

safety

lighting

decentral and
central supply

2023

CATALOGUE



LIGHT IS SAFETY

True to this motto, **Beghelli PRÄZISA Deutschland** has been a competent partner worldwide for more than three decades for specialist planners, expert companies, industries, trade and commerce. 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 mounting, 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 lightings. The standard is particularly advantageous for construction of new lightings as well as the renovation of existing lightings.



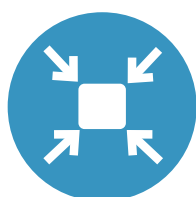
SUSTAINABLE

Our concepts Smart Lighting and Sicuro Safety Lighting are extremely efficient. Luminaire power is reduced up to 75%, luminaire quantity up to 40%. Assembly and maintenance are easy. This saves energy and protects the environment.



INNOVATIVE

The series Titanium Safety Lighting is powered by Lithium-Ion-Titanium 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 -10 °C to +45 °C.



COMPACT

Tula combines escape sign and safety luminaire and replaces the separate escape sign 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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**CENTRAL
SUPPLY
SICURO230**

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**DECENTRAL
SUPPLY
SICURO24**

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CENTRAL & SUPPLY



CENTRAL SUPPLY WITH S230

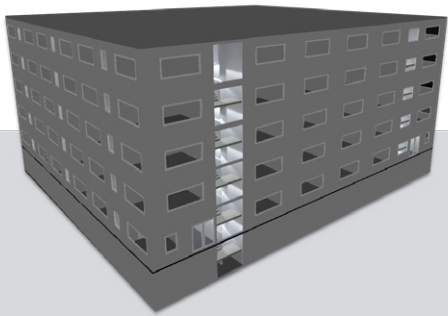
- for building-related safety lighting ✓
- static & dynamic control ✓
- mode-dependent reduced battery supply ✓
- also for mains replacement systems (MRS) or a dual mains available ✓

DECENTRAL S230 & S24



DECENTRAL SUPPLY WITH S24

- ✓ for fire section-related safety lighting
- ✓ static & dynamic control
- ✓ **mode-dependent reduced battery supply**
- ✓ **extreme version for extended temperature ranges**



SICURO230

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

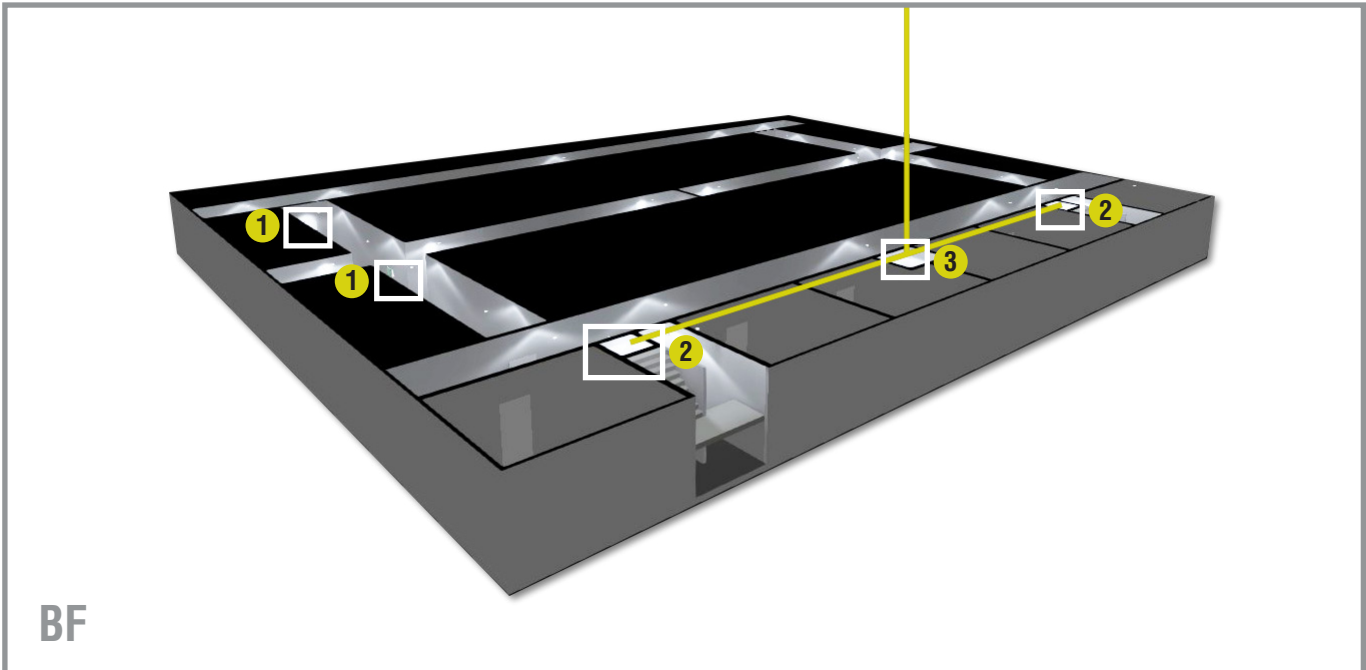


battery room

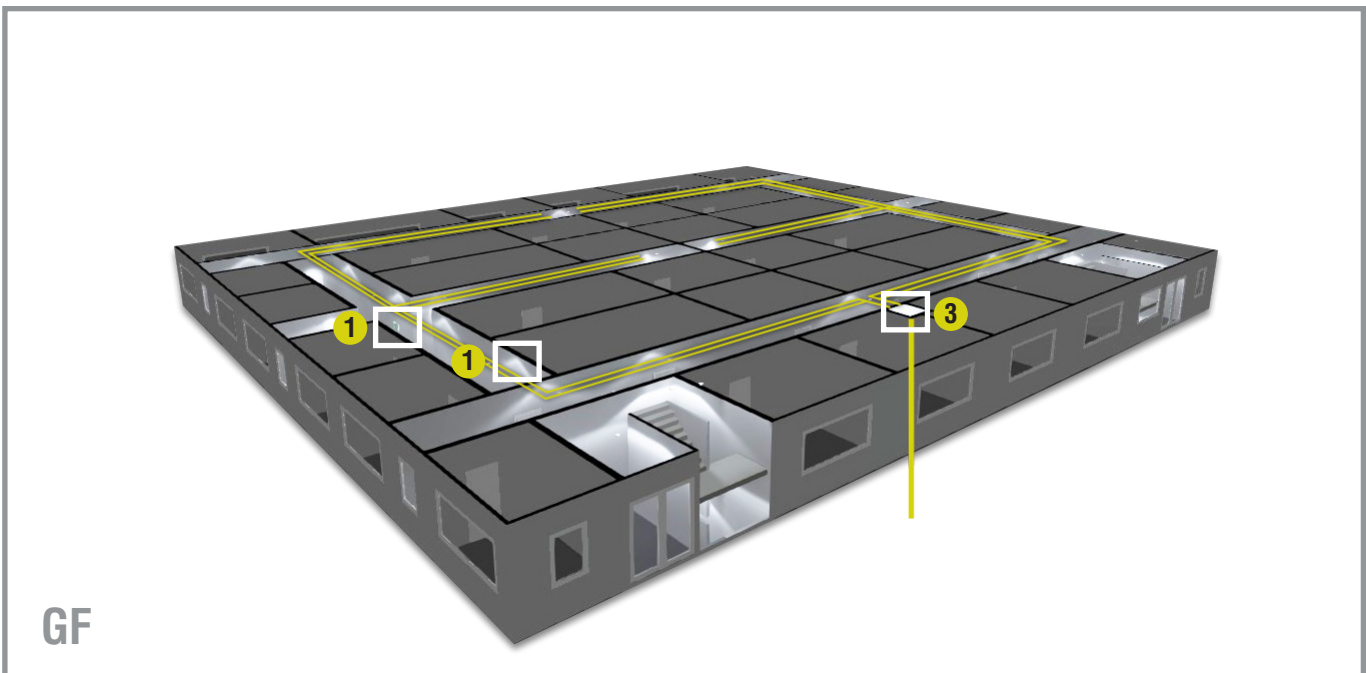
additional distributors

additional cables

F30 partly functional integrity



BF



GF

2 MAIN STATION



3 SUB STATION



1



SEPARATE
EXIT SIGN LUMINAIRES



SEPARATE
SAFETY LUMINAIRES



COMBINED
EXIT SIGN AND
SAFETY LUMINAIRES



DYNAMIC
EXIT SIGN LUMINAIRES¹



DYNAMIC
LUMINOUS MARKERS¹



INDOOR AND OUTDOOR
LUMINAIRES



Danger-depending dynamic control of the safety lighting

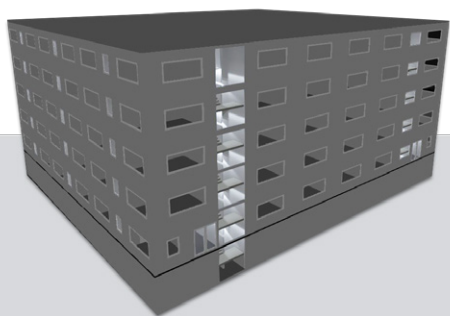
Demand-depending static control of the safety lighting

Mode-depending reduced battery 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





¹ only with S24 sub stations



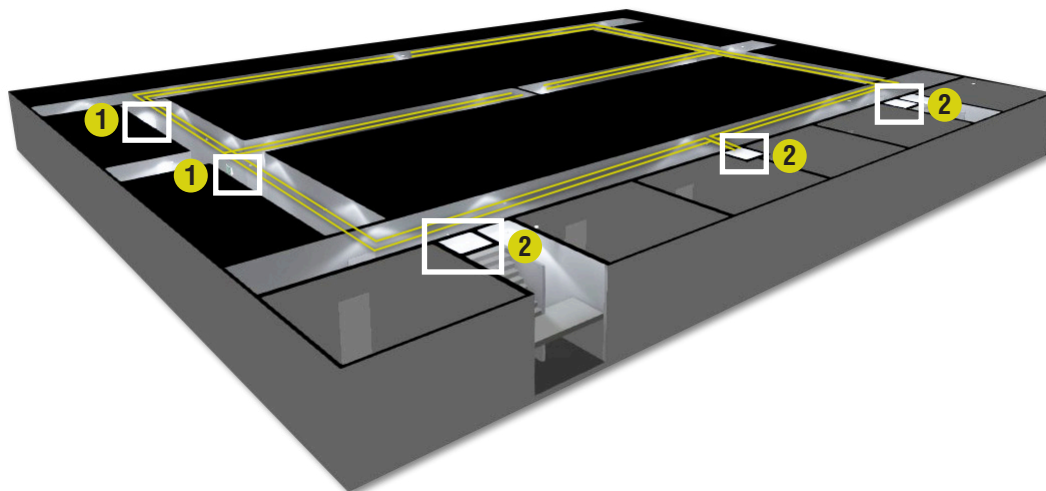
SICURO24

System with power limitation for supplying the safety lighting in a fire section of a building¹ – concept with compact stations

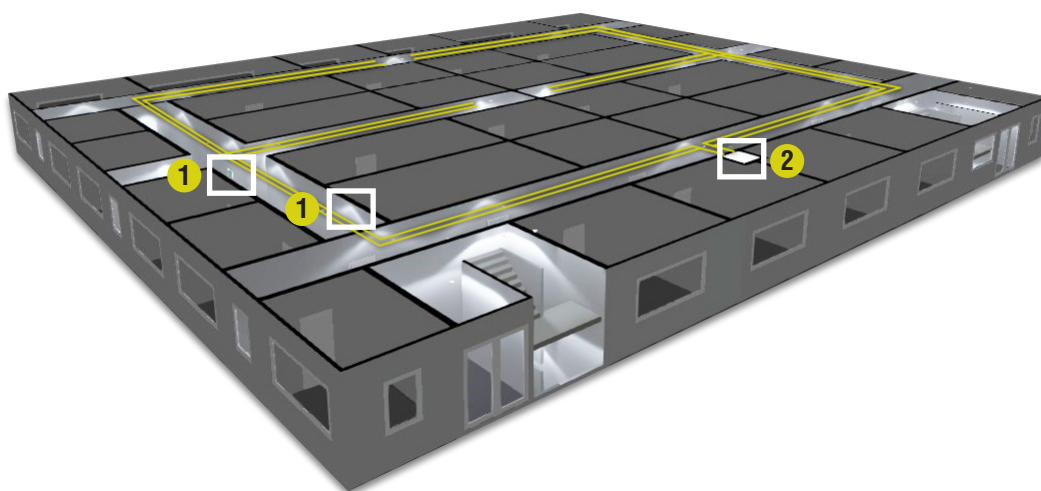


-  no battery room
-  no additional distributors
-  no additional cables
-  no functional integrity

¹ in public buildings with fire sections < 1.600 m²



BF



GF

2 COMPACT STATION



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-dependent dynamic control of the safety lighting

Demand-dependent static control of the safety lighting

Mode-dependent reduced battery supply in emergency operation for decreasing of battery capacity

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Six combinable operating modes in one luminaire circuit

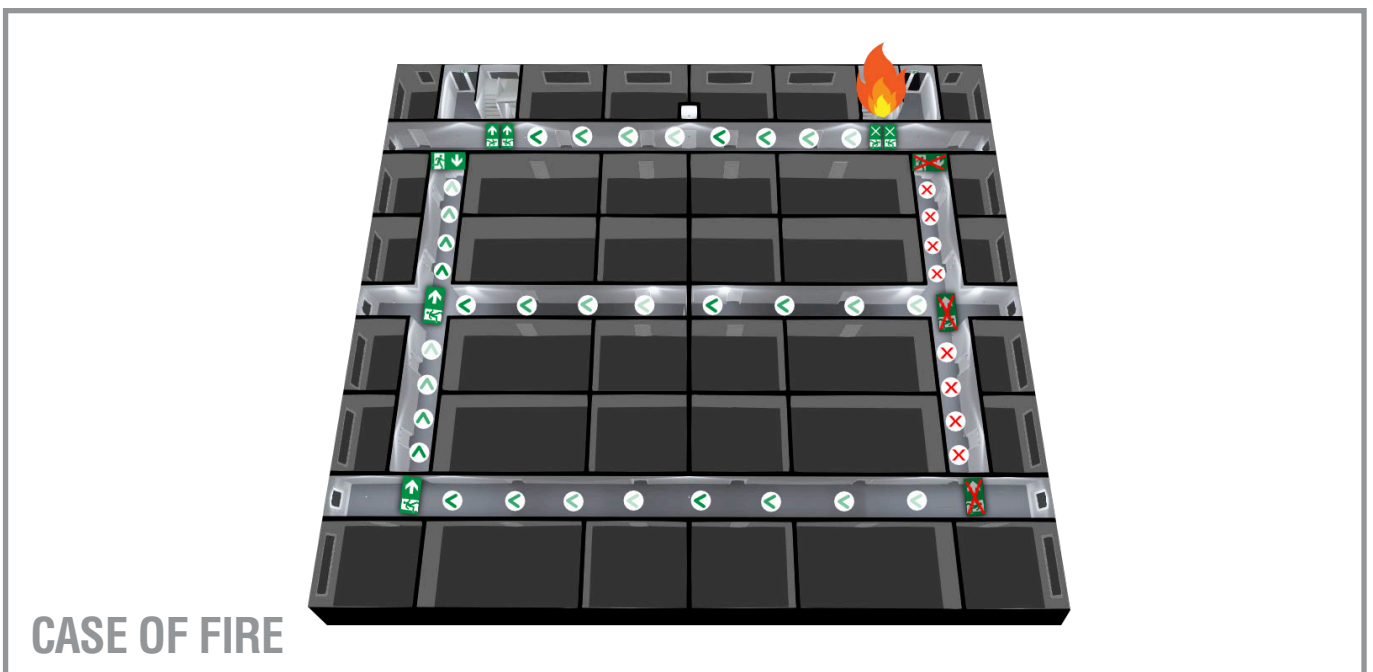
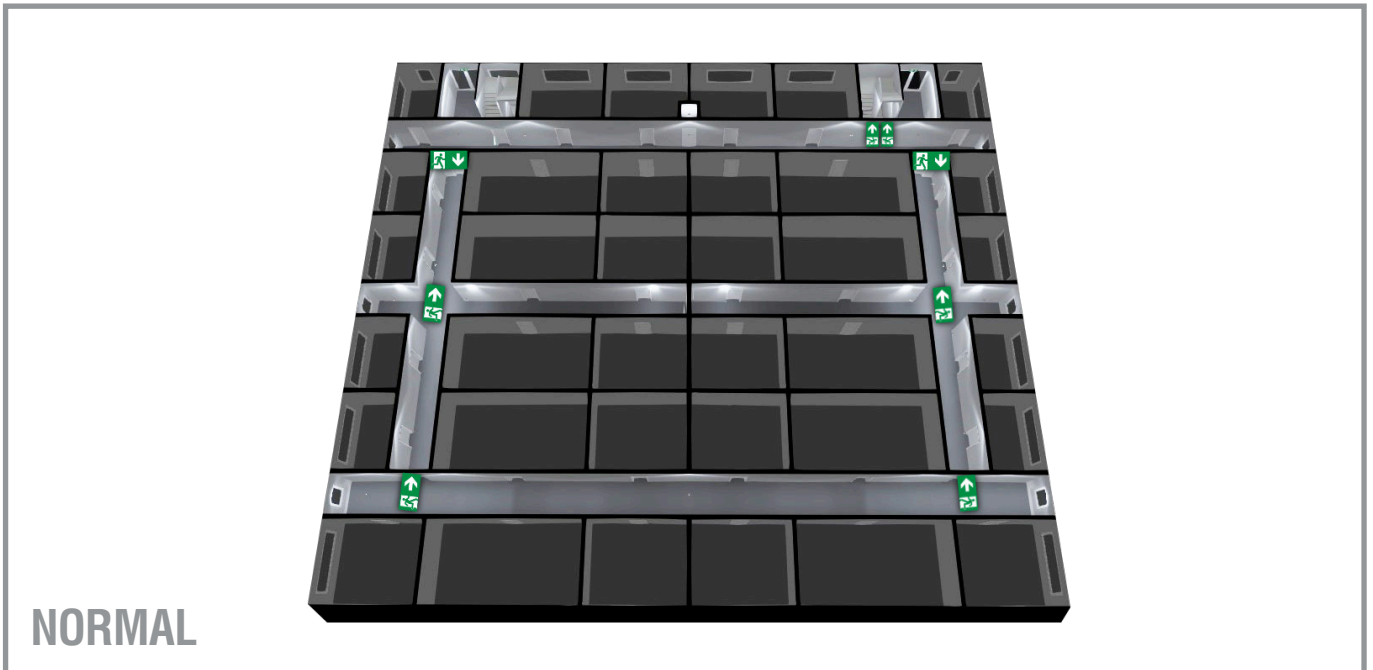


DANGER-DEPENDING DYNAMIC CONTROL WITH SICURO230 AND SICURO24

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

- 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
- closing an escape route with dynamic exit sign luminaires and dynamic luminous markers¹

