# SECTION 1
# SPECIFICATION

## Introduction

The Tektronix P6021 5 foot and 9 foot Current Probes are designed to measure alternating current waveforms. These probes, used with current devices such as the Type 134 Current Probe Amplifier, 7A14 Current Probe Amplifier plug-in, or the P6021 Passive Termination, permit a current waveform to be viewed and measured on the oscilloscope. This instruction manual deals primarily with the P6021 Current Probe as used with the Termination. For information concerning use with the current probe amplifier, refer to the appropriate current probe amplifier instruction manual.

The specifications pertain to the P6021 Current Probe with Termination.

### ELECTRICAL CHARACTERISTICS

**(For both 5 foot and 9 foot versions unless otherwise stated)**

| Characteristic | Performance |
|---|---|
| Step Response | |
| 5 Foot Probe Aberrations (Probe and Termination only) | |
| 2 mA/mV | 3%, −3% or less, total of 4% or less peak to peak within 50 nanoseconds of step; +1%, −1% or less, total of 2% or less peak to peak thereafter. |
| 10 mA/mV | 3%, −3% or less, total of 4% or less peak to peak within 50 nanoseconds of step; +1%, −1% or less, total of 2% or less peak to peak thereafter. |
| 9 Foot Probe Aberrations (Probe and Termination only) | |
| 2 mA/mV and 10 mA/mV | +4%, −4% or less, not to exceed 5% peak to peak within 50 nanoseconds of step. +1%, −1% or less, total not to exceed 2% peak to peak thereafter. |
| Risetime (Probe and Termination only) | |
| 2 mA/mV | 4.5 nanoseconds or less |
| 10 mA/mV | 4 nanoseconds or less |

### ELECTRICAL CHARACTERISTICS (cont)

| Characteristic | Performance |
|---|---|
| Risetime (with 580 Series test oscilloscope) | |
| 2 mA/mV | 6.7 nanoseconds or less |
| 10 mA/mV | 6.5 nanoseconds or less |
| Tilt | |
| 2 mA/mV | 4% or less within ten microseconds of step |
| 10 mA/mV | 4% or less within 100 microseconds of step |
| Sensitivity | Two milliamperes or ten milliamperes for each millivolt at oscilloscope input, selected by slide switch. |
| Accuracy | Within ±3% |
| Bandwidth (with 580 Series test oscilloscope) | |
| 2 mA/mV | 450 hertz or less to 52 megahertz or more |
| 10 mA/mV | 120 hertz or less to 54 megahertz or more |
| Maximum CW Current | 15A peak to peak sinewave between 1.2 kHz and 5 MHz at 2 mA/mV; between 300 Hz and 5 MHz at 10 mA/mV. |
| Maximum Pulse Current | 250 amperes peak, not to exceed 500 A–μs or 5 amperes RMS. Ampere-second product in excess of 500 A μs reduces probe output to zero due to core saturation. |
| Maximum Voltage | 600 volts (DC + peak AC) |
| Maximum DC Saturation | 0.5 amperes |
| Delay Time | Approximately 9 nanoseconds (5 foot probe) or 15.8 nanoseconds (9 foot probe) with termination. |
| Insertion Impedance | 0.03 Ω or less at 1 MHz, increasing to 1.0 Ω or less at 60 MHz. |