



# Performance Specifications

## SFQ 600 Fine Position Sensor ( $\pm 50$ mil range) P/N 900031

Unless otherwise specified, tests were performed at lab ambient temperature with an input voltage to the unit of  $\pm 15.00V$  and a 2.07 MHz TTL level clock.

Parameter	Conditions/Notes	Min	Typ	Max	Units
Target Material			Al		
Gap at Null			2.286 (90)		mm (mils)
Range			$\pm 1.27$ ( $\pm 50$ )		mm (mils)
Output Voltage			$\pm 10$		Volts
Maximum Nonlinearity Error	Tested over $\pm 50$ mil (1.27mm) range.		12.7 (0.5)		$\mu m$ (mils)
Noise	Tested at null over 0.1Hz to 100kHz. (See Note 1)		0.66 25		nm/ $\sqrt{Hz}$ , RMS (nano-in/ $\sqrt{Hz}$ , RMS)
Scale Factor	Tested over $\pm 50$ mil (1.27mm) range.	7.72 (196)	7.87 (200)	8.03 (204)	V/mm (V/in)
Null Drift at Constant Temp.	Over 24 hours. Tested at 22.5°C.		$\pm 0.4$	$\pm 2$	mV
Null Drift Over Temperature	Tested over -20° to +25°C.		$\pm 0.3$	$\pm 1$	mV/°C
Scale Factor Stability	Tested over $\pm 50$ mil (1.27mm) range.		-0.020	-0.04	%/°C
Electronics Operating Temp.	Range tested in vacuum.	-34		+65	°C
Bandwidth	By analysis.		32		kHz
Input Voltage		$\pm 14.25$	$\pm 15$	$\pm 15.75$	V
Input Clock Frequency			2.07		MHz
Output Impedance			600		$\Omega$
Power Consumption	For temperatures in the range -20°C to +25°C.			0.7	W
Survivable Vibration Levels	20Hz to 2kHz.	10			$g^2/\sqrt{Hz}$
Mean Time Between Failure	Average temperature of 20°C.	33.24			$10^6$ Hours
Radiation Hardness, Ionizing Total Dose	By analysis. See Note 2.	65			Krad(Si)
System Mass/Weight			0.394 (13.9)		Kg (Ounces)

### Notes:

1. We believe this noise value will be reduced by several times upon implementation of a minor change to the system to be made on the next revision.
2. All components used are guaranteed radiation hardened to  $>100Krad(Si)$ .

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