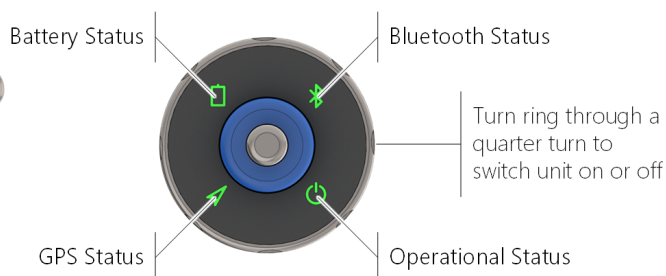


SWiFTplus Turbidity



SWiFTplus Turbidity combines Valeport's survey-grade sound speed, temperature and pressure sensor technology with Turbidity observations, coupled with the convenience of Bluetooth connectivity and rechargeable batteries. An integral GPS module to geo-locate each profile completes the package. Data can be easily and quickly downloaded and reviewed through Bluetooth, using the App and instantly shared in industry-standard formats via email and cloud services. Alternatively, Valeport's connect PC software can be used with a USB cable for instrument setup, data extraction, display and translation to common-format data strings and additional tools.

In addition to the directly measured sensor observations, conductivity, salinity and, therefore, density are calculated using a Valeport proprietary algorithm - DASH. DASH has been developed from extensive laboratory and field work.

Valeport's Turbidity technology is essentially two sensors in one. The first is a "classic" nephelometer, using a 90° beam angle for turbidity levels between 0 and 1000 NTU (linear response). The second sensor uses optical backscatter (~120° beam angle) for turbidity levels up to 10 000 NTU (linear response). Both sensors output data on separate data telegrams, simultaneously at a programmable rate. This means that there is no need to switch ranges as conditions vary. Intelligent sampling and the use of a 24 bit ADC eliminates the need to switch gain.

Sensor Specifications

Turbidity		
Linear Range:	Nephelometer	0 to >1 000 NTU - linear response
	Optical Backscatter:	0 to 10,000 - linear response
		(>10,000 NTU has a non-linear monotonic response that allows derivation of higher values using look-up tables)
Linearity		0.99 ²
Minimum		0.03 NTU
Detection Level		

The SWiFTplus is fitted with Valeport's digital time of flight sound velocity sensor, temperature compensated piezo-resistive pressure transducer and a PRT temperature sensor

Sound Velocity	
Range:	1375 – 1900 m/s
Resolution:	0.001 m/s
Accuracy:	±0.02 m/s

Pressure	
Range:	10 Bar or 20Bar
Resolution:	0.001% FS
Accuracy:	±0.05% FS

Temperature	
Range:	-5°C to +35°C
Resolution:	0.001°C
Accuracy:	±0.01°C

Calculated Accuracies

Calculations based on Valeport's proprietary DASH formula

Salinity	±0.05 PSU
Conductivity:	±0.05 mS/cm
Density:	±0.05 kg/m3

Physical

Materials:	Housing:	Titanium
	Optical window:	Sapphire glass
	Sinker weight:	Stainless Steel
Depth Rating:	200m	
Dimensions:	Ø78mm x Length 285mm	
	307mm with sinker weight	
Weight:	2.7kg (in air) / 1.7kg (in water) including optional sinker weight	

Communications (set up and data offload)

Bluetooth v4 - low energy
USB Serial

Memory

2 GB Internal Flash Card Storage

Electrical

Battery:	Internal Rechargeable Battery Pack
Charging:	USB
	Supplied mains AC adapter

Software

Valeport Connect software for PC and IOS mobile devices

Ordering

0660047-XX-TU	SWiFTplus profiler with Turbidity sensor
	Titanium Housing rated to 200m
	Note: XX pressure transducer range - select from 10 or 20 Bar
	Supplied with:
	• Deployment weight
	• PC Bluetooth adapter
	• USB interface and charging cable and charger
	• Valeport Connect PC software \IOS App