

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Control levers**

with type designation(s)
RSCU 144² ABB Azimuth Lever

Issued to

Kwant Controls B.V.
Sneek, Netherlands

is found to comply with
DNV GL rules for classification – Ships
DNV GL rules for classification – High speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	C

This Certificate is valid until **2021-11-10**.

Issued at **Høvik** on **2016-11-11**

DNV GL local station: **Rotterdam**

Approval Engineer: **Jabber Abbas**

for **DNV GL**

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Odd Magne Nesvåg
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.

Job Id:
Certificate No: **TAA00000KH**

Product description

The RSCU 144² ABB Azimuth Lever series (rotation and speed control) are console mounted units designed for both speed (RPM or pitch) and azimuth steering.

The RSCU 144² ABB Azimuth Lever is stepper motor driven and is controlled by a CUBI Module (Control Unit to Bus Interface) with CAN bus connection for automatic synchronization with remote stations. The CUBI also creates free configurable palpable stops (detents) for Speed and Azimuth steering.

All units are powered by 24 VDC.

Please see table below for all possible types of the lever series:

Drawing No.	Rev.	Type	Art. Nr.
A0132466	A	RSCU 144 ² ABB Azimuth IE	12008103
A0132679	A	RSCU 144 ² ABB Azimuth IE	12008104
A0133443	0	RSCU 144 ² ABB Azimuth IE AFT	12008105
A0133558	0	RSCU 144 ² ABB Azimuth ME IE	12008150
A0132403	0	RSCU 144 ² ABB Azimuth ME	12008152

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015.

Marking of product

The products to be marked with:

- ABB
- RSCU H 144 Azimuth Lever
- serial number

Job Id:
Certificate No: **TAA00000KH**

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE