IEC 61804-5

Edition 2.0 2020-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL) – Part 5: EDDL Builtin library

Les dispositifs et leur intégration dans les systèmes de l'entreprise – blocs fonctionnels (FB) pour les procédés industriels et le langage de description électronique de produit (EDDL) – Partie 5: Bibliothèque de Builtin EDDL

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

IEC 61804-5:2020-06(en-fr)

THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2020 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 000 terminological entries in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

A propos de l'IEC
La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC
Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform
La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,…). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished
Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc
Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

Electropedia - www.electropedia.org
Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 000 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary
67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

IEC 61804-5

Edition 2.0 2020-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL) – Part 5: EDDL Builtin library

Les dispositifs et leur intégration dans les systèmes de l'entreprise – blocs fonctionnels (FB) pour les procédés industriels et le langage de description électronique de produit (EDDL) – Partie 5: Bibliothèque de Builtin EDDL

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 25.040.40; 35.240.50

ISBN 978-2-8322-8446-9

Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

® Registered trademark of the International Electrotechnical Commission
Marque déposée de la Commission Electrotechnique Internationale

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

CONTENTS

FOREWORD 20
INTRODUCTION 23
1 Scope 24
2 Normative references 24
3 Terms, definitions, acronyms and abbreviated terms 24
3.1 Terms and definitions 24
3.2 Acronyms and abbreviated terms 24
4 Conventions for builtin descriptions 25
5 Builtin categories 26
5.1 Overview 26
5.2 User interface builtins 36
5.3 Communication builtins 37
5.4 Action builtins 39
6 EDDL builtin library 42
6.1 General 42
6.2 User interface builtins 42
6.2.1 Builtin ACKNOWLEDGE 42
6.2.2 Builtin acknowledge 43
6.2.3 Builtin DELAY 44
6.2.4 Builtin delay 44
6.2.5 Builtin delayfor 45
6.2.6 Builtin delayfor2 46
6.2.7 Builtin DISPLAY 48
6.2.8 Builtin display 49
6.2.9 Builtin display_bitenum 49
6.2.10 Builtin display_builtin_error 50
6.2.11 Builtin display_comm_error 50
6.2.12 Builtin display_comm_status 51
6.2.13 Builtin display_device_status 52
6.2.14 Builtin display_dynamics 52
6.2.15 Builtin display_dynamics2 53
6.2.16 Builtin display_message 54
6.2.17 Builtin display_message2 55
6.2.18 Builtin display_response_code 57
6.2.19 Builtin display_response_status 58
6.2.20 Builtin display_xmtr_status 58
6.2.21 Builtin edit_device_value 59
6.2.22 Builtin edit_device_value2 60
6.2.23 Builtin edit_local_value 62
6.2.24 Builtin edit_local_value2 63
6.2.25 Builtin get_acknowledgement 64
6.2.26 Builtin get_acknowledgement2 65
6.2.27 Builtin GET_DEV_VAR_VALUE 66
6.2.28 Builtin get_dev_var_value 67
6.2.29 Builtin GET_LOCAL_VAR_VALUE 68
6.2.30 Builtin get_local_var_value 68

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.2.31 Builtin Menu ... 69
6.2.32 Builtin MenuDisplay (version A) ... 70
6.2.33 Builtin MenuDisplay (version B) ... 71
6.2.34 Builtin PUT_MESSAGE ... 72
6.2.35 Builtin put_message ... 73
6.2.36 Builtin SELECT_FROM_LIST ... 75
6.2.37 Builtin select_from_list ... 76
6.2.38 Builtin select_from_menu ... 76
6.2.39 Builtin select_from_menu2 ... 78
6.2.40 Prompt string formats ... 79
6.3 Communication builtins ... 80
6.3.1 Builtin abort_on_all_comm_errors ... 80
6.3.2 Builtin ABORT_ON_ALL_COMM_STATUS ... 81
6.3.3 Builtin ABORT_ON_ALL_DEVICE_STATUS ... 81
6.3.4 Builtin ABORT_ON_ALL_RESPONSE_CODES ... 82
6.3.5 Builtin abort_on_all_response_codes ... 82
6.3.6 Builtin ABORT_ON_COMM_ERROR ... 83
6.3.7 Builtin abort_on_comm_error ... 83
6.3.8 Builtin ABORT_ON_COMM_STATUS ... 84
6.3.9 Builtin ABORT_ON_DEVICE_STATUS ... 85
6.3.10 Builtin ABORT_ON_NO_DEVICE (deprecated) ... 85
6.3.11 Builtin ABORT_ON_RESPONSE_CODE ... 86
6.3.12 Builtin abort_on_response_code ... 87
6.3.13 Builtin ext_send_command ... 87
6.3.14 Builtin ext_send_command_trans ... 88
6.3.15 Builtin fail_on_all_comm_errors ... 89
6.3.16 Builtin fail_on_all_response_codes ... 90
6.3.17 Builtin fail_on_comm_error ... 90
6.3.18 Builtin fail_on_response_code ... 91
6.3.19 Builtin get_more_status ... 92
6.3.20 Builtin IGNORE_ALL_COMM_STATUS ... 92
6.3.21 Builtin IGNORE_ALL_DEVICE_STATUS ... 93
6.3.22 Builtin IGNORE_ALL_RESPONSE_CODES ... 93
6.3.23 Builtin IGNORE_COMM_ERROR ... 94
6.3.24 Builtin IGNORE_COMM_STATUS ... 95
6.3.25 Builtin IGNORE_DEVICE_STATUS ... 95
6.3.26 Builtin IGNORE_NO_DEVICE (deprecated) ... 96
6.3.27 Builtin IGNORE_RESPONSE_CODE ... 96
6.3.28 Builtin read_value ... 97
6.3.29 Builtin read_value2 ... 97
6.3.30 Builtin ReadCommand ... 98
6.3.31 Builtin retry_on_all_comm_errors ... 99
6.3.32 Builtin RETRY_ON_ALL_COMM_STATUS ... 99
6.3.33 Builtin RETRY_ON_ALL_DEVICE_STATUS ... 100
6.3.34 Builtin RETRY_ON_ALL_RESPONSE_CODES ... 100
6.3.35 Builtin retry_on_all_response_codes ... 101
6.3.36 Builtin RETRY_ON_COMM_ERROR ... 102
6.3.37 Builtin retry_on_comm_error ... 102
6.3.38 Builtin RETRY_ON_COMM_STATUS ... 103

