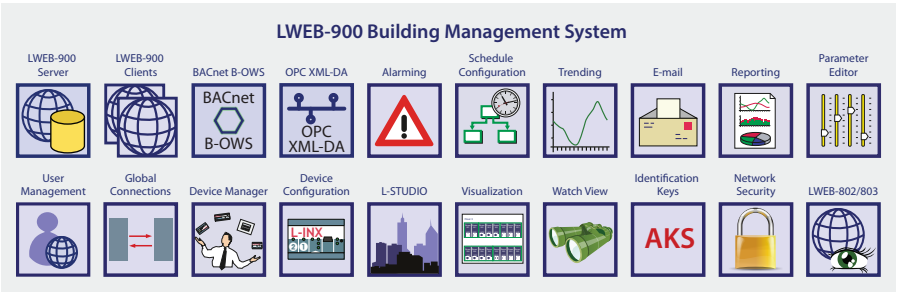
English
01/2018

LOYTEC

Facts

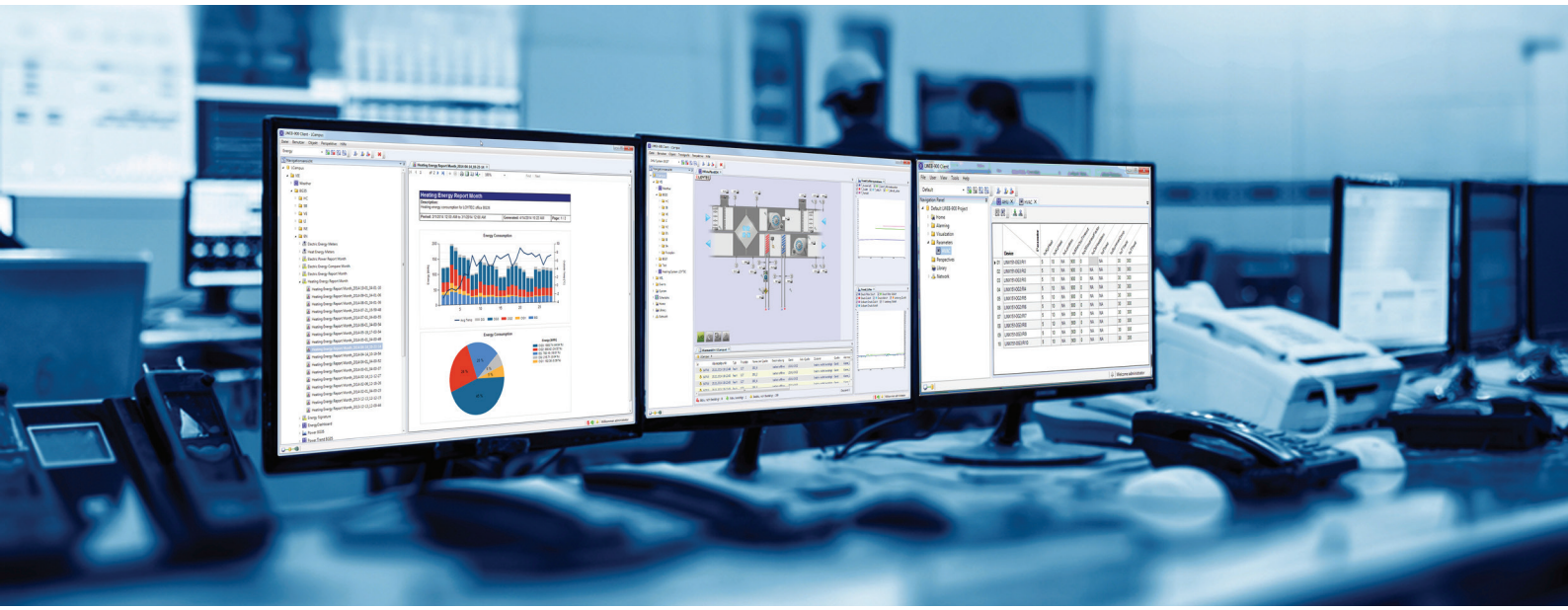
Innovative Building Automation – Product Solutions

