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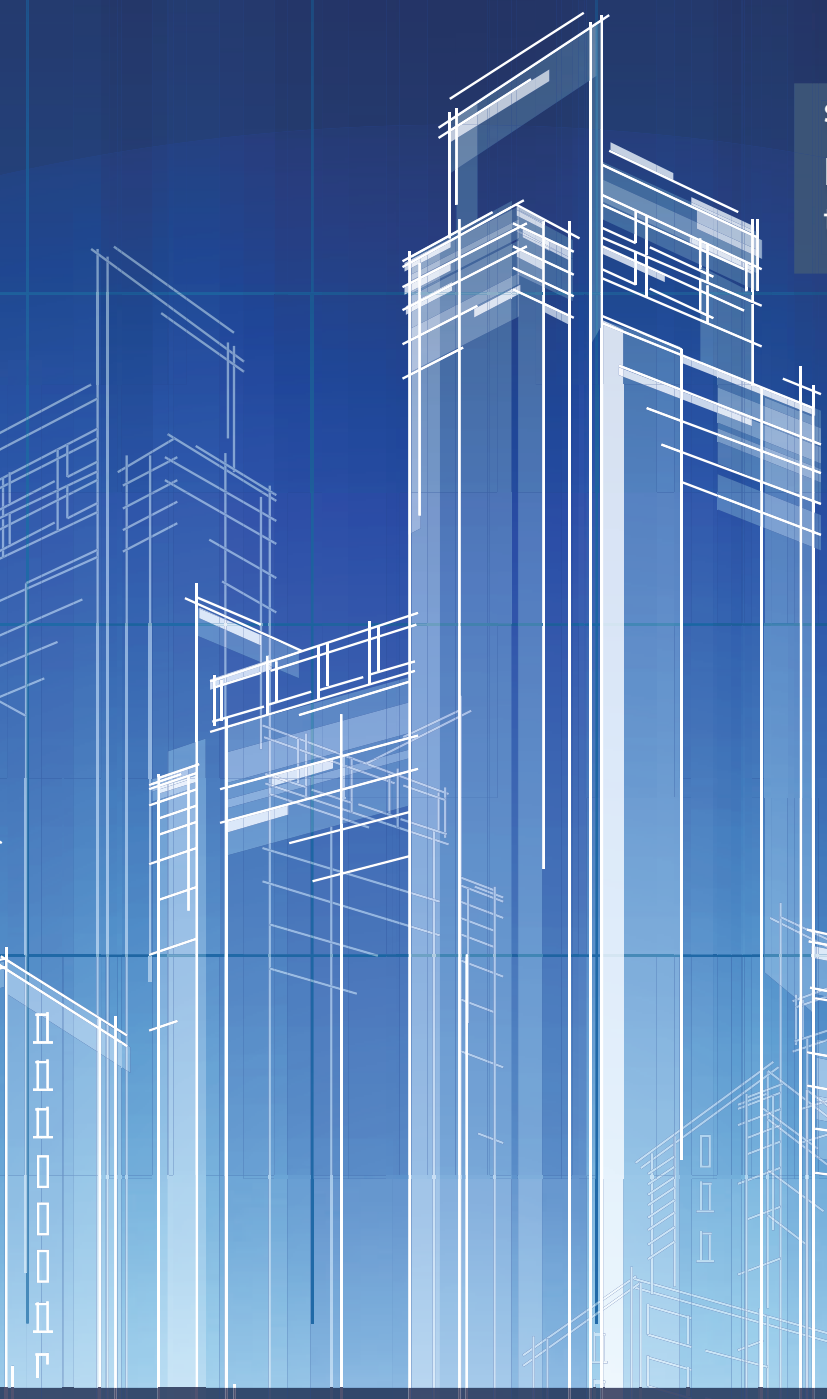
LOYTEC Express

Magazine for Building Automation



SUPPORT TIP:

LOYTEC Design Guidelines – The next Step towards complete Visualization

PRODUCT NEWS:

LINX-153, LINX-154, LINX-215, LDALI-PLC4, LMPBUS-804, LIOB-588, LIOB-589

EMPLOYEE PORTRAIT:

Jérôme Bossuge now supports our LOYTEC Sales Team in Switzerland

L-ROC Projects

Successful Planning, Architecture, Technology

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MASTHEAD

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Dipl.-Ing. Hans-Jörg Schweinzer, CEO
LOYTEC electronics GmbH

10 years of Building under Control Symposium – 10 years of strong customer contact and innovations

Ten years of BUCS stand for ten years of strong contact with our customers and all friends of house LOYTEC around the world, ten years of innovations, progress and delight in new technologies that help to improve all of our lives.

Politically, the last ten years tell a different story. We see steps backwards wherever we look. Restrictions in travel freedom, fear of terror, questionable leaders playing with rocketry, almost entirely abandoning the privacy of the oh-so-free citizen. Fear is stirring up nationalism, borders are established again, walls are built. Everything foreign is classified as bad and dangerous. Gun ownership is fashionable again – one has to defend himself, after all. Achievements of the last 40 years are going down the drain. These are developments that affect each and every one of us, they shock me, and no turnaround is foreseeable right now. Where does all of this lead, and how will our future look like?

On the other hand, technology made significant progress in the last ten years. Especially IT and the connected industries, mobile communication paired with smart phones, automotive, or automation technology. Saving, sharing and providing information at any time and everywhere has become a big part of our lives now. Following these trends, LOYTEC presents a whole line of new innovative products and solutions at BUCS 2017.

At the center of the new product line LOYTEC puts the new tool platform L-STUDIO 3.0 on the market. L-STUDIO 3.0 proves LOYTEC's steady strive for constant improvements of workflows, methods, and automatisms. Latest software techniques together with powerful hardware and fast communication channels (Ethernet IP and WLAN/IP) ensure critical advantages. Packed with unique features L-STUDIO 3.0 increases efficiency in project completion. Programming in IEC-61131-3 and IEC-61499, visualization, and data point management are now fully integrated. Instead of single controllers, L-STUDIO 3.0 now manages complete systems and automatically handles data point connections between controllers.

LOYTEC demonstrates their strength in innovation with the creation of a new generation of L-INX Automation Servers. Our new top class flagship is the LINX-153, which provides six communication interfaces at once. LINX-215 represents the new middle class of Automation servers, which keeps up with the top class function-wise. Both classes of devices provide all protocols of the LOYTEC portfolio and feature Dual Ethernet and local operation via LCD and jog-dial. Naturally all network security functions are also implemented. "Packed with power" is the name of the game.

In the field of DALI lighting control the LDALI-PLC4 is freely programmable with L-STUDIO 3.0 and seamlessly expands the L-ROC product line with a powerful lighting component.

Last but not least, our Chef de Cuisine Eugen presents a juicy vegetarian dish – to make sure our magazine does not become a dry reading experience towards the end.

Have fun browsing our pages!
Yours,

Successfully Planning L-ROC Projects

Planning a room automation system needs to satisfy many conflicting requirements: Technical feasibility, costs, deadlines, availability and much more. A modern, integrative planner has to oversee available technologies, but also carve a cost effective and practicable solution.

A room automation system is a mass project. It contains hundreds to thousands of similar control loops. An important part of mass production is the scale effect. It is more cost effective to manufacture a large number of similar products than to engineer every product on its own. Unfortunately, many room automation projects are carried out in the traditional art of engineering. Every controller is individually dimensioned to optimize hardware usage while missing that economic advantages are mainly achieved by standardization.

The art of planning is to develop types of room controllers which cover the automation project as well as possible. The more types, the more documentation.

Dipl.-Ing. Thomas Rauscher
LOYTEC electronics GmbH

Thomas Rauscher is product manager of the L-ROC product family. Product development, development tools, as well as IT management are part of his tasks. Furthermore, IP networks, LINUX environments and distributed systems fall within his area of competence. After his studies of computer technology at the Vienna University of Technology he started his employment at LOYTEC in 2000. Beside his development activities he also supervises a research cooperation with the University of Applied Sciences, Technikum Wien.

Planning type	L-ROC-Model	Segments	UI/DI Window Contact	AO VAV	Relays 2x External Blinds	TRIACS Valve
Flexible with DALI, SMI, MP-BUS, Enocean, L-STAT	LROC-401	8 - 16	-	-	-	-
Flexible with DALI, local I/Os, L-STAT	LROC-400	8	8 windows (2 DI / 4 UI free)	8 VAV-Controller	16 (8 free)	8 (0 free)
2-axis with DALI, local I/Os, L-STAT	LROC-400	6	6 windows (2 DI / 4 UI free)	6 VAV-Controller	24 (0 free)	6 (2 free)
3-axis with DALI, local I/Os, L-STAT	LROC-400	4	4 windows (2 DI / 6 UI free)	4 VAV-Controller	24 (0 free)	4 (2 free)

Table 1: L-ROC segment design examples (UI = Universal Input, DI = Digital Input, AO = Analog Output, VAV = Variable Air Volume)

Switch cabinet circuit diagrams, control schemes and terminal lists get more complex, as every controller type is different. This complexity extends to parameterization, visualization and maintenance plans. Similarly, higher complexity also results in increased failure rates. All this stresses the necessity to put effort into developing a sound set of controller types at the very beginning of the project.

