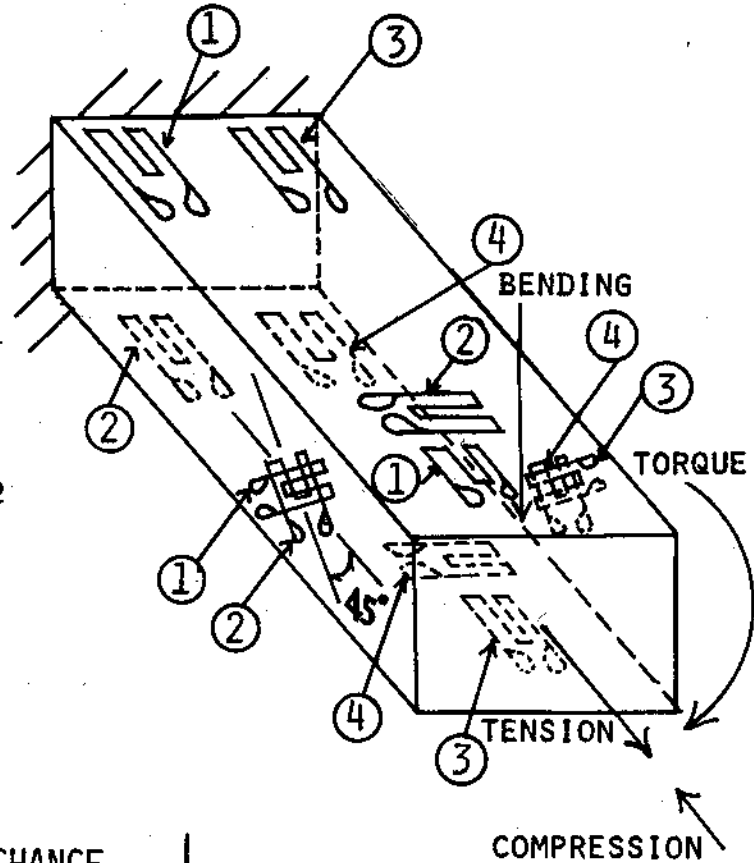
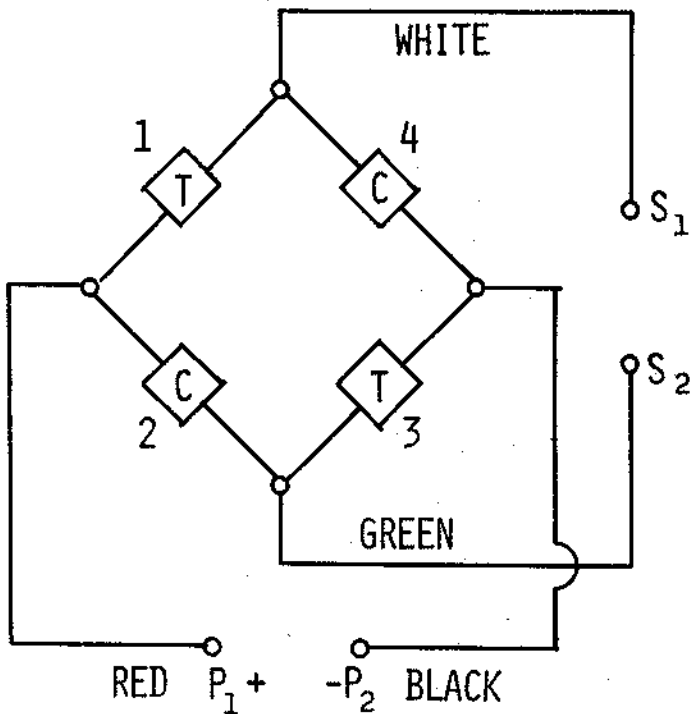


