Model GK-603 Readout Box

Model GK-603 Readout Box LCD / control panel.

Operating Principle

The Model GK-603 Inclinometer Readout Box is an easy-to-use, portable and rugged instrument for reading inclinometer probes, spiral indicators and tiltmeters, and for analyzing the resultant data. It is housed in a weather-resistant aluminum case to withstand the rigors of field operation. A large (15 row by 20 column) backlit LCD provides exceptional viewing under nearly all lighting conditions. A 12 volt 7.0 Ahr rechargeable battery will power the unit for up to 12 hours with a probe or tiltmeter plugged in. An internal lithium battery retains the configuration and data files of the readout for up to four years should the main battery fail or be disconnected.

In use, the inclinometer probe is connected to the readout and lowered to the bottom of the hole. Readings are stored by pressing a button on the face panel (or the remote switch). An audible in the Model GK-603 indicates the completion of the reading storage.

When the survey is complete, the readings are saved in the solid state memory under an eight-character file name which can be analyzed using the built-in capabilities of the Model GK-603, or transmitted to a host computer via RS-232 for archival purposes or further data reduction using spread sheets or GTilt Software[1].

The data reduction features of the readout allow for the direct printing of instrument check sums, deflection and profile reports, and the creation of three plot types: change in reading, deflection and profile. Plots may also be viewed on the LCD screen prior to printing to check the scales or to quickly determine if movement has occurred and at which depth.

System Components

The Model GK-603 is supplied complete with battery charger, remote switch with audible, and RS-232 interface cable. Optional accessories include a cold weather option, external power cable (12 VDC), and serial printer.

[1]GTilt is manufactured by Mitre Software Corporation. Please visit www.mitresoftware.com for more information.

Technical Specifications

▾ Analog Measurement	
Input Range	±10 VDC
Resolution	1 part in 40,000
Input Bias Current	10 µA
Input Impedance	> 1 MΩ
Input Bandwidth	20 Hz
A to B Channel Isolation	–92 db
Accuracy[1]	0.15% F.S.
Probe Supply	±12 VDC @ 50 mA
▾ Digital Measurement	
Resolution	16 bit (1 part in 65,536)
▾ Memory	
RAM / ROM	128K Static / 64K EPROM
Configuration File Storage	16 files
Data File Storage	96 files
Max Levels Per Data File	255
Total Data Point Storage	26,880
▾ Clock	
Features	Full calendar
Time Format	24 hour
Oscillator	32.768 kHz
Accuracy	±1 minute per month
▾ Serial Interface	
Interface Speed	300, 1200 or 9600 baud
Communication Parameters	8 databits, 1 stop bit, no parity, full duplex
Software Handshake	XON / XOFF
Data Output Format	ASCII text
▾ Power	
Quiescent Current Draw	< 0.2 mA
Operating Current	≈ 175 mA (≈ 225 mA with probe)
Battery	Sealed lead-acid, 12 Volt, 7.0 Ahr
Operating Time	≈ 12 hours
Backup Battery	Lithium, 3.5 volt, 1.8 Ahr
▾ Physical	
Dimensions (L × W × H)	210 × 165 × 203 mm
Weight	3.6 kg
Operating Temperature[2]	0°C to 50°C
Humidity	95% (non-condensing)

[1]Over specified temperature range.
[2]Low temperature versions (to –30°C) available on request.

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