# ACCOLADE
## MEASUREMENT

# Tilt & Subsidence Monitoring

**Typical applications include:**

- Retaining Structure Monitoring
- Tunnel Wall Monitoring
- Dam Monitoring
- Party Wall Monitoring
- Excavation Monitoring
- Foundation Monitoring

**Commonly used instrumentation detailed below:**

- Electrolevel Beam
- Tilt Sensor
- MEMs Sensor
- Inclinometer
- Portable Tiltmeter
- Bassett Convergence
- Liquid Settlement System

# ACCOLADE MEASUREMENT



## Electrolevel Beam / Mounted Tilt Sensor

| | |
|---|---|
| **Variables measured** | **Tilt (mm/m, degrees or radians)** |
| **Range** | **±0˚45'00" (13mm/m)** |
| **Accuracy** | **±0˚0'21"  (± 0.1mm/m)** |
| **Resolution** | **0.02% full scale (0˚0'2" or 0.0052mm/m)** |
| **Repeatability** | **±0.05% full scale (±0˚0'3" or ±0.013mm/m)** |
| **System operation** | **Automated** |
| **Data access** | **Remotely** |
| **Reading frequency** | **>1min** |

**Additional Information:**

- Best suited for use on short to medium duration projects.
- Cheap, simple & reliable, although prone to drift over long durations.
- Good for tight / restricted access locations (i.e. tunnels / façades adjacent to excavations).
- Contains a sealed precision glass chamber containing conductive fluid and a number of electrodes, mounted in an inert ceramic compound.

## MEMS Sensor

| | |
|---|---|
| **Variables measured** | **Tilt (mm/m, degrees or radians)** |
| **Range** | **±3˚ to ±15˚ (±52mm/m to ±265mm/m)** |
| **Accuracy** | **±0.05% full scale (±0˚0'11" or ± 0.05mm/m)** |
| **Resolution** | **0.008% full scale (0˚0'2" or 0.0052mm/m)** |
| **Repeatability** | **±0.01% full scale (±0˚0'3" or ±0.013mm/m)** |
| **System operation** | **Automated** |
| **Data access** | **Remotely** |
| **Reading frequency** | **>1min** |

**Additional Information:**

- Suited for use on short to long duration projects.

- Accurate & reliable; not prone to drift on long duration projects.

- Good for tight / restricted access locations (i.e. tunnels / facades / boreholes / piles).

- MEMS (micro electro-mechanical systems) are very small devices that convert mechanical movement into an electrical signal.

# Inclinometer

| | |
|---|---|
| **Variables measured** | **Tilt (mm/m, degrees or radians)** |
| | **Displacement away from centre line (mm)** |
| **Range** | **±30˚ (±577mm/m), at 3m to 150m depth** |
| **Accuracy** | **±0.02% full scale (±0˚0'22" or ± 0.1mm/m)** |
| **Resolution** | **0.001% full scale (0˚0'2" or 0.01mm/m)** |
| **Repeatability** | **±0.008% full scale (±0˚0'9" or ±0.042mm/m)** |
| **System operation** | **Automated or Manual** |
| **Data access** | **Remotely or on site** |
| **Reading frequency** | **5min intervals or as per visit** |

### Additional Information:

- Suited for use on short to long duration projects.
- Accurate & reliable; not prone to drift on long duration projects.
- Good for underground and restricted access locations (i.e. tunnels, slopes, banks, structures / boreholes / piles).
- MEMS (micro electro-mechanical systems) are very small devices that convert mechanical movement into an electrical signal.
- Can monitor horizontal, vertical & inclined displacements.

## Portable Tiltmeter

| | |
|---|---|
| **Variables measured** | **Tilt (mm/m, degrees or radians)** |
| **Range** | **±10˚ (±176mm/m)** |
| **Accuracy** | **±0.02% full scale (±0˚0'15" or ± 0.07mm/m)** |
| **Resolution** | **0.006% full scale (0˚0'4" or 0.017mm/m)** |
| **Repeatability** | **±0.007% full scale (±0˚0'5" or ±0.024mm/m)** |
| **System operation** | **Manual** |
| **Data access** | **On site** |
| **Reading frequency** | **Per visit** |

### Additional Information:

- Suited for use on short to medium duration projects.
- Easy installation; install tilt plates to structure.
- MEMS (micro electro-mechanical systems) are very small devices that convert mechanical movement into an electrical signal.
- Tilt plates remain in position throughout monitoring; a portable tiltmeter is brought to site to measure tilt of the plates.

## More detail available if required:

- Bassett Convergence
- Liquid Settlement System

Please get in touch if you would like more information.