



Deep Water ROSON 75/100 kN

umbilical operated seabed CPT thrust system



features

- deployable from survey vessels with A-frame and/or moon pool
- proven wheel drive thrust system (75/100 kN)
- suitable for CPT testing up to 4000 m water depth
- digital 10 cm² piezocones
- software for intelligent real time data acquisition and control
- suitable for Deep Water Sampler (DWS) application

Deep Water ROSON seabed CPT thrust system

The demands of test equipment for soil investigation in deep water are set high. Therefore technically very advanced equipment is required which produces reliable information and subsequent assessment of the bearing capacity of the soil.

proven technology

The Deep Water ROSON, with its proven wheel drive CPT unit, is equipped for cone penetration tests, and analyses the seabed's geotechnical condition in deep water conditions. The ROSON is provided with technology to operate at water depths up to 4000 meters with high water pressures and strong sea currents. The umbilical used, supports broadband data connection and power supply over great distances.

reliable force and accurate intelligence

The CPT string is pushed into the soil by means of two friction wheels driven by electrical motors. The friction wheels are pressed against each other by means of a hydraulic cylinder, thus holding the CPT string in between them. The digital cone, pushed into the soil, acquires accurate data that is processed into high quality information by the software specially made for the Deep Water ROSON.

standard features

- Two-directional frame inclinometer.
- Total load sensor for indication of the total pushing force.
- Limit switches for end-of-stroke detection.
- Depth encoder to measure the penetration depth.
- Digital cones for high quality and accurate data.
- Software for intelligent data acquisition and control.



deep water features

- Self-tensioning electric driven winch for 4000 meter cable storage.
- Fibre optic connections for broadband data exchange.
- Cones are pressure compensated for deep sea usage.

optional features

- Spin control system for steady system deployment.
- Ballast and skirt system for stabilization on the seafloor and a minimum of disturbance of the soil.
- Level winder for optimal winding of the umbilical.
- Single mode fibre optic connection for client purpose.

optional Deep Water Sampler

The Deep Water Sampler for soft clay has been designed in cooperation with the Norwegian Geotechnical Institute (NGI).

When ROSON and DWS are used together, the friction wheels, dirt scrapers, limit switches and depth encoder are adjusted.

To support the build-up of the sample tubes, mast sections are deployed on top of the seabed frame (see picture).



Drive unit	
Water depth rating	4000 meters
Driving speed	20 mm/s
Pushing/pulling force	100 kN (maximum)
Pushing/pulling force	75 kN (nominal)
Electrical motors	2 x 1,5 kW
Wheel diameter	Ø 660 mm

Deep water Cone and Sampler	
Pressure resistance	400 bar tested
Cone tip area	10 cm ²
CPT Depth	10 m (up to 40 m optional)
CPT string diameter	Ø 36 mm (OD)

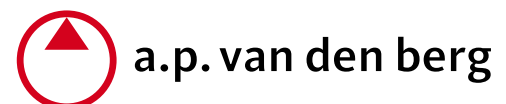
Seabed frame	
Footprint	2500 x 2500 mm ²
Height	2275 mm
Lifting point height	Depending on CPT depth
Working height	2150 mm plus CPT depth
Weight	5500 kg in air

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