LOYTEC Product Overview

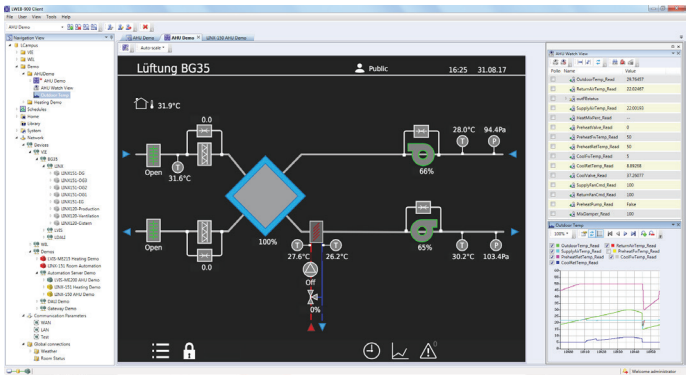


	LON	BACnet	KNX	EnOcean	DALI	SMI	Modbus	M-Bus	MP-Bus	OPC	Programmable
User Interface L-VIS L-WEB L-STAT	✓	✓					✓			✓	
I/O Controller L-IOB	✓	✓							✓	✓	✓
Lighting Control L-DALI	✓	✓		✓	✓	✓	✓			✓	
Room Automation L-ROC L-INX L-IOB L-KNX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Energy Management, Metering L-INX L-IOB L-MBUS	✓	✓	✓	✓			✓	✓	✓	✓	✓
HVAC Control L-INX L-IOB L-MBUS L-MPBUS	✓	✓	✓	✓			✓	✓	✓	✓	✓
Gateways L-GATE L-INX L-DALI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Network Infrastructure L-IP L-Switch NIC	✓	✓								✓	

L-WEB System

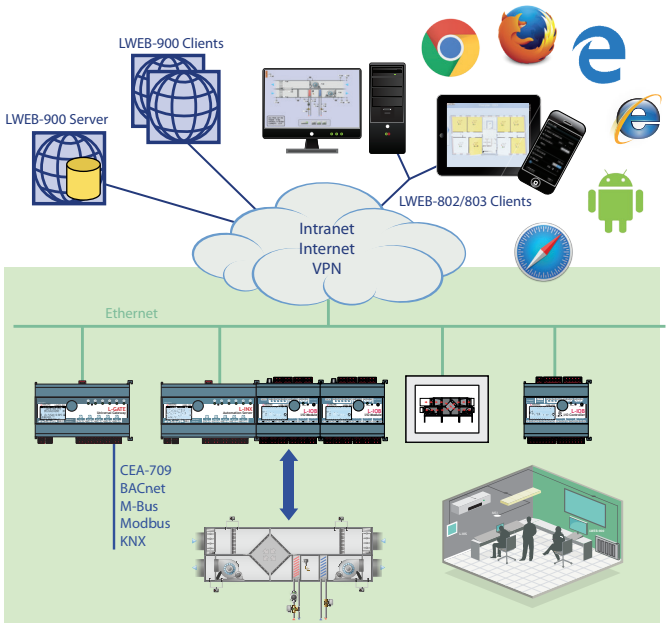


The L-WEB System is a powerful building management system platform for managing distributed building automation systems of any size. Maximum flexibility and scalability is achieved through the LWEB-900 client/server architecture in combination with the distributed LOYTEC L-INX Automation Servers and L-ROC Room Controllers.



The L-WEB System provides:

