DIN EN ISO 16484-6:2014-09 (E)

Building automation and control systems (BACS) - Part 6: Data communication conformance testing (ISO 16484-6:2014); English version EN ISO 16484-6:2014, only on CD-ROM

Contents

Page

1. PURPOSE ... 1
2. SCOPE ... 1
3. DEFINITIONS ... 1
4. ELECTRONIC PICS FILE FORMAT ... 1
   4.1 Character Encoding ... 1
   4.2 Structure of EPICS Files ... 2
   4.3 Character Strings ... 3
   4.4 Notational Rules for Parameter Values ... 3
   4.5 Sections of the EPICS File ... 4
5. EPICS CONSISTENCY TESTS ... 23
6. CONVENTIONS FOR SPECIFYING BACnet CONFORMANCE TESTS ... 24
   6.1 TCSL Components ... 24
   6.2 TCSL Statements ... 25
   6.3 Time Dependencies ... 30
   6.4 BACnet References ... 31
   6.5 TD Requirements ... 31
7. OBJECT SUPPORT TESTS ... 32
   7.1 Read Support for Properties in the Test Database ... 32
   7.2 Write Support for Properties in the Test Database ... 32
   7.3 Object Functionality Tests ... 35
8. APPLICATION SERVICE INITIATION TESTS ... 131
   8.1 AcknowledgeAlarm Service Initiation Tests ... 131
   8.2 ConfirmedCOVNotification Service Initiation Tests ... 132
   8.3 UnconfirmedCOVNotification Service Initiation Tests ... 141
   8.4 ConfirmedEventNotification Service Initiation Tests ... 144
   8.5 UnconfirmedEventNotification Service Initiation Tests ... 177
   8.6 GetAlarmSummary Service Initiation Tests ... 184
   8.7 GetEnrollmentSummary Service Initiation Tests ... 184
   8.8 GetEventInformation Service Initiation Tests ... 186
   8.9 LifeSafetyOperation Service Initiation Tests ... 187
   8.10 SubscribeCOV Service Initiation Tests ... 187
   8.11 SubscribeCOVProperty Service Initiation Tests ... 188
   8.12 AtomicReadFile Service Initiation Tests ... 189
   8.13 AtomicWriteFile Service Initiation Tests ... 190
   8.14 AddListElement Service Initiation Tests ... 190
   8.15 RemoveListElement Service Initiation Tests ... 191
   8.16 CreateObject Service Initiation Tests ... 191
   8.17 DeleteObject Service Initiation Tests ... 192
   8.18 ReadProperty Service Initiation Tests ... 193
   8.19 ReadPropertyConditional Service Initiation Tests ... 194
   8.20 ReadPropertyMultiple Service Initiation Tests ... 195
   8.21 ReadRange Service Initiation Tests ... 197
   8.22 WriteProperty Service Initiation Tests ... 201
   8.23 WritePropertyMultiple Service Initiation Tests ... 203
   8.24 DeviceCommunicationControl Service Initiation Tests ... 205
   8.25 ConfirmedPrivateTransfer Service Initiation Test ... 207
   8.26 UnconfirmedPrivateTransfer Service Initiation Test ... 207
   8.27 ReinitializeDevice Service Initiation Tests ... 207
   8.28 ConfirmedTextMessage Service Initiation Tests ... 208
   8.29 UnconfirmedTextMessage Service Initiation Tests ... 209
   8.30 TimeSynchronization Service Initiation Tests ... 210
   8.31 UTCTimeSynchronization Service Initiation Tests ... 210
   8.32 Who-Has Service Initiation Tests ... 211
   8.33 I-Have Service Initiation Tests ... 212

