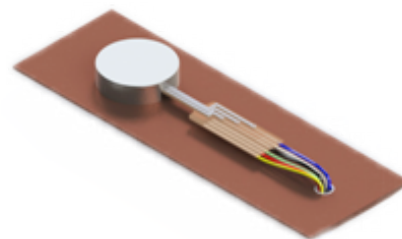


DUAL BRIDGE STRESS and TEMPERATURE SENSOR

DBST – BOND STRESS AND TEMPERATURE SENSOR

GENERAL

- **Miniature** dual measurement sensor, measures normal and/or shear stress and temperature
- Made of **corrosive resistant** steel (17-4 PH) or Ti6Al4V
- **Designed to minimize normal stress** field perturbation
- Excellent for measurement of stress in **rubbery materials** (solid propellants, rubber-metal interfaces, CFRP / GFRP- metal interfaces)
- **Intrinsically safe** (fail safe) with solid propellants and primary explosives (1.1 – 1.3 UN materials)
- **High frequency** and extraordinary pressure over-range capability
- **Long term stability** versions and data available
- **Thermal hysteresis** data available
- **Cable** options (round, \varnothing 1.83; or flat, 3.48 x 0.25)
- Bridge completion unit in separated box or integral to the connector
- Long life (decades) for embedded application



MECHANICAL

Standard pressure ranges	7	14	bar
	100	200	psi

Any other range / shim geometry	Consult Factory
Over Pressure (No change out of spec.)	40 x Range
Maximum over-range without failure	30 x Range

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DUAL BRIDGE STRESS and TEMPERATURE SENSOR

PERFORMANCE (STRESS)

(ALL VALUES MAXIMUM)

Balance (Zero) @ STP conditions	± 2.00	mV
Full Scale Sensitivity	20 ± 1.00	mV/mA
Static Error Band	± 0.25	% FS (BFSL)
Thermal Balance (Zero) Shift	± 0.036	% FS/°C
Thermal Sensitivity Shift	± 0.009	% FS/°C
Long Term Stability Options	B < ± 1	C < ± 0.5 % FS/yr
Long Term Stability Data	3 or 6 months after production	

PERFORMANCE (TEMPERATURE)

Output, -18°C (0 °F)	± 4.00	mV
Output, +65°C (150 °F)	150 ± 4.00	mV
Alternative output	1 mV / °C	
Other calibration	Consult factory	

ENVIRONMENTAL

Storage and Operating Temperature	-73°C to +162° C
Compensated Temperature Range (Consult factory for other ranges)	-46°C to +66°C
Acceleration (Consult factory for high vibration options)	100g's any axis
Media Compatibility (wetted surface)	Titanium 6AL4V

ELECTRICAL

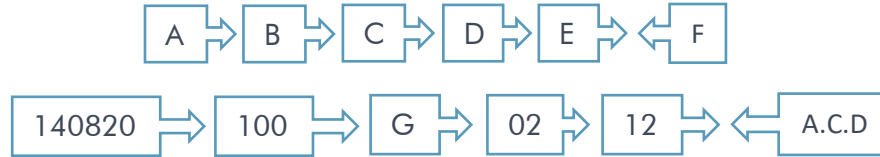
Input Constant Current [mA]	1-4 mA
Input Impedance (Nominal, 24°C) [Ω]	500 ± 100
Stress Sensor Output Resistance (Nominal, 24°C) [Ω]	450 ± 50
Temperature Sensor Output Resistance (Nominal, 24°C) [Ω]	3000 ± 500
Insulation Resistance Minimum @50 VDC [$M\Omega$]	50

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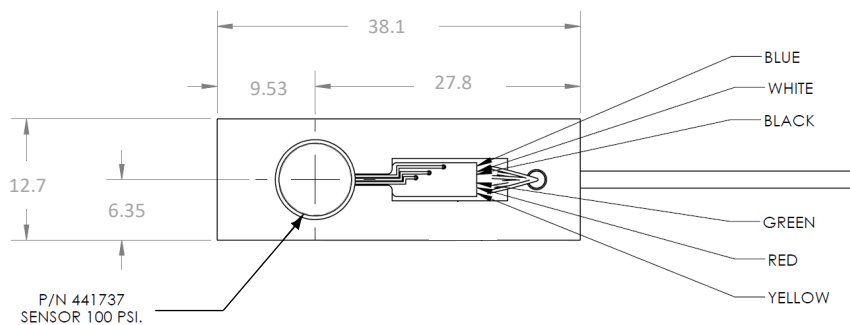
DUAL BRIDGE STRESS and TEMPERATURE SENSOR

ORDERING FORMAT



Position	Content	Example
A	→ Model	140820
B	→ Pressure range (bar or PSI) <ul style="list-style-type: none"> • 100 psi • 200 psi 	100
C	→ Header option <ul style="list-style-type: none"> • G = Gage • R = Sealed reference 	G
D	→ Bridge Completion unit in black box (01) or integrated in connector (02)	02
E	→ Cable length (12 feet standard), specify round or flat	12
F	→ Options <ul style="list-style-type: none"> • A = Thermal Hysteresis Data • B = Long Term Stability < 1% FS/yr • C = Long Term Stability <0.5% FS/yr • D = Long Term Stability Data • E = Custom applications – Contact factory 	A.C.D.

OUTLINE



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