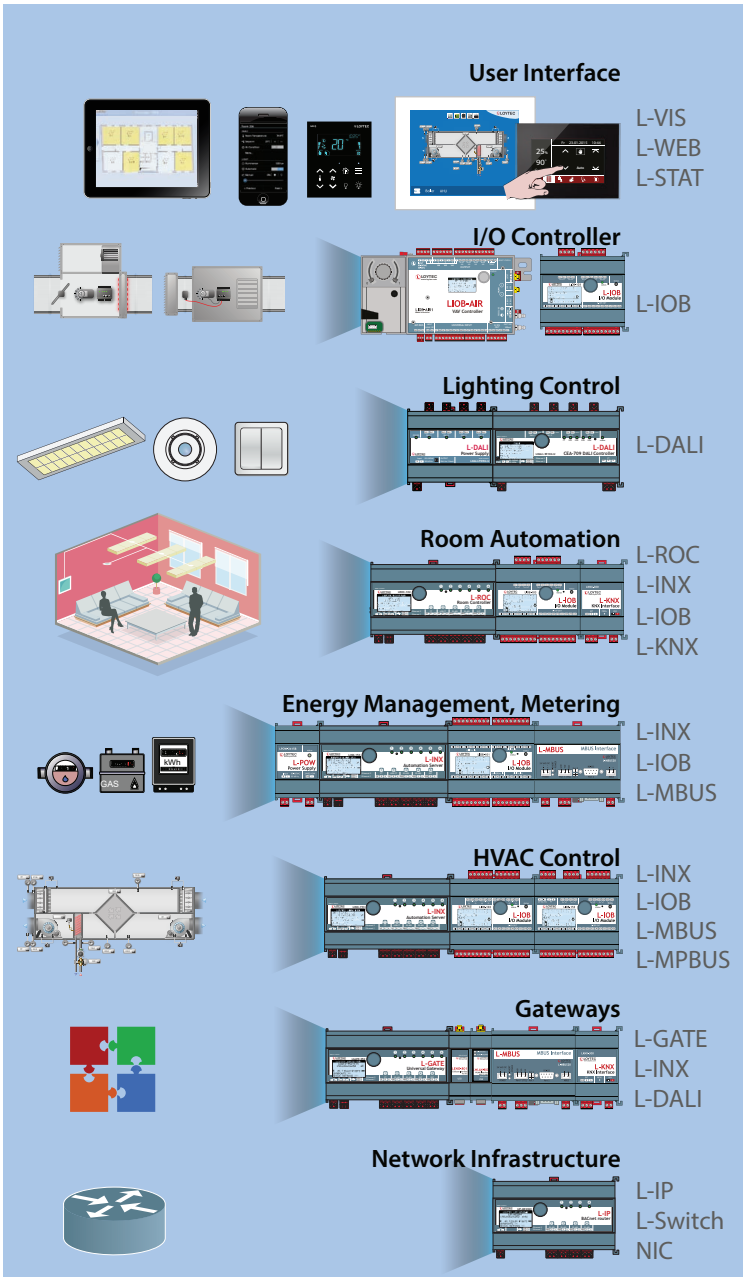
English
01/2020

LOYTEC Facts+

Innovative Building Automation – Product Solutions

Member of: LONMARK PARTNER · BACnet INTEREST GROUP EUROPE · Member of BACnet International · enocean alliance Member · KNX · SMI STANDARD MOTOR INTERFACE · eu.bac european building automation controls association · Digital Illumination Interface Alliance

LOYTEC Product Overview



LON	BACnet	KNX	EnOcean	DALI	SMI	Modbus	M-Bus	MP-Bus	OPC	Programmable	IoT
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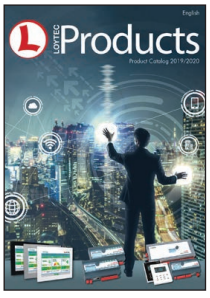
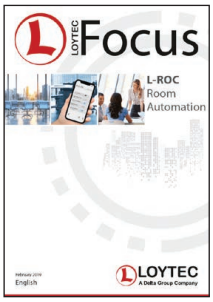
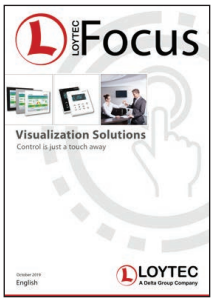
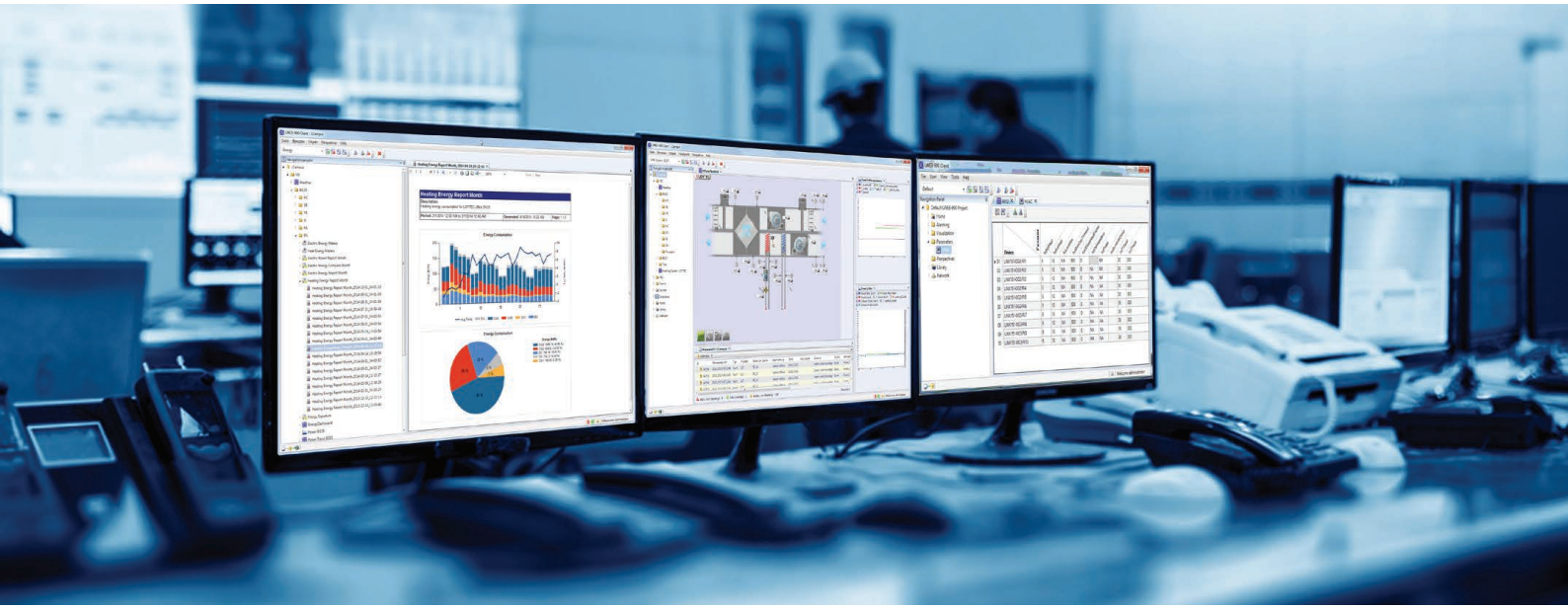




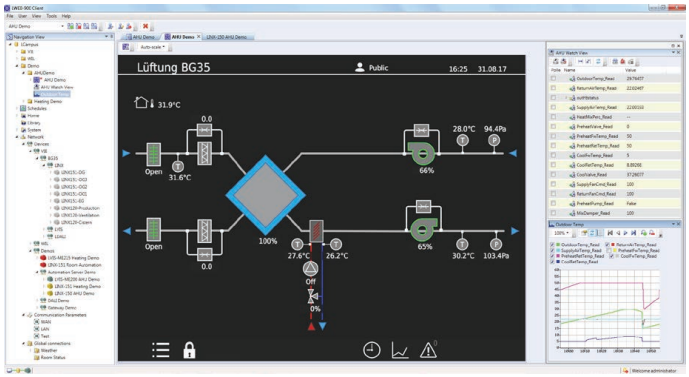


If you wish a printed copy of our marketing literature for free, please contact info@loytec.com.

