



KNX DALI-Gateways



DaliControl SC16 and SC64IP
Lighting Becomes Digital

Contemporary lighting technology – More than just light

The requirements of modern lighting technology are changing. Whilst previously its purpose was simply to provide light for visual activities, the focus is now shifting to comfort, ambience and energy saving in addition to the mere functional aspects. Softly dimmed office lights with soft-start function, wall lights with individual light colours and illuminated ceilings with floating colour gradients have become an essential part of modern purpose built architecture. The economical and sustainable running of a building also requires an optimal mix of day light and artificial light through constant light regulation.

Even in the private living environment, the requirements of lighting technology are increasingly demanding. Light scenes for different purposes and moods, interior and exterior orientation lighting as well as colourful effects through modern power-LEDs have come to be used increasingly in the upmarket domestic environment.

The DALI System – The future of lighting is digital

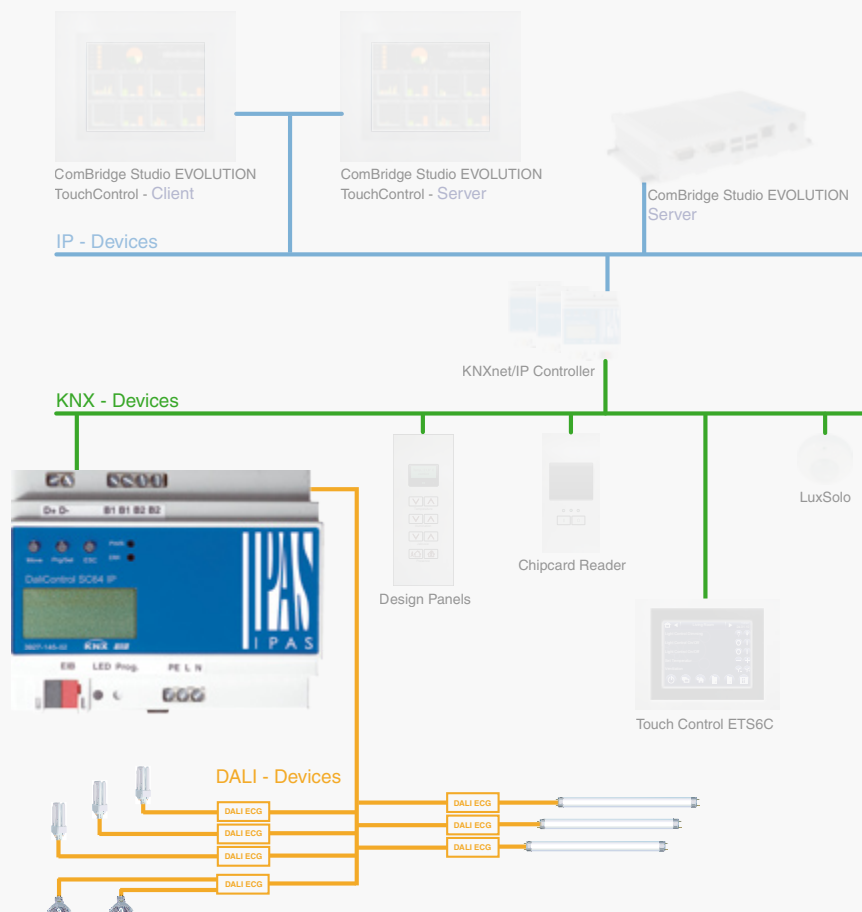
Both the numerous new applications and the technically sophisticated modern lights require greater control engineering complexity. Against this background, the industry has defined the DALI (Digital Addressable Lighting Interface) Standard for digital communication between the individual components of a lighting system.

The manufacturer-independent DALI-Bus is increasingly becoming communications standard for the control of Electronic Control Gears (ECGs). The device deliberately does without the maximum possible functions of complex building technology.

In favour of easy communications structures and simple installation requirements, the DALI places emphasis on a limited set of commands that focus on application-specific functions.

Due to the relatively slow but entirely sufficient transfer rates, the wiring can be clearly laid out via conventional cables in any bus topology.

The massive advantages compared with the conventional 1..10V technology, have led to broad market acceptance over the past few years. In the medium term the DALI is expected to replace analogue technology completely.



