ClampOn 3D Vibration Monitor, Low Power High Performance (LPHP)

To accurately monitor vibration in complex subsea pipework, multiple measurement locations are required. The different modes are measured to gain knowledge of the forces in play; hence, a system of several vibration monitors must be installed at different locations on the pipework. A datalogger communicates with each of the vibration monitors, and synchronize the measurements by its onboard, real time clock. This allows for complete motion tracking/phase relation of pipework sections, such as well jumpers, flex loops, and other unsupported lines.

As an alternative to battery and datalogger, the instruments can be directly interfaced through the ROV power and coms, or by direct cable to surface when the water depth is less than 400 meters.

- Phase relation
- 16ch Multichannel system
- 3-axial gyroscope
- 3-axial magnetometer/compass
- Up to 10 years battery/deployment life
- Wireless data offloading (third party)
- Direct interface to ROV
- Local indication
- Direct cable to surface vessel

For short inspection type monitoring tasks, single or multiple instruments can be interfaced directly with topside PC in water depths less than 400 meters, using our 500-meter electrohydraulic cable reel, providing real-time data. Alternatively, instruments can be directly interfaced through the ROV communication link on its serial interface. These solutions are typically used to map out the vibration force during well start-up and short campaigns. For long-term monitoring the data-logger set-up is better suited as equipment can be installed and left.
### OUTLINE SPECIFICATIONS

**Cable reel**
- **Cable**: 500 meter 2 pair 9,3mm OD
- **Supply voltage**: 3Phase 230 or 400 AC
- **Weight**: 180 Kg
- **Dimensions**: L:1150*W:750*H:950mm

**ROV interface**
- **Voltage**: 9-36Vdc
- **Signal interface**: RS485
- **Connector type**: Depending on ROV system/type

**Basket (multichannel logger)**
- **Battery**: 350Ah primary Lithium or 54Ah chargeable Ni-MH
- **Design depth**: 3000 meters
- **Local indication**: Dual colour led
- **On/off**: Scheduling and optional ROV switch
- **Data logger / Controller**: 128GB storage
- **Weight**: ~120kg (depending on configuration)
- **Dimensions**: L:1095*W:745*H:940mm

**Instrument***
- **Measurement principle**: MEMS accelerometers, gyroscope and magnetometer
- **Frequency range**: 0 Hz to 6000Hz
- **Signal interface**: RS485
- **Power consumption**: 0,1W

*See datasheet for further details