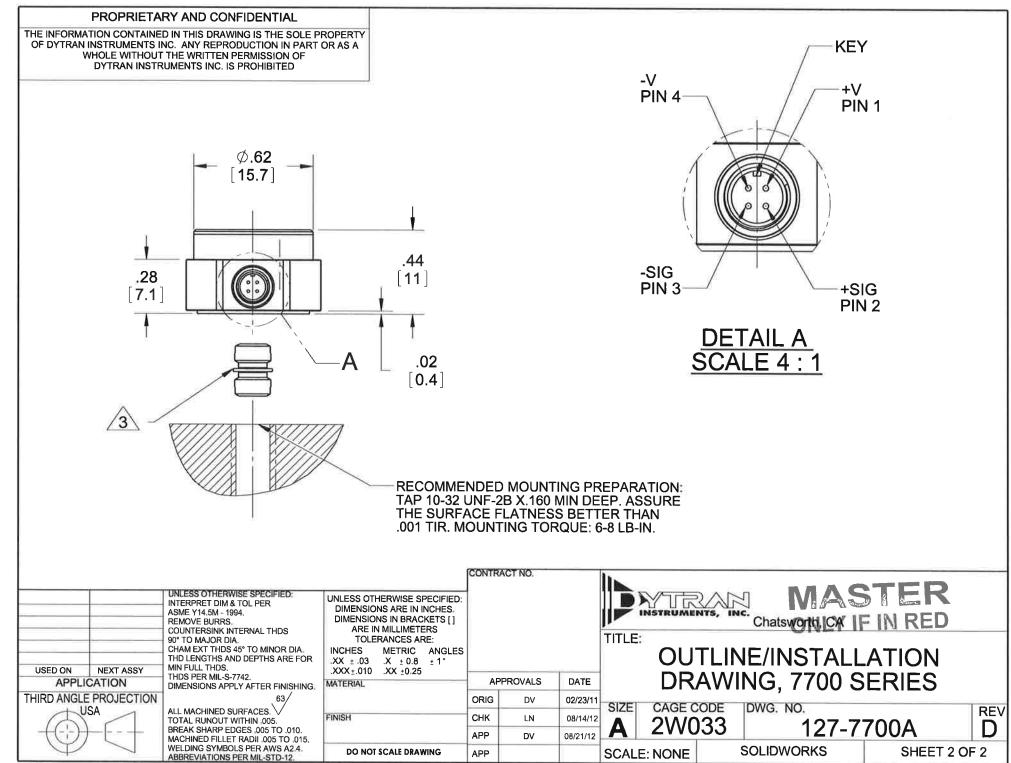


172-0081, REV C



VARIABLE CAPACITANCE ACCELEROMETER REV F. ECN • POWER SUPPLY IDENTICAL TO STRAIN GAGE SENSORS • VARIABLE CAPACITANCE ACCELEROMETER	Model Number 7700A3	PERFORMANCE SPECIFICATION										DOC NO PS7700A3
$\frac{1}{120} \frac{1}{100} \frac{1}$												
POWER SUPPLY IDENTICAL TO STRAIN GAGE SENSOR? POWER SUPPLY I		1										
$\frac{1}{122} \frac{1}{122} \frac{1}{12} \frac{1}{122} \frac{1}{122} \frac{1}{12} \frac{1}{122} \frac{1}{122} \frac{1}{12} \frac{1}{122} \frac{1}{122} \frac{1}{12} \frac{1}{12} \frac{1}{122} \frac{1}{12} \frac{1}{12}$	or RAN		• POWER SUPPLY II	DENTICAL TO S	FRAIN GAGE SENSOF	s	Model		response (Hz)	Differential, ± 5%	Max.Shock (0.1ms)	Noise Differential (μg RMS/vHz)
+ HERMETICALLY SEALED • DE RESPONSE • DE RESPONS	100t+1		VARIABLE CAPAC	ITANCE ACCELI	EROMETER		7700A1	±5	0-500	100	2000	12
+ DC RESPONSE NYICLE	SIL		• DIFFERENTIAL MO	DE			7700A2	±10	0-1000	50	5000	18
$V \otimes U \otimes $	The second	K	• HERMETICALLY SI	EALED			7700A4	±50	0-2000	10	5000	50
FNCLESH S Very CAL (soft Max Image: Construction of the products in this family for detailed description Very CAL (soft Max Image: Construction of the products in this family for detailed description Very CAL (soft Max Image: Construction of the products in this family for detailed description PRODUCT Image: Construction of the products in this family for detailed description Production of the product in the product			• DC RESPONSE									100
WYSCAL VeryENENSLIBITSIVeryEN $\frac{0.28}{0.0}$ α_{c} $\frac{8.0}{0.0}$ α_{c} $\frac{8.0}{0.0}$ $\frac{10.22}{0.007}$ $\frac{10.20}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.20}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.22}{0.007}$ $\frac{10.20}{0.007}$ $\frac{10.20}{$								+	•			200
$ \begin{array}{c} \label{eq:harder} \eqref{harder} har$			ENGLIS	Н	SI		Refer to the	performance speci	fications of the pro	oducts in this family fo	or detailed description	
$\frac{1}{128} \frac{1}{128} \frac{1}$	HYSICAL					-	Supplied A	cessories:				
$\frac{10 - 32 \text{ UNF} - 28}{\text{tantal}}$ $\frac{10 - 32 \text{ UNF} - 28}{\text{T-6A4-4V}}$ $\frac{10 - 32 \text{ UNF} $	Veight, Max		0.28	oz	8.0	grams	1) Accredite	d calibration certific	ate (ISO 17025)			
