Beghelli
PRÄZISA

SAFETY LIGHTING

DECENTRAL
AND
CENTRAL
SUPPLY

CATALOGUEV02

LIGHT IS SAFETY

True to this motto, **Beghelli PRÄZISA** has been a competent partner for specialist planners, expert companies, industries, trade and commerce worldwide for more than three decades. We develop, manufacture and distribute **safety lighting** as well as **interior and exterior lighting**.

Important criteria for the design of our products are the **preservation of resources** and the **protection of the environment**.This is done through products with **high efficiency** and simple operation. This reduces the costs of assembly, installation and operation - the latter through lower **energy consumption and longer service life**. Our standards for general and safety lighting are very high.

We are constantly developing new functions and designs of innovative lighting concepts. This way we do not just provide safety through lighting, but also stage buildings and public spaces.

RELIABLE

For lighting control and monitoring, we have been relying on wireless communication according to the Zigbee® standard for more than 15 years. This allows optimal management of indoor and outdoor lighting. The standard is particularly advantageous for construction and renovation of new lighting and the renovation of existing lighting.

SUSTAINABLE

Our concepts SmartLighting and SicuroEmergencyLighting are extremely efficient. Lighting power is reduced up to 75%, lighting quantity up to 40%. Installation and maintenance are easy.
This saves energy and protects the environment.

INNOVATIVE

The series TitanatEmergencyLighting is powered by lithium-titanate batteries. The service life is 10 years and is therefore cheaper and safer than the central battery supply. The system can even be operated without any problems in extreme temperature ranges from -20 °C to +50 °C.

COMPACT

Tula combines escape sign and safety luminaire and replaces the separate escape signs and safety luminaires at exits, emergency exits and escape routes. Tula is available for surface wall and ceiling mounting as well as for pendant mounting and can be flexibly integrated into any architecture.

VARIABLE

MultiLens is a flat and lightweight downlight for surface wall and ceiling mounting. The light distribution is variable through the multi-focus lens module. Light colours can be individually controlled with the multicolour LED driver.

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GENERAL

CONTROL
DIMMING
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LUMINAIRES
FUNCTIONS

FOR SICURO230
AND SICURO24

CENTRAL SUPPLY SICURO230

DECENTRAL SUPPLY SICURO24

CENTRAL & SUPPLY

CENTRAL SUPPLY WITH S230

for building-related safety lighting ✓

static & dynamic control ✓

risk-depending dual self-contained supply ✓

mode-depending reduced self-contained supply ✓

DECENTRAL
S230 & S24

DECENTRAL SUPPLY WITH S24

- for fire sections related safety luminaires
- static & dynamic control
- **mode-depending reduced self-contained supply**
- **extreme version for extended temperature ranges**

SICURO230

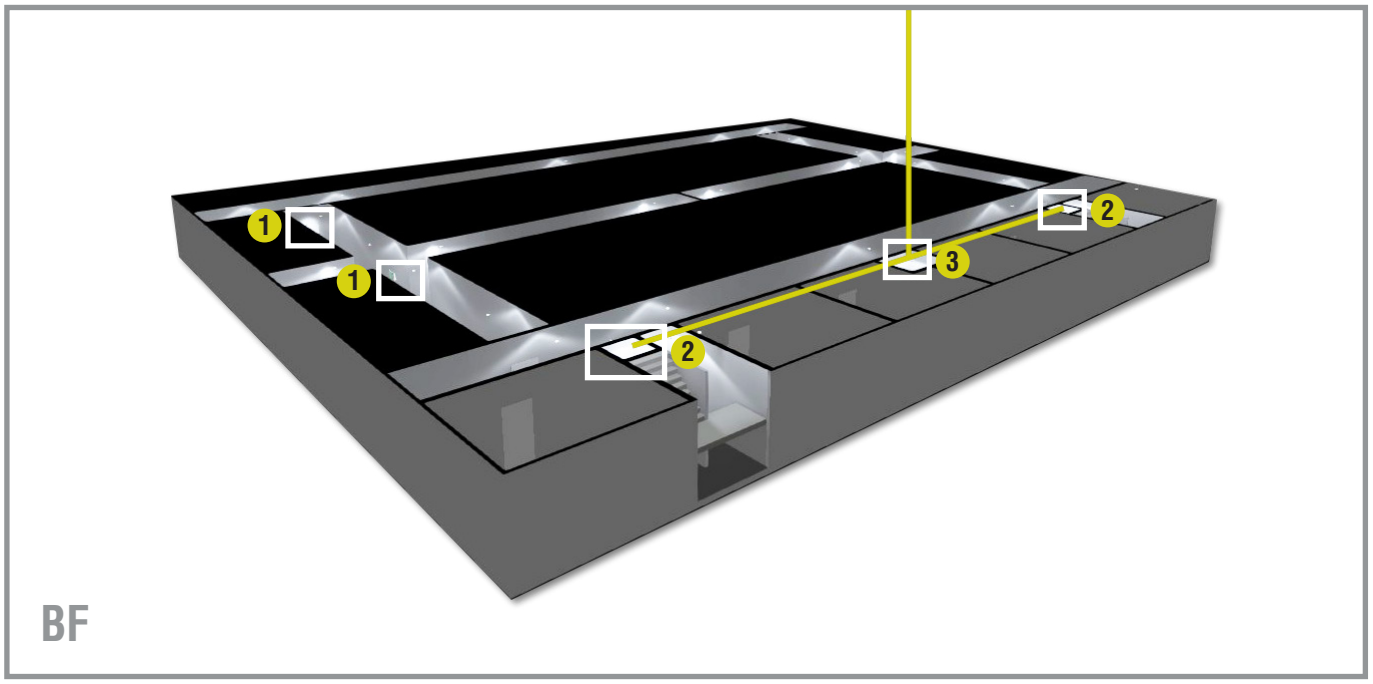
System without power limitation for supplying the safety lighting in a building – concept with one central station and a maximum of 32 sub stations

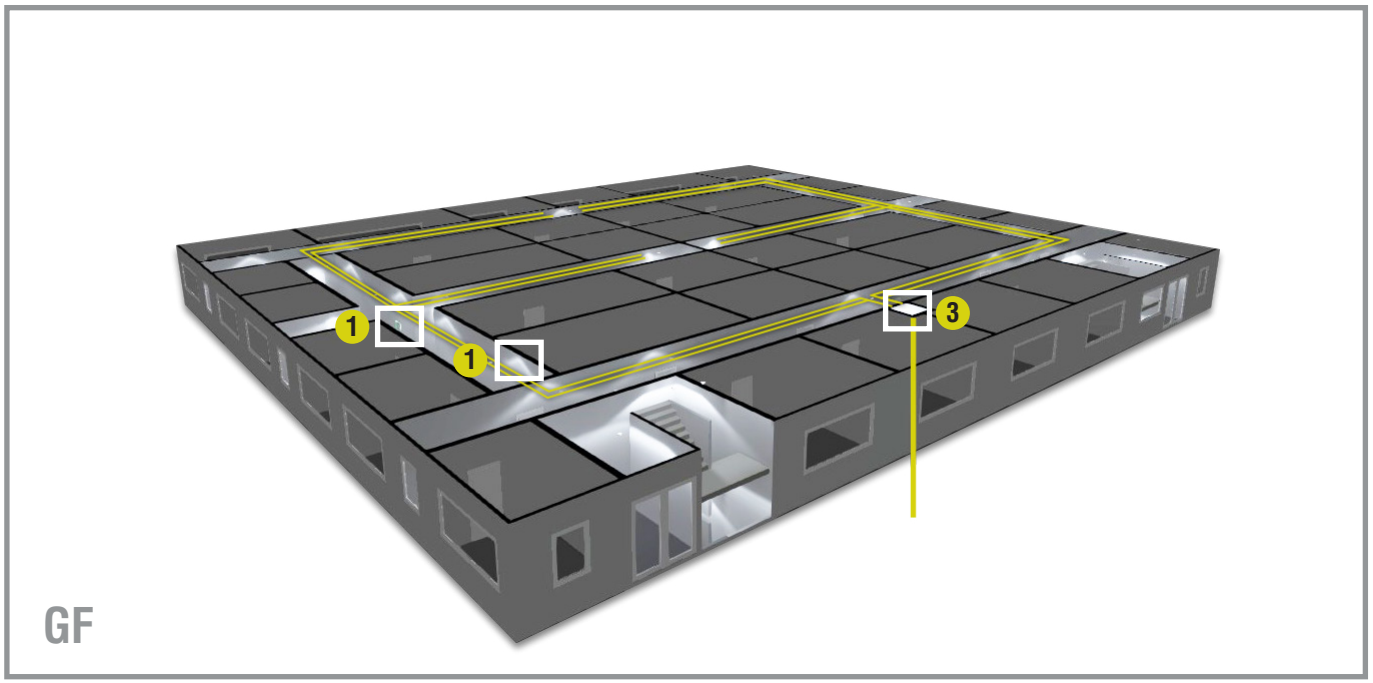
battery compartement

additional distributor

additional cables

F30 partly functional integrity





CENTRAL SUPPLY WITH SICURO230

2 CENTRAL STATION

3 SUB STATION

Danger-depending dynamic control of the safety lighting

Demand-depending static control of the safety lighting

Risk-depending dual self contained supply in emergency operation for increasing personal safety

Mode-depending reduced self contained supply in emergency operation for decreasing of battery capacity

Automatic power reduction of indoor and outdoor luminaires in emergency operation

Six combined operating modes in one luminaire circuit

SUPPLY OF

1

SEPARATE
EXIT SIGN LUMINAIRES

SEPARATE
SAFETY LUMINAIRES

COMBINED
EXIT SIGN AND
SAFETY LUMINAIRES

DYNAMIC
EXIT SIGN LUMINAIRES[1]

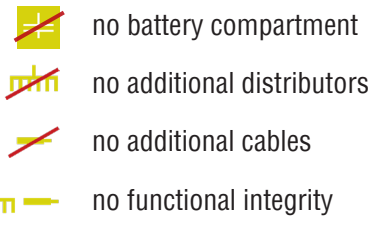
DYNAMIC
LUMINOUS MARKERS[1]

INDOOR AND OUTDOOR
LUMINAIRES

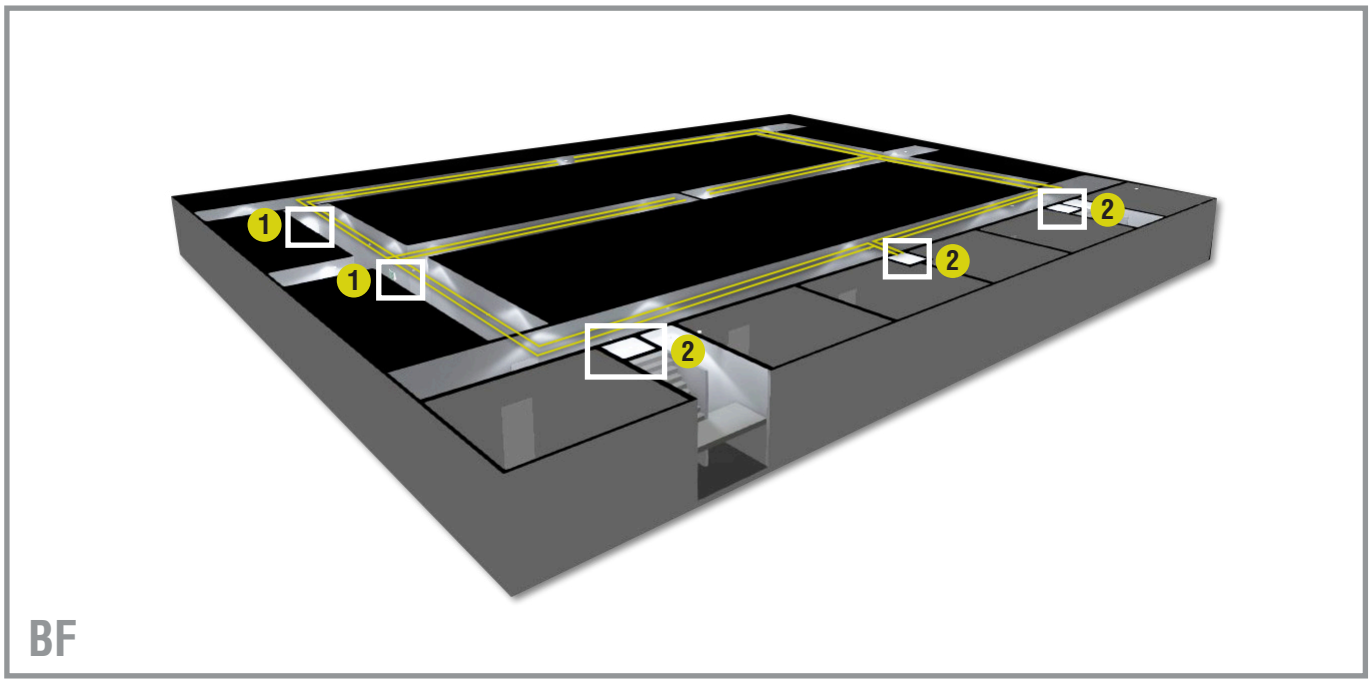
[1] only with S24-sub stations

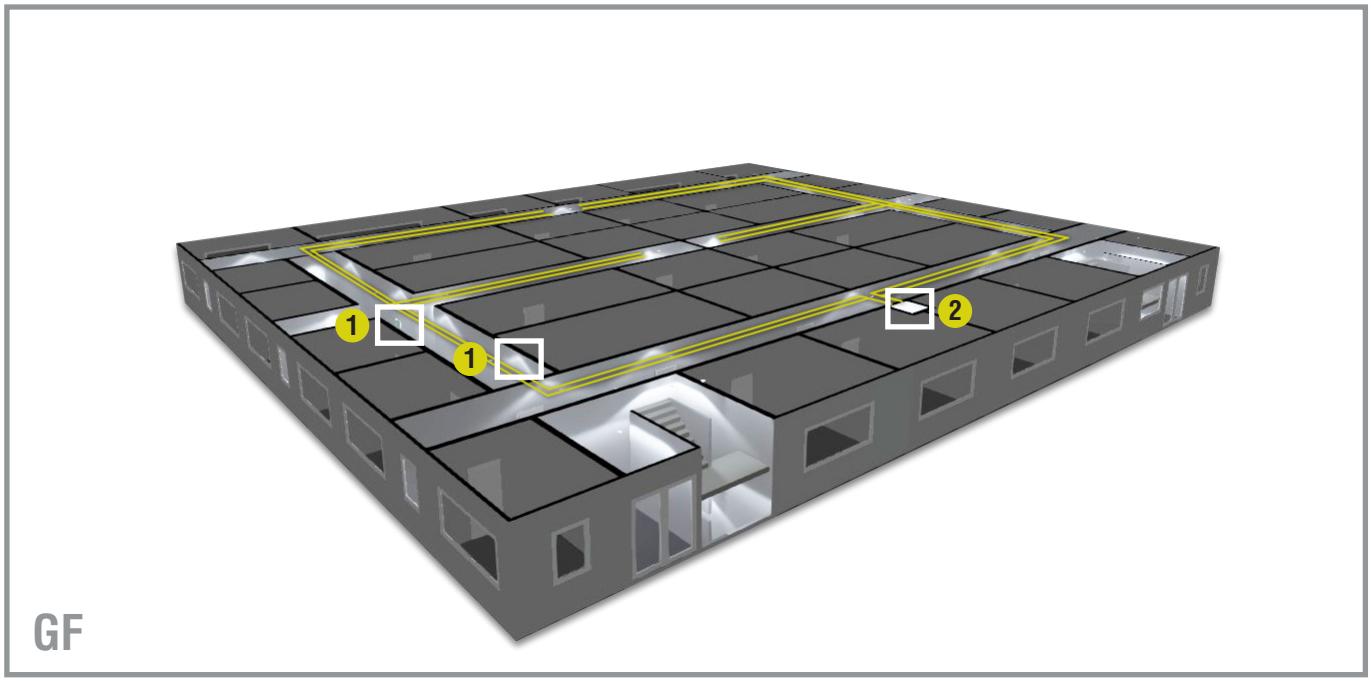
SICURO24

System with power limitation for supplying the safety lighting in a fire area of a building [1] – concept with compact station



[1] in public buildings with fire areas < 1.600 m²





DECENTRAL SUPPLY WITH SICURO24

2 COMPACT STATION

Danger-depending dynamic control of the safety lighting

Demand-depending static control of the safety lighting

Mode-depending reduced self contained supply in emergency operation for decreasing of battery capacity

Automatic power reduction of indoor and outdoor luminaires in emergency operation

Six combinable operating modes in one luminaire circuit

SUPPLY OF

1

SEPARATE
EXIT SIGN LUMINAIRES

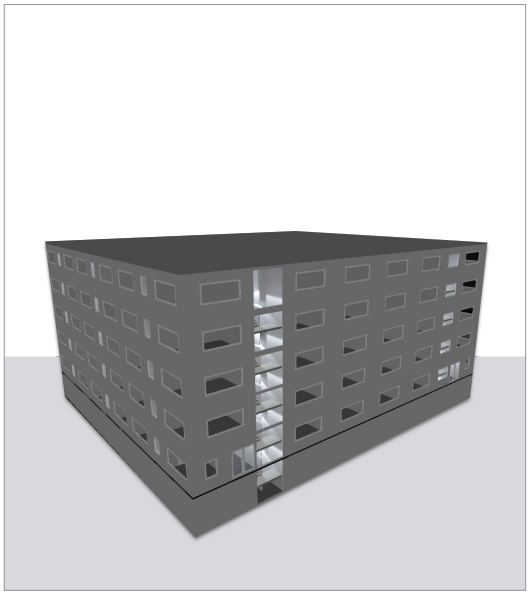
SEPARATE
SAFETY LUMINAIRES

COMBINED
EXIT SIGN AND
SAFETY LUMINAIRES

DYNAMIC
EXIT SIGN LUMINAIRES

DYNAMIC
LUMINOUS MARKERS

INDOOR AND OUTDOOR
LUMINAIRES

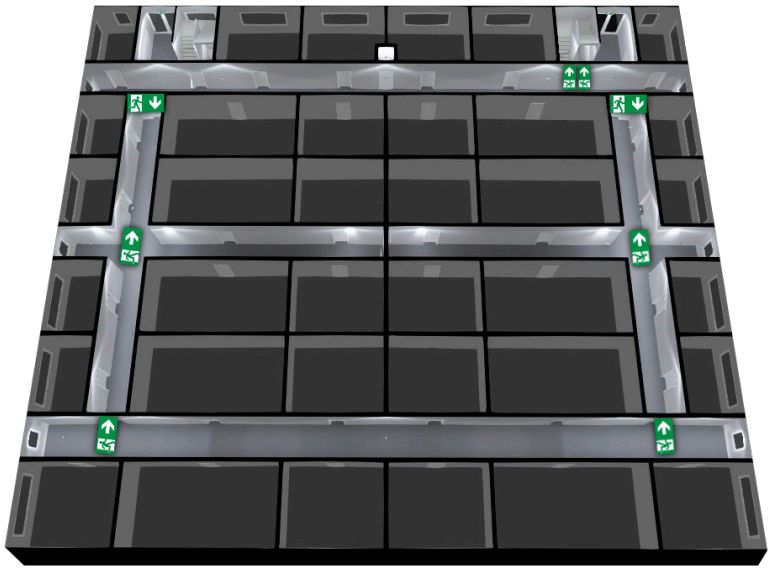


DANGER-DEPENDING DYNAMIC CONTROL WITH SICURO230 & SICURO24

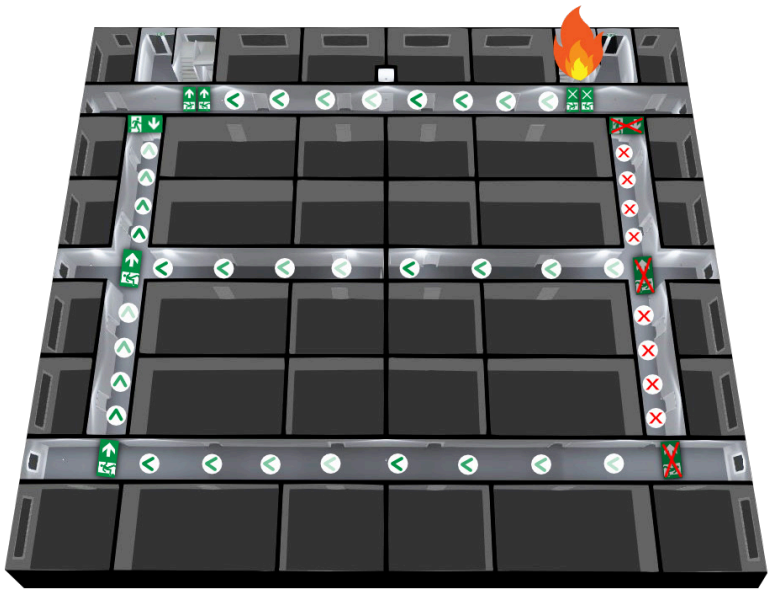
Control of exit sign and safety luminaires, dynamic exit sign luminaires and dynamic luminous markers in mains and emergency operation dependent on danger from:

