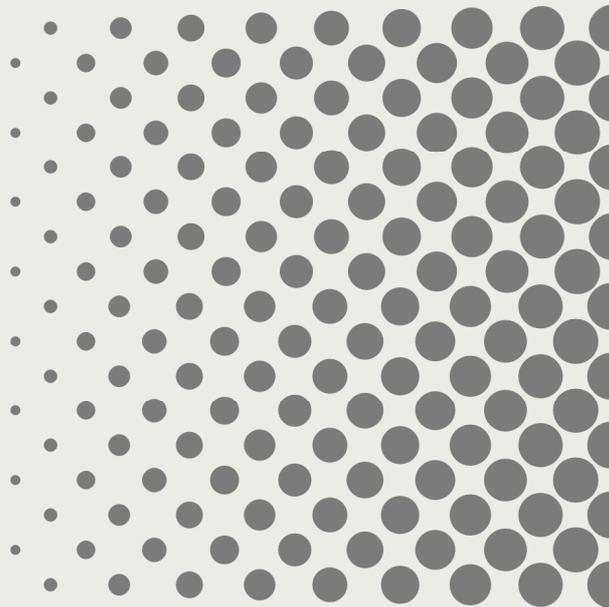




# Emergency Lighting



centralized supply system  
decentralized supply system

Date:  
Revision:

27.07.2023  
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English

INSTALLATION INSTRUCTION

SICURO

LOGICA 230/24



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## Information of the installation instruction

### Important instructions

According to EN 50110-1:2004-11 any work on the installation has to be executed by qualified electricians only.

Other activities described in this installation instruction have to be executed only by persons who:

- have been instructed by qualified persons.
- have fully understood their tasks and the functions of the installation.
- are under observation and being checked regularly by qualified persons.

Please observe the local rules and regulations.

## Symbol explanation

### The following symbols must be observed.



**Attention:**

Indicates hazards that may be the cause for damage to human, plant or environment as well as very important instructions.



**Note:**

Provides information and advice for navigating within the described plant, components or functions.

## Manufacturer, further documents

Manufacturer:

**Beghelli PRÄZISA Deutschland GmbH**

Internet: [www.beghelli.de](http://www.beghelli.de)  
E-mail: [kontakt@beghelli.de](mailto:kontakt@beghelli.de)

Further documents:

**Catalogues**  
**SICURO**

The catalogue contents are also available over the internet – [www.beghelli.de](http://www.beghelli.de).

## Type codes

Designation:	Station type:	Mains monitoring:	Mains supply:	Battery supply:	Mains output voltage:	Battery output voltage:
SICURO-230Z	main station	3~	400 V AC 50/60 Hz 3~	216 V DC	230 V AC 50/60 Hz 1~	216 V DC
SICURO-230Z	main station	1~	230 V AC 50/60 Hz 1~	216 V DC	230 V AC 50/60 Hz 1~	216 V DC
SICURO-230Z	sub station	3~	400 V AC 50/60 Hz 3~	216 V DC from main station	230 V AC 50/60 Hz 1~	216 V DC
SICURO-230Z	sub station	1~	230 V AC 50/60 Hz 1~	216 V DC from main station	230 V AC 50/60 Hz 1~	216 V DC
SICURO-230Z	sub station	/	230 V AC 50/60 Hz 1~ from main station, combined with battery supply	216 V DC from main station, combined with mains supply	230 V AC 50/60 Hz 1~	216 V DC
SICURO-24Z	sub station	/	230 V AC 50/60 Hz 1~ from main station, combined with battery supply	216 V DC from main station, combined with mains supply	24 V DC	24 V DC
SICURO-24G	main station	1~	230 V AC 50/60 Hz 1~	24 V DC	24 V DC	24 V DC



### Attention:

The specified mains and battery output voltages are only valid if output cards of the types AKS 1/2/4 EÜ/SÜ, eAK 2x32 EÜ/SÜ resp. AK24V are used.

### Mains output voltage:

- > The mains output voltage designates the voltage with which the output circuits of an emergency light station can be operated if no supply failure is present.
- > The mains output voltage designates the voltage with which the output circuits of an emergency light station are operated if a partial supply failure is present.

### Battery output voltage:

- > The battery output voltage designates the voltage with which the output circuits of an emergency light station are operated if a general supply failure is present.
- > The battery output voltage designates the voltage with which the output circuits of an emergency light station are operated if a function test, a duration test, an insulation test or a read-in is executed.

## Preface

This installation instruction covers all standard switchboard configurations. Device properties and device connections are documented. The information provided conforms to the latest scope of delivery regarding all standard switchboards in their respective minimal configuration. All configurations deviating from this are documented only partially. The information of this document which is different to the minimal configurations can be supplemented by the use of the documentations regarding the single equipment. Additional information can be requested from the above mentioned address.

The technical content of this installation instruction is correct at time of print.  
Subject to change without prior notification.



### Attention:

**This installation instruction should be used for general engineering purposes only before the ready manufactured product is delivered. After the delivery the individual documentation of the product must be used to reach the most exact relation.**

## General installation notes

Switchboards with devices are custom manufactured products which are every time adapted to the respective technical requirements of the object and the customer of Beghelli PRÄZISA Deutschland. This leads to individual switchboard configurations. The connection of a switchboard can basically be divided in the following installation steps. Additional steps regarding the connection should be planned and performed concerning the respective technical requirements and the installed equipment of the ready manufactured switchboard. With the aid of the individual documentation of the product it is possible to get an overview of its properties. The documentation can be used to plan and perform additional installation steps.

According to DIN VDE 0100-600, clause 6.4.3.3, the check of an installation with SICURO-230Z system regarding the insulation resistance of an output circuit can be done after the removal of all fuses of the output circuit.



**Note:**

**If contact designations are not described in detail in the installation steps respective information can be found in the individual documentation.**

## Installation step 1 – unpacking and check of the equipment

During the unpacking a check of all equipment should be done regarding the delivered quantities in correspondence with the respective order numbers. Viewing the individual documentation of the product can help to assign the delivered equipment better. In case of deviations to the ordered equipment please contact Beghelli PRÄZISA Deutschland.



**Attention:**

**During this and all following installation steps special attention must be paid to all equipment which is signed with safety signs. This installation instruction as well as all additional supplied documentations of other manufacturers (first and foremost material safety datasheets) must be read before the beginning of any activities.**

## Installation step 2 – assembly and erection of the equipment

The assembly and erection of all equipment should be done concerning the general cabling topology of all emergency light stations. The following installation steps as well as the individual documentation of the product are providing information how to install respective cables und external equipment.



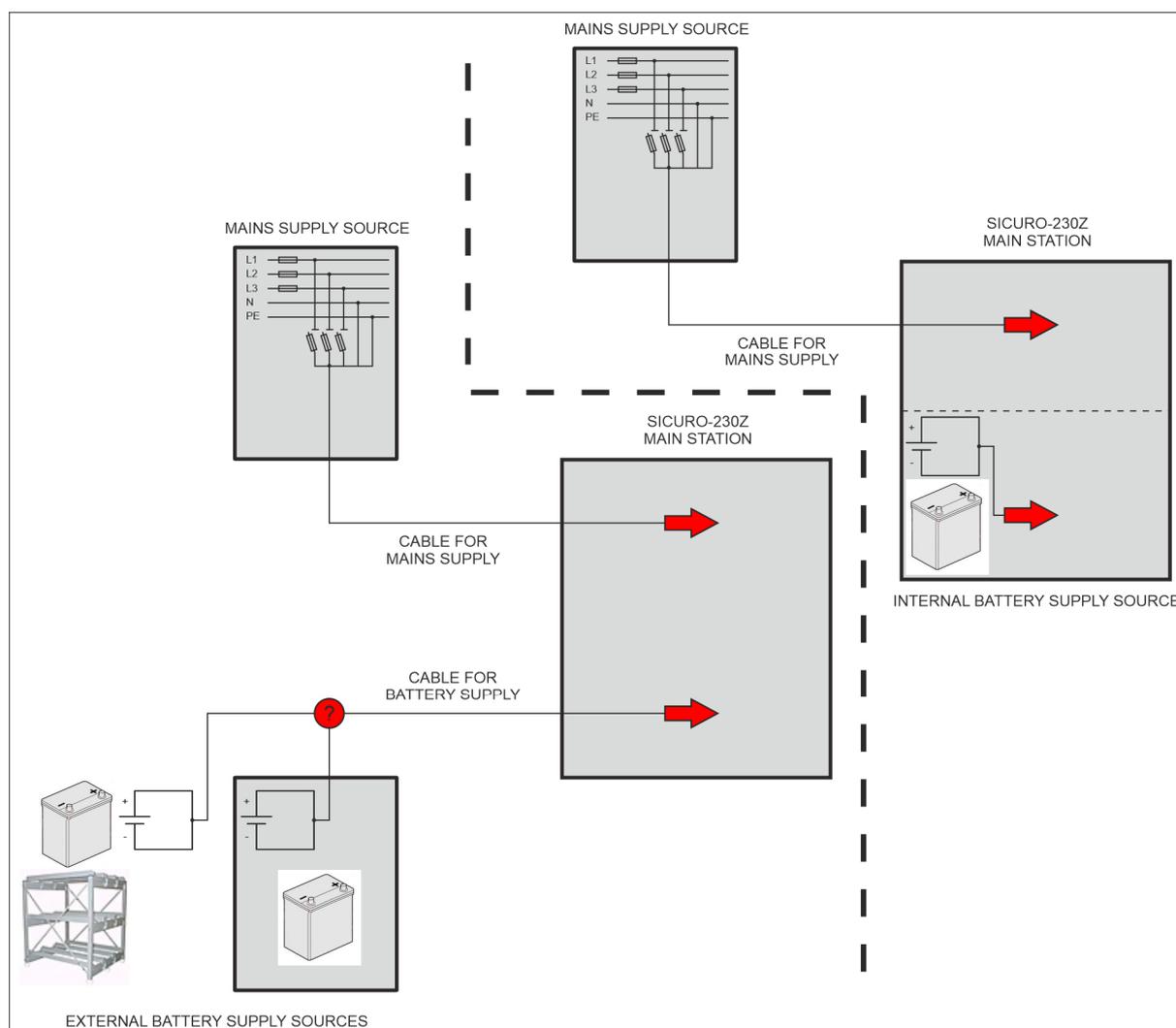
**Attention:**

**During this and all following installation steps all activities must be done without voltage on the equipment. This includes all kinds of mains supply voltages, battery supply voltages and every other kind of voltage independently of their usage.**

### Installation step 3 – connection of mains and battery supply

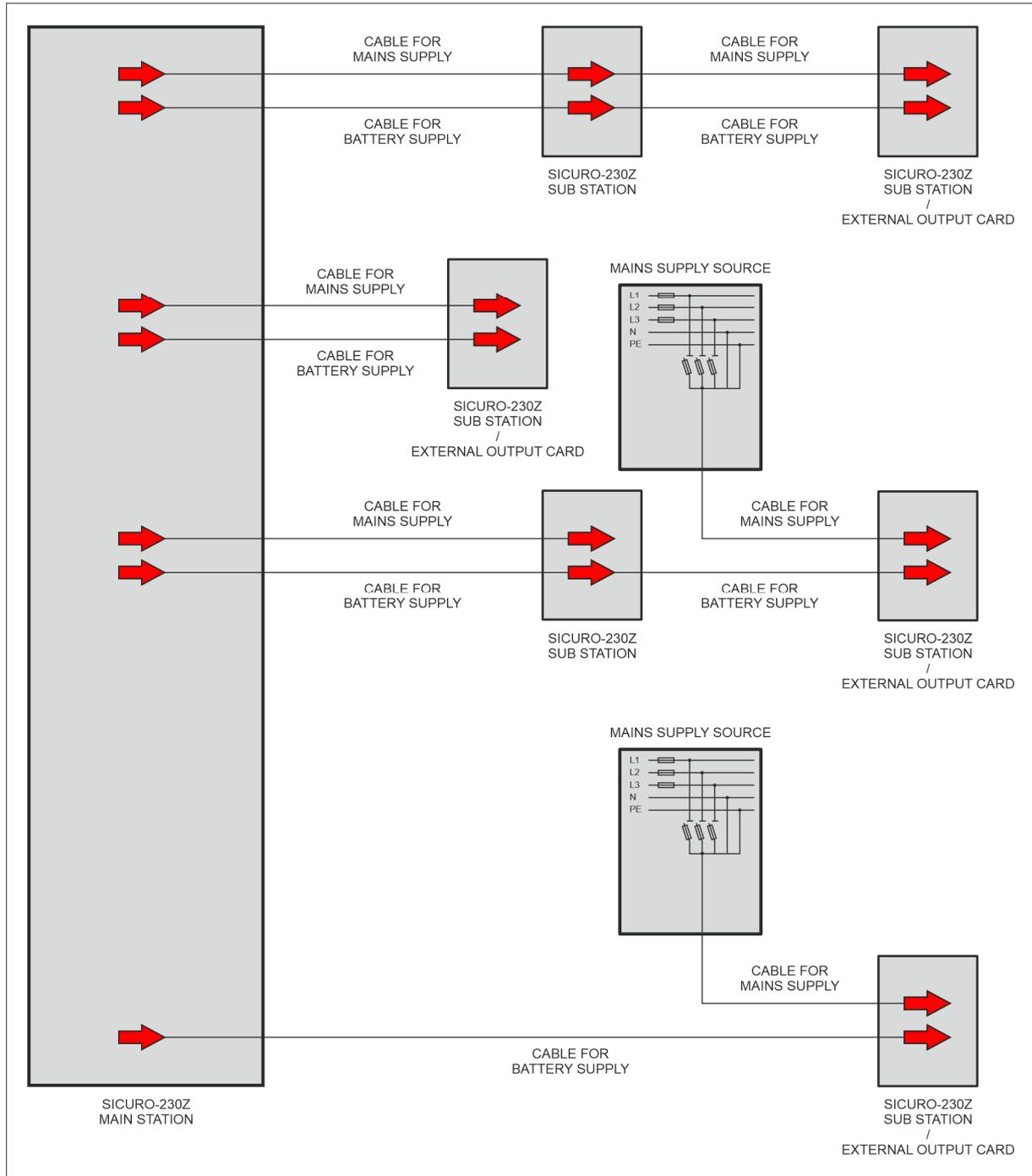
#### SICURO-230Z – main station:

- > Every SICURO-230Z system consists at least of one main station and a maximum of 128 main stations.
- > Every main station must be supplied with a mains and a battery supply.
- > Depending on the configuration the battery supply source can be placed inside the main station switchboard or external.



SICURO-230Z – sub station without combined mains and battery supply,  
SICURO-230Z – external output card without combined mains and battery supply:

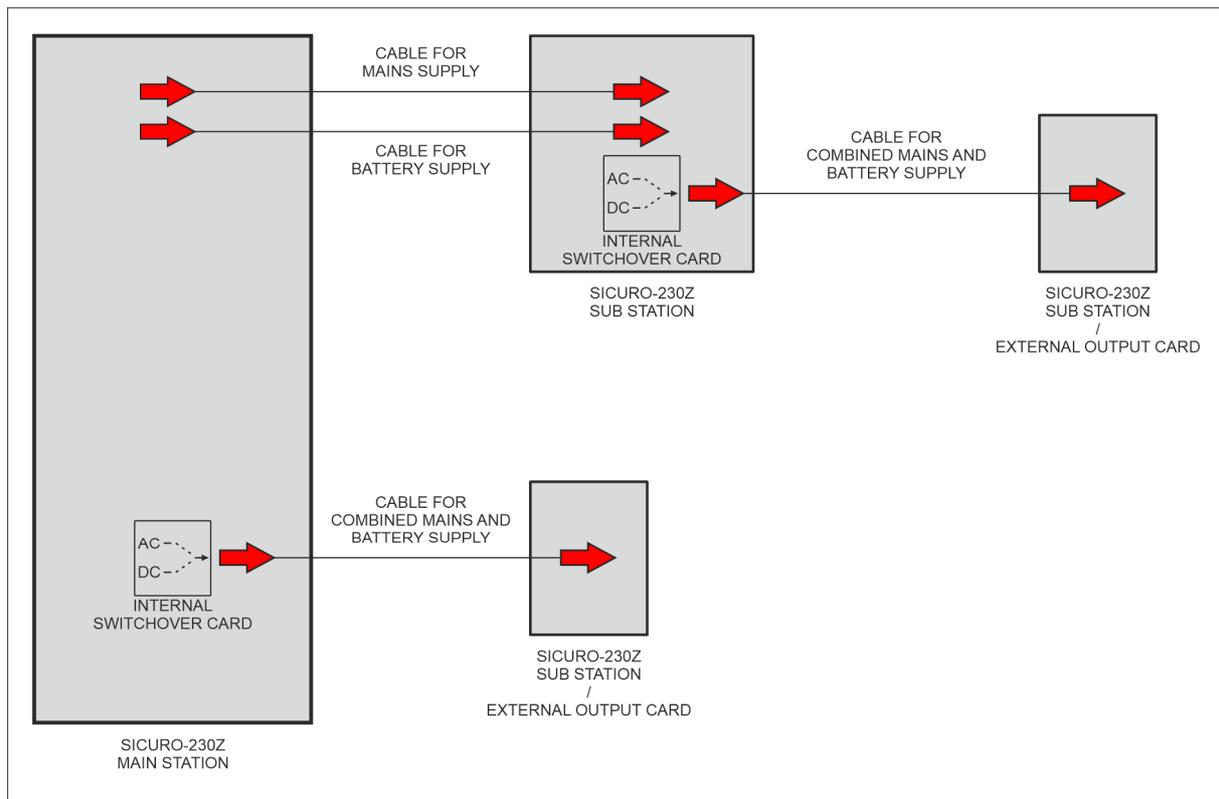
- > Every sub station / external output card must be supplied with a mains and a battery supply.
- > Depending on the configuration the mains and the battery supply for the sub stations can be wired in a row or starred.
- > A main station can have up to 32 connected sub stations / external output cards. A combination with sub stations of the SICURO-24Z system is possible.



SICURO-230Z – sub station with combined mains and battery supply

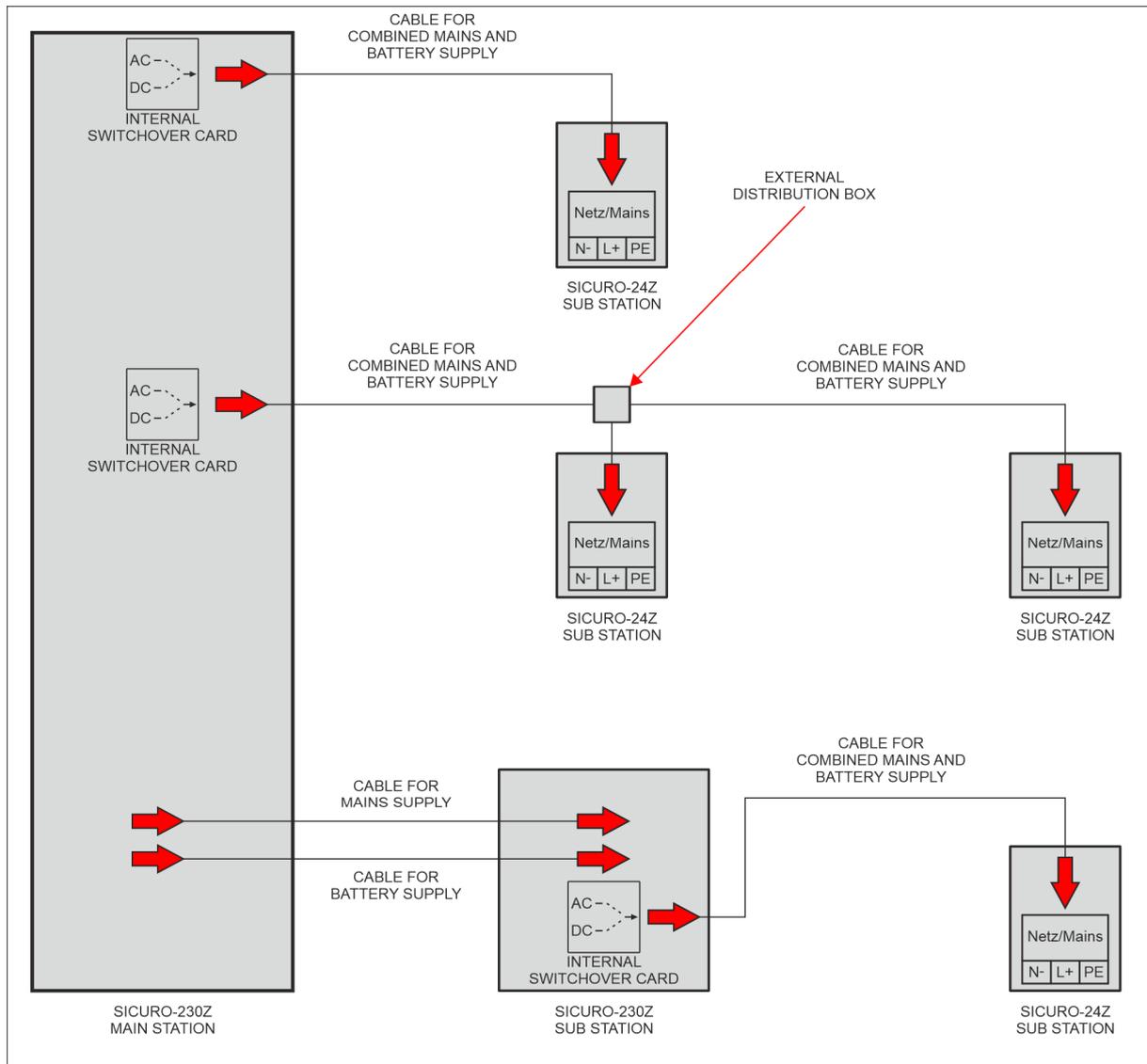
SICURO-230Z – external output card with combined mains and battery supply:

- > Every sub station / external output card must be supplied with a combined mains and battery supply.
- > Depending on the configuration the combined mains and battery supply for the sub stations / external output cards can be wired in a row or starred.
- > A main station can have up to 32 connected sub stations / external output cards. A combination with sub stations of the SICURO-24Z system is possible.



SICURO-24Z – sub station with combined mains and battery supply:

- > Every sub station must be supplied with a combined mains and battery supply.
- > Depending on the configuration the combined mains and battery supply for the sub stations can be wired in a row or starred.
- > A main station can have up to 32 connected sub stations / external output cards. A combination with sub stations of the SICURO-230Z system is possible.
- > The handoff point to connect the combined mains and battery supply to the sub station is located on the I/O card. The contact is designated with "Netz/Mains" and "N-/L+/PE".



**Attention:**

**Switchboards, distribution boxes and cables are defined by national rules. Regarding this equipment a functional integrity can be required.**

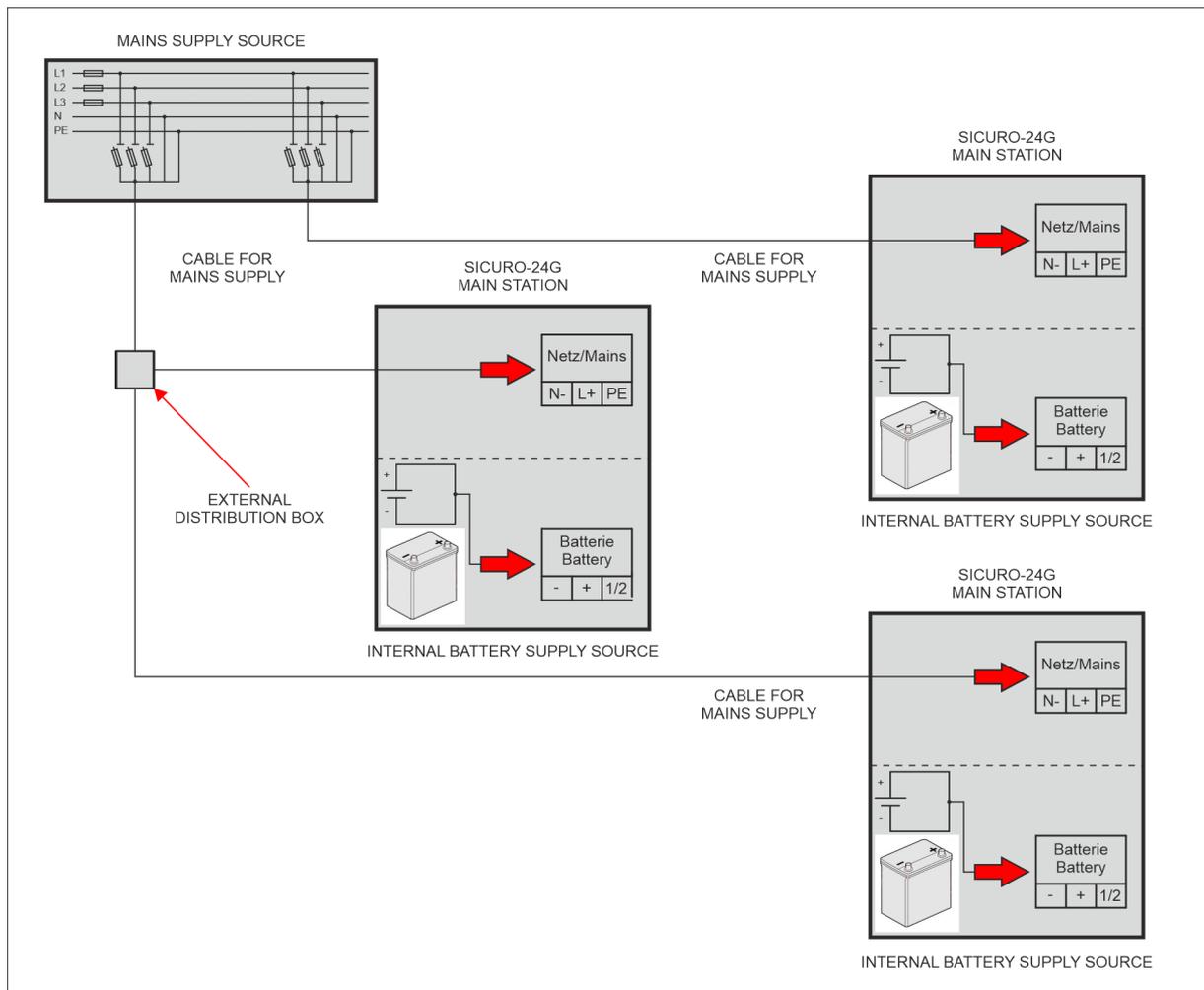
SICURO-24G – main station:

- > Every SICURO-24G system consists at least of one main station and a maximum of 128 main stations.
- > Every main station must be supplied with a mains and a battery supply.
- > Depending on the configuration the mains supply for the main stations can be wired in a row or starred. An external distribution box is necessary for the wiring in a row.
- > The battery supply source is placed inside the main station switchboard.
- > A main station can have no connected sub stations.
- > The handoff point to connect the mains supply to the main station is located on the I/O card. The contact is designated with "Netz/Mains" and "N-/L+/PE".
- > The handoff point to connect the battery supply to the main station is located on the I/O card. The contact is designated with "Batterie Battery" and "-/+".



**Attention:**

**It is not allowed to use the software programming of a SICURO-24G system to configure a main station as a sub station in combination with a cabling of the sub station bus. Within a SICURO-24G system all emergency light stations must be configured as main stations. A main station must be an autonomous working unit regarding the required basic functionality.**



**⚠ Attention:**

**Switchboards, distribution boxes and cables are defined by national rules. Regarding this equipment a functional integrity can be required.**

## Installation step 4 – connection of the critical circuit

### Properties of the critical circuit:

- > All SICURO systems are equipped with a critical circuit.
- > The critical circuit is equipped on its measure contact with a loop monitoring which works together with an end resistor (10 kΩ).
- > The end resistor (10 kΩ) mounted on the measure contact at delivery condition must be connected together with the last external monitoring module.
- > The critical circuit measures on its measure contact the presence of the end resistor (10 kΩ). If the measured resistance value deviates positive or negative from a determined value, then a mains failure is detected by the emergency light station.
- > The handoff point to connect the critical circuit to the emergency light station is located on the I/O card.

The measure contact is designated with "KSK" and "-/+" at SICURO-230Z systems.

The measure contact is designated with "KSK" and "+/-" at SICURO-24Z systems and SICURO-24G systems.