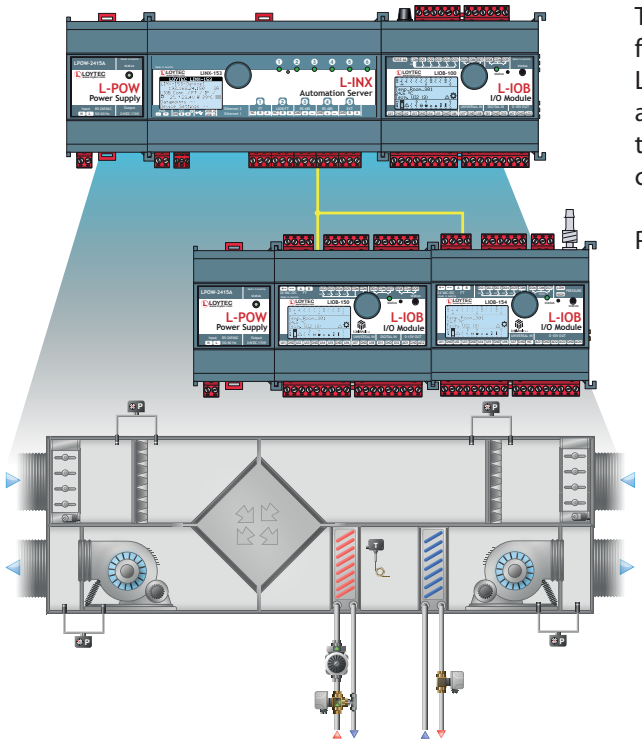
- Visualization of customized graphic pages with dynamic content from a standard web browser
- Analysis and storage of long term data
- Management of distributed time schedules
- Alarm management
- Organization of system parameters and data points
- Device management and updates for all LOYTEC devices
- Reporting, e.g. to document the energy consumption of a building.



Individualized graphics can be created for specific tasks which are available to different users via LWEB-803 dashboards, LWEB-802 HTML5 user interfaces, or through the LWEB-900 building management system.

Multiple users can simultaneously use the system functions on different PCs. LWEB-900 provides comprehensive user management and asset tracking features. Alarming, scheduling and trending (AST™) functions distributed to LOYTEC devices are automatically synchronized to the LWEB-900 server. AST™ functions are ready where they are needed in building automation and fully integrated into the L-WEB System.

L-INX Automation Servers



The freely programmable L-INX Automation Servers are powerful multi-protocol devices that can be expanded by plug and play L-IOB I/O Modules. L-INX Automation Servers feature comprehensive alarming, scheduling, trending (AST™), and email notification features. The L-INX can host dynamic graphical pages that can be accessed via a standard web browser.

Protocols supported:

Field level protocols	IP level protocols
BACnet MS/TP	BACnet/IP
LonMark TP/FT-10	LonMark IP-852
KNX TP1	KNXnet/IP
M-Bus	OPC XML-DA, OPC UA
Modbus RTU	Modbus TCP
EnOcean	SMTP
SMI	SNMP
MP-Bus	Node.js

L-IOB I/O Modules can be connected to the L-INX Automation Servers via LIOB-Connect, LIOB-FT, and LIOB-IP. L-INX integrates smoothly into the L-WEB System via web services. The built-in network security features such as SSL, HTTPS, SSH, and the configurable firewall make the data exchange with the L-INX Automation Servers secure from unauthorized access. L-INX Automation Servers can connect to SMI, MP-Bus, EnOcean and WLAN through additional interfaces.

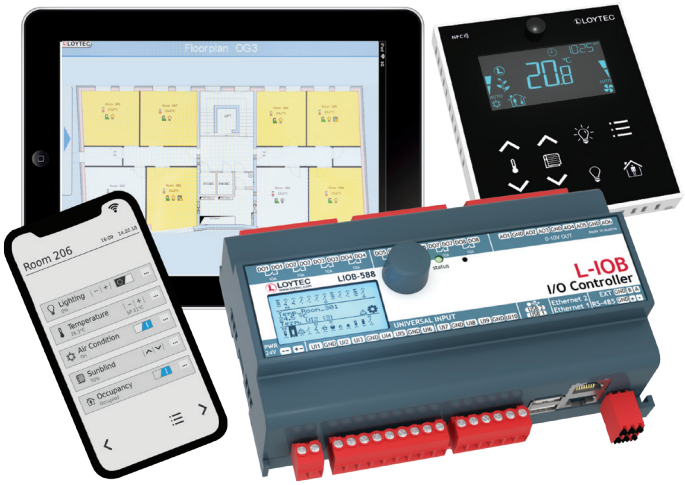
L-IOB I/O Controllers & Modules

The freely programmable L-IOB I/O Controllers and the L-IOB I/O Modules feature various I/O configurations and are based on 32-bit L-CORE, ensuring first class performance and resources. Some models are equipped with a built-in pressure sensor.

