
Stage Sensor Recorder System

Model SSR100

Campbell Scientific's SSR100 is an integrated system that monitors and records water level. It consists of a shaft encoder and a Campbell Scientific datalogger housed in an environmental enclosure. The system is pre-programmed to measure the shaft encoder, an optional tipping bucket rain gage, and an optional SDI-12 sensor. An alphanumeric LCD inside the enclosure displays the real-time measurements. A TX312 High Data Rate GOES satellite transmitter can be added to the system to transmit measurements via Geostationary Operational Environmental Satellites (GOES).

Designed as a replacement for the USGS Automated Data Recorder (ADR), the SSR100 can use the float, pulley, float tape or beaded float line, end hooks, counter weights, and power supply of the old ADR system. This equipment is also available from Campbell Scientific (see ordering information).



The self-contained SSR100 deploys quickly in a gage house.

Features

- Integrated system saves on setup time and effort
- Preprogrammed system eases operation for field personnel
- Barrier strip connectors on the outside of enclosure are provided for connecting the sensors and power supply; cables with special connectors are not required
- Optional GOES transmitter is NESDIS-certified for high and low data rates, including 100, 300, and 1200 bps
- The mounting bracket of the enclosure has the same footprint as the old ADRs, allowing the SSR100 to be mounted where the ADRs functioned

Measurement Technique

A pulley attached to a float and counter-weight rotates as water level rises or falls. The rotation produces an electronic signal that is sent to the datalogger. The datalogger calculates water level by adding or subtracting the respective clockwise or counterclockwise movement to a running total.

Power Considerations

For many applications, Campbell Scientific's PS100 power supply connected to an ac wall charger or a solar panel can source sufficient current. The PS100 should be housed in an environmental enclosure, typically the ENC10/12. Please note that the power supply will not fit in the SSR100's enclosure.

If the optional TX312 HDR GOES transmitter is used, Campbell Scientific recommends our PS24 or an equivalent power supply. The PS24 consists of our BP24 24 Ahr battery pack, CH100 regulator, and a 10" x 12" environmental enclosure. The battery should be connected to the SP10 10 W Solar Panel, SP20 20 W Solar Panel, or an ac wall charger.

For help in analyzing your power requirements, refer to our Power Supply product literature or application note.

Ordering Information

SSR100	Stage Sensor Recorder that includes a shaft encoder, datalogger, environmental enclosure, and display. A complete measurement system requires a float, pulley, float tape, end hooks, appropriate-sized counter weight, and power supply. The pulley is offered as an option; the other components are ordered as accessories.
-PP	Plastic pulley, 12" circumference (0.01 ft resolution)

Encoder Accessories

12221	Polyethylene float, 6" diameter
10801	Float tape, punched on 2.4" center
12222	End hooks for punched tape (2 required)
10803	Counter weight, 4 oz
12225	Counter weight, 8 oz

Power Supply (see power considerations on page 1)

PS24	Power supply that consists of the BP24 24 Ahr sealed rechargeable battery, CH100 12 V regulator, and 10" x 12" enclosure. The BP24 must be connected to a charging source such as the 9591 wall charger, SP10 solar panel, or SP20 solar panel.
PS100	12 V power supply with charging regulator and sealed rechargeable battery; the battery must be connected to a charging source such as the 9591 wall charger, SP10 solar panel, or SP20 solar panel.
9591	8 V 1.2 A wall charger that recharges the rechargeable battery via ac power.
SP10	10 W solar panel
SP20	20 W solar panel
ENC10/12	10" x 12" environmental enclosure for housing the PS100

Optional High Data Rate GOES Transmitter and Antennas

Refer to the TX312 product literature for required equipment and the procedure for getting onto the GOES system.

Specifications

Temperature range:	-25° to 50°C (shaft encoder not responsive if water freezes)
Weight:	20 lbs (9.1 kg)
Enclosure Dimensions:	10" x 12" x 4.5" (25.4 x 30.5 x 11.4 cm)

Shaft Encoder

Shaft size:	5/16" OD
Thread count:	24 per inch
Resolution:	100 counts/revolution
Starting torque:	<0.125 inches per ounce
Supply voltage:	4 to 5.6 V
Typical current drain:	0.5 mA
Maximum shaft speed:	6 RPMS

Datalogger

Storage:	62,000 data points
Supply voltage:	9.6 to 16 V
Typical current drain:	1.3 mA quiescent, 13 mA during processing, and 46 mA during analog measurements

Alphanumeric Display

Description:	CD294 DataView Display with 2-line, 32-character LCD
Current drain:	1.5 mA operating, 12 µA quiescent

