

Portable vertical inclinometer probe

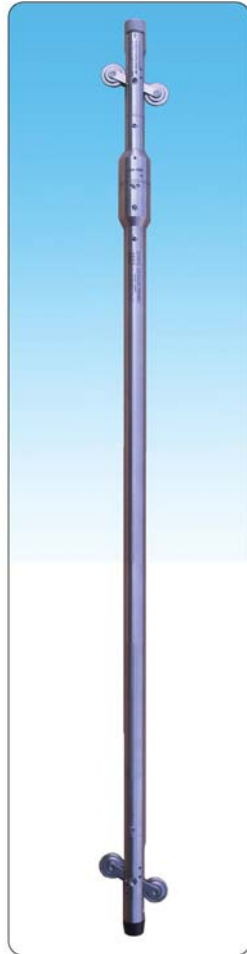
[Spiral sensor probe]

It is useful to find out matching up between direction of inclinometer casing and direction of measuring.

Also, this model can find out the twisting while connection with casing each.

The gage length is 1m and there is potentiometer in side of probe and can check out the twisting up to $\pm 10^\circ$ by each 1m.

It is also can connect to cable of data logger.



[Model 5480P spiral sensor probe]

Specification

Model	5480P
Sensor element	Disposable integrated potentiometer
Range	$\pm 10^\circ$ Degree
Resolution	$\pm 0.01^\circ$
Accuracy	$\pm 0.5\%$ FSR
Dimensions	$\varnothing 40 \times 1,160$ mm
Gage length	1,000mm
Weight	2.0 kg

[Self calibration frame]

It is useful to check the condition of inclinometer probe or calibrate.

It is designed with “ \perp ” shape of aluminum frame and pivot which is hang behind of aluminum frame. Also, it can divide and calibrate 5 point as -10° , -5° , 0° , $+5^\circ$, $+10^\circ$.

.Aluminum frame which is anodizing can fix to the wall and it can use anytime as necessary.

Specification

Model	5480C
Material	Aluminum frame, Epoxy painting inclinometer case
Calibration point	5point (-10° , -5° , 0° , $+5^\circ$, $+10^\circ$)
Dimensions	$350 \times 80 \times 127$ mm
Probe case	630mm
Weight	Around 3kg



[Model 5480C self calibration frame]

[Dummy probe]

Model 5410D dummy probe is not real probe.

There is not sensor in it.

It is a kind of tester to find out condition of inclinometer casing.

In case of many different displacements happened at underground, inclinometer casing might be damaged or bent. At this time, push the dummy probe into inside of casing and to find out the condition of casing.

It is designed with STS $\varnothing 2$ mm wire rope



[Model 5480D dummy probe]

Portable vertical inclinometer probe



Description

[Inclinometer probe & working principle]

Model 5480 **Portable vertical inclinometer probe** excavates into stable ground and is vertically installed to make gradual displacement with inclining casing. It gets data with model 5480 inclinometer probe, control cable, inclinometer data logger inside the inclinometer casing with probe.

Any ground displacement displaces the casing and gets the basic data after establishing. It also completely reproduces the changed profiles by **Geo-pro** (analysis software) with data logger from frequent measurement.

While measuring, you put it inside the casing and haul by 50cm up to data logger to make memory.

It has built-in 2-axis accelerometer available to read 30° of horizontal angle, one of which is parallel with the wheel and another one is right-angled.

Model 5480 portable vertical inclinometer probe has no effect from impact or vibration with high resolution and precision.

While measuring, you use the two grooves inside the casing and throw the probe into a right-angled direction after measuring one direction to get the perfect displacement. The wheels connected to springs in the probe are distributed to 500mm to make target distance freely.

The wheels measure from inner diameter $\varnothing 40\text{mm}$ to $\varnothing 73\text{mm}$ of the casing and the probe measures semi permanently with plated stainless steel.

For a large displacement, additional part of dummy probe replaces the probe when sinking down inside the casing.

[Control cable]

This correspondent line connects the inclinometer probe to data logger and controls placement of probe.

Therefore, its intensity and flexibility do matter.

