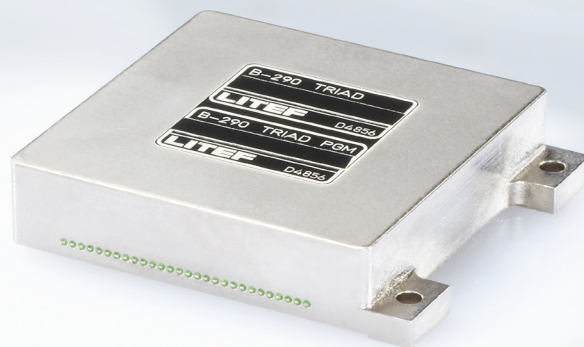


## B-290 TRIAD

### THREE AXIS ACCELEROMETER



The B-290 Triad has been developed for applications in Attitude and Heading Reference Systems and Inertial Navigation Systems. It consists of three B-290 accelerometers.

The sensitive element of the B-290 accelerometer is an elastically suspended pendulum, manufactured in silicon using micromechanic techniques. A batch process is used on the wafer level.

An acceleration along the input axis causes a displacement of the pendulum which is sensed by a capacitive bridge. To achieve high accuracy, the pendulum of the B-290 is force-rebalanced by the electrostatic forces of the capacitive bridge.

The digital restoring loops for the force rebalance are realized with a digital signal processor. The loop characteristics are defined in software. The software also performs temperature compensation of bias and scale factor. The scaled and temperature compensated accelerations are output via a digital serial interface.

#### CUSTOMER ADVANTAGES OF THE B-290 TRIAD

- Integrated electronics
- Standard digital interface
- Output of temperature compensated data
- Small size, low weight
- Cost savings

## TECHNICAL DATA B-290 TRIAD

### THREE AXIS ACCELEROMETER

PERFORMANCE	
Range	± 10 g / ± 40 g
Scale Factor Error	
- Repeatability (day to day)	≤ 0.2 % (1 σ)
- Stability (short term)	≤ 0.02 % (1 σ)
Bias	
- Repeatability [turn-off/on]	≤ 2.0 mg (1 σ)
- Temperature Error	≤ 0.2 mg (1 σ)
Resolution	16 Bit
Axis Misalignment (compensated)	2 mrad
ELECTRICAL CHARACTERISTICS	
Power Supply	+5 VDC, +15 VDC
Current Consumption	0.16 A, 0.05 A
Connector	28 Pins Flatpack (pitch 1.27 mm)
Data Interface (serial)	based on CCITT 1431 T1/E1 (IBIS)
Data Rate	8 kHz max
PHYSICAL CHARACTERISTICS	
Size (H x W x L)	62.8 x 50.8 x 12.6 mm <sup>3</sup>
Weight	80 g
ENVIRONMENTAL CONDITIONS	
Operating Temperature Range	- 40 °C ... + 85 °C
Vibration	10 gRMS
Shock, half sine	1000 g, 0.6 ms
Packaging	hermetically sealed

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