An L-ROC type consists of:

- A set of segment types, defining the room functionality
- The data point configuration used for parameterization and operation
- Terminal configuration for local I/Os

The basis of the planning process is the window axis grid, which often is about 1.35m or 1.50m. This results in 2-axis designs for smaller offices (1 person) or 3-axis designs for larger offices (2 persons).

It is very important to use the same grids for HVAC, shading and lighting. Different grids result in increased efforts during installation and make it difficult to define reasonable room segments. Lighting and valve cabling to different floors should be avoided.

The planning process should result in a system where variations from the base building structure can be covered by proper parameterization.

The following planning types are commonly found:

Flexible: The most flexible and recommended concept is to assign each windows axis to a room segment. Doing so, all possible room configurations can be selected by just assigning the right parameters. An LROC-400 is used for every eight windows axis. If an aisle area also should be fully automated, one LROC-400 covers the aisle area and seven windows axis. This planning type automatically results in a low count on necessary L-ROC types. Thus, switching cabinet design and installation can be greatly standardized.

2-axis/3-axis: This segmentation scheme uses a room segment for two or three axis. The room segments provides an HVAC module, a light module with four to six actuators and a sunblind module operating on all windows. If these room types are change regularly, the following options exist:

- 2-axis: Using 2-axis segments, a 3-axis segment room can be implemented by two 2-axis rooms. These two rooms are then logically combined to a single room. The superfluous window axis is simply unused and its corresponding terminals are left free.
- 3-axis: Using 3-axis segments, a 2-axis segment can be simply obtained by omitting the superfluous terminals.
- Free: It is also possible to design every controller to

Segment type	HVAC Valves	Occupancy	Lamps	Shading	Room Control Devices
2-axis	1	1	4	2	1
Corner 2-axis specific	1	1-2	4	4	2
Corner 2-axis using 2 2-axis segments	2	2	8	4	2

Table 2: Corner segment design examples

match the room arrangement individually. This however results in documentation, installation and maintenance overhead.

Architecture

Creative architectonic design can make a planner's live hard. Irregular floors, exceptions, corner rooms or sticking out building parts with many sunblinds are only a few examples for common planning obstacles. Picture 1 shows a floor plan with L-ROC layout, illustrating the mentioned planning details. The following explanations refer to this sample project.

Corner rooms: Corner rooms appear in almost every building project. Typically, a corner room covers two windows axis with at least two segments per façade. The following complications occur in a corner room:

- The ratio between HVAC, light and shading actuators is different
- Room control panels get more complex, as two different shading actuators have to be controlled.
- The interaction of door and window light bands has to be considered.

The table (see table 2) shows the equipment of a 2-axis segment type and a typical corner segment type as it would be engineered individually. The last row shows that using two standard segment types to implement a corner room just provides too many lamps actuators. Thus, using the latter method removes the need for putting effort into engineering corner rooms separately.

Sometimes, only one operator panel is planned, so that one button is assigned to switch between two light bands or sunblind zones. This should be avoided, as users generally expect intuitive operation and an A/B-switch requires some explanations or documentation.

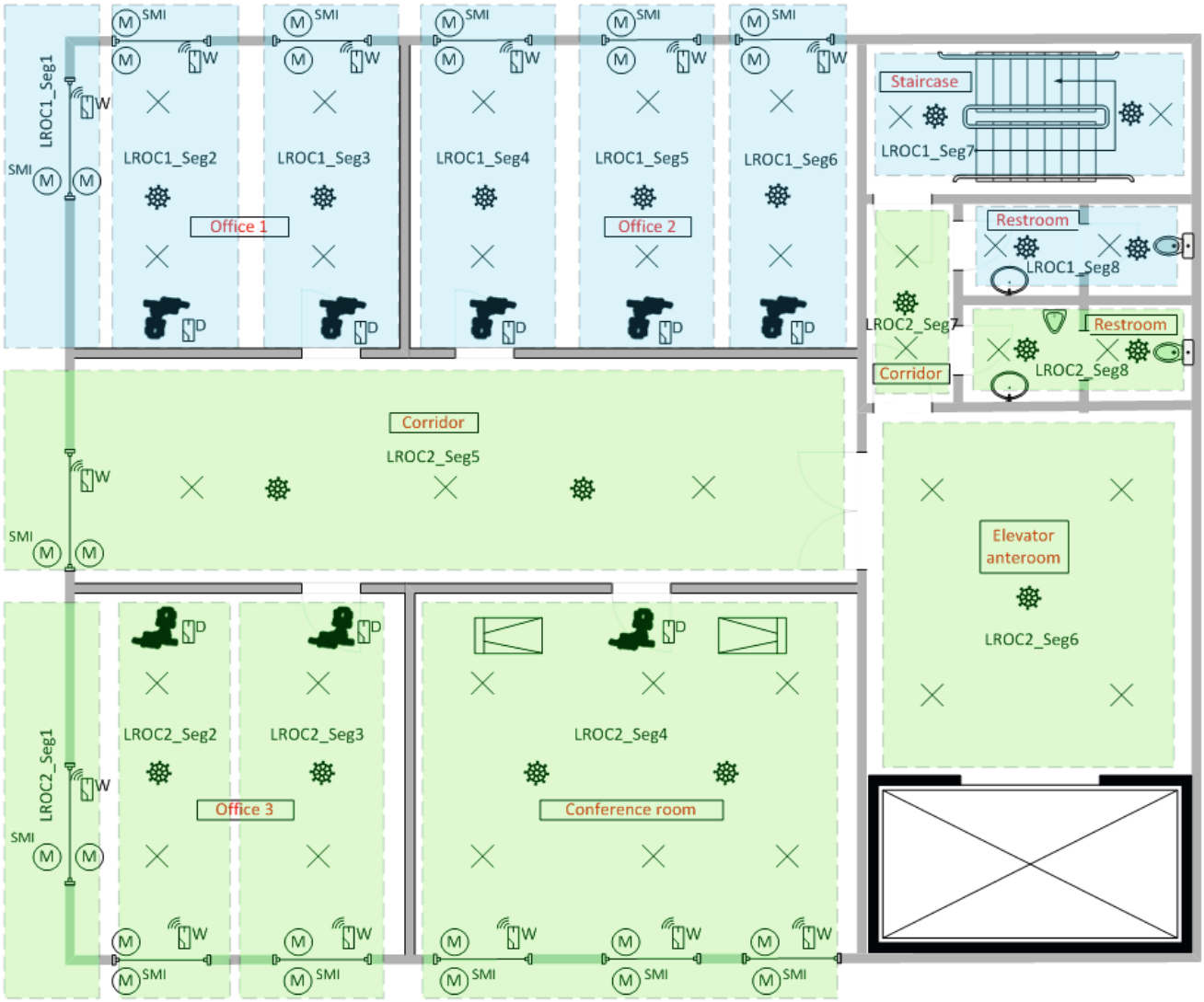
Exceptions: Often, social rooms, tea kitchens, think tanks or other rooms break the axis grid. These exceptions can be resolved using the following rules:

- The room is just simpler, for example it lacks a chilled beam. Here, simply the standard segment can be used and the control module can be deactivated.
- The room differs marginally from the standard room. Most of time the room can be implemented with the standard room and an adapted parameterization..
- The room has a totally non-standard lighting or shading concept.
- The room is completely different in light or shade. Here, additional room segments can be used to increase the number of available zones or actuators. Alternatively, additional data points can be connected on the L-ROC instance (not L-ROC type), to control additional actuators.

Technologies

An integrative planner can use a variety of sensor and actuator technologies. Sensors, valves, actuators and compact controllers come in different flavors: Discrete variants (digital, analog), KNX, BACnet MSTP, Modbus, DALI, SMI, MPBUS and EnOcean. Every technology however requires specific knowledge, experience and tools. Common building communication systems can be divided into two groups:

- Complex bus systems, like KNX or BACnet, which are full automation solutions on their own. These systems typically provide a powerful, hence complex configuration tool.
- Simple communication systems, like EnOcean, DALI, SMI or MPBUS, which are typically used to connect sensors and actuators to a controller. These systems usually do not have complex tooling and are kept intentionally simple.



Picture 1: Floor plan with L-ROC layout

Less is more: Do not try to use too many communicative technologies simultaneously in a project. A system using KNX and BACnet MS/TP with routing, a LonWorks device, DALI lighting and window contacts with EnOcean and some local I/Os at the same time will not be maintainable at the end. Its installation requires much special knowledge, which rarely will be found in a single person.

Use the selected technologies: Every communication system has some extra features. MPBUS-Actuators provide additional inputs for dewpoint sensors. There are many DALI components, like switches or relays. Using these options can often avoid using classic terminals and wiring.

Work smart, not hard: When possible, use communicative technologies, like DALI, SMI or MPBUS. First, it saves a lot of wiring. Second, you can register faults very early in your BMS system.

Summary

Planning a room automation system is a complex task requiring much expertise and experience. The recommendations in this article aim to help you in planning your next L-ROC project efficiently. As the length of this article does not allow for handling every planning aspect, the expertise of our technical sales team should be utilized.

Common mistakes

Planning mistakes in room automation are multiplied thousandfold. Therefore, the planning should refer to best practices and avoid known common failures at a very early stage.

