

Controls what needs to be controlled:

In times of climate change, the nuclear phase-out and a lack of resources, increasing energy efficiency is a key policy goal.

By using reactive power compensation:

- Energy losses in the electrical supply network are significantly reduced. This leads to an associated **saving in CO2 emissions**.
- Electric supply networks are used more efficiently in order to use the free capacities for the distribution of **renewable energy**.
- the accuracy in planning **future supply networks** can be increased.



Reactive power influences the voltage quality Q capacitive -> ensures a rise in voltage in the network Q inductive -> has a voltage-reducing effect in the network

As of 2020:

Reactive power compensation devices (1) Pursuant to **Section 16 (2) NAV**, connection use with a Shift factor (cos Phi) between **0.9 capacitive and 0.9 inductive**.

BLR-CM

BELUK

The intelligent control algorithm of the BLR-CM switches inductive and capacitive stages in an optimized way and thus guarantees short settling times and a reduced number of switching processes. In addition, the switching cycles are evenly distributed in order to enable the longest possible maintenance intervals.

Measurement method: True RMS

Determination of $\cos \varphi$ based on the fundamental wave

1-phase / 3-phase measurement

Voltage range: 90 - 530 V AC, 45 - 65 Hz

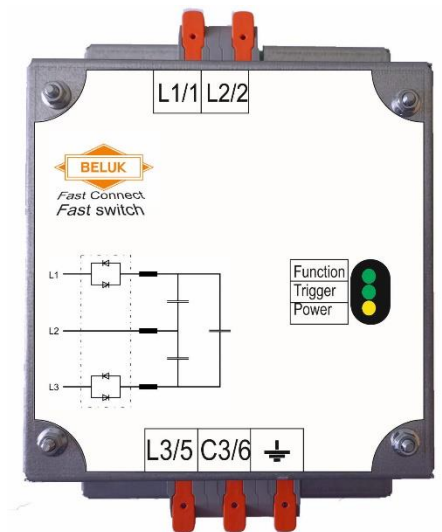
Current range: 15 mA - 5 A

Cos phi: 0.70 c - 0.60 i

Display: DE / EN / FR

Backlit graphic LCD.

Display languages: DE / EN / FR



Advantages:

The logo consists of a central orange diamond shape with a white border. Inside the diamond, the word "BELUK" is written in a bold, orange, sans-serif font. The diamond is flanked by two white triangles pointing outwards, one on each side, creating a larger, irregular shape.

-
- Can control inductive and capacitive stages in parallel.
 - Dynamic compensation in connection with our thyristor controllers, switching time <100ms
 - 1-phase or 3-phase measurement for asymmetrical networks
 - Simple commissioning through plain text menu guidance
 - Algorithm that protects the capacitors or ensures a longer service life through even distribution of the switching cycles and operating hours (best fit)
 - works in 4 quadrant operation (import / export)
 - Security level password protected
 - Alarm configuration for maintenance work e.g. Loss of power or exceeding of switching cycles
 - Avoidance of overcompensation through shortened shutdown
 - Defect step detection

Useful information:

The logo for BELUK, featuring the word "BELUK" in orange capital letters inside a white rectangular box with a double border, which is itself centered within a larger orange diamond shape with a white border.

BELUK

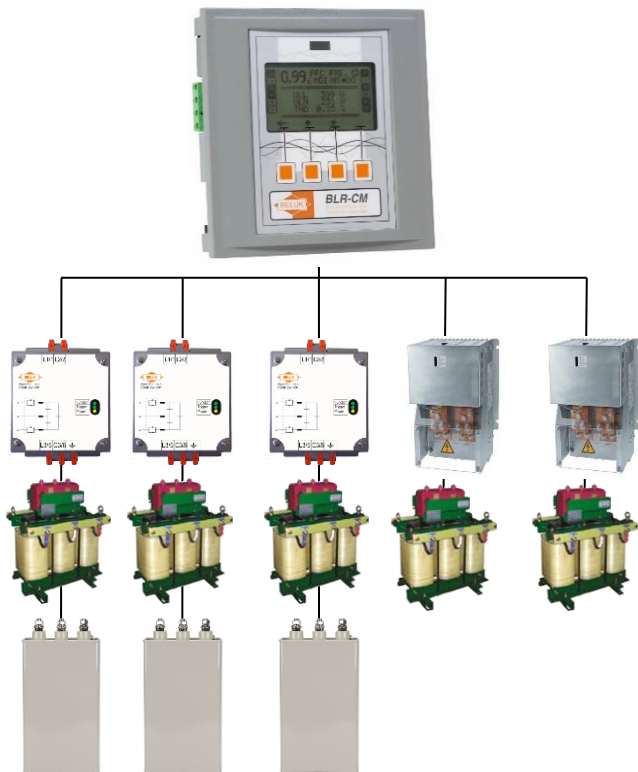
- long service life of our controller (experience with over 100,000 devices worldwide)
- Developed and manufactured in Germany
- Optional Modbus-RTU interface RS 485 (Modbus slave) thus fulfills the open communication standard according to IEC 60870
- Option Q (u) allows voltage-controlled compensation
- Compensation of a transformer for which there is no fixed stage can be solved with the CM in two ways (offset reactive power or medium-voltage side current measurement)
- It is possible to use an external signaling contact via a potential-free changeover contact (250V AC / 5A max.), E.g. for a signal light
- Digital input (adjustable logic: HIGH or LOW active / input signal: 90 - 250V AC) for switching between target cos phi 1 and 2 or for suppressing the I low alarm (DI)
- TÜV and UL certified
- Dimensions / cut-out: 144 x 144 mm / 135 x 135 mm

BLR-CM Q(U)

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Voltage maintenance with the BLR-Q (U)

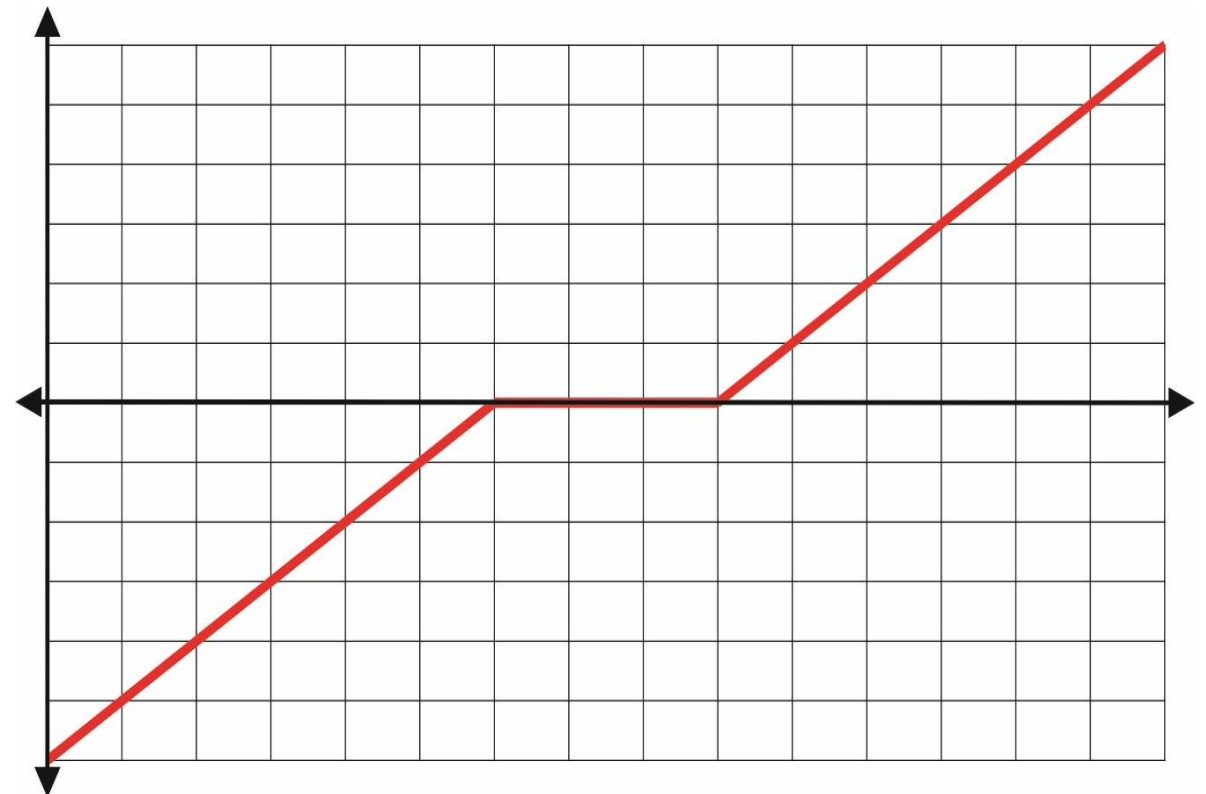
In order to keep the voltage in interconnected networks stable, over or under compensation can be used to influence the voltage level. The BLR-CM-Q (U) can use a standardized characteristic curve to compensate for voltage deviations via a capacitor or reactor stages.



Cos phi ind
Max. 10,60

Cos phi
1,00

Cos phi cap
Max. C0,60



BLR-CM Q(U)

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Voltage maintenance with the BLR-Q (U)

Setting:

COS PHI KAP is approached with the setting for SET VALUE 1.
COS PHI IND is approached with the setting for SET VALUE 4.

The setpoints are calculated from the set NOMINAL VOLTAGE and the Percentage deviation.

e.g. NOMINAL VOLTAGE 11kV

COS PHI KAP c 0.60

SET VALUE 1 $0.90 * \text{NOMINAL VOLTAGE}$

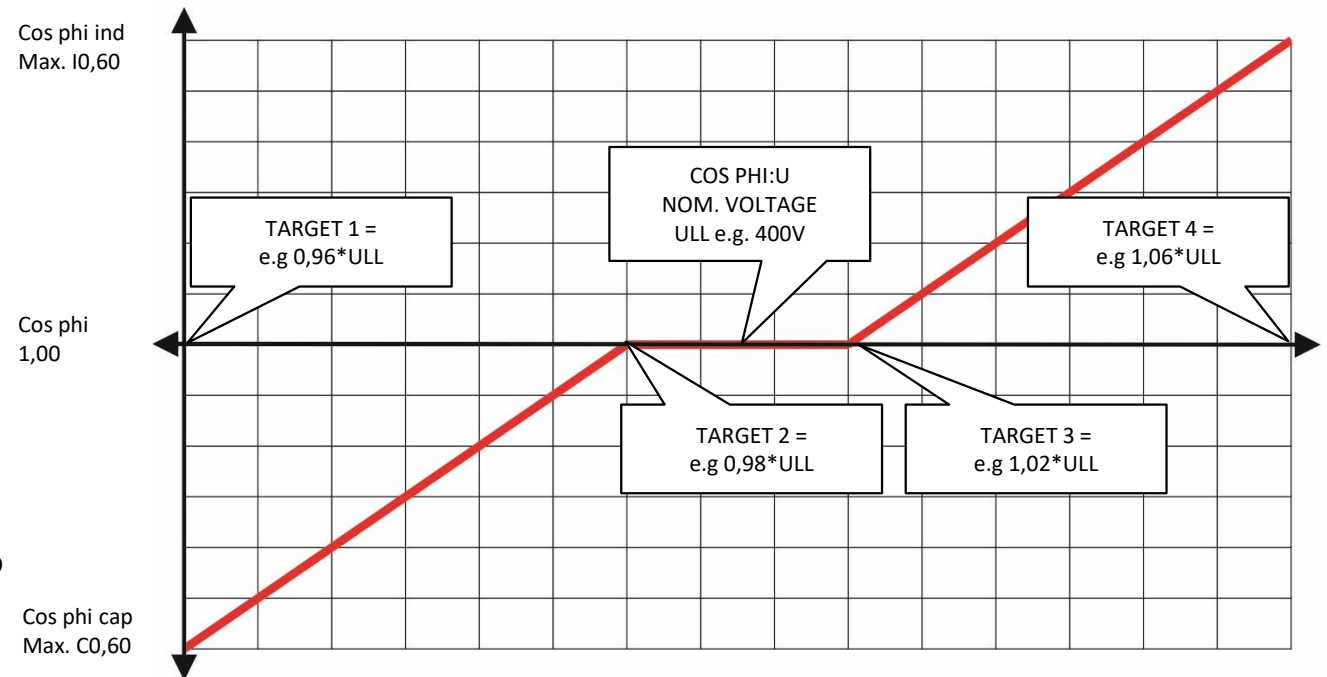
If the measured voltage falls more than 10% below the set one Nominal voltage, the controller uses the value of COS PHI KAP as target COS PHI.

The setting is made in the same way in the inductive range. Between the two The BLR-Q (U) dynamically determines its target cos phi.

