

E DIN EN ISO 16484-6:2024-12 (E)

Erscheinungsdatum: 2024-11-15

Building automation and control systems (BACS) - Part 6: Data communication conformance testing (ISO/FDIS 16484-6:2024); English version prEN ISO 16484-6:2024

Contents

Page

FOREWORD	vi
1. PURPOSE	1
2. SCOPE	1
3. DEFINITIONS	1
3.1 Terms Adopted from International Standardss	1
3.2 Abbreviations and Acronyms Used in the Standard	1
3.3 Common language used in tests	1
4. ELECTRONIC PICS FILE FORMAT	2
4.1 Character Encoding	2
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	5
5. EPICS CONSISTENCY TESTS	10
6. CONVENTIONS FOR SPECIFYING BACnet CONFORMANCE TESTS	12
6.1 TCSL Components	12
6.2 TCSL Statements	13
6.3 Time Dependencies	18
6.4 BACnet References	19
6.5 TD Requirements	19
6.6 Test Execution Considerations	19
7. OBJECT SUPPORT TESTS	21
7.1 Read Support for Properties in the Test Database	21
7.2 Write Support for Properties in the Test Database	23
7.3 Object Functionality Tests	29
8. APPLICATION SERVICE INITIATION TESTS	332
8.1 AcknowledgeAlarm Service Initiation Tests	332
8.2 ConfirmedCOVNotification Service Initiation Tests	334
8.3 UnconfirmedCOVNotification Service Initiation Tests	348
8.4 ConfirmedEventNotification Service Initiation Tests	352
8.5 UnconfirmedEventNotification Service Initiation Tests	398
8.6 GetAlarmSummary Service Initiation Tests	422
8.7 GetEnrollmentSummary Service Initiation Tests	422
8.8 GetEventInformation Service Initiation Tests	424
8.9 LifeSafetyOperation Service Initiation Tests	425
8.10 SubscribeCOV Service Initiation Tests	426
8.11 SubscribeCOVProperty Service Initiation Tests	427
8.12 AtomicReadFile Service Initiation Tests	432
8.13 AtomicWriteFile Service Initiation Tests	432
8.14 AddListElement Service Initiation Tests	433
8.15 RemoveListElement Service Initiation Tests	433
8.16 CreateObject Service Initiation Tests	434
8.17 DeleteObject Service Initiation Tests	434
8.18 ReadProperty Service Initiation Tests	435
8.19 ReadPropertyConditional Service Initiation Tests	437
8.20 ReadPropertyMultiple Service Initiation Tests	437
8.21 ReadRange Service Initiation Tests	440
8.22 WriteProperty Service Initiation Tests	443
8.23 WritePropertyMultiple Service Initiation Tests	446
8.24 DeviceCommunicationControl Service Initiation Tests	448
8.25 ConfirmedPrivateTransfer Service Initiation Test	449
8.26 UnconfirmedPrivateTransfer Service Initiation Test	450
8.27 ReinitializeDevice Service Initiation Tests	450

