LM3 Technologies

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TECHNICAL DATA SHEET

Electrical and Continuity Testing

LM3 Technologies' Electrical Testing solution automates the verification of continuity, resistance, voltage, and current characteristics in wiring harnesses, subassemblies, and electrical components. By combining fast switching systems, vision integration, and automated defect detection, our solution ensures comprehensive validation of electrical integrity at the production line speed.

Built for inline, workstation-based, or robot-assisted integration, the system reduces manual probing errors, ensures 100% testing coverage, and maintains complete traceability of test results.

PRODUCT INFO

PRODUCT NAME:
Electrical and Continuity Testing Systems

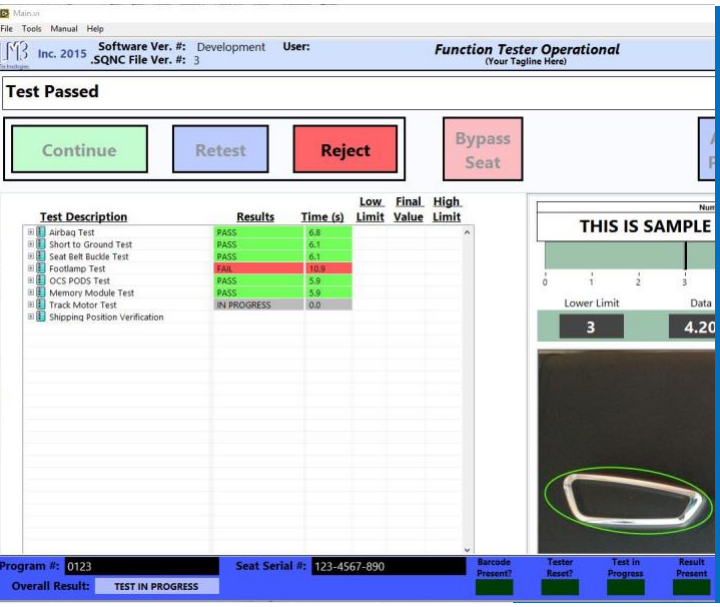
CATEGORY:
Automated Electrical Continuity and Resistance Inspection

Budget Range:
$30,000 - $250,000
Dependent on scope and hardware configuration

SYSTEM APPLICATIONS

Electrical Testing systems are deployed in **automotive wiring harness production**, **PCB assembly verification**, **battery module validation**, and **electromechanical subassembly inspection** across industries such as **automotive**, **electronics**, and **industrial automation**.

Applications include **continuity checking**, **high-resistance detection**, **short circuit detection**, **polarity validation**, **grounding verification**, and **load testing** to confirm product compliance before assembly moves downstream.



SYSTEM CAPABILITIES

- **Cycle Time:** Full test cycles from 2–6 seconds depending on circuit complexity
- **Flexible Integration:** Operator-driven or automated probe interface systems
- **Part Types:** Harnesses, PCB assemblies, battery modules, connectorized systems
- **Traceability:** Captures detailed pass/fail results, defect classification, and image association

INSPECTION METRICS

Metric	Range	Notes
Continuity Range	0 – 10 Ω	Adjustable threshold limits based on test profile
Resistance Range	0 – 1 MΩ	Capable of fine resistance validation
Voltage Range	0 – 48V DC	Available for active circuit validation
Inspection Cycle Time	2 – 6 sec	Depends on total number of points tested
Trigger Method	Operator Start / PLC Command	Manual or automated triggering options
Output Format	Test Report + Pass/Fail	Flexible setups based on production needs
Data Logging	Enabled	Includes full test matrix if desired
Part Presentation	Fixtured or Manual	Full traceability with timestamped result records

SYSTEM KEY FEATURES

High-Speed Electrical Switching

Utilizes fast, precision test switching systems to handle complex multi-point electrical testing without manual reconfiguration.

Full Vision and Electrical Test Integration

Optional combination with vision inspection systems enables electrical and mechanical validations in a single station.

Configurable Test Profiles

Supports flexible recipes for different part variants, easily switched via barcode scans, operator selection, or PLC commands.

Full Traceability and Test Archiving

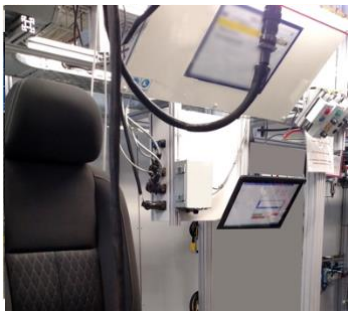
Stores detailed test results, part IDs, operator IDs, and timestamps for full quality auditing and process improvement.

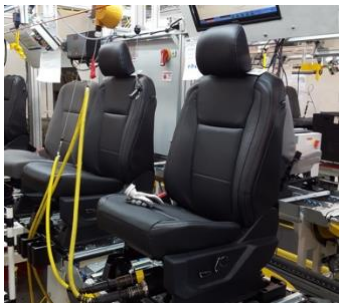
Setup

1. Hardware Installation
2. Test Point Configuration
3. Calibration & Validation
4. Recipe Loading
5. PLC Connection
6. Trigger Setup
7. Logging Setup
8. System Launch

Integration Points

Integration Point	Connection Type	Function
Test Start Trigger	PLC / Operator Button	Start Test Sequence
Electrical Data Output	Ethernet/IP / TCP/IP	Result Transmission
PLC Feedback	Digital I/O / Network	OK/NG Output to Line
Operator Interface	Touchscreen / Monitor	Test Status Display
Recipe Management	Barcode / UI Selection	Profile Switching
Data Storage	REST API / SQL Database	Test Result Archiving
Fixture Status Monitoring	Digital Inputs	Confirm Part Seating
Maintenance Access	Ethernet / USB	System Updates





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GET CONNECTED

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