We made control cable has soft polyurethane sheath not to be effected from any temperature change and the built-in stainless rope holds the high tension.

The copper shaped gaff protuberance of 50cm on the external sheath helps stop at the right position of the cable guide .

The connector clip on the one extreme of the cable is connected to probe in waterproof condition, and on the other one, the LEMO connector is set to connect to data logger.

[Cable guide]

The cable guide pulley temporarily set at the upper casing while measurement, holds up the probe inside the casing by 50cm to help rapid measuring and to keep the right distance.

Features

- Rapid responsibility and reproducibility
- Semi permanent use of endurance
- Perfect water, moisture and wind proof with the plated stainless steel
- Available for wide range of $\varnothing 40$ (internal) to $\varnothing 73$ (internal) casing
- The durable control cable of polyurethane rubber and available for any temperature, weather and chemical features without clearing covering mantles
- 500mH₂O waterproof

Compositions

Model 5480 portable vertical inclinometer consists of parts as below.

- Model 5480 vertical inclinometer probe
- Control cable and plastic cable drum
- Cable guide
- ACE-3000 data logger



[Model 5480set]

Portable vertical inclinometer probe

The readout

- ACE-3000 (Inclinometer data logger)
- ACE-2000 (Tiltmeter readout)



[Model ACE-3000 data logger & hard switch]

Ordering information

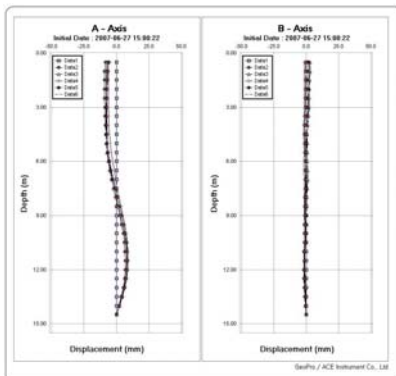
- The total length of needed cable
- Needed accessories

Ancillary equipments

- Dummy probe
 - Wheel for dummy probe (50m)
 - Plastic reel (for 50m/100m)
 - Self calibration frame (model 5480C)
 - Spiral sensor probe (model 5480P)
 - Wheel cartridge (model 5480W)
- ; It is a kit for replacing at work site easily



[Model 5480W wheel cartridge]

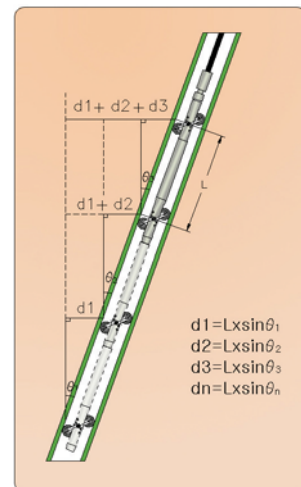


[Geo-pro graph]

Specification

Model	5480	
Inclinometer probe (Vertical type)	Applied sensor	2-accelerometer
	Measuring range	$\pm 30^\circ$
	Resolution	0.005 mm / 5m
	Rating output	± 5.0 VDC
	Nonlinearity	$\pm 0.02\%$ FSR
	Repeatability	$\pm 0.01\%$ FSR
	Thermal zero shift	Less than 0.002% FSR/ $^\circ\text{C}$
	Sensitivity	1.0 ± 0.001
	Temperature range	-20~50 $^\circ\text{C}$
	Gage length	500mm
	System accuracy	± 2 mm / 25m
	Minimum radius curve	R 4.5m (Data reading)
	Dimensions	$\varnothing 27 \times 660$ mm
	Weight	2.0 kg
Material	Special stainless steel	
Waterproof	500mH ₂ O	
Accessories	Hand bag	
Control cable	Temperature range	-25~80 $^\circ\text{C}$
	Minimum radius curve	R 120mm
	Out diameter	$\varnothing 10.0$ mm
	Cable	0.75mm ² \times 6C
	Material of cable	Polyurethane rubber
	Weight	About 8.5kg / 50m
Cable guide	Material	Aluminum
	Weight	0.3 kg

- Standard control cable. (40/50/100m)



[Theory of displacement calculating]