DIN EN 16186-3:2022-05 (E)

Railway applications - Driver's cab - Part 3: Design of displays for heavy rail vehicles

Contents

Page

European foreword 4

Introduction 6

1 Scope 7

2 Normative references 8

3 Terms and definitions 8

4 Symbols and abbreviations 13

5 Characteristics of displays and visible or audible information 14
5.1 General 14
5.1.1 General guidelines 14
5.1.2 Provide operation relevant information 15
5.1.3 Display performance requirements 15
5.1.4 Principles for warnings 16
5.1.5 Languages 17
5.2 Design of information 17
5.2.1 General 17
5.2.2 Screen organization and dimensions 18
5.2.3 Luminance 20
5.2.4 Colours 21
5.2.5 Symbols 26
5.2.6 Text 27
5.2.7 Loudspeaker 29
5.3 User/display interaction 29
5.3.1 Buttons 29
5.3.2 Keyboards 34
5.4 Input of data 35
5.4.1 General 35
5.4.2 Entering (alpha)numeric characters 35
5.4.3 Input fields 35
5.4.4 Input for predefined data 36
5.4.5 Acknowledgements 37
5.5 Troubleshooting 37
5.5.1 Fault indication requesting driver warning and acknowledgement (troubleshooting process) 37
5.5.2 Fault indication not requesting driver warning and acknowledgement 38

Annex A (normative) Symbols, text messages and audible messages 39

A.1 General 39
A.2 Mandatory symbols and text messages 39
A.3 Optional symbols 80
A.4 Audible warnings 94
A.4.1 Application specific audible warnings 94
A.4.2 General audible warning 96

Annex B (normative) Information shown on displays by associated symbols related with functions 97

B.1 Mandatory information, if the function exists ... 97
B.1.1 For all types of rolling stock ... 97
B.1.2 For high speed Class 1 trains ... 98
B.2 Optional information ... 99

Annex C (informative) Information referring to functions using the display ... 100

Annex D (informative) Hard keys arrangement ... 102

Annex E (informative) TDD basic screen ... 103

Annex F (informative) TDD menu structure ... 105

Annex G (informative) Possible responses to TCMS detectable failures, depending on the quality of information ... 108

Annex H (informative) Display screens from various applications (examples) ... 110

Annex I (informative) Perception areas on driver's desk ... 114

Annex J (informative) Data entry and keyboard (example) ... 115

J.1 Principles for Example 1 ... 115
J.1.1 General ... 115
J.1.2 Numerical data entry, Example 1 ... 115
J.1.3 Alphanumerical data entry, Example 1 ... 116
J.2 Alphanumerical data entry, Example 2 ... 119

Annex K (informative) Allocation of clauses to functions according to EN 15380-4 ... 121

Annex L (informative) Project specific tasks of technical specification or choice of an option provided by this standard ... 126

L.1 General ... 126
L.2 Project specific tasks ... 126
L.3 Choice of options ... 127

Annex M (informative) Registration form for new graphical symbols ... 129

Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive (EU) 2016/797 aimed to be covered ... 130

Bibliography ... 132