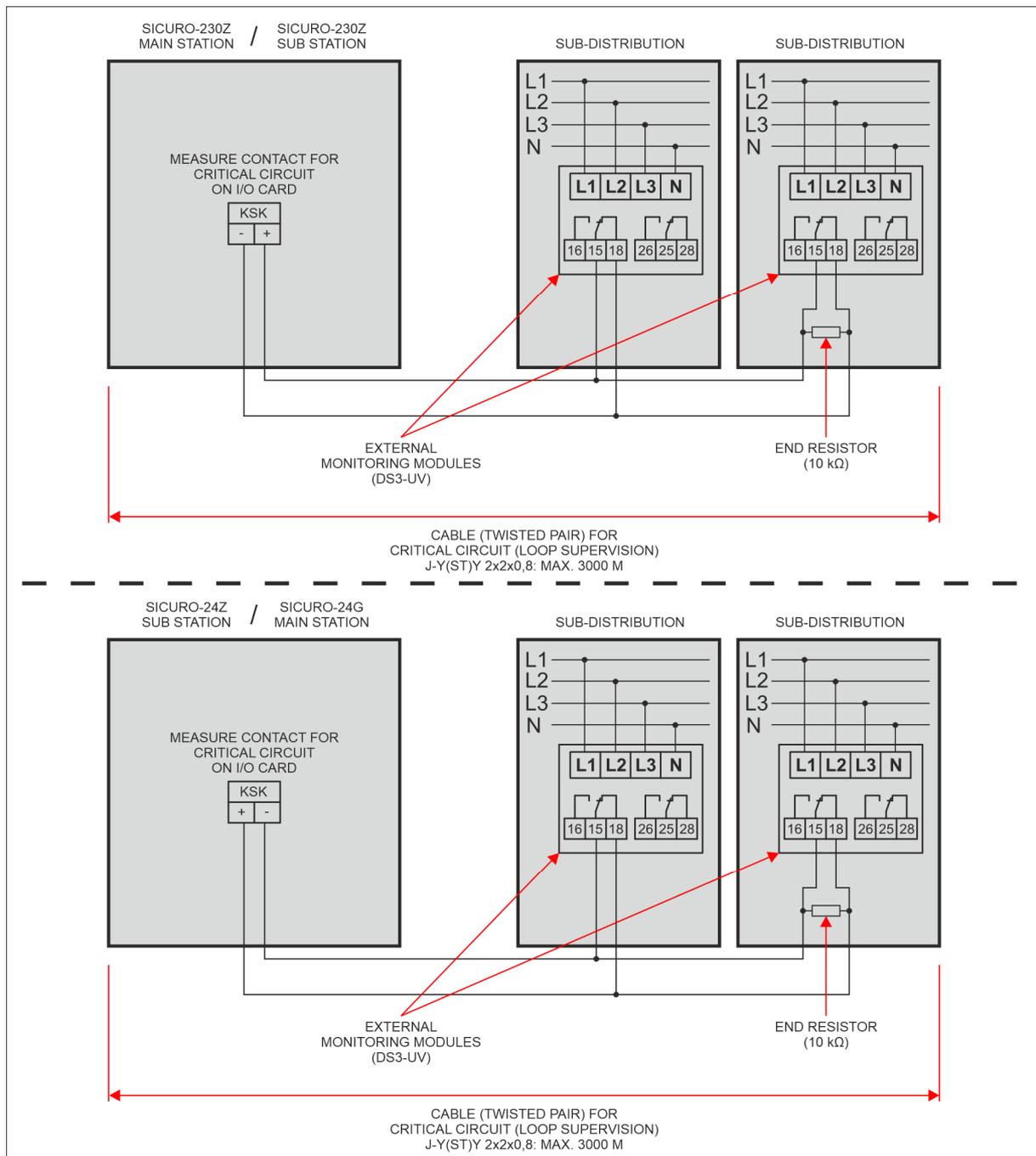


### **Attention:**

**When a mains failure is detected on the critical circuit of an emergency light station, only the output circuits resp. luminaire modules can be set in an emergency operation, which are connected to the affected emergency light station.**

### Properties of external monitoring modules:

- > The critical circuit is used for the sub-distribution monitoring of the general lighting. In the course of this external monitoring modules (standardly DS3-UV) are installed inside every sub-distribution which must be monitored.
- > Each external monitoring module monitors presence and value of the mains voltage.
- > The last external monitoring module must be connected together with the end resistor (10 kΩ).
- > An external monitoring module must open the critical circuit to enable the measuring of the end resistor (10 kΩ) by the measure contact of the critical circuit when no mains failure is present.
- > An external monitoring module must close the critical circuit low-ohmic to enable the measuring of a short circuit by the measure contact of the critical circuit the when a mains failure is present.

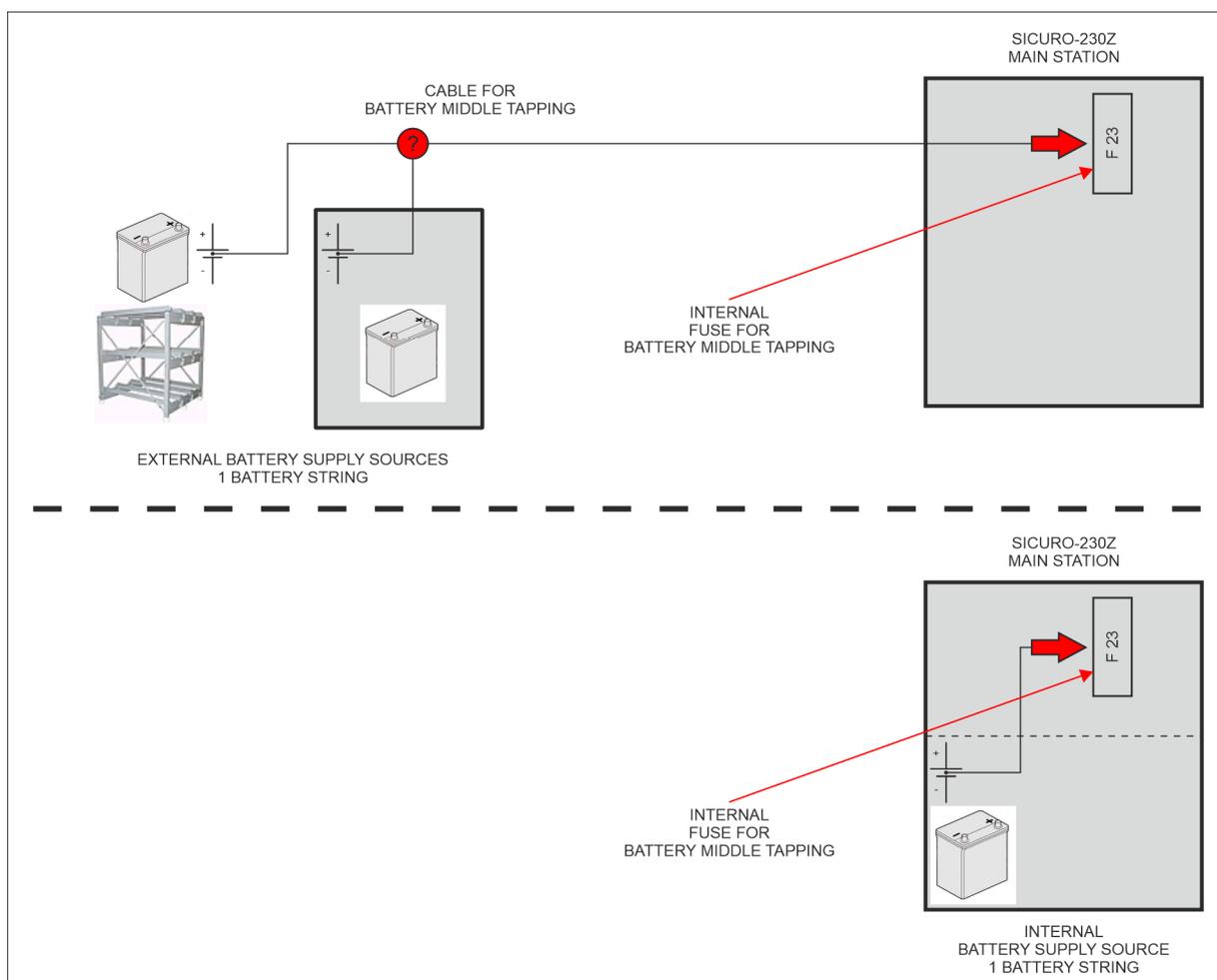


**Attention:** The critical circuit must be wired in a row. A starred wiring is not possible, because the loop monitoring must consist of only one defined end with an end resistor.

## Installation step 5 – connection of the battery middle tapping

### SICURO-230Z – main station:

- > Every main station of a SICURO-230Z system is equipped with one or more measure contacts for battery middle tapplings.
- > Every main station must be connected to all present battery middle tapplings.
- > Battery middle tapplings are placed inside the main station switchboard.
- > Depending on the configuration the battery supply of a main station can consist of one or more battery strings. One battery middle tapping is used per battery string.
- > The handoff points to connect battery middle tapplings to the main station are located at the following fuses:
  - Fuse F 23 for battery string 1. The measuring contact is designated with "F 23".
  - Fuse F 24 for battery string 2. The measuring contact is designated with "F 24".
  - Fuse F 25 for battery string 3. The measuring contact is designated with "F 25".
  - Fuse F 26 for battery string 4. The measuring contact is designated with "F 26".



SICURO-230Z – sub station:

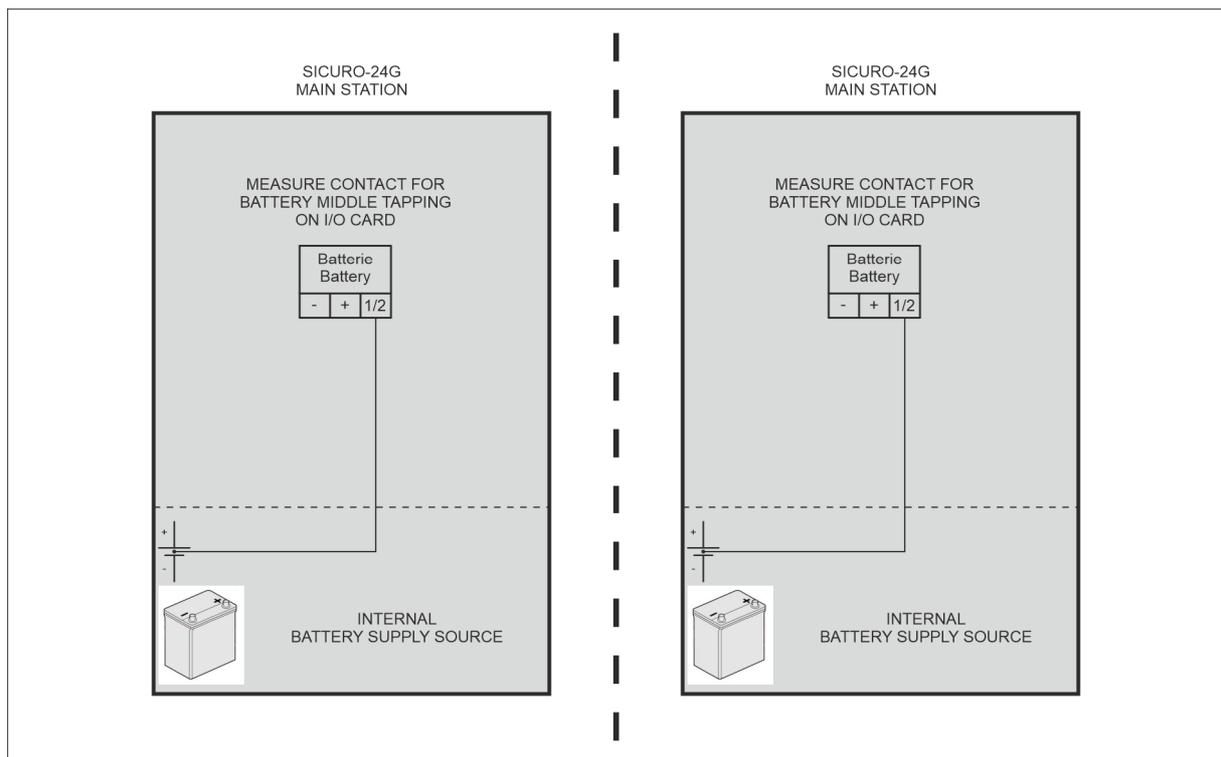
- > The sub stations of a SICURO-230Z system are not equipped with a measure contact for a battery middle tapping. The sub stations are operated without a battery middle tapping.

SICURO-24Z – sub station:

- > The sub stations of a SICURO-24Z system are not equipped with a measure contact for a battery middle tapping. The sub stations are operated without a battery middle tapping.

SICURO-24G – main station:

- > Every main station of a SICURO-24G system is equipped with a measure contact for a battery middle tapping.
- > Every main station must be connected to a battery middle tapping.
- > The battery middle tapping is placed inside the main station switchboard.
- > The handoff point to connect the battery middle tapping to the emergency light station is located on the I/O card. The measuring contact is designated with "Batterie Battery" and "1/2".



**Note:**

**The handoff point to connect the battery middle tapping to the emergency light station is pre-wired if the batteries are placed inside the switchboard at delivery condition. In this case the respective contacts are not intended as a connection for the customer at standard switchboard configurations.**

## Installation step 6 – connection of the device supply voltages

### SICURO-230Z:

- > All SICURO systems are equipped with one device supply voltage.
- > The voltage source supplies the voltage level 24 V DC.
- > The handoff point of the device supply voltage is located at terminal clamps inside the switchboard. The contacts are designated with "X21", "24+" and "0".
- > The voltage source can be used for additional devices which are placed internal or external related to the switchboard.



**Note:**

**If additional internal devices are included in the switchboard configuration a respective pre-wiring is existent at delivery condition.**

### SICURO-24Z and SICURO-24G:

- > All SICURO systems are equipped with one device supply voltage.
- > The voltage source supplies the voltage level 24 V DC.
- > The handoff point of the device supply voltage is located on the I/O card. The contacts are designated with "24V Ext." and "+/-".
- > The voltage source can be used for additional devices which can be placed external related to the switchboard.

## Installation step 7 – connection of the switch inputs

- > All SICURO systems are equipped with two switch inputs.
- > The switch contacts are carried out as circuits with a switch voltage of 24 V DC.
- > The command uptake for all switch inputs is binary and done by a low-ohmic contact closing (short circuit).
- > The command initiation for the switch input "maintained mode on/off" is software controlled and can not be influenced by a programming.
- > The command initiation for the switch input "user definition" is software controlled and can be influenced by a programming.
- > The handoff point of the switch input "maintained mode on/off" is located on the I/O card.  
The contacts of SICURO-230Z systems are designated with "DS" and "-/+".  
The contacts of SICURO-24Z and SICURO-24G systems are designated with "DS" and "+/-".
- > The handoff point of the switch input "user definition" is located on the I/O card.  
The contacts of SICURO-230Z systems are designated with "Aux In" and "-/+".  
The contacts of SICURO-24Z and SICURO-24G systems are designated with "Aux In" and "+/-".
- > The switch inputs can be used for control purposes together with additional devices which can be placed internal or external related to the switchboard.



**Attention:**

**The switch inputs are only free available if no optional signalling and switching module (MSM) is included in the switchboard configuration. Depending on the type of the signalling and switching module (MSM) the switch inputs are partly or completely used.**

## Installation step 8 – connection of the control contact for fans

### SICURO-230Z:

- > For the integration of fans the three auxiliary contacts "auxiliary contact 1", "auxiliary contact 2" and "auxiliary contact 3" on the I/O card can be used in combination with a respective software programming for control purposes.



**Note:**

**Regarding the wiring of the auxiliary contacts the installation step "connection of the auxiliary contacts" (see installation step 15) must be observed.**

### SICURO-24Z:

- > The SICURO-24Z systems without fire protection enclosures are not equipped with a contact for fans. The emergency light stations are operated without a fan.
- > The SICURO-24Z systems with fire protection enclosures are equipped with a contact for fans. This contact is combined with the contact for the output of the mains module.

### SICURO-24G:

- > The SICURO-24G systems without fire protection enclosures are not equipped with a contact for fans. The emergency light stations are operated without a fan.
- > The SICURO-24G systems with fire protection enclosures are equipped with a contact for fans. This contact is combined with the contact for the connection of the mains supply.

## Installation step 9 – connection of the measure contact "temperature sensor"

### SICURO-230Z:

- > Every main station of a SICURO-230Z system is equipped with a measure contact for a temperature sensor.
- > The measure contact is carried out as a circuit with a measure voltage of 3 V DC and software monitored.
- > The handoff point to connect a temperature sensor to the main station is located on the I/O card. The measure contact is designated with "Temp. NTC".
- > The measure contact is used for monitoring purposes together with a temperature sensor which is placed as follows depending on the switchboard configuration:
  - Combi switchboard: Pre-installed in the battery chamber of the switchboard.
  - Battery switchboard: By customer in the switchboard.
  - Battery rack: By customer in the battery room.



**Note:**

**The handoff point to connect a temperature sensor to the measure contact is pre-wired in combi switchboards and located at the terminal clamps of the I/O card. The contacts "Temp. NTC" are not intended as a connection for the customer at combi switchboards.**

- > The sub stations of a SICURO-230Z system are not equipped with a measure contact for a temperature sensor. The sub stations are operated without a temperature sensor.

### SICURO-24Z:

- > The sub stations of a SICURO-24Z system are not equipped with a measure contact for a temperature sensor. The sub stations are operated without a temperature sensor.

### SICURO-24G:

- > Every main station of a SICURO-24G system is equipped with a measure contact for a temperature sensor.
- > The measure contact is carried out as a circuit with a measure voltage of 3 V DC and software monitored.
- > The handoff point to connect a temperature sensor to the main station is located on the I/O card. The measure contact is designated with "Temp. NTC".
- > The measure contact is used for monitoring purposes together with a pre-installed temperature sensor which is placed in the battery chamber of the switchboard.



**Note:**

**The handoff point to connect a temperature sensor to the measure contact is pre-wired and located at the terminal clamps of the I/O card. The contacts "Temp. NTC" are not intended as a connection for the customer at standard switchboard configurations.**

### Installation step 10 – connection of the message contact for insulation failures

#### SICURO-230Z:

- > For the integration of a message contact for insulation failures the three auxiliary contacts "auxiliary contact 1", "auxiliary contact 2" and "auxiliary contact 3" on the I/O card can be used in combination with a respective software programming for control and monitoring purposes purposes.



**Note:**

**Regarding the wiring of the auxiliary contacts the installation step "connection of the auxiliary contacts" (see installation step 15) must be observed.**

#### SICURO-24Z and SICURO-24G:

- > The SICURO-24Z and SICURO-24G systems are not equipped with a message contact for signaling an insulation failure. The emergency light stations are operated without an insulation monitoring.

### Installation step 11 – connection of the message contact mains failures

- > For the integration of a message contact for mains failures the three auxiliary contacts "auxiliary contact 1", "auxiliary contact 2" and "auxiliary contact 3" on the I/O card can be used in combination with a respective software programming for control and monitoring purposes purposes.



**Note:**

**Regarding the wiring of the auxiliary contacts the installation step "connection of the auxiliary contacts" (see installation step 15) must be observed.**

### Installation step 12 – connection of the message contact "operational condition"

- > All SICURO systems are equipped with a message contact for the status "operational condition".
- > The message contact is carried out as a potential-free closer and software controlled.
- > The handoff point of the message contact "operational condition" is located on the I/O card. The message contact is designated with "Betr." and "C/NO".
- > The rating of the contacts amounts to 4 A at 250 V AC resp. 4 A at 30 V DC.
- > The message contact can be used for control or monitoring purposes together with additional devices which can be placed internal or external related to the switchboard.

Software command "operational condition" PRESENT:

The message relay is not energized and the contacts "C" and "NO" are opened.

Software command "operational condition" NOT PRESENT:

The message relay is energized and the contacts "C" and "NO" are closed.



**Attention:**

**The message contact "operational condition" is only free available if no optional signalling and switching module (MSM) is included in the switchboard configuration.**

### Installation step 13 – connection of the message contact "collective fault"

- > All SICURO systems are equipped with a message contact for the status "collective fault".
- > The message contact is carried out as a potential-free closer and software controlled.
- > The handoff point of the message contact "collective fault" is located on the I/O card. The message contact is designated with "Stoer." and "C/NO".
- > The rating of the contacts amounts to 4 A at 250 V AC resp. 4 A at 30 V DC.
- > The message contact can be used for control or monitoring purposes together with additional devices which can be placed internal or external related to the switchboard.

Software command "collective fault" PRESENT:

The message relay is not energized and the contacts "C" and "NO" are opened.

Software command "collective fault" NOT PRESENT:

The message relay is energized and the contacts "C" and "NO" are closed.



**Attention:**

**The message contact "collective fault" is only free available if no optional signalling and switching module (MSM) is included in the switchboard configuration.**

#### **Installation step 14 – connection of the message contact "battery operation"**

- > All SICURO systems are equipped with a message contact for the status "battery operation".
- > The message contact is carried out as a potential-free closer and software controlled.
- > The handoff point of the message contact "battery operation" is located on the I/O card. The message contact is designated with "Batt." and "C/NO".
- > The rating of the contacts amounts to 4 A at 250 V AC resp. 4 A at 30 V DC.
- > The message contact can be used for control or monitoring purposes together with additional devices which can be placed internal or external related to the switchboard.

Software command "battery operation" PRESENT:

The message relay is not energized and the contacts "C" and "NO" are opened.

Software command "battery operation" NOT PRESENT:

The message relay is energized and the contacts "C" and "NO" are closed.



**Attention:**

**The message contact "battery operation" is only free available if no optional signalling and switching module (MSM) is included in the switchboard configuration.**

### Installation step 15 – connection of the auxiliary contacts

- > All SICURO systems are equipped with three auxiliary contacts.
- > The auxiliary contacts are carried out as potential-free changeovers and software controlled. The software control can be influenced by a programming.
- > The handoff point of the auxiliary contact "auxiliary contact 1" is located on the I/O card. The auxiliary contact is designated with "Aux Out 1" and "NC/C/NO".
- > The handoff point of the auxiliary contact "auxiliary contact 2" is located on the I/O card. The auxiliary contact is designated with "Aux Out 2" and "NC/C/NO".
- > The handoff point of the auxiliary contact "auxiliary contact 3" is located on the I/O card. The auxiliary contact is designated with "Aux Out 3" and "NC/C/NO".
- > The rating of the contacts amounts to 4 A at 250 V AC resp. 4 A at 30 V DC.
- > The auxiliary contacts can be used for control or monitoring purposes together with additional devices which can be placed internal or external related to the switchboard.

Software commands for standard control and fan control OFF:

The control relay is not energized and the contacts "C" and "NC" are closed.

Software commands for standard control and fan control ON:

The control relay is energized and the contacts "C" and "NO" are closed.



**Attention:**

**It should be noted that a normal auxiliary voltage is not present during a general supply failure. Therefore a connected fan can not work during this circumstance.**

## Installation step 16 – connection of the station buses

### SICURO-230Z – main station:

- > Every SICURO-230Z system consists at least of one main station and a maximum of 128 main stations.
- > Single main stations can be wired together on the main station bus or in the same network for combined control and monitoring purposes. The main station bus can be furthermore used to connect different converter units for adaption purposes to computers resp. to a building management system (BMS) or a remote panel.
- > Every SICURO-230Z system can have up to 128 connected main stations on the main station bus resp. over the network. A combination with main stations of the SICURO-24G system is not possible.



**Note:**

**Single main stations in a SICURO-230Z system are autonomous working units regarding the required basic functionality. It is not mandatory to wire single main stations together on the main station bus or in the same network.**



**Attention:**

**It is not allowed to use the software programming of a SICURO-230Z system to configure a main station as a sub station in combination with a cabling of the sub station bus. Within a SICURO-230Z system all main stations must be configured as main stations. A main station must be an autonomous working unit regarding the required basic functionality.**

### SICURO-230Z – sub station,

### SICURO-230Z – external output card:

- > Every sub station must be wired to the associated main station of the SICURO-230Z system on the sub station bus or in the same network to provide the required system functionality.
- > Every external output card must be wired to the associated main station of the SICURO-230Z system on the sub station bus to provide the required system functionality.
- > A main station of the SICURO-230Z system can have up to 32 connected sub stations / external output cards on the sub station bus resp. over the network. A combination with sub stations of the SICURO-24Z system is possible.



**Attention:**

**Single sub stations / external output cards in a SICURO-230Z system are not autonomous working units regarding the required basic functionality. It is mandatory to wire sub stations / external output cards together on the sub station bus resp. in the same network of the associated main station of the SICURO-230Z system.**

#### SICURO-24Z – sub station:

- > Every sub station must be wired to the associated main station of the SICURO-230Z system on the sub station bus or in the same network to provide the required system functionality.
- > A main station of the SICURO-230Z system can have up to 32 connected sub stations / external output cards on the sub station bus resp. over the network. A combination with sub stations of the SICURO-230Z system is possible.



#### **Attention:**

**Single sub stations in a SICURO-24Z system are not autonomous working units regarding the required basic functionality. It is mandatory to wire sub stations together on the sub station bus resp. in the same network of the associated main station of the SICURO-230Z system.**

#### SICURO-24G – main station:

- > Every SICURO-24G system consists at least of one main station and a maximum of 128 main stations.
- > Single main stations can be wired together on the main station bus or in the same network for combined control and monitoring purposes. The main station bus can be furthermore used to connect different converter units for adaption purposes to computers resp. to a building management system (BMS) or a remote panel.
- > Every SICURO-24G system can have up to 128 connected main stations on the main station bus resp. over the network. A combination with main stations of the SICURO-230Z system is not possible.



#### **Note:**

**Single main stations in a SICURO-24G system are autonomous working units regarding the required basic functionality. It is not mandatory to wire single main stations together on the main station bus or in the same network.**



#### **Attention:**

**It is not allowed to use the software programming of a SICURO-24G system to configure a main station as a sub station in combination with a cabling of the sub station bus. Within a SICURO-24G system all emergency light stations must be configured as main stations. A main station must be an autonomous working unit regarding the required basic functionality.**

#### General wiring:

- > The main station bus as well as the sub station bus must be wired in a row. A starred wiring is not allowed.
- > To wire the main station bus as well as the sub station bus a shielded cable with twisted-pair wires must be used. On the first main station a functional earthing for the cable must be installed.
- > An additional converter unit for the main station bus can be placed internal or external related to the switchboard.



**Note:**

Regarding the wiring in the network the installation step "connection of the LAN port (network)" (see installation step 18) must be observed.



**Attention:**

A maximum of one converter unit can be connected on the main station bus. The simultaneous operation of several converter units is not possible. The simultaneous operation of a converter unit together with a remote panel is possible.



**Note:**

If an additional internal converter unit is included in the switchboard configuration a respective pre-wiring is existent at delivery condition.

General properties of the main station bus and sub station bus:

- > Every EVA unit of a SICURO system is equipped with station buses.
- > The station buses are carried out as RS485 interfaces. There is a division in a main station bus and a sub station bus.
- > Main station bus: to create an overordinated connection at the EVA unit of a main station the contacts which are designated with "RS485 Main" and "G/+/-" must be used.
- > Sub station bus: to create a subordinated connection at the EVA unit of a main station the contacts which are designated with "RS485 Sub" and "G/+/-" must be used. To create a subordinated connection at the EVA unit of a sub station the contacts which are designated with "RS485 Main" and "G/+/-" must be used.