DaliControl Gateways – Optimum use of synergies



The optimum use of the DALI technology can, of course, only be guaranteed when it is integrated into the overall building system. The IPAS DaliControl Gateways therefore combine the cross-functional KNX installation bus and the lighting control-specific DALI bus.

Thanks to the combination of the two systems, the cost-effective and powerful digital ECGs with DALI interface can be integrated as a sub-system into an overall KNX architecture.

The user therefore has access to a multitude of existing KNX devices for the DALI control. In addition, the combination of the DALI lighting system with the overall KNX system also allows for different sections to be linked creating extensive synergies.

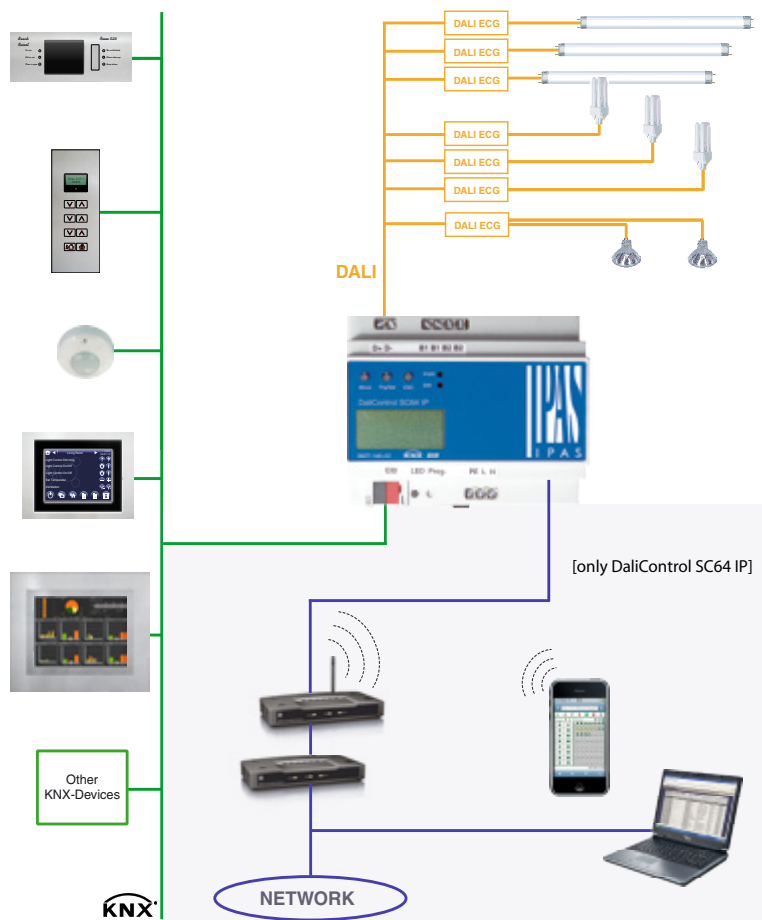
DaliControl SC16 – Complete DALI functions, easy control

The entry-level device from the IPAS DaliControl product range is the DaliControl SC16. The device can be used to switch and dim up to 64 ECGs in 16 groups. With the SC16, IPAS deliberately focuses on the pure group communication that was envisaged in the original DALI concept. The ECGs can be arranged in any order in up to 16 groups.

The individual groups are then switched, dimmed or set to the required light value via KNX communications objects. The pure group communication that is favoured by DALI purists ensures that the different lights that are part of a group are switched and dimmed 100% simultaneously.

Particularly in installations with many lights operated in parallel, group communication is to be preferred over individual control (see DaliControl SC64IP). In addition, the DaliControl SC16 allows for the simple saving of up to 16 light scenes without any additional KNX components.

For light scenes, IPAS also believes fully in the DALI standard. As envisaged in the original concept, values are saved on the ECGs and scenes are called via DALI scene communication.



References – IPAS DALI Gateways in worldwide adoption



Globus luxury department store – Zurich

The innovative and upmarket life style house in the centre of Zurich
 Complete façade and exposition lighting with over 7000 lights
 through IPAS DALI technology

Design: Bürgin & Keller AG, Adliswil
 Realisation: Kellerkom AG, Zürich



Levitt Bosch Aymerich office complex – Madrid

Office complex with three high-rise buildings and urban infrastructure
 Awarded first price in the category system integration / automation by the City of Madrid
 Headquarters of Neoris/CEMEX group and Philips Ibericá Healthcare Headoffice

Building operator: Levitt Bosch Aymerich
 Realisation: Fudomo Espacios Inteligentes, S.L.