date relationTr-6AI-4VTr-6AI-4V FEFORMANCE proper Ange (430B) $\frac{255}{0.050}$ (430B) $\frac{255}{0.050}$ (430B) $\frac{255}{0.050}$ (430B) $\frac{255}{0.050}$ (430B) $\frac{255}{0.050}$ (430B) $\frac{2245}{0.050}$ (430B) $\frac{2245}{0.050}$ (430B) $\frac{10}{0.20}$ (430B) $\frac{10}{0.20}$ <td>Connector</td> <td>Туре</td> <td>4-PIN, M4.5 x 0.35 THD</td> <td></td> <td>4-PIN, M4.5 x 0.35 THD</td> <td>l</td> <td>2) Mounting</td> <td>stud model # 6200</td> <td></td> <td></td> <td></td> <td></td>	Connector	Туре	4-PIN, M4.5 x 0.35 THD		4-PIN, M4.5 x 0.35 THD	l	2) Mounting	stud model # 6200				
PERFORMANCEnput Range $\frac{425}{0.500}$ $g pk$ $\frac{4245}{0.500}$ $m^3 ^2 pk$ $m^3 ^2 pk$ 'requency Response (45%) $\frac{0.400}{20}$ $m^3 (pk)$ Hz 0.4000 $m^3 (ms^2)$ Sensitivity Differential, 15% (11) 20 $m^3 (pk)$ $m^3 (ms^2)$ Hz 0.14000 $m^3 (ms^2)$ Output Nodes, Differential, 17p 37 $\mu g RMS^3 V Hz$ 0.5 $\% F.S$ 0.5 $\% F.S$ 0.5 $\% F.S$ Ont-Lineatity, Max [2] 0.5 $\% F.S$ 0.3 $\%$ $\% F.S$ 0.3 $\%$ Sensitivity -3.3 $\%$ 3.3 $\%$ $\% F.S$ $\% F.S$ Oras Arki Sensitivity -3.3 $\%$ $\% F.S$ $\% F.S$ Wardium Mechanical Shock (0.1 ms) 55000 111 $(ppm n'F)$ $7F$ $\frac{149050}{2500}$ $m^3 p' pk$ Diparating Temperature Shift 55002 $7F$ $\frac{149050}{2500}$ $7F$ 630 HEX Diparating Temperature Range $\frac{111}{100}$ γDc $\frac{149}{1225}$ 0 330 ± 11 γDc Diparating Temperature Range $\frac{12}{130}$ $\frac{149}{M0}$ \sqrt{Dc} $\frac{19}{1225}$ 0 $\frac{19}{1225}$ 0 Diparating Temperature Range $\frac{13}{130}$ $\frac{13}{M0}$ $\frac{19}{M0}$ $\frac{19}{1225}$ 0 $\frac{19}{1225}$ 0 $\frac{19}{1225}$ 0 Diparating Temperature Range $\frac{13}{130}$ $\frac{13}{M0}$ $\frac{19}{M0}$ $\frac{10}{1225}$ 0 $\frac{10}{122}$ 0 0 0 <t< td=""><td>√lounting</td><td>Tapped Hole</td><td>10-32 UNF-2B</td><td></td><td>10-32 UNF-2B</td><td></td><td>Notes:</td><td></td><td></td><td></td><td></td><td></td></t<>	√lounting	Tapped Hole	10-32 UNF-2B		10-32 UNF-2B		Notes:					
PERFORMANCE	Material		Ti-6AI-4V		Ti-6AI-4V]	[1] Single en	ided sensitivity is h	alf of values show	'n		
nput Range $\frac{425}{10.00}$ g pk $\frac{4245}{0.500}$ m/s ² pkH2requency Response $(\pm 5\%)$ 0.6400 H2 0.600 H2(±3B) 0.1400 H2 0.1400 H2 0.1400 Dupt Noise, Differential, Typ 377 $g RMS/H2$ 363 $m/s^2 RMS/H2$ Dupt Noise, Differential, Typ 0.5 $\%$ F, S 0.5 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 0.5 $\%$ F, S 0.5 $\%$ F, S 0.5 $\%$ F, S<				-		-	[2] -90% to +	90% of Full Scale				
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PERFORMANCE						[3] Over the	rated temperature	range			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	nput Range		±25	g pk	±245	m/s² pk	[4] Bias volta	age equal to (+ v - ((-v)) / 2			
($430B$) 0.1400 Hz 0.1400 Hzhensitivity Differential, 15% [1] 20 W/g 2.0 $W/m^{1/2}$ $W/m^{1/2}$ yup Moso, Differential, 17% 37 90 MSV/Hz 2.0 $W/m^{1/2}$ $W/m^{1/2}$ ion-Linearly, Max [2] 37 90 MSV/Hz 363 $W/m^{1/2}$ $W/m^{1/2}$ $W/m^{1/2}$ ion-Linearly, Max [2] 0.3 3 363 9% 363 $W/m^{1/2}$ $W/m^{1/2}$ ion-Linearly, Max [2] 0.3 3 $\%$ 363 $\%$ $\%$ $\%$ ion-Linearly, Max [2] 0.3 $\%$ 3.3 $\%$ $\%$ $\%$ ion-Linearly, Max [2] 0.3 $\%$ 3.3 $\%$ $\%$ ion-Linearly, Max [2] 0.3 $\%$ $\%$ $\%$ $\%$ ion-Linearly, Max [2] 0.3 $\%$ $\%$ $\%$ $\%$ ion-Linearly, Max [2] 0.3 $\%$ $\%$ $\%$ $\%$ ion-Linearly, Max [3] 111 $0pm^{1/2}$ $m^{1/2}$ $m^{1/2}$ $m^{1/2}$ $m^{1/2}$ ion-Linearly, Max [3] 111 $0pm^{1/2}$ $W^{1/2}$ 0.3 $\%$ $M^{1/2}$ ion-Linearly $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ ion-Linearly $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ ion-Linearly $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ $M^{1/2}$ ion-Linearly $M^{1/2}$ $M^{1/$	requency Response	(±5%)	0-500		0-500	Hz	[5] Mating ca	able 6895A				
is an slivity Differential, $\frac{2\%}{1}$ [1] Upput Noise, Differential, $\frac{2\%}{1}$ [1] Upput Noise, Differential, $\frac{2\%}{1}$ [1] Upput Noise, Differential, $\frac{2\%}{1}$ [1] $\frac{20}{37}$ $\frac{m^{1/g}}{g}$ RMSV Hz $\frac{0.5}{\%}$ $\frac{3.7}{\%}$ $\frac{0.5}{1}$ $\frac{5\%}{\%}$ $\frac{0.5}{0.3}$ $\frac{1}{\%}$ $\frac{1}{5}$ $\frac{0.5}{0.3}$ $\frac{1}{\%}$ $\frac{1}{5}$		(±3dB)	0-1400	Hz	0-1400	Hz	[6] In the inte	erest of constant pr	oduct improveme	nt, we reserve the rig	ht to change specification	ons without notice.