Dew point sensors: Although software algorithms can estimate condensation, the best practice is to use a dew point sensor when using chilled ceilings or similar devices. Software dewpoint calculation needs a safety margin that results in early deactivation of the cooling device, especially on hot and sticky days. Similarly, windows have to be equipped with a window contact, when the user can open them. An open window enables an undefined increase in humidity, so a working condensation protection must be in place. Another option is to control the cool supply temperature to avoid condensation physically. In addition, special evaporation pans can be used to prevent damage by condensation.

Facades: A room segment is assigned to a facade. Make sure that a large open-space office does not cover multiple facades, as this can result in inaccurate weather data. In addition, a shading module calculates shading for one direction. If too many windows with varying directions are assigned to the same shading module, some of them will not be shaded correctly.

Presence detection: An energy efficient building is not possible without proper presence detection. Omitting presence sensors disables many comfort and energy saving functions which can be only marginally compensated with scheduled presence.

Function descriptions: Make sure that required comfort functions are defined right at the beginning of a project. It is best practice to make up a demonstration room or area where the control system is evaluated and tuned. This allows avoiding misunderstandings in installation and operation at an early project phase.

LOYTEC Design Guidel towards comprehensiv

ines – Next Step
ve Visualisation

In 2017, LOYTEC developed modern LOYTEC design guidelines to define a common design language for all graphical LOYTEC user interfaces. A distinctive LOYTEC look-and-feel has been created. With the new design, you will always recognize our user-friendly and stylish design language, no matter if you are using a PC, tablet, a mobile device, or one of our L-VIS touch panels.

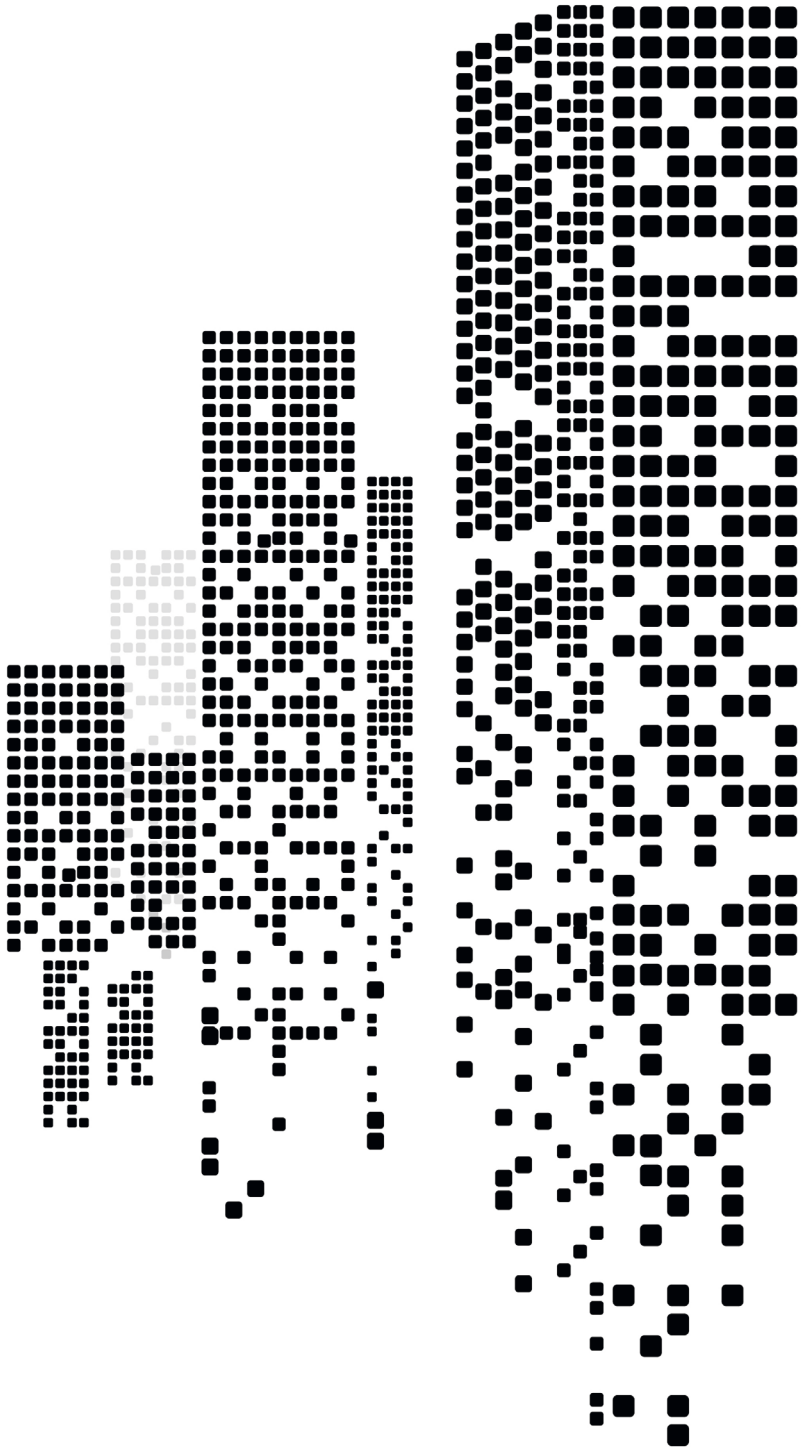
The design guidelines define basic properties like color, fonts and font size. Further, also the user interface design is defined on a higher level, like the design of controls for different applications like switching light or changing set points. Special focus was put on an intuitive user interface for the end user. On the other hand, the functions and controls are selected so that they can be easily re-used in different projects.

The main view of the user interface shows rectangular tiles, containing basic controls of various functions, such as temperature control, ventilation, or sunblinds, among others. For example, you can change the room temperature set point directly in the associated tile. Clicking on the symbol in the top right corner opens a new window, which provides further configuration options for the room temperature control.(see Figure 1).

The new design guidelines enable a wide array of different screen resolutions that are common in mobile devices, desktop PCs, and our own L-VIS touch panels.

The font chosen to be used in all user interfaces is DejaVu Sans Condensed exclusively, a simple and modern sans serif font, that presents all text in elegant and easily readable style.

For more flexibility, two basic designs were defined in the guidelines: white-on-black and black-on-white. As devices running LOYTEC software vary greatly in size, format, and display brightness, among other features,



this option has been included to be able to choose the best matching style to your particular device's characteristics.

The design uses a restricted color palette to meet the requirements of both designs. White-on-black uses a dark gray as background color, plain white for the text. Black-on-White uses a very light gray for background, and dark gray text. Both designs rely on a mostly monochrome color palette, where color is scarcely used and highlights special features. Active buttons, tiles or sliders are market with a bright blue color.

A great number of icons was created for this project. Emphasis has been put on a flat, clean look, so the function connected to each icon is immediately clearly recognizable. This also helps to reduce text in the projects to an absolute minimum, which was one of the key requirement of the LOYTEC design guidelines and greatly helps for re-using the designs in different regions of the world.

All icons have been accurately named, described and assigned a unique number, to ensure straightforward and most convenient usage of the icon library. The graphic symbols for the new LOYTEC Building Automation function library for L-STUDIO are based on this design. Further, the design guidelines will also be applied to the standard room control symbols of the L-ROC library (see figure 2).

The design also makes use of some newly added features of the LOYTEC visualization solutions, as the following article explains in detail.

