# Load Cell Readout

## Applications

**The Model GK-502 Load Cell Readout is designed to read *GEOKON®*'s Model 3000 full bridge resistance strain gage type load cells. The rugged and reliable, user-friendly GK-502 features the following…**

- **Easy-to-use control panel**
- **Output displayed in engineering units**
- **16×2 LCD display**
- **10-pin load cell connector**
- **USB communications port**
- **Internal real-time clock**
- **Non-volatile memory**
- **Rechargeable battery**
- **Data storage capability**
- **Cold weather operation**

• *Model GK-502 Load Cell Readout.*


• *Close-up of the Model GK-502 Load Cell Readout control panel.*

## Operating Principle

The Model GK-502 Load Cell Readout is a portable battery powered instrument designed to read all full bridge resistance strain gage type load cells, including the ***GEOKON®*** Model 3000 Load Cells.

The readout incorporates a 12 Volt, 1.4 Ahr Sealed Lead Acid (SLA) battery, 16×2 graphic liquid crystal display (LCD) with backlight, membrane keypad, and battery charger circuit. Two side-mounted 10-pin, military style **Bendix®** connectors are provided; the first is used to connect the load cell, and the second is used for communications, via a USB connection (COM port), and for charging of the battery, via the battery charger.

The GK-502 supplies a precision 2.048 VDC excitation to the full bridge Load Cell and displays the output in Digits, mV, mV/V, or by entering a Gage Factor and Zero Reading, in engineering units (lbs, kg, kips, Tons, etc.).

An internal Real-Time Clock/Calendar (RTCC) and non-volatile memory allows storage for up to 999 time-stamped readings, which can be displayed via the LCD display, or downloaded to a computer via the COM port for further analysis.

The GK-502 is designed to read both 4-wire and 6-wire remote-sense full bridge load cells.

Power consumption of the GK-502 is very low (300 mW), and will allow continuous operation for up to 48 hours under normal conditions. Continuous battery monitoring is included to warn the user when the battery is low and requires recharging.

● *Model GK-502 Load Cell Readout, showing load cell and communication connectors.*

● *Model GK-502 Load Cell Readout shown with the Model 3000 Electrical Resistance Load Cell.*

## Advantages and Limitations

The Model GK-502 is designed to be user-friendly with push button operation for all functions.

The display shows digits, mV, mV/V or engineering units.

Readings, including reading number, date and time, can be stored by pressing the "STORE" button.

To power off the GK-502, press the "ON/OFF" switch. Alternatively, the GK-502 will automatically shut off after five minutes of remaining idle.

Load cells are easily connected via the side-mounted 10-pin connector, or via the supplied patch cord with alligator clips.

Remote sense capabilities for added accuracy with long cable lengths.

Stored data can be downloaded through the 10-pin USB port for use in spreadsheet applications.

## System Components

The Model GK-502 is supplied complete with battery charger, USB cable, USB driver (CD format), patch cord with alligator clips, for connection to load cell cables without 10-pin connectors, and manual.

## Technical Specifications

| | |
|---|---|
| Display Resolution | 1 uV (mV, mV/V); 1 digit (Dg); 1 lb (lbs.); 1 kg (kg); 0.01 kip (kips); 0.01 ton (tons); 0.01 metric ton (metric tons); 0.01 kN (kilonewton) |
| Accuracy | ±0.05% F.S. (±30 digits) |
| Range (S+S–) | ±16 mV (±31,250 digits) |
| ADC | Differential 24 bit Sigma Delta |
| ADC Resolution | 1.9 nV |
| Excitation Voltage/ ADC Reference | 2.048 V (± 0.001 V) 3 ppm/°C |
| Display | 16 × 2 graphic LCD with backlight |
| Connectors | *Bulkhead:* **Bendix** PTO2A-12-10S<br>*Mating:* **Bendix** PY06A-12-10P(SR) |
| Operating Temperature | –30 to +50°C |
| Power Requirements | 12 VDC @ 22 mA (operation)<br>12 VDC @ 16 µA (off) |
| AC Adaptor | 120/230 VAC: 50-60 Hz, 18 VDC, 1.66 A |
| Battery | *(type)* Lead acid 12 volt, 1.4 Ahr<br>*(operating time)* 48 hours |
| Materials | Aluminum case and lid |
| Weight | 2.3 kg |
| L × W × H | 165 × 102 × 216 mm |

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