IEC61508

CERTIFICATE OF COMPLIANCE

NAUTITECH™

SHUTDOWN SYSTEM

This document is issued as a summary of the hardware failure data affecting the application of the equipment as a sub-system being part of a Safety Function intended to conform with the requirements of IEC61508 – Functional Safety of Electrical/Electronic/ Programmable Logic Safety Systems. The hardware has been subjected to a Failure Modes Effects and Diagnostics Analysis (FMEDA) to determine the specific failure modes and failure rates with the relevant results presented herein.

Emergency Stop Shutdown Safety Function – Electronic Engines

The Emergency Stop Shutdown safety function utilises the standard hardware platform from Nautitech consisting of the following items/products:

Item	Product Code
Emergency Pressure Switch	CT500114
PMU	PL500102

Notes (*) Display units are interchangeable

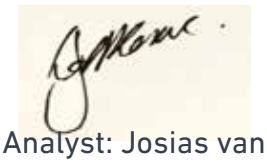
Product Failure Rates

Emergency Stop Shutdown Function	
SIL Capability	1
Sub-System Type	B
Hardware Fault Tolerance (HFT)	0
Safe Failure Fractions (SFF)	91.1%
PFH1oo1	3.85×10^{-6}
PFD1oo1 (2 year proof-test interval)	3.37×10^{-2}
MTBF	23050 hrs

Notes

- Reliability data for this analysis is taken from MIL-HDBK217F Notice 2 and Siemens SN29500 Reliability Data Handbook.
- Proof testing must be carried out according to the application requirements, however it is recommended that this be carried out atleast once every two years.

Signed on behalf of Nautitech



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Date: 1st Nov 2016

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Date: 1st Nov 2016