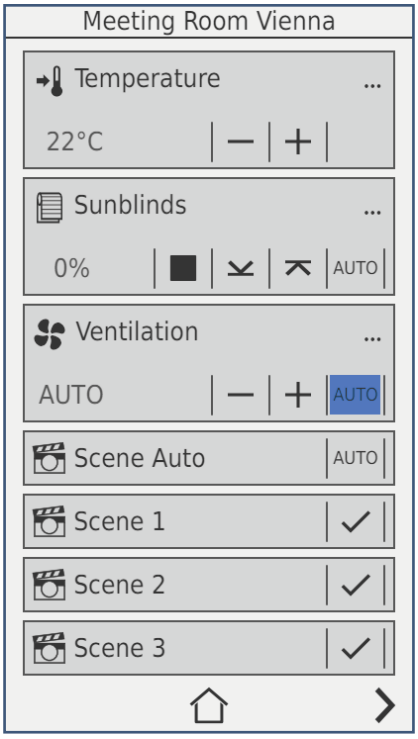


Fig. 1: L-WEB Room Ctrl. Design for mobile devices

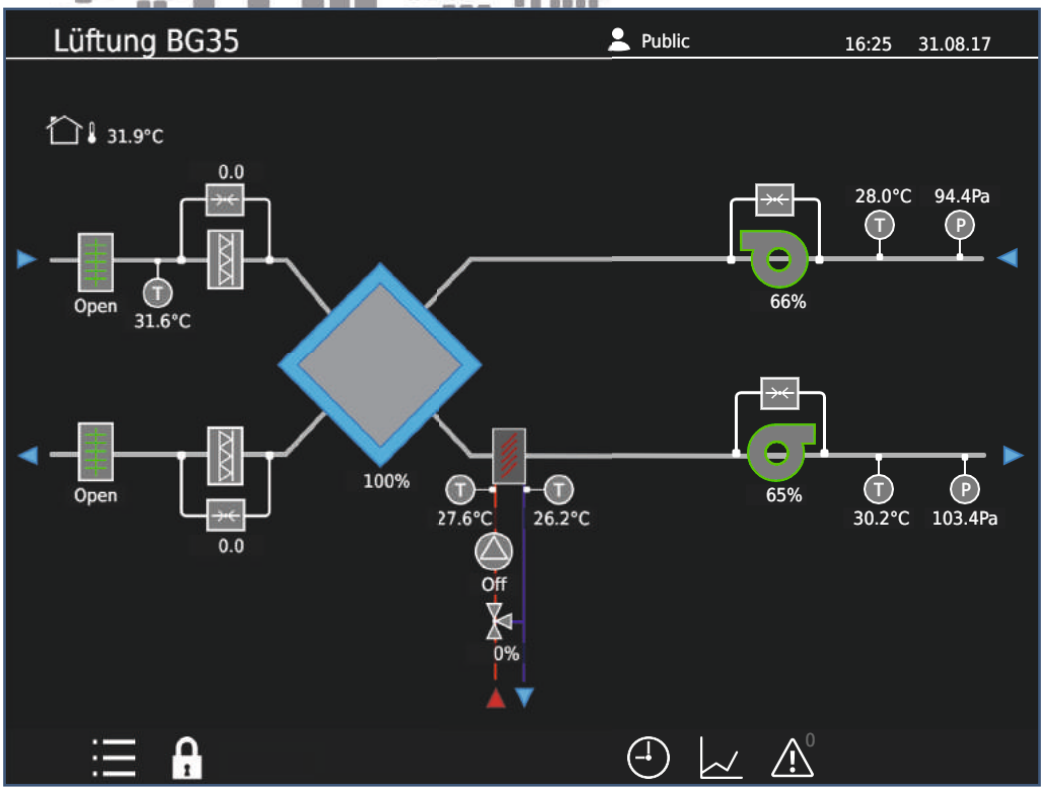


Fig. 2: New Design of Air Handling Unit Visualization

New Design Elements for special Requirements: Knob Control and Pop Up

The new knob control design element was implemented to guarantee a distinctive control for specific interfaces and tasks. The knob control was created to match our guidelines in order to give precise feedback for any interface, keeping a modern and distinctive look-and-feel.

Once the control enters input mode, it will constantly sample the touch position and calculate a new value depending on the virtual rotation position. The knob can be rotated by moving the touch position around, including the knob center and any area outside the knob control. During this phase, the entire screen becomes the active area, such that the user may move the touch position well outside the knob, allow a much more sensitive value selection than it would be possible with a bar control. This helps to gain finer control of the knob rotation, especially for small knobs.

With the snap-into-position feature, once the user releases the knob, either it will remain at its current position, or snap into place at the nearest tick mark before a final update with the current position is sent out to all connected data points. This allows using the knob control not only for analog values, but also gives a smart possibility to intuitively select from a number of discrete values. The appearance of the new control is highly configurable, so that it can not only be used for intuitively entering data, but also for some nice designs to display data (see Figure 1).

Another new visualization feature is the possibility to combine elements to a popup element (see Figure 2). A popup e.g. can be a panel that is displayed on top of the underlying graphics. For this purpose, new action command (Open PopUp, Close PopUp, Toggle PopUp) have been added to the action object. All elements, that should be displayed with the popup action, are added to the object tree below the action. If the Popup is not shown, the elements are hidden and cannot be operated. To re-use such popup elements in different designs and screen sizes, it is possible to choose the position of the popup between the original design position, screen center or auto place. For automatic placement, the elements are displayed close to the position that triggered the display command but in a way that all elements are shown on the screen.

Dipl.-Ing. Norbert Reiter
LOYTEC electronics GmbH

Norbert Reiter is responsible for customer support, custom applications, and trainings at LOYTEC electronics GmbH. In this capacity he has established and developed LOYTEC's comprehensive training programs. He is also an instructor of many training sessions himself, both in-house and abroad. After studying computer technology at University of Technology Vienna, Norbert joined LOYTEC 17 years ago. He made significant contributions to the development of the ORION stack, several software tools and LOYTEC network infrastructure products.

The new features and the design guidelines should help system integrators to create modern, intuitive user interfaces. By using the popup-feature, the design can be re-used in different projects even when the size of the underlying display varies.

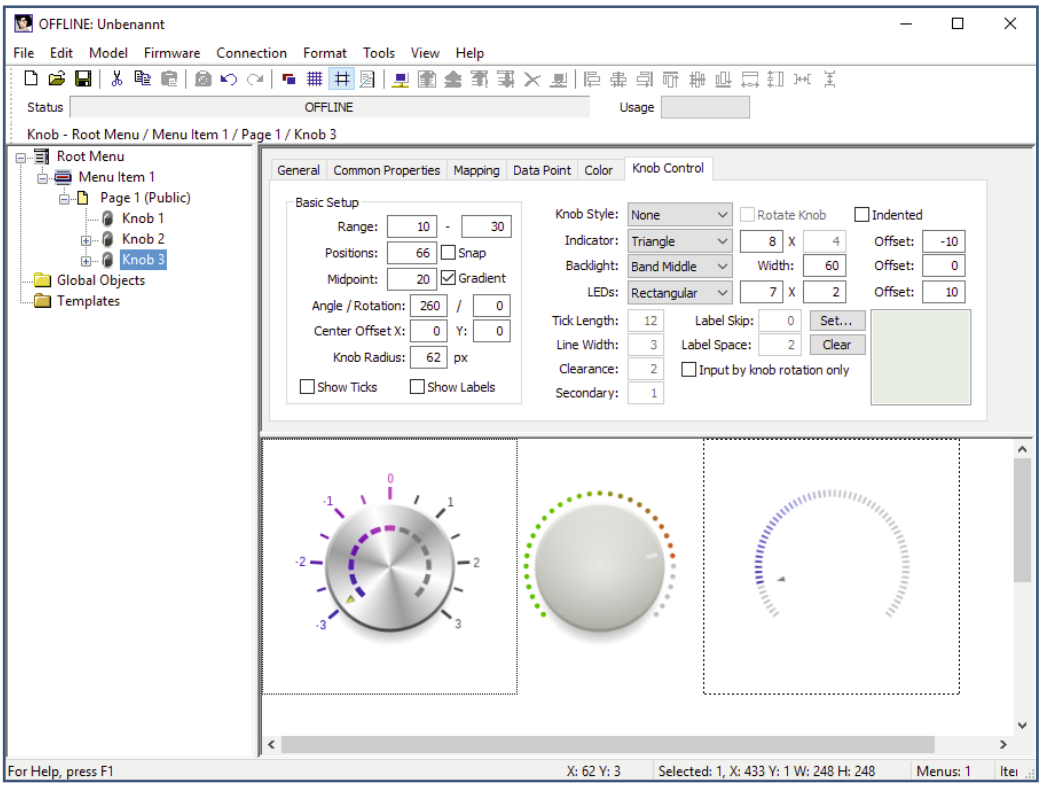


Fig. 1: Configuration options of the new knob control

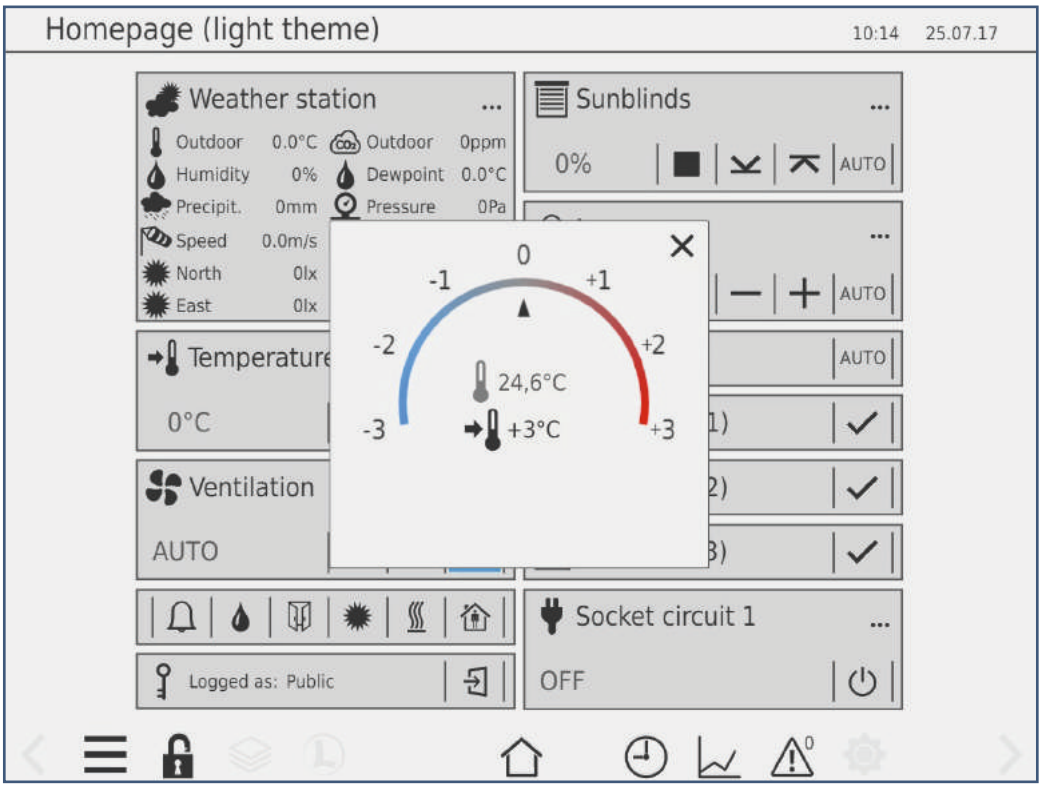


Fig. 2: Room operation on a 15" L-VIS Screen

Delta EMEA Headquarters in Hoofddorp, Netherlands

The renovation and upgrade of the existing office building in Hoofddorp transforms the Delta EMEA Headquarters into a modern working environment. The result is an impressive green building which is capable of achieving up to 45 percent energy savings and has recently received the BREEAM certificate.

