

Echoflex Reference Guide

BACnet PICS for Elaho BACnet Interface

Overview

This reference guide defines the BACnet Protocol Implementation Conformance Statement (PICS) for use with Echoflex's Elaho BACnet Interface.

BACnet Protocol Implementation Conformance Statement

Object Name: Elaho BACnet Interface - configurable using ElahoAccess Mobile App

Description: BACnet representation of Elaho lighting system objects

Vendor Name: Electronic Theatre Controls, Inc. Echoflex Solutions, Inc.

Vendor Identifier: # 433

Model Name: Elaho BACnet Interface

Firmware Revision: v3.0.0 and later

Application Software Revision: v3.0.0 and later

Protocol Version: 1

Protocol Revision: 12

1. Product Description

The Elaho BACnet Interface allows a BACnet Client to interface with and control an Elaho lighting system. BACnet IP Clients physically connect to a Building Management Network where the BACnet Interface is also connected, positioning the BMS switch as a gateway between the Elaho system and BACnet client applications. It exposes a series of BACnet objects that reflect the state/condition of Elaho lighting devices and permits control.

2. BACnet Conformance Class Supported

BACnet Standardized Device Profile (Annex L):

- BACnet Operator Workstation (B-OWS)
- BACnet Advanced Operator Workstation (B-AWS)
- BACnet Operator Display (B-OD)
- BACnet Building Controller (B-BC)
- BACnet Advanced Application Controller (B-AAC)
- BACnet Application Specific Controller (B-ASC)
- BACnet Smart Sensor (B-SS)
- BACnet Smart Actuator (B-SA)
- BACnet Gateway (B-GW)

Echoflex Reference Guide

Protocol Implementation Conformance Statement

List All BACnet Interoperability Building Blocks Supported (Annex K):

DS-RP-B

DS-WP-B

DS-COV-B

3. BACnet Standard Protocol Services Supported

Application Service	Initiates Requests	Executes Requests
SubscribeCOV	–	■
ReadProperty	–	■
WriteProperty	–	■
I-Am	■	–
Who-Is	–	–

4. Standard Object Types Supported

Object-Type	Supported	Dynamically Creatable	Dynamically Deletable	Optional Properties Supported	Writable Properties
Analog Value	■	–	–	Description	Present_Value
Binary Input	■	–	–	Description	–
Binary Value	■	–	–	Description	Present_Value
Device	■	N/A	N/A	–	–
Multi-state Value	■	–	–	Description	Present_Value

5. Data Link Layer Option

- BACnet IP, (Annex J)
- BACnet IP, (Annex J), Foreign Device
- ISO 8802-3, Ethernet (Clause 7)
- ATA 878.1, 2.5Mb. ARCNET (Clause 8)
- ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) -----
- MS/TP master (Clause 9), baud rate(s):
- MS-TP slave (Clause 9), baud rate(s):
- Point-To-Point, EIA 232 (Clause 10), baud rate(s):
- Point-To-Point, modem (Clause 10), baud rate(s):
- LonTalk, (Clause 11), medium: -----
- BACnet/ZigBee (Annex O).
- Other:

Echoflex Reference Guide

Protocol Implementation Conformance Statement

6. Character Sets Supported

Indicating support for multiple character sets does not imply that they can all be supported.

- ISO 10646 (UTF-8)
- IBM™ / Microsoft™ DBCS
- ISO 8859-1
- ANSI x3.4
- ISO 10646 (UCS-2)
- ISO 10646 (UCS-4)
- JIS 0208

If this product is a communication gateway, describe the types of non-BACnet equipment / network (s) that the gateway supports:

- Supports connectivity with the Unison Elaho lighting control system.
- Supports connectivity with the Elaho lighting control system.

