

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 (FMEA) to determine the specific failure modes and failure rates with the relevant results presented herein.

Temperature Shutdown Safety Function

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

- Temp Sensor PB500120
- Barrier CE002312
- Charger PL118506
- Display ME1185 or ME5350
- Solenoid/Relay SYJ712 series / G2R series

Product Failure Rates – High Demand

SIL Capability = 1

Sub-system Type = B

Hardware Fault Tolerance (HFT) = 0

SFF = 74.5%

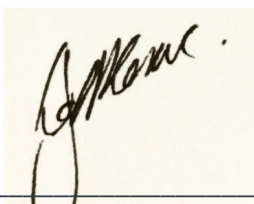
PFH1001 = 2.67×10^{-6}

PDF1001 = 2.34×10^{-2} (2 year proof-test interval)

MTBF = 95689 hrs (Mean Time Between Failure)

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 at least once every two years.



Analyst: Josias van der Merwe
Date: 26th July 2016

Signed on behalf of Nautitech



Verification: Marcus Punch Pty. Ltd.
Date: 26th July 2016