Multiple techniques are integrated into the Delta EMEA headquarters which aim at improving user comfort and energy savings: Delta Energy Online platform, renewable energy solutions with a 58.24 kW solar supported by Delta's PV inverters, BMCS, and LED Lighting Solution have been implemented.

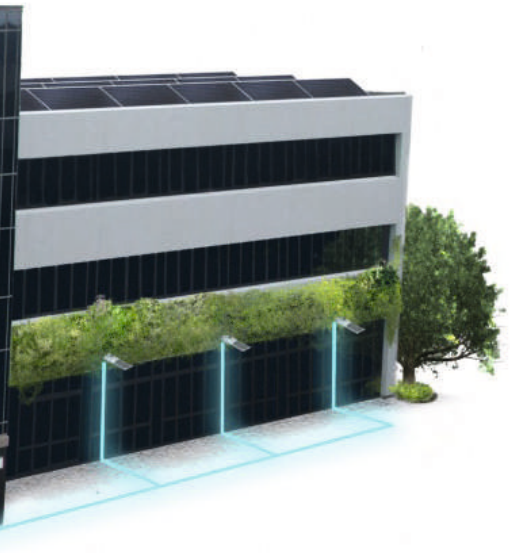
Building Management and Control System (BMCS)

This smart building automation platform is based on technologies developed by LOYTEC electronics. This advanced cloud-ready platform is compatible with all open communication protocols available now in building control, thus, enabling a highly effective, cost-efficient and eco-friendly management of the entire building. All sub-systems installed for HVAC (heating, ventilation and air conditioning), lighting, room climate control, power generation and energy storage are linked and managed by Delta's BMCS.

LED Lighting Solution

High-efficiency LED lighting products, smart sensors, actuators as well as LOYTEC's DALI lighting system are integrated as an intelligent building automation platform that creates a smart lighting system. Visual comfort and energy savings are both accomplished by constant light control with user presence and lux level detection. The dimming function takes into account ambient natural lighting.

This case study demonstrates that it is possible to transform existing builings into highly sustainable ones. With the BREEAM certificate, the opening event in April 2017 was embellished perfectly. The BREEAM rating "very good" is an independent proof of the sustainability and quality of this building.



Find more case studies at www.loytec.com/case-studies

FACTS	
Location	Hoofddorp, Netherlands
Topology	OPC UA, OPC XML DA BACnet® IP Modbus RTU, Modbus TCP DALI KNX IP, KNX TP M-Bus
Components involved	LOYTEC Competence Partner: Numan & Kant LOYTEC Competence Center: Vedotec B.V.
LOYTEC Components	12x LROC-100 Room Controllers 28x LIOB-152 I/O Modules 12x LDALI-E101-U Controllers 168x LDALI-MS1 Multi sensor 3x LDALI-3E102 Controllers 3x LDALI-PWR2-U Power Supply 86x LIOB-152 I/O Modules 5x LVIS-ME212 Touch Panels 5x LVIS-FRAME12 Mounting Frames 1x LVIS-3ME15-G1 Touch Panels 1x LVIS-FRAME 15 Mounting Frames 1x LWLAN-800 Wireless LAN-Interface 1x LINX-112 Automation Server
LOYTEC Tools	LWEB-900 Integrated Building Management System L-STUDIO Tool Platform L-LOGICAD Software L-INX Configurator L-VIS Configurator

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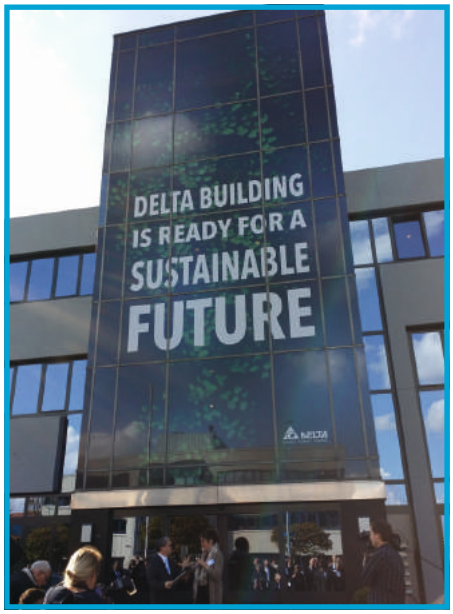
A Delta Group Company



Company Profile of GTS Automation GmbH

GTS Automation GmbH is an independent enterprise, independent from products and groups of companies. GTS has their headquarters in Austria and is well established within the field of integrated building automation. The company was founded in 2006 by partners and managing directors Dipl.-Ing. (FH) Jürgen Chochola and Dipl.-Ing. (FH) Georg Kubasa.

GTS offers solutions in the field of measurement and control engineering and uses modern IP-based technologies for communication and automation solutions. They are specialized in automation of primary plants as for example heating, cooling, or air condition, and also in providing integrated concepts for customer specific single-room solutions (for example lighting, sun blinds, air condition, media technologies). Another advantage is seamless integration of other relevant building elements, which allows realization of access control, alarm systems and video surveillance in a consistent manner.

GTS' range of services extends over the course of whole projects. Starting with planning (or planning support) and dimensioning of plants, ranging to delivery of components, building of switch cabinets, development of software. Moreover, tests and commissioning services, trainings, documentation, and maintenance are part of the overall concept.

Support of all open communication techniques and bus technologies combined with free selection of products make GTS a flexible partner who is able to tend to customer requests. GTS strives for complete concepts to ensure user-friendly operation and support. Services like regular diagnosis and maintenance of house installations are included as well.

Alongside the Vienna headquarters, customers are also cared for from GTS offices in Linz, Velden, Switzerland, Romania, and Bulgaria. A new office building in Bad Vöslau is in planning (www.officebasebadvoeslau.at), and will set future standards in the field of green technologies.

Since the founding of GTS Automation, long-term, stable relations with customers are held in high regard. This attitude allows successful realization of projects, making use of an extensive network in the DACH and CEE region. GTS Automation is active in: Austria, Germany, Switzerland, United Kingdom, Lithuania, Poland, Czech Republic, Slovakia, Romania, Bulgaria, Croatia, Serbia and Montenegro.

www.gts-automation.com

Austria Campus

A new business hotspot emerges

Excellently located in the second district of Vienna, in what is one of the most interesting business locations of the city, AUSTRIA CAMPUS emerges with a gross floor area of 330.000 square meters.

Within the next five years, building on the premises will result in modern and sustainable office complexes equipped with their own infrastructure and connection to public transport. Upon completion, more than half of the total office area will be used for the Austrian headquarters of UniCredit Bank Austria. Other planned buildings are a hotel, some commercial areas, a conference center, a medical center, a kindergarten, and a canteen restaurant, amongst others.

GTS Automation was able to shine with their complete solution, providing their flexible axis concept and the combining of room operation elements like lighting, sunblind control, or room conditioning. This grants builders high flexibility for renting out their property.

FACTS	
Location	Wien, Praterstern
Project runtime	March 2016 - August 2018
Client	SIGNA Holding
BMS & Software	evon XAMControl
DDC- Hardware	HKLS+E: BECKHOFF
LOYTEC - Individual room control	1.000 x LROC-400 in redundant ring configuration 3.000 x L-STAT (with CO2 and motion sensor) 7.320 room axes 32.000 DALI Lights 9.000 SMI sunblind motors 4.000 KNX multi sensors 8.400 electrothermal actuators

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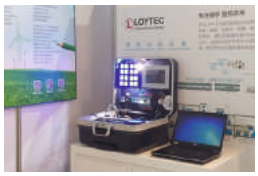
LOYTEC at ISH in Frankfurt, Germany

For LOYTEC ISH 2017 in Frankfurt was a great success. The world's leading trade fair for building, energy, air-conditioning technology, and renewable energies attracted a large number of vistors. We were very happy about many exciting questions concerning our product porfolio and the latest innovations in building automation. Some pictures will give you a short impression.