7. Special Functionality

Segmented Requests Supported	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Segmented Responses Supported	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

8. Router

- Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.
- Annex H, BACnet Tunneling Router over IP
- BACnet/IP Broadcast Management Device (BBMD)
 - Does the BBMD support registrations by Foreign Devices? Yes No
 - Does the BBMD support network address translation? Yes No

9. Property Range Restrictions

Multi-state values: 1–16

- 1–16 = Preset 1–16
- 17 = Space off
- 18 = Space is not off, but none of presets 1–16 are active

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Point Reference

Analog Values

#	Description	Notes
1	Space 1: Zone 1	
2	Space 1: Zone 2	
3	Space 1: Zone 3	
4	Space 1: Zone 4	
5	Space 1: Zone 5	
6	Space 1: Zone 6	
7	Space 1: Zone 7	
8	Space 1: Zone 8	
9	Space 1: Zone 9	
10	Space 1: Zone 10	
11	Space 1: Zone 11	
12	Space 1: Zone 12	
13	Space 1: Zone 13	
14	Space 1: Zone 14	
15	Space 1: Zone 15	
16	Space 1: Zone 16	
17	Space 2: Zone 1	
18	Space 2: Zone 2	
19	Space 2: Zone 3	
20	Space 2: Zone 4	
21	Space 2: Zone 5	
22	Space 2: Zone 6	
23	Space 2: Zone 7	
24	Space 2: Zone 8	
25	Space 2: Zone 9	
26	Space 2: Zone 10	
27	Space 2: Zone 11	
28	Space 2: Zone 12	
29	Space 2: Zone 13	
30	Space 2: Zone 14	
31	Space 2: Zone 15	
32	Space 2: Zone 16	
33	Space 3: Zone 1	
34	Space 3: Zone 2	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
35	Space 3: Zone 3	
36	Space 3: Zone 4	
37	Space 3: Zone 5	
38	Space 3: Zone 6	
39	Space 3: Zone 7	
40	Space 3: Zone 8	
41	Space 3: Zone 9	
42	Space 3: Zone 10	
43	Space 3: Zone 11	
44	Space 3: Zone 12	
45	Space 3: Zone 13	
46	Space 3: Zone 14	
47	Space 3: Zone 15	
48	Space 3: Zone 16	
49	Space 4: Zone 1	
50	Space 4: Zone 2	
51	Space 4: Zone 3	
52	Space 4: Zone 4	
53	Space 4: Zone 5	
54	Space 4: Zone 6	
55	Space 4: Zone 7	
56	Space 4: Zone 8	
57	Space 4: Zone 9	
58	Space 4: Zone 10	
59	Space 4: Zone 11	
60	Space 4: Zone 12	
61	Space 4: Zone 13	
62	Space 4: Zone 14	
63	Space 4: Zone 15	
64	Space 4: Zone 16	
65	Space 5: Zone 1	
66	Space 5: Zone 2	
67	Space 5: Zone 3	
68	Space 5: Zone 4	
69	Space 5: Zone 5	
70	Space 5: Zone 6	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
71	Space 5: Zone 7	
72	Space 5: Zone 8	
73	Space 5: Zone 9	
74	Space 5: Zone 10	
75	Space 5: Zone 11	
76	Space 5: Zone 12	
77	Space 5: Zone 13	
78	Space 5: Zone 14	
79	Space 5: Zone 15	
80	Space 5: Zone 16	
81	Space 6: Zone 1	
82	Space 6: Zone 2	
83	Space 6: Zone 3	
84	Space 6: Zone 4	
85	Space 6: Zone 5	
86	Space 6: Zone 6	
87	Space 6: Zone 7	
88	Space 6: Zone 8	
89	Space 6: Zone 9	
90	Space 6: Zone 10	
91	Space 6: Zone 11	
92	Space 6: Zone 12	
93	Space 6: Zone 13	
94	Space 6: Zone 14	
95	Space 6: Zone 15	
96	Space 6: Zone 16	
97	Space 7: Zone 1	
98	Space 7: Zone 2	
99	Space 7: Zone 3	
100	Space 7: Zone 4	
101	Space 7: Zone 5	
102	Space 7: Zone 6	
103	Space 7: Zone 7	
104	Space 7: Zone 8	
105	Space 7: Zone 9	
106	Space 7: Zone 10	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
107	Space 7: Zone 11	
108	Space 7: Zone 12	
109	Space 7: Zone 13	
110	Space 7: Zone 14	
111	Space 7: Zone 15	
112	Space 7: Zone 16	
113	Space 8: Zone 1	
114	Space 8: Zone 2	
