

VW high sensitivity settlement system



Description

Model 1680 **VW high sensitivity settlement system** is designed to measure delicate deflection in bridge or pole and largely divided into four parts : reference vessel, monitoring vessel, liquid tube. In each monitoring pot buoy hangs onto the VW force sensor. The reference vessel should be set up on stable area or structure.

The reference vessel is designed to connect to multiple monitoring vessels, which should be installed at the points where potential displacement may occur.

Both reference vessel and monitoring vessel should be installed on the same height, and the system operates after filling liquid and permitting generation.

The level of monitoring vessel and reference vessel are the same. Depending on settlement or heaving, the liquid quantity in the buoy can be increased or decreased. The differential buoyancy is transmitted to VW force sensor and cause changes in the frequency. It can be easily estimated by calibration sheet.

The vessel is processed from stainless steel, and no leakage occurs. Applied to high-precision fitting, it has a high level of durability, allowing for precise and semi permanent use.

Applications

Model 1680 is used VW force sensor as a basic element and shows high resolution and reproducibility. It is designed to measure vertical displacement such as minute settlements or heaving by 0.02mm, allowing for precise measurement by connecting displacement range or speed or minute displacement to automatic logger.

- Useful to measure delicate deflection in pier or abutment
- Measuring settlement, caused by adjacent or underground excavation work
- Measuring settlement for structure maintenance

Features

- Assuring reliability and stability under severe condition
- Optimal design for usage
- High stability and sensitivity
- Highly precise measurement (detecting 0.02mm)
- Excellent reproducibility and response due to its high resistance to the length of cable and the changes in resistance
- Adjusting the range, depending on expected displacement
- Automatic measurement

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Specification

Model	1680		
Sensor element	VW force transducer		
Range	100mm	300mm	600mm
Resolution	0.025% FSR (0.02mm)	0.025% FSR (0.06mm)	0.025% FSR (0.12mm)
Accuracy	±0.1% FSR		
Nonlinearity	±0.5% FSR		
Operating temperature	-40~80°C		
Built-in temperature device	Thermistor (3k Ω)		
Maximum length	200m (Reference vessel - Monitoring vessel), 500m (Total system length)		
System compositions	① Reference vessel ② Monitoring vessel ③ Air line ④ Water line		
Materials	Engineering plastic, alloy steel plate, stainless steel, urethane hose		
Weight	① Reference vessel about 2.5kg ② Monitoring vessel about 2.5kg ③ Mounting bracket about 2kg		
Signal cable	Ø6.4mm, 0.37mm ² × 4C shielded PVC sheath cable		

(Note) The accuracy and reliability depends on compensating for temperature variations, atmospheric pressure variations, de-airing in liquid and installation method.

The readout

It is connected to the system such as the VW readout units, data loggers to be data logging and data acquisition system to monitor readings. It is compatible with other company's readout unit.

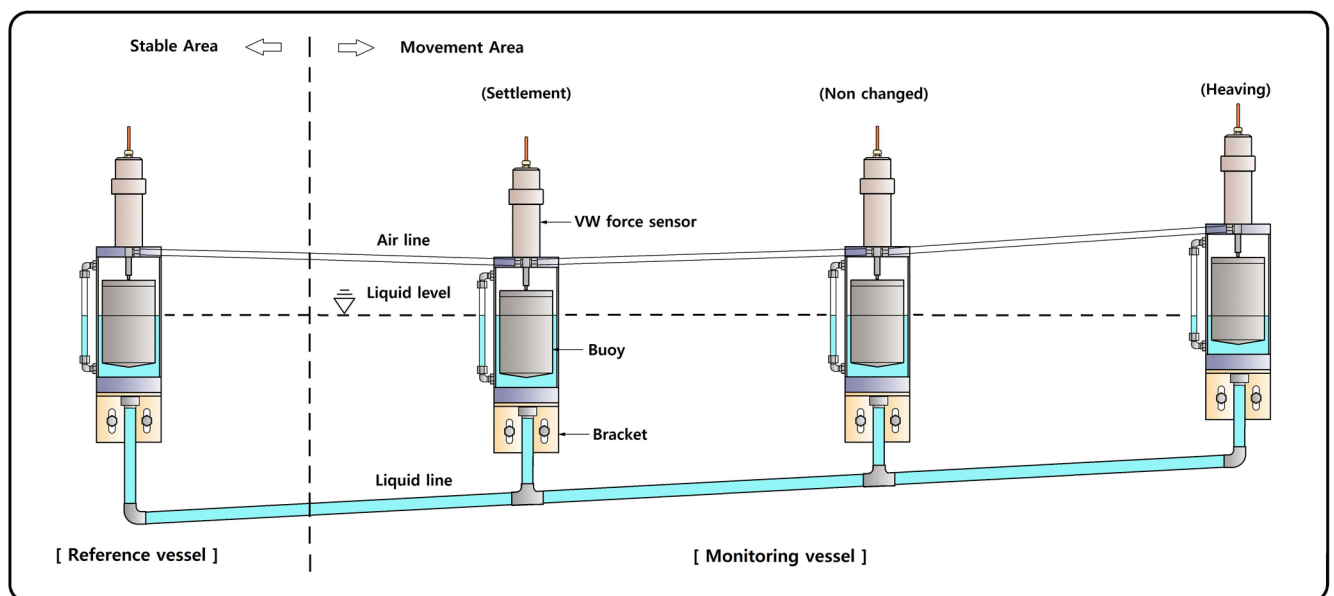
- ACE-800 (VW readout)
- ACE-1000 (VW data recorder)
- ACE-1100 series (VW mini logger)
- ADL-16V (VW data logger)
- ADL-200A (Smart logger)
- VL Module (Smart LoRa system)

Ordering information

- Application quantity
- Application field and used
- Measurement range (expected changes in quantity)
- Automatic measurement
- Keeping VW readout unit

Ancillary equipments

- Universal terminal box (model 7012/7024)



[Installation of VW high sensitivity settlement system]