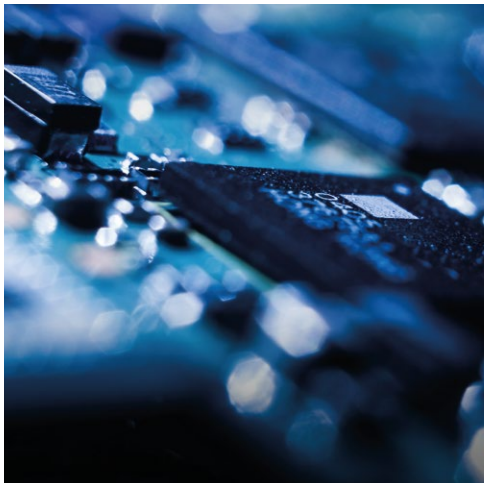
rabbit



SINCE
1989

—
STREET LIGHTING
CONTROL

REACTIVE POWER
COMPENSATION
ACTIVE POWER REDUCTION

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ABOUT THE COMPANY

Gone are the days when everyone lit their way with their own torch. Romantic gas lamps that were manually lit at dusk are also the past. Today, the city light up every evening with a huge number of lamps increased holiday periods by light decoration and illumination of monuments. And it's not for free!

In contrast to the traffic lights, street lamps are not an absolute necessity - but their absence would lead to strong protests by residents. A much better solution for economical community is rational organization of lighting and proper control over it. Appropriate, i.e. responding to the needs of users while minimizing the costs.

Creating a good solution for a particular customer requires both substantial technical knowledge, knowledge of market trends and practical experience. This is what makes **RABBIT**, which exists since 1989, stand out. It deals with the control, management and monitoring of external lighting. Comprehensively solves problems concerning lighting. Adjusts projects to individual needs. Offers professional guidance and execution of installation works, service, maintenance lighting and training. 33-year experience collected by the company is supported by numerous realizations. Its devices control external lighting not only in Poland (e.g. comprehensive solutions for Warsaw and Krakow), but also in Estonia, Romania, Lithuania and Latvia. Significant savings arising from modernization of lighting are usually achieved by optimizing the moment of switching the street lighting on and off. In the simplest case, this is correlated with the time of sunrise and sunset. For a big city small shifts of that moment can mean the difference in cost expressed in thousands of PLN. Therefore, digital astronomical CPA programmers, which precisely define the right moment to switch, enjoy great interest of our customers. Municipalities appreciate the savings obtained after installation of the programmer in the lighting system and therefore fast return on investment, while energy companies emphasize their functionality and minimal risk of failure.

For more than a quarter of a century, we focus on modern technology, reliability and long life. We invite you to familiarize yourself with our offer and cooperation, which will soon bring tangible results.

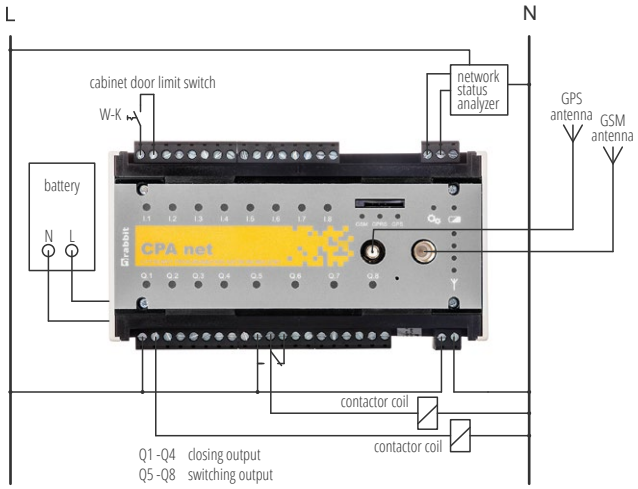
CPAnet

CONTROL AND MONITORING SYSTEM

CPAnet is a modern system that is used for remote monitoring and management of street lighting through the website.

We refer to this system as intelligent as it is able to select the most appropriate moment and time to switch on/off the lights and adjust the light intensity. This considerably reduces power consumption. The system consists of controllers and software. System controllers switch on the lighting system by contactors also allowing control of power reducers operation. Built-in GPS receiver allows to pinpoint the geographical location of the lighting system, therefore to precisely specify the moment of sunrise and sunset. Time downloaded from the GPS frees the user from having to correct the clock in the driver. The device is mounted in the lighting cabinet. Along with the connected lighting circuits it creates a system that can be remotely monitored by the user. CPAnet is user-friendly - the controller mounted in the lighting cabinet is automatically localized in the system. Each user after logging in to its account www.cpanet.pl has access to its subordinate structure of lighting (town, municipality). In addition, the user can secure access to the system with SMS password - as in banking systems.

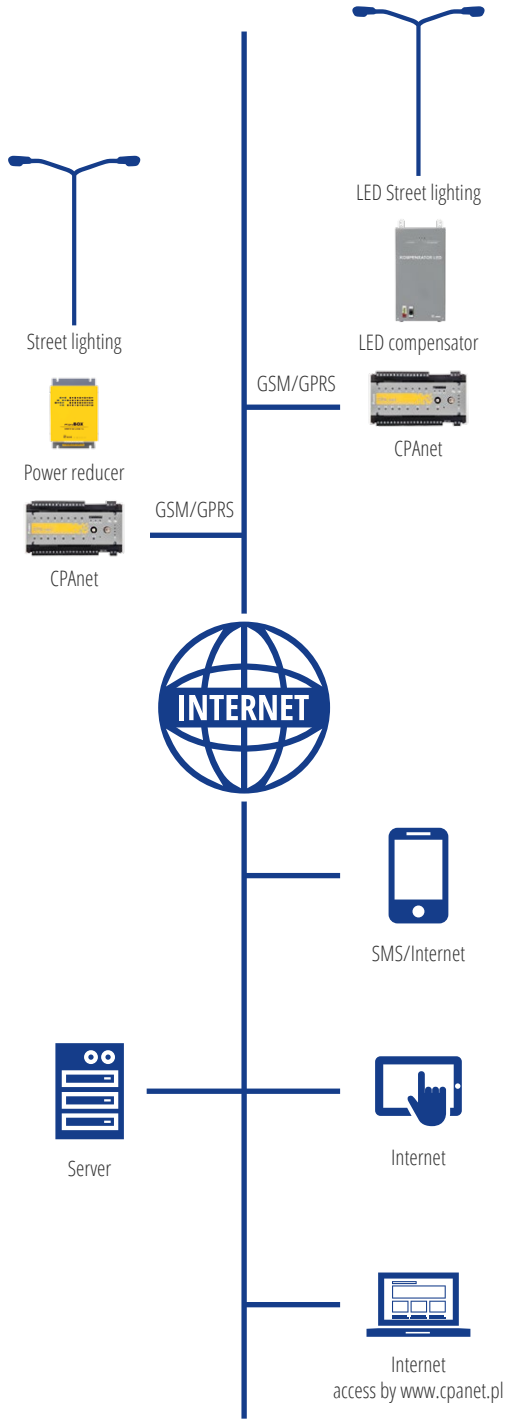
WIRING DIAGRAM



TECHNICAL SPECIFICATIONS

- supply voltage: 85-264 VAC, 47-440 Hz
- driver size (width / height / depth): 150 x 85 x 110 mm
- width of the device: 9 modules
- number of outputs: 8 (4 circuit, 4 switch)
- outputs current capacity: AC1: 6 A/250 V AC; DC1: 6 A/24 V DC
- number of intputs: 8
- operating temperature: from -30°C to +85°C
- protection degree: IP20
- DIN rail mounting
- cooperation with a network analyzer/meter

DIAGRAM OF THE SYSTEM



SYSTEM FEATURES

- full control and management through a website
- GPS time synchronization (time and geographical location downloaded from the GPS enable accurate calculation of sunrise and sunset on a given day and location)
- communication: GPRS, SMS
- automatic location of the controllers on the website map
- easy creation and management of groups of drivers
- possibility to emergency switch the lighting on/off via SMS (mobile phone or web pages)
- real-time monitoring and analysis of network parameters: current, voltage, power consumption, active power, reactive power
- archiving and visualization of measurement and alarm data
- reporting system
- user authentication (login, password) and giving them different powers
- remote software updates and settings on GPRS
- free SIM card for 24 months
- access to free software on the website
- application for mobile devices
- emergency power supply from a built-in battery
- LEDs on the front panel, indicating the status of inputs and outputs, GSM signal, GPRS, GPS, network coverage, battery charging status
- 6 output modes: astronomical, daily, cascade, service, reduction, weather
- possibility of introducing 10 exceptions to the illumination work schedule (e.g. public holidays, local holidays, etc.)
- ability to set separate patches for summer and winter
- immediate information on the occurrence of alarm situations, i.e. power failure, failure of individual phases, power excess/reduction, cabinet openings
- remote lightning power switch on/off during maintenance
- possibility to remotely program lighting with APC-2 and APC-LED systems
- possibility to turn on/off lighting via SMS (e.g. sports fields)
- possibility to customize road lighting to the current volume of traffic (based on data from an external traffic control system)
- system designed for use both in new and existing lighting systems
- temporary lack of access to the Internet does not interfere with operation of the controller
- virtual photocells can be connected, allowing an immediate response to severe weather changes. Its proper use allows achieving substantial savings.

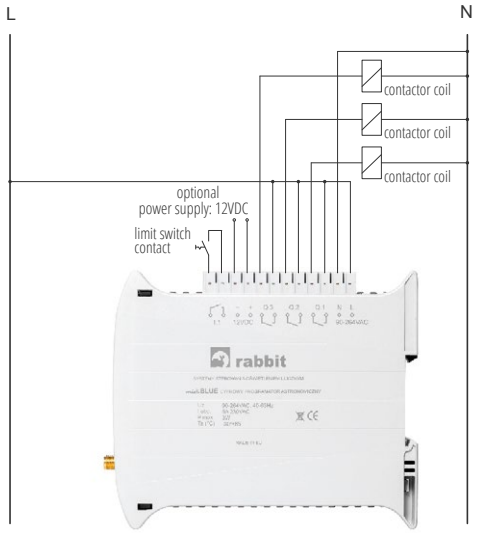
midiBLUE

STREET LIGHTING CONTROL SYSTEM

midiBLUE is a modern and intelligent street lighting controller. It is designed for turning on/off and monitoring operation of lighting infrastructure. The controller is programmed using a website.

The device calculates sunrise and sunset times on the basis of geographical position or imports the data from astronomical tables. The midiBLUE controller synchronizes time with the Network Time Protocol Server, allowing the lighting to be turned on precisely. The time taken directly from the atomic clock guarantees absolute accuracy and makes any clock corrections made by the user in the controller unnecessary. This small device is mounted in a lighting cabinet. Together with online service, it creates a system that allows for remote monitoring and management of a street lighting. This type of solution enables data for a large amount of cabinet to be processed in real time. It has a direct impact on improving a quality of lighting, reaction time in emergency situations and reducing costs.

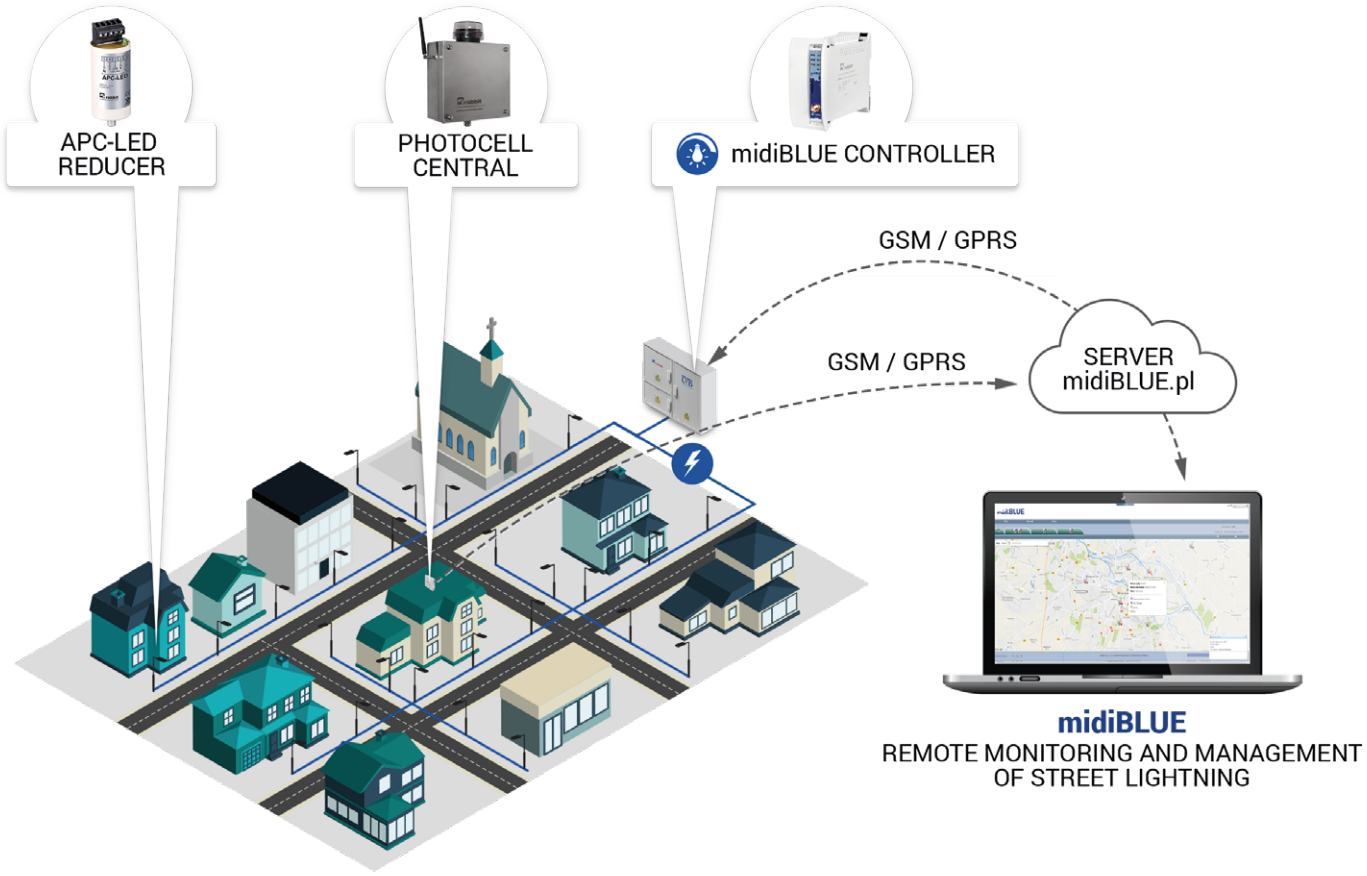
WIRING DIAGRAM



TECHNICAL SPECIFICATIONS

- supply voltage: 90-264 VAC, 40-63 Hz
- driver size (width / height / depth): 45 x 100 x 120 mm
- width of the device: 3 modules
- number of outputs: 3
- outputs current capacity: AC1: 6 A/250 V AC; DC1: 6 A/24 V DC
- number of inputs: 1
- operational temperature: from -30°C to +85°C
- protection degree: IP20
- DIN rail mounting

DIAGRAM OF THE SYSTEM



SYSTEM FEATURES

- full control and system management through the website
- synchronisation of time with server Network Time Protocol - time taken directly from the atomic clock guarantees absolute accuracy
- communication: GPRS, SMS
- possibility to create and manage groups of controllers
- possibility to emergency switch on/off the lighting via SMS
- user authorisation (login, password) and giving them various rights
- automatic summer/winter time change
- possibility to program up to four switch on/off sections at fixed hours including astronomical switch on/off
- 4 output operation modes: astronomical, daily, cascade, service
- LEDs on the front panel indicating the status of inputs and outputs, GSM and GPRS signal, power status
- possibility to set 10 exceptions to the lighting schedule (for example calendar holidays, local holidays, etc.)
- possibility to upload any astronomical table
- possibility to make separate corrections for summer and winter
- alarm analysis system
- prompt notification of occurrence of alarm-type events, i.e. power outage and openings of the cabinet
- visualisation of controllers on a website map
- reporting system
- HTTPS encryption
- data archiving
- event logging
- lighting operation time counter (separate for each control output)
- remote update of software and setting via GPRS
- remote programming of luminaries with APC-LED system
- astronomical operation mode based on GPS location or data from astronomical tables
- remote switching on/off the lighting during maintenance works
- possibility to control lighting in sports facilities, for example sports fields, school playgrounds, etc.
- synchronisation of starts within a group of controllers (signal multiplexing) possibility to correct start times and switch off the lighting basing on a signal coming from central photocells for immediate response to severe weather changes. Its proper use allows significant savings to be reached.

midiBLUE NFC

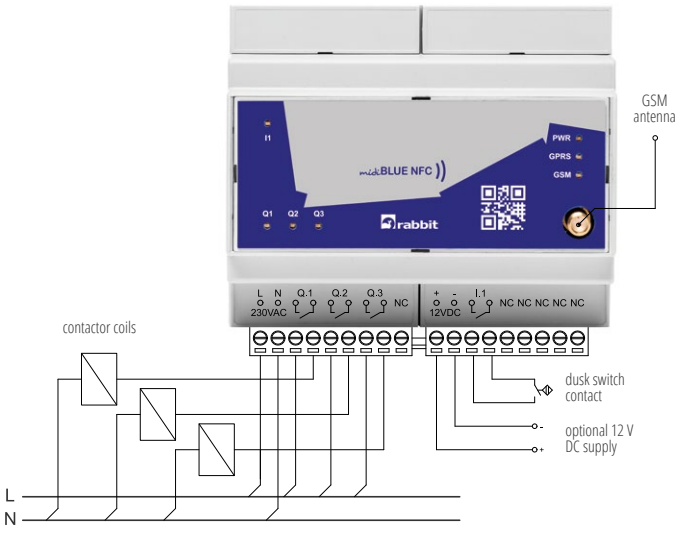
STREET LIGHTING CONTROL SYSTEM

midiBLUE NFC is a modern street lighting controller. It is used to switch lighting on, off and monitor it remotely via a web page as well as by a proximity via a smartphone from the midiBLUE NFC application.

