DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-11305
This Certificate consists of 4 pages

This is to certify that the

Programmable Electronic System

with type designation

DELOMATIC-3

Manufactured by

DEIF A/S

Skive, Denmark

is found to comply with

Det Norske Veritas' Rules for Classification of Ships and High Speed and Light Craft

Application

Documentation for the actual application is to be submitted for approval in each case.

Location classes :

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules to be provided upon installation on board.

Place and date
Høvik, 2009-05-25
for DET NORSKE VERITAS AS

Odd Magne Nesvåg
Head of Section

DET NORSKE VERITAS * 1864 *

Local Office
DNV Aalborg

This Certificate is valid until
2011-06-30

Poul Tranborg
Surveyor

Notice: 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 following units/modules are included in the type approval:

CP -1	Control Panel
DGU-1	19" Rack Frame
PSM-1	Power Supply Module
CM -2	Control Module with optional RS232 or RS422 communication module
CRM-1	Current Relay Module
IPM-1	Input Module
OPM-1	Output Module
SCM-1	Measuring/Synchronising Module
SCM-2	Measuring/Synchronising Module
AOM-1	Analogue output channels 2X4

Software version number:
CM-2:
Monitor SW (D-101) 2314220004G (ver. 2.20)
I/O SW (D-201) 2314220005D (ver. 1.03)

Application Software (104&105)
Application Software type approved and controlled as described in type approval documentation for application software.

SCM-1 and SCM-2:
SCM-C SW 2314220003D (ver. 1.06)
SCM-B SW 2314220002F (ver. 1.16)

CP-1: 2314220001C (ver. 1.09)

Application/Limitation

The approval covers hardware and software listed under product description.

Approval conditions

When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Case-by-case:
For each delivery where the product is included (typically a switchboard) the following information related to the Delomatic-3 system is to be submitted for approval:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- List of hardware and software modules as identified in this Type Approval Certificate
- Functional description
- List of implemented alarm and protection functions with proposed limits and time delays
- Test program for test at DEIF or the switchboard maker as applicable

Product certificate.
Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control.
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

DEIF Specifications:
System 4921240044E, CP-1 4921240046E, PSM-1 4921240048D, IPM-1 4921240052D, OPM-1 4921240054D, AOM-1 4921240064D, SCM-1 4921240056E, SCM-2 4921240058D, CRM-1 4921240094A

Data sheets:
CM-2 4921240183D

Drawings:
4157200194 rev.C, 4157200062 rev.F, 4157200065 rev.E, 4175200063 rev.C, 4157200064 rev.B, 4157200066 rev.G, 4157200067 rev.C, 4157200068 rev.H, 4157200058 rev.A, 4157200059 rev.B, 4157200060 rev.C, 4157200061 rev.D, 4157200214 rev. B dated 95-08-22.

Environmental test reports received in 2 booklets dated 25-03-95 & 95-09-15 to 95-10-02. In connection with updating of CM-1 to CM-2 a new test report with final date 19991208 was received.

Application software:
4189230029B Software Units
4189230033A Software Kontrol
4189230034A Application Software Unit Declaration
4930010053A Project Log/Description of Change

FAT Reports:
430549 (Ulstein Verft Newbuilding No.236 ID 20177)
430589 (Kværner Fjellstrand Newbuilding No.1646 ID 20122)

Retention survey report dated 2009-05-20

Certificate retention survey

The scope of the retention/renewal survey 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 survey 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.

Survey to be performed at renewal of this certificate.

END OF CERTIFICATE