L-WEB Building Management System

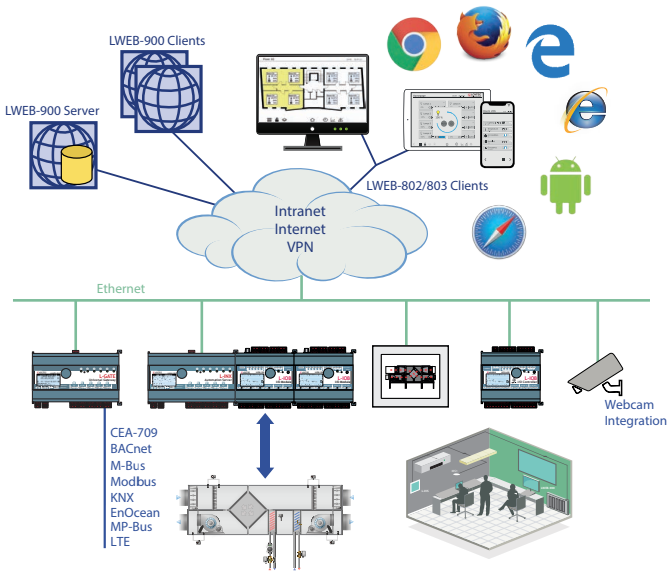


The L-WEB System is a powerful building management system platform for managing distributed building automation systems of any size. Maximum flexibility and scalability is achieved through the LWEB-900 client/server architecture in combination with the distributed LOYTEC L-INX Automation Servers and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



The L-WEB System provides:

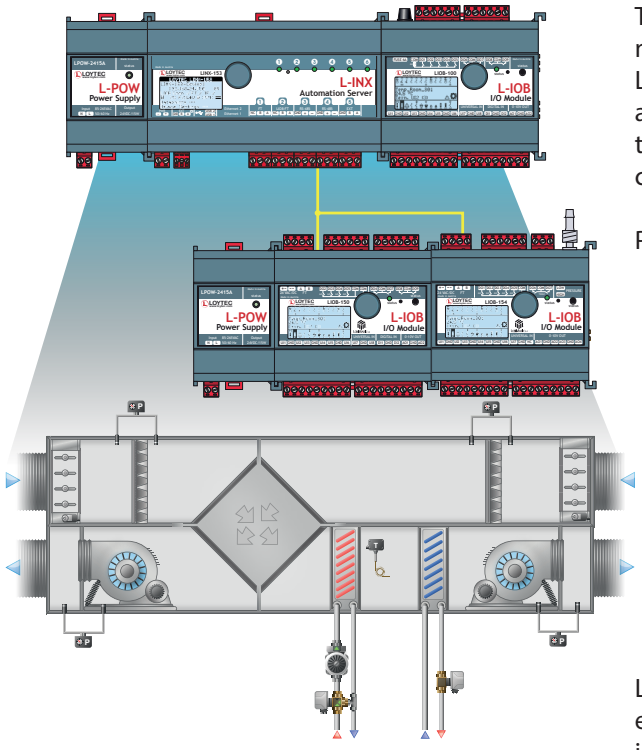
- Visualization of customized graphic pages with dynamic content from a standard web browser
- Analysis and storage of long term data
- Management of distributed time schedules
- Alarm management
- Organization of system parameters and data points
- Device management and updates for all LOYTEC devices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



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 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	HTTPS
SMI	SMTP
MP-Bus	SNMP
	Node.js
	LTE

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, LTE and WLAN through additional interfaces.

L-IOB I/O Controllers & Modules

The 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.

LIOB-AIR Controllers are fully IP based variable air volume controllers (VAV controller) with a predefined, flexible, reprogrammable application program and sophisticated management functions for a building ventilation system.

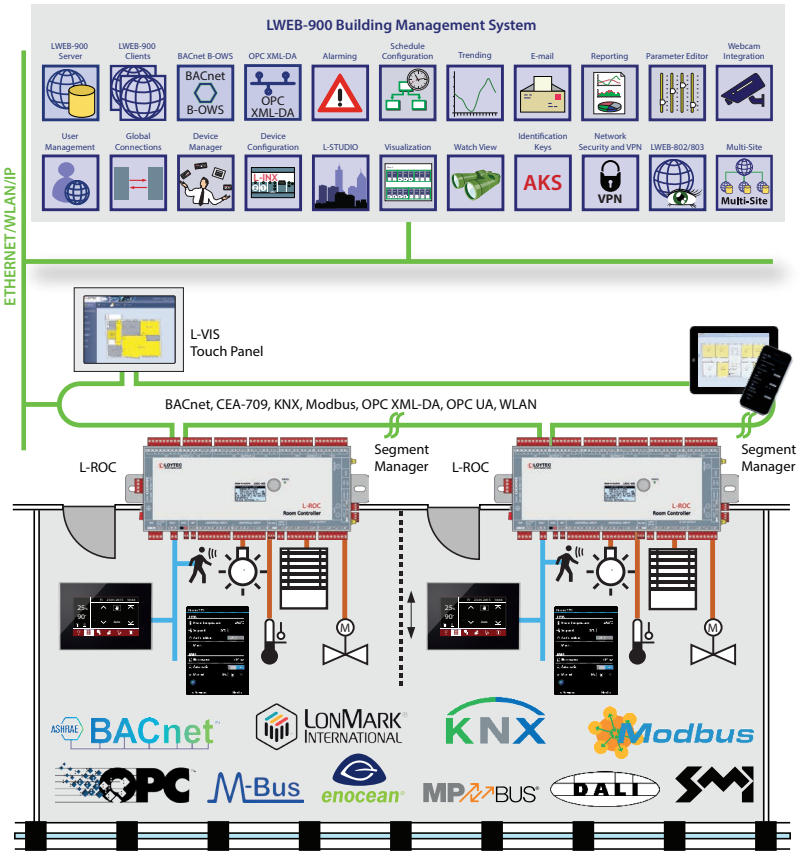
L-ROC Room Automation

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.

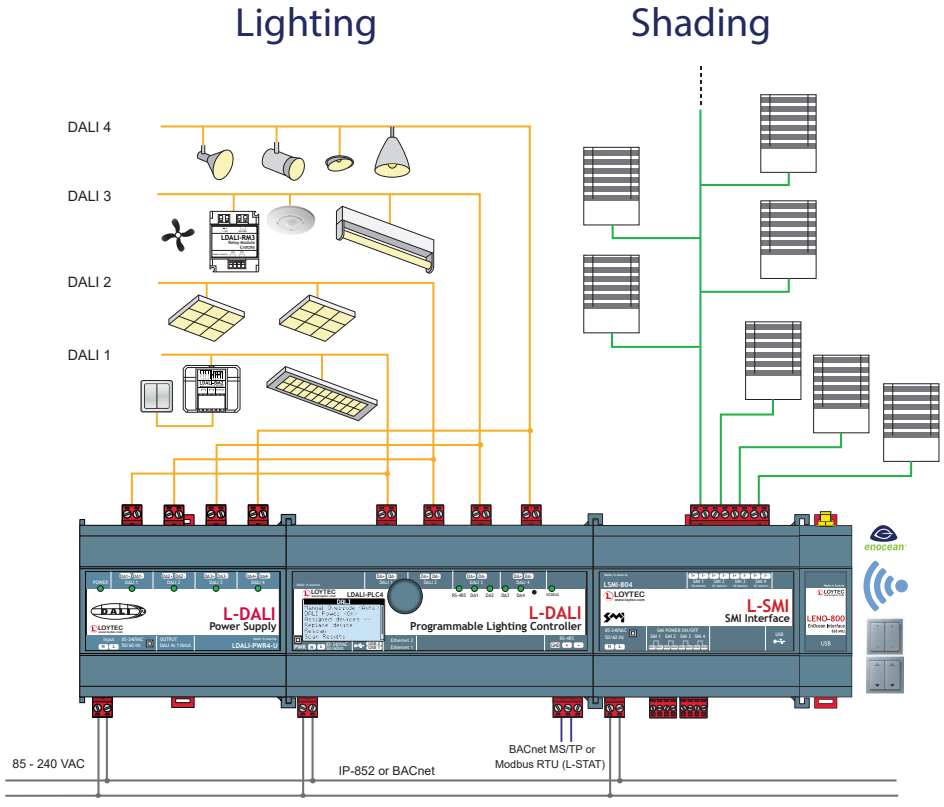
The L-STUDIO software allows for the creation and adjustment of flexible room applications incorporating HVAC, lighting, sun blinds and security functions into totally integrated automation systems with very little effort.

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-2, KNX, LON, BACnet, MS/TP, Modbus, SMI, M-Bus, MP-Bus, LTE 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 the L-DALI 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.

IoT Integration

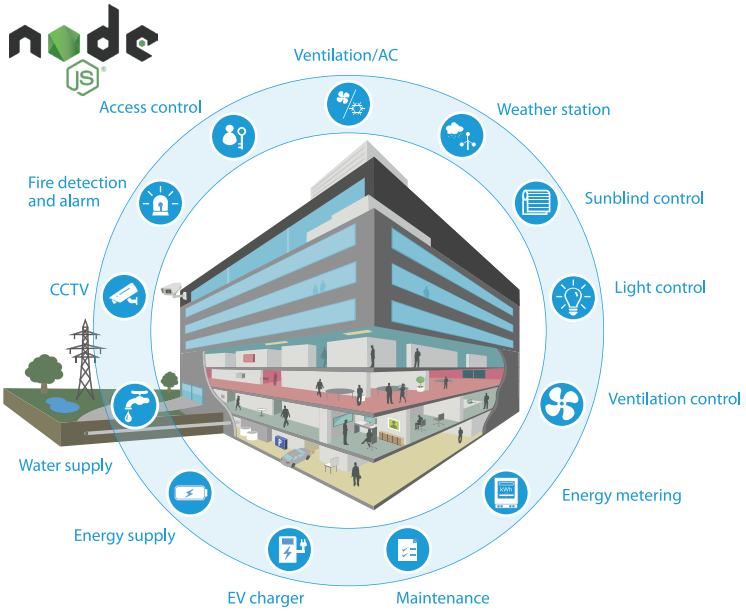
The Internet of Things has brought forward an offspring of devices with Web-based interfaces, such as Multimedia projectors, A/V systems, Smart-TVs, or smart light bulbs. LOYTEC's groundbreaking JavaScript-based IoT integration allows to integrate them all.

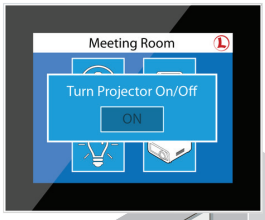
Typical applications are meeting rooms or auditoriums with scene control of lighting and shading, integration of third-party devices, and operation of multimedia equipment by the touch of a single button. Similar products from the consumer sector like a Sonos® audio system, Philips Hue lights or Alexa and friends can be connected to the LOYTEC building control system.

The IoT function (Node.js) allows connecting the system to almost any cloud service, either for uploading historical data to analytics services, delivering alarm messages to alarm processing services or operating parts of the control system over a cloud service (e.g., scheduling based on Web calendars or booking systems).

Processing Internet information such as weather data in forecast-based control is also possible. Finally, the JavaScript kernel also allows implementing serial protocols to non-standard equipment in primary plant control.

In short: If you can control it via app, you can integrate it into the building automation system or touch panel interface.





Multimedia Integration

- Scene control
- Integrated room functions
- Control projectors
- Control sound systems
- Smart screens control

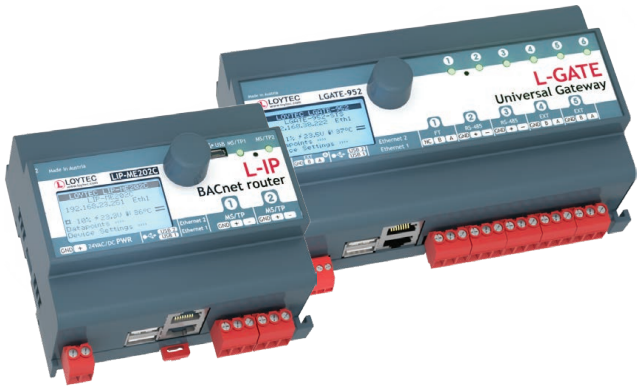
Offices, Receptions, ...

Meeting and Conference Rooms

Connectivity Products

The LGATE-902 and LGATE-952 are powerful universal gateways that can host user specific graphical pages to be used with LWEB-802/803. They can simultaneously integrate and map data points from multiple open protocols. Local operation and override is provided by the built-in jog dial and the backlit display (128x64 pixels). Device and data point information is provided by the Web interface and shown on the display via symbols and in text format.

The LIP-ME201C, LIP-ME202C, and LIP-ME204C BACnet/IP Routers connect BACnet MS/TP channels to a BACnet/IP network. The BACnet routers are compliant with the standards ASHRAE 135-2012 and ISO 16484-5:2012. The routers can be configured to act as a BACnet Broadcast Management Device (BBMD). The L-IP BACnet/IP Routers also provide Foreign Device support.



The L-IP Routers LIP-1ECTC, LIP-3ECTC, LIP-33ECTC, and LIP-3333ECTC connect twisted pair channels (TP/FT-10 or TP/XF-1250) with the Ethernet/IP channel (IP-852) in LonMark Systems. L-IP routes CEA-709 packets through an IP based network such as a LAN (Ethernet), an Intranet, or even the Internet.

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 Room Operator Panels

The L-STAT is a room operator panel 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 measure 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.

The L-STAT comes with a built-in infrared receiver for comfortable remote control. Custom versions of the L-STAT are available with all three different hardware versions.

Additionally, they can be equipped with an EnOcean interface. In this case, the L-STAT acts as a remote EnOcean transceiver for all controllers supporting an L-STAT interface.

Product name	L-WEB Building Management Software			
Model	**LWEB-900**	**LWEB-900-MAX**	**LWEB-803**	**LWEB-802**
				
Product description	Building Management Software for 10 devices (L-IP Router and L-IOB-I/O Modules connected as extension to the L-INX Automation Servers, L-ROC Room Controllers and L-IOB I/O Controllers do not consume a device license), licenses for 5 LWEB-900 clients and 20 LWEB-80x clients are included, no installation license for end customers	Building management software for an unlimited number of devices, Building Management Software for an unlimited number of devices, licenses for 5 LWEB-900 clients and 20 LWEB-80x clients are included, no installation license for end customers	Graphical user interface, visualization on Windows PC	Graphical user interface via web browser, compatible to Android and iOS
Hardware requirements	LWEB-900 server: PC with at least 2 GHz, 32- or 64-bit processor, 4 GB RAM, 50 GB free hard disk space, Ethernet connection LWEB-900 client: PC with at least 2 GHz, 32- or 64-bit processor, 2 GB RAM, 1 GB free hard disk space, Ethernet connection, screen resolution 1280x720			
Operating System	Windows 7, Windows 8, Windows 10, Windows Server 2008, Windows Server 2012, Windows Server 2016			-
Visualization and operation	■	■	■	■
Graphical view	■	■	■	■
Alarming	■	■	■	■
Scheduling	■	■	■	■
Trending	■	■	■	■
Event log	■	■	■	■
Parameter view	■	■	-	-
Global connections	■	■	-	-
Device manager	■	■	-	-
Device configuration	■	■	-	-
Multiuser system	■	■	■	■
Reporting	■	■	-	-
Watch view	■	■	-	-
AKS-Identification keys	■	■	-	-
Webcam Integration	■	■	-	-
Multi-Site	-	-	-	-

Product name	L-WEB Building Management Software						
Model	**LWEB-900-ADD-10**	**LWEB-900-ADD-MAX**	**LWEB-900-CL-5**	**LWEB-900-80x-50**	**LWEB-900-80x-100**	**LWEB-900-80x-MAX**	**LWEB-900-Multi-Site**
Product description	Add-on license for 10 additional devices	Add-on license for an unlimited number of devices	Add-on license for additional 5 LWEB-900 clients	Add-on license for additional 50 LWEB-80x clients	Add-on license for additional 100 LWEB-80x clients	Add-on license for an unlimited number of LWEB-80x clients	LWEB-900 Multi-Site add-on license, needs LWEB-900 base license
Multi-Site	-	-	-	-	-	-	■

Product name	L-VIS Touch Panels						
Model	**LVIS-3ME7-G1**	**LVIS-3ME7-G2**	**LVIS-3ME12-A1**	**LVIS-3ME15-A1**	**LVIS-3ME15-G1**	**LVIS-3ME15-G2**	**LVIS-3ME15-G3**
							
Power supply	24 VDC ±10%, 2.5 W Backlight on: 5 W		24 VDC ±10%, 4 W, Backlight on: 10 W or 85-240 VAC, 7 W @110 V, 5.9 W @230 V Backlight on: 13 W @110 V, 13.3 W @230 V		24 VDC ±10%, 4.2 W, Backlight on: 9.4 W or 85-240 VAC, 5.6 W @110 V, 7 W @230 V Backlight on: 11.3 W @110 V, 13.3 W @230 V		
Screen size	7″	7″	12.1″	15″	15″	15″	15″
Touch display	Capacitive touch	Capacitive touch	Resistive touch	Resistive touch	Capacitive touch	Capacitive touch	Capacitive touch
Display resolution	800 x 480 262,144 colors	800 x 480 262,144 colors	800 x 600 262,144 colors	1024 x 768 262,144 colors	1024 x 768 262,144 colors	1024 x 768 262,144 colors	1024 x 768 262,144 colors
Panel material	Frameless glass	Frameless glass	Aluminum frame with anodized finish	Aluminum frame with anodized finish	Frameless glass	Frameless glass	Frameless glass
Color	Silver	Black	Silver	Silver	Silver	Black	White
BACnet	■	■	■	■	■	■	■
CEA-709	■	■	■	■	■	■	■
OPC XML-DA server	■	■	■	■	■	■	■
OPC XML-DA clients	■	■	■	■	■	■	■
OPC UA server	■	■	■	■	■	■	■
OPC data points	10000	10000	10000	10000	10000	10000	10000
Modbus data points	2000	2000	2000	2000	2000	2000	2000
VNC clients	16	16	16	16	16	16	16
Alarming	■	■	■	■	■	■	■
Scheduling	■	■	■	■	■	■	■
Trending	■	■	■	■	■	■	■
Web server	■	■	■	■	■	■	■
Ethernet ports	2	2	2	2	2	2	2
TP / FT-10 ports	1	1	1	1	1	1	1
RS-485 ports (Modbus / BACnet)	1	1	1	1	1	1	1
Digital Input (DI)	2	2	2	2	2	2	2
Speaker and audio output	■	■	■	■	■	■	■
Mounting frame	■	■	■	■	■	■	■
WLAN	■ [5]	■ [5]	■ [5]	■ [5]	■ [5]	■ [5]	■ [5]
LTE	■ [5]	■ [5]	■ [5]	■ [5]	■ [5]	■ [5]	■ [5]
Operating conditions	10°C to 40°C, 10-90% RH, non condensing						
Dimensions (L x W x H, mm)	223.5 x 162 x 165		329 x 268.3 x 65	394 x 318 x 65			
Dimensions cut-out (L x W x H, mm)	195 x 143 x 61		300 x 250 x 61	355 x 295 x 61			
Certificates	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL

5. To operate these protocols, an expansion module is needed and must be ordered separately.

Product name	L-ROC Room Controller			
Model	**LROC-102**	**LROC-400**	**LROC-401**	**LROC-402**
				
Power supply	24 VDC / 24 VAC ±10%, typ. 2.5 W	24 VDC or 85 – 240 VAC, 50 – 60 Hz (both supplies can be redundantly fed, do not connect 24VDC if SMI or DALI are used)		
CPU	A5 500 MHz	A5 500 MHz	A5 500 MHz	A5 500 MHz
RAM	256 MByte	256 MByte	256 MByte	256 MByte
FLASH	4 GByte	4 GByte	4 GByte	4 GByte
TP / FT-10 ports	1	-	-	-
LIOB-FT ports	1			
RS-485 ports (Modbus RTU)	1	1	1	1
RS-485 ports (BACnet MS/TP)	1	1	1	-
Extension port (KNX)	1	1	1	1
Extension/Serial port (M-Bus)	1	1	1	-
Total number of data points	30000	30000	30000	30000
OPC data points	10000	10000	10000	10000
BACnet objects	1000	1000	1000	1000
BACnet calendar	25	25	25	25
BACnet scheduler	100	100	100	100
BACnet notification classes	32	32	32	32
Trend logs	512	512	512	512
LonMark calendar	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)
LonMark scheduler	100	100	100	100
LonMark alarm servers	1	1	1	1
Modbus data points	2000	2000	2000	2000
L-WEB clients	32	32	32	32
L-IOB I/O modules	Up to 24 (L-IOB I/O Modules in any combination of type LIOB-Connect, LIOB-FT, and LIOB-IP852 / LIOB-BIP)	2 x LIOB-45x or LIOB-55x		
IEC-61131-3	-	-	-	-
IEC-61499	■	■	■	■
CEA-709 Router	■	■	■	-
CEA-709 RNI	-	-	-	-
CEA-709 (FT)	■	-	-	-
CEA-852 (IP)	■	■	■	■
BACnet Router	■	■	■	■
BACnet MS / TP	■	■	■	■
BACnet TCP / IP	■	■	■	■
BBMD	■	■	■	■
Modbus RTU	■ 3	■ 3	■ 3	-
Modbus TCP / IP	■	■	■	■
M-Bus	■ 4	■ 5	■ 5	-
KNX TP1	■ 4	■	■	■
KNX IP	■	■	■	■
SMI	■ 5	■	■	■ 5
EnOcean	■ 5	■	■	■ 5
OPC XML-DA	■	■	■	■
OPC UA	■	■	■	■
SNMP	■	■	■	■
LIOB Connect	■	-	-	-
LIOB FT + IP	■	■ (IP only)	■ (IP only)	■ (IP only)
128 x 64 graphic display with backlight	■	■	■	■
microSD Card	-	-	-	-
USB	■	■	■	■
Ethernet switch	■	■	■	■
WLAN	■ 5	■ 5	■ 5	■ 5
LTE	■ 5	■ 5	■ 5	■ 5
IoT	■	■	■	■
SSH, HTTPS, Firewall	■	■	■	■
Operating conditions	0 °C to 50°C, 10–90 % RH, non condensing	0 °C to 40°C, 10–90 % RH, non condensing		
Dimensions (L x W x H, mm)	159 x 100 x 75	290 x 144 x 54	290 x 144 x 54	290 x 144 x 54
Certificates	CE, FCC	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL

1. This model can be configured to have either FT or IP active for CEA-709.
2. This model can be configured to have either MS / TP or IP active for BACnet.
3. Modbus RTU can only be used if BACnet MS / TP is not active on this model.
4. M-Bus and KNX TP1 can be used alternatively only on this model. An expansion module is needed and must be ordered separately.
5. To operate these protocols, an expansion module is needed and must be ordered separately.

Product name	L-ROC Room Controller		
Model	**LROC-400**	**LROC-401**	**LROC-402**
			
MP-Bus (actuator)	■	■	■
Universal Input (UI)	10	-	10
Digital Input (DI)	2	-	2
Analog Output (AO)	8	-	8
Digital Output (DO)	32 (24 x Relay, 8 x Triac) Relay : 10 A Triac : 0.5 A @ 24-240 VAC	-	32 (24 x Relay, 8 x Triac) Relay : 10 A Triac : 0.5 A @ 24-240 VAC
Max. number of Rooms /Segments	8	16	8
SMI devices (via built-in interface)	1 x 16	1 x 16	-
SMI devices via LSMI-800	1 x 16	1 x 16	1 x 16
SMI devices via LSMI-804	4 x 16	4 x 16	4 x 16
SMI devices maximum	96	96	64
EnOcean devices (via built-in interface)	32	64	-
EnOcean devices via LENO-80x	-	-	32
EnOcean devices (maximum)	64	64	64
EnOcean devices commissioning limit	32	64	32
L-STAT Room operator panels	8	16	8
DALI power supply	1 (16 VDC,160 mA guaranteed supply current, 250 mA max. supply current)	1 (16 VDC,160 mA guaranteed supply current, 250 mA max. supply current)	-
DALI devices	64	64	-
DALI groups	16	16	-
DALI sensors	16	16	-
DALI pushbuttons (LDALI-BM2)	64 pushbutton coupler	64 pushbutton coupler	-
MP-Bus devices (via built-in interface)	1 x 8 (16 MPL)	1 x 8 (16 MPL)	1 x 8 (16 MPL)
MP-Bus devices via LMPBUS-804	4 x 8 (16 MPL)	4 x 8 (16 MPL)	4 x 8 (16 MPL)
MP-Bus devices (maximum)	80	80	80

Product name	L-INX Automation Servers		
Model	**LINX-153**	**LINX-154**	**LINX-215**
			
BACnet device profile	B-BC		
Power supply	24 VDC / 24 VAC ± 10%, typ. 2.5 W		
CPU	A5 (500 MHz)		
RAM	256 MByte	256 MByte	256 MByte
FLASH	4 GByte	4 GByte	4 GByte
TP / FT-10 ports	1	-	1
LIOB-FT ports	1	-	1
RS-485 ports	2	4	1
Extension port (KNX) Extension / Serial port (M-Bus)	1	1	1
Total number of data points	30000		10000
OPC data points	10000		2000
BACnet objects	2000		750
BACnet calendar	25		25
BACnet scheduler	100		100
BACnet notification classes	32		32
Trend logs	512		256
LonMark calendar	1 (25 calendar patterns)		1 (25 calendar patterns)
LonMark scheduler	100		100
LonMark alarm servers	1		1
Modbus data points	2000	5000	2000
L-WEB clients	32		32
L-IOB I/O modules	Up to 24 L-IOB I/O Modules in any combination of type LIOB-Connect, LIOB-FT, LIOB-IP852/BIP		Up to 8 L-IOB I/O Modules in any combination of type LIOB-Connect, LIOB-FT, LIOB-IP852
IEC-61131-3	■	■	■
IEC-61499	■	■	■
CEA-709 Router	■	-	■
CEA-709 RNI	■	-	■
CEA-709 (FT)	■ 1	■	■ 1
CEA-852 (IP)	■ 1	■	■ 1
BACnet Router	-	■	■
BACnet MS / TP	■ 2	■	■ 2
BACnet TCP / IP	■ 2	■	■ 2
BBMD	-	■	-
Modbus RTU	■ 3	■ 3	■ 3
Modbus TCP / IP	■	■	■
M-Bus	■ 4	-	■ 4
MP-Bus	■ 5	-	■ 5
SMI	■ 5	-	■ 5
KNX TP1	■ 4	-	■ 4
KNX IP	■	-	■
EnOcean	■ 5	-	■ 5
OPC XML-DA	■	■	■
OPC UA	■	■	■
SNMP	■	■	■
LIOB-Connect	■	■	■
LIOB FT + IP	■	■	■
128 x 64 graphic display with backlight	■	■	■
USB	■	■	■
Ethernet switch	■	■	■
WLAN	■ 5	■ 5	■ 5
LTE	■ 5	■ 5	■ 5
IoT	■	■	■
SSH, HTTPS, Firewall	■	■	■
Operating conditions	10°C to 50°C, 10-90% RH, non condensing		
Dimensions (L x W x H, mm)	159 x 100 x 75		107 x 100 x 75
Certificates	CE, FCC, BTL	CE, FCC, BTL	CE, FCC, BTL, UL

1. This model can be configured to have either FT or IP active for CEA-709.
2. This model can be configured to have either MS / TP or IP active for BACnet.
3. Modbus RTU can only be used if BACnet MS / TP is not active on this model.
4. M-Bus and KNX TP1 can be used alternatively only on this model. An expansion module is needed and must be ordered separately.
5. To operate these protocols, an expansion module is needed and must be ordered separately.