L-IOB I/O Controllers and Modules are available with BACnet/IP or LonMark IP-852 Ethernet connectivity, as well as LonMark TP/FT-10. The L-IOB I/O devices communicate independently via network variables or BACnet objects in the corresponding networks. In addition, L-IOB I/O Modules are available with a LIOB-Connect interface for a fast and easy connection to L-INX Automation Servers or L-ROC Room Controllers.

All L-IOB devices contain a 128 x 64 display with backlight. The display shows device and data point information. A jog dial is used for local operation by navigating through detailed information on the display and for operation and control of data points.

All L-IOB I/O Controllers feature comprehensive alarming and scheduling. IP based L-IOB I/O Controllers feature trending and email notification. They can also host dynamic graphical pages accessible via web browser.



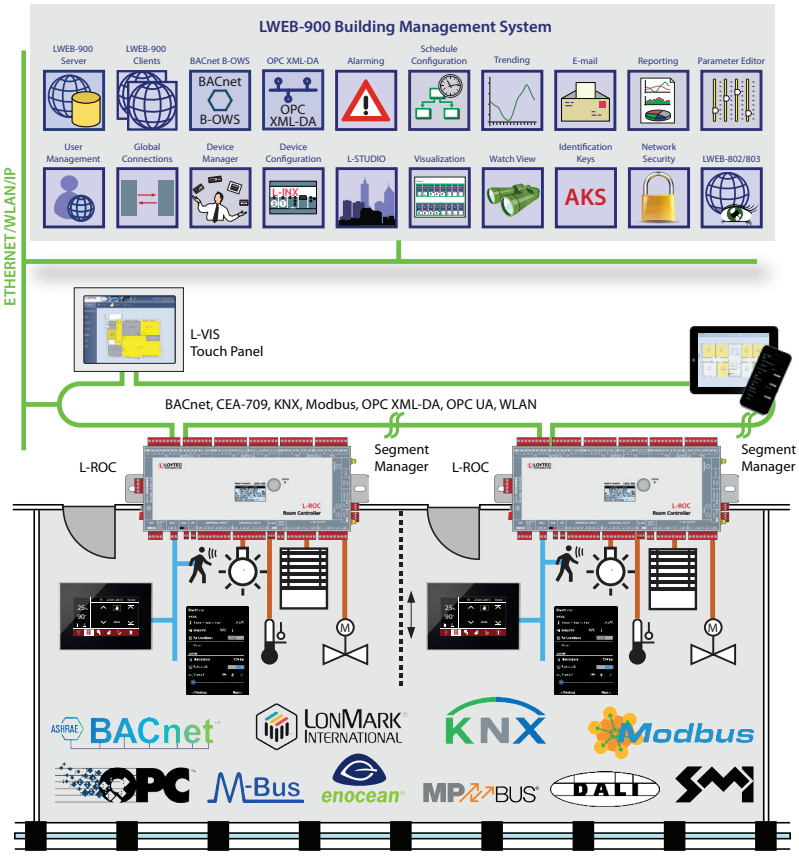
L-ROC Room Automation

The L-ROC Room Controller is the core of the revolutionary IP based room automation system that allows for changing room layouts within seconds. L-ROC smoothly integrates in native BACnet/IP Networks and LonMark Systems at the controller level.

