a.p. van den berg
The CPT factory

Deep Water ROSON 100

the versatile seabed CPT system for ultra-deep water

features

- proven wheel drive system with a pushing force of 100 kN
- option for second set of wheels to achieve 200 kN
- deployable from medium to large vessel
- 4,000 m water depth rating, CPT depth up to 50 m
- provided with technology to operate at high water pressures
- suitable for 10 cm^2 Icone + click-on modules & Seabed Sampler XL

creating tools that move your business

Deep Water ROSON 100, the versatile seabed CPT system for ultra-deep water

introduction

The ROSON is a proven seabed CPT system, deployed from a vessel with an A-frame or crane through a moon pool or over the side. The electrical wheel drive system pushes the pre-assembled CPT string into the seabed. Wheel friction is imposed by hydraulic force. A self-tensioning electric winch with heave compensation feeds the umbilical for power supply and data communication.

versatility and full force for ultra-deep water

The full force DW (Deep Water) ROSON 100, unrivalled in the industry, is capable of performing CPTs and taking soil samples at water depths up to 4,000 m. It can be used in projects where a pushing force of up to 10 tons is required. Yet, more compact soil and/or large depth requirements may demand a 20 tons pushing force. For these projects a second set of wheels can be stacked onto the first one, creating a "DW ROSON 2x100" with a pushing force of 200 kN. A CPT depth up to 50 m is achievable (of course depending on the soil conditions and reaction force). The DW ROSON is provided with robust technology to operate in harsh offshore conditions at ultra-deep water depths. The optical fibre umbilical guarantees realtime broadband data transmission and power supply over great distances. The self-tensioning electric winch is provided with a level winder for proper layering of the umbilical.

Specifications drive unit	
Water depth rating	4,000 m
Driving speed	20 mm/sec
Pushing/pulling force	100 kN
Electrical motors	2 x 1.5 kW
Wheel diameter	Ø 1,000 mm
Specifications seabed frame	
Footprint	2,500 x 2,500 mm²
Height	2,300 mm
Lifting point height	2,900 mm
Weight	7,000 kg in air (excl. ballast)
Specifications CPT	
Icone size/type	10 cm² / CPT or CPTU
Icone modules	
- up to 4,000 m water depth	Vane
- up to 1,000 m water de	Seismic, Conductivity & Magneto
Weight	Ø 36 mm

digital Icone data acquisition system

The ROSON works in conjunction with A.P. van den Berg's digital Icone data acquisition system, consisting of the Icontrol, Icones and the Ifield software for realtime data presentation. It enables measurement of cone resistance (q_c), local friction (f_s), pore water pressure (u) and inclination (Ix/y). The Icone is easily extendable with click-on modules to measure other than the four standard parameters. The Icone Vane is available for the DW ROSON and can be used at water depths up to 4,000 m. The modules Conductivity, Magneto and Seismic can be used at water depths up to 1,000 m.

Deep Water Icone

For the DW ROSON a pressure compensated Icone is available. This Deep Water Icone allows pore water pressure measurements relative to the hydrostatic pressure at cone level, resulting in higher accuracy over the fulle range of water depths. The pressure compensated piezocone measures the four standard parameters and can also be combined with the Icone click-on modules.

sampling with the Seabed Sampler XL

In combination with the Seabed Sampler XL it is possible to take high quality seabed samples with a diameter of 110 mm and a length up to 20 m at water depths up to 4,000 m. The recovery ratio is higher than 95%, what means that very little disturbance occurs to the sample. Sample tubes are pre-assembled in the ROSON. Then the total assembly is lowered to the seabed and the sample string is pushed into the soil by means of the ROSON drive wheels.

optional features

- spin control system for steady system deployment
- ballast and skirt system for stabilization on the seafloor and minimal disturbance of the soil

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