



Conventional installation versus automation

In many areas of building installation, effectiveness and comfort are demanded but building automation solutions are not employed. In such cases, presence or motion detectors are often used.

At the same time, dimmed lighting is increasingly being realized by means of DALI. The **gesis®** presence detector as a fully-fledged DALI master is the ideal solution here.

Yet overvoltage protection is also becoming more and more important. It's not only a lightning strike that can destroy electronic systems. Overvoltages can also be caused by switching operations, for instance. The overvoltage protection that can be ideally integrated into the **gesis®** installation provides protection here.



gesis[®] .

Other applications designed to be pluggable. Presence detectors, overvoltage protection and transformers.

■ Other applications for pluggable electronic systems.

Motion and presence detectors are being used for lighting control with increased regularity. Above all in offices and classrooms, and not only in corridors or adjoining rooms. Both switching detectors and dimming detectors are used. Dimming is realized almost exclusively via DALI. The reliable detection of slight motions is crucial to applications for sedentary activities. Simple detectors are not suitable for this purpose, since they have a very coarse data acquisition grid and detect only severe motions. Wieland detectors take this into account and are equipped with very sensitive detectors.

■ DALI

Digital Addressable Lighting Interface, DALI for short, is the standard in lighting control. Besides 230V, two conductors are laid for controlling electronic ballasts for fluorescent lamps, LED ballast sand other applications. These are normally laid together with the power supply lines in one conductor. DALI is a conventional master/slave system. It controls and regulates, in dependence of brightness and motion, up to 64 DALI ballasts in four separate groups.

■ Overvoltage protection

Overvoltage protection is becoming increasingly important. The financial consequences come not from defective devices such as computers, but the outage costs caused by the defect. The **gesis**[®] overvoltage protection is a Type 3 arrester which is used near to the end devices. For the protection against overvoltages caused by lightning flashes to work properly, a comprehensive lightning protection concept must be designed for the building.

■ Electronic systems made pluggable

With the advent of LED technology, devices such as the electronic transformers on the following pages are certainly no longer in such great demand even for customized lighting. Here, they are mainly symbolic for the potentials created by the **gesis**[®] plug systems. We tailor, with pleasure, electronic systems for our customers so they can be simply plugged into the electronic installations.

The benefits of pluggable electronic systems

- Easy, quick and safe to install
- No need to open the housing to connect the conductor (avoiding accessible electronic systems)
- Fast change of electronics in case of a fault
- Industrial design quality transferred to the installation

Classrooms as an example

Requirements

The lighting in classrooms has to be controlled in dependence of brightness and presence. The various elements of natural light between window side and corridor side must be noted and the light strips at various levels considered. The lighting must be activated by a fully-automated mechanism if required. The lighting levels are to be changed or switched on by force as and when necessary. In large rooms, where the range of one presence detector is inadequate, a second detector has to be used as a slave to the 1st detector.

