

Seismic Qualification of Krohne Flowmeter

- Introduction
- Test Specimen Identification
- Methodology
- Testing
- Anomalies
- Conclusions

Introduction

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Krohne Facilities

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Test Specimen Identification

- Krohne Variable

Area

Flowmeter

Model No

H250/RR/M9/K1

Op Pressure

13.8 psig

Op Temp

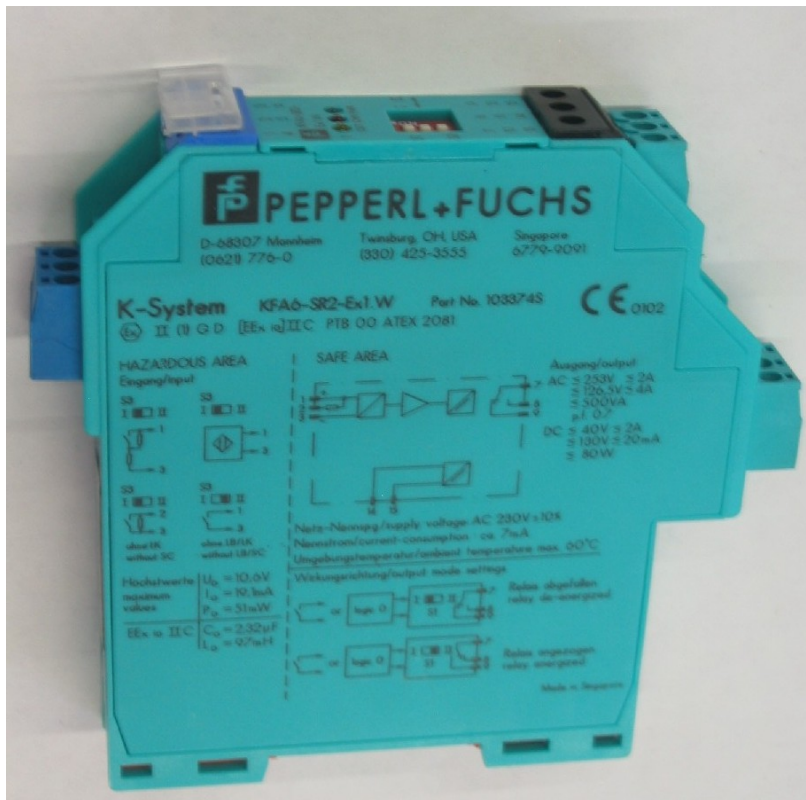
106°F (41°C)



Test Specimen Identification

(continued)

- Associated Isolated Output Relay Module



Model No.

KFA6-SR2-Ex1.W

Part No. 103374S

Supply 207-253VAC

/45-60 Hz

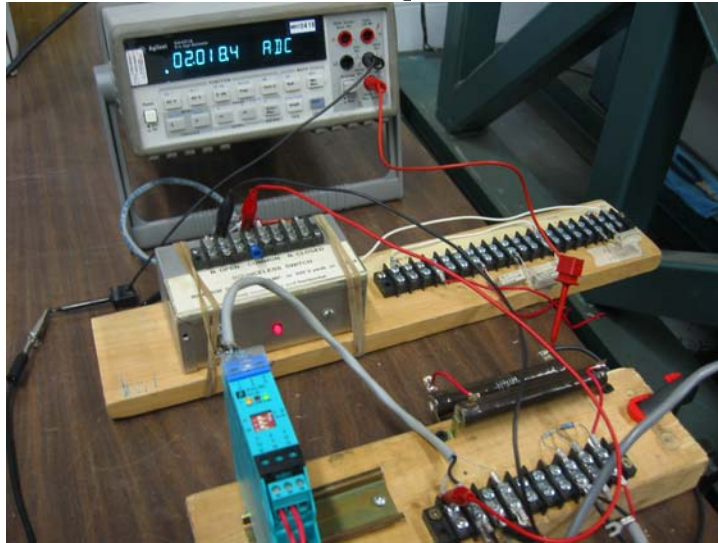
Input 8 VDC/ 8 mA

Methodology

- | Step # | Description |
|--------|----------------------------|
| 1 | Baseline Testing |
| 2 | Radiation Aging |
| 3 | Post Radiation Tests |
| 4 | Thermal Aging |
| 5 | Post Thermal Aging Tests |
| 6 | Sine Sweep Seismic Testing |
| 7 | Post Seismic Tests |
| 8 | Helium Leak Test |

