PFR-101 Title: FM3 SST Sensor NanoMuscle Damaged

Assembly : SST	**SubAssembly : Sensor**	
Component : NanoMuscle	**Units Affected:**	**Units fixed:**
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Organization: UCB	**Date: 21/OCT/05**	
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Failure Occurred During (Check one √)

□ Functional test □ Qualification test □ S/C Integration □ Launch operations x Other (Flight Assy)

Environment when failure occurred:

x Ambient	□ Vibration	□ Shock	□ Acoustic
□ Thermal	□ Vacuum	□ Thermal-Vacuum	□ EMI/EMC

Problem Description

During assembly of the FM3 SST Sensor serial number 6 the assembler damaged the nano muscle by grabbing hold of the unit in the area of the nano muscle.

Analyses Performed to Determine Cause

The resistance of the nano muscle was measured and found to be 10Ohms instead of the nominal 5Ohms. This suggested damage to the nano muscle wire.

Corrective Action/ Resolution

The nano muscle assembly was replaced with a flight ready unit. The SST actuator circuit was tested and shown to behave normally. The sensor requires 1 cycle of Thermal Vacuum to SST sensor limits to verify the actuator works at temperature extremes – then the PFR can be closed.

Acceptance:

MAM: Ron Jackson_____; MSE: Ellen Taylor_____

PM: Peter Harvey_____; Cognizant Engineer_____

Date of Closure_____