¹ only with S24 sub stations



DYNAMIC EXIT SIGN LUMINAIRES



ESCAPE ROUTE TO THE RIGHT



ESCAPE ROUTE TO THE LEFT



ESCAPE ROUTE CLOSED

DYNAMIC LUMINOUS MARKERS



ESCAPE ROUTE TO THE RIGHT



ESCAPE ROUTE TO THE LEFT



LUMINOUS MARKER SWITCHED OFF

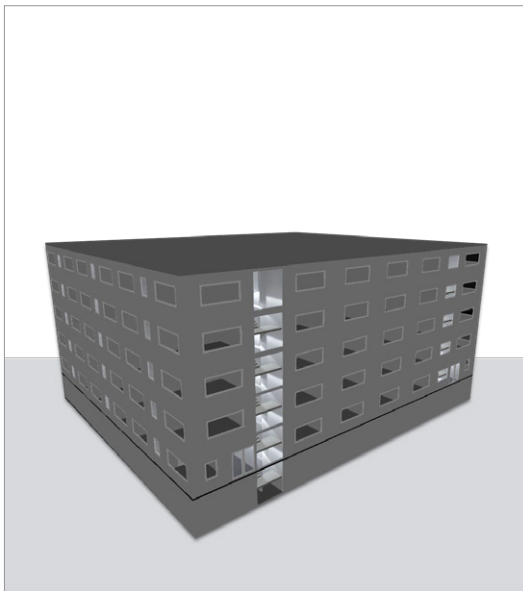


Automatic control over a danger signalling unit and:

- **1-time control inputs** for exit sign luminaires and safety luminaires
- **8-time control inputs** for dynamic exit sign luminaires and dynamic luminous markers

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

Ideal for safety lightings **in buildings or fire sections with several escape routes**



MODE-DEPENDENT REDUCED BATTERY SUPPLY WITH S230 AND S24

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

- **mains operation:** operation of the LED lamp by the electronic control gear of the luminaire with non-reduced power
- **emergency operation:** operation of the LED lamp by the integrated LED driver of the S230 or S24 inverter module with reduced power

MAINS OPERATION



EMERGENCY OPERATION



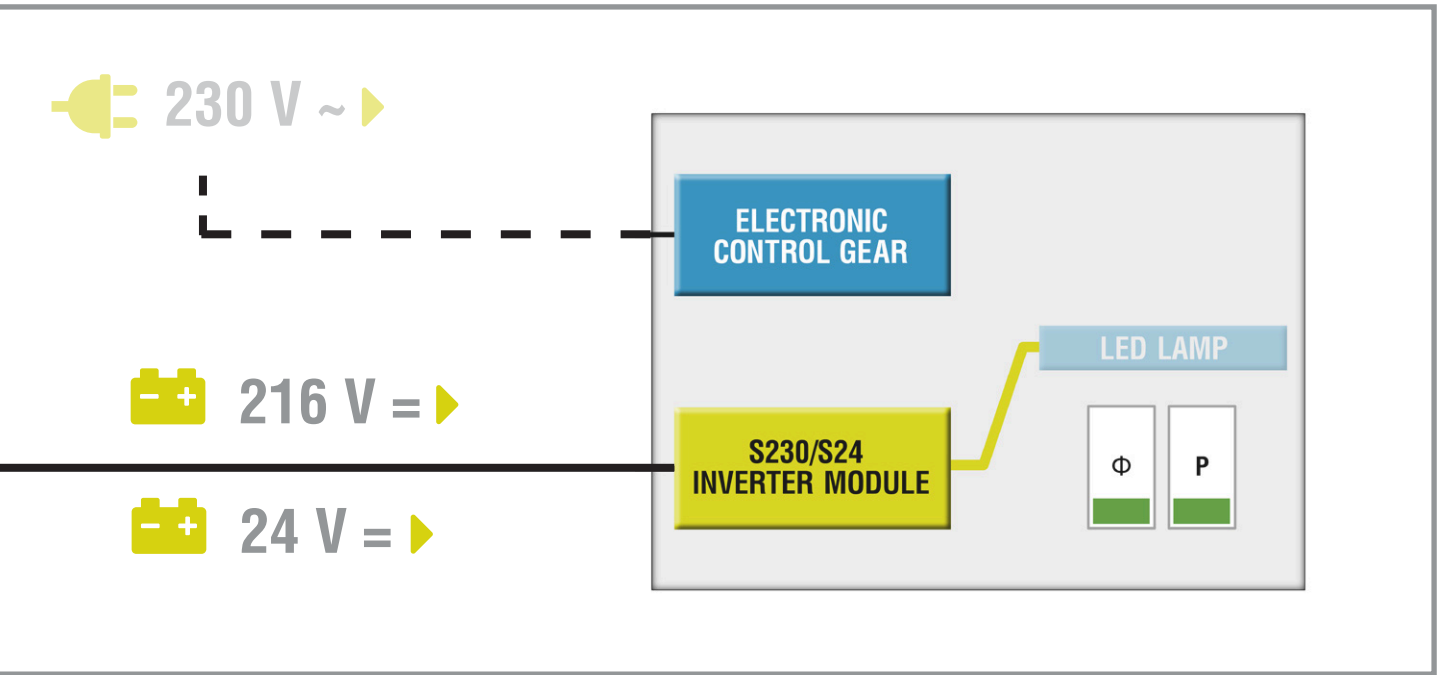
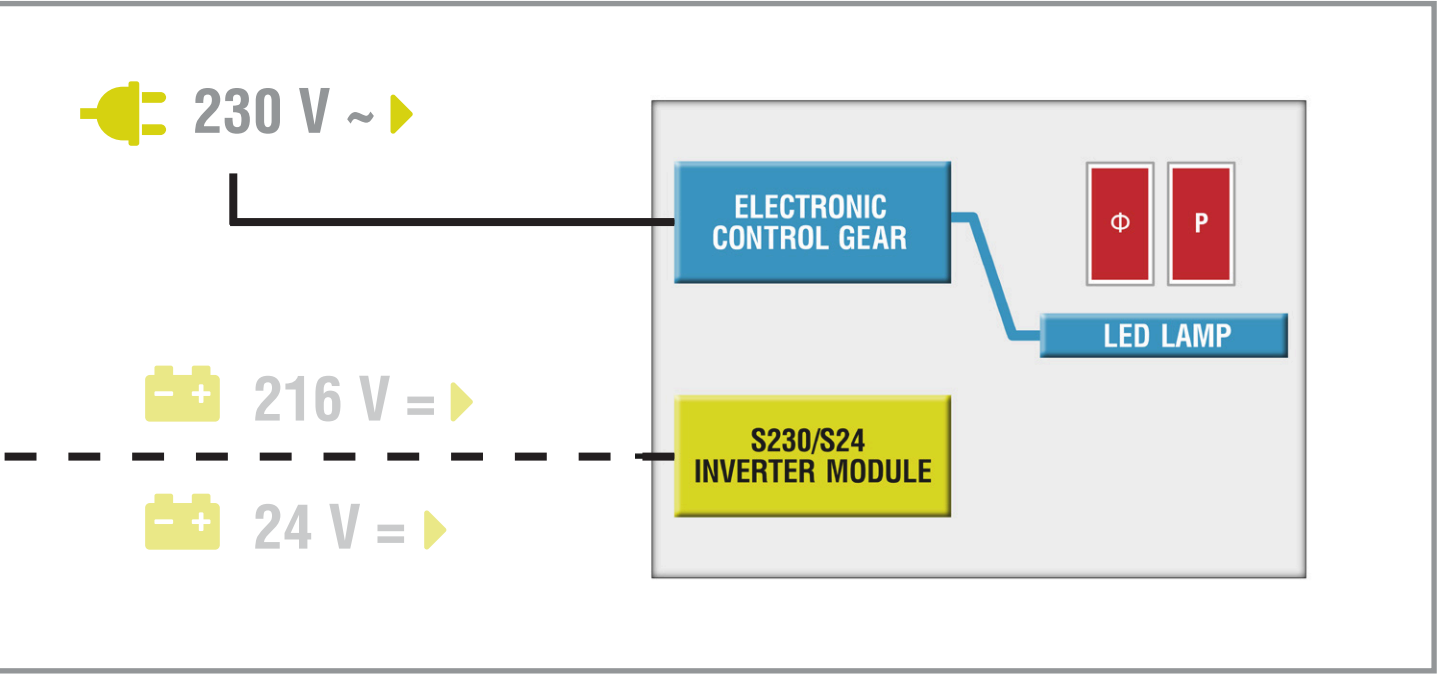


Reduction of the battery capacity

S230 inverter module with output power of 6 W or 12 W (adjustable or programmable) and **S24 inverter module** with output power of 6 W or 12 W (programmable)

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

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





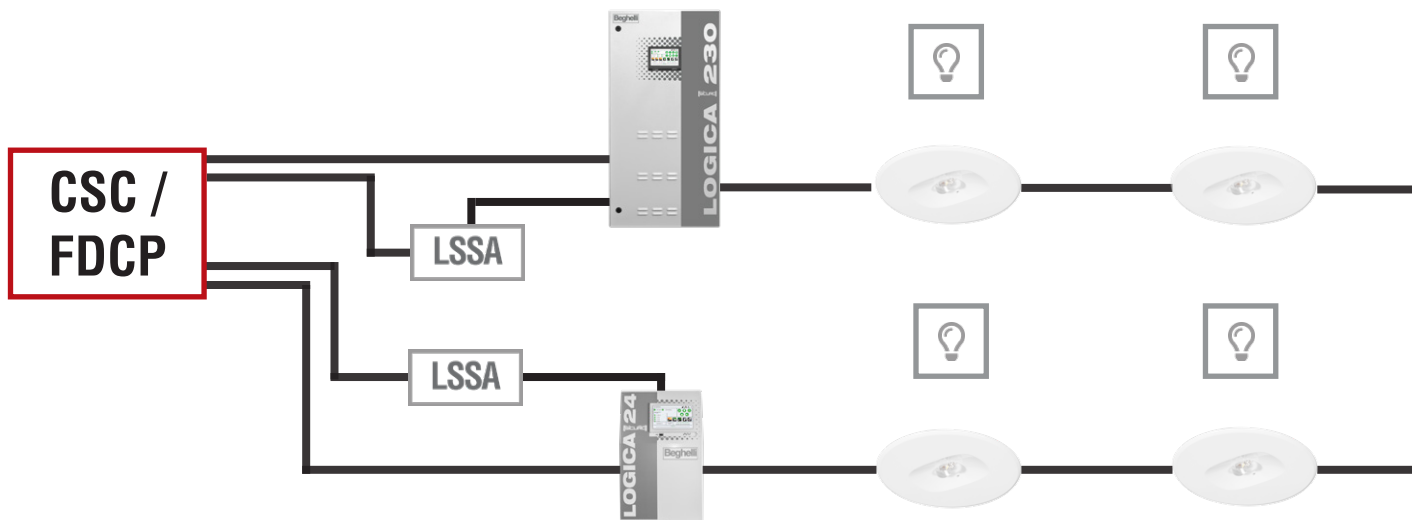
SELECTIVE ACTIVE SWITCHING WITH SICURO230 AND SICURO24

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

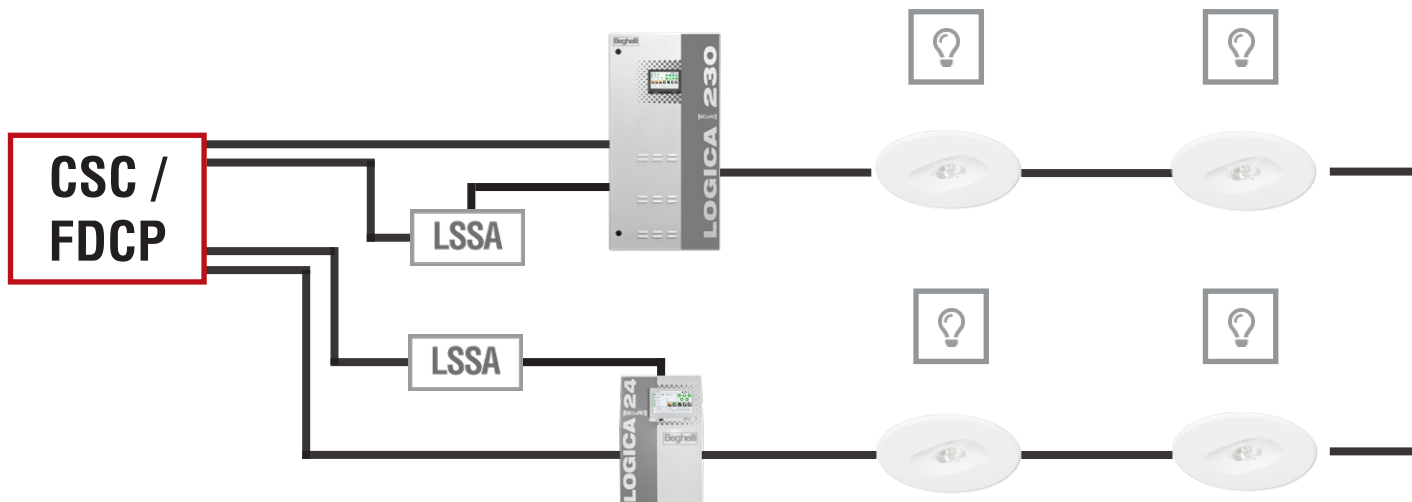
Individual switching of output circuits and / or luminaires by:

- 1 control input in S230/S24 stations
- each 1 control input per optional S230 module, S230 inverter module and S24 inverter module in indoor and outdoor luminaires
- each 8 control inputs per optional LSSA module in S230/S24 stations or external

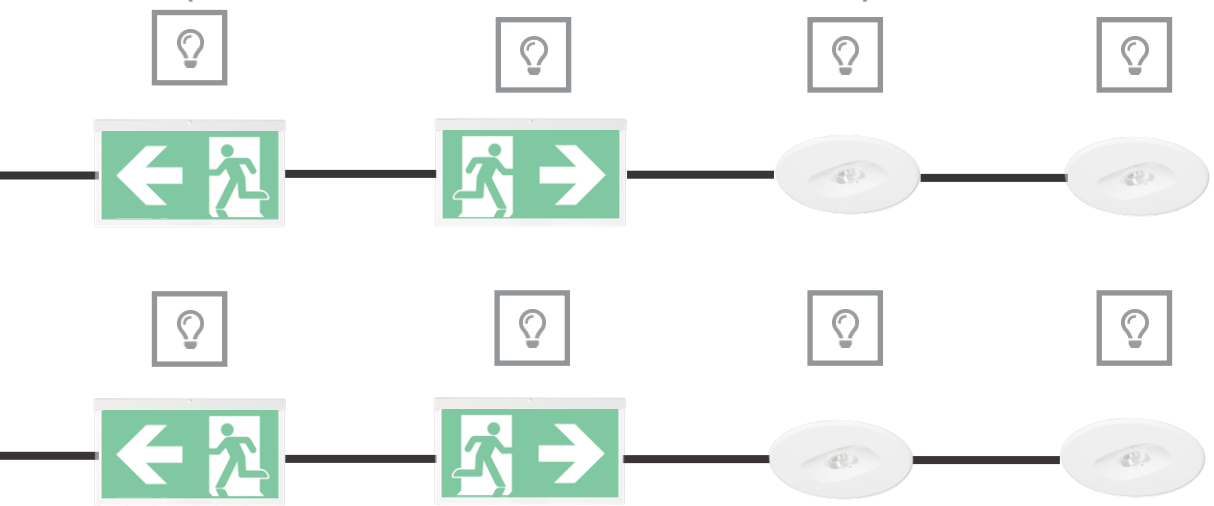
EXAMPLE SAFETY LIGHTING IN NORMAL CASE



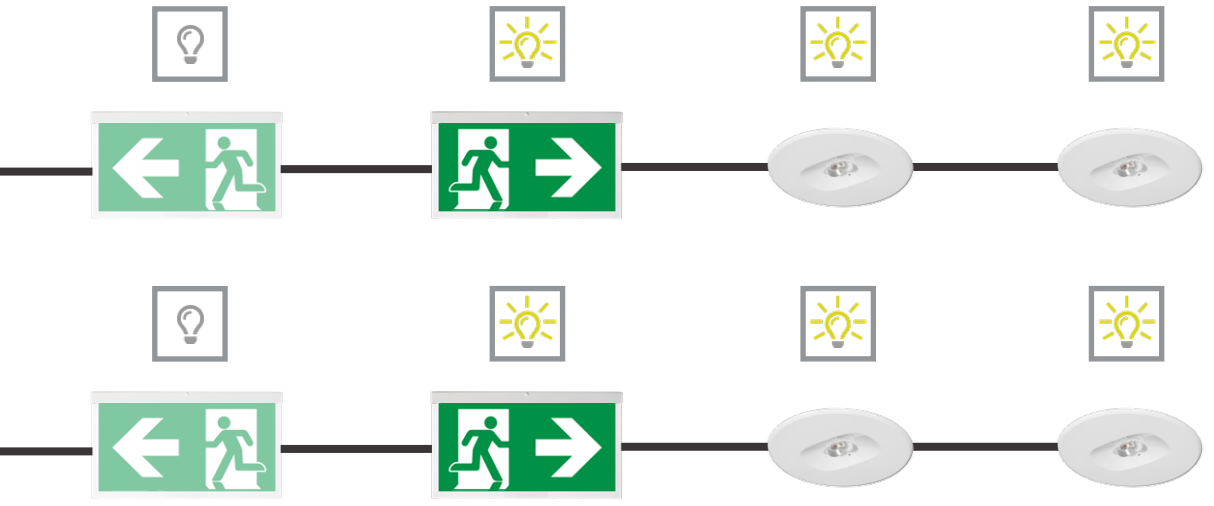
EXAMPLE SAFETY LIGHTING IN CASE OF DANGER



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



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





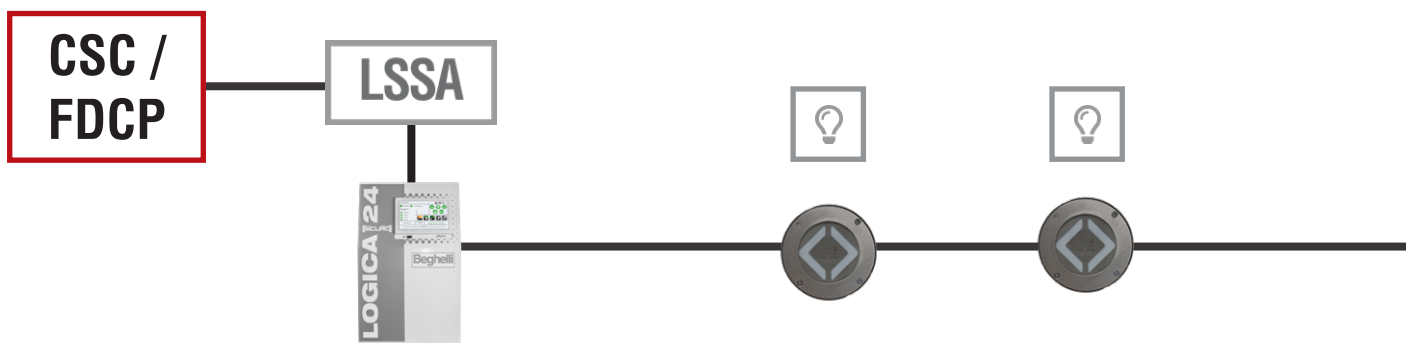
SELECTIVE DYNAMIC / ADAPTIVE SWITCHING WITH SICURO24

Selective switching of dynamic / adaptive S24 exit sign luminaires and S24 luminous markers in mains and emergency operation (on / off / change of escape route / closure of escape route), also simultaneous or not simultaneous blinking.