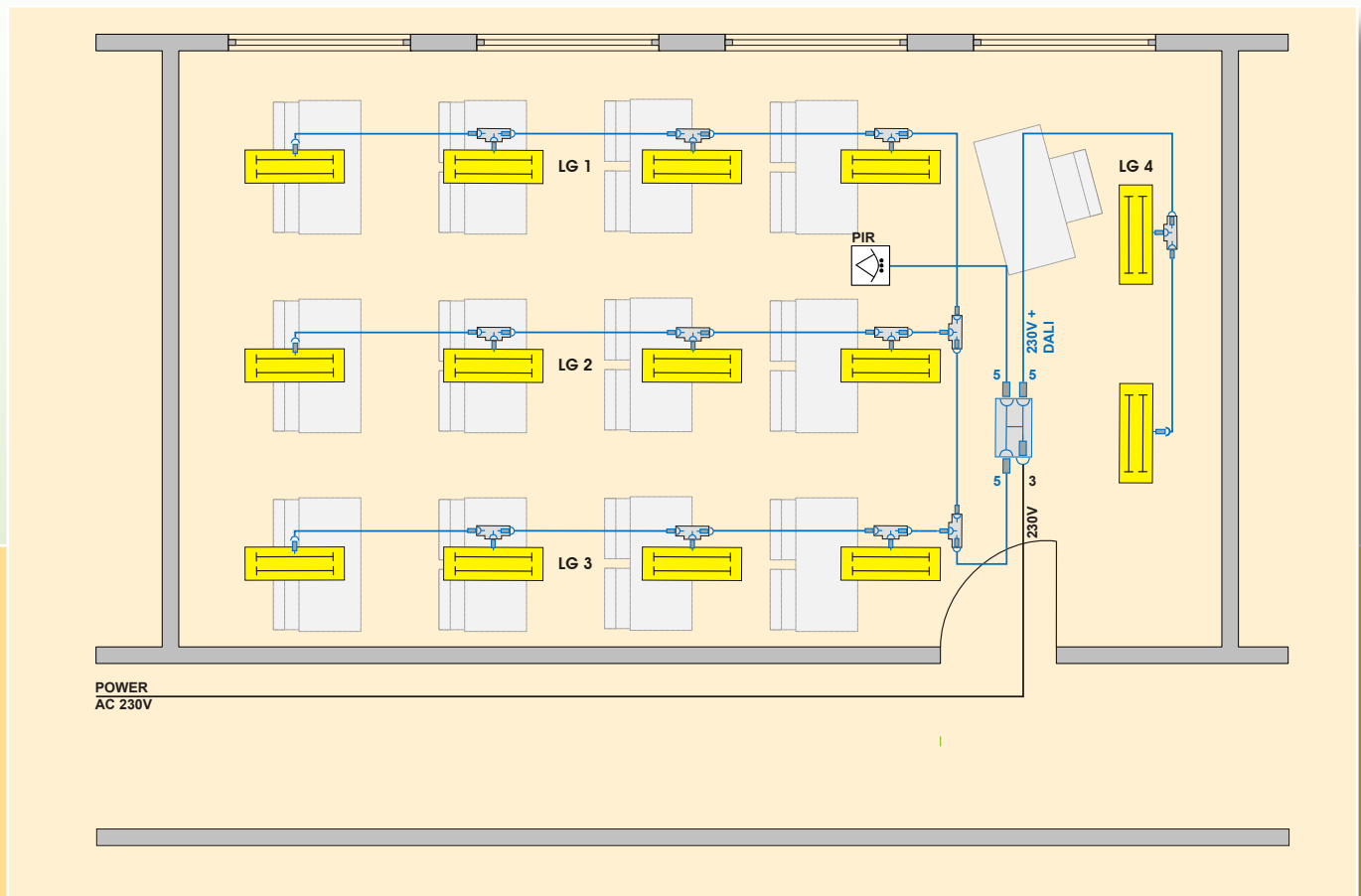
Realization

The DALI presence detector performs this task par excellence. As the DALI master, it can control up to 64 DALI ballasts in four groups. Three of these groups can be dimmed and one group, for the blackboard lighting, can be switched. Various offsets can be specified for the three dimming groups. As a result, the window side can be dimmed more than the corridor side when there is enough

exterior light. The installation location of the sensor serves as a reference point. The lighting can be controlled manually via the remote at any time. If the sensor detection range is not adequate, another detector is quickly integrated into the pluggable installation as the slave. Just like the master sensor and the lights, it is simply integrated into the DALI line in parallel.

Used automation devices:

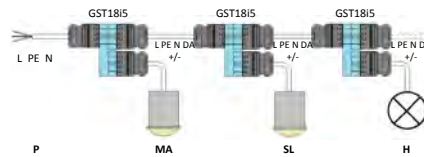
- 1 x DALI presence detector
- 1 x power supply GST18i5 socket in pastel blue for the local connection (in this case, only N, L and PE are connected).
- 1 x distributor with 1 E/3A GST18i5 pastel blue
- Depending on the number of lights, T-pieces GST18i5 pastel blue
- Pre-assembled conductors GST18i5, pastel blue in various lengths
- Lights with GST18i5 pastel blue connection



DALI presence detector



| Type | Std. pack | Part no. |
|----------------------------|---|---------------|
| Master gesis P CLS-DALI-31 | 1 | 83.020.0115.1 |
| Slave gesis P MS-DALI-SL | | 83.020.0116.1 |
| Rated voltage | 230 V / 50 Hz | |
| Output | DALI 64 ballasts in 4 groups (3 x dimming, 1 x switching) | |
| Mounting location | Ceiling | |
| Mounting height | 2.4 to 3.0 m | |
| Range | 8-12 m, round | |
| Plug system | GST18i5, Code 2, pastel blue | |
| Accessories | T-distributor 92.050.1453.0 | |



Comment:

Power supply system:

Power is supplied to the system via a female connector, GST18i5, pastel blue, to which only L, N and PE is connected. The DALI signal is supplied from the master to the DALI installation.

