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Service diagnostic interface for consumer electronics products and networks – Implementation for ECHONET

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CONTENTS

FOREWORD 32
INTRODUCTION 34
1 Scope 35
2 Normative references 35
3 Terms, definitions and abbreviated terms 35
3.1 Terms and definitions 35
3.2 Abbreviated terms 36
4 Different types of service diagnostics 37
4.1 Stand-alone products 37
4.2 Facilities or household appliances network 37
4.3 Remote diagnosis 37
5 SDI requirements 37
5.1 General 37
5.2 Hardware 37
5.2.1 Tester hardware 37
5.2.2 Facilities or household appliances network 37
5.2.3 DUT hardware 38
5.3 Software 38
5.3.1 General 38
5.3.2 Tester software 38
5.3.3 DUT software requirements for the SDI 38
6 Tester software requirements 39
6.1 Reading the property diagnostic unit 39
6.2 General information (product identification) 39
6.3 Diagnosis information 39
7 Control protocol 1st 39
7.1 General 39
7.2 Frame format 39
7.2.1 General 39
7.2.2 ECHONET headers (EHD) 40
7.2.3 Source/Destination ECHONET address (SEA/DEA) 42
7.2.4 ECHONET byte counter (EBC) 43
7.2.5 ECHONET data (EDATA) 43
7.2.6 Object message header (OHD) 44
7.2.7 ECHONET objects (EOJ) 44
7.2.8 ECHONET property (EPC) 45
7.2.9 ECHONET service (ESV) 46
7.2.10 ECHONET property value data (EDT) 61
7.2.11 Compound ECHONET Service (CpESV) 61
7.2.12 Processing target property counter (OPC) 67
7.2.13 Property data counter (PDC) 68
8 Control protocol 2nd 68
8.1 General 68
8.2 Frame format 68
8.2.1 General 68
8.2.2 ECHONET Lite Header (ELHD) 69

8.2.3 Transaction ID (TID) 70
8.2.4 ECHONET Lite Data (ELDATA) 70
8.2.5 ECHONET Objects (EOJ) 70
8.2.6 ECHONET Lite Service (ELSV) 71
8.2.7 ECHONET property (EPC) 79
8.2.8 ECHONET Lite Property data counter (ELPDC) 80
9 ECHONET objects: detailed specifications 81
9.1 Basic concept 81
9.2 ECHONET properties: basic specifications 82
9.2.1 General 82
9.2.2 ECHONET property value data types 82
9.2.3 Property value range 82
9.2.4 Required class properties 83
9.2.5 Array 83
9.3 Device object super class specifications 84
9.3.1 General 84
9.3.2 Overview of device object super class specifications 84
9.3.3 Operation status property 89
9.3.4 Installation location property 89
9.3.5 Standard version information property 90
9.3.6 Identification number property 91
9.3.7 Measured instantaneous power consumption property 91
9.3.8 Measured cumulative energy consumption property 91
9.3.9 Manufacturer's fault code property 91
9.3.10 Current limit setting property 92
9.3.11 Fault status property 92
9.3.12 Fault description property 92
9.3.13 Manufacturer code property 94
9.3.14 Business facility code property 94
9.3.15 Product code property 95
9.3.16 Production number property 95
9.3.17 Production date property 95
9.3.18 Power-saving operation setting property 95
9.3.19 Remote control setting property 95
9.3.20 Current time setting property 97
9.3.21 Current date setting property 97
9.3.22 Power limit setting property 97
9.3.23 Cumulative operating time property 97
9.3.24 Property map property 98
9.4 Temperature sensor class specifications 99
9.4.1 General 99
9.4.2 Operation status property 99
9.4.3 Measured temperature value property 99
9.5 Humidity sensor class specifications 99
9.5.1 General 99
9.5.2 Operation status property 100
9.5.3 Measured value of relative humidity property 100
9.6 Illuminance sensor class specifications 100
9.6.1 General 100

9.6.2 Operation status property 100
9.6.3 Measured illuminance value 1 property 100
9.6.4 Measured illuminance value 2 property 101
9.7 Human detection sensor class specifications 101
9.7.1 General 101
9.7.2 Operation status property 101
9.7.3 Detection threshold level property 101
9.7.4 Human detection status property 101
9.8 Electric energy sensor class specifications 102
9.8.1 General 102
9.8.2 Operation status property 103
9.8.3 Cumulative amounts of electric energy property 103
9.8.4 Small-capacity sensor instantaneous electric power property 103
9.8.5 Medium-capacity sensor instantaneous electric power property 103
9.8.6 Large-capacity sensor instantaneous electric power property 103
9.8.7 Cumulative amounts of electric energy measurement log property 103
9.8.8 Effective voltage value property 103
9.9 Open/close sensor class specifications 104
9.9.1 General 104
9.9.2 Operation status property 104
9.9.3 Degree-of-opening detection status 1 property 104
9.9.4 Detection threshold level property 105
9.9.5 Degree-of-opening detection status 2 property 105
9.10 Current sensor class specifications 105
9.10.1 General 105
9.10.2 Operation status property 105
9.10.3 Measured current value 1 property 106
9.10.4 Rated voltage property to be measured property 106
9.10.5 Measured current value 2 property 106
9.11 Air speed sensor class specifications 106
9.11.1 General 106
9.11.2 Operation status property 106
9.11.3 Measured value of air speed property 107
9.11.4 Air flow direction property 107
9.12 Water flow rate sensor class specifications 107
9.12.1 General 107
9.12.2 Operation status property 107
9.12.3 Cumulative flow rate property 107
9.12.4 Flow rate property 108
9.13 Rain sensor class specifications 108
9.13.1 General 108
9.13.2 Operation status property 108
9.13.3 Detection threshold level property 108
9.13.4 Rain detection status property 108
9.14 Home air conditioner class specifications 109
9.14.1 General 109
9.14.2 Operation status property 117
9.14.3 Power-saving operation setting property 117
9.14.4 Operation mode setting property 118

9.14.5 Automatic temperature control setting property 118
9.14.6 Normal/high-speed/silent operation setting property 118
9.14.7 Set temperature value property 118
9.14.8 Set value of relative humidity in dehumidifying mode property 118
9.14.9 Set temperature value in cooling mode property 119
9.14.10 Set temperature value in heating mode property 119
9.14.11 Set temperature value in dehumidifying mode property 119
9.14.12 Rated power consumption property 120
9.14.13 Measured value of current consumption property 120
9.14.14 Measured value of room relative humidity property 120
9.14.15 Measured value of room temperature property 120
9.14.16 Set temperature value of user remote control property 120
9.14.17 Measured cooled air temperature property 121
9.14.18 Measured outdoor air temperature property 121
9.14.19 Relative temperature setting property 121
9.14.20 Air flow rate setting property 121
9.14.21 Automatic control of air flow direction setting property 121
9.14.22 Automatic swing of air flow setting property 122
9.14.23 Air flow direction (vertical) setting property 122
9.14.24 Air flow direction (horizontal) setting property 123
9.14.25 Special state property 124
9.14.26 Non-priority state property 124
9.14.27 Ventilation function setting property 124
9.14.28 Humidifier function setting property 125
9.14.29 Ventilation air flow rate setting property 125
9.14.30 Degree of humidification setting property 125
9.14.31 Mounted air cleaning method property 125
9.14.32 Air purifier function setting property 126
9.14.33 Mounted air refresh method property 126
9.14.34 Air refresher function setting property 127
9.14.35 Mounted self-cleaning method property 128
9.14.36 Self-cleaning function setting property 128
9.14.37 Special function setting property 129
9.14.38 Operation status of components property 129
9.14.39 Thermostat setting override function property 130
9.14.40 Air purification mode setting property 130
9.14.41 Buzzer property 130
9.14.42 ON timer-based reservation setting property 131
9.14.43 ON timer setting (time) property 131
9.14.44 ON timer setting (relative time) 131
9.14.45 OFF timer-based reservation setting property 131
9.14.46 OFF timer setting (time) property 132
9.14.47 OFF timer setting (relative time) property 132
9.15 Ventilation fan class specifications 132
9.15.1 General 132
9.15.2 Operation status property 132
9.15.3 Ventilation automatic setting property 133
9.15.4 Set value of ventilation air flow rate property 133
9.16 Air purifier class specifications 133

