Electronic Heater Valves Testing
Application Note 1270-4

Description
Production testing of automotive heater/air-conditioning system valves requires high volume testing on high speed, economical test systems.

Problem
Some 600,000 automotive heater/air-conditioning system valves per year must be tested on an easy to operate pass-fail test system. The test results must be clearly indicated to the system operator and transmitted to the facilities overall CIM management and reporting system.

Solution
A turnkey system was integrated with measurement instruments and computer control, based on HP VXI components. The system was delivered with test software and custom fixturing. The system is capable of testing the required 600,000 valves per year on a pass-fail criteria with a test cycle time of 45 seconds per two valves, tested in parallel. The test operator interacts with the test system via a single on-off button. The pass-fail test result is displayed to the operator. The test result, and the bar-code scanned part identification, is transmitted, via the facilities LAN network to the central CIM system, for capture in the statistical data base.

Key System Features
- Minimum Operator Interaction
- CIM System Connected

Typical System Configuration

<table>
<thead>
<tr>
<th>Data Acquisition System</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Slot Mainframe</td>
<td>1</td>
</tr>
<tr>
<td>High-Speed</td>
<td></td>
</tr>
<tr>
<td>Integrating Voltmeter</td>
<td>1</td>
</tr>
<tr>
<td>Universal Counter</td>
<td>1</td>
</tr>
<tr>
<td>Programmable Power Supply</td>
<td>2</td>
</tr>
<tr>
<td>FET Multiplexer Channels</td>
<td>32</td>
</tr>
<tr>
<td>Relay Driver Channels</td>
<td>72</td>
</tr>
</tbody>
</table>

Computer/Software
- PC Embedded Controller
- Workstation/Controller
- Keyboard, Monitor and Mouse
- Software - HP ITG
  - HP BASIC
  - HP FTM

Other Equipment
- Custom Interface Board with Sense Resistors
- Optical Sensor Interface

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