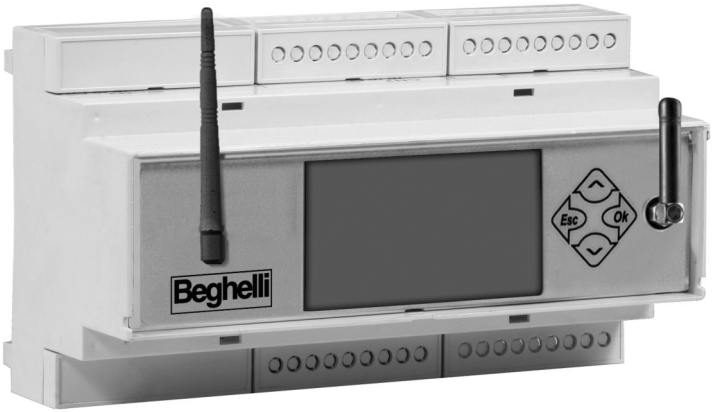
# LOGICA SUPERVISOR CONTROL UNIT

**code 12131C**

**Supervisor Control Unit for the centralised management and control of normal and emergency lighting systems**




INSTALLATION
AND OPERATING INSTRUCTIONS

Beghelli

**TABLE OF CONTENTS**

## WHAT IS THE SUPERVISOR CONTROL UNIT BY BEGHELLI

The Supervisor Control Unit by Beghelli (code 12131C) is a device used for the centralised control of normal and emergency lighting systems. It controls and supervises up to 31 Logica Control Units by Beghelli via a RS485 bus (control unit code 12100C), and each control unit, in its turn, can handle up to 128 normal and emergency luminaires on a DALI bus, according to IEC60929.

It can also be used with centralised battery lighting/emergency systems, interfacing with the ups units via bus RS232_B and with NEA systems, up to 63 NEALOG (code 16318) via bus RS485; each control unit, in its turn, can handle up to 64 NEA luminaires.

The Control Unit consists of:

- Keyboard + display for user operations;
- RS485 interface for connections to Logica Control Units by Beghelli (code 12100);
- RS485 interface for Supervisor Unit remote control via PC or modem connection;
- RS232 interface that can be connected to the Logica DIN RS232 serial printer by Beghelli (code 12099);
- ethernet interface to enable the use of the device with a LAN network;
- USB interface for software updates.

## FUNCTIONS

The Supervisor Control Unit performs the following tasks:

### SYSTEM MONITORING

The Supervisor Control Unit keeps the connected Logica (or Nealog) Control Units under permanent supervision, detects and reports any Control Unit/ luminaire malfunction.

### SYSTEM CONTROL

The Supervisor Control Unit allows the user to adjust the brightness of the luminaires, perform Functional and Autonomy tests on the system emergency luminaires, set Test times and frequency. etc...

### KEEPING A LOGBOOK

The Supervisor Control Unit tracks test outcomes and, in general, any relevant operation in the system.

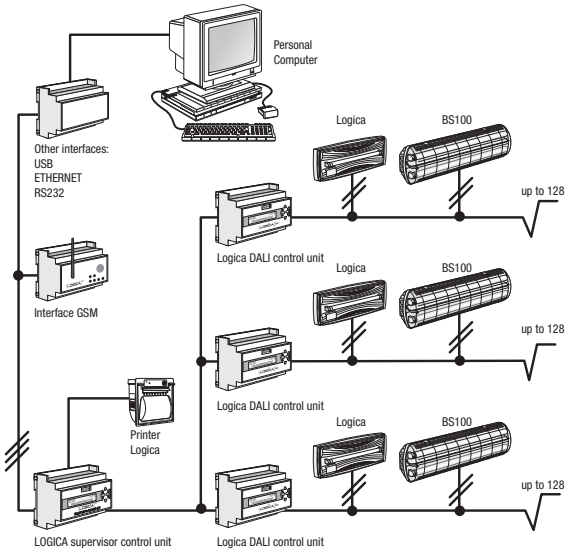
If a printer is available (code 12099) this information can be regularly printed on paper; if there is a USB flash drive connected, the information can be saved in the form of files and if a PC connection is available, this information can be sent and saved on a computer.