9.16.1 General 133
9.16.2 Operation status property 134
9.16.3 Filter change notice property 134
9.16.4 Air flow rate setting property 134
9.16.5 Smoke (cigarette) detection status property 134
9.16.6 Optical catalyst operation setting property 134
9.16.7 Air pollution detection status property 134
9.17 Humidifier class specifications 134
9.17.1 General 134
9.17.2 Operation status property 136
9.17.3 Humidifying setting 1 property 136
9.17.4 Humidifying setting 2 property 136
9.17.5 Measured value of relative humidity property 136
9.17.6 Reservation setting of OFF timer property 136
9.17.7 Relative time value set of OFF timer property 137
9.17.8 Ion emission setting property 137
9.17.9 Implemented ion emission method property 137
9.17.10 Water amount level property 137
9.18 Package-type commercial air conditioner (indoor unit) class specifications 137
9.18.1 General 137
9.18.2 Operation status property 139
9.18.3 Operation mode setting property 139
9.18.4 Temperature setting property 139
9.18.5 Measured indoor unit temperature property 139
9.18.6 Thermostat state property 140
9.18.7 Current function (automatic operation mode) property 140
9.18.8 Group information property 140
9.18.9 Power consumption range for indoor units property 140
9.19 Package-type commercial air conditioner (outdoor unit) class specifications 140
9.19.1 General 140
9.19.2 Operation status property 142
9.19.3 Rated power consumption of outdoor unit property 142
9.19.4 Measured outdoor unit temperature property 142
9.19.5 Special state property 142
9.19.6 Group information property 142
9.19.7 Measured power consumption of outdoor unit property 142
9.19.8 Possible power savings for outdoor units property 143
9.19.9 Settings restricting power consumption of outdoor units property 143
9.19.10 Minimum power consumption for restricted outdoor unit property 143
9.20 Electric storage heater class specifications 144
9.20.1 General 144
9.20.2 Operation status property 146
9.20.3 Temperature setting property 146
9.20.4 Rated power consumption property 147
9.20.5 Measured indoor temperature property 147
9.20.6 Measured outdoor temperature property 147
9.20.7 Air flow rate setting property 147
9.20.8 Fan operation status property 148
9.20.9 Heat storage operation status property 148

9.20.10 Heat storage temperature setting property 148
9.20.11 Measured stored heat temperature property 148
9.20.12 Daytime heat storage setting property 148
9.20.13 Daytime heat storage ability property 148
9.20.14 Midnight power duration setting property 148
9.20.15 Midnight power start time setting property 148
9.20.16 Radiation method property 149
9.20.17 Child lock setting property 149
9.20.18 Fan timer 1 setting property 149
9.20.19 Fan timer 1 ON time setting property 149
9.20.20 Fan timer 1 OFF time setting property 149
9.20.21 Fan timer 2 setting property 149
9.20.22 Fan timer 2 ON time setting property 149
9.20.23 Fan timer 2 OFF time setting property 150
9.21 Gas heat pump-type commercial air conditioner (indoor unit) class specifications 150
9.21.1 General 150
9.21.2 Operation status property 151
9.21.3 Operation mode setting property 151
9.21.4 Temperature setting value property 151
9.21.5 Measured temperature value of indoor unit property 152
9.21.6 Thermo status property 152
9.21.7 Operation mode status during automatic operation property 152
9.21.8 Group information property 152
9.21.9 Power consumption range for indoor units property 152
9.22 Gas heat pump-type commercial air conditioner (outdoor unit) class specifications 152
9.22.1 General 152
9.22.2 Operation status (inherited from the super class property) property 154
9.22.3 Measured temperature value of outdoor unit property 154
9.22.4 Measured cumulative gas consumption property 154
9.22.5 Group information property 154
9.22.6 Time slot operation factor setting property 155
9.22.7 Allowable operation factor property 155
9.23 Range hood class specifications 156
9.23.1 General 156
9.23.2 Operation status property 158
9.23.3 Range hood automatic setting property 158
9.23.4 Ventilation air flow rate setting property 158
9.23.5 Lighting operation setting property 158
9.23.6 Light source colour setting property 159
9.23.7 Brightness level setting property 159
9.23.8 Lighting mode setting property 159
9.23.9 When in coloured lighting mode RGB setting property 159
9.23.10 Measured value of indoor temperature property 160
9.23.11 Measured value of outdoor temperature property 160
9.23.12 Measured value of supply air temperature property 160
9.23.13 Measured value of cooking temperature property 160
9.23.14 Measured value of indoor relative humidity property 160

9.23.15 Measured value of outdoor air humidity property 160
9.23.16 Human detection threshold level setting property 160
9.23.17 Human detection status property 161
9.23.18 Measured value of CO_2 concentration property 161
9.23.19 Gas detection threshold level property 161
9.23.20 Gas detection status property 161
9.23.21 Error detection mode property 161
9.24 Electrically operated shade class specifications 162
9.24.1 General 162
9.24.2 Operation status property 164
9.24.3 Fault description property 164
9.24.4 Timer operation setting property 164
9.24.5 Wind detection status property 164
9.24.6 Sunlight detection status property 164
9.24.7 Opening (extension) speed setting property 164
9.24.8 Closing (retraction) speed setting property 165
9.24.9 Operation time property 165
9.24.10 Automatic operation setting property 165
9.24.11 Open/close (extension/retraction) operation setting property 165
9.24.12 Degree-of-opening property 165
9.24.13 Shade angle setting property 165
9.24.14 Open/close (extension/retraction) speed property 165
9.24.15 Electric lock setting property 165
9.24.16 Remote operation setting status property 166
9.24.17 Selective opening (extension) operation setting property 166
9.24.18 Open/closed (extended/retracted) status property 166
9.24.19 One-time opening (extension) speed setting property 166
9.24.20 One-time closing (retraction) speed setting property 166
9.25 Electrically operated rain sliding door/shutter class specifications 166
9.25.1 General 166
9.25.2 Operation status property 168
9.25.3 Fault description property 169
9.25.4 Timer operation setting property 169
9.25.5 Opening speed setting property 169
9.25.6 Closing speed setting property 169
9.25.7 Operation time setting property 169
9.25.8 Open/close operation setting property 169
9.25.9 Degree-of-opening setting property 169
9.25.10 Blind angle setting property 169
9.25.11 Opening/closing speed setting property 170
9.25.12 Electric lock setting property 170
9.25.13 Remote operation setting status property 170
9.25.14 Selective degree-of-opening setting property 170
9.25.15 Open/closed status property 170
9.25.16 Slit degree-of-opening property 170
9.25.17 One-time opening speed setting property 171
9.25.18 One-time closing speed setting property 171
9.26 Electric water heater class specifications 171
9.26.1 General 171

9.26.2 Operation status property 179
9.26.3 Automatic water heating setting property 179
9.26.4 Automatic water temperature control setting property 179
9.26.5 Water heater status property 179
9.26.6 Water heating temperature setting property 179
9.26.7 Manual water heating stop days setting property 179
9.26.8 Relative time setting value for manual water heating OFF property 180
9.26.9 Tank operation mode setting property 180
9.26.10 Daytime reheating permission setting property 180
9.26.11 Measured temperature of water in water heater property 180
9.26.12 Alarm status property 180
9.26.13 Hot water supply status property 181
9.26.14 Relative time setting for keeping bath temperature property 181
9.26.15 Temperature of supplied water setting property 181
9.26.16 Bath water temperature setting property 181
9.26.17 Hot water volume setting property 181
9.26.18 Measured amount of water remaining in tank property 182
9.26.19 Tank capacity property 182
9.26.20 Automatic bath water heating mode setting property 182
9.26.21 Manual bath reheating operation setting property 182
9.26.22 Manual bath hot water addition function setting property 182
9.26.23 Manual lukewarm water temperature lowering function setting property 182
9.26.24 Bath water volume setting 1 property 182
9.26.25 Bath water volume setting 2 property 183
9.26.26 Bathroom priority setting property 183
9.26.27 Bath operation status monitor property 183
9.26.28 Bath water volume setting 3 property 183
9.26.29 Bath water volume setting 4 property 183
9.26.30 Bath water volume setting 4 – Maximum settable level property 183
9.26.31 Sound volume setting property 184
9.26.32 Mute setting property 184
9.26.33 Remaining hot water volume property 184
9.26.34 Surplus electric energy prediction value property 184
9.26.35 Rated power consumption of HP unit in wintertime property 185
9.26.36 Rated power consumption of HP unit in in-between seasons property 185
9.26.37 Rated power consumption of HP unit in summertime property 185
9.26.38 ON timer reservation setting property 185
9.26.39 ON timer setting property 185
9.26.40 Participation in energy shift property 185
9.26.41 Standard time to start heating property 186
9.26.42 Number of energy shifts property 186
9.26.43 Daytime heating shift time 1 property (D1 of Figure 63 and D1 of Figure 64) 187
9.26.44 Expected electric energy at daytime heating shift time 1 property (C1 of Figure 63 and C1 of Figure 64) 187
9.26.45 Consumption of electric energy per hour 1 property 188
9.26.46 Daytime heating shift time 2 property (D2 of Figure 63 and D2 of Figure 64) 188
9.26.47 Expected electric energy at daytime heating shift time 2 property (C2 of Figure 64) 189