The midiBLUE NFC controller calculates the sunrise and sunset times from the geographical position or retrieves them from an astronomical table. This small device is mounted in a lighting cabinet. In conjunction with the Internet site, it creates a system that allows for remote monitoring and management of street lighting. This type of solution enables real-time data processing for a large number of lighting cabinets. This has a direct impact on improving the quality of lighting, the speed of response in emergency situations and cost reduction.

Controller operation parameters can be changed and programmed via the website or by means of wireless NFC communication. This is done by means of an application that can be downloaded free of charge from the Google Play store. The midiBLUE NFC controller synchronizes time with the Network Time Protocol server, thus switching the lights on very precisely. The time retrieved directly from the atomic clock ensures absolute accuracy and relieves the user from adjusting the clock themselves in the controller. In addition, it ensures that all controllers are switched on at the same time, with one-second accuracy.

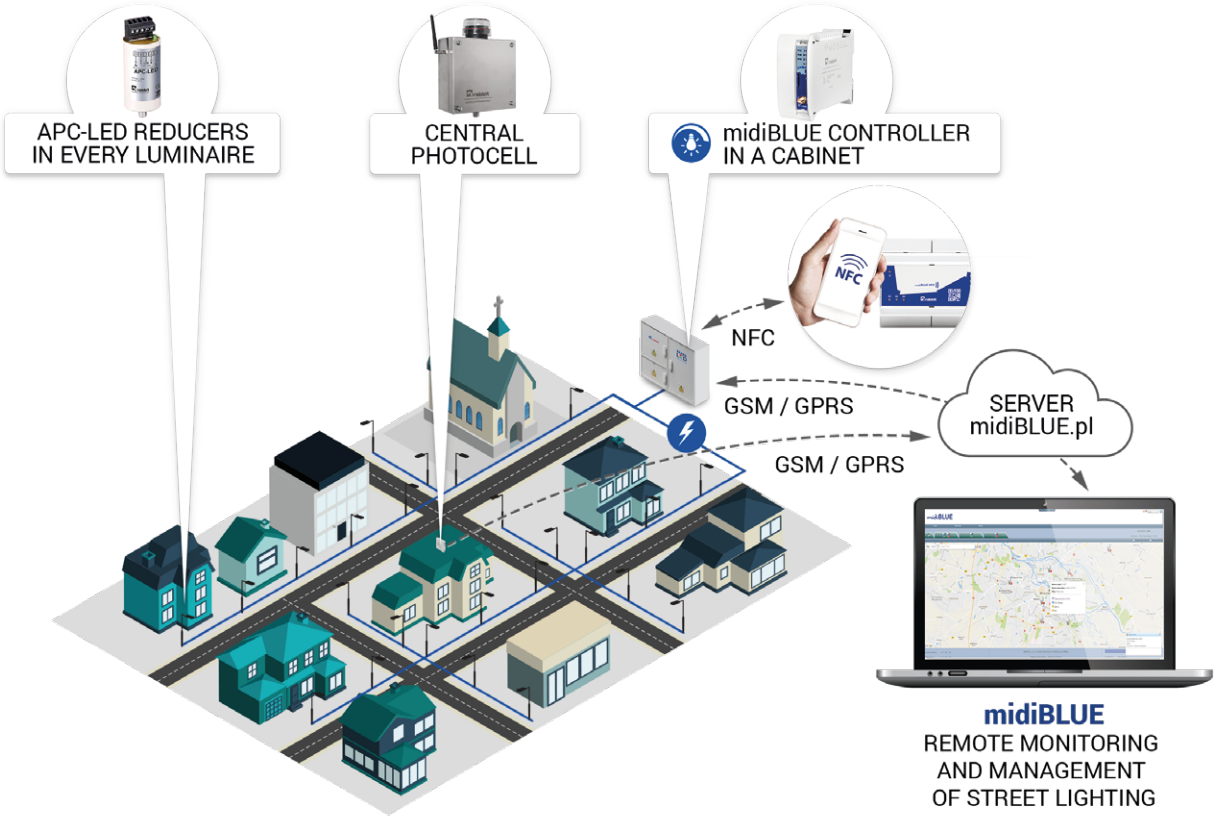
WIRING DIAGRAM



TECHNICAL PARAMETERS

- power supply voltage: 90-264 VAC, 40-63 Hz
- dimensions (W/H/D): 106 x 91 x 62 mm
- device width: 6 modules
- number of outputs: 3
- output current capacity: AC1: 6 A/250 V AC; DC1: 6 A/24 V DC
- number of inputs: 1
- operating temperature: from –30°C to +85°C
- protection: IP20
- DIN rail mounting

SYSTEM OPERATION DIAGRAM



FEATURES OF THE DEVICE

- full control and management of the system via a website
- controller programming is performed remotely via a website or by a proximity via a smartphone from the midiBLUE NFC application
- time synchronization with the Network Time Protocol server – time retrieved directly from the atomic clock guarantees an absolute accuracy
- communication: GPRS, SMS, NFC
- possibility to create and manage groups of controllers
- possibility to switch the lighting on/off via SMS in an emergency
- user authorization (login, password) and assignment of various permissions
- automatic summer/winter time change
- possibility to program up to four switch-on/off intervals at fixed hours, including astronomical switch-on/offs
- 4 output modes: astronomical, daily, cascade, service
- LEDs on the front panel indicating the status of inputs and outputs, GSM, GPRS signal, power supply status
- possibility to introduce 10 exceptions to the lighting operating schedule (e.g. calendar holidays, local holidays, etc.)
- possibility to upload any astronomical table
- possibility to set separate corrections for summer and winter
- alarm analysis system
- immediate information on the occurrence of alarm situations, i.e. power failure and cabinet opening
- visualization of drivers on a website map
- reporting system
- HTTPS encryption
- data archiving
- event recording
- lighting operating time counter (separate for each control output)
- remote upgrade of software and settings via GPRS
- remote programming of luminaires with APC-LED system
- operating in an astronomical mode based on GPS position or astronomical table data
- remote switching on/off of lighting during maintenance works
- possibility to control lighting in sports facilities such as football pitch, school playgrounds, etc.
- the ability to connect a central photocell for immediate response to strong weather changes. Its proper use allows to achieve great savings.

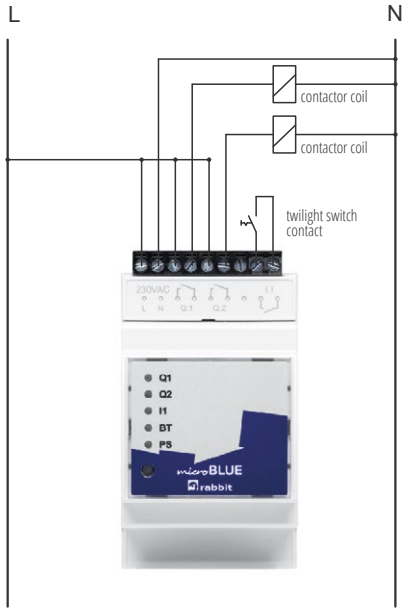
microBLUE 3m

PROGRAMMABLE ASTRONOMICAL CLOCK

Digital astronomical controller microBLUE 3m is a modern device, designed for controlling the street lighting. Controller programming is realized with use of smartphone or tablet from mBLUE application level.

The device calculates the hours of sunrise and sunset according to the current date and the geographical location in which it is installed or it retrieves them from the table. Functions of the controller and its programming can be done from your smartphone or tablet through Bluetooth wireless connection. It is easier thanks to a simple, free application with a friendly interface. Owing to this, communication with the controller mounted in a lighting cabinet is done remotely, without opening it.

WIRING DIAGRAM



FEATURES OF THE DEVICE

- full control and programming with use of smartphone or tablet from mBLUE application level
- simple and intuitive interface of free mBLUE application
- time synchronization according to smartphone or tablet GPS
- Bluetooth 2.0 communication
- access control with use of PIN code
- recording of events
- automatic summer/winter time change
- possibility of programming up to three night breaks or four activations at constant time
- LED on the front panel, signalling states of inputs and outputs, state of wireless connection with smartphone or tablet, state of power supply
- automatic location of controllers in the application map
- lighting operation time counter (independent for each control output)
- cooperation with twilight switch
- possibility of remote settings and firmware replacement
- possibility of remote programming of fittings with APC- LED system

TECHNICAL SPECIFICATIONS

- supply voltage: 230 V +5/-10%, 50 Hz
- driver size (width / height / depth): 52 x 104 x 62 mm
- width of the device: 3 modules
- number of outputs: 2 (two independently programmable outputs)
- outputs current capacity: AC1: 6 A/250 V AC; DC1: 6 A/24 V DC
- number of inputs: 1 (twilight switch, event recorder)
- operational temperature: from -30°C to +80°C
- protection degree: IP20
- DIN rail mounting

microBLUE GPS

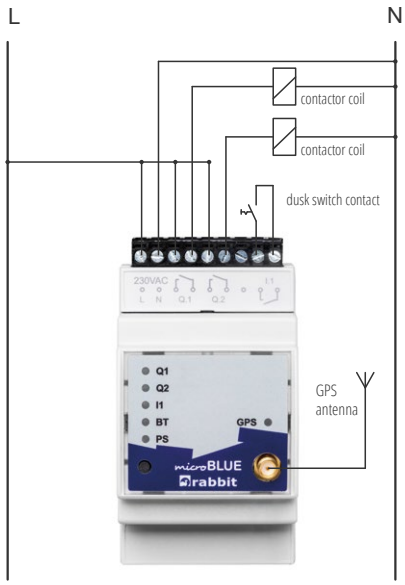
PROGRAMMABLE ASTRONOMICAL CLOCK

microBLUE GPS is a modern street lighting controller with built-in GPS receiver. Programming of the controller is carried out by a smartphone from the mBLUE application.