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.3.39 Builtin RETRY_ON_DEVICE_STATUS ... 103
6.3.40 Builtin RETRY_ON_NO_DEVICE (deprecated) ... 104
6.3.41 Builtin RETRY_ON_RESPONSE_CODE ... 105
6.3.42 Builtin retry_on_response_code ... 105
6.3.43 Builtin send ... 106
6.3.44 Builtin send_all_values ... 107
6.3.45 Builtin send_command ... 107
6.3.46 Builtin send_command_trans ... 108
6.3.47 Builtin send_trans ... 108
6.3.48 Builtin send_value ... 109
6.3.49 Builtin send_value2 ... 110
6.3.50 Builtin SET_NUMBER_OF_RETRIES ... 111
6.3.51 Builtin WriteCommand ... 111
6.3.52 Builtin XMTR_ABORT_ON_ALL_COMM_STATUS ... 112
6.3.53 Builtin XMTR_ABORT_ON_ALL_DATA ... 112
6.3.54 Builtin XMTR_ABORT_ON_ALL_DEVICE_STATUS ... 113
6.3.55 Builtin XMTR_ABORT_ON_ALL_RESPONSE_CODES ... 113
6.3.56 Builtin XMTR_ABORT_ON_COMM_ERROR ... 114
6.3.57 Builtin XMTR_ABORT_ON_COMM_STATUS ... 114
6.3.58 Builtin XMTR_ABORT_ON_DATA ... 115
6.3.59 Builtin XMTR_ABORT_ON_DEVICE_STATUS ... 116
6.3.60 Builtin XMTR_ABORT_ON_NO_DEVICE (deprecated) ... 116
6.3.61 Builtin XMTR_ABORT_ON_RESPONSE_CODE ... 117
6.3.62 Builtin XMTR_IGNORE_ALL_COMM_STATUS ... 117
6.3.63 Builtin XMTR_IGNORE_ALL_DATA ... 118
6.3.64 Builtin XMTR_IGNORE_ALL_DEVICE_STATUS ... 118
6.3.65 Builtin XMTR_IGNORE_ALL_RESPONSE_CODES ... 119
6.3.66 Builtin XMTR_IGNORE_COMM_ERROR ... 119
6.3.67 Builtin XMTR_IGNORE_COMM_STATUS ... 120
6.3.68 Builtin XMTR_IGNORE_DATA ... 120
6.3.69 Builtin XMTR_IGNORE_DEVICE_STATUS ... 121
6.3.70 Builtin XMTR_IGNORE_NO_DEVICE (deprecated) ... 121
6.3.71 Builtin XMTR_IGNORE_RESPONSE_CODE ... 122
6.3.72 Builtin XMTR_RETRY_ON_ALL_COMM_STATUS ... 123
6.3.73 Builtin XMTR_RETRY_ON_ALL_DATA ... 123
6.3.74 Builtin XMTR_RETRY_ON_ALL_DEVICE_STATUS ... 124
6.3.75 Builtin XMTR_RETRY_ON_ALL_RESPONSE_CODES ... 124
6.3.76 Builtin XMTR_RETRY_ON_COMM_ERROR ... 125
6.3.77 Builtin XMTR_RETRY_ON_COMM_STATUS ... 125
6.3.78 Builtin XMTR_RETRY_ON_DATA ... 126
6.3.79 Builtin XMTR_RETRY_ON_DEVICE_STATUS ... 126
6.3.80 Builtin XMTR_RETRY_ON_NO_DEVICE (deprecated) ... 127
6.3.81 Builtin XMTR_RETRY_ON_RESPONSE_CODE ... 127
6.4 Action builtins ... 128
6.4.1 Builtin fgetval ... 128
6.4.2 Builtin fsetval ... 128
6.4.3 Builtin get_date ... 129
6.4.4 Builtin get_double ... 130
6.4.5 Builtin get_float ... 130

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.4.6 Builtin get_signed ... 131
6.4.7 Builtin get_string ... 132
6.4.8 Builtin get_unsigned ... 132
6.4.9 Builtin igetval ... 133
6.4.10 Builtin isetval ... 133
6.4.11 Builtin isOffline ... 134
6.4.12 Builtin lgetval ... 134
6.4.13 Builtin lsetval ... 135
6.4.14 Builtin put_date ... 135
6.4.15 Builtin put_double ... 136
6.4.16 Builtin put_float ... 137
6.4.17 Builtin put_signed ... 137
6.4.18 Builtin put_string ... 138
6.4.19 Builtin put_unsigned ... 139
6.4.20 Builtin sgetval ... 139
6.4.21 Builtin ssetval ... 140
6.5 Variable access builtins ... 140
6.5.1 Builtin assign ... 140
6.5.2 Builtin assign_double ... 141
6.5.3 Builtin assign_float ... 142
6.5.4 Builtin assign_int ... 142
6.5.5 Builtin assign_var ... 143
6.5.6 Builtin assign2 ... 143
6.5.7 Builtin dassign ... 145
6.5.8 Builtin fassign ... 145
6.5.9 Builtin float_value ... 145
6.5.10 Builtin fvar_value ... 146
6.5.11 Builtin get_date_value ... 146
6.5.12 Builtin get_date_value2 ... 147
6.5.13 Builtin get_double_value ... 148
6.5.14 Builtin get_double_value2 ... 149
6.5.15 Builtin get_float_value ... 150
6.5.16 Builtin get_float_value2 ... 151
6.5.17 Builtin get_signed_value ... 152
6.5.18 Builtin get_signed_value2 ... 152
6.5.19 Builtin get_string_value ... 153
6.5.20 Builtin get_string_value2 ... 154
6.5.21 Builtin get_unsigned_value ... 155
6.5.22 Builtin get_unsigned_value2 ... 156
6.5.23 Builtin iassign ... 157
6.5.24 Builtin int_value ... 157
6.5.25 Builtin ivar_value ... 158
6.5.26 Builtin lassign ... 158
6.5.27 Builtin long_value ... 159
6.5.28 Builtin lvar_value ... 159
6.5.29 Builtin put_date_value ... 159
6.5.30 Builtin put_date_value2 ... 160
6.5.31 Builtin put_double_value ... 161
6.5.32 Builtin put_double_value2 ... 162