balput Noise, Differential, Typ (or-Linearly, Mar (2) ensitivity $\frac{37}{0.5}$ µg RMS/H Hz % F.S $\frac{363}{0.5}$ µm/s ² RMS/H Hz % F.S specification is suitable for use in a particular application. Parameters provided in datasheets and / or spec may vary in different applications and performance may vary overtime. All operating parameters, including two in a particular application is suitable for use in a particular application. Parameters provided in datasheets and / or spec may vary in different applications and performance may vary overtime. All operating parameters, including two in a particular application. Parameters provided in datasheets and / or spec may vary in different applications and performance may vary overtime. All operating parameters, including two in a particular application is suitable for use in a particular application. Parameters provided in datasheets and / or spec may vary in different applications and performance may vary overtime. All operating parameters, including two in a particular application is suitable for use in a particular application. Parameters provided in datasheets and / or spec may vary in different applications and performance may vary overtime. All operating parameters, including two in a particular applications and performance may vary overtime. All operating parameters, including the operating Current to Excitation Voltage isectrical Isolation (Case) Upper International Shock (0.1 ms) like Temperity Change isectrical Isolation Voltage $\frac{14}{1225}$ $\frac{14}{1225}$ $\frac{14}{1225}$ Upper Internation Voltage isectrical Isolation (Case) $\frac{14}{1225}$ $\frac{14}{1225}$ $\frac{14}{126}$	Sensitivity Differential, ±5% [1]		20	mV/g	2.0	mV/m/s ²				-		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Dutput Noise, Differential ,Typ		37	μg RMS/√ Hz	363	µm/s ² RMS/√ Hz						
Particivity Change with Excitation Voltage (6-22 Volts) Cross Axis Sensitivity ENVIRONMENTAL daximum Mechanical Shock (0.1 ms) Bias Temperature Shift Max (3) Sensitivity Temperature Shift Max (3) Sensitivity Temperature Range Seal ELECTRICAL Duput Common Mode Voltage $\pm vDC$ Duput Com			0.5	% F.S	0.5	% F.S	-					
Cross Axis Sensitivity <3 % <3 %ENVRONMENTAL Maximum Mechanical Shock (0.1 ms) Bias Temperature Shift $\frac{15000}{111}$ $\frac{110}{13910 + 139}$ g pk (ppm of span)/°F $\frac{2200}{2250}$ r^F $\frac{149050}{220}$ $\frac{13910 + 250}{220}$ r^C m/s² pk (ppm of span)/°C r^C Departing Temperature Range Beal $\frac{67 to 257}{-13910 + 129}$ $-67 to 257$ $-F$ $\frac{14}{-1225}$ $-13910 + 129$ $-13910 + 129$ $\frac{14}{-1225}$ $-13910 + 129$ $-13910 + 129$ $\frac{14}{-1225}$ -1255 -100 $\frac{14}{-1225}$ -1255 -100 $\frac{14}{-1225}$ -100 $\frac{14}{-1225}$ -100 $\frac{14}{-1225}$ -100 Duput Impedence, Nom Deparating Current to Excitation Voltage Electrical Isolation (Case) $\frac{13}{-100}$ -100 $\frac{14}{-100}$ -100 $\frac{14}{-100}$ -100 $\frac{14}{-120}$ -100	ensitivity Change with Excitation Voltage (6-22 Volts)		0.3	%	0.3	%						
Maximum Mechanical Shock (0.1 ms) $\frac{15000}{111}$ $g pk$ $\frac{449050}{200}$ $m/s^2 pk$ m/s	Cross Axis Sensitivity		< 3	%	< 3	%						