Function Tests

- Test Setups



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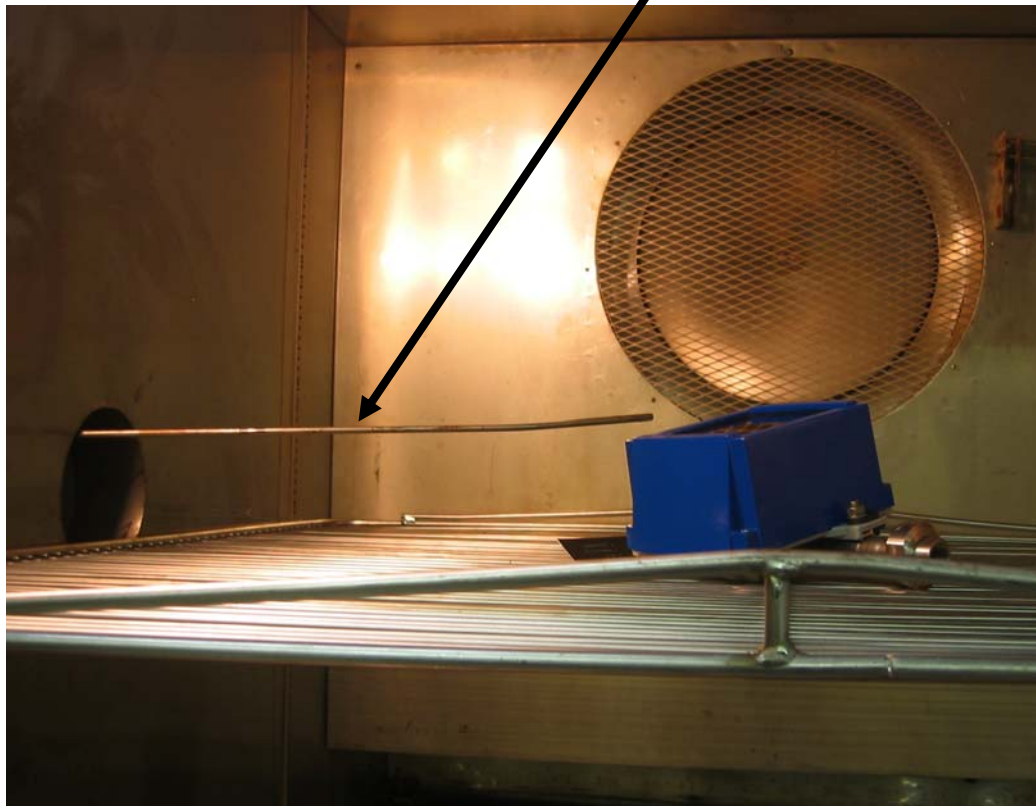
Radiation Aging

- Flow Meter after Radiation Aging



Thermal Aging

- Flowmeter inside oven thermocouple



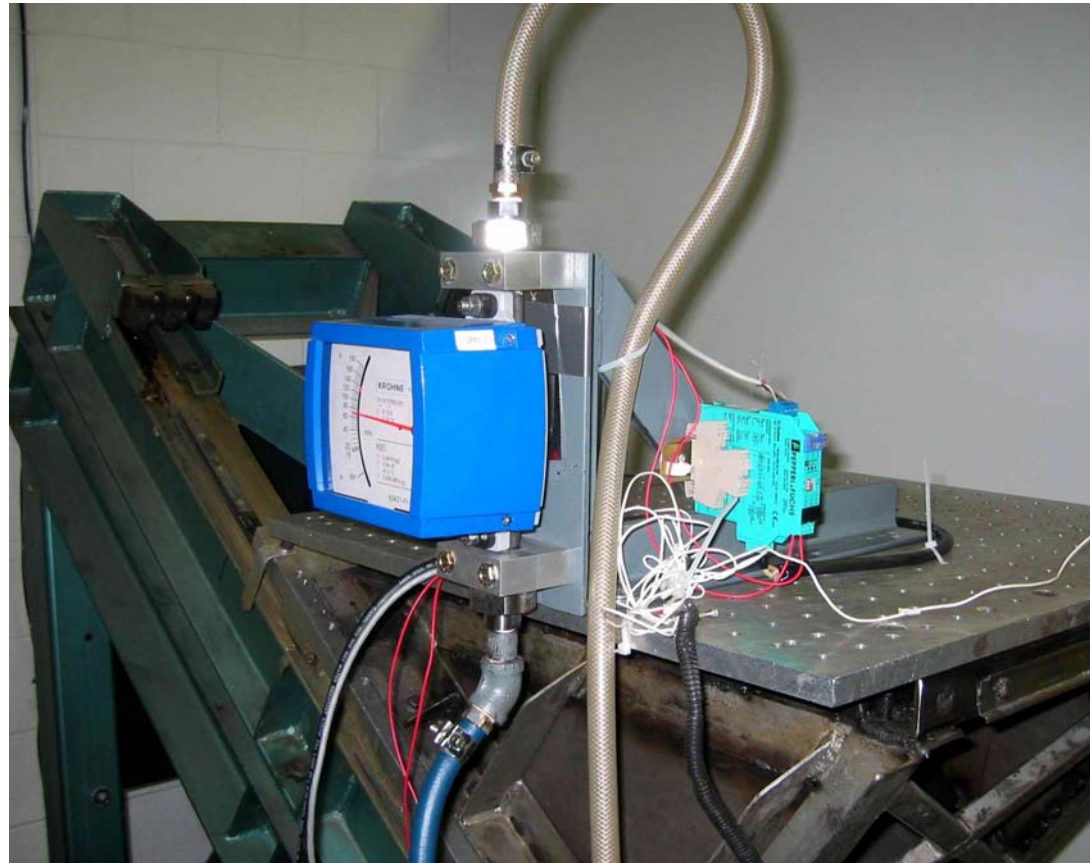
Thermal Aging (continued)

- Overview of oven



Seismic Testing

- Test set up

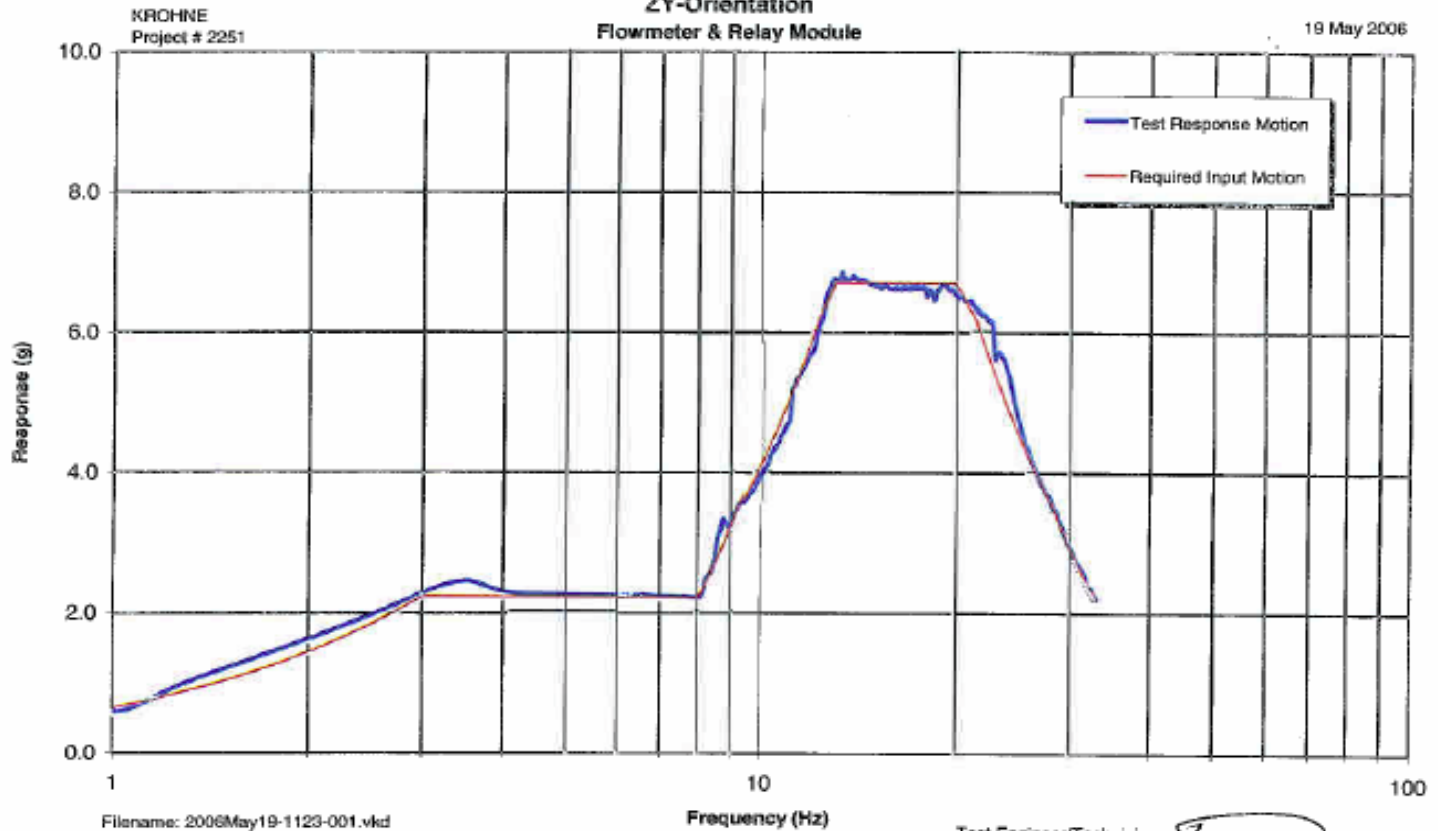


Seismic Testing (continued)

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FIGURE D52
Sine Sweep Seismic Testing
ZY-Orientation
Flowmeter & Relay Module

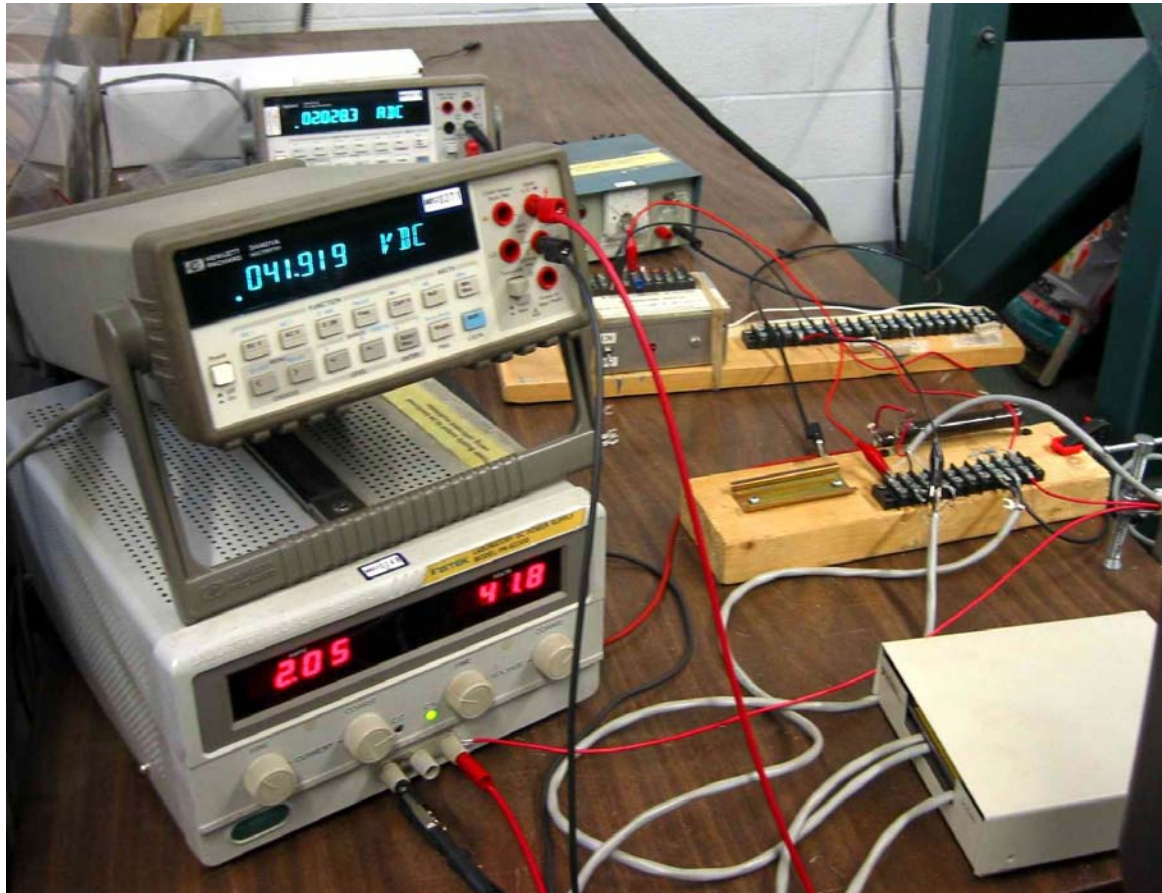
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Seismic Testing (continued)

- Equipment monitoring



Helium Leak Test

- Test set up



Anomalies

- Darkened glass indication cover after Radiation Aging.
- Performance deterioration after Thermal Aging.
- Deflection of needle indicator during Seismic Testing.

Conclusions



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