DNV·GL

Certificate No:
TAA00001U1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Loading and unloading arrangement

with type designation(s)
Radio remote control terminal units:
MC-3-6, MC-3-6 EX, MC-3-5, MC-3-5 EX, MC-3300, MC-3300 EX, MC-3200, MC-3200 EX

Issued to
Cavotec Micro-control AS
Hell, Norway

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Portable radio remote control terminal unit for remote operation of winches/cranes.
Radio frequency band: 433.05-434.79 MHz.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C / IP66**

Issued at **Høvik** on **2018-06-19**
This Certificate is valid until **2022-12-31**.
DNV GL local station: **Trondheim**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

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.

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Job Id: **262.1-015028-3**
Certificate No: **TAA00001U1**

Product description

Portable radio remote control terminal unit for operation of winches/cranes. The terminal unit connects to the base unit wirelessly.

Product names:

Standard:	For Ex-zones:
MC-3-6	MC-3-6 EX
MC-3-5	MC-3-5 EX
MC-3300	MC-3300 EX
MC-3200	MC-3200 EX

Radio frequency band: 433.05-434.79 MHz
Channel separation: 25 kHz
Max. radiated power: 10 mW e.r.p.

Terminal unit product code:
Taa.b-cc-dd-ee.ff.ggg-hhhh

where

T	=	Terminal unit (fixed)
aa	=	Enclosure
b	=	EX/non-EX
cc	=	Approval
dd	=	Application
ee	=	Safety
ff	=	Main electronics
ggg	=	Radio
hhhh	=	Additional info

The following key combinations are covered by this approval:

cc	=	01	Maritime approval, DNV-OS-D202/IACS-E10
		50	ATEX and/or IECEx + DNV-OS-D202/IACS-E10
		51	cFMus + DNV-OS-D202/IACS-E10
		52	GOST-R + DNV-OS-D202/IACS-E10
		53	Inmetro and Anatel + DNV-OS-D202/IACS-E10

Place of manufacture

Cavotec Germany GmbH
Division Cavotec Micro-Control
Gewerbering 3
DE-93345 Hausen
Germany

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.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

The type approval does not cover the different administrations requirements for use of the radio frequency band. The applied frequency band 433.05-434.79 MHz is defined by ITU-R Radio Regulations (2016) as an ISM-band for ITU Region 1 that may be subject to special authorisation by the administration concerned. Any use if the radio frequency band has to be in line with the requirements of the administration concerned.

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.
Applicable tests according to ETSI EN 301 489-1 (V1.8.1) and ETSI EN 301 489-3 (V1.4.1).

Marking of product

Product code: As listed under product description
Product name: As listed under product description
Radio Type: MC-CD-PLL
Frequency: 433.05-434.79 MHz
Unique Serial No.

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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE