BACnet ✓ Modbus ✓
CEA-709 ✓ M-Bus ✓
KNX ✓ ZigBee ✓

LGATE-950
Universal Gateway

LGATE-950 allows a smooth integration between LonMark Systems, BACnet networks, KNX networks, Modbus devices, M-Bus devices as well as ZigBee PRO wireless devices. Network variables are mapped to binary, analog, or multi-state objects (input, output, value) according to the CEN/TS 15231:2005 standard. BACnet objects can be manually mapped to NVs. In addition to analog, binary and multi-state objects LGATE-950 supports alarming, scheduling and trending.

Universal Gateway

LGATE-950 Universal Gateways can be either connected through their Ethernet/IP ports to LonMark IP-852, BACnet/IP, KNXnet/IP and Modbus TCP simultaneously or to TP/FT-10, BACnet MS/TP channels, Modbus RTU and KNX TP1 respectively. LGATE-950 with a built-in IP-852 Router and BACnet/IP Router can communicate on all channel types at the same time. Static and dynamic NVs for CEA-709 are available. In addition to SNVTs also User Defined NVs (UNVTs) and Configuration Properties (SCPTs, UCPTs) are supported. In case of BACnet the LGATE-950 complies with the B-BC (BACnet Building Controller) profile. Communication takes place both via BACnet Server Objects as well as Client Mappings.

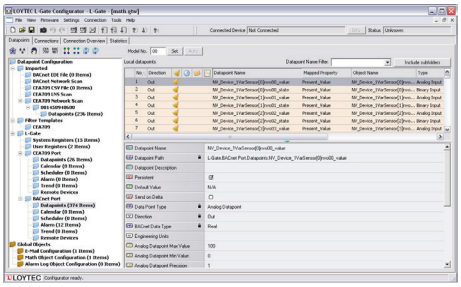
KNX connectivity is supported through the optional LKNX-300 module. When connected communication through KNX TP1 and KNXnet/IP is supported. Wireless connectivity through ZigBee is supported when using the optional LZIBI-800 module. The integration of Modbus (RTU and TCP) and M-Bus is provided by the Universal Gateway as well. The L-MBUS level converter is needed to connect an M-Bus channel. In operation LGATE-950 just supports only one of the three interfaces M-Bus/KNX/ZigBee. During the configuration of the Gateway the used interface has to be chosen. The built-in OPC server (OPC XML-DA) allows client applications to access predefined OPC data points via Web services. For OPC DA clients based on Microsofts COM/DCOM technology (OPC DA 2.0.5) the bridge software LOPC-800 is available. All data points are available in a tree structure on the integrated Web server to be displayed or set using a standard Web browser. The integrated gateway functionality enables data exchange between all communication technologies available on the device. This makes the LGATE-950 Universal Gateway a high performance integration platform.

OPC-Server

All technology data points used by the LGATE-950 Universal Gateways - whether SNVTs, UNVTs or Configuration Properties from the CEA-709 network, BACnet Server Objects and Client Mappings, data points from Modbus, M-Bus, KNX or ZigBee - can be automatically mapped to OPC data points. The LGATE-950 provides OPC data points fully technologically independent via its OPC XML-DA Server to higher-level systems such as the L-WEB System or a SCADA system of a third-party supplier.

Engineering

The configuration is done with the easy to use L-GATE Configurator. The software can run as a stand-alone tool or as a LNS® plug-in. The L-GATE Configurator allows creation of network variables and BACnet objects automatically by scanning an accessible LonMark System and a BACnet network. Running as a LNS® plug-in, the L-GATE Configurator has direct access to the LNS® database. EDE files can be imported for the BACnet configuration.



The configuration is done very easily if an LNS® database is available. Based on a selection of network variables from the LNS® database, BACnet server objects are created automatically and connected to the network variables. The binding of the network variables in the LonMark System can be executed optionally with the download of the configuration in the LGATE-900. This way information from a LonMark System is available via BACnet Server Objects in the shortest possible time.

