ORIGINAL

REVISIONS				
SYMBOL	PREP BY	DESCRIPTION	DATE	APPROVAL
A		RN A011 INACTIVATES DRAWING FOR NEW DESIGN	9/20/90	

INACTIVE FOR NEW DESIGN;
(REFER TO GSFC S-311-641 GENERAL REQUIREMENT FOR THERMOSTATIC SWITCHES)

PREPARED BY John P. Lawrence	DATE 8/2/85	TITLE Procurement Specification for a Thermostatic Switch (Generic)
APPROVED George P. Kramer, Jr.	8/2/85	
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		* S-311-429

Branch – PARTS
Division –
Project –

GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND

S70-23 (3/64)

1.0 SCOPE: This document defines the special requirements to be specified by the user and acceptance test requirements to be performed by the manufacturer prior to shipment.

2.0 GENERAL

2.1 Intended Application: These thermostatic switches must meet the rigors of launch and subsequent extended spaceflight with extremely high probability of successful operation.

2.2 Standard Test Conditions: Unless otherwise specified, all tests, measurements, inspections and examinations shall be conducted under the following conditions:

a. Temperature - +15° to 35°C

b. Relative Humidity - 30 to 80 percent

c. Barometric Pressure - 750 to 800mm of mercury

2.3 Recording and Shipment of Data: Acceptance test data shall be recorded on data sheets suitable for the purpose. Data shall be related to the respective switch serial number. A copy of the data summary shall be shipped with the switches.

3.0 REQUIREMENTS: The total switch requirements are comprised of those delineated in:

a. The purchase order/request (see para. 3.1)

b. Para. 3.2

3.1 Purchase Order/Request Requirements: The purchase order/request shall specify the following:

a. The physical configuration desired

b. Define the temperature set points as maximum temperature and minimum temperature with 20°F minimum spread between maximum and minimum limits and with

a 7°F minimum differential. Specify whether the switch should open on temperature rise or close on temperature rise,

or alternately,

define open or close as the critical set point with a tolerance of ±5°F and allow the other set point to float 7 to 20°F above or below the critical set point.

3.2 Inspection, Screening and Quality Control Requirements: as a minimum, the supplier shall perform the following inspections/tests in accordance with his documented procedures which must be reviewed and approved by the GSFC prior to contract award:

a. 100% Pre-cap Inspection. Immediately prior to enclosing the parts in the case, the assembly shall be thoroughly examined for design, cleanliness and good workmanship at 10X magnification, minimum.

b. Thermal Switch Cleanliness. Inspection shall include the use of micro-particle cleaning on 100% of the devices. However, small particle inspection shall be performed on 2% or 2 pieces, whichever is greater, of the lot being cleaned.

c. Group A Inspection. Group A inspection shall be applied 100% to each unit and shall include: calibration, creepage, seal, contact resistance, dielectric test, insulation resistance, 500 cycle run-in (6V-100ma on contacts) and visual and mechanical examination.

d. Group B Inspection. For lot sizes up to 50 pieces, a minimum of 4 devices shall be selected which has passed Group A inspection. Sample sizes for lots greater than 50 pieces shall be submitted. Group B inspection shall include: examination of product, thermal shock, terminal strength, solderability, vibration, shock, seal, endurance, calibration, creepage, electricals (e.g., dielectric withstanding voltage, insulation resistance, contact resistance). The test sequence for Group B inspection shall be submitted. No failures shall be allowed. Under no circumstances shall Group B samples be submitted as deliverable (flight) items.

e. Plating. Platings which are known to sublimate in a hard vacuum such as cadmium or zinc shall not be used. Finishes shall be free from breaks, scratches, and other defects which will reduce the serviceability of the parts.

f. Marking. Each thermostat shall be permanently and legibly marked with the thermostat identification including date code.