8.34 Who-Is Service Initiation Tests 212
8.35 I-Am Service Initiation Tests 213
8.36 VT-Open Service Initiation Tests 213
8.37 VT-Close Service Initiation Tests 214
8.38 VT-Data Service Initiation Tests 215
8.39 RequestKey Service Initiation Tests 217
8.40 Authenticate Service Initiation Tests 218
9. APPLICATION SERVICE EXECUTION TESTS 222
9.1 AcknowledgeAlarm Service Execution Tests 222
9.2 ConfirmedCOVNotification Service Execution Tests 243
9.3 UnconfirmedCOVNotification Service Execution Tests 247
9.4 ConfirmedEventNotification Service Execution Tests 247
9.5 UnconfirmedEventNotification Service Execution Tests 250
9.6 GetAlarmSummary Service Execution Tests 250
9.7 GetEnrollmentSummary Service Execution Tests 251
9.8 GetEventInformation Service Execution Tests 255
9.9 LifeSafetyOperation Service Execution Test 257
9.10 SubscribeCOV Service Execution Tests 259
9.11 SubscribeCOVProperty Service Execution Tests 265
9.12 AtomicReadFile Service Execution Tests 272
9.13 AtomicWriteFile Service Execution Tests 278
9.14 AddListElement Service Execution Tests 289
9.15 RemoveListElement Service Execution Tests 291
9.16 CreateObject Service Execution Tests 293
9.17 DeleteObject Service Execution Tests 297
9.18 ReadProperty Service Execution Tests 298
9.19 ReadPropertyConditional Service Execution Tests 301
9.20 ReadPropertyMultiple Service Execution Tests 302
9.21 ReadRange Service Execution Tests 309
9.22 WriteProperty Service Execution Tests 318
9.23 WritePropertyMultiple Service Execution Tests 323
9.24 DeviceCommunicationControl Service Execution Test 331
9.25 ConfirmedPrivateTransfer Service Execution Tests 338
9.26 UnconfirmedPrivateTransfer Service Execution Tests 338
9.27 ReinitializeDevice Service Execution Tests 338
9.28 ConfirmedTextMessage Service Execution Tests 341
9.29 UnconfirmedTextMessage Service Execution Tests 343
9.30 TimeSynchronization Service Execution Tests 343
9.31 UTCTimeSynchronization Service Execution Tests 344
9.32 Who-Has Service Execution Tests 345
9.33 Who-Is Service Execution Tests 350
9.34 VT-Open Service Execution Tests 353
9.35 VT-Close Service Execution Tests 355
9.36 VT-Data Service Execution Tests 356
9.37 RequestKey Service Execution Test 356
9.38 Authenticate Service Execution Tests 358
9.39 General Testing of Service Execution 363
10. NETWORK LAYER PROTOCOL TESTS 364
10.1 Processing Application Layer Messages Originating from Remote Networks 364
10.2 Router Functionality Tests 364
10.3 Half-Router Functionality Tests 388
10.4 B/IP PAD Tests 395
10.5 Initiating Network Layer Messages 397
10.6 Non-Router Functionality Tests 398
10.7 Route Binding Tests 400
11. LOGICAL LINK LAYER PROTOCOL TESTS 406

11.1 UI Command and Response 406
11.2 XID Command and Response 406
11.3 TEST Command and Response 407
12. DATA LINK LAYER PROTOCOLS TESTS 408
12.1 MS/TP State Machine Tests 408
12.2 PTP State Machine Tests 463
13. SPECIAL FUNCTIONALITY TESTS 501
13.1 Segmentation 501
13.2 Time Master 510
13.3 Character Sets 510
13.4 Malformed PDUs 511
13.5 Slave Proxy Tests 512
13.6 Automatic Network Mapping 515
13.7 Automatic Device Mapping 515
14. BACnet/IP Functionality Tests 516
14.1 Non-BBMD B/IP Device 516
14.2 BBMD B/IP Device with a Server Application 518
14.3 Broadcast Distribution Table Operations 522
14.4 Foreign Device Table Operations (Negative Tests) 526
14.5 BACnet Broadcast Management (No Foreign Device Table, No Applications) 527
14.6 Foreign Device Management 529
14.7 Broadcast Management (BBMD, Foreign Devices, Local Application) 533
14.8 Registering as a Foreign Device 541
14.9 Initiating BVLL Service Requests Conveying an NPDU 541
15. Reporting Test Results 543
ANNEX A - Example EPICS (INFORMATIVE) 545