8.28	ConfirmedTextMessage Service Initiation Tests.....	451
8.29	UnconfirmedTextMessage Service Initiation Tests.....	452
8.30	TimeSynchronization Service Initiation Tests.....	452
8.31	UTCTimeSynchronization Service Initiation Tests.....	452
8.32	Who-Has Service Initiation Tests.....	453
8.33	I-Have Service Initiation Tests.....	454
8.34	Who-Is Service Initiation Tests.....	454
8.35	I-Am Service Initiation Tests.....	455
8.36	VT-Open Service Initiation Tests.....	455
8.37	VT-Close Service Initiation Tests.....	456
8.38	VT-Data Service Initiation Tests.....	457
8.39	RequestKey Service Initiation Tests.....	459
8.40	Authenticate Service Initiation Tests.....	459
8.41	WriteGroup Service Initiation Tests.....	462
8.42	SubscribeCOVPropertyMultiple Service Initiation Tests.....	463
8.43	AuditLogQuery Initiation Tests.....	467
9.	APPLICATION SERVICE EXECUTION TESTS.....	468
9.1	AcknowledgeAlarm Service Execution Tests.....	468
9.2	ConfirmedCOVNotification Service Execution Tests.....	493
9.3	UnconfirmedCOVNotification Service Execution Tests.....	498
9.4	ConfirmedEventNotification Service Execution Tests.....	501
9.5	UnconfirmedEventNotification Service Execution Tests.....	505
9.6	GetAlarmSummary Service Execution Tests.....	507
9.7	GetEnrollmentSummary Service Execution Tests.....	508
9.8	GetEventInformation Service Execution Tests.....	511
9.9	LifeSafetyOperation Service Execution Test.....	513
9.10	SubscribeCOV Service Execution Tests.....	517
9.11	SubscribeCOVProperty Service Execution Tests.....	527
9.12	AtomicReadFile Service Execution Tests.....	538
9.13	AtomicWriteFile Service Execution Tests.....	544
9.14	AddListElement Service Execution Tests.....	553
9.15	RemoveListElement Service Execution Tests.....	556
9.16	CreateObject Service Execution Tests.....	557
9.17	DeleteObject Service Execution Tests.....	562
9.18	ReadProperty Service Execution Tests.....	563
9.19	ReadPropertyConditional Service Execution Tests.....	568
9.20	ReadPropertyMultiple Service Execution Tests.....	568
9.21	ReadRange Service Execution Tests.....	577
9.22	WriteProperty Service Execution Tests.....	589
9.23	WritePropertyMultiple Service Execution Tests.....	596
9.24	DeviceCommunicationControl Service Execution Test.....	611
9.25	ConfirmedPrivateTransfer Service Execution Tests.....	618
9.26	UnconfirmedPrivateTransfer Service Execution Tests.....	619
9.27	ReinitializeDevice Service Execution Tests.....	619
9.28	ConfirmedTextMessage Service Execution Tests.....	623
9.29	UnconfirmedTextMessage Service Execution Tests.....	624
9.30	TimeSynchronization Service Execution Tests.....	625
9.31	UTCTimeSynchronization Service Execution Tests.....	625
9.32	Who-Has Service Execution Tests.....	626
9.33	Who-Is Service Execution Tests.....	633
9.34	VT-Open Service Execution Tests.....	636
9.35	VT-Close Service Execution Tests.....	637
9.36	VT-Data Service Execution Tests.....	639
9.37	RequestKey Service Execution Test.....	639
9.38	Authenticate Service Execution Tests.....	641
9.39	General Testing of Service Execution.....	644
9.40	AuditLogQuery Service Execution Tests.....	645
9.41	WriteGroup Tests.....	647
9.42	SubscribeCOVPropertyMultiple Service Execution Tests.....	651
10.	NETWORK LAYER PROTOCOL TESTS.....	665
10.1	General Network Layer Tests.....	665
10.2	Router Functionality Tests.....	666
10.3	Half-Router Functionality Tests.....	690
10.4	B/IP PAD Tests.....	697
10.5	Initiating Network Layer Messages.....	699
10.6	Non-Router Functionality Tests.....	700

10.7	Route Binding Tests	703
10.8	Virtual Routing Functionality Tests	707
11.	LOGICAL LINK LAYER PROTOCOL TESTS	726
11.1	UI Command and Response	726
11.2	XID Command and Response	726
11.3	TEST Command and Response.....	727
12.	DATA LINK LAYER PROTOCOLS TESTS	728
12.1	MS/TP State Machine Tests	728
12.2	PTP State Machine Tests.....	786
12.3	BACnet/IP Functionality Tests.....	818
12.4	BACnet/IPv6 Functionality Tests.....	849
12.5	Secure Connect Functionality Tests	863
13.	SPECIAL FUNCTIONALITY TESTS	912
13.1	Segmentation	912
13.2	Time Master	920
13.3	Character Sets.....	925
13.4	Malformed PDUs	925
13.5	Slave Proxy Tests	926
13.6	Automatic Network Mapping.....	928
13.7	Automatic Device Mapping.....	929
13.8	Backup and Restore Procedure Tests	929
13.9	Application State Machine Tests.....	943
13.10	Workstation Scheduling Tests	943
14.	Reporting Test Results	961
	ANNEX A – EXAMPLE EPICS (INFORMATIVE)	962
	HISTORY OF REVISIONS.....	977