Product name	L-IOB I/O Controller (LonMark TP / FT-10)					L-IOB I/O Controller (LonMark IP-852)				
Model	LIOB-180	LIOB-181	LIOB-182	LIOB-183	LIOB-184	LIOB-480	LIOB-481	LIOB-482	LIOB-483	LIOB-484
										
BACnet device profile	-					-				
Power supply	24 V DC / 24 V AC ±10 % via L POW, or with an external power supply									
CPU	A5 (500 MHz)					A5 (500 MHz)				
RAM	128 MByte					128 MByte				
FLASH	4 GByte					4 GByte				
Universal Input (UI)	8	8	6	6	7	8	8	6	6	7
Digital Input (DI)	2	12	-	-	-	2	12	-	-	-
Analog Output (AO)	2	-	6	6	4	2	-	6	6	4
Digital Output (DO)	8 (4 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (4 x Relay16A @ 250 VAC, 1 x Relay 6A @ 250 VAC)	7 (5 x Relay 6A @ 250 VAC, 2 x Triac 0.5A @ 24–230 VAC)	8 (4 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (4 x Relay 16A @ 250 VAC, 1 x Relay 6A @ 250 VAC)	7 (5 x Relay 6A @ 250 VAC, 2 x Triac 0.5A @ 24–230 VAC)
Total number of data points	2000					2000				
OPC XML-DA data points	-					300				
BACnet objects	-					-				
BACnet calendar	-					-				
BACnet scheduler	-					-				
BACnet notification classes	-					-				
Trend logs	-					50				
LonMark calendar	1 (25 calendar patterns)					1 (25 calendar patterns)				
LonMark scheduler	10					10				
LonMark alarm servers	1					1				
Modbus data points	-					-				
L-WEB clients	-					8				
L-IOB I/O modules/ Interface	LIOB-FT or LonMark TP / FT-10					Up to 1 (LIOB-IP852)				
Differential pressure sensor	-	-	-	-	0–500 Pa	-	-	-	-	0–500 Pa
128x64 graphic display with backlight	■	■	■	■	■	■	■	■	■	■
Ethernet switch	-	-	-	-	-	■	■	■	■	■
Operating conditions	0°C to 50°C, 10–90% RH, non condensing									
Dimensions (L x W x H, mm)	107 x 100 x 75					107 x 100 x 75				
Certificates	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL

Product name	L-IOB I/O Controller					
Model	LIOB-580	LIOB-581	LIOB-582	LIOB-583	LIOB-584	LIOB-585
						
BACnet device profile	B-BC					
Power supply	24 V DC / 24 V AC ±10 % via L-POW, or with an external power supply					24 V DC / 24 V AC ±10 % via LPOW-2415B, or with an external power supply
CPU	A5 (500 MHz)					
RAM	128 MByte					
FLASH	4 GByte					
Universal Input (UI)	8	8	6	6	7	6
Digital Input (DI)	2	12	-	-	-	-
Analog Output (AO)	2	-	6	6	4	2
Digital Output (DO)	8 (4 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (4 x Relay 16A @ 250 VAC, 1 x Relay 6A @ 250 VAC)	7 (5 x Relay 6A @ 250 VAC, 2 x Triac 0.5A @ 24–230 VAC)	5 (5 x Triac 0.5 A)
Total number of data points	2000					10000
OPC XML-DA data points	300					1000
BACnet objects	300					500
BACnet calendar	25					
BACnet scheduler	10					
BACnet notification classes	32					
Trend logs	50					256
LonMark calendar	-					1 (25 calendar patterns)
LonMark scheduler	-					10
LonMark alarm servers	-					1
Modbus data points	-					300
L-WEB clients	8					32
L-IOB I/O modules/ Interface	Up to 1 (LIOB-BIP)					-
Differential pressure sensor	-	-	-	-	0–500 Pa	
128x64 graphic display with backlight	■	■	■	■	■	■
Ethernet switch	■	■	■	■	■	■
Operating conditions	0°C to 50°C, 10–90% RH, non condensing					
Dimensions (L x W x H, mm)	107 x 100 x 75					
Certificates	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL
IoT	■	■	■	■	■	■ [1]

1. To operate IoT funcionalities, a L-IOT1 is needed and must be ordered separately.

Product name	L-IOB I/O Controller		
Model	LIOB-586	LIOB-588	LIOB-589
			
BACnet device profile	B-BC		
Power supply	24 V DC / 24 V AC ±10 % via L POW, or with an external power supply		
CPU	A5 (500 MHz)	A5 (500 MHz)	A5 (500 MHz)
RAM	128 MByte	128 MByte	128 MByte
FLASH	4 GByte	4 GByte	4 GByte
Universal Input (UI)	6	10	10
Digital Input (DI)	4	-	6
Analog Output (AO)	-	6	6
Digital Output (DO)	6 (6 x Relay 16A)	8 (8 x Relay 10A)	4 (4 x Relay 10A)
Total number of data points	10000	10000	10000
OPC XML-DA data points	1000	1000	1000
BACnet objects	500	500	500
BACnet calendar	25	25	25
BACnet scheduler	10	10	10
BACnet notification classes	32	32	32
Trend logs	256	256	256
LonMark calendar	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)
LonMark scheduler	10	10	10
LonMark alarm servers	1	1	1
Modbus data points	300	300	300
L-WEB clients	32	32	32
L-IOB I/O modules/ Interface	1 x LIOB-10x or LIOB-45x/55x	1 x LIOB-10x or LIOB-45x/55x	1 x LIOB-10x or LIOB-45x/55x
Differential pressure sensor	-	-	-
128x64 graphic display with backlight	■	■	■
Ethernet switch	■	■	■
WLAN	■ 1	■ 1	■ 1
LTE	■ 1	■ 1	■ 1
IoT	■ 2	■ 2	■ 2
Operating conditions	0°C to 50°C, 10–90% RH, non condensing		
Dimensions (L x W x H, mm)	159 x 100 x 75	159 x 100 x 75	159 x 100 x 75
Certificates	CE, FCC, BTL	CE, FCC, BTL	CE, FCC, BTL

1. To operate these protocols, an expansion module is needed and must be ordered separately.
2. To operate IoT funcionalities, a L-IOT1 is needed and must be ordered separately.

Product name	L-IOB I/O Modules (BACnet IP)					L-IOB I/O Modules (LIOB-Connect)				L-IOB Adapter		
Model	LIOB-550	LIOB-551	LIOB-552	LIOB-553	LIOB-554	LIOB-100	LIOB-101	LIOB-102	LIOB-103	LIOB-A2	LIOB-A4	LIOB-A5
												
BACnet device profile	B-BC					-				-		
Power supply	24 V DC / 24 V AC ±10 % via L POW, or with an external power supply									-		-
Universal Input (UI)	8	8	6	6	7	8	8	6	6	-	-	-
Digital Input (DI)	2	12	-	-	-	2	16	-	-	-	-	-
Analog Output (AO)	2	-	6	6	4	2	-	6	6	-	-	-
Digital Output (DO)	8 (4 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (4 x Relay 16A @ 250 VAC, 1 x Relay 6A @ 250 VAC)	7 (5 x Relay 6A @ 250 VAC, 2 x Triac 0.5A @ 24–230 VAC)	9 (5 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (Relay 16A @ 250 VAC)	-	-	-
Differential pressure sensor	-	-	-	-	0–500 Pa	-	-	-	-	-	-	-
OPC XML-DA data points	100					-	-	-	-	-	-	-
BACnet objects	1 (Per I/O)					-	-	-	-	-	-	-
BACnet calendar	10					-	-	-	-	-	-	-
BACnet scheduler	5					-	-	-	-	-	-	-
Trend logs	10					-	-	-	-	-	-	-
Alarm logs	5					-	-	-	-	-	-	-
Connection	RJ-45	RJ-45	RJ-45	RJ-45	RJ-45	LIOB-Connect	LIOB-Connect	LIOB-Connect	LIOB-Connect	4-wire cables	Ethernet	Terminate the LIOB-Connect bus
128x64 graphic display with backlight	■	■	■	■	■	■	■	■	■	■	■	■
Ethernet switch	■	■	■	■	■	-	-	-	-			
Operating conditions	0°C to 50°C, 10–90% RH, non condensing											
Dimensions (L x W x H, mm)	107 x 100 x 75					107 x 100 x 75				55 x 100 x 60	27 x 100 x 60	
Certificates	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC	CE, FCC

