



Feel comfortable in your building

Our solution for Simplastic





Natural light and modern lighting control – Simplastic – Batalha (PT)

Simplastic, based in Portugal, specialises in thermoplastic injection moulding, the assembly of components and finished products. Founded in 1977, the company primarily serves the French, Portuguese and German markets. Its high-profile customers include well-known brands such as Tefal, Krups, Bodum and Rowenta. The thermoplastic injection moulding specialist has now built a new 10,000 m² production facility near the world-renowned centre of mould production – Marinha Grande. Automatic lighting control can save a significant amount of energy, particularly in large halls. The system should take natural daylight into account, whilst also allowing manual override of lighting settings via the control centre or the respective machine operator.

Lighting control with daylight integration

B.E.G. has decades of experience in daylight-dependent lighting control. Initially, 1-10 V technology was used, but this is increasingly being replaced by DALI technology. DALI is a bus system that was originally developed for luminaires. The term DALI stands for 'Digital Addressable Lighting Interface' and refers to a standardised digital control gear interface. This standard ensures the compatibility and interchangeability of control gear from different manufacturers within a lighting system. Daylight-dependent control, or constant light control, utilises natural daylight. To ensure optimal lighting conditions, only as much artificial light is switched on as is needed to maintain the desired brightness level. If the proportion of natural daylight changes, the proportion of artificial light also changes automatically. This saves energy in addition to presence-based control. Simplastic requires different brightness levels depending on the area. In the injection moulding and inspection areas, for example, slightly higher brightness levels are required than in the assembly area. In the warehouse area, on the other hand, work can be carried out with a lower brightness level. It therefore quickly became clear to Simplastic that a control system using DALI presence detectors was the right choice here.

Manual control of brightness levels and night mode

Simplastic has four large zones in the production hall, which are further divided into smaller areas. It should be possible for staff to control each sub-area and its associated groups manually, as well as centrally (via a PC and push-button). There should also be a night mode in which some lights are switched on at 20% brightness.

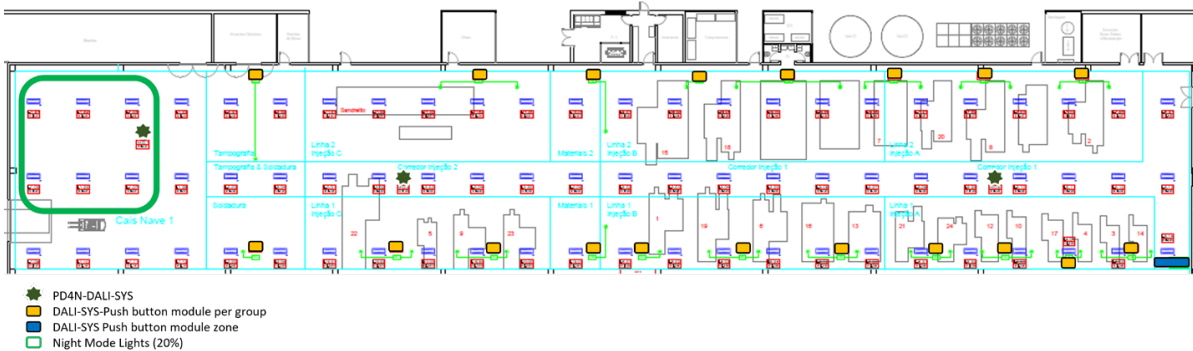
Our solution – DALI-SYS

To control devices centrally, you need to network several devices. This is made possible by a suitable lighting control system. B.E.G., Simplastic and the energy and project consultancy CCEnergia decided to utilise the advantages of the B.E.G. DALI-SYS lighting control system. B.E.G. DALI-SYS is a modular, networkable system that is freely scalable. The components are addressable and operate on the principle of distributed intelligence. The DALI wiring is independent of the group configuration. This means that changes can be made quickly and easily without the need for rewiring. With B.E.G. DALI-SYS, rooms, areas or even the entire building can be controlled using standard push-buttons or via a PC/smartphone. B.E.G. handles the individual planning right through to implementation in close consultation with the planners and building owners.

