




water flow & velocity meter

Swoffer models 2100 and 3000

overview


-  Calibrated, robust, and reliable water flow or velocity meter
- Low cost, easy to use, with little ongoing maintenance
- Variable length wands to measure from bridges, moorings, rafts, water craft and more
- The gold standard of water velocity measurements since 1959

Swoffer Instruments Inc. has been the world leading manufacturer of water flow and water velocity sensors, portable handheld meters, and loggers since 1959. Swoffer water flow meters are designed to measure velocity in any application from streams and rivers to storm water and sewage.

Swoffer water flow equipment has the advantage of easy to use, flexible design to measure shallow and deep channels as well as low and rapid velocities. Unlike other water velocity instruments, Swoffer instruments are self-calibrating leading to the most accurate water velocity measurements available.

Swoffer flow meters are best used for portable, spot measurements of water velocity.

swoffer fiber-optic sensors

 The basic principle of the Swoffer fiber-optic sensor is simple and unique: 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

producing electronic pulses.

These pulses, generated by the propeller rotor over a precisely measured amount of time, are directly proportional to water velocity.

The electronic half of the sensor is the latest opto-electronics and is epoxy encapsulated in a 12.7mm diameter acetal resin housing for protection from chemicals and the elements. It can be purchased separately and attached to and used with many in-water devices in addition to those offered by Swoffer.

The sensor uses a two-wire signal system requiring only 3 volts for operation and can generate an output signal through over 300m of cable.

The rotating portion of the sensor consists of a very low friction fiber-optics rotor rotating around a polished & hardened stainless steel shaft, all driven by a glass-reinforced nylon propeller. All rotor parts are easily replaceable in the field and spares are provided with every new instrument.

model 3000

Swoffer Model 3000 Current Velocity Meter-Flowmeter



A high accuracy, calibrated flow meter with data logger. Records depths, widths, velocities, flow angles, and

time/date stamp.

features

- Read stream velocity *directly* from 0.03 to 7.5 meters per second in velocity mode
- Various propeller sizes for slow and rapid flow (see use of special propellers application note)
- Interchangeable wand lengths from 0.3 to 5.95m to measure in stream or from bridges
- Records depths, widths, velocities, flow angles, time/date (“stations”) in “Discharge” mode
- Memory holds 1000 “stations” in up to 100 cross sections for later upload to a PC
- Calculates discharge
- Velocity sampling interval is user selectable from 1 to 999 seconds
- Powered by four AA size batteries
- Can be easily field-calibrated to operate with any contact closure type sensor

specifications

- Velocity Range: 0.03 to 7.5 m/s
- Resolution: 0.001m
- Accuracy: $\pm 1\%$
- Operating Temperature: Handheld Unit: -20 to +70°C; Sensor: -17.8 to +90°C
- Power Requirements: 4 x AA batteries
- Display Average: User adjustable from 1 to 999 seconds.
- Sensor Body and Rotor: Acetron GP (rotor body) & Ertalyte® TX, an internally lubricated thermoplastic polyester that provides enhanced wear over all previous rotor materials.
- Sensor Propeller: Glass-filled nylon. 5cm diameter is supplied. Other sizes available for special applications.
- Cable Length: Equal to wand at full extension plus 1.5m. Special lengths to 300m also available.
- Sensor Type: Photo-Fiber-Optic two-conductor electrical with all electronics permanently encapsulated in epoxy resin.
- [Contact Us for More Information](#)

brochures and manuals

- [Swoffer Model 3000 Datasheet](#)
- [Swoffer Model 3000 Manual](#)
- [Swoffer Model 3000 Product Description Sheet](#)

model 2100

Swoffer Model 2100 Current Velocity Meter



2100 Model

The Model 2100 Velocity Meter is the classic Swoffer instrument to measure water flow. Data is displayed on the screen and can be recorded on a notepad. For data capture option see model 3000 above.