9.26.48 Consumption of electric energy per hour 2 property 189
9.27 Electric toilet seat class (warm-water washing toilet seat, heating toilet seat, etc.) specifications 191
9.27.1 General 191
9.27.2 Operation status property 193
9.27.3 Temperature level of toilet seat property 193
9.27.4 Heater setting of toilet seat property 193
9.27.5 Temporal halt setting of toilet seat heating property 193
9.27.6 Temporal halt start time of toilet seat heating property 193
9.27.7 Temporal halt time duration of toilet seat heating property 193
9.27.8 Temperature level setting of room heating property 194
9.27.9 Room heating setting property 194
9.27.10 Room heating status property 194
9.27.11 Start time of room heating property 194
9.27.12 Duration time of room heating property 194
9.27.13 Special operation mode setting property 194
9.27.14 Human detection status property 194
9.27.15 Seating detection status property 194
9.28 Electric lock class specifications 195
9.28.1 General 195
9.28.2 Operation status property 196
9.28.3 Lock setting 1 property 196
9.28.4 Lock setting 2 property 196
9.28.5 Lock status of door guard property 196
9.28.6 Door open/closed status property 196
9.28.7 Occupant/non-occupant status property 196
9.28.8 Alarm status property 196
9.28.9 Automatic lock mode setting property 196
9.28.10 Battery level property 197
9.29 Instantaneous water heater class specifications 197
9.29.1 General 197
9.29.2 Operation status property 200
9.29.3 Water heating status property 200
9.29.4 Set value of hot water temperature property 200
9.29.5 Hot water warmer setting property 200
9.29.6 Duration of automatic operation setting property 200
9.29.7 Remaining automatic operation time property 201
9.29.8 Set value of bath temperature property 201
9.29.9 Bath water heater status property 201
9.29.10 Bath automatic mode setting property 201
9.29.11 Bath additional boil-up operation setting property 201
9.29.12 Bath hot water adding operation setting property 202
9.29.13 Bath water temperature lowering operation setting property 202
9.29.14 Bath hot water volume setting 1 property 202
9.29.15 Bath hot water volume setting 2 property 202
9.29.16 Bath hot water volume setting 3 property 202
9.29.17 Bath hot water volume setting 4 property 202
9.29.18 Bath hot water volume setting 4 – Maximum settable level property 203
9.29.19 Bathroom priority setting property 203

9.29.20 Shower hot water supply status property 203
9.29.21 Kitchen hot water heating status property 203
9.29.22 Hot water warmer ON timer reservation setting property 203
9.29.23 Bath operation status monitor property 203
9.29.24 Set value of hot water warmer ON timer time property 203
9.29.25 ON timer reservation setting property 204
9.29.26 Set value of ON timer time property 204
9.29.27 Set value of ON timer relative time property 204
9.29.28 Sound volume setting property 204
9.29.29 Mute setting property 204
9.30 Bathroom heater and dryer class specifications 205
9.30.1 General 205
9.30.2 Operation status property 209
9.30.3 Operation setting property 209
9.30.4 Ventilation operation setting property 210
9.30.5 Bathroom pre-warmer operation setting property 210
9.30.6 Bathroom heater operation setting property 210
9.30.7 Bathroom dryer operation setting property 211
9.30.8 Cool air circulation operation setting property 211
9.30.9 Mist sauna operation setting property 212
9.30.10 Water mist operation settings property 212
9.30.11 Measured relative bathroom humidity property 212
9.30.12 Measured bathroom temperature property 213
9.30.13 Human body detection status property 213
9.30.14 Filter cleaning reminder sign setting property 213
9.30.15 Ventilation air flow rate setting property 213
9.30.16 ON timer-based reservation setting 1 property 213
9.30.17 ON timer-based reservation setting 2 property 214
9.30.18 ON timer setting (time) property 214
9.30.19 ON timer setting (relative time) property 214
9.30.20 OFF timer-based reservation setting property 214
9.30.21 OFF timer setting (time) property 215
9.30.22 OFF timer setting (relative time) property 215
9.31 Household solar power generation class specifications 215
9.31.1 General 215
9.31.2 Operation status property 221
9.31.3 Identification number property 221
9.31.4 Current time setting property 221
9.31.5 Current date setting property 222
9.31.6 Output power control setting 1 property 222
9.31.7 Output power control setting 2 property 222
9.31.8 Function to control purchase of excess electricity setting property 222
9.31.9 Output power controlling schedule property 222
9.31.10 Next access date and time property 223
9.31.11 Type for function to control purchase of excess electricity property 223
9.31.12 Output power change time setting value property 223
9.31.13 Upper limit clip setting value property 223
9.31.14 Operation power factor setting value property 223
9.31.15 FIT contract type property 223

9.31.16 Self-consumption type property 223
9.31.17 Capacity approved by equipment property 224
9.31.18 Conversion coefficient property 224
9.31.19 System interconnection status property 224
9.31.20 Output power restraint status property 224
9.31.21 Measured instantaneous amount of electricity generated property 225
9.31.22 Measured cumulative amount of electricity generated property 225
9.31.23 Resetting cumulative amount of electric energy generated property 225
9.31.24 Measured cumulative amount of electric energy sold property 225
9.31.25 Resetting cumulative amount of electric energy sold property 225
9.31.26 Power generation output limit setting 1 property 225
9.31.27 Power generation output limit setting 2 property 225
9.31.28 Limit setting for the amount of electricity sold property 225
9.31.29 Rated power generation output (system interconnected) property 225
9.31.30 Rated power generation output (independent) property 226
9.32 Floor heater class specifications 226
9.32.1 General 226
9.32.2 Operation status property 228
9.32.3 Measured instantaneous power consumption property 228
9.32.4 Measured cumulative energy consumption property 228
9.32.5 Temperature setting 1 property 229
9.32.6 Temperature setting 2 property 229
9.32.7 Temperature setting 2 – Maximum settable level property 229
9.32.8 Measured room temperature property 229
9.32.9 Measured floor temperature property 230
9.32.10 Zone change setting property 230
9.32.11 Special operation setting property 230
9.32.12 Daily timer setting property 230
9.32.13 Daily timer setting 1 property / Daily timer setting 2 property 230
9.32.14 Rated power consumption property 231
9.32.15 Power consumption measurement method property 232
9.32.16 ON timer reservation setting property 232
9.32.17 Time set by ON timer property 232
9.32.18 Relative ON timer setting property 232
9.32.19 OFF timer reservation setting property 232
9.32.20 Time set by OFF timer property 233
9.32.21 Relative OFF timer setting property 233
9.33 Fuel cell class specifications 233
9.33.1 General 233
9.33.2 Operation status property 235
9.33.3 Measured temperature of water in water heater property 236
9.33.4 Rated power generation output property 236
9.33.5 Heating value of hot water storage tank property 236
9.33.6 Measured instantaneous power generation output property 236
9.33.7 Measured cumulative energy generation output property 236
9.33.8 Cumulative energy generation output reset setting property 236
9.33.9 Measured instantaneous gas consumption property 236
9.33.10 Measured cumulative gas consumption property 236
9.33.11 Cumulative gas consumption reset setting property 236

9.33.12 Power generation setting property 237
9.33.13 Power generation status property 237
9.33.14 Measured in-house instantaneous power consumption property 237
9.33.15 Measured in-house cumulative energy consumption property 237
9.33.16 In-house cumulative energy consumption reset property 237
9.33.17 System interconnection status property 237
9.33.18 Power generation request time setting property 237
9.33.19 Designated power generation status property 238
9.33.20 Measured remaining hot water amount property 238
9.33.21 Tank capacity property 238
9.34 Storage battery class specifications 238
9.34.1 General 238
9.34.2 Operation status property 248
9.34.3 Identification number property 248
9.34.4 Current time setting property 249
9.34.5 Current date setting property 249
9.34.6 AC effective capacity (charging) property 249
9.34.7 AC effective capacity (discharging) property 249
9.34.8 AC chargeable capacity property 249
9.34.9 AC dischargeable capacity property 250
9.34.10 AC chargeable electric energy property 250
9.34.11 AC dischargeable electric energy property 250
9.34.12 AC charge upper limit setting property 250
9.34.13 AC discharge lower limit setting property 250
9.34.14 AC cumulative charging electric energy property 250
9.34.15 AC cumulative discharging electric energy property 250
9.34.16 AC charge amount target value property 251
9.34.17 AC discharge amount target value property 251
9.34.18 Charging method property 251
9.34.19 Discharging method property 252
9.34.20 Minimum/maximum charging electric power property 254
9.34.21 Minimum/maximum discharging electric power property 254
9.34.22 Minimum/maximum charging current property 254
9.34.23 Minimum/maximum discharging current property 254
9.34.24 Re-interconnection permission setting property 254
9.34.25 Operation permission setting property 255
9.34.26 Independent operation permission setting property 255
9.34.27 Working operation status property 255
9.34.28 AC rated electric energy property 255
9.34.29 Rated electric energy property 255
9.34.30 Rated capacity property 255
9.34.31 Rated voltage property 255
9.34.32 Measured instantaneous charging/discharging electric power property 255
9.34.33 Measured instantaneous charging/discharging current property 256
9.34.34 Measured instantaneous charging/discharging voltage property 256
9.34.35 Measured cumulative discharging electric energy property 256
9.34.36 Measured cumulative discharging electric energy resetting property 256
9.34.37 Measured cumulative charging electric energy property 256
9.34.38 Measured cumulative charging electric energy reset setting property 256

9.34.39 Operation mode setting property 256
9.34.40 System interconnection status property 257
9.34.41 Minimum/maximum charging electric power (independent) property 257
9.34.42 Minimum/maximum discharging electric power (independent) property 257
9.34.43 Minimum/maximum charging current (independent) property 257
9.34.44 Minimum/maximum discharging current (independent) property 257
9.34.45 Charging/discharging amount setting 1 property 258
9.34.46 Charging/discharging amount setting 2 property 258
9.34.47 Remaining stored electricity 1 property 258
9.34.48 Remaining stored electricity 2 property 258
9.34.49 Remaining stored electricity 3 property 258
9.34.50 Battery state of health property 258
9.34.51 Battery type property 259
9.34.52 Charging amount setting 1 property 259
9.34.53 Discharging amount setting 1 property 259
9.34.54 Charging amount setting 2 property 259
9.34.55 Discharging amount setting 2 property 259
9.34.56 Charging electric power setting property 259
9.34.57 Discharging electric power setting property 259
9.34.58 Charging current setting property 260
9.34.59 Discharging current setting property 260
9.34.60 Rated voltage (independent) property 260
9.35 Electric vehicle charger/discharger class specifications 260
9.35.1 General 260
9.35.2 Operation status property 269
9.35.3 Dischargeable capacity of vehicle mounted battery 1 property 269
9.35.4 Dischargeable capacity of vehicle mounted battery 2 property 269
9.35.5 Remaining dischargeable capacity of vehicle mounted battery 1 property 269
9.35.6 Remaining dischargeable capacity of vehicle mounted battery 2 property 270
9.35.7 Remaining dischargeable capacity of vehicle mounted battery 3 property 270
9.35.8 Rated charge capacity property 270
9.35.9 Rated discharge capacity property 270
9.35.10 Vehicle connection and chargeable/dischargeable status property 270
9.35.11 Minimum/maximum charging electric power property 271
9.35.12 Minimum/maximum discharging electric power property 271
9.35.13 Minimum/maximum charging current property 271
9.35.14 Minimum/maximum discharging current property 271
9.35.15 Charger/discharger type property 271
9.35.16 Vehicle connection confirmation property 273
9.35.17 Used capacity of vehicle mounted battery 1 (total battery capacity) property 273
9.35.18 Used capacity of vehicle mounted battery 2 property 273
9.35.19 Rated voltage property 273
9.35.20 Measured instantaneous charging/discharging electric power 273
9.35.21 Measured instantaneous charging/discharging current property 273
9.35.22 Measured instantaneous charging/discharging voltage property 274
9.35.23 Measured cumulative amount of discharging electric energy property 274

9.35.24 Cumulative amount of discharging electric energy reset setting 274
9.35.25 Measured cumulative amount of charging electric energy property 274
9.35.26 Cumulative amount of charging electric energy reset setting property 274
9.35.27 Operation mode setting property 274
9.35.28 System interconnection status property 274
9.35.29 Remaining stored electricity of vehicle mounted battery 1 property 274
9.35.30 Remaining stored electricity of vehicle mounted battery 2 property 275
9.35.31 Remaining stored electricity of vehicle mounted battery 3 (charging rate) property 275
9.35.32 Charging amount setting 1 property 275
9.35.33 Charging amount setting 2 property 275
9.35.34 Charging electric power setting property 275
9.35.35 Discharging electric power setting property 275
9.35.36 Charging current setting property 275
9.35.37 Discharging current setting property 276
9.35.38 Rated voltage (independent status) property 276
9.35.39 Chargeable capacity of vehicle mounted battery property 276
9.35.40 Remaining chargeable capacity of vehicle mounted battery property 276
9.35.41 Vehicle ID property 276
9.35.42 Discharging amount setting property 277
9.36 Engine cogeneration class specifications 277
9.36.1 General 277
9.36.2 Operation status property 279
9.36.3 Measured hot water temperature of water heater property 279
9.36.4 Rated power generation output property 279
9.36.5 Heating value of hot water storage tank property 279
9.36.6 Measured instantaneous power generation output property 280
9.36.7 Measured cumulative energy generation output property 280
9.36.8 Cumulative energy generation output reset setting property 280
9.36.9 Measured instantaneous gas consumption property 280
9.36.10 Measured cumulative gas consumption property 280
9.36.11 Cumulative gas consumption reset setting property 280
9.36.12 Power generation setting property 280
9.36.13 Power generation status property 280
9.36.14 Measured in-house instantaneous power consumption property 280
9.36.15 Measured in-house cumulative energy consumption property 281
9.36.16 In-house cumulative energy consumption reset property 281
9.36.17 System interconnection status property 281
9.36.18 Measured remaining hot water amount property 281
9.36.19 Tank capacity property 281
9.37 Water flowmeter class specifications 281
9.37.1 General 281
9.37.2 Operation status property 283
9.37.3 Water flowmeter classification property 283
9.37.4 Owner classification property 283
9.37.5 Measured cumulative amount of flowing water property 284
9.37.6 Unit for measured cumulative amounts of flowing water property 284
9.37.7 Historical data of measured cumulative amounts of flowing water property 284

9.37.8 Detection of abnormal value in metering data property 284
9.37.9 Security data information property 284
9.37.10 ID number setting property 285
9.37.11 Verification expiration information property 285
9.38 Power distribution board metering class specifications 285
9.38.1 General 285
9.38.2 Operation status property 301
9.38.3 Measured cumulative amount of electric energy (normal and reverse directions) property 301
9.38.4 Unit for cumulative amounts of electric energy property 302
9.38.5 Historical data of measured cumulative amounts of electric energy (normal and reverse directions) property 302
9.38.6 Day for which the historical data of measured cumulative amounts of electric energy shall be retrieved (normal and reverse directions) property 302
9.38.7 Measured instantaneous electric power property 303
9.38.8 Measured instantaneous currents property 303
9.38.9 Measured instantaneous voltages property 303
9.38.10 Measurement channels 1 to 32 property 303
9.38.11 Master rated capacity property 304
9.38.12 Number of measurement channels (simplex) property 304
9.38.13 Channel range specification for cumulative amount of electric energy consumption measurement (simplex) property 304
9.38.14 Measured cumulative amount of electric energy consumption list (simplex) property 304
9.38.15 Channel range specification for instantaneous current measurement (simplex) property 305
9.38.16 Measured instantaneous current list (simplex) property 305
9.38.17 Channel range specification for instantaneous power consumption measurement (simplex) property 306
9.38.18 Measured instantaneous power consumption list (simplex) property 306
9.38.19 Number of measurement channels (duplex) property 306
9.38.20 Channel range specification for cumulative amount of electric energy consumption measurement (duplex) property 307
9.38.21 Measured cumulative amount of electric energy consumption list (duplex) property 307
9.38.22 Channel range specification for instantaneous current measurement (duplex) property 307
9.38.23 Measured instantaneous current list (duplex) property 308
9.38.24 Channel range specification for instantaneous power consumption measurement (duplex) property 308
9.38.25 Measured instantaneous power consumption list (duplex) property 309
9.39 Low-voltage smart electric meter class specifications 309
9.39.1 General 309
9.39.2 Operation status property 316
9.39.3 Coefficient property 316
9.39.4 Number of effective digits for cumulative amounts of electric energy property 316
9.39.5 Measured cumulative amount of electric energy (normal direction) property 317
9.39.6 Unit for measured cumulative amounts of electric energy (normal and reverse directions) property 317

