

Wideband Underwater Electrometer

FieldGuard sets a new standard for the detection of underwater electric field.

The sensor core provides an ultra-high sensitivity $< 10 \text{ pV/m @1Hz}$, enabling the detection of low signals from further away on a very wide spectrum of frequencies.



KEY PERFORMANCES

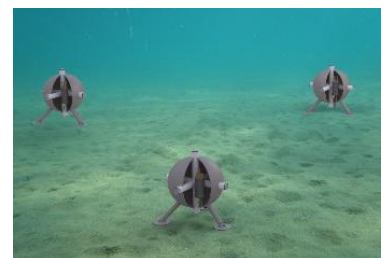
- Ultra-high sensitivity $< 10 \text{ pV/m @1Hz}$
- Ultra-Low Noise Electrodes $< -188 \text{ dB}$
- Large Bandwidth DC to 4000 Hz
- Self-Calibration – integrated automatic alignment channel

MAIN FUNCTIONALITIES

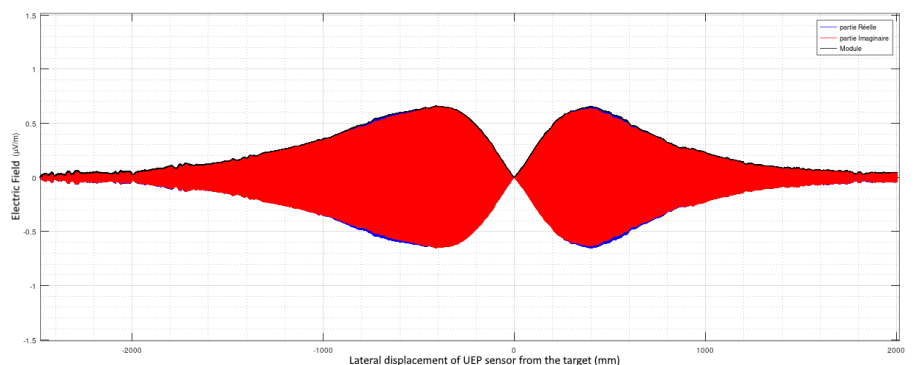
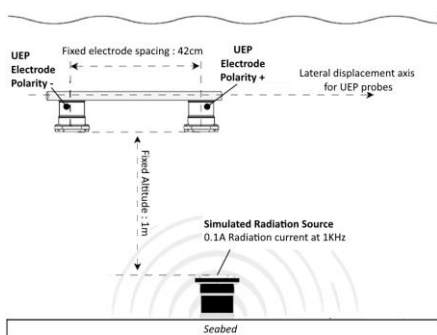
- Monoaxial / Triaxial
- OEM or fully assembled
- Mountable on ROV, AUV and fixed installation
- Easy storage
- ITAR-Free, Dual Use

APPLICATIONS

- Area surveillance – intruder detection
- Anti-Submarine warfare
- Electromagnetic signature measurement
- Submarine power and communication cable tracking
- Electromagnetic noise impact monitoring
- Contactless cathodic protection



TRACKING AND LOCALISATION OF AN ELECTRIC RADIATION SOURCE AT SEA (water electric conductivity : $4,8 \text{ S.m}^{-1}$)



PERFORMANCES

Sensitivity (V/m)	< 10 pV/m @1Hz
Frequency Span (Hz)	DC to 4000 Hz
Noise level (nV/√Hz @1Hz)	< -188 dB
RMS noise	< 0.5 nV RMS/m
Amplitude range	Full scale amplitude: from +/- 5 μV/m to +/- 50mV/m
Gain (dB)	Selectable by command 40 / 60 / 80 / 100dB analog amplifier
Galvanic isolation	Yes, by insulation amplifier
Linearity (analog)	< 0.5%

SPECIFICATIONS - SINGLE AXIS (OEM: 1 conditioner & 2 probes)

Conditioner dimensions	140mm * Ø90mm
Conditioner weight in air / water	0.85Kg / 0.35Kg
Probe dimensions	113mm * Ø90mm
Probe weight in air / water	0.85Kg / 0.35Kg
Material	Aluminium (Housing) and Titanium (sensor)
Electrode's connectors options (all SubConn)	Straight or right angle
Depth rating	300m (6000m option)
Data output and rate	Digital, serial – 4Khz
Power supply / consumption	5 - 48 VDC / < 1.5 W

SPECIFICATIONS – INTEGRATED (+ 1 POD to integrate up to multiple axis & external sensors)

POD dimensions	450mm * Ø145mm
POD weight in air / water	6.5Kg / 1.3 Kg
Ethernet	10/100 Mbits, UDP/TCP (client / server)
Maximum data acquisition rate	4Khz
Real time data output	NMEA UDP
Internal data storage	SD card
Power supply / consumption	20 - 48 VDC / < 10 W

NOISE SPECTRAL DENSITY PERFORMANCE