The sensor for both 2100 and 3000 models are the same – Swoffer’s unique, high accuracy fiber-optic sensor.

features

- Read stream velocity *directly* from 0.03 to 7.5 meters per second
- Three selectable pre-set display update times. 90 second maximum
- Powered by a single standard 9V battery.
- Uses the efficient, propeller-driven *Photo-Fiber-Optic* sensor pioneered by



Swoffer in the 1970's

- Precision quartz crystal controlled electronics provides accurate, precise data in all flow conditions

specifications

- Velocity Range: 0.03 to 7.5 m/s
- Resolution: 0.01m
- Accuracy: $\pm 1\%$
- Operating Temperature: Handheld Unit: -25.6 to +49°C; Sensor: -17.8 to +90°C
- Power Requirements: 1 x 9V battery
- Display Average: Three selectable averaging times:
5, 20 and 90 seconds-FPS mode.
1.5, 6 and 30 seconds-MPS mode.
- Sensor Body and Rotor: Acetron GP (rotor body) & Ertalyte® TX, an internally lubricated thermoplastic polyester that provides enhanced wear over all previous rotor materials.
- Sensor Propeller: Glass-filled nylon. 5cm diameter is supplied. Other sizes available for special applications.
- Cable Length: Equal to wand at full extension plus 1.5m. Special lengths to 300m also available.
- Sensor Type: Photo-Fiber-Optic two-conductor electrical with all electronics permanently encapsulated in epoxy resin.
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brochures and manuals

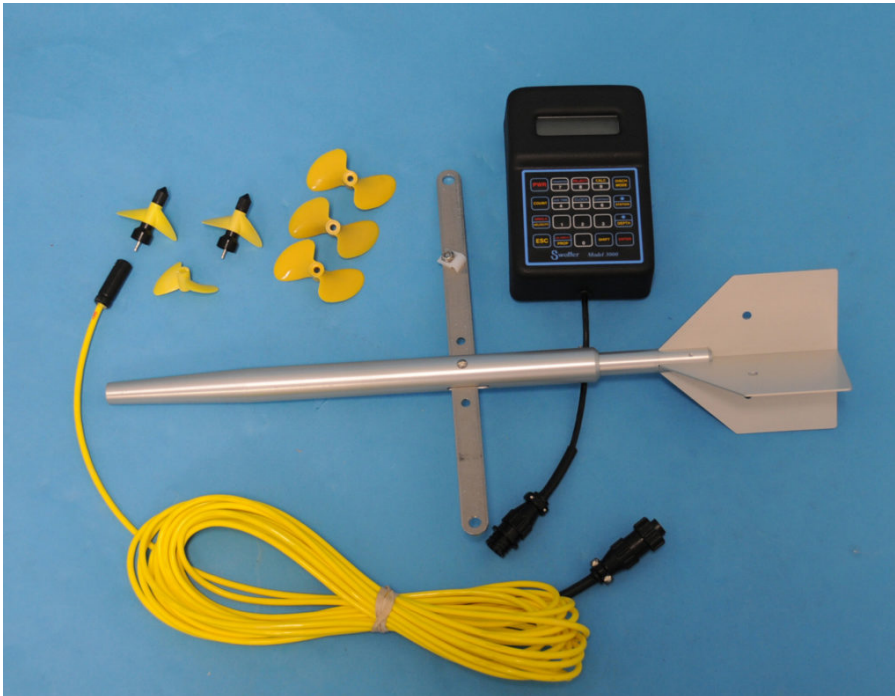
- [Swoffer Model 2100 Datasheet](#)
- [Swoffer Model 2100 Manual](#)
- [Swoffer Model 2100 Product Description Sheet](#)

accessories

P-1450 pelican carry case



propellers and underwater line



propellers sizes and models



manuals & docs

model 3000 water velocity meter

- [Swoffer Model 3000 Datasheet](#)
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- [Swoffer Model 3000 Product Description Sheet](#)

model 2100 water velocity meter

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related products

- [Dissolved gas sensors including DO, pH and more](#)
- [Water level and depth sensors](#)
- [Waste water and water quality research and monitoring](#)
- [Hydrology research and monitoring](#)
- [Data loggers and internet access to data](#)