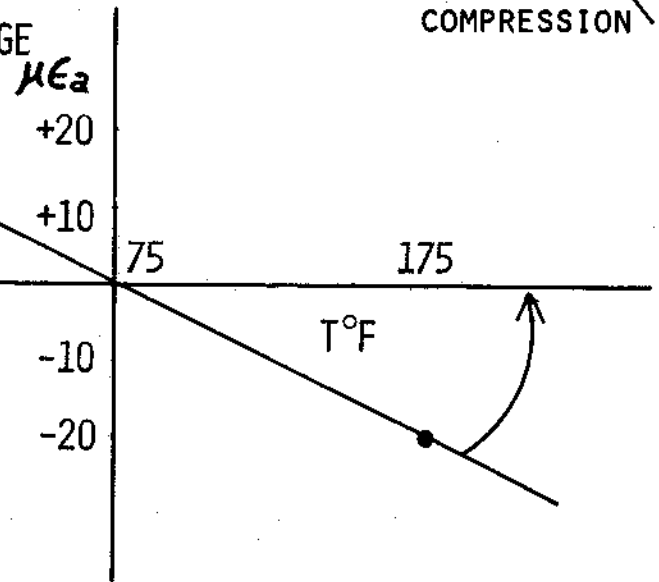
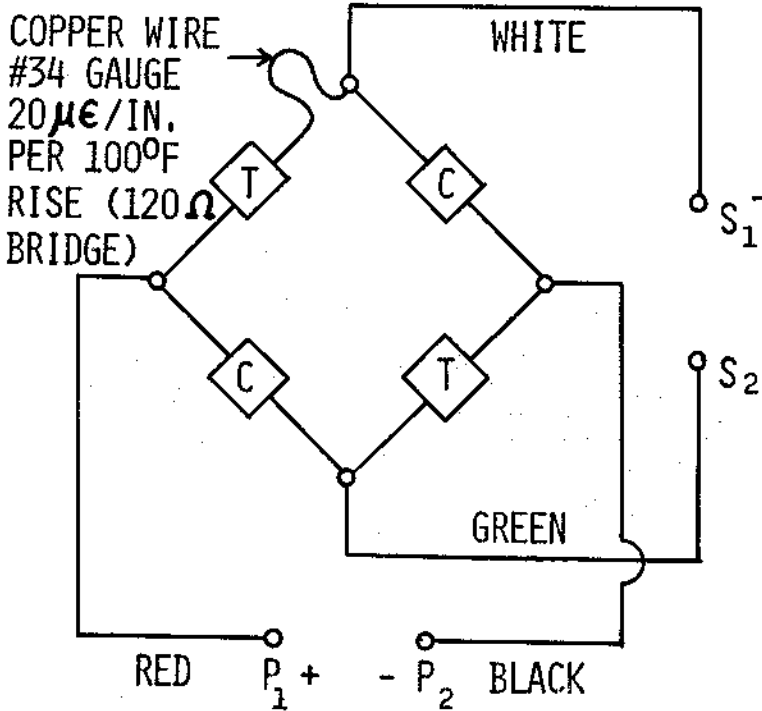
SESSION IV

TRANSDUCER DESIGN - ELECTRICAL ASPECTS.