The microBLUE GPS controller is equipped with GPS receivers with built-in internal antenna. Such solution ensures precise time synchronization and relieves the user of the need for self-adjustment of the clock in the controller. Driver parameters can be changed and programmed from your smartphone or tablet via Bluetooth wireless connectivity. This is facilitated by the user-friendly mBLUE application, which can be downloaded free of charge from Google Play. Thanks to this solution, the communication with the controller mounted in the lighting cabinet takes place remotely, without the need to open it.

The user can secure access to microBLUE GPS with a PIN code and always find it on the map displayed on the phone.

WIRING DIAGRAM



DEVICE PROPERTIES

- full control via your smartphone or tablet from the mBLUE application.
- simple and intuitive interface of the mBLUE application
- free mBLUE application (to download from Google Play)
- time synchronization according to GPS signal
- communication via Bluetooth 2.0
- access to the controller blocked by a PIN code
- event recording
- automatic change of summer/winter time
- possibility to program up to three night breaks or four activations at fixed hours
- possibility of introducing 365 exceptions to the lighting schedule
- LEDs on the front panel indicating the status of inputs and outputs, status of wireless connection with smartphone or tablet, power status
- automatic location of the controller on the map of the mBLUE application
- cooperation with dusk switch
- lighting operation time counter (separate for each of the control outputs)
- possibility of remote exchange of software and settings
- possibility of remote programming of luminaires with APC-LED system
- possibility of uploading any astronomical table
- the possibility of creating your own astronomical table with the help of the table generator
- in buildings, metal cabinets and places where GPS range is limited, there should be connected an external antenna

TECHNICAL PARAMETERS

- power supply voltage: 230 V +5/-10%, 50Hz
- dimensions (w/h/l): 52 x 104 x 62 mm
- device width: 3 modules
- number of outputs: 2 (two independently programmable outputs)
- current-carrying capacity of outputs: AC1: 6 A/250 V AC; DC1: 6 A/24 V DC
- number of inputs: 1 (dusk switch or event recorder)
- operating temperature: from -30°C to +80°C
- degree of protection: IP20
- Installation on the DIN bar

CPA 4.0

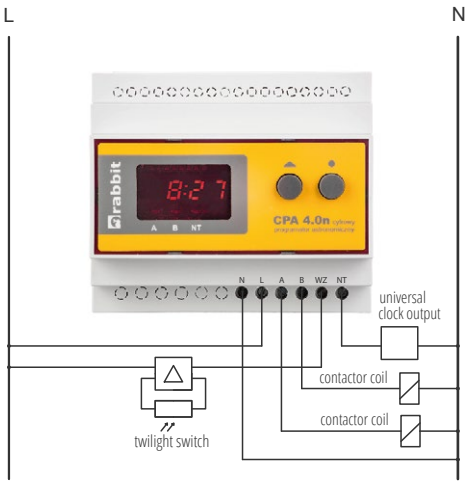
PROGRAMMABLE ASTRONOMICAL CLOCK

CPA 4.0 is a controller designed for switching on and off the street lighting.

Hours of switching on and off are determined on the basis of data from an array of sunrises and sunsets, and amendments made by the user. This almost maintenance-free device successfully replaces the previously used twilight switches and allows you to optimize lighting expenditure to a level equivalent to user expectations.

Installed in lighting cabinet and properly programmed CPA4.0 controller does not require further intervention of the user. It controls lighting in annual cycle, without the need for periodic adjustment. Device programming is performed using controller buttons.

WIRING DIAGRAM



FEATURES OF THE DEVICE

- automatic change of summer/winter time
- programmable night interruption
- ability to block night break e.g. on weekends, on holidays
- cooperation with twilight switch
- easy to read LED display and ergonomic keyboard facilitate making settings
- LEDs on the front panel indicate the status of inputs and outputs
- ability to lock the keyboard and controller settings, using the remote control
- lighting operation time meter (separate for each of the control outputs)

TECHNICAL SPECIFICATIONS

- supply voltage: 230 V +5/-10%, 50 Hz
- driver size (width / height / depth): 105 x 90 x 65 mm
- width of the device: 6 modules
- number of outputs: 3 (two independent programmable outputs in astronomical mode and one universal)
- outputs current capacity: AC1: 8 A/250 V AC; DC1: 8 A/24 V DC
- number of intputs: 1 (twilight switch)
- operating temperature: from –30°C to +50°C
- protection degree: IP20
- DIN rail mounting

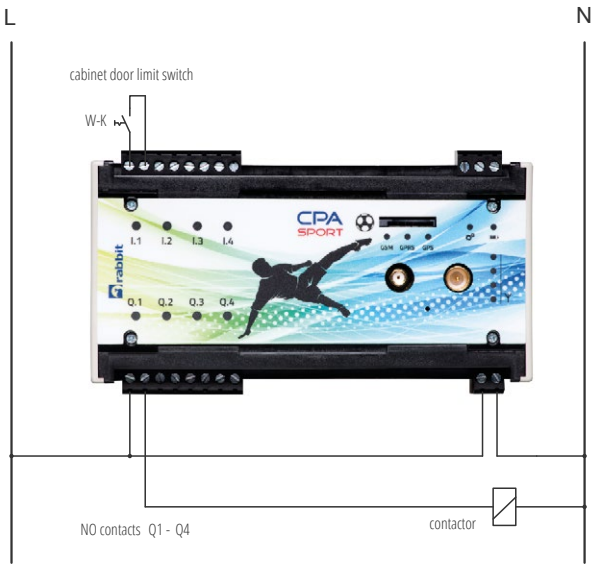
CPA Sport

SPORTS FACILITY LIGHTING CONTROLLER

CPA Sport is a controller dedicated to management of lighting at sports facilities.

Programming of the controlled is performed via a website. In comfortable conditions, from any location, you may set: password and activation duration, calculate estimated cost of lighting in a given location, as well as specify a time interval, in which lighting shall be turned on via SMS. Thanks to such solution, a sports facility administrator has a full control of lighting and the user has an optimum comfort. Should it turn dark, you may turn the light on yourself by sending a text message. Password and a special phone number shall be placed in a visible place at a facility. Such solutions offers significant savings of electrical energy costs. Lighting is turned on only when it is necessary.

WIRING DIAGRAM



DEVICE PROPERTIES

- full control and management of the device via a website
- turning the light on via a text message
- possibility to set any time of turning on/off of lighting on pitches
- possibility to upload a schedule of sports classes (then, lighting shall turn on automatically before a class starts and turn off after a class ends)
- possibility to separate facility functions (lighting may be turned on just for a selected pitch)
- possibility to manage several sports facilities
- synchronization of time with GPS (from an in-built GPS receiver there is downloaded an exact time and geographic location)
- free SIM card for 24 months
- communication: GPRS, SMS
- Instant notification about emergency situations, i.e. power failure, cabinet opened
- system of reporting and storage of alarm data
- user authentication (login, password) as well as assigning various permissions
- automatic location of controllers on website's map
- remote change of software and settings via GPRS
- access to free software on a website
- LEDs on the front panel, which signal the state of inputs and outputs, GSM, GPRS, GPS signal, network coverage, battery charging status
- 6 modes of output operation: astronomical, daily, cascade, service, reduction, weather
- possibility to introduce 10 exceptions from the lighting schedule (e.g. public holidays, local holidays, etc.)
- possibility to set separate adjustments for summer and winter

TECHNICAL PARAMETERS

- power supply voltage: 85-264 VAC, 44-440 Hz
- controller dimensions (w/h/l): 150 x 85 x 110 mm
- device width: 9 modules
- number of outputs: 4
- current-carrying capacity of outputs: 2 A/230 V
- number of inputs: 4
- operating temperature: from -30°C to +85°C
- degree of protection: IP20
- Installation on the DIN bar

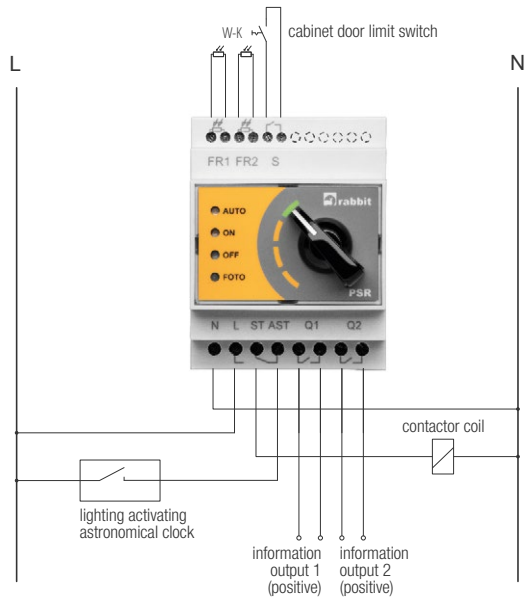
PSR

AUTONOMOUS MODE SWITCH

PSR autonomous mode switch serves as an emergency street lighting control. In the event of the clock failure, it may take over its tasks, thus allowing service engineers to identify, diagnose and remove the defect.

