

### PRO-5 Displacement-Strain Profile Measurement System for Structural Health Monitoring

High Accuracy Displacement, Temperature and Strain Profile Measurements for Structures. Monitor Thousands of Sensors and Distribute Hundreds of PRO-5 Modules Over Thousands of Feet Using One Network Cable. Integrated Strain Gauge in Waterproof Housing with Sealed Connectors and Small Form Factor.

#### GENERAL DESCRIPTION

Monitor forces, movements and temperatures over wide areas of structures using a network of digital PRO-5 modules. Each PRO-5 can be equipped with a 3-axis accelerometer, strain gauge and temperature sensor together with 24-bit digital conversion. PRO-5 modules are bonded to structures using a fast setting two-part epoxy and connected end-to-end using a single cable with integrated waterproof circular connectors. The PRO-5 uses a dual network technology which allows chains of sensors (PRO-5 SubNet Modules) to branch off from a main network chain (PRO-5 MainNet), so sub-networks of PRO-5 modules can run in any direction and at any orientation: vertical, horizontal or at an any incline. Thousands of PRO-5 sensor readings are obtained by a central controller module (GCM4) and transmitted to a remote server for a complete real-time structural monitoring solution.

#### Technical Features

- ✓ Displacement Profile Measurements
- ✓ Install at Any Orientation
- ✓ High-Resolution Strain Sensor
- ✓ Horizontal and Vertical Movements
- ✓ Long-Term Stability

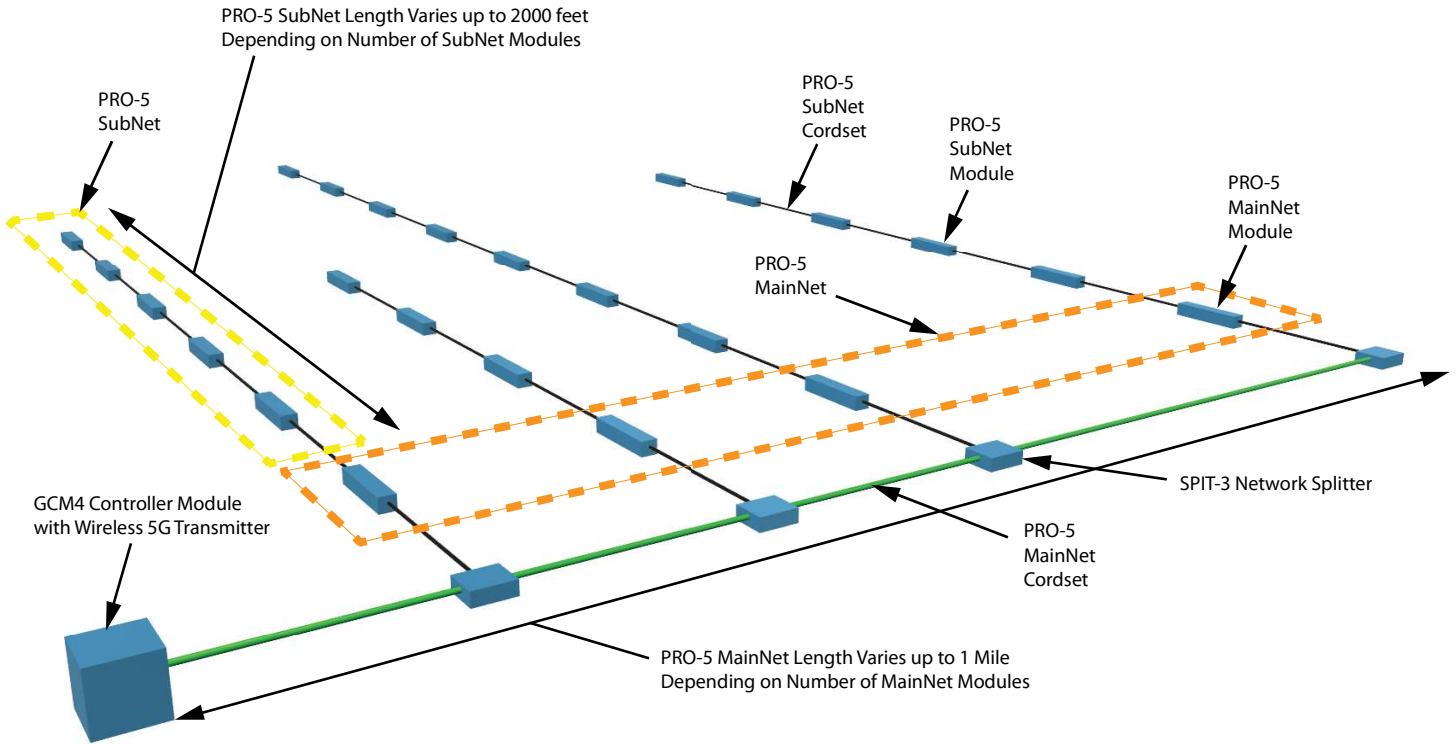
#### Applications

- ✓ Structural Health Monitoring
- ✓ Remote Monitoring
- ✓ Transmission Towers
- ✓ Early Warning Systems
- ✓ Pipelines and Penstocks
- ✓ Bridge Monitoring
- ✓ Wall Deflections
- ✓ Structural Crack Monitoring
- ✓ Railroad Tracks and Bridges
- ✓ Impact Detection
- ✓ Early Warning Systems

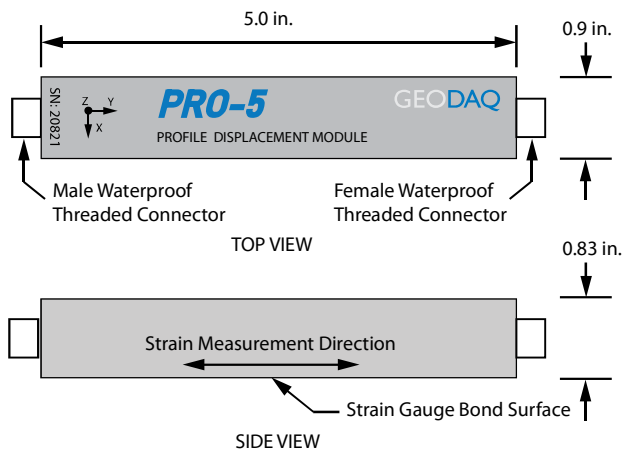
Parameter	Typical Values
Tilt Measurement	3 Directions (X, Y and Z)
Tilt Resolution	0.002 degrees
Tilt Range	+/- 90 degrees
Tilt Long-Term Stability	0.01 degrees
Temperature Sensor Accuracy	+/- 0.5 degrees Celsius (typical)
Strain Gauge Resolution	1 $\mu\epsilon$
Strain Gauge Range (typical)	3000 $\mu\epsilon$
Power Supply	12 Volts DC Unregulated
AD Resolution	24 bit
Standard Cable Type	4 Pin IP67 Circular



### PRO-5 GENERAL CONNECTION SETUP



### PHYSICAL PARAMETERS



### MODEL NUMBER CONFIGURATION

PRO5 - NETWORK TYPE - SENSOR OPTIONS

NETWORK TYPE	
MAIN	MainNet Module
SUB	SubNet Module

SENSOR OPTIONS	
AT	3-Axis Accelerometer, Temperature
AT-EXT	3-Axis Accelerometer, Temperature, External Sensor
AST-CON	3-Axis Accelerometer, Strain for Concrete, Temperature
AST-STL	3-Axis Accelerometer, Strain for Steel, Temperature
ST-CON	Strain for Concrete, Temperature
ST-STL	Strain for Steel, Temperature