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.5.33 Builtin put_float_value ... 163
6.5.34 Builtin put_float_value2 ... 164
6.5.35 Builtin put_signed_value ... 165
6.5.36 Builtin put_signed_value2 ... 165
6.5.37 Builtin put_string_value ... 166
6.5.38 Builtin put_string_value2 ... 167
6.5.39 Builtin put_unsigned_value ... 168
6.5.40 Builtin put_unsigned_value2 ... 169
6.5.41 Builtin ret_double_value ... 170
6.5.42 Builtin ret_double_value2 ... 171
6.5.43 Builtin ret_float_value ... 171
6.5.44 Builtin ret_float_value2 ... 172
6.5.45 Builtin ret_signed_value ... 172
6.5.46 Builtin ret_signed_value2 ... 173
6.5.47 Builtin ret_unsigned_value ... 174
6.5.48 Builtin ret_unsigned_value2 ... 174
6.5.49 Builtin vassign ... 175
6.6 Normal termination builtins ... 175
6.6.1 Builtin discard_on_exit ... 175
6.6.2 Builtin save_on_exit ... 176
6.6.3 Builtin save_values ... 177
6.6.4 Builtin send_on_exit ... 178
6.7 Abnormal termination builtins ... 179
6.7.1 Builtin abort ... 179
6.7.2 Builtin add_abort_method (version A) ... 179
6.7.3 Builtin add_abort_method (version B) ... 180
6.7.4 Builtin method_abort ... 180
6.7.5 Builtin pop_abort_method ... 181
6.7.6 Builtin process_abort ... 181
6.7.7 Builtin push_abort_method ... 182
6.7.8 Builtin remove_abort_method (version A) ... 182
6.7.9 Builtin remove_abort_method (version B) ... 183
6.7.10 Builtin remove_all_abort_methods ... 183
6.8 String builtins ... 184
6.8.1 Builtin atof ... 184
6.8.2 Builtin atoi ... 184
6.8.3 Builtin BUILD_MESSAGE ... 185
6.8.4 Builtin dictionary_string ... 185
6.8.5 Builtin ftoa ... 186
6.8.6 Builtin get_comm_error_string ... 186
6.8.7 Builtin get_dictionary_string ... 187
6.8.8 Builtin get_enum_string ... 188
6.8.9 Builtin get_response_code_string ... 188
6.8.10 Builtin get_rspcode_string ... 189
6.8.11 Builtin get_rspcode_string_by_id ... 190
6.8.12 Builtin get_status_code_string (deprecated) ... 190
6.8.13 Builtin get_status_string ... 191
6.8.14 Builtin get_stddict_string ... 192
6.8.15 Builtin get_variable_string ... 192

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.8.16 Builtin itoa (version A) ... 193
6.8.17 Builtin itoa (version B) ... 193
6.8.18 Builtin strleft ... 194
6.8.19 Builtin strcmp ... 194
6.8.20 Builtin strlen ... 195
6.8.21 Builtin strlwr ... 196
6.8.22 Builtin strmid ... 196
6.8.23 Builtin strright ... 197
6.8.24 Builtin strstr ... 197
6.8.25 Builtin strtrim ... 198
6.8.26 Builtin strupr ... 199
6.8.27 Builtin trunc ... 199
6.9 Date time builtins ... 200
6.9.1 Builtin AddTime ... 200
6.9.2 Builtin DATE_AND_TIME_VALUE_to_string ... 200
6.9.3 Builtin Date_to_DayOfMonth ... 201
6.9.4 Builtin DATE_to_days ... 201
6.9.5 Builtin Date_to_Month ... 202
6.9.6 Builtin DATE_to_string ... 202
6.9.7 Builtin Date_To_Time ... 203
6.9.8 Builtin Date_to_Year ... 203
6.9.9 Builtin days_to_DATE ... 204
6.9.10 Builtin DELAY_TIME ... 204
6.9.11 Builtin DiffTime ... 204
6.9.12 Builtin From_DATE_AND_TIME_VALUE ... 205
6.9.13 Builtin From_TIME_VALUE ... 205
6.9.14 Builtin GetCurrentDate ... 206
6.9.15 Builtin GetCurrentDateAndTime ... 206
6.9.16 Builtin GetCurrentTime ... 207
6.9.17 Builtin GET_TICK_COUNT ... 207
6.9.18 Builtin Make_Time ... 207
6.9.19 Builtin seconds_to_TIME_VALUE ... 208
6.9.20 Builtin seconds_to_TIME_VALUE8 ... 209
6.9.21 Builtin Time_To_Date ... 209
6.9.22 Builtin TIME_VALUE_to_Hour ... 209
6.9.23 Builtin TIME_VALUE_to_Minute ... 210
6.9.24 Builtin TIME_VALUE_to_Second ... 210
6.9.25 Builtin TIME_VALUE_to_seconds ... 211
6.9.26 Builtin TIME_VALUE_to_string ... 211
6.9.27 Builtin timet_to_string ... 212
6.9.28 Builtin timet_to_TIME_VALUE ... 213
6.9.29 Builtin timet_To_TIME_VALUE ... 213
6.9.30 Builtin timet_to_TIME_VALUE8 ... 214
6.9.31 Builtin To_Date ... 214
6.9.32 Builtin To_Date_and_Time ... 215
6.9.33 Builtin To_Time ... 215
6.9.34 Builtin To_TIME_VALUE ... 216
6.9.35 Builtin To_TIME_VALUE8 ... 216
6.10 Diagnostic builtins ... 217