LOYTEC on Tour - Around the World with our Solutions



Guangzhou Electrical Building Technology 2017, China

guangzhou electrical building technology
June 9 - 12, 2017
Guangzhou, China

infocomm CHINA 成都
April 12 - 14, 2017
Beijing, China

HANNOVER MESSE
April 24 - 28, 2017
Hannover, Germany

TILS
April 12 - 15, 2017
Taipei, Taiwan

AHR EXPO JAN 30-FEB 1 2017
Jan 30 - Feb 1, 2017
Las Vegas, USA

ACREX India
Feb 23 - 25, 2017
Greater Noida, India

LEDASIA.in
March 2 - 4, 2017
Bengaluru, India

ESEE
April 14 - 16, 2017
Nanjing, China

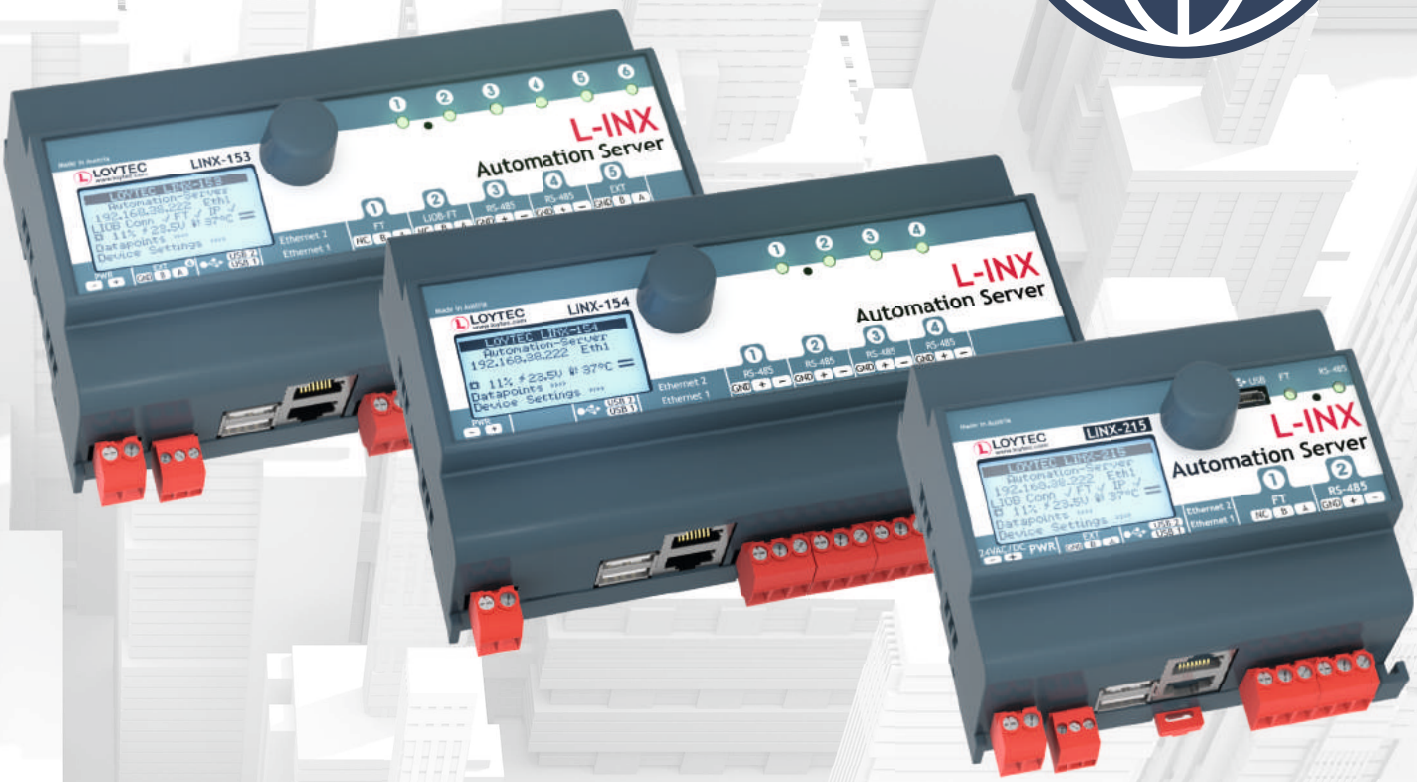
TECHNO-FRONTIER
April 19 - 21, 2017
Tokyo, Japan

ineltec.

LOYTEC impresses Basel!

Shortly before the deadline for our L-Express magazine we recieved a few pictures from ineltec, the Swiss expo for intelligent building technologies, which took place in Basel from September 12 until September 15, 2017. At booth D115 LOYTEC presented the latest trends and technologies.

PRODUCT NEWS



01 The new L-INX Automation Servers LINX-153 and LINX-154, LINX-215

LOYTEC has released new L-INX models: The LINX-153, LINX-154, and the LINX-215. These models are packed with even more functionality and communication ports and fully support the L-STUDIO 61131 programming model.

The new LINX-215 combines the entire family of the small and freely programmable L INX automation servers LINX-110/111/112/113 and LINX-210/211/212/213. This means the LINX-215 speaks both LonWorks (FT-10 and IP-852) and BACnet (MS/TP and BACnet/IP). It also offers a router as well as an RNI and all additional protocols such as Modbus, M-Bus, KNX, EnOcean, SMI, and MP-Bus. Moreover and most importantly, the LINX-215 is fully integrated in the L-STUDIO 61131 programming model. This means that all configuration tasks, program logic and visualization development is done in L-STUDIO.

The new LINX-153 is the bigger sibling of the LINX-215 and combines the functions of the LINX-150/151. It is also designed for L-STUDIO integration and offers LonWorks, BACnet and optional routing. In comparison to its predecessor models, it adds an extra EXT port. The LINX-154 is a new model equipped with four RS-485 ports that can run BACnet MS/TP or Modbus RTU. A BACnet router hooks up the MS/TP ports to BACnet/IP. This model is also designed for engineering in L-STUDIO.

Of course all new models are fully backward compatible to their predecessors. That means all backups and data point configurations previously made can be used on the new model. Easy setup over the LCD display, dual Ethernet ports, integrated OPC server, LWEB-802 graphical views, built-in firewall and SNMP maintainability by IT departments are other standard features. And all new models go Wi-Fi with the LWLAN-800 adapter. In case existing L-LOGICAD programs need to be migrated, a separate license for those models can be purchased.

02 New LDALI-PLC4 Controller

The LDALI-PLC4 controllers are powerful, freely programmable lighting controllers. They are programmed using the L-STUDIO programming tool. For integration into the L-ROC system, IEC 61499 is supported, for stand-alone operation IEC 61131. A library containing standard lighting and sunblind control functionality is available. It supports various lighting control strategies, presence and lux level based. Several parameters can be used to configure the application for almost any use case. User specific program extensions are possible as well. With Alarming, Scheduling, Trending and e-mail notification (AST™) the LDALI-PLC4 controller is a perfect solution for DALI lighting systems with application requirements not covered by the standard application of the non-programmable L-DALI controllers.

In addition to 4 DALI channels for the integration of DALI luminaires, sensors and buttons, wireless EnOcean sensors and buttons can be integrated via the optional L-ENO EnOcean interface. For sunblinds the LSMI-804 extension module allows the integration of up to four SMI channels. Physical I/Os can be integrated through L-IOB I/ O Modules via LIOB IP. Via Ethernet/IP the LDALI-PLC4 controller provides connectivity functions to concurrently integrate CEA 709 (LonMark Systems), BACnet, KNX, and Modbus subsystems.

03 The new MPBUS Interface LMPBUS-804

The LMPBUS level converters are used to connect an MP-Bus network to the L-INX Automation Server, the L-ROC Room Controller or the L-GATE Gateway. MP-Bus means multipoint bus. The MP bus is the Belimo Master / Slave bus. Up to 8 slaves can be connected to one master device. If only modern actuators (eg -MPL) are used, up to 16 slaves can be connected. The advantages include significantly reduced cabling costs and significantly higher functionality. In addition, a sensor can be connected via the MP-Bus slave. These sensors include active sensors, passive resistance sensors, and switches. These sensor values can be read via MP-Bus network.

04 The new LIOB 588/589 I/O Controllers

The new LIOB-588/589 I/O Controllers are the latest addition to the LOYTEC L-IOB product line-up. Like their sibling, the LIOB-586, both devices come in a 159 mm wide enclosure for DIN rail mounting and have an LCD display with jog-dial for local operation.