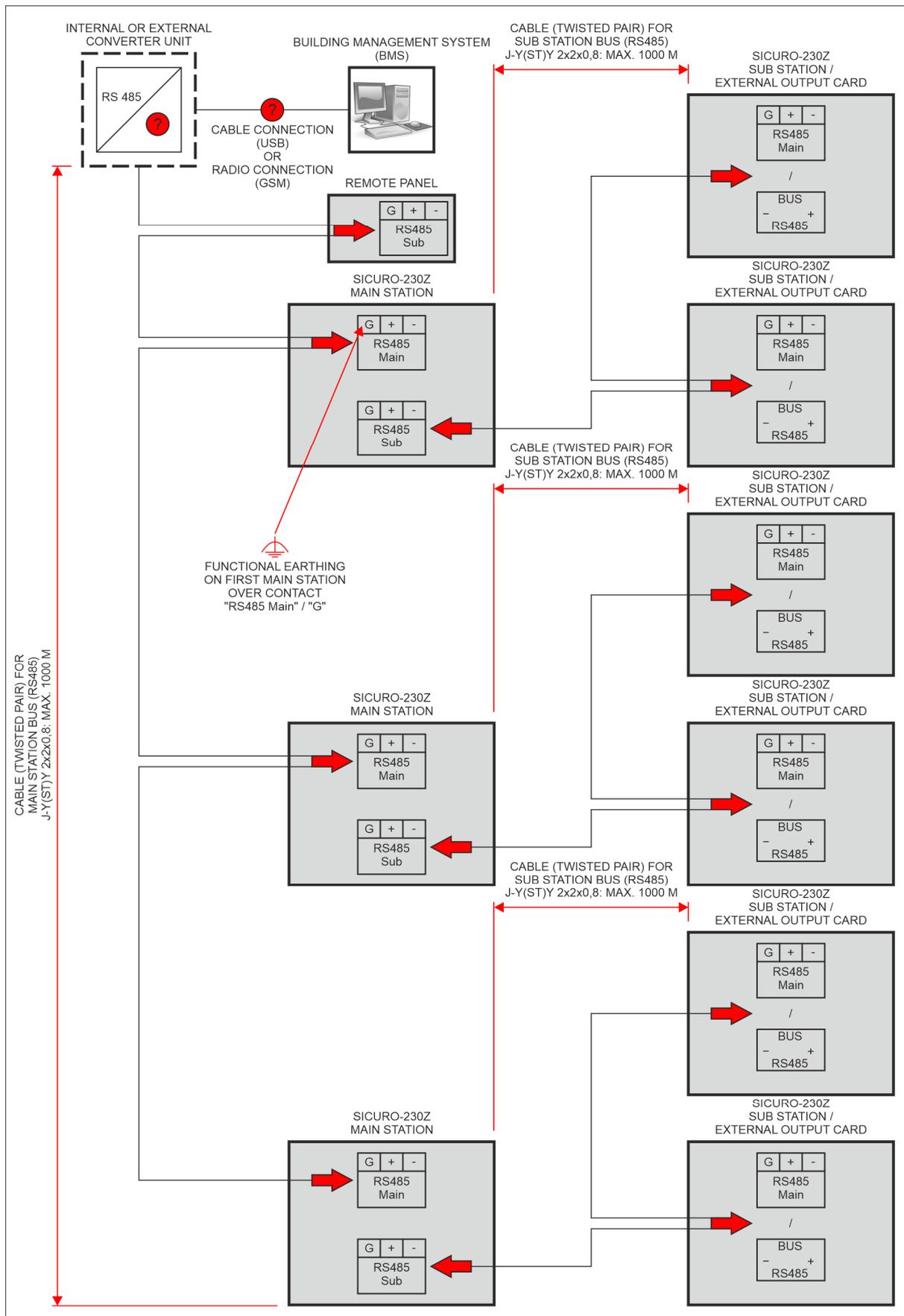
**Attention:**

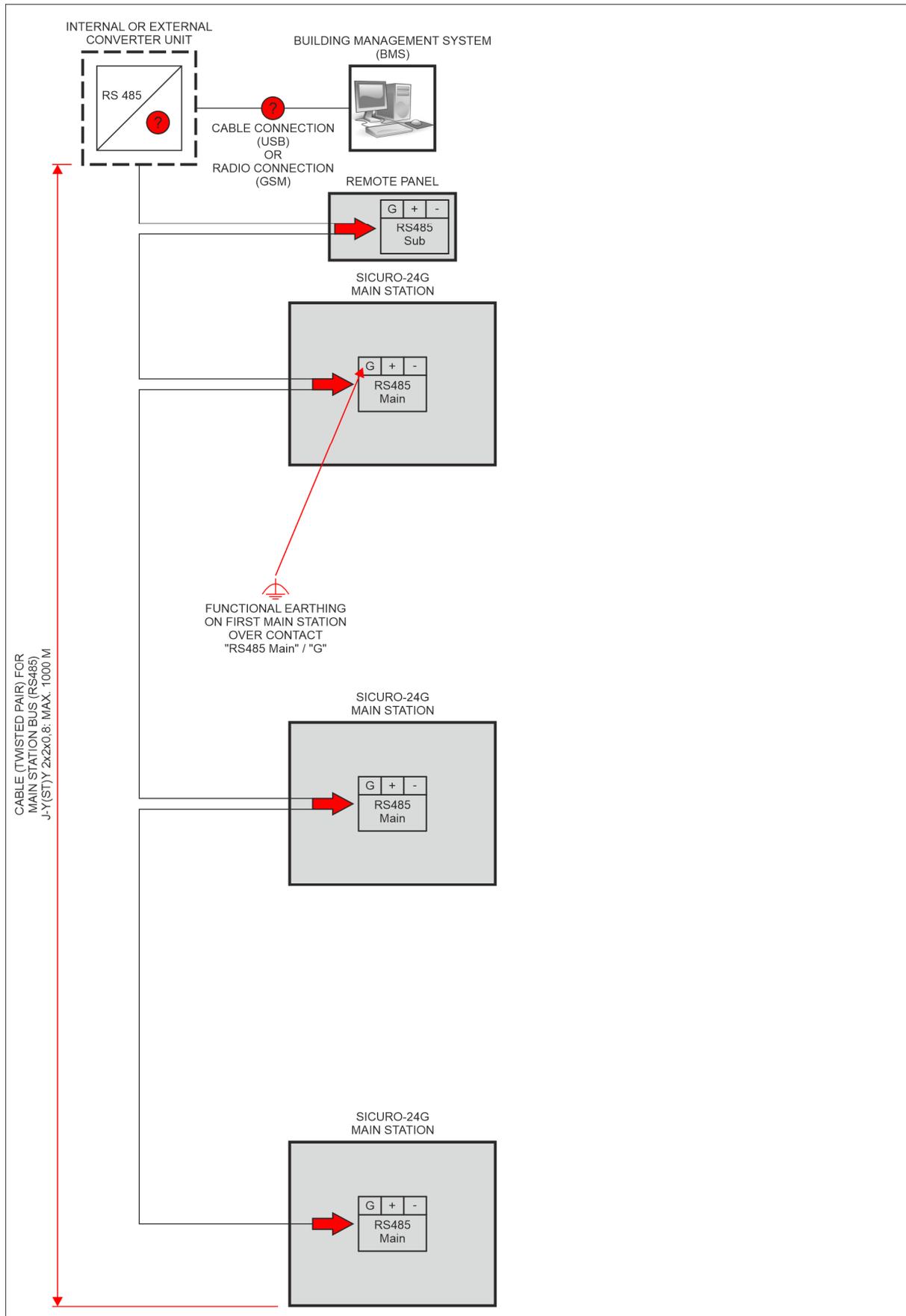
**SICURO-230Z / SICURO-24Z:** at the EVA unit of a sub station the contacts which are designated with "RS485 Sub" and "G/+/-" have no function and must not be used.

**SICURO-24G:** at the EVA unit of a main station the contacts which are designated with "RS485 Sub" and "G/+/-" must not be used. It is not allowed to wire a sub station bus at SICURO-24G systems.

**A combination of the main station buses of SICURO-230Z and SICURO-24G systems is not possible.**

- > The main station bus can be used for control or monitoring purposes together with a converter unit or / and a remote panel and further main stations.
- > The sub station bus is only used for control or monitoring purposes together with sub stations.
- > The main station bus provides no bidirectional communication exchange between the connected main stations. A bidirectional communication exchange is only possible between a converter unit as well as a remote panel and the connected main stations.
- > The sub station bus provides a bidirectional communication exchange between a main station and connected sub stations.





**Installation step 17 – connection of the device bus**

- > Additional devices for control and monitoring purposes can be wired on the device bus of an emergency light station.
- > Each emergency light station can have up to 96 connected devices on the device bus.

General wiring:

- > The device bus must be wired in a row. A starred wiring is not allowed.
- > To wire the device bus a shielded cable with twisted-pair wires must be used.
- > An additional device for the device bus can be placed internal or external related to the switchboard.

General properties of the device bus:

- > Every EVA unit of a SICURO system is equipped with a device bus.
- > The device bus is carried out as RS485 interface.
- > To create a connection at the EVA unit of an emergency light station the contacts which are designated with "RS485 Ext." and "G/+/-" must be used.
- > The device bus provides a bidirectional communication exchange between the emergency light station and connected devices.
- > The device bus can be used to connect LSSA modules. A connection of converter units for adaption purposes to computers resp. to a building management system (BMS) is not possible.

## Installation step 18 – connection of the LAN port (network)

### SICURO-230Z – main station:

- > Every SICURO-230Z system consists at least of one main station and a maximum of 128 main stations.
- > Single main stations can be wired together in the same network or on the main station bus for combined control and monitoring purposes. The LAN port of a main station can be furthermore used to connect computers resp. a building management system (BMS). Over a router or a switch a remote panel can be integrated in the same network.
- > Every SICURO-230Z system can have up to 128 connected main stations over the network resp. on the main station bus. A combination with main stations of the SICURO-24G system is not possible.



**Note:**

**Single main stations in a SICURO-230Z system are autonomous working units regarding the required basic functionality. It is not mandatory to wire single main stations together in the same network or on the main station bus.**



**Attention:**

**It is not allowed to use the software programming of a SICURO-230Z system to configure a main station as a sub station in combination with a cabling in the same network. Within a SICURO-230Z system all main stations must be configured as main stations. A main station must be an autonomous working unit regarding the required basic functionality.**

### SICURO-230Z – sub station:

- > Every sub station must be wired to the associated main station of the SICURO-230Z system in the same network or on the sub station bus to provide the required system functionality.
- > A main station of the SICURO-230Z system can have up to 32 connected sub stations / external output cards over the network resp. on the sub station bus. A combination with sub stations of the SICURO-24Z system is possible.



**Attention:**

**Single sub stations in a SICURO-230Z system are not autonomous working units regarding the required basic functionality. It is mandatory to wire sub stations together in the same network or on the sub station bus of the associated main station of the SICURO-230Z system.**

#### SICURO-24Z – sub station:

- > Every sub station must be wired to the associated main station of the SICURO-230Z system in the same network or on the sub station bus to provide the required system functionality.
- > A main station of the SICURO-230Z system can have up to 32 connected sub stations / external output cards over the network resp. on the sub station bus. A combination with sub stations of the SICURO-230Z system is possible.



**Attention:**

**Single sub stations in a SICURO-24Z system are not autonomous working units regarding the required basic functionality. It is mandatory to wire sub stations together in the same network resp. on the sub station bus of the associated main station of the SICURO-230Z system.**

#### SICURO-24G – main station:

- > Every SICURO-24G system consists at least of one main station and a maximum of 128 main stations.
- > Single main stations can be wired together in the same network or on the main station bus for combined control and monitoring purposes. The LAN port of a main station can be furthermore used to connect computers resp. a building management system (BMS). Over a router or a switch a remote panel can be integrated in the same network.
- > Every SICURO-24G system can have up to 128 connected main stations over the network resp. on the main station bus. A combination with main stations of the SICURO-230Z system is not possible.



**Note:**

**Single main stations in a SICURO-24G system are autonomous working units regarding the required basic functionality. It is not mandatory to wire single main stations together in the same network or on the main station bus.**



**Attention:**

**It is not allowed to use the software programming of a SICURO-24G system to configure a main station as a sub station in combination with a cabling in the same network. Within a SICURO-24G system all emergency light stations must be configured as main stations. A main station must be an autonomous working unit regarding the required basic functionality.**

#### General wiring:

- > To wire the LAN port a shielded patch cable with twisted-pair wires of the type CAT-5 (or superior) must be used.

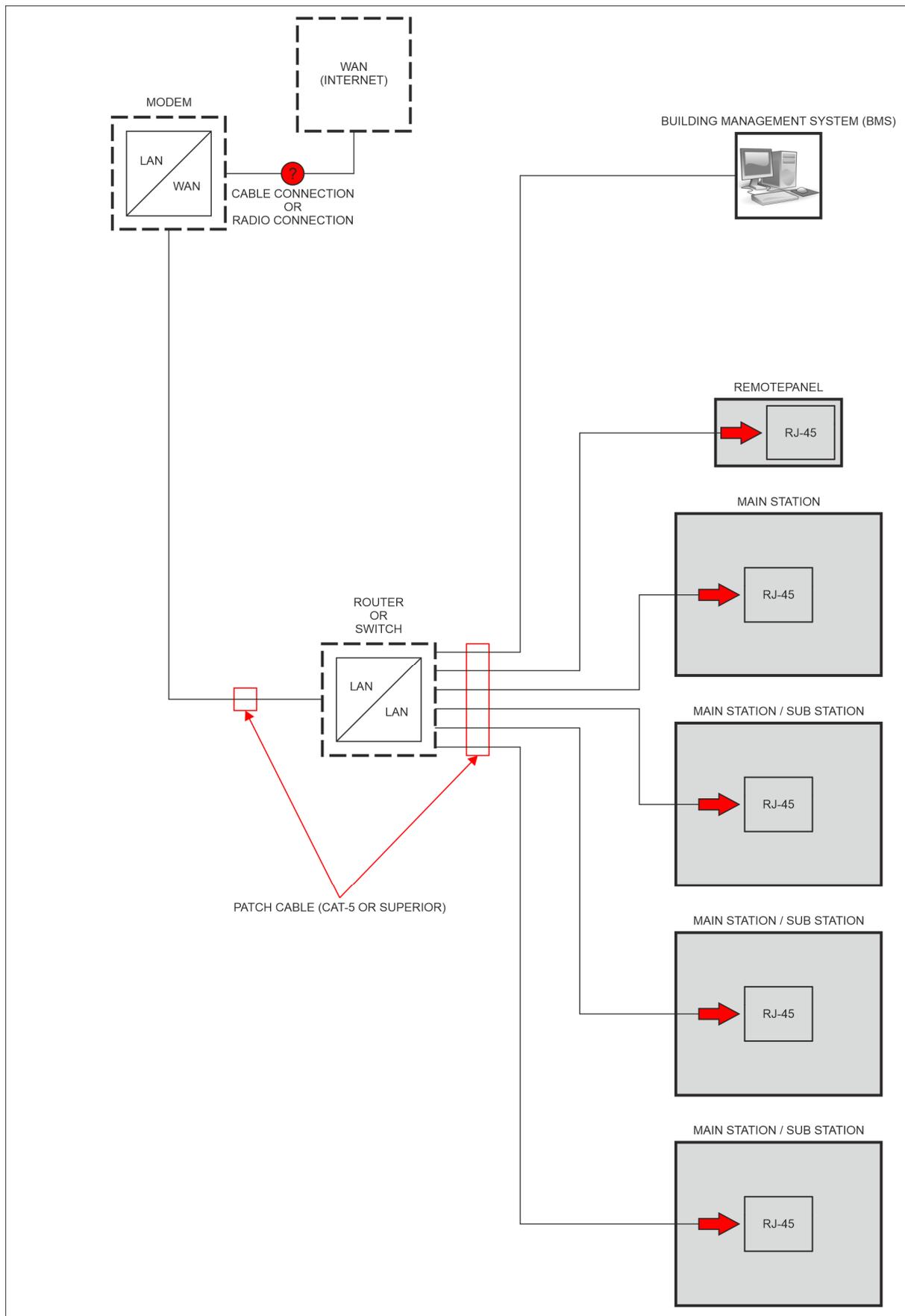


**Note:**

**Regarding the wiring of the station buses the installation step "connection of the station buses" (see installation step 16) must be observed.**

General properties of the LAN port:

- > Every EVA unit of a SICURO system is equipped with a LAN port.
- > The LAN port is carried out as RJ-45 interface.
- > To create a connection at the EVA unit of an emergency light station the port which is designated with "RJ-45" must be used.
- > The LAN port can be used for control or monitoring purposes.
- > The LAN port provides no bidirectional communication exchange between the connected main stations. A bidirectional communication exchange is only possible between computers resp. a building management system (BMS) as well as a remote panel and the connected main stations.



## **Installation step 19 – connection of the LSSA switch inputs**

### SICURO-230Z:

- > The SICURO-230Z systems are not equipped with LSSA switch inputs on the I/O card.
- > For the integration of LSSA switch inputs additional LSSA modules can be used for control purposes which can be placed internal or external related to the switchboard.

### SICURO-24Z and SICURO-24G:

- > All SICURO-24Z and SICURO-24G systems are equipped with four LSSA switch inputs.
- > The LSSA switch contacts for the inputs 1 to 4 are carried out as circuits for a switch voltage of 230 V AC.
- > The handoff points of the LSSA switch inputs are located on the I/O card.
- > The contacts are designated with:
  - "LSSA1" and "N/L" for LSSA switch input 1.
  - "LSSA2" and "N/L" for LSSA switch input 2.
  - "LSSA3" and "N/L" for LSSA switch input 3.
  - "LSSA4" and "N/L" for LSSA switch input 4.
- > The LSSA switch inputs can be used for control purposes together with additional devices which can be placed external related to the switchboard.
- > The command uptake for the inputs 1 to 4 is binary and done by a connection of a voltage of 230 V AC.
- > The command initiation for the inputs 1 to 4 is software controlled and can be influenced by a programming.
- > For the integration of further LSSA switch inputs additional LSSA modules can be used for control purposes which can be placed external related to the switchboard.

## Installation step 20 – connection of the output circuits

### SICURO-230Z:

- > All SICURO-230Z systems can be equipped with output cards of the monitoring types EÜ and SÜ. The output contacts of the output cards are carried out as circuits with supply voltages of 230 V AC and 216 V DC.
- > The output circuits are primary used to supply the connected luminaires with their operating voltages.
- > The output circuits can be secondary used for control and monitoring purposes of the connected luminaires together with additional luminaire modules.
- > Output cards of the type EÜ provide a single monitoring of luminaires with luminaire modules by communication over the cable of the output circuit.
- > Output cards of the type SÜ provide a circuit monitoring of luminaires without communication over the cable of the output circuit.
- > Depending on the configuration the handoff points of the output circuits can be located at the terminal clamps of the card frame or be wired to further terminal clamps inside the switchboard.



#### **Attention:**

**The output circuits of a SICURO-230Z system are using a direct voltage of 216 V DC. All equipment connected to this output circuits must be fully suitable for direct voltages regarding emergency light applications.**

**Depending on the type of the installed output card it can be that the respective terminal clamps are partly not used. Only output cards with four output circuits are using the respective terminal clamps completely. All equipment must be connected according to this.**

**The slide-in slots on all card frames of a SICURO-230Z system have no mechanical coding against wrong installed cards. All cards must be installed into the respective slide-in slots.**

- > The contacts of the card frame 8 AK are designated with:

"L1", "N1" and "PE1" for slide-in slot 1 / output circuit 1.

"L2", "N2" and "PE2" for slide-in slot 1 / output circuit 2.

"L3", "N3" and "PE3" for slide-in slot 1 / output circuit 3.

"L4", "N4" and "PE4" for slide-in slot 1 / output circuit 4.

"L5", "N5" and "PE5" for slide-in slot 2 / output circuit 1.

"L6", "N6" and "PE6" for slide-in slot 2 / output circuit 2.

"L7", "N7" and "PE7" for slide-in slot 2 / output circuit 3.

"L8", "N8" and "PE8" for slide-in slot 2 / output circuit 4.

"L9", "N9" and "PE9" for slide-in slot 3 / output circuit 1.

"L10", "N10" and "PE10" for slide-in slot 3 / output circuit 2.

"L11", "N11" and "PE11" for slide-in slot 3 / output circuit 3.

"L12", "N12" and "PE12" for slide-in slot 3 / output circuit 4.

"L13", "N13" and "PE13" for slide-in slot 4 / output circuit 1.  
"L14", "N14" and "PE14" for slide-in slot 4 / output circuit 2.  
"L15", "N15" and "PE15" for slide-in slot 4 / output circuit 3.  
"L16", "N16" and "PE16" for slide-in slot 4 / output circuit 4.

"L17", "N17" and "PE17" for slide-in slot 5 / output circuit 1.  
"L18", "N18" and "PE18" for slide-in slot 5 / output circuit 2.  
"L19", "N19" and "PE19" for slide-in slot 5 / output circuit 3.  
"L20", "N20" and "PE20" for slide-in slot 5 / output circuit 4.

"L21", "N21" and "PE21" for slide-in slot 6 / output circuit 1.  
"L22", "N22" and "PE22" for slide-in slot 6 / output circuit 2.  
"L23", "N23" and "PE23" for slide-in slot 6 / output circuit 3.  
"L24", "N24" and "PE24" for slide-in slot 6 / output circuit 4.

"L25", "N25" and "PE25" for slide-in slot 7 / output circuit 1.  
"L26", "N26" and "PE26" for slide-in slot 7 / output circuit 2.  
"L27", "N27" and "PE27" for slide-in slot 7 / output circuit 3.  
"L28", "N28" and "PE28" for slide-in slot 7 / output circuit 4.

"L29", "N29" and "PE29" for slide-in slot 8 / output circuit 1.  
"L30", "N30" and "PE30" for slide-in slot 8 / output circuit 2.  
"L31", "N31" and "PE31" for slide-in slot 8 / output circuit 3.  
"L32", "N32" and "PE32" for slide-in slot 8 / output circuit 4.

> The card frame 8 AK can be maximally operated with an electrical power of 9000 W. The configuration of the used output cards may not lead to an exceedance of this maximum value.

> The contacts of the card frame 5 AK 2 LT are designated with:

"L1", "N1" and "PE1" for slide-in slot 3 / output circuit 1.  
"L2", "N2" and "PE2" for slide-in slot 3 / output circuit 2.  
"L3", "N3" and "PE3" for slide-in slot 3 / output circuit 3.  
"L4", "N4" and "PE4" for slide-in slot 3 / output circuit 4.

"L5", "N5" and "PE5" for slide-in slot 4 / output circuit 1.  
"L6", "N6" and "PE6" for slide-in slot 4 / output circuit 2.  
"L7", "N7" and "PE7" for slide-in slot 4 / output circuit 3.  
"L8", "N8" and "PE8" for slide-in slot 4 / output circuit 4.

"L9", "N9" and "PE9" for slide-in slot 5 / output circuit 1.  
"L10", "N10" and "PE10" for slide-in slot 5 / output circuit 2.  
"L11", "N11" and "PE11" for slide-in slot 5 / output circuit 3.  
"L12", "N12" and "PE12" for slide-in slot 5 / output circuit 4.

"L13", "N13" and "PE13" for slide-in slot 6 / output circuit 1.  
"L14", "N14" and "PE14" for slide-in slot 6 / output circuit 2.  
"L15", "N15" and "PE15" for slide-in slot 6 / output circuit 3.  
"L16", "N16" and "PE16" for slide-in slot 6 / output circuit 4.

"L17", "N17" and "PE17" for slide-in slot 7 / output circuit 1.  
"L18", "N18" and "PE18" for slide-in slot 7 / output circuit 2.  
"L19", "N19" and "PE19" for slide-in slot 7 / output circuit 3.  
"L20", "N20" and "PE20" for slide-in slot 7 / output circuit 4.

> The card frame 5 AK 2 LT can be maximally operated with an electrical power of 9000 W. The configuration of the used output cards may not lead to an exceedance of this maximum value.

 **Attention:** The slide-in slots 1 and 2 are reserved for the use of charger cards at the card frame 5 AK 2 LT.

SICURO-24Z and SICURO-24G:

- > All SICURO-24Z and SICURO-24G systems are equipped with output cards of the type EÜ. The output contacts of the output cards are carried out as circuits with a supply voltage of 24 V DC.
- > The output circuits are primary used to supply the connected luminaires with the operating voltage.
- > The output circuits can be secondary used for control and monitoring purposes of the connected luminaires together with additional luminaire modules.
- > Output cards of the type EÜ provide a single monitoring of luminaires with luminaire modules by communication over the cable of the output circuit.
- > The handoff points of the output circuits are located on the output card.

 **Attention:** The output circuits of the SICURO-24Z and SICURO-24G systems are using a direct voltage of 24 V DC. All equipment connected to this output circuits must be fully suitable for direct voltages regarding emergency light applications.

- > The contacts of the output card AK24V are designated with:
  - "1+" and "1-" for output circuit 1.
  - "2+" and "2-" for output circuit 2.
  - "3+" and "3-" for output circuit 3.
  - "4+" and "4-" for output circuit 4.
- > The output card AK24V can be maximally operated with an electrical power of 72 W per output circuit, if no fire protection enclosure is used.
- > The output card AK24V can be maximally operated with an electrical power of 65 W per output circuit, if a fire protection enclosure is used.

The configuration of the used output card may not lead to an exceedance of this maximum values.

**Installation step 21 – retorquing and check of electrical connections**

After all electrical connections are finished a retorquing of all screwable connections must be done. Thereupon all electrical connections must be check for proper execution.

**Equipment descriptions**

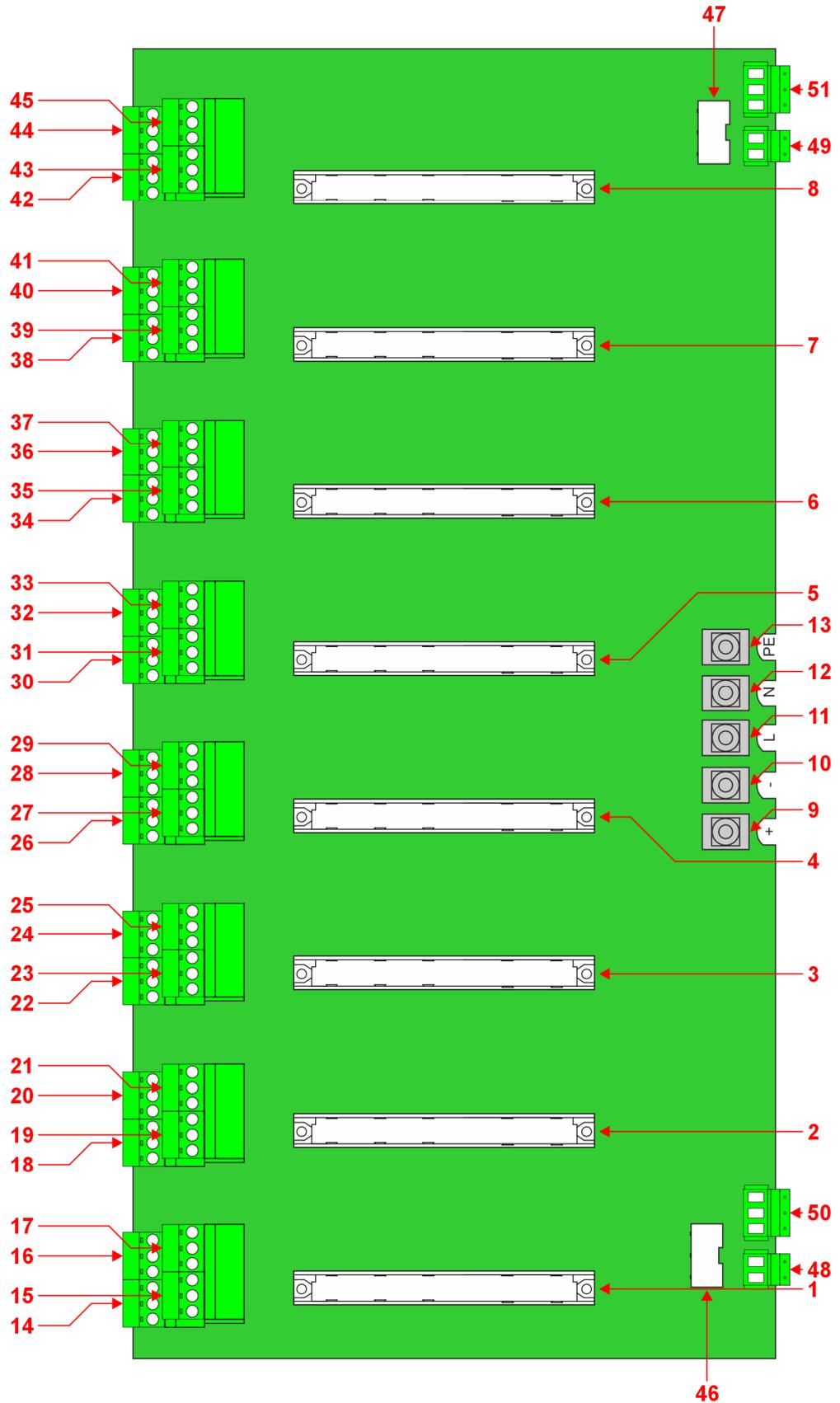
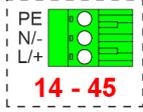
The following descriptions are referring to the basic functionalities and properties of the equipment. All pictured device drawings of equipment are reduced in the degree of detail. A unique assignment is possible over the mentioned order numbers.

**SICURO-230Z – card frame 8 AK – 321003001 / GZ5030P**

Card frame for installation of 8 output cards for SICURO-230Z systems.