- Switch-on or switch-off of exit sign luminaires
- Switch-on or switch-off of safety luminaires
- Changing an escape route with dynamic exit sign luminaires and dynamic luminous markers
- Blocking an escape route with dynamic exit sign luminaires and dynamic luminous markers[1]

[1] only with S24-sub stations



NORMAL



CASE OF FIRE

DYNAMIC EXIT SIGN LUMINAIRES

ESCAPE ROUTE TO THE RIGHT

ESCAPE ROUTE TO THE LEFT

ESCAPE ROUTE BLOCKED

DYNAMIC LUMINOUS MARKERS

ESCAPE ROUTE TO THE RIGHT

ESCAPE ROUTE TO THE LEFT

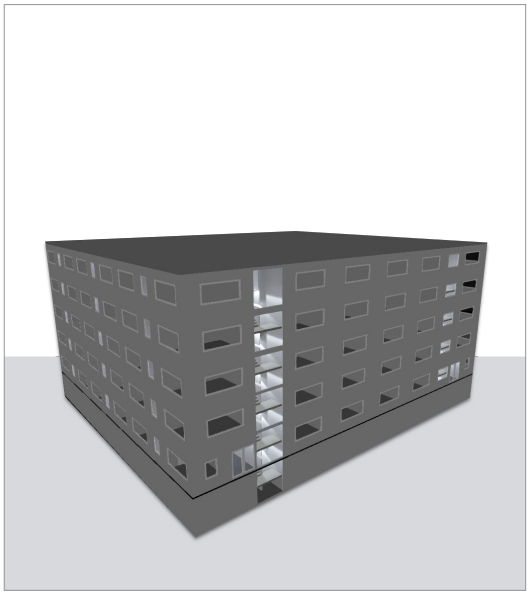
LUMINOUS MARKER SWITCHED OFF

Automatic control over a danger signalling unit and:

- **1-times control input** for exit and safety luminaires
- **8-times control input** for dynamic exit sign luminaires and dynamic luminous markers

Communication between Sicuro24 / Sicuro230 and the exit sign and safety luminaires, dynamic exit sign luminaires and luminous markers **over a mains bus**

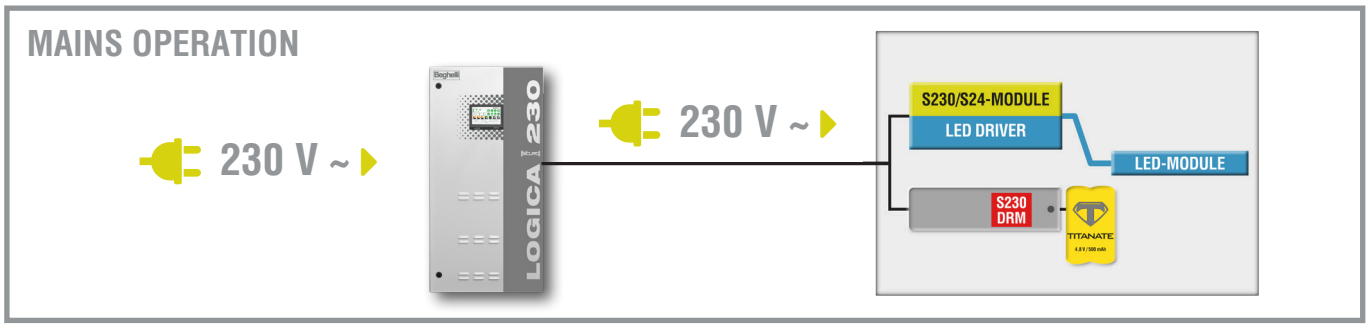
Suitable for safety lighting **in buildings or fire sections with several escape routes**

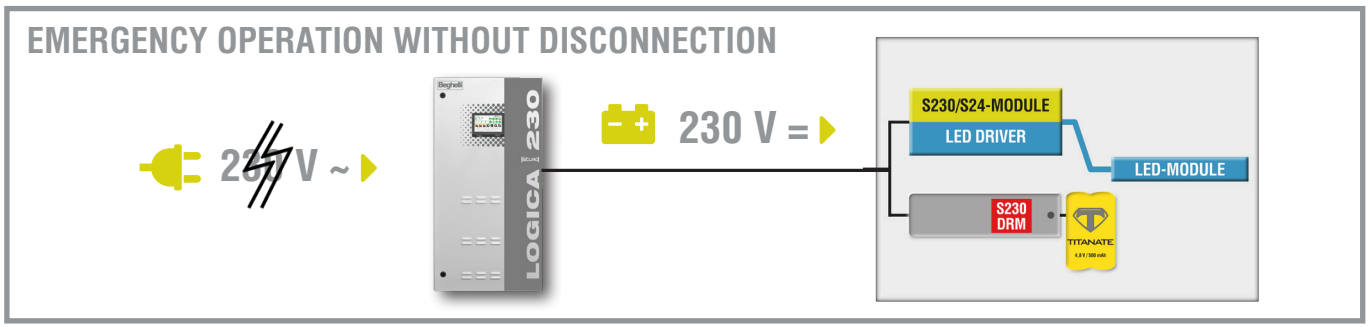


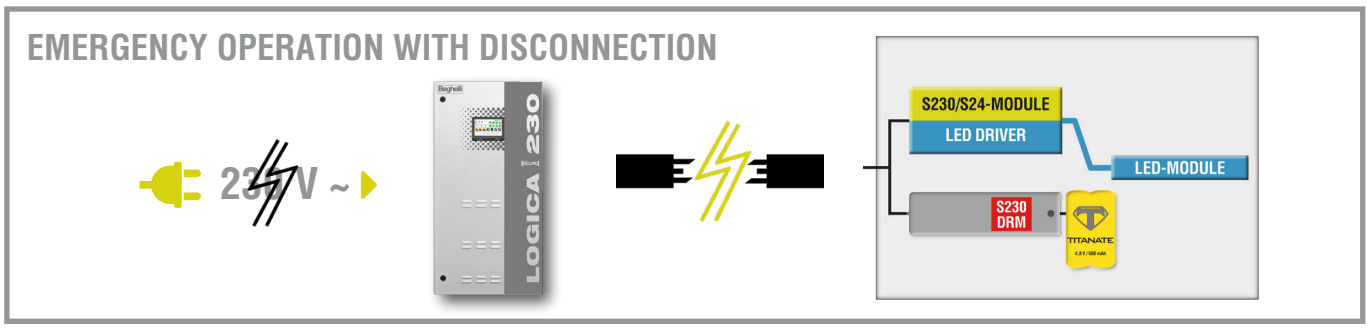
RISK-DEPENDING DUAL SELF-CONTAINED SUPPLY WITH S230

Supply of exit sign luminaires and safety luminaires in emergency operation dependent on a risk, e.g. an interruption of a cable between the central supply and an exit sign luminaire or safety luminaire, by switch-over to the battery of an optional S230 Disaster recovery module:

- **Mains operation:** supply from the mains
- **Emergency operation without disconnection:** supply from the battery of the Sicuro230 system
- **Emergency operation with disconnection:** supply from the battery of the S230 Disaster recovery module







Increasing personal safety

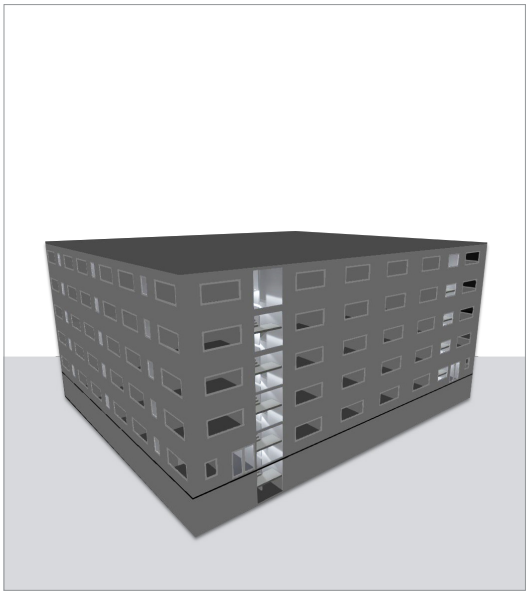
Ideal for safety lighting in areas of **increased personal hazard**

S230 Disaster recovery module with lithium-ion-titanate-battery, charging device and switchover device – easy integration in S230 exit sign and S230 safety luminaires

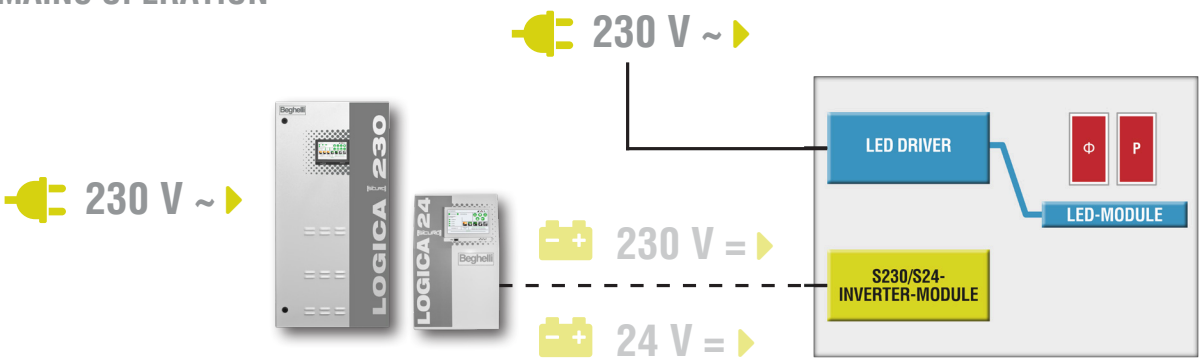
MODE-DEPENDING REDUCED SELF-CONTAINED SUPPLY WITH S230 AND S24

Supply of indoor and outdoor luminaires in emergency operation depending on the mode, by switching to the LED driver of an optional S230- or S24-inverter-module:

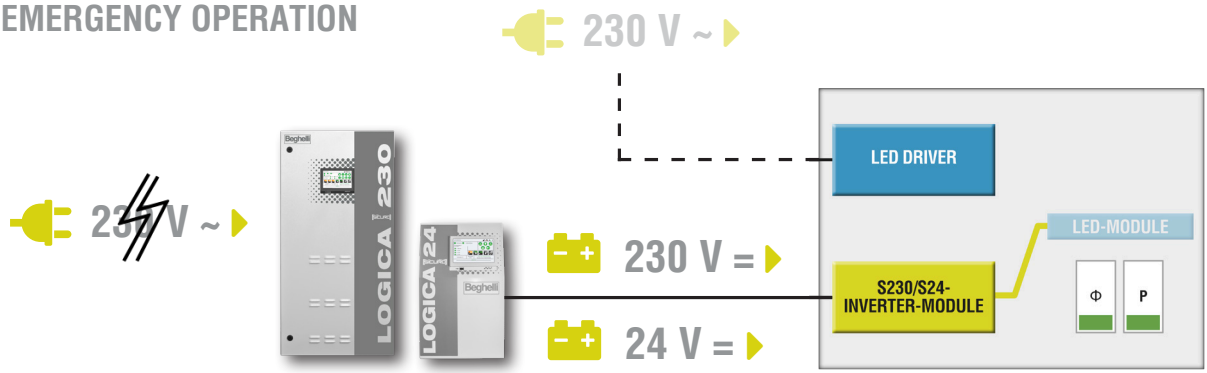
- **Mains operation:** operation of the LED module by the LED driver of the luminaire with non-reduced power
- **Emergency operation:** operation of the LED module by the LED driver of the S230- or S24-inverter-module with reduced power



MAINS OPERATION



EMERGENCY OPERATION

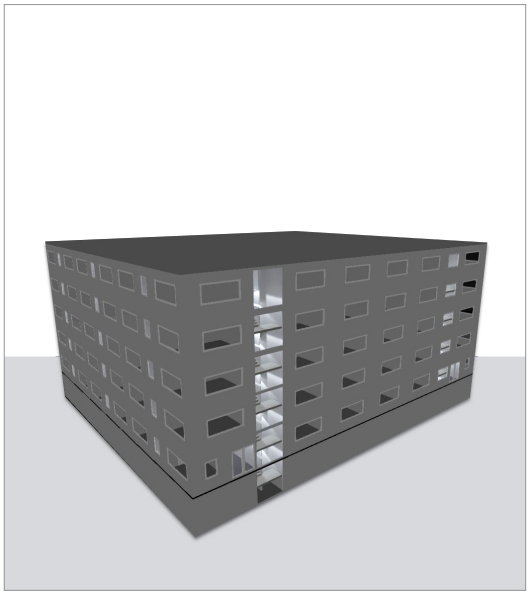


Reduction of the battery capacity

S230-inverter-module with power output of 12 W and **S24-inverter-module** with power output of 6 W or 12 W

Ideal for safety lighting in areas with **higher design demands**

S230- and S24-inverter-module with LED-driver and switchover device – easy integration in indoor and outdoor luminaires



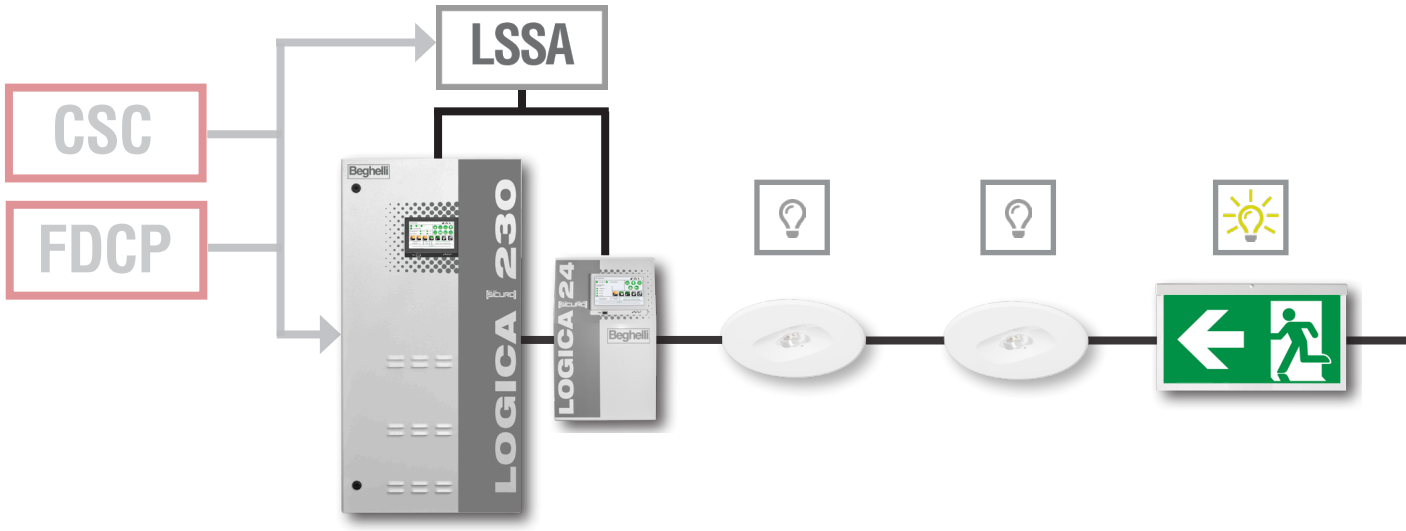
SELECTIVE STATIC CONTROL WITH SICURO230 AND SICURO24

Selective control of **static S230 / S24 exit sign luminaires and safety luminaires in mains and emergency operation** (on / off).

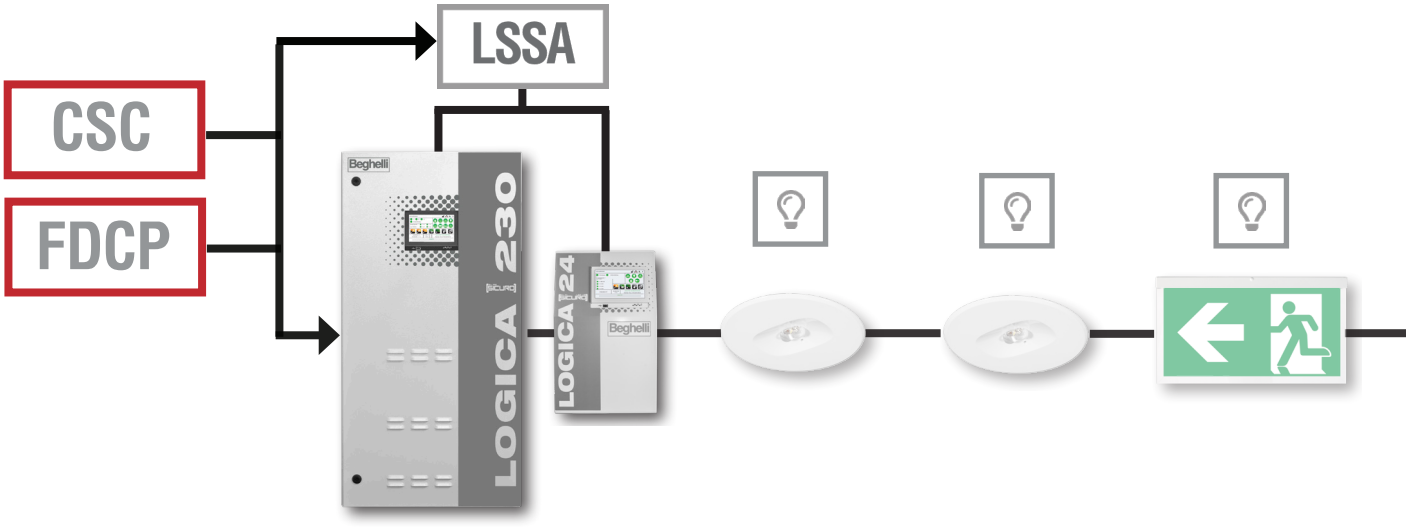
Individual control of circuits and / or luminaires by:

- 1 control input in S230-central station / -sub station or S24-compact station
- Each 1 control input in optional S230-modules resp. S230/S24-inverter-modules in indoor and outdoor luminaires
- Each 8 S24-control inputs in optional LSSA-modules in S230-main station / -sub station or mains distributors

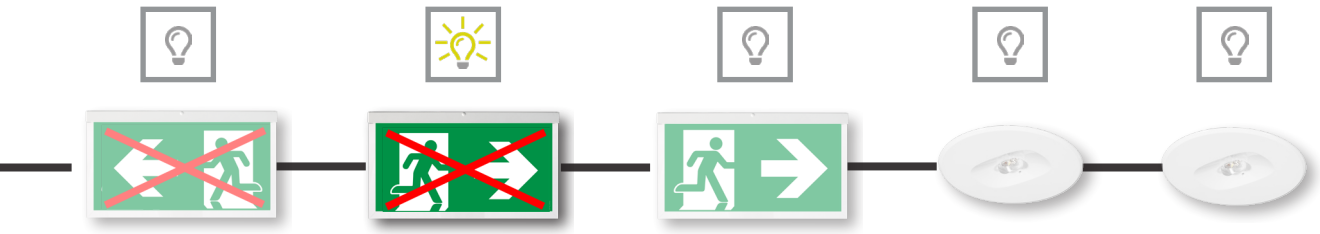
EXAMPLE SAFETY LIGHTING IN NORMAL CASE



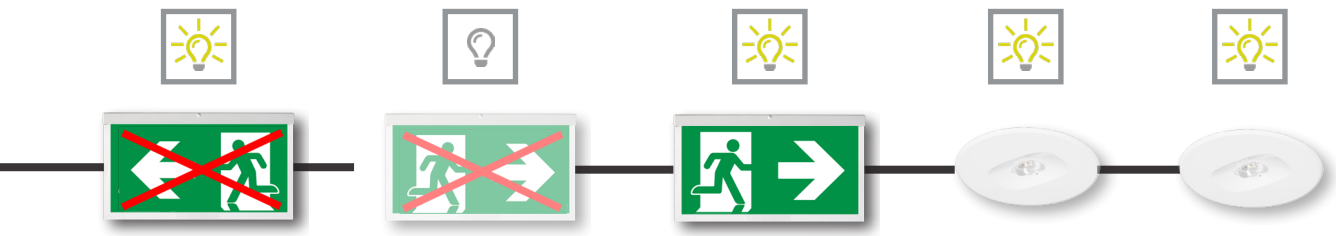
EXAMPLE SAFETY LIGHTING IN CASE OF DANGER

