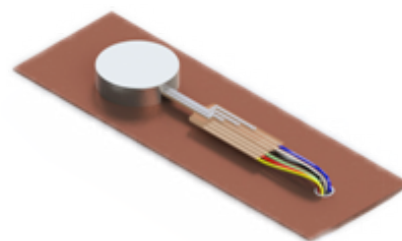


## DUAL BRIDGE STRESS and TEMPERATURE SENSOR

### 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	7	14	bar
ranges	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

#### HAPTICA S.r.l.

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# DUAL BRIDGE STRESS and TEMPERATURE SENSOR

## PERFORMANCE (STRESS)

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

## PERFORMANCE (TEMPERATURE)

Output, -18°C (0 °F)	$\pm 4.00$	mV
Output, +65°C (150 °F)	$150 \pm 4.00$	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

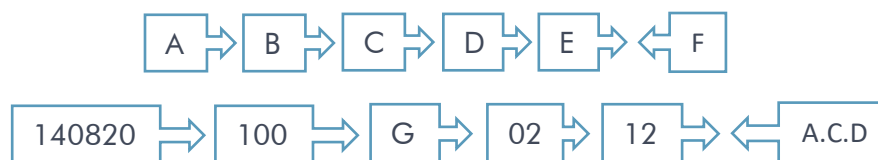
Input Constant Current [mA]	1-4 mA
Input Impedance (Nominal, 24°C) [ $\Omega$ ]	$500 \pm 100$
Stress Sensor Output Resistance (Nominal, 24°C) [ $\Omega$ ]	$450 \pm 50$
Temperature Sensor Output Resistance (Nominal, 24°C) [ $\Omega$ ]	$3000 \pm 500$
Insulation Resistance Minimum @50 VDC [M $\Omega$ ]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

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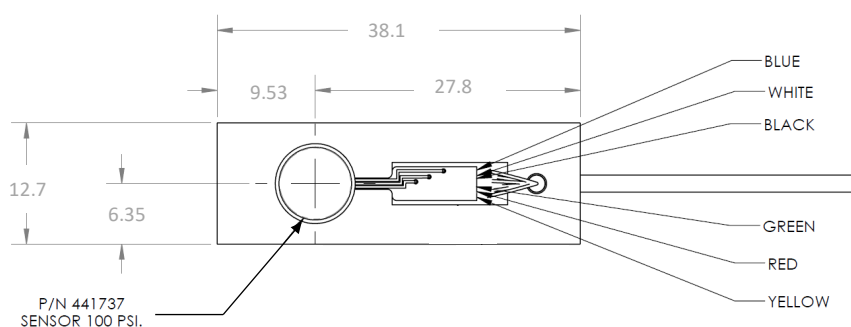
# DUAL BRIDGE STRESS and TEMPERATURE SENSOR

## ORDERING FORMAT



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

## OUTLINE



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