

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Rig Anchor Release Connector**with type designation(s)
RAR Plus (Gen II RAR)

Issued to

InterOcean Systems LLC
San Diego CA, United Statesis found to comply with
DNVGL-OS-E301 – Position mooring, Edition July 2015**Application :****to be used for Temporary and Mobile Mooring,**
as defined in Offshore Standard DNVGL-OS-E301 Position Mooring July 2015Issued at **Høvik** on **2017-01-30**This Certificate is valid until **2023-01-29**.DNV GL local station: **Long Beach**for **DNV GL**Approval Engineer: **Pierre-Eric Moulia**

Inger-Helene Hals
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

The RAR Plus is a subsea mooring connector, that includes a release-under-load mechanism driven by internal accumulators, and initiated by an encrypted sonar signal.

Minimum Breaking Load (MBL): 2000 kips / 8900 kN
Proof Load : 1576 kips / 7010 kN
Max remote release load: 800 kips / 3560 kN
Max manual release load: 400 kips / 1780 kN
Inspection interval / battery replacement: 18 months

Application/Limitation

The connector is to be used in connection with chains for Temporary or Mobile Mooring as defined in Offshore Standard DNVGL-OS-E301 Position Mooring July 2015.

DNVGL review scope was to verify the mechanical integrity of the connector. DNVGL also checked that no single event/failure may lead to the unintentional release of more than 1 mooring line.

For DNVGL Class vessels mooring lines quick release: The RAR Plus does not negate the requirements to be able to carry out controlled release and halting of winches in emergencies per DNVGL-OS E301 Chapter 2 Section 4 § 11.5.10

The connectors shall be manufactured and tested in accordance with Offshore Standard DNVGL-OS-E302 "Offshore Mooring Chain" July 2015.

The approval is conditional that load bearing materials manufacturers are holding an Approval of Manufacturer DNVGL Certificate.

Individual Product Certificate is to be issued for each delivery.

Type Approval documentation

Tests carried out

Prototype tests were carried out with DNVGL Surveyor.
For every order testing shall be carried out according to DNVGL-OS-E302 July 2015.

Marking of product

The connector shall be marked with product designation as stated on the certificate, and with unique identifier traceable to the product certificate

Periodical assessment

For retention of the Type Approval, a DNVGL surveyor shall perform a survey after 2 years and another one after 3,5 years (+/- 90 days), to verify that the type approval is complied with.