



Marine Design Appraisal Document

Lloyd's Register EMEA
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Date
11 August 2014

Please quote this reference number on all future communications
HPC1320097/30060-14/ML/SC

THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002
ISSUED TO: LAMTEC MESS- UND REGELTECHNIK FÜR FEUERUNGEN GMBH
FOR: BURNER CONTROL SYSTEMS AND ACTUATORS
TYPE: ETAMATIC, ETAMATIC/S, ETAMATIC OEM, FA1, FMS; "662R21..."
TYPE APPROVAL CERTIFICATE NO. 14/20049

The additional undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Form LR2571	Application for Type Approval Certification	22.02.2013
Form LR2502	Request for Marine Service	16.08.2013
12 100 19876 TMS	ISO 9001:2008 Certificate issued by TÜV SÜD	20.11.2012
HPC1320097	Works Inspection Report, done by LR Hamburg	25.10.2013
AA03-1AL_Rev.1	Prozessanweisung: Versionierung und Änderung von Hard- und Software	27.05.2013
AA03-5CL_Rev.0	Arbeitsanweisung: Dokumentlenkung Entwicklung	15.11.2011
MH03_Rev.5	Handbuch: Entwicklung, Planung, Dokumentation, Functional Safety Management	27.05.2013
PA03-1L_Rev.6	Prozessanweisung: Produktentwicklung	01.11.2012
[Projekt] Safety Plan_V2.05	Template for project related Safety Plan in accord. to IEC 61508	21.08.2013
Prozesse Projektstufe_V1.08	Project Handling, Specification, Validation, Change Request – and Defect Management	12.12.2011
Z-IS-TAF-MUC-04-02-17360843-001-Rev.02	TÜV Süd Certificate – confirmation for permanent operation (SIL3) FMS (Software Version V5.600)	06.08.2012
Z-IS-TAF-MUC-08-02-17360843-005-Rev.02	TÜV Süd Certificate – confirmation for permanent operation (SIL3) FA1 (Software-Version V5.600)	06.08.2012
Z-IS-TAF-MUC-04-02-17360843-004-Rev.01	TÜV Süd Certificate – meets the requirements of the Directive 97/23/EC for Etamatic, -/S, -OEM(Software Version V5.600)	06.08.2012

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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APPROVAL DOCUMENTATION (continued)

CE-0085AU0207	EC type examination certificate for EC Gas Appliances Directive (2009/142/EC) – Type Etamatic, -/S, -OEM and FA1	17.01.2012
C-F 1183-04/08	TÜV Süd Test Report and assessment of Hard- and Software (FMS)	21.07.2008
C-F 1185-04/08	TÜV Süd Test Report and assessment of Hard- and Software (Etamatic, -/S, -OEM and FA1)	28.02.2008
VD07-4B_Rev.3	Besprechungsprotokoll Lieferantenaudit (PCB manufacturer)	20.10.2009
Fmea-CPU-E_Rev.1.00	FMEA and Functional Description of CPU (FMS)	12.02.1997
FMEA-Etamatic-mainboard-E_Rev.1.03	Description of FMEA and Self-Test of the Basic Board (Etamatic)	15.03.1999
Sw-fmea-V6.000-E	Software FMEA for Firing Management System (FMS and Etamatic) Version 5.00	15.01.2005
DLT6701-10-bEN-007	Technical Data – Burner Control FA1	undated
DLT2003-11-cEN-021	Technical Data – Burner Control Etamatic	undated
DLT2030-11-bEN-024	Technical Data – Burner Control Etamatic OEM	undated
DLT1010-11-cEN-017	Technical Data – Combustion Management System FMS	undated
DLT662R2121-13-aD-E-F-017	Operating Instructions electrical actuator “662R2121” – 40Nm	undated
DLT662R2112-13-aD-E-F-010	Operating Instructions electrical actuator “662R2112” – 30Nm	undated
DLT662R2111N-13-aD-E-F-018	Operating Instructions electrical actuator “662R2111” – 20Nm	undated
DLT662R2127-13-aD-E-F-014	Operating Instructions electrical actuator “662R2127” – 6Nm	undated
EINFUEHR.DOC_V2.00	Einführung in die Softwaredokumentation FMS 4 / FMS 5	06.05.1998
FMS-Etamatic8v006	Versionsverwaltung Software – FMS/VMS und Etamatic	20.08.2013
Modulliste_V.4.000	Modulliste - FMS/VMS/Etamatic – Main- and Monitoring Processor	13.04.2003
V5z201_V.1.003	Erweiterung der Gerätefirmware FMS/VMS/Etamatic Example for module Regression testing	18.11.2008
DGR-0036-QS-811-12	TÜV Süd Certificate – Development of Burner Control Units	29.11.2012
Lloyds_Punkt_1a	Confirmation (Lamtec) of representative Test Reports for Actuators	02.04.2014
CF11850511_SIL_BST	Confirmation TÜV Süd for SIL3 conformity (Etamatic devices)	31.01.2011
Sw_fmea-V8.000	Software FMEA – FMS and Etamatic (Version 8.000)	17.08.2009
Lloyds_Punkt_7	Confirmation (Lamtec) - EMC and Environmental Test Reports of Etamatic/S represents FA1, Etamatic and Etamatic OEM -/S	03.04.2014
FMS-Etamatic8v009	Version management for FMS/VMS and Etamatic	13.12.2013
Unnumbered	E-Mail correspondence – Questionnaire related to LR rules	18.07.2014