115	Space 8: Zone 3	
116	Space 8: Zone 4	
117	Space 8: Zone 5	
118	Space 8: Zone 6	
119	Space 8: Zone 7	
120	Space 8: Zone 8	
121	Space 8: Zone 9	
122	Space 8: Zone 10	
123	Space 8: Zone 11	
124	Space 8: Zone 12	
125	Space 8: Zone 13	
126	Space 8: Zone 14	
127	Space 8: Zone 15	
128	Space 8: Zone 16	
129	Space 9: Zone 1	
130	Space 9: Zone 2	
131	Space 9: Zone 3	
132	Space 9: Zone 4	
133	Space 9: Zone 5	
134	Space 9: Zone 6	
135	Space 9: Zone 7	
136	Space 9: Zone 8	
137	Space 9: Zone 9	
138	Space 9: Zone 10	
139	Space 9: Zone 11	
140	Space 9: Zone 12	
141	Space 9: Zone 13	
142	Space 9: Zone 14	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
143	Space 9: Zone 15	
144	Space 9: Zone 16	
145	Space 10: Zone 1	
146	Space 10: Zone 2	
147	Space 10: Zone 3	
148	Space 10: Zone 4	
149	Space 10: Zone 5	
150	Space 10: Zone 6	
151	Space 10: Zone 7	
152	Space 10: Zone 8	
153	Space 10: Zone 9	
154	Space 10: Zone 10	
155	Space 10: Zone 11	
156	Space 10: Zone 12	
157	Space 10: Zone 13	
158	Space 10: Zone 14	
159	Space 10: Zone 15	
160	Space 10: Zone 16	
161	Space 11: Zone 1	
162	Space 11: Zone 2	
163	Space 11: Zone 3	
164	Space 11: Zone 4	
165	Space 11: Zone 5	
166	Space 11: Zone 6	
167	Space 11: Zone 7	
168	Space 11: Zone 8	
169	Space 11: Zone 9	
170	Space 11: Zone 10	
171	Space 11: Zone 11	
172	Space 11: Zone 12	
173	Space 11: Zone 13	
174	Space 11: Zone 14	
175	Space 11: Zone 15	
176	Space 11: Zone 16	
177	Space 12: Zone 1	
178	Space 12: Zone 2	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
179	Space 12: Zone 3	
180	Space 12: Zone 4	
181	Space 12: Zone 5	
182	Space 12: Zone 6	
183	Space 12: Zone 7	
184	Space 12: Zone 8	
185	Space 12: Zone 9	
186	Space 12: Zone 10	
187	Space 12: Zone 11	
188	Space 12: Zone 12	
189	Space 12: Zone 13	
190	Space 12: Zone 14	
191	Space 12: Zone 15	
192	Space 12: Zone 16	
193	Space 13: Zone 1	
194	Space 13: Zone 2	
195	Space 13: Zone 3	
196	Space 13: Zone 4	
197	Space 13: Zone 5	
198	Space 13: Zone 6	
199	Space 13: Zone 7	
200	Space 13: Zone 8	
201	Space 13: Zone 9	
202	Space 13: Zone 10	
203	Space 13: Zone 11	
204	Space 13: Zone 12	
205	Space 13: Zone 13	
206	Space 13: Zone 14	
207	Space 13: Zone 15	
208	Space 13: Zone 16	
209	Space 14: Zone 1	
210	Space 14: Zone 2	
211	Space 14: Zone 3	
212	Space 14: Zone 4	
213	Space 14: Zone 5	
214	Space 14: Zone 6	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
215	Space 14: Zone 7	
216	Space 14: Zone 8	
217	Space 14: Zone 9	
218	Space 14: Zone 10	
219	Space 14: Zone 11	
220	Space 14: Zone 12	
221	Space 14: Zone 13	
222	Space 14: Zone 14	
223	Space 14: Zone 15	
224	Space 14: Zone 16	
225	Space 15: Zone 1	
226	Space 15: Zone 2	
227	Space 15: Zone 3	
228	Space 15: Zone 4	
229	Space 15: Zone 5	
230	Space 15: Zone 6	
231	Space 15: Zone 7	
232	Space 15: Zone 8	
233	Space 15: Zone 9	
234	Space 15: Zone 10	
235	Space 15: Zone 11	
236	Space 15: Zone 12	
237	Space 15: Zone 13	
238	Space 15: Zone 14	
239	Space 15: Zone 15	
240	Space 15: Zone 16	
241	Space 16: Zone 1	
242	Space 16: Zone 2	
243	Space 16: Zone 3	
244	Space 16: Zone 4	
245	Space 16: Zone 5	
246	Space 16: Zone 6	
247	Space 16: Zone 7	
248	Space 16: Zone 8	
249	Space 16: Zone 9	
250	Space 16: Zone 10	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Analog Values