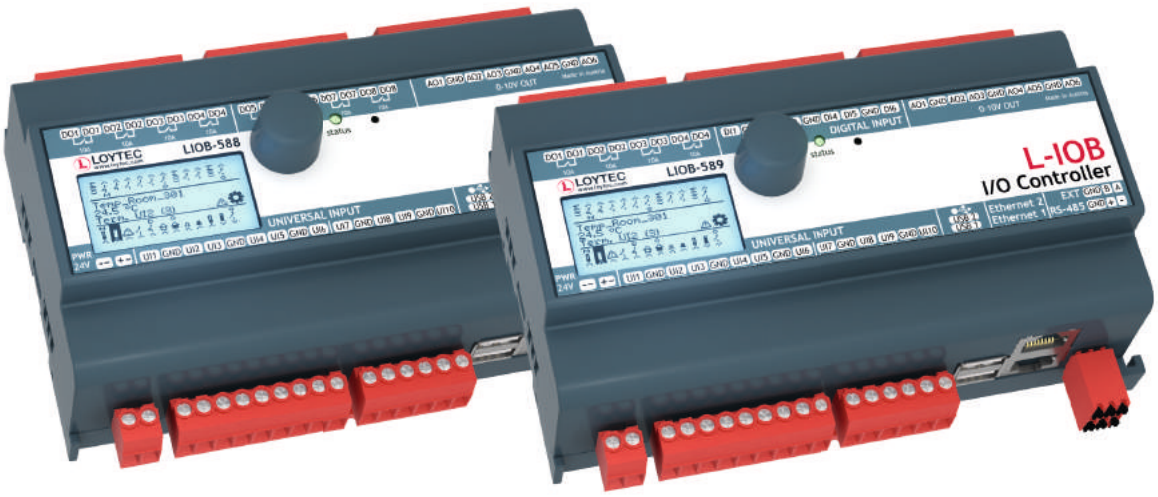
Both devices are equipped with two Ethernet ports and a built-in Ethernet switch, which allows building a daisy chained line topology or even a redundant ring topology using the Rapid Spanning Tree Protocol. The new models support integration into BACnet/IP networks and the LonMark system. Additionally, the devices support communication in BACnet MS/TP networks and connection of external meters via Modbus or M-Bus. For enhanced maintainability by IT departments, the LIOB-588/589 has an integrated SNMP server.

The new controllers introduce two new I/O configurations: Both have ten universal inputs and six analog outputs. In addition, the LIOB-588 has eight 10A relays while the LIOB-589 adds four 10A relays and six digital inputs.

The LIOB-588/589 I/O Controllers also contain two USB 2.0 ports and support connection of an LWLAN-800 adapter for wireless network & mesh support as well as a LENO-800 adapter for connection of EnOcean wireless devices.

Technology data points are automatically exposed as OPC tags for higher level OPC client applications or the L-WEB system via the integrated OPC server providing SSL encrypted web services (OPC XML-DA) or UA Secure Conversation (OPC UA).

Both devices can be programmed with L-LOGICAD or L-STUDIO in IEC 61131-3 or IEC 61499.



Delta Electronics Beijing Office

The U.S. Green Building Council (USGBC) has just granted the LEED NC (New Construction) Silver Certification to Delta Electronics' Beijing Office. Delta's Beijing office has demonstrated an impressive 20% cut in overall energy costs as compared to the annual baseline reference of the 2007 ASHREA standard 90.1. Relative to other large public buildings within the same region, Delta's Beijing Office saves up to 22% in total energy consumed and 43% in total water consumed against the LEED design standard baseline.

Delta's Beijing Office, besides functioning as a sales and administration center, also serves as a significant R&D center cultivating technological talent in North China. A 5-story building with a 2-level basement sprawling over a total area of 19,000 square meters, Delta's Beijing Office has successfully implemented many energy-saving architectural techniques and green designs.

The office building utilizes LOTEC's building automation solutions, which supports all major communication protocols such as BACnet/IP, BACnet MS/TP, LonMark/IP, LonMark TP/FT-10, Modbus TCP, Modbus RTU, OPC XML-DA, M-Bus, KNX, EnOcean and others, simultaneously. LOYTEC solutions also facilitates data exchange to transform existing systems in the building to an integral whole run by automated control, which operates on a single platform for rapid integration. This reduces overall investment costs while nicely balancing energy efficiency with occupant comfort. A variety of diverse systems that can be integrated on this single platform include: lighting, air-conditioning, chiller, heating, conferencing system and environment control system.

Lighting control offers a conference capability on the first and second floor. Each actuates its own appropriate lighting mode based on usage scenarios, such as all lights ▶

on for general conference mode, or front lights off for slide presentation mode. Each and every lighting unit's status can be monitored and controlled on the web interface, from a single lamp to a large group of lamps, plus finer control for anything in-between individual controls and group controls. The lighting of the third and fourth floors of the office building operate according to working hours interleaved with lunch breaks and holidays, which can also be complemented with other improvised schedule controls. If overtime is necessary, lighting can also be manually turned on and off via local touch panels.

The office spaces in the third and fourth floors are studded with sensors that capture temperature and humidity data, and are capable of real-time monitoring and analysis of the office environment. The realtime status of each area is also displayed on a big signage screen. A 24-hour trending history of the office environment data is ready, anytime, at a glance. LOYTEC building management and control system will automatically make the right decision for the appropriate control, whether it is to activate, modulate or deactivate the air-conditioning, AHU, chiller, or heating system.

Regarding air-conditioning in the office spaces, the temperature, humidity and CO_2 concentration data captured on realtime sensors help determine the appropriate fan speed and temperature setpoints to modulate ambient comfort with automated start/stop. Holidays and exception days are discretely scheduled to achieve maximum energy savings. The exhibition halls and conference halls on the first and second floors are each provided with a single FCU for air-conditioning, which is capable of a precise temperature control over each zone, with automated ventilation start/stop for intelligent energy savings.

The local hot water supply, provided by the municipal hot water pipe network, is shunted into four pipelines, each of which is tapped with a flow meter and a thermometer respectively. This measures consumption quantity before conversion to appropriate terms for energy analysis and management. Each pipeline has a proportional valve that is controlled according to schedule, such as: office hot water supply is to be shut down for weekends and holidays, while the dormitory is still fully provided. During weekdays, heating begins at 5:00am every morning to warm up the office spaces, and stops at 10:00pm.

Delta's Beijing Office has easily achieved the seamless integration of its building subsystems, simply by adopting its own effective and efficient solutions. By just tapping on a touch screen, the LOYTEC's building management and control system offers the building operator not only intelligent automated control, but also comprehensive user flexibility that responds to real field scenarios for more purposeful control, and takes the full potential of the intelligent building automation system into even smarter energy-saving. ■

LOYTEC
A Delta Group Company

DELTA
Smarter. Greener. Together.

FACTS	
Location	Beijing, China
Number of Nodes	3,000
Topology	BACnet/IP, LonMark IP, IP Network, Modbus RTU, Modbus TCPChina Railway
Companies involved	Delta Greentech (China), DMC
LOYTEC Components	1 x LINX-151, 1 x LINX-121, 1 x LINX-100, 1 x LROC-100, 3 x LIOB-100, 5 x LIOB-450, 3 x LIOB-451, 2 x LIOB-550, 4 x LIOB-551, 2 x LIOB-552, LWEB-900
LOYTEC Tools	L-INX Configurator, L-VIS Configurator, L-LOGICAD, LWEB-803

Delta GreenTech, China:

A Trail Blazer in China's Building Control Market

With service points spread throughout China, Delta GreenTech (China) Co. (DGC) has maintained a rapid annual growth rate of 35.5% on average since it started operations in 1994. The company provides reliable and efficient power, digital visual system and automation solutions to customers in a variety of industries such as telecommunications, data centers, electric power, petrochemical, railway, industrial machinery and more.

DGC's Intelligent Building Business Department is capable of rolling out a complete building automation solution with consulting, customer requirements analysis, program design, project planning, actual system installation, commissioning, training and customer service. With one-stop service to meet customer needs, DGC provides custom-tailored services based on specific conditions in different fields.

Ramping up solutions that meet customer needs, David Zhao, the Manager of DGC's Intelligent Building Business Department, is a twenty-year veteran in building control. He often carries a mobile sales kit while traveling across China, to demonstrate the advantages of LOYTEC building management and control systems to clients.

Thanks to Zhao's enthusiasm and lively description of the benefits of the system, even customers that are not so familiar with building automation can appreciate the convenience and efficiency of building management.

A proven professional in air conditioning, computer networks and programming, who also holds a Chinese National Certificate for Associate Constructor, Zhao majored in automation in grad school, and has a broad perspective of China's building automation market. "China's current building automation market is fraught with competitors. Building improvements are demanded by more customers, who are driving a corresponding technological shift toward more complex building types and systems. Solution providers that cater to customer's requirements with a cross-building, cross-field and multi-system automation control solutions, can truly meets customer needs", observed Zhao. As seen by Zhao LOYTEC's product features respond perfectly to this on-going trend.

Zhao's team enrolls many engineering professionals and salespersons, each of whom either holds more than a decade's experience in automation control, HVAC, architecture, or many years of real automation practice. With the team's technologies and strong sales backup, LOYTEC products are particularly welcome in large-scale construction cases, as they are easily integrated, quickly installed, and provide costs-savings for maintenance and operations.

Delta's solutions now have many success stories of introduction into China. Examples include building types such as commercial buildings, integrated construction, railway stations, hospitals, and more, demonstrating LOYTEC's cross-building, cross-field and cross-system application flexibility for optimized efficiency in building operations.

LOYTEC's Kitchen-ABC

Millet-stuffed bell peppers with olives, feta & tomato sauce

Eugen exclusively tells you his secrets. This time he prepares a vegetarian variation of a traditional dish that our eployees and guests already enjoyed in our in-house restaurant.