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TEST REPORTS

BV113240	Vibration Test Report, issued by VIBTEC for Relay modules	30.11.2011
DECRC-E3-01/13-96/304	EMC I Test Report from ABB – FMS 4 module	18.12.1996
DECRC-E3-01/13-95/303	EMC II Test Report from ABB – FMS 4 module	10.12.1996
DECRC-E3-01/13-96/301a	EMC III Test Report from ABB – FMS 4 module	10.12.1996
DECRC-E3-01/13-95/301	EMC IV Test Report from ABB – FMS 4 module	16.02.1996
51218-90160	EMC Test Report, issued by Senston for Etamatic /S	16.03.1999
EMVP 971	EMC Test Report, issued by EMK for Etamatic OEM	09.03.2004
1213-11-EE-11-PB001	EMC I Test Report, issued by SLG for FMS and actuators	18.10.2011
1213-11-EE-11-PB003	EMC II Test Report, issued by SLG for FMS and actuators	06.12.2011
P113923_Rev.1.3	EMC III Test Report, issued by MECTRONIC GmbH for FMS and actuators	22.06.2011
V1.10	Environmental Test Report for FMS, Etamatic and Etamatic OEM	05.12.2011
P113924_Rev.1.3	EMC Test Report, issued by MECTRONIC GmbH for Etamatic-S and actuator 662R2111	22.06.2011
Hochspannungstest. Etamatic OEM V5.0	Prüfung der Spannungsfestigkeit und Isolationswiderstand der Etamatic OEM	08.12.2011
BV112969a	Vibration Test Report, issued by VIBTEC for Etamatic, -OEM, FMS	07.07.2011
1213-11-EE-11-PB004	EMC I Test Report, issued by SLG for Etamatic S and actuators	06.12.2011
1213-11-EE-11-PB002	EMC II and Voltage + Frequency Variation Test Report, issued by SLG for Etamatic S and actuators	18.10.2011
66301_V1.01	Degree of Protection Etamatic OEM – IP20	02.04.2012
663R1_V1.01	Degree of Protection Etamatic – IP20 (rear) and IP40 (front)	02.04.2012
BV1333933	Vibration Test Report, issued by VIBTEC for 30Nm actuator	17.05.2013
Unnumbered	Climate Test Report for Actuator "662R2111-020" (20Nm) for FMS/VMS/Etamatic	23.05.2013
C-V1222-06/14	TÜV Süd Test Report for Software modification (V.5.800)	18.02.2014

DRAWINGS

66300920 V4.4	Part List CPU-/Keypad-Display PCB Etamatic OEM	06.10.2006
663P0920 V4.4	Part List CPU-/Keypad-Display PCB Etamatic	06.10.2006
663P0921 V4.6	Part List Processor PCB FMS/VMS	06.10.2006
663P0922 V5.8	Part List Base PCB Etamatic	01.02.2008
663P0923 V3.9	Part List Power Supply electronic 230V AC FMS/VMS	12.11.2007
663P3000 V4.2	Part List Backplane assembly FMS/VMS	13.01.2006
663P5000 V1.9	Part List Front PCB Electronic	30.06.2006
670P0922 V1.3	Part List Base PCB FA!	26.02.2008
190.251-1-A/B_V3.0	Layout: Power Supply Unit (PCB)	22.07.1996

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DRAWINGS (continued)

190.253-1-A/B_V1.0	Layout: Power Plane	13.07.1994
660R0016_V4.3	Layout: Relay module R16	24.04.2006
663P0920_V4.0	Layout: Rechner-/ Front- Elektronik Etamatic	08.05.2001
663P0921-1-A/B_V4.3	Layout: Processor PCB VMS/FMS	17.05.2002
663P0992_V6.1	Layout: PCB basis for Etamatic	12.10.2009
663P3000_V4.0	Layout: Backplane FMS	14.05.2003

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.

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