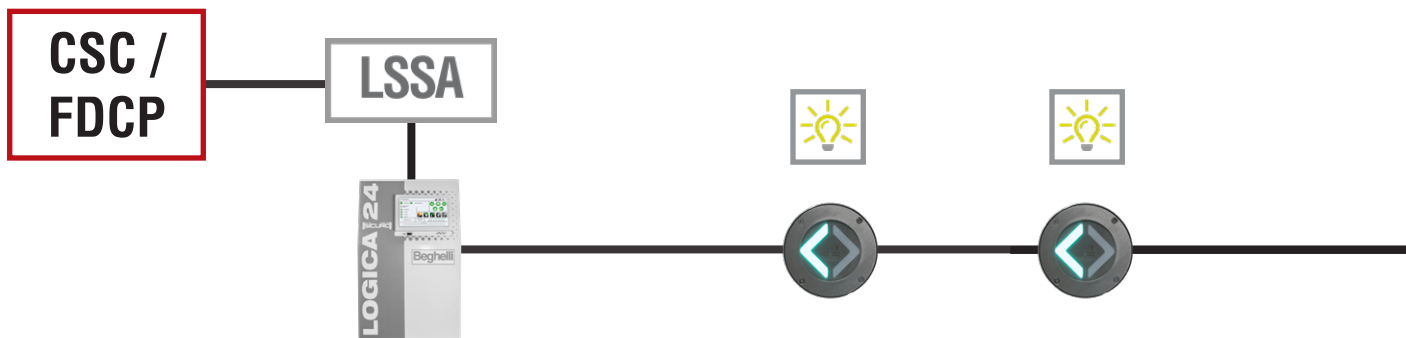
Individual switching of output circuits and / or luminaires by:

- each 8 control inputs per optional LSSA module in S24 stations or external

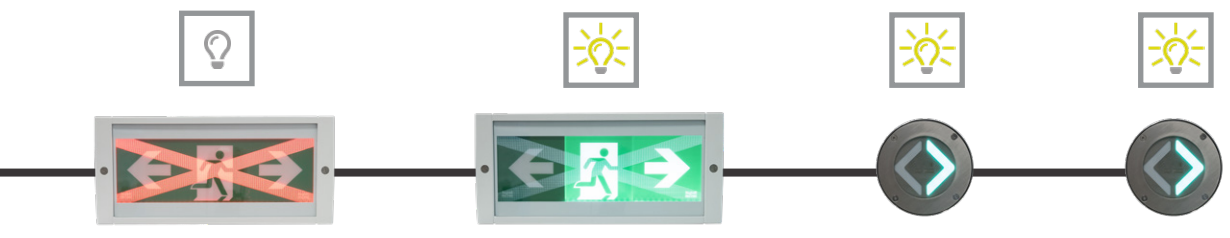
EXAMPLE DYNAMIC / ADAPTIVE SAFETY LIGHTING IN NORMAL CASE



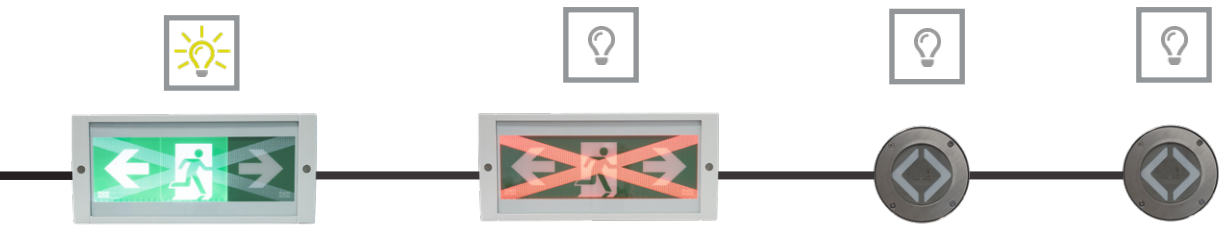
EXAMPLE DYNAMIC / ADAPTIVE SAFETY LIGHTING IN CASE OF DANGER



SWITCHING BY CSC (COMBINED SIGNALLING CENTRAL) OR FDCCP (FIRE DEPARTMENT CONTROL PANEL) ON LSSA-MODULE



SWITCHING BY CSC (COMBINED SIGNALLING CENTRAL) OR FDCCP (FIRE DEPARTMENT CONTROL PANEL) ON LSSA-MODULE





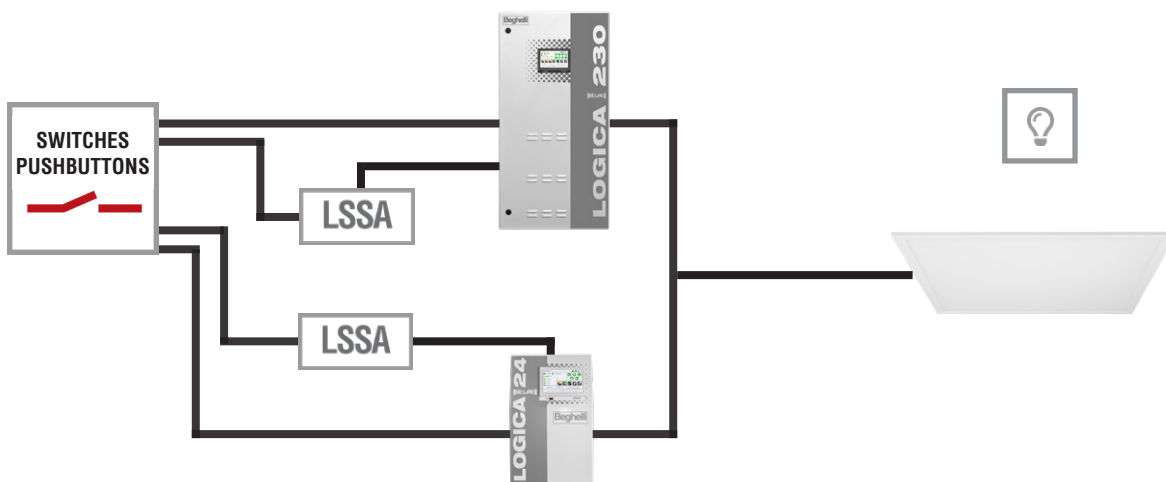
SELECTIVE SWITCHING WITH SICURO230 AND SICURO24

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

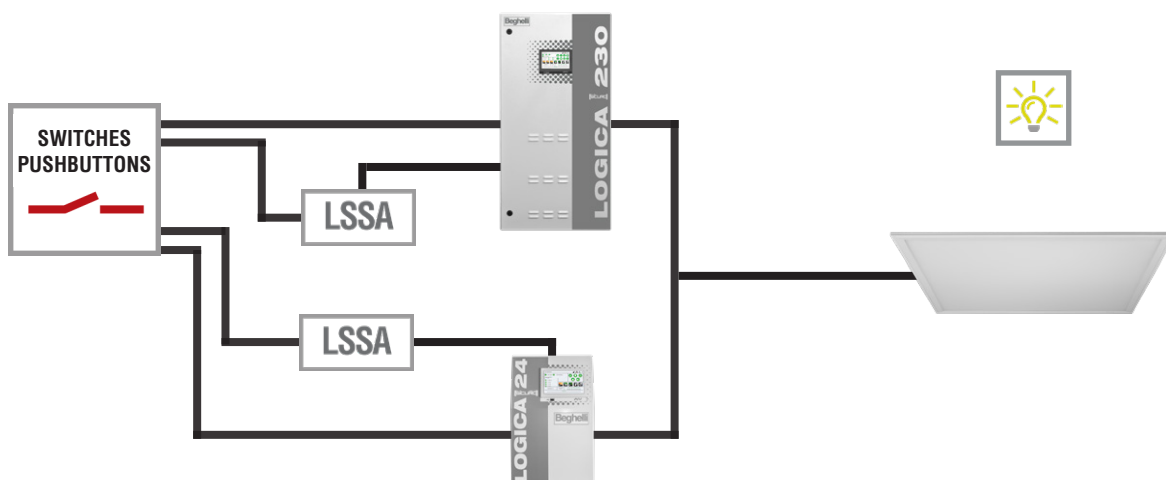
Individual switching of output circuits and / or luminaires by:

- 1 control input in S230/S24 stations
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- each 8 control inputs per optional LSSA module in S230/S24 stations or external

EXAMPLE INDOOR OR OUTDOOR LUMINAIRES IN MAINS OPERATION SWITCHED OFF



EXAMPLE INDOOR OR OUTDOOR LUMINAIRES IN MAINS OPERATION SWITCHED ON



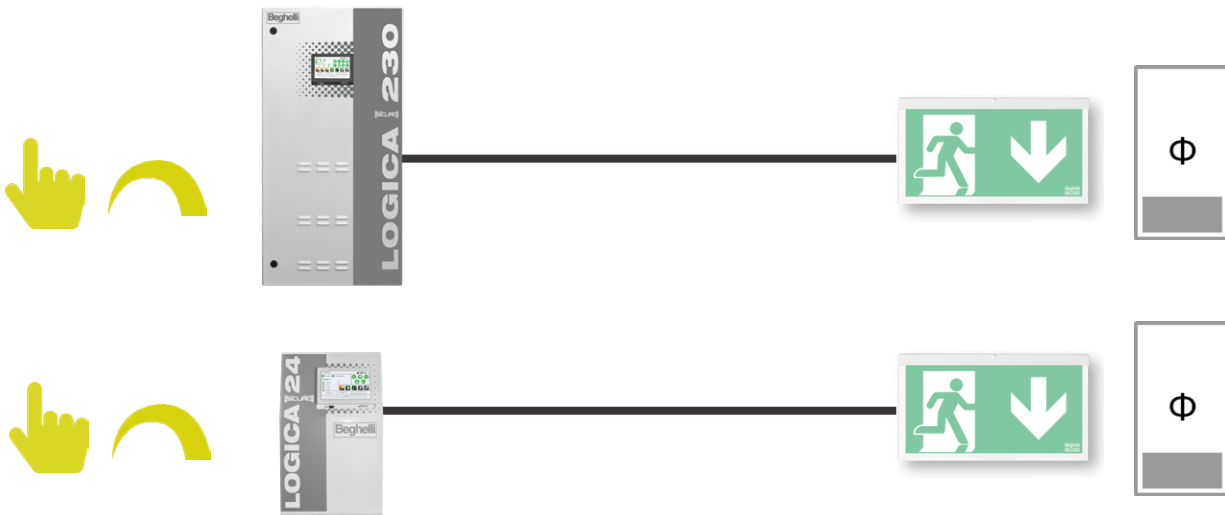
SELECTIVE DIMMING WITH SICURO230 AND SICURO24

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

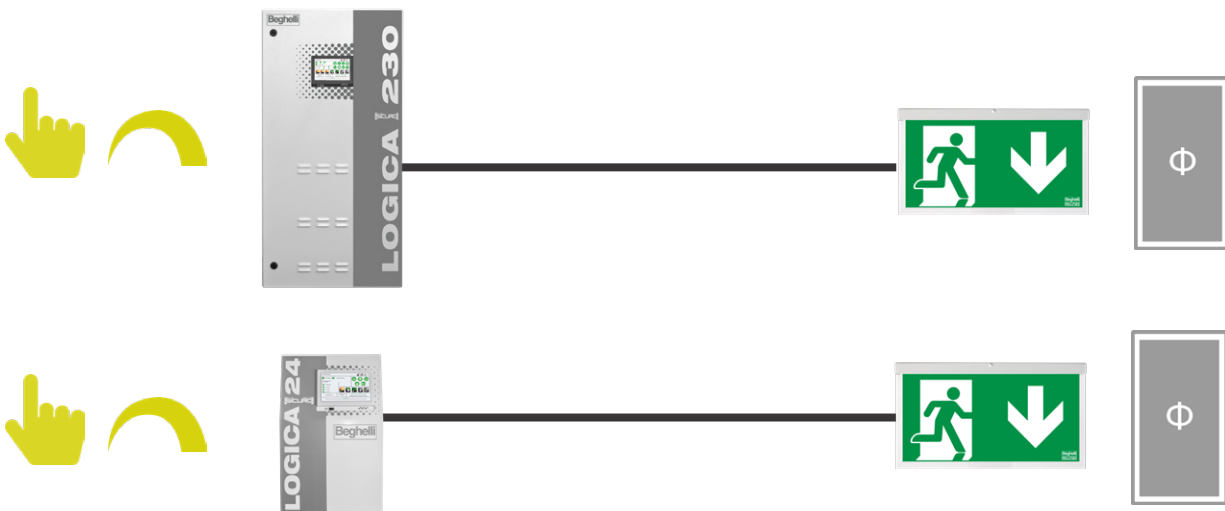
- individual programming of dimming



EXAMPLE EXIT SIGN LUMINAIRE IN MAINS OPERATION DIMMED



EXAMPLE EXIT SIGN LUMINAIRE IN MAINS OPERATION UNDIMMED

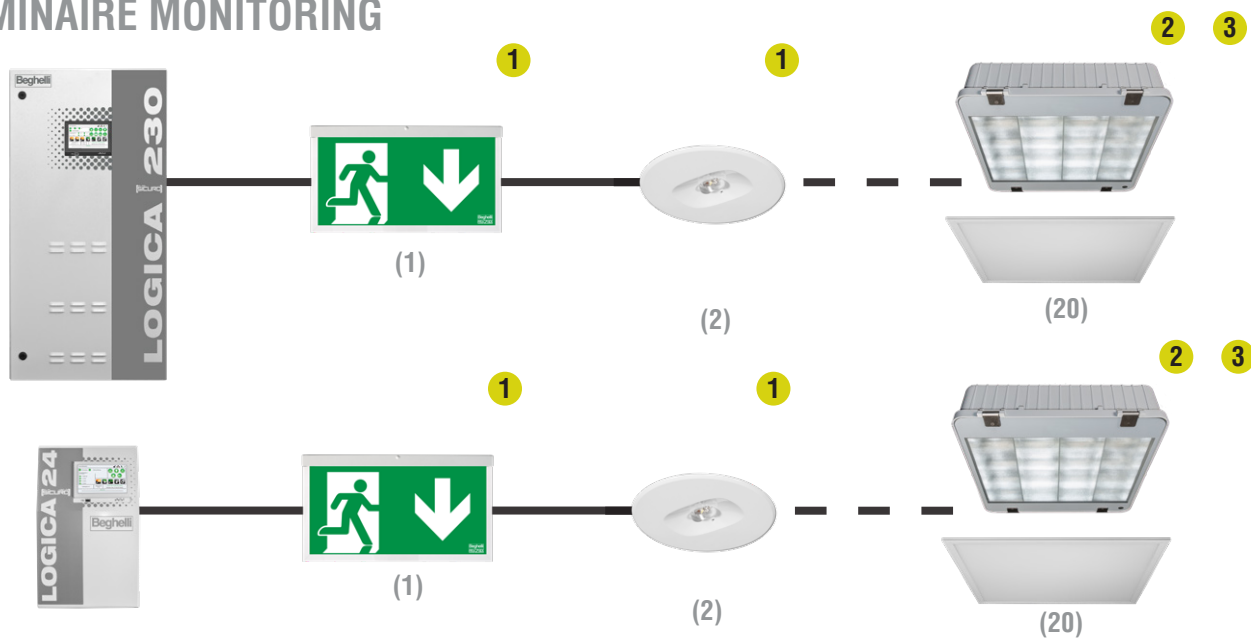




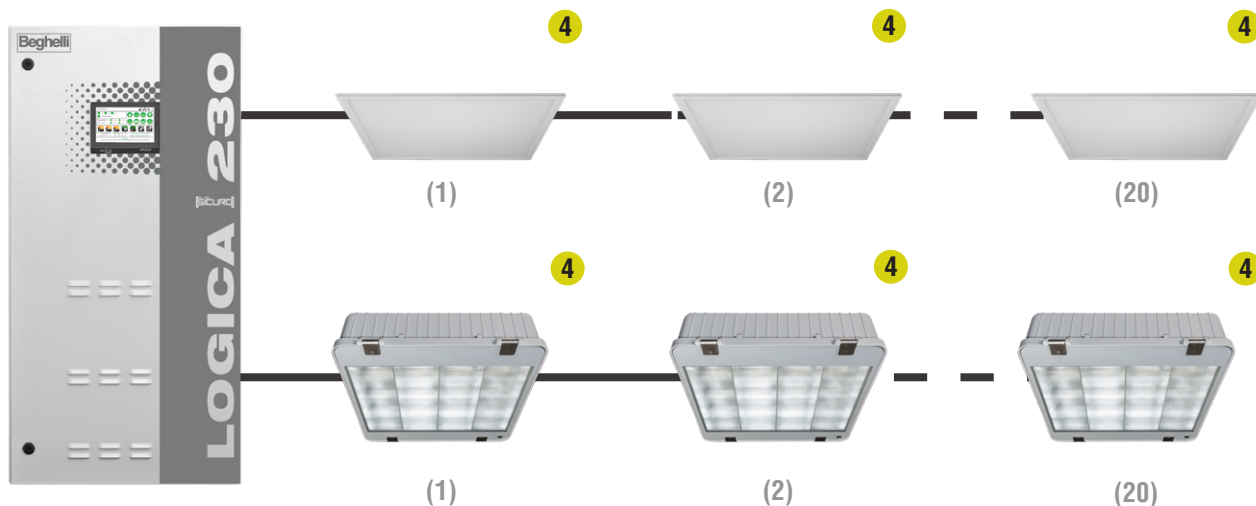
TESTING WITH SICURO230 AND SICURO24

- automatic testing of the function of the S230/S24 system, the luminaires and the battery
- automatic storage of the test results in the S230/S24 system
- individual programming of
 - test type
 - test duration
 - test start (day / time)