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.10.1 Builtin get_comm_error ... 217
6.10.2 Builtin get_dds_error ... 217
6.10.3 Builtin get_response_code ... 218
6.11 Math builtins ... 219
6.11.1 Builtin abs ... 219
6.11.2 Builtin acos ... 219
6.11.3 Builtin asin ... 220
6.11.4 Builtin atan ... 220
6.11.5 Builtin ByteToDouble ... 221
6.11.6 Builtin ByteToFloat ... 221
6.11.7 Builtin ByteToLong ... 222
6.11.8 Builtin ByteToShort ... 222
6.11.9 Builtin cbrt ... 223
6.11.10 Builtin ceil ... 223
6.11.11 Builtin cos ... 224
6.11.12 Builtin cosh ... 224
6.11.13 Builtin DoubleToByte ... 225
6.11.14 Builtin drand ... 225
6.11.15 Builtin dseed ... 226
6.11.16 Builtin exp ... 226
6.11.17 Builtin FloatToByte ... 226
6.11.18 Builtin floor ... 227
6.11.19 Builtin fmod ... 227
6.11.20 Builtin fpclassify ... 228
6.11.21 Builtin is_NaN ... 229
6.11.22 Builtin log ... 229
6.11.23 Builtin log10 ... 229
6.11.24 Builtin log2 ... 230
6.11.25 Builtin LongToByte ... 230
6.11.26 Builtin nan ... 231
6.11.27 Builtin NaN_value ... 232
6.11.28 Builtin nanf ... 232
6.11.29 Builtin pow ... 233
6.11.30 Builtin round ... 233
6.11.31 Builtin ShortToByte ... 234
6.11.32 Builtin sin ... 234
6.11.33 Builtin sinh ... 235
6.11.34 Builtin sqrt ... 235
6.11.35 Builtin tan ... 235
6.11.36 Builtin tanh ... 236
6.12 List builtins ... 236
6.12.1 Builtin get_date_lelem ... 236
6.12.2 Builtin get_date_lelem2 ... 237
6.12.3 Builtin get_double_lelem ... 238
6.12.4 Builtin get_double_lelem2 ... 239
6.12.5 Builtin get_float_lelem ... 240
6.12.6 Builtin get_float_lelem2 ... 241
6.12.7 Builtin get_signed_lelem ... 242
6.12.8 Builtin get_signed_lelem2 ... 242

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.12.9 Builtin get_string_lelem ... 243
6.12.10 Builtin get_string_lelem2 ... 244
6.12.11 Builtin get_unsigned_lelem ... 245
6.12.12 Builtin get_unsigned_lelem2 ... 246
6.12.13 Builtin ListDeleteElementAt (version A) ... 247
6.12.14 Builtin ListDeleteElementAt (version B) ... 248
6.12.15 Builtin ListDeleteElementAt2 ... 248
6.12.16 Builtin ListInsert (version A) ... 249
6.12.17 Builtin ListInsert (version B) ... 250
6.12.18 Builtin ListInsert2 ... 250
6.13 Translation builtins ... 251
6.13.1 Builtin DICT_ID ... 251
6.13.2 Builtin get_block_instance_by_object_index ... 252
6.13.3 Builtin get_block_instance_by_tag ... 253
6.13.4 Builtin get_block_instance_count ... 254
6.13.5 Builtin get_resolve_status ... 254
6.13.6 Builtin ITEM_ID ... 255
6.13.7 Builtin MEMBER_ID ... 255
6.13.8 Builtin ObjectReference ... 256
6.13.9 Builtin resolve_array_ref ... 257
6.13.10 Builtin resolve_array_ref2 ... 258
6.13.11 Builtin resolve_block_ref ... 258
6.13.12 Builtin resolve_block_ref2 ... 259
6.13.13 Builtin resolve_list_ref ... 260
6.13.14 Builtin resolve_local_ref ... 260
6.13.15 Builtin resolve_local_ref2 ... 261
6.13.16 Builtin resolve_param_list_ref ... 262
6.13.17 Builtin resolve_param_ref ... 262
6.13.18 Builtin resolve_param_ref2 ... 263
6.13.19 Builtin resolve_record_ref ... 264
6.13.20 Builtin resolve_record_ref2 ... 264
6.13.21 Builtin VARID ... 265
6.14 Block transfer builtins ... 265
6.14.1 Builtin abortTransferPort ... 265
6.14.2 Builtin closeTransferPort ... 266
6.14.3 Builtin fGetByte ... 266
6.14.4 Builtin get_transfer_status ... 267
6.14.5 Builtin openTransferPort ... 268
6.14.6 Builtin readItemFromDevice ... 268
6.14.7 Builtin writeItemToDevice ... 269
6.15 File builtins ... 269
6.15.1 Builtin browseIdentity ... 269
6.15.2 Builtin re_read_file ... 270
6.15.3 Builtin re_write_file ... 270
6.16 Identification builtins ... 271
6.16.1 Builtin GET_DD_REVISION ... 271
6.16.2 Builtin GET_DEVICE_REVISION ... 271
6.16.3 Builtin GET_DEVICE_TYPE ... 271
6.16.4 Builtin GET_MANUFACTURER ... 272

