



LOYTEC

Facts⁺

创新楼宇自动化 - 产品解决方案

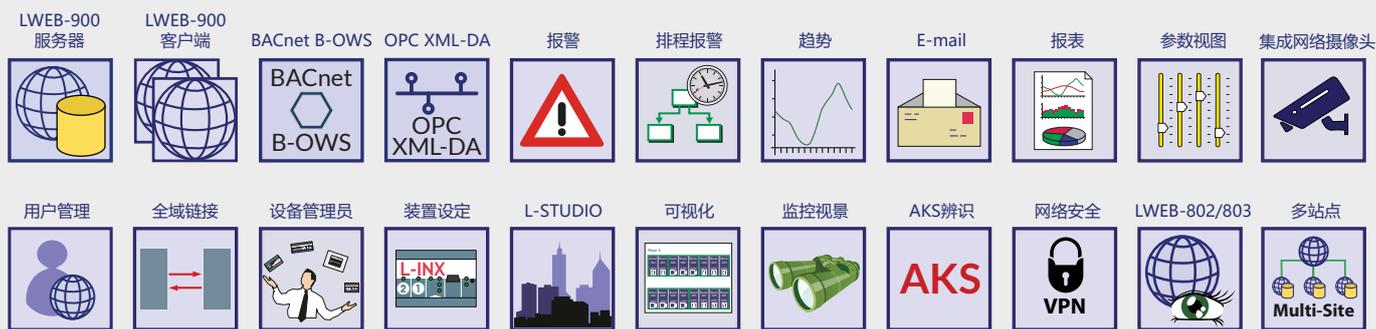


Member of:



LOYTEC产品概观观.

LWEB-900楼宇管理系统



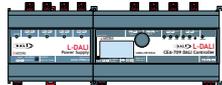
人机界面

L-VIS
L-WEB
L-STAT
L-PAD



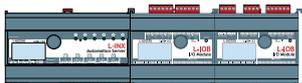
区域控制自动化

L-ROC
L-INX
L-IOB
L-PAD



灯光控制

L-DALI



暖通空控制

L-INX
L-IOB
L-MBUS
L-MPBUS



专用 控制器

L-IOB



能源管理、表计

L-INX
L-IOB
L-MBUS



网关

L-GATE
L-INX
L-DALI



网络基础架构

L-IP
L-Switch
NIC

LON	BACnet	KNX	EnOcean	Bluetooth	DALI	SMI	Modbus	M-Bus	MP-Bus	OPC	可编程	IoT
✓	✓			✓			✓			✓	✓	✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
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✓	✓									✓		

L-WEB系统.

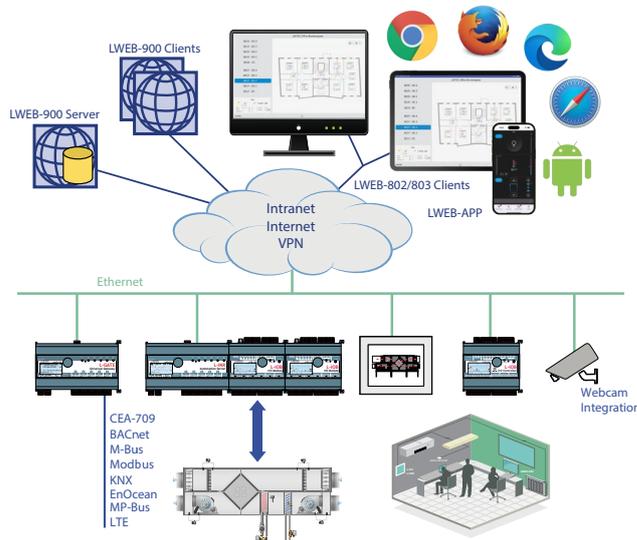
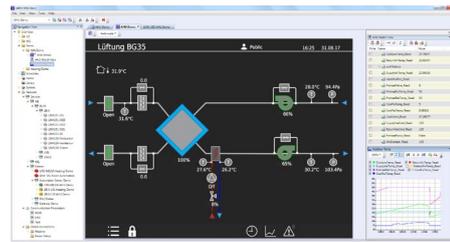


L-WEB是一套功能强大的管理平台，可以用在管理不同大小的分散式楼宇自动化系统。搭配使用Client/Server架构的LWEB-900、分散式L-INX自动化服务器与L-ROC区域控制器，能够提升系统弹性与扩充性最大化。

L-WEB系统功能包含

- 使用标准浏览器浏览定制化的图形页面与动态内容
- 储存与分析长期数据
- 管理分散式排程
- 管理报警
- 组织任意型态的系统参数与数据点
- 管理所有LOYTEC装置(支持远程管理)
- 建立报表(例如：将楼宇的能耗制成图表文件)
- 集成网络摄像头
- 多站点
- VPN

透过LWEB-803仪表盘、LWEB-802HTML5界面或使用LWEB-900楼宇管理系统，建立不同用户因特殊工作要求而建立的独立视景。多个用户可以同时不同的PC上操作。LWEB-900用户管理功能，可以依照不同用户或群组设置不同权限。所有

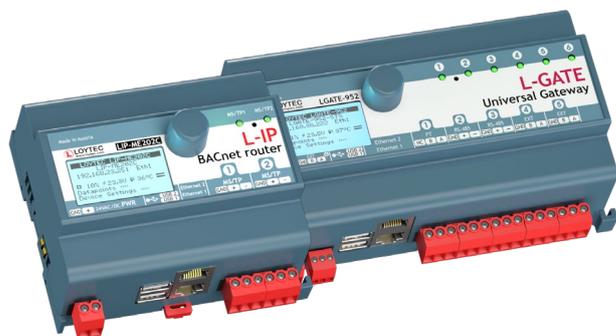


系统与用户的互动，都会依照用户分别记录。分散于LOYTEC L-INX, L-ROC, L-VIS, L-DALI, L-IOB I/O控制器, LIOB-AIR与 L-GATE装置上的警报、排程与趋势记录(AST)，可以自动同步到LWEB-900服务器。如此一来AST功能在楼宇自动化系统需要的时候，能够立即提供数据，并且集成到L-WEB系统中。

网关/路由器.

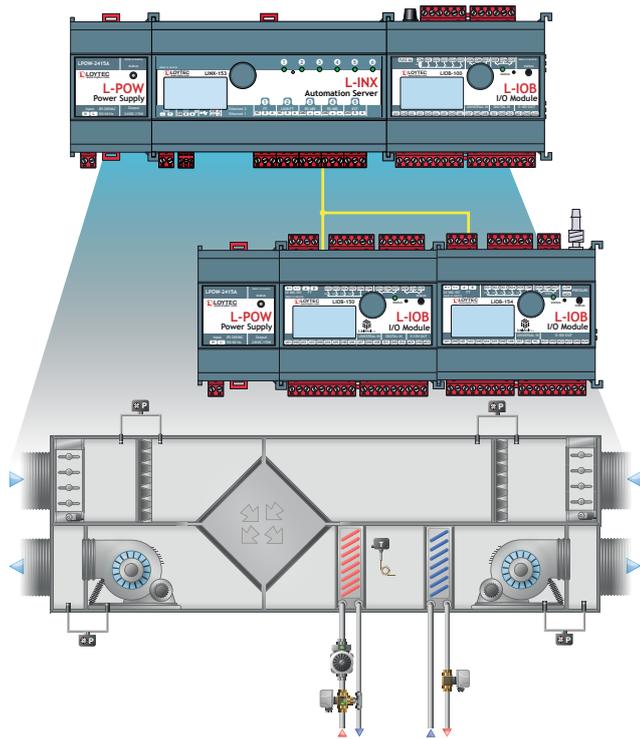
L-GATE网关LGATE-952 和 LGATE-902，是功能强大的通用网关。可以放置用户特有的图形页面供LWEB-802/803使用。可以同时整合并对应多个不同的开放式通信协议数据点。使用内置旋钮与背光显示器(128 x 64)，于本机操作与修改设置。由网路介面所提供的装置与数据点信息，以文字和图标方式呈现于显示器上。

LIP-ME201C(LIP-ME201的后继型号)、LIP-ME202C与LIP-ME204C(LIP-ME204的后继型号) BACnet/IP路由器，连接BACnet MS/TP通道与BACnet/IP网络，BACnet路由器符合ASHRAE135-2012与ISO16484-5:2012标准，并且可以设置成为BACnetBroadcast Management Device (BBMD)设备。L-IP BACnet/ IP路由器也支持外来设备(Foreign Device)。



各型 L-IP 路由器，即 LIP-1ECTC, LIP-3ECTC, LIP-13ECTC, LIP-33ECTC 以及 LIP-3333ECTC，可连接双绞线信道 (TP/FT-10 或 TP/XF-1250) 至 LonMark 系统中的以太网/IP 信道 (IP-852)。L-IP 可发送 CEA-709 封包，通过IP 网络，例如：LAN (以太网)、内网或甚至互联网。

L-INX自动化服务器.



