GeoPulse Compact

Towed Sub-Bottom Profiler for Shallow Water Operation

GeoAcoustics

Overview

The GeoPulse Compact is an advanced high performance sub-bottom profiler designed for rapid deployment and ease of use in shallow water. The system is lightweight and robust with low power consumption.

The system contains a newly designed transducer and hydrophone which is combined with state-of-the-art, adjacent, transmit and receive electronics to outperform any other system on the market in the same size and weight class.

The GeoPulse Compact is designed for use in shallow water operation and can work in less than 1 m of water depth by receiving on the hydrophone while the transducer is active.

The system is shipped with the latest version of Chesapeake SonarWiz© software, for control, visualisation, and data processing.

The GeoPulse Compact is also available in an over-the-side configuration which utilises the standard GeoAcoustics mounting pole or can be converted with an optional mounting cradle.

Key Features

- OTS conversion kit available
- Lightweight and rugged design
- Wide frequency range
- Output power up to 1 kW
- Low power – from 10 V_{DC} 30 W typical
- Suitable down to 250 m depth
- Penetration up to 80 m
- Resolution as small as 6 cm

Applications

- Pipeline detection
- Geological surveys
- Dredging surveys
- Environmental surveys
- Buried object detection

Technical Specifications

Interface Box (Model GP01)

Mechanical	Anodised aluminium case
Weight	7 kg
Dimensions	268 mm (D) x 350 mm (W) x 103 mm (H) (excluding connectors)
Environmental	10 % - 95 % RH, non-condensing 0 °C – 40 °C (operation), -20 °C – 75 °C (storage) IP66 rated (including mating connectors). IP66 rated connector covers supplied
Connectors	Power in, deck/tow cable, 3 x serial, PPS input, external trigger input
Indicators	One for each of: Power in, HV, Time sync, Sonar link
Power Input	Power Input: 10 V_{DC} – 34 V_{DC} (24 V_{DC} nominal recommended) Reverse polarity and overvoltage protected Power: 30 W typical plus transmitter power Transmitter power usage: 1 W – 35 W
AC Input	Mains adaptor supplied. Input: 90 V_{AC} – 305 V_{AC}, 47 Hz – 63 Hz Output: 24 V_{DC} nominal, 120 W capable Short circuit & overcurrent protected. IP65 rated
Serial:	Serial: 3 x RS232 with overvoltage protection Range of baud rates selectable
PPS:	PPS: TTL level, protected, edge selectable

Acquisition Software (SonarWiz®)

Version	Fully featured SBP with control interface (locked for use with GeoPulse Compact)
Features	Control of all system parameters, Full range of processing tools Data export in industry standard formats 1 year of maintenance included

Towfish (Model GP06)

Mechanical	Mechanical: anodised aluminium/acetal construction, fibreglass shell covers All parts 1000 m depth rated
Weight	44 kg (including ballast)
Dimensions	1090 mm (L) x 700 mm (W) x 376 mm (H)
Transmit	
Output Power	1 kW peak (adjustable as % of full scale)
Waveforms	**Pinger**: Frequency and cycles selectable: 1 – 32 cycles (in 1 cycle steps). 4 – 15 kHz (in 0.1 kHz steps). **Ricker**: Spread spectrum (selectable by highest frequency component). 4kHz – 15 kHz (in 0.1 kHz steps) **Chirp**: Range of sweeps available with 5, 10 or 15 kHz bandwidth, 8, 16 or 32 ms length, using frequencies between 1.5 kHz – 18 kHz
Rep Rate	Up to 20 PPS (waveform dependent)
Acoustic	
Source Level	Up to 196 dB ± 3 dB re 1µPa @ 1m
Beamwidth	Along track (hydrophone Rx): (two way) 35° at 5 kHz, 18° at 10 kHz, 12° at 15 kHz Along track (transducer Rx): 45° at 5 kHz, 25° at 10 kHz, 35° at 15 kHz
Resolution	6 cm (using 15 kHz "Chirp" sweep)
Penetration	Up to 80 m (fine clay), up to 20 m (sand)
Receive	
Acquisition	Dual channel, 800 kHz front end sampling, 50/100 kHz sample output, 24 bit

Specifications subject to change without notice. E&OE

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