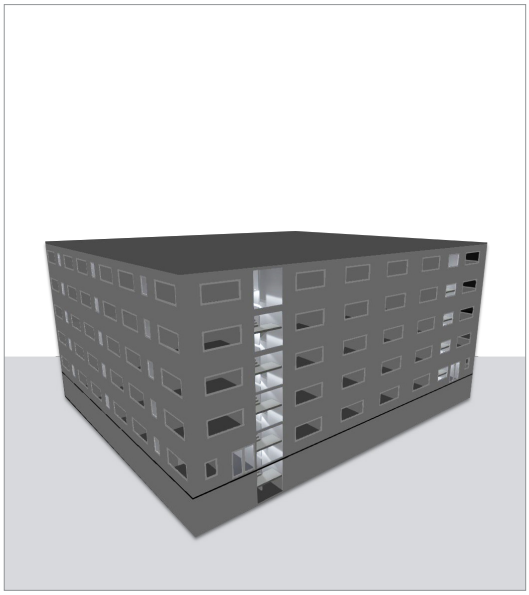


CONTROL BY CSC (COMBINED SIGNALLING CENTRAL) OR FDCP (FIRE DEPARTEMENT CONTROL PANEL)



CONTROL BY CSC (COMBINED SIGNALLING CENTRAL) OR FDCP (FIRE DEPARTEMENT CONTROL PANEL)





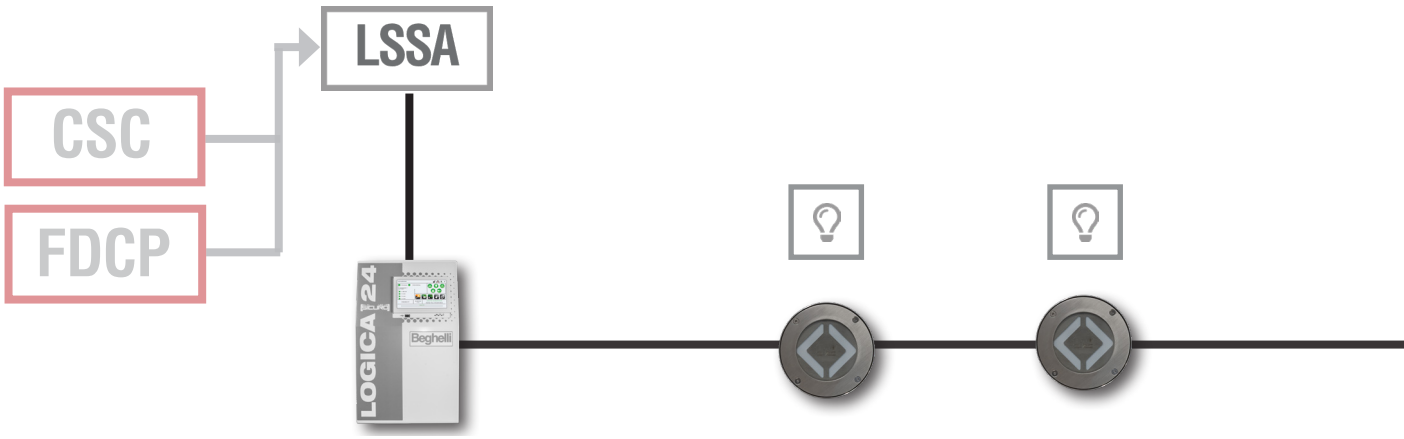
SELECTIVE DYNAMIC CONTROL WITH SICURO230 AND SICURO24

Control of the safety lighting by selective switching of **dynamic S24 exit sign luminaires or S24-luminous markers in mains operation and emergency operation** (on / off / changing an escape route / blocking an escape route), flashing at the same time or not flashing at the same time.

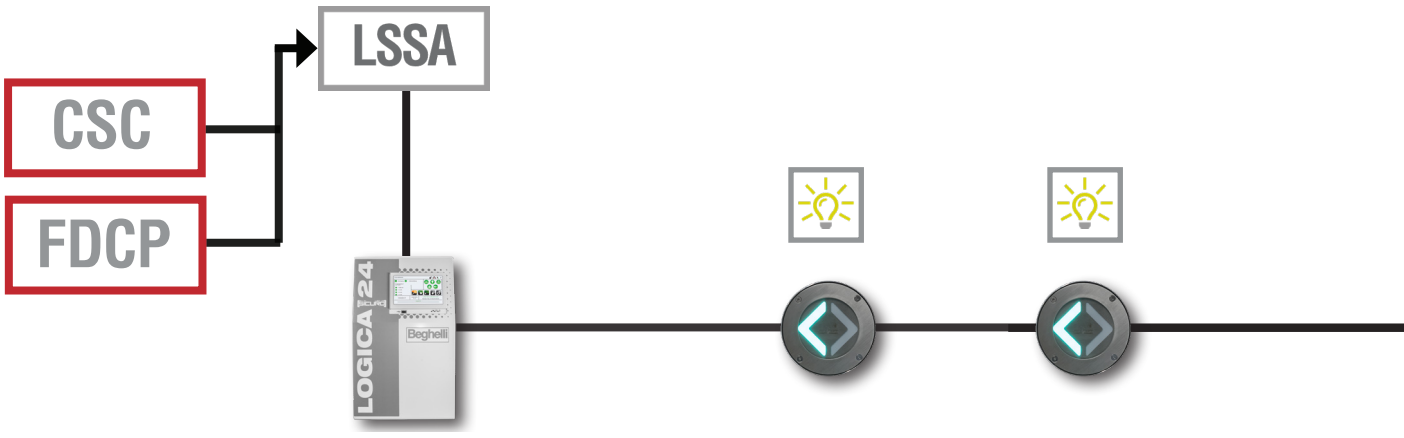
Individual control of circuits and / or luminaires by:

- each 8 control inputs in optional LSSA-modules in S24-station / -sub station or mains distributor

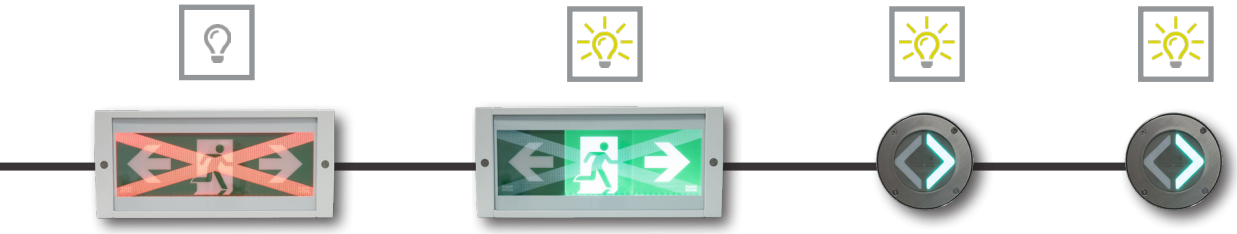
EXAMPLE DYNAMIC EXIT SIGN LUMINAIRES IN NORMAL CASE



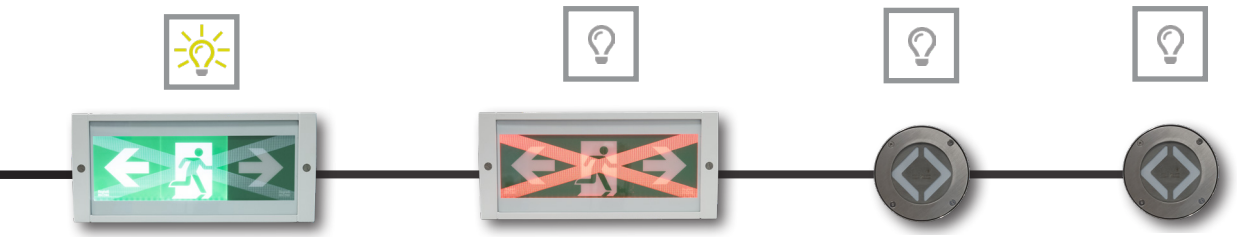
EXAMPLE DYNAMIC SAFETY LUMINAIRES IN CASE OF DANGER

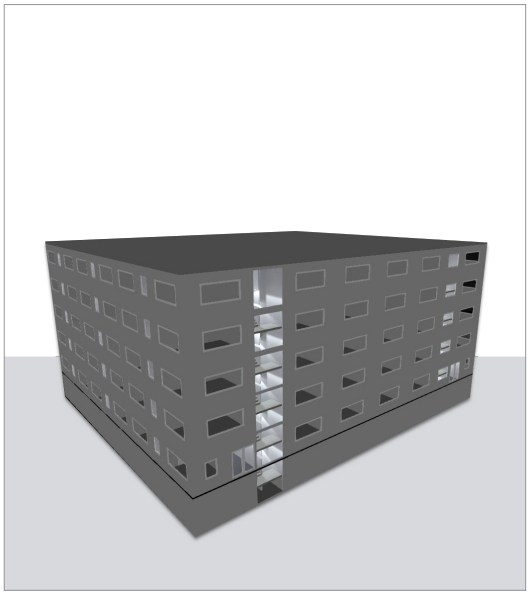


CONTROL BY CSC (COMBINED SIGNALLING CENTRAL) OR FDCP (FIRE DEPARTEMENT CONTROL PANEL) AND LSSA-MODULE



CONTROL BY CSC (COMBINED SIGNALLING CENTRAL) OR FDCP (FIRE DEPARTEMENT CONTROL PANEL) AND LSSA-MODULE





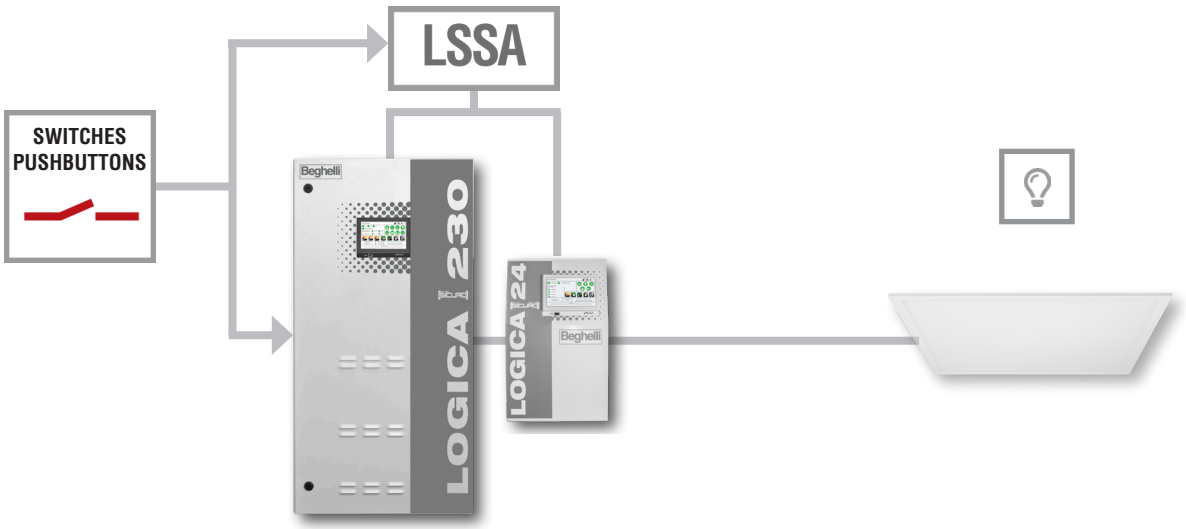
SELECTIVE CONTROL WITH SICURO230 AND SICURO24

Selective control of **indoor and outdoor luminaires in mains operation** (on / off).

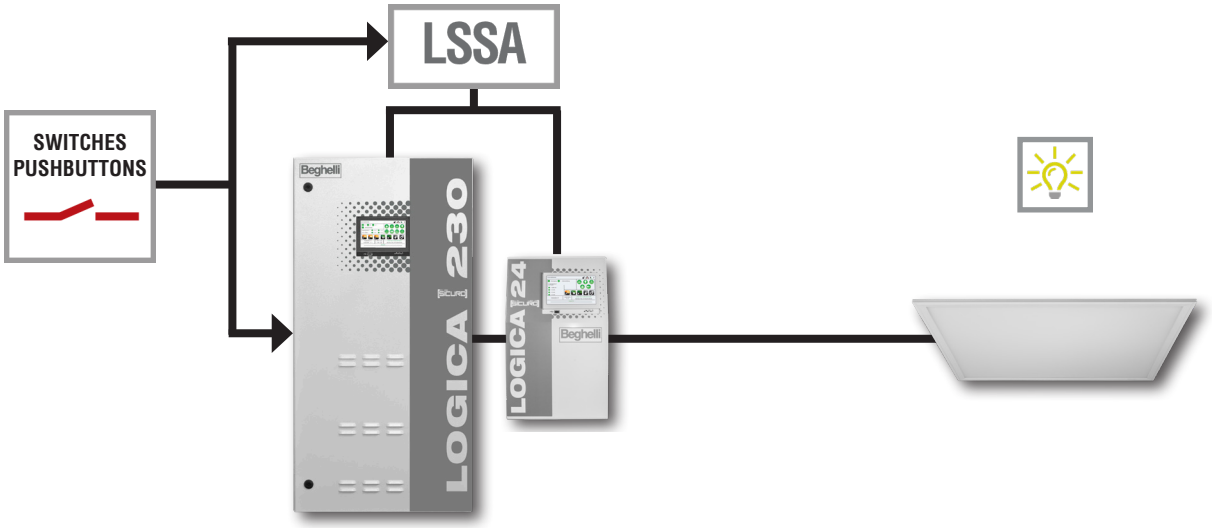
Individual control of circuits and / or luminaires by:

- Each 1 control input in S230-central station and S230- / S24-sub station- or S24-compact station
- Each 1 control input in optional S230-modules or S230- / S24-inverter-modules in indoor and outdoor luminiares
- Each 8 control inputs in optional LSSA-modules in S230-main station / -sub station or mains distributor

EXAMPLE: INDOOR OR OUTDOOR LUMINAIRES IN MAINS OPERATION SWITCHED OFF



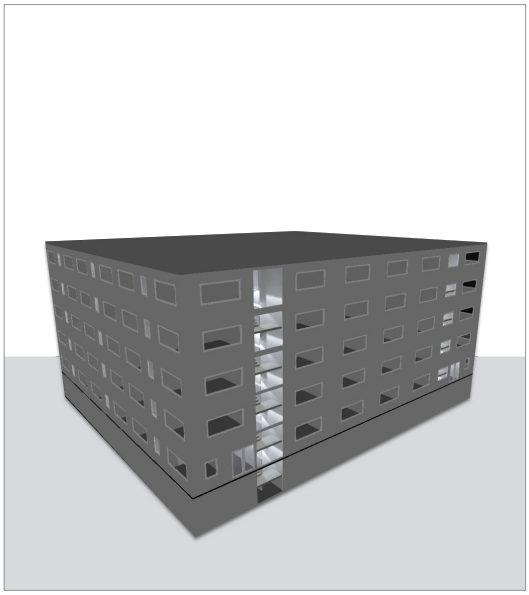
EXAMPLE: INDOOR OR OUTDOOR LUMINAIRES IN MAINS OPERATION SWITCHED ON



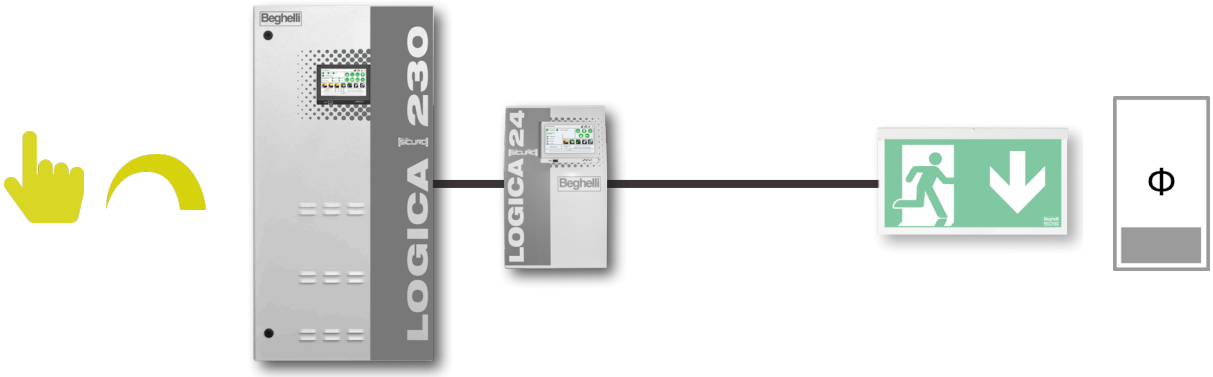
SELECTIVE DIMMING WITH SICURO230 AND SICURO24

Selective dimming (10 % to 100 %) of S230- or S24-exit sign luminaires **in mains operation**