9.39.7 Historical data of measured cumulative amounts of electric energy 1 (normal direction) property 317
9.39.8 Measured cumulative amounts of electric energy (reverse direction) property 318
9.39.9 Historical data of measured cumulative amounts of electric energy 1 (reverse direction) property 318
9.39.10 Day for which the historical data of measured cumulative amounts of electric energy shall be retrieved 1 property 319
9.39.11 Measured instantaneous electric power property 319
9.39.12 Measured instantaneous currents property 319
9.39.13 Cumulative amounts of electric energy measured at fixed time (normal direction) property 319
9.39.14 Cumulative amounts of electric energy measured at fixed time (reverse direction) property 320
9.39.15 Historical data of measured cumulative amounts of electric energy 2 (normal and reverse directions) property 321
9.39.16 Day for which the historical data of measured cumulative amounts of electric energy shall be retrieved 2 property 321
9.40 Smart gas meter class specifications 322
9.40.1 General 322
9.40.2 Operation status property 326
9.40.3 Gas meter classification setting property 326
9.40.4 Owner classification setting property 326
9.40.5 Measured cumulative gas consumption property 327
9.40.6 Unit for measured cumulative gas consumption property 327
9.40.7 Historical data of measured cumulative gas consumption property 328
9.40.8 Day setting for which the historical data of measured cumulative gas consumption shall be retrieved property 328
9.40.9 Detection of abnormal value in metering data property 328
9.40.10 Security data information property 328
9.40.11 Valve closure by the Centre property 329
9.40.12 Permission from the Centre to reopen the valve closed by the Centre property 329
9.40.13 Emergency closure of shutoff valve property 329
9.40.14 Shutoff valve status property 329
9.40.15 Historical data of shutoff reasons property 329
9.40.16 ID number setting property 329
9.40.17 Verification expiration setting property 329
9.40.18 Measured cumulative gas consumption information with date and time property 329
9.40.19 Historical information of cumulative gas consumption property 330
9.41 High-voltage smart electric energy meter class specifications 331
9.41.1 General 331
9.41.2 Operation status property 341
9.41.3 Coefficient property 341
9.41.4 Multiplying factor for coefficient property 341
9.41.5 Fixed date property 341
9.41.6 Day for which the historical data of measured cumulative amounts of electric energy shall be retrieved property 341
9.41.7 Measured cumulative amount of active electric energy property 342
9.41.8 Cumulative amounts of active electric energy at fixed time property 342

9.41.9 Measurement data of cumulative amount of active electric energy for power factor measurement 343
9.41.10 Number of effective digits for cumulative amount of active electric energy property 343
9.41.11 Unit for cumulative amounts of active electric energy property 344
9.41.12 Historical data of measured cumulative amount of active electric energy property 344
9.41.13 Monthly maximum electric power demand property 344
9.41.14 Cumulative maximum electric power demand property 345
9.41.15 Electric power demand at fixed time (30-minute average electric power) property 345
9.41.16 Number of effective digits of electric power demand property 346
9.41.17 Unit of electric power demand property 346
9.41.18 Historical data of measured electric power demand property 347
9.41.19 Unit of cumulative maximum electric power demand property 347
9.41.20 Measurement data of reactive electric energy consumption (lag) for power factor measurement property 347
9.41.21 Measurement data of cumulative amount of reactive electric energy consumption (lag) at fixed time for power factor measurement property 348
9.41.22 Number of effective digits for measurement data of cumulative amount of reactive electric energy consumption (lag) for power factor measurement property 349
9.41.23 Unit of measurement data of cumulative amount of reactive electric energy consumption (lag) property 349
9.41.24 Historical data of measurement data of cumulative amount of reactive electric energy consumption (lag) for power factor measurement property 349
9.42 Kerosene meter class specifications 350
9.42.1 General 350
9.42.2 Operation status property 351
9.42.3 Measured cumulative amount of kerosene consumption property 351
9.42.4 History of measured cumulative amounts of kerosene consumption property 351
9.43 Smart kerosene meter class specifications 351
9.43.1 General 351
9.43.2 Operation status property 354
9.43.3 Owner category setting property 354
9.43.4 Measured cumulative kerosene consumption property 354
9.43.5 Units for measured cumulative kerosene consumption property 355
9.43.6 Historical information of cumulative kerosene consumption property 355
9.43.7 Collection date setting for history of cumulative kerosene consumption property 355
9.43.8 Meter reading data abnormality detection status property 356
9.43.9 Security data information property 356
9.43.10 Residual volume control warning level property 356
9.43.11 Residual volume control warning level 1 property 356
9.43.12 Residual volume control warning level 2 property 356
9.43.13 Residual volume control warning level 3 property 356
9.43.14 Slight leak timer value (kerosene flow rate continuation) property 357
9.43.15 ID number setting property 357
9.43.16 Verification expiration setting property 357

9.43.17 Measured cumulative kerosene consumption information with date and time property 357
9.43.18 Historical information of cumulative kerosene consumption property 357
9.44 General light class specifications 358
9.44.1 General 358
9.44.2 Operation status property 361
9.44.3 Illuminance level property 362
9.44.4 Light colour setting property 362
9.44.5 Illuminance level step setting property 362
9.44.6 Light colour step setting property 363
9.44.7 Maximum specifiable values property 363
9.44.8 Maximum value of settable level for night lighting property 363
9.44.9 Lighting mode setting property 363
9.44.10 Illuminance level setting for main lighting property 364
9.44.11 Illuminance level step setting for main lighting property 364
9.44.12 Illuminance level setting for night lighting property 364
9.44.13 Illuminance level step setting for night lighting property 365
9.44.14 Light colour setting for main lighting property 365
9.44.15 Light colour level step setting for main lighting property 365
9.44.16 Light colour setting for night lighting property 366
9.44.17 Light colour level step setting for night lighting property 366
9.44.18 Lighting mode status in automatic mode property 366
9.44.19 RGB setting for colour lighting property 366
9.44.20 ON timer reservation setting property 366
9.44.21 ON timer setting property 367
9.44.22 OFF timer reservation setting property 367
9.44.23 OFF timer setting property 367
9.45 Mono functional lighting class specifications 367
9.45.1 General 367
9.45.2 Operation status property 368
9.45.3 Illuminance level setting property 368
9.46 Lighting for solid light-emitting source class specifications 368
9.46.1 General 368
9.46.2 Operation status property 370
9.46.3 Number of light sources property 370
9.46.4 List of the light source operation status property 370
9.46.5 List of the light source optical output setting values property 371
9.46.6 List of light source colour temperature setting values property 371
9.46.7 ON timer reservation setting property 372
9.46.8 ON timer setting property 372
9.46.9 OFF timer reservation setting property 373
9.46.10 OFF timer setting property 373
9.47 Electric vehicle charger class specifications 373
9.47.1 General 373
9.47.2 Operation status property 377
9.47.3 Rated charge capacity property 378
9.47.4 Vehicle connection and chargeable status property 378
9.47.5 Minimum/maximum charging electric power property 378
9.47.6 Minimum/maximum charging current property 378

9.47.7 Charger type property 378
9.47.8 Vehicle connection confirmation property 379
9.47.9 Used capacity of vehicle-mounted battery 1 property 379
9.47.10 Rated voltage property 380
9.47.11 Measured instantaneous charging electric power property 380
9.47.12 Measured cumulative amount of charging electric energy property 380
9.47.13 Cumulative amount of charging electric energy reset setting property 380
9.47.14 Operating mode setting property 380
9.47.15 Remaining stored electricity of vehicle-mounted battery 1 property 380
9.47.16 Remaining stored electricity of vehicle-mounted battery 3 property 380
9.47.17 Charging electric power setting property 380
9.47.18 Charging current setting property 380
9.47.19 Chargeable capacity of vehicle mounted battery property 381
9.47.20 Remaining chargeable capacity of vehicle mounted battery property 381
9.47.21 Vehicle ID property 381
9.47.22 Charging amount setting property 381
9.48 Household small wind turbine power generation class specifications 382
9.48.1 General 382
9.48.2 Operation status property 383
9.48.3 System interconnection status property 383
9.48.4 Measured instantaneous amount of electricity generated property 384
9.48.5 Measured cumulative amount of electricity generated property 384
9.48.6 Resetting cumulative amount of electricity generated property 384
9.48.7 Measured cumulative amount of electricity sold property 384
9.48.8 Resetting cumulative amount of electricity sold property 384
9.48.9 Power generation output limit setting 1 property 384
9.48.10 Power generation output limit setting 2 property 384
9.48.11 Limit setting for the amount of electricity sold property 384
9.48.12 Rated power property 384
9.48.13 Measured wind speed property 385
9.48.14 Rated wind speed property 385
9.48.15 Cut-in wind speed property 385
9.48.16 Cut-out wind speed property 385
9.48.17 Extreme wind speed property 385
9.48.18 Braking status property 385
9.49 Lighting system class specifications 386
9.49.1 General 386
9.49.2 Operation status property 387
9.49.3 Illuminance level setting property 387
9.49.4 Scene control setting property 387
9.49.5 Number that can assign scene control setting property 387
9.50 Extended lighting system class specifications 388
9.50.1 General 388
9.50.2 Operation status property 390
9.50.3 Illuminance level setting property 390
9.50.4 Scene control setting property 390
9.50.5 Number that can assign scene control setting property 390
9.50.6 Power consumption rate list property 390
9.50.7 Power consumption when fully lit property 391