By means of the SET VALUES 3 & 4, the characteristic can be close to the target voltage

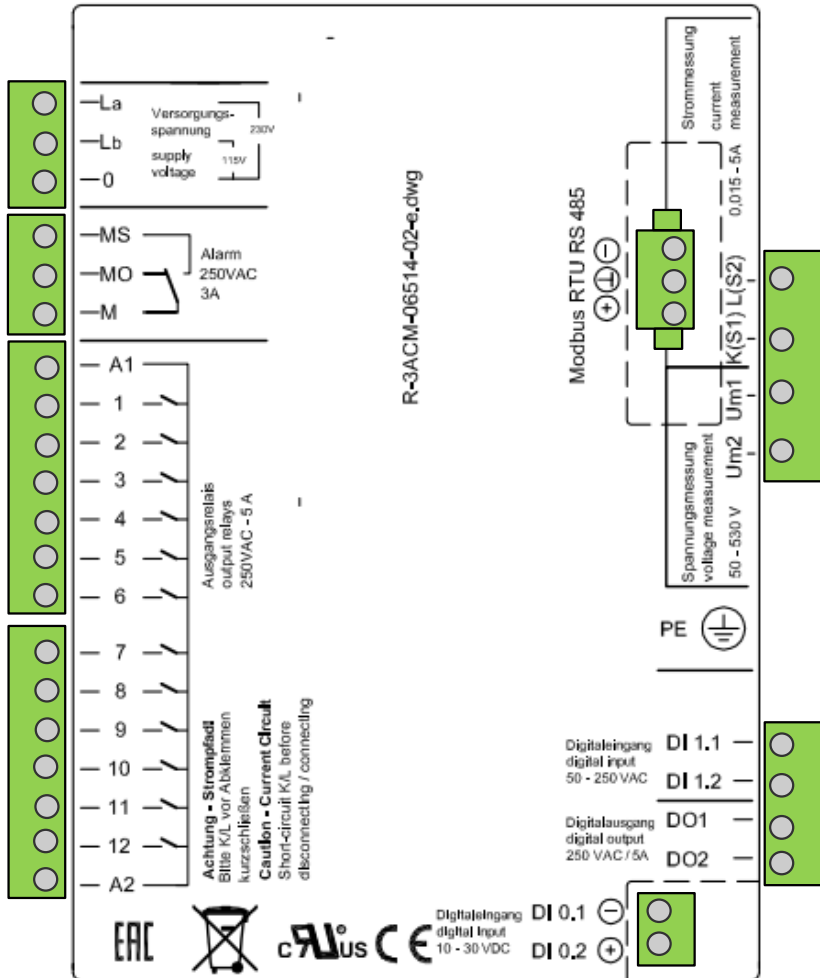
can also be adjusted to set the tolerance range for which none Voltage regulation is necessary. If the mains voltage is within the Tolerance range

the value set under COS PHI BASIS is used as the control target.



Features:

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BLR-ACM 12 R
with Option MB

Features:

Measurement and supply voltage are separated.

Supply: 115 V DC

230 V AC

Voltage measurement: 50V - 530V (tolerance 0.5%)

Current measurement: 0.015 - 5 A (overload 20%)

Connection: Plug-in screw terminals up to 2.5mm²

1 phase measurement

Circuit breakers / relays (left) and
Thyristors (right) can be switched.

Options:

Dynamic control (option -T)

3-phase measurement (option -3A)

