Date: 30/10/20
Vendor Name: Maco Lighting (1002)
Product Name: zencontrol LCM/RCM/AC
Product Model Number: zencontrol LCM/RCM/AC
Applications Software Version: 1.7 **Firmware Revision:** 1.0.0
BACnet Protocol Revision: 12

Product Description:

zencontrol Controller BACnet Server
Provides an interface to query information on connected DALI Emergency devices, and the occupancy state of DALI groups.

BACnet Standardized Device Profile (Annex L)

	BACnet Operator Workstation (B-OWS)
	BACnet Building Controller (B-BC)
	BACnet Advanced Application Controller (B-AAC)
x	BACnet Application Specific Controller (B-ASC)
	BACnet Smart Sensor (B-SS)
	BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks supported (see Annex K in BACnet Addendum 135d):

DS-RP-B Read Property
DS-RPM-B Read Property Multiple
DS-WP-B Write Property

DS-COV-B Change Of Value

AE-ACK-B Alarm Acknowledgement
AE-INFO-B Information Summary
AE-N-I-B Internal Notification

NM-BBMDC-B BBMD Configuration
NM-FDR-A Foreign Device Registration

Which of the following device binding methods does the product support? (check one or more)

	Send Who-Is, receive I-Am (BIBB DM-DDB-A)
x	Receive Who-Is, send I-Am (BIBB DM-DDB-B)
	Send Who-Has, receive I-Have (BIBB DM-DOB-A)
x	Receive Who-Has, send I-Have (BIBB DM-DOB-B)
	Manual configuration of recipient device's network number and MAC address
	None of the above

Standard Object Types Supported:

Device Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

Description Local_Time Local_Date UTC_Offset Daylight_Saving_Status Active_COV_Subscriptions

4. List of all properties that are writable where not otherwise required by this standard

Object_Identifier Description

5. List of proprietary properties:

Property Identifier	**Property Datatype**	**Meaning**
512	CharacterString	Fitting Number

6. List of any property value range restrictions:

Property Identifier	**Restrictions**

Binary Input Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

Description Time Delay Notification Class Alarm Value Event Enable Acked Transitions Notify Type Event Time Stamps Inactive Text Active Text Event Detection Enable

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

Binary Input instance numbers between 524288-524351 map to the error state of proprietary object 128 (Emergency Device) 0-63. To test behaviour of the Binary Input object and its alarms, set the Out of Service state to true, and then manually set Present Value as desired.

Notification Class Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

Binary Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

These Binary Value objects support COV subscriptions.

Binary Value instance numbers between 0:63 map to the battery fail state of proprietary object 128 (Emergency Device) 0-63.
Binary Value instance numbers between 64:127 map to the lamp fail state of proprietary object 128 (Emergency Device) 0-63.
Binary Value instance numbers between 128:191 map to the communication error state of proprietary object 128 (Emergency Device) 0-63.
Binary Value instance numbers between 192:255 map to the lamp on state of proprietary object 128 (Emergency Device) 0-63.
Binary Value instance numbers between 256:271 map to the occupancy state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance number 272 indicates whether any DALI Gear or Devices are missing.
Binary Value instance number 273 indicates whether any DALI Gear are reporting a lamp failure.
Binary Value instance number 274 indicates whether there is a DALI circuit failure.
Binary Value instance number 275 indicates whether the controller is online and functioning normally.

Binary Value instance numbers between 288:303 map to the lamp failure state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance numbers between 304:319 map to the gear failure state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance numbers between 320:335 map to the comms failure state of proprietary object 129 (DALI Occupancy Group) 0-15.

Binary Value instance numbers between 336:399 map to the lamp failure state of DALI Address 0-63.

Binary Value instance numbers between 400:463 map to the gear failure state of DALI Address 0-63.

Binary Value instance numbers between 464:527 map to the comms failure state of DALI Address 0-63.

To test behaviour of the Binary Value object and its COV, set the Out of Service state to true, and then manually set Present Value as desired.

Analog Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

Dali Light Level, Dali Scene and Inhibit are all writeable to control the Dali bus. Controller Profile is writeable to control the operation of the controller.

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

These Analog Value objects support COV subscriptions. Analog Value instance numbers between 0:63 map to the Dali Address state of proprietary object 128 (Emergency Device) 0-63. Analog Value instance numbers between 64:127 map to the Rated Duration state of proprietary object 128 (Emergency Device) 0-63. Analog Value instance numbers between 128:191 map to the Emergency Failure state of proprietary object 128 (Emergency Device) 0-63. Analog Value instance numbers between 192:255 map to the Emergency Status State state of proprietary object 128 (Emergency Device) 0-63. Analog Value instance numbers between 256:271 map to the DALI Light Level state of proprietary object 129 (DALI Occupancy Group) 0-15. This Property is writeable. Analog Value instance numbers between 272:287 map to the DALI Scene state of proprietary object 129 (DALI Occupancy Group) 0-15. This Property is writeable. Analog Value instance numbers between 288:303 map to the Inhibit state of proprietary object 129 (DALI Occupancy Group) 0-15. This Property is writeable. Analog Value instance numbers between 304:319 map to the Minimum Lux Level state of proprietary object 129 (DALI Occupancy Group) 0-15. Analog Value instance numbers between 320:336 map to the Maximum Lux Level state of proprietary object 129 (DALI Occupancy Group) 0-15. Analog Value instance number 1024 is a free running counter that will monotonically increase over time to represent the continued running of the control system. Analog Value instance number 1025 represents the current Profile of the Controller. Write a Profile number between 0 – 65534 to switch to that profile if it is currently present on the controller. If it is not, no action will be taken. If a profile is switched to with a non-low priority, write a value of -1 to return the controller to its regularly scheduled profile. To test behaviour of the Analog Value object and its COV, set the Out of Service state to true, and then manually set Present Value as desired.