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

6.17 Development support builtins ... 272
6.17.1 Builtin _ERROR ... 272
6.17.2 Builtin _TRACE ... 273
6.17.3 Builtin _WARNING ... 273
6.17.4 Builtin LOG_MESSAGE ... 274
6.18 DDL references ... 274
6.18.1 Direct referencing of VARIABLEs ... 274
6.18.2 Accessing standard dictionary strings ... 275
6.18.3 String support using DD_STRING ... 276
6.18.4 Referencing DD item attributes ... 276
6.19 Method functions ... 277
7 Builtins return codes ... 278

Figure 1 – A sample METHOD ... 278
Figure 2 – DD_STRING parameters passed by reference ... 278

Table 1 – Format for the builtin overview table ... 25
Table 2 – Contents of the builtin overview table ... 25
Table 3 – Format for the builtins lexical element tables ... 25
Table 4 – Contents of the lexical element table ... 26
Table 5 – Builtin overview ... 26
Table 6 – Usage of builtins ... 36
Table 7 – User interface builtins ... 36
Table 8 – Communication builtins ... 37
Table 9 – Action builtins ... 39
Table 10 – Builtin ACKNOWLEDGE ... 43
Table 11 – Builtin acknowledge ... 43
Table 12 – Builtin DELAY ... 44
Table 13 – Builtin delay ... 45
Table 14 – Builtin delayfor ... 45
Table 15 – Builtin delayfor2 ... 47
Table 16 – Builtin DISPLAY ... 48
Table 17 – Builtin display ... 49
Table 18 – Builtin display_bitenum ... 49
Table 19 – Builtin display_builtin_error ... 50
Table 20 – Builtin display_comm_error ... 51
Table 21 – Builtin display_comm_status ... 51
Table 22 – Builtin display_device_status ... 52
Table 23 – Builtin display_dynamics ... 53
Table 24 – Builtin display_dynamics2 ... 54
Table 25 – Builtin display_message ... 55
Table 26 – Builtin display_message2 ... 56
Table 27 – Builtin display_response_code ... 57
Table 28 – Builtin display_response_status ... 58

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 29 – Builtin display_xmtr_status 59
Table 30 – Builtin edit_device_value 59
Table 31 – Builtin edit_device_value2 61
Table 32 – Builtin edit_local_value 62
Table 33 – Builtin edit_local_value2 64
Table 34 – Builtin get_acknowledgement 65
Table 35 – Builtin get_acknowledgement2 66
Table 36 – Builtin GET_DEV_VAR_VALUE 67
Table 37 – Builtin get_dev_var_value 68
Table 38 – Builtin GET_LOCAL_VAR_VALUE 68
Table 39 – Builtin get_local_var_value 69
Table 40 – Builtin Menu 70
Table 41 – Builtin MenuDisplay 71
Table 42 – Builtin MenuDisplay 72
Table 43 – Builtin PUT_MESSAGE 73
Table 44 – Builtin put_message 74
Table 45 – Builtin SELECT_FROM_LIST 75
Table 46 – Builtin select_from_list 76
Table 47 – Builtin select_from_menu 77
Table 48 – Builtin select_from_menu2 79
Table 49 – Format options 80
Table 50 – Builtin abort_on_all_comm_errors 80
Table 51 – Builtin ABORT_ON_ALL_COMM_STATUS 81
Table 52 – Builtin ABORT_ON_ALL_DEVICE_STATUS 82
Table 53 – Builtin ABORT_ON_ALL_RESPONSE_CODES 82
Table 54 – Builtin abort_on_all_response_codes 83
Table 55 – Builtin ABORT_ON_COMM_ERROR 83
Table 56 – Builtin abort_on_comm_error 84
Table 57 – Builtin ABORT_ON_COMM_STATUS 84
Table 58 – Builtin ABORT_ON_DEVICE_STATUS 85
Table 59 – Builtin ABORT_ON_NO_DEVICE 86
Table 60 – Available abort and retry masks 86
Table 61 – Builtin ABORT_ON_RESPONSE_CODE 87
Table 62 – Builtin abort_on_response_code 87
Table 63 – Builtin ext_send_command 88
Table 64 – Builtin ext_send_command_trans 89
Table 65 – Builtin fail_on_all_comm_errors 90
Table 66 – Builtin fail_on_all_response_codes 90
Table 67 – Builtin fail_on_comm_error 91
Table 68 – Builtin fail_on_response_code 91
Table 69 – Builtin get_more_status 92
Table 70 – Builtin IGNORE_ALL_COMM_STATUS 93
Table 71 – Builtin IGNORE_ALL_DEVICE_STATUS 93

