

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