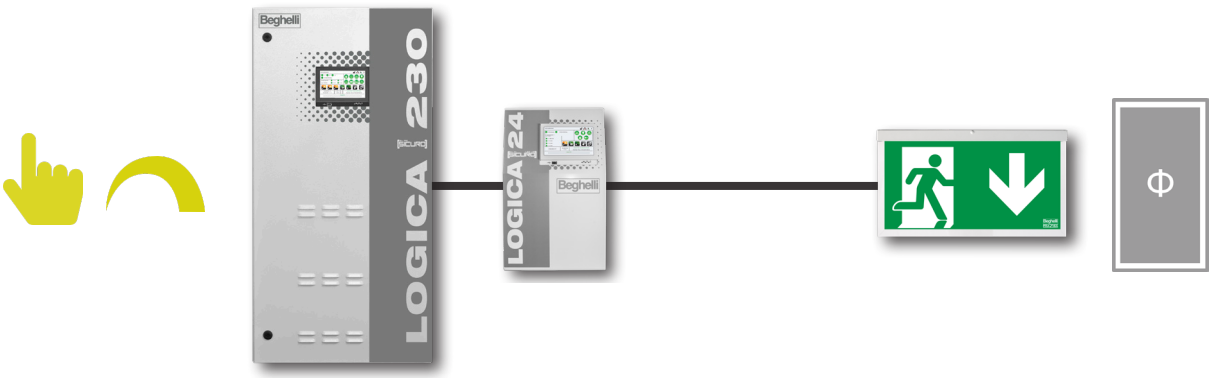
- Individual programming of the dimming

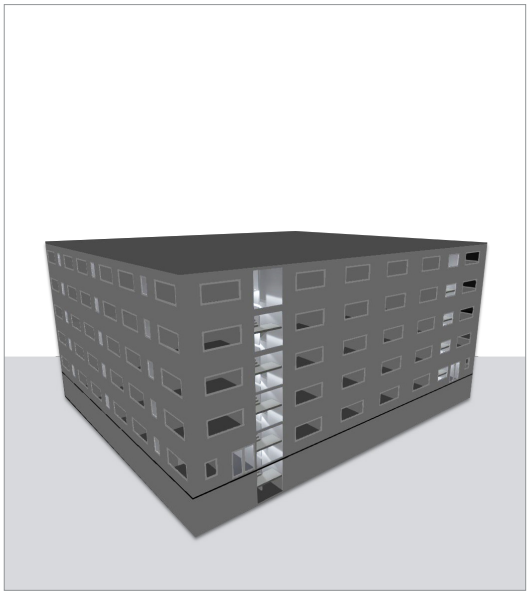


EXIT SIGN LUMINAIRES IN MAINS OPERATION DIMMED



EXIT SIGN LUMINAIRES IN MAINS OPERATION UNDIMMED

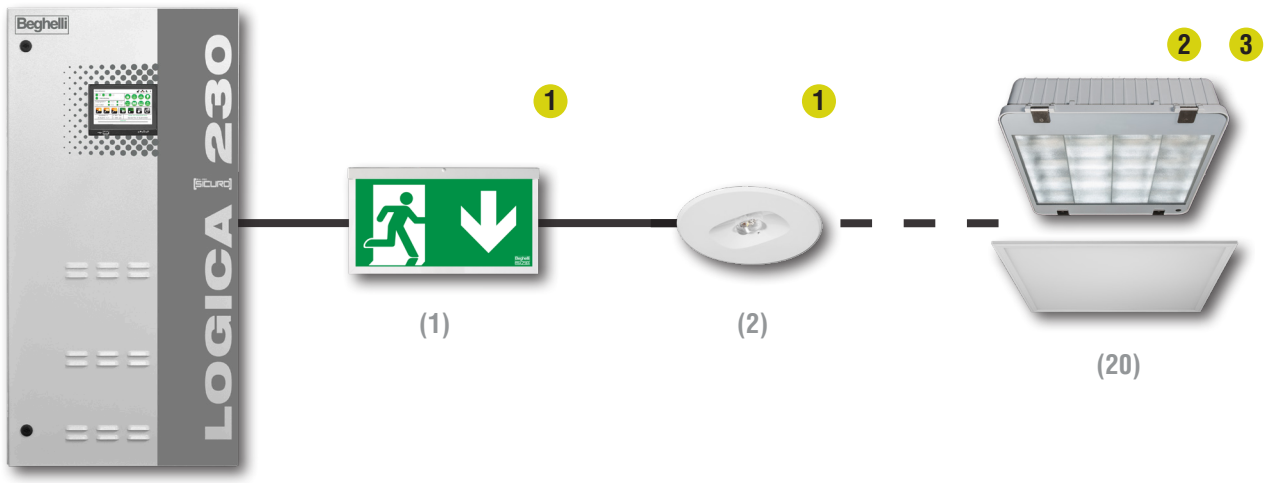




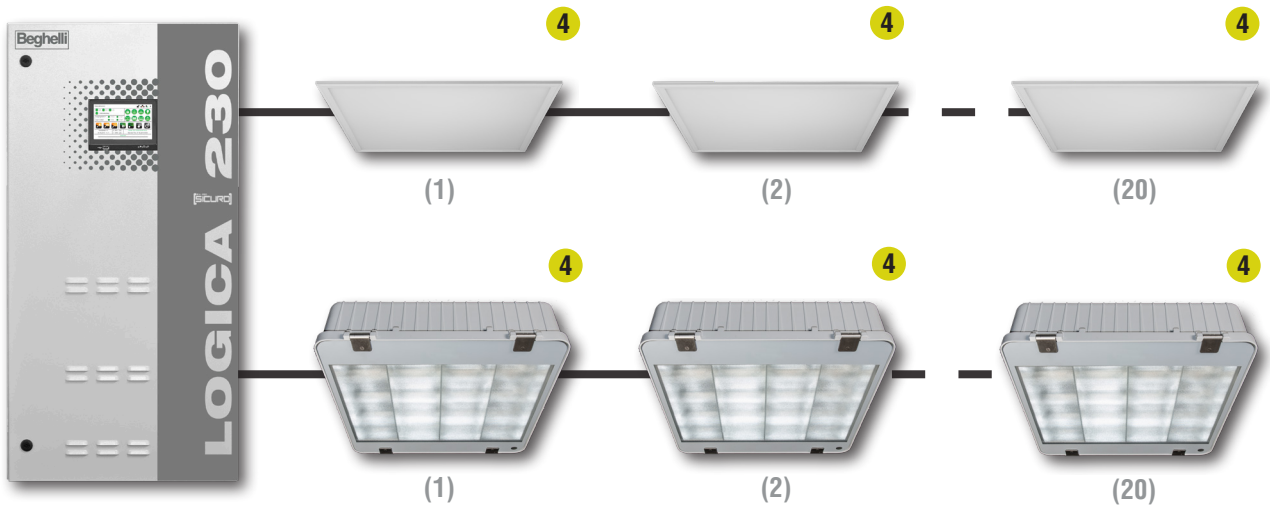
TESTING WITH S230 & S24

- Automatic testing of functions of S230- or S24-devices and luminaires as well as the battery
- Automatic storage of tests and faults of S230- or S24-devices and luminaires and as well as the battery
- Individual programming of
  - Test type
  - Test duration
  - Test start (day / time)

LUMINAIRE MONITORING

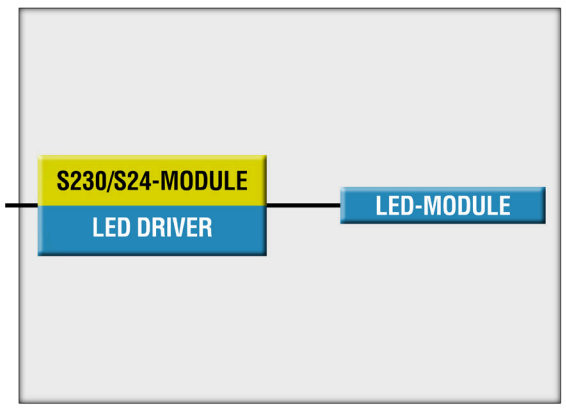


CIRCUIT MONITORING

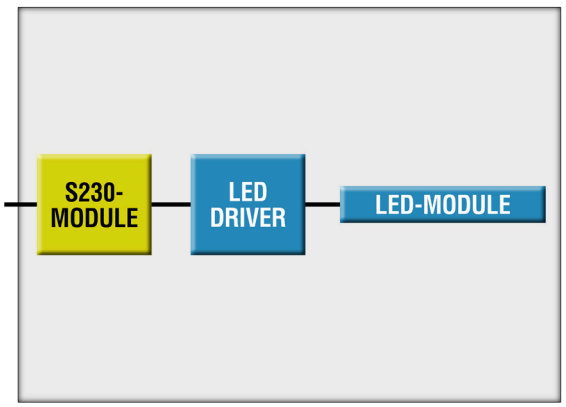


- Choice of selective luminaire or circuit monitoring
- Selective luminaire monitoring by:
  1. S230- / S24-exit sign luminaires and emergency luminaires
  2. S230-modules in indoor and outdoor luminaires
  3. S230- / S24-inverter-modules in indoor and outdoor luminaires
- Signalling of a luminaire fault with reference to the luminaire number
- Selective circuit monitoring by:
  4. Indoor and outdoor luminaires without S230-module resp. without S230- / S24-inverter-module
- Signalling of a luminaire fault without reference to the luminaire number

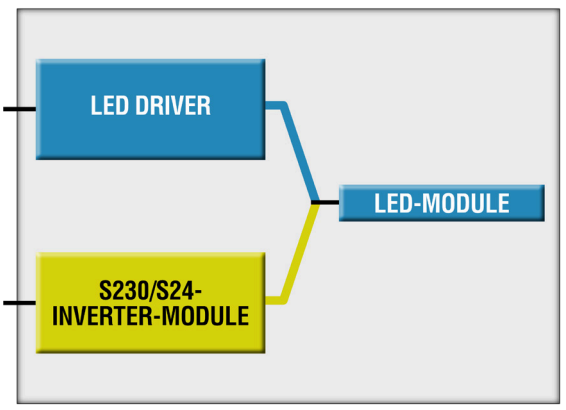
1 S230- / S24-EXIT SIGN LUMINAIRES AND SAFETY LUMINAIRES



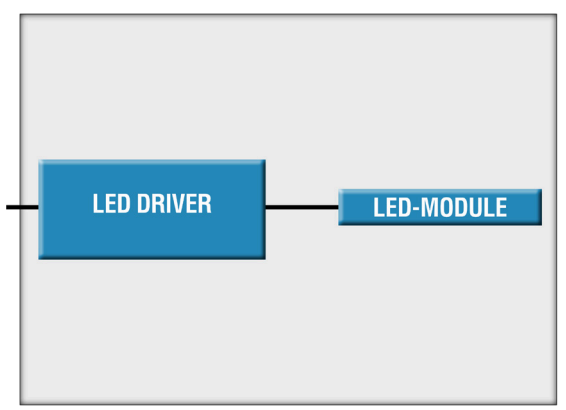
2 INDOOR AND OUTDOOR LUMINAIRES WITH S230-MODULE

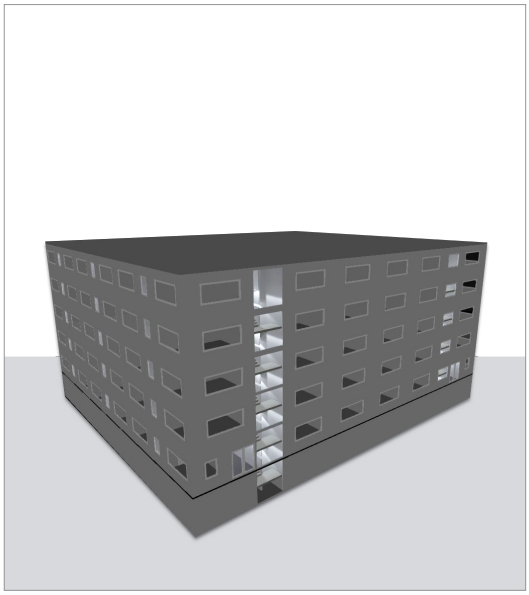


3 INDOOR AND OUTDOOR LUMINAIRES WITH S230- / S24-INVERTER-MODULE



4 INDOOR AND OUTDOOR LUMINAIRES WITHOUT S230-MODULE RESP. WITHOUT S230- / S24-INVERTER-MODULE





LUMINAIRES FOR SICURO230 AND SICURO24

- S230- and S24-exit sign and emergency luminiares
  - Individual programming of the operating mode per luminaire or circuit
- Indoor and outdoor luminaires with S230-module
  - Individual programming of the operating mode per luminaire or circuit
  - Integrated LSSA-control input

S230- AND S24-EXIT SIGN LUMINAIRES AND SAFETY LUMINAIRES FOR S230- AND S24-DEVICES

LED **LED driver**

Control device

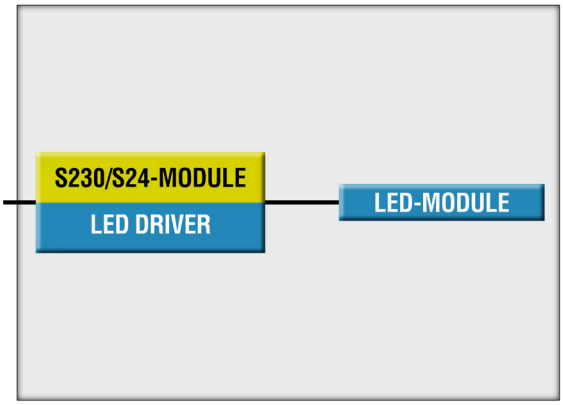
Programmable operating mode

Combinable operating mode

Monitoring device

Luminaire monitoring

Automatic & manual addressing
(only automatic addressing for S24-luminaires)



INDOOR AND OUTDOOR LUMINAIRES WITH S230-MODULE FOR S230-DEVICES

Control device

Programmable operating mode

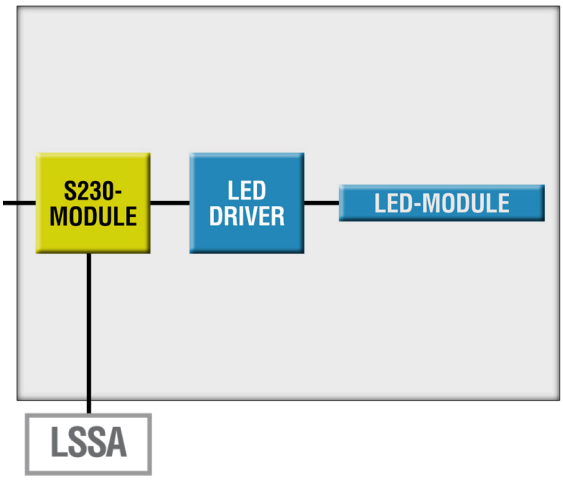
Combinable operating mode

Monitoring device

Luminaire monitoring

Automatic & manual addressing
(only automatic addressing for S24-luminaires)

LSSA **LSSA-control input**



- Indoor and outdoor luminaires with S230- and S24-inverter-module
  - Integrated LSSA-control input
- Indoor and outdoor luminaires with electronic operating unit for LED lamps and discharge lamps
  - Individual programming of the operating mode per luminaire or circuit

INDOOR AND OUTDOOR LUMINAIRES WITH S230- AND S24-INVERTER-MODULE FOR S230- UND S24-DEVICES

LED **LED driver**

Control device

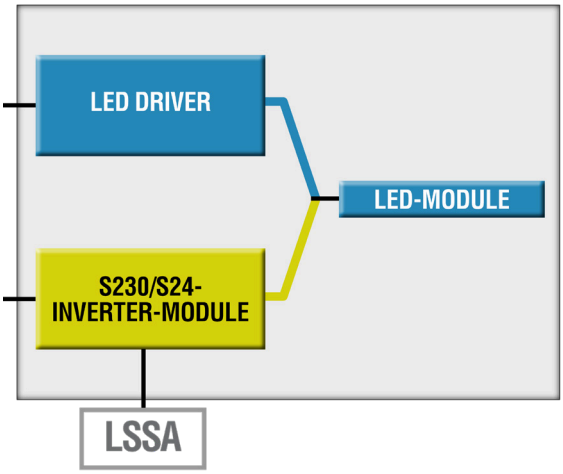
Combinable operating mode

Monitoring device

Luminaire monitoring

Automatic & manual addressing
(only automatic addressing for S24-luminaires)

LSSA **LSSA-control input**



INDOOR AND OUTDOOR LUMINAIRES FOR S230-DEVICES

EB **Electronic operating device for discharge lamp compliant with:**

- DIN EN 61347-1
- DIN EN 61347-2-3
- DIN EN 61347-2-7
- DIN EN 61347-2-13

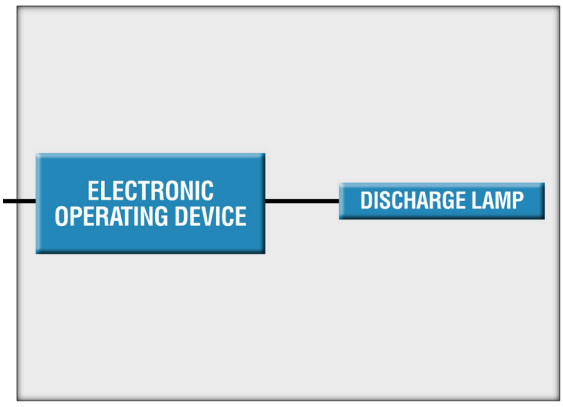
Operating mode

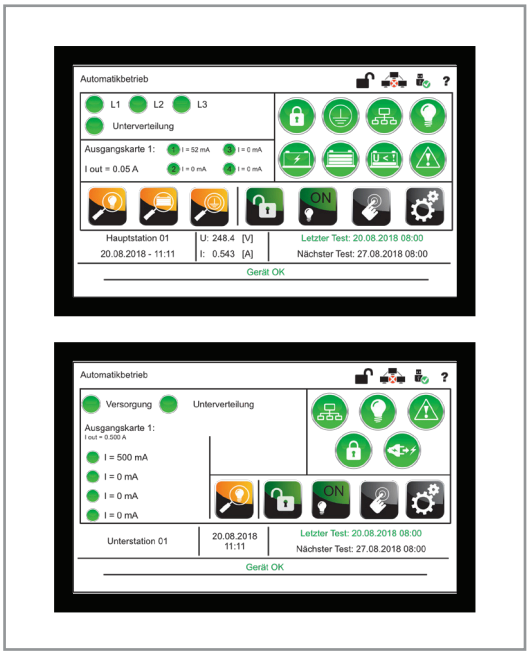
Programmable operating mode

No Combinable operating mode

Monitoring

Circuit monitoring





SICURO230 AND SICURO24 FUNCTIONS

CONTROL AND MONITORING

- **Static** control of the safety lighting by:
  - Selective control of exit sign luminaires and safety luminaires in mains operation and emergency operation (on / off)
- **Dynamic** control of safety luminaires by:
  - Selective control of dynamic exit sign luminaires and luminous markers in mains operation and emergency operation (on / off / changing an escape route / blocking an escape route), flashing at the same time or not flashing at the same time (only for S24)
- Selective **switchover** from **mains operation in emergency operation**
- Selective **switchover** from **emergency operation in mains operation**
- Selective **dimming** (10 % to 100 %) in **mains operation**
- Automatic testing of the function of the S230 or S24 system, luminaries as well as the battery
- Automatic storage of safety lighting tests and faults
- Automatic luminaire monitoring (S230 and S24) or circuit monitoring (S230)
- Luminaire monitoring by:
  - Integrated S230- and S24-modules in safety luminaires and exit sign luminaires
  - Separate S230- and S24-inverter modules in indoor and outdoor luminaires
  - Separate S230-modules in indoor and outdoor luminaires
  - Automatic addressing (S230 and S24) or manual addressing (S230)
- Programmable operating mode for each luminaire (luminaire monitoring) and / or each circuit (circuit monitoring)
  - Maintained mode
  - Non-maintained mode
  - Switchable maintained / non-maintained mode

MAINS MONITORING

- Internal mains monitoring for mains supply of S230- and S24 systems
- Control input for mains monitoring of the mains supply of the general lighting by means of optional mains monitoring modules

LSSA INPUT

- 1 (S230) or 4 (S24) LSSA inputs, free programmable, for switching the luminaires and / or circuits
  - **Control signal:** 230 V AC

CONTROL INPUTS AND CONTROL OUTPUTS

- 1 control input, permanently programmed, for switching of[1]
  - Maintained mode (on / off), switching signal: contact, potential-free
  - **Control signal:** contact, potential-free
- 1 control input, free programmable, for switching of
  - Operational condition (on / off)
  - Function test (start)
  - Duration test (start)
  - Non-maintained mode (off)
  - Deep discharge (reset)
  - LSSA (24 V)
  - **Control signal:** contact, potential-free
- 3 control inputs, permanently programmed, for signalling of
  - Operational condition
  - Battery operation
  - Collective fault
- 3 control outputs, free programmable, for signalling of
  - Charging status
  - Battery status
  - Circuit status
  - Luminaire status
  - Operational condition
  - Mains failure
  - Battery operation
  - Test operation
  - Deep discharge
  - Fan
  - **Control signal:** contact, potential-free

[1] The control input can also be used as LSSA input

INTERFACES

RS485-bus for communication to:

- Sicuro remote panel
- PC with optional software Logica Visual
- Building management system via a modbus (functions via modbus: notification of system configuration, system status and system faults

Ethernet bus for communication to:

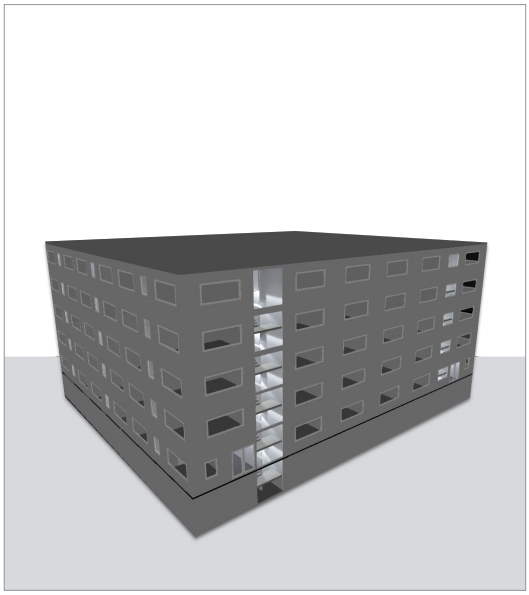
- Sicuro remote panel
- PC with optional software Logica Visual via intranet
- Web server via the internet (functions via web server: manual function test (start), output of test results, operational condition (on / off) and maintained mode (on / off)

USB interface for:

- Upload / download of system configuration
- Download of test results
- Software updates for S230- and S24 system, S230-modules and S24-inverter-modules

OPERATION

Operation via coloured 7" touch screen with graphic and alpha-numeric interface for input and output of all parameters and data, password protection can be activated, multilingual, and 3 status LEDs for indication of mains operation, battery operation and collective fault



INTERFACES SICURO230 AND SICURO24

Remote monitoring and remote control:

- Sicuro Remote Panel for max. 96 S230-central stations and / or S24-stations
- Internal PC via intranet (optional software Logica Visual required)
- External PC via internet
- Building management system via modbus

TEST Function test (start)
Operating mode (switch)

ETHERNET

RS485

TEST Function test (start)
Operating mode (switch)

ETHERNET

RS485

TEST Function test (start)
Operating mode (switch)

ETHERNET

MODBUS TCP

MODBUS RTU

Notification
Status Faults Tests

Notification
Status Faults Tests

Notification
Status Faults Tests

Notification
Status Faults Tests

CENTRAL SUPPLY SICURO230

The central supply Sicuro230 is based on one **central station and a maximum of 32 sub stations**, connected via two separate mains and battery cables or a combined mains and battery cable and a bus cable.

Note: Sicuro230 can also be supplied without a charging device and battery, by using a mains replacement system or a dual mains.

CENTRAL STATIONS

Versions with battery, charging, switchover, control and monitoring as well as distributor with internal luminaire circuits. Further external luminaire circuits can be optionally realised. Modular conception of the central stations with exchangable components.