L-INX自动化服务器是可编程、适合多种通信协议的装置，并可以透过随插即用的方式扩充L-IOB I/O模组。L-INX自动化服务器搭载易懂的报警、排程、趋势纪录(AST)、email通知功能，并能够存放图形化页面提供标准的网页浏览器访问。

支持的通信协议：

现场等级通讯协议	IP 等级通讯协议
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模块可使用LIOB-Connect、LIOB-FT或LIOB-IP方式，连接L-INX自动化服务器。L-INX透过Web Service与L-WEB系统集成。内置的网络安全功能，例如SSL、HTTPS、SSH与可设置的防火墙，可避免传输的数据被未授权的来源访问。L-INX 自动化服务器可经由附加的接口，连接到 SMI、MP-Bus、EnOcean、LTE 以及 WLAN。

L-IOB I/O 控制器与模块.

可编程的L-IOB I/O控制器与L-IOB I/O模块，有多种不同的I/O组合。32位元的L-CORE，让系统保有第一级的效能。部份型号内置压力传感器。

L-IOB I/O控制器与模块可使用于BACnet/IP或LonMark IP-852的Ethernet网络，也可使用于LonMark TP/FT-10网路。L-IOB I/O装置拥有可透过网络变数(Network Variables)或BACnet对象的通信能力。此外，L-IOB I/O模块也提供快速且简易的LIOB-Connect连接方式与L-INX自动化服务器或L-ROC区域控制器连接。

所有L-IOB装置均配有128 x 64的背光显示器，可显示装置与数据点数据。旋钮搭配显示器，可以提供详细信息的浏览与数据点的操作及控制。

所有的L-IOB控制器内置易懂的报警与排程功能。基于IP网络的L-IOB I/O 控制器具有趋势记录及电邮通知功能。这些控制器甚至还能承载由网络浏览器访问的动态图形页面。

LIOB-110、LIOB-112、LIOB-560、LIOB-562、LIOB-590、LIOB-592、LIOB-593、LIOB-594、LIOB-595和LIOB-596上有通用I/O。



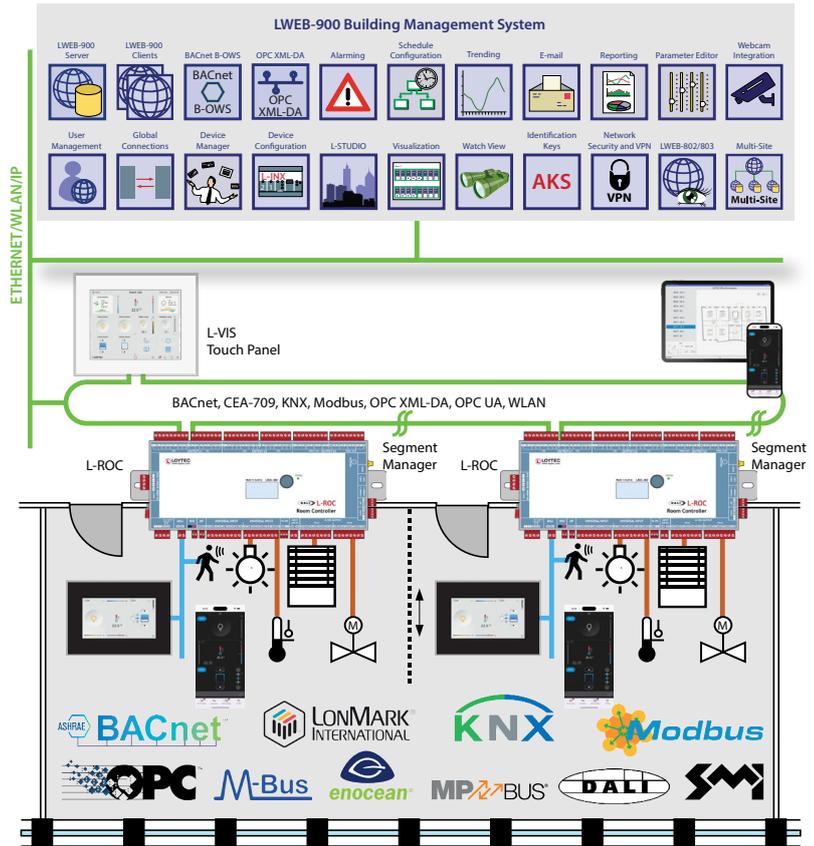
L-ROC 区域自动化.

L-ROC 区域控制器乃是基于 IP 网络的区域自动化系统之核心，可在短短数秒钟之内即完成房间布局变更。L-ROC可以与BACnet/IP及LonMark系统在控制器阶层平顺地集成。

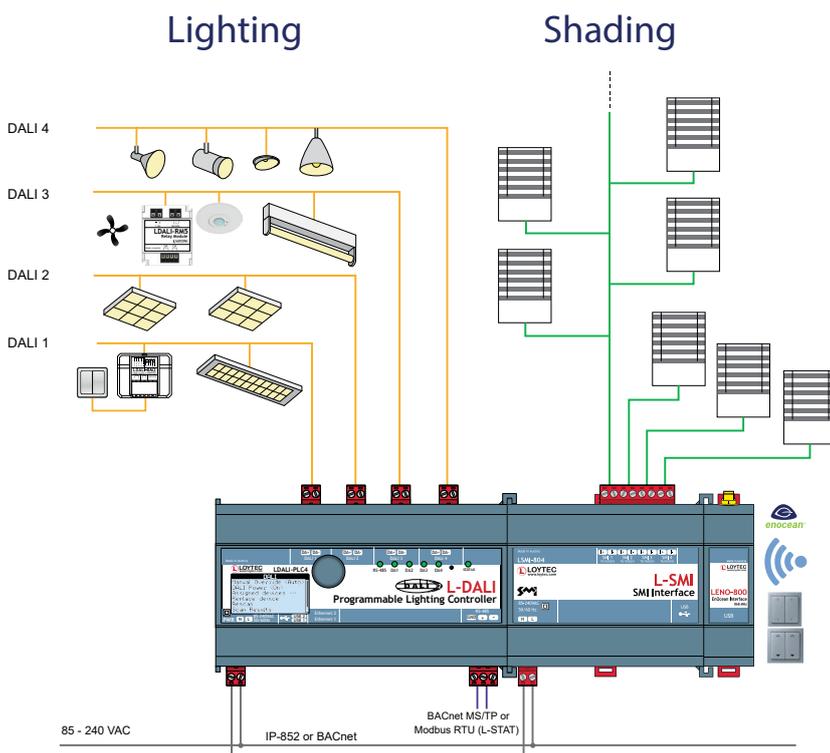
L-STUDIO软件能够建立与调整区域自动化应用程序，非常简单的就能把HVAC、灯光、遮阳帘、安控功能与自动化系统完全集成。

L-ROC解决方案其中的一个以网络为基础的功能，就是能够使用PC或手持装置(iOS或Android)，搭配LWEB-803仪表板(执行于PC上的虚拟房间单元)或使用LWEB-802 HTML5页面于LVIS触控屏幕上，透过自动建立图形的项目进行区域控制。

L-ROC 区域控制器系列产品，在控制器层级即已集成诸如 DALI、KNX、LON、BACnet、MS/TP、Modbus、SMI、M-Bus、MP-Bus、LTE 及 EnOcean 等诸项子系统。这些集成功能即成为其卓越扩展性及灵活性的坚实基础。



L-DALI 灯光控制.



L-DALI控制器具备DALI灯光控制，以及DALI(Digital Addressable Lighting Interface)与LonMark系统或BACnet网络之间的网关的多功能装置。除了DALI镇流器(Ballast)，也支持DALI按压开关耦合器(Couplers,例如: LDALI-BM2)、多传感器(例如,LDALI-MS2)与继电器模块LDALI-RM5/LDALI-RM6。

内置网页服务器提供装置设定、DALI系统设置与维护功能。LDALI控制器也提供报警、排程、趋势记录与email通知功能。

L-DALI 控制器不仅支持 DALI-2 标准，且能集成 EnOcean 装置以及 LSMI-804 接口，根据太阳所在位置施行主动式板条控制及调整，建立智能高效的遮阳及眩光保护措施。

LPAD-7 可程序化触控面板.



IP 连接是通过设备上的以太网实现的，该端口支援 PoE、Bridge或分离网络配置以及 WLAN 无线。LPAD-7可透过蓝牙网路及蓝牙Mesh与LPAD-7通讯。

LPAD-7触控面板搭配BACnet、EnOcean、Bluetooth、Modbus、OPC XML/ DA、OPC UA、LonMark IP852与FT功能。

LPAD-7 可程序化触控面板适用于房间控制面板、网路温控器，或内建电容式触控面板及各种内建感应器。LPAD-7 完全符合在任何类型的商业或住宅房间中操作的要求。

LPAD-7安装墙上可呈现现代及纤薄的设计。

LPAD-7内建多种感测器，可测量温度、湿度、亮度以及是否有人接近。可选择加购安装插座，在需要时增加了额外的连接和大量的输入/输出选择。

红外线接收器可接受遥控器命令，侦测到有人靠近后，萤幕自动点亮，可设置侦测距离（20-200 cm）。



L-STAT 网络恒温器.



