



SWALE OCEANOGRAPHIC

SMATCH

autonomous multiparameter probe

Coastal environment monitoring and water quality control



SMATCH measures and records up to 7 parameters: temperature, pressure (depth), conductivity (salinity), turbidity, dissolved oxygen, fluorescence (Chlorophyll a, Phycocyanine, Phycoerythrin) and pH. Light and compact, SMATCH has been designed for long term use in network.

Operational:

- Deployment on a light buoy or on a stationary structure in shallow waters
- Fast wireless configuration and data collection thanks to a communication interface (**Radio Data Pencil** of about 25m range) connected to the USB port of a PC using **Winmemo** software.
- GPRS or Iridium link for network use

Rugged and reliable:

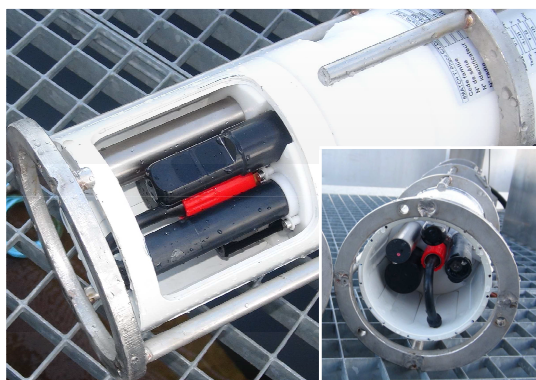
- Sensors protected against biofouling by localised chlorination
- GPS available with alarm function (swinging circle)

Examples of use of the SMATCH :

- Water quality control
- Environmental monitoring
- Oyster farms monitoring
- Salinity and turbidity measurement for hydrodynamic models adjustment



Pictures ACCOAST, LTR, nke Instrumentation



Several versions of the **SMATCH** are available depending on the transmission mode:

SMATCH TI xxx: GPS and integrated GPRS modem, internal Lithium batteries

SMATCH TD xxx: GPS and deported GPRS modem (40m cable length max.), internal Lithium batteries

SMATCH TS xxx: serial transmission, internal or external power supply **xxx** : indicate the measured parameters (depth, temperature, conductivity, salinity, dissolved oxygen, turbidity, fluorescence and pH).

Example: SMATCH TI CTDDOTbdFluo

Optional sensor : CDOM, Crude Oil, Refined Fuels

Physicochemical parameters			Technical features	
		Range	Accuracy	Resolution
Depth (D)		From 0 to 10m	< 0.02m	0.003m
	optional:	From 0 to 40m	< 0.08m	0.012m
Temperature (T)		-5°C to +35°C	< 50m°C (0°-20°C)	1m°C to 10°C
Conductivity (C)		0 - 70 mS/cm	< 50 µS/cm	1.2 µS/cm
		0 - 10 mS/cm	< 50 µS/cm	0.16 µS/cm
		0 - 2 mS/cm	< 20 µS/cm	0.04 µS/cm
Salinity		2 - 42 PSU	< 0.1 PSU	< 0.001
		0 – 4.6 PSU	< 0.1 PSU	<0.0005
		0 – 0.83 PSU	< 0.05 PSU	<0.00005
Dissolved oxygen (DO) sensor	Saturation	0 to 120% Aanderaa Optical	< 5%	0.01%
	Concentration	0 to 30mg/l	< 5%	0.01%
Turbidity (Tbd)		Range (factory set) 25, 125, 500 or 750 NTU		
Seapoint Optical sensor		(Linearity < 5% deviation 0-1500 NTU non linear above 1500 NTU, max. 2000 NTU)		
(optional wiper available)		Light source wavelength : 880 nm		
Fluorescence (Fluo) Chlorophyll A		0 - 500 µg/L	Linearity	< 0,008 µg/L
Turner Designs Optical sensor CYCLOPS-7			0.99 r2	< 0,0008 µg/L
Excitation wavelength: 460 nm		0 -50 µg/L		□< 0,00008 µg/L
Emission wavelength: 620-715 nm		0 - 5 µg/L		
Wavelength detection: 300-1100 nm				
Fluorescence (Fluo) Phycocyanine		0 - 2 000 000 µg/L	Linearity	< 31 cell/mL
Turner Designs Optical sensor CYCLOPS-7			0.99 r2	< 3 cell/mL
Excitation wavelength : 595 nm		0 - 200 000 µg/L		< 0,3 cell/mL
Emission wavelength : 670 nm		0 - 20 000 µg/L		
Wavelength detection : 500-1100 nm				
pH (pH)		Range from 0 to 14 pH / Accuracy ± 0,1 pH / Resolution 0.0003pH		
Time		Internal clock with calendar (clock drift < 1mn/month)		
Mechanical features	SMATCH	Ø 11cm / length 42.5 cm / weight 3.6 kg		
	On Buoy	Max dimensions : Ø 26 cm / length 175 cm / weight 11 kg		