# DIN EN 16186-3:2019-06 (E)

## Railway applications - Driver's cab - Part 3: Design of displays (includes Amendment A1:2018)

## Contents

Page


European foreword ....4

Introduction ....5

1 Scope ....6

2 Normative references ....7

3 Terms and definitions ....7

4 Symbols and abbreviations ....12

5 Characteristics of displays and visible or audible information ....12
5.1 General ....12
5.1.1 General guidelines ....12
5.1.2 Provide operation relevant information ....13
5.1.3 Display performance requirements ....13
5.1.4 Principles for warnings ....15
5.1.5 Languages ....16
5.2 Design of information ....16
5.2.1 General ....16
5.2.2 Screen organization and dimensions ....17
5.2.3 Luminance ....18
5.2.4 Colours ....19
5.2.5 Symbols ....24
5.2.6 Text ....25
5.2.7 Loudspeaker ....27
5.3 User/display interaction ....27
5.3.1 Buttons ....27
5.3.2 Keyboards ....32
5.4 Input of data ....33
5.4.1 General ....33
5.4.2 Entering (alpha)numeric characters ....33
5.4.3 Input fields ....33
5.4.4 Input for predefined data ....34
5.4.5 Acknowledgements ....34
5.5 Troubleshooting ....35
5.5.1 Fault indication requesting driver warning and acknowledgement (troubleshooting process) ....35
5.5.2 Fault indication not requesting driver warning and acknowledgement ....36

Annex A (normative) Symbols, text messages and audible messages ....37

A.1 General ....37
A.2 Mandatory symbols and text messages ....37
A.3 Optional symbols ....73
A.4 Audible warnings ....83
A.4.1 Application specific audible warnings ....83
A.4.2 General audible warning ....85

**Annex B (normative) Information shown on displays by associated symbols related with functions** ..... 86
**B.1 Mandatory information, if the function exists** ..... 86
**B.1.1 For all types of rolling stock** ..... 86
**B.1.2 For high speed Class 1 trains** ..... 87
**B.2 Optional information** ..... 87
**Annex C (informative) Information referring to functions using the display** ..... 89
**Annex D (informative) Hard keys arrangement** ..... 91
**Annex E (informative) TDD basic screen** ..... 92
**Annex F (informative) TDD menu structure** ..... 95
**Annex G (informative) Possible responses to TCMS detectable failures, depending on the quality of information** ..... 98
**Annex H (informative) Display screens from various applications (examples)** ..... 100
**Annex I (informative) Perception areas on driver's desk** ..... 104
**Annex J (informative) Data entry and keyboard (example)** ..... 105
**J.1 Principles for Example 1** ..... 105
**J.1.1 General** ..... 105
**J.1.2 Numerical data entry, Example 1** ..... 105
**J.1.3 Alphanumerical data entry, Example 1** ..... 106
**J.2 Alphanumerical data entry, Example 2** ..... 109
**Annex K (informative) Allocation of clauses to functions according to EN 15380-4** ..... 111
**Annex L (informative) Project specific tasks of technical specification or choice of an option provided by this standard** ..... 116
**L.1 General** ..... 116
**L.2 Project specific tasks** ..... 116
**L.3 Choice of options** ..... 117
**Annex M (informative) Registration form for new graphical symbols** ..... 119
**Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC** ..... 120