Conversely, client mappings can be placed on LGATE-950 and mapped to network variables, which in turn are integrated in the LonMark System.

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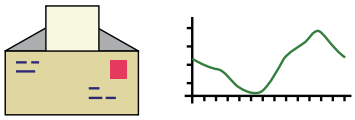
Universal Gateway

Modbus data points can be included using Modbus master or slave functionality. M-Bus devices can be scanned and the scanned datapoints can be utilized in LGATE-950. KNX data points can be mapped to any other available network protocol. ZigBee networks can be installed and commissioned with the L-GATE Configurator. All ZigBee PRO data points are available for interconnection with other network technologies.

Network Communication

LGATE-950 can communicate in LonMark Systems either on an Ethernet/IP channel (LonMark IP-852) or a TP/FT-10 channel. Static and dynamic NVs form the interface. In addition to SNVTs also User Defined NVs (UNVTs) and Configuration Properties (SCPTs, UCPTs) are supported.

In BACnet networks LGATE-950 can be connected either to an Ethernet/IP channel (BACnet/IP) or a BACnet MS/TP channel. Communication takes place both via BACnet server objects or client mappings. LGATE-950 complies with the B-BC (BACnet Building Controller) profile. KNX networks can be connected via the KNX TP1 interface or the KNXnet/IP interface. Modbus devices are connected with RS-485 (RTU) or TCP.



Local Data Storage, Data Provision and Reporting

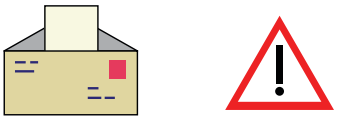
LGATE-950 can store trend and event logs locally and provide the logged data to the L-WEB System using Web services. In addition, trend and event logs can be read via FTP as CSV files or sent as an e-mail attachment. Trend data from LonMark Systems and BACnet networks are also available to other BACnet devices or a BACnet Building Workstation. LWEB-801 Server is a powerful solution to store long-term data in a SQL database. LOYTEC provides LWEB-830 Dream Report as an option for analyzing and presenting the data for use with LWEB-801.

Comprehensive Scheduling in LonMark Systems and BACnet Networks

Schedulers and calendars located on the LGATE-950 are configured with the configuration tool and parameterized in the integrated Web server. In LonMark Systems remote access to other LOYTEC devices and their schedulers is also available. At the same time BACnet schedule objects on remote BACnet devices are connected via client mappings. Conversely BACnet Clients can access the schedules on LGATE-950.

LGATE-950 allows mapping LonMark Scheduler to BACnet Scheduler. For example, a LonMark Scheduler can be mapped to a BACnet Scheduler in the L-GATE which in turn can be adjusted by a BACnet Operating Workstation. Or, a L-VIS Touch Panel in the LonMark System can adjust a schedule that is attached to a BACnet network.

Centralized management of schedulers on one or multiple distributed LGATE-950 is done with the LWEB-820 Master Schedule Configurator.



Alarming

LGATE-950 supports BACnet Intrinsic Alarming and provides alarm messages via BACnet Notification Class Objects. On the CEA-709 side alarming according to the LonMark profile definition is supported. Alarms are available via the integrated Web server. Alarm logs are stored on the device and synchronized to an available LWEB-801 Server. Alarm logs can be read via FTP from the L-INX Automation Server or forwarded event-driven to any e-mail recipients via e-mail.