LUMINAIRE MONITORING



CIRCUIT MONITORING

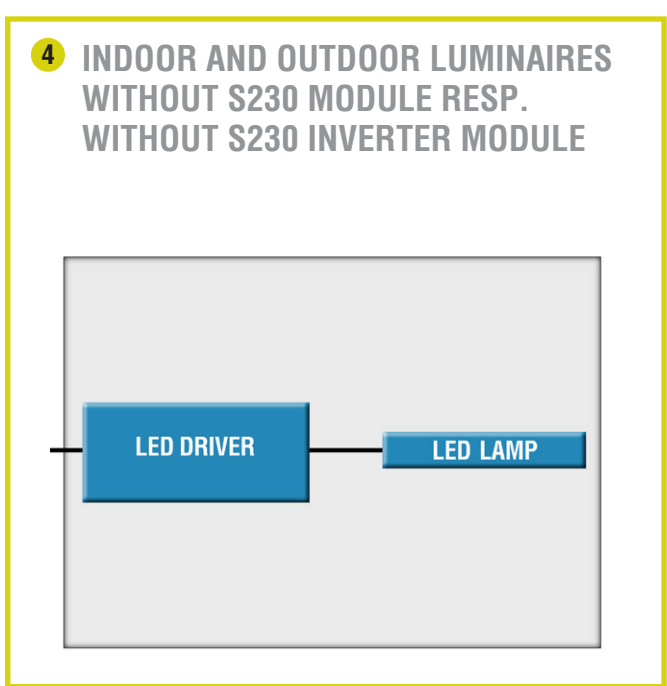
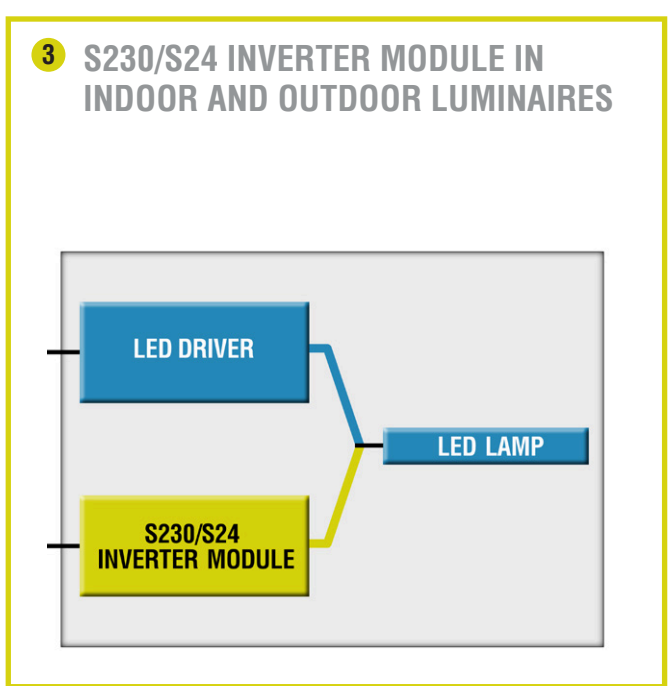
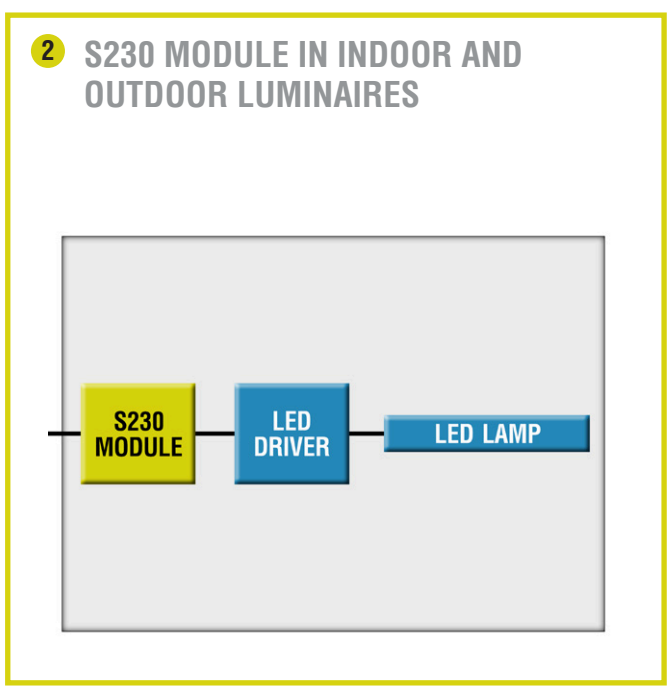
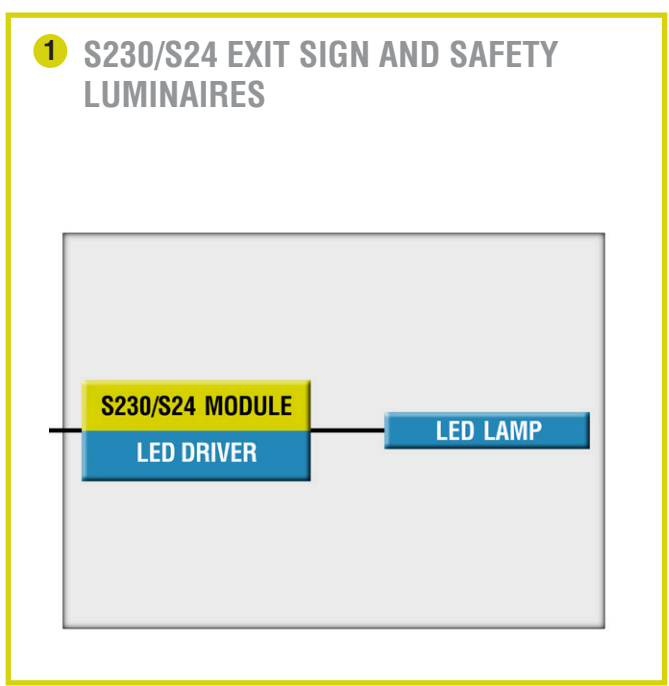


- choice of selective luminaire or circuit monitoring
- selective luminaire monitoring by:
 - 1 S230/S24 exit sign and safety luminaires
 - 2 S230 modules in indoor and outdoor luminaires
 - 3 S230/S24 inverter modules in indoor luminaires and outdoor luminaires

Signalling of a luminaire fault with reference to the luminaire number

- selective circuit monitoring by:
 - 4 indoor luminaires and outdoor luminaires without S230 module resp. without S230 inverter module

Signalling of a luminaire fault without reference to the luminaire number










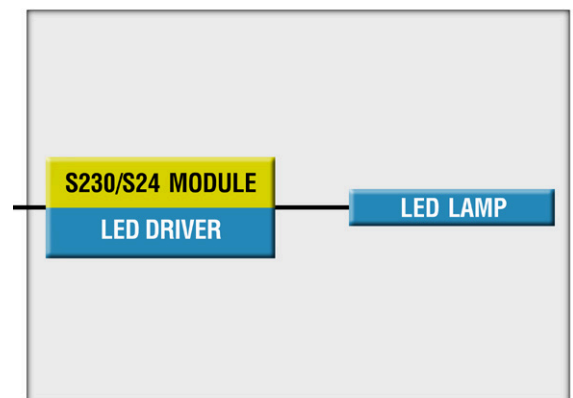


LUMINAIRES FOR SICURO230 AND SICURO24








- S230/S24 exit sign and safety luminaires
 - 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

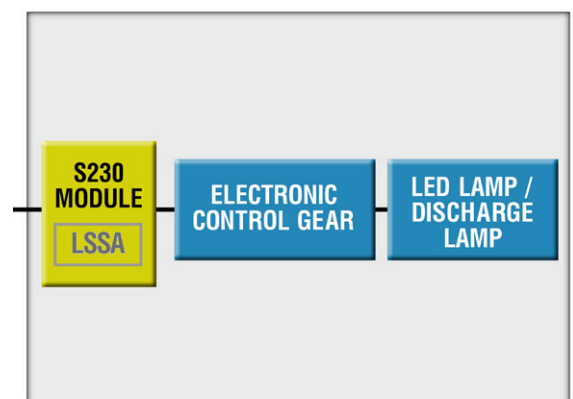
S230/S24 EXIT SIGN AND SAFETY LUMINAIRES FOR S230/S24 SYSTEMS

-  **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 SYSTEMS

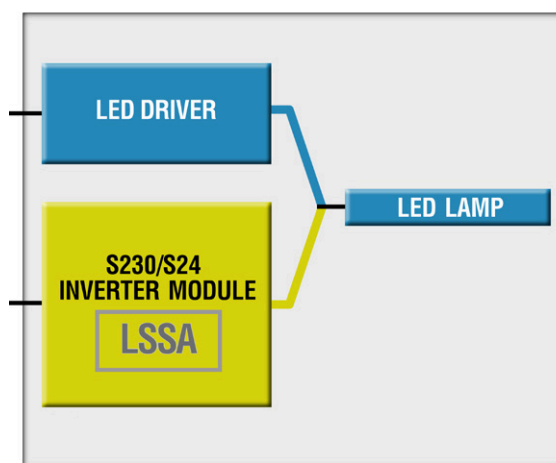
-  **Control device**
-  Programmable operating mode
-  Combinable operating mode
-  **Monitoring device**
-  Luminaire monitoring
-  **Automatic & manual addressing**
-  **LSSA control input**



- indoor luminaires and outdoor luminaires with S230/S24 inverter module
 - integrated LSSA control input
- indoor luminaires and outdoor luminaires with electronic control gear for LED lamps or discharge lamps
 - individual programming of the operating mode per circuit

INDOOR AND OUTDOOR LUMINAIRES WITH S230/S24 INVERTER MODULE FOR S230/S24 SYSTEMS

-  **LED driver**
-  **Control device**
-  **Combinable operating mode**
-  **Monitoring device**
-  **Luminaire monitoring**
-  **Automatic & manual addressing**
(only automatic addressing for S24 luminaires)
-  **LSSA control input**





INDOOR AND OUTDOOR LUMINAIRES FOR S230 SYSTEMS


ECG Electronic control gear for LED lamps and discharge lamps compliant with:

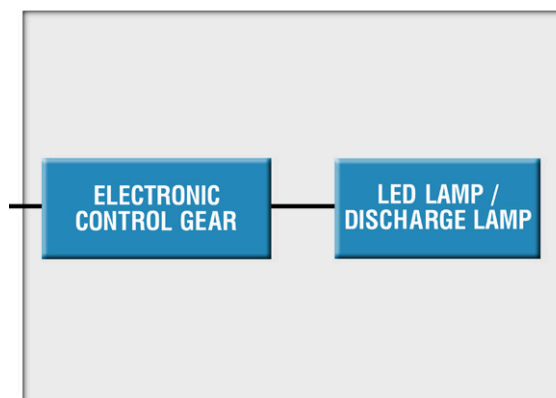
- DIN EN 61347-1
- DIN EN 61347-2-3
- DIN EN 61347-2-7
- DIN EN 61347-2-13

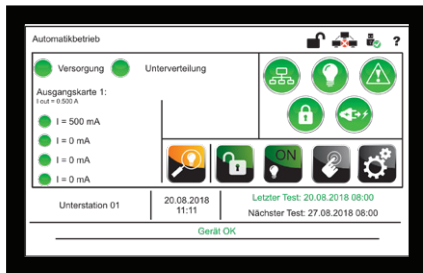
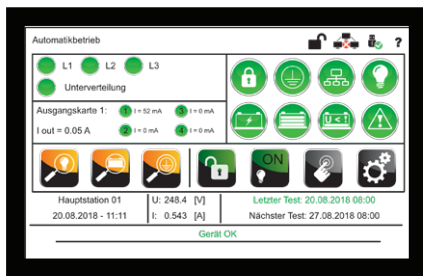
Control

-  Programmable operating mode
-  No combinable operating mode

Monitoring

-  Circuit monitoring





FUNCTIONS OF SICURO230 AND SICURO24

CONTROL AND MONITORING

- control of the safety lighting
 - **active** control in mains and emergency operation (on / off / closure)
 - **dynamic / adaptive (only S24)** control in mains and emergency operation (on / off / closure / escape direction)
- automatic test device according to EN 62034
 - function test
 - duration test
 - insulation test (only S230)
 - including test book
- luminaire monitoring by:
 - integrated S230 and S24 modules in exit sign and safety 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
 - switched maintained mode
 - dimmed maintained mode from 10 % to 100 % (luminaire monitoring)
 - time switch
 - combinable operating modes for each luminaire (luminaire monitoring)
- allocation of 4 different query functions with each 4 different switch inputs for each luminaire (luminaire monitoring)
 - light switch
 - sub distribution (monitoring of sub distributions of the general lighting)
 - dynamic light (closure of escape routes)
 - manual reset (for operating modes)

MAINS MONITORING

- internal mains monitoring for mains supply of the S230 and S24 systems
- control input for mains monitoring of the general lighting via optional mains monitoring modules

LSSA INPUTS

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

CONTROL INPUTS AND CONTROL OUTPUTS

- 1 control input, not programmable, for switching of
 - maintained mode (on / off)
 - **control signal:** contact, potential-free
- 1 control input, free programmable, for switching of
 - maintained mode (on / off)
 - operational condition (on / off)
 - fire disconnection (on / off)
 - function test (start)
 - duration test (start)
 - manual reset (reset of operating modes)
 - deep discharge protection (reset)
 - operating system (shut down)
 - various equipment by use as LSSA input (24 V)
 - **control signal:** contact, potential-free
- 3 control outputs, not programmable, for signalling of
 - operational condition
 - battery operation
 - collective fault
 - **control output:** 3 closers (N/O / potential-free)
- 3 control outputs, free programmable, for signalling of
 - charge failure
 - battery failure
 - circuit resp. luminaire failure
 - operational condition
 - mains failure
 - battery operation
 - test operation
 - deep discharge
 - insulation failure (only S230)
 - sub-distribution failure by critical circuit
 - sub-distribution failure by LSSA input
 - **control output:** 3 changeovers, potential-free

INTERFACES

RS485 bus for communication to:

- Sicuro remote panel
- PC with optional software Logica Visual
- building management system via Modbus RTU

Ethernet for communication to:

- Sicuro remote panel
- PC with optional software Logica Visual
- Webserver internal (LAN) or external via internet (WAN)
- building management system via Modbus TCP

USB for:

- upload / download of the system-configuration
- download of the test results
- software updates for the S230 and S24 system

OPERATION

Operation via colored 7" touch screen with graphic and alphanumeric interface for input and output of all parameters and data, activatable password protection, multilingual and 3 status LEDs for signalling of mains operation / battery operation / collective fault



INTERFACES SICURO230 AND SICURO24

Remote monitor and remote control:

- Sicuro remote panel for maximal 96 S230Z main stations or S24G stations via ethernet (intranet) or RS485 bus
- local PC via ethernet (intranet) or RS485 bus – optional software Logica Visual required
- non-local PC via ethernet (internet)
- building management system via ethernet (intranet) as Modbus TCP or RS485 bus as Modbus RTU



ETHERNET

👉 TEST function test (start)

RS485



ETHERNET

👉 TEST function test (start)
👉 ⏸️ operating mode (program)

RS485



ETHERNET

👉 TEST function test (start)



MODBUS TCP (over ethernet)

MODBUS RTU (over RS485)

Signalling of

- i** status
- x** faults
- ✓** tests

Signalling of

- i** status
- x** faults
- ✓** tests

Signalling of

- i** status
- x** faults
- ✓** tests

Signalling of

- i** status
- x** faults
- ✓** tests

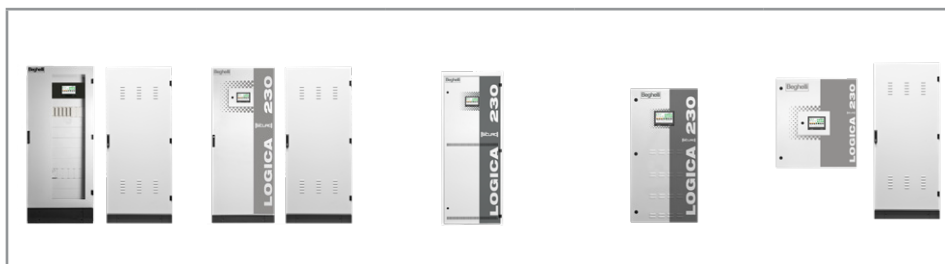




CENTRAL SUPPLY SICURO230Z

The central supply Sicuro230Z is based on **one main station and a maximum of 32 sub stations**, connected via separate mains and battery cables as well as a bus cable or a combined mains and battery cable as well as a bus cable.

External luminaire circuit modules can only be connected to main stations. The feed of external luminaire circuit modules must be carried out via 11KW switchover modules.



TYPE		S230Z-H-S MAXI	S230Z-H-S	S230Z-H-SK	S230Z-H-SK MINI	S230Z-H-W
VERSION		Version with separate electronic and battery cabinet as stand cabinet			Version with combined electronic and battery cabinet as stand cabinet	
BATTERY CAPACITY		7,2 to 400 Ah	7,2 to 250 Ah	7,2 to 100 Ah	7,2 to 28 Ah	7,2 to 150 Ah
CHARGING MODULES		max. 18	max. 12	max. 2 resp. 4	max. 2	max. 2 resp. 4
LUMINAIRE CIRCUIT MODULES	(INTERNAL)	max. 24	max. 24	max. 13 resp. 10 resp. 8	max. 5	max. 13 resp. 10 resp. 8
LUMINAIRE CIRCUIT MODULES	(EXTERNAL)	max. 64 (eAK 2 EÜ/SÜ) resp. 32 (eAK 4 EÜ/SÜ)				
11KW SWITCHOVER MODULES		4	4	2	1	2
SUB STATION OUTPUTS		max. 32	max. 20	max. 4	-	max. 4
LSSA INPUTS (INTERNAL)		-	-	-	-	-
LSSA MODULES (INTERNAL)		max. 8 (optional)	max. 8 (optional)	max. 4 (optional)	max. 2 (optional)	max. 4 (optional)
LSSA MODULES (EXTERNAL)		max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)	max. 96 (optional)
MOUNTING		stand	stand	stand	stand	wall
ELECTRONIC CABINET		sheet steel, grey ^{1/3}	sheet steel, grey ¹	sheet steel, grey ¹	sheet steel, grey ¹	sheet steel, grey ¹
BATTERY CABINET		sheet steel, grey ¹				
DIMENSIONS (H X W X D) MM		2.000 x 800 x 600	2.000 x 800 x 600	2.000 x 800 x 600	1.520 x 650 x 400	890 x 800 x 400
TYPE OF PROTECTION	electronic	IP54	IP54	IP20	IP20	IP54
	battery	IP21	IP21	IP20	IP20	IP21
PROTECTION CLASS		I	I	I	I	I
SUPPLY	mains	3 / N / PE 230 V~ ⁴	3 / N / PE 230 V~ ⁴	3 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴	3 / N / PE 230 V~ ⁴
	battery	216 V =	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	-5 °C to +35 °C
	battery	+20 °C	+20 °C	+20 °C	+20 °C	+20 °C
CABLE ENTRY		below / above	below / above	above	above	above
CABLE CLAMPS	mains	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²
	battery	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²
	luminaires	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²
	control	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²
ORDER CODE		-	-	-	-	-

¹ RAL 7035

² RAL 9003 (white) or RAL 7016 (grey)

³ Electronic cabinet with swivel frame and large viewing window. All luminaire circuits prewired to series terminals (push-in technology).

⁴ 50 Hz / 60 Hz

It must be taken into account that the variable configuration parameters listed on this double page affect each other with regard to their minimum / maximum amounts in combination with the desired customer requirements (e. g. quantities, cable cross-sections, electrical power limits, space

requirement, addressability, operating duration...). Therefore, the individual configuration of a safety lighting should be carried out in consultation with Beghelli PRÄZISA Deutschland, or made with the aid of a configuration software created by Beghelli PRÄZISA Deutschland.

Note: Sicuro230Z can also be supplied without charging device and battery, by using a mains replacement system (MRS) or a dual mains – see Sicuro230N.