Maximum Mechanical Shock (0.1 ms) ± 5000 g pk ± 49050 m/s' pk $(ppm of span)''C$ Bias Temperature Shift111(ppm of span)''F 200 (ppm of span)''COperating Temperature Shift -138 to ± 139 111 (ppm of span)''FOperating Temperature Range -67 to 257 rC Seal -167 to 257 rF -250 to ± 250 Bellet CTRICAL -1225 Ω 1225 Ω Dutput Common Mode Voltage \pm voc 1225 Ω 1225 Ω Dupcarting Current, Max 13 mA Dc 13 mA DcDarage in Operating Current to Excitation Voltage 13 mA/V $M\Omega$ Electrical Isolation (Case) 000 025 $M\Omega$ 025 Interview 000 000 $M\Omega$ 000 000 000 $M\Omega$ 000 $M\Omega$	ENVIRONMENTAL							đ 7 0	1			
Bias Temperature Shift ,Max [3] 111 (ppm of span)/*F 200 (ppm of span)/*C ppm of span)/*C *C *	Maximum Mechanical Shock (0.	.1 ms)	±5000	g pk	±49050	m/s² pk				℣ℸ℩ℯ	_	
Operating Temperature Range Seal $-67 \text{ to } 257$ Hermetic $^{\circ}\text{F}$ $-55 \text{ to } 125$ Hermetic $^{\circ}\text{C}$ SLECTRICALDutput Common Mode Voltage \pm VDCDutput Common Mode Voltage \pm VDCDutput Impedence, NomDeperating Voltage Deperating Voltage Denating Voltage Denating Current, Max Change in Operating Current to Excitation Voltage13 Change in Operating Current to Excitation Voltage13 Clearly Solution (Case)	Bias Temperature Shift ,Max [3]]	111	(ppm of span)/°F	200	(ppm of span)/°C		[
Seal \overrightarrow{u}	Sensitivity Temperature Shift		-139 to +139 ppm/°F -250 to +250 ppm/°C									
Contraction of the second sec	Operating Temperature Range		-67 to 257	°F	-55 to 125	°C						
ELECTRICALDutput Common Mode Voltage \pm VDCDutput Impedence, NomDeprating VoltageDeprating VoltageDeprating Current, MaxChange in Operating Current to Excitation VoltageElectrical Isolation (Case)Determine Voltage10-32 UNF-2B $\sqrt{0.58}$ $\sqrt{140}$ <t< td=""><td colspan="2">Seal</td><td>Hermetic</td><td>]</td><td>Hermetic</td><td>Ι</td><td></td><td></td><td>·</td><td></td><td>(.27</td><td></td></t<>	Seal		Hermetic]	Hermetic	Ι			·		(.27	
Dutput Common Mode Voltage \pm VDC[4][4]Dutput Impedence, Nom1225 Ω 1225 Ω Dperating Voltage ± 3 to ± 11 VDC ± 3 to ± 11 VDCDeprating Current, Max13mA Dc13mA DcChange in Operating Current to Excitation Voltage0.25mAV0.25Electrical Isolation (Case)100MQ>100	ELECTRICAL			1		т		[10.0]	-			
Deperating Voltage Deperating Voltage Deperating Current, Max Deperating Current to Excitation Voltage Electrical Isolation (Case) $\frac{\pm 3 \text{ to } \pm 11}{13}$ VDC $\frac{\pm 3 \text{ to } \pm 11}{13}$ VDC $\frac{\pm 3 \text{ to } \pm 11}{13}$ VDC $\frac{13}{MA}$ Dc $\frac{MA}{Dc}$ \frac{MA}	,		[4]		[4]	ļ				(-	
$\frac{\pm 3 \text{ to } \pm 11}{\text{Dperating Voltage}} \qquad $			1225	Ω	1225	Ω			_			NECTOR
Change in Operating Current to Excitation Voltage 0.25 mA/V 0.25 mA/V Electrical Isolation (Case) > 100 MΩ > 100 MΩ	Operating Voltage		±3 to ±11	VDC	±3 to ±11	VDC						
Electrical Isolation (Čase) > 100 M Ω > 100 M Ω 10-32 UNF-2B 0.58 $.14$ $[3.6]$												
▼.140 Ø.58		Excitation Voltage								<u>L I</u> I		
								10-32				
Units on the line drawing are in inches. Refer to 127-7700A for more information.							Units on the line	drawing are in inches. Re	efer to 127-7700A for m			

INSTRUMENTS, INC.

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