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 72 – Builtin IGNORE_ALL_RESPONSE_CODES 94
Table 73 – Builtin IGNORE_COMM_ERROR 94
Table 74 – Builtin IGNORE_COMM_STATUS 95
Table 75 – Builtin IGNORE_DEVICE_STATUS 96
Table 76 – Builtin IGNORE_NO_DEVICE 96
Table 77 – Builtin IGNORE_RESPONSE_CODE 97
Table 78 – Builtin read_value 97
Table 79 – Builtin read_value2 98
Table 80 – Builtin ReadCommand 99
Table 81 – Builtin retry_on_all_comm_errors 99
Table 82 – Builtin RETRY_ON_ALL_COMM_STATUS 100
Table 83 – Builtin RETRY_ON_ALL_DEVICE_STATUS 100
Table 84 – Builtin RETRY_ON_ALL_RESPONSE_CODES 101
Table 85 – Builtin retry_on_all_response_codes 101
Table 86 – Builtin RETRY_ON_COMM_ERROR 102
Table 87 – Builtin retry_on_comm_error 103
Table 88 – Builtin RETRY_ON_COMM_STATUS 103
Table 89 – Builtin RETRY_ON_DEVICE_STATUS 104
Table 90 – Builtin RETRY_ON_NO_DEVICE 104
Table 91 – Builtin RETRY_ON_RESPONSE_CODE 105
Table 92 – Builtin retry_on_response_code 106
Table 93 – Builtin send 106
Table 94 – Builtin send_all_values 107
Table 95 – Builtin send_command 108
Table 96 – Builtin send_command_trans 108
Table 97 – Builtin send_trans 109
Table 98 – Builtin send_value 110
Table 99 – Builtin send_value2 111
Table 100 – Builtin SET_NUMBER_OF_RETRIES 111
Table 101 – Builtin WriteCommand 112
Table 102 – Builtin XMTR_ABORT_ON_ALL_COMM_STATUS 112
Table 103 – Builtin XMTR_ABORT_ON_ALL_DATA 113
Table 104 – Builtin XMTR_ABORT_ON_ALL_DEVICE_STATUS 113
Table 105 – Builtin XMTR_ABORT_ON_ALL_RESPONSE_CODES 114
Table 106 – Builtin XMTR_ABORT_ON_COMM_ERROR 114
Table 107 – Builtin XMTR_ABORT_ON_COMM_STATUS 115
Table 108 – Builtin XMTR_ABORT_ON_DATA 115
Table 109 – Builtin XMTR_ABORT_ON_DEVICE_STATUS 116
Table 110 – Builtin XMTR_ABORT_ON_NO_DEVICE 117
Table 111 – Builtin XMTR_ABORT_ON_RESPONSE_CODE 117
Table 112 – Builtin XMTR_IGNORE_ALL_COMM_STATUS 118
Table 113 – Builtin XMTR_IGNORE_ALL_DATA 118
Table 114 – Builtin XMTR_IGNORE_ALL_DEVICE_STATUS 119

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 115 – Builtin XMTR_IGNORE_ALL_RESPONSE_CODES 119
Table 116 – Builtin XMTR_IGNORE_COMM_ERROR 120
Table 117 – Builtin XMTR_IGNORE_COMM_STATUS 120
Table 118 – Builtin XMTR_IGNORE_DATA 121
Table 119 – Builtin XMTR_IGNORE_DEVICE_STATUS 121
Table 120 – Builtin XMTR_IGNORE_NO_DEVICE 122
Table 121 – Builtin XMTR_IGNORE_RESPONSE_CODE 122
Table 122 – Builtin XMTR_RETRY_ON_ALL_COMM_STATUS 123
Table 123 – Builtin XMTR_RETRY_ON_ALL_DATA 123
Table 124 – Builtin XMTR_RETRY_ON_ALL_DEVICE_STATUS 124
Table 125 – Builtin XMTR_RETRY_ON_ALL_RESPONSE_CODES 125
Table 126 – Builtin XMTR_RETRY_ON_COMM_ERROR 125
Table 127 – Builtin XMTR_RETRY_ON_COMM_STATUS 126
Table 128 – Builtin XMTR_RETRY_ON_DATA 126
Table 129 – Builtin XMTR_RETRY_ON_DEVICE_STATUS 127
Table 130 – Builtin XMTR_RETRY_ON_NO_DEVICE 127
Table 131 – Builtin XMTR_RETRY_ON_RESPONSE_CODE 128
Table 132 – Builtin fgetval 128
Table 133 – Builtin fsetval 129
Table 134 – Builtin get_date 129
Table 135 – Builtin get_double 130
Table 136 – Builtin get_float 131
Table 137 – Builtin get_signed 131
Table 138 – Builtin get_string 132
Table 139 – Builtin get_unsigned 133
Table 140 – Builtin igetval 133
Table 141 – Builtin isetval 134
Table 142 – Builtin isOffline 134
Table 143 – Builtin lgetval 135
Table 144 – Builtin lsetval 135
Table 145 – Builtin put_date 136
Table 146 – Builtin put_double 136
Table 147 – Builtin put_float 137
Table 148 – Builtin put_signed 138
Table 149 – Builtin put_string 138
Table 150 – Builtin put_unsigned 139
Table 151 – Builtin sgetval 140
Table 152 – Builtin ssetval 140
Table 153 – Builtin assign 141
Table 154 – Builtin assign_double 141
Table 155 – Builtin assign_float 142
Table 156 – Builtin assign_int 142
Table 157 – Builtin assign_var 143

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 158 – Builtin assign2 ... 144
Table 159 – Builtin dassign ... 145
Table 160 – Builtin fassign ... 145
Table 161 – Builtin float_value ... 146
Table 162 – Builtin fvar_value ... 146
Table 163 – Builtin get_date_value ... 147
Table 164 – Builtin get_date_value2 ... 148
Table 165 – Builtin get_double_value ... 149
Table 166 – Builtin get_double_value2 ... 150
Table 167 – Builtin get_float_value ... 150
Table 168 – Builtin get_float_value2 ... 151
Table 169 – builtin get_signed_value ... 152
Table 170 – Builtin get_signed_value2 ... 153
Table 171 – Builtin get_string_value ... 154
Table 172 – Builtin get_string_value2 ... 155
Table 173 – Builtin get_unsigned_value ... 156
Table 174 – Builtin get_unsigned_value2 ... 157
Table 175 – Builtin iassign ... 157
Table 176 – Builtin int_value ... 158
Table 177 – Builtin ivar_value ... 158
Table 178 – Builtin lassign ... 158
Table 179 – Builtin long_value ... 159
Table 180 – Builtin lvar_value ... 159
Table 181 – Builtin put_date_value ... 160
Table 182 – Builtin put_date_value2 ... 161
Table 183 – Builtin put_double_value ... 162
Table 184 – Builtin put_double_value2 ... 163
Table 185 – Builtin put_float_value ... 163
Table 186 – Builtin put_float_value2 ... 164
Table 187 – Builtin put_signed_value ... 165
Table 188 – Builtin put_signed_value2 ... 166
Table 189 – Builtin put_string_value ... 167
Table 190 – Builtin put_string_value2 ... 168
Table 191 – Builtin put_unsigned_value ... 169
Table 192 – Builtin put_unsigned_value2 ... 170
Table 193 – Builtin ret_double_value ... 171
Table 194 – Builtin ret_double_value2 ... 171
Table 195 – Builtin ret_float_value ... 172
Table 196 – Builtin ret_float_value2 ... 172
Table 197 – Builtin ret_signed_value ... 173
Table 198 – Builtin ret_signed_value2 ... 173
Table 199 – Builtin ret_unsigned_value ... 174
Table 200 – Builtin ret_unsigned_value2 ... 174

