

DIN EN ISO 16484-6:2009-11 (E)

Building automation and control systems (BACS)_ - Part 6: Data communication conformance testing (ISO_16484-6:2009); English version EN_ISO_16484-6:2009, only on CD-ROM

Contents

	Page
Foreword.....	5
1 Scope	6
2 Relationship between this part of ISO 16484 and ANSI/ASHRE 135.1-2007.....	6
3 Terms, definitions and abbreviated terms	6
4 ELECTRONIC PICS FILE FORMAT	7
4.1 Character Encoding.....	7
4.2 Structure of EPICS Files	8
4.3 Character Strings.....	8
4.4 Notational Rules for Parameter Values	8
4.5 Sections of the EPICS File	10
5 EPICS CONSISTENCY TESTS	26
6 CONVENTIONS FOR SPECIFYING BACnet CONFORMANCE TESTS	27
6.1 TCSL Components.....	28
6.2 TCSL Statements	29
6.3 Time Dependencies	33
6.4 BACnet References	33
7 OBJECT SUPPORT TESTS	34
7.1 Read Support for Properties in the Test Database	34
7.2 Write Support for Properties in the Test Database	34
7.3 Object Functionality Tests.....	35
8 APPLICATION SERVICE INITIATION TESTS	103
8.1 AcknowledgeAlarm Service Initiation Tests	103
8.2 ConfirmedCOVNotification Service Initiation Tests.....	104
8.3 UnconfirmedCOVNotification Service Initiation Tests.....	113
8.4 ConfirmedEventNotification Service Initiation Tests.....	115
8.5 UnconfirmedEventNotification Service Initiation Tests.....	145
8.6 GetAlarmSummary Service Initiation Tests.....	151
8.7 GetEnrollmentSummary Service Initiation Tests	151
8.8 GetEventInformation Service Initiation Tests	153
8.9 LifeSafetyOperation Service Initiation Tests	153
8.10 SubscribeCOV Service Initiation Tests	154
8.11 SubscribeCOVProperty Service Initiation Tests	155
8.12 AtomicReadFile Service Initiation Tests	156
8.13 AtomicWriteFile Service Initiation Tests	156
8.14 AddListElement Service Initiation Tests	157
8.15 RemoveListElement Service Initiation Tests	157
8.16 CreateObject Service Initiation Tests	158
8.17 DeleteObject Service Initiation Tests	159
8.18 ReadProperty Service Initiation Tests.....	159
8.19 ReadPropertyConditional Service Initiation Tests	160
8.20 ReadPropertyMultiple Service Initiation Tests	160
8.21 ReadRange Service Initiation Tests.....	161
8.22 WriteProperty Service Initiation Tests.....	163
8.23 WritePropertyMultiple Service Initiation Tests	163
8.24 DeviceCommunicationControl Service Initiation Tests.....	165
8.25 ConfirmedPrivateTransfer Service Initiation Test.....	166
8.26 UnconfirmedPrivateTransfer Service Initiation Test.....	167
8.27 ReinitializeDevice Service Initiation Tests	167
8.28 ConfirmedTextMessage Service Initiation Tests.....	168
8.29 UnconfirmedTextMessage Service Initiation Tests.....	169

