

AST Series Module

Fully Integrated Embedment Sensor with Force, Acceleration, Tilt and Temperature

GENERAL DESCRIPTION

The AST structural monitoring module is designed for embedment in concrete providing a complete measurement solution in a single robust housing. Each AST module includes a temperature compensated full bridge electrical resistance strain sensor, one 3-axis low-g accelerometer, and one high resolution temperature sensor. Our unique combination of sensors in one integrated measurement system provides the perfect solution for dynamic and static structural monitoring applications like rapid pile load testing, impact monitoring, and long term health monitoring. The AST can be configured with bandwidths ranging from 0 to 10Hz up to 1300 Hz, so vibrations and impact motions can be obtained with a minimal noise floor. The accelerometer sensor provides 3-axis tilt measurements allowing complete sensor orientation in-situ. The intelligent 3D sensor orientation feature allows off-axis corrections for unintentional misalignment or rotation of the sensor module in piles and other structural elements.

Analog and Digital Models:

AST200 - Strain, Acceleration, Temperature with analog output

AST300 - Strain, Acceleration, Temperature with AD and digital CAN output



Applications

- ✓ Drilled Shafts and Reinforced Concrete Piles
- ✓ Bridge Column Load Monitoring
- ✓ Pavement Monitoring
- ✓ Dynamic Impact Monitoring
- ✓ Earth Retaining Walls
- ✓ Long Term Structural Health Monitoring

Parameter	Typical Values
Strain Gauge Range	3000 $\mu\epsilon$
Strain Gauge Resolution	1 $\mu\epsilon$
Accelerometer Axes	X, Y and Z
Accelerometer FS Range	+/- 2g or +/- 4g
Accelerometer Linearity	+/- 0.1% Full Scale
Accelerometer Bandwidth	0 to 1300 Hz (lower with LP)
Temperature Sensor Accuracy	+/- 2.5 degrees Fahrenheit
Power Supply	9 to 12 Volts DC Unregulated
Module Length	11 inches
Module End Cap Diameter	1.25 inches