Quick Zirconia Probe Diagnostics
ZR22G

This troubleshooting guide contains the typical checks recommended by our service department to help find the source of a probe issue.

**Equipment Required**

An ohmmeter
An insulation tester 500VDC/1000VDC

**Ohmmeter Basic Tests**

Cold junction types:

<table>
<thead>
<tr>
<th>Component Tested</th>
<th>Probe Terminals/Locations</th>
<th>Desired Value(s)</th>
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<tbody>
<tr>
<td>Heater</td>
<td>Terminals 7 and 8</td>
<td>60-80Ω</td>
</tr>
<tr>
<td>Thermocouple</td>
<td>Terminals 3 and 4</td>
<td>1-5Ω when at room temp. 50-100Ω when at process temp.</td>
</tr>
<tr>
<td>Cold Junction (RTD)</td>
<td>Terminals 5 and 6</td>
<td>~1100Ω at room temp.</td>
</tr>
<tr>
<td>Cold Junction (transistor)</td>
<td>Terminals 5 and 6</td>
<td>∞Ω/2-5MΩ values when reversed.</td>
</tr>
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</table>

The RTD type is the most typical, but probes which are/were part of legacy analyzer systems (ZA8C/AV8C) will be of the transistor type.
**Insulation Tester Basic Tests**

Check the following terminals against ground with a 500VDC or 1000VDC insulation tester: 3, 4, 5, 6, 7, and 8.

Terminals 3 and 4 should read over 5MΩ.
Terminals 5, 6, 7, and 8 should read over 20MΩ.

**Additional Testing (Requires removal of O₂ Cell)**

*Replacement of the metal o-ring (K9470BJ) is required when reinstalling the cell.*

Measure the resistance between Cell+ (terminal 1) and the contact spring groove with an ohmmeter. The reading should be less than 3Ω.

Measure the resistance between Cell- (terminal 2) and the case with an ohmmeter. This should also read less than 3Ω.

Finally, check Cell+ (terminal 1) to case/ground with an insulation tester. The reading should be greater than 5MΩ.

*If you have trouble with performing any of the above tests or are not able to resolve the issue, please contact our service department at support@us.yokogawa.com or 1-800-524-7378 (SERV).*