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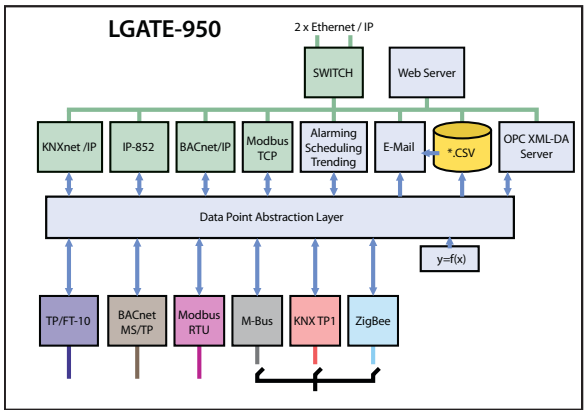
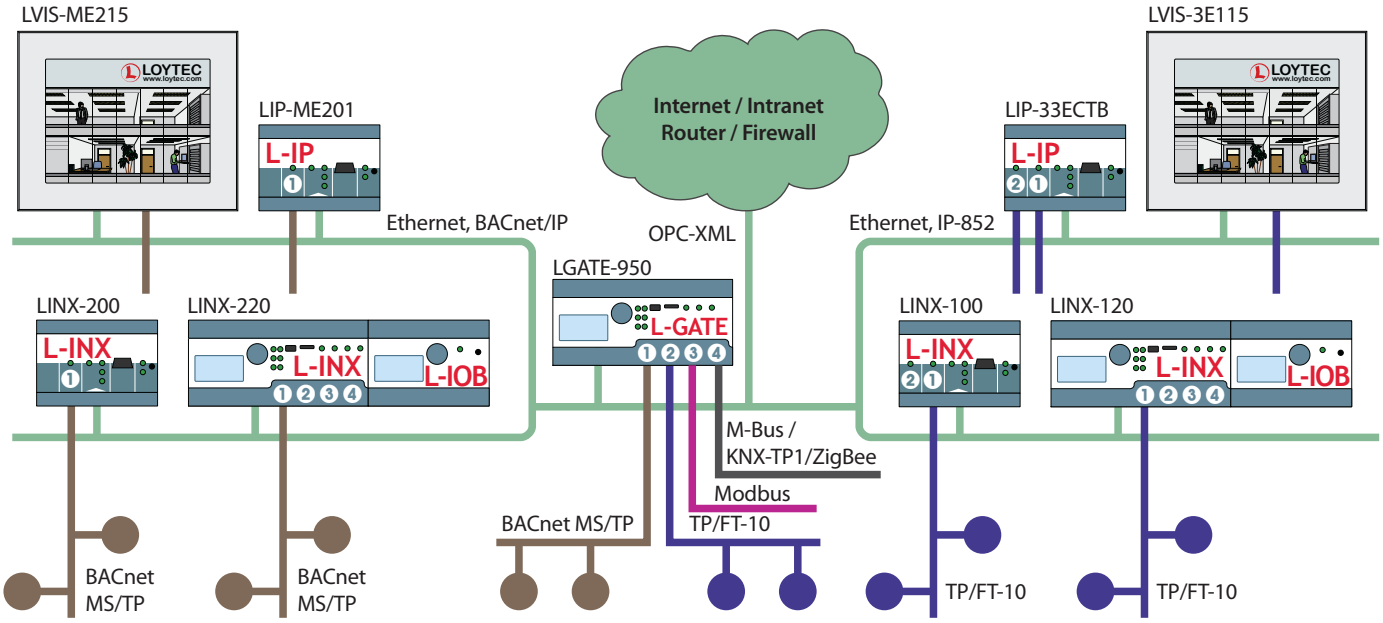
LGATE-950
Universal Gateway



Features:

- 128x64 display with backlight
- Local and remote access to information about device status and data points
- Manual operation using the jog dial or VNC client
- Memory expansion with microSD card
- Alarming, Scheduling, and Trending (AST™)
- Event-driven e-mail notification
- Built-in OPC XML-DA Server
- Data point access via Web services
- Access to network statistics
- Compliant with ANSI/ASHRAE-135-2008 and ISO 16484-5 standard
- Supports BACnet MS/TP or BACnet/IP
- BACnet Client Function (Write Property, Read Property, COV Subscription)
- BACnet Client Configuration with configuration tool (Scan and EDE import)
- B-BC (BACnet Building Controller) functionality
- Compliant with CEA-709, CEA-852, ISO/IEC 14908-1 standard (LonMark Systems)
- Supports TP/FT-10 or IP-852 (Ethernet/IP)
- Support of CEA-709 dynamically created network variables or static network variables
- Support of CEA-709 user-defined NVs (UNVTs) and Configuration Properties (SCPTs, UCPTs)
- KNX TP1 and KNXnet/IP (only with LKNX-300 interface module)
- ZigBee PRO coordinator support (only with LZIBI-800 interface module)
- M-Bus Master according to EN 13757-3
- Connection of M-Bus devices via optional M-Bus Converter (e.g. L-MBUS80)
- Modbus TCP and Modbus RTU (Master or Slave)
- Integrated Web server for the device configuration and for monitoring of data points
- Configurable via Ethernet/IP, USB, or TP/FT-10