8.30	TimeSynchronization Service Initiation Tests.....	170
8.31	UTCTimeSynchronization Service Initiation Tests	170
8.32	Who-Has Service Initiation Tests.....	170
8.33	I-Have Service Initiation Tests	171
8.34	Who-Is Service Initiation Tests	171
8.35	I-Am Service Initiation Tests	172
8.36	VT-Open Service Initiation Tests	172
8.37	VT-Close Service Initiation Tests.....	173
8.38	VT-Data Service Initiation Tests.....	174
8.39	RequestKey Service Initiation Tests	176
8.40	Authenticate Service Initiation Tests	177
9	APPLICATION SERVICE EXECUTION TESTS	180
9.1	AcknowledgeAlarm Service Execution Tests	181
9.2	ConfirmedCOVNotification Service Execution Tests	193
9.3	UnconfirmedCOVNotification Service Execution Tests	197
9.4	ConfirmedEventNotification Service Execution Tests	197
9.5	UnconfirmedEventNotification Service Execution Tests	198
9.6	GetAlarmSummary Service Execution Tests	198
9.7	GetEnrollmentSummary Service Execution Tests.....	199
9.8	GetEventInformation Service Execution Tests	203
9.9	LifeSafetyOperation Service Execution Test.....	205
9.10	SubscribeCOV Service Execution Tests.....	206
9.11	SubscribeCOVProperty Service Execution Tests	211
9.12	AtomicReadFile Service Execution Tests.....	218
9.13	AtomicWriteFile Service Execution Tests.....	224
9.14	AddListElement Service Execution Tests.....	234
9.15	RemoveListElement Service Execution Tests	236
9.16	CreateObject Service Execution Tests.....	238
9.17	DeleteObject Service Execution Tests.....	242
9.18	ReadProperty Service Execution Tests	243
9.19	ReadPropertyConditional Service Execution Tests	245
9.20	ReadPropertyMultiple Service Execution Tests.....	246
9.21	ReadRange Service Execution Tests	253
9.22	WriteProperty Service Execution Tests	255
9.23	WritePropertyMultiple Service Execution Tests	260
9.24	DeviceCommunicationControl Service Execution Test	268
9.25	ConfirmedPrivateTransfer Service Execution Tests	272
9.26	UnconfirmedPrivateTransfer Service Execution Tests	273
9.27	ReinitializeDevice Service Execution Tests	273
9.28	ConfirmedTextMessage Service Execution Tests	275
9.29	UnconfirmedTextMessage Service Execution Tests	277
9.30	TimeSynchronization Service Execution Tests	277
9.31	UTCTimeSynchronization Service Execution Tests	278
9.32	Who-Has Service Execution Tests	279
9.33	Who-Is Service Execution Tests	284
9.34	VT-Open Service Execution Tests	287
9.35	VT-Close Service Execution Tests	288
9.36	VT-Data Service Execution Tests	289
9.37	RequestKey Service Execution Test	290
9.38	Authenticate Service Execution Tests	292
9.39	General Testing of Service Execution.....	296
10	NETWORK LAYER PROTOCOL TESTS.....	297
10.1	Processing Application Layer Messages Originating from Remote Networks.....	297
10.2	Router Functionality Tests	297
10.3	Half-Router Functionality Tests	321
10.4	B/IP PAD Tests.....	327
10.5	Initiating Network Layer Messages	329

11	LOGICAL LINK LAYER PROTOCOL TESTS	331
11.1	UI Command and Response	331
11.2	XID Command and Response.....	331
11.3	TEST Command and Response	332
12	DATA LINK LAYER PROTOCOLS TESTS	333
12.1	MS/TP State Machine Tests	333
12.2	PTP State Machine Tests	385
13	SPECIAL FUNCTIONALITY TESTS	421
13.1	Segmentation	421
13.2	Time Master	430
13.3	Character Sets.....	431
13.4	Malformed PDUs	431
13.5	Slave Proxy Tests	432
14	BACnet/IP Functionality Tests	435
14.1	Non-BBMD B/IP Device	435
14.2	Non-BBMD B/IP device Device with a Server Application.....	437
14.3	Broadcast Distribution Table Operations	437
14.4	Foreign Device Table Operations (Negative Tests).....	44
14.5	BACnet Broadcast Management (No Foreign Device Table, No Applications).....	441
14.6	Foreign Device Management	442
14.7	Broadcast Management (BBMD, Foreign Devices, Local Application).....	444
15	Reporting Test Results	447
	ANNEX A – EXAMPLE EPICS (INFORMATIVE)	448