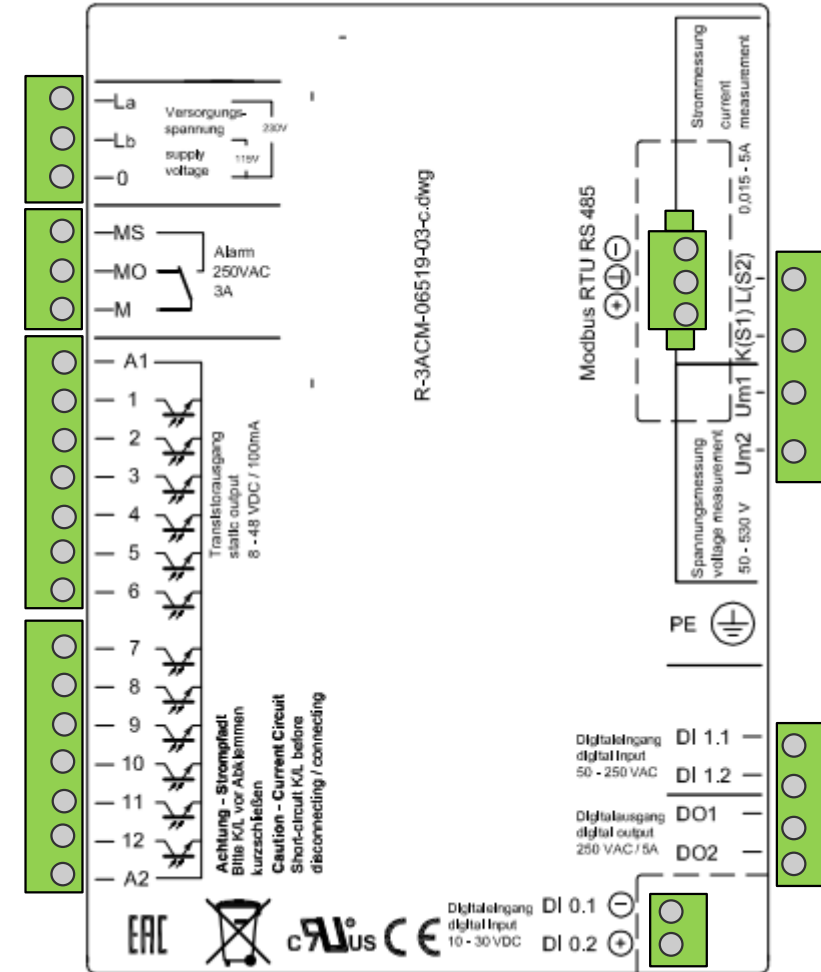
Voltage-dependent regulation (option Q (u))

High voltage algorithm (option -HV)