Systems used: KNX, DALI

Products used*:
13 x Presence detector PD4N-DALI-SYS +SM-Base
34 x Push-button modules PBM-DALI-SYS-4W
12 x Power supplies PS-DALI-SYS-USB-REG
4 x ROUTER-DALI-SYS-REG
1 x ViStation Pro

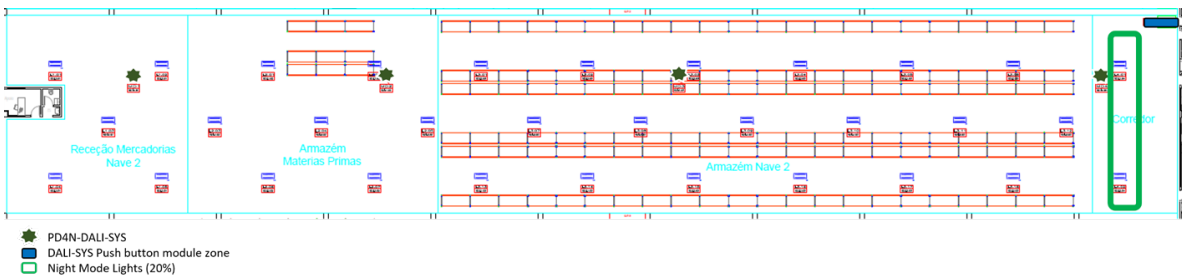
Zone 1



„Injection Moulding and Inspection“ – There are 28 injection moulding machines in this zone. The lighting in the aisle is controlled by three PD4N-DALI-SYS-AP units based on ambient light levels. The luminaires in each machine area can be manually controlled (ON/OFF/dimming) via

push-buttons using our DALI-SYS push-button modules. Two or more machine operators share different push-buttons, which control all associated groups, and operate their luminaires together within their zone.

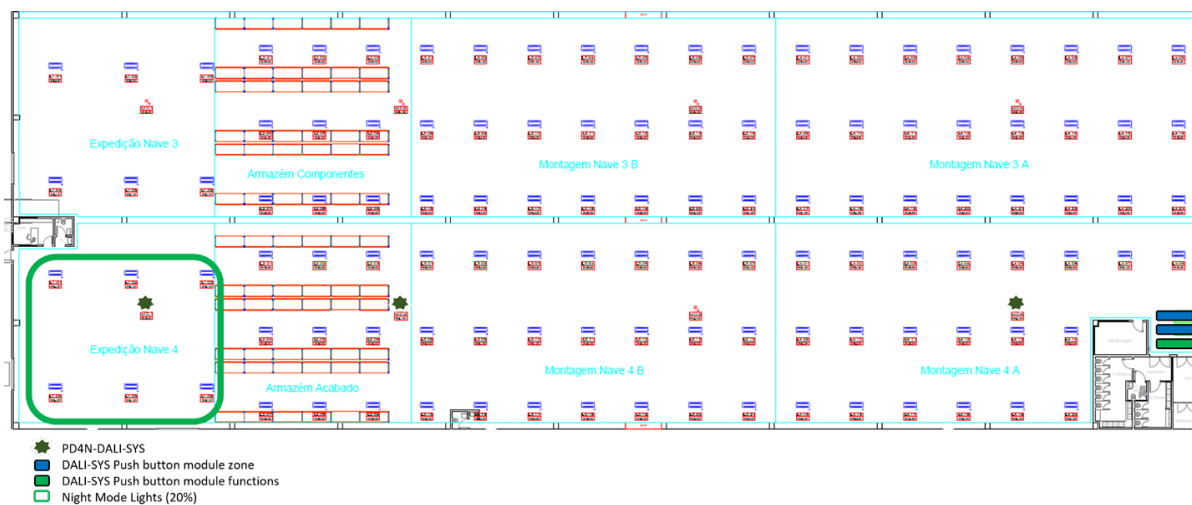
Zone 2



„Goods Receipt“, „Raw Materials Store“, „Warehouse Zone 2“ and „Corridor Zone 2“ – In this zone, the four sub-areas are

each controlled by a PD4-DALI-SYS-AP, with an additional central push-button for each area.

Zone 3 und 4



„Component and Prefabricated Parts Storage“ and „Assembly Zones 3 and 4“ – In these zones too, the four sub-areas are each controlled by four PD4-DALI-SYS-AP units and a

central push-button for the zone. In Zone 4, a push-button with a DALI-SYS push-button module is also installed to control the respective functions.

Implementation

Here, four functions have been selected:

- Automatic: The lighting in Zones 2, 3 and 4, as well as the corridor in Zone 1, is switched on at 100% and automatically regulated to take account of natural daylight, and switched off when necessary.
- Manual: Lighting in zones 2, 3, 4 and the corridor in zone 1 is off.
- ON/OFF Zone 1: All luminaires in zone 1 are also included in group 0 to allow a central on/off command to be sent.
- Night mode: In this mode, some of the lighting (see also the diagrams showing the zones) is dimmed to 20%, whilst the rest of the lighting is switched off. Simplastic operates on a 24-hour shift basis in certain areas of the hall from 8 am on Monday to 6 pm on Saturday. As a rule, there is no work on Sundays and on Mondays until 8 am.

