

# Intrinsically Safe Vibrating Wire Readout

## Applications

The Model 404 Intrinsically Safe Vibrating Wire Readout is for use with specifically designed GEOKON® vibrating wire sensors such as piezometers, crackmeters, stressmeters, etc.

The readout has IECEx approval (IECEx SIM 13.0014x) for use in underground coal mines in Australia. Approval for use in other countries must be confirmed with the requisite authorities.



- The Model 404 Readout is easily held and operated with one hand.

**\*GEL Instrumentation Pty Ltd**  
Unit 5/29 Kenworth Place  
Brendale Brisbane QLD  
Australia 4500

tel: +617 3205 4011  
email: gelinst@bigpond.net.au



- Close-up of the Model 404 Intrinsically Safe Vibrating Wire Readout control panel and LCD display.

## Operating Principle

The Model 404 Intrinsically Safe Vibrating Wire Readout is a portable, low-power, hand-held unit, designed in cooperation with GEL Instrumentation\*, that is capable of running for more than 6 hours continuously on a single charge.

The Model 404 is designed to read specific **GEOKON** vibrating wire sensors in hazardous environments (IECEx ia, approval SIM 13.0014X) and is approved only for designated **GEOKON** sensors, identified as Type 1, Type 2, Type 3 and Type 4.

The Model 404 is based on the **GEOKON** Model GK-404 Readout and provides 6 excitation positions (A-F) with a display resolution of 0.1 digit. It is capable of displaying the reading in either digits, frequency (Hz), period ( $\mu$ s) and in the case of strain gauges (position C, D and E), in microstrain ( $\mu$ ε).

The use of vibrating wire transducers allows highly accurate measurement for critical monitoring. The Model 404 also displays the temperature of the transducer with a resolution of 0.1 °C.

## Advantages and Limitation

The Model 404 has a sealed enclosure and a four-switch membrane keypad that can be operated with one hand. The stainless steel enclosure provides rugged protection for the internal circuits.

The 16 × 2 character LCD display allows the user to adjust backlight and contrast. The large display size makes it easy to read in all situations, while retaining hand-held convenience.

Power is provided by integral NiMH cells, which are recharged away from the hazardous environment using the supplied compact charger. Power features include an automatic power-off option, battery monitor display and low battery warning. Settings are retained between powerons.

This readout box does not have data storage capabilities.



● Model 404 in carry case (included).



● Sensor cable and compact charger (included).



● Model 404 dimensions.

### System Components

The Model 404 is supplied complete with a standard crocodile/alligator clip type sensor cable, wall charger and canvas carrying case.

The carrying case will protect the readout in underground environments and includes a pouch for the sensor cable and a shoulder carry strap.

### Technical Specifications

Display Resolution	(period) 0.1 microsecond (strain) 1 microstrain (Hz <sup>2</sup> × 10 <sup>-3</sup> ) 0.1 digit (frequency) 0.1 Hz (temperature) 0.1 °C
Measurement Accuracy	(vw sensor) 0.025% F.S. (temperature) 1.0% F.S.
Timebase Accuracy	±50 ppm
Excitation Range	400 Hz to 6000 Hz, 5 Volt Square Wave
Temperature Range	-20 °C to +40 °C
Battery	(type) Integral NiMH cells (life) 6 hours at 20 °C (per charge)
Weight	1020 g (excluding carry case)
L × W × H	165 × 110 × 45 mm