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 201 – Builtin vassign ... 175
Table 202 – Builtin discard_on_exit ... 176
Table 203 – Builtin save_on_exit ... 177
Table 204 – Builtin save_values ... 177
Table 205 – Builtin send_on_exit ... 178
Table 206 – Builtin abort ... 179
Table 207 – Builtin add_abort_method ... 179
Table 208 – Builtin add_abort_method ... 180
Table 209 – Builtin method_abort ... 181
Table 210 – Builtin pop_abort_method ... 181
Table 211 – Builtin process_abort ... 182
Table 212 – Builtin push_abort_method ... 182
Table 213 – Builtin remove_abort_method ... 183
Table 214 – Builtin remove_abort_method ... 183
Table 215 – Builtin remove_all_abort_methods ... 184
Table 216 – Builtin atof ... 184
Table 217 – Builtin atoi ... 185
Table 218 – Builtin BUILD_MESSAGE ... 185
Table 219 – Builtin dictionary_string ... 186
Table 220 – Builtin ftoa ... 186
Table 221 – Builtin get_comm_error_string ... 187
Table 222 – Builtin get_dictionary_string ... 187
Table 223 – Builtin get_enum_string ... 188
Table 224 – Builtin get_response_code_string ... 189
Table 225 – Builtin get_rspcode_string ... 190
Table 226 – Builtin get_rspcode_string_by_id ... 190
Table 227 – Builtin get_status_code_string ... 191
Table 228 – Builtin get_status_string ... 191
Table 229 – Builtin get_stddict_string ... 192
Table 230 – Builtin get_variable_string ... 193
Table 231 – Builtin itoa (version A) ... 193
Table 232 – Builtin itoa (version B) ... 194
Table 233 – Builtin strleft ... 194
Table 234 – Builtin strcmp ... 195
Table 235 – Builtin strlen ... 195
Table 236 – Builtin strlwr ... 196
Table 237 – Builtin strmid ... 197
Table 238 – Builtin strright ... 197
Table 239 – Builtin strstr ... 198
Table 240 – Builtin strtrim ... 198
Table 241 – Builtin strupr ... 199
Table 242 – Builtin trunc ... 199
Table 243 – Builtin AddTime ... 200

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 244 – Builtin DATE_AND_TIME_VALUE_to_string 201
Table 245 – Builtin Date_to_DayOfMonth 201
Table 246 – Builtin DATE_to_days 202
Table 247 – Builtin Date_to_Month 202
Table 248 – Builtin DATE_to_string 203
Table 249 – Builtin Date_To_Time 203
Table 250 – Builtin Date_to_Year 203
Table 251 – Builtin days_to_DATE 204
Table 252 – Builtin DELAY_TIME 204
Table 253 – Builtin DiffTime 205
Table 254 – Builtin From_DATE_AND_TIME_VALUE 205
Table 255 – Builtin From_TIME_VALUE 206
Table 256 – Builtin GetCurrentDate 206
Table 257 – Builtin GetCurrentDateAndTime 206
Table 258 – Builtin GetCurrentTime 207
Table 259 – Builtin GET_TICK_COUNT 207
Table 260 – Builtin Make_Time 208
Table 261 – Builtin seconds_to_TIME_VALUE 208
Table 262 – Builtin seconds_to_TIME_VALUE 209
Table 263 – Builtin Time_To_Date 209
Table 264 – Builtin TIME_VALUE_to_Hour 210
Table 265 – Builtin TIME_VALUE_to_Minute 210
Table 266 – Builtin TIME_VALUE_to_Second 211
Table 267 – Builtin TIME_VALUE_to_seconds 211
Table 268 – Builtin TIME_VALUE_to_string 212
Table 269 – Builtin timet_to_string 213
Table 270 – Builtin timet_to_TIME_VALUE 213
Table 271 – Builtin timet_To_TIME_VALUE 214
Table 272 – Builtin timet_to_TIME_VALUE8 214
Table 273 – Builtin To_Date 214
Table 274 – Builtin To_Date_and_Time 215
Table 275 – Builtin To_Time 215
Table 276 – Builtin To_TIME_VALUE 216
Table 277 – Builtin To_TIME_VALUE8 216
Table 278 – Builtin get_comm_error 217
Table 279 – Builtin get_dds_error 218
Table 280 – Builtin get_response_code 219
Table 281 – Builtin abs 219
Table 282 – Builtin acos 220
Table 283 – Builtin asin 220
Table 284 – Builtin atan 221
Table 285 – Builtin ByteToDouble 221
Table 286 – Builtin ByteToFloat 222