Through-wiring:

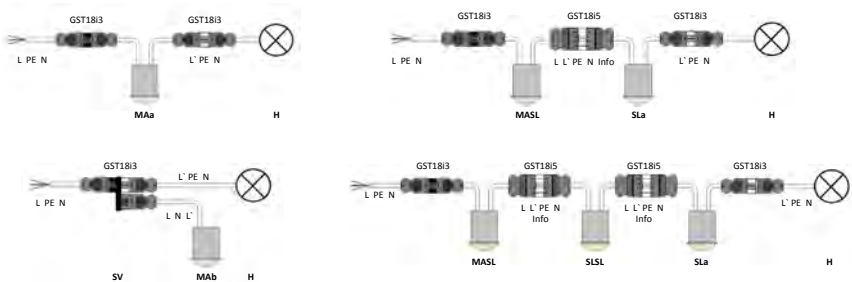
The through-wiring is completely 5-pole. All stations and detectors are connected in parallel.

| | Function | Input/output | |
|-----------|----------------|--------------|---------------------|
| | | Type | male GST18 Code2 |
| P | Infeed | Only 230 V | 5-pole pastel blue |
| MA | Master | 230 V DALI | |
| SL | Slave | | |
| H | DALI luminaire | | |



Master with direct luminaire connection (MA)
83.020.0110.1


| Type | Std. pack | Part no. |
|--|-----------|---------------|
| Master with direct luminaire connection (MA) gesis P MS8-360-1L | 1 | 83.020.0110.1 |
| Master for connecting a cross connect (MAB) gesis P MS8-360-1Lb | 1 | 83.020.0110.2 |
| Cross connect accessories | | 92.030.0153.1 |
| Master for connecting a slave (MASL) gesis P MS8-360-1LSL | 1 | 83.020.0110.3 |
| Slave with direct luminaire connection (SLa) gesis P MS8-360-SLb | 1 | 83.020.0111.1 |
| Slave with connection for further slave (SLSL) gesis P MS8-360-SLSL | 1 | 83.020.0111.2 |




| | Function | Input | | Output | |
|-------------|----------|--------------------------|---------------------|--------------|---------------|
| | | Type | male GST18 Code1 | Type | male GST18 |
| MAa | Master | 230 V | 3-pole black | 230 V | 3-pole white |
| MAB | Master | Contained in the output | | | 3-pole brown |
| MASL | Master | 230 V | 3-pole black | to the slave | 5-pole white |
| SLa | Slave | from the master or slave | 5-pole black | 230 V | 3-pole white |
| SLSL | Slave | from the master or slave | 5-pole black | to the slave | 5-pole white |
| SV | | Cross connect | | | |
| H | | Luminaire | | | |

| | |
|-------------------|---|
| Rated voltage | 230 V / 50 Hz |
| Switching current | 10 A |
| Switching load | 165 A/20 ms 800/20 ms max. 140 µF |
| Mounting location | Ceiling |
| Mounting height | 2.4 to 3.0 m |
| Range | 8-12 m, round |
| Plug system | See table, left |


IR transmitter for commissioning and operating the presence and motion detector

|  | Type | Std. pack | Part no. |
|---|--|-----------|---------------|
| | Commissioning gesis PIR IR B-21 IPD | 1 | 83.020.0120.0 |
| <p>This remote control is required for setting the presence detector functions, e.g. delay times, lighting levels or the assignment of DALI groups. It can be used for any number of detectors.</p> | | | |


IR transmitter for operation

|  | Type | Std. pack | Part no. |
|--|------------------------------------|-----------|---------------|
| | Operation gesis PIR IR B-04 IPD | 1 | 83.020.0120.1 |
| <p>This remote control permits the user to operate the assigned presence or movement detectors, and hence temporarily change the dimming value, for example.</p> | | | |

gesis[®] overvoltage protection Type 3

|  | Type | Std. pack | Part no. |
|---|----------------------------------|---|---------------|
| | Optical defect indicator | 1 | 84.990.1242.0 |
| | Acoustic defect indicator | 1 | 84.990.1243.0 |
| | Connectors | GST18i3, Code 1, black Type 3 according to EN 61643-11+A11 | |
| Worker classification | Class 3 according to IEC 61643-1 | | |
| U _e | 255 V / 50 Hz | | |
| Max. fusing | 16 A gl/gG (B 16 A) | | |
| Ambient temperature | -25° C ... +40° C | | |

Electronic transformer for low-volt halogen lights

| | Type | Std. pack | Part no. | |
|--|--|--|-------------------------------|---------------|
|  | Assembled on primary and secondary side 1 | 1 | 99.449.9999.9 | |
| | Nominal voltage | | 230 V 150-60 Hz | |
| | Rated current | | 0.45 A (primary) | |
| | Output | | | |
|  | Nominal voltage | | 11,8 V | |
| | Connected load | | 35 ... 105 W | |
| | Ambient temperature | | max. 50° C | |
| | Short-circuit protective device | | Electronic, automatic restart | |
| | Dimensions (transformer) | | 175 x 42 x 18 mm | |
| | Connection | | | |
| | Primary side | | GST18i3, Code 1, white | |
| | Secondary side | | ST 16/2 BS | |
| |  | Assembled on primary and secondary side, assembled pluggable | 1 | 99.448.9999.9 |
| | |  | Assembled on secondary side | 1 |