

Date: Dec 15, 2011

Vendor Name: LOYTEC electronics GmbH

Product Name: CEA-709/BACnet Gateway

Product Model Number: LGATE-900

Applications Software Version: V4.x

Firmware Revision: 4.x

BACnet Protocol Revision: 135-2010 (1.6)

Product Description:

This product implements an CEA-709 to BACnet gateway. The BACnet side of the gateway reflects the CEA-709 network variable (NV) and configuration property (CP) allocations. Simple NVs are mapped to single BACnet objects, structured NVs are mapped to BACnet objects for each structure member. There can be up to 750 BACnet objects. In addition to the basic gateway functionality, the device also implements BACnet Schedule, Calendar, Trend Log, and Notification Class objects. Alarming is based on intrinsic reporting. BACnet schedules and calendars can be mapped to CEA-709 schedules and calendars. The configuration of the gateway is accomplished by a PC software. The product is equipped with a BACnet/IP and MS/TP interface for BACnet communication, as well as a TP/FT-10 and Ethernet/IP (CEA-852) interface for CEA-709 communication. The L-Gate also supports BBMD and foreign device registration and can act as a BACnet time master.

BACnet Standardized Device Profile (Annex L):

BACnet Advanced Application Controller (B-BC)

Note, that this device is a gateway. The LGATE-900 also is a BBMD.

BACnet Interoperability Building Blocks Supported (Annex K):

Data Sharing – ReadProperty-A (DS-RP-A)
Data Sharing – ReadProperty-B (DS-RP-B)
Data Sharing – ReadPropertyMultiple-A (DS-RPM-A)
Data Sharing – ReadPropertyMultiple-B (DS-RPM-B)
Data Sharing – WriteProperty-A (DS-WP-A)
Data Sharing – WriteProperty-B (DS-WP-B)
Data Sharing – WritePropertyMultiple-A (DS-WPM-A)
Data Sharing – WritePropertyMultiple-B (DS-WPM-B)
Data Sharing – COV-A (DS-COV-A)
Data Sharing – COV-B (DS-COV-B)
Data Sharing – COVP-A (DS-COVP-A)
Data Sharing – COVP-B (DS-COVP-B)
Data Sharing – COV Unsolicited-B (DS-COVU-B)
Alarm and Event – Notification-A (AE-N-A)
Alarm and Event – Notification Internal-B (AE-N-I-B)
Alarm and Event – ACK-A (AE-ACK-A)
Alarm and Event – ACK-B (AE-ACK-B)
Alarm and Event – Alarm Summary-A (AE-ASUM-A)
Alarm and Event – Alarm Summary-B (AE-ASUM-B)
Alarm and Event – Alarm Enrollment Summary-A (AE-ESUM-A)
Alarm and Event – Alarm Enrollment Summary-B (AE-ESUM-B)
Alarm and Event – Alarm Information-A (AE-INFO-A)
Alarm and Event – Alarm Information-B (AE-INFO-B)
Scheduling – Internal-B (SCHED-I-B)
Scheduling – External-B (SCHED-E-B)
Trending – Viewing and Modifying Trends Internal-B (T-VMT-I-B)
Trending – Viewing and Modifying Trends External-B (T-VMT-E-B)
Trending – Automated Trend Retrieval-B (T-ATR-B)

Device Management – DynamicDeviceBinding-A (DM-DDB-A)
Device Management – DynamicDeviceBinding-B (DM-DDB-B)
Device Management – DynamicObjectBinding-B (DM-DOB-B)
Device Management – TimeSynchronization-A (DM-TS-A)
Device Management – TimeSynchronization-B (DM-TS-B)
Device Management – UTCTimeSynchronization-A (DM-UTC-A)
Device Management – UTCTimeSynchronization-B (DM-UTC-B)
Device Management – Automatic Time Synchronization-a (DM-ATS-A)
Device Management – DeviceCommunicationControl-B (DM-DCC-B)
Device Management – ReinitializeDevice-B (DM-RD-B)
Device Management – Backup and Restore (DM-BR-B)
Device Management – List Manipulation-A (DM-LM-A)
Device Management – List Manipulation-B (DM-LM-B)
Network Management – Connection Establishment-A (NM-CE-A)

Segmentation Capability:

Segmented requests supported, window size: 16
Segmented responses supported, window size: 16

Standard Object Types Supported:

For all the objects below the following apply if not stated otherwise:

- 1) Does not support the CreateObject and DeleteObject service
- 2) Properties Object_Name, Description support up to 64 characters
- 3) Includes the required properties as specified for the object class
- 4) All commandable objects support the Priority_Array and Relinquish_Default with 16 freely usable priorities
- 5) All analog, binary, multi-state objects support COV subscriptions
- 6) No additional writeable properties exist
- 7) No proprietary properties exist
- 8) No range restrictions exist
- 9) Analog, binary, and multi-state objects are limited to 750 objects in total

Device Object

List of optional properties supported:

Location, Description, Max_Segments_Accepted, APDU_Segment_Timeout, Max_Master¹, Max_Info_Frames¹, Active_COV_Subscriptions, Configuration_Files, Last_Restor_Time, Backup_Failure_Timeout, Local_Time, Local_Date, UTC_Offset, Daylight_Saving_Status, Time_Synchronization_Recipients, UTC_Time_Synchronization_Recipients, Time_Synchronization_Interval, Align_Intervals, Interval_Offset

Analog Input, Analog Output, Analog Value

List of optional properties supported:

Description, Reliability, Min_Pres_Value, Max_Pres_Value, COV_Increment, Time_Delay, Notification_Class, Low_Limit, High_Limit, Deadband, Limit_Enable, Event_Enable, Acked_Transitions, Event_Time_Stamps

Binary Input, Binary Output, Binary Value

List of optional properties supported:

Description, Reliability, Active_Text, Inactive_Text, Time_Delay, Notification_Class, Alarm_Value, Feedback_Value, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

¹ If device is operated with BACnet MS/TP enabled.

Multi-State Input, Multi-state Output, Multi-State Value

List of optional properties supported:

Description, Reliability, State_Text, Time_Delay, Notification_Class, Alarm_Values, Fault_Values, Feedback_Values, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Notification Class Object, Schedule Object, Calendar Object

List of optional properties supported (as applies):

Description, Weekly_Schedule, Exception_Schedule

Object limit: 32 Notification Class, 100 Schedule, 25 Calendar objects.

Trend Log Object

List of optional properties supported:

Description, Start_Time, Stop_Time, Log_DeviceObjectProperty, Log_Interval, COV_Resubscription_Interval, Client_COV_Increment, Notification_Threshold, Records_Since_Notification, Last_Notify_Record, Notification_Class, Event_Enable, Acked_Transitions, Notify_Type, Event_Time_Stamps

Object limit: 100 Trend Log objects. There is an aggregated limit of 130000 log records over all Trend Log objects.

File Object

List of optional properties supported: –

Object limit: 1 File object. This object is used for configuration backup and restore.

Data Link Layer Options:

- ☒ BACnet IP, (Annex J)
- ☒ BACnet IP, (Annex J), Foreign Device
- ☐ ISO 8802-3, Ethernet (Clause 7)
- ☒ MS/TP master (Clause 9), baud rate(s): 9600, 19200, 38400, 76800
- ☐ 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:

Device Address Binding:

Static device address binding is supported.

Networking Options:

- ☐ 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)
- ☒ Registrations by Foreign Devices

Character Sets Supported:

The device is configurable for one of the following character sets at a time. It does not support them simultaneously.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> ANSI X3.4 | <input type="checkbox"/> IBM™/Microsoft™ DBCS | <input checked="" type="checkbox"/> ISO 8859-1 |
| <input checked="" type="checkbox"/> ISO 10646 (UCS-2) | <input type="checkbox"/> ISO 10646 (UCS-4) | <input type="checkbox"/> JIS C 6226 |

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

The device is an CEA-709/BACnet gateway. The network variables (NVs) and configuration properties (CPs) on the CEA-709 network are mapped to BACnet objects. The mappings are created by configuration software, which generates a set of editable defaults based on the recommendation CEN/TS 15231:2005. Defaults generated according to standard network variable types (SNVT) include the properties Object_Name, Description, Units, Max_Pres_Value, Min_Pres_Value, Resolution, Number_Of_States, and State_Text. Properties updated during run-time by the gateway are Present_Value, Status_Flags, Reliability, Out_Of_Service. Trend Log, Schedule, and Notification Class Objects operate locally on the BACnet objects and, thus, the mapped CEA-709 NVs. An additional feature is the mapping between CEA-709 and BACnet schedules/calendars.

Additional Information and Contact:

Further Information, a detailed User Manual and firmware updates can be obtained from our website <http://www.loytec.com>.

For information and technical support please contact us at the following address:

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