9.50.8 Possible power savings property 391
9.50.9 Power consumption limit setting property 391
9.50.10 Automatic operation controlling setting property 392
9.50.11 Fading control change time setting property 392
9.51 Multiple input PCS class specifications 392
9.51.1 General 392
9.51.2 Operation status property 395
9.51.3 Identification number property 395
9.51.4 Current time setting property 395
9.51.5 Current date setting property 395
9.51.6 System interconnection status property 396
9.51.7 Measured cumulative amount of electric energy (normal direction) property 396
9.51.8 Measured cumulative amount of electric energy (reverse direction) property 396
9.51.9 Measured instantaneous electric power property 396
9.51.10 List of connected devices property 396
9.52 Hybrid water heater class specifications 396
9.52.1 General 396
9.52.2 Operation status property 399
9.52.3 Automatic water heating setting property 399
9.52.4 Water heating status property 399
9.52.5 Heater status property 399
9.52.6 Hot water supply mode setting for auxiliary heat source machine property 399
9.52.7 Heater mode setting for auxiliary heat source machine property 400
9.52.8 Linkage mode setting for solar power generation property 400
9.52.9 Solar power generations utilization time property 400
9.52.10 Hot water supply status property 401
9.52.11 Measured amount of hot water remaining in tank property 401
9.52.12 Tank capacity property 401
9.53 Refrigerator class specifications 401
9.53.1 General 401
9.53.2 Operation status property 407
9.53.3 Door open/close status property 407
9.53.4 Door open warning property 407
9.53.5 Refrigerator compartment door status 407
9.53.6 Freezer compartment door status property 407
9.53.7 Ice compartment door status property 408
9.53.8 Vegetable compartment door status property 408
9.53.9 Multi-refrigerating mode compartment door status property 408
9.53.10 Maximum allowable temperature setting level property 408
9.53.11 Refrigerator compartment temperature setting property 408
9.53.12 Freezer compartment temperature setting property 408
9.53.13 Ice compartment temperature setting property 409
9.53.14 Vegetable compartment temperature setting property 409
9.53.15 Multi-refrigerating mode compartment temperature setting property 409
9.53.16 Refrigerator compartment temperature level setting property 409
9.53.17 Freezer compartment temperature level setting property 410
9.53.18 Ice compartment temperature level setting property 410

9.53.19 Vegetable compartment temperature level setting property 410
9.53.20 Multi-refrigerating mode compartment temperature level setting property 410
9.53.21 Measured refrigerator compartment temperature property 411
9.53.22 Measured freezer compartment temperature property 411
9.53.23 Measured ice compartment temperature property 411
9.53.24 Measured vegetable compartment temperature property 411
9.53.25 Measured multi-refrigerating mode compartment temperature property 411
9.53.26 Compressor rotation speed property 411
9.53.27 Measured electric current consumption property 411
9.53.28 Rated power consumption property 412
9.53.29 Quick freeze function setting property 412
9.53.30 Quick refrigeration function setting property 412
9.53.31 Icemaker setting property 412
9.53.32 Icemaker operation status property 412
9.53.33 Icemaker tank status property 412
9.53.34 Refrigerator compartment humidification function setting property 413
9.53.35 Vegetable compartment humidification function setting property 413
9.53.36 Deodorization function setting property 413
9.54 Microwave oven class specifications 413
9.54.1 General 413
9.54.2 Operation status property 419
9.54.3 Door open/close status property 419
9.54.4 Heating status property 419
9.54.5 Heating setting property 420
9.54.6 Heating mode setting property 420
9.54.7 Automatic heating setting property 421
9.54.8 Automatic heating level setting property 421
9.54.9 Automatic heating menu setting property 421
9.54.10 Oven mode setting property 423
9.54.11 Oven preheating setting property 423
9.54.12 Fermenting mode setting property 423
9.54.13 Chamber temperature setting property 424
9.54.14 Food temperature setting property 424
9.54.15 Heating time setting property 424
9.54.16 Remaining heating time setting property 425
9.54.17 Microwave heating power setting property 425
9.54.18 Prompt message setting property 425
9.54.19 Accessories to combination microwave oven setting property 426
9.54.20 Display character string setting property 428
9.54.21 Two-stage microwave heating setting (duration) property 428
9.54.22 Two-stage microwave heating setting (heating power) property 428
9.55 Washer and dryer class specifications 429
9.55.1 General 429
9.55.2 Operation status property 441
9.55.3 Door/cover open/close status property 441
9.55.4 Washer and dryer setting property 441
9.55.5 Washer and dryer cycle setting 1 property 442
9.55.6 Washer and dryer cycle setting 2 property 445
9.55.7 Drying cycle setting property 446

9.55.8 Washer and dryer cycle option list 1 property 447
9.55.9 Washer and dryer cycle option list 2 property 448
9.55.10 Washer and dryer cycle option list 3 property 448
9.55.11 Water flow rate setting property 449
9.55.12 Rotation speed for spin drying setting property 449
9.55.13 Degree of drying setting property 450
9.55.14 Remaining washing time property 450
9.55.15 Remaining drying time 450
9.55.16 Elapsed time on the ON timer property 450
9.55.17 Pre-soaking time setting property 450
9.55.18 Current stage of washer and dryer cycle property 451
9.55.19 Water volume setting 1 property 452
9.55.20 Water volume setting 2 property 453
9.55.21 Washing time setting property 453
9.55.22 Number of times of rinsing property 454
9.55.23 Rinsing process setting property 454
9.55.24 Spin drying time setting property 454
9.55.25 Drying time setting property 455
9.55.26 Warm water setting property 455
9.55.27 Bathtub water recycle setting property 455
9.55.28 Wrinkling minimization setting property 456
9.55.29 Time remaining to complete washer and dryer cycle property 456
9.55.30 Door/cover lock setting property 456
9.55.31 Washer and dryer cycle property 456
9.55.32 ON timer reservation setting property 458
9.55.33 ON timer setting property 458
9.55.34 Relative time-based ON timer setting 458
9.56 Clothes dryer class specifications 458
9.56.1 General 458
9.56.2 Operation status property 459
9.56.3 Door/cover open/close status property 459
9.56.4 Drying setting property 460
9.56.5 Drying status property 460
9.56.6 Remaining drying time property 460
9.56.7 ON timer reservation setting property 460
9.56.8 ON timer setting property 460
9.56.9 Relative time-based ON timer setting property 460
9.57 Cooking heater class specifications 460
9.57.1 General 460
9.57.2 Operation status property 463
9.57.3 Heating status property 463
9.57.4 Heating setting property 464
9.57.5 All stop setting property 464
9.57.6 Heating power setting property 465
9.57.7 Heating temperature setting property 465
9.57.8 Heating modes of stoves setting property 465
9.57.9 Relative time settings of OFF timers property 466
9.57.10 Child lock setting property 466
9.57.11 Radiant heater lock setting property 466

9.58 Commercial showcase class specifications 467
9.58.1 General 467
9.58.2 Operation status property 469
9.58.3 Operation mode setting property 469
9.58.4 Measured value of discharge temperature property 469
9.58.5 Internal lighting operation status property 469
9.58.6 External lighting operation status property 470
9.58.7 Compressor operation status property 470
9.58.8 Measured value of internal temperature property 470
9.58.9 Freezing capability value property 470
9.58.10 Defrosting heater power consumption property 470
9.58.11 Fan motor power consumption property 470
9.58.12 Heater mode property 470
9.58.13 Group information property 470
9.58.14 Showcase type information property 470
9.58.15 Door type information property 470
9.58.16 Showcase configuration information property 471
9.58.17 Type of lighting inside the showcase property 471
9.58.18 Type of lighting outside the case property 471
9.58.19 Illuminance level setting of lighting inside the showcase property 471
9.58.20 Illuminance level setting of lighting outside the case property 471
9.58.21 Temperature setting of inside the case property 471
9.58.22 Showcase shape information property 471
9.58.23 Temperature range information for inside the case property 471
9.59 Commercial showcase outdoor unit class specifications 472
9.59.1 General 472
9.59.2 Operation status property 472
9.59.3 Exceptional status property 472
9.59.4 Operation mode setting property 473
9.59.5 Measured value of outdoor air temperature property 473
9.59.6 Compressor operation status property 473
9.59.7 Group information property 473
9.60 Dishwasher and dryer class specifications 473
9.60.1 General 473
9.60.2 Operation status property 485
9.60.3 ON timer reservation setting property 485
9.60.4 ON timer setting property 485
9.60.5 Relative time-based ON timer setting property 485
9.60.6 Door/cover open/close setting property 485
9.60.7 Door/cover lock setting property 485
9.60.8 Operation status setting property 485
9.60.9 Dish-washing method setting property 486
9.60.10 Drying method setting property 486
9.60.11 Storing method setting property 487
9.60.12 Dish-washing method setting acceptable information property 487
9.60.13 Drying method setting acceptable information property 488
9.60.14 Storing method setting acceptable information property 488
9.60.15 Prewashing time setting property 488
9.60.16 Highest water temperature setting for prewashing property 489