Commissioning with IPAS DALI gateways – Efficiency and cost-effectiveness starts with the installation

Principally, each DALI segment in a DALI installation needs to be commissioned individually. In order to make the commissioning process as efficient and suited to the preferences and qualifications of the commissioning engineer, all IPAS DALI gateways support different commissioning methods.



Commissioning directly on the device

The easiest way of commissioning a DALI segment is directly on the device via the programming buttons and the integrated service display. Simply use the buttons to start an automatic search algorithm for connected ECGs. Once the search is completed, the number of ECGs found is shown on the display. Use the menu navigation on the display to identify the individual ECGs and assign them to groups.

The setting of different group parameters, the assignment of scenes and finally the important system test can also be

performed directly on the device. The major advantage of commissioning on the device is that it can be performed independently of KNX, i.e. even before KNX is installed. Especially in large installations, KNX and lights are often installed by different people and at different times. The possibility of commissioning on the device means that the installation engineer can complete all tasks up to the DALI commissioning and group assignment before the KNX system integrator carries out the complex KNX programming process.

Commissioning through the software tool: DaliControl Service & Commissioning Wizzard

The DaliControl Service & Commissioning Wizzard is an easy-to-use software tool for the commissioning of individual DALI segments. Starting the search algorithm, identification of lights and group assignment can all be performed easily on the installation engineer's notebook. However, using the tool requires an already existing KNX installation and the assignment of individual physical addresses for all existing gateways.

The software communicates with the connected gateways via any KNX interface (RS232 / USB / IP). Scenes can, of course, also be assigned and programmed via the DaliControl Service & Commissioning Wizzard. The major advantage of using the tool is the possibility to save the DALI configuration data. This makes it possible to both archive the data and load it onto another device in the future.

All IPAS DALI gateways support both the above installation methods. Both methods can, of course, also be combined. If, for example due to a non-existing KNX installation, some of the gateways have been commissioned via the programming buttons, the data can still be exported once KNX is available and the installation can be completed with the DaliControl Service & Commissioning Wizzard.

In addition to the two methods described above, the DaliControl 64IP also supports the commissioning via the integrated web server see below commissioning via Web.



DaliControl SC64IP – greater requirements demand new ways

In order to meet market requirements for a greater number of groups that can be controlled via a gateway, IPAS engineers have developed a further DALI Gateway, which, in addition to the classic control of 16 DALI groups, also allows individual control of ECGs. The DaliControl SC64IP supports both group and ECG short address communication. This makes it possible to control up to 64 ECGs individually in addition to the switching of light groups. This possibility makes the DALI particularly interesting in environments where many lights need to be controlled individually, e.g. small offices or laboratories.

The major advantage of the DaliControl SC64IP is that each device allows for individual control in addition to group control. This means that for example in an open-plan office 2x 16 lights can be controlled in groups (with the advantage of synchronisation within a group) plus 32 individual offices with 1 light each. Each DaliControl SC64 IP comprises the full functionality of the DaliControl SC16 plus additional single control.

Light and ECG fault recognition – Not only comfort but also economical advantage

A particular advantage of the DALI technology is that light and ECG faults can immediately be recognised and analysed. Via the IPAS DALI gateways an error status can be directly transmitted to the KNX bus and displayed within a visualisation. Important, safety-relevant lights can be connected directly to an alarm and the maintenance personnel can be informed immediately in case of a malfunction. This means that mitigating measures can be taken straight away.

The exact localisation of the affected light offered by the IPAS DaliControl SC64IP means that the maintenance personnel is led straight to the relevant light without further search. Additional functions of modern visualisations (e.g. IPAS ComBridge Studio), such as the connection of an alarm with the data sheet of the corresponding light, sending of the data sheet as an attachment to the e-mail alarm, etc further contribute to the optimisation process.