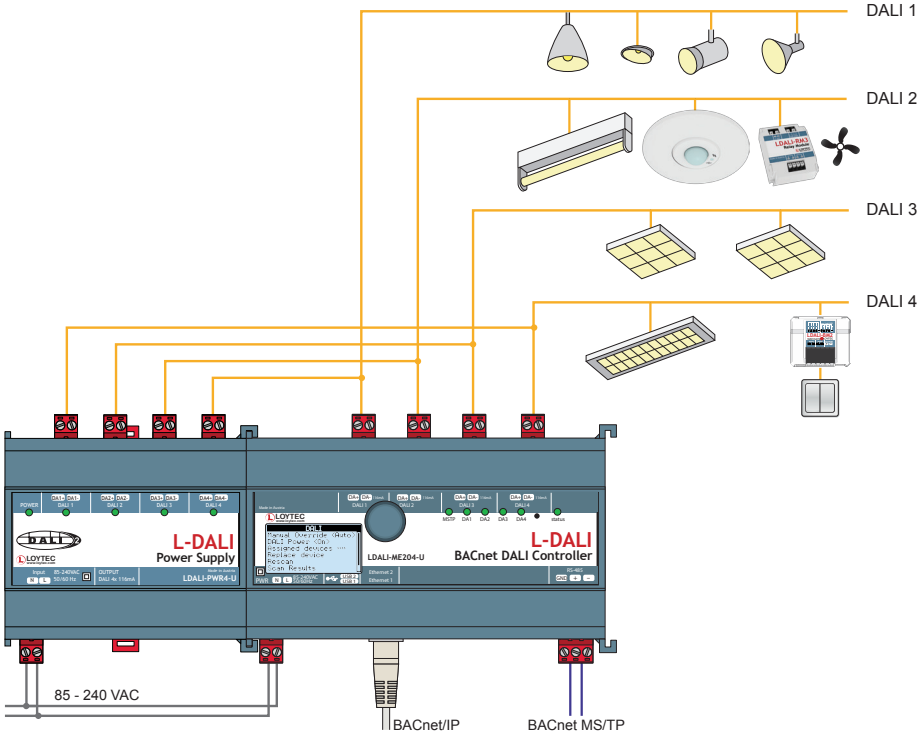
The L-STUDIO software allows for the creation and adjustment of flexible room applications incorporating HVAC, lighting, sun blinds and security functions into totally integrated automation systems with very little effort.

An integral part of the L-ROC solution is a web-based room operation from PCs or mobile devices (iOS and Android) via LWEB-803 dashboards (virtual room unit on PC desktop), or LWEB-802 HTML5 pages with the automatic generation of graphic projects for local room operation on L-VIS Touch Panels.

The L-ROC Room Controller family of products integrates DALI, KNX, LON, BACnet, MS/TP, Modbus, SMI, M-Bus, MP-Bus, and EnOcean subsystems at controller level. These integration capabilities are the foundation for outstanding scalability and flexibility.



L-DALI Lighting Control



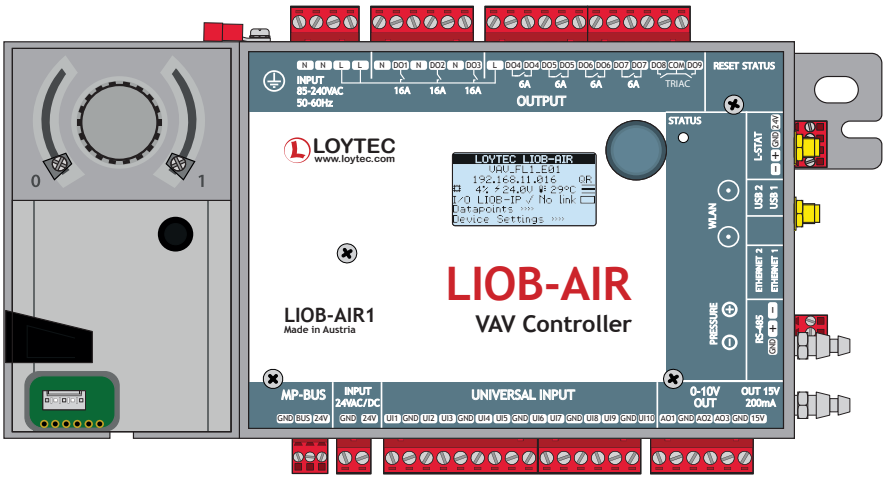
L-DALI Controllers are multi-functional devices featuring DALI light control and gateway functionality between the DALI protocol (Digital Addressable Lighting Interface) and LonMark Systems or BACnet Networks. In addition to the integration of DALI ballasts these controllers support configuration of DALI pushbutton couplers (e.g. LDALI-BM2), a variety of multi sensors (like the LDALI-MS2), and the L-DALI relay modules (LDALI-RM3 and LDALI-RM4).

The built-in web server allows for device configuration, DALI system configuration and maintenance. L-DALI Controllers feature alarming, scheduling, trending (AST™) and e-mail notification functionality.