Product name	I/O Modules (LIOB LonMark TP / FT-10)					I/O Modules (LIOB LonMark IP-852)				
Model	LIOB-150	LIOB-151	LIOB-152	LIOB-153	LIOB-154	LIOB-450	LIOB-451	LIOB-452	LIOB-453	LIOB-454
										
BACnet device profile	-					-				
Power supply	24 V DC / 24 V AC ±10 % via L POW, or with an external power supply									
Universal Input (UI)	8	8	6	6	7	8	8	6	6	7
Digital Input (DI)	2	12	-	-	-	2	12	-	-	-
Analog Output (AO)	2	-	6	6	4	2	-	6	6	4
Digital Output (DO)	8 (4 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (4 x Relay16A @ 250 VAC, 1 x Relay 6A @ 250 VAC)	7 (5 x Relay 6A @ 250 VAC, 2 x Triac 0.5A @ 24–230 VAC)	8 (4 x Relay 6A @ 250 VAC, 4 x Triac 0.5A @ 24–230 VAC)	-	8 (Relay 6A @ 250 VAC)	5 (4 x Relay16A @ 250 VAC, 1 x Relay 6A @ 250 VAC)	7 (5 x Relay 6A @ 250 VAC, 2 x Triac 0.5A @ 24–230 VAC)
Differential pressure sensor	-	-	-	-	0–500 Pa	-	-	-	-	0–500 Pa
OPC XML-DA data points	-	-	-	-	-	-	-	-	-	-
BACnet objects	-	-	-	-	-	-	-	-	-	-
BACnet calendar	-	-	-	-	-	-	-	-	-	-
BACnet scheduler	-	-	-	-	-	-	-	-	-	-
Trend logs	-	-	-	-	-	-	-	-	-	-
Alarm logs	-	-	-	-	-	-	-	-	-	-
Connection	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Twisted pair	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
128x64 graphic display with backlight	■	■	■	■	■	■	■	■	■	■
Ethernet switch	-	-	-	-	-	■	■	■	■	■
Operating conditions	0°C to 50°C, 10–90% RH, non condensing									
Dimensions (L x W x H, mm)	107 x 100 x 75					107 x 100 x 75				
Certificates	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL	CE, FCC, LonMark, UL

Product name	LIOB-VAV Controller			
Model	LIOB-AIR1	LIOB-AIR2	LIOB-AIR13	LIOB-AIR20
				
BACnet device profile	B-BC			
Power supply	85-240 V AC 50/60Hz or 24 V DC / 24 V AC ±10 %	24 V DC / 24 V AC ±10 %		85-240 V AC 50/60Hz
CPU	A5 500 MHz			
RAM	128 MByte			
FLASH	4 GByte			
Universal Input (UI)	10			
Digital Input (DI)	-			
Analog Output (AO)	3			
Digital Output (DO)	9 (3 x Relay 16A @ 250 VAC, 4 x Relay 6A @ 250 VAC, 2 x Triac 0.5A)	6 (4 x Relay 6A @ 250 VAC, 2 x Triac 0.5A)		6 (4 x Relay 10A, 2 x Triac 0.5A)
Total number of data points	30000			
OPC XML-DA data points	10000			
BACnet objects	1000			
BACnet calendar	25			
BACnet scheduler	100			
BACnet notification classes	32			
Trend logs	512			
LonMark calendar	1 (25 calendar patterns)			
LonMark scheduler	100			
LonMark alarm servers	1			
Modbus data points	4000	2000	2000	2000
L-WEB clients	32			
L-IOB I/O modules/ Interface	Up to 1 (LIOB-BIP)			
Differential pressure sensor	0–250 Pa			0-500 Pa
128x64 graphic display with backlight	■			
Ethernet switch	■			
Operating conditions	0°C to 50°C, 10–90% RH, non condensing			
Dimensions (L x W x H, mm)	235 x 120 x 68		208 x 120 x 68	
Ethernet	2			
L-STAT ports	1			
RS-485 ports (Modbus RTU)	1	-	-	1
RS-485 ports (BACnet MS / TP)				
MP-Bus (actuator)	1			
USB ports	2			
Connections (Local / Global)	4000 / 250			
IEC-61499	■			
CEA-852 (IP)	■			
BACnet IP	■			
Modus TCP	■			
LIOB-IP	■			
OPC XML-DA	■			
OPC UA	■			
Wireless	Built-in	Needs LWLAN-800	Built-in	
LTE	■ [1]	■ [1]	■ [1]	■ [1]
IoT	■ [2]	■ [2]	■ [2]	■ [2]
DALI	-	-	-	■
EnOcean	Needs LENO-80x	Needs LENO-80x	Needs LENO-80x	Built-in
Certificates	CE, FCC, UL		CE, FCC	

1. To operate these protocols, an expansion module is needed and must be ordered separately.
2. To operate IoT funcionalities, a L-IOT1 is needed and must be ordered separately.

Product name	Gateways					
Model	LGATE-952	LGATE-902	LINX-102	LINX-103	LINX-202	LINX-203
						
BACnet device profile	B-BC	B-BC	-	-	B-BC	B-BC
Power supply	24 VDC / 24 VAC ± 10%, typ. 2.5 W	24 VDC / 24 VAC ± 10%, typ. 2.5 W	24 VDC / 24 VAC ± 10%, typ. 2.5 W			
CPU	A5 500 MHz	A5 500 MHz	A5 500 MHz			
RAM/FLASH	256 MB / 4 GB	256 MB / 4 GB	256 MB / 4 GB	256 MB / 4 GB	256 MB / 4 GB	256 MB / 4 GB
LIOB-Connect	-	-	■	■	■	■
TP / FT-10 ports	1	1	1	1	-	-
RS-485 ports	2	1	1	1	2	2
Extension ports	3	1	1	1	1	1
Total number of data points	30000	10000	10000	10000	10000	10000
OPC data points	5000	2000	2000	2000	2000	2000
BACnet objects	2000	2000	-	-	750	750
BACnet client mappings	1000	750	-	-	750	750
BACnet calendar	25	25	-	-	25	25
BACnet scheduler	100	100	-	-	100	100
BACnet notification classes	32	32	-	-	32	32
Trend logs	512	256	256	256	256	256
LonMark calendar	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	-	-
LonMark scheduler	100	100	100	100	-	-
LonMark alarm servers	1	1	1	1	-	-
L-WEB clients	32	32	32	32	32	32
L-IOB I/O modules	-	-	Up to 8 (LIOB-Connect, LIOB-FT and LIOB-IP852)		Up to 8 (LIOB-Connect, LIOB-FT and LIOB-55x)	
IEC-61131	-	-	-	-	-	-
IEC-61499	-	-	-	-	-	-
CEA-709 Router	-	-	-	■	-	-
CEA-709 RNI	■	■	■	-	-	-
CEA-709 (FT)	■ 1	■ 1	■ 1	■	-	-
CEA-852 (IP)	■ 1	■ 1	■ 1	■	-	-
BACnet Router	-	-	-	-	-	■
BACnet MS / TP	■ 2	■ 2	-	-	■ 2	■
BACnet IP	■ 2	■ 2	-	-	■ 2	■
BBMD	■	■	-	-	-	■
Modbus RTU	■	■ 3	■	■	■ 3	■ 3
Modbus IP	■	■	■	■	■	■
M-Bus	■ 4	■ 4	■ 4	■ 4	■ 4	■ 4
KNX TP1	■ 4	■ 4	■ 4	■ 4	■ 4	■ 4
MP-BUS	■ 5	■ 5	■ 5	■ 5	■ 5	■ 5
KNX IP	■ 4	■ 4	■	■	■	■
SMI	■ 5	■ 5	■ 5	■ 5	■ 5	■ 5
EnOcean	■ 5	■ 5	■ 5	■ 5	■ 5	■ 5
OPC XML-DA Client and Server	■	■	■	■	■	■
OPC UA Server	■	■	■	■	■	■
SNMP	■	■	■	■	■	■
LIOB FT + IP	-	-	■	■	■	■
128 x 64 graphic display with backlight	■	■	■	■	■	■
USB	■	■	■	■	■	■
Ethernet switch	■	■	■	■	■	■
WLAN	■ 5	■ 5	■ 5	■ 5	■ 5	■ 5
LTE	■ 5	■ 5	■ 5	■ 5	■ 5	■ 5
IoT	■	■	■ 6	■ 6	■ 6	■ 6
SSH, HTTPS, Firewall	■	■	■	■	■	■
Operating conditions	0°C to 50°C, 10–90% RH, non condensing					
Dimensions (L x W x H, mm)	159 x 100 x 75	107 x 100 x 75				
Certificates	CE, FCC, BTL	CE, FCC, BTL, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL

1. This model can be configured to have either FT or IP active for CEA-709.
2. This model can be configured to have either MS / TP or IP active for BACnet.
3. Modbus RTU can only be used if BACnet MS / TP is not active on this model.
4. M-Bus and KNX TP1 can be used alternatively only on this model. To operate these protocols, an expansion module is needed and must be ordered separately.
5. To operate these protocols, an expansion module is needed and must be ordered separately.
6. To operate IoT funcionalities, a L-IOT1 license is needed and must be ordered separately.