TYPE		S230Z-H-S
DESCRIPTION		Version with separate electronic and battery cabinet as standing cabinets
BATTERY TYPE		sealed Pb battery
BATTERY CAPACITY		7 Ah to 230 Ah
BATTERY VOLTAGE		216 V
BATTERY CURRENT	**1 h**	4.4 A to 167.8 A[1]
	1.5 h	3.2 A to 124 A[1]
	2 h	2.6 A to 98 A[1]
	3 h	1.8 A to 71.4 A[1]
	8 h	0.8 A to 31.6 A[1]
BATTERY POWER	**1 h**	950 W to 36 kW[1]
	1.5 h	690 W to 27 kW[1]
	2 h	560 W to 21 kW[1]
	3 h	389 W to 15 kW[1]
	8 h	173 W to 6.8 kW[1]
CHARGE		max. 16 modules 246 V / 2 A
LUMINAIRE CIRCUITS		max. 8 / 16 / 24 internal modules: ● 1 x 230 V / 6 A ● 2 x 230 V / 3 A ● 4 x 230 V / 1.5 A max. 32 external modules: ● 2 x 230 V / 1.75 A ● 4 x 230 V / 1.75 A mains operation: ~ emergency operation: =
SUB STATIONS		max. 32

[1] Data excluding aging reserve

S230Z-H-SK
Version with combined electronic and battery cabinet as standing cabinet
sealed Pb battery
7 Ah to 110 Ah
216 V
4.4 A to 78.3 A[1]
3.2 A to 57 A[1]
2.6 A to 45 A[1]
1.8 A to 33.3 A[1]
0.8 A to 14.5 A[1]
950 W to 19.9 kW[1]
690 W to 12 kW[1]
560 W to 9.8 kW[1]
389 W to 7.2 kW[1]
173 W to 3.1 kW[1]
max. 4 modules 246 V / 2 A
max. 13 internal modules: ● 1 x 230 V / 6 A ● 2 x 230 V / 3 A ● 4 x 230 V / 1.5 A max. 32 external modules: ● 2 x 230 V / 1.75 A ● 4 x 230 V / 1.75 A mains operation: ~ emergency operation: =
max. 6

S230Z-H-SK/MINI / S230Z-H-WK
Version with combined electronic and battery cabinet as standing or wall cabinet
sealed Pb battery
7 Ah to 12 Ah / 7 Ah to 28 Ah
216 V
4.4 A to 8.1 A / 25 A[1]
3.2 A to 5.7 A / 15 A[1]
2.6 A to 4.5 A / 11.7 A[1]
1.8 A to 3.3 A / 10 A[1]
0.8 A to 1.4 A / 4.3 A[1]
950 W to 1.7 kW / 5.4 kW[1]
690 W to 1.20 kW / 3.2 kW[1]
560 W to 972 W / 2.5 kW[1]
389 W to 713 W / 2.1 kW[1]
173 W to 302 W / 929 W[1]
max. 2 modules 246 V / 2 A
max. 5 internal modules: ● 1 x 230 V / 6 A ● 2 x 230 V / 3 A ● 4 x 230 V / 1.5 A max. 32 external modules: ● 2 x 230 V / 1.75 A ● 4 x 230 V / 1.75 A mains operation: ~ emergency operation: =
none

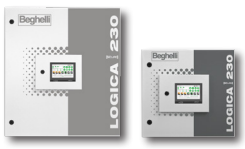
[1] Data excluding aging reserve

CENTRAL SUPPLY SICURO230

The central supply Sicuro230 is based on **one central station and a maximum of 32 sub stations**, connected via two separate mains and battery cables or a combined mains and battery cable and a bus cable.

SUB STATIONS

Sub stations with control and monitoring as well as distributors with internal luminaire circuits. Further external luminaire circuits can be optionally realised. Modular conception of the sub stations with exchangable components.



TYPE	S230Z-U-S	S230Z-U-W / S230Z-U-W/MINI
DESCRIPTION	Version as standing cabinet	Version as wall cabinet **without** function integrity
LUMINAIRE CIRCUITS	max. 8 / 16 / 24 / 32 internal modules: ● 1 x 230 V / 6 A ● 2 x 230 V / 3 A ● 4 x 230 V / 1.5 A max. 32 external modules: ● 2 x 230 V / 1.75 A ● 4 x 230 V / 1.75 A mains operation: ~ emergency operation: =	max. 8 / 16 internal modules: ● 1 x 230 V / 6 A ● 2 x 230 V / 3 A ● 4 x 230 V / 1.5 A mains operation: ~ emergency operation: =

S230Z-U-W/E30

Version as wall cabinet **with** function integrity

max. 8 modules:

- 1 x 230 V / 6 A
- 2 x 230 V / 3 A
- 4 x 230 V / 1.5 A

mains operation: ~
emergency operation: ⎓

Function integrity for 30 minutes in a cabinet approved by the DIBt (German Institute for Structural Engineering) and additional fire testing with electrical equipment by a material testing institute

S24Z-U

Version as wall cabinet **without** function integrity

max. 1 module:

- 4 x 24 V / 3 A

mains operation: ⎓
emergency operation: ⎓

S24Z-U/E30

Version as wall cabinet **with** function integrity

max. 1 module:

- 4 x 24 V / 3 A

mains operation: ⎓
emergency operation: ⎓

Function integrity for 30 minutes in a cabinet approved by the DIBt (German Institute for Structural Engineering) and additional fire testing with electrical equipment by a material testing institute

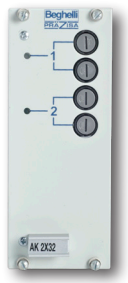
INTERNAL LUMINAIRE CIRCUIT MODULES FOR S230

Luminaire circuit modules for internal use in S230 central station or S230 sub station. Modules with 1, 2 or 4 luminaire circuits for luminaire and circuit monitoring as well as luminaire and circuit control:

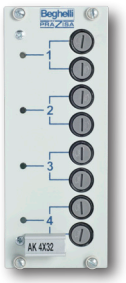
- Selective monitoring per luminaire (luminaire monitoring) or per circuit (circuit monitoring)
- Selective control per luminaire (luminaire monitoring) or per circuit (circuit monitoring)
- Programming of the operating mode per luminaire (luminaire monitoring) or per circuit (circuit monitoring)
- Button for addressing of the luminaire circuit module

Combined operation of modules with luminaire and circuit monitoring in a S230 central station or S230 sub station possible.

TYPE	AK 1 X 32 EÜ	AK 1 X 32 SÜ
MONITORING	**Luminaire monitoring**	**Circuit monitoring**
DESCRIPTION	1 circuit for 1 x 20 (32) luminaires	1 circuit für 1 x 20 (32) luminaires
CONNECTED LOAD	1 x 1.380 W	1 x 1.380 W
INRUSH CURRENT	430 A / 250 µs	430 A / 250 µs
FUSE	2 x 10 AT / 500 V	2 x 10 AT / 500 V
ORDER CODE	**17233**	**17242**



TYPE	AK 2 X 32 EÜ	AK 2 X 32 SÜ
MONITORING	**Luminaire monitoring**	**Circuit monitoring**
DESCRIPTION	1 circuit for 2 x 20 (32) luminaires	1 circuit for 2 x 20 (32) luminaires
CONNECTED LOAD	2 x 690 W	2 x 690 W
INRUSH CURRENT	2 x 215 A / 250 µs	2 x 215 A / 250 µs
FUSE	4 x 5 AT / 500 V	4 x 5 AT / 500 V
ORDER CODE	**17232**	**17243**



TYPE	AK 4 X 32 EÜ	AK 4 X 32 SÜ
MONITORING	**Luminaire monitoring**	**Circuit monitoring**
DESCRIPTION	1 circuit for 4 x 20 (32) luminaires	1 circuit for 4 x 20 (32) luminaires
CONNECTED LOAD	4 x 345 W	4 x 345 W
INRUSH CURRENT	4 x 107 A / 250 µs	4 x 107 A / 250 µs
FUSE	8 x 2.5 AT / 500 V	8 x 2.5 AT / 500 V
ORDER CODE	**17234**	**17244**

EXTERNAL LUMINAIRE CIRCUIT MODULES FOR S230

Luminaire circuit modules for external use. Modules with 2 or 4 luminaire circuits for luminaire and circuit monitoring as well as luminaire or circuit control:

- Selective monitoring per luminaire (luminaire monitoring) or per circuit (circuit monitoring)
- Selective control per luminaire (luminaire monitoring) or per circuit (circuit monitoring)
- Programming of the operating mode per luminaire (luminaire monitoring) or per circuit (circuit monitoring)
- Rotary switch for addressing of the luminaire circuit module
- LED for signalling of:
  - Operating mode
  - Collective fault
  - Luminaire or circuit fault
  - Bus fault
- Control output for signalling of:
  - Collective fault
  - Control signal: contact, potential-free

Combined operation of modules with luminaire and circuit monitoring in a S230 central station or S230 sub station possible.

Housing:	Polystyrene
Color:	grey (RAL 7035)
Type of protection:	IP65
Protection class:	II

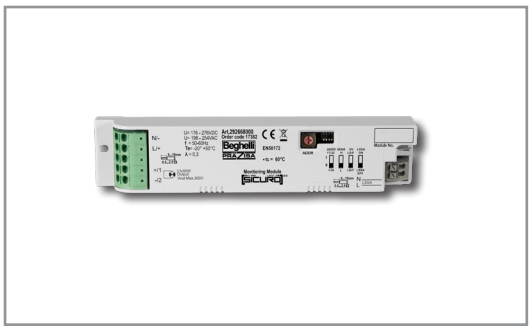
TYPE	eAK 2 X 32 EÜ	eAK 2 X 32 SÜ
MONITORING	**Luminaire monitoring**	**Circuit monitoring**
DESCRIPTION	2 circuits for 2 x 20 (32) luminaires	2 circuits for 2 x 20 (32) luminaires
CONNECTED LOAD	2 x 400 W	2 x 400 W
INRUSH CURRENT	2 x 215 A / 250 µs	2 x 215 A / 250 µs
FUSE	4 x 3.15 AT / 500 V	4 x 3.15 AT / 500 V
ORDER CODE	**30011**	**30013**

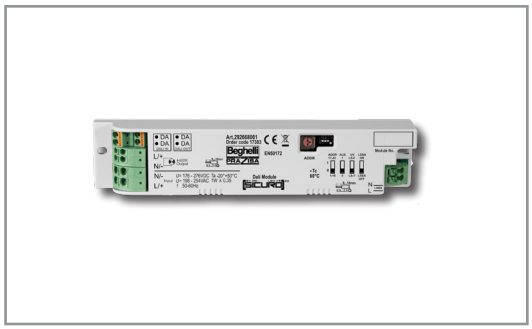
TYPE	eAK 4 X 32 EÜ	eAK 4 X 32 SÜ
MONITORING	**Luminaire monitoring**	**Circuit monitoring**
DESCRIPTION	4 circuits for 4 x 20 (32) luminaires	4 circuits for 4 x 20 (32) luminaires
CONNECTED LOAD	4 x 400 W	4 x 400 W
INRUSH CURRENT	2 x 215 A / 250 µs	2 x 215 A / 250 µs
FUSE	8 x 3.15 AT / 500 V	8 x 3.15 AT / 500 V
ORDER CODE	**30012**	**30014**

11KW SWITCH

Switchover module for voltage supply of S24-sub stations as well as optionally for S230-sub stations or external luminaire circuit modules in a combined mains and battery supply cable with a max. connected load of 11.000 W.

- Switchover between mains and battery supply
- Overvoltage protection and current limitation
- Button for addressing
- 6 status LEDs for several signalling





S230-MODULE / S230-DALI-MODULE

Monitoring and control module with selectable automatic or manual addressing for indoor and outdoor luminaires with electronic operating unit resp. DALI operating unit and LED lamps or discharge lamps.

- **Operating mode:** Maintained mode (switchable / not switchable), non-maintained mode (switchable / not switchable / programmable)
- **Monitoring:** Luminaire monitoring with selective fault message with inactive electronic operating unit resp. DALI operating unit
  - Monitoring power: 2.5 W to 500 W
- **Control:** LSSA control input for switching the luminaire with mains operation (on / off) or switching on the luminaire in emergency operation (mains monitoring)
  - Control signal: 0 V or 230 V

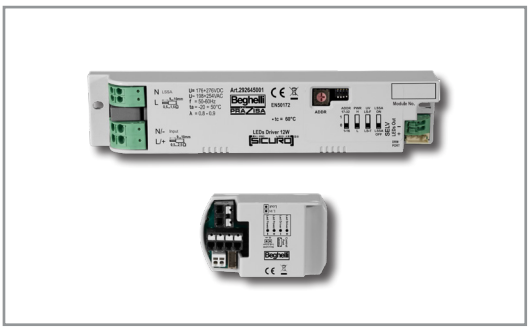
Additional functions with S230-DALI module:

- **Dimming in mains operation:** Dimming of luminaire via DALI signal from a DALI controller
  - Dimming level: 1 % to 100 %
- **Dimming in battery operation:** Dimming of luminaire via DALI signal of the S230 DALI module
  - Dimming level: 1 % to 100 % (programmable)
- Automatic activation of the power failure level with partial mains failures

Communication with the S230 central station or sub station via powerline bus.

Mains voltage:	198 V to 254 V
Battery voltage:	176 V to 276 V
Mounting:	Luminaire installation
Housing:	Polycarbonate
Dimensions (H x W x D):	24 x 152 x 32 mm
Type of protection:	IP20
Protection class:	II

Order code	Description
17382	S230-module
17383	S230-DALI-module



S230-INVERTER-MODULE

Monitoring and control module with integrated LED driver and selectable automatic or manual addressing for indoor and outdoor luminaires with LED driver and LED module.

- **Operating mode:** Maintained mode (switchable / not switchable), non-maintained mode (switchable / not switchable / programmable)
- **Mains operation:** Operation of the LED module via the LED driver of the luminaire without reduced power
  - LED-module supply: 2 V to 55 V / max. 4 A
  - Power: Nominal power
- **Battery operation:** Operation of the LED module via the LED driver of the S230-inverter-module with reduced power
  - Monitoring power: 12 W
- **Control:** LSSA control input for switching the luminaire in mains operation (on / off) or switch-on of the luminaire in emergency mode (mains monitoring)
  - Control signal: 0 V or 230 V

Communication with the S230 central station or sub station via powerline bus.

Mains voltage:	198 V to 254 V
Battery voltage:	176 V to 276 V
Mounting:	Luminaire installation
Housing:	Polycarbonate
Dimensions (H x W x D):	24 x 152 x 32 mm + 24 x 50 x 32 mm
Type of protection:	IP20
Protection class:	II

Order code	Description
17381	S230-inverter-module

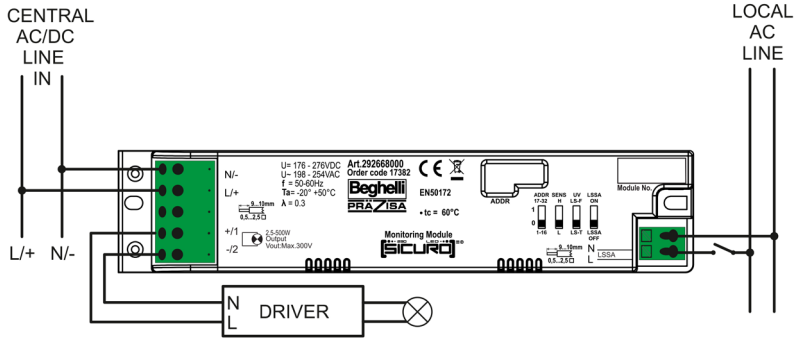
CALCULATION OF LIGHT FLUX:

Light flux in mains operation = 100 %

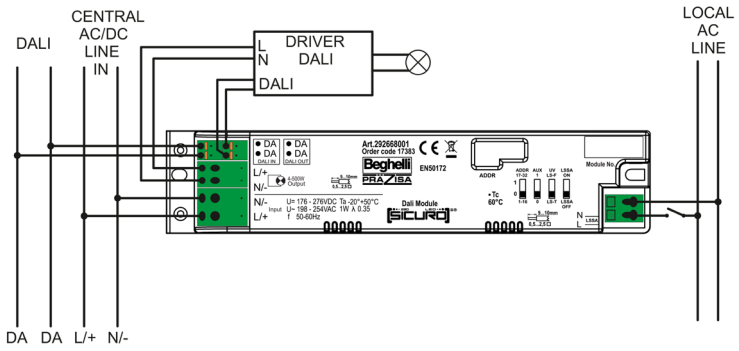
Light flux in battery operation =

$$\text{Light flux in mains operation} \times \frac{12\ \text{W}}{\text{power of LED-module}}$$

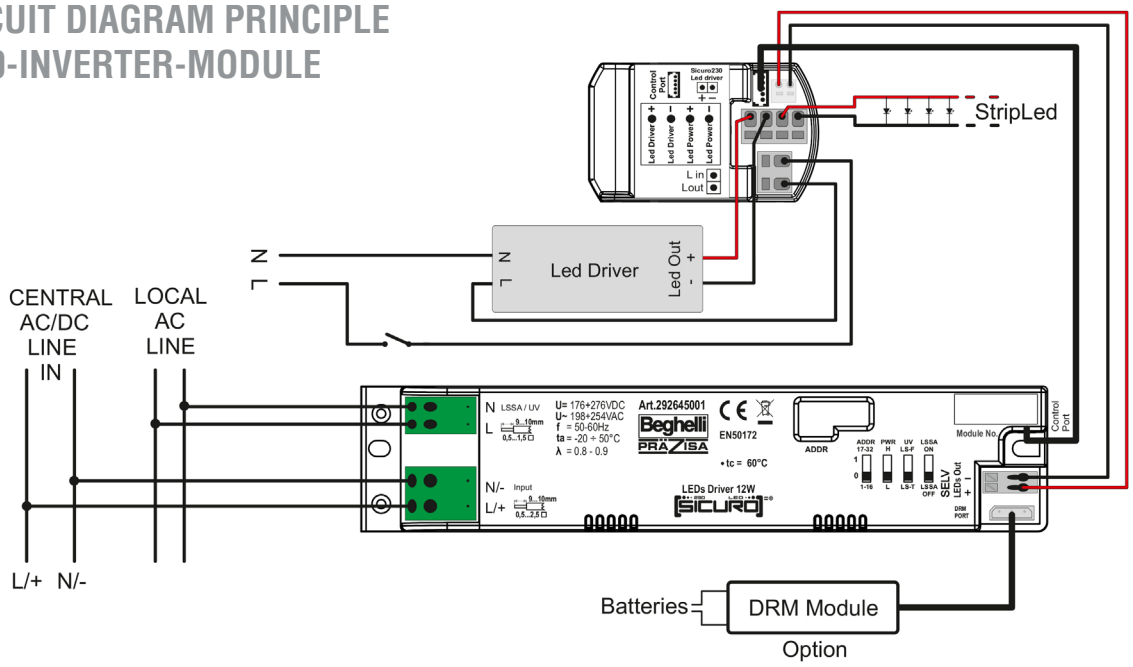
CIRCUIT DIAGRAM PRINCIPLE S230-MODULE

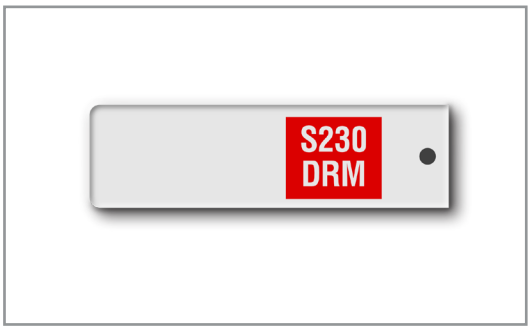


CIRCUIT DIAGRAM PRINCIPLE S230-DALI-MODULE



CIRCUIT DIAGRAM PRINCIPLE S230-INVERTER-MODULE





Order code	Description
17236	Disaster recovery module
RA07	Additional battery

DISASTER RECOVERY MODULE FOR S230

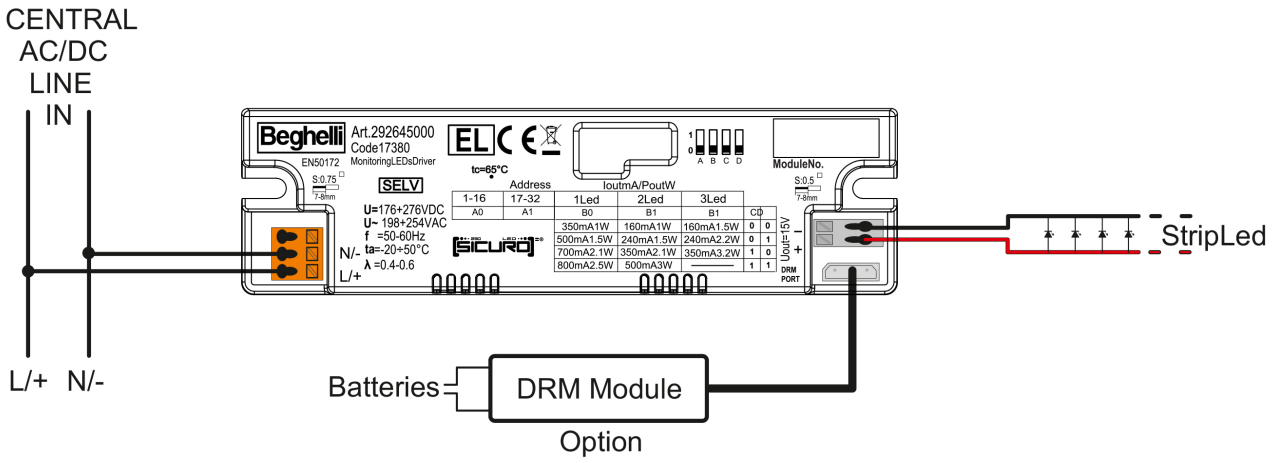
Module with lithium-ion-titanate battery, charging device and switchover device for dual battery supply of S230 escape sign luminaires, S230 safety luminaires and indoor and outdoor luminaires with S230 inverter module.

