



TR 210 Huntron Tracker®



Tektronix TR 210 Huntron Tracker.

The Advantages of Tracker Technology

The Tektronix TR 210 Huntron Tracker® provides advanced troubleshooting capabilities to simplify testing newer technology components such as CMOS and MOS circuits. A built-in pulse generator lets you troubleshoot gate-fired devices such as SCRs, TRIACs and opto-couplers. By energizing the gate, you can test a component in an active mode. Since the TR 210 is used while the power to the circuit-under-test is turned off, you avoid an accidental short that could cause further damage. It allows you to analyze the overall health of a solid-state component, which makes it perfect for finding leakage or substrate damage that has brought a circuit board or a complete system

down prematurely. Because it can compare suspect components to known-good equivalents, it's also ideal for troubleshooting when documentation is missing or incomplete.

Analog Signature Analysis

The TR 210 works by applying a current-limited AC signal across two points of a component. The current flow causes a vertical deflection of the oscilloscope display, while the voltage causes a horizontal deflection. Together, they give you a unique current-voltage "analog signature" that represents the overall health of the device-under-test. By analyzing each signature, you can quickly tell if a component is good, bad, or marginal.

Real-world Troubleshooting Challenges

Test Components and Boards Without Power – Ideal for Catastrophic Failures

Get a Picture of a Component's Overall Health – Including Intermittent Problems

Test Gate-fired Devices with a Built-in Pulse Generator

Non-destructive Testing

The Tektronix TR 210 is ideal for troubleshooting Programmable Logic Controls (PLCs). In troubleshooting multi-channel input modules, technicians frequently run into a damaged channel because the IC buffers, opto-couplers, and drivers have been over-stressed. Using the built-in pulse generator, the TR 210 quickly troubleshoots opto-couplers and other gate-fired devices. Simply compare the signature of one channel against another. You'll usually find problems where you see differences in signatures.

Likewise, you can also compare multi-channel output devices with the TR 210. These devices usually fail when too much current is drawn through the logic section. To troubleshoot them, compare the signatures of ICs in one channel against those in another, looking for differences that indicate a problem.

Ranges

Range	V _s (V _{pk})	Z _s (Ω)	Current (mA _{RMS})	P _{max} (mW)	P _{diode} (mW)
High	60	74 k	0.6	6	0.2
Medium 2	20	27 k	0.6	2	0.2
Medium 1	15	1.2 k	8.5	23	2
Low 2	10	54	132	232	33
Low 1 ¹	3	10 k	0.21	0.1	0.05

¹ Low power setting.

TR 210 Characteristics

Test Frequencies – 50 or 60 Hz, 200 Hz, 2,000 Hz.

Functions –

Range Selection: Auto or Manual. High Range Lockout.

Compare-A-Trace – Adjustable (0.5 Hz to 5 Hz).

Pulse Generator –

Level: 0 V to 5 V.

DC Mode: +DC or –DC.

Pulse Mode: +Pulse, –Pulse, or both; adjustable duty cycle.

General Characteristics

ENVIRONMENTAL, EMC, SAFETY

Temperature –

Operating: 0° C to +40° C.

Non-operating: –50° C to +60° C.

Humidity –

Operating: 0 to 70% (per IEC 1010-1).

Altitude –

Operating: Up to 4,600 m (15,000 ft.).

Non-operating: Up to 15,000 m (50,000 ft.).

EMC – Directive 89/336/EC.

Safety Compliance – Low voltage directive 73/23/EEC as amended by 93/86/EEC.

PHYSICAL

Dimensions	cm	in.
Height	6.2	2.45
Width	29.1	11.45
Depth	25.9	10.2

Weight	kg	lb.
Net	2.1	4.6

WARRANTY

One year parts and labor.

POWER

Source Power –

Voltage Ranges: 100 VAC, 230 VAC.

Line Frequency: 50 or 60 Hz.

Power – 15 W maximum.

Ordering Information

TR 210 Huntron Tracker®

Includes: Instruction Manual, One Set ATL25 Test Probes, Common Test Leads, Two Mini-clip Leads, U.S. Power Cord.

INTERNATIONAL POWER CORD OPTIONS

Option A1 – Universal Euro 220 V, 50 Hz.

Option A2 – UK 240 V, 50 Hz.

TR 210 RECOMMENDED ACCESSORIES

Black Ground Leads – 98-0043.²

Blue Clip Leads – 98-0036.²

Foot Switch – 98-0314.²

18-in. Coaxial BNC Cable – 012-0076-00.

36-in. Coaxial BNC Cable – 012-1341-00.

42-in. Coaxial BNC Cable – 012-0057-01.

TR 210 RECOMMENDED OSCILLOSCOPES

Tektronix TDS 210 60 MHz Digital Real-time Oscilloscope.

Tektronix TDS 220 100 MHz Digital Real-time Oscilloscope.

² Available from:

Huntron, Inc.

15720 Mill Creek Blvd.

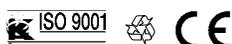
Mill Creek, WA 98012

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