Data storage

Modbus

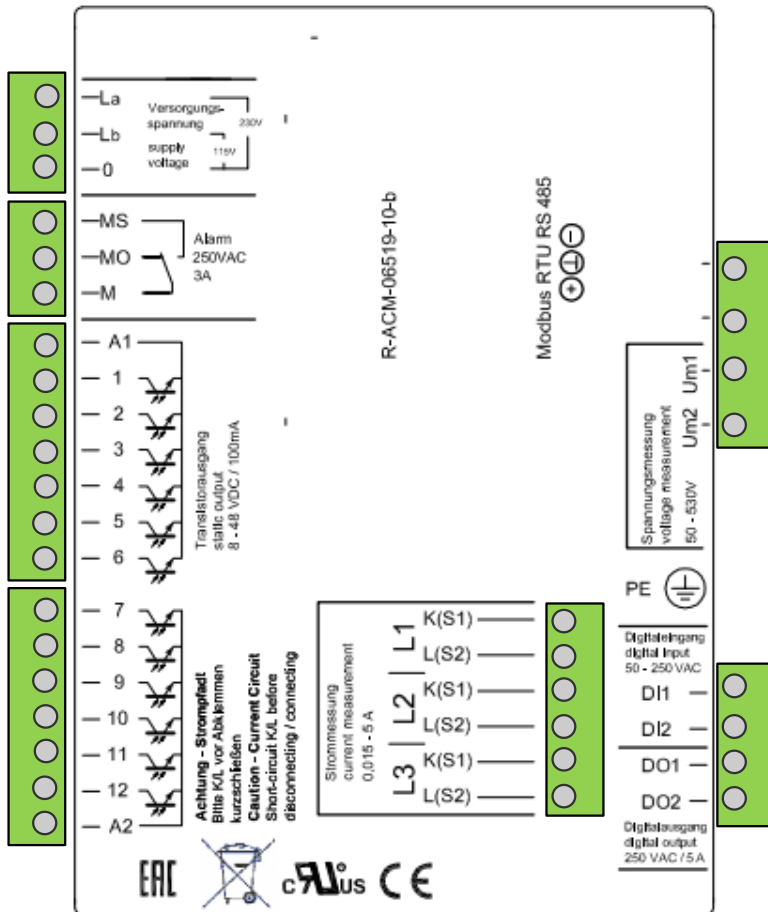
Digital input



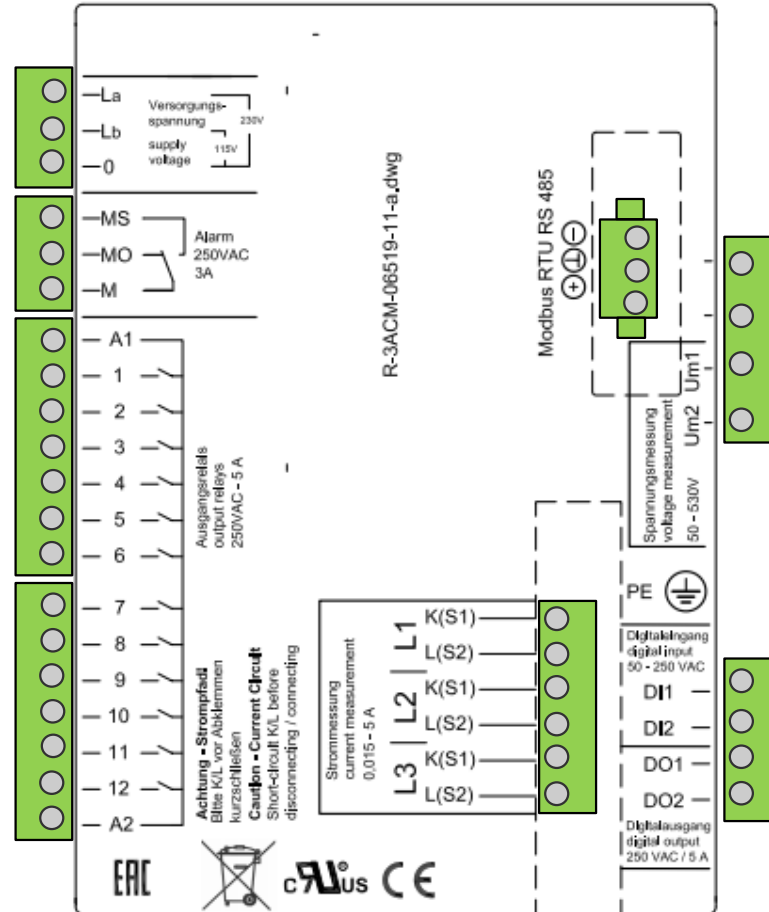
BLR-ACM 12 T
with Option MB

Features:

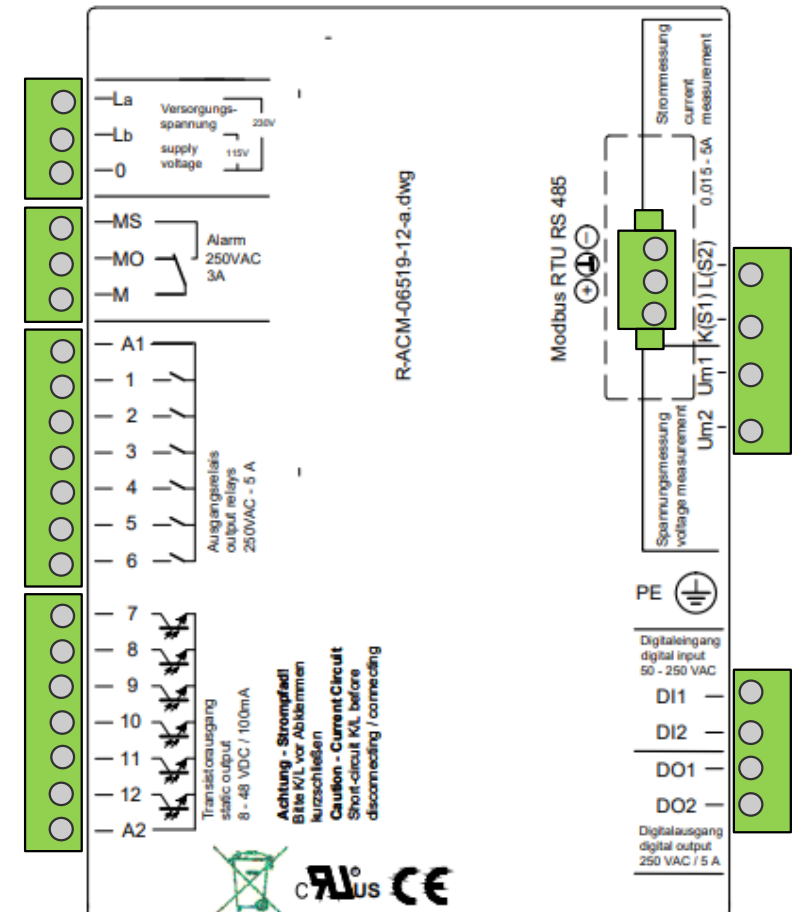
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BLR-ACM 12T
with Option 3A



BLR-ACM 12R
With Option 3A / MB



BLR-ACM 12RT
with Option MB

BLR-CXplus

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Order now!

You have questions about our products, we are happy to help you.

Contact us by email
blr@beluk.de

Our team will be happy to advise you at
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