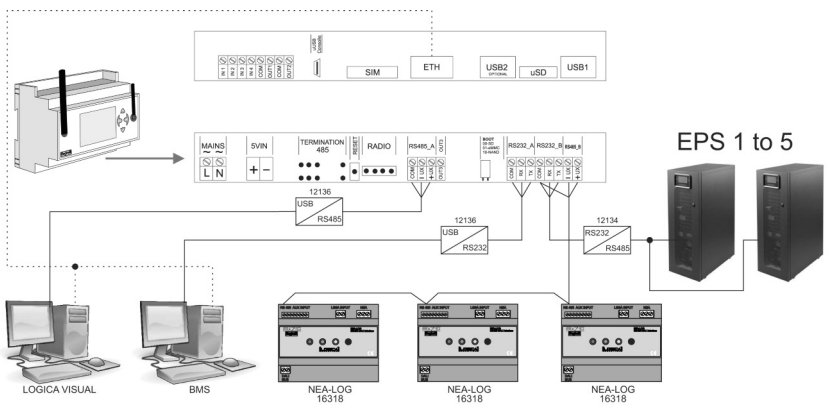
The Supervisor Control Unit can store information related to a period of about two years; it will then start deleting older logs to make space for new data (the stated time refers to a system of 4000 luminaires, with Functional Tests performed every 15 days and Autonomy tests performed every 6 months; smaller systems with different Test frequencies will have a higher/lower logbook duration).

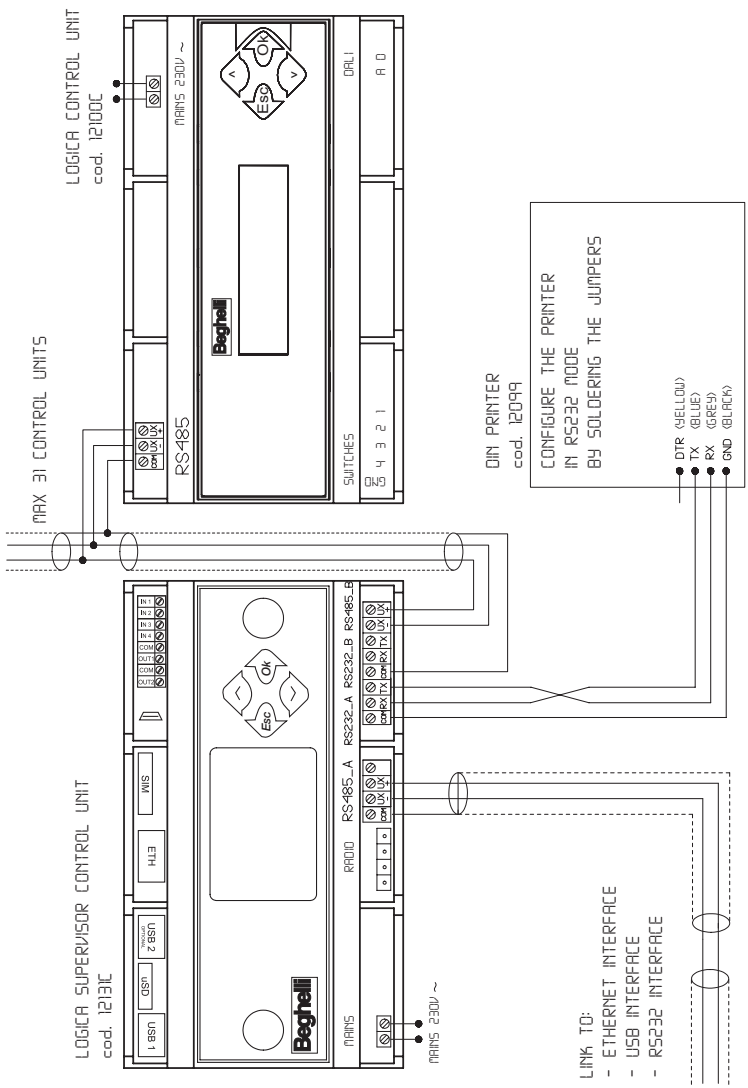
# INSTALLATION

Use the layout below for reference to connect the Supervisor Control Unit to Logica Control Units (RS485 bus) and, if applicable, to the printer (RS232 bus)

The connection to the system, via the LogicaVisual software, can be made via RS485_A and ETHERNET (starting from firmware version 1.20)





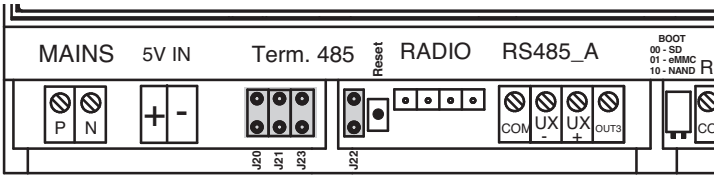

INPUT: for the connection of buttons, switches, outputs of other technological systems (e.g. anti-theft). Dry contact.
OUTPUT: open collector output. Vmax 24V; Imax 50mA

## RS 485 LINE USE AND TERMINATION

The Control Unit is equipped with 2 separate RS 485 lines (RS485_A and RS485_B); impedance adjustment possible on both lines by adding 2 2.54 pitch jumpers.

Impedance adjustment is needed when the Control Unit is the "terminal" part of BUS 485 (the beginning or the end of the path).

To adjust the RS485_A line, insert the Jumpers in connectors J22 and J23. To adjust the RS485_B line, insert the Jumpers in connectors J20 and J21.




## OPERATIONS REQUIRED TO RENDER THE SUPERVISOR CONTROL UNIT OPERATIONAL

### KEYBOARD AND DISPLAY FUNCTIONS

Pressing the keys enables the user to move through the screens, to display information and select the operation mode.

The three main menus are LIGHTS, MAINTENANCE AND STATUS;

- to move from one menu to another, use the “DOWN” and “UP” keys
- to enter the menu and access additional functions, use the “OK” keys
- to return to a higher menu level, use the “ESC” keys
- to move from the first to the last level of each menu (circular menus) press (eg: in MANUAL TEST press to go to SOFTWARE UPGRADE).

**Other key functions:**

- use the "DOWN" and "UP" keys to change a value (for example, in the date and time settings menu, with the hour indication "08" flashing, press to increase the value to "09", press to decrease the value to "07")
- use key "OK" key to confirm the entered value (by reference to the example given at the previous point, if, after changing the hour value to "07", you press , this value will be stored on the Control Unit) .

## DATE AND TIME SETTINGS

| | | |
|---|---|---|
| At the first start up, the system displays the LIGHTS menu: | | SAB 00:00:01<br>LIGHTS |
| Press the keys shown on the right in sequence to go to the menu for time setting: |  | SAB 00:00:01<br>MAINTENANCE |
| |  | Maintenance<br>MANUAL TEST |
| |  | Maintenance<br>SOFTWARE UPGRADE |
| |  X 5 | Maintenance<br>CTRL UNIT MGT. |
| |  | Ctrl Unit Mgt.<br>CHANGE DATE-TIME |
| Press  again to enter the menu that shows the date currently set on the Control unit appears and the day indication will be flashing (“01”). Press  until the desired day is displayed, then press  to confirm. Now the month indication will start flashing (to change it, follow the same procedure as for setting the day). | | Change date-time<br>01-01-2019 00:00 |
| Apply the same method to set the year, hour and minutes. Press  to confirm the value set for minutes; now, the display will show "COMMAND EXECUTED". | | 15-06-2019 15:45<br>COMMAND EXECUTED |

## SEARCHING FOR LOGICA CONTROL UNITS (NEW CONFIGURATION)

**N.B.**: before proceeding, make sure that a different address is set for each Logica Control Unit installed and wired to the Supervisor Control Unit; to set an address for a Logica Control Unit, refer to the "Logica Control Unit by Beghelli" manual.

**N.B.**: also check that the system configuration command has been executed on all Logica Control Units installed and wired to the Supervisor Control Unit (see the "Logica Control Unit by Beghelli" manual).

After completing these checks, launch the search procedure, which will make the Supervisor Control Unit search for Logica Control Units connected to it.

**N.B.**: if the number of Logica Control Units found does not match the number of Control Units connected to the Supervisor Control Unit, check the system wiring.

The same procedure applies for NEALOG devices (code 16318).

In this case, before initiating the configuration phase, search on the Supervisor Control Unit for the Nea devices, proceeding as follows:

Maintenance Ok Ctrl Unit Mgt Ok NEA Ctrl Unit YES/NO Ok YES Ok

| | | |
|---|---|---|
| Assuming you start from the LIGHTS menu: press the keys shown on the right in sequence to go to the new configuration search menu. | | SAB 00:00:01<br>LIGHTS |
| | ⌄ | SAB 00:00:01<br>MAINTENANCE |
| | Ok | Maintenance<br>MANUAL TEST |
| | ⌃ | Maintenance<br>SOFTWARE UPGRADE |
| | ⌃ X 4 | Maintenance<br>CONFIGURATION |
| | Ok | Configuration NEW |

**N.B.**: Where applicable, the menu pages may also contain indications related to the NEA system.

| | | |
|---|---|---|
| Press Ok to launch the search for Control Units. During the search, the two numbers shown on screen, divided by a<br>dash, mean:<br>- on the left: total number of Control Units detected up to that moment<br>- on the right: address of the Logica Control Unit undergoing checks to see if it is connected to the system. | | Ctrl Unit Config.<br>in progress<br>000-000 |
| At the end of the search, the number of Logica Control Units detected will be shown on screen. | | Total<br>02 CONTROL UNITS |

**N.B.:** if the number of Logica Control Units found does not match the number of Control Units connected to the Supervisor Control Unit, check the system wiring.

The same procedure applies when searching for NEALOG devices.

## SCHEDULING FUNCTIONAL AND AUTONOMY TESTS

The Functional and Autonomy Tests are meant to check the emergency luminaires. Functional Tests consist in turning on the luminaire for about 30 seconds and checking the luminaire light source and battery efficiency; Autonomy Tests consist in turning on the luminaire for extended periods of time and checking if the battery is still working. If the Tests reveal that the luminaire is faulty, this information will be transmitted from the luminaire to the Logica Control Unit and then to the Supervisor Control Unit: an error message will be displayed on the screen of the Supervisor Control Unit and the error will be recorded in the Logbook.

The Supervisor Control Unit allows you to set the date and time of the next tests either individually, for each Logica Control Unit, or globally, for all Logica Control Units in the system. After setting the date and time of the next Functional and Autonomy Tests, all subsequent tests will be performed at a regular interval, which can also be set in the menu of the Control Unit.

**For a correct operation of the system, the following must be set:**
- Date and time of the next Functional Test;
- Date and time of the next Autonomy Test;
- Time interval between repeated Functional Tests;
- Time interval between repeated Autonomy Tests.

The example below shows how to set the date and time of the next Functional Test.

| | | |
|---|---|---|
| Assuming you start from the LIGHTS menu: press the keys shown on the right in sequence to go to the date-time settings menu for the next Functional Test.<br><br>("x 3" means you have to press the key three times) | | SAB 00:00:01<br>LIGHTS |
| |  | SAB 00:00:01<br>MAINTENANCE |
| |  | Maintenance<br>MANUAL TEST |
| |  x3 | Maintenance<br>MANAGEMENT TEST |
| |  | Management Test<br>ALL |
| |  | All NEXT FUNC TEST |
| Press  to show the date of the Next Functional Test stored on the Control Unit.<br>To set the time of the test, proceed as shown in section "Date and Time Settings". | | Next Func Test<br>31-12-2099 00:00 |

## GROUPS

Luminaires connected to each Logica Control Unit by Beghelli can be divided into groups to perform separate operations on system sections. Each luminaire can belong to a group, multiple groups or no group. The total number of groups available is 16.

Assigning a luminaire to a group is an operation that needs to be performed on the Logica Control Unit to which that luminaire is connected; for this, refer to the “Logica Control Unit by Beghelli” manual.