L-STAT是现代感设计、精简外观并适用于各种内部装潢的房间控制装置。并使用Modbus界面直接连接于LOYTEC控制器。

单一控制器最多可连接16个L-STAT装置。L-STAT具备分区的LCD屏幕，可以调整RGB背光颜色以搭配各种不同内部装潢色调。8个电容式触控按钮可以在传感器数值、显示参数值与调整设置值之间切换。此外，也可以连接最多4组的外接按压开关。

不同版本的L-STAT内置不同的传感器，用于量测温度、湿度、露点、环境光、占用(Occupancy)与CO₂浓度。此外也可以在屏幕上显示日期时间及环境友善度的绿叶符号。

内置的蜂鸣器提供按键的声音回馈、报警或错误警示。为了防止

未经授权的变更，可设置两层式的权限控管(用户、系统集成商)。L-STAT搭配红外线接收器可接收遥控器信号。

L-STAT 的客制化版本可用在所有三种不同的硬体版本。此外，它们可配备 EnOcean界面。于此情况下，L-STAT 即为远端 EnOcean 收发器，可用于所有支援 L-STAT 界面的控制器。



L-VIS触控屏幕.

L-VIS触控屏幕是楼宇自动化系统中，最适合用在可视化与操作各种不同应用功能的装置。L-VIS触控屏幕将楼宇自动化系统，以图形方式呈现，并适用于房间、会议室或接待区域。

L-VIS提供一个无年代限制且极用户友善的设计，可以与现代或历史建筑和谐共存。浅盘式安装与低热能流失，让L-VIS触控屏幕几乎可以安装在任何位置。

基于LonMark系统、BACnet或Modbus网络的操作与监控需要，可选择下列不同的L-VIS触控屏幕：



- 7" L-VIS触控屏幕, (LVIS7-32Gx), 1024 x 600, 16.7 百万色, 玻璃面板无外框, 电容式触控
- 12.1" L-VIS触控屏幕, (LVIS12-32Gx), 1024 x 768, 16.7 百万色, 阳极处理铝合金外框
- 15.1" L-VIS触控屏幕, (LVIS15-32Gx), 1024 x 768, 16.7 百万色, 阳极处理铝合金外框或玻璃面板无外框, 电容式触控

物联网集成.



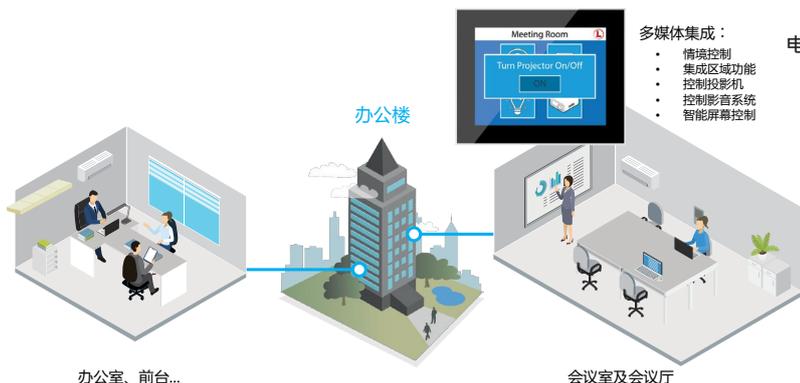
物联网让现代设备都具备Web接口，例如多媒体投影机、A/V系统、智能电视或智能灯泡等。LOYTEC突破性的使用JavaScript来集成IoT设备，使得这些设备都能被LOYTEC集成。

典型的应用场合是会议室或礼堂，通过集成灯光、遮阳帘，多媒体设备及各类第三方设备，实现可依排程一键完成场景切换控制。LOYTEC楼宇控制系统还可以集成各种个人消费性产品如Sonos®音响系统、亚马逊语音助理Alexa、飞利浦Hue智慧灯具等。

物联网功能(Node.js)可以连接至任意一个云服务，例如上传历史数据进行数据分析，或是传递报警信息至报警系统进行故障处理，亦或是通过云服务实现连动控制(如利用网络日历或预订系统进行排程设定等)。

此外，也可通过LOYTEC采集网络上的信息，例如可以读取网络上的天气预报信息并进行连动控制。最后，JavaScript内核还允许在主设备控制中，对非标准设备使用串行通讯协议。

简言之：只要可以通过APP进行控制，就能够集成到楼宇自动化系统或者触控屏上。



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 a LOYTEC controller do not consume a device license), licenses for 5 LWEB-900 Clients and 20 LWEB-80x Clients are included	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 10, Windows 11, Windows Server 2012, Windows Server 2016, Windows Server 2019			-
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	■	■	-	-
Scripting	■	■	-	-
Recommended limit for SQLite	10 GBytes, 1 record =100 bytes -> 100.000.000 records			-
Max. number of devices	1000		-	-
Max. number of multi-sites	50		-	-

Product name	L-WEB Building Management Add-on licenses	
Add-on licenses	Description	
LWEB-900-ADD-10	Add-on license for 10 additional devices	
LWEB-900-ADD-MAX	Add-on license for max. 1000 devices	
LWEB-900-CL-5	Add-on license for additional 5 LWEB-900 clients	
LWEB-900-80x-50	Add-on license for additional 50 LWEB-80x clients	
LWEB-900-80x-100	Add-on license for additional 100 LWEB-80x clients	
LWEB-900-80x-MAX	Add-on license for an unlimited number of LWEB-80x clients	
LWEB-900-MS	Add-on license to enable multi-site support	
LWEB-900-VPN-BASE	Add-on license to enable VPN support in LWEB-900 for one project, includes LWEB-900-VPN-MNT for 1 year	
LWEB-900-VPN-MNT	Add-on license to add/remove VPN clients in LWEB-900 for all projects. Valid for 1 year.	

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	Quad-core ARM Cortex-A53 @ 1.1GHz		
RAM	1 GByte	1 GByte	1 GByte
FLASH	8 GByte	8 GByte	8 GByte
TP / FT-10 ports	1	-	1
LIOB-FT ports	1	-	1
RS-485 ports	2	4	1
Extension port (KNX)	1	1	1
Extension / Serial port (M-Bus)			
Total number of data points	30000		10000
OPC data points	10000		5000
BACnet objects	2000		750
BACnet calendar	25		25
BACnet scheduler	100		100
BACnet notification classes	32		32
Trend logs	512 (13 000 000 entries, ≈ 200 MB)		256 (13 000 000 entries, ≈ 200 MB)
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)	■	■	■
CEA-852 (IP)	■	■	■
BACnet Router	■	■	■
BACnet MS / TP	■	■	■
BACnet TCP / IP	■	■	■
BBMD	■	■	■
Modbus RTU/ASCII	■ ¹	■ ¹	■ ¹
Modbus TCP / IP	■	■	■
M-Bus	■ ²	-	■ ²
MP-Bus	■ ³	-	■ ³
SMI	■ ³	-	■ ³
KNX TP1	■ ²	-	■ ²
KNX IP	■	-	■
EnOcean	■ ³	-	■ ³
OPC XML-DA	■	■	■
OPC UA	■	■	■
SNMP	■	■	■
LIOB-Connect	■	■	■
LIOB FT + IP	■	■	■
128 x 64 graphic display with backlight	■	■	■
USB	■	■	■
Ethernet switch	■	■	■
WLAN	■ ³	■ ³	■ ³
LTE	■ ³	■ ³	■ ³
IoT	■	■	■
L-STUDIO	■	■	■
SSH, HTTPS, Firewall	■	■	■
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)		
Dimensions (L x W x H, mm)	159 x 100 x 75		107 x 100 x 75
Certificates	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL

1. Modbus RTU/ASCII can only be used if BACnet MS / TP is not active on the same port.

2. M-Bus and KNX TP1 can be used alternatively only on this model. An expansion module is needed and must be ordered separately.