The lock function is used to implement the desired mode. The DALI-SYS multisensor (DALI-SYS presence detector) receives a 'Lock' signal via the push-button module. The detector is locked, the sensor's automatic function is deactivated, and at the same time a final command is sent to the DALI luminaires. In our case, night mode is activated as a scene. The function could also be activated automatically via a calendar function (included in both versions of the B.E.G. ViStation) from 6 pm on Saturday to 8 am on Monday. As Simplastic sometimes works continuously during periods of high order volume and other closing times are possible, it was decided to implement the function manually via the push-button only.

Entire hall

Thanks to its location in southern Europe, plenty of daylight can be utilised, thereby saving a significant amount of energy. Occasionally, however, daylight can distort light measurements. At Simplastic, it was quickly realised that light measurements were being affected by the upper side windows on the south side. In the afternoon, the sun shines obliquely through the windows onto the PD4N-DALI-SYS, thereby di-

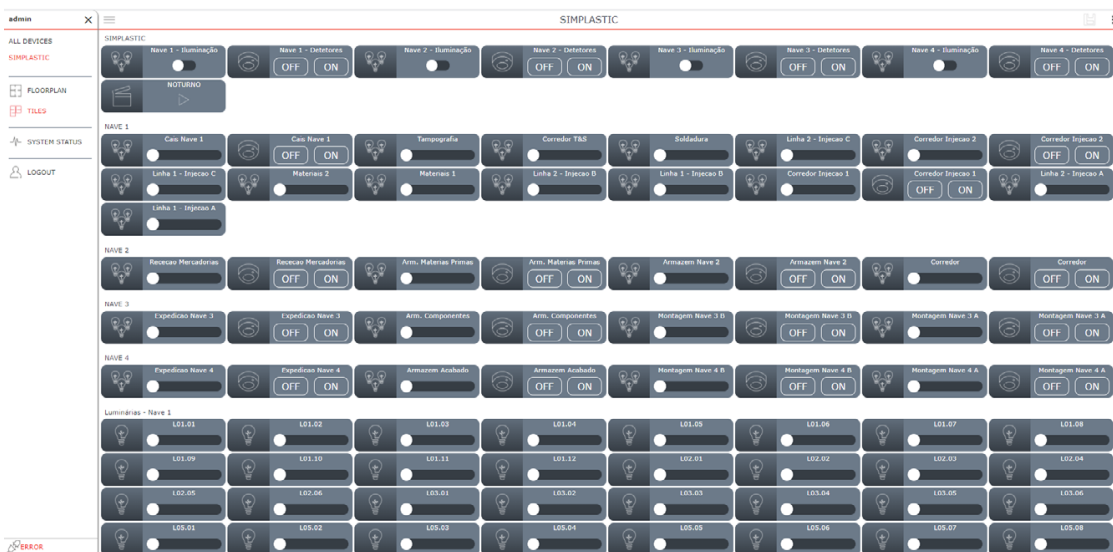
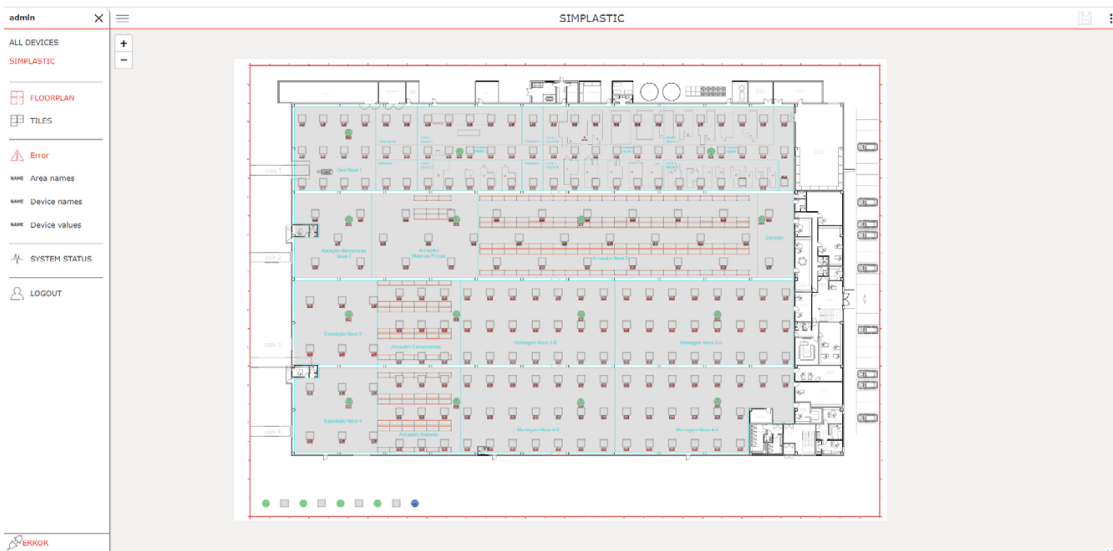
starting the light measurement. *Only a fraction of the daylight reaches the floor. A solution was quickly found. Using the calendar function, the sensors are disabled between 3 pm and 8 pm and therefore no longer control the lighting. Before the sensor is disabled, it can still send one final signal. To approach the desired lux value of 500, a signal is sent to the lights to dim to 80%.*