S230Z-H-WK	S230Z-U-S	S230Z-U-W	S230Z-U-W MINI	S230Z-U-W E30	S24Z-U-1	S24Z-U-1 E30
Version with combined electronic and battery cabinet as wall cabinet	Version with electronic cabinet as stand cabinet	Version with electronic cabinet as wall cabinet		Version with electronic cabinet as wall cabinet with functional integrity	Version with electronic cabinet as wall cabinet	Version with electronic cabinet as wall cabinet with functional integrity
7,2 to 12 Ah	-	-	-	-	-	-
max. 2	-	-	-	-	-	-
max. 5	max. 32	max. 16	max. 8	max. 8	1	1
max. 64 (eAK 2 EÜ/SÜ) resp. 32 (eAK 4 EÜ/SÜ)	-	-	-	-	-	-
1	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	4	4
max. 2 (optional)	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)	max. 96 (optional)
wall	stand	wall	wall	wall	wall	wall
sheet steel, grey ¹	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
1.200 x 600 x 350	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	1.050 x 650 x 415
IP20	IP54	IP54	IP54	IP54	IP20	IP54
IP20	-	-	-	-	-	-
I	I	I	I	II	I	II
1 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴	1 / N / PE 230 V~ ⁴
216 V =	216 V =	216 V =	216 V =	216 V =	216 V =	216 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	-5 °C to +35 °C
+20 °C	-	-	-	-	-	-
above	below / above	above	above	above	above	above
min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	4 to 25 mm ²	max. 2,5 mm ²	max. 2,5 mm ²
min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	min. 4 mm ²	4 to 25 mm ²	max. 2,5 mm ²	max. 2,5 mm ²
max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²
max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²	max. 2,5 mm ²
-	-	-	-	-	white (RAL 9003): 17064 grey (RAL 7016): 17074	30043



CENTRAL SUPPLY SICURO230N

The central supply Sicuro230N is based on **one main station and a maximum of 32 sub stations**, connected via a bus cable.

Feed without battery supply via a mains replacement system (MRS) or a dual mains.



External luminaire circuit modules can only be connected to main stations. The feed of external luminaire circuit modules is carried out without 11KW switchover modules.

TYPE	
VERSION	
LUMINAIRE CIRCUIT MODULES	(INTERNAL)
LUMINAIRE CIRCUIT MODULES	(EXTERNAL)
SUB STATION OUTPUTS	
LSSA INPUTS	(INTERNAL)
LSSA MODULES	(INTERNAL)
LSSA MODULES	(EXTERNAL)
MOUNTING	
ELECTRONIC CABINET	
DIMENSIONS (H X W X D) MM	
TYPE OF PROTECTION	
PROTECTION CLASS	
SUPPLY	
AMBIENT TEMPERATURE	
CABLE ENTRY	
CABLE CLAMPS	mains
	luminaires
	control

		S230N-H-S	S230N-H-W
		Version with electronic cabinet as stand cabinet	Version with electronic cabinet as wall cabinet
		max. 32	max. 16
		max. 64 (eAK 2 EÜ/SÜ) resp. max. 32 (eAK 4 EÜ/SÜ)	
		max. 20	max. 4
		-	-
		max. 8 (optional)	max. 4 (optional)
		max. 96 (optional)	max. 96 (optional)
		stand	wall
		sheet steel, grey (RAL 7035)	sheet steel, grey (RAL 7035)
		2.000 x 800 x 600	890 x 800 x 400
		IP54	IP54
		I	I
		3 / N / PE 230 V ~ 50/60 Hz	3 / N / PE 230 V ~ 50/60 Hz
		-5 °C to +35 °C	-5 °C to +35 °C
		below / above	above
		min. 4 mm ²	min. 4 mm ²
		max. 2,5 mm ²	max. 2,5 mm ²
		max. 2,5 mm ²	max. 2,5 mm ²

It must be taken into account that the variable configuration parameters listed on this double page affect each other with regard to their minimum / maximum amounts in combination with the desired customer requirements (e. g. quantities, cable cross-sections, electrical power limits, space requirement, addressability ...).

Therefore, the individual configuration of a safety lighting should be carried out in consultation with Beghelli PRÄZISA Deutschland, or made with the aid of a configuration software created by Beghelli PRÄZISA Deutschland.

			
S230N-U-S		S230N-U-W	
Version with electronic cabinet as stand cabinet		Version with electronic cabinet as wall cabinet	
max. 32		max. 16	
-		-	
-		-	
-		-	
max. 8 (optional)		max. 4 (optional)	
max. 96 (optional)		max. 96 (optional)	
stand		wall	
sheet steel, grey (RAL 7035)		sheet steel, grey (RAL 7035)	
2.000 x 800 x 600		890 x 800 x 400	
IP54		IP54	
I		I	
1 / N / PE 230 V ~ 50/60 Hz		1 / N / PE 230 V ~ 50/60 Hz	
-5 °C to +35 °C		-5 °C to +35 °C	
below / above		above	
min. 4 mm ²		min. 4 mm ²	
max. 2,5 mm ²		max. 2,5 mm ²	
max. 2,5 mm ²		max. 2,5 mm ²	

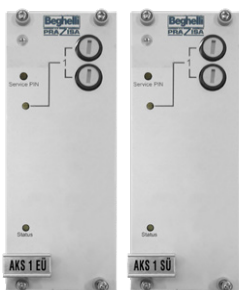


INTERNAL LUMINAIRE CIRCUIT MODULES FOR S230

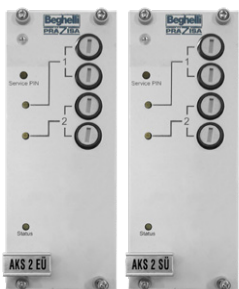
Luminaire circuit modules for internal use in S230Z stations. Modules with 1, 2 or 4 luminaire circuits for luminaire and circuit monitoring as well as luminaire or circuit control:

- 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)
- pushbutton for addressing of the luminaire circuit module

Combined operation of luminaire circuit modules for luminaire and circuit monitoring in one S230Z station possible.



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



TYPE	AKS 2 EÜ	AKS 2 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 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	AKS 4 EÜ	AKS 4 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 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
- status LED for signalling of:
 - mains operation
 - battery operation
 - collective fault
 - luminaire circuit switched off
- control output for signalling of:
 - collective fault
 - **control output:** 1 changeover, potential-free

Combined operation of luminaire circuit modules for luminaire and circuit monitoring on one S230Z station possible.

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



TYPE	eAK 2 EÜ	eAK 2 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 EÜ	eAK 4 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	4 x 215 A / 250 µs	4 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 SWITCHOVER MODULE

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

- switchover between mains and battery supply
- overvoltage protection as well as inrush current limitation
- pushbutton for addressing
- 6 status LEDs for several signalling
- flip switch for blocking of the output



S230 MODULE / S230 DALI MODULE

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

- **operating mode:** maintained mode (switchable / not switchable / programmable), non-maintained mode (programmable)
- **monitoring:** luminaire monitoring with selective fault message at defective electronic control gear resp. DALI control gear or defective LED lamp resp. discharge lamp
 - monitoring power S230 module: 2,5 W to 500 W
 - monitoring power S230 DALI module: 4 W to 500 W
- **control:** LSSA control input for switching the luminaire in mains operation (on / off) or switch-on of 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 of 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 at partial mains failures on the DALI control gear

Communication to the S230 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 for emergency operation and selectable automatic or manual addressing for indoor and outdoor luminaires with electronic control gear and LED lamps.

- **operating mode:** maintained mode (switchable / not switchable / not programmable), non-maintained mode (switchable / not switchable / programmable)
- **mains operation:** operation of the LED lamp via the LED driver of the luminaire without reduced power
 - power: nominal power of the luminaire
- **battery operation:** operation of the LED lamp via the integrated LED driver of the S230 inverter module with reduced power
 - driver power (inverter): 6 W or 12 W (adjustable over DIP switch on inverter or programmable over S230 station)
 - driver current (inverter): max. 2 A
 - driver voltage (inverter): 3 V to 58 V
- **control:** LSSA control input for switching the luminaire in mains operation (on / off) or switch-on of the luminaire in emergency operation (mains monitoring)
 - control signal: 0 V or 230 V

Communication to the S230 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 + 22 x 51 x 31 mm
Type of protection: IP20
Protection class: II

Order code	Description
17381	S230 inverter module

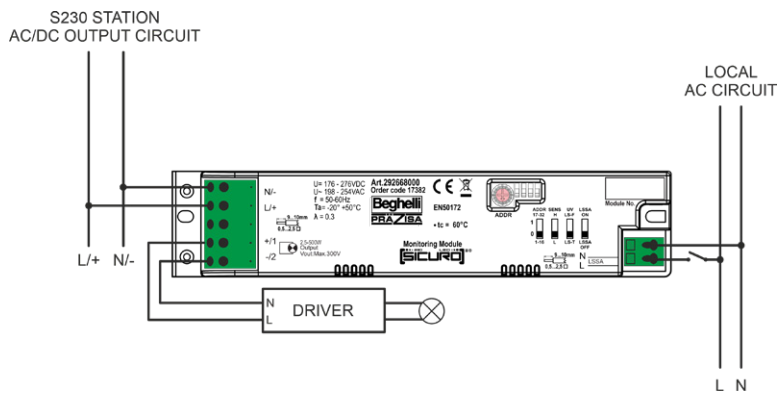
CALCULATION OF LIGHT FLUX:

Light flux of the LED lamp in mains operation = 100 %

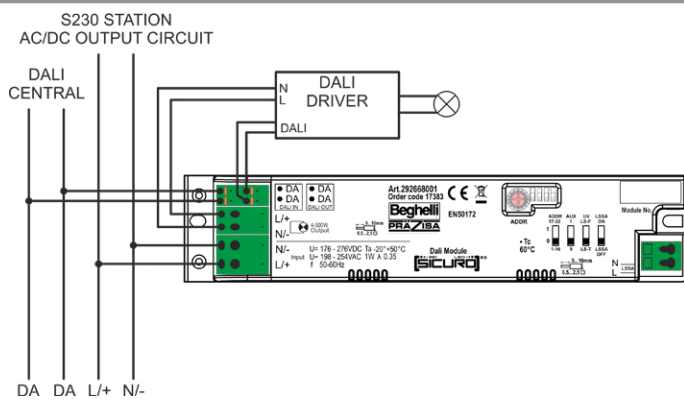
Light flux of the LED lamp in battery operation =

$$\text{Light flux of the LED lamp in mains operation} \times \frac{6 \text{ W or } 12 \text{ W}}{\text{power of the LED lamp in mains operation}}$$

PRINCIPLE WIRING DIAGRAM S230 MODULE

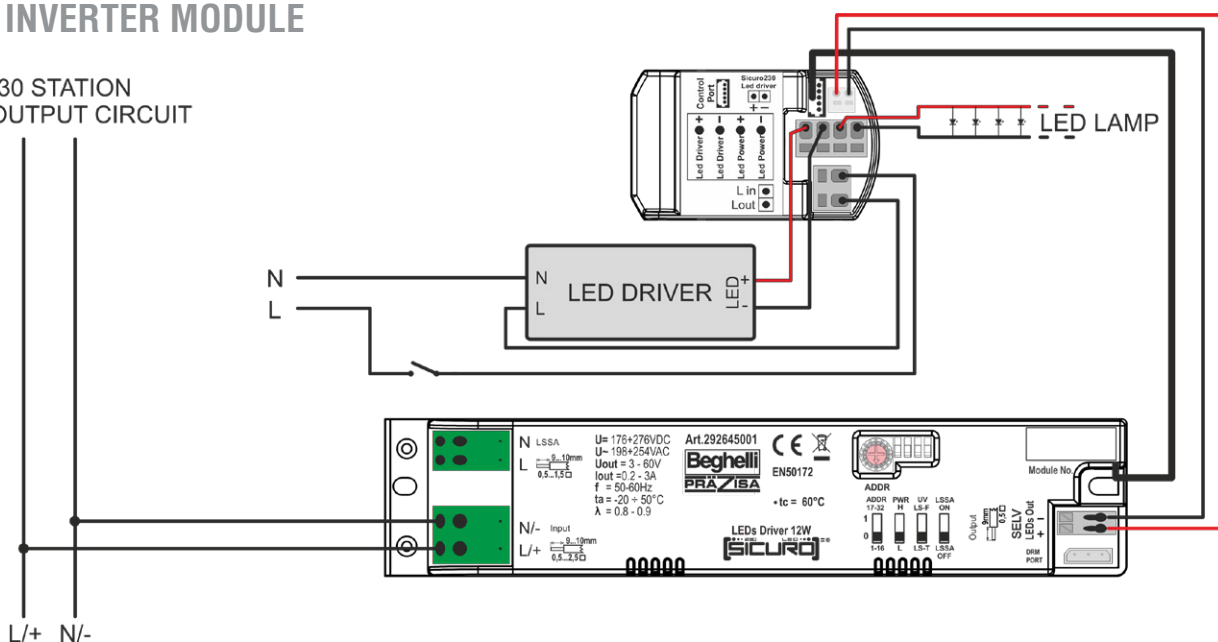


PRINCIPLE WIRING DIAGRAM S230 DALI MODULE



PRINCIPLE WIRING DIAGRAM S230 INVERTER MODULE

S230 STATION AC/DC OUTPUT CIRCUIT





BATTERY MANAGEMENT LIFE PLUS

The change of the internal resistance of individual battery blocks in a battery system leads to too high or low block voltages at the individual battery blocks. Without monitoring the voltages and temperatures of all battery blocks, the result can be a destruction of individual or even all battery blocks (follow-up effect). **With battery management Life Plus, the service life of the battery system can be extended by avoiding the destruction of the battery blocks. Life plus is only available for Sicuro230Z.**

FUNCTIONS

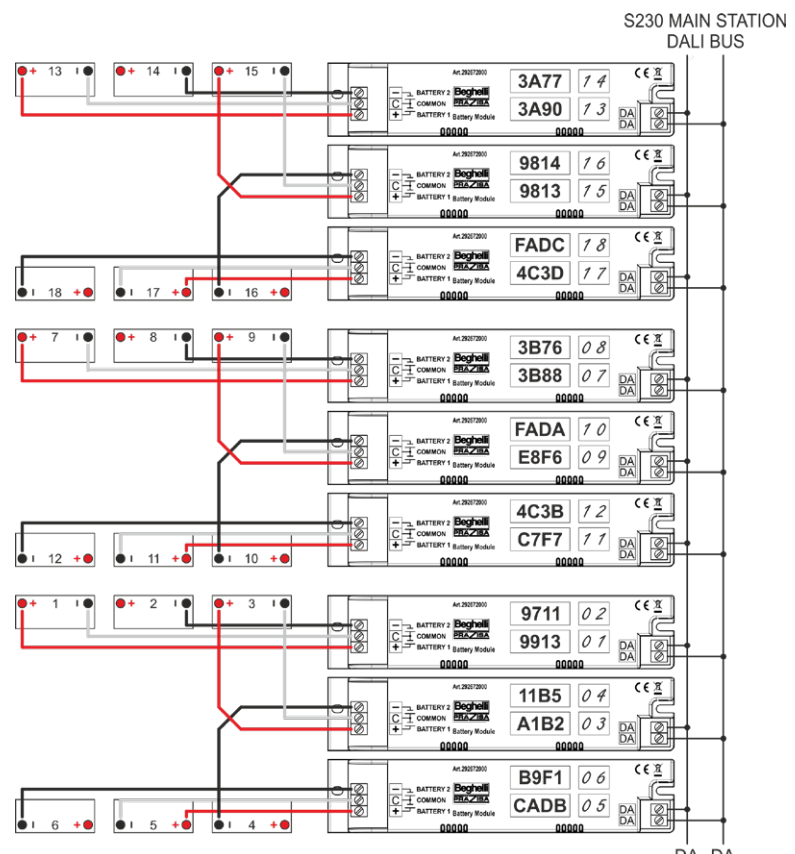
- automatic monitoring of the total voltage of all battery blocks
- automatic monitoring of the individual voltage of all battery blocks
- signalling over the S230 station of:
 - total voltage of all battery blocks
 - individual voltage of all battery blocks
 - individual voltage of a battery block too low
 - individual voltage of a battery block too high
 - charge

Life Plus is 1 set with 9 modules. The modules are positioned at the battery blocks. With parallel connection of 1 to 3 battery systems, a parallel connection of 1 to 3 Life Plus is possible. A cable bus (DALI bus) handles communication between Life Plus and the S230 main station.

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

Order code	Description
17384	battery management Life Plus

PRINCIPLE WIRING DIAGRAM BATTERY MANAGEMENT LIFE PLUS





CHARGING MODULE S230Z

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

- Charging voltage:** 245,7 V (at an ambient temperature of +20 °C)
- Charging current:** 2 A
- Charge:** IU characteristic curve

BATTERY

Battery supply via sealed lead batteries with grid electrodes and AGM separator. According to EN 60896 and EUROBAT.

Service life expectancy: > 10 years for lead battery (Pb) at ambient temperature of +20 °C

EXAMPLE DESIGN OF A S230Z SYSTEM

DESIGN OF THE BATTERY SUPPLY AND AGEING RESERVE

At intended operation of lead batteries, a capacity loss of up to 2,5 % per year (25 % in 10 years) has to be expected normally. According to EN 50171, this capacity loss must be taken into account for the battery determination in order to achieve the full nominal operating duration at the end of the life expectancy of 10 years. The end of a battery's lifetime is reached when, at the end of the nominal operating duration, the nominal voltage of the battery drops below a value of 90 % at nominal load. Example: Battery discharge current 24 A + 25 % ageing reserve = 30 A. For the safety lighting of a meeting place with a required nominal operating time of 3 hours, a battery with 120 Ah results from the following table.

CHARGING CURRENT AND QUANTITY OF CHARGING MODULES

According to EN 50171, discharged batteries must be recharged to 80 % of

the taken capacity within 12 hours. For the necessary charging current resp. the necessary quantity of charging modules, a variety of variable configuration parameters must be taken into account (e. g. discharge current, operating duration, installed equipment in the main station, p. r. n. installed equipment in sub stations, p. r. n. external luminaire circuit modules, space requirement ...). Therefore, the individual determination of the charging current resp. the quantity of the charging modules should be carried out in consultation with Beghelli PRÄZISA Deutschland, or made with the aid of a configuration software created by Beghelli PRÄZISA Deutschland.

VENTILATION OF THE BATTERY ROOM

According to DIN 50272-2, the necessary air volume flow for battery rooms at boost charge is calculated according to the formula $Q = 0,05 \times n \times I_{GAS} \times C_n \times 10^{-3}$ and necessary inlet and outlet vents according to the formula $A = 28 \times Q$.

$$Q = 0,05 \times n \times I_{GAS} \times C_n \times 10^{-3}$$

- Q = air volume flow [m³/h]
- n = cell quantity (108 for 18 blocks)
- I_{GAS} = gas production current [mA/Ah]
- C_n = nominal capacity at 20 °C [Ah]

$$I_{GAS} = I_{BOOST} \times f_g \times f_s$$

- I_{GAS} = gas production current [mA/Ah]
- I_{BOOST} = typical boost charge current [mA/Ah] (8 mA/Ah for sealed lead batteries)
- f_g = gas emission factor (0,2 for sealed lead batteries)
- f_s = safety factor (5 for sealed lead batteries)

$$A = 28 \times Q$$

- A = opening area of the necessary inlet and outlet vents [cm²]
- Q = necessary air volume flow [m³/h]

CAPACITY ¹ (Ah)	COUNT BLOCKS	CURRENT (A) ¹						CONNECTED LOAD (W) ¹						HOUSING	
		0,5 h	1 h	1,5 h	2 h	3 h	8 h	0,5 h	1 h	1,5 h	2 h	3 h	8 h	cabinet ²	shelf ³
7,2	18	6,94	4,36	3,13	2,47	1,72	0,79	1499,04	941,76	676,08	533,52	371,52	170,64	1	X
12	18	11,90	7,47	5,33	4,24	2,95	1,30	2570,40	1613,52	1151,28	915,84	637,20	280,80	1	X
20	18	19,50	12,20	8,78	6,95	4,83	2,18	4212,00	2635,20	1896,48	1501,20	1043,28	470,88	1	X
28	18	26,60	16,70	12,01	9,58	6,67	3,06	5745,60	3607,20	2594,16	2069,28	1440,72	660,96	1	X
33	18	35,60	21,80	15,70	11,40	8,20	3,70	7689,60	4708,80	3391,20	2462,40	1771,20	799,20	1	X
45	18	43,60	26,80	19,30	15,60	11,20	5,00	9417,60	5788,80	4168,80	3369,60	2419,20	1080,00	1	X
55	18	60,20	35,30	25,90	19,00	13,70	6,10	13003,20	7624,80	5594,40	4104,00	2959,20	1317,60	1	X
70	18	82,60	47,10	33,90	25,90	18,70	8,40	17841,60	10173,60	7322,40	5594,40	4039,20	1814,40	1	X
90	18	80,80	50,10	36,00	31,10	22,50	10,60	17452,80	10821,60	7776,00	6717,60	4860,00	2289,60	1	X
100	18	117,90	65,50	46,50	36,30	26,20	11,70	25466,40	14148,00	10044,00	7840,80	5659,20	2527,20	1	X
120	18	110,00	68,40	49,90	42,50	30,80	14,40	23760,00	14774,40	10778,40	9180,00	6652,80	3110,40	1	-
150	18	138,00	85,70	63,00	53,20	38,50	18,10	29808,00	18511,20	13608,00	11491,20	8316,00	3909,60	1	-
200	18	183,00	113,00	84,00	70,50	51,10	23,90	39528,00	24408,00	18144,00	15228,00	11037,60	5162,40	2	-
240	36	220,00	136,80	99,80	85,00	61,60	28,80	47520,00	29548,80	21556,80	18360,00	13305,60	6220,80	2	-
250	18	229,00	142,00	106,00	88,10	63,80	29,90	49464,00	30672,00	22896,00	19029,60	13780,80	6458,40	2	-
300	36	276,00	171,40	126,00	106,40	77,00	36,20	59616,00	37022,40	27216,00	22982,40	16632,00	7819,20	2	-
360	54	330,00	205,20	149,70	127,50	92,40	43,20	71280,00	44323,20	32335,20	27540,00	19958,40	9331,20	3	-
400	36	366,00	226,00	168,00	141,00	102,20	47,80	79056,00	48816,00	36288,00	30456,00	22075,20	10324,80	4	-

¹ gross values for current / power (aging reserve not taken into account)
² Version with separate battery cabinet
³ Version with combined electronic and battery cabinet
⁴ Further capacities on request

Note: Sicuro230Z can also be supplied without a charging device and battery, by using a mains replacement system (MRS) or a dual mains – see Sicuro230N.



PROJECT PLANNING INFORMATION S230Z

For project planning of the central supply Sicuro230Z, the following information is required:

- operating duration (0,5 h / 1 h / 1,5 h / 2 h / 3 h / 8 h)
- battery capacity (Ah)
 - can be calculated from the operating duration and total power in battery operation
- total power in mains operation (W)
- total power in battery operation (W)

MAIN STATION

- number of internal luminaire circuit modules in main station:
 - AKS 1 EÜ
 - AKS 2 EÜ
 - AKS 4 EÜ
 - AKS 1 SÜ
 - AKS 2 SÜ
 - AKS 4 SÜ
 - power per luminaire circuit (W)
- number of external luminaire circuit modules for main station:
 - eAK 2 EÜ
 - eAK 4 EÜ
 - eAK 2 SÜ
 - eAK 4 SÜ
- number of 11KW switchover modules in main station for sub stations / external luminaire circuit modules:
 - SWITCH 11KW
 - power per switchover module
- number of LSSA modules in main station:
 - LSSA 3+5
 - LSSA 8

SUB STATION

- total power in mains operation per sub station (W)
- total power in battery operation per sub station (W)
- voltage supply with separate mains and battery supply cable or via combined mains and battery supply cable (11KW switchover module)
- number of internal luminaire circuit modules in sub station:
 - AKS 1 EÜ
 - AKS 2 EÜ
 - AKS 4 EÜ
 - AKS 1 SÜ
 - AKS 2 SÜ
 - AKS 4 SÜ
 - power per luminaire circuit (W)
- number of LSSA modules in sub station:
 - LSSA 3+5
 - LSSA 8

OPTIONS

- battery management Life Plus
- mains monitoring modules DS3 UV
- LSSA modules LSSA 3+5 or LSSA 8
- S230 modules or S230 DALI modules
- S230 inverter modules
- remote panel
- signalling and switching module MSM
- software Logica Visual

Note: Sicuro230Z can also be supplied without a charging device and battery, by using a mains replacement system (MRS) or a dual mains - see Sicuro230N.



PROJECT PLANNING INFORMATION S230N

For project planning of the central supply Sicuro230N for mains replacement systems (MRS) or dual mains, the following information is required:

- total power in mains operation (W)

MAIN STATION

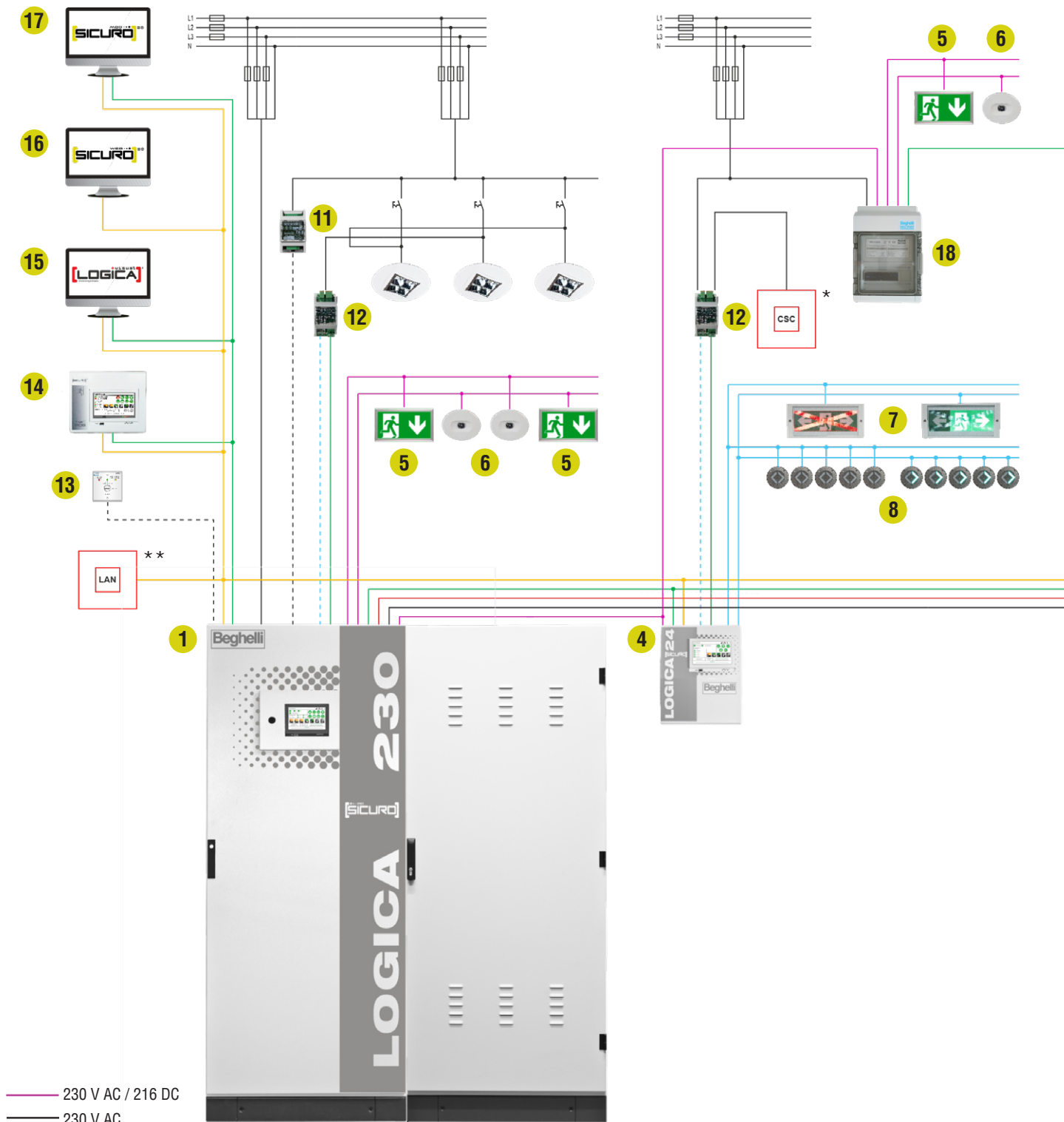
- number of internal luminaire circuit modules in main station:
 - AKS 1 EÜ
 - AKS 2 EÜ
 - AKS 4 EÜ
 - AKS 1 SÜ
 - AKS 2 SÜ
 - AKS 4 SÜ
 - power per luminaire circuit (W)
- number of external luminaire circuit modules for main station:
 - eAK 2 EÜ
 - eAK 4 EÜ
 - eAK 2 SÜ
 - eAK 4 SÜ
- number of LSSA modules in main station:
 - LSSA 3+5
 - LSSA 8

SUB STATION

- total power in mains operation per sub station (W)
- number of internal luminaire circuit modules in sub station:
 - AKS 1 EÜ
 - AKS 2 EÜ
 - AKS 4 EÜ
 - AKS 1 SÜ
 - AKS 2 SÜ
 - AKS 4 SÜ
 - power per luminaire circuit (W)
- number of LSSA modules in sub station:
 - LSSA 3+5
 - LSSA 8

OPTIONS

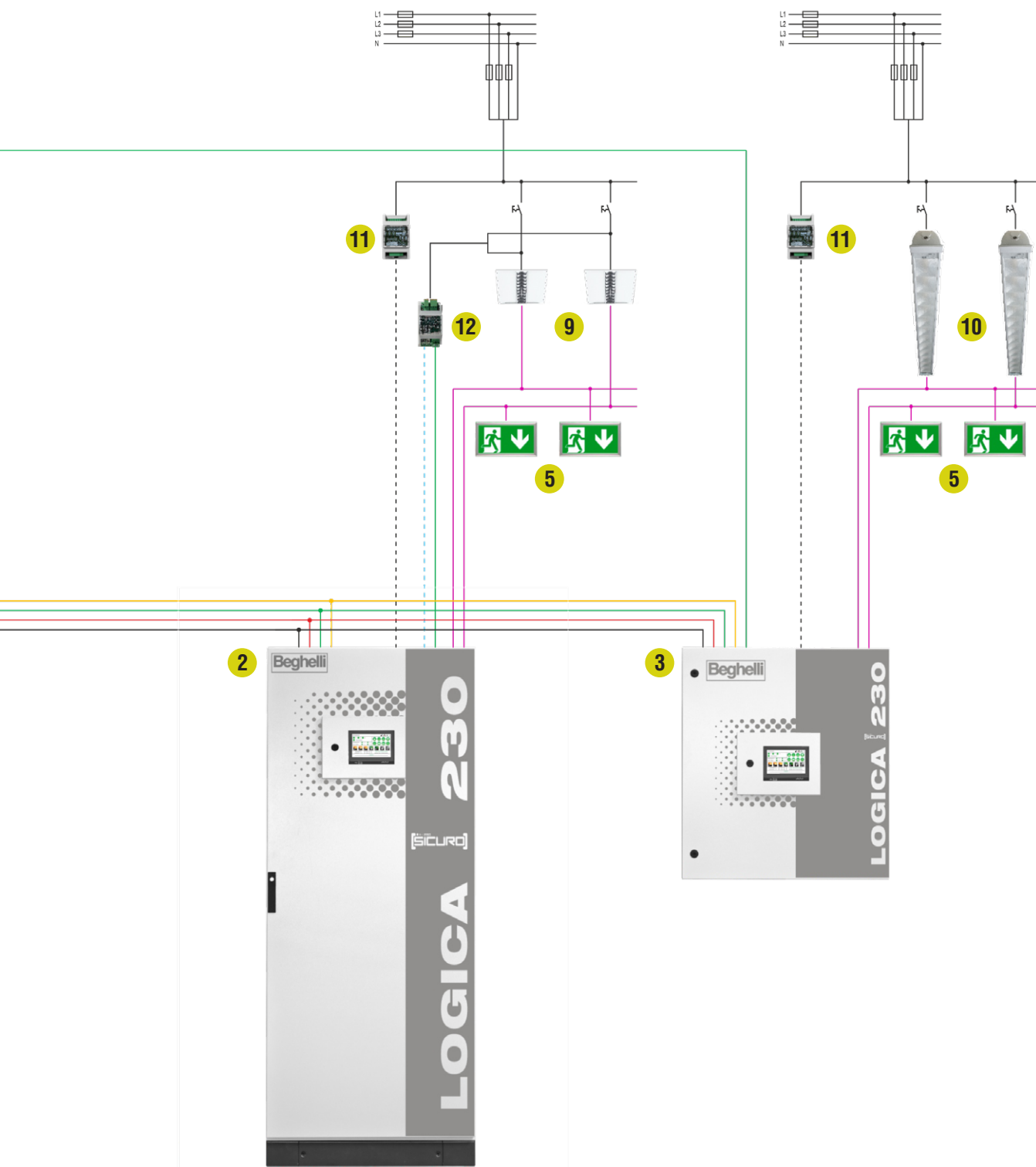
- mains monitoring modules DS3 UV
- LSSA modules LSSA 3+5 or LSSA 8
- S230 modules or S230 DALI modules
- S230 inverter modules
- remote panel
- signalling and switching module MSM
- software Logica Visual



- 230 V AC / 216 DC
- 230 V AC
- 216 V DC
- 24 V DC (load)
- - - 24 V DC (control)
- RS485
- ethernet
- - - control and signals

* combined signalling central
 ** local network

- 1** main station S230Z-H-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 exit sign luminaire, dynamic
- 8** S24 luminous marker, dynamic
- 9** luminaire with S230 module
- 10** luminaire with S230 inverter module
- 11** mains monitoring module (option)¹
- 12** light switch query / mains monitoring module (option)²



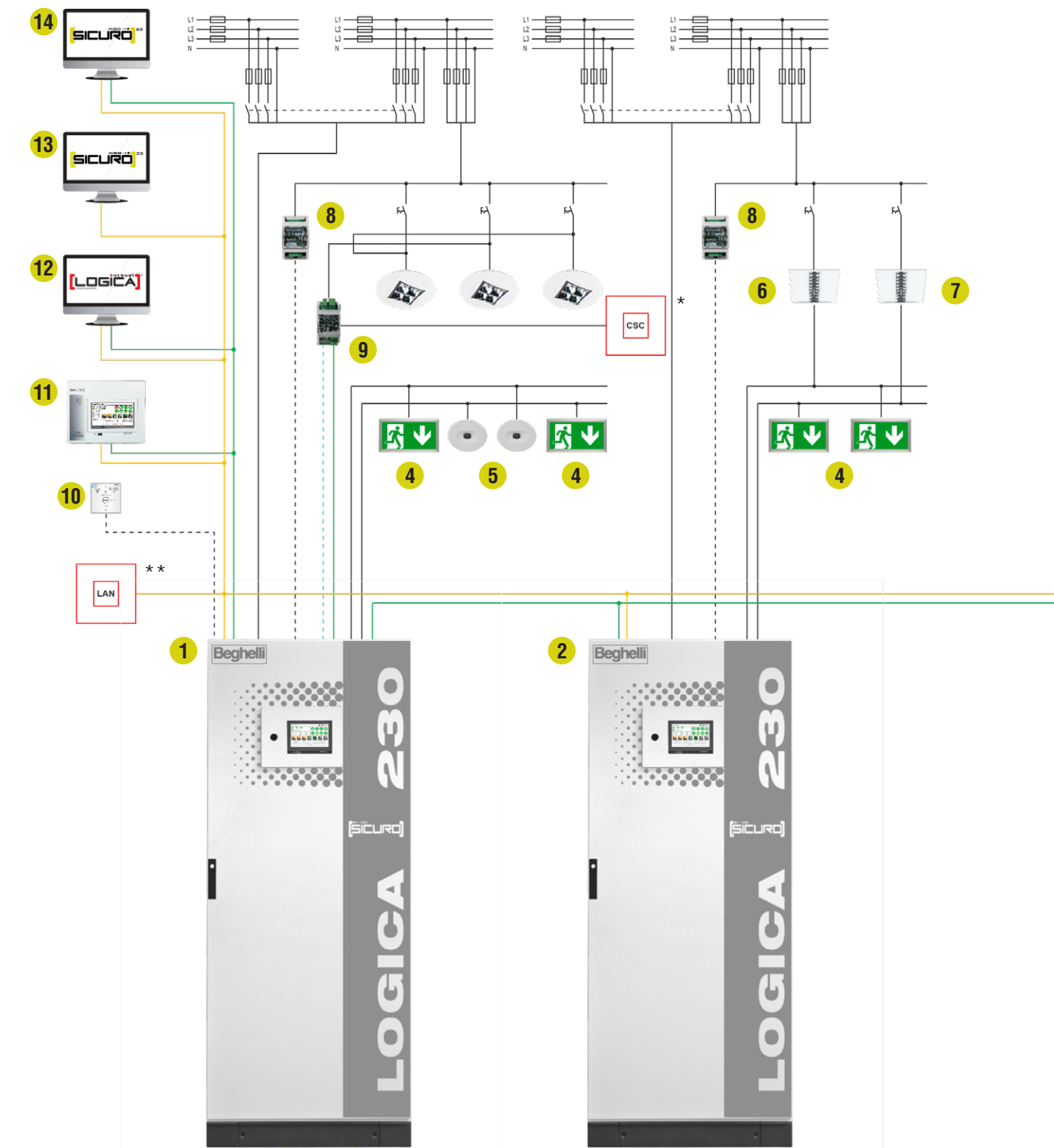
- 13 signalling and switching module (option)³
- 14 RS485 or ethernet for remote panel (option)^{1 4}
- 15 RS485 or ethernet for PC with software Logica Visual (option)^{1 4}
- 16 ethernet for webserver (option)⁴
- 17 RS485 or ethernet for Modbus RTU / TCP (option)^{1 4}
- 18 external luminaire circuit module eAK (option)¹

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 mm²

³ cable: min. 6 x 2 x 0,8 mm

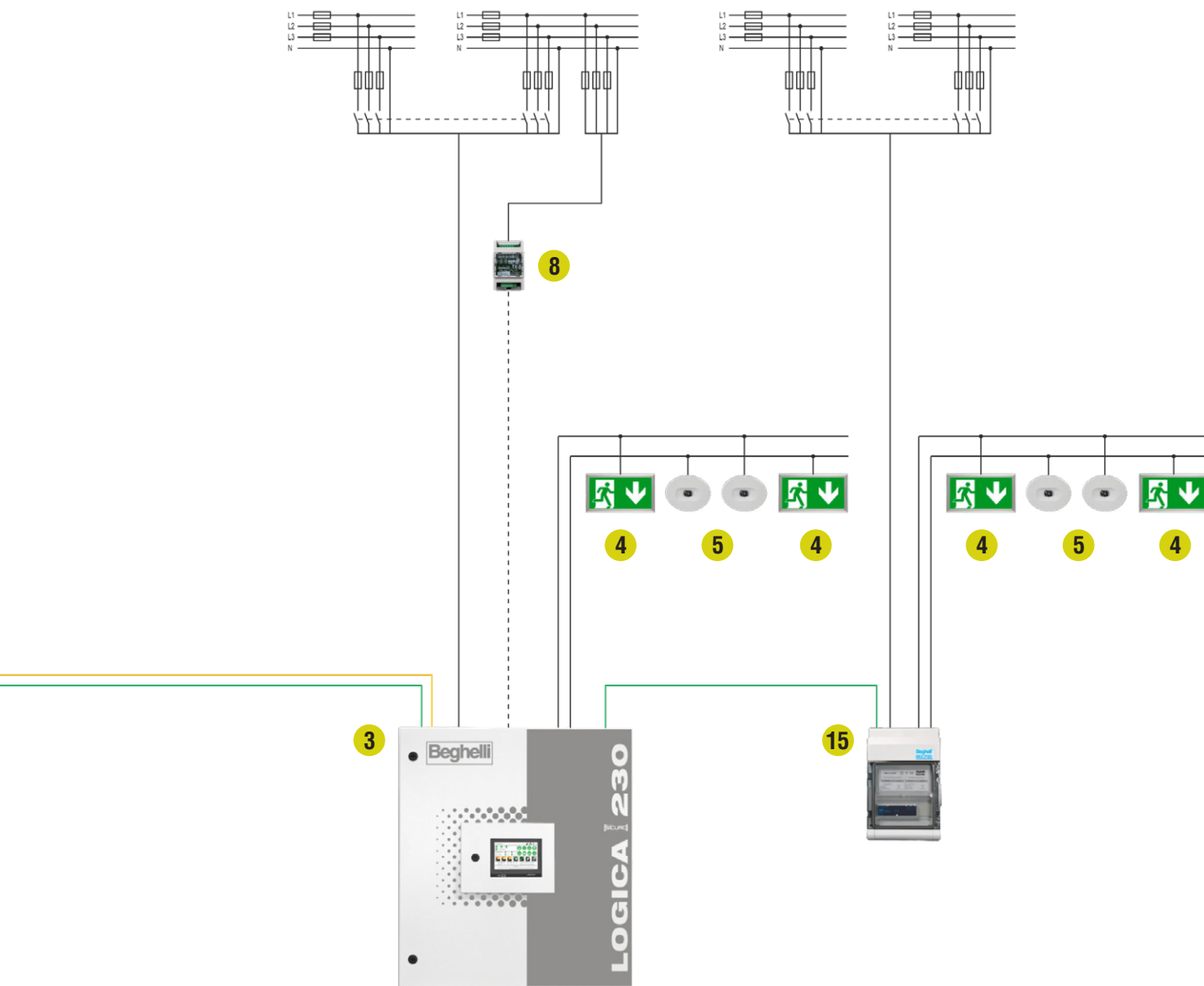
⁴ cable: min. CAT-5



— 230 V AC
 - - - 24 V DC (control)
 — RS485
 — ethernet
 - - - control and signals

* combined signalling central
 ** local network

- 1** main station S230N-H-S
- 2** sub station S230N-U-S
- 3** sub station S230N-U-W
- 4** S230 exit sign luminaire
- 5** S230 safety luminaire
- 6** luminaire with S230 module
- 7** luminaire with S230 inverter module
- 8** mains monitoring module (option)¹
- 9** light switch query / mains monitoring module (option)²
- 10** signalling and switching module (option)³



- 11 RS485 or ethernet for remote panel (option)^{1 4}
- 12 RS485 or ethernet for PC with software Logica Visual (option)^{1 4}
- 13 ethernet for webserver (option)⁴
- 14 RS485 or ethernet for Modbus RTU / TCP (option)^{1 4}
- 15 external luminaire circuit module eAK (option)¹

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 mm²

³ cable: min. 6 x 2 x 0,8 mm

⁴ cable: min. CAT-5

COMPACT STATIONS SICURO24G

Overview of all available compact stations – Sicuro24G.

No individual configuration of the safety lighting in consultation with Beghelli PRÄZISA Deutschland necessary.



S24G	
Version with combined electronic and battery cabinet as wall cabinet	
sealed lead battery	
12 Ah to 56 Ah	
24 V	
6,5 A to 15,8 A	
3,7 A to 15,8 A	
2,8 A to 13,9 A	
1,1 A to 6,2 A	
156 W to 384 W	
88,8 W to 384 W	
67,2 W to 333,6 W	
26,4 W to 148 W	
1 charging module 27,6 V / max. 6 A	
max. 1 / 2 luminaire circuit modules: ● 4 x 24 V / 3 A mains operation: 24 V DC emergency operation: 24 V DC	

TYPE	
DESCRIPTION	
BATTERY TYPE	
BATTERY CAPACITY	
BATTERY VOLTAGE	
BATTERY CURRENT	1 h
	2 h
	3 h
	8 h
BATTERY POWER	1 h
	2 h
	3 h
	8 h
CHARGE	
LUMINAIRE CIRCUITS	



**S24G
E30**

Version with combined electronic and battery cabinet as wall cabinet **with** function integrity

sealed lead 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 charging module 27,2 V / max. 6 A

max. 1 luminaire circuit module:

- 4 x 24 V / 2,7 A

mains operation: 24 V DC

emergency operation: 24 V DC



**S24G
EXTREME**

Version with combined electronic and battery cabinet as wall cabinet

sealed Lithium-Ion-Titanium 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 W to 216 W

35 W to 70 W

1 charging module 27 V / max. 6 A

max. 1 / 2 luminaire circuit modules:

- 4 x 24 V / 3 A

mains operation: 24 V DC

emergency operation: 24 V DC

30 minutes function integrity in a cabinet approved by the DIBt with additional fire test of the electrical built-ins by a material test establishment.

For ambient temperatures of -10 °C to +45 °C.



LUMINAIRE CIRCUIT MODULES FOR SICURO24

Luminaire circuit modules for internal use in S24Z and S24G 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) or per circuit
- pushbutton for addressing of the luminaire circuit module



TYPE	AK24V
MONITORING	luminaire monitoring
DESCRIPTION	4 circuits for 4 x 20 (32) luminaires
CONNECTED LOAD	4 x 72 W for installation in cabinet without function integrity, 4 x 65 W for installation in cabinet with function integrity
FUSE	8 x 6,3 AT / 250 V
ORDER CODE	17247



S24 INVERTER MODULE

Monitoring and control module with integrated LED driver for emergency operation and automatic addressing for indoor and outdoor luminaires with electronic control gear and LED lamps.

- **operating mode:** maintained mode (switchable / not switchable / not programmable), non-maintained mode (switchable / not switchable / programmable)
- **mains operation:** operating of the LED lamp via LED driver of the luminaire without reduced power
 - power: nominal power of the luminaire
- **battery operation:** operating of the LED lamp via integrated LED driver of the S24 inverter module with reduced power
 - driver power (inverter): 6 W or 12 W (programmable via S24 station)
 - driver current (inverter): max. 0,5 A
 - driver voltage (inverter): 2 V to 55 V
- **control:** control input for switching the luminaire in mains operation (on / off)
 - control signal: 0 V or 230 V

Communication to the S24 station via powerline bus.

Order code	Description
17220	S24 inverter module for luminaire installation with strain relief
G31446	S24 inverter module for luminaire installation without strain relief
17210	S24 inverter module for luminaire attachment

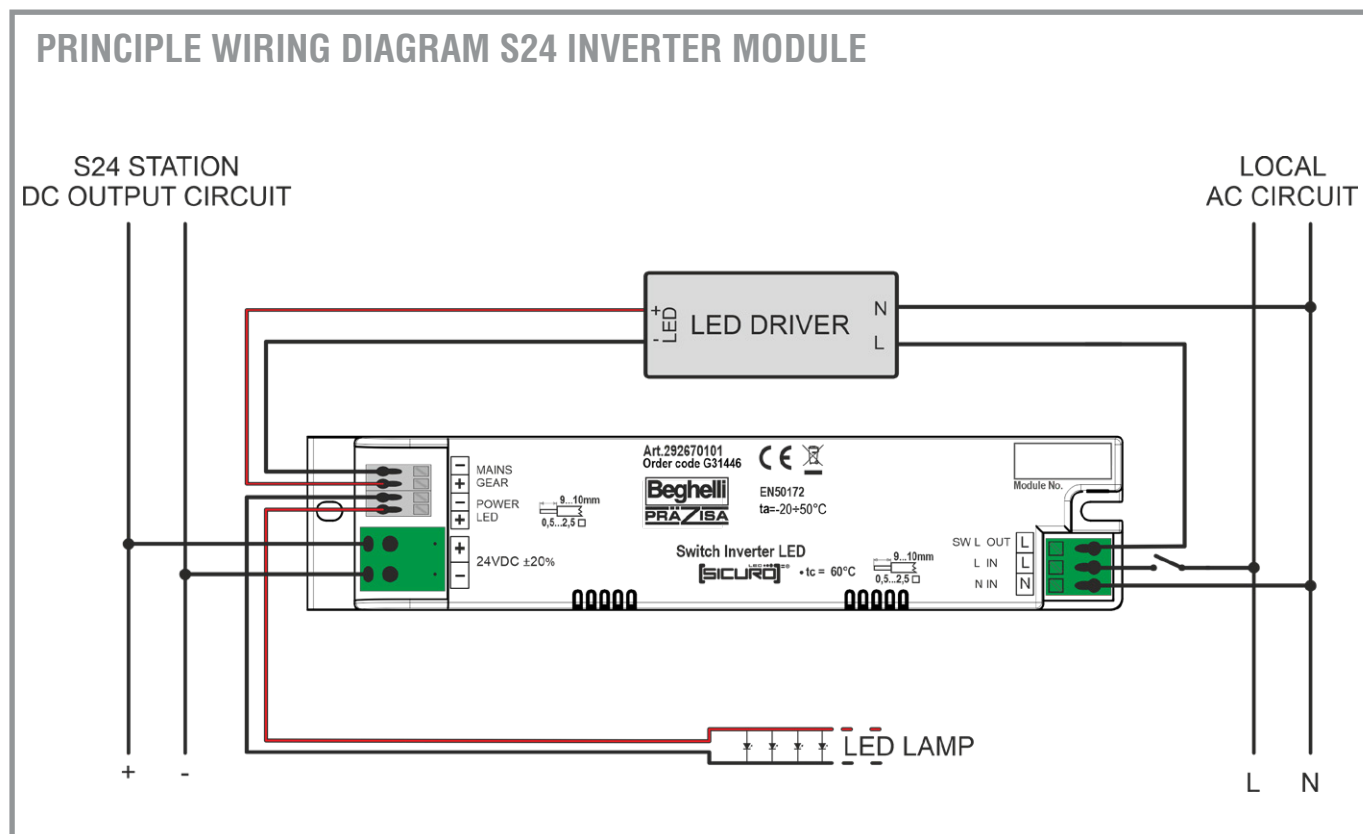
Battery voltage:	24 V ± 20 %
Mounting:	luminaire installation (17220, G31446) / luminaire attachment (17210)
Housing:	polycarbonate
Dimensions (H x W x D):	30 x 323 x 45 mm (17220) / 24 x 152 x 32 mm (G31446) / 55 x 300 x 138 mm (17210)
Type of protection:	IP20 (17220, G31446) / IP65 (17210)
Protection class:	II

CALCULATION OF LIGHT FLUX:

Light flux of the LED lamp in mains operation = 100 %

Light flux of the LED lamp in battery operation =

$$\text{Light flux of the LED lamp in mains operation} \times \frac{6 \text{ W or } 12 \text{ W}}{\text{power of the LED lamp in mains operation}}$$












DECENTRAL SUPPLY SICURO24G

The decentral supply Sicuro24 is based on **compact stations**.

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

				
TYPE	S24G-H-1 12 Ah	S24G-H-1 24 Ah	S24G-H-1/2 28 Ah	S24G-H-1/2 56 Ah
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
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 (RAL 9003), grey (RAL 7016)	sheet steel, white (RAL 9003), grey (RAL 7016)	sheet steel, grey (RAL 7035)	sheet steel, grey (RAL 7035)
BATTERY CABINET				
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	IP20	IP20	IP20	IP20
PROTECTION CLASS	I	I	I	I
SUPPLY	mains	1 / N / PE 230 V ~ 50/60 Hz	1 / N / PE 230 V ~ 50/60 Hz	1 / N / PE 230 V ~ 50/60 Hz
	battery	24 V =	24 V =	24 V =
AMBIENT TEMPERATURE	electronic	-5 °C to +35 °C	-5 °C to +35 °C	-5 °C to +35 °C
CABLE ENTRY	above / behind	above / behind	above	above
CABLE CLAMPS	mains	2,5 mm ²	2,5 mm ²	2,5 mm ²
	battery	2,5 mm ²	2,5 mm ²	2,5 mm ²
	luminaires	2 x 2,5 mm ²	2 x 2,5 mm ²	2 x 2,5 mm ²
	control	2,5 mm ²	2,5 mm ²	2,5 mm ²
ORDER CODE	white (RAL 9003): 17060 grey (RAL 7016): 17070	white (RAL 9003): 17061 grey (RAL 7016): 17071	1 luminaire circuit module: 17062 2 luminaire circuit modules: 17065	1 luminaire circuit module: 17063 2 luminaire circuit modules: 17066

	EXTREME  	
S24G-H-1 56 Ah, E30	S24G-H-1/2 20 Ah, EXTREME	S24G-H-1/2 40 Ah, 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 (RAL 7035)	sheet steel, grey (RAL 7035)	sheet steel, grey (RAL 7035)
1.050 x 650 x 415	800 x 400 x 170	800 x 400 x 170
IP54	IP54	IP54
II	I	I
1 / N / PE 230 V ~ 50/60 Hz	1 / N / PE 230 V ~ 50/60 Hz	1 / N / PE 230 V ~ 50/60 Hz
24 V =	24 V =	24 V =
-5 °C to +25 °C	-10 °C to +45 °C	-10 °C to +45 °C
above	above	above
2,5 mm ²	2,5 mm ²	2,5 mm ²
2,5 mm ²	2,5 mm ²	2,5 mm ²
2 x 2,5 mm ²	2 x 2,5 mm ²	2 x 2,5 mm ²
2,5 mm ²	2,5 mm ²	2,5 mm ²
30008	1 luminaire circuit module: 17075 2 luminaire circuit modules: 17077	1 luminaire circuit module: 17076 2 luminaire circuit modules: 17078



CHARGING MODULES S24G

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

- Charging voltage:** 27,6 V for lead battery (Pb)
27 V for Lithium-Ion-Titanium battery (LTO)
- Charging current:** 3 A or 6 A (depends on battery capacity)



BATTERY

Battery supply with sealed lead batteries (standard version) or Lithium-Ion-Titanium batteries (extreme version).

- Service life expectancy:** > 5 years for lead battery (Pb) at ambient temperature of +15 °C to +25 °C
> 10 years for Lithium-Ion-Titanium battery (LTO) at ambient temperature of -10 °C to +45 °C

STANDARD-VERSION – LEAD BATTERY (PB)

CAPACITY (Ah)	VOLTAGE (V)	CURRENT (A) ¹				CONNECTED LOAD (W) ¹			
		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	67,2	26,4
24	24	12	7,5	5,6	2,3	288	180	134,4	55,2
28	24	12 / 15,8 ²	9,7	7	3,1	288 / 384 ²	232,8	170	74,4
56	24	12 / 15,8 ²	12 / 15,8 ²	12 / 13,9 ²	6,2	288 / 384 ²	288 / 384 ²	288 / 333,6 ²	148

EXTREME-VERSION – LITHIUM-ION-TITANIUM BATTERY (LTO)

CAPACITY (Ah)	VOLTAGE (V)	CURRENT (A) ¹				CONNECTED LOAD (W) ¹			
		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
40	24	12 / 15,8 ²	12 / 15,8 ²	9	2,9	288 / 384 ²	288 / 384 ²	216	70

¹ Net values for current / power (aging reserve already taken into account)

² Versions with 1 / 2 luminaire circuit module(s)



PROJECT PLANNING INFORMATION S24G

For project planning of the decentral supply Sicuro24G the following information is required:

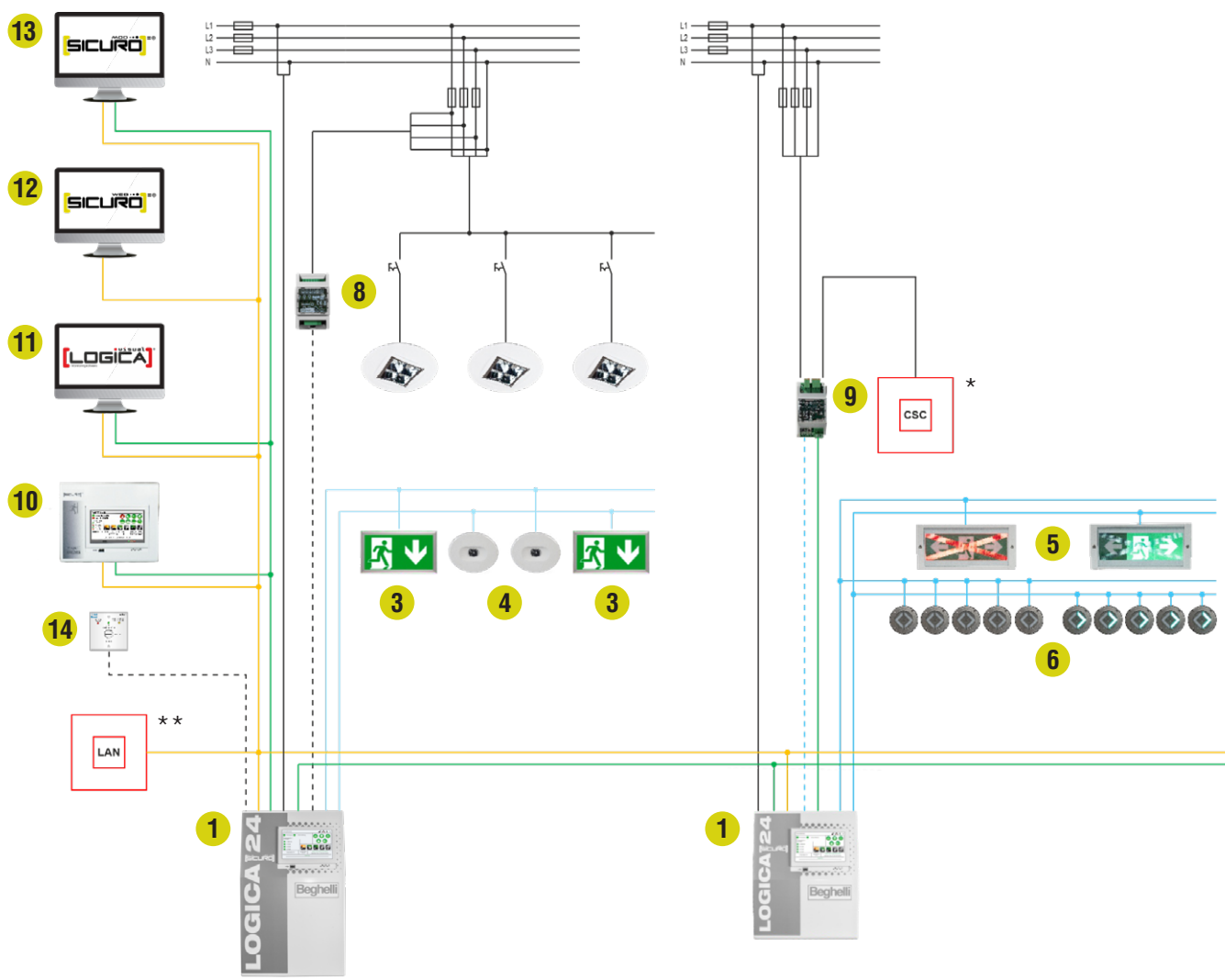
- operating duration (1 h / 2 h / 3 h / 8 h)
- battery capacity (Ah)
 - can be calculated from the operating duration and total power in battery operation
- total power in mains operation (W)
- total power in battery operation (W)