The system may be mounted in any control cabinet. Its major advantage is a possibility of connecting two sensors at a time, which increases failure-free operation of the device. If one sensor is defective or in the event of an act of vandalism resulting in the damage to the sensor (e.g. removed or covered as a result of painting), the second sensor takes over all functions and controls the device independently.
The device detects if measuring elements have been connected and if they work properly. In case of any irregularities or lack of connection of light-sensitive elements, a relevant LED light in the front panel will activate. If light-sensitive elements have not been connected, ST control output in FOTO mode is inactive. The device has regular boundary values of lighting activation (15 lx) and deactivation (25 lx).

WIRING DIAGRAM



Two information outputs Q1 and Q2 inform about switch knob location and defective operation of sensors or their absence.

FEATURES OF THE DEVICE

- emergency lighting control
- analogue light intensity measurement
- optical and sound signaling of work status
- possible to connect two sensors at a time
- possible to mount in any control cabinet

TECHNICAL SPECIFICATIONS

- supply voltage: 230 VAC +10/-15%, 50Hz
- dimensions (W/H/D): 68 x 90 x 65 mm
- device width: 4 modules
- number of control outputs: 1
- number of information outputs: 2
- measurement range 1- 500 lx
- output current-carrying capacity: 3 A/230V
- ambient temperature: -40°C to +85°C
- protection class: PSR - IP20, sensor - IP67

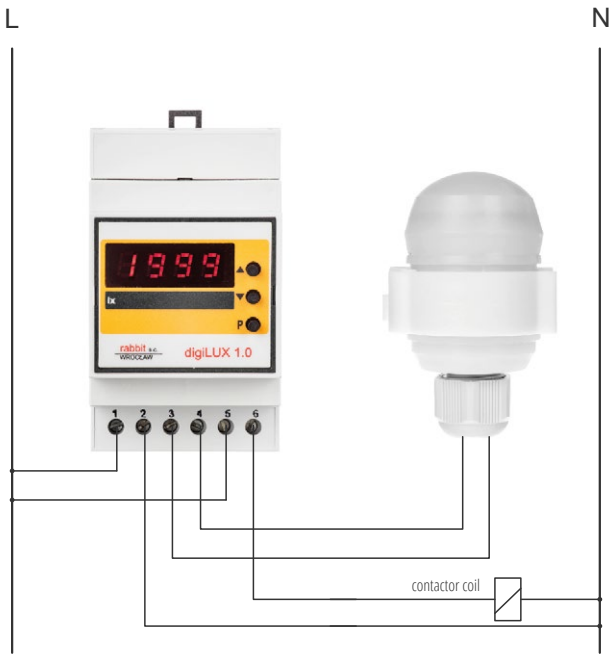
digiLUX

DIGITAL TWILIGHT SWITCH

digiLUX digital twilight switch is designed to control lighting: street, manufacturing facilities and industrial halls.

It is an autonomous device or operating as supplementation of digital astronomical CPA programmers. digiLUX measures the intensity of light with an accuracy of one lux in wide range and displays the measured value on the LED display. The device consists of measuring part and a sensor made based on light-to-frequency converter. Buttons placed on the front panel of the switch allow setting the level of intensity at which the light is switched on and off with an accuracy of 1 lx in the entire measuring range. Thanks the moment of switching the lighting delayed by 1 minute the digiLux switch avoids instability (short-term switching on and off cycles) caused by e.g. momentary lighting of the sensor. digiLUX allows you to switch the lighting on also during the day in case of very bad weather conditions.

WIRING DIAGRAM



FEATURES OF THE DEVICE

- digital measurement of light intensity
- ease and precision of setting the switching threshold (measurement resolution 1 lux)
- resistance to short-time lighting or masking of the sensor
- relay output (closing contact)

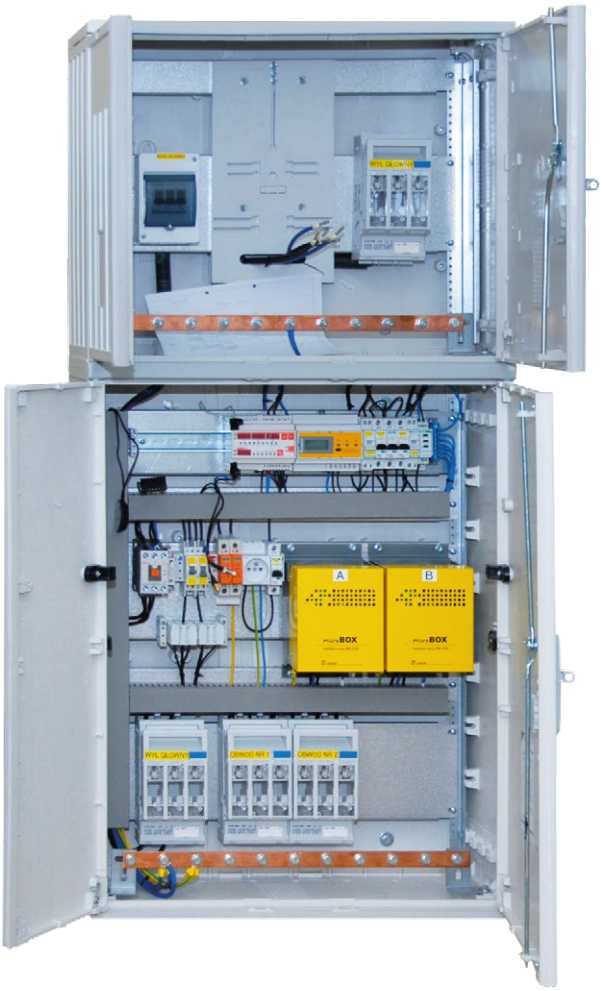
TECHNICAL SPECIFICATIONS

- supply voltage: 230 V +10/–20%, 50 Hz
- driver size (width / height / depth): 52 x 95 x 58 mm
- width of the device: 3 modules
- number of outputs: 1
- measurement scope 0-3500 lx
- outputs current capacity: 16 A/230 V
- operating temperature: from -20°C to +50°C
- protection degree: digiLUX – IP20, sensor – IP56
- DIN rail mounting

SSOU

STREET LIGHTING SYSTEM CABINET

SSOU is a modern street lighting cabinet.



SSOU in one enclosure integrates the measuring and distribution part, the system for central power reduction (power reducer) and the system for control and remote monitoring (CPA).

The cabinet housing houses three sections. These are:

1. measuring section
2. distribution section
3. power regulator section

Measuring section always has a separate door and closing. In the measuring section there are upstream of the counter protection and measurement devices that are installed depending on the needs and requirements of the energy supply company.

Distribution section contains typical elements of control circuits: contactors, security of lines powering individual lighting circuits and terminal blocks. In this section, the circuit of remote control and supervision CPAnet was placed. The last section contains power reducer with parameters corresponding to the needs of a specific location.

Cabinets are made according to customer requirements. At the step of order picking technical details are determined with the ordering party. A final draft is prepared, which after approval is implemented. As a standard the cabinets are mounted in housings made of aluminium, powder coated, although it is also possible to use other housings. We offer single-phase versions of cabinets or three-phase, with power range from 3.5 kVA to 120 kVA. The use of modern control system based on the CPAnet controller and power reducer allowed to create a solution fully corresponding to European standards. With the remote exchange of software, it is also flexible, because it can be adapted to customer needs changing over time.

TECHNICAL SPECIFICATIONS

- available power range:
  - single-phase versions: 3.5 kVA to 20 kVA
  - three-phase versions: 7.5 kVA to 120 kVA
- dimensions and weight depend on the version

LED CABINET

SZAFA LED
oświetlenie uliczne LED

LED STREET LIGHTING SYSTEM CABINET

The LED cabinet combines a comprehensive solution providing professional security and control of modern LED street luminaries in a single housing.

Compared to traditional street lighting fixtures, LED luminaries require a totally different security system. For this reason the LED cabinet houses four sections:

1. Security section
2. Power compensation section
3. Measuring section
4. Switching section

The security section contains all necessary elements protecting the power supply line against all kinds of over-voltages and current surges. Additionally, there is a "soft-start" system in this section in order to prevent current surge when switching on the lighting.

The next section includes a properly selected and performed compensator of LED's capacitive reactive power offering parameters corresponding to the needs of a specific location. The switching section contains common control components: contactors, protection for power lines supporting individual lighting circuits, control and remote monitoring system CPAnet and harmonic filters. The filters significantly "improve" the power factor, reducing harmonic losses generated by LED switch mode power supplies but also improve THD.

The measuring section is always equipped with a separate door and lock. This section includes upstream of the counter protection and measuring equipment which is installed depending on the needs and requirements of the power supply company.

The cabinets are performed according to customer requirements. Technical details are established with a customer at the stage of order completion. The final draft is drawn up, accepted and implemented. The cabinets are normally mounted in aluminium housings, powder coated, but it is also possible to use other housings. We offer single-phase or three-phase versions of the cabinets, with the power range up to 120 kVA. The use of modern control system based on CPAnet controller allowed us to develop a solution that fully complies with the European standards. Thanks to the remote software update it is also flexible because it can be adapted to customer needs that change over time.

FEATURES OF THE DEVICE

- capacitive reactive power compensation
- "on-line" control and full supervision over the cabinet work in real time
- over-voltage and lightning surge protection
- "soft-start" system – inrush current surge protection
- harmonic filter
- cabinet performance options: I or II insulation class
- ability to produce cabinets adapted for every control system

TECHNICAL SPECIFICATIONS

- available power range:
  - single-phase versions: up to 20 kVA
  - three-phase versions: up to 120 kVA
- dimensions and weight depend on the version

LED COMPENSATOR
LED MAX COMPENSATOR

COMPENSATOR OF LED'S CAPACITIVE REACTIVE POWER

A compensator of capacitive reactive power is a device used to eliminate capacitive reactive energy consumption.

LED compensator and LED MAX compensator are designed in such a way to significantly reduce the losses generated in the LED lighting installation which result from the flow of capacitive reactive power. In practice it means reduction of high bills for capacitive reactive energy, which is more and more often invoiced by power plants. The devices proposed by our company are designed to work in street lighting circuits equipped with LED lamps. The devices are pre-parameterized for specific circuits during production. Wide range of adjustment ensures optimal compensation, even with large changes in reactive power as in the case of installation of illuminations on the occasion of Christmas and other celebrations.

Compensator's controller regulates the tracking compensation in the range from 15% to 100%, i.e. e.g. the compensator 2250 VAR provides compensation of capacitive reactive power from 350 VAr to 2250 VAr.

The compensator may cooperate with CPAnet type street lighting controllers. In this way it enables automatic, remote supervision of the compensation process. It is best to install the device at the stage of designing and construction of new LED lighting cabinet. This solution significantly reduces the cost of the entire project.

FEATURES OF THE DEVICE

- optimisation of reactive power in LED lighting circuits
- 1- and 3-phase versions available
- tracking compensation of reactive power in the range from 15 to 100%
- power and compensation parameters may be read on the device's display
- may be used in cable networks, overhead lines, for internal and external lighting in power distribution systems supporting facilities
- compatibility with CPAnet system - remote management and network monitoring
- high economic efficiency allows to reduce the cost of reactive power and thus to improve the quality of energy
- environmentally friendly device – thanks to elimination of capacitive reactive power consumption, the CO_2 emission may be reduced
- rate of return on purchase of the device starting from 3 months

TECHNICAL SPECIFICATIONS

- power supply voltage: 230 V
- power range up to 3500 VAr in modular version, extendable to 7500 VAr in hybrid version
- operating temperature: from -20°C to +55°C
- protection level: IP20
- mounted in a lighting cabinet
- dimensions and weight depend on the version

APC–LED 1-10 V / APC–LED DALI

AUTONOMIC TIME RELAYS

APC-LED 1-10 V and APC-LED DALI are microprocessor-based time relays intended to control the power of a single LED luminaire of the street lighting.

APC-LED in a housing adapted to NEMA connector

A unique feature of the system is the ability to identify a current time based on the history of on/off switching cycles. The time of commencement of a full or partial power reduction and duration thereof are set at 30 min intervals. Switching in luminaires supplied from a single power line occurs simultaneously with a one-second accuracy.

APC-LED 1-10 V is designed to control LED power supplies with built-in light intensity reduction circuit, 1~10 V dc interface, PWM signal filling change or resistance.

APC-LED DALI is designed to control LED power supplies with a built-in light reduction system, DALI standard interface.

Relays allow for a temporary reduction of a luminous flux in LED luminaires of various types. The system has two time intervals pre-programmed, in which the luminous flux intensity is reduced on two different levels. A user may program the system so to change the scope of both time intervals as well as the reduction level. Programming shall comprise usage of an appropriate sequence of power supply on/off cycles.

APC-LED 1-10 V and APC-LED DALI may be programmed via a CPAnet system, a midiBLUE system or a microBLUE controller.

PROPERTIES

- lack of control line
- lack of clock and internal battery
- changeable settings in all luminaires simultaneously
- signaling of an operating state for maintenance purposes
- possibility to program the relay via CPAnet and midiBLUE systems as well as a microBLUE controller
- maintenance-free and easy-to-install device

TECHNICAL PARAMETERS

- power supply voltage: 230 V +5/–15%, 50Hz
- dimensions of the device (H / D): 95 x Ø 35 mm, (installation inside the LED luminaire)
- dimensions of the device in NEMA housing (H / D): 50 x Ø 84 mm, (installation inside the LED luminaire)
- number of outputs: APC-LED 1-10 V – 1, APC-LED DALI – DALI standard
- power consumption 0,5 W
- operating temperature: from -30°C to +80°C
- degree of protection: IP20

microBLUE

midiBLUE

CPAnet

microBOX 12A

POWER REDUCER

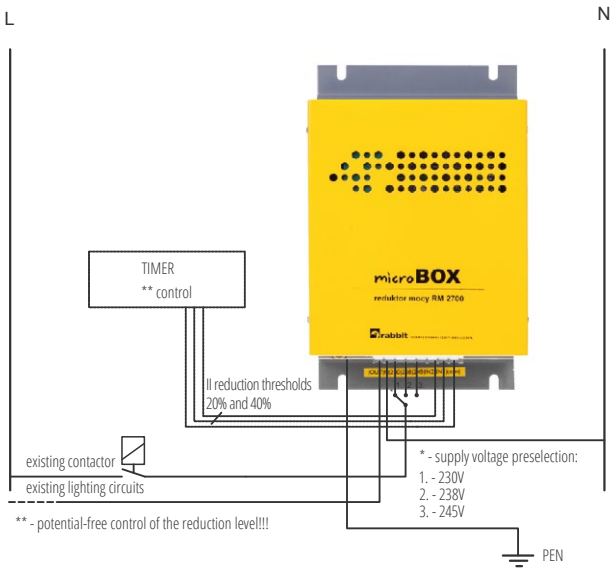
microBOX 12A is a low-power reducer designed to work in lighting networks,

in which it is possible to reduce power consumption by reducing the voltage. microBOX 12A regulator is the smallest reducer on the market. Thanks to small dimensions and low weight it will fit in almost any lighting cabinet.

The device uses the transformer method of lowering voltage and at the same time power, allowing up to 40 percent energy savings. microBOX 12A does not introduce harmonic distortion and does not adversely affect the work of lighting.

microBOX 12A is used where it is possible to reduce illumination intensity at certain times e.g.: on the streets, stadiums, railway stations and parks.

WIRING DIAGRAM



FEATURES OF THE DEVICE

- Voltage optimization of street lighting network
- available 1- and 3-phase versions
- adjustable power reduction level of 20% or 40%
- possibility to activate or deactivate reduction at any time
- lack of harmonic distortion
- automatic bypass of the device in case of power failure or damage
- control by any CPA series astronomical programmer or any timer
- possibility to chose voltage on the terminal block
- 3 LEDs on the front panel of the device, indicating the status of work
- possibility to use in cable networks, overhead lines, for external and internal lighting
- environmentally friendly device - by reducing power consumption it reduces CO_2 emissions
- innovation, reliability, easy operation
- high economic efficiency - reducing costs up to 40%

TECHNICAL SPECIFICATIONS

- supply voltage: 230, 238, 240 V, 50Hz
- output voltage: 230 V - 180 V
- size (width / height / depth): 140 x 215 x 125 mm
- capacity range up to 2.5 kVA for a 1-phase and up to 7.5 kVA for 3-phase
- outputs current capacity: 12 A
- 1st reduction level by 20 %
- 2nd reduction level by 40 %
- operating temperature: from -40°C to +40 °C
- protection degree: IP20
- installation in the lighting cabinet and on the board
- weight 4.7 kg (for one phase)

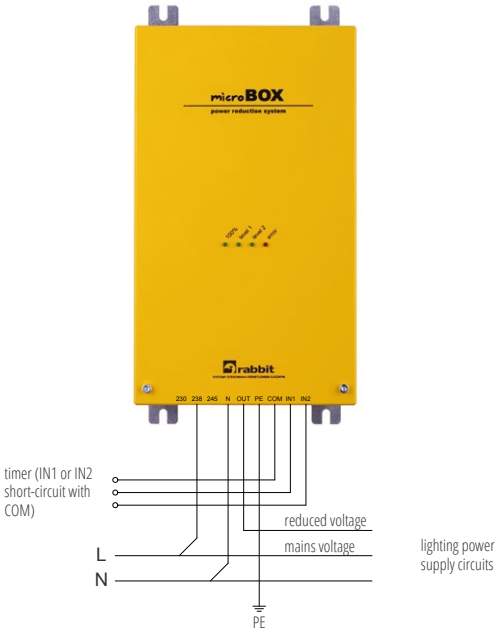
microBOX 25A

POWER REDUCER

microBOX 25A is medium power reducer, designed to work in lighting network,

in which it is possible to reduce power consumption by reducing voltage. Due to its small size and low weight it will fit in almost any lighting cabinet. The device uses the transformer method of lowering voltage and power at the same time, which allows energy savings of up to 40%. With this solution we extend the life of luminaires, ballasts and light sources, as well as lower the additional costs of operation and maintenance of the lighting networks. microBOX does not introduce harmonic distortion and does not adversely affect the work of lighting. The device is equipped with thermal protection: internal temperature sensor that if required switches the device off and indicates exceeding the allowed temperature. On the front panel of the device there is a switch that allows the user to easily select the appropriate voltage or, if necessary, a manual bypass.

WIRING DIAGRAM



FEATURES OF THE DEVICE

- Voltage optimization of street lighting network
- available 1- and 3-phase versions
- adjustable power reduction level of 20% or 40%
- possibility to activate or deactivate reduction at any time
- lack of harmonic distortion
- possibility to use in cable networks, overhead lines, for external and internal lighting
- on the front panel of the device there is a switch that allows selection of supply voltage
- automatic and manual bypass of the device in case of power failure or damage
- control by any CPA series astronomical programmer or any timer
- 4 LEDs on the front panel of the device, indicating the status of work
- environmentally friendly device - by limiting power consumption it reduces CO_2 emissions
- innovation, reliability, easy operation
- high economic efficiency - reducing costs up to 40%

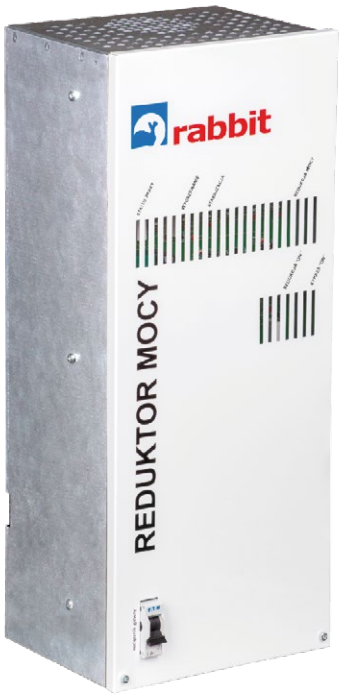
TECHNICAL SPECIFICATIONS

- supply voltage: 230, 238, 245 V, 50Hz
- reception voltage: 230 V - 180 V
- size (width / height / depth): 165 x 330 x 165 mm
- power range
  25A up to 5.5 kVA for a 1-phase and up to 17 kVA for 3-phase
- outputs current capacity: 25A (depending on the version)
- 1st reduction level by 20 %
- 2nd reduction level by 40 %
- operating temperature: -40 °C to +40 °C
- protection degree: IP20
- installation in the lighting cabinet and on the board
- weight 10.8 kg (for one phase)

GreenBoX

POWER REDUCER

GreenBoX reducer is a modern device, reducing energy consumption in lighting circuits.



The transformer method of lowering voltage and therefore power used in the reducer allows to save energy. Thanks to application of modern solutions and small dimensions GreenBoX can be connected to any lighting system: both the newly designed and already existing. GreenBoX series reducers were primarily used in low-power lighting circuits, and as they do not introduce harmonic distortion, they are readily used.

GreenBoX is manufactures in single-phase and three-phase versions for currents 15A/25A/35A/45A/60A/80A per phase. We offer it as an external IP44 cabinet (attached to lighting cabinet) or interior one (for mounting in lighting cabinets or switchboards).

The outdoor IP44 version is manufactured in aluminium or thermosetting housing.

The device is used in public and commercial buildings requiring long-term illumination: in the streets, stadiums, railway stations or in parks.

Legend:

Uz - nominal voltage of 230 V

Us - stabilization voltage 200-220 V

Ur - power reduction voltage 180 V-200 V

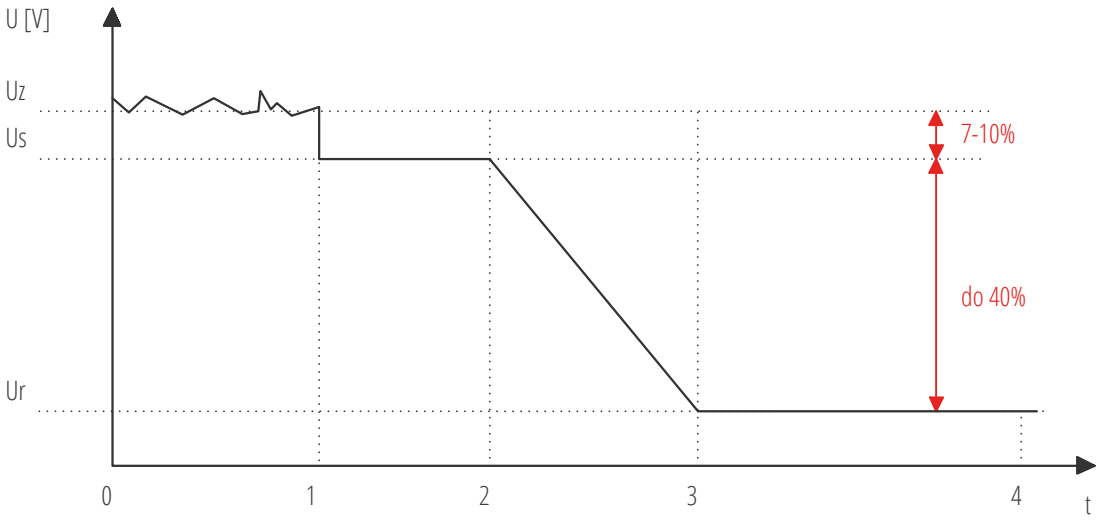
Stage:

0-1 - a series of heating sources, about 15 minutes;

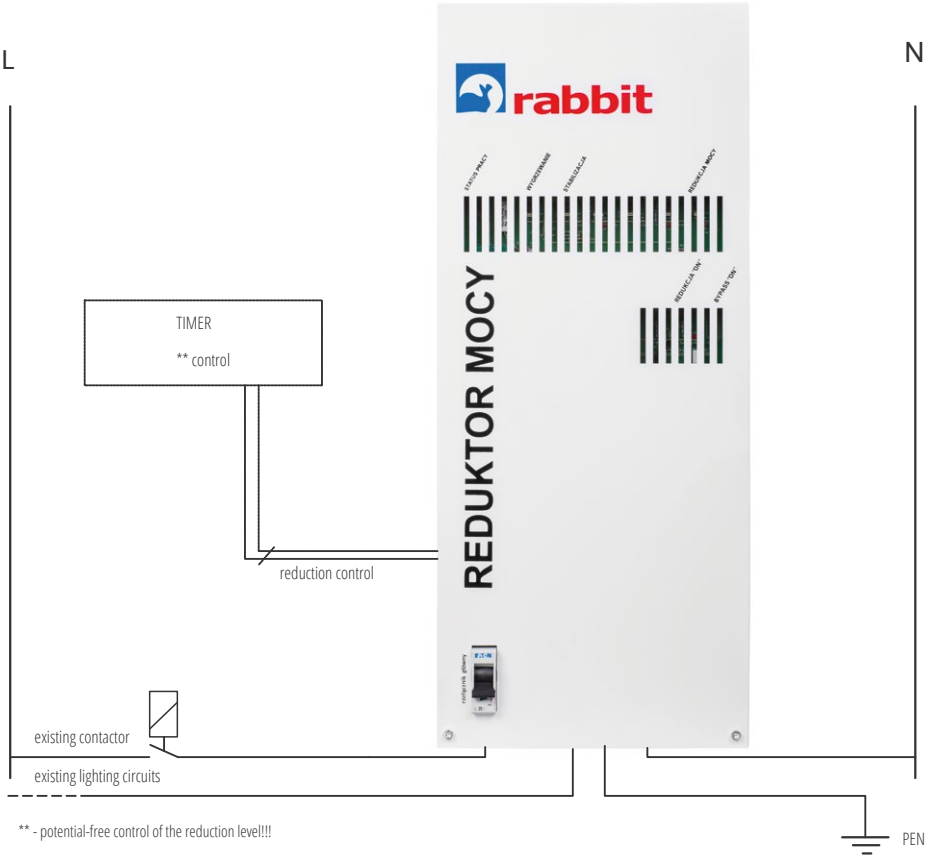
1-2 - nominal work - stabilization voltage;

2-3 - process of power reduction (several-stage voltage reduction to Ur)

3-4 - power reduction process (user adjustable threshold)



WIRING DIAGRAM



FEATURES OF THE DEVICE

- voltage optimization of street lighting network
- available 1- and 3-phase versions
- adjustable level of power reduction to 40% (multi-stage voltage reduction)
- possibility to activate or deactivate reduction at any time
- lack of harmonic distortion
- possibility to use in cable networks, overhead lines, for external and internal lighting
- automatic bypass of the device in case of power failure or damage
- control by any CPA series astronomical programmer
- environmentally friendly device - by reducing power consumption it reduces CO_2 emissions
- innovation, reliability, easy operation
- high economic efficiency - reducing costs up to 40%

TECHNICAL SPECIFICATIONS

- supply voltage: 250 V - 230 V
- reception voltage: 230 V - 180 V
- size (width / height / depth): 15A, 25A: 225 x 570 x 205 mm; 35A, 45A, 60A: 225 x 630 x 220 mm; 80A: 245 x 690 x 210 mm
- capacity range -

  15A up to 3.3 kVA for a 1-phase and up to 9.9 kVA for 3-phase

  25A up to 5.5 kVA for a 1-phase and up to 16.5 kVA for 3-phase

  35A up to 8 kVA for a 1-phase and up to 24 kVA for 3-phase

  45A up to 10 kVA for a 1-phase and up to 30 kVA for 3-phase

  60A up to 13 kVA for a 1-phase and up to 40 kVA for 3-phase

  80A up to 18 kVA for a 1-phase and up to 54 kVA for 3-phase
- outputs current capacity: 15 – 80A (depending on the version)
- operating temperature: from -40°C to +40°C
- protection degree: IP20
- installation in the lighting cabinet or on the board
- weight up to 23.5 kg (depending on the version)

Soft start LED

INRUSH CURRENT LIMITER

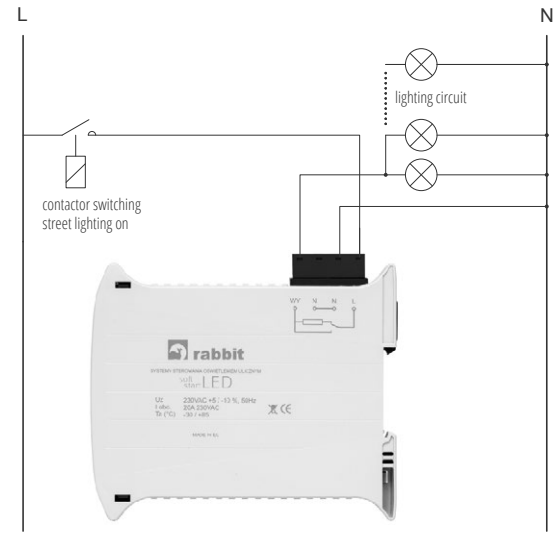
Soft start LED is an inrush current limiter. It protects the lighting installation against considerable current surge which may cause substantial damage.

Modern LED luminaires and energy-efficient LED „bulbs" are known to have a very high inrush current during startup. This feature is typical of all devices with an electronic power supply. In short impulse this current may be over 100 A with regard to the power supply 150 W. You can easily imagine the inrush current of the system composed of a few dozen luminaires 100 W. Such a considerable current surge may cause much damage in the short and long perspective.

Current surge may cause the protection of the entire switchboard to activate and thus switch off the power supply in the factory. Next, a continuous switching on and off leads to erosion of contacts and may result in the so-called contact "gluing". Erosion, that is burning of contacts leads to a change of protection current, voltage drops and apparatus overheating. These undesired phenomena can be prevented thanks to the use of soft start LED inrush current limiter.

The use of the limiter also translates into lower electricity bills. Without soft start LED, it is necessary to use much more protections in order to avoid an uncontrollable activation of safety devices, about 2-3 times bigger than intended for the installed power. The so-called contracted power is calculated on the basis of values of used protection, and therefore the use of soft start LED allows installing nominal protections and reducing costs related to contracted power fees.

WIRING DIAGRAM



FEATURES OF THE DEVICE

- reduction of inrush current of switched –mode power supplies max up to 20 A
- the device allows using nominal safety devices – protects against over-current during start-up phase
- protects against burning of contacts of relays, contactors and connectors
- intended for operation with up to 20 A of nominal current
- two-stage current limiter reduces current surge in the case of power of more than 2 kW
- micro-processor adjustment of current limit time
- possible to use in all types of LED luminaires
- electronic protection of current limiting resistors

TECHNICAL SPECIFICATIONS

- supply voltage: 230 V +5/-10%, 50Hz
- dimensions (width/height/length): 35 x 100 x 120 mm
- width of the device: 2 modules
- maximum number of starts: 1 cycle/ 5 min
- electric life: 1 million cycles
- current-carrying capacity: 16A/230 V
- working temperature: from -30°C to +60°C
- protection rating: IP20
- rail assembly DIN

1-10test / DALItest

LAMP OPERATION TESTER

1-10test and DALItest are testers that serve to verify proper operation of lamps.

The **1-10test** device servers to verify proper operation of lamps adjusted to be controlled via the 1-10 interface. Testing may be performed in two ways. The first - automatic. In this mode, the lamp's power is smoothly adjusted from the maximum (10V) to the minimum (~0V) value. Having acquired the minimum power, a lamp returns to its maximum-power state. The entire test takes about 5 seconds. The other, non-automated manual mode comprises manual, 11-step adjustment of the lamp power with buttons located besides an LED meter.

The **DALItest** tester servers to verify proper operation of lamps adjusted to be controlled via the DALI interface. The user may choose from two testing methods. The first - automatic. In this mode, the lamp's power at the test's initial stage is smoothly adjusted from a minor value to the maximum value. At the next stage, a lamp is turn on and off several times. The entire test takes 10 seconds. The other mode is a non-automatic manual mode, which comprises manual, five-step lamp power adjustment with buttons.

PARAMETRY TECHNICZNE

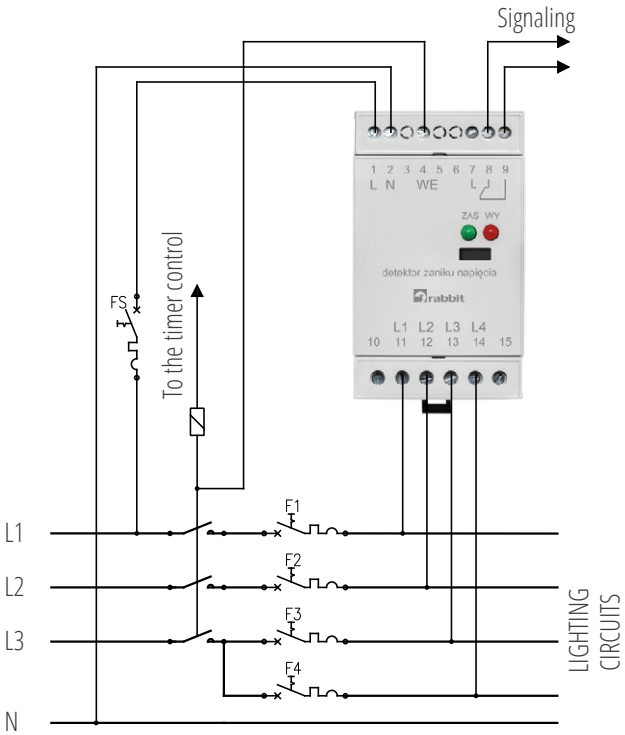
- power supply voltage: 9V (ER9V with 1200 mAh capacity)
- tester dimensions: (l / w / h) 142 x 69 x 25 mm
- operating temperature: from -40°C to + 70°C
- degree of protection: IP20

DZN

VOLTAGE DROP DETECTOR

Voltage drop detector is a device, which serves to detect and signal voltage drops in supervised circuits.

WIRING DIAGRAM



DEVICE PROPERTIES

- detection and signaling of voltage absence at one of four inputs
- operation mode with an analysis of voltage input
- optical signaling of operation mode
- no phase distinction
- cooperation with CPAnet and midiBLUE street lighting systems
- possible cooperation with other devices
- possible installation in every lighting cabinet

TECHNICAL PARAMETERS

- power supply voltage: 230V, ±10%, 50Hz,
- dimensions (w/h/l): 53 x 96 x 33 mm
- device width: 3 modules
- number of outputs: 1 P
- output current-carrying capacity: AC1: 5A/230V, DC1: 5A/24V
- number of inputs: 4
- power consumption 1W
- operating temperature: from -20°C to +70°C
- voltage on inputs L1 - L4: max. 400VAC,
- degree of protection: IP20
- Installation on the DIN bar

SERVICES

The company Rabbit offers you a service of comprehensive lighting projects implementation. We treat each task individually and offer the best solutions that take into account both technical aspects and cost: we aim to rationalize the investment costs and operational savings.

EXPERT ADVICE

– we advise our Customers how to select the lighting system solutions ranging from performing a preliminary audit of the lighting infrastructure, through analyzing the technical condition and current energy costs, up to submitting a concrete solution that is most advantageous for the Customer.

SERVICE

– we offer post-warranty service and remote support of Service Department in installing and commissioning our equipment, as well as by everyday use. In addition, we guarantee CPAnet system users a free support of Service Desk from 6:00 to 22:00.

EXECUTION

– we offer a comprehensive execution of the electrical installation works by the lighting, as well as installation and commissioning of our equipment, which ensures correctness of their operation. We also provide services of comprehensive modernization of the lighting from design to turnkey delivery.

MAINTENANCE OF LIGHTING

– we offer total care over the lighting system in the area. At the outset, we conduct a detailed inventory of the lighting infrastructure on the entrusted area. We analyze its condition, indicating the possibility of optimizing costs and improving functionality.

As part of our service we i.a. provide service and overhaul of equipment, measurement and performance tests of road lighting, elimination of failures, renovation of lighting poles and cabinets, repair or replacement of damaged cables.

TRAINING

– in a relaxed atmosphere, in a clear and transparent manner we will train your employees how to operate our devices. We believe that your staff, supported our experience, will more effectively manage the lighting infrastructure entrusted to them.

We remain at your disposal and we offer our knowledge and experience.

rabbit

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