- "1": slide-in slot 1 for output card
- "2": slide-in slot 2 for output card
- "3": slide-in slot 3 for output card
- "4": slide-in slot 4 for output card
- "5": slide-in slot 5 for output card
- "6": slide-in slot 6 for output card
- "7": slide-in slot 7 for output card
- "8": slide-in slot 8 for output card
- "9": terminal clamp "+" for battery supply (216 V DC)
- "10": terminal clamp "-" for battery supply (216 V DC)
- "11": terminal clamp "L" for mains supply (230 V AC)
- "12": terminal clamp "N" for mains supply (230 V AC)
- "13": terminal clamp "PE" for mains supply (230 V AC)
- "14": terminal clamp "L1" / "N1" / "PE1" for output circuit 1 of slide-in slot 1 (230 V AC / 216 V DC)
- "15": terminal clamp "L2" / "N2" / "PE2" for output circuit 2 of slide-in slot 1 (230 V AC / 216 V DC)
- "16": terminal clamp "L3" / "N3" / "PE3" for output circuit 3 of slide-in slot 1 (230 V AC / 216 V DC)
- "17": terminal clamp "L4" / "N4" / "PE4" for output circuit 4 of slide-in slot 1 (230 V AC / 216 V DC)
- "18": terminal clamp "L5" / "N5" / "PE5" for output circuit 1 of slide-in slot 2 (230 V AC / 216 V DC)
- "19": terminal clamp "L6" / "N6" / "PE6" for output circuit 2 of slide-in slot 2 (230 V AC / 216 V DC)
- "20": terminal clamp "L7" / "N7" / "PE7" for output circuit 3 of slide-in slot 2 (230 V AC / 216 V DC)
- "21": terminal clamp "L8" / "N8" / "PE8" for output circuit 4 of slide-in slot 2 (230 V AC / 216 V DC)
- "22": terminal clamp "L9" / "N9" / "PE9" for output circuit 1 of slide-in slot 3 (230 V AC / 216 V DC)
- "23": terminal clamp "L10" / "N10" / "PE10" for output circuit 2 of slide-in slot 3 (230 V AC / 216 V DC)
- "24": terminal clamp "L11" / "N11" / "PE11" for output circuit 3 of slide-in slot 3 (230 V AC / 216 V DC)
- "25": terminal clamp "L12" / "N12" / "PE12" for output circuit 4 of slide-in slot 3 (230 V AC / 216 V DC)
- "26": terminal clamp "L13" / "N13" / "PE13" for output circuit 1 of slide-in slot 4 (230 V AC / 216 V DC)
- "27": terminal clamp "L14" / "N14" / "PE14" for output circuit 2 of slide-in slot 4 (230 V AC / 216 V DC)
- "28": terminal clamp "L15" / "N15" / "PE15" for output circuit 3 of slide-in slot 4 (230 V AC / 216 V DC)
- "29": terminal clamp "L16" / "N16" / "PE16" for output circuit 4 of slide-in slot 4 (230 V AC / 216 V DC)
- "30": terminal clamp "L17" / "N17" / "PE17" for output circuit 1 of slide-in slot 5 (230 V AC / 216 V DC)
- "31": terminal clamp "L18" / "N18" / "PE18" for output circuit 2 of slide-in slot 5 (230 V AC / 216 V DC)
- "32": terminal clamp "L19" / "N19" / "PE19" for output circuit 3 of slide-in slot 5 (230 V AC / 216 V DC)
- "33": terminal clamp "L20" / "N20" / "PE20" for output circuit 4 of slide-in slot 5 (230 V AC / 216 V DC)
- "34": terminal clamp "L21" / "N21" / "PE21" for output circuit 1 of slide-in slot 6 (230 V AC / 216 V DC)
- "35": terminal clamp "L22" / "N22" / "PE22" for output circuit 2 of slide-in slot 6 (230 V AC / 216 V DC)

- "36": terminal clamp "L23" / "N23" / "PE23" for output circuit 3 of slide-in slot 6 (230 V AC / 216 V DC)
- "37": terminal clamp "L24" / "N24" / "PE24" for output circuit 4 of slide-in slot 6 (230 V AC / 216 V DC)
- "38": terminal clamp "L25" / "N25" / "PE25" for output circuit 1 of slide-in slot 7 (230 V AC / 216 V DC)
- "39": terminal clamp "L26" / "N26" / "PE26" for output circuit 2 of slide-in slot 7 (230 V AC / 216 V DC)
- "40": terminal clamp "L27" / "N27" / "PE27" for output circuit 3 of slide-in slot 7 (230 V AC / 216 V DC)
- "41": terminal clamp "L28" / "N28" / "PE28" for output circuit 4 of slide-in slot 7 (230 V AC / 216 V DC)
- "42": terminal clamp "L29" / "N29" / "PE29" for output circuit 1 of slide-in slot 8 (230 V AC / 216 V DC)
- "43": terminal clamp "L30" / "N30" / "PE30" for output circuit 2 of slide-in slot 8 (230 V AC / 216 V DC)
- "44": terminal clamp "L31" / "N31" / "PE31" for output circuit 3 of slide-in slot 8 (230 V AC / 216 V DC)
- "45": terminal clamp "L32" / "N32" / "PE32" for output circuit 4 of slide-in slot 8 (230 V AC / 216 V DC)
- "46": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "47": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "48": terminal clamp for service
- "49": terminal clamp for service
- "50": terminal clamp for service
- "51": terminal clamp for service

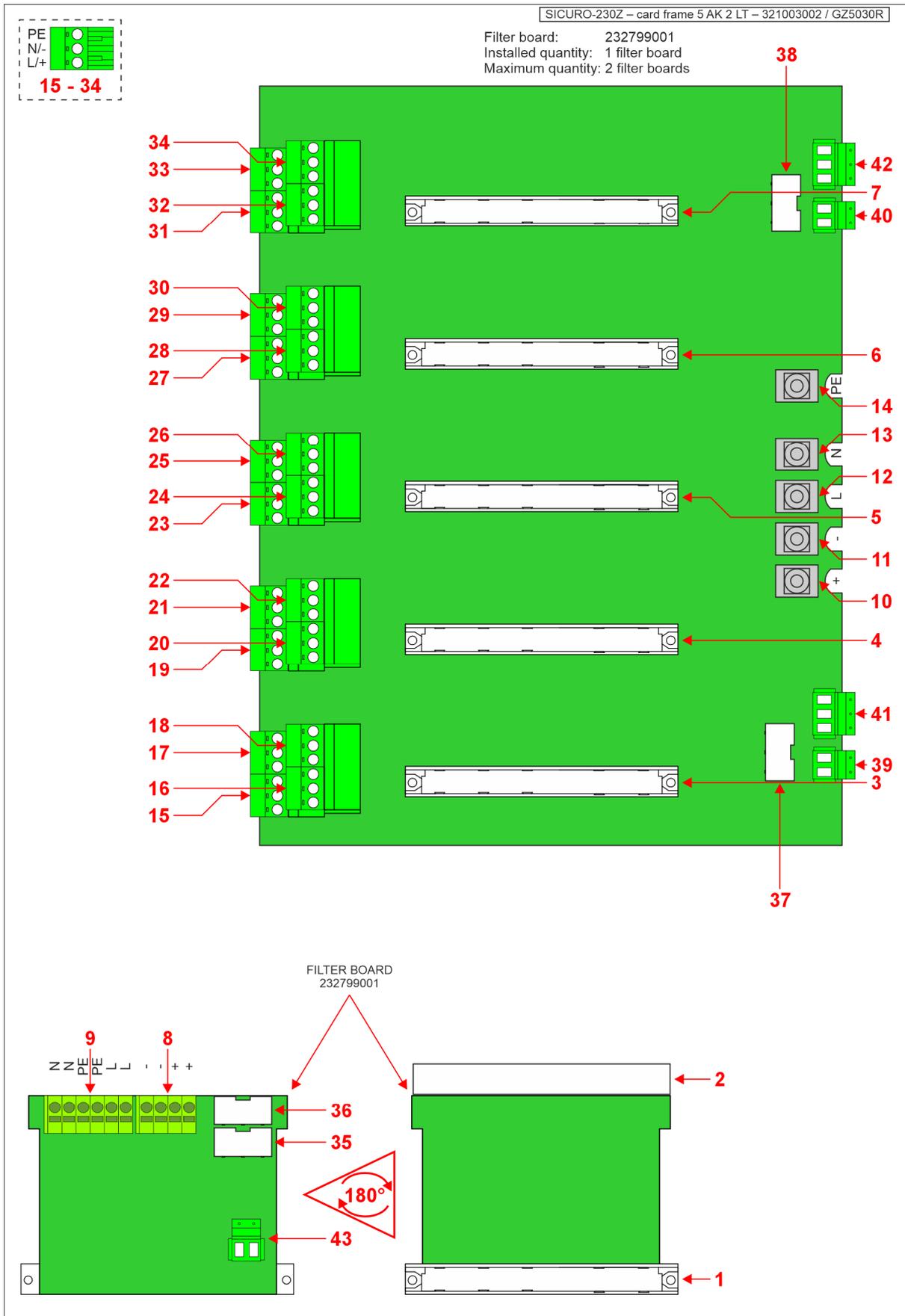


**SICURO-230Z – card frame 5 AK 2 LT – 321003002 / GZ5030R**

Card frame for installation of 5 output cards and 2 charger cards for SICURO-230Z systems.

- "1": slide-in slot 1 for charger card
- "2": slide-in slot 2 for charger card
- "3": slide-in slot 3 for output card
- "4": slide-in slot 4 for output card
- "5": slide-in slot 5 for output card
- "6": slide-in slot 6 for output card
- "7": slide-in slot 7 for output card
- "8": terminal clamp for battery supply (216 V DC)
- "9": terminal clamp for mains supply (230 V AC)
- "10": terminal clamp "+" for battery supply (216 V DC)
- "11": terminal clamp "-" for battery supply (216 V DC)
- "12": terminal clamp "L" for mains supply (230 V AC)
- "13": terminal clamp "N" for mains supply (230 V AC)
- "14": terminal clamp "PE" for mains supply (230 V AC)
- "15": terminal clamp "L1" / "N1" / "PE1" for output circuit 1 of slide-in slot 3 (230 V AC / 216 V DC)
- "16": terminal clamp "L2" / "N2" / "PE2" for output circuit 2 of slide-in slot 3 (230 V AC / 216 V DC)
- "17": terminal clamp "L3" / "N3" / "PE3" for output circuit 3 of slide-in slot 3 (230 V AC / 216 V DC)
- "18": terminal clamp "L4" / "N4" / "PE4" for output circuit 4 of slide-in slot 3 (230 V AC / 216 V DC)
- "19": terminal clamp "L5" / "N5" / "PE5" for output circuit 1 of slide-in slot 4 (230 V AC / 216 V DC)
- "20": terminal clamp "L6" / "N6" / "PE6" for output circuit 2 of slide-in slot 4 (230 V AC / 216 V DC)
- "21": terminal clamp "L7" / "N7" / "PE7" for output circuit 3 of slide-in slot 4 (230 V AC / 216 V DC)
- "22": terminal clamp "L8" / "N8" / "PE8" for output circuit 4 of slide-in slot 4 (230 V AC / 216 V DC)
- "23": terminal clamp "L9" / "N9" / "PE9" for output circuit 1 of slide-in slot 5 (230 V AC / 216 V DC)
- "24": terminal clamp "L10" / "N10" / "PE10" for output circuit 2 of slide-in slot 5 (230 V AC / 216 V DC)
- "25": terminal clamp "L11" / "N11" / "PE11" for output circuit 3 of slide-in slot 5 (230 V AC / 216 V DC)
- "26": terminal clamp "L12" / "N12" / "PE12" for output circuit 4 of slide-in slot 5 (230 V AC / 216 V DC)
- "27": terminal clamp "L13" / "N13" / "PE13" for output circuit 1 of slide-in slot 6 (230 V AC / 216 V DC)
- "28": terminal clamp "L14" / "N14" / "PE14" for output circuit 2 of slide-in slot 6 (230 V AC / 216 V DC)
- "29": terminal clamp "L15" / "N15" / "PE15" for output circuit 3 of slide-in slot 6 (230 V AC / 216 V DC)
- "30": terminal clamp "L16" / "N16" / "PE16" for output circuit 4 of slide-in slot 6 (230 V AC / 216 V DC)
- "31": terminal clamp "L17" / "N17" / "PE17" for output circuit 1 of slide-in slot 7 (230 V AC / 216 V DC)
- "32": terminal clamp "L18" / "N18" / "PE18" for output circuit 2 of slide-in slot 7 (230 V AC / 216 V DC)
- "33": terminal clamp "L19" / "N19" / "PE19" for output circuit 3 of slide-in slot 7 (230 V AC / 216 V DC)
- "34": terminal clamp "L20" / "N20" / "PE20" for output circuit 4 of slide-in slot 7 (230 V AC / 216 V DC)
- "35": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame

- "36": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "37": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "38": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "39": terminal clamp for service
- "40": terminal clamp for service
- "41": terminal clamp for service
- "42": terminal clamp for service
- "43": terminal clamp for temperature sensor



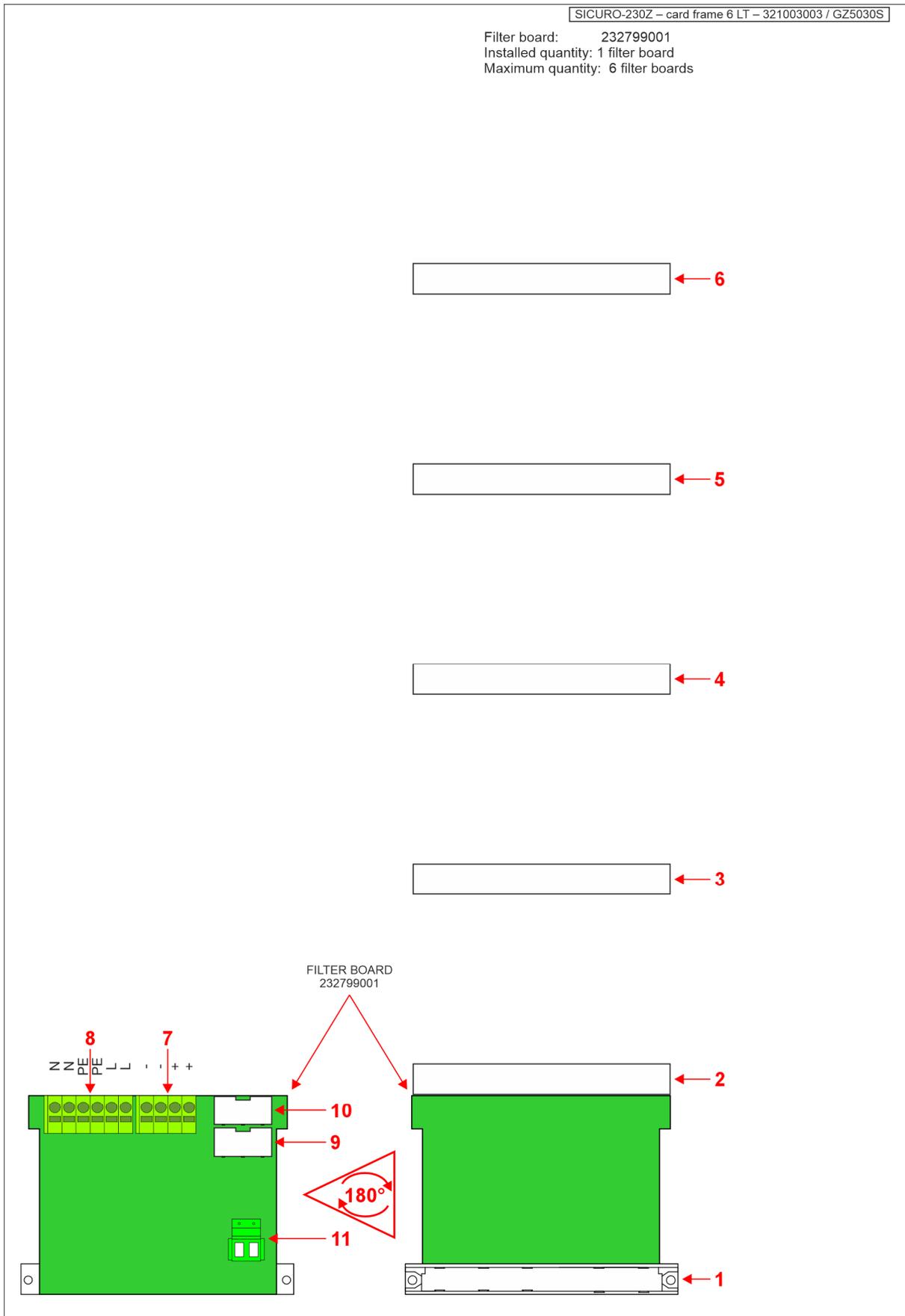
**SICURO-230Z – card frame 6 LT – 321003003 / GZ5030S**

Card frame for installation of 6 charger cards for SICURO-230Z systems.

- "1": slide-in slot 1 for charger card
- "2": slide-in slot 2 for charger card
- "3": slide-in slot 3 for charger card
- "4": slide-in slot 4 for charger card
- "5": slide-in slot 5 for charger card
- "6": slide-in slot 6 for charger card
- "7": terminal clamp for battery supply (216 V DC)
- "8": terminal clamp for mains supply (230 V AC)
- "9": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "10": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame
- "11": terminal clamp for temperature sensor

SICURO-230Z – card frame 6 LT – 321003003 / GZ5030S

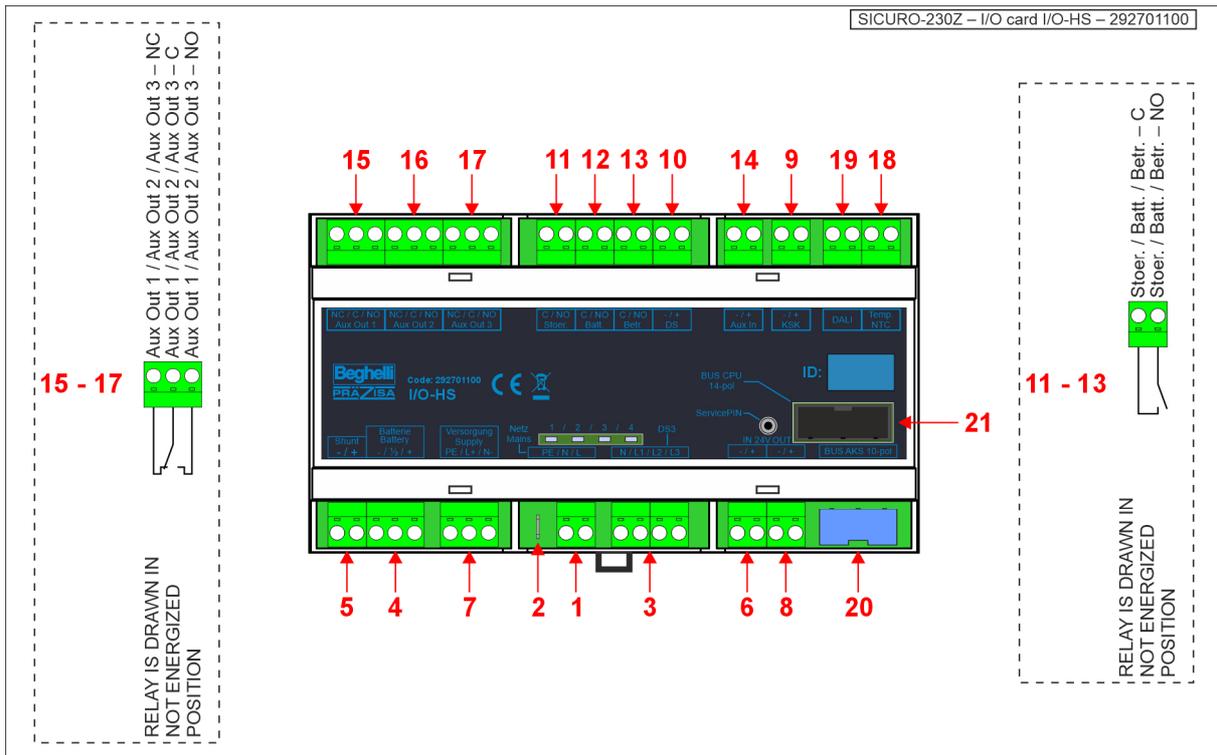
Filter board: 232799001  
Installed quantity: 1 filter board  
Maximum quantity: 6 filter boards



**SICURO-230Z – I/O card I/O-HS – 292701100**

I/O card for distribution of the connections for main stations of SICURO-230Z systems.

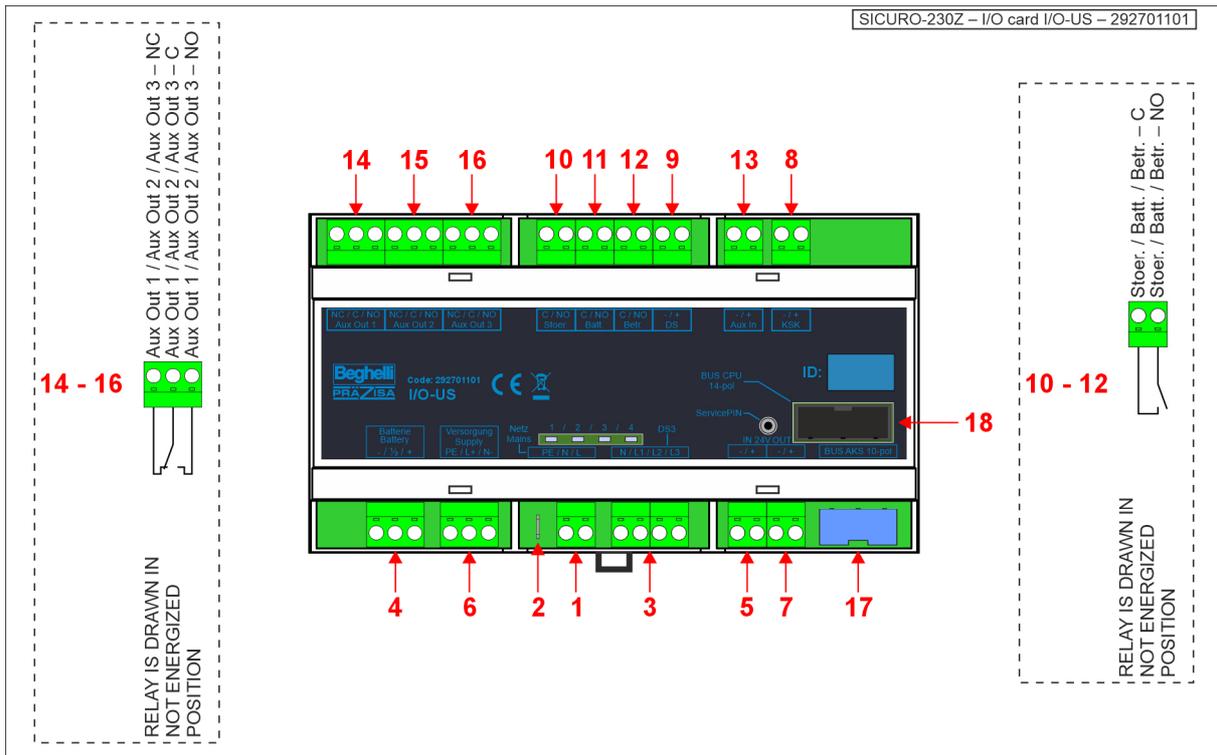
- "1": terminal clamp "Netz Mains" for mains supply (230 V AC)
- "2": flat plug "Netz Mains" for protective conductor (PE) of mains supply (230 V AC)
- "3": terminal clamp "DS3" for mains monitoring (400 V AC)
- "4": terminal clamp "Batterie Battery" for battery supply (216 V DC) with battery middle tapping
- "5": terminal clamp "Shunt" for battery shunt (216 V DC)
- "6": terminal clamp "IN 24V" for output of the mains module (24 V DC)
- "7": terminal clamp "Versorgung Supply" for input of the mains module (230 V AC)
- "8": terminal clamp "24V OUT" for additional internal or external devices (device supply voltage, 24 V DC)
- "9": terminal clamp "KSK" for critical circuit
- "10": terminal clamp "DS" for switch input "maintained mode on/off"
- "11": terminal clamp "Stoer." for message contact "collective fault"
- "12": terminal clamp "Batt." for message contact "battery operation"
- "13": terminal clamp "Betr." for message contact "operational condition"
- "14": terminal clamp "Aux In" for switch input "user definition"
- "15": terminal clamp "Aux Out 1" for auxiliary contact "auxiliary contact 1"
- "16": terminal clamp "Aux Out 2" for auxiliary contact "auxiliary contact 2"
- "17": terminal clamp "Aux Out 3" for auxiliary contact "auxiliary contact 3"
- "18": terminal clamp "Temp. NTC" for measure contact "temperature sensor"
- "19": terminal clamp "DALI" for bus connection with battery modules
- "20": AKS port "BUS AKS 10-pol" for bus connection with switchover card / card frame
- "21": CPU port "BUS CPU 14-pol" for bus connection with EVA unit



**SICURO-230Z – I/O card I/O-US – 292701101**

I/O card for distribution of the connections for sub stations of SICURO-230Z systems.

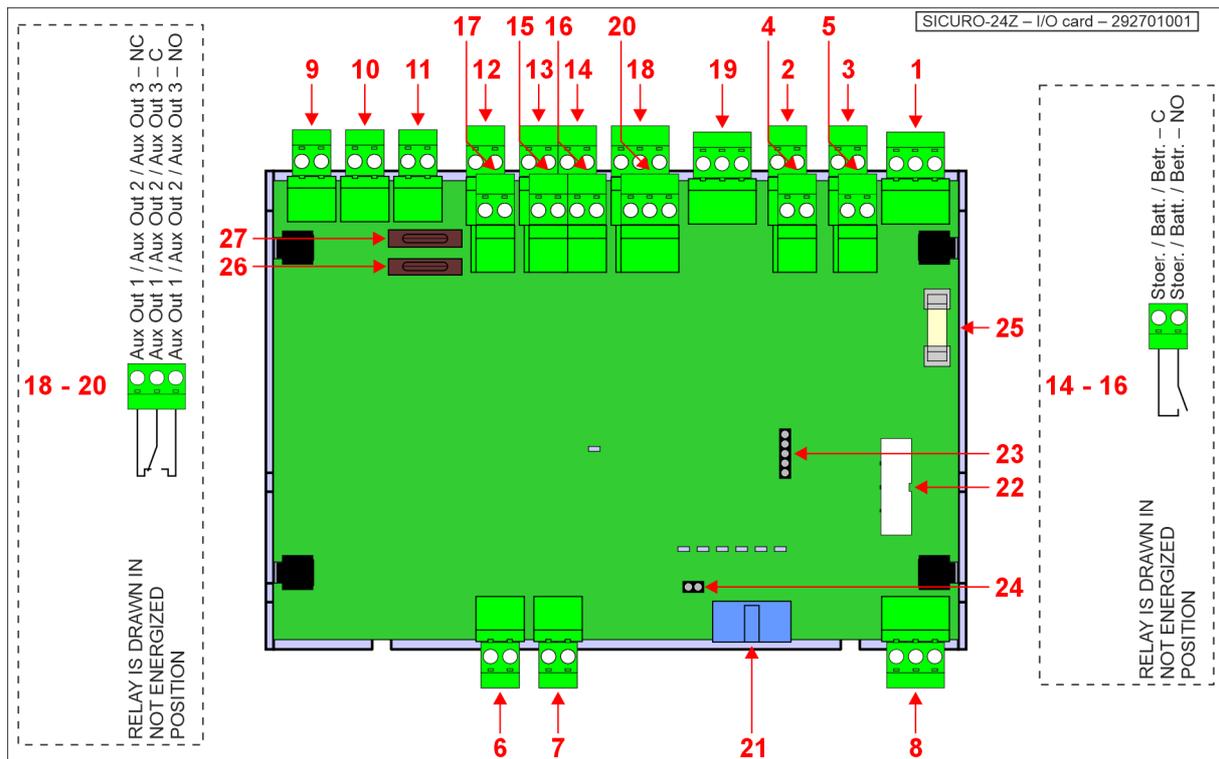
- "1": terminal clamp "Netz Mains" for mains supply (230 V AC)
- "2": flat plug "Netz Mains" for protective conductor (PE) of mains supply (230 V AC)
- "3": terminal clamp "DS3" for mains monitoring (400 V AC)
- "4": terminal clamp "Batterie Battery" for battery supply (216 V DC) with battery middle tapping
- "5": terminal clamp "IN 24V" for output of the mains module (24 V DC)
- "6": terminal clamp "Versorgung Supply" for input of the mains module (230 V AC)
- "7": terminal clamp "24V OUT" for additional internal or external devices (device supply voltage, 24 V DC)
- "8": terminal clamp "KSK" for critical circuit
- "9": terminal clamp "DS" for switch input "maintained mode on/off"
- "10": terminal clamp "Stoer." for message contact "collective fault"
- "11": terminal clamp "Batt." for message contact "battery operation"
- "12": terminal clamp "Betr." for message contact "operational condition"
- "13": terminal clamp "Aux In" for switch input "user definition"
- "14": terminal clamp "Aux Out 1" for auxiliary contact "auxiliary contact 1"
- "15": terminal clamp "Aux Out 2" for auxiliary contact "auxiliary contact 2"
- "16": terminal clamp "Aux Out 3" for auxiliary contact "auxiliary contact 3"
- "17": AKS port "BUS AKS 10-pol" for bus connection with switchover card / card frame
- "18": CPU port "BUS CPU 14-pol" for bus connection with EVA unit



## **SICURO-24Z – I/O card – 292701001**

I/O card for distribution of the connections of SICURO-24Z systems.

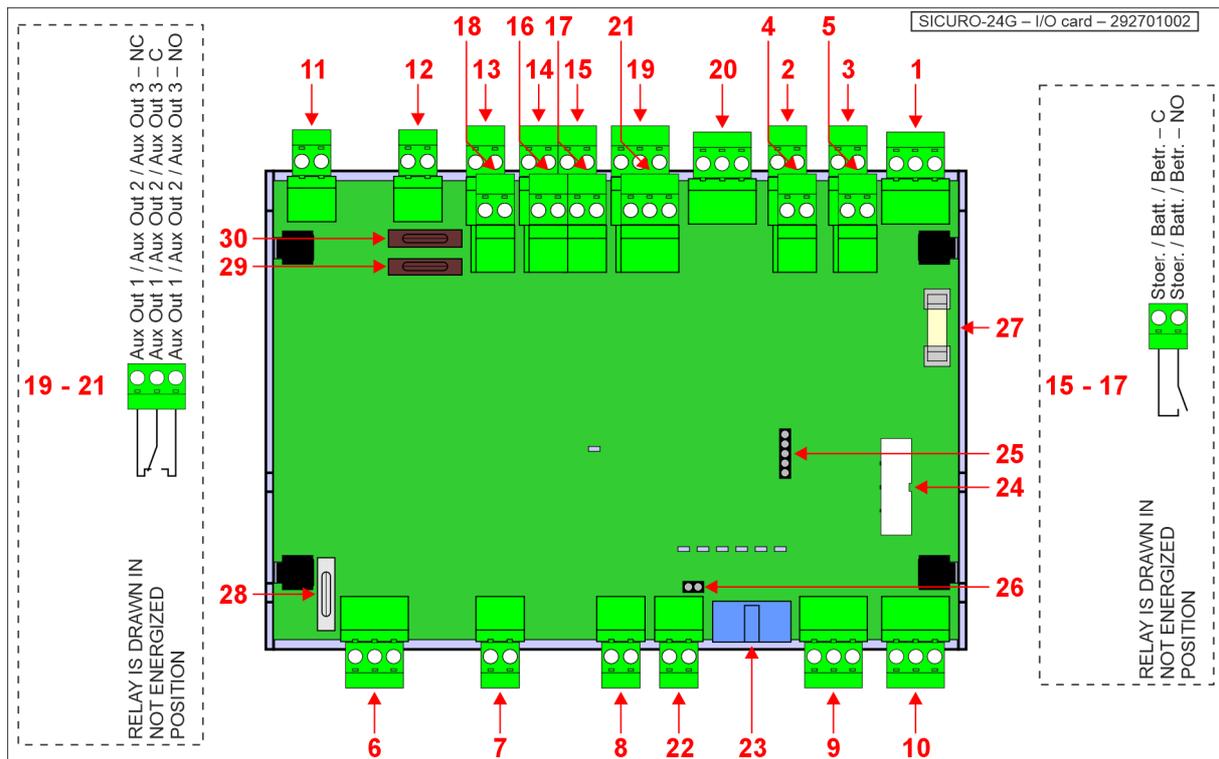
- "1": terminal clamp "Netz/Mains" for combined mains and battery supply (230 V AC / 216 V DC)
- "2": terminal clamp "LSSA1" for LSSA switch input 1 (230 V AC)
- "3": terminal clamp "LSSA2" for LSSA switch input 2 (230 V AC)
- "4": terminal clamp "LSSA3" for LSSA switch input 3 (230 V AC)
- "5": terminal clamp "LSSA4" for LSSA switch input 4 (230 V AC)
- "6": terminal clamp "Versorg. Supply" for output 1 of the mains module
- "7": terminal clamp "Versorg. Supply" for output 2 of the mains module
- "8": terminal clamp "Versorgung Supply" for input of the mains module (230 V AC / 216 V DC)
- "9": terminal clamp "24V AK" for supply voltage 1 of one output card (24 V DC)
- "10": terminal clamp "24V AK" for supply voltage 2 of one output card (24 V DC)
- "11": terminal clamp "24V Ext." for additional external devices (device supply voltage, 24 V DC)
- "12": terminal clamp "KSK" for critical circuit
- "13": terminal clamp "DS" for switch input "maintained mode on/off"
- "14": terminal clamp "Stoer." for message contact "collective fault"
- "15": terminal clamp "Batt." for message contact "battery operation"
- "16": terminal clamp "Betr." for message contact "operational condition"
- "17": terminal clamp "Aux In" for switch input "user definition"
- "18": terminal clamp "Aux Out 1" for auxiliary contact "auxiliary contact 1"
- "19": terminal clamp "Aux Out 2" for auxiliary contact "auxiliary contact 2"
- "20": terminal clamp "Aux Out 3" for auxiliary contact "auxiliary contact 3"
- "21": AK port "BUS AK24V 10-pol" for bus connection with output card
- "22": CPU port "BUS CPU 14-pol" for bus connection with EVA unit
- "23": port for service
- "24": jumper, not used
- "25": fuse F1 for combined mains and battery supply voltage (230 V AC / 216 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "26": fuse F4 for device supply voltage (24 V DC)  
– fuse values: 32 V / 5 A
- "27": fuse F5 for internal supply voltage of the I/O card (24 V DC)  
– fuse values: 32 V / 5 A



## **SICURO-24G – I/O card – 292701002**

I/O card for distribution of the connections of SICURO-24G systems. The I/O card 292701002 is substituted by the I/O card 292701002#1.

- "1": terminal clamp "Netz/Mains" for mains supply (230 V AC) as well as for mains monitoring (230 V AC)
- "2": terminal clamp "LSSA1" for LSSA switch input 1 (230 V AC)
- "3": terminal clamp "LSSA2" for LSSA switch input 2 (230 V AC)
- "4": terminal clamp "LSSA3" for LSSA switch input 3 (230 V AC)
- "5": terminal clamp "LSSA4" for LSSA switch input 4 (230 V AC)
- "6": terminal clamp "Batterie Battery" for battery supply (24 V DC) with battery middle tapping
- "7": terminal clamp "Versorg. Supply" for output of the mains module
- "8": terminal clamp "Ladeteil Charger" for output of the charger module
- "9": terminal clamp "Versorgung Supply" for input of the mains module (230 V AC)
- "10": terminal clamp "Ladeteil Charger" for input of the charger module (230 V AC)
- "11": terminal clamp "24V AK" for supply voltage of the output card (24 V DC)
- "12": terminal clamp "24V Ext." for additional external devices (device supply voltage, 24 V DC)
- "13": terminal clamp "KSK" for critical circuit
- "14": terminal clamp "DS" for switch input "maintained mode on/off"
- "15": terminal clamp "Stoer." for message contact "collective fault"
- "16": terminal clamp "Batt." for message contact "battery operation"
- "17": terminal clamp "Betr." for message contact "operational condition"
- "18": terminal clamp "Aux In" for switch input "user definition"
- "19": terminal clamp "Aux Out 1" for auxiliary contact "auxiliary contact 1"
- "20": terminal clamp "Aux Out 2" for auxiliary contact "auxiliary contact 2"
- "21": terminal clamp "Aux Out 3" for auxiliary contact "auxiliary contact 3"
- "22": terminal clamp "Temp. NTC" for measure contact "temperature sensor"
- "23": AK port "BUS AK24V 10-pol" for bus connection with output card
- "24": CPU port "BUS CPU 14-pol" for bus connection with EVA unit
- "25": port for service
- "26": jumper for selection of the temperature sensor  
(bridged for internal temperature sensor, not bridged for external temperature sensor)
- "27": fuse F1 for mains supply voltage (230 V AC)  
– fuse values: 250 V / 6,3 A / time lag
- "28": fuse F3 for battery supply voltage (24 V DC)  
– fuse values: 32 V / 25 A
- "29": fuse F4 for device supply voltage (24 V DC)  
– fuse values: 32 V / 5 A
- "30": fuse F5 for internal supply voltage of the I/O card (24 V DC)  
– fuse values: 32 V / 5 A



**SICURO-24G – I/O card – 292701002#1**

I/O card for distribution of the connections of SICURO-24G systems. The I/O card 292701002#1 substitutes the I/O card 292701002.

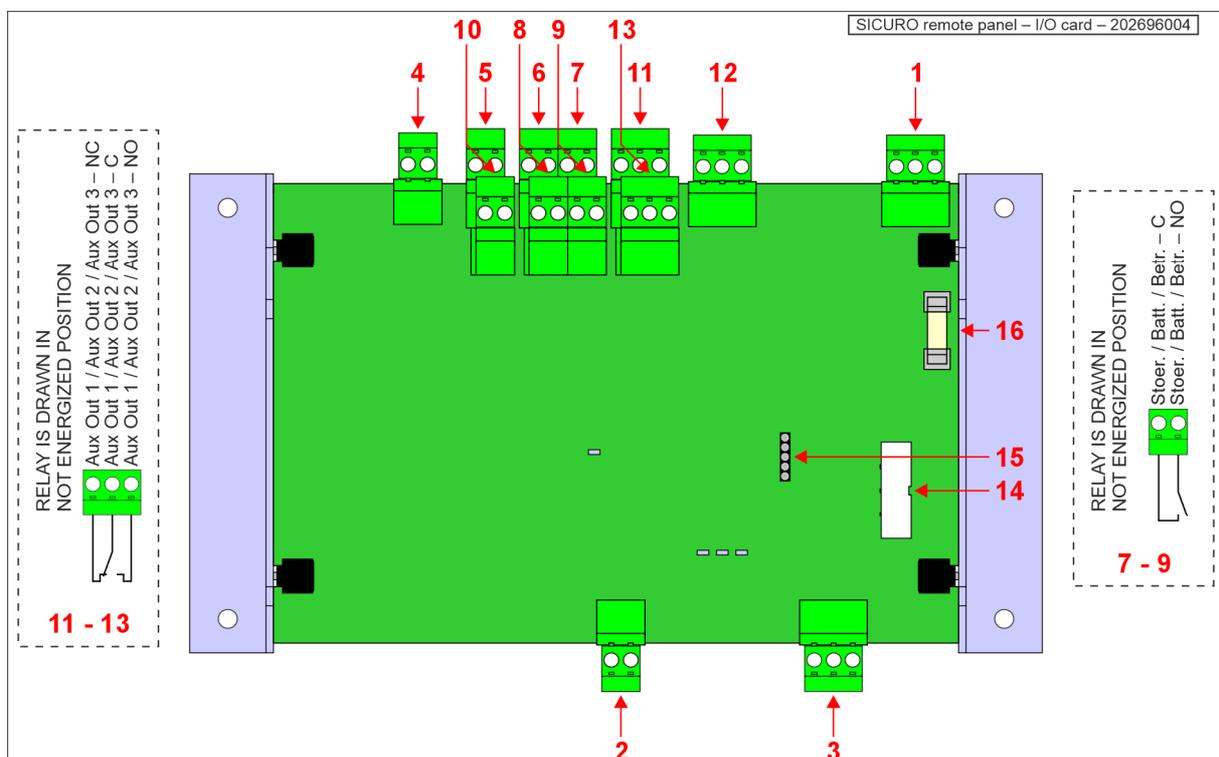
- "1": terminal clamp "Netz/Mains" for mains supply (230 V AC) as well as for mains monitoring (230 V AC)
- "2": terminal clamp "LSSA1" for LSSA switch input 1 (230 V AC)
- "3": terminal clamp "LSSA2" for LSSA switch input 2 (230 V AC)
- "4": terminal clamp "LSSA3" for LSSA switch input 3 (230 V AC)
- "5": terminal clamp "LSSA4" for LSSA switch input 4 (230 V AC)
- "6": terminal clamp "Batterie Battery" for battery supply 1 (24 V DC) with battery middle tapping
- "7": terminal clamp "Batterie Battery" for battery supply 2 (24 V DC) without battery middle tapping
- "8": terminal clamp "Versorg. Supply" for output 1 of the mains module
- "9": terminal clamp "Versorg. Supply" for output 2 of the mains module
- "10": terminal clamp "Ladeteil Charger" for output of the charger module
- "11": terminal clamp "Versorgung Supply" for input of the mains module (230 V AC)
- "12": terminal clamp "Ladeteil Charger" for input of the charger module (230 V AC)
- "13": terminal clamp "24V AK" for supply voltage 1 of one output card (24 V DC)
- "14": terminal clamp "24V AK" for supply voltage 2 of one output card (24 V DC)
- "15": terminal clamp "24V Ext." for additional external devices (device supply voltage, 24 V DC)
- "16": terminal clamp "KSK" for critical circuit
- "17": terminal clamp "DS" for switch input "maintained mode on/off"
- "18": terminal clamp "Stoer." for message contact "collective fault"
- "19": terminal clamp "Batt." for message contact "battery operation"
- "20": terminal clamp "Betr." for message contact "operational condition"
- "21": terminal clamp "Aux In" for switch input "user definition"
- "22": terminal clamp "Aux Out 1" for auxiliary contact "auxiliary contact 1"
- "23": terminal clamp "Aux Out 2" for auxiliary contact "auxiliary contact 2"
- "24": terminal clamp "Aux Out 3" for auxiliary contact "auxiliary contact 3"
- "25": terminal clamp "Temp. NTC" for measure contact "temperature sensor"
- "26": AK port "BUS AK24V 10-pol" for bus connection with output card
- "27": CPU port "BUS CPU 14-pol" for bus connection with EVA unit
- "28": port for service
- "29": jumper for selection of the temperature sensor  
(bridged for internal temperature sensor, not bridged for external temperature sensor)
- "30": fuse F1 for mains supply voltage (230 V AC)  
– fuse values: 250 V / 6,3 A / time lag
- "31": fuse F3 for battery supply voltage (24 V DC)  
– fuse values: 32 V / 25 A
- "32": fuse F4 for device supply voltage (24 V DC)  
– fuse values: 32 V / 5 A



**SICURO remote panel – I/O card – 202696004**

I/O card for distribution of the connections of SICURO remote panels.

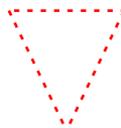
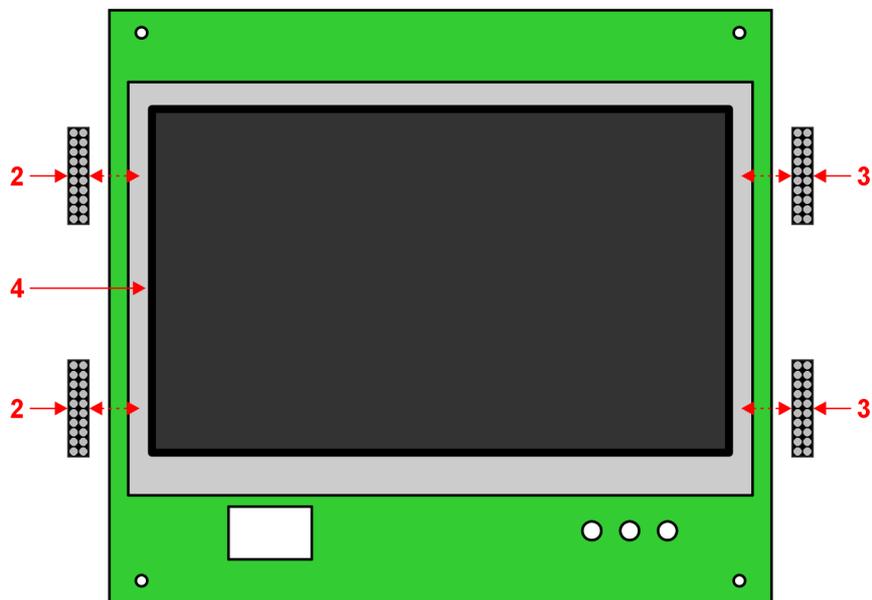
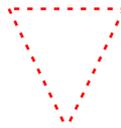
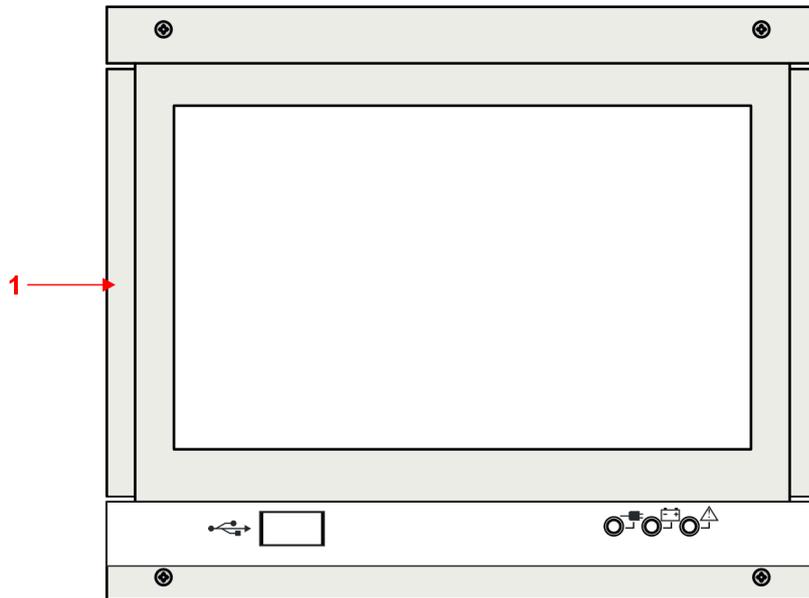
- "1": terminal clamp "Netz/Mains" for mains supply (230 V AC)
- "2": terminal clamp "Versorg. Supply" for output of the mains module (24 V DC)
- "3": terminal clamp "Versorg. Supply" for input of the mains module (230 V AC)
- "4": terminal clamp "24V Ext." for additional external devices (device supply voltage, 24 V DC)
- "5": terminal clamp "KSK" for critical circuit
- "6": terminal clamp "DS" for switch input "maintained mode on/off"
- "7": terminal clamp "Stoer." for message contact "collective fault"
- "8": terminal clamp "Batt." for message contact "battery operation"
- "9": terminal clamp "Betr." for message contact "operational condition"
- "10": terminal clamp "Aux In" for switch input "user definition"
- "11": terminal clamp "Aux Out 1" for auxiliary contact "auxiliary contact 1"
- "12": terminal clamp "Aux Out 2" for auxiliary contact "auxiliary contact 2"
- "13": terminal clamp "Aux Out 3" for auxiliary contact "auxiliary contact 3"
- "14": CPU port "BUS CPU 14-pol" for bus connection with EVA unit
- "15": port for service
- "16": fuse F1 for mains supply voltage (230 V AC)  
 – fuse values: 250 V / 1 A / time lag



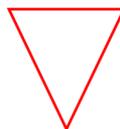
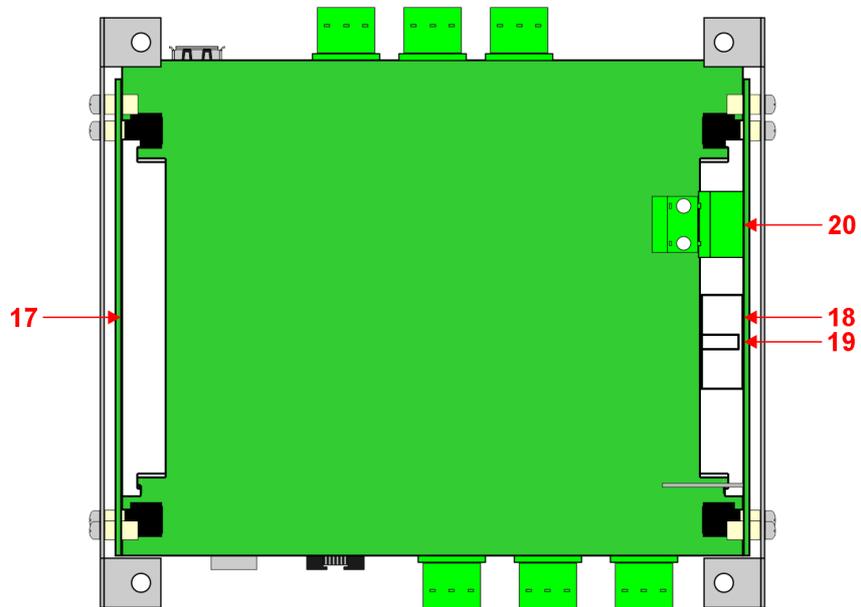
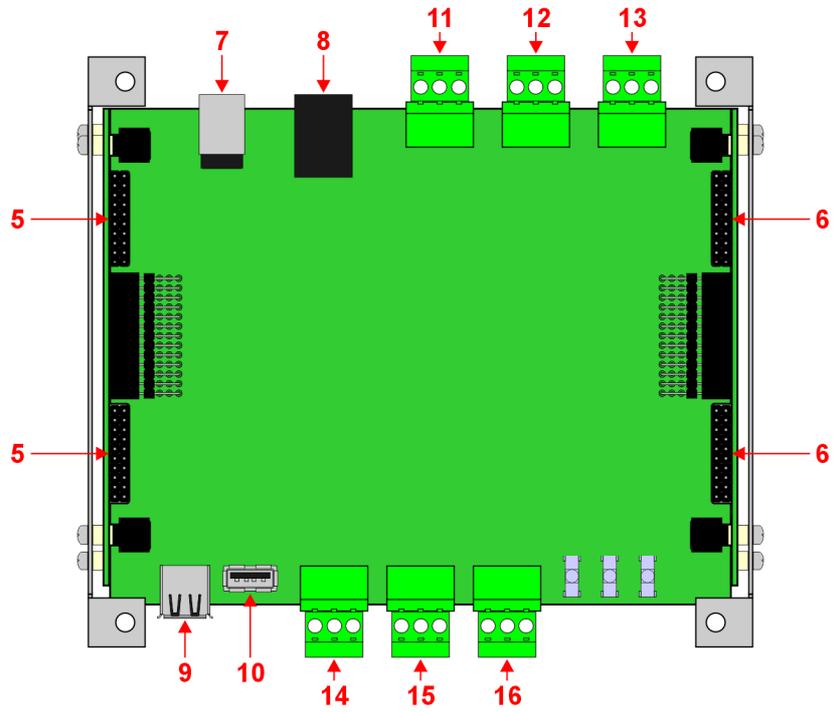
<b>SICURO-24Z/24G – EVA unit (white, RAL9003) – 321004014</b>
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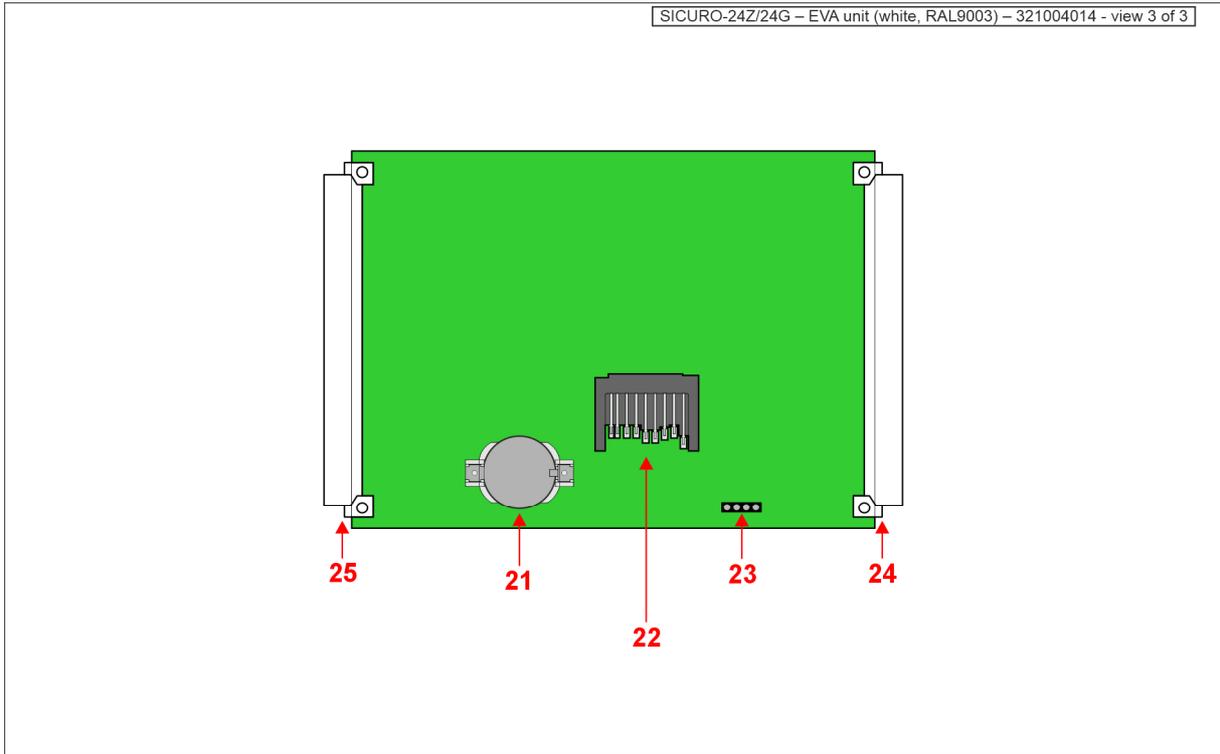
EVA unit for input, process and output purposes of SICURO-24Z and SICURO-24G systems. The colour of the cover is white (RAL9003).

- "1": cover (white, RAL9003)
- "2": display card: card port left (backside)
- "3": display card: card port right (backside)
- "4": display card: touchscreen
- "5": interface card: card port left
- "6": interface card: card port right
- "7": interface card: USB port (type: B)
- "8": interface card: LAN port (type: RJ-45)
- "9": interface card: USB port (type: A)
- "10": interface card: USB port (type: A)
- "11": interface card: terminal clamp "RS485 Sub" for sub station bus (RS485)
- "12": interface card: terminal clamp "RS485 Main" for main station bus (RS485)
- "13": interface card: terminal clamp "RS485 Ext." for device bus (RS485)
- "14": interface card: terminal clamp for service
- "15": interface card: terminal clamp for service
- "16": interface card: terminal clamp for service
- "17": interface card: display port
- "18": interface card: control port
- "19": interface card: CPU port "BUS CPU 14-pol" for bus connection with I/O card
- "20": interface card: terminal clamp for service
- "21": CPU card: memory battery
- "22": CPU card: MMC card slot
- "23": CPU card: port for service
- "24": CPU card: control port
- "25": CPU card: display port



SICURO-24Z/24G – EVA unit (white, RAL9003) – 321004014 - view 2 of 3

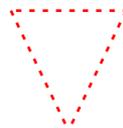
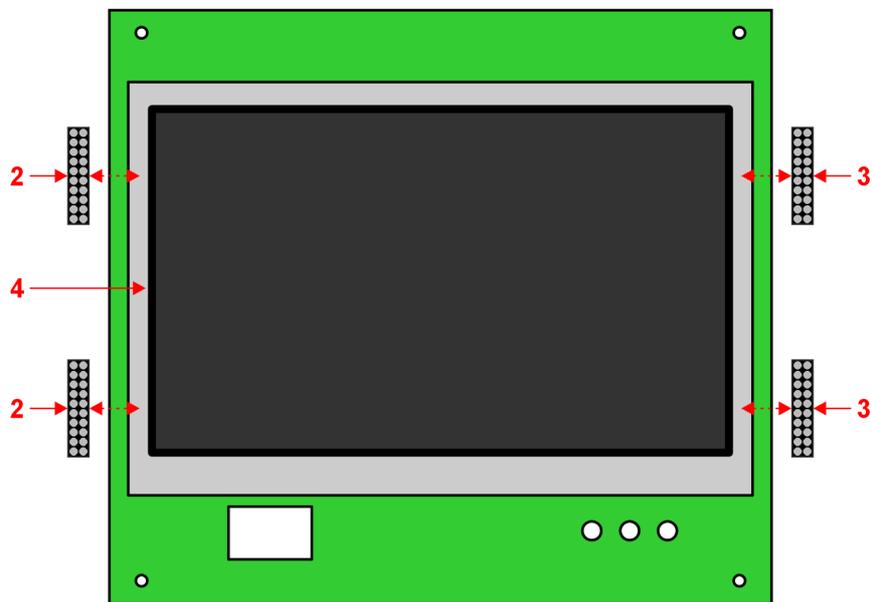
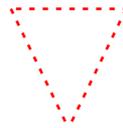
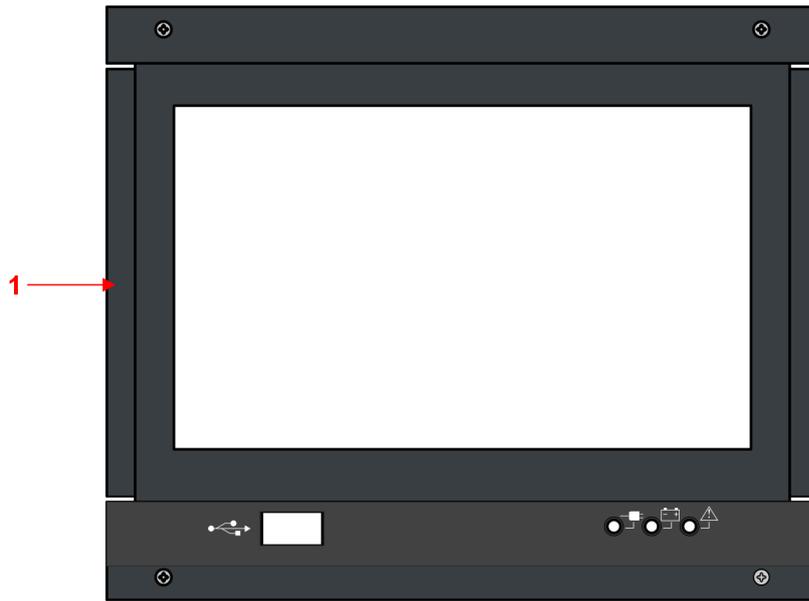


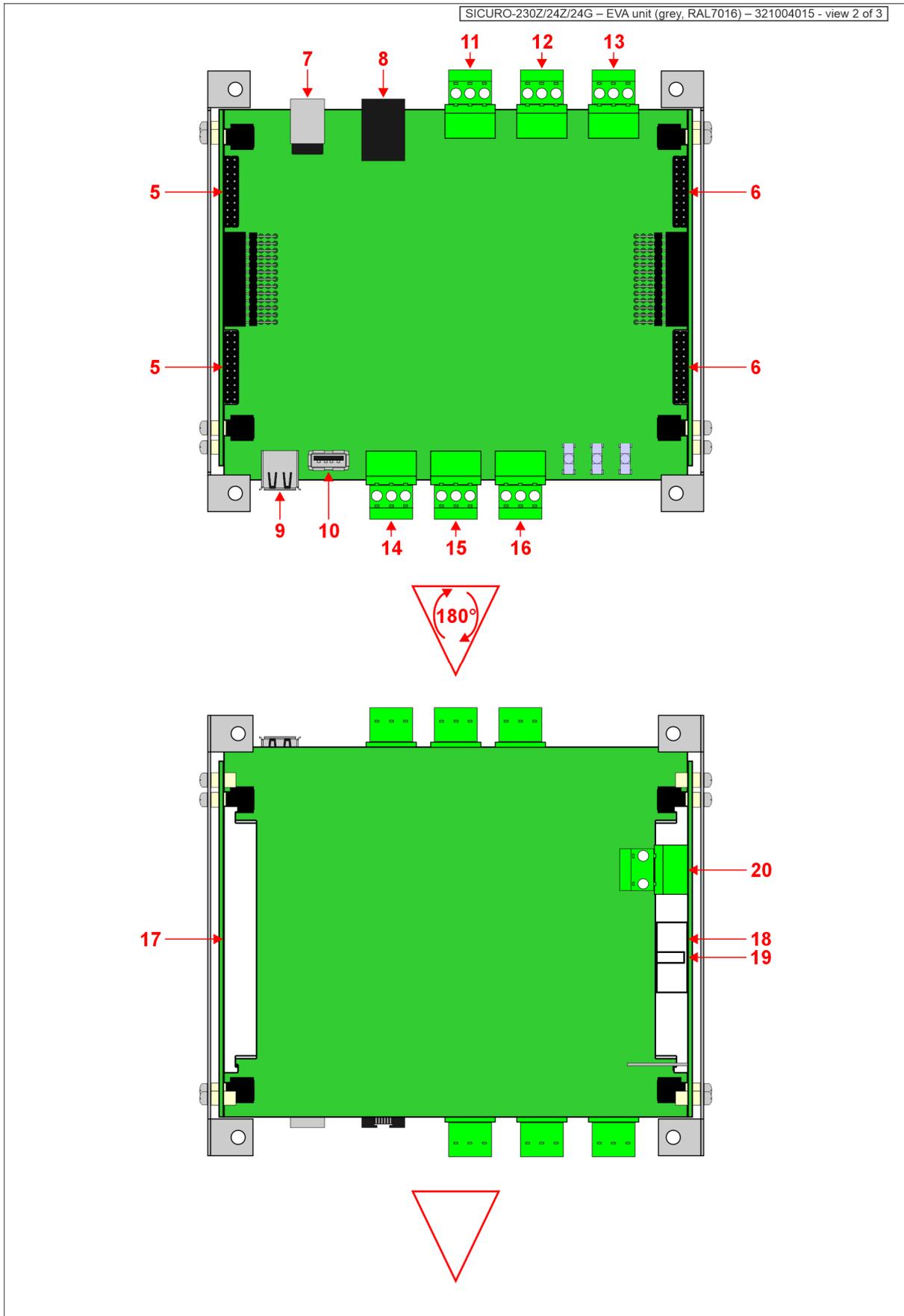


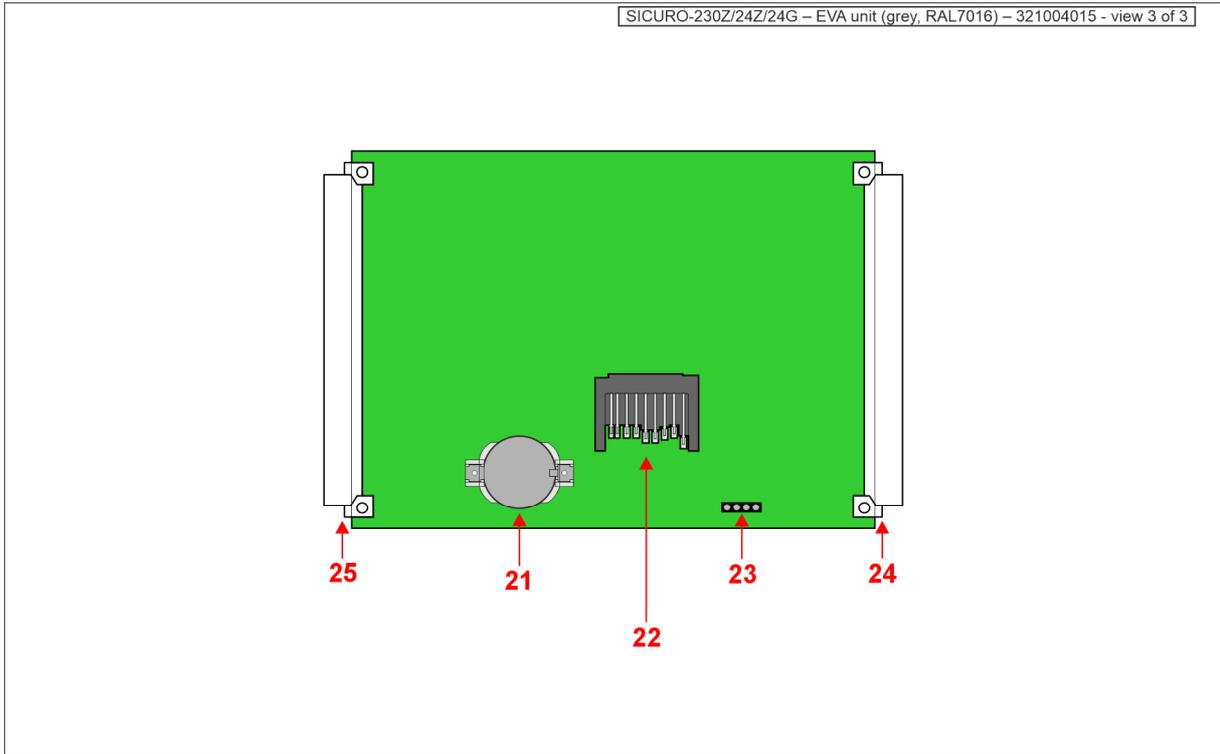
<b>SICURO-230Z/24Z/24G – EVA unit (grey, RAL7016) – 321004015</b>
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EVA unit for input, process and output purposes of SICURO systems. The colour of the cover is grey (RAL7016).

- "1": cover (grey, RAL7016)
- "2": display card: card port left (backside)
- "3": display card: card port right (backside)
- "4": display card: touchscreen
- "5": interface card: card port left
- "6": interface card: card port right
- "7": interface card: USB port (type: B)
- "8": interface card: LAN port (type: RJ-45)
- "9": interface card: USB port (type: A)
- "10": interface card: USB port (type: A)
- "11": interface card: terminal clamp "RS485 Sub" for sub station bus (RS485)
- "12": interface card: terminal clamp "RS485 Main" for main station bus (RS485)
- "13": interface card: terminal clamp "RS485 Ext." for device bus (RS485)
- "14": interface card: terminal clamp for service
- "15": interface card: terminal clamp for service
- "16": interface card: terminal clamp for service
- "17": interface card: display port
- "18": interface card: control port
- "19": interface card: CPU port "BUS CPU 14-pol" for bus connection with I/O card
- "20": interface card: terminal clamp for service
- "21": CPU card: memory battery
- "22": CPU card: MMC card slot
- "23": CPU card: port for service
- "24": CPU card: control port
- "25": CPU card: display port



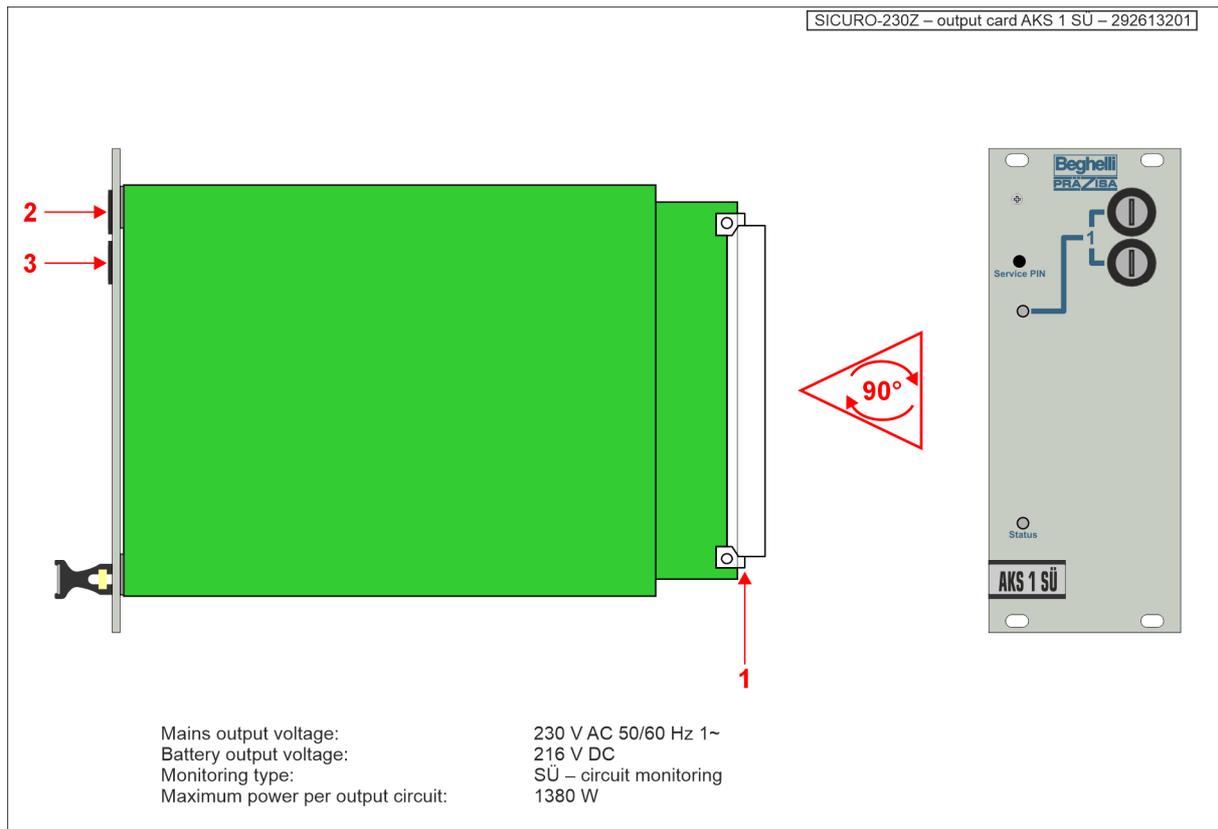




## SICURO-230Z – output card AKS 1 SÜ – 292613201

Output card for supply of the output circuits of SICURO-230Z systems.

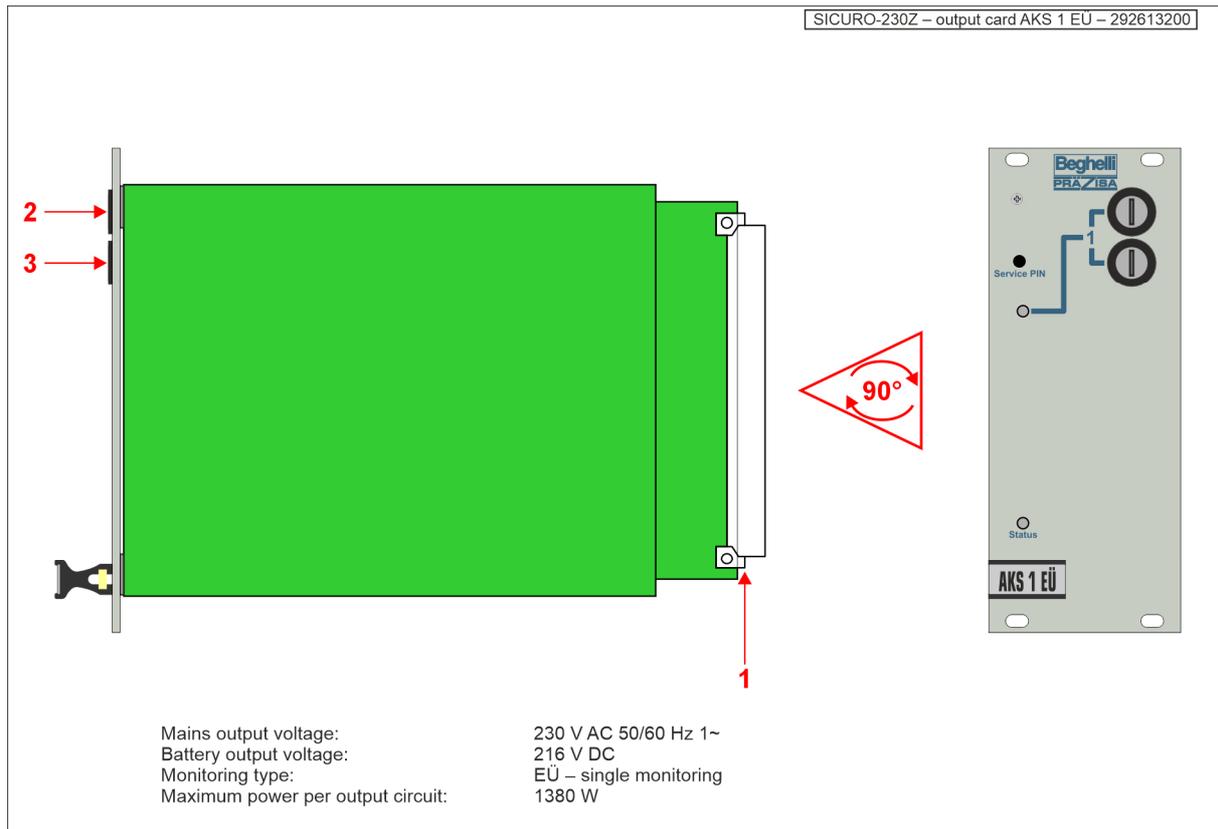
- "1": control port
- "2": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 10 A / time lag (T 10A 500V)
- "3": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 10 A / time lag (T 10A 500V)



## SICURO-230Z – output card AKS 1 EÜ – 292613200

Output card for supply of the output circuits of SICURO-230Z systems.

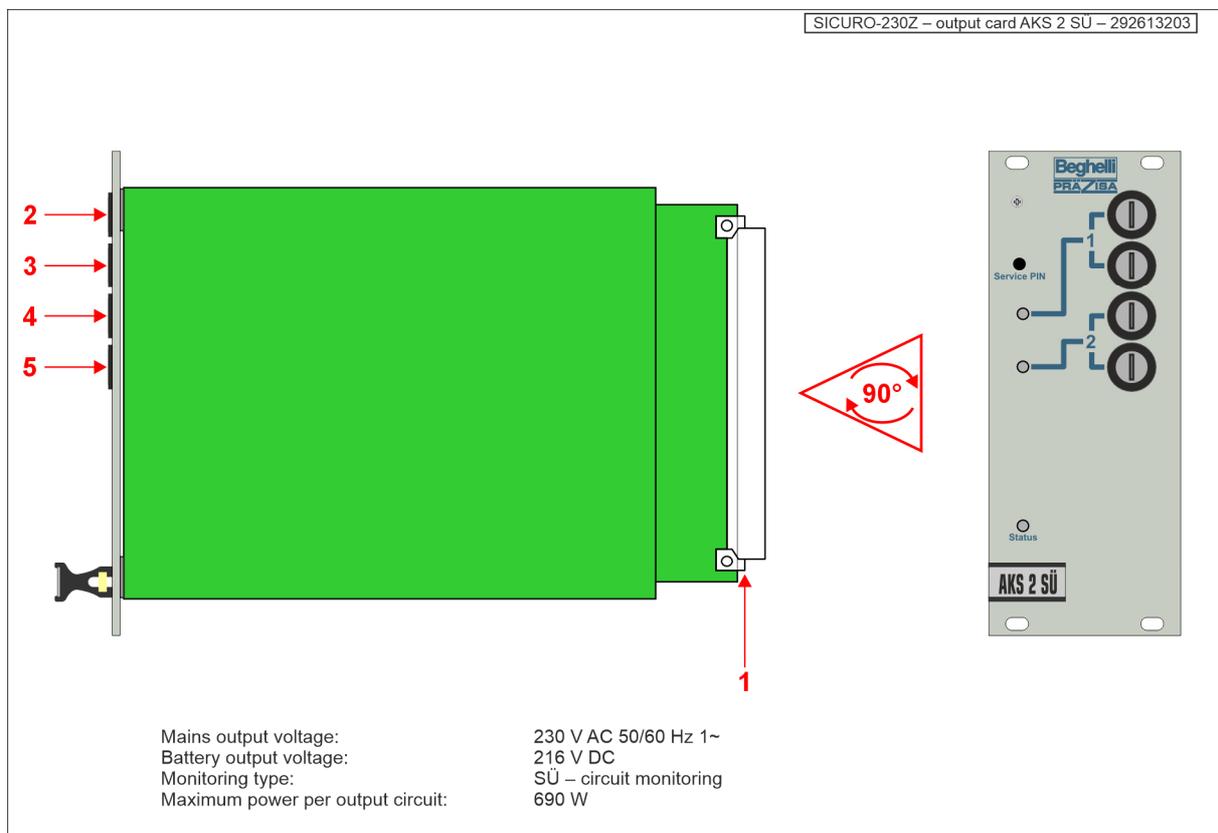
- "1": control port
- "2": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 10 A / time lag (T 10A 500V)
- "3": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 10 A / time lag (T 10A 500V)



**SICURO-230Z – output card AKS 2 SÜ – 292613203**

Output card for supply of the output circuits of SICURO-230Z systems.

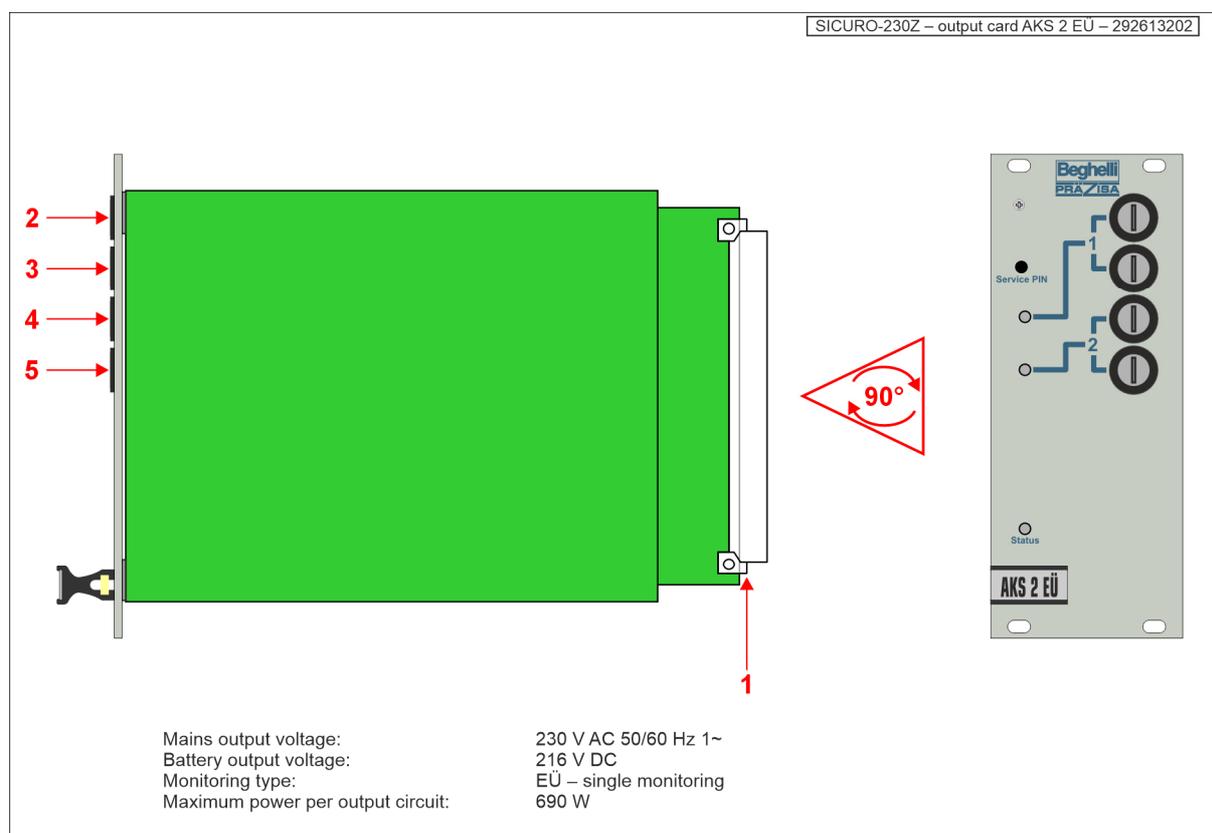
- "1": control port
- "2": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)
- "3": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)
- "4": fuse (L+) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)
- "5": fuse (L-) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)



**SICURO-230Z – output card AKS 2 EÜ – 292613202**

Output card for supply of the output circuits of SICURO-230Z systems.

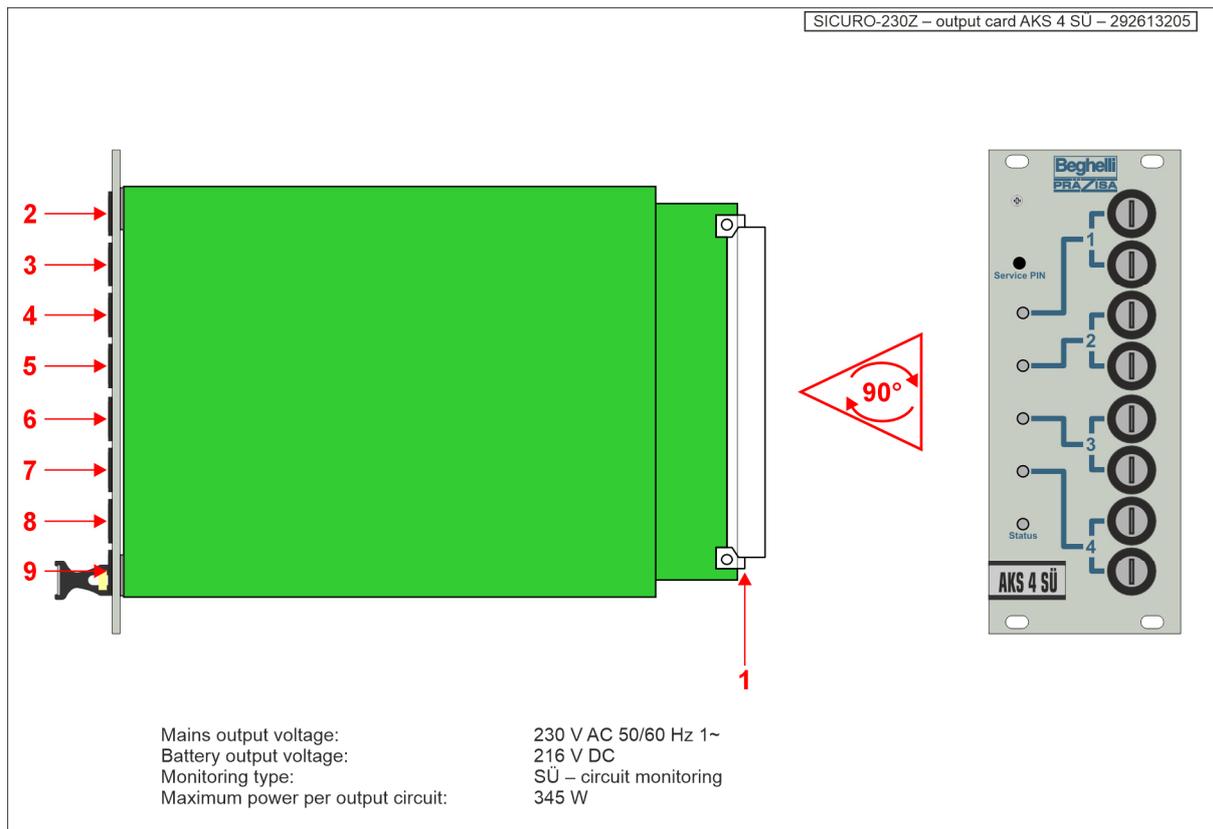
- "1": control port
- "2": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)
- "3": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)
- "4": fuse (L+) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)
- "5": fuse (L-) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 5 A / time lag (T 5A 500V)



**SICURO-230Z – output card AKS 4 SÜ – 292613205**

Output card for supply of the output circuits of SICURO-230Z systems.

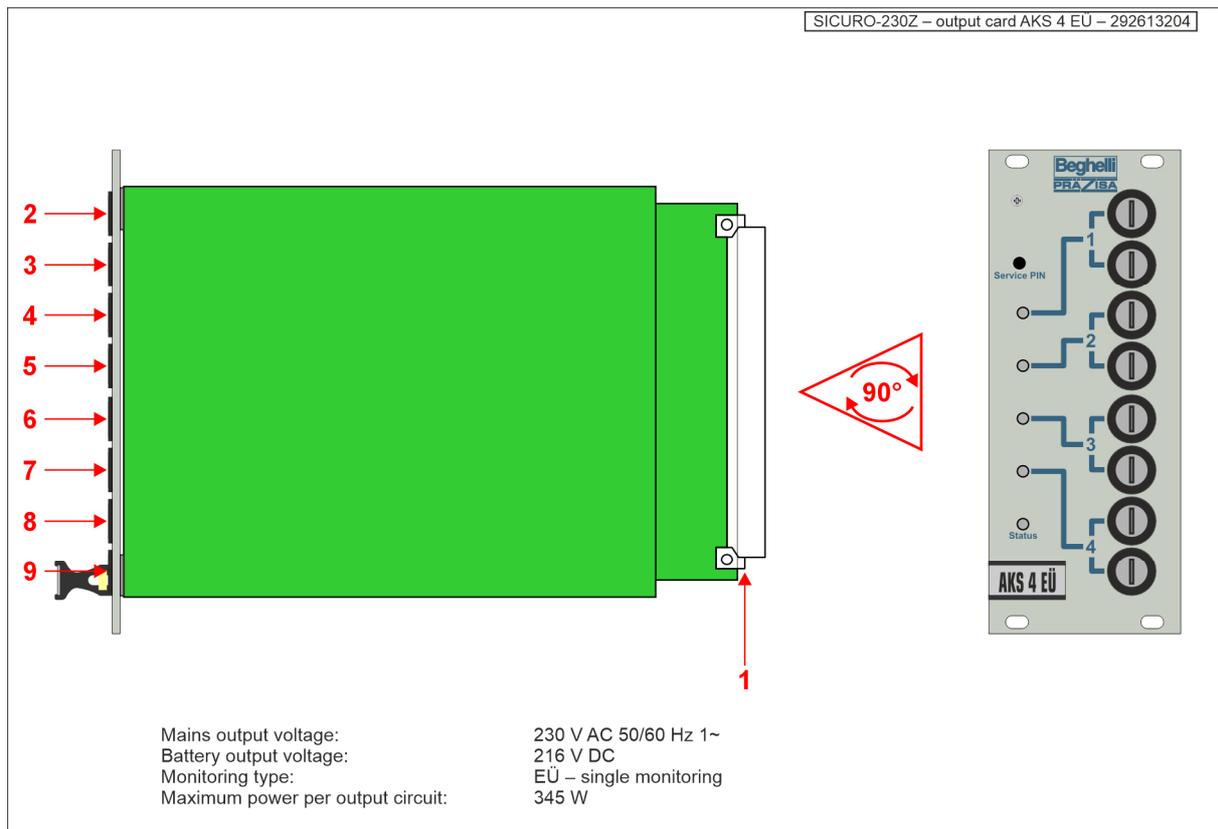
- "1": control port
- "2": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "3": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "4": fuse (L+) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "5": fuse (L-) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "6": fuse (L+) for output circuit 3 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "7": fuse (L-) for output circuit 3 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "8": fuse (L+) for output circuit 4 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "9": fuse (L-) for output circuit 4 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)



**SICURO-230Z – output card AKS 4 EÜ – 292613204**

Output card for supply of the output circuits of SICURO-230Z systems.

- "1": control port
- "2": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "3": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "4": fuse (L+) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "5": fuse (L-) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "6": fuse (L+) for output circuit 3 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "7": fuse (L-) for output circuit 3 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "8": fuse (L+) for output circuit 4 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)
- "9": fuse (L-) for output circuit 4 (230 V AC / 216 V DC)  
– fuse values: 500 V / 2,5 A / time lag (T 2,5A 500V)

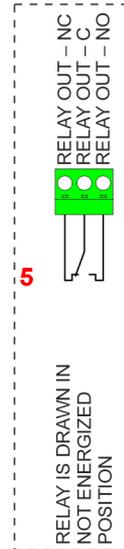
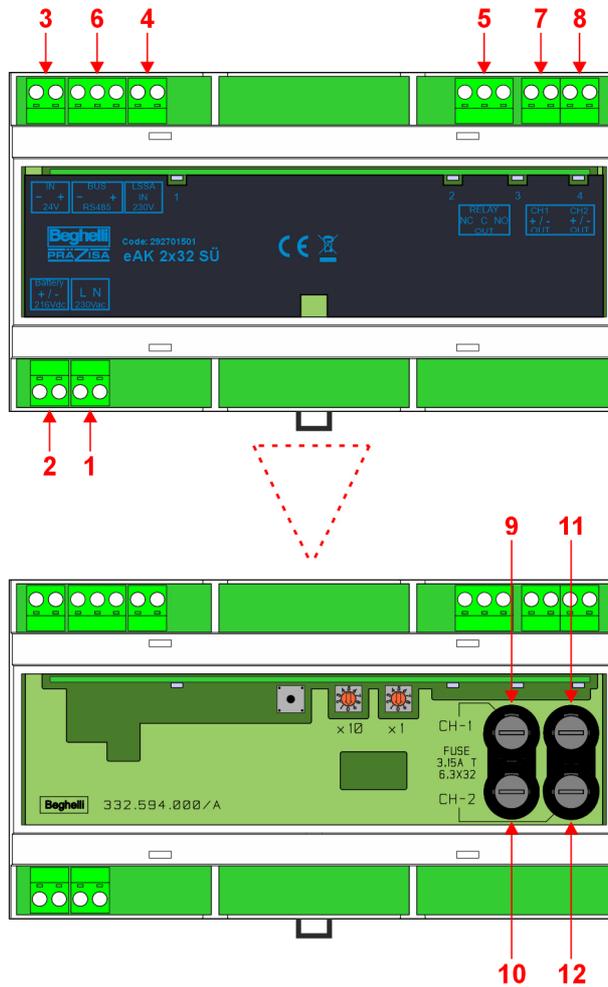


**SICURO-230Z – external output card eAK 2 SÜ – 292701501**

External output card for supply of the output circuits of SICURO-230Z systems.