STATION

- number of internal luminaire circuit modules in the station:
 - AK24V
 - power per luminaire circuit

OPTIONS

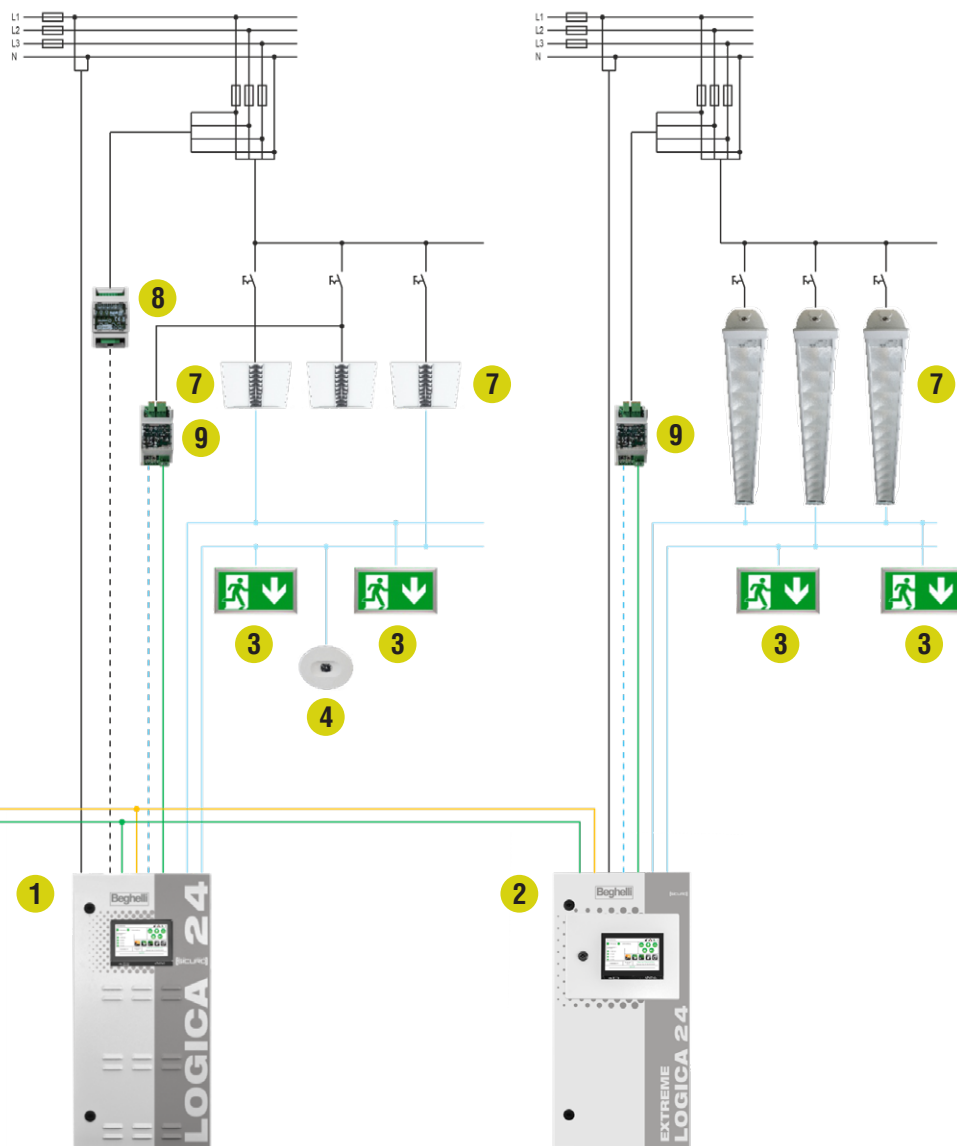
- mains monitoring modules DS3 UV
- LSSA modules LSSA 3+5 or LSSA 8
- S24 inverter modules
- remote panel
- signalling and switching module MSM
- software Logica Visual



- 230 V AC
- 24 V DC (load)
- - - 24 V DC (control)
- RS485
- ethernet
- - - control and signals

* combined signalling central
 ** local network

- 1** S24G station
- 2** S24G extreme station
- 3** S24 exit sign luminaire
- 4** S24 safety luminaire
- 5** S24 exit sign luminaire, dynamic
- 6** S24 luminous marker, dynamic
- 7** luminaire with S24 inverter module
- 8** mains monitoring module (option)¹
- 9** light switch query / mains monitoring module (option)²



- 10 RS485 bus or ethernet for remote panel (option)¹⁴
- 11 RS485 bus or ethernet for PC with software **Logica Visual** (option)¹⁴
- 12 ethernet for webservice (option)⁴
- 13 RS485 bus or ethernet for Modbus RTU / TCP (option)¹⁴
- 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 mm²
³ cable: min. 6 x 2 x 0,8 mm
⁴ cable: min. CAT-5



Order code	Description
17240	remote panel S230/S24 housing white
17241	remote panel S230/S24 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 per system
 - collective fault
 - battery
 - charge
 - luminaires
 - communication fault
- tests of the last 2 years per system

Switch input and signalling output

- 1 switch input, free programmable, for switching of
 - operational condition (on / off) for one or all systems
 - maintained mode (on / off) for one or all systems
 - function test (start) for one or all systems
 - duration test (start) for one or all systems
 - manual reset (reset of luminaires) for one or all systems
 - deep discharge protection (reset) for one or all systems
 - **switching signal:** contact, potential-free
- 3 control outputs, free programmable, for signalling of
 - charge failure for one or all systems
 - battery failure for one or all systems
 - circuit resp. luminaire failure for one or all systems
 - deep discharge for one or all systems
 - operational condition for one or all systems
 - mains failure for one or all systems
 - battery operation for one or all systems
 - test operation for one or all systems
 - **control output:** 3 changeovers, potential-free

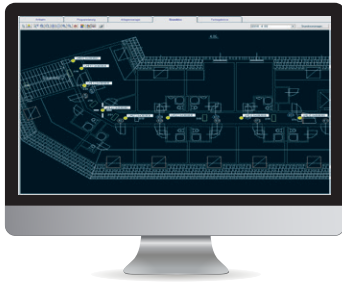
Communication

- RS485 bus for communication with Sicuro systems
- ethernet for communication with Sicuro systems

Operation

Operation via colored 7" touch screen with graphic and alphanumeric interface for input and output of all parameters and data, activatable password protection, multilingual and 3 status LEDs for signalling of mains operation / battery operation / collective fault

Mounting:	surface wall mounting
Cable entry:	from above / from behind
Housing:	sheet steel, white (RAL 9003) or grey RAL (7016)
Dimensions (H x W x D):	225 x 276 x 100 mm
Type of protection:	IP20
Protection class:	I



MONITORING AND CONTROL SOFTWARE LOGICA VISUAL

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

Version for Windows XP (32/64 Bit), Windows VISTA (32/64 Bit), Windows 7 (32/64 Bit), Windows 8 (32/64 Bit), Windows 10 (32/64 Bit) and Windows 11.

FUNCTIONS

Monitoring

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

Control

- manual switching (on / off) of the maintained mode in mains operation per system (decentral and central supply)

Signalling

- current status in online mode in graphical and numerical format per luminaire
 - operational condition
 - operating mode
 - faults
 - tests
- faults in online mode per luminaire
 - lamp
 - communication fault
 - battery fault (self-contained supply)
- tests of the last 2 years per system

Programming

- import of layout plans as DXF/DWG file
- textual and graphical 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 and central supply)
- switching per circuit or luminaire (decentral and central supply)
- switching per luminaire (self-contained supply, only for maintained mode)
- test parameters per device
 - date
 - time
 - duration
 - cycle
- free assignment of luminaires to groups per system (decentral supply, central supply and self-contained supply)
- 3 programmable time functions (time switch) each for all 7 weekdays with 5 switch-on times per weekday (decentral and central supply)

Order code	Description
12139	Logica Visual



MAINS MONITORING MODULE DS3 UV

Module for monitoring the mains supply of the general lighting in sub distributors.
 Activation of the control output during mains faults and mains failures with $U < 85\% U_{Nominal}$.

Mains input: 3 ~ N 400 V / 50/60 Hz or 1 ~ N 230 V / 50/60 Hz
Control output: 2 changeovers, potential-free
Housing: plastic
Dimensions (H x W x D): 110 x 53 x 63 mm
Type of protection: IP20
Protection class: II
Mounting: distributor installation (DIN rail)

Order code	Description
17385	DS3 UV 3-phase or 1-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. Triggering of the control inputs with switch voltages (invertible). Function and logic of control inputs as well as assignment to luminaire circuits or luminaires free programmable.

Control inputs for mains monitoring: 3 or 0
Control signal: 1 ~ N 230 V / 50 Hz, invertible
 ($U < 85\% U_{Nominal}$)
Control inputs for light switch query: 5 or 8
Control signal: 1 ~ N 230 V / 50 Hz, invertible
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: distributor installation (DIN rail) as well as in various S230 stations

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. Triggering of the control inputs with switch contacts (potential-free, invertible). Function and logic of control inputs as well as assignment to luminaire circuits or luminaires free programmable.

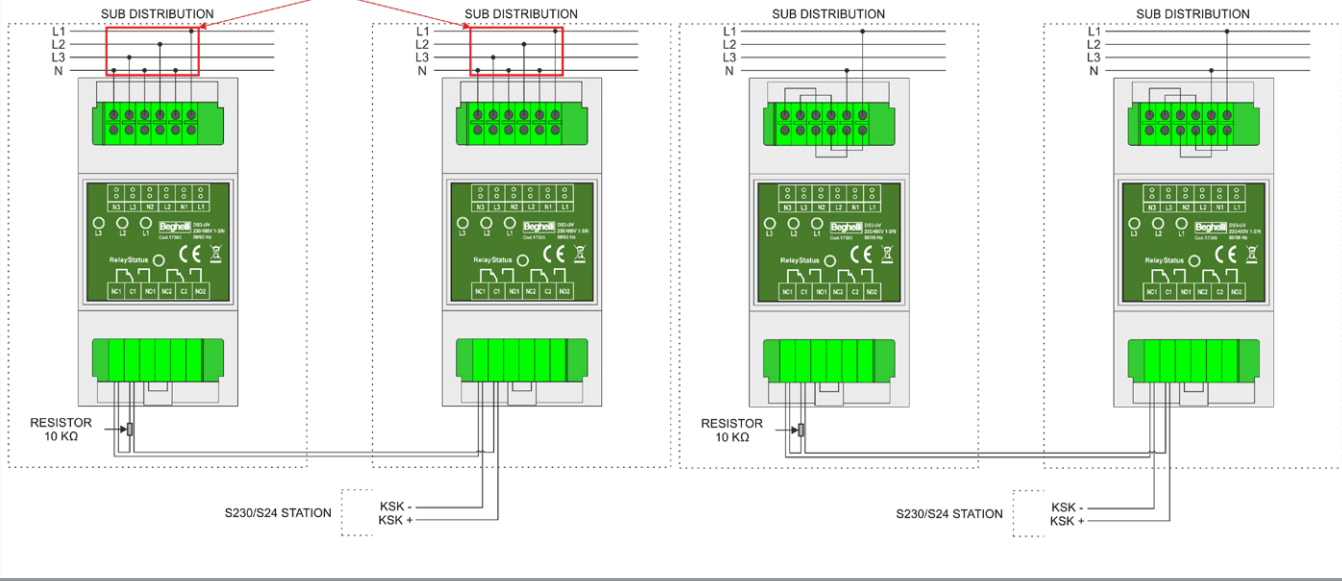
Control inputs for light switch query: 8
Control signal: switch contact (potential-free), invertible
Communication bus: RS485
Housing: plastic
Dimensions (H x W x D): 110 x 53 x 63 mm
Type of protection: IP20
Protection class: II
Mounting: distributor installation (DIN rail) or in various S230 stations

Order code	Description
17231	LSSA 8

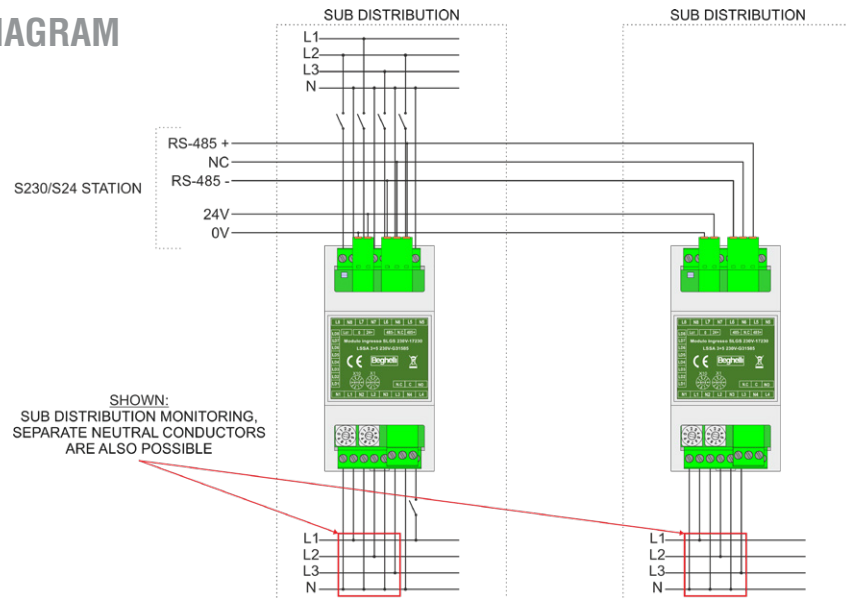
PRINCIPLE WIRING DIAGRAM DS3 UV 3-PHASE

SEPARATE NEUTRAL CONDUCTORS
ARE ALSO POSSIBLE

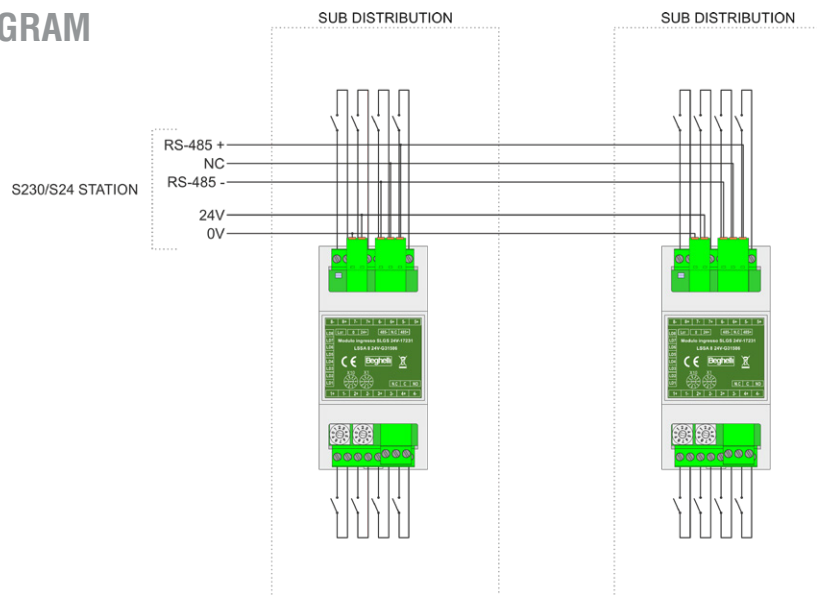
PRINCIPLE WIRING DIAGRAM DS3 UV 1-PHASE



PRINCIPLE WIRING DIAGRAM LSSA 3+5



PRINCIPLE WIRING DIAGRAM LSSA 8





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 mounting

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 PC with the 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:

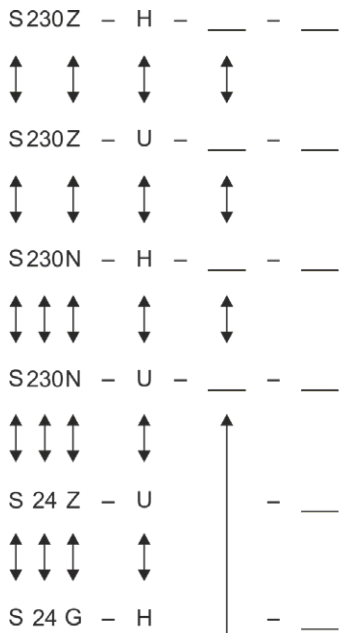
DIN rail or surface wall mounting

Delivery content:

1x mounting adapter for DIN-rail, 1x USB cable

Order code	Description
16319	RS485/USB interface

TYPE BREAKDOWN SICURO230 AND SICURO24



→ Maximum quantity of the output circuits [pcs.] in slide-in slots for S230Z and S230N.
 → Maximum quantity of the output circuits [pcs.] in fixed mounting for S24Z and S24G.

→ Cabinet type for S230Z - main station:

S	= „Stand cabinet“ Stand-Schrank	2000 x 800 x 600 mm (HxWxD)
S MAXI	= „Stand cabinet Maxi“ Stand-Schrank Maxi	2000 x 800 x 600 mm (HxWxD)
SK	= „Stand combi cabinet“ Stand-Kombischrank	2000 x 800 x 600 mm (HxWxD)
SK MINI	= „Stand combi cabinet Mini“ Stand-Kombischrank Mini	1520 x 650 x 400 mm (HxWxD)

W	= „Wall cabinet“ Wand-Schrank	890 x 800 x 400 mm (HxWxD)
WK	= „Wall combi cabinet“ Wand-Kombischrank	1200 x 600 x 350 mm (HxWxD)

→ Cabinet type for S230Z - sub station:

S	= „Stand cabinet“ Stand-Schrank	2000 x 800 x 600 mm (HxWxD)
W	= „Wall cabinet“ Wand-Schrank	890 x 800 x 400 mm (HxWxD)
W MINI	= „Wall cabinet Mini“ Wand-Schrank Mini	570 x 600 x 350 mm (HxWxD)
W E30	= „Wall cabinet E30“ Wand-Schrank E30	1050 x 650 x 415 mm (HxWxD)

→ Cabinet type for S230N - main station:

S	= „Stand cabinet“ Stand-Schrank	2000 x 800 x 600 mm (HxWxD)
W	= „Wall cabinet“ Wand-Schrank	890 x 800 x 400 mm (HxWxD)

→ Cabinet type for S230N - sub station:

S	= „Stand cabinet“ Stand-Schrank	2000 x 800 x 600 mm (HxWxD)
W	= „Wall cabinet“ Wand-Schrank	890 x 800 x 400 mm (HxWxD)

→ Station type:
 H = main station
 U = sub station

→ Supply type:
 Z = central
 G = decentral
 N = mains replacement system (MRS) oder dual mains

→ Mains output voltage [V] of the output circuits:
 S230Z and S230N = 230 V AC (direct passthrough)
 S24Z = 24 V DC (conversion)
 S24G = 24 V DC (conversion)

→ System:
 S = Sicuro

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Dated: December 2023

Guarantee conditions

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