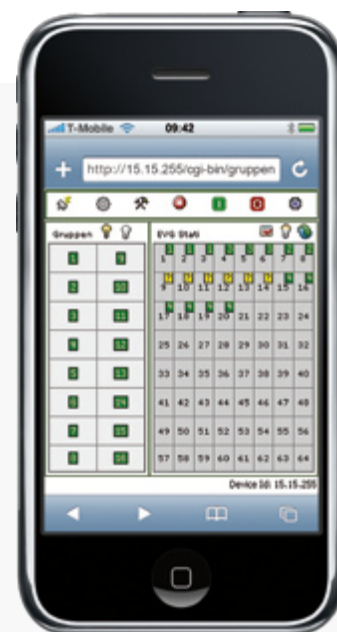
Even in the case of lights that are not crucial for safety purposes, the individual error notification is of great importance. Whilst the individual fault in a big hall might not be decisive for the overall brightness level, the failure of a certain percentage of lights within a group (e.g. > 20%) makes the exact provision of this information crucial for an efficient maintenance process.

Commissioning via the web – there is no easier way

In addition to the possibilities described above, the DaliControl SC64IP also offers a further commissioning option via the integrated web server. If the desired gateway is connected to the IP network via a common patch cable, any commissioning website of the device can be loaded via any browser simply by entering the IP address.

Intuitive ICONS on the site ensure quick identification and group assignment of the connected DALI segment. The service engineer can, of course, also realise the network connection of his notebook via a WLAN network. Room to manoeuvre during the commissioning process makes the work much easier, especially in installations where lights are spread over different rooms or even floors. And all this without having to install any additional software. The web browser is enough.

The website design on the DaliControl SC64IP also makes the display on many PDAs and mobile browsers possible. This means that the notebook can be done without at any time. A modern mobile phone makes any other commissioning tool unnecessary.



IPAS DaliControl SC16 and SC64 IP – Possibilities and features compared

	DaliControl SC16	DaliControl SC64 IP
Maximum number of ECGs	64	64
DALI power supply	integrated, from gateway	integrated, from gateway
Group control	16	16
Number of communications objects per group	5	5
Status acknowledgement per group	1 Bit or 8 Bit	1 Bit or 8 Bit
Error status per group	ECG and/or light	ECG and/or light
EVG individual control	no	yes, up to 64 ECGs
Number of communications objects per ECG	---	2
Error status per ECG	---	ECG and/or light
General error status objects	DALI-, KNX-, ECG-, Lights-, general error	DALI-, KNX-, ECG-, Lights-, general error
KNX objects for broadcast functions	no	yes
Maximum number of scenes	16	16
Scene calling via KNX object types	1 Bit / 1 Byte	1 Byte
Binary inputs for external buttons	yes, 2 inputs	yes, 2 inputs
Commissioning on the device	via display and buttons	via display and buttons
DaliControl Service & Commissioning Wizard	supported	supported
DaliControl Service & Commissioning Wizard	no	yes

For further technical information and data, please see the following documents:

- [Operating and assembly manual DaliControl SC16](#)
- [Application program description DaliControl SC16](#)
- [Operating and assembly manual DaliControl SC64IP](#)
- [Application program description DaliControl SC64IP](#)
- [Software Manual DaliControl Service & Commissioning Wizard](#)

The documents are available on the IPAS website www.ipas-products.com

IPAS – for buildings of the future

Since its establishment in 1996, IPAS stands for innovative products and solutions in building automation. Based on the global KNX standard, IPAS develops and manufactures devices and software for buildings of the future.

Every day our highly-qualified IPAS team rises to the challenge of developing the best technological and economical solutions for our clients. Knowledge, experience and creativity direct everything we do from development to production and distribution.

Informed by our project management experience and the global use of our products, IPAS today stands for sustainable values. It is our company policy to create and sustain employment, to assume responsibility for the community and to train young people.

Our relationship with our clients is based on fairness, cooperation and integrity.

In the manufacture of our products, we strive for the upmost quality taking into consideration resource saving technologies and manufacturing processes. Sustainability and environmental awareness are integral to our work. Our certified quality management system in accordance with DIN/ISO 9001, guarantees that all our processes meet these requirements.

It is our aim to always realise the individual wishes of our clients and to offer the best-possible solutions for your requirements, true to our maxim:

„A satisfied client is the best reference“.

The information in this brochure contains details and features that may differ from those described in individual cases or may be subject to technical changes.

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