- "1": terminal clamp "230Vac" for mains supply and mains monitoring (230 V AC)
- "2": terminal clamp "Battery 216Vdc" for battery supply (216 V DC)
- "3": terminal clamp "IN 24V" for device supply voltage (24 V DC)
- "4": terminal clamp "LSSA IN 230V" for LSSA switch input (230 V AC)
- "5": terminal clamp for message contact of the external output card  
(message contact as potential-free changeover)
- "6": terminal clamp "BUS RS485" for sub station bus (RS485)
- "7": terminal clamp "CH1 OUT" for output circuit 1 (230 V AC / 216 V DC)
- "8": terminal clamp "CH2 OUT" for output circuit 2 (230 V AC / 216 V DC)
- "9": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)
- "10": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)
- "11": fuse (L+) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)
- "12": fuse (L-) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)

SICURO-230Z – external output card eAK 2 SU – 292701501



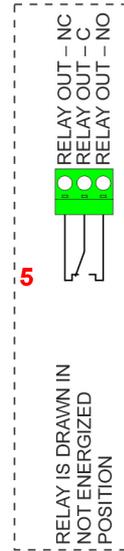
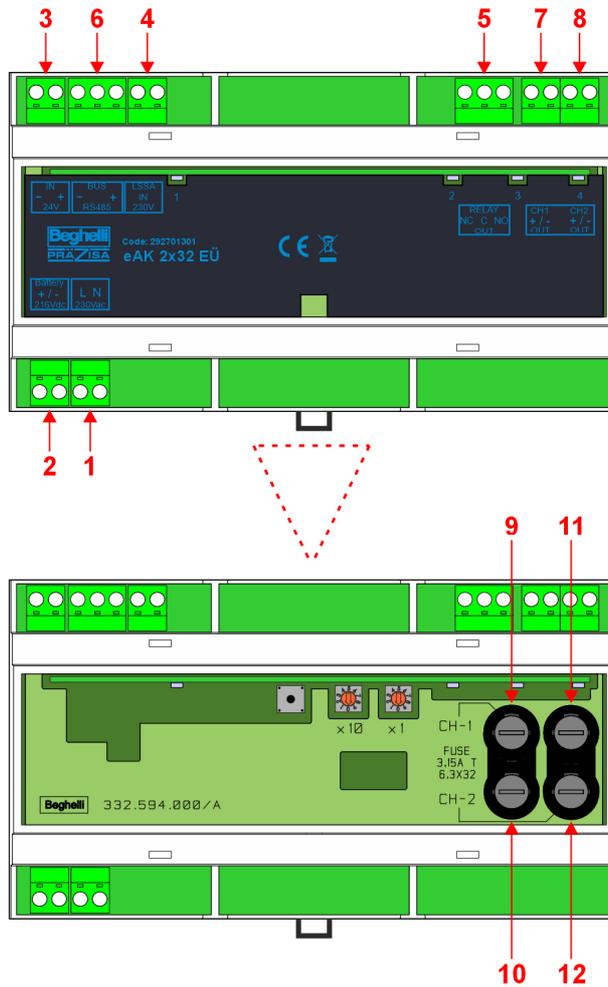
Mains output voltage:	230 V AC 50/60 Hz 1~
Battery output voltage:	216 V DC
Monitoring type:	SÜ – circuit monitoring
Maximum power per output circuit:	400 W

**SICURO-230Z – external output card eAK 2 EÜ – 292701301**

External output card for supply of the output circuits of SICURO-230Z systems.

- "1": terminal clamp "230Vac" for mains supply and mains monitoring (230 V AC)
- "2": terminal clamp "Battery 216Vdc" for battery supply (216 V DC)
- "3": terminal clamp "IN 24V" for device supply voltage (24 V DC)
- "4": terminal clamp "LSSA IN 230V" for LSSA switch input (230 V AC)
- "5": terminal clamp for message contact of the external output card  
(message contact as potential-free changeover)
- "6": terminal clamp "BUS RS485" for sub station bus (RS485)
- "7": terminal clamp "CH1 OUT" for output circuit 1 (230 V AC / 216 V DC)
- "8": terminal clamp "CH2 OUT" for output circuit 2 (230 V AC / 216 V DC)
- "9": fuse (L+) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)
- "10": fuse (L-) for output circuit 1 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)
- "11": fuse (L+) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)
- "12": fuse (L-) for output circuit 2 (230 V AC / 216 V DC)  
– fuse values: 500 V / 3,15 A / time lag (T 3,15A 500V)

SICURO-230Z – external output card eAK 2 EU – 292701301

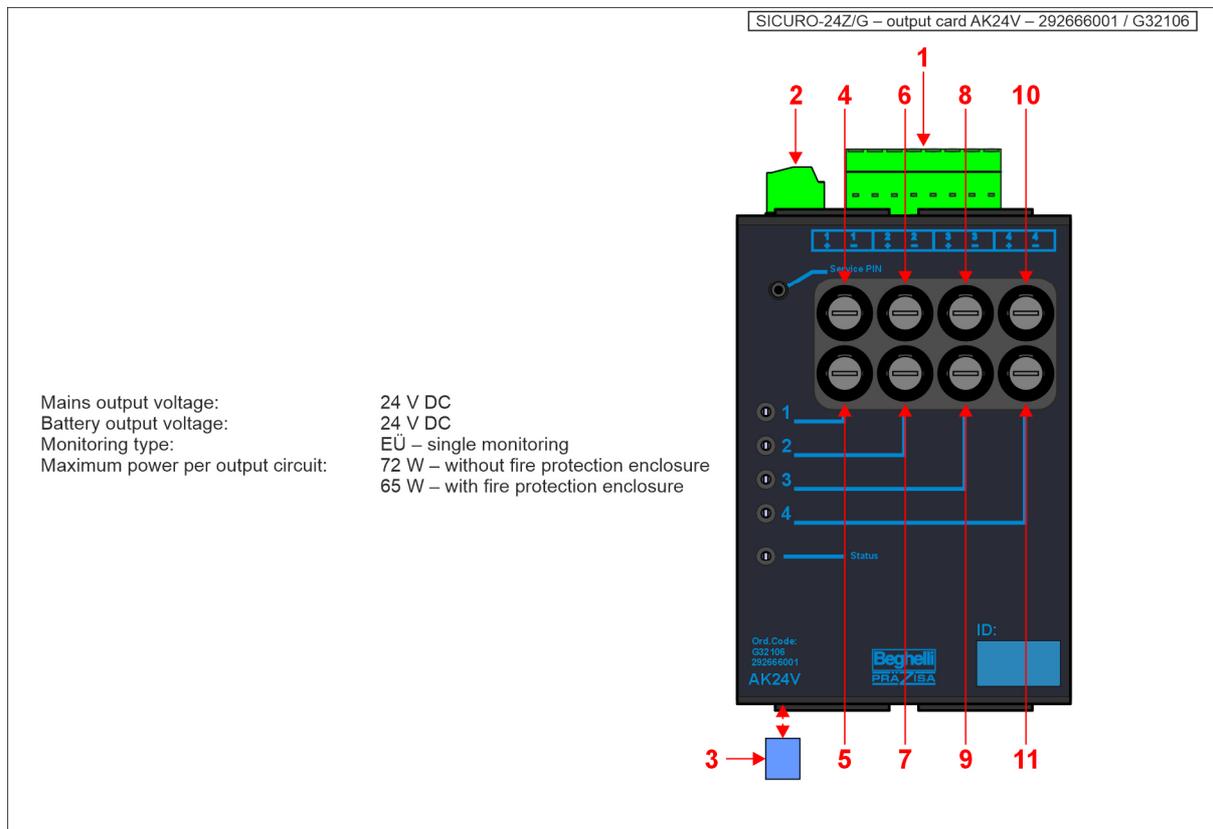


Mains output voltage: 230 V AC 50/60 Hz 1~  
 Battery output voltage: 216 V DC  
 Monitoring type: EÜ – single monitoring  
 Maximum power per output circuit: 400 W

**SICURO-24Z/24G – output card AK24V – 292666001 / G32106**

Output card for supply of the output circuits of SICURO-24Z and SICURO-24G systems.

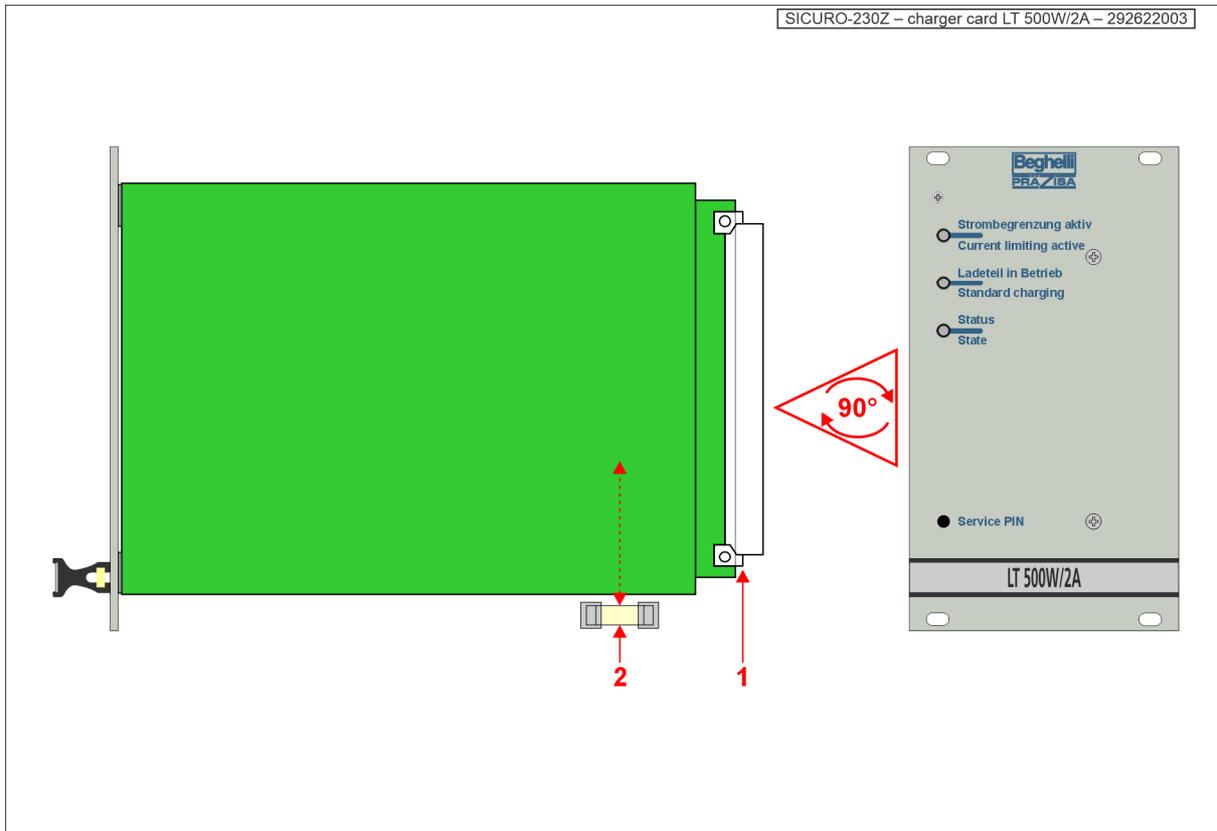
- "1": terminal clamp "1+ 1-" / "2+ 2-" / "3+ 3-" / "4+ 4-" for output circuits (24 V DC)
- "2": terminal clamp "24V AK" for supply voltage of the output card (24 V DC)
- "3": AK port "BUS AK24V 10-pol" for bus connection with I/O card / output card (covert)
- "4": fuse (+) for output circuit 1 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "5": fuse (-) for output circuit 1 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "6": fuse (+) for output circuit 2 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "7": fuse (-) for output circuit 2 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "8": fuse (+) for output circuit 3 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "9": fuse (-) for output circuit 3 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "10": fuse (+) for output circuit 4 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag
- "11": fuse (-) for output circuit 4 (24 V DC)  
– fuse values: 250 V / 6,3 A / time lag



**SICURO-230Z – charger card LT 500W/2A – 292622003**

Charger card for charging the batteries of SICURO-230Z systems.

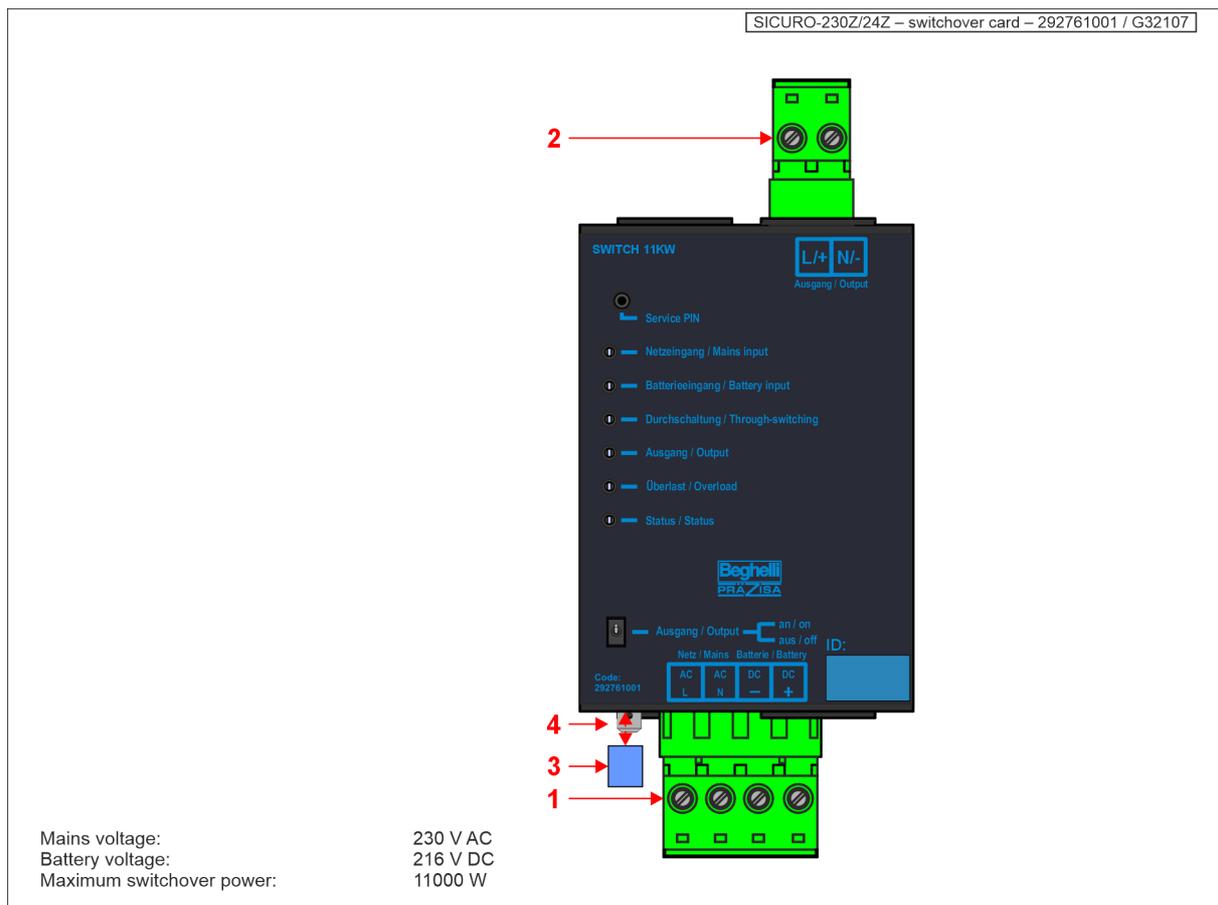
- "1": control port
- "2": fuse for input voltage (230 V AC)  
– fuse values: 250 V / 5000 mA / fast (F 5A L 250V)



**SICURO-230Z/24Z – switchover card – 292761001 / G32107**

Switchover card for use of one cable as combined mains and battery supply.

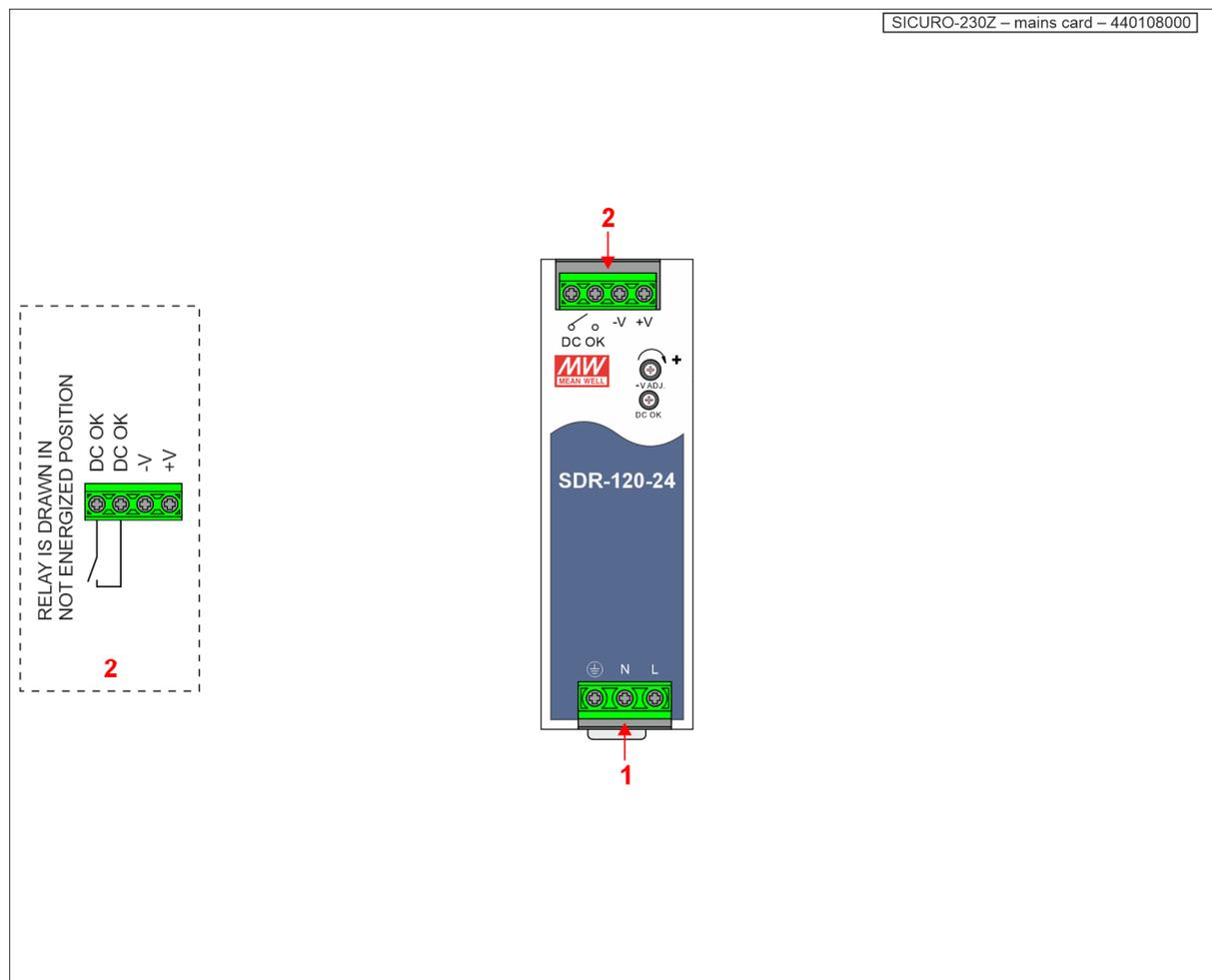
- "1": terminal clamp "AC L" / "AC N" / "BAT -" / "BAT +" (inputs) for mains supply (230 V AC) and battery supply (216 V DC)
- "2": terminal clamp "+" / "-" (output) for combined mains and battery supply (230 V AC and 216 V DC)
- "3": AKS port "BUS AKS 10-pol" for bus connection with I/O card / switchover card / card frame (covert)
- "4": flat plug (input) for protective conductor (PE) of mains supply (230 V AC)



**SICURO-230Z – mains card – 440108000**

Mains card for supply of equipment of SICURO-230Z systems.

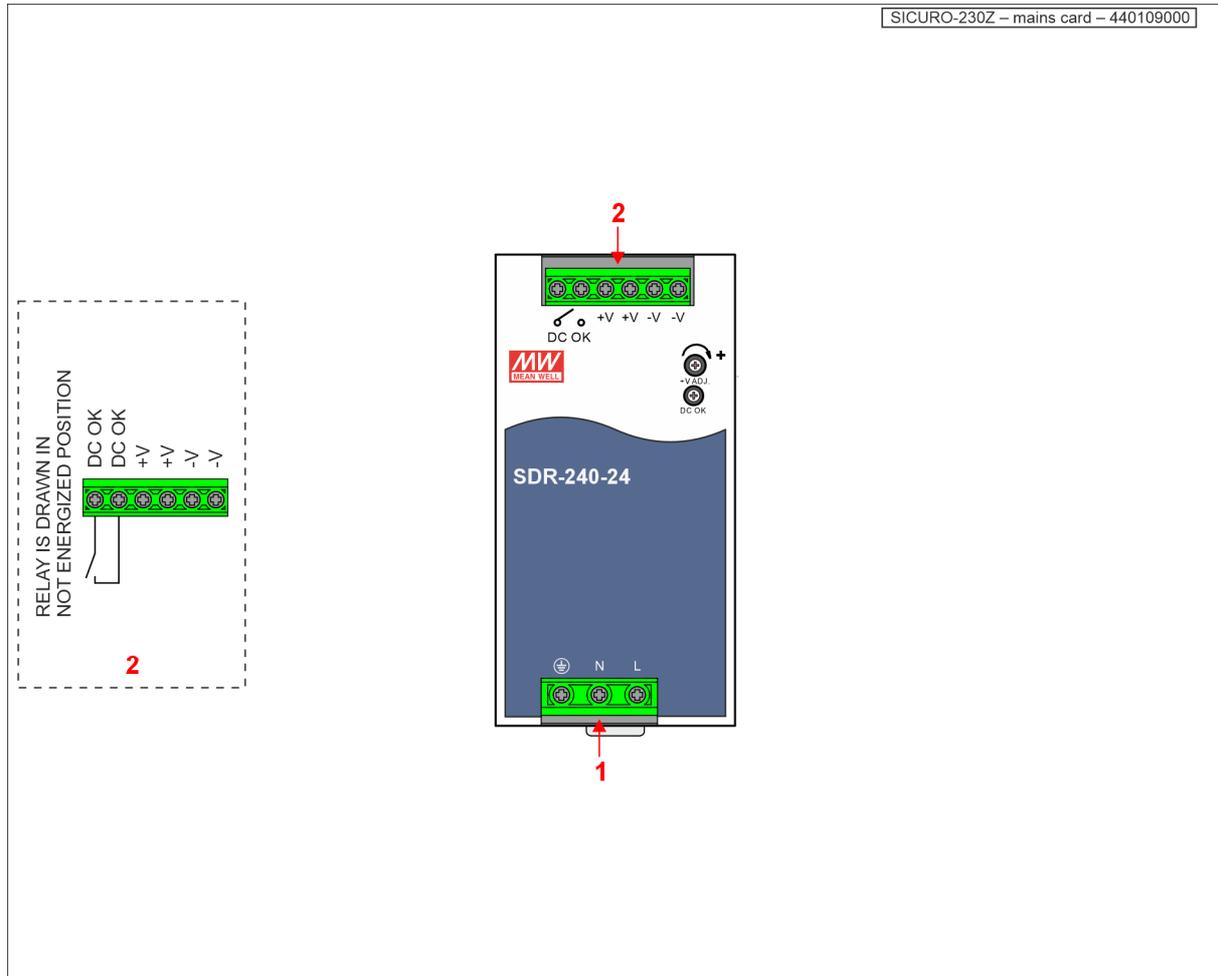
- "1": terminal clamp for input of the mains card (230 V AC / 216 V DC)
- "2": terminal clamp for output and message contact of the mains card (voltage and current are factory-adjusted)



**SICURO-230Z – mains card – 440109000**

Mains card for supply of equipment of SICURO-230Z systems.

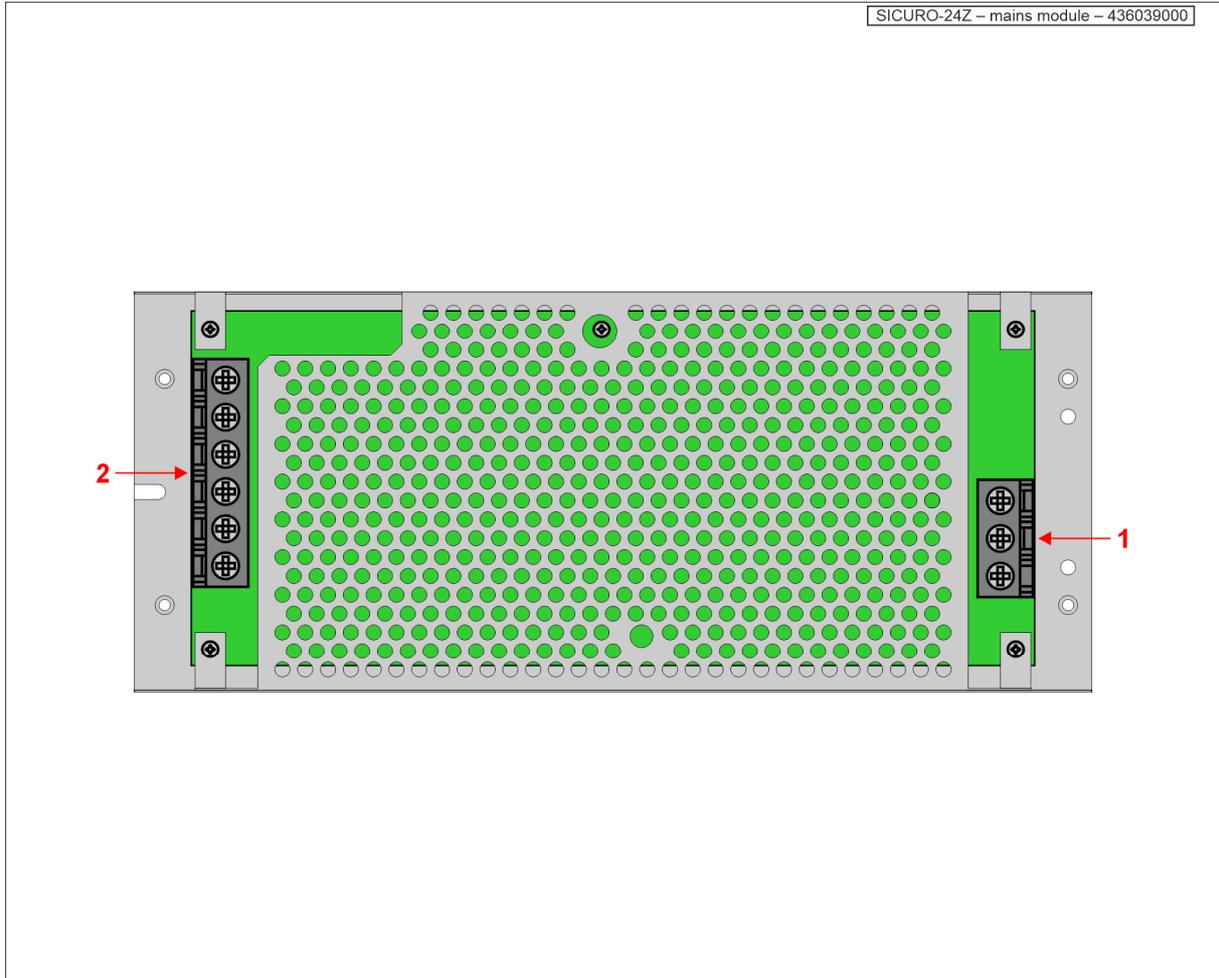
- "1": terminal clamp for input of the mains card (230 V AC / 216 V DC)
- "2": terminal clamp for output and message contact of the mains card (voltage and current are factory-adjusted)



**SICURO-24Z – mains module – 436039000**

Mains module for supply of equipment of SICURO-24Z systems.

