ECAD® System 2005 Cable Test System

Specifications

The ECAD System 2005 is a portable, PC-controlled test system designed to automatically characterize multi-conductor circuits.

APPLICATIONS

- Periodic condition monitoring
- Identifying and locating degraded and failed conditions
  - Open and short circuits
  - Resistive connections
  - Moisture and fluid intrusion
  - Brittle and cracked insulation

MEASUREMENTS

- AC and DC voltage
- DC Resistance
- Impedance, phase angle, capacitance, dissipation factor, inductance, quality factor, AC resistance, reactance
- Insulation resistance (up to 500 VDC)
- Polarization Index (PI) and Dielectric Absorption Ratio (DAR)
- Time domain reflectometery

SOFTWARE

- Basic users execute pre-defined test plans
  - Results are automatically stored in a database and compared to acceptance criteria and historical data
  - Anomalous results are flagged in color and in real time
- Advanced users can create or modify test plans
  - New test plans are dynamically added to front-end drop menus
- One-line diagrams and testing instructions can be included in test plans
- Graphical analysis tools for interpreting test results

HARDWARE

- PCI instrumentation
- Rugged system controller
  - Sunlight readable display, CDROM burner, IP65 environmental protection, uninterruptible backup power supply, AC/DC operation
- Internal RF switch allows the user to test up to 15 conductors with one test connection.

PHYSICAL AND ENVIRONMENTAL

- Weighs approximately 30 lbs
- Operating temperature -4°F to +122°F
- Storage temperature -13°F to +158°F
- IP65 protection while operating

Contact
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Specifications

Characteristic	ECAD System 2005
AC/DC Voltage Measurement	♦ Used to protect operator and equipment from testing energized circuits ♦ DC voltage measurements from 0 to 500 VDC; 1% overall accuracy ♦ AC voltage measurements from 0 to 140 VAC; 1% overall accuracy
DC Resistance	♦ Single ended loop resistance measurement ♦ Measurement range from 1 mohm to 10 Mohm; 1% overall accuracy ♦ Also used as insulation resistance test permissive (>500 kohms required) to protect field equipment.
Impedance and Phase Angle	♦ Impedance and phase angle measurements at nine frequencies: 100 Hz to 40 kHz ♦ AC resistance, reactance, inductance, quality factor, capacitance, dissipation factor are calculated ♦ Impedance, AC resistance, and Reactance measurement range: 1 mohm to 10 MOhm; 1% accuracy (1 kHz) ♦ Capacitance measurement range: 10 pF to 1000 mF; 1% accuracy (1 kHz) ♦ Inductance measurement range: 100 nH to 1000 mH; 1% accuracy (1 kHz) ♦ Dissipation and Quality Factor: 0.001 to 1000; 1% accuracy (1 kHz)
Time Domain Reflectometry	♦ TDR signatures are used to locate circuit faults and degraded components ♦ Low resolution and high resolution modes available.
Insulation Resistance	♦ Standard test voltages from 50 to 500 VDC ♦ Current limited power supply and software controls to protect sensitive circuits ♦ Selectable test durations
Software Features	♦ Basic and advanced user levels ▪ Basic users can execute pre-defined test plans ▪ Advanced users can create or change test plans ♦ Testing sequence is controlled using a test plan ♦ Test plan defines testing configurations, test connections, acceptance criteria, special instructions, and an electronic copy of the schematic ♦ Graphical analysis module for comparing test results ♦ Significant changes between data sets are flagged automatically in real-time ▪ Suspect results can be examined during testing ♦ TDR analysis with cursors for measuring distance and “zooming-in” on detail ♦ Manual control of all instrumentation and measurements ♦ Self-test/calibration function ♦ Results are stored in a Microsoft Access database ♦ Databases can be exported/imported
Environmental Features	♦ Operating temperature -4°F to +122°F ♦ Storage temperature -13°F to +158°F ♦ IP-65 protection (operating configuration)
Physical	♦ Weight approximately 30 pounds

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