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

Product name	L-ROC Room Controller			
	LROC-102	LROC-400	LROC-401	LROC-402
Model				
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	Quad-core ARM Cortex-A53 @ 1.1GHz			
RAM	1 GByte	1 GByte	1 GByte	1 GByte
FLASH	8 GByte	8 GByte	8 GByte	8 GByte
TP / FT-10 ports	1	-	-	-
LIOB-FT ports	1	-	-	-
RS-485 ports ³	2	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	4000	4000	4000	4000
BACnet calendar	25	25	25	25
BACnet scheduler	100	100	100	100
BACnet notification classes	32	32	32	32
Trend logs	512 (13 000 000 entries, ≈ 200 MB)			
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	4000	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/LIOB-55x/56x		
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 / SC	■	■	■	■
BBMD	■	■	■	■
Modbus RTU/ASCII	■ 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	■	■	■	■
L-STUDIO	■ (IEC 61499 only)	■ (IEC 61499 only)	■ (IEC 61499 only)	■ (IEC 61499 only)
SSH, HTTPS, Firewall	■	■	■	■
Operating conditions	0 °C to 50°C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	0 °C to 40 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)		
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, BTL, UL	CE, FCC, BTL, 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/ASCII 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-ROC Room Controller
Model	LROC-800
	
Power supply	85 V - 277 V AC
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz
RAM	1 GByte
FLASH	8 GByte
Universal I/O	12 (U, R) ¹
Digital Output (DO)	3 TRIACS (0.5 A), 4 Relays (10 A)
Total number of data points	15000
OPC data points	5000
L-WEB clients	32
Max. number of Rooms /Segments	3
Trend logs (BACnet or generic)	512 (13 000 000 entries, ≈ 200 MB)
Total trended data points	2000
BACnet client mappings	2500
BACnet objects	1000 (analog, binary, multi-state)
BACnet calendar	25
BACnet scheduler	100
BACnet notification classes	32
Bluetooth datapoints	3000
Bluetooth devices	100
CEA-709 network variables (NVs)	1000
CEA-709 Alias NVs	2000
CEA-709 External NVs (polling)	2000
CEA-709 address table entries	1000 (non-ECS mode: 15)
L-STUDIO	■
LonMark calendar	1 (25 calendar patterns)
LonMark scheduler	100
LonMark alarm servers	1
BACnet Router	■
BACnet MS / TP	■
BACnet TCP / IP / SC	■
BBMD	■
OPC XML-DA	■
OPC UA	■
SNMP	■
LIOB Connect	-
LIOB FT + IP	■ (IP only)
128 x 64 graphic display with backlight	■
LSTAT ports	1
USB	■
Ethernet switch	■
WLAN	■
SMI	1 integrated, or ■ ²
EnOcean	■ ²
LTE	■ ²
MP-Bus	■ ²
RS-232	■ ²
IoT	■
SSH, HTTPS, Firewall	■
Operating conditions	0 °C to 40 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)
Dimensions (L x W x H, mm)	159 x 100 x 75
Certificates	CE, FCC

1. This model can be configured to have either FT or IP active for CEA-709.

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

Product name	L-ROC Room Controller
Model	LROC-800



DALI power supply	1 (16 VDC, 116 mA guaranteed supply current, 125 mA max. supply current)
DALI groups	16
DALI sensors	16
DALI pushbuttons (LDALI-BM2)	64 pushbutton coupler
EnOcean datapoints	1000
EnOcean devices via LENO-80x	32
EnOcean devices commissioning limit	32
MP-Bus devices (per channel)	8 (16 MPL)
MP-Bus devices via LMPBUS-804	4 x 8 (16 MPL)
MP-Bus devices (maximum)	64
SMI devices	16
SMI devices (per channel)	16

Product name	L-IOB I/O Modules (LIOB-Connect)					
Model	LIOB-100	LIOB-101	LIOB-102	LIOB-103	LIOB-110	LIOB-112
						
Power supply	24 V DC / 24 V AC $\pm 10\%$ via L-INX, L-ROC, LIOB-586/587/588/589, L-POW or LIOB-A2/A4 via LIOB-Connect					
Universal Input (UI)	8	8	6	6	-	-
Digital Input (DI)	2	16	-	-	-	-
Analog Output (AO)	2	-	6	6	-	-
Digital Output (DO)	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)	-	-
Universal I/O (IO)	-	-	-	-	20	40 ¹
Connection	LIOB-Connect	LIOB-Connect	LIOB-Connect	LIOB-Connect	LIOB-Connect	LIOB-Connect
128x64 graphic display with backlight	■	■	■	■	■	■
Ethernet switch	-	-	-	-	-	-
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)					
Dimensions (L x W x H, mm)	107 x 100 x 75					159 x 100 x 75
Certificates	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
										
Power supply	24 VDC / VAC $\pm 10\%$ 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 Relay 16A ¹ @ 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 ² @ 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	-	-	-	-	± 500 Pa	-	-	-	-	± 500 Pa
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, noncondensing, degree of protection: IP40, IP20 (terminals)									
Dimensions (L x W x H, mm)	107 x 100 x 75									
Certificates	CE, FCC, LonMark, UL									

1. O29-O40 are internally connected to IO29-IO40 and provide 4-20 mA outputs in parallel to the 0-10 V outputs on IO29-IO40

2. UL: 8A

Product name	L-IOB I/O Modules (BACnet IP)						
Model	LIOB-550	LIOB-551	LIOB-552	LIOB-553	LIOB-554	LIOB-560	LIOB-562
							
BACnet device profile	B-BC						
Power supply	24 VDC / VAC ±10 % via L-POW, or with an external power supply					24 VDC / 24 VAC ±10 %	
Power consumption	4.5 W (relays on)	4.5 W	4.5 W (relays on)	4.5 W (relays on)	4.5 W (relays on)	4.5 W ²	2.5 W + 0.5 W for each Oxx (max 6 W) ²
Universal I/O (IO)	-	-	-	-	-	20	40 ¹
Universal Input (UI)	8	8	6	6	7	-	-
Digital Input (DI)	2	12	-	-	-	-	-
Analog Output (AO)	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 Relay 16A ³ @ 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	-	-	-	-	±500 Pa	-	-
OPC data points	100						200
BACnet objects	1 (Per I/O)						
BACnet calendar	10						
BACnet scheduler	5						
Trend logs	10 (130000 entries, ≈ 2 MB)					20 (260000 entries, ≈ 4 MB)	40 (520000 entries, ≈ 8 MB)
Alarm logs	5						
Connection	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
128x64 graphic display with backlight	■	■	■	■	■	■	■
Ethernet switch	■	■	■	■	■	■	■
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)						
Dimensions (L x W x H, mm)	107 x 100 x 75						159 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	CE, FCC, BTL

Product name	LOYBT I/O Module
Model	LOYBT-IO1
	
Power supply	24 VDC/ VAC SELV ±10 % via LPOW-2415B, or with an external power supply 230 V AC: 85–240 V AC, 50/60 Hz
Interfaces	Bluetooth SIG Mesh
Power consumption	max. 1.7 W
Universal I/O (IO)	4 x Universal I/O (U), 4 x Universal I/O (U,I), 4 x Universal I/O (U,R) ⁴
Digital Output (DO)	6 (4 x Relay 2A, 30V DC / 600mA, 125 V AC; 2 x TRIAC 0.3A, 24–240 V AC)
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)
Dimensions (L x W x H, mm)	107 x 100 x 75
Certificates	CE, FCC

1. O29-O40 are internally connected to IO29-IO40 and provide 4-20 mA outputs in parallel to the 0-10 V outputs on IO29-IO40

2. Add external load: Sum of max. current drawn from all outputs x 24V

3. UL: 8A

4. U: 0-10V input or 0-10V output, I: 4-20 mA input (only available on UIO 5-8), R: resistance measurement (only available on UIO 1-4)

Product name	L-IOB Adapter		
Model	LIOB-A2	LIOB-A4	LIOB-A5
			
Connection	4-wire cables	RJ-45	Terminate the LIOB-Connect bus
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)		
Dimensions (L x W x H, mm)	55 x 100 x 60	27 x 100 x 60	
Certificates	CE, FCC	CE, FCC	CE, FCC

Product name	LOYCNV Voltage / Current Converter	
Model	LOYCNV-VA8	
		
Power supply	24 V DC ± 10 %	
Interfaces	8 x Analog Input (0-10 V) 8 x Analog Output (4-20 mA), burden resistance 250-500 Ohm	
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Dimensions	55 x 100 x 60 (L x W x H, mm)	
Certificates	CE, FCC	

Product name	LOYCNV Voltage Converter	
Model	LOYCNV-PT1008	
		
Power supply	24 V DC ± 10 %	
Power consumption	approx. 0.7 W	
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Input	8x PT1000 (2-wire connection)	
Output	8x 0 – 10 V	
Dimensions	55 x 100 x 60 (L x W x H, mm)	
Certificates	CE, FCC	

Product name	Relay Interface	
Model	LOYREL-816	
		
Power supply	24 V DC	
Interfaces	8 x Digital Output (16 A Relays) 8 x Digital Input (0/10 V), input 0 V: Relay off, Input 10 V: Relay on	
Power consumption	up to 3.2 W	
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Dimensions (L x W x H, mm)	107 x 100 x 60	
Certificates	CE, FCC	

Product name	Triac Interface	
Model	L-TRIAC16	
		
Interfaces	16 x Digital Output (0.5 A TRIAC), 24 V AC - 230 V AC 16 x Digital Input (0/10 V), Input 0 V: TRIAC off, Input 10 V: TRIAC on	
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Dimensions (L x W x H, mm)	107 x 100 x 60	
Certificates	CE, FCC	

Product name	L-IOB I/O Controller					
Model	LIOB-585	LIOB-586	LIOB-587	LIOB-588	LIOB-589	LIOB-590
						
