Bendix

**Aerospace
Systems Division**

HFE SN-05
CALIBRATION CONSTANTS

NO.	REV. NO.
ATM-837	

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This ATM specifies the calibration constants for the Heat Flow Experiment, SN-05, which is a part of the ALSEP Flight #3 System. These constants are published herein primarily because of their application in ALSEP telemetry data reduction for MCC display purposes.

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HFE Calibration Parameters

Numerical values for the parameters defined below are given in Table I.

A.   Electronics Box (Gulton document: Instruction Manual).

	Parameter Name	Mnemonic

1. Excitation voltage attenuation factor for gradient and ring bridges — CKH(M)
   $M = 2(I-1) + J$ for gradient bridges, I, J.
   $M = 4 + 2(I-1) + J$ for ring bridges.

2. Series resistor for DTL (IJ) measurement. Where M has the same meaning as above — CKL(M)

3. Attenuation factor for absolute temperature measurement accounting for series resistor for current measurement. M has the same meaning as above — CKT(M)

4. Attenuation resistors, M has the same meaning as above — CR(M)

5. Simulator lead resistance — RS

6. Factor for converting excitation voltage of reference bridge to amplifier gain — C19

B.   Probe calibration factors

1. Excitation voltage lead resistance $M = 2(I-1) + J$ for gradient bridge in Probe 1 and Section J — RL(M)

   $M = 4 + 2(I-1) + J$ for ring bridge in Probe I Section J.

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2.   Ring bridge temperature offset
         M = 2(I-1) + J   DELT(M)

3.   Ring bridge temperature difference
      offset, M = 2(I-1) + J   DELDT(M)

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TABLE I

Parameter	Value
CKH(1)	5.4413D-03
CKH(2)	5.4408D-03
CKH(3)	5.4417D-03
CKH(4)	5.4410D-03
CKH(5)	5.4408D-03
CKH(6)	5.4410D-03
CKH(7)	5.4408D-03
CKH(8)	5.4402D-03
CKL(1)	2.0014D+01
CKL(2)	2.0015D+01
CKL(3)	2.0013D+01
CKL(4)	2.0015D+01
CKT(1)	2.7224D-03
CKT(2)	2.7223D-03
CKT(3)	2.7225D-03
CKT(4)	2.7223D-03
CKT(5)	2.7224D-03
CKT(6)	2.7225D-03
CKT(7)	2.7225D-03
CKT(8)	2.7225D-03
CR(M)	2.0110D+05
M = 1, ___ , 8	all identical
RS	1.09872D+03
C 19	1.815353D-02
RL(1)	1.086366D+03
RL(2)	1.085265D+03
RL(3)	1.152638D+03
RL(4)	1.162768D+03
RL(5)	1.125277D+03
RL(6)	1.115164D+03
RL(7)	1.185069D+03
RL(8)	1.191878D+03
DELT(1)	4.20D-01
DELT(2)	4.40D-01
DELT(3)	4.30D-01
DELT(4)	4.30D-01
DELDT(1)	1.30D-02
DELDT(2)	7.50D-02
DELDT(3)	2.00D-02
DELDT(4)	1.40D-02