Product name	DALI Controller					
Model	LDALI-3E101-U	LDALI-3E102-U	LDALI-3E104-U	LDALI-ME201-U	LDALI-ME204-U	LDALI-PLC4
						
Power supply	85-240 V AC	85-240 V AC	85-240 V AC	85-240 V AC	85-240 V AC	85-240 V AC
DALI channels	1	2	4	1	4	4
Integrated DALI bus power supply	16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current	16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current	16 VDC, 116 mA guaranteed supply current, 125 mA max. supply current	16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current	16 VDC, 116 mA guaranteed supply current, 125 mA max. supply current	16 VDC, 116 mA guaranteed supply current, 125 mA max. supply current
OPC Total number of data points	2000					10000
Address table entries	512			-	-	512
128x64 graphic display with backlight	■	■	■	■	■	■
BACnet	-	-	-	■	■	■
CEA-709	■	■	■	-	-	■
OPC XML-DA + UA Server	■	■	■	■	■	■
DALI ballasts per DALI channel	64					
DALI groups per DALI channel	16					
DALI sensor per DALI channel	16					
Scene control	16 scenes per DALI group					
Alarm logs	10					
Scheduler	16 per DALI channel (LonMark)			25 per DALI channel (BACnet)		
Trend logs	512 (4 000 000 entries, max. ≈ 60 MB)					
Local and Global connections	2000 / 250					
L-WEB clients (concurrent)	32 (simultaneously)					
Ethernet ports	2					
TP / FT-10 ports	1			-		
BACnet MS / TP ports	-	-	-	1	1	1
WLAN	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]
LTE	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]
IoT	■	■	■	■	■	■
Operating conditions	0°C to 40°C, 10–90% RH, non condensing					
Dimensions (L x W x H, mm)	159 x 100 x 75					
Certificates	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL

1. To operate these protocols, an expansion module is needed and must be ordered separately.

Product name	L-DALI Pushbutton Coupler	L-DALI Multi-sensor	L-DALI Relay Module	
Model	**LDALI-BM2**	**LDALI-MS2**	**LDALI-RM3**	**LDALI-RM4**
				
Power supply	DALI bus 3.0 mA at 16 V DC	DALI bus 3.5 mA at 16 V DC	DALI bus 3 mA at 16 V DC	
Product descriptions	4 pushbutton coupler	Multi-sensor with motion detection and lux level measurements	DALI Relay Module 10A Analog Interface 0–10 V and 1–10 V	
Number of devices	64 per DALI channel, with sufficient dimensioned DALI bus power supply	16 per DALI channel	64 per DALI channel, with sufficient dimensioned DALI bus power supply	
Lux level measurement	-	0 – 4000 lux, resolution: 0.125 lux	-	-
Infrared motion receiver max. coverage	-	10,8 m @ 3m mounting height ($92m^2$), 136 zones, opening angle: 122°	-	-
Nominal load and current AC	-	-	2 500 VA / 10A	
Nominal load and current DC	-	-	300 W / 10A	
Relay contact switching voltage	-	-	120 - 347 V AC / 30 V DC	
Operating conditions	0°C to 50°C, 10–90% RH, non condensing	0°C to 50°C, 10–90% RH, non condensing	0 °C to 50 °C, 10 – 90 % RH, non condensing	
Certificates	DALI-2, CE, FCC	DALI-2, CE, FCC	CE, FCC	

Product name	L-DALI Power Supply	
Model	**LDALI-PWR2-U**	**LDALI-PWR4-U**
		
Power supply	85-240 VAC, 50 / 60 Hz	
Product descriptions	DALI power supply unit for 2 DALI channels	DALI power supply unit for 4 DALI channels
Operating conditions	0°C to 40°C, 10–90% RH, non condensing	
Certificates	DALI-2, CE, FCC, UL	DALI-2, CE, FCC, UL

Product name	Infrared Remote controller
Model	**L-RC1**
	
Power supply	1 x CR2025 3.0 V button battery
Product descriptions	Infrared remote control for room automation applications
Keys	18
Operating conditions	0°C to 40°C, 10–90% RH, non condensing
Certificates	CE, FCC

Product name	L-IP CEA-709 / IP-852 Router				L-IP BACnet IP Router		
Model	LIP-3ECTC	LIP-1ECTC	LIP-33ECTC	LIP-3333ECTC	LIP-ME201C	LIP-ME202C	LIP-ME204C
							
Power supply	24 V AC / DC ±10%						
OPC XML-DA server	■	■	■	■	■	■	■
OPC UA server	■	■	■	■	■	■	■
Ethernet ports	2	2	2	2	2	2	2
TP / FT-10 ports	1	-	2	4	-	-	-
TP / XF-1250 ports	-	1	-	-	-	-	-
BACnet MS / TP ports	-	-	-	-	1	2	4
Operating conditions	0°C to 50°C, 10–90% RH, non condensing						
Dimensions (L x W x H, mm)	107 x 100 x 60			159 x 100 x 75	107 x 100 x 75		159 x 100 x 75
Certificates	CE, FCC	CE, FCC	CE, FCC, UL	CE, FCC	CE, FCC,BTL, UL	CE, FCC, BTL, UL	CE, FCC
USB ports	2	2	2	2	2	2	2
WLAN	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]
LTE	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]	■ [1]

Product name	NIC for CEA-709 and IP-852 Channels				
Model	NIC709-USB100	NIC852	NIC709-IP3E100C	NIC709-IP1E100C	NIC852-SW
					
Power supply	USB interface	USB interface	24 V AC / DC ±10%		-
Product description	USB interface, connects to the USB port of a PC	Floating license via USB hardlock key	Remote Network Interface (RNI)		Software license for one PC, connect to IP-852 channel
Ethernet ports	-	-	2	2	-
TP / FT-10 ports	1	-	1	-	-
TP / XF-1250 ports	1	-	-	1	-
RS-485 ports	1	-	-	-	-
USB ports	1	1	2	2	-
SNMP	-		■	■	-
WLAN	-		■ [1]	■ [1]	-
Operating System	Windows 7, Windows 8, Windows 10, Windows Server 2003 (32-bit), Windows Server 2008, Windows Server 2012, Windows Server 2016				
Operating conditions	0°C to 50°C, 10–90% RH, non condensing	-	0°C to 50°C, 10–90% RH, non condensing		-
Dimensions (L x W x H, mm)	120 x 70 x 23	-	107 x 100 x 75	107 x 100 x 75	-
Certificates	CE, FCC	CE, FCC	CE, FCC	CE, FCC	-

Product name	LPA CEA-709 Protocol Analyzer				
Model	LPA-SET-USB	LPA-IP	LPA-SW	LPA-IP-SW	LPA-USB
					
Product description	Set contains: Network interface NIC709-USB100 and NIC852 for IP-852 / CEA-709 channels, registered to NIC852 / NIC709-USB100	IP-852 Channel Protocol Analyzer bundle contains: Network interface NIC852 for IP-852 channels, registered to NIC852	Protocol Analyzer Software, supports all NIC-709 network interfaces, NIC709 not included	Protocol Analyzer Software for IP-852 channels, supports Remote LPA. NIC852 not included.	Set contains: Network Interface NIC709-USB100 LPA-SW Protocol Analyzer Software for CEA-709 channels, registered to NIC709-USB100
Operating System	Windows 7, Windows 8, Windows 10, Windows Server 2003 (32-bit), Windows Server 2008, Windows Server 2012, Windows Server 2016				

1. To operate these protocols, an expansion module is needed and must be ordered separately.

Product name	M-Bus Level Converter	
Model	L-MBUS20	L-MBUS80
		
Power supply	24 V AC / DC ±10%	
Baud rate	300 to 9600 baud	300 to 9600 baud
TTL / RS-232	1	1
M-Bus	1	1
M-Bus devices	Up to 20	Up to 80
Operating conditions	0°C to 50°C, 10–90% RH, non condensing	
Dimensions (L x W x H, mm)	107 x 100 x 60	
Certificates	CE, FCC	CE, FCC

Product name	EnOcean Interface		
Model	LENO-800	LENO-801	LENO-802
			
Power supply	Via the USB 2.0 BUS Connection		
Frequency	868.3 MHz	902.875 MHz	928.35 MHz
Installation	Standard USB 2.0 cable, max 5 M		
Data rate	125 kbit/s		
Operating conditions	0°C to 50°C, 10–90% RH, non condensing		
Versions	Europe	USA / Canada	Japan
Dimensions (L x W x H, mm)	27 x 89 x 60		
Certificates	CE, FCC	CE, FCC	CE, FCC