BACnet device profile	B-BC					
Power supply	24 VDC / 24 VAC ±10 % via L-POW, or with an external power supply					
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz					
RAM	1 GByte					
FLASH	8 GByte					
Universal Input (UI)	6	6	6	10	10	-
Digital Input (DI)	-	4	4	-	6	-
Analog Output (AO)	2	-	-	6	6	-
Digital Output (DO)	5 (5 x TRIAC 0.5 A)	6 (6 x Relay 10 A)	6 (6 x Relay 10 A)	8 (8 x Relay 6 A)	4 (4 x Relay 6 A)	-
Universal I/O (IO)	-	-	-	-	-	20
Differential pressure sensor	±500 Pa	-	-	-	-	-
Total number of data points	10000	10000	10000	10000	10000	10000
OPC data points	5000	5000	5000	5000	5000	5000
BACnet objects	1000	1000	1000	1000	1000	1000
BACnet calendar	25	25	25	25	25	25
BACnet scheduler	10	10	10	10	10	10
BACnet notification classes	32	32	32	32	32	32
Trend logs	256 (13 000 000 entries, ≈ 200 MB)					
LonMark calendar	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)
LonMark scheduler	10	10	10	10	10	10
LonMark alarm servers	1	1	1	1	1	1
Modbus data points	300	300	300	300	300	300
L-WEB clients	32	32	32	32	32	32
L-IOB I/O modules	-	1 x LIOB-11x or LIOB-45x/55x/56x	1 x LIOB-11x or LIOB-45x/55x/56x	1 x LIOB-11x or LIOB-45x/55x/56x	1 x LIOB-11x or LIOB-45x/55x/56x	-
Power Measurement	-	-	■	-	-	-
Ethernet switch	■	■	■	■	■	■
128x64 graphic display with backlight	■	■	■	■	■	■
WLAN	■ 1	■ 1	■ 1	■ 1	■ 1	-
EnOcean	■ 1	■ 1	■ 1	■ 1	■ 1	-
MP-Bus	■	■ 1	■ 1	■ 1	■ 1	-
SMI	-	-	-	-	-	-
LTE	■ 1	■ 1	■ 1	■ 1	■ 1	-
IoT	■ 2	■ 2	■ 2	■ 2	■ 2	■ 2
L-STUDIO	■	■	■	■	■	■
Operating conditions	0°C to 50°C, 10–90% RH, noncondensing, degree of protection: IP40, IP20 (terminals)					
Dimensions (L x W x H, mm)	107 x 100 x 75	159 x 100 x 75	159 x 100 x 75	159 x 100 x 75	159 x 100 x 75	107 x 100 x 75
Certificates	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL

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

2. To operate IoT functionalities, the L-IOT1 software license is needed and must be ordered separately.

Product name	L-IOB Room Controller		L-IOB I/O Controller			
Model	LI0B-591	LI0B-592	LI0B-593	LI0B-594	LI0B-595	LI0B-596
						
BACnet device profile	B-BC					
Power supply	85 – 240 VAC, 50 – 60 Hz		24 VDC / 24 VAC ±10 % via L-POW, or with an external power supply			
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz					
RAM	1 GByte					
FLASH	8 GByte					
Universal Input (UI)	-	-	-	-	-	-
Digital Input (DI)	-	-	-	-	-	-
Analog Output (AO)	-	-	-	-	-	-
Digital Output (DO)	1 x TRIAC 1250 W, 230 V AC 3 x TRIAC 300 W, 230 V AC	-	7 (5x Relay 2A, 2x Relay 6A)	7 (5x Relay 2A, 2x Relay 6A)	4 (4x Relay 2A)	6 (4x Relay 2A, 2x TRIAC 0.5A)
Universal I/O (IO)	8 x Universal I/O (U, I, R), ³ 12 x Universal I/O (U) ³	40 ⁴	8 x Universal I/O (U, I, R), ³ 8 x Universal I/O (U) ³	8 x Universal I/O (U, I, R), ³	6 x Universal I/O (U, I, R), ³	8 x Universal I/O (U, I, R), ³
Differential pressure sensor	-	-	-	-	±500 Pa	-
Total number of data points	10000	10000	10000	10000	10000	10000
OPC data points	5000	5000	5000	5000	5000	5000
BACnet objects	500	500	1000	500	500	500
BACnet calendar	25	25	25	25	25	25
BACnet scheduler	10	10	10	10	10	10
BACnet notification classes	32	32	32	32	32	32
Trend logs	256 (13 000 000 entries, ≈ 200 MB)					
LonMark calendar	-	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)	1 (25 calendar patterns)
LonMark scheduler	-	10	10	10	10	10
LonMark alarm servers	-	1	1	1	1	1
Modbus data points	300	300	500	300	300	300
L-WEB clients	32	32	32	32	32	32
L-IOB I/O modules	1 x LI0B-45x/55x/56x	-	-	-	-	-
Integrated DALI bus power supply	16 VDC, 116 mA max. supply current	-	-	-	-	-
DALI channels	1	-	-	-	-	-
DALI devices	64	-	-	-	-	-
Ethernet switch	■	■	■	■	■	■
128x64 graphic display with backlight	■	■	■	■	■	■
WLAN	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹
EnOcean	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹
MP-Bus	■ ¹	■	■ ¹	■ ¹	■ ¹	■ ¹
SMI	■ ¹	-	-	-	-	-
LTE	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹
IoT	■ ²	■ ²	■ ²	■ ²	■ ²	■ ²
L-STUDIO	■	■	■	■	■	■
Operating conditions	0 °C to 45 °C, 10–90% RH, noncondensing, degree of protection: IP30, IP20 (terminals)		0 °C to 50 °C, 10–90% RH, noncondensing, degree of protection: IP40, IP20 (terminals)			
Dimensions (L x W x H, mm)	199 x 87 x 62	159 x 100 x 75	107 x 100 x 75	107 x 100 x 75	107 x 100 x 75	107 x 100 x 75
Certificates	CE, FCC, BTL	CE, FCC, BTL	CE, FCC, BTL	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 functionalities, the L-IOT1 software license is needed and must be ordered separately.

3. U: 0-10V input or 0-10V output, I: 4-20 mA input, R: resistance measurement

4. O29-O40 are internally connected to IO29-IO40 and provide 4-20 mA outputs in parallel to the 0-10 V outputs on IO29-IO40

Product name	Gateways					
	LGATE-952	LGATE-902	LINX-102	LINX-103	LINX-202	LINX-203
Model						
BACnet device profile	B-BC	B-BC	-	-	B-BC	B-BC
Power supply	24VDC / 24 VAC ± 10%, typ. 2.5 W					
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz					
RAM/FLASH	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB
LIOB-Connect	-	-	■	■	■	■
TP / FT-10 ports	1	1	1	1	-	-
RS-485 ports	2	1	1	1	1	1
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 (13 000 000 entries, ≈ 200 MB)		256 (13 000 000 entries, ≈ 200 MB)			
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/ASCII	■	■ 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/Server	■	■	■	■	■	■
OPC UA Server	■	■	■	■	■	■
SNMP	■	■	■	■	■	■
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	■	■	■	■	■	■
LIOB FT + IP	-	-	■	■	■	■
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)					
Dimensions (L x W x H, mm)	159 x 100 x 75			107 x 100 x 75		
Certificates	CE, FCC, BTL, UL	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/ASCII 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 functionalities, the L-IOT1 software license is needed and must be ordered separately.

Product name	L-VIS Touch Panels								
Model	LVIS7-32G1	LVIS7-32G2	LVIS12-32G1	LVIS12-32G2	LVIS12-32G3	LVIS15-32G1	LVIS15-32G2	LVIS15-32G3	
									
Power supply	PoE class 4, 24 V DC $\pm 10\%$, standby 3.6 W normal use 4.1 W, full load 8 W 85-240 V AC, standby 4.2 W normal use 5.4 W, full load 9.2 W		PoE class 4, 24 V DC $\pm 10\%$, standby 3.6 W normal use 4.1 W, full load 8 W 85-240 V AC, standby 4.2 W normal use 5.4 W, full load 9.2 W			PoE class 4, 24 V DC $\pm 10\%$, standby 5.8 W normal use 11 W, full load 18 W 85-240 V AC, standby 7.2 W normal use 14 W, full load 19.5 W			
Screen size	7"	7"	12.1"	12.1"	12.1"	15"	15"	15"	
Touch display	Capacitive touch								
Display resolution	IPS, 1024 x 600, 16.7 million colors, 500 cd/m ²		IPS, 1024 x 768, 16.7 million colors, 700 cd/m ²			IPS, 1024 x 768, 16.7 million colors, 350 cd/m ²			
Panel material	Frameless glass								
Color	Silver	Black	Silver	Black	White	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	10000	10000
Modbus data points	2000	2000	2000	2000	2000	2000	2000	2000	2000
VNC clients	16	16	16	16	16	16	16	16	16
Alarming	■	■	■	■	■	■	■	■	■
Scheduling	■	■	■	■	■	■	■	■	■
Trending	■	■	■	■	■	■	■	■	■
Web server	■	■	■	■	■	■	■	■	■
Ethernet ports	2	2	2	2	2	2	2	2	2
TP / FT-10 ports	1	1	1	1	1	1	1	1	1
RS-485 ports (Modbus / BACnet)	1	1	1	1	1	1	1	1	1
Digital Input (DI)	2	2	2	2	2	2	2	2	2
Speaker and audio output	■	■	■	■	■	■	■	■	■
Mounting frame	■	■	■	■	■	■	■	■	■
WLAN	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹
LTE	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹
Operating conditions	10°C to 40°C, 10-90% RH, noncondensing								
Dimensions (L x W x H, mm)	223.5 x 162 x 65		333 x 272.5 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, BTL								