#	Description	Notes
251	Space 16: Zone 11	
252	Space 16: Zone 12	
253	Space 16: Zone 13	
254	Space 16: Zone 14	
255	Space 16: Zone 15	
256	Space 16: Zone 16	

Binary Values

#	Description	Notes
1	Space 1 Lockout Status	
2	Space 2 Lockout Status	
3	Space 3 Lockout Status	
4	Space 4 Lockout Status	
5	Space 5 Lockout Status	
6	Space 6 Lockout Status	
7	Space 7 Lockout Status	
8	Space 8 Lockout Status	
9	Space 9 Lockout Status	
10	Space 10 Lockout Status	
11	Space 11 Lockout Status	
12	Space 12 Lockout Status	
13	Space 13 Lockout Status	
14	Space 14 Lockout Status	
15	Space 15 Lockout Status	
16	Space 16 Lockout Status	
17	Space 1 Timeclock Hold Status	
18	Space 2 Timeclock Hold Status	
19	Space 3 Timeclock Hold Status	
20	Space 4 Timeclock Hold Status	
21	Space 5 Timeclock Hold Status	
22	Space 6 Timeclock Hold Status	
23	Space 7 Timeclock Hold Status	
24	Space 8 Timeclock Hold Status	
25	Space 9 Timeclock Hold Status	
26	Space 10 Timeclock Hold Status	
27	Space 11 Timeclock Hold Status	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Binary Values

#	Description	Notes
28	Space 12 Timeclock Hold Status	
29	Space 13 Timeclock Hold Status	
30	Space 14 Timeclock Hold Status	
31	Space 15 Timeclock Hold Status	
32	Space 16 Timeclock Hold Status	
33	Space 1 Demand Response Status	
34	Space 2 Demand Response Status	
35	Space 3 Demand Response Status	
36	Space 4 Demand Response Status	
37	Space 5 Demand Response Status	
38	Space 6 Demand Response Status	
39	Space 7 Demand Response Status	
40	Space 8 Demand Response Status	
41	Space 9 Demand Response Status	
42	Space 10 Demand Response Status	
43	Space 11 Demand Response Status	
44	Space 12 Demand Response Status	
45	Space 13 Demand Response Status	
46	Space 14 Demand Response Status	
47	Space 15 Demand Response Status	
48	Space 16 Demand Response Status	

Binary Inputs

#	Description	Notes
1	Space 1 Occupancy Status	
2	Space 2 Occupancy Status	
3	Space 3 Occupancy Status	
4	Space 4 Occupancy Status	
5	Space 5 Occupancy Status	
6	Space 6 Occupancy Status	
7	Space 7 Occupancy Status	
8	Space 8 Occupancy Status	
9	Space 9 Occupancy Status	
10	Space 10 Occupancy Status	
11	Space 11 Occupancy Status	
12	Space 12 Occupancy Status	

Echoflex Reference Guide

Protocol Implementation Conformance Statement

Binary Inputs

#	Description	Notes
13	Space 13 Occupancy Status	
14	Space 14 Occupancy Status	
15	Space 15 Occupancy Status	
16	Space 16 Occupancy Status	

Multistate Values

#	Description	Notes
1	Space 1 Preset Status	
2	Space 2 Preset Status	
3	Space 3 Preset Status	
4	Space 4 Preset Status	
5	Space 5 Preset Status	
6	Space 6 Preset Status	
7	Space 7 Preset Status	
8	Space 8 Preset Status	
9	Space 9 Preset Status	
10	Space 10 Preset Status	
11	Space 11 Preset Status	
12	Space 12 Preset Status	
13	Space 13 Preset Status	
14	Space 14 Preset Status	
15	Space 15 Preset Status	
16	Space 16 Preset Status	