Product name	Wireless LAN Interface
Model	LWLAN-800
	
Power supply	via the USB 2.0 bus connection
Installation	standard USB 2.0 cable, max 5 M
USA (FCC)	2.412~2.462 GHz / 11 channels
Europe (ETSI)	2.412~2.472 GHz / 13 channels
Japan	2.412~2.472 GHz / 13 channels
Frequency	2.4 GHz band
Standard	IEEE 802.11 b/g/n
RF output power	max. 18 dBm (63 mW) ±2 dBm
Operating conditions	0°C to 50°C, 10–90% RH, non condensing
Dimensions (L x W x H, mm)	27 x 89 x 60
Certificates	CE, FCC, IC

Product name	LTE Interface
Model	LTE-800
	
Power supply	24 V DC
Installation	standard USB 2.0 cable, max 5 M
Standard	LTE, UMTS/HSPA+ and GSM/GPRS/EDGE
Operating conditions	0°C to 50°C, 10–90% RH, non condensing
Dimensions (L x W x H, mm)	55 x 100 x 60
Certificates	CE, FCC

Product name	Standard Motor Interface, SMI	
Model	LSMI-800	LSMI-804
		
Product description	Standard Motor Interface for 16 motors via EXT port	Standard Motor Interface for 64 motors, 4 SMI channels via USB
Power supply	230 VAC, 50 Hz, max 2 W	85-240 VAC, 50/60 Hz, max 2W
Installation	3-wire cable, max 1 M	standard USB 2.0 cable, max 1 M
Digital Output (DO)	-	4 x Relay, 10 A
Operating conditions	0°C to 50°C, 10–90% RH, non condensing	
Dimensions (L x W x H, mm)	55 x 100 x 60	107 x 100 x 60
Certificates	CE, FCC	

Product name	MP-Bus Interface
Model	LMPBUS-804
	
Power supply	24 V AC / DC ±10%
Interfaces	1 x Mini USB 2.0 Type B
MP-Bus	4
Operating conditions	0°C to 50°C, 10–90% RH, non condensing
Dimensions (L x W x H, mm)	55 x 100 x 60
Certificates	CE, FCC

Product name	KNX TP1 Interface
Model	LKNX-300
	
Power supply	via KNX TP1 bus
Baud rate	9600 baud
Installation	3-wire cable, max 1 M
EXT ports	1
KNX TP1 ports	1
Number of KNX TP1 data points	1000
Operating conditions	0°C to 50°C, 10–90% RH, non condensing
Dimensions (L x W x H, mm)	55 x 100 x 60
Certificates	CE, FCC

Product name	L-STAT Room Control Unit					
Model LSTAT-80x-G3-Lx	**LSTAT-800-G3-L1 LSTAT-801-G3-L1 LSTAT-802-G3-L1**	**LSTAT-800-G3-L2 LSTAT-801-G3-L2 LSTAT-802-G3-L2**	**LSTAT-800-G3-L3 LSTAT-801-G3-L3 LSTAT-802-G3-L3**	**LSTAT-800-G3-L4 LSTAT-801-G3-L4 LSTAT-802-G3-L4**	**LSTAT-800-G3-L5 LSTAT-801-G3-L5 LSTAT-802-G3-L5**	**LSTAT-800-G3-L6 LSTAT-801-G3-L6 LSTAT-802-G3-L6**
Black Front, White Enclosure						
Model LSTAT-80x-G3-L20x	**LSTAT-800-G3-L201 LSTAT-801-G3-L201 LSTAT-802-G3-L201**	**LSTAT-800-G3-L202 LSTAT-801-G3-L202 LSTAT-802-G3-L202**	**LSTAT-800-G3-L203 LSTAT-801-G3-L203 LSTAT-802-G3-L203**	**LSTAT-800-G3-L204 LSTAT-801-G3-L204 LSTAT-802-G3-L204**	**LSTAT-800-G3-L205 LSTAT-801-G3-L205 LSTAT-802-G3-L205**	**LSTAT-800-G3-L206 LSTAT-801-G3-L206 LSTAT-802-G3-L206**
White Front, White Enclosure						
Power supply	24 VDC ±10%, 1 W					
Display	LCD display with backlight and choice of RGB color					
RS-485 ports	1	1	1	1	1	1
Button	4	6	8	8	8	8
NFC (Near Field Communication)	1	1	1	1	1	1
Buzzer	1	1	1	1	1	1
Internal temperature sensor	1	1	1	1	1	1
Internal relative humidity sensor	1	1	1	1	1	1
Digital Input (DI)	3	3	3	3	3	3
Universal Input (UI)	1	1	1	1	1	1
Motion detection, occupancy, Infrared receiver	1 (LSTAT-801-GX-LX and LSTAT-802-GX-LX)					
CO_2 sensor	1 (LSTAT-802-GX-LX)					
EnOcean	optional for L-STAT-CUSTOM					
Operating conditions	0°C to 50°C, 10–90% RH, non condensing					
Dimensions (W x H x D, mm)	94.5 x 110 x 19.5					
Certificates	CE, FCC, UL					

Buttons (capacitive touch)
LSTAT-80x-Gx-Lxx1: 4 x Button with temperature up/down, occupancy, and menu
LSTAT-80x-Gx-Lxx2: 6 x Button with temperature up/down, fan up/down, occupancy, and menu
LSTAT-80x-Gx-Lxx3: 8 x Button with temperature up/down, fan up/down, light on/off, occupancy, and menu
LSTAT-80x-Gx-Lxx4: 8 x Button with temperature up/down, sunblinds up/ down, light on/off, occupancy, and menu
LSTAT-80x-Gx-Lxx5: 8 x Button with temperature up/ down, fan up/ down, sunblinds up/ down, occupancy, and menu
LSTAT-80x-Gx-Lxx6: 8 x Button with temperature up/ down, fan up/ down, sunblinds up/ down, light, and menu

Product name	Network Terminator				
Model	LT-03	LT-13	LT-33	LT-04	LT-B4
					
Power supply	-	-	-	-	24 VDC or 24 VAC ±10%
RJ-45 ports	1	-	-	1	-
TP / FT-10 ports	1	1	2	-	-
TP / XF-1250 ports	-	1	-	-	-
RS-485	-	-	-	1	1
Operating conditions	0°C to 50°C, 10–90% RH, non condensing				
Dimensions (L x W x H, mm)	27 x 89 x 60				
Certificates	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC

Product name	L-POW Power Supply		
Model	LPOW-2415A	LPOW-2415B	LPOW-2460B
			
Input voltage	85–240 VAC, 50–60 Hz		
Supply voltage	24 VDC 15 W	24 VDC 15 W	24VDC 60 W
Connection	via LIOB-Connect	Connector	Connector
Dimensions (L x W x H, mm)	55 x 100 x 60		71 x 91 x 55
Certificates	CE, FCC, UL		CE, FCC

Product name	System Distribution Box		
Model	LBOX-600	LBOX-ROC1	LBOX-ROC2
			
Material	Galvanized steel		
Application	Room automation components	System distribution box for LROC-40x Room Controller	
Dimensions (L x W x H, mm)	600 x 250 x 82	519 x 280 x 71	
Input voltage	-	100 – 240 V AC, 50 – 60 Hz	
Supply voltage	-	24 V DC 60 W	

RS-485 standard: ANSI/TIA/EIA-485

Product name	L-ACT Actuators	
Model	L-ACT101-MP	L-ACT101-MP
		
Dimensions (L x W x H, mm)	116 x 66 x 63 (L x W x H)	116 x 66 x 63 (L x W x H)
Shaft diameter (inches)	5/8"	3/4"
Certificates	CE, FCC, UL	

Product name	Ethernet Switch	
Model	DVS-110W02-3SFP Managed 10-Port Ethernet Switch	DVS-008I00 Unmanaged 8-Port Fast Ethernet
		
Dimensions (L x W x H, mm)	75 x 108.7 x 145.3 (L x W x H)	45 x 108.7 x 145.3 (L x W x H)
Installation	Industrial DIN-Rail and wall mounting	Industrial DIN-Rail and wall mounting
Certificates	CE, FCC, UL	

Product name	DVP Modbus I/O Extension	
Model	DVP16SM11N I/O Extension Module	RTU-485 Remote I/O Communication Module
		
Dimensions (L x W x H, mm)	25.2 x 60 x 96 (L x W x H)	25.2 x 60 x 96 (L x W x H)
Installation	Industrial DIN-Rail and wall mounting	Industrial DIN-Rail and wall mounting
Certificates	CE, FCC, UL	

Intelligent Building Automation Solutions

fully integrated - seamlessly connected - securely networked

LOYTEC
A Delta Group Company

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), LTE 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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