHz, –3 dB	DC to 15 MHz, –3 dB	DC to 17 MHz, –3 dB	DC to 10 MHz, –3 dB	DC to 2 MHz, –3 dB
Rise Time, 10% to 90%	≤ 3.5 ns	≤ 7 ns	≤ 23 ns	≤ 20 ns	≤ 35 ns	≤ 175 ns
DC Gain Accuracy	≤3% ¹	≤3% ¹	≤3%	≤3% ¹	≤3%	≤3%

¹ The DC gain accuracy is correctable to < 0.2% when using the probe trim procedure described on page 2–10.

Nominal and Typical Characteristics

Nominal and typical characteristics, Tables 4–2 and 4–3, are not guaranteed. They are provided to characterize the configuration, performance, or operation of typical probe/amplifier combinations.

Table 4–2: Nominal and Typical AM 503B and AM 5030 Characteristics

Parameter	Installed Probe					
	A6312	A6302	A6303	A6302XL	A6303XL	A6304XL
Current/Division Ranges, nominal, Oscilloscope at 10 mV/div	1 mA/div to 5 A/div, 1–2–5 sequence	1 mA/div to 5 A/div, 1–2–5 sequence	5 mA/div to 50 A/div, 1–2–5 sequence	1 mA/div to 5 A/div, 1–2–5 sequence	5 mA/div to 50 A/div, 1–2–5 sequence	500 mA/div to 200 A/div, 1–2–5 sequence
Input Coupling, nominal	AC, DC, and REF	AC, DC, and REF	AC, DC, and REF	AC, DC, and REF	AC, DC, and REF	AC, DC, and REF
AC Coupling Low-Frequency Bandwidth, typical	<7 Hz, –3 dB	<7 Hz, –3 dB	<7 Hz, –3 dB	<7 Hz, –3 dB	<7 Hz, –3 dB	<7 Hz, –3 dB
Output DC Level Adjustment Range, typical	±10 divisions	±10 divisions	±10 divisions	±10 divisions	±10 divisions	±10 divisions
Output Dynamic Range, typical (Including Output DC Level Setting)	±10 divisions, ±100 mV	±10 divisions, ±100 mV	±10 divisions, ±100 mV	±10 divisions, ±100 mV	±10 divisions, ±100 mV	±10 divisions, ±100 mV
Displayed Noise, typical	<250 μ A _{RMS} Limit measurement bandwidth to 100 MHz.	<250 μ A _{RMS} Limit measurement bandwidth to 100 MHz.	<2.5 mA _{RMS} Limit measurement bandwidth to 100 MHz.	<250 μ A _{RMS} Limit measurement bandwidth to 100 MHz.	<2.5 mA _{RMS} Limit measurement bandwidth to 100 MHz.	<0.25 A _{RMS} Limit measurement bandwidth to 20 MHz.

Table 4–2: Nominal and Typical AM 503B and AM 5030 Characteristics (Cont.)

Parameter	Installed Probe					
	A6312	A6302	A6303	A6302XL	A6303XL	A6304XL
Bandwidth Limit, –3 dB, typical	20 MHz ±4 MHz	20 MHz ±4 MHz	12 MHz ±3 MHz	14 MHz ±2 MHz	9 MHz ±2 MHz	2 MHz ±10 kHz
Signal Delay, typical, with provided 50 Ω cable	approximately 30 ns	approximately 30 ns	approximately 55 ns	approximately 60 ns	approximately 105 ns	approximately 105 ns

Table 4–3: AM 503B and AM 5030 Mechanical Characteristics

Parameter, nominal	Characteristic
Length	298 mm (11.7 in)
Height	127 mm (5.0 in)
Width	67 mm (2.63 in)
Weight	2 kg (4.4 lb)

Environmental Characteristics

The environmental characteristics in Table 4–4 are warranted performance specifications. Unlike the warranted characteristics in Table 4–1, the environmental characteristics are type tested; therefore there are no performance verification procedures provided to test these characteristics.

Table 4–4: AM 503B and AM 5030 Environmental Characteristics

Parameter	Characteristic
Ambient Temperature	
Operating	0° C to +50° C
Nonoperating	–55° C to +75° C
Humidity	
Operating	50° C, to 95% R.H.
Nonoperating	60° C, to 95% R.H.
Altitude	
Operating	4,570 m (15,000 ft) maximum
Nonoperating	15,200 m (50,000 ft) maximum
Random Vibration	
Operating	0.31 g _{RMS} , 5 Hz to 500 Hz, 10 minutes each axis
Nonoperating	2.46 g _{RMS} , 5 Hz to 500 Hz, 10 minutes each axis
Shock	30 g, 11 ms duration, half-sine pulses
Bench Handling	30 g, 11 ms duration, half-sine pulses
Topple Test	30 g, 11 ms duration, half-sine pulses
Transit Test, Packaged Product	38.1 cm (15 in) free-fall drop height, 91 kg (200 lb) compressive load, 32 mm (0.125 in) displacement, 30 minute vibration test, 1.33 g _{RMS} , 1 hour each axis random vibration test
Electro-Magnetic Compliance	Meets FCC Part 15, Subpart B, Class A