The L-DALI controllers feature DALI-2 support. They can integrate EnOcean devices and, together with the LSMI-804 interface, they can build up an intelligent and efficient sun and anti-glare protection through active slat control and slat adjustment according to the sun position

L-STUDIO Air

The system is built-up by the powerful LIOB-AIR controller. This controller is the first representative of LOYTEC's product family of application specific controllers that solely communicate via Ethernet/IP and/or WLAN (also MESH). LIOB-AIR devices are programmed with L-STUDIO. LIOB-AIR is a fully IP based variable air volume controller (VAV controller) with a predefined, flexible, reprogrammable application program and sophisticated management functions for a building ventilation system.

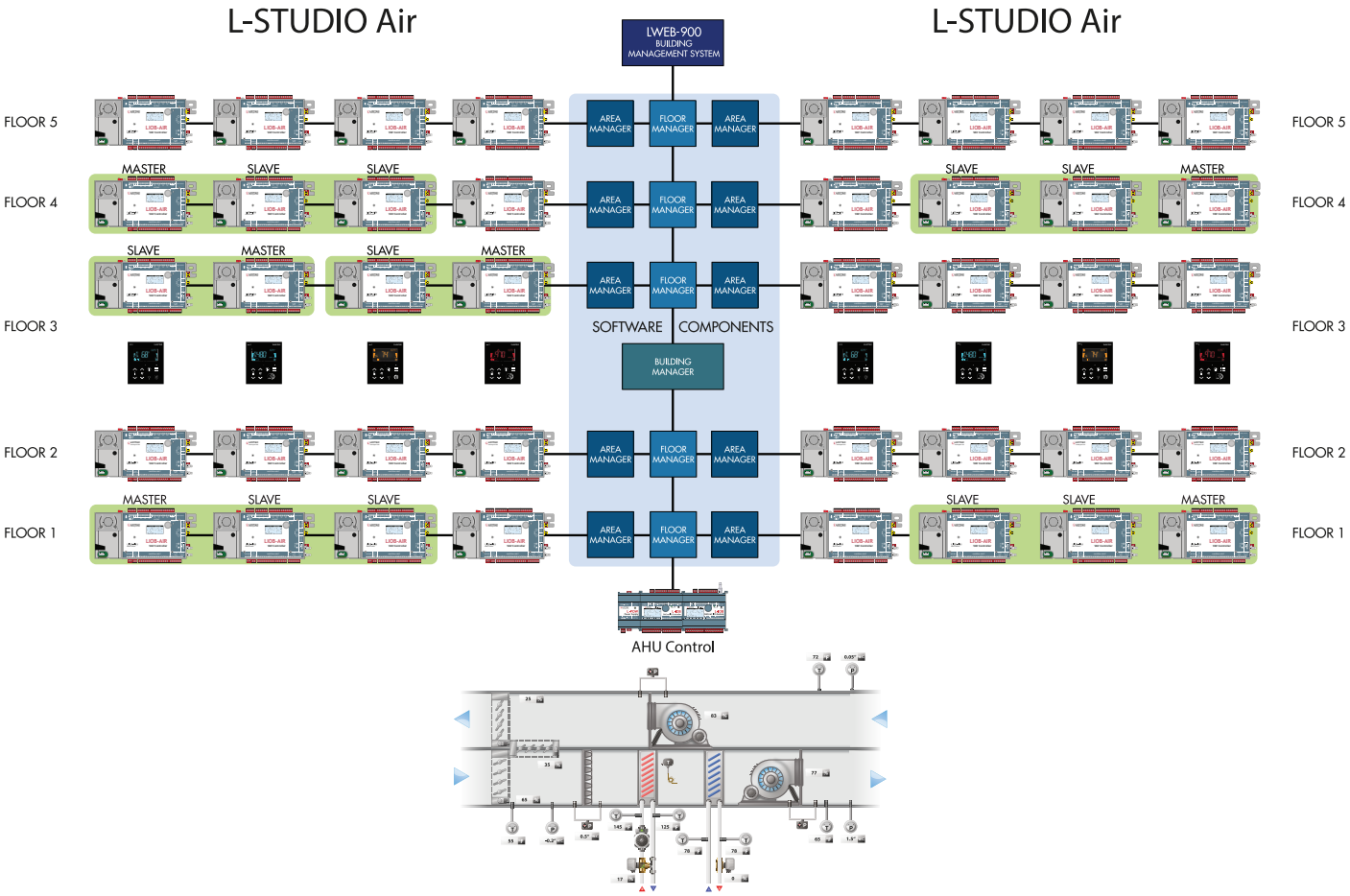


The L-STUDIO Air designer supports fast and flexible project design meeting any building floor plan requirements. VAV controllers are grouped in areas, areas are grouped in floors and multiple floors form a building.