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 287 – Builtin ByteToLong 222
Table 288 – Builtin ByteToShort 223
Table 289 – Builtin cbrt 223
Table 290 – Builtin ceil 223
Table 291 – Builtin cos 224
Table 292 – Builtin cosh 224
Table 293 – Builtin DoubleToByte 225
Table 294 – Builtin drand 225
Table 295 – Builtin dseed 226
Table 296 – Builtin exp 226
Table 297 – Builtin FloatToByte 227
Table 298 – Builtin floor 227
Table 299 – Builtin fmod 228
Table 300 – Builtin fpclassify 228
Table 301 – Builtin is_NaN 229
Table 302 – Builtin log 229
Table 303 – Builtin log10 230
Table 304 – Builtin log2 230
Table 305 – Builtin LongToByte 231
Table 306 – Builtin nan 231
Table 307 – Builtin NaN_value 232
Table 308 – Builtin nanf 233
Table 309 – Builtin pow 233
Table 310 – Builtin round 233
Table 311 – Builtin ShortToByte 234
Table 312 – Builtin sin 234
Table 313 – Builtin sinh 235
Table 314 – Builtin sqrt 235
Table 315 – Builtin tan 236
Table 316 – Builtin tanh 236
Table 317 – Builtin get_date_lelem 237
Table 318 – Builtin get_date_lelem2 238
Table 319 – Builtin get_double_lelem 239
Table 320 – Builtin get_double_lelem2 240
Table 321 – Builtin get_float_lelem 240
Table 322 – Builtin get_float_lelem2 241
Table 323 – Builtin get_signed_lelem 242
Table 324 – Builtin get_signed_lelem2 243
Table 325 – Builtin get_string_lelem 244
Table 326 – Builtin get_string_lelem2 245
Table 327 – Builtin get_unsigned_lelem 246
Table 328 – Builtin get_unsigned_lelem2 247
Table 329 – Builtin ListDeleteElementAt 248

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 330 – Builtin ListDeleteElementAt 248
Table 331 – Builtin ListDeleteElementAt2 249
Table 332 – Builtin ListInsert 250
Table 333 – Builtin ListInsert 250
Table 334 – Builtin ListInsert2 251
Table 335 – Builtin DICT_ID 252
Table 336 – Builtin get_block_instance_by_object_index 252
Table 337 – Builtin get_block_instance_by_tag 253
Table 338 – Builtin get_block_instance_count 254
Table 339 – Builtin get_resolve_status 255
Table 340 – Builtin ITEM_ID 255
Table 341 – Builtin MEMBER_ID 256
Table 342 – Builtin ObjectReference 256
Table 343 – Builtin resolve_array_ref 257
Table 344 – Builtin resolve_array_ref2 258
Table 345 – Builtin resolve_block_ref 259
Table 346 – Builtin resolve_block_ref2 260
Table 347 – Builtin resolve_list_ref 260
Table 348 – Builtin resolve_local_ref 261
Table 349 – Builtin resolve_local_ref2 261
Table 350 – Builtin resolve_param_list_ref 262
Table 351 – Builtin resolve_param_ref 263
Table 352 – Builtin resolve_param_ref2 263
Table 353 – Builtin resolve_record_ref 264
Table 354 – Builtin resolve_record_ref2 265
Table 355 – Builtin VARID 265
Table 356 – Builtin abortTransferPort 266
Table 357 – Builtin closeTransferPort 266
Table 358 – Builtin fGetByte 267
Table 359 – Builtin get_transfer_status 267
Table 360 – Builtin openTransferPort 268
Table 361 – Builtin readItemFromDevice 268
Table 362 – Builtin writeItemToDevice 269
Table 363 – Builtin browseIdentity 269
Table 364 – Builtin re_read_file 270
Table 365 – Builtin re_write_file 270
Table 366 – Builtin GET_DD_REVISION 271
Table 367 – Builtin GET_DEVICE_REVISION 271
Table 368 – Builtin GET_DEVICE_TYPE 272
Table 369 – Builtin GET_MANUFACTURER 272
Table 370 – Builtin _ERROR 273
Table 371 – Builtin _TRACE 273
Table 372 – Builtin _WARNING 274

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

Table 373 – Builtin LOG_MESSAGE 274
Table 374 – Referencable EDD item attributes 276
Table 375 – Contents of the return codes description table 279
Table 376 – Return code descriptions 279
Table 377 – Return code descriptions 279

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DEVICES AND INTEGRATION IN ENTERPRISE SYSTEMS – FUNCTION BLOCKS (FB) FOR PROCESS CONTROL AND ELECTRONIC DEVICE DESCRIPTION LANGUAGE (EDDL) –

Part 5: EDDL Builtin library

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61804-5 has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

This edition was developed by merging material from multiple variants of existing EDDL specifications including those from FieldComm Group (Foundation™ Fieldbus[1], HART®[2]), PROFIBUS™[3] Nutzerorganisation e.V. (PNO), and ISA100_Wireless™[4] Compliance Institute (ISA100 WCI). As a result, the formatting and numbering of this edition may be different from any of the individual specifications from which this edition was derived.

This edition includes the following significant technical changes with respect to the previous edition:

- Communication profiles ISA100 and GPE were added.
- The following builtins have been deprecated:
  - ABORT_ON_NO_DEVICE
  - IGNORE_NO_DEVICE
  - RETRY_ON_NO_DEVICE
  - XMTR_ABORT_ON_NO_DEVICE
  - XMTR_IGNORE_NO_DEVICE
  - XMTR_RETRY_ON_NO_DEVICE
  - get_status_code_string

The text of this International Standard is based on the following documents:

CDV	Report on voting
65E/634/CDV	65E/691/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61804 series, published under the general title *Devices and integration in enterprise systems – Function blocks (FB) for process control and electronic device description language (EDDL)*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

---

1 FOUNDATION™ Fieldbus is the trademark of FieldComm Group. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

2 HART® is the registered trademark of FieldComm Group. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

3 PROFIBUS and PROFINET are the trademarks of the PROFIBUS Nutzerorganisation e.V. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

4 ISA100_Wireless™ is the trademark of ISA100 Wireless Compliance Institute. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop

INTRODUCTION

This part of IEC 61804

- contains a list of builtins that can be used inside of EDDL methods;
- defines the functionality and parameters for each builtin;
- decribes how EDDL variables can be referenced from inside EDDL methods;

EDDL features are limited by profile for each of the communication technologies. The descriptions in this part of IEC 61804 refer to these features in a general sense and not all communication technologies will support all of the features described. The profile definitions in the overview of this part and in IEC 61804-3 are referred to in order to understand the features supported by each communication technology.

IEC 61804-5 Ed.2.0 - Preview only Copy via ILNAS e-Shop