

X2-SDL

SUBMERSIBLE DATA LOGGER



- Cellular, satellite or radio telemetry
- Alkaline battery or solar powered
- Supports a variety of environmental sensors
- Optional web datacenter
- Complete system is truly submersible

The **X2-SDL** Submersible Data Logger is a rugged, self-powered remote data logging system for deploying environmental sensors in lakes, streams, rivers, wetlands, coastal waters, sewers, and culverts without fear of accidental flooding. The system is configured with three sensor ports for connection to industry-standard digital interfaces including RS-485, RS-232 and SDI-12. Additional sensor inputs are available through the use of adapters. Each sensor port offers a UW receptacle with double O-ring seal for a reliable waterproof connection. Unlike many data loggers, the **X2-SDL** is truly submersible. The housing and battery compartment are completely sealed and waterproof.

When it comes to field ruggedness, the NexSens **X2-SDL** is in a class of its own. The housing is constructed of impact-resistant PVC and includes two elastomer bumpers for long-term deployment in close-fitting pipes and buoy ports. Internal circuit boards and communication modules are shock mounted and all access ports incorporate redundant sealing. The **X2-SDL** withstands extreme wave action, drops, floods, periodic & long-term deployment underwater, and more. When fitted for wireless remote communication, the radio, cellular, and satellite antennas are also waterproof.

The **X2-SDL** can be powered autonomously by sixteen D-cell alkaline batteries. Optional solar power kits provide long-term continuous operation and solar charging. Common sensor connections include multi-parameter sondes, water quality sensors, temperature strings, Doppler velocity meters, water level sensors, and weather stations. Optional integrated cellular or satellite telemetry modules offer real-time remote communications via the **WQData LIVE** web datacenter. There, data is presented on a fully-featured and easy-to-use dashboard. Other features include automated reports, alarms, push notifications and much more.



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specifications

Material	PVC body with Acetal battery lid
Weight	12.0 lbs. without batteries; 16.6 lbs. with batteries
Dimensions	5.5" (13.97 cm) diameter; 17.3" (43.94 cm) length (antenna length varies by model)
Power Requirements	5-24 VDC \pm 15% (Reverse polarity protected)
Current Draw (Typical @ 12VDC)	Low power sleep: 200uA; Active: 20mA; Wi-Fi transmitting: 43mA max; Cellular transmitting: 200 mA
Peak Current	Power supply must be able to sustain a 500mA 1-second peak current (@ 12V)
Operating Temperature	-20 to 70°C
Rating	Submersible to 200 ft. (requires SDL-CAP on telemetry models)
Wi-Fi Communications	802.11b/g/n (direct to X2 or connect X2 to an existing network)
Wi-Fi Antenna	Internal to device
Wi-Fi Range	250 ft. maximum ¹
User Interface	RS-485 direct to PC software, embedded web, WQData LIVE web datacenter, magnet for Wi-Fi, status LEDs
Data Logging	64MB internal flash*, 256MB microSD card (expandable up to 32GB)
Data Processing	Parameter level polynomial equation adjustment; Basic & burst averaging (min, max, standard deviation, and raw data available)
Real Time Clock (RTC)	<30sec/month drift ² ; Auto-sync weekly ³ ; Internal backup battery
Log Interval	User configurable from 1 second (10 minute default) ⁴ ; Unique interval per sensor
Transmission Trigger	Time-based, parameter threshold ⁵ ; Selective parameter upload option
Sensor Interfaces	SDI-12, RS-232 (3 channels), RS-485
Sensor Power	(3) 12V regulated switch channels with 1.5A capacity ^{5,6}
Built-in Sensors	Temperature (-40 to 85°C, 0.002°C resolution, \pm 2°C accuracy); Pressure (300 to 1100 mbar, 0.016 mbar resolution, \pm 2 mbar accuracy); Humidity (0-100%, 0.04% resolution, \pm 5% accuracy); Battery voltage
Sensor Ports	(3) 8-Pin for sensor interface (RS-232, RS-485, SDI-12, 5V, 12V, GND)
Power Port	(1) 6-Pin for power and communication (Primary/Secondary/Backup Input, RS-485 Host, GND)
Telemetry Options	Cellular, Iridium Satellite, Radio, Radio to Cellular
Antenna Port	N-style

¹ Range varies based on many factors including obstructions, other wireless signals in the area, elevation changes and more. Actual distances may vary by location.

² Assumes 25°C operating temperature

³ Requires the X2-SDL to be connected to the internet

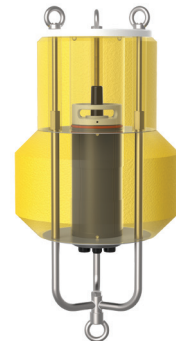
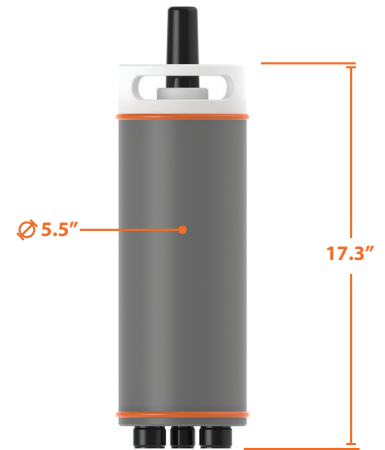
⁴ Minimum log interval dependent on sensor limitations and processing time

⁵ Cumulative concurrent current limit of all three channels is 2A

⁶ Logger power supply must be able to support current requirements of sensors

parts list

Part #	Description
X2-SDL	X2-SDL submersible data logger
X2-SDL-C-VZ4G	X2-SDL submersible data logger with Verizon 4G LTE cellular telemetry
X2-SDL-C-AT4G	X2-SDL submersible data logger with AT&T 4G LTE cellular telemetry
X2-SDL-I	X2-SDL submersible data logger with Iridium satellite telemetry
X2-SDL-R-DG	X2-SDL submersible data logger with 900 MHz radio telemetry
SDL-CAP	SDL submersible antenna cap
UW-CON	UW plug connectorization of sensor cable assembly
CB-50	Data buoy with polymer-coated foam hull, 50 lb. buoyancy
UW6-USB-485P	Direct connect USB PC cable, X2/V2



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