CEA-709 **KNX** **Modbus** **M-Bus** **ZigBee**

CEA-852 **BACnet** **OPC**

BACnet ✓ Modbus ✓
CEA-709 ✓ M-Bus ✓
KNX ✓ ZigBee ✓

LGATE-950
Universal Gateway

Specifications			
Dimensions (mm)	159 x 100 x 75 (L x W x H)		
Power supply	24 VDC / 24 VAC ±10 %, typ. 2.5 W		
Interfaces	2 x Ethernet (100Base-T) OPC XML-DA, BACnet/IP, LonMark IP-852, KNXnet/IP (needs LKNX-300) Modbus TCP (Master or Slave), HTTP, FTP	1 x TP/FT-10 (LonMark System) 1 x BACnet MS/TP 1x Modbus RTU (Master or Slave) 1 x M-Bus (Master EN 13757-3) or 1x KNX TP1 or 1x ZigBee PRO 2 x USB-A, 1 x USB-B (PC)	
Tools	L-INX Configurator		
Resource limits			
OPC XML-DA data points	5 000	LonMark Calendar	1 (25 Calendar Templates)
BACnet Server Objects	1 000 (Analog, Binary, Multi-State)	LonMark Scheduler	100
BACnet Client Mappings	1 000	LonMark Alarm Server	1
BACnet Calendar Objects	25	CEA-709 trend logs	100
BACnet Scheduler Objects	100 (64 data points per object)	E-mail templates	100
BACnet Notification Class Objects	32	Math objects	100
BACnet Trend Log Objects	100 (390 000 logs, ≈ 6 MB)	Alarm logs	10
CEA-709 Network Variables (NVs)	1 000	M-Bus data points	1 000
CEA-709 Alias NVs	1 000	Modbus data points	2 000
CEA-709 External NVs (Polling)	1 000	KNX TP1 data points	255
CEA-709 Address Table Entries	512 („legacy mode“: 15)	KNXnet/IP data points	255
Data point connections	2 000	ZigBee PRO end devices	20 (50 with router)

Order number	Configuration	Page
LGATE-950	Universal Gateway	78
LPOW-2415A	LIOB Connect power supply, 24 VDC, 15 W	56
LPOW-2415B	Power supply with external power connector 24 VDC, 15 W	56
LOPC-BR800	OPC Bridge (PC software) to connect OPC DA clients (COM/DCOM) with L-INX Automation Servers	89
L-MBUS20	M-Bus level converter for 20 M-Bus devices	57
L-MBUS80	M-Bus level converter for 80 M-Bus devices	57
LKNX-300	KNX Interface Modul to connect KNX S-mode (formerly EIB) devices through KNX TP1	50
LZIBI-800	ZigBee PRO Interface Module for 20 end devices (50 with ZigBee PRO router)	51
LT-03	Network terminator for 1 x TP/FT-10 or TP/LPT-10 (bus or free topology), 1 x Network Access Connector RJ45	89
LT-13	Network terminator for 1 x TP/FT-10 or TP/LPT-10 (bus or free topology) 1 x TP/XF-1250 (bus topology only)	89
LT-33	Network terminator for 2 x TP/FT-10 or TP/LPT-10 (bus or free topology)	89
LT-04	Network terminator for 1 x EIA-485 (bus topology), 1 x Network access connector RJ45	90
LT-B4	Network terminator for 1 x EIA-485 (bus topology) with biasing circuit (failsafe biasing)	90