9.60.17 Washing time setting property 489
9.60.18 Highest water temperature setting for washing property 489
9.60.19 Number of times of rinsing setting property 490
9.60.20 Rinsing mode setting property 490
9.60.21 Highest water temperature setting for hot water rinsing property 490
9.60.22 Dish-washing water volume setting property 491
9.60.23 Dish-washing water pressure setting property 491
9.60.24 Dish-washing level setting property 491
9.60.25 Drying time setting property 492
9.60.26 Highest air temperature setting for hot air drying property 492
9.60.27 Drying air flow rate setting property 492
9.60.28 Drying level setting property 493
9.60.29 Storing time setting property 493
9.60.30 Operation setting information property 494
9.60.31 Operation transition status property 495
9.60.32 Remaining time on the ON timer property 497
9.60.33 Remaining time of prewashing property 497
9.60.34 Remaining time of washing property 497
9.60.35 Remaining time of rinsing property 498
9.60.36 Remaining time of dish-washing property 498
9.60.37 Remaining drying time property 498
9.60.38 Remaining time of dish-washing and drying property 498
9.60.39 Storing elapsed time property 498
9.60.40 Used water volume property 498
9.61 Switch class specifications 498
9.61.1 General 498
9.61.2 Operation status property 499
9.61.3 Connected device property 499
9.62 Controller class specifications 499
9.62.1 General 499
9.62.2 Operation status property 501
9.62.3 Controller ID property 501
9.62.4 Number of devices controlled property 502
9.62.5 Index property 502
9.62.6 Device ID property 502
9.62.7 Device type property 502
9.62.8 Name property 502
9.62.9 Connection status property 503
9.62.10 Business code of the device to be controlled property 503
9.62.11 Product code of the device to be controlled property 503
9.62.12 Manufacture date of the device to be controlled property 503
9.62.13 Registered information renewal date of the device to be controlled property 504
9.62.14 Registered information renewal version information of the device to be controlled property 504
9.62.15 Place to install device to be controlled property 504
9.62.16 Fault status of device to be controlled property 504
9.62.17 Address of installation location property 504
9.62.18 Set property map for device to be controlled property 504

9.62.19 Get property map for device to be controlled property 504
10 Property map description format 505
Bibliography 506

Figure 1 – ECHONET frame for plain data format 40
Figure 2 – EHD detailed specifications 41
Figure 3 – Configuration of SEA and DEA when an individual address is specified 42
Figure 4 – DEA (broadcast-stipulated) address configuration 42
Figure 5 – Broadcast target stipulation code 43
Figure 6 – Node group stipulation bit specifications 43
Figure 7 – OHD detailed specifications 44
Figure 8 – EOJ detailed specifications 44
Figure 9 – EPC detailed specifications 46
Figure 10 – ESV detailed specifications 46
Figure 11 – EDATA configuration in property value write service 51
Figure 12 – EDATA configuration in property value read service 51
Figure 13 – EDATA configuration in property value notification service 52
Figure 14 – EDATA configuration in property value element-stipulated write service 53
Figure 15 – EDATA configuration in property value element-stipulated read service 54
Figure 16 – EDATA configuration in property value element-stipulated notification service 55
Figure 17 – EDATA configuration in property value element-stipulated addition 56
Figure 18 – EDATA configuration in property value element-stipulated deletion 57
Figure 19 – EDATA configuration in property value element-stipulated existence confirmation 58
Figure 20 – EDATA configuration in property value element addition 59
Figure 21 – EDATA configuration in property value notification (response required) 59
Figure 22 – EDATA configuration in property value element-stipulated notification (response required) 60
Figure 23 – CpESV configuration 61
Figure 24 – Relationship between write request (requiring no response) and write "process-not-possible" response 64
Figure 25 – Relationship between write request (requiring a response), write "accepted" response, and write "process-not-possible" response 65
Figure 26 – Relationship between read request (requiring a response), read "accepted" response, and read "process-not-possible" response 66
Figure 27 – Notification message format 67
Figure 28 – Relationship between property value notification (requiring a response) and property value notification response 67
Figure 29 – Processing target property counter for three requests 68
Figure 30 – Property data counter 68
Figure 31 – ECHONET Lite frame format 69
Figure 32 – Detailed specifications of ELHD1 69
Figure 33 – Detailed specifications of ELHD2 70
Figure 34 – Detailed specifications of EOJ code 70

Figure 35 – ELSV code detailed specifications 71
Figure 36 – ELDATA configuration for property value write service (no response required) 74
Figure 37 – ELDATA configuration for property value write service (response required) 75
Figure 38 – ELDATA configuration for property value read service 76
Figure 39 – ELDATA configuration for property value write and read service 77
Figure 40 – ELDATA configuration for property value notification service 78
Figure 41 – ELDATA configuration for property value notification (response required) service 79
Figure 42 – EPC detailed specifications 80
Figure 43 – ECHONET Lite Property data counter 81
Figure 44 – Example of array elements 83
Figure 45 – Example of property value element deletion 84
Figure 46 – Example of property value element addition 84
Figure 47 – Data structure of "identification number" property 91
Figure 48 – Data structure of "manufacturer's fault code" property 92
Figure 49 – Configuration without "control server" 96
Figure 50 – Configuration with "control server" 96
Figure 51 – Air flow direction (vertical) setting 122
Figure 52 – Air flow direction (horizontal) setting 124
Figure 53 – Mounted air cleaning method 125
Figure 54 – Air purifier function setting 126
Figure 55 – Air refresh method 127
Figure 56 – Air refresher function setting 127
Figure 57 – Self-cleaning method 128
Figure 58 – Self-cleaning function setting 129
Figure 59 – Implemented ion emission method 137
Figure 60 – Power restriction control of commercial-use package air conditioner (example) 144
Figure 61 – Value of alarm status 181
Figure 62 – Period that writing request is unacceptable 186
Figure 63 – Time to start accumulating hot water shift (daytime single shift) 190
Figure 64 – Time to start accumulating hot water shift (daytime double shift) 191
Figure 65 – An example of household solar power generation configuration 220
Figure 66 – Function to control purchase of excess electricity 221
Figure 67 – An example of capacity approved by equipment 224
Figure 68 – Daily timer setting 231
Figure 69 – Example of the battery configuration 239
Figure 70 – Image of various properties related to electric energy handled in this class 239
Figure 71 – Overview of charging methods 252
Figure 72 – Overview of discharging methods for storage battery if reverse power flow is not allowed 253
Figure 73 – Overview of discharging methods for storage battery if reverse power flow is allowed 253

Figure 74 – Relationship between the properties related to electric energy handled in this class 261
Figure 75 – Data structure of Vehicle ID in electric vehicle charger/discharger class 276
Figure 76 – Current direction in power distribution board 301
Figure 77 – Actual implementation cases from the solid light-emitting source class 369
Figure 78 – Relationship between the properties related to electric energy handled in this class 377
Figure 79 – Data structure of vehicle ID in electric vehicle charger class 381
Figure 80 – Relationship between the properties related to household small wind turbine power generation class 386
Figure 81 – A configuration of lighting system 387
Figure 82 – A configuration of extended lighting system 389
Figure 83 – Explanation for power consumptions 391
Figure 84 – An example of multiple input PCS configuration 395
Figure 85 – Example of a device that operates a heat pump only when supplying hot water 398
Figure 86 – Example of a device that operates a heat pump when supplying hot water and heating 399
Figure 87 – Stove 464