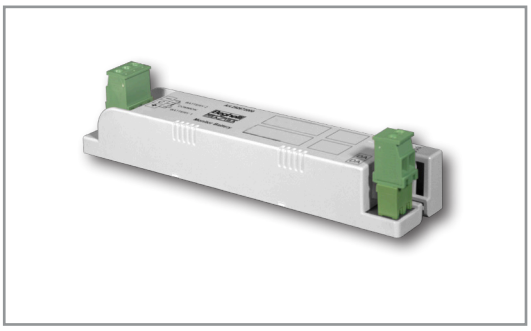
- **Mains operation:** Supply of the luminaire via the S230 central station or sub station
- **Emergency operation without disconnection:** Power supply of the luminaire via the S230 central station or sub station
- **Emergency operation with disconnection:** Power supply of the luminaire via the DRM

Automatic charging of the battery and switching in emergency operation with disconnection. Simple integration in S230 escape sign luminaires, S230 safety luminaires and indoor and outdoor luminaires with S230-inverter-module with plug connection.

Mounting:	Luminaire installation
Housing:	Polycarbonate
Dimensions (H x W x D):	11 x 70 x 19 mm
Type of protection:	IP20

CIRCUIT DIAGRAM PRINCIPLE





Order code	Description
17384	Battery management Life Plus

BATTERY MANAGEMENT LIFE PLUS

The change of the internal resistance of individual battery blocks in a battery system leads to high or low block voltages at the individual battery blocks. If the voltages are not monitored and the charging of all battery blocks is not regulated, the destruction of individual battery blocks results in the destruction of all battery blocks. **With battery management Life Plus, the lifetime of the battery system can be extended by avoiding the destruction of all battery blocks in the event of the destruction of individual battery blocks.**

FUNCTIONS

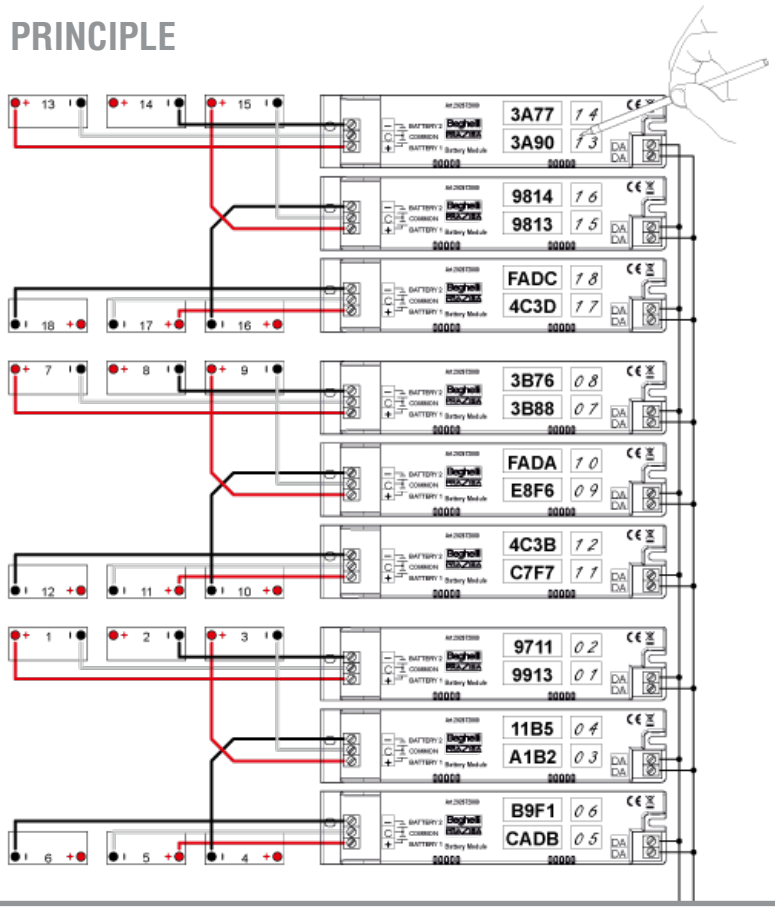
- Automatic monitoring of the total voltage of all battery blocks
- Automatic monitoring of the individual voltage of all battery blocks
- Automatic regulation of the total voltage of all battery blocks
- Automatic regulation of the individual voltage of all battery blocks
- Signalling via the S230 controller of:
  - Total voltage of all battery blocks
  - Individual voltage of all battery blocks
  - Individual voltage of a battery block too low
  - Individual voltage of a battery block too high
  - Charge
  - Compensation charging

With compensation charging, the block voltages which are too high or too low are automatically increased or decreased.

Life Plus is 1 kit with 9 modules. The modules are positioned on the battery. With parallel connection of 1 to 4 battery systems, parallel connection of 1 to 4 Life Plus is possible. A cable bus handles communication between the Life Plus and the S230 controller.

Housing:	Polycarbonate
Dimensions (H x W x D):	24 x 152 x 32 mm
Type of protection:	IP20

CIRCUIT DIAGRAM PRINCIPLE



TECHNICAL DATA S230

TYPE		S230Z-H-S	S230Z-H-SK	S230Z-H-SK/ MINI	S230Z-H-WK
VERSION		Version with separate electronic and battery cabinet as standing cabinets	Version with combined electronic and battery cabinet as standing or wall cabinet		
BATTERY CAPACITY		7 to 230 Ah	7 to 110 Ah	7 to 28 Ah	7 to 12 Ah
CHARGING MODULES		max. 12	max. 2 bzw. 4	max. 2	max. 2
LUMINAIRE CIRCUIT MODULES (INTERNAL)		max. 24	max. 13 bzw. 10	max. 5	max. 5
LUMINAIRE CIRCUIT MODULES (EXTERNAL)		max. 32 or 16	max. 32	max. 32	max. 32
SUB STATIONS		max. 20	max. 4	-	-
LSSA INPUTS (INTERNAL)		1	1	1	1
LSSA MODULES (INTERNAL)		max. 8 (optional)	max. 4 (optional)	max. 2 (optional)	max. 2 (optional)
LSSA MODULES (EXTERNAL)		max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)
MOUNTING		standing	standing	standing	wall
ELECTRONIC CABINET		sheet steel, grey[1]	sheet steel, grey[1]	sheet steel, grey[1]	sheet steel, grey[1]
BATTERY CABINET[1]		sheet steel, grey[1]			
DIMENSIONS (H x W x D) MM		2.000 x 800 x 600	2.000 x 800 x 600	1.520 x 650 x 400	1.200 x 600 x 350
TYPE OF PROTECTION	**electronic**	IP54	IP21	IP21	IP21
	battery	IP21	IP21	IP21	IP21
PROTECTION CLASS		I	I	I	I
SUPPLY	**mains**	3 / N / PE	3 / N / PE	3 / N / PE	3 / N / PE
	battery	216 V =	216 V =	216 V =	216 V =
AMBIENT TEMPERATURE	**electronic**	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C
	battery	+20 °C	+20 °C	+20 °C	+20 °C
CABLE ENTRY		above / below	above	above	above
CABLE CLAMPS	**mains**	min. 4 mm²	min. 4 mm²	min. 4 mm²	min. 4 mm²
	battery	min. 4 mm²	min. 4 mm²	min. 4 mm²	min. 4 mm²
	luminaires	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²
	control inputs / outputs	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²

[1] RAL 7035
[2] RAL 9003 (white) or RAL 7016 (grey)

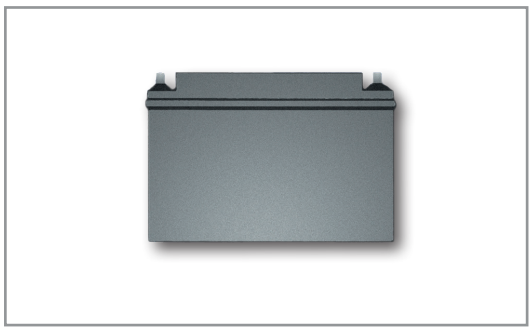
					
S230Z-U-S	**S230Z-U-W**	**S230Z-U-W/MINI**	**S230Z-U-W/E30**	**S24Z-U**	**S24Z-U/E30**
Version with electronic cabinet as standing or wall cabinet					
-	-	-	-	-	-
-	-	-	-	-	-
max. 32	max. 16	max. 8	max. 8	1	1
max. 32	-	-	-	-	-
-	-	-	-	-	-
1	1	1	1	4	4
max. 8 (optional)	max. 4 (optional)	max. 1 (optional)	max. 2 (optional)	-	-
max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)
standing	wall	wall	wall	wall	wall
sheet steel, grey[1]	sheet steel, grey[1]	sheet steel, grey[1]	fire protection panels, grey[1]	sheet steel, white or grey[2]	fire protection panels, grey[1]
-	-	-	-	-	-
2.000 x 800 x 600	890 x 800 x 400	570 x 600 x 350	1.050 x 650 x 415	399 x 316 x 144	750 x 650 x 341
IP21	IP54	IP54	IP54	IP20	IP54
IP21	-	-	-	-	-
I	I	I	I	I	I
230 V ~	230 V ~	230 V ~	230 V ~	24 V =	24 V =
216 V =	216 V =	216 V =	216 V =	24 V =	24 V =
-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C
-	-	-	-	-	-
above / below	above	above	above	above	above
min. 10 mm²	min. 10 mm²	min. 10 mm²	min. 10 mm²	min. 2,5 mm²	min. 2,5 mm²
min. 10 mm²	min. 10 mm²	min. 10 mm²	min. 10 mm²	min. 2,5 mm²	min. 2,5 mm²
2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²
2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²

CHARGING MODULES AND BATTERIES FOR S230

CHARGING MODULE S230

Charging module for temperature-regulated charging of batteries with charging state-dependent switching from charging to float charging. Automatic switch-off in the case of extreme temperature deviations to protect the batteries.

Charging voltage: 245.7 V (ambient temperature +20 °C)
Charging current: 2 A
Charge: UI characteristic curve



BATTERY

Batteries as sealed Pb batteries with grid electrodes and AGM separator compliant with EN 60896 and EUROBAT.

Service life: > 10 years (ambient temperature +20 °C)

CAPACITY (Ah)	VOLTAGE (V)	CURRENT (A)[1]					CONNECTED LOAD (W)[1]					BATTERY	
		1 h	1.5 h	2 h	3 h	8 h	1 h	1.5 h	2 h	3 h	8 h	cabinet[2]	compartement[3]
7	216	4.4	3.2	2.6	1.8	0.8	950	691	561	389	173	1	X
12	216	8.1	5.7	4.5	3.3	1.4	1.750	1.231	972	713	302	1	X
18	216	11.9	8.5	6.8	4.9	2	2.570	1.836	1.466	1.065	432	1	X
28	216	20.7	15	11.7	8.4	3.7	4.471	3.234	2.533	1.821	799	1	X
33	216	25	17.7	14	10	4.3	5.400	3.832	3.019	2.160	929	1	X
44	216	31.1	22.5	17.8	12.9	5.7	6.718	4.856	3.846	2.786	1.231	1	X
55	216	39.9	29.3	23.1	16.5	7.2	8.618	6.328	4.980	3.564	1.555	1	X
70	216	52.6	38.6	30.9	22.4	10.2	11.362	8.335	6.675	4.383	2.203	1	X
80	216	61.3	43.9	34.5	24.9	11.1	13.241	9.477	7461	5.378	2.398	1	X
100	216	72.6	52.5	41.7	30.3	13.4	15.682	11.311	9.006	6.545	2.894	1	X
110	216	78.3	57	45.6	33.3	14.5	16.913	12.303	9.845	7.193	3.132	1	-
120	216	83.9	61	48.7	35.7	15.8	18.122	13.185	10.522	7.711	3.416	1	-
135	216	107	78.8	62.8	44.8	19.4	23.112	17.027	13.563	9.677	4.190	1	-
150	216	110	80.3	63.3	45.5	19	23.760	17.343	13.668	9.828	4.104	1	-
200	216	140	104	83.8	61.2	27.3	30.240	22.516	18.101	13.218	5.897	1	-
230	216	167.8	124	98	71.4	31.6	36.245	26.851	21.228	15.422	6.826	2	-

[1] Data excluding aging reserve

[2] Version with separate battery cabinet

[3] Version with combined electronic and battery cabinet

Note: Sicuro230 can also be supplied without a charging device and battery, by using a mains replacement system or a dual mains.

PROJECT PLANNING INFORMATION

For planning a central supply Sicuro230, the following information is required:

- Operating time (1 h / 1.5 h / 2 h / 3 h / 8 h)
- Battery capacity (Ah)
  - Can be calculated from the operating time and total power in battery operation
- Total power in mains operation (W)
- Total power in battery operation (W)

CENTRAL STATION

- Number of internal luminaire circuit modules in the central station:
  - AK 1 x 20 EÜ
  - AK 2 x 20 EÜ
  - AK 4 x 20 EÜ
  - AK 1 x 20 SÜ
  - AK 2 x 20 SÜ
  - AK 4 x 20 SÜ
  - Power per luminaire circuit
- Number of external luminaire circuit modules in the sub station:
  - eAK 2 x 20 EÜ
  - eAK 4 x 20 EÜ
  - eAK 2 x 20 SÜ
  - eAK 4 x 20 SÜ
- Number of LSSA modules in the central station:
  - LSSA 3+5
  - LSSA 8

SUB STATION

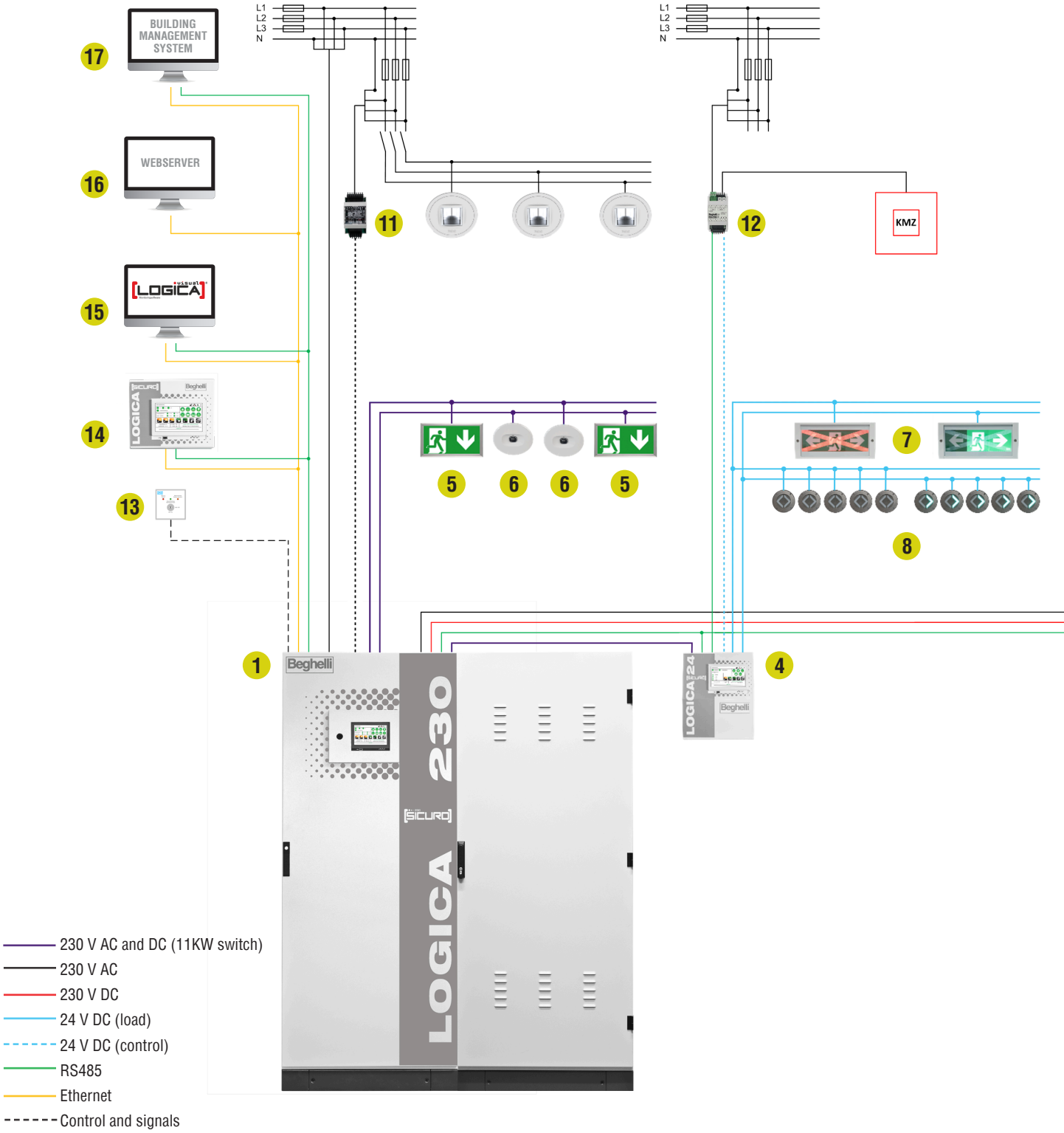
- Total power in mains operation per sub station
- Total power in battery operation per sub station
- Voltage supply with separate mains supply cable and battery supply cable or via combined mains supply cable and battery supply cable (11KW switch)
- Number of internal luminaire circuit modules in the sub station:
  - AK 1 x 20 EÜ
  - AK 2 x 20 EÜ
  - AK 4 x 20 EÜ
  - AK 1 x 20 SÜ
  - AK 2 x 20 SÜ
  - AK 4 x 20 SÜ
  - Power per luminaire circuit
- Number of external luminaire circuit modules in the sub station:
  - eAK 2 x 20 EÜ
  - eAK 4 x 20 EÜ
  - eAK 2 x 20 SÜ
  - eAK 4 x 20 SÜ
- Number of LSSA modules in the sub station:
  - LSSA 3+5
  - LSSA 8

OPTIONS

- Battery management Life Plus
- Mains monitoring modules DS1 UV or DS3 UV
- LSSA-modules LSSA 3+5 or LSSA 8
- S230-modules or S230 DALI-modules
- S230-inverter-modules
- DRM-modules
- Remote panel
- Signalling and switching module MSM
- Monitoring software Logica Visual

Note: Sicuro230 can also be supplied without a charging device and battery, by using a mains replacement system or a dual mains.

