

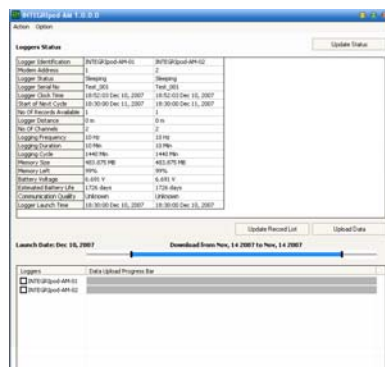
# INTEGRIPod™ A Acoustic Data Logger



**INTEGRIPod™**  
acoustic inclinometers  
for mooring lines



Pod holders installed on subsea structures allow pods to be installed by ROV or divers



**INTEGRIPod™** software allows the data from each pod to be retrieved acoustically

## IMPLEMENTATION

The Pulse **INTEGRIPod™ A** is an acoustically linked data logger. It has an external connector to allow any sensor to be connected in order to record the sensor data to its on-board memory over a long period of time. Periodically this data can be transmitted to the surface via a through water acoustic link. The system is a semi real-time data logging system.

The data loggers are acoustically linked to and controlled by the topside data acquisition system which allows for logging program selection, system diagnostic and data retrieval. Three user defined logging programs (Infrequent, Frequent and Emergency) are available to suit different applications.

The **INTEGRIPod™ A** contains all electronics and batteries enclosed in a cylindrical corrosion resistant casing rated for 3000m water depth.

Low power architecture and appropriate sensor selection facilitates long term operation, up to 1 year, without battery replacement (dependant on logging program and sensors selected).

These robust devices can be quickly installed by diver or ROV, and can accommodate the external loading anticipated even in harsh environments without damage or impacting reliability.

The **INTEGRIPod™ A** is supplied with a subsea connector (such as ROV connector) offering maximum monitoring flexibility.

## IMPLEMENTATION

The **INTEGRIPod™ A** The **INTEGRIPod™-A** can be deployed in the field by strapping directly to the structure using bands or using a tailor-made interface designed to suit. This may be executed by diver or ROV. After installation, the **INTEGRIPod™ A** is controlled by a topside data acquisition system via the acoustic transceiver.

A data acquisition system is deployed on the topside of the platform. This involves an acoustic transceivers which are installed below the hull of the platform, a PC-based data acquisition system and a topside electrical system. The acoustic transceiver can be deployed using a winch or mounted to a fixed structure of the platform.

## SENSOR EXPANSION

|                         |             |
|-------------------------|-------------|
| Number of sensor inputs | 8 channels. |
| Input voltage range     | 0 – 2.5 V   |
| Measurement resolution  | 0.6 mV      |
| Measurement accuracy    | 1.2 mV      |

## SOFTWARE

The software has the basic functions of initialisation, data collection, saving and display. Data saved by the system will enable post data analysis to be carried out. **INTEGRIVIEW** software is a software suite for viewing the data. The saved files have the following format.

## UPLOADED FILES FORMAT

|                   |                                       |
|-------------------|---------------------------------------|
| Data files        | Time stamp files                      |
|                   | Data records for each logging session |
|                   | Excel compatible                      |
| Time stamp files  | ASCII format                          |
| Data record files | ASCII format                          |
|                   | Raw voltages for all sensors inputs   |

**LOGGER SPECIFICATION**

**Acceleration Sensors (base case)**

Sensor direction X and Y (Z optional)  
 Range (g) ± 1.2 and ± 2  
 Cut-off response 4.5Hz  
 Accuracy ±0.002g rms with 1.2g range  
 DC temp drift Correction if required  
 Alignment error 0.3 deg between axis  
 Sensor direction Indicated on the logger body  
 Sensor calibration Use gravity (1g and -1g)

**Standalone logging programme (user defined)**

Logging mode Infrequent  
 Logging period (min) 10  
 Cycle period (hour) 24  
 Sampling frequency (Hz) 10Hz  
 Logging mode Frequent  
 Logging period (min) 10  
 Cycle period (hour) 2  
 Sampling frequency (Hz) 10Hz  
 Logging mode Emergency  
 Logging period (min) 10  
 Cycle period (hour) 0.5  
 Sampling frequency (Hz) 10Hz

**Communication Method**

Method Acoustic transceiver

**Acoustic Modem link**

Transducer type 70° Omni-directional  
 Link distance 3000 m  
 Acoustic transmission rate 4800 bits/second  
 Frequency 12.75 to 21.25 kHz  
 Power 8mW in sleep mode  
 8W in transmission

**On-board memory**

Memory media Up to 4 GB memory card

**Software**

Operating system 2000, NT, XP, Vista  
 Functions  
 - Diagnostic check  
 - Collect statistical data  
 - Initialise data collection  
 - Download data  
 - Data saving  
 - GUI

**Power consumption of logger**

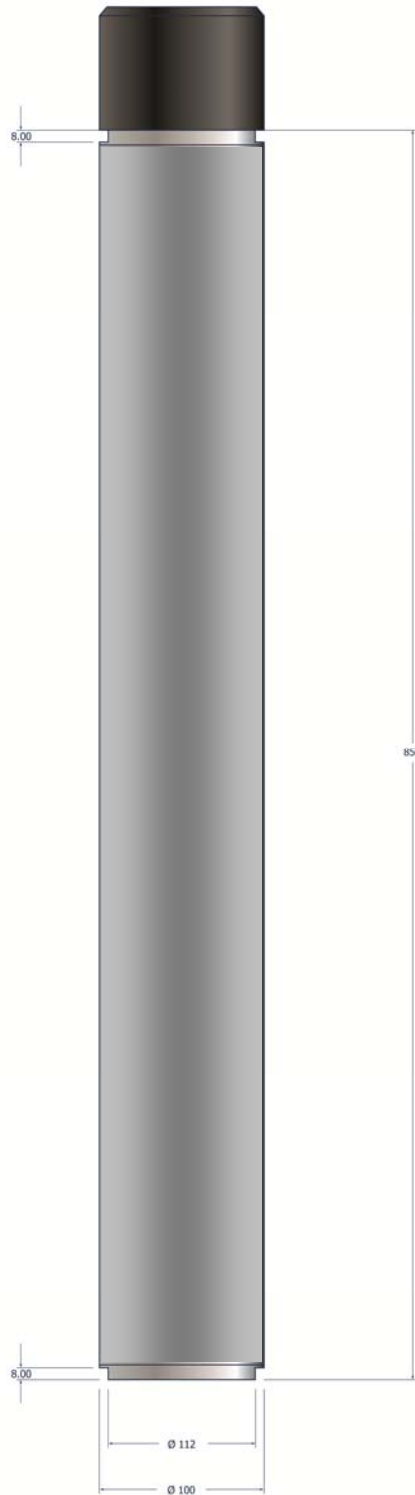
Batteries 40x D-size 3.6V lithium  
 Battery capacity 140000mA-hour nominal  
 Current (logging) 20mA  
 Standby <3mA

**Casing**

Material Superduplex stainless steel  
 Size (mm) 115 diameter x 900 length  
 Weight in air 18kg (with batteries)  
 Weight in water 13kg (with batteries)  
 Direction of sensor-X Polarisation slot on base

**Environmental**

Operating 2° C to 30° C  
 Storage -5° C to 50° C  
 Pressure rating 3000m water depth  
 Seals Nitrile 'O-rings'



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