CharacterString Value Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	Property Datatype	Meaning

6. List of any property value range restrictions:

Property Identifier	Restrictions

7. Object Notes

CharacterString Value instance numbers between 0:63 map to the Fitting Number of proprietary object 128 (Emergency Device) 0-63. CharacterString Value instance numbers between 64:127 map to the GTIN of proprietary object 128 (Emergency Device) 0-63. CharacterString Value instance numbers between 128:191 map to the Serial Number of proprietary object 128 (Emergency Device) 0-63. CharacterString Value instance numbers between 192:255 map to the OEM GTIN of proprietary object 128 (Emergency Device) 0-63. CharacterString Value instance numbers between 256:319 map to the OEM Serial Number of proprietary object 128 (Emergency Device) 0-63. CharacterString Value instance numbers between 320:383 map to the Fitting Number of DALI Address 0-63. CharacterString Value instance numbers between 384:447 map to the GTIN of DALI Address 0-63. CharacterString Value instance numbers between 448:511 map to the Serial Number of DALI Address 0-63. CharacterString Value instance numbers between 512:575 map to the OEM GTIN of DALI Address 0-63. CharacterString Value instance numbers between 575:639 map to the OEM Serial Number of DALI Address 0-63.

Notification Class Object Type

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	**Property Datatype**	**Meaning**

6. List of any property value range restrictions:

Property Identifier	**Restrictions**

Proprietary Object Types Supported:

Emergency DALI Object Type (Identifier 128)

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	**Property Datatype**	**Meaning**
512	CharacterString	Fitting Number
514	Unsigned	DALI Address
515	Boolean	Battery Failure Status
516	Boolean	Lamp Failure Status
517	Boolean	Lamp On Status
518	Boolean	Comms Error Status
519	CharacterString	GTIN
520	CharacterString	Serial Number
521	CharacterString	OEM GTIN
522	CharacterString	OEM Serial
524	Unsigned	Rated Duration
525	Unsigned	DALI Failure Status
526	Unsigned	DALI Emergency Status

6. List of any property value range restrictions:

Property Identifier	**Restrictions**
514	0 – 63→ DALI Address of fitting

DALI Occupancy Group Object Type (Identifier 129)

1. Dynamically creatable using BACnet's CreateObject service? No
2. Dynamically deletable using BACnet's DeleteObject service? No
3. List of optional properties supported:

4. List of all properties that are writable where not otherwise required by this standard

5. List of proprietary properties:

Property Identifier	**Property Datatype**	**Meaning**
513	Boolean	Occupancy State
514	Unsigned	DALI Light Level
515	Unsigned	Current Scene
516	Unsigned	Sensor Inhibit Time
517	Signed	Lux Minimum Value
518	Signed	Lux Maximum Value

6. List of any property value range restrictions:

Property Identifier	**Restrictions**
513	0 → Unoccupied, 1 → Occupied
514	0 – 254 → Uniform Level, 255 → Mixed Levels
515	0-15 → Go to scene (writable), 255 → No current scene (unwritable)
516	0 → Disable Inhibit, 1 – 86400 → Inhibit for number of seconds
517,518	-1 → No Lux Data, 0+ → Reported Lux Data

Data Link Layer Options (check all that are supported):

X	BACnet IP, (Annex J)	
X	BACnet IP, (Annex J), Foreign Device	
	ISO 8802-3, Ethernet (Clause 7)	
	ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)	
	ANSI/ATA 878.1, RS-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:	
	Other:	

Networking Options (check all that are supported):

	Router, Clause 6 - List all routing configurations (e.g. ARCNET-Ethernet, Ethernet-MS/TP, etc.):
	Annex H.3, BACnet Tunneling Router over UDP/IP
X	BACnet/IP Broadcast Management Device (BBMD)
X	BBMD supports registrations by Foreign Devices

Segmentation Capability (check all that apply):

		Window Size
	Segmented requests supported	
	Segmented responses supported	

Character Sets Supported (check all that apply):
Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

x	ANSI X3.4
	IBM™/Microsoft™ DBCS
	ISO 8859-1
	ISO 10646 (UCS-2)
	ISO 10646 (ICS-4)
	JIS C 6226

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

N/A

Include any addition information about the product's BACnet capabilities relevant to interoperability:

This controller supports a maximum of 128 simultaneous COV subscriptions.