SEA-BIRD SCIENTIFIC

seabird.com | sales@seabird.com | +1 425-643-9866

19plus V2

SEACAT PROFILER CTD

SHOWN WITH OPTIONAL CAGE, SBE 5P PUMP, & SBE 43 DO SENSOR

Overview

The SBE 19plus V2 SeaCAT measures conductivity, temperature, and pressure at 4 scans/sec (4 Hz) and provides high accuracy and resolution, reliability, and ease-of-use for a wide range of research, monitoring, and engineering applications. Pump-controlled, T-C ducted flow minimizes salinity spiking caused by ship heave and allows for slow descent rates without slowing sensor responses, improving dynamic accuracy and resolving small scale structure in the water column. The 19plus V2 supports numerous auxiliary sensors (dissolved oxygen, pH, turbidity, fluorescence, oil, PAR, nitrates, altimeter, etc.) with six A/D channels and one RS-232 data channel. Data is recorded in memory and can also be output in real-time in engineering units or raw HEX. Nine alkaline D-cells provide power for up to 60 hours of profiling.

The 19plus V2 is commonly used autonomously, recording data internally. It can also provide real-time acquisition and display over short cables via the RS-232 interface; a load-bearing cable for hand-hauled, real-time profiling is available. External power and communication over 10,000 m of single-core, armored cable can be provided with the SBE 33 Deck Unit and PDIM. The 19plus V2 is easily integrated with a Sea-Bird WaterSampler; both real-time and autonomous auto-fire operations are possible.

In moored mode, the 19plus V2 records data at user-programmable intervals. This is easily configured with setup commands and by removing the profiling T-C Duct and installing optional anti-foulant devices.

Options

- Plastic (600 m) or titanium (7000 or 10,500 m) housing; wet-pluggable MCBH connectors
- SBE 5M pump for pumped conductivity; or SBE 5P or 5T pump for pumped conductivity and auxiliary sensor(s)
- Sea-Bird Scientific auxiliary sensors — dissolved oxygen, pH, fluorescence, oil, radiance (PAR), light transmission, turbidity, nitrates (profiling only), etc.
- Auxiliary sensors from other manufacturers
- Stainless steel protection cage
- Rechargeable Nickel Metal Hydride (NiMH) batteries and charger
- Moored mode conversion kit with anti-foulant device fittings
- Load-bearing underwater cable for hand-hauled, real-time profiling
- SBE 36 CTD Deck Unit & PDIM & Sea-Bird water sampler (real-time operation on single-core armored cable to 10,000 m).

Components

Unique internal-field conductivity cell permits use of T-C Duct, minimizing salinity spiking

Aged and pressure-protected thermistor has a long history of exceptional accuracy and stability

Pressure sensor with temperature compensation is available in eight strain-gauge ranges (to 7000 m) and eleven

Digiquartz® ranges (to 10,500 m). Note: Sampling rate 2 Hz when Digiquartz installed

Pump runs continuously (profiling mode), providing correlation of CTD and plumbed auxiliary sensor measurements

Features

Conductivity, Temperature, Pressure, and up to seven auxiliary sensors

User-programmable mode: profiling at 4 Hz, or moored sampling at user-programmable intervals

RS-232 interface, internal memory, and internal alkaline batteries (can be powered externally)

Pump-controlled, T-C ducted flow to minimize salinity spiking

Depths to 600, 7000, or 10,500 m

Seasoft© V2 Windows software package (setup, data upload, real-time data acquisition, and data processing)

Next generation of the SeaCAT family, field-proven since 1987

Five-year limited warranty

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Field Specifications

The specifications below represent the expected performance of the instrument when deployed in the field. Under controlled circumstances in a lab, we would expect the instrument to outperform these specifications.

We have chosen to display field specifications to give our users a true measure of how Sea-Bird Scientific instruments perform in harsh environments and applications. It is critical to keep this in mind when comparing specifications with instruments from other manufacturers.

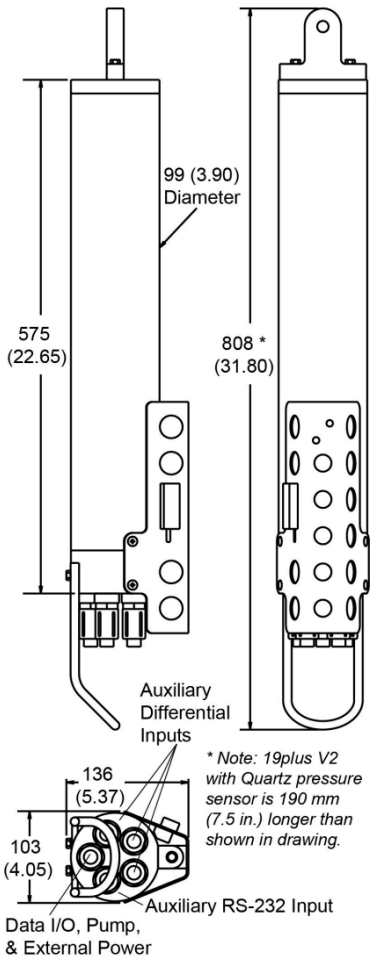
Initial Accuracy	
Conductivity	± 0.0005 S/m
Temperature	± 0.005 °C
Pressure	Strain-gauge ± 0.1% of full scale range; Quartz ± 0.02% of full scale range

Typical Stability	
Conductivity	0.0003 S/m per month
Temperature	0.0002 °C per month
Pressure	Strain-gauge ± 0.1% of full scale range; Quartz ± 0.02% of full scale range per year

Measurement Range	
Conductivity	0 to 9 S/m
Temperature	-5 to +35 °C
Pressure	Strain-gauge 0 to 20/100/350/600/1000/2000/3500/7000 m; Quartz 20/60/130/200/270/680/1400/2000/4200/7000/10,500 m

Resolution	
Conductivity	0.00005 S/m typical
Temperature	0.0001 °C
Pressure	Strain-gauge 0.002% of full scale range; Quartz 0.0025% of full scale range

Dimensions in millimeters (inches)



** Note: 19plus V2 with Quartz pressure sensor is 190 mm (7.5 in.) longer than shown in drawing.*

Sampling Speed	Profiling: 4 Hz (strain-gauge pressure) or 2 Hz (Quartz pressure)
Memory & Data Storage	64 Mbyte non-volatile FLASH Bytes/sample: 6 T&C; 5 pressure; 2 each external voltage; 4 date & time (RS-232 sensor is sensor dependent)
Power Supply & Consumption	9 alkaline D-cell batteries, 60 hours CTD profiling (see manual)
Optional External Power	9 - 28 VDC; consult factory for required current
Auxiliary Sensors	Power out up to 500 mA at 10.5 - 11 VDC; Voltage sensor A/D resolution 14 bits & input range 0-5 VDC
Housing, Depth Rating, & Weight (add 0.3 to 0.7 kg [in air] for pump, depending on model)	Acetal Copolymer Plastic, 600 m, in air 7.3 kg, in water 2.3 kg 3AL-2.5V Titanium, 7000 m, in air 13.7 kg, in water 8.6 kg 6AL-4V Titanium, 10,500 m
Optional Cage (weight in air)	(strain-gauge pressure version) 1016 x 241 x 279 mm, 6.3 kg

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