Table 1 – Bit pattern for hop count 41
Table 2 – List of class group codes 45
Table 3 – List of ESV codes for requests 48
Table 4 – List of ESV codes for response/notification 49
Table 5 – List of ESV codes for "response-not-possible" responses 50
Table 6 – List of CpESV codes for request/notification 63
Table 7 – List of CpESV codes for "accepted" response 63
Table 8 – List of CpESV codes for "process-not-possible" response 63
Table 9 – List of class group codes 71
Table 10 – List of service codes for request 73
Table 11 – List of ELSV codes for response/notification 73
Table 12 – List of ELSV codes for "response not possible" 74
Table 13 – EPC code allocation table 80
Table 14 – Data types, data sizes, and overflow/underflow codes 83
Table 15 – List of device object super class configuration properties 85
Table 16 – Installation location (space) types and the bit values assigned to them 90
Table 17 – Fault-content property value assignments 94
Table 18 – List of temperature sensor properties 99
Table 19 – List of humidity sensor properties 99
Table 20 – List of illuminance sensor properties 100
Table 21 – List of human detection sensor properties 101
Table 22 – List of electric energy sensor properties 102
Table 23 – List of open/close sensor properties 104
Table 24 – List of current sensor properties 105
Table 25 – List of air speed sensor properties 106

Table 26 – List of water flow rate sensor properties 107
Table 27 – List of rain sensor properties 108
Table 28 – List of home air conditioner properties 109
Table 29 – Air flow direction (horizontal) setting 123
Table 30 – List of ventilation fan properties 132
Table 31 – List of air purifier properties 133
Table 32 – List of humidifier properties 135
Table 33 – List of package-type commercial air conditioner (indoor unit) properties 138
Table 34 – List of package-type commercial air conditioner (outdoor unit) properties 141
Table 35 – List of electric storage heater properties 144
Table 36 – List of gas heat pump-type commercial air conditioner (indoor unit) properties 150
Table 37 – List of gas heat pump-type commercial air conditioner (outdoor unit) properties 153
Table 38 – List of range hood properties 156
Table 39 – Range hood-specific errors of EPC = 0x88 "fault status" 161
Table 40 – List of electrically operated shade properties 162
Table 41 – List of electrically operated rain sliding door/shutter properties 167
Table 42 – List of electric water heater properties 171
Table 43 – Property change according to both heating automatic setting property and energy shift participation status property 186
Table 44 – List of electric toilet seat (warm-water washing toilet seat, heating toilet seat, etc.) properties 192
Table 45 – List of electric lock properties 195
Table 46 – List of household instantaneous water heater properties 197
Table 47 – List of bathroom heater and dryer properties 205
Table 48 – List of household solar power generation properties 216
Table 49 – List of floor heater properties 226
Table 50 – List of fuel cell properties 233
Table 51 – List of storage battery properties 240
Table 52 – List of electric vehicle charger/discharger properties 262
Table 53 – List of engine cogeneration properties 277
Table 54 – List of water flowmeter properties 282
Table 55 – List of power distribution board metering properties 285
Table 56 – List of low-voltage smart electric meter properties 310
Table 57 – List of smart gas meter properties 322
Table 58 – Security data information property 328
Table 59 – Historical data of measured cumulative gas consumption (example) corresponding to the transition of cumulative gas consumption 330
Table 60 – List of high-voltage smart electric energy meter properties 331
Table 61 – List of kerosene meter properties 350
Table 62 – List of smart kerosene meter properties 351
Table 63 – bit assignment for security data 356
Table 64 – Historical data example of measured cumulative kerosene consumption corresponding to the transition of cumulative kerosene consumption 358

Table 65 – List of general light properties 359
Table 66 – List of mono functional lighting properties 367
Table 67 – List of lighting for solid light-emitting source properties 368
Table 68 – Examples of the list of the light source operation status when operating Get 370
Table 69 – Examples of the list of the light source operation status when operating Set 370
Table 70 – Examples of the list of the light source optical output setting values when operating Get 371
Table 71 – Examples of the list of the light source optical output setting values when operating Set 371
Table 72 – Examples of the list of light source colour temperature setting values when operating Get 372
Table 73 – Examples of the list of light source colour temperature setting values when operating Set 372
Table 74 – List of electric vehicle charger properties 373
Table 75 – List of household small wind turbine power generation properties 382
Table 76 – List of lighting system properties 386
Table 77 – List of extended lighting system properties 388
Table 78 – An example of scene number set 390
Table 79 – List of multiple input PCS properties 393
Table 80 – List of hybrid water heater properties 397
Table 81 – List of operations for linkage modes and utilization time 401
Table 82 – List of refrigerator properties 402
Table 83 – List of microwave oven properties 413
Table 84 – Heating status property 420
Table 85 – Automatic heating setting property 421
Table 86 – Automatic heating cycle codes 422
Table 87 – Prompt message codes 426
Table 88 – 2 bytes bitmap definition for each accessory 427
Table 89 – List of washer and dryer properties 429
Table 90 – washer and dryer setting property 442
Table 91 – Washer and dryer cycle option list 1 property 448
Table 92 – Washer and dryer cycle option list 2 property 448
Table 93 – Washer and dryer cycle option list 3 property 448
Table 94 – Current stage of washer and dryer cycle property 452
Table 95 – List of clothes dryer properties 459
Table 96 – List of cooking heater properties 461
Table 97 – List of commercial showcase properties 467
Table 98 – List of commercial showcase outdoor unit properties 472
Table 99 – List of dishwasher and dryer properties 473
Table 100 – Bitmap definition for dish-washing method setting acceptable information 488
Table 101 – Bitmap definition for drying method setting acceptable information 488
Table 102 – Bitmap definition for storing method setting acceptable information 488
Table 103 – Bitmap definition for each rinsing mode 490
Table 104 – Operation setting information arrangement 495

Table 105 – Pattern of property values 496
Table 106 – Relationship with operation status setting (EPC = 0xB2) 497
Table 107 – List of switch properties 499
Table 108 – List of controller properties 499
Table 109 – Property map description format 505

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SERVICE DIAGNOSTIC INTERFACE FOR CONSUMER ELECTRONICS PRODUCTS AND NETWORKS – IMPLEMENTATION FOR ECHONET

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IEC 62394 has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment[1]. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2017. This edition constitutes a technical revision.

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

a) updates of the device object super class specifications for the property configurations shared by all device objects;
b) modification and addition of the property configurations defined by each object;
c) addition of new device objects and their property configurations;

[1] The third edition (2017) was developed by technical area 8: Multimedia home systems and applications for end-user network. However, technical area 8 has been disbanded.

d) updates to Bibliography.

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

Draft	Report on voting
100/3758/FDIS	100/3787/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

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

IMPORTANT – The "colour inside" logo on the cover page of this document 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.

INTRODUCTION

Consumer products are often repaired by service workshops, which service a wide range of products developed by different manufacturers.

For highly complex products, fault diagnosis becomes increasingly difficult and time consuming.

To facilitate diagnosis, manufacturers often develop built-in diagnostic software that communicates with an external diagnostic unit through a service diagnostic interface (SDI).

To avoid the need for a service workshop to purchase several different diagnostic units from different manufacturers for different products, a standardized SDI is proposed for use by all manufacturers of any products requiring a diagnostic interface. The result will be that only one SDI is needed in the service workshops.

The SDI should be suitable for diagnosis in a facilities or household appliances network in which different products from different manufacturers are connected together. The interface should also allow for future developments.

The standard SDI should:

- be usable in future products,
- be easily connectable to a product or a network,
- be inexpensive,
- not limit product design.

SERVICE DIAGNOSTIC INTERFACE FOR CONSUMER ELECTRONICS PRODUCTS AND NETWORKS – IMPLEMENTATION FOR ECHONET

1 Scope

This International Standard specifies requirements for service diagnostic software to be implemented in products that incorporate a digital interface. It does not specify requirements for carrying out remote diagnosis or for manufacturer-dependent software.

The Service Diagnostic Interface (SDI) requires an external controller (exclusive or general-purpose/PC) into which service diagnostic software can be loaded. Parts of the controller software are standardized while other parts are proprietary to the manufacturers.

To reach a common approach in servicing all products from all manufacturers, it is necessary to standardize specific items to be tested in products and certain aspects of controllers' diagnostic software.

The SDI is based upon ECHONET specification version 2.11, ECHONET Lite specification version 1.13, and APPENDIX Detailed Requirements for ECHONET Device objects Release M, because this interface will be used in future products. The use of this connection and existing communication protocols enable implementation in products at a low cost, with maximum flexibility and efficiency.

The SDI consists of

- specific hardware and software requirements of the device under test (DUT);
- specific requirements of the controller:
  - the service software;
  - an ECHONET interface;
- the connection between the controller and the DUT.

This document provides the minimal requirements necessary to carry out computerized diagnosis. It covers the standardized software of the controller as well as the standardized software and provisions in the DUT.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp