

MODEL 3000

Datalogging Current Meter, Flowmeter

2001 Product Description Sheet



geo scientific ltd.

watershed monitoring instrumentation

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Telescoping Wands



3000-STDX
2 to 9½' reach
(shown folded for
storage)

8" boom

3000-STDX

2½' to 9½' telescoping extension wand with no graduations. Sensor is mounted on an 8" boom to reach into side sewers. A 2" boom is also available for stability in higher flows and easier access through small openings in pipes. A two foot adjustable depth probe is provided and attaches to the fully extended lower section. The depth probe allows repeated accurate sensor placement indexed from the stream bed. The 3000-STDX includes the Model 3000 Indicator, two propeller rotor assemblies, spare propeller, DB9 connector, operating instructions and a storage tube for sensor wand. Cable is 5' longer than the maximum extension.



3000-LX at work

3000-LX

4½' to 19½' extension. Same as the 3000-STDX except each telescoping section is 4 feet in length. A three foot adjustable depth probe is provided. Telescoping sections are secured by readily available stainless steel hose clamps for maximum reliability and ease of maintenance.

The Model 3000-LX includes the 3000 Indicator, two propeller rotor assemblies, spare propeller, DB9 connector, instruction manual and storage tube for the sensor wand.

3000-LX, 4½' to 19 ½' extension

Wading Wands



3000-12
to 2.7 ft

3000-13
to 3.7 ft

3000-14
to 4.7 ft.

3000-12, -13, -14, -C80, -C140

6/10 Depth Method Model 3000's are designed to be used while wading in streams and waterways. Use the rods to measure the stream depth then automatically place the sensor at 6/10 of the depth from the stream surface, the best place to determine the average velocity of a water column in relatively shallow water. All models include the 3000 Indicator, two propeller rotor assemblies, a spare propeller, DB9 connector, operating manual and a storage tube for the sensor wand. Indicator-to-wand connection cable length is five feet longer than the wading rod. Wading rods for Models 3000-12, -13, -14 are in feet & tenths and Models 3000-C80 and 3000-C140 have 5cm graduations.



3000-C80
to 86 cm

3000-C140
to 145 cm

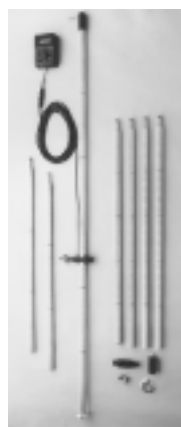


3000-12, quick profiling of shallow streams

Combination Wands

3000-1514

12' total length. 1" diameter, thick-walled aluminum tube graduated from the bottom up in feet and tenths. Designed to be very stable in higher flows when the 2½" dia. foot is placed on the stream bed. Wand breaks down via threaded fittings into four sections of three feet each. Supplied with a **Top Cap**, **Slider**, and **Foot** as well as the Model 3000 Indicator, instruction manual, DB9 connector, spare propeller, extra rotor assembly, AA batteries and 25' sensor cable. Top cap contains direction pointer for use when sensor is not visible in deep water and the slider allows locking the sensor anywhere along the entire wand length.



3000-1518

4 meters total length. Same as 3000-1514 except each section is one meter long. Graduations are marked every 5cm. The length of both the 3000-1514 and 3000-1518 rods can be increased if needed by adding extra sections of rod available as options. The extra sections are offered with or without graduations. Supplied with same equipment as the 3000-1514.



3000-1514

MODEL 3000 FLOWMETER - DATALOGGER

The new Model 3000 Indicator is a datalogging version of the time proven Model 2100. The 3000 allows the operator to input and store measurement data usually hand written to a clipboard while profiling streams for discharge measurement. The Model 3000 can record depths, widths, velocities and angles along with time & date of measurements. It holds 1000 "Stations" in any combination of 1 to 100 "Transects" or "Sections". It can figure the "Q" (total discharge) and upload all the information in spreadsheet-acceptable format to your PC for further study and record keeping.

You can set the sampling time anywhere from 1 to 999 seconds and true averages can be attained by adding any single reading to multiple successive readings.

The 3000 Indicator is fully compatible with all previous sensors so it can also be purchased separately to update earlier Swoffer instruments. It can also be used with the USGS "Price Type" AA & Pygmy current meters, with or without the Swoffer-designed Model 2200 optical retrofit.

Calibration ratings for up to 5 different sensors (PROPS on the indicator keypad) are stored in the *Model 3000* plus calibrations for AA and Pygmy meters using either the *Swoffer Model 2200* optical retrofits or the original catwhisker contacts. An easy *self-calibration* feature enables you to check operation of the instrument while in the field and all calibration data may be edited if needed. The Indicator powers the sensor only when it is required for a measurement so batteries last longer. The onboard clock can be set anytime and remains in operation even after shutdown. And, if you forget to turn the Model 3000 off, it doesn't. After 20 minutes of inactivity it automatically shuts itself off. Powered by four AA batteries, the Model 3000 instruments are very light weight and easy to use even all day in the field.



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OPTIONS AND ACCESSORIES



2100-TSR Adapter for
using optical sensor on a
USGS wading rod



2100-151-Slider for
use on any 1" rods.



Foot, Slider, Top Cap, 25' sensor and Rotors and parts. Common to the 3000-1514 & -1518 models.

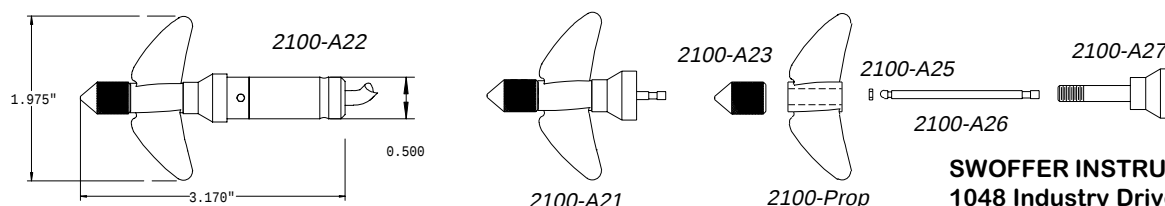
THE SWOFFER OPTICAL-ELECTRONIC SENSOR

The basic principle of the Swoffer sensor is simple; multiple bundles of fiber-optics, assembled into a propeller-driven rotor, gate a beam of infrared light from a photo diode to a photo-sensitive transistor. The rate of rotation of the propeller rotor is directly proportional to water speed, therefore, pulses produced by the photo transistor over a given time are also directly proportional to water velocity.

The Model 3000 uses a propeller rotor which requires very little energy to activate, works in nearly all water conditions and produces consistent, strong output pulses even at low speeds. The calibration curve for the rotors is linear and consistent in all normally occurring open channel velocities. The propellers used with the Model 3000 were specifically designed for use in water so they do not need a shroud to protect them from the effects of turbulence. Because no shroud is used the propellers are better able to shed debris normally found in sewers and natural streams.

The electronic half of the sensor consists of the latest opto-electronics and is epoxy encapsulated in a ½" (12.7mm) diameter acetal resin housing for protection from chemicals and the elements. The sensor uses a two-wire signal system requiring as little as 3 volts for operation and can generate an output signal through over 1000 feet of cable. The sensor consumes very little power, produces four pulses per revolution and can be manufactured in a variety of configurations and, most of all, it is sturdy and reliable.

The standard version of the propeller rotor assembly (2100-A21) uses a very low friction fiber-optics rotor, a polished and hardened stainless steel shaft, and a glass-filled nylon propeller. All rotor parts are easily replaceable in the field and spares are provided with every Model 3000 instrument.



For more complete descriptions and prices see the separate specification and price sheets.

All Model 3000 instruments are supplied with four AA alkaline batteries, two complete rotor assemblies (**2100-A21**), a spare propeller, the 3000 Datalogging Digital Indicator with a neck strap and a Sensor (**2100-A22**). The sensor wands are shipped in a PVC tube which serves as a permanent carrying/storage case.

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