CENTRAL SUPPLY SICURO230



1 **Central station** S230Z-S

2 **Sub station** S230Z-U/S

3 **Sub station** S230Z-U/W

4 **Sub station** S24Z-U

5 **S230 exit sign luminaire**

6 **S230 safety luminaire**

7 **S24 dynamic exit sign luminaire**

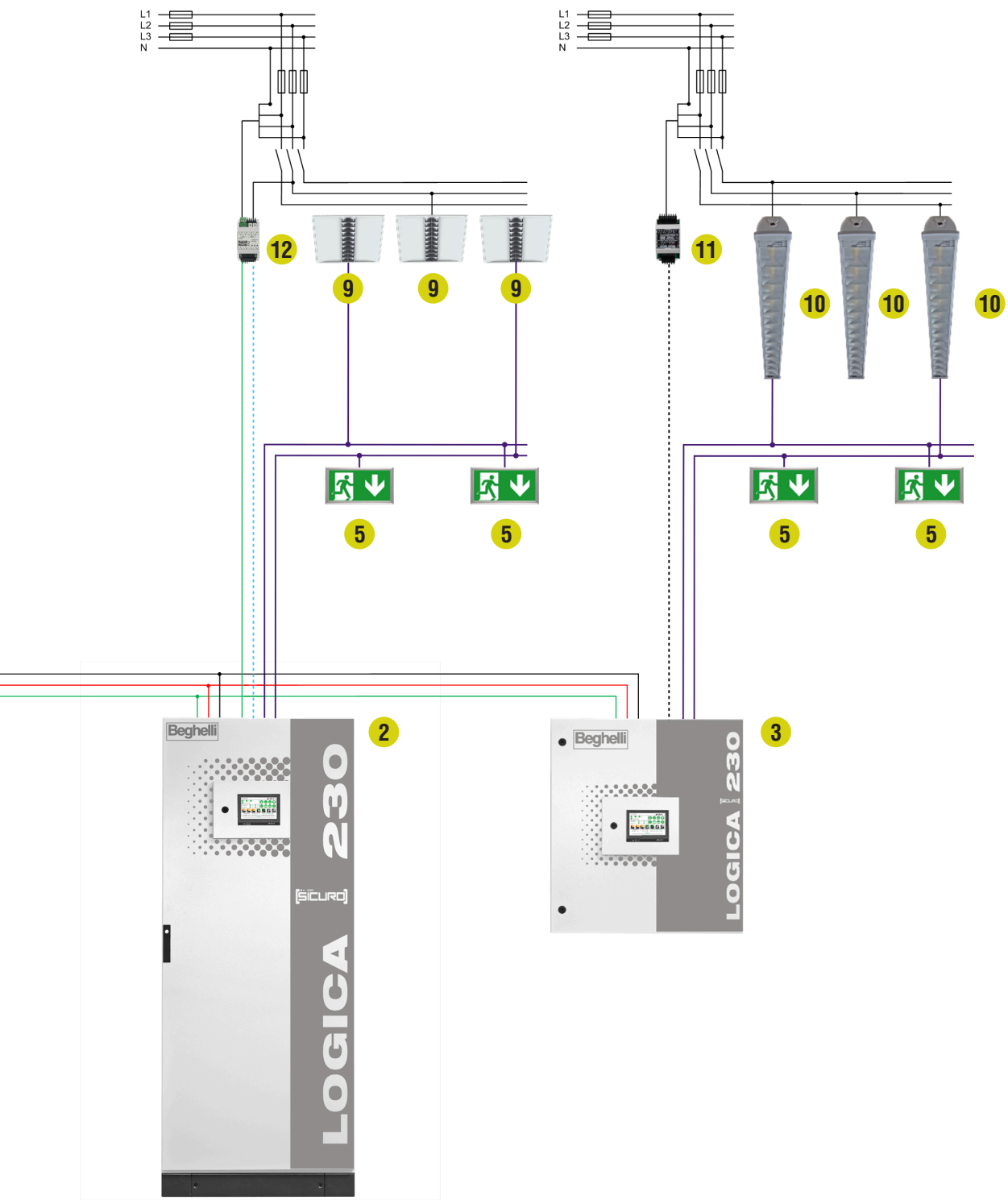
8 **S24 dynamic luminous marker**

9 **Luminaire** with S230-module

10 **Luminaire** with S230-inverter-module

11 **Mains monitoring module** (option)[1]

12 **Combined mains monitoring / light switch query module** (option)[2]



13 **Signalling and switching module** (option)[3]

14 **RS485 or ethernet** for **Remote panel** (option)[1] [4]

15 **RS485 or Ethernet** for PC with **software Logica Visual**[1] [4]

16 **Ethernet bus for web server**[4]

17 **RS485 or ethernet** for modbus RTU / TCP[1] [4]

[1] Cable: min. 2 x 2 x 0,8 mm

[2] Cable: min. 2 x 2 x 0,8 mm + 1 x 2 x 1,5 mm

[3] Cable: min. 6 x 2 x 0,8 mm

[4] Cable: min. CAT-5

DECENTRAL SUPPLY SICURO24

The decentral supply is based on **compact stations**.

COMPACT STATIONS

Compact stations with battery, charge, switchover, control and monitoring as well as distributor with internal luminaire circuits. Modular conception of the central station with exchangeable components.

TYPE		S24G
DESCRIPTION		Version with combined eletronic and battery cabinet as wall cabinet
BATTERY TYPE		sealed Pb battery
BATTERY CAPACITY		12 Ah to 56 Ah
BATTERY VOLTAGE		24 V
BATTERY CURRENT	**1 h**	6.5 A to 15.8 A
	2 h	3.7 A to 15.8 A
	3 h	2.8 A to 13.9 A
	8 h	1.1 A to 6.2 A
BATTERY POWER	**1 h**	156 W to 384 W
	2 h	88.8 W to 384 W
	3 h	67.2 W to to 333.6 W
	8 h	26.4 W to 148 W
CHARGE		1 module 27.2 V / max. 6 A
LUMINAIRE CIRCUITS		max. 1 / 2 modules: ● 4 x 24 V / 3 A mains operation: 24 V DC emergency operation: 24 V DC

S24G/E30
Version with combined eletronic and battery cabinet as wall cabinet **with** function integrity
sealed Pb battery
56 Ah
24 V
10.8 A
10.8 A
10.8 A
6.2 A
260 W
260 W
260 W
148 W
1 module 27.2 V / max. 6 A
max. 1 / 2 modules: ● 4 x 24 V / 3 A mains operation: 24 V DC emergency operation: 24 V DC

S24G EXTREME
Version with combined electronic and battery cabinet as wall cabinet
sealed Li-Ion-Titanate-battery
20 Ah / 40 Ah
24 V
12 A to 15.8 A
8 A to 15.8 A
4.5 A to 9 A
1.45 A to 2.9 A
288 W to 384 W
192 W to 384 W
108 to 216 W
35 W to 70 W
max. 1 module 27 V / max. 6 A
max. 1 / 2 modules: ● 4 x 24 V / 3 A mains operation: 24 V DC emergency operation: 24 V DC

Duration of 30 minutes in a cabinet approved by the DIBt and additional fire testing with electrical equipment by a material testing institute.

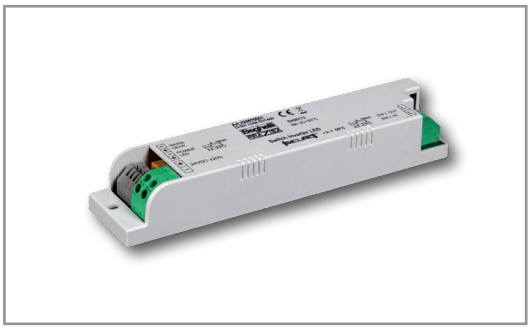
For ambient temperatures of -20° C to +50 ° C

LUMINAIRE CIRCUIT MODULES FOR S24

Luminaire circuit modules for use in S24 stations or S24 sub stations. Module with 4 luminaire circuits for luminaire monitoring as well as luminaire or circuit control:

- Selective monitoring per luminaire (luminaire monitoring)
- Selective control per luminaire (luminaire monitoring)
- Programming of the operating mode per luminaire (luminaire monitoring)
- Button for addressing the luminaire circuit module

TYPE	AK 4 X 32 EÜ
MONITORING	**Luminaire monitoring**
DESCRIPTION	4 circuits for 4 x 20 (32) luminaires
CONNECTED LOAD	4 x 72 W
INRUSH CURRENT	-
FUSE	8 x 6.3 AT / 250 V
ORDER CODE	**17247**



S24-INVERTER-MODUL

Monitoring and control module and integrated LED driver with automatic addressing for indoor and outdoor luminaires with LED driver and LED module.

- **Operating mode:** Maintained mode (switchable / not switchable), non-maintained mode (switchable / not switchable / programmable)
- **Mains operation:** Operation of the LED module via the LED driver of the luminaire without reduced power
  - LED-module supply: 2 V to 55 V / 0.5 A
  - Performance: 6 W or 12 W
- **Control:** LSSA control input for switching the luminaire in mains operation (on / off) or switching on the luminaire in emergency mode (mains monitoring)
  - Control signal: 0 V or 230 V

Communication to the S24 station or sub station via powerline bus.

Order code	Description
17220	S24-inverter-module for luminaire installation
17210	S24-inverter-module for luminaire attachment

CALCULATION OF LIGHT FLUX:

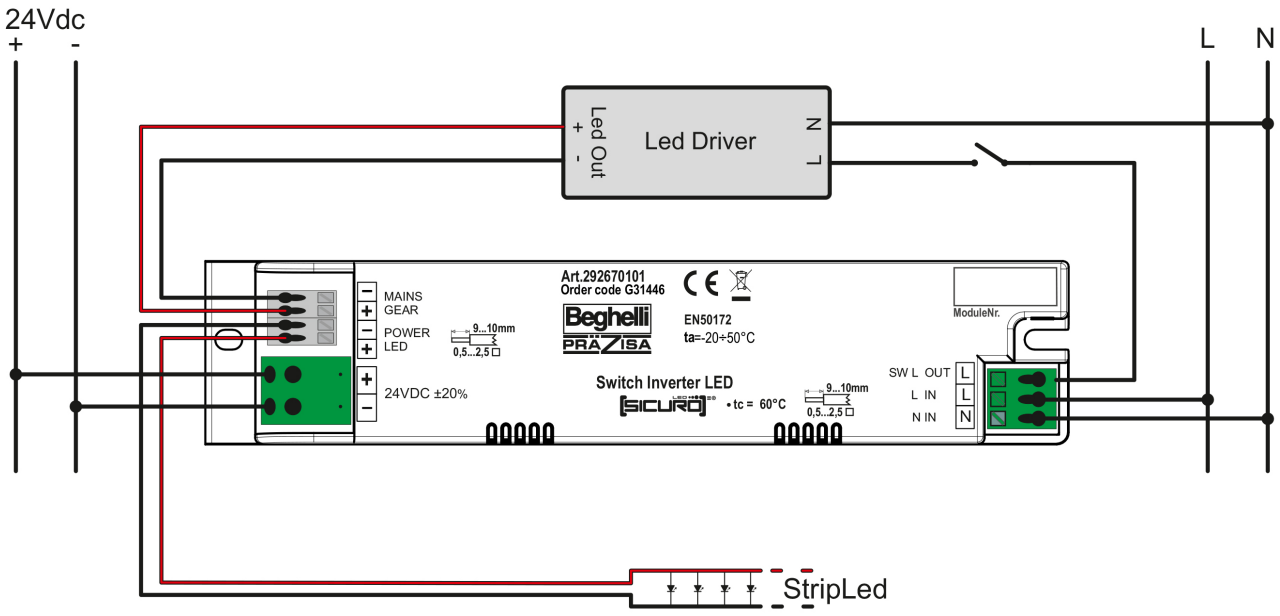
Light flux in mains operation = 100 %

Light flux in battery operation =

$$\text{Light flux in mains operation} \times \frac{\text{6 W or 12 W}}{\text{LED-module power}}$$

Battery voltage:	24 V ± 20 %
Mounting:	Luminaire installation / luminaire attachment
Housing:	Polycarbonate
Dimensions (H x W x D):	30 x 239 x 46 mm / 55 x 300 x 139 mm
Type of protection:	IP20 / IP65
Protection class:	II

CIRCUIT DIAGRAM PRINCIPLE



TECHNICAL DATA S24




TYPE		S24G-12	S24G-24	S24G-28	S24G-56
VERSION		Version with combined electronic and battery cabinet as wall cabinet			
BATTERY CAPACITY		12 Ah	24 Ah	28 Ah	56 Ah
CHARGING MODULES		1	1	1	1
LUMINAIRE CIRCUIT MODULES (INTERNAL)		1	1	1 or 2	1 or 2
LUMINAIRE CIRCUIT MODULES (EXTERNAL)		-	-	-	-
SUB STATIONS		-	-	-	-
LSSA-INPUTS	(INTERNAL)	4	4	4	4
LSSA-MODULES	(INTERNAL)	-	-	-	-
LSSA-MODULES	(EXTERNAL)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)
MOUNTING		Wall	Wall	Wall	Wall
ELECTRONIC CABINET		sheet steel, white or grey[1]	sheet steel, white or grey[1]	sheet steel, grey[2]	sheet steel, grey[2]
BATTERY CABINET[1]					
DIMENSIONS (H x W x D) MM		516 x 316 x 140	644 x 316 x 140	800 x 400 x 170	800 x 400 x 170
TYPE OF PROTECTION	**electronic**	IP20	IP20	IP20	IP20
	battery	IP20	IP20	IP20	IP20
PROTECTION CLASS		I	I	I	I
SUPPLY	**mains**	230 V ~ 50 Hz	230 V ~ 50 Hz	230 V ~ 50 Hz	230 V ~ 50 Hz
	battery	24 V =	24 V =	24 V =	24 V =
AMBIENT TEMPERATURE	**electronic**	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C
	battery	+20 °C	+20 °C	+20 °C	+20 °C
CABLE ENTRY		above / behind	above / behind	above	above
CABLE CLAMPS	**mains**	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²
	battery	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²
	luminaires	2 x 2.5 mm²	2 x 2.5 mm²	2 x 2.5 mm²	2 x 2.5 mm²
	control inputs / outputs	2.5 mm²	2.5 mm²	2.5 mm²	2.5 mm²

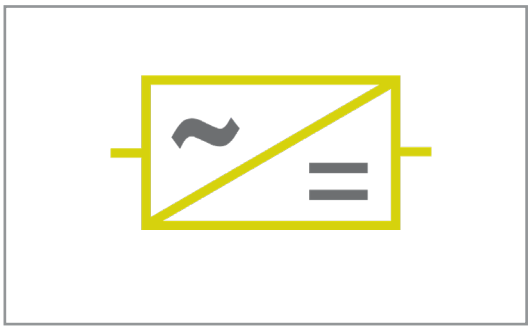
[1] RAL 9003 (white) or RAL 7060 (grey)

[2] RAL 7035

Data excluding aging reserve

	EXTREME  	
S24G-56/E30	**S24G-20 EXTREME**	**S24G-40 EXTREME**
Version with combined electronic and battery cabinet as wall cabinet with function integrity	Version with combined electronic and battery cabinet as wall cabinet	
56 Ah	20 Ah	40 Ah
1	1	1
1	1 or 2	1 or 2
-	-	-
-	-	-
4	4	4
-	-	-
max. 96 (optional)	max. 96 (optional)	max. 96 (optional)
Wall	Wall	Wall
fire protection panels, grey[2]	sheet steel, grey[2]	sheet steel, grey[2]
1.050 x 650 x 415	800 x 400 x 170	800 x 400 x 170
IP54	IP54	IP54
IP54	IP54	IP54
I	I	I
230 V ~ 50 Hz	230 V ~ 50 Hz	230 V ~ 50 Hz
24 V =	24 V =	24 V =
-5 °C to +35 °C	-20 °C to +50 °C	-20 °C to +50 °C
+20 °C	-20 °C to +50 °C	-20 °C to +50 °C
above	above	above
2.5 mm²	2.5 mm²	2.5 mm²
2.5 mm²	2.5 mm²	2.5 mm²
2 x 2.5 mm²	2 x 2.5 mm²	2 x 2.5 mm²
2.5 mm²	2.5 mm²	2.5 mm²

CHARGING MODULE AND BATTERIES FOR S24

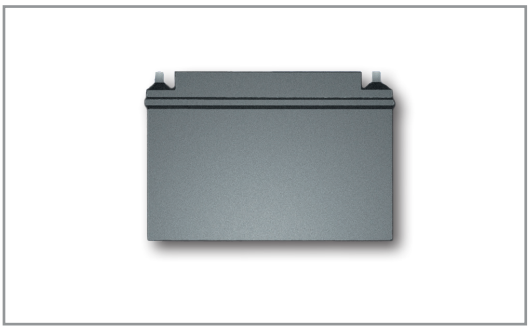


CHARGING MODULE S24

Charging module for charging of batteries with charging state-dependent switchover from charging to float charging. Automatic switch-off in the case of extreme temperature deviations to protect the batteries.

Charging voltage: LTO 27 V
PB 27.8 V

Charging current: 3 A or 6 A



BATTERY

Batteries as sealed lead battery (standard version) or lithium-ion-titanate batteries (extreme version).

Service life: > 10 years
Standard version with an ambient temperature of 20 °C
Extreme version with an ambient temperature of -20° C to + 50 °C

STANDARD VERSION

CAPACITY (Ah)	VOLTAGE (V)	CURRENT (A)[1]				CONNECTED LOAD (W)[1]				BATTERY COMPARTEMENT
		1 h	2 h	3 h	8 h	1 h	2 h	3 h	8 h	
12	24	6.5	3.7	2.8	1.1	156	88.8	76.2	26.4	X
24	24	12	7.5	5.6	2.3	288	180	134.4	55.2	X
28	24	12 / 15.8[2]	9.7	7	3.1	288 / 384[2]	232.8	170	74.4	X
56	24	12 / 15.8[2]	12 / 15.8[2]	12 / 13.9[2]	6.2	384	288 / 384[2]	288 / 333.6[2]	148	X

EXTREME VERSION

CAPACITY (Ah)	VOLTAGE (V)	CURRENT (A)[1]				CONNECTED LOAD (W)[1]				BATTERY COMPARTEMENT
		1 h	2 h	3 h	8 h	1 h	2 h	3 h	8 h	
20	24	12 / 15.8[2]	8	4.5	1.45	288 / 384[2]	192	108	35	X
40	24	12 / 15.8[2]	12 / 15.8[2]	9	2.9	288 / 384[2]	288 / 384[2]	216	70	X

[1] Data including aging reserve

[2] Version with 1 / 2 luminaire circuit modules

PROJECT PLANNING INFORMATION

For planning a decentral supply Sicuro24, the following information is required:

- Operating time (1 h / 2 h / 3 h / 8 h)
- Battery capacity (Ah)
  - Can be calculated from the operating time and total power in battery operation
- Total power in mains operation (W)
- Total power in battery operation (W)

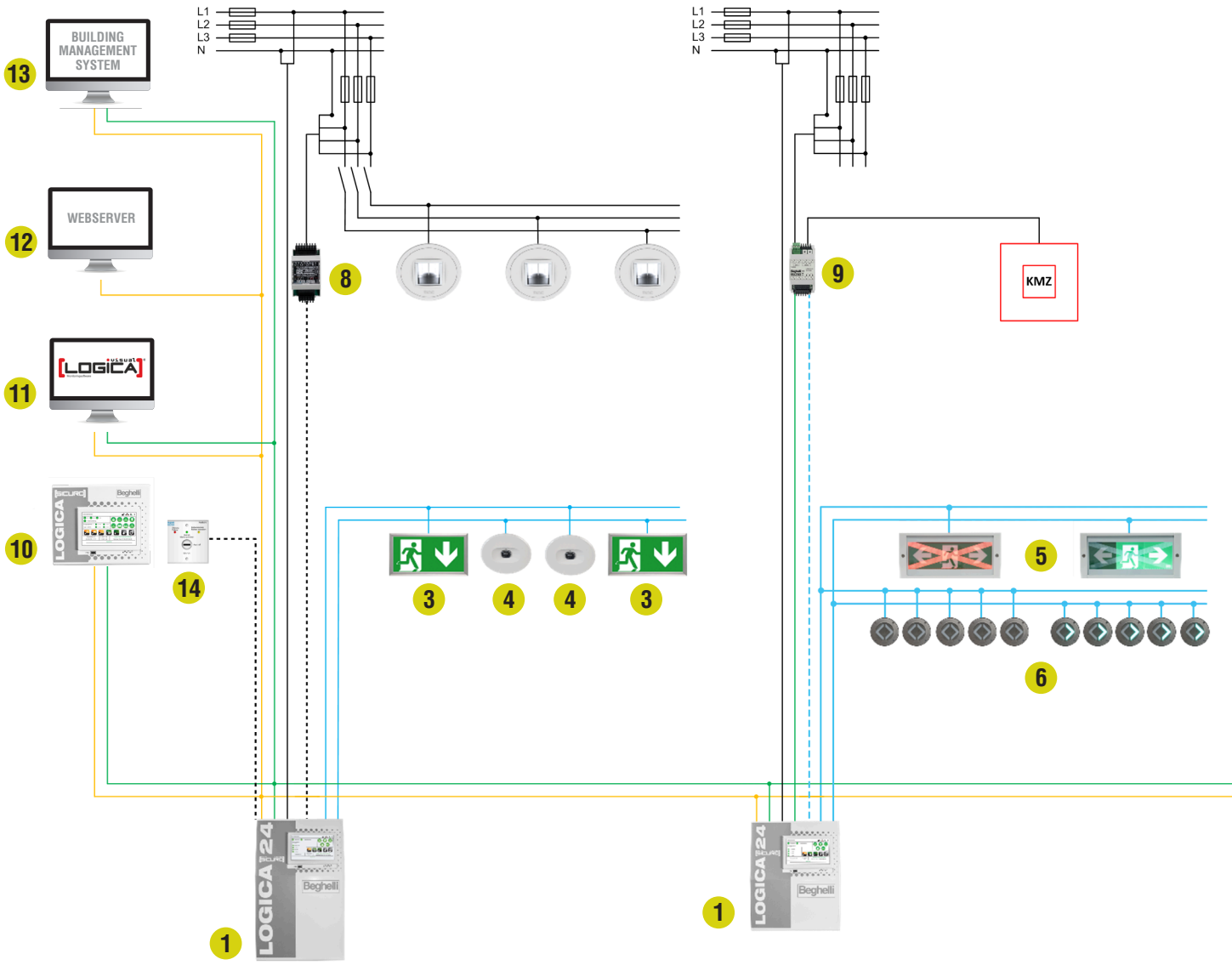
STATION

- Number of internal luminaire circuit modules in the station:
  - AK 4 x 20 EÜ
  - Power per luminaire circuit

