DPF-CX03-E

Bluetooth Inclinometer

DPF sensors

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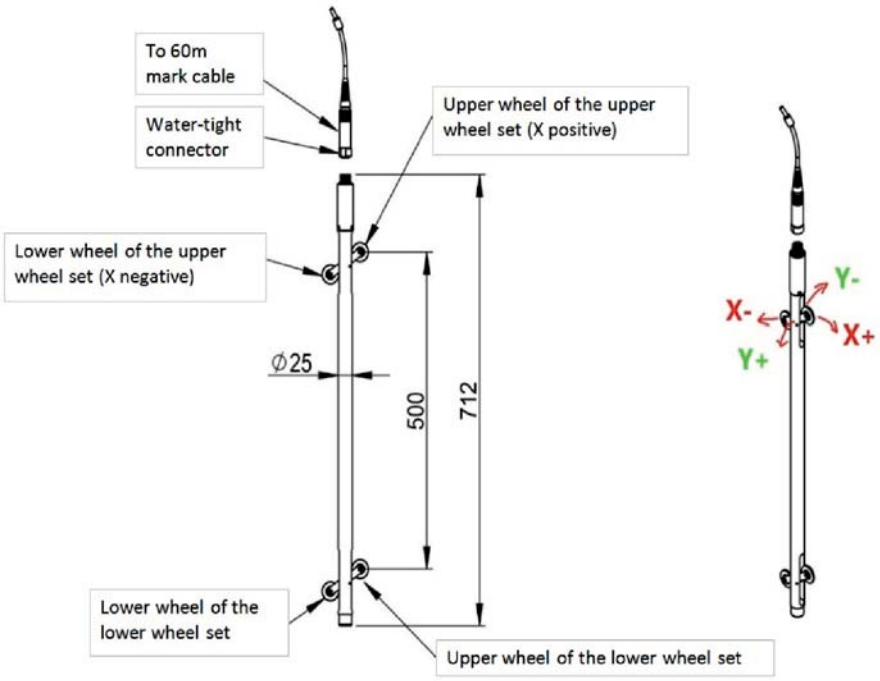
Bluetooth Inclinometer with Cell Phone App

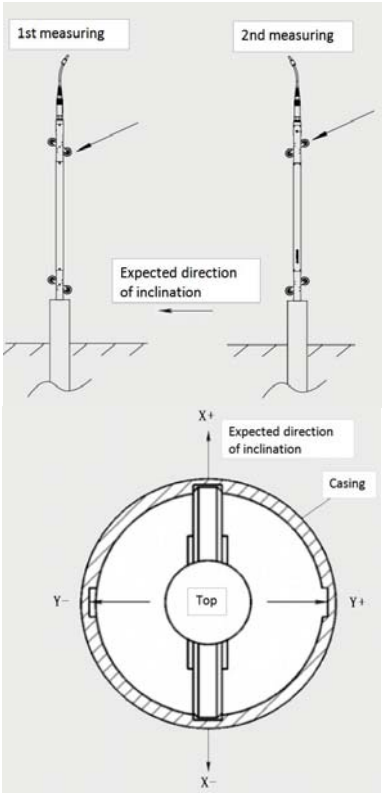
Product Model :	DPF-CX03E
Measuring Range :	
Output :	Bluetooth
Measuring Axis :	Dual Axis
Accuracy :	0.001°-0.005°
Resolution :	0.001°
Application :	Geo/Structural Monitoring
IP Degree :	IP68
Temperature :	-40℃ ~ +85℃

Inclinometers are widely used around the world to monitor the deformation of slopes, embankments, dams, foundation pits and tunnels. By measuring the inclination angle of a sensor probe at different locations inside a casing, we're able to obtain data of soil displacement in vertical or horizontal direction. An inclinometer kit consists of a sensor probe, a mark cable and a datalogger.

The inclinometer casing is usually installed in a vertical drilling hole through the unstable soil layer to the lower stable soil layer. The first observation can establish the initial section of casing movement, based on which the magnitude, direction and speed of soil displacement at certain locations can be measured through subsequent observations.

ZCT-CX03E is the latest Bluetooth inclinometer system developed and manufactured by Shanghai Electronic Tech Co., Ltd. With the inclinometer, measurement activities can be configured by anAndroid mobile phone, and data collected can be uploaded immediately to the phone. With the Android app, functions such as hole locating, measurement, display, storage, alarming, data analysis and data import/export can be easily realized.





Item	Conditions	Typical value	Unit
Measuring range[1]		± 15 / ± 30	degree
Resolution		0.001	degree
		0.02	mm/m
Probe accuracy		±0.005	degree
System repeatability[2]	30m	±1	mm
Protection grade[3]	probe	IP68	
	datalogger	IP67	
Cable	6.8mm dia	30 or 60	m
Probe size	diameter * length	25*710	mm
Operating and storage temperature[4]		-20...+60	ºC
Outer size	packing without cable reel	985*425*175	mm
	cable reel	350*250*430	mm
Gross weight	without cable reel	15	kg
Standards		JB/T 12204-2015	
		GB50026-2007	
		ISO18674-3-2017	

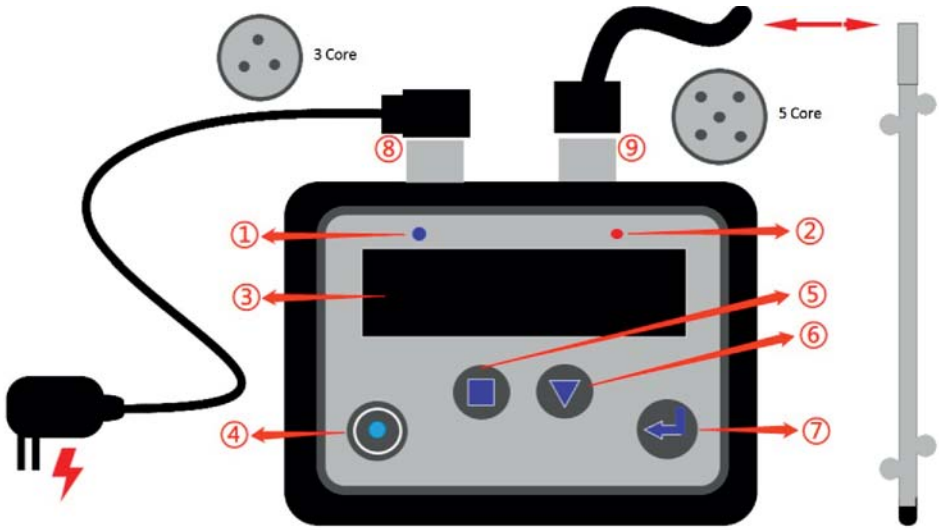
Major advantages of DPF-CX03E:

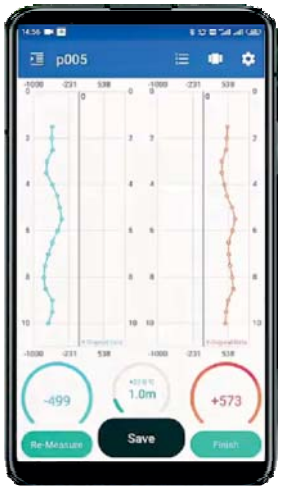
- ✔ anti-vibration
- ✔ stable and reliable
- ✔ high protection grade
- ✔ wide measurement range
- ✔ high resolution and accuracy
- ✔ portable, smart and user-friendly
- ✔ real-time data display and uploading

Note:
1-In case other ranges are required, contact DPF SENSORS
2-System repeatability varies when different operators use different casings, probes, cables and/or dataloggers under different environment temperatures. The data in the table is based on repeated measurement results at different depth (30m deep to the top, 0.5m interval, so 60 readings each time) under the same conditions at the factory, which represent the deviation range of accumulated displacement. The same conditions refer to the same standard hole, the same operator, the same test method and procedure, the same instrument and the same environment factors.
3-For the probe: 100 munder water, xx hours without water leakage; for the datalogger: 1m under water, no water leakage for half an hour. These are factory test results. Watertight quality may decrease as the instrument ages, and the rate of aging is closely related to the environment and frequency of use. Timely maintenance of the instrument is recommended.
4-The product is powered by rechargeable Lithium-ion battery. Please make sure that the environment temperature is within the temperature range before charging the battery, so life span of the battery may not be shortened. Do not charge the battery when environment temperature is below zero.

Instructions for use

- ✳ The sensor probe consists of stainless steel housing, cable joint and two guide wheel sets.
- ✳ The plane where the wheel sets are located is defined as X directions, and the upper wheel represents the positive direction. That is to say, the reading is positive when the plane tilts in this direction. The plane perpendicular to the plane where the wheel sets are located is in Y directions. The positive and negative Y directions are shown in the figure above.
- ✳ For standard measurement, the probe needs to be lifted twice from the bottom to the top of the inclinometer casing. The first time is often called the positive measurement, and the second time is often called the reverse measurement.
- ✳ When the inclinometer casing is installed, one group of guide grooves shall be aligned with the expected inclination (displacement) direction. In particular, during the first measurement, the positive X direction (the upper wheel direction) shall be towards the expected displacement direction, so displacement data collected is positive.





① Blue indicator light indicates the communication conditions. It flashes at 0.5Hz when Bluetooth is not connected. It lights up briefly after successful communication with the mobile phone during measurement.

② Red indicator light indicates if the data is stable during measurement.

③ Display is a 3.12″ OLED screen, with functions such as prompting operations and displaying data.

④ Power switch with an indicator light that shines when power is on

⑤ Key 1 (square key) for positioning and canceling measurement

⑥ Key 2 (triangle key) to move the cursor

⑦ Confirm key to confirm and save (for example, confirm hole selection, save current reading)

⑧ 3-core connector for charging

High Precision

Our in-place clinometer accuracy reaches 0.01 degree. We have tilt angle platform with accuracy 0.003 degree to calibrate our inclinometer. Ensure each product satisfy the accuracy in specification.

High level waterproof

Each inclinometer sensor probe must be strictly tested under 120 meters depth water pressure for 12 hours. Make sure all sensor probes fulfill IP 68 waterproof level.

High reliability

Aging test is strictly performed for the PCB of in-place inclinometer. Keep it in aging test box with 85 ºC temperature for 6 hours to ensure high reliability.

Excellent process

All components of sensor probe are high strength stainless steel. Every detail is carefully designed to ensure durability.

Freely customized length

There are three standard length of sensor probe unit, i.e. 1 m, 2 m, 3 m, for your selection. If these are all not suitable, we could customize the length of sensor unit as you request.

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NIF: B-87969416
SENSORES E INSTRUMENTACION GUEMISA S.L.
C\ La Fundición 4 Bis - Pl 1ª Oficina-2
28522 Rivas Vaciamadrid (Madrid)
Telf. 91 764 21 00
email: ventas@guemisa.com
www.guemisa.com