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

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						
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
Power supply	24 VDC ±10%, 1 W					
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, noncondensing					
Dimensions (L x W x H, 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	LPAD-7 Touch Panel		LPAD-7 Touch Panel / Programmable Controller			
Model	LPAD7-30G3	LPAD7-30G4	LPAD7-31G3	LPAD7-31G4	LPAD7-41G3	LPAD7-41G4
						
	G3: white front, white enclosure;		G4: black front, black enclosure			
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz		Quad-core ARM Cortex-A53 @ 1.1GHz		Quad-core ARM Cortex-A53 @ 1.1GHz	
RAM	1 GByte		1 GByte		1 GByte	
FLASH	8 GByte		8 GByte		8 GByte	
Power supply	PoE class 3, 24 V DC ±10 %, 3 W, backlight on: 6 W					
Display	7" IPS, 1024 x 600, 16.7 million colors, capacitive touch					
OPC XML-DA server	■		■		■	
OPC XML-DA clients	■		■		■	
OPC UA server	■		■		■	
OPC data points	10000		10000		10000	
Modbus data points	2000		2000		2000	
VNC clients	16		16		16	
AST	■		■		■	
Web server	■		■		■	
Ethernet ports	2 x Ethernet (100Base-T), switched or separated networks: (supporting IPv4 and IPv6)		2 x Ethernet (100Base-T), switched or separated networks: (supporting IPv4 and IPv6)		2 x Ethernet (100Base-T), switched or separated networks: (supporting IPv4 and IPv6)	
PoE Class 3	■		■		■	
Speaker	■		■		■	
TOF proximity sensor	■		■		■	
Temperature/Humidity	■		■		■	
Lux sensor	■		■		■	
IR receiver	■		■		■	
WLAN	■		■		■	
Microphone	-		-		■	
Max. number of Rooms/Segments	-		2		2	
Bluetooth	■		■		■	
BACnet/IP, BACnet/SC	-		■		■	
BACnet MS/TP	-		■ 1		■ 1	
LonMark IP-852 ²	■ 2		■ 2		■ 2	
LonMark TP/FT-10 ²	■ 2		■ 2		■ 2	
Modbus TCP	■		■		■	
Modbus RTU/ASCII	-		■ 1		■ 1	
EnOcean	■ 3		■ 3		■ 3	
IoT, Node.js, Node-RED	-		■		■	
IEC 61499 / IEC 61131-3 programming	-		■		■	
Degree of protection	IP20					
Operating conditions	+10 °C to 45 °C, 10-90 % RH, noncondensing					
Dimensions	180 x 112.2 x 21 (L x W x H, mm)					
Certificates	CE, FCC		CE, FCC, BTL		CE, FCC, BTL	

1. Needs LPAD7-SOCKET1, LPAD7-SOCKET2, LPAD7-SOCKET3 or LPAD7-SOCKET4 - must be ordered separately.

2. Needs LPAD7-SOCKET2 - must be ordered separately.

3. Needs LPAD7-SOCKET3, or LPAD7-SOCKET4 - must be ordered separately.

Product name	LPAD7-SOCKETx Mounting Sockets					
Model	LPAD7-SOCKET0	LPAD7-SOCKET1	LPAD7-SOCKET2	LPAD7-SOCKET3	LPAD7-SOCKET4	LPAD7-SOCKET5
						
	LPAD7-SOCKET0	LPAD7-SOCKET1	LPAD7-SOCKET2	LPAD7-SOCKET3	LPAD7-SOCKET4	LPAD7-SOCKET5
						
Power supply	24 V DC supply	24 V AC/DC supply	24 V AC/DC supply	24 V AC/DC supply	24 V AC/DC supply	24 V AC/DC supply
RS-485	-	■	■	■	■	-
LonMark TP/FT-10	-	-	■	-	-	-
EnOcean	-	-	-	868 MHz	902 MHz	-
Interfaces	-	6 x Relay 2A, 24 V, 7 x Universal I/O (IO), 1 x RS-485	1 x LonMark TP/FT-10, IP-852, 1 x RS-485, 3 x digital input (dry contact, not protected against overvoltage)	1 x EnOcean 868 MHz, 1 x RS-485, 3 x digital input (dry contact, not protected against overvoltage)	1 x EnOcean 902 MHz, 1 x RS-485, 3 x digital input (dry contact, not protected against overvoltage)	-
Certificates	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, EnOcean certified	CE, FCC, EnOcean certified	CE, FCC, BTL, UL

Product name	L-DALI Controller		
Model	LDALI-3E101-U	LDALI-3E102-U	LDALI-3E104-U
			
Power supply	85-240 V AC, 50/60 Hz, typ. 9 W (4 W + 5 W DALI)	85-240 V AC, 50/60 Hz, typ. 14 W (4 W + 2 x 5 W DALI)	85-240 V AC, 50/60 Hz, typ. 14 W (4 W + 4 x 2.5 W DALI)
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz		
RAM/FLASH	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB
DALI channels	1	2	4
Integrated DALI bus power supply (per channel data)	16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current		16 VDC, 116 mA guaranteed supply current, 125 mA max. supply current
OPC data points	10000	10000	10000
128x64 graphic display with backlight	■	■	■
BACnet Server Objects	-	-	-
CEA-709 Local NVs	1000	2000	4000
OPCXML-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)		
Trend logs	512 (13 000 000 entries, ≈ 200 MB)		
Local and Global connections	2000 / 250		
L-WEB clients	32 (simultaneously)		
Ethernet ports	2		
TP / FT-10 ports	1		
BACnet MS / TP ports	-	-	-
WLAN	■ 1	■ 1	■ 1
LTE	■ 1	■ 1	■ 1
L-STUDIO	-	-	-
IoT	■	■	■
Operating conditions	0 °C to 40 °C, 10 – 90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)		
Dimensions	159 x 100 x 75 (L x W x H, mm)		
Certificates	DALI-2, CE, FCC, UL	DALI-2, CE, FCC, UL	DALI-2, CE, FCC, UL

Product name	L-DALI Power Supply		
Model	LDALI-PWR1-U	LDALI-PWR2-U	LDALI-PWR4-U
			
Power supply	85-240 VAC, 50 / 60 Hz	85-240 VAC, 50 / 60 Hz	85-240 VAC, 50 / 60 Hz
Product descriptions	DALI power supply unit for 1 DALI channels	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, noncondensing, degree of protection: IP40, IP20 (terminals)		
DALI supply current guaranteed / max	1 x 50mA / 62mA	2 x 116mA / 125mA	4 x 116mA / 125mA
Dimensions	51 x 41 x 21 (L x W x H)	107 x 100 x 75 (L x W x H, mm)	
Certificates	DALI-2, CE, FCC	DALI-2, CE, FCC, UL	DALI-2, CE, FCC, UL

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

Product name	L-DALI Controller				
Model	LDALI-ME201-U	LDALI-ME202-U	LDALI-ME204-U	LDALI-PLC2	LDALI-PLC4
					
Power supply	85-240 V AC, 50/60 Hz, typ. 9W (4W + 5W DALI)	85-240 V AC, 50/60 Hz, typ. 14W (4W + 2 x 5 W)	85-240 V AC, 50/60 Hz, typ. 14W (4W + 4 x 2.5W DALI)	85-240 V AC, 50/60 Hz, typ. 14W (4W + 2 x 5W DALI)	85-240 V AC, 50/60 Hz, typ. 14W (4W + 4 x 2.5W DALI)
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz				
RAM/FLASH	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB	1 GB / 8 GB
DALI channels	1	2	4	2	4
Integrated DALI bus power supply (per channel data)	16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current		16VDC, 116 mA guaranteed supply current, 125 mA max. supply current	16 V DC, 230 mA guaranteed supply current, 250 mA max. supply current	16 V DC, 116 mA guaranteed supply current, 125 mA max. supply current
OPC data points	10000	10000	10000	10000	10000
128x64 graphic display with backlight	■	■	■	■	■
BACnet Server Objects	1000	2000	4000	2000	2000
CEA-709 Local NVs	-	-	-	1000	1000
OPCXML-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	25 per DALI channel (BACnet)			25 per DALI channel (LonMark), 25 per DALI channel (BACnet)	
Trend logs	512 (13 000 000 entries, ≈ 200 MB)				
Local and Global connections	2000 / 250				
L-WEB clients	32 (simultaneously)				
Ethernet ports	2				
TP / FT-10 ports	-		1		1
BACnet MS / TP ports	1	1	1	1	1
WLAN	■ 1	■ 1	■ 1	■ 1	■ 1
LTE	■ 1	■ 1	■ 1	■ 1	■ 1
L-STUDIO	-	-	-	■	■
IoT	■	■	■	■	■
Operating conditions	0 °C to 40 °C, 10 – 90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)				
Dimensions	159 x 100 x 75 (L x W x H, mm)				
Certificates	DALI-2, CE, FCC, BTL, UL	DALI-2, CE, FCC, BTL, UL	DALI-2, CE, FCC, BTL, UL	DALI-2, CE, FCC, BTL, UL	DALI-2, CE, FCC, BTL, 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, noncondensing
Dimensions	40.5 x 86.4 x 7.20 (L x W x H, mm)
Certificates	CE, FCC

