A820 Series

DC-Operated 2 axis, Ultra-Low Range, Inertial Servo Accelerometer

Sherborne Sensors
.... the first choice in precision

Features

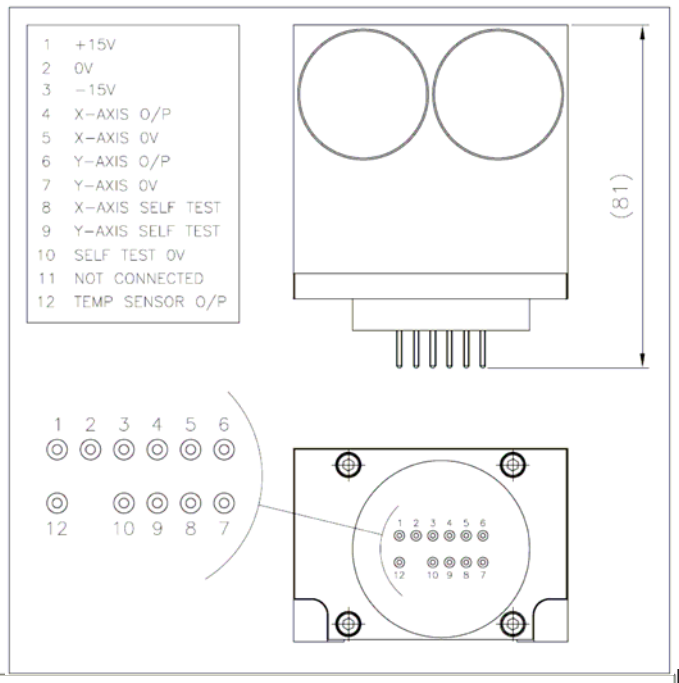
- *Ultra Low Range ±1/10g to ±2g*
- *Compact dual axis design (X and Y)*
- *Each axis fully conditioned offering a complete operating system*
- *Total electrical isolation between axes*
- *High accuracy specification Input voltage ±15 VDC; output signal ±5 VDC*
- *Self test on both axes*
- *Silicone oil and electrical damping*
- *Temperature Sensor Output (AD592) – A825 only*
- *Differing X and Y ranges option available*

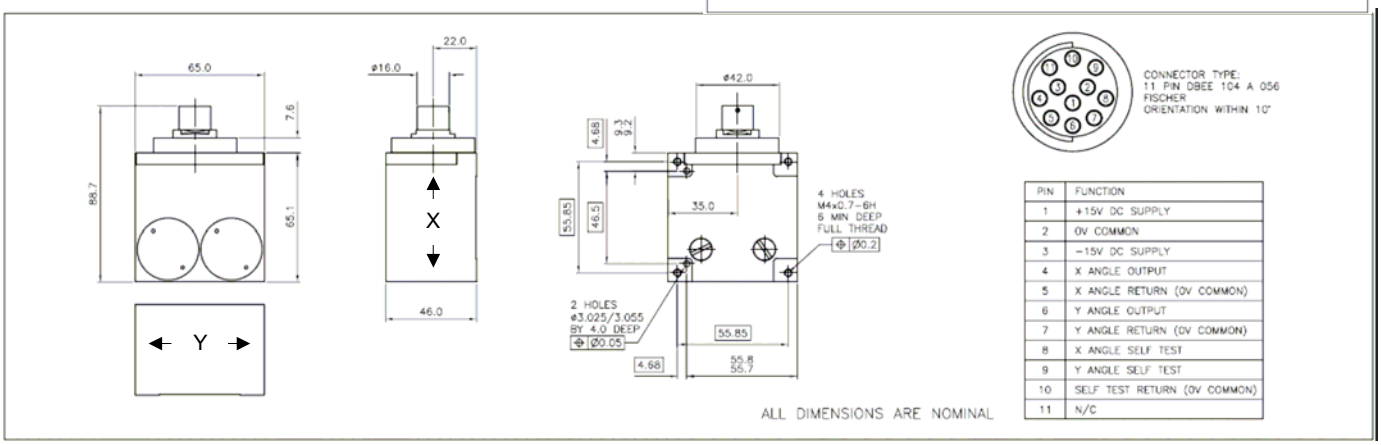
Applications

- *Geophysical, siesmic and civil engineering studies*
- *Structural health monitoring systems*
- *Ultra-low acceleration studies requiring DC response*

A823 and A825

The A823 and A825 are high precision 2 axis (X and Y) gravity referenced servo accelerometers suitable for military or industrial applications. Both axes have a similar high specification to the single axis A320 Series. Any alignment problems with positioning single axis units, when used for X and Y measurements, are removed by the precision housing of the A820 Series that has accurately positioned dowel hole alignment.





PIN	FUNCTION
1	+15V DC SUPPLY
2	0V COMMON
3	−15V DC SUPPLY
4	X ANGLE OUTPUT
5	X ANGLE RETURN (0V COMMON)
6	Y ANGLE OUTPUT
7	Y ANGLE RETURN (0V COMMON)
8	X ANGLE SELF TEST
9	Y ANGLE SELF TEST
10	SELF TEST RETURN (0V COMMON)
11	N/C

Certified System ANAB ACCREDITED BS EN 9001-2008 AS 9100 Rev C

2 YEAR WARRANTY

In North America: Email: nasales@sherbornesensors.com
Rest of World: Email: sales@sherbornesensors.com
Website: www.sherbornesensors.com

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NOVA METRIX

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Environmental Characteristics

Operating Temperature Range		°C	-18 to 70
Survival Temperature Range		°C	-40 to 70
Constant Acceleration Overload		g	50
Shock Survival			1250g, 0.5msec, ½ sine
Vibration Endurance			35g rms, 20 Hz to 2000 Hz sinusoidal
Environmental Sealing		IP65	
EMC Directive	EN 61326: 1998		
EMC Emissions	EN 55022: 1998		30 MHz to 1 GHz
EMC Immunity	EN61000-4-2 1995 inc A1: 1998 & A2: 2001		±4 kV
	EN61000-4-3: 2002		10 V/m
	EN61000-4-4: 2004		± 1 kV
	EN61000-4-6 1996 inc A1: 2001		3 Vrms
	EN61000-4-6: 2007		10 Vrms
	EN61000-4-8: 1994 Incorporating Amendment A1: 2001		30 A/m

Specifications by Range @ 20°C

Range		**±0.1g**	**±0.25g**	**±0.50g**	**±1g**	**±2g**
Excitation Voltage	Volts dc			±12 to ±18		
Current Consumption	mA (nom)	±25	±25	±15	±15	±15
Full Range Output (FRO) (see note 1)	Volts dc			±5		
Output Standardisation	% FRO (max)			±2		
Output Impedance	Ohm			<10		
Output Noise (DC to 10kHz)	V rms (max)			0.005		
Non-Linearity (see note 2)	% FRO (max)			0.05		
Non-Repeatability	% FRO (max)	0.04	0.02	0.004	0.002	0.001
Resolution	% FRO (min)	0.1	0.2	1.0	2.0	4.0
-3 dB Frequency	Hz	10	15	30	40	55
Sensitive Axis-to-Case Misalignment	deg (max)	±0.1°	±0.15°	±0.25°	±0.50°	±1.00°
Cross-axis sensitivity (see note 3)	g/g (max)			±0.002		
Zero Offset (see note 4)	Volts dc (max)	±0.05	±0.04	±0.03	±0.02	±0.02
Thermal Zero Shift	%FRO/°C (max)	±0.05	±0.03	±0.01	±0.005	±0.003
Thermal Sensitivity Shift	%Reading/°C (max)	±0.04	±0.03	±0.01	±0.006	±0.006
Temperature Sensor Output	µA/°K			1		

Notes

1. Full Range Output I(FRO) is defined as the full acceleration range from positive to negative, i.e. ±1g =2g
2. Non-linearity is determined by the method of least squares
3. Cross-axis Sensitivity is the output of unit when accelerated to full range output acceleration at 90° to the sensitive axis
4. Zero offset is specified under static conditions without any vibration input

How to Order

Specify model type with appropriate range e.g. A823-0001-0.5 denotes a 2-Axis Accelerometer with acceleration range ±0.5g, fitted with 12-way electrical connector

DESIGNATION & ORDERING CODE

A82☐ -0001 - ☐☐

3 Connector
5 Solder Pins

RANGE ± g

Please specify Mating Connector 3CON-037F if required.

In North America: Email: nasales@sherbornesensors.com
Rest of World: Email: sales@sherbornesensors.com
Website: www.sherbornesensors.com

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