1. THE WHEATSTONE BRIDGE (BASIC)



2. ZERO SHIFT DUE TO TEMPERATURE CHANGE



3. SENSITIVITY SHIFT DUE TO TEMPERATURE CHANGE

(A) MODULUS OF ELASTICITY (E) OF TRANSDUCER ELEMENT

TYPICAL VALUES - CHANGE PER 100°F

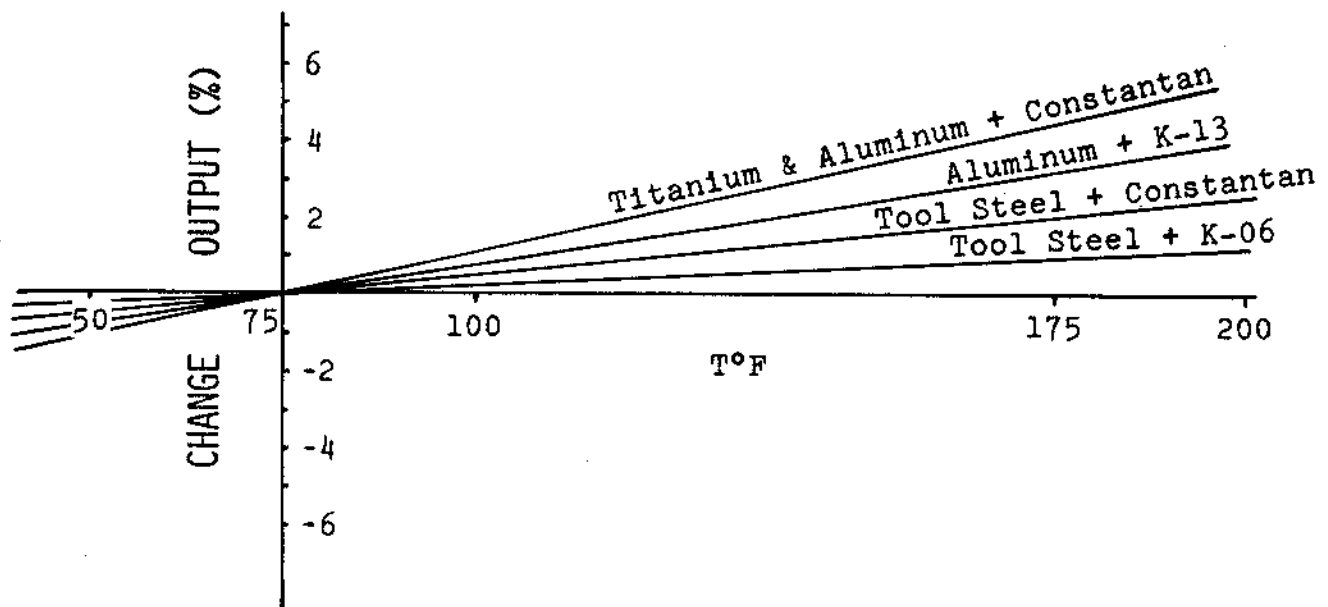
RDS Tool Steel	1.5%
301 SS	1.4%
17-4PH SS	1.7%
2024 Al.	4 %
6061 Al.	4 %
AZ91 Mag.	6-8 %
HK31 Mag.	2-3 %
8 Mn Ti.	4 %
6 AL4V Ti.	3.6%
Inconel X	2.1%
Beryllium Copper	2.5%

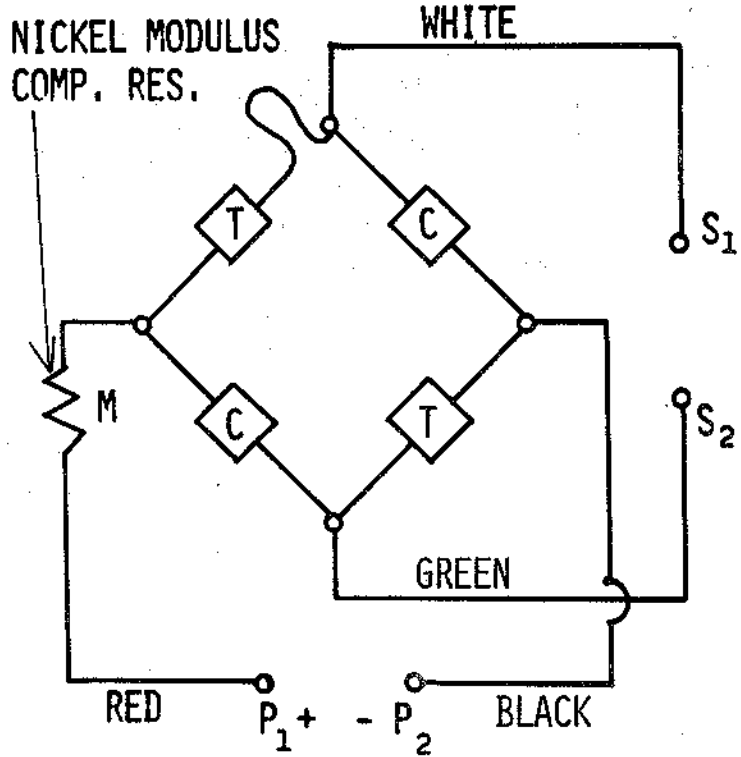
(B) GAGE FACTOR OF STRAIN GAGE ALLOY

TYPICAL VALUES - CHANGE PER 100°F

Constantan	+0.5%
K Alloy Compensation	
03	-0.45
06	-0.55
09	-0.72
13	-0.85
Iso Elastic	-0.75