- "1": terminal clamp for input of the mains module (230 V AC / 216 V DC)
- "2": terminal clamp for output of the mains module (voltage and current are factory-adjusted)

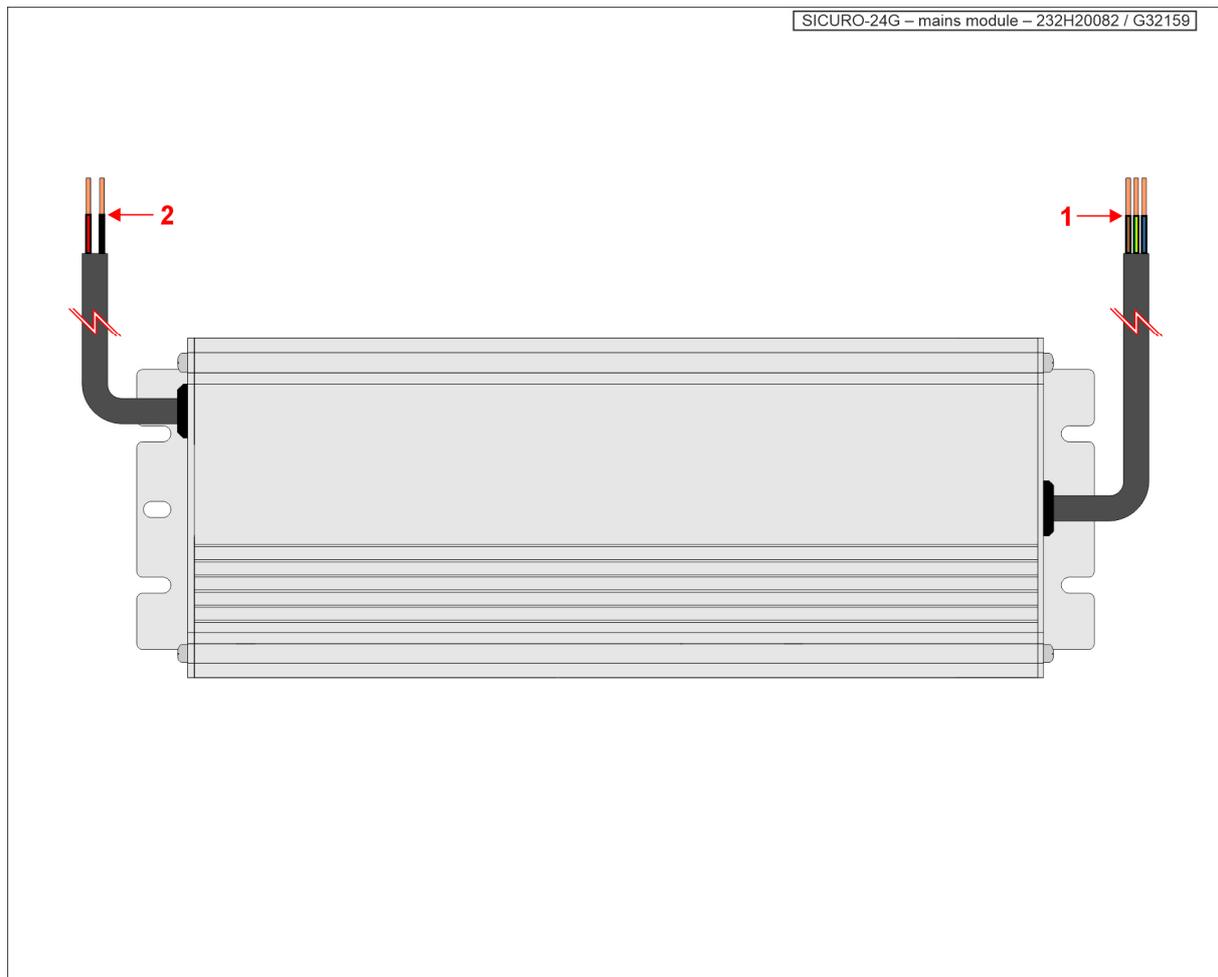


**SICURO-24G – mains module – 232H20082 / G32159**

Mains module for supply of equipment of SICURO-24G systems with one output card.

"1": cable for input of the mains module (230 V AC)

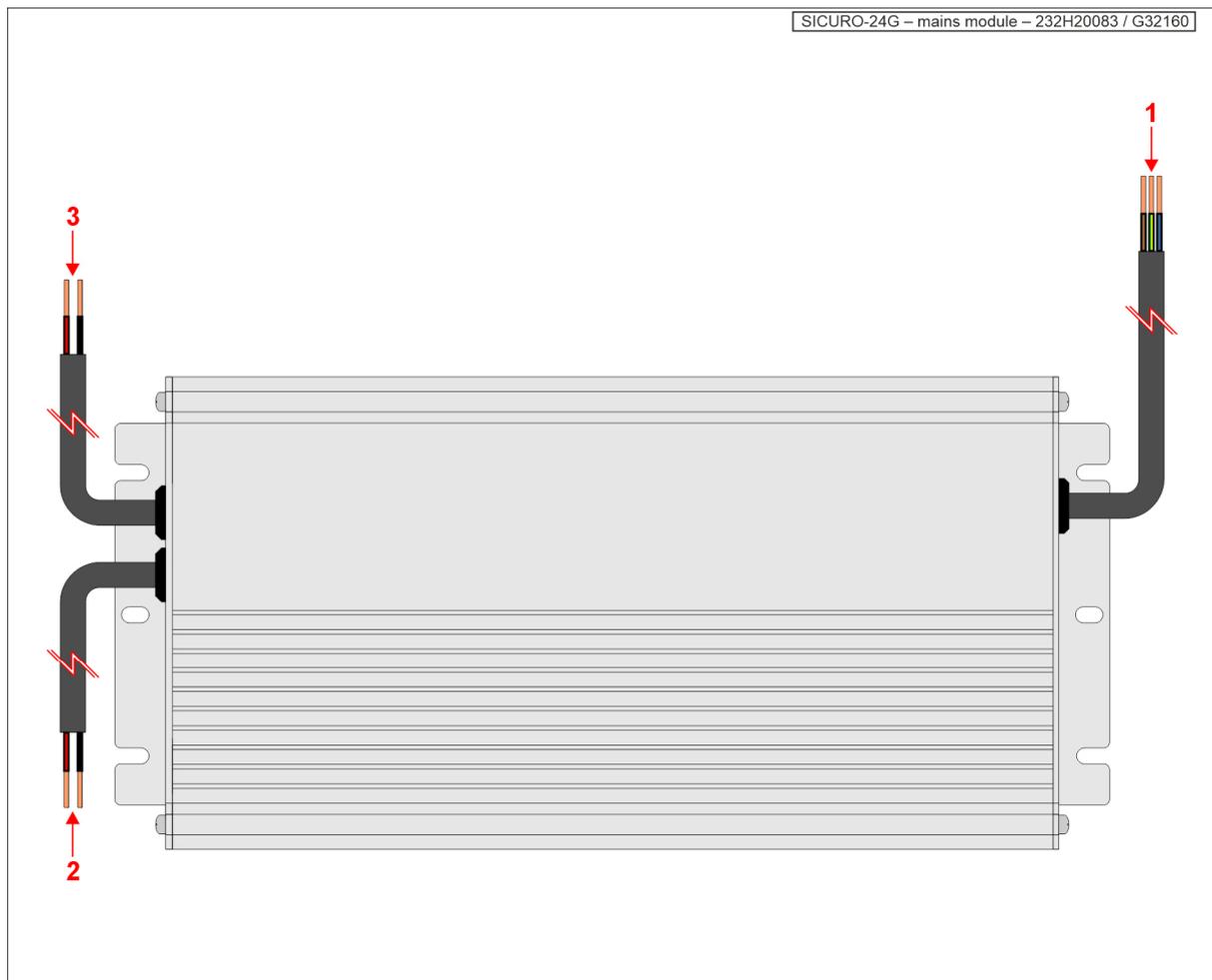
"2": cable for output of the mains module  
(voltage and current are factory-adjusted)



**SICURO-24G – mains module – 232H20083 / G32160**

Mains module for supply of equipment of SICURO-24G systems with two output cards.

- "1": cable for input of the mains module (230 V AC)
- "2": cable for output 1 of the mains module (voltage and current are factory-adjusted)
- "3": cable for output 2 of the mains module (voltage and current are factory-adjusted)

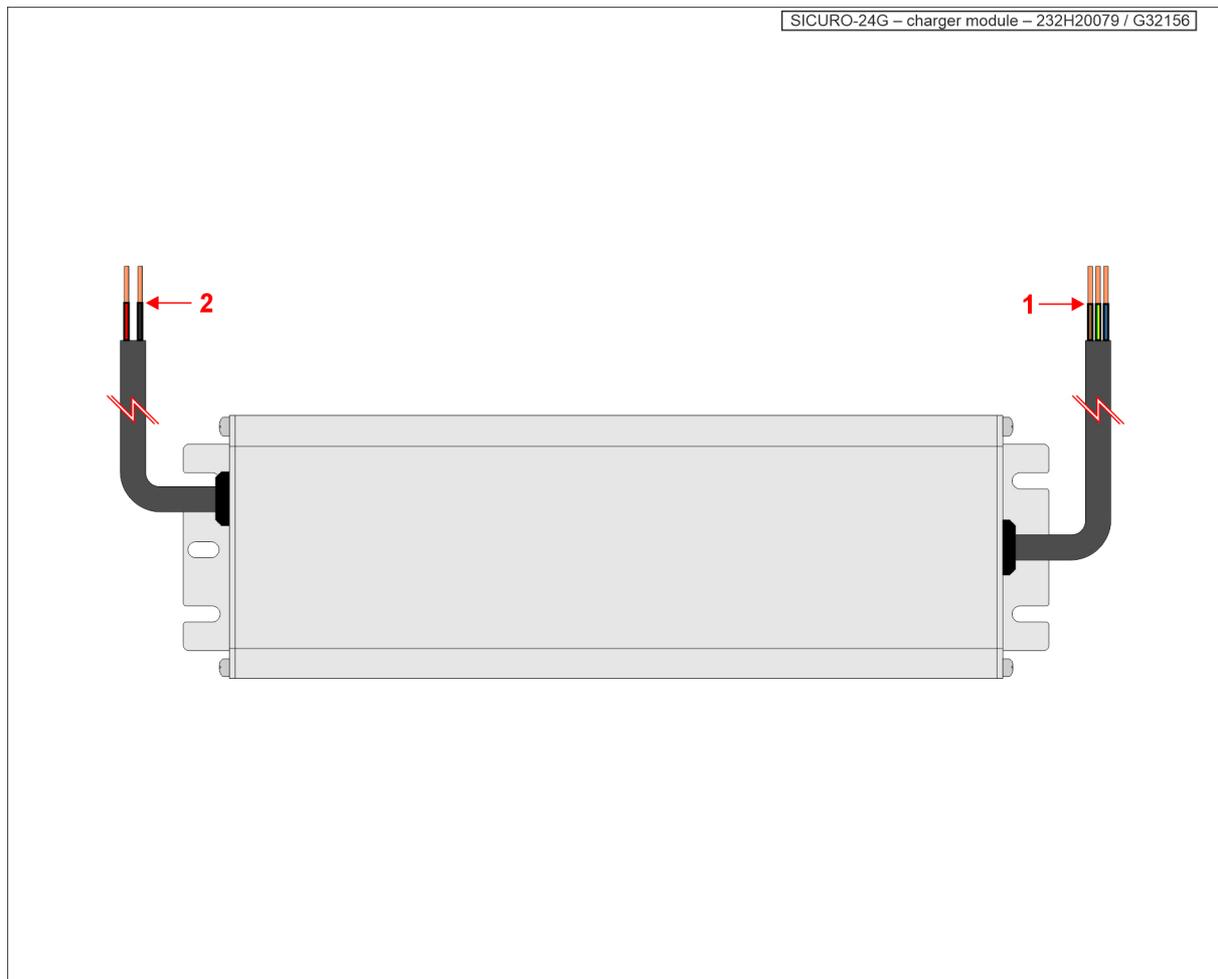


**SICURO-24G – charger module – 232H20079 / G32156**

Charger module for charging of batteries of SICURO-24G systems.

"1": cable for input of the charger module (230 V AC)

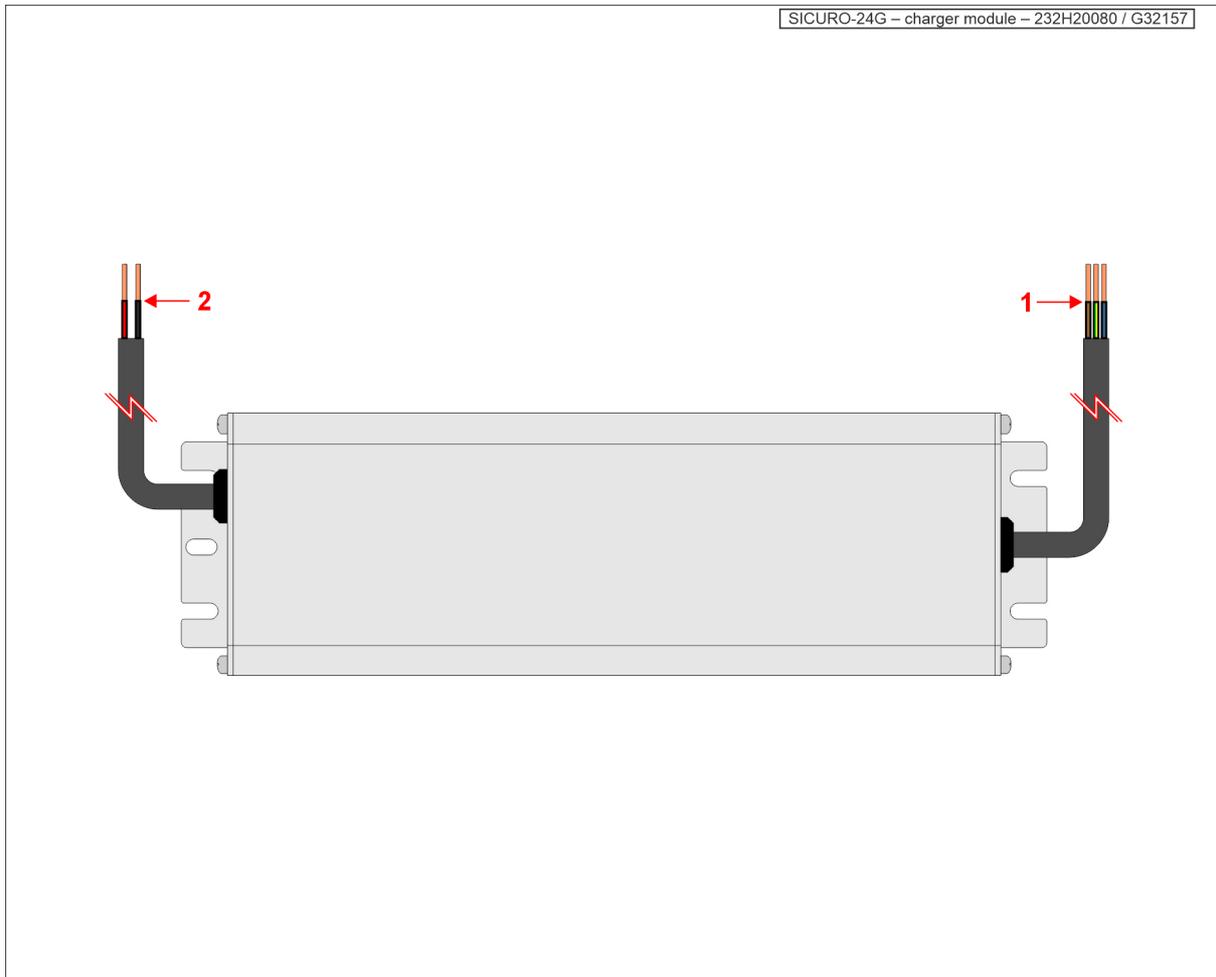
"2": cable for output of the charger module  
(voltage and current are factory-adjusted)



**SICURO-24G – charger module – 232H20080 / G32157**

Charger module for charging of batteries of SICURO-24G systems.

- "1": cable for input of the charger module (230 V AC)
- "2": cable for output of the charger module (voltage and current are factory-adjusted)

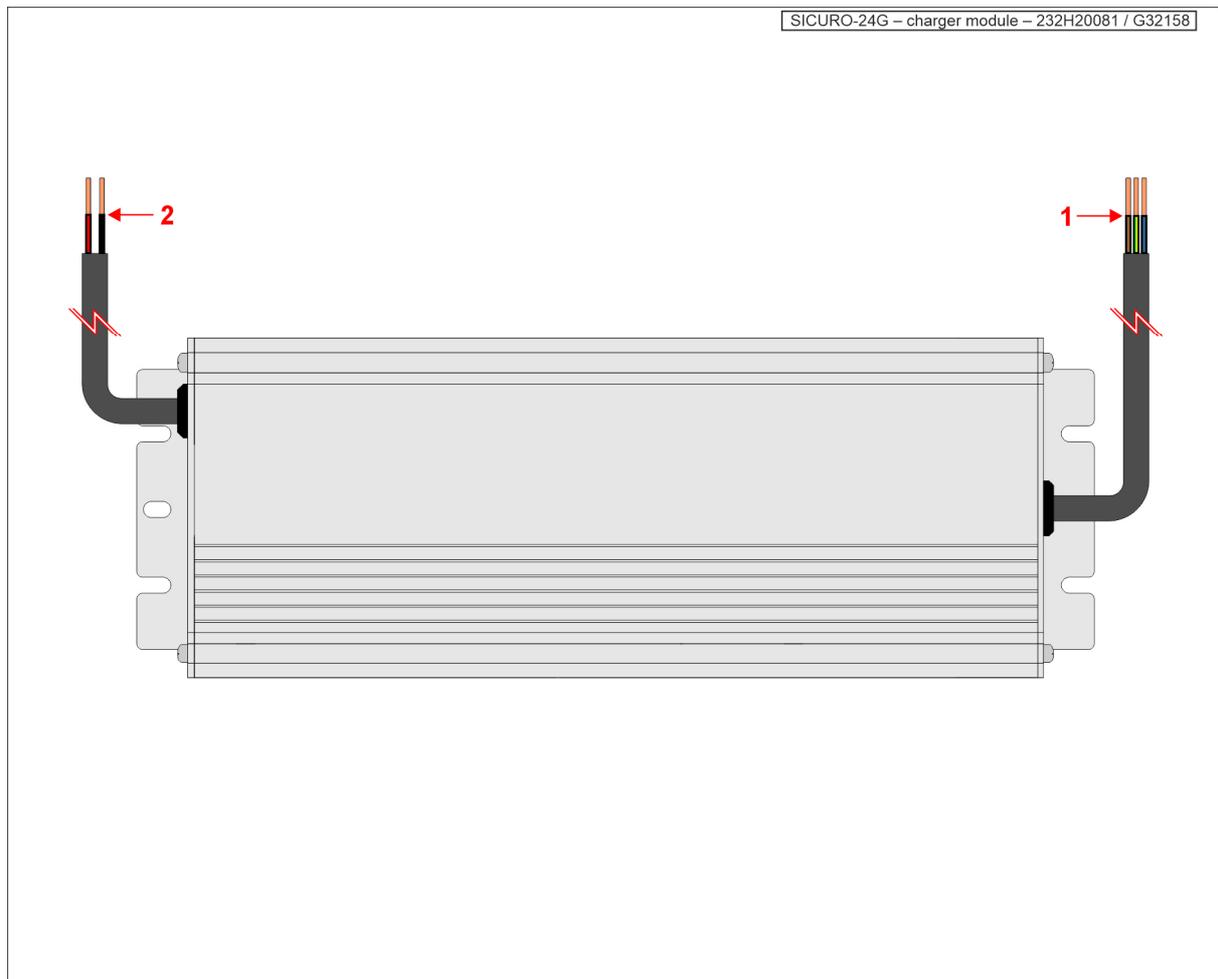


## SICURO-24G – charger module – 232H20081 / G32158

Charger module for charging of batteries of SICURO-24G systems.

"1": cable for input of the mains module (230 V AC)

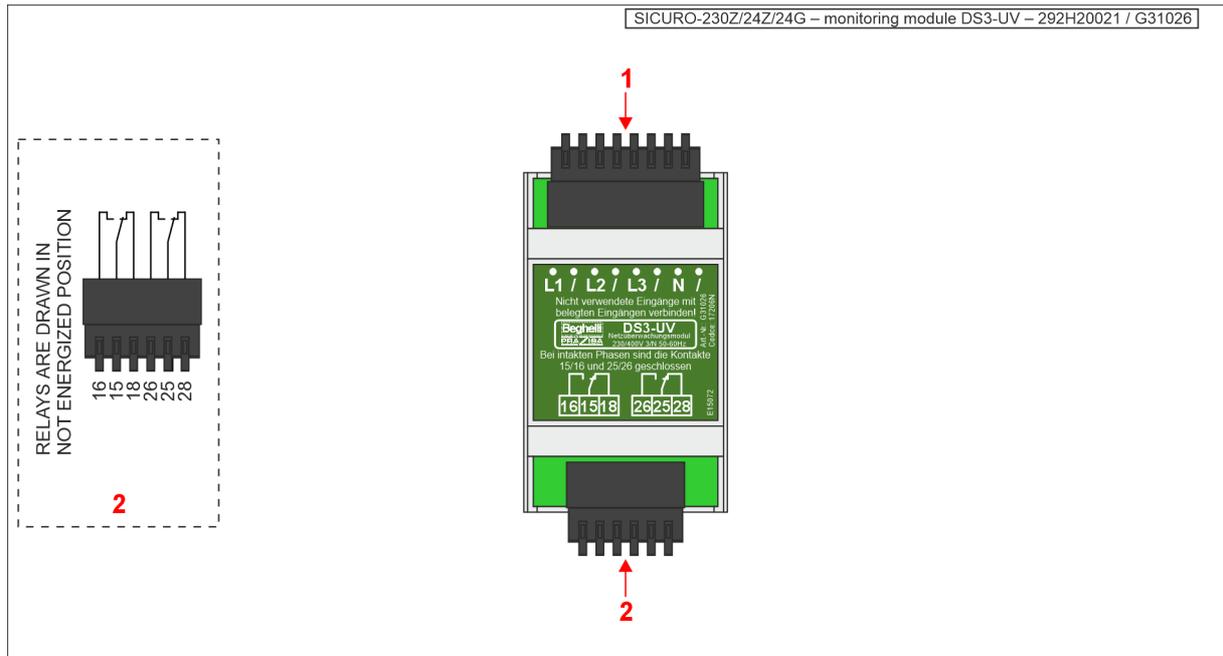
"2": cable for output of the mains module  
(voltage and current are factory-adjusted)



**SICURO-230Z/24Z/24G – monitoring module DS3-UV – 292H20021 / G31026**

Monitoring module for monitoring of one mains supply. The monitoring inputs are capable of an integrated sub-distribution monitoring (3-phase) for the general lighting, which can monitor presence and value of the mains voltage.

- "1": terminal clamp for mains monitoring (400 V AC)
- "2": terminal clamp for message contacts of the monitoring module (message contacts as potential-free changeovers)

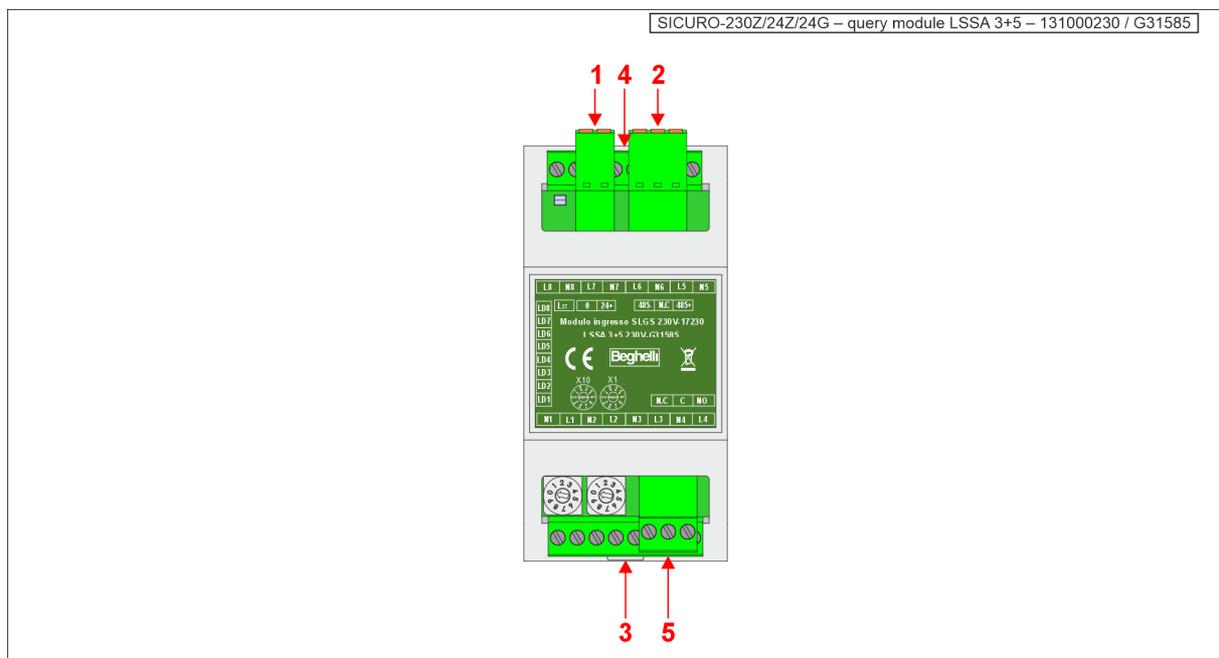


**SICURO-230Z/24Z/24G – query module LSSA 3+5 – 131000230 / G31585**

Query module for query of eight LSSA switch inputs. The LSSA switch inputs 1 to 3 are capable of an integrated sub-distribution monitoring (3-phase) for the general lighting, which can monitor presence and value of the mains voltage.

- > Every query module is equipped with eight LSSA switch inputs.
- > The switch contacts are carried out as circuits for a switch voltage of 230 V AC.
- > The command uptake for all LSSA switch inputs is binary and done by a connection of a voltage of 230 V AC.
- > The command initiation for all LSSA switch inputs is software controlled and can be influenced by a programming.
- > All LSSA switch inputs can be used for control purposes together with additional devices which can be placed internal or external related to the switchboard. The LSSA switch inputs 1 to 3 can be used for monitoring purposes regarding the mains supply of the general lighting.

- "1": terminal clamp for device supply voltage (24 V DC)
- "2": terminal clamp for device bus (RS485)
- "3": terminal clamp for LSSA switch inputs 1 to 4
- "4": terminal clamp for LSSA switch inputs 5 to 8
- "5": terminal clamp for message contact of the query module (message contact as potential-free changeover)



**SICURO-230Z/24Z/24G – query module LSSA 8 – 131000231 / G31586**

Query module for query of eight LSSA switch inputs.

- > Every query module is equipped with eight LSSA switch inputs.
- > The switch contacts are carried out as circuits with a switch voltage of 24 V DC.
- > The command uptake for all LSSA switch inputs is binary and done by a low-ohmic contact closing (short circuit).
- > The command initiation for all LSSA switch inputs is software controlled and can be influenced by a programming.
- > All LSSA switch inputs can be used for control purposes together with additional devices which can be placed internal or external related to the switchboard.

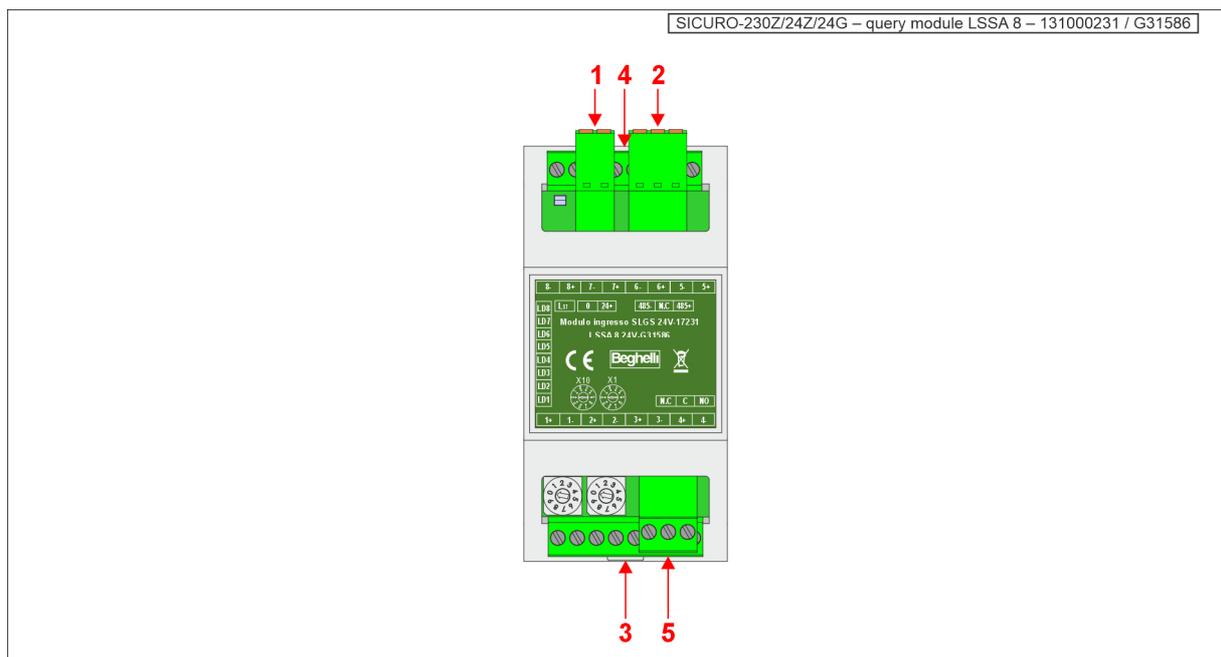
"1": terminal clamp for device supply voltage (24 V DC)

"2": terminal clamp for device bus (RS485)

"3": terminal clamp for LSSA switch inputs 1 to 4

"4": terminal clamp for LSSA switch inputs 5 to 8

"5": terminal clamp for message contact of the query module (message contact as potential-free changeover)











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