

# Inclinometer Readout

## Applications

The Model GK-604 Inclinometer Readout is used in conjunction with analog inclinometer probes to measure lateral movements in and around...

- Landslides
- Unstable Slopes
- Dam Embankments
- Landfills
- Slurry walls
- Caissons
- Piles
- Sheet Piling
- Tunnels



• Model 6000-2 Control Cable (top) and Model 6000-4 Inclinometer Cable (bottom).



• Model 6000-14 (left) and Model 6000-13 (right) Cable Holds.



• Model GK-604-4 Interface.



• Model GK-604 Inclinometer Readout comprising cable reel with probe interface, cable, Field PC and carry case.

## Introduction

The Model GK-604 Inclinometer Readout is designed for use with all analog type inclinometer probes. In use, the probe is connected by its control cable to an interface inside the reel, which converts the signal and transmits the data, via radio, to the Model FPC-1 Field PC.

## Control Cable

The Model 6000-2 Control Cable is a lightweight, Polyurethane-jacketed cable and is less than 7 mm in diameter. A central Kevlar® strand, with a breaking strength of 150 kg, is firmly attached to the probe cable connector. This prevents the cable from stretching and allows for a heavy pull in the event the probe becomes jammed in the casing.

The readout end of the cable has a LEMO® connector that connects to the interface.

Non-slip metal depth markers are crimped onto the cable at intervals equal to the wheel base of the inclinometer probe (0.5 m or 2 ft). These markers engage the cable hold at the top of the casing while the probe is being read.

## Cable Holds

The Cable Holds are anodized aluminum plugs that fit into the top of either a 2.75" (Model 6000-13) or 3.34" inclinometer casing (Model 6000-14), with a "V" slot to allow the Model 6000-2 Control Cable and its markers to be

pulled through it during the survey. The center of the Cable Hold is tapered to a smaller diameter than the cable's metal markers, which allows the cable to be suspended from the markers, during readings.

The Model 6000-4 Inclinometer Cable (see photo, upper left) is too large in diameter (11 mm) for use with the Model 6000-13/14 Cable Holds and requires the use of the Model 6000-6 Pulley Assembly during readings.

## Cable Reels

Two reels are available: The Model GK-604-3, which contains the Model GK-604-4 Interface, and the Model 6000-5-2 Storage Reel (without the interface). Both reels are capable of accommodating 200 m of the Model 6000-2 Control Cable. The Model GK-604-3 includes a rugged Cordura® carry case.

## Model GK-604-4 Interface

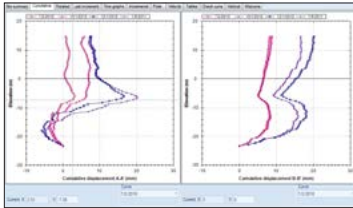
The GK-604-4 Interface converts the signal from the inclinometer probe into a radio signal, which is transmitted to the Field PC. The interface is built into the GK-604-3 Cable Reel, or supplied as a stand-alone unit for those who prefer not to use cable reels (see photo, lower left).

The GK-604-4 Interface is also compatible with the Model 6000-4 Inclinometer Cable.

## Model FPC-1 Field PC



● Model FPC-1 Field PC showing an inclinometer data reading screen shot.



● SiteMaster Software graph showing cumulative inclinometer displacements.

### Operating Principle

The Model FPC-1 Field PC is a rugged, easy-to-use instrument, which is used for reading MEMS analog, MEMS digital and force balance type inclinometers and tiltmeters when running the Model GK-604D IRA application.

Readings are stored by tapping "Record," or pressing the "Enter" button on the Field PC display. An audible beep indicates the completion of the reading storage. During the running of a deflection survey the Field PC has the capability of displaying the check sum on the LCD screen, a useful tool for checking the survey data in the field so that reading errors are minimized.

Once surveys are complete, readings saved to the internal SSD can be transferred to a host computer where data reduction, graphing and reporting can be accomplished using SiteMaster Software (sold separately—please see the SiteMaster data sheet for further details).

The Field PC comes complete with a hand strap, stylus, USB sync cable, Lithium-Ion battery, AC wall charger (with international plug kit), screen protector, CD-ROM (with license and manuals) and Quick Start Guide.

### Technical Specifications (FPC-1 Field PC)

Operating Temperature	-30 °C to 60 °C	Connections	1 × USB host and client (Mini AB USB OTG, 1.2 host, 2.0 client), Power jack, 1 × SDIO slot, 9-pin serial RS-232 connector
Storage Temperature	-40 °C to 70 °C	Communication	Ubiquitous short-range wireless PAN, WLAN: Integrated 802.11 b/g supports AES, TKIP, WEP, WPA and WPA2, GSM/UMTS (HSDPA/EDGE)
Processor	Marvell PXA310 806 MHz	Navigation	Integrated GPS SIRF Star III chipset with WAAS/EGNOS support, Integrated E-Compass and G-Sensor, Integrated Altimeter
Memory	128 MB SDRAM	Camera	Integrated 3 megapixel camera with autofocus and LED Flash
Data Storage	4 GB iNAND Flash	Weight	490 g, including rechargeable battery
Operating System	Microsoft® Windows® Mobile 6.1	L × W × H	179 × 97 × 37 mm
Screen	480 × 640 pixel Anti-glare 3.5" VGA resolution, touchscreen, sunlight readable 262K colors (18 bit), with LED backlight		
Keypad	Numeric keypad with backlighting, on-screen QWERTY keyboard		
Battery	5600 mAh Li-ion battery pack		

### Technical Specifications (GK-604-4 Interface)

Standard Range	±8 V
Resolution	16 bit
Accuracy	±0.1% F.S.
Battery	>16 hours continuous operation, per charge
Temperature Range	-30°C to +50°C
Dimensions	(L × W × H): 160 × 75 × 75 mm

### Ordering Information

**Model GK-604-1:** Inclinometer Readout with FPC-1 Field PC, Software, Probe Interface installed in Cable Reel and reel Carry Case.

**Model GK-604-2:** Inclinometer Readout with FPC-1 Field PC, Software and Probe Interface (no cable reel).

**Model GK-604-3:** Inclinometer Software and Probe Interface, installed in Cable Reel.

**Model GK-604-4:** Inclinometer Software and Probe Interface, installed in enclosure (no cable reel).

**Model GK-604-5:** Inclinometer Readout Software for PC- Field PC.

**Model FPC-1:** Field PC and accessories only.



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