OPTIONS

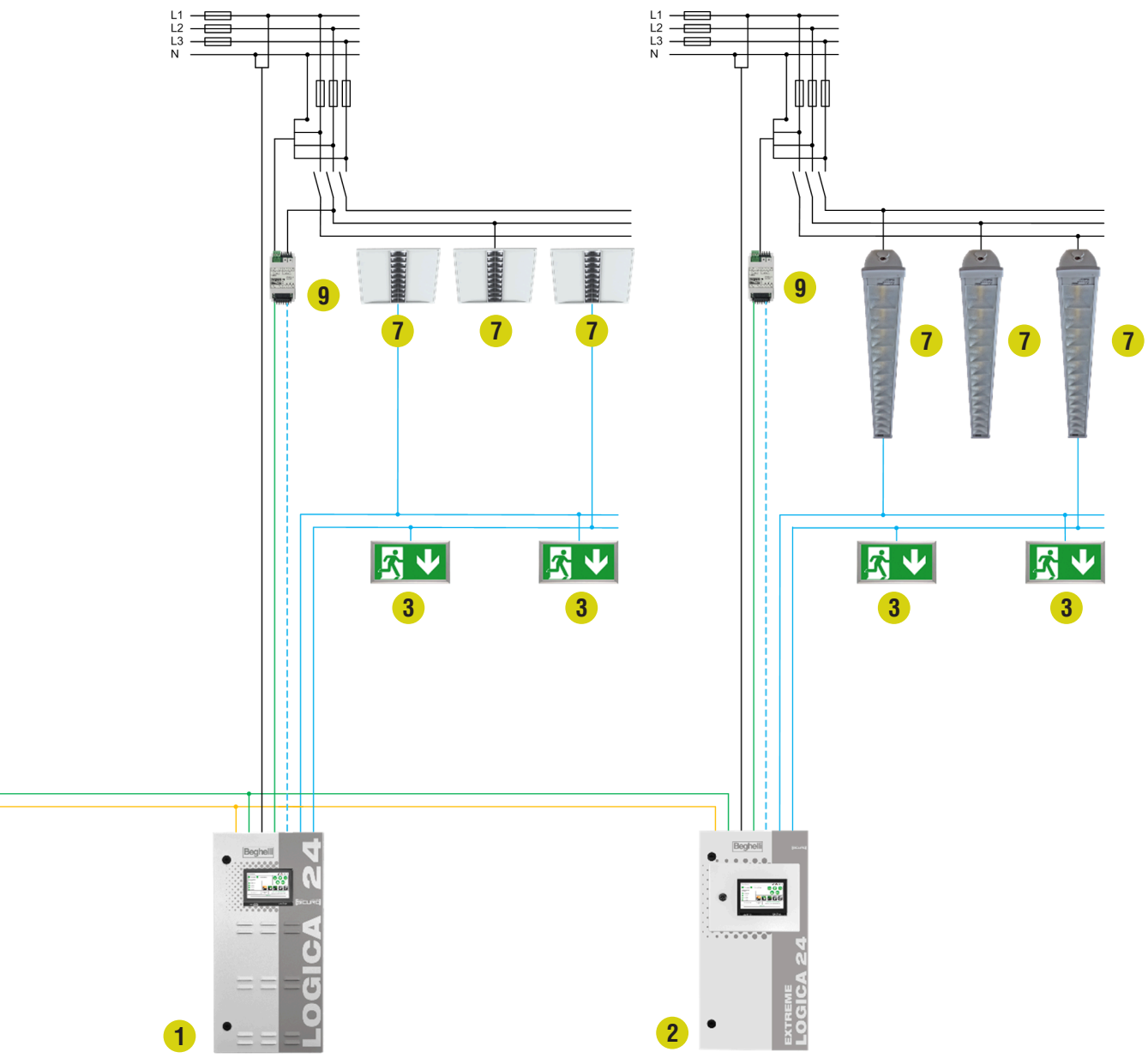
- Mains monitoring modules DS1 UV or DS3 UV
- LSSA-modules LSSA 3+5 or LSSA 8
- S24-inverter-modules
- Remote panel
- Signalling and switching module MSM
- Monitoring software Logica Visual

DECENTRAL SUPPLY SICURO24



230 V AC
24 V DC (load)
24 V DC (control)
RS485 bus
Ethernet
Control and signals

1 **S24G station**
2 **S24G extreme station**
3 **S24 exit sign luminaire**
4 **S24 safety luminaire**
5 **S24 dynamic exit sign luminaire**
6 **S24 dynamic luminours markers**
7 **Luminaire** with S24-inverter-module
8 **Mains monitoring module** (option)[1]
9 **Combined mains monitoring / light switch query module** (option)[2]



10 **RS485 or ethernet** for remote panel (option) [1] [4]

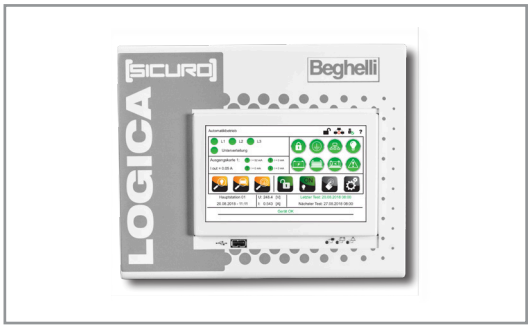
11 **RS485 bus or ethernet** for PC with **software Logica Visual** [1] [4]

12 **Ethernet bus for web server**[4]

13 **RS485 or ethernet** for modbus RTU / TCP[1] [4]

14 **Signalling and switching module** (option)[3]

[1] Cable: min. 2 x 2 x 0.8 mm
[2] Cable: min. 2 x 2 x 0.8 mm + 1 x 2 x 1.5 mm
[3] Cable: min. 6 x 2 x 0.8 mm
[4] Cable: min. CAT-5



Order code	Description
17240	Remote panel Sicuro24-230 housing white
17241	Remote panel Sicuro24-230 housing grey

REMOTE PANEL

Remote panel for remote control of 96 Sicuro systems.

FUNCTIONS

Testing

- Function test (start) per system or for all systems
- Duration test (start) per system or for all systems

Control

- Maintained mode (on / off) per system or for all systems
- Operational condition (on / off) per system or for all systems

Signalling

- Operating mode (mains / battery) per system
- Operational condition per system
- Faults
  - Collective fault
  - Battery
  - Charging
  - Luminaires
  - Communication fault
- Testing of the last 2 years per system

Switch input and signalling output

- 1 switch input, free programmable, for switching of
  - Operational condition (on / off)
  - Maintained mode (on / off)
  - Function test (start)
  - Duration test (start)
  - Non-maintained mode (off) of all systems
  - Deep discharge protection (reset) for one or all systems
  - **Switching signal:** Contact, potential-free
- 3 signalling outputs, free programmable, for signalling the status of
  - Charging
  - Battery
  - Circuit resp. luminaire
  - Deep discharge
  - Operational condition
  - Mains failure
  - Battery operation
  - Test operation for one or all systems
  - **Signalling signal:** contact, potential-free

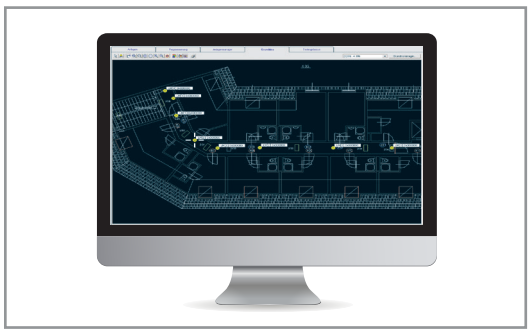
Communication bus

- RS485 bus for communication in decentral supplies
- Ethernet bus for communication in decentral supplies
- 3 signalling outputs, free programmable, for signalling the status of
  - Charging
  - Battery
  - Circuit resp. luminaire
  - Deep discharge
  - Operational condition
  - Mains failure
  - Battery operation
  - Test operation for one or all systems
  - **Signalling signal:** contact, potential-free

Operation

Operation via 7” colour touch screen with graphic and alphanumeric interface for input and output of all parameter and data, activatable password protection, multilingual and 3 status LED for displaying mains operation / battery operation / collective fault

Mounting:	Surface wall mounting
Cable entry:	Above / behind
Housing:	Sheet steel, white (RAL 9003) or grey RAL (7016)
Type of protection:	IP20 / IP65
Protection class:	II



Order code	Description
SWB16311	Logica Visual

MONITORING AND CONTROL SOFTWARE LOGICA VISUAL

Software for central monitoring and control of complex safety lighting with self-contained supply, decentral or central power supply.

Version for Windows XP (32/64 Bit), Windows VISTA (32/64 Bit), Windows 7 (32/64 Bit), Windows 8 (32/64 Bit) and Windows 10 (32/64 Bit)

FUNCTIONS

Monitoring

- Automatic or manual execution of a function test
- Automatic or manual execution of a duration test

Control

- Manual switching (on / off) of maintained mode in mains operation per system (decentral or central supply)

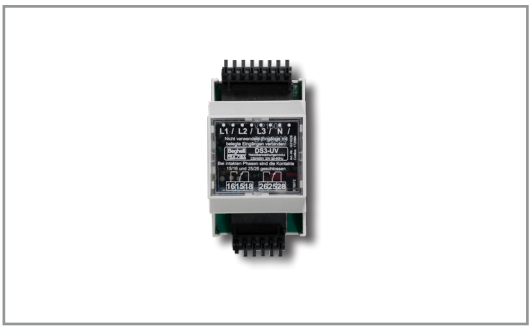
Signalling

- Current status in online mode in graphic and numerical format per luminaire (decentral or central supply)
  - Operational condition
  - Operating mode
  - Faults
  - Tests
- Faults in online mode per luminaire (decentral and central supply)
  - Lamp
  - Communication fault
- Tests of the last 2 years per system (decentral and central supply)

Programming

- Import of layout plans as DXF / DWG file
- Text and graphic assignment of all systems, circuits and luminaires resp. luminaires, supply devices and supply modules
- System parameters per system
- Test parameters per system
- Operating mode per circuit or luminaire (decentral or central supply)
- Switching per circuit or luminaire (decentral or central supply)
- Test parameters per system
  - Date
  - Time
  - Duration
  - Cycle
- Free assignment of circuits and luminaires to monitoring and control modules per system (decentral or central supply)
- 2 programmable time control scenes with 7 x 5 switch commands (maintained mode) per system (central supply)
- 3 programmable time control scenes with 7 x 5 > switch commands (maintained mode) per system (decentral supply)

OPTIONAL COMPONENTS FOR S230 AND S24



MAINS MONITORING MODULE DS 1 UV/DS 3 UV

Module for monitoring the mains supply for general lighting in sub distributors. Activation of the control output during mains faults and mains failures with U < 0.6 $U_{Nominal}$ for 0.5s.

Mains input:	1 ~ N 230 V / 50 Hz resp. 3 ~ N 400 V / 50 Hz
Control output:	2 changeovers, potential-free
Housing:	Plastic
Dimensions (H x W x D):	90 x 52 x 58 mm
Type of protection:	IP20
Protection class:	II
Mounting:	Distributor installation (DIN rail)

Order code	Description
17226	DS1 UV 1-phase
17206N	DS3 UV 3-phase

LIGHT SWITCH QUERY MODULE LSSA 3+5

Module with 3 control inputs for monitoring the mains for general lighting or to query the light switches for general lighting and 5 control inputs to query the light switches for general lighting. Function and logics of control inputs as well as assignment of luminaire circuits or luminaires, which can be freely programmed.

Control input for mains monitoring:	3 or 0
Control signal:	1 ~ N 230 V / 50 Hz, can be inverted (U > 0,6 $U_{Nominal}$ for 0,5 s)
Control input for light switch query:	5 or 8
Control signal:	1 ~ N 230 V / 50 Hz, can be inverted
Communication bus:	RS485
Housing:	Plastic
Dimensions (H x W x D):	110 x 53 x 63 mm
Type of protection:	IP20
Protection class:	II
Mounting:	Installation in S230 central station or sub station or distributor

Order code	Description
17230	LSSA 3+5

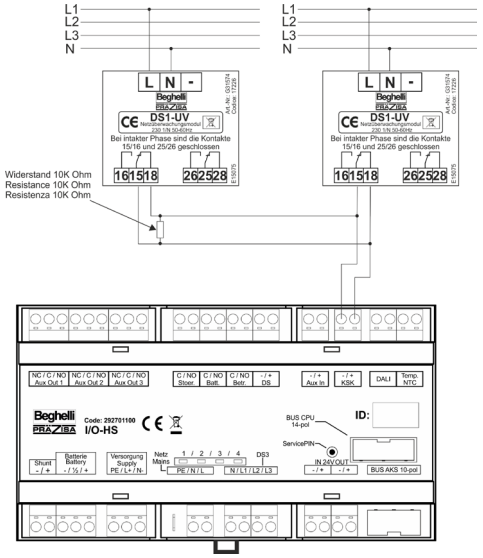
LIGHT SWITCH QUERY MODULE LSSA 8

Module with 8 control inputs to query the light switches for general lighting. Activation of the control inputs for the light switch query with switch contacts (potential free), can be inverted. Logics of the control inputs as well as assignment to luminaire circuits or luminaires, can be freely programmed.

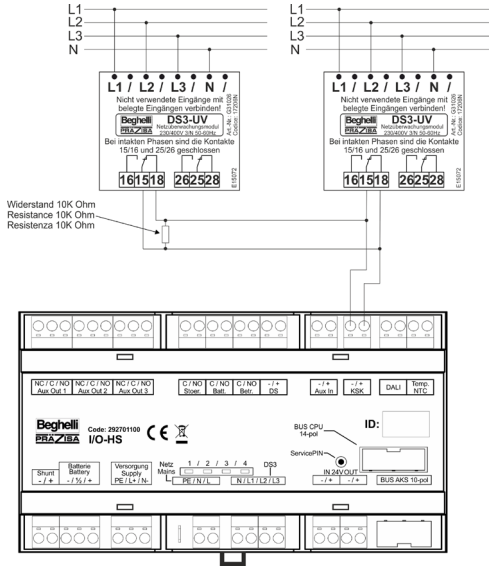
Control inputs for light switch query:	8
Control signal:	Switch contact (potential free),can be inverted
Communication bus:	RS485
Housing:	Plastic
Dimensions (H x W x D):	110 x 53 x 63 mm
Type of protection:	IP20
Protection class:	II
Mounting:	Installation in S230 central station or sub station or distributor

Order code	Description
17231	LSSA 8

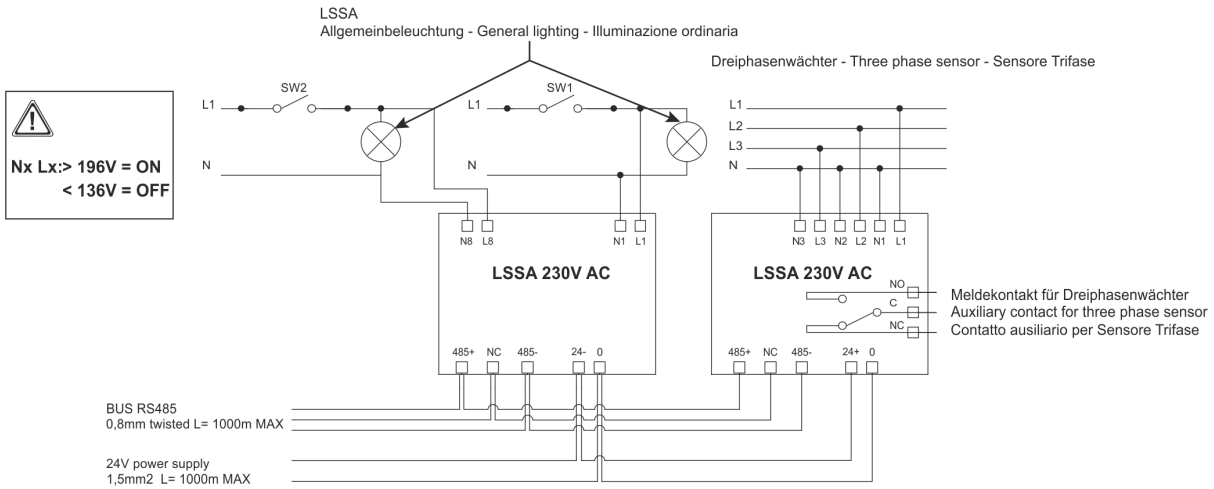
CIRCUIT DIAGRAM PRINCIPLE DS 1 UV



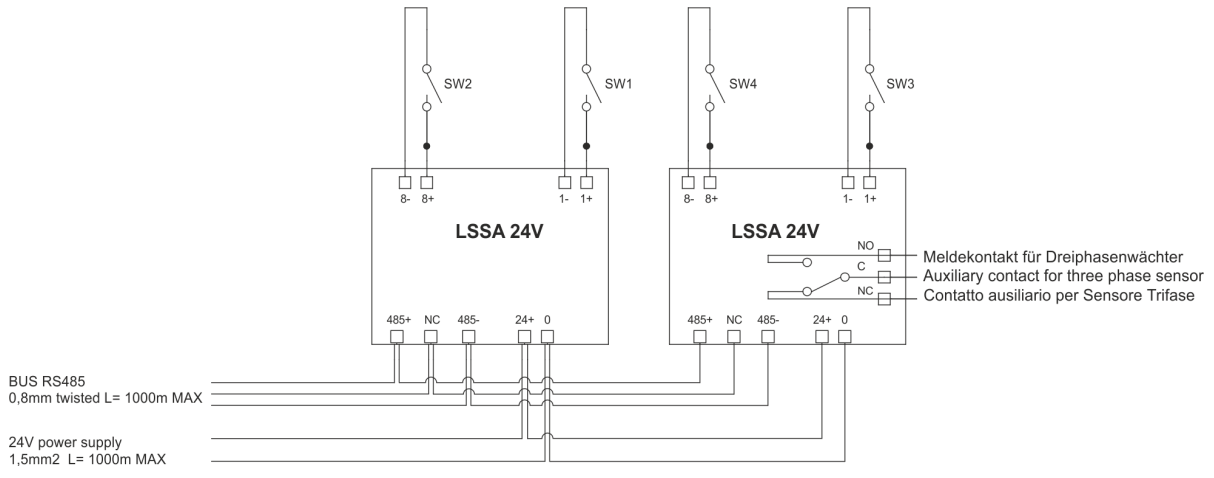
CIRCUIT DIAGRAM PRINCIPLE DS 3 UV



CIRCUIT DIAGRAM PRINCIPLE



CIRCUIT DIAGRAM PRINCIPLE



OPTIONAL COMPONENTS FOR S230 AND S24

SIGNALLING AND SWITCHING MODULE MSM-A

Signalling (optical) of:

- Operational condition
- Battery operation
- Collective fault

Switching (keyswitch) of:

- Maintained mode

Housing:	Plastic
Dimensions (H x W x D):	160 x 80 x 60 mm
Type of protection:	IP65
Protection class:	III
Mounting:	Surface wall mountring

Order code	Description
17207	MSM-A

SIGNALLING AND SWITCHING MODULE MSM-E

Signalling (optical) of:

- Operational condition
- Battery operation
- Collective fault

Switching (keyswitch) of:

- Maintained mode

Housing:	Plastic / Metal
Dimensions (H x W x D):	86 x 86 x 53 mm
Type of protection:	IP20
Protection class:	III
Mounting:	Recessed wall mounting

Order code	Description
17208	MSM-E

RS485 / USB-INTERFACE

Module for communication between Sicuro systems and a computer with software Logica Visual via USB.

Housing:	Metal
Dimensions (H x W x D):	151 x 75 x 26 mm
Type of protection:	IP20
Protection class:	III
Mounting:	DIN rail

Order code	Description
16319	RS485-USB-interface

ORDER INDEX

Disclaimer

The technical content corresponds to the status at the time of printing the catalogue. Subject to change. Please request information from your internal sales team or field sales. We cannot assume any liability for typesetting errors and colour deviations.

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