Visualisation

To meet the demands of a modern building, it is almost impossible to imagine a control system that does not allow operation via a standard web browser on a PC, tablet or smartphone. B.E.G. Visualisation offers the necessary features for almost all applications. The visualisation is customised to the customer's specific requirements. Plans, photos and drawings can be integrated into the system.

All luminaires, multisensors and other relevant DALI-SYS components are registered at the factory, and the end customer receives a 'ready-to-go' visualisation with an informative display that allows manual settings. User management and the assignment of rights can be controlled centrally via ViStation. Both the system integrator and the end customer can create a virtually unlimited number of users and assignments to allocate the appropriate permissions.



Implementation

Two different versions available

Using a ViStation (the visualisation interface for our B.E.G. DALI-SYS control system), this can be achieved using two different versions. In the 'full' visualisation, the building is displayed as a 2D plan showing all lights, detectors and push-buttons. The current status of the lights can also be viewed in real time. In the Light version, various buttons are displayed as tiles with project-specific details, e.g. luminaire 1 "Injection moulding".

The tile view allows lighting groups to be controlled (ON/OFF/DIM) and scenes to be called up. This view is also included in the Pro version. A calendar function (including an astro function) has also been integrated into both versions to control the lighting at specific times, regardless of movement. B.E.G. as an after-sales service partner.

	light	pro
Group-based lighting control via PC, Tablet or Smartphone	✓	✓
Live Feedback of Lighting Level	✓	✓
User Rights and User Groups Management	✓	✓
Software Update and Backup&Restore Management	✓	✓
Scheduler (incl. Astro function)	✓	✓
Device-based lighting control and feedback		✓
Floor plan view		✓
Live Feedback of Occupancy		✓
Devices Health Status Monitor and Messenger		✓
Floor plan design and it's integration		✓
Occupancy Trending (Occupancy Monitor)		✓
Energy Consumption Trending (Energy Monitor)		✓
Predictable Maintenance tools (Operating hours counter, „Health Care Alarm“)		✓

13x



93340 PD4N-DALI-SYS

+



93307 SM Base

34x



92842 PBM-DALI-SYS-4W

12x



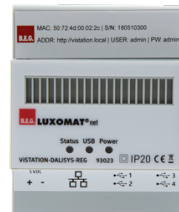
92843 PS-DALI-SYS-USB-REG

4x



93480 ROUTER-DALI-SYS-REG

1x



93023 ViStation Pro

Simplastic opted for the Pro version, which allows them to control lights via the 2D plan or view their status. Currently, three staff members use the visualisation system: an IT staff member, the foreman for Zones 1 and 2, and the foreman for Zones 3 and 4. Changes to the calendar function and the creation of new users can be carried out at any time by the administrator (IT staff member).



Even after commissioning, B.E.G. remains available to offer advice and support and, as part of its after-sales service, provides system maintenance if required. In addition to any necessary changes to the building's parameters, the service also includes assistance with luminaire maintenance (e.g. re-addressing).

Personal advice

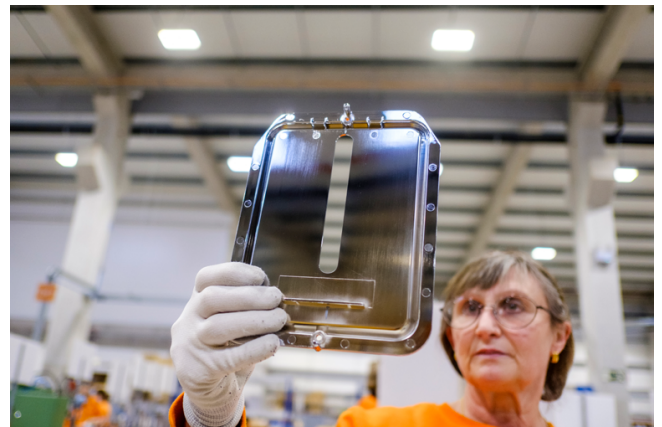
Our team is always on hand to offer advice and assistance. If you have any questions about your order or our products, please give us a call or send us an email.

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Feel comfortable in your building



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