Each VAV controller has a BACnet, LON, and an OPC network interface which integrates seamlessly into any BMS. The graphic pages for operation, supervision, and device configuration are hosted on the LIOB-AIR.

A dedicated port connects the L-STAT thermostat for user interaction and configuration tasks.

The built-in damper actuator communicates via MP-Bus and provides detailed status information. The built-in differential pressure sensor is used to measure the air flow. A number of universal inputs and analog and digital outputs can be configured to connect additional sensors and actuators.



L-VIS Touch Panels

L-VIS Touch Panels are ideally suited for visualization and operation of various applications in building automation. L-VIS Touch Panels visualize building automation systems, can be used as room units, or make a good choice in conference rooms and reception areas.

L-VIS impresses with its timeless design, harmonic integration into modern and historical architecture, with an extremely user friendly concept. The shallow installation depth and low thermal power loss allow mounting in almost any location.

For the operation and monitoring of information in LonMark Systems, BACnet or Modbus networks, the following types of L-VIS Touch Panels are available:

- 7" L-VIS Touch Panel, 800 x 480, 262 144 colors, frameless glass front and capacitive touch,
- 12.1" L-VIS Touch Panel, 800 x 600, 262 144 colors, aluminium frame with anodized finish,
- 15" L-VIS Touch Panel, 1024 x 768, 262 144 colors, aluminium frame with anodized finish or frameless glass front and capacitive touch.

L-STAT Network Thermostat

The L-STAT is a room control device with a modern, minimalistic look that fits any interior design. It is directly connected to a LOYTEC controller with a Modbus interface.

Up to 16 L-STAT devices can be connected to one controller. L-STAT is equipped with a segmented LCD display featuring an RGB backlight with adjustable color, offering an elegant way to make the L-STAT match the interior color concept of any building. Eight capacitive touch buttons are used to cycle through sensor values, display parameters, and adjust set points. Additionally, four external buttons can be connected.

Depending on the version, the L-STAT's internal sensors mea-sure temperature, humidity, dew point, ambient light, occupancy, and the CO_2 level of the air. Additionally, the date and time as well as the current level of eco-friendliness in the form of leaves are also displayed on the LCD display.

A buzzer provides acoustic feedback for the touch buttons and can also be used to indicate alarms and error states. To prevent unauthorized modifications, two access levels (end user, system integrator) are provided. Last but not least, the L-STAT comes with a built-in infrared receiver for comfortable remote control.

LOYTEC Building Automation

Modern building automation is characterized by the integration of multiple systems and the use of the resulting synergies.

The ability to maximize energy efficiency while maximizing comfort and flexibility is paramount for today's buildings. Transparency in energy consumption and costs is required to immediately detect any weaknesses and to actively develop improvement processes.

LOYTEC sets the target to transform these requirements in best possible product solutions. The result is an innovative product portfolio with consistent and coordinated products. Thereby, LOYTEC relies on open communication protocols emphasizing communication via Ethernet/IP and WLAN/IP to ensure seamless connection to the Intranet/Internet. LOYTEC focuses on the international standards ISO 16484-5 (BACnet), ISO/IEC 14908-1 (LON), ISO/IEC 14543 (KNX), IEC 62386 2014 (DALI), and OPC. In addition, EnOcean (radio), SMI (sunblinds), M-Bus (meter), MP-Bus (Belimo) and Modbus are supported.

LOYTEC accepted no compromises in the development of the building management system LWEB-900, as it constitutes the basis of properly managing technical plants in a building or in distributed real estates.

Highest energy efficiency and a transparent management of technical building installations require a seamlessly integrated building automation system. Especially heating, ventilation, air conditioning, lighting, and sun protection are essential. The LOYTEC L-INX Automation Servers and L-ROC Room Controllers are able to manage and integrate the corresponding subsystem in highly efficient ways.

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