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

Product name	L-DALI Multisensors				
Model	LDALI-MS2-BT	LDALI-MS2-BT-B	LDALI-MS3-BT	LDALI-MS3-BT-B	LDALI-MS4-BT
					
	White	Black	White	Black	White
Power supply	DALI bus, 6 mA / 10 mA at 16 V DC (Bluetooth disabled/enabled), max. 10mA (inrush current)				
Product descriptions	Multi-sensor with motion detection, lux level measurements and Bluetooth			Multi-sensor with motion detection, lux level measurements, flat lens and Bluetooth	
Dimensions (mm)	Total Ø: 104 flush-mounted Ø: 60 mounting depth: 30		Total Ø: 68 mounting hole Ø: 60 mounting depth: 42		
Installation	Ceiling mount: • Direct installation in false ceilings (spring mount included) • Flush-mounted installation • On-wall (mounting kit LOYMS2-OW must be ordered separately)			Ceiling mount: • Direct installation in false ceilings (spring mount included)	
Number of LDALI-MSx-BT	16 per DALI channel, with sufficient dimensioned DALI bus power supply				
Lux level measurement	0 – 4000 lux, resolution: 0.125 lux				
Mounting height	max. 12 m			max. 5 m	
Passive infrared motion detector	10.8 m @ 3m mounting height (92m ²), 136 zones, opening angle: 122° (up to 5 m mounting height) Highbay-application: 5 m – 12 m mounting height, detection area: 256 m ² (opening angle: 73.6° @ 12 m, 122° @ 5 m)			7.2 m @ 3 m mounting height (44 m ²), 156 zones, opening angle: 100° (up to 5 m mounting height)	
Bluetooth	■		■		■
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, noncondensing, degree of protection: IP20				
Certificates	DALI-2, CE, FCC		DALI-2, CE, FCC		DALI-2, CE, FCC

Product name	LOYBT Multisensors				
Model	LOYBT-MS2	LOYBT-MS2-B	LOYBT-MS3	LOYBT-MS3-B	LOYBT-MS4
					
	White	Black	White	Black	White
Power supply	DALI-bus, 6 mA at 16 V DC, max. 15 mA (inrush current) or DC power supply (max. 1A), 6 mA at 12 V DC or 24 V DC				
Product descriptions	Bluetooth SIG Mesh qualified multi-sensor (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh), up to 12 m mounting height			Bluetooth SIG Mesh qualified multi-sensor (presence detection, lux sensor, IR receiver, temperature sensor, humidity sensor, 3 digital inputs, Bluetooth Mesh, flat lens)	
Dimensions (mm)	Total Ø: 104 flush-mounted Ø: 60 mounting depth: 30		Total Ø: 68 mounting hole Ø: 60 mounting depth: 42		
Installation	Ceiling mount: • Direct installation in false ceilings (spring mount included) • Flush-mounted installation • On-wall (surface mounting box included)			Ceiling mount: • Direct installation in false ceilings (spring mount included)	
Mounting height	max. 12 m		max. 12 m		max. 5 m
Passive infrared motion detector	10.8 m @ 3m mounting height (92m ²), 136 zones, opening angle: 122° (up to 5 m mounting height) Highbay-application: 5 m – 12 m mounting height, detection area: 256 m ² (opening angle: 73.6° @ 12 m, 122° @ 5 m)			7.2 m @ 3 m mounting height (44 m ²), 156 zones, opening angle: 100° (up to 5 m mounting height)	
Bluetooth SIG Mesh	■		■		■
Bluetooth & RF characteristics	Maximum output power: + 8 dBm Frequency range: 2402 - 2480 Mhz				
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, noncondensing, degree of protection: IP20				
Certificates	DALI-2, CE, FCC		DALI-2, CE, FCC		DALI-2, CE, FCC

Product name	LOY-POW Power Supply
Model	LOY-POW2404



Power factor	115 V AC typ. 0.6; 230 V AC typ. 0.47; 277 V AC typ. 0.44
Installation	Installation/distribution box
Nominal Input Voltage	100-277 V AC, 50/60Hz
Operating conditions	-40°C to +85°C, 10 – 90 % RH, noncondensing, degree of protection: IP65, Maximum case temperature: +110°C
Dimensions	37 x 24 x 18 (L x W x H)
Certificates	CE, FCC, UL
For use with	LOYBT-MSx

Product name	L-DALI Phase-Cut Dimmer Module
Model	LDALI-PD1



Power supply	220-240 V AC, 50/60Hz
Product descriptions	DALI phase-cut dimmer module
Number of devices	64 per DALI channel, with sufficient dimensioned DALI bus power supply
Operating conditions	0°C – 50°C, 10 – 90% RH, non-condensing, degree of protection: IP20
Dimensions (mm)	51 x 41 x 21
Certificates	DALI-2, CE, FCC

Product name	L-DALI Pushbutton Coupler
Model	LDALI-BM2



Power supply	DALI bus 3.5 mA at 16 V DC, max. 6 mA (inrush current)
Product descriptions	Quadruple pushbutton coupler
Number of devices	64 per DALI channel, with sufficient dimensioned DALI bus power supply
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP20
Dimensions	45.8 x 37.8 x 13.5 (L x W x H, mm)
Certificates	DALI-2, CE, FCC

Product name	L-DALI Sunblind Module	LOYBT Sunblind Module
Model	LOY-DALI-SBM1	LOYBT-SBM1



Power supply	DALI-bus, idle 3.5 mA (@16 V DC) / typ. 6 mA (@ 16 V DC) / max. 11 mA inrush current	Mains voltage (85V-240V AC), 50/60Hz, typ. 4 ma (@230 V AC), eff. power consumption 200 mW
Product description	DALI Sunblind Module, DALI, 2 x 6A/250 V AC	Bluetooth SIG Mesh qualified Sunblind Module, 2 x 6A/240 V AC
Installation	Distribution box	
Maximum switching power	1500 VA @ 250 V AC / 180 W @ 30 V DC	1500 VA @ 240 V AC
Nominal switching capacity	6A @ 250 V AC / 6A @ 30 V DC / inrush currents up to 10A	6A @ 240 V AC / inrush currents up to 10A
Relay contact switching voltage	250 V AC / 30 V DC	240 V AC
Interfaces	1 x DALI, protected against overvoltage (mains)	1 x Bluetooth Interface, 2 x Relay
Bluetooth & RF characteristics	-	Maximum output power: + 8 dBm Frequency range: 2402 - 2480 Mhz
Dimensions (mm)	51 x 41 x 21	
Operating conditions	0 °C to 50 °C, 10 – 90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Certificates	DALI-2, CE, FCC	CE, FCC

Product name	L-DALI Relay module		
Model	LDALI-RM5	LDALI-RM6	LDALI-RM8
			
Power supply	DALI bus, idle 3.5 mA / 3 mA (1-10 V connected / not connected) (@16 V DC), typ. 6 mA (@16 V DC), max. 11 mA (inrush current)		85 – 240 V AC or 24 V DC ±10 %, typ. consumption: < 1 W
Product descriptions	DALI Relay Module 10 A, Analog Interface 1 – 10 V		DALI Relay Module, 8-channel
Number of devices	64 per DALI channel, with sufficient dimensioned DALI bus power supply		max. 8 per DALI channel
Current AC	10 A, 120 V AC; 10 A, 120 V AC; 8 A, 277 V AC; 6 A, 347 V AC		16 A
Current DC	10 A, 30 V DC		16 A, 30 V DC
Relay contact switching voltage	120 - 347 V AC / 30 V DC		120-277 V AC / 30 V DC
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP20		0 °C to 40 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)
Dimensions	51 x 41 x 21 (L x W x H, mm)		159 x 100 x 75 (L x W x H, mm)
Certificates	DALI-2, CE, FCC		DALI-2, CE, FCC

Product name	L-DALI PWM module		
Model	LDALI-PWM4	LDALI-PWM4-TC	LDALI-PWM4-RGBW
			
Power supply	12 - 24V DC +10%		
Product descriptions	PWM module, DALI, 4 x 3 A LED outputs, 24 V DC ext.	PWM module tunable white, DALI, 4 x 3 A LED outputs, 24 V DC ext.	PWM module RGBW, DALI, 4 x 3 A LED outputs, 24 V DC ext.
Number of devices	up to 16 per DALI channel	up to 32 per DALI channel	up to 64 per DALI channel
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP20		
Dimensions (mm)	51 x 41 x 21		
Certificates	DALI-2, CE, FCC	DALI-2, CE, FCC	CE, FCC

