ISO/IEC 14762:2009-01 (E)

Information technology – Functional safety requirements for home and building electronic systems (HBES)

CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviations 8
4 Conformance 10
5 General requirements 11
5.1 General 11
5.2 Method of establishment for the requirements 11
5.2.1 General 11
5.2.2 HBES application environment 11
5.2.3 Sources of hazards 11
5.2.4 Hazardous events 12
5.2.5 Derivation of requirements 12
6 Requirements for functional safety 12
6.1 General 13
6.2 Power feeding 13
6.2.1 Safe restart after power is restored (1) 13
6.2.2 Product marking and instructions prevent risk of wrong connections (3) (6) 13
6.2.3 Product construction and design prevent wrong connections 13
6.3 Environment 14
6.3.1 Product designed for application environment and specified temperature range (7) 14
6.3.2 Resistance to abnormal heat and prevention of fire propagation (8) 14
6.3.3 Withstand of mechanical stress appropriate to the application(s) (9) 14
6.4 Lifetime 14
6.5 Reasonably foreseeable misuse 14
6.5.1 Minimization of accidental download of wrong application software or parameters (15) 14
6.5.2 Proper configuration and related parameters (15) 15
6.5.3 Detection and/or indication of missing or incompletely configured products during configuration process (15) 15
6.6 Software and communication 15
6.6.1 Development process compliance with ISO 9000 or similar standards (16) 15
6.6.2 Check for proper operation of product software and integrity of the configuration (16) 15
6.6.3 Limitation of the traffic load imposed on the communication medium (12) (17) 15
6.6.4 Proper function of product and exclusion of hazards on reception of messages from multiple sources (23) 16
6.6.5 Defined state after a system reset (if any) (24) 16
6.6.6 Restricted access to manual configuration of system parameters (24) 16
6.6.7 Disturbed communication 16
6.7 Remote operations 17

6.7.1 General recommendations 17
6.7.2 Within a single building or in its immediate vicinity 17
6.7.3 From outside the building 18
6.7.4 Management 18
Annex A (informative) Example of a method for the determination of safety integrity levels 20
A.1 General 20
A.2 Terms and definitions 20
A.3 As low as reasonably practicable (ALARP) and tolerable risk concepts 21
Annex B (informative) Hazards and development of necessary functional safety requirements 22
Annex C (informative) Some examples of non safety related HBES applications 28
C.1 General 28
C.2 Example 1: Oven 28
C.3 Example 2: Devices presenting a high potential risk of hazard 28
C.4 Example 3: Mains plugs, socket outlets and circuits 29
C.5 Example 4: Water temperature adjustment 29
Bibliography 30

Figure A.1 – Risk reduction – General concept 20

Table 1 – Requirements for avoiding inadvertent operations and possible ways to achieve them 19
Table A.1 – Example of risk classification of accidents 21
Table A.2 – Interpretation of risk classes 21
Table B.1 – Safety requirements and risk reduction 22