

OSCILLOSCOPE CALIBRATION INSTRUMENTS



PG 506A

CALIBRATION GENERATOR

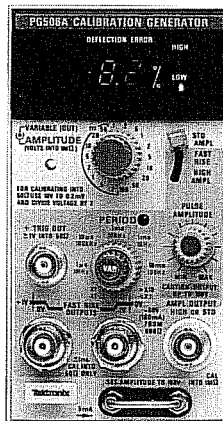
- Three Square-Wave Output Modes
- 10 Hz to 1 MHz
- Direct Readout of Oscilloscope Deflection Error

ORDERING INFORMATION

PG506A Calibration Generator **\$3,140**
Includes: Instruction manual (070-6687-00).

OPTIONAL ACCESSORIES

Precision Voltage Divider –
Order 015-0265-00. **\$240**
Tunnel-Diode Pulsar –
Order 067-0681-01. **\$275**



PG 506A

The PG 506A Calibration Generator provides three modes of square wave output, selectable dc outputs, and a variable-amplitude output with front panel digital indication of oscilloscope deflection error. Simultaneous, plus and minus low-level, fast-rise (1.0 ns) square waves or high-amplitude (60 V), extremely clean square waves are available at frequencies from 10 Hz through 1 MHz for checking

oscilloscope transient response. A 5 mA calibration current loop is useful for current probe calibration. A 1 kHz square wave can be generated in the amplitude-calibration mode. Its amplitude can be varied around the calibrated level until the square wave aligns with the oscilloscope graticule divisions. Scope deflection error can then be read directly off the PG 506A digital display in percentage high or low, permitting rapid verification of oscilloscope performance.

An optional Tunnel-Diode Pulsar provides a clean, fast-rise pulse for adjusting the transient response of high frequency oscilloscopes and other instruments. It can be driven by the PG 506A at repetition rates exceeding 50 Hz. Output amplitude of the pulse is approximately 250 mV into 50 ohms, while rise time is less than or equal 125 ps; aberrations are less than 1% in a 1 GHz system.

The optional Precision Voltage Divider is designed for use with the PG 506A in the Standard Amplitude mode. This 4 divider allows your oscilloscope to display a constant four divisions when checking amplitude calibration from 20 $\mu\text{V}/\text{div}$ through 1 V/div. It also allows more convenient use of the PG 506A with oscilloscopes that cannot display five divisions of amplitude. The input limit on the instrument is 5 V RMS. The output is 0.4 X the PG 506A amplitude with a voltage accuracy of 0.4%. The input capacitance requirement is 50 ohms with an output load greater than or equal to 100 kohms.

CHARACTERISTICS

AMPLITUDE-CALIBRATOR MODE

Period – Fixed at ≈ 1 ms or dc.

Amplitude – From 200 μV p-p to 100 V p-p in 1-2-5 sequence, accurate within 0.25% into 1 M Ω . 100 μV p-p to 5 V p-p into 50 Ω .

Error Readout – Range: $\pm 7.5\%$. Resolution: 0.1%.

PULSE MODES

Period – 1 μs to 10 ms (within 5%) in decade steps with the variable control in Cal position. Variable extends period to at least 100 ms.

Symmetry – $\approx 50\%$ duty cycle.

HIGH AMPLITUDE OUTPUT

Rise Time – Underterminated: 100 ns or less. Terminated into 50 Ω : 10 ns or less.

Amplitude Range – Underterminated: 6 V or less to at least 60 V. Terminated into 50 Ω : 0.5 V or less to at least 5 V.

Leading-Edge Aberrations – Within 2% or 50 mV p-p, whichever is greater, when terminated into 50 Ω .

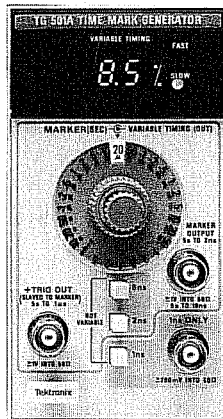
NEW TG 501A

TIME MARK GENERATOR

- Marker Outputs, 1 ns to 5 s
- Direct Readout of Oscilloscope Timing Error
- External Trigger Output

ORDERING INFORMATION

TG 501A Time Mark Generator **\$2,750**
Includes: Instruction manual (070-1576-02).



TG 501A TIME MARK GENERATOR

The TG 501A Time Mark Generator provides marker outputs from one nano-second to five seconds. A unique feature of the TG 501A is a variable timing output with a front panel two-digit LED display. The display indicates percentage of timing error between the normal time interval and a variable interval that lines up the marker pulse with graticule or division marks on the display. This feature

not only provides direct readout in terms of percent error, but also helps eliminate errors associated with visually estimating error from a display.

Markers – 1 ns through 5 s in a 1-2-5 sequence.

Marker Amplitude – ≥ 1 V peak into 50 Ω on 5 s through 10 ns markers. ≥ 750 mV p-p into 50 Ω on 5 ns and 2 ns markers. ≥ 200 mV p-p into 50 Ω on 1 ns markers.

Trigger Output Signal – Slaved to marker output from 5 s through 100 ns. Remains at 100 ns for all faster markers.

Internal Time Base – Crystal Frequency 5 MHz; Stability (0 to 50°C within 5 parts in 10⁷ after 1/2 hour; Long-Term Drift 1 part or less in 10⁷ per month; Setability adjustable to within 5 parts in 10⁸).

External Reference Input – Available with internal changes. Acceptable frequencies, 1 MHz, 5 MHz, or 10 MHz. Input amplitude must be TTL-compatible.

Timing-Error Readout Range – To 7.5%.

Timing-Error Measurement Accuracy – Device under test error is indicated to within one least significant digit (to within one displayed count).