INGREDIENTS (for 4 people)

3 big bell peppers (red or yellow)
1 small zucchini
1 small leek
175g millet
100g feta cheese
100g olives
1/2 bunch of parsley
500g tomatoes
1 onion
2 garlic cloves, peeled, finely chopped
2 tbsp of olive oil
Salt
Black pepper

First prepare the millet:
Weigh the millet and boil with twice as much water. Taking a measuring beaker for weighing helps you to find the right amount of water easily. After 5 minutes of cooking let it swell for at least 10 minutes.
In the meantime clean the leeks and cut them finely. Dice the Feta cheese. Chop olives coarsely and parsley finely. When the millet is completely swollen, add the freshly cut ingredients and season with some salt and pepper.
Preheat the oven to 200°C.
Peel the onion and finely chop it into quarter rings and garlic. Heat the olive oil in an ovenproof pan and fry the onions with the garlic. Brush the tomatoes briefly in boiling water, peel and chop them and add to the onions and the garlic. Season with salt and pepper and cook to a sauce. Cook the tomato sauce for 4-5 minutes and start preparing the bell peppers. First peel the bell peppers in half, remove the core casing and wash. Spread the millet filling evenly on the paprika halves and press firmly. Put in the tomato sauce.
Cook the pan with tomato sauce and stuffed peppers in a preheated oven on medium rails for 20-30 minutes. Serve with salted potatoes or rice.

ENJOY YOUR MEAL!

„New LOYTEC fans"

Jérôme Bossuge, LOYTEC Sales Switzerland

We are pleased to welcome Mr. Jérôme Bossuge as our new LOYTEC Sales Manager for Switzerland. As of 1st of July, 2017, he will take over sales in Switzerland.

Swiss-born Jérôme was previously responsible for creating the building automation division at Omni Ray AG. Convinced by the quality of our LOYTEC product portfolio, he will now focus on the distribution of LOYTEC product solutions in Switzerland. Jérôme Bossuge can look back at an extensive experience in areas such as automation, IT, process control systems, network technology and sales and marketing. His heart beats for the building automation industry. Before his time at Omni Ray AG he gained experience with leading building automation companies in Switzerland.

The familiar, local contact person will be the same, a great advantage for LOYTEC customers and Competence Partners!

With Jérôme Bossuge as a sales manager, LOYTEC strengthens market presence in Switzerland. Our future goal is continuous growth through the expansion of our multi-channel strategy, based both on Competence Partners and on direct sales. In the future, we will also offer interesting local training courses on our system solutions. First-class support is guaranteed: Jérôme Bossuge will be first point of contact for first-level support in Switzerland while our support team in Vienna offers second-level support.

In an ever changing field, that will be heavily influenced by digitalization as well as integrated and interoperable systems, we have a good foundation with our broad product portfolio and are able to provide complex and safe solutions," emphasizes Jérôme Bossuge. " My goal is not only to win new customers but also to turn them into LOYTEC fans."

LOYTEC Trainings

We offer trainings in German, English, Chinese, French and Italian. Training dates can be found at www.loytec.com/training. For further information please contact sales@loytec.com.

LTRAIN-LSTUDIO

Programming the L-INX Automation Server (3 days)

- Introduction into the L-STUDIO Software
- Concepts and structure of the IEC 61131 and IEC 61499 language
- Creating function logic with data points and graphical systems
- Working with function blocks, device types and resources
- Testing and debugging of the system
- Configuration of schedulers, alarms, and trends
- Deploying of logic and graphical projects
- Contents of the LOYTEC building automation library
- Working with the LOYTEC building automation library

LTRAIN-LROC

Room Automation with L-ROC (2 days)

- System design based on a sample project
- Creating the IEC 61499 application for the same project
- Creating virtual room operating units, using them with LWEB-802/803
- Creating floor plan visualizations
- Integration into LWEB-900
- Parameterization, testing, and debugging the application
- Concepts and features of important IEC 61499 function blocks

LTRAIN-GATEWAY

Gateway Applications and Data Point Management (2 days)

- LOYTEC data point concept
- CEA-709, BACnet, M-Bus, Modbus, OPC XML-DA
- AST™ functions, local and remote
- Building gateway applications with L-GATE, L-Proxy and L-INX

LTRAIN-BMS

LWEB-900 Building Management System (2 days)

- Introduction to the LWEB-900 system
- LWEB-900 Project Setup
- Working with LWEB-900 Views
- LWEB-900 User Management

LTRAIN-DALI

Lighting Control with L-DALI (2 days)

- Introduction to DALI
- Features of the LOYTEC DALI Controllers
- Configuring LOYTEC DALI Controllers
- Setting up a DALI network
- Troubleshooting the DALI installation

LTRAIN-GRAPHICS

Graphical Design for L-VIS and L-WEB (2 days)

- Creating L-VIS and LWEB-803 projects with L-VIS/L-WEB Configurator
- Creating a distributed visualization based on L-INX and LWEB-803
- Efficient project design using templates

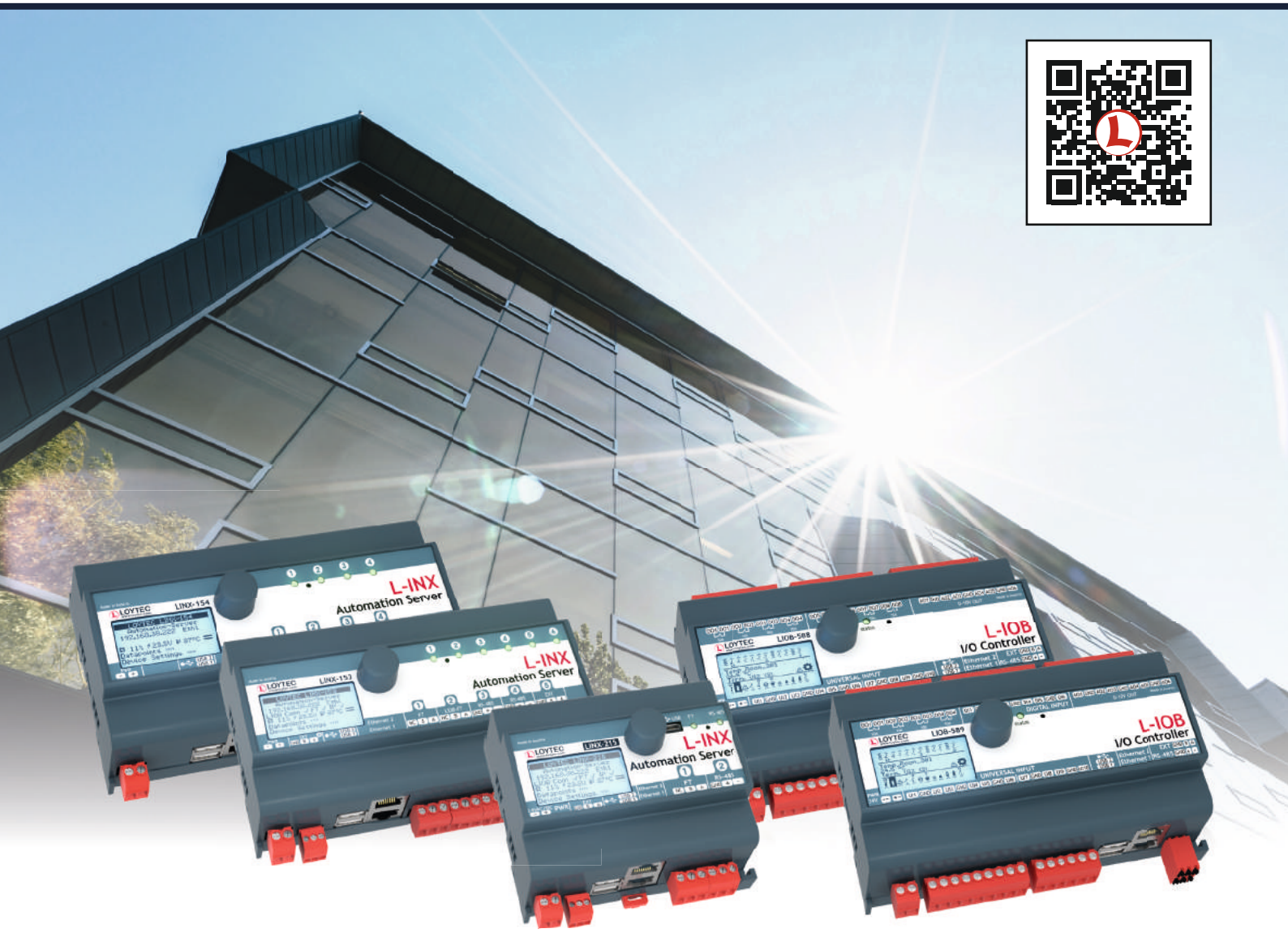
LTRAIN-LIOB-AIR

Controlling VAV-Systems with LIOB-AIR (2 days)

- Introduction to the LIOB-AIR system
- Adapting device templates
- Creating a complete VAV system
- Using the graphical user interface
- Connection to the AHU
- Integration into BACnet and CEA-709 systems
- Advanced features, examples and use cases

New LOYTEC Product Family

Fully integrated. Seamlessly connected. Securely networked.



LINX-153, LINX-154, LINX-215, LIOB-588, LIOB-589

Our brand-new L-INX Automation Servers and L-IOB Controllers represent more performance, more resources and consequently more possibilities in project business.

With the new tool platform L-STUDIO 3.0 programming is feasible in IEC 61131-3 or IEC 61499 depending on your applications or preferences.

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