(C) COMBINED EFFECT GAGE & SPECIMEN

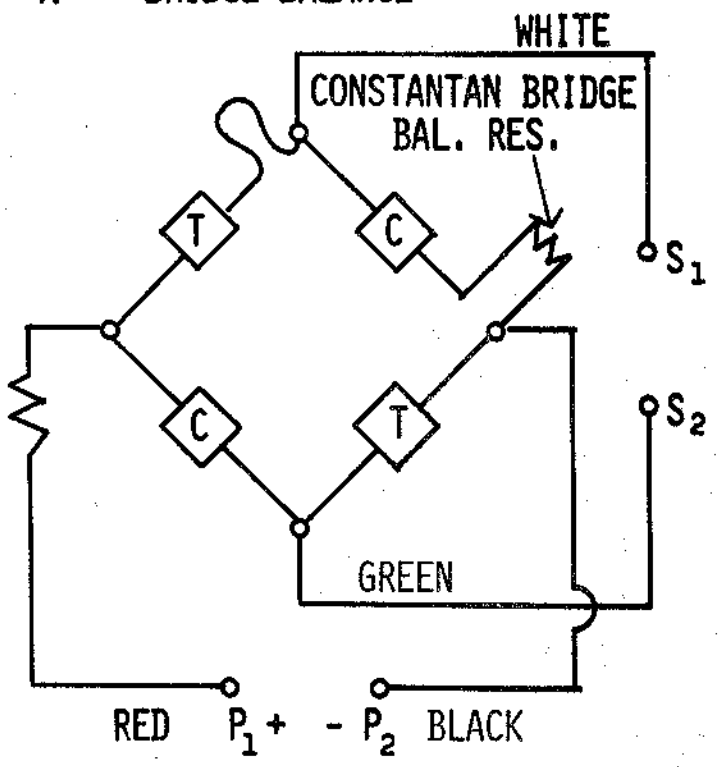




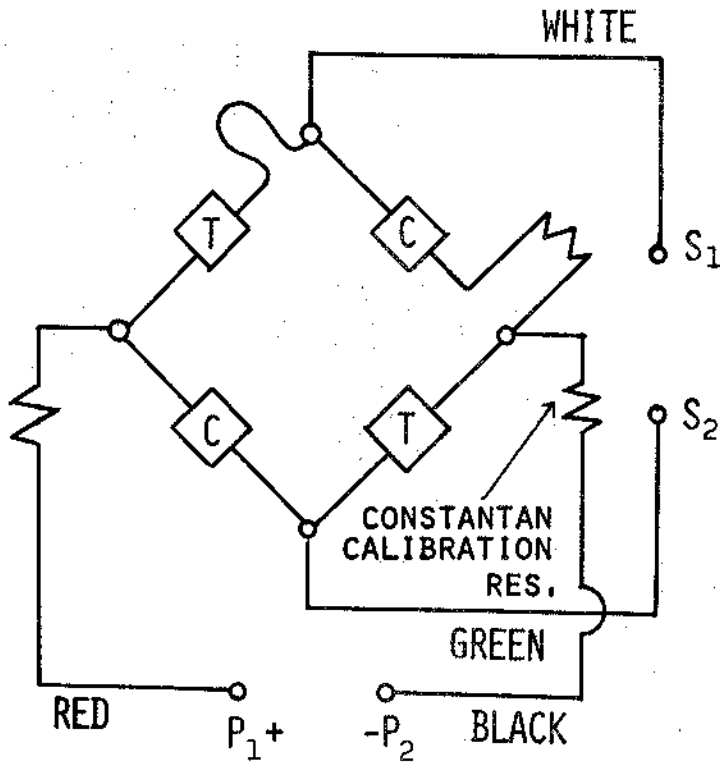
TYPICAL MODULUS RESISTOR VALUES
(CONSTANTAN)

	BRIDGE RESISTANCE	
	120 OHM	350 OHM
TOOL STEEL AND 17-4	7.7	22.5
ALUMINUM AND TITANIUM	14.3	41.6
BERYLLIUM COPPER	12.0	35.0

4. BRIDGE BALANCE



5. BRIDGE CALIBRATION



'AR' OR 'BR' SERIES
ADJUSTABLE CONSTANTAN
RESISTOR MAY BE USED
DEPENDING ON VALUE
REQUIRED

6. IDEAL COMPENSATION TO MAINTAIN BRIDGE SYMMETRY

