

VW convergencemeter



Description

The main body of model 1345 VW convergencemeter is made of stainless steel. VW convergencemeter is composed of sensor part, stainless extension rod and hook. It is a precise instrument, which measure inner section between 2 points by placing hooks at both ends.

Model 1347 uses carbon fiber wire to connect the sensor part and fixed point. Carbon fiber wire has very little temperature change and is light, so it is very useful even for long distance.

If any changes occur within the tunnel due to external forces, internal changes is transmitted to the sensor through extension rod. Due to the shift in tension, vibrating wire is magnetized by plucking coil and generates resonance frequency. The resonance frequency is transmitted to the VW readout unit and displayed suitable mechanical unit.

In case of unstable slope, it is possible to measure the changes by installed several VW convergencemeters along with unstable slope.

In addition, it contributes to measure the speed of displacement, rate and tendency of changes in inner tunnel. The VW convergencemeter is individually compensated, and recorded on the calibration sheet.

If the direction or size of the tunnel convergence is not figured out, it is possible to set up two ways VW convergencemeter for precise measurement.

The VW convergencemeter is equipped with a temperature device for compensating temperature variations.

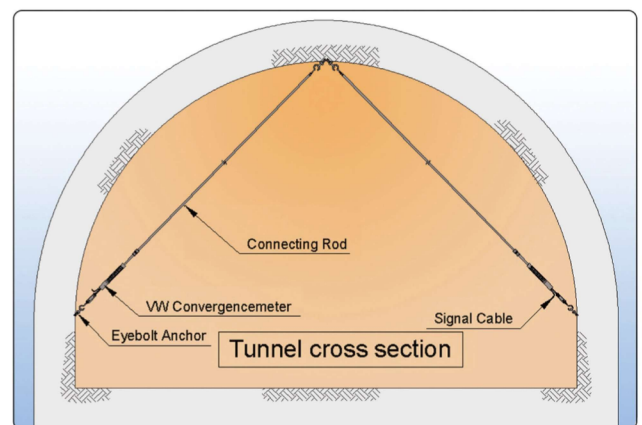
Features

- Stability and reliability in extreme environment
- Not affected by cable length and resistance change, reproducibility are very excellence
- Easy to use and installation
- Built-in temperature device
- Possible to automatic measurement
- Using permanent rustproof materials
- Adjusting the range, depending on estimated displacement

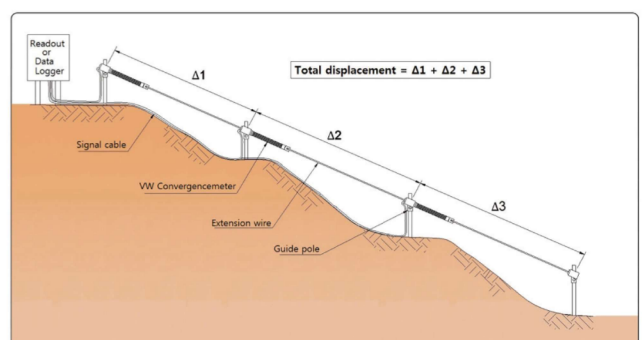
Applications

Model 1345 is mainly used to understand any changes in size, ratio and tendency of tunnel, caused by constructing tunnels or underground structures. Measure the value by VW readout unit. Unlike manual convergencemeter it has an automatic function and minimizes potential error in measurement.

- Measuring the changes inner hole of tunnel
- for bridge or displacement of structure
- Measuring the concentration which affects on the inner wall of the tunnel
- Measuring the degree of deformation while the excavating underground



[Installation of VW convergencemeter]



[Installation of slope]

VW convergencemeter

Specification

Model	1345		1347	
Sensor element	Vibrating wire sensor			
Range	0~50mm	0~100mm	0~50mm	0~100mm
Resolution	0.025% FSR	0.025% FSR	0.025% FSR	0.025% FSR
Accuracy	±0.1% FSR			
Nonlinearity	±0.5% FSR			
Operating temperature	-40~80°C			
Built-in temperature device	Thermistor (3k Ω)			
Temperature device range	-40~105°C			
Temperature device accuracy	±0.5°C			
Waterproof	50m H ₂ O			
Materials	Special stainless steel, high grade epoxy potting			
Weight	0.58kg	0.6kg	0.4kg	0.5kg
Signal cable	Ø4.5mm, 0.24mm ² × 4C shielded PVC cable		Ø6.4mm, 0.37mm ² × 4C shielded PVC cable	
Accessories	① STS extension rod	② Anchor bolt	① Carbon fiber wire	② Bracket

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.

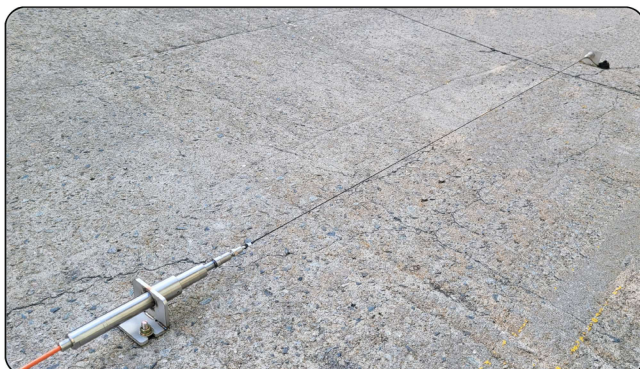
- ACE-800 (VW readout)
- ACE-1000 (VW data recorder)
- ACE-1100 series (VW mini logger)
- ADL-16V (VW data logger)
- ADL-200A (Smart logger)
- VL Module (Smart LoRa system)

Ordering information

- Application field
- Cable length
- Keeping VW readout unit
- Size of radius of tunnel
- In case of setting up VW convergencemeter, it should be taken into account that it may cause disturbances for traffic and pedestrians.

Ancillary equipments

- Universal terminal box (model 7012/7024)



[Model 1347 installation]