Product name	L-IP CEA-709 / IP-852 Router					L-IP BACnet IP Router		
Model	LIP-3ECTC	LIP-1ECTC	LIP-13ECTC	LIP-33ECTC	LIP-3333ECTC	LIP-ME201C	LIP-ME202C	LIP-ME204C
								
Power supply	24 V AC / DC \pm 10%							
CPU	Quad-core ARM Cortex-A53 @ 1.1GHz							
RAM/FLASH	1 GB / 8 GB							
OPC XML-DA server	■	■	■	■	■	■	■	■
OPC UA server	■	■	■	■	■	■	■	■
Ethernet ports	2	2	2	2	2	2	2	2
TP / FT-10 ports	1	-	1	2	4	-	-	-
TP / XF-1250 ports	-	1	1	-	-	-	-	-
BACnet MS / TP ports	-	-	-	-	-	1	2	4
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)							
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, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, UL	CE, FCC, BTL, UL	CE, FCC, BTL, UL	CE, FCC, UL
USB ports	2	2	2	2	2	2	2	2
WLAN	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹
LTE	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹	■ ¹

Product name	NIC for CEA-709 and IP-852 Channels					
Model	NIC852	NIC709-USB100	NIC709-IP3E100C	NIC709-IP1E100C	NIC709-IP4E100C	NIC852-SW
						
Power supply	USB interface	USB interface	24 V AC / DC \pm 10%			-
CPU	-	-	Quad-core ARM Cortex-A53 @ 1.1GHz			-
RAM/FLASH	-	-	1 GB / 8 GB			-
Product description	Floating license via USB hardlock key	USB interface, connects to the USB port of a PC	Remote Network Interface (RNI)			Software license for one PC, connect to IP-852 channel
Ethernet ports	-	-	2	2	2	-
TP / FT-10 ports	-	1	1	-	-	-
TP / XF-1250 ports	-	1	-	1	-	-
TP/ RS-485 ports	-	1	-	-	1	-
USB ports	1	1	2	2	2	-
SNMP	-	-	■	■	■	-
WLAN	-	-	■ ¹	■ ¹	■ ¹	-
LTE	-	-	■ ¹	■ ¹	■ ¹	-
Operating conditions	-	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)				-
Dimensions (L x W x H, mm)	-	104.4 x 66.5 x 25.5	107 x 100 x 75	107 x 100 x 75	107 x 100 x 75	-
Certificates	CE, FCC	CE, FCC	CE, FCC	CE, FCC	CE, FCC	-
Operating System	Windows 10, Windows 11, Windows Server 2016, Windows Server 2019, Windows Server 2022					

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, Windows Server 2019				

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

Product name	M-Bus Interface	
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, noncondensing, degree of protection: IP40, IP20 (terminals)	
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, noncondensing, degree of protection: IP40, IP20 (terminals)		
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, noncondensing, degree of protection: IP40, IP20 (terminals)
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, typ 4.5 W
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, noncondensing, degree of protection: IP40, IP20 (terminals)
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, noncondensing, degree of protection: IP40, IP20 (terminals)
Dimensions (L x W x H, mm)	55 x 100 x 60
Certificates	CE, FCC

Product name	MP-Bus Interface
Model	LMPBUS-804
	
Power supply	24 V DC
Interfaces	1 x Mini USB 2.0 Type B
MP-Bus	4
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)
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	85-240 VAC, 50/60 Hz, max 2W	
Installation	3-wire cable, max 1 m	standard USB 2.0 cable, max 1 m
Interfaces	1 x EXT 1 x SMI (high voltage)	1 x USB (compatible with USB Type-C®) 4 x SMI (high voltage)
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)	
Dimensions (L x W x H, mm)	55 x 100 x 60	107 x 100 x 60
Certificates	CE, FCC	

Product name	Dual Single-Pair-Ethernet Converter
Model	LOY-SPE2
	
Power supply	24 V DC / V AC SELV ±10 % via LPOW-2415B, or with an external power supply
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022
Power consumption	1.2 W
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP40, IP20 (terminals)
Dimensions (L x W x H, mm)	27 x 89 x 60
Certificates	CE, FCC

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, noncondensing				
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
		
Input voltage	85–240 VAC, 50–60 Hz	
Supply voltage	24 V DC 15 W	24 V DC 15 W
Connection	via LIOB-Connect	Connector
Dimensions (L x W x H, mm)	55 x 100 x 60	
Certificates	CE, FCC, UL	

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 VAC, 50 – 60 Hz	
Supply voltage	-	24 VDC 60 W	

Product name	L-ACT Actuators		
Model	L-ACT101-MP	L-ACT101-MP	L-ACT-FRAME1
			
Dimensions (L x W x H, mm)	116 x 66 x 63	116 x 66 x 63	214 x 68 x 118
Shaft diameter (inches)	5/8"	3/4"	-
Certificates	CE, FCC, UL		

Product name	Indoor air quality sensor
Model	LOYUNO-L
	
Dimensions (mm)	141.91 x 42 x 67.91 (L x W x H)
Installation	Drywall mount, Electrical box mount, wall mount cradle
Power supply	source 1: 12-24 VDC, 24 VAC source 2: power adapter 12V/1A 6W max. (12VDC)
Display	-
Operating conditions	0 °C to 50 °C, 10–90 % RH, non-condensing
Interfaces	Modbus RTU / BACnet MS/TP (Select via DIP switch), Bluetooth Mesh
Certificates	CE, FCC
For use with	Bluetooth Mesh enabled LOYTEC devices (e.g. LPAD-7)

Product name	LOYBT Bluetooth Mesh Sensor
Model	LOYBT-TEMP2
	
Dimensions (mm)	30 x 13 (Ø x H)
Power supply	Battery powered (CR2032), expected battery life time: 1 year
Product descriptions	Bluetooth Mesh temperature, humidity and vibration sensor
Interfaces	1x Bluetooth Mesh (low power node) 1x Button (digital input) 1x Led (optical feedback)
Installation	Wall mounted (screw or adhesive tape)
Sensor Data Update	Periodically: 5 minutes interval Change of Temperature Value: >0.5° since last publication Change from Unoccupied to Occupied
Bluetooth & RF-characteristics	Maximum output power: +4 dBm Frequency range: 2402-2480 MHz
Occupancy detection	Vibration
Operating conditions	0 °C to 50 °C, 10–90 % RH, noncondensing, degree of protection: IP20
For use with	Bluetooth Mesh enabled LOYTEC devices (e.g. LPAD-7)

智能建筑自动化 创造价值的解决方案.

完全集成-无缝连接-安全联网

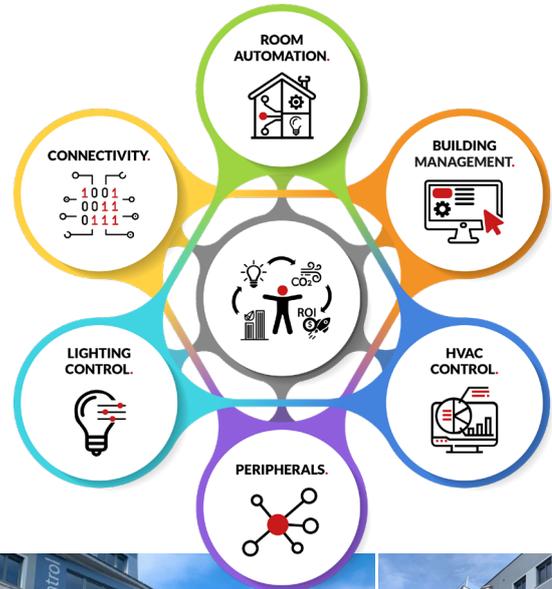
现今楼宇自动化的特征在于结合多种系统以及强调使用合成综效。

追求最大化能源效益、舒适度与弹性是现今楼宇的基本要求。透明化能源消耗与成本数值，是即时侦测系统弱点与主动强化管理流程的基础。

LOYTEC已将这类需求转化成为最佳的产品解决方案为目标。我们的成果就是发展出创新、一致性高且能够互相配合的产品组合。也因此，LOYTEC仰赖强调Ethernet/IP与WLAN/IP的开放通讯协议，确保内部网络/网际网络的连接性。LOYTEC致力于国际标准ISO 15484-5 (BACnet)、ISO/IEC 14908-1 (LON)、ISO/IEC 14543 (KNX)、IEC 62386 2014 (DALI) 与OPC。除此之外也支援EnOcean(无线电)、SMI(遮阳)、M-Bus(表计)、MP-Bus(Belimo)与Modbus。

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最高能源效益与科技化的楼宇安装透明化管理，需要与楼宇自动化系统无缝整合。尤其暖房、通风、空调、照明及遮阳，各项功能均为至关重要。LOYTEC L-INX 自动化服务器及 L-ROC 区域控制器，能以高效方式管理并集成相关诸项子系统。



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