

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Automatic Telephone System and Hands Free Voice Talk Back System

with type designation(s)

SeaCom 1000, SeaCom 2100, Alphaconnect 48, Alphaconnect 128

Issued to

SeaCom ApS
Åbyhøj, Denmark

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

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

See page 3 for further details on application.

This Certificate is valid until **2019-10-06**.

Issued at **Høvik** on **2015-10-07**

DNV GL local station: **Aalborg**

for **DNV GL**

Approval Engineer: **Steinar Kristensen**

Jan Tore Grimsrud
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

SeaCom automatic telephone system and hands free voice talk back system consists of automatic telephone exchanges and talk back, intercom and telephone stations.

Products are also available in an Alphasat branded version designated as Alphaconnect, consisting of the same hardware and software, but in different colours.

For the talk back, telephone and intercom stations the designation SC xxx represents the SeaCom version of the product, while Pxxx is the Alphaconnect version.

The following products are covered by this Type Approval ¹⁾:

Equipment type	Module	Description	Article no.	SW	Env. ^{*)}
Telephone exchanges	SeaCom 1000	Telephone exchange with maximum 56 telephone and communication station positions	10-092-0000	N.A.	Protected
	Alphaconnect 48		10-091-0000	N.A.	
	SeaCom 2100	Telephone exchange with maximum 128 telephone and communication station positions	10-092-0200	N.A.	
	Alphaconnect 128		10-091-0100	N.A.	
Circuit board modules for exchanges	PSU	Power supply unit, 18-32 VDC input, +/- 5V, -48V and 80V AC output	10-110-1020	02xx	Protected
	CP2	Central processor board, including Ethernet, serial and USB ports ²⁾	10-110-1011	OS 0301 + CP 08xx	
	FIO2 Master	2 line trunk board with master clock and communications on board	10-110-1031	06xx	
	AEXT8	8 line analogue extension board	10-110-1041	05xx	
	PIM	Power input module	20-110-0060	N.A.	
	CTU2	Cable termination unit	10-110-1061	N.A.	
	PDU	Power distribution unit	10-110-1200	N.A.	
Talk back station	SC 211	Simple water tight telephone station with 3 buttons	10-102-0211	01xx	Exposed
	P211		10-103-0211	01xx	Exposed
Telephone station	SC 220	Water tight and salt mist resistant industrial telephone station with built in call relay	10-102-0220	01xx	Exposed
	P220		10-103-0220	01xx	Exposed
Telephone and intercom station	SC 411	Flush mount telephone station with display, backlight and hands-free	10-102-0411	01xx	Protected
	P411		10-103-0411	01xx	Protected
	SC 421	Water tight telephone station with display, backlight and hands-free	10-102-0421	01xx	Exposed
	P421		10-103-0421	01xx	Exposed
Accessories	Handset/ cradle	Water tight handset with cradle for use with SC211/P211, SC220/P220 and SC421/P421	10-400-1020	N.A.	Exposed
	Headset	Noise cancelling headset with 10m cable for use with SC211/P211, SC220/P220 and SC421/P421	10-400-0205	N.A.	Protected

^{*)} Location categories according to IEC 60945 (2002)

¹⁾ Actual configuration may vary based on requirements for individual installations. Only modules listed in this certificate are approved for installation.

²⁾ Ethernet, Serial and USB ports may only be used for connections internally within the system, and are not approved for connection to other systems/ networks

Job Id: **262.1-011116-2**
Certificate No: **TAA0000054**

Application

The SeaCom/ Alphaconnect automatic telephone system and hands free voice talk back system may be used in cargo ships, passenger vessels and mobile offshore units for compliance with the following codes, rules and regulations:

- SOLAS
- MODU Code
- HSC Code
- DNV GL Statutory Interpretations [July 2015]

Type Approval documentation

DNV GL No	Document Id	Rev.	Description
25	DOC110225CJ01_03	03	Report: SeaCom, Performance type test report for SeaCom communication system
24	TMN100510CJ01_03	03	Manual: SeaCom, SeaCom system reference manual
23	2010-01-11-SeaCom-addendum	2011-03-22	Report: Jens-EMC, Extreme and excessive power supply conditions
22	20110329	2011-03-28	Report: EKTOS, Environmental test report, additional tests
10	20100902/CNI	2010-09-02	Report: EKTOS, Environmental test report
7	2010-01-11-SeaCom-Alphaconnect P411/ SeaCom411	2010-07-14	Report: Jens-EMC, EMC test report for SeaCom 411/ Alphaconnect P411
6	2010-01-11-SeaCom-Alphaconnect P220/ SeaCom220	2010-07-14	Report: Jens-EMC, EMC test report for SeaCom 220/ Alphaconnect P220
5	2010-01-11-SeaCom-Alphaconnect P211/SeaCom211	2010-07-13	Report: Jens-EMC, EMC test report for SeaCom 211/ Alphaconnect P211
4	2010-01-11-SeaCom-AC48/SeaCom1000 & AC128/SeaCom2100	2010-07-21	Report: Jens-EMC, EMC test report for AC48/SeaCom1000 &/ AC128/SeaCom2100
3	2010-01-11-SeaCom-Alphaconnect P421/ SeaCom421	2010-07-14	Report: Jens-EMC, EMC test report for SeaCom 421/ Alphaconnect P421

Tests carried out

- Environmental testing: IEC 60945 (2002)
- Performance testing: Functional tests according to DNV GL Type Approval programs 848.25 for Automatic Telephone System and 848.26 for Hands Free Voice Talk Back system.

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Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

Periodical assessment

A retention survey is to be performed at least once every second year, and again upon renewal of this certificate. The scope of the retention/renewal survey is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.