The Supervisor Control Unit has the same Group concept as the Logica Control Units: any operation performed from the Supervisor Control Unit on a group, will affect the corresponding group of each Logica Control Unit by Beghelli in the system; if a command is sent to group '1' from the Supervisor Control Unit by Beghelli, that command will affect all luminaires belonging to group '1' of each Logica Control Unit by Beghelli.

# MENU

The system is organised in menus that allow you to access varied features of the system: turn luminaires on and off, perform Functional and Autonomy Tests, review information on malfunctions, etc...

To understand how to navigate among screens using the keys, see section “Keyboard and Display Functions”.

Most of the operations that can be performed can be applied to the entire system or to a portion of it, as indicated in the following table:

| To perform an operation on: | go to the menu:: |
|---|---|
| all luminaires in the system | ALL |
| all luminaires of Logica Control Unit XXX | CTRL UNIT XXX |
| all luminaires in Group yy | GROUP YY |

The system features 3 main menus: LIGHTS, MAINTENANCE AND STATUS.

## LIGHTS MENU

How to use this menu to modify the brightness of the bulbs:

| | go to the menu: |
|---|---|
| for the maximum level of brightness | ON (MAX) |
| to turn them off | TO TURN THEM OFF |
| for an intermediate brightness level XX | DIMMER STEP XX |

## MAINTENANCE MENU

### MANUAL TEST

The Functional and Autonomy Tests are meant to check the emergency luminaires. Functional Tests consist in turning on the luminaire for about 30 seconds and checking the luminaire tube and battery efficiency; Autonomy Tests consist in turning on the luminaire for extended periods of time and checking if the battery is still working.

Normally, Functional and Autonomy Tests are run automatically at regular intervals according to the schedule set by the user (see "Scheduling Functional and Autonomy Tests") but it is also possible to perform Functional or Autonomy Tests directly from the keyboard: Manual Test.

The manual tests are interrupted after the related time set has lapsed or by sending a stop test command.

Manual Tests will not change the time intervals and durations set for the automatic Tests.

Use the MANUAL TEST menu to perform the operations described in the following table:

| To: | go to the menu: |
|---|---|
| run a Functional Test | FUNCTION |
| run an unlimited time test that will stop when the battery is empty | ALWAYS ON |
| run a set time test | 00h 04m 15s<br>...<br>06h 01m 15s |
| stop any test | STOP TEST |

## EMERGENCY

**N.B.:** commands in the EMERGENCY menu will only affect luminaires that are not powered from the mains, i.e. they are lit in a state of emergency.

When power from the mains to a luminaire is cut off, the luminaire will turn on and run on battery supply. As long as its battery still has energy stored, any of the following commands can be sent to the luminaire:

- Disable the state of emergency: the luminaire turns off; it can be turned back on by enabling the state of emergency.
- Enable the state of emergency: the luminaire turns on
- Turn off: the luminaire is turned off permanently; it cannot be turned back on unless the luminaire itself detects mains power. This feature can be useful to preserve the bulbs batteries when, for instance, it is necessary to remove the power supply to the system for a long period.

| To: | go to the menu: |
|---|---|
| disable the state of emergency | EMERG. UNENABLED |
| enable the state of emergency | EMERG.ENABLED |
| permanently turn off the luminaire | OFF |

## ERROR STATUS

This menu allows you to review and clear luminaire faults.

If there is no error on any of the Logica Control Units by Beghelli connected to the Supervisor Control Unit by Beghelli, this menu will show:

Error Status
NO ERROR

If there is an error on at least one luminaire, the following operations will be possible:

| To: | go to the menu: |
|---|---|
| display the malfunctions associated with the luminaires belonging to Control Unit XXX | CTRL UNIT XXX |
| clear the malfunctions on a selected luminaire belonging to Control Unit XXX | CONTROL UNIT XXX<br>LOGICA ZZZZZZ |
| clear the error signals for all the luminaires in the system | ALL |
| clear the error signals for all the luminaires in Group YY | GROUP YY |

## TEST MANAGEMENT

This menu allows you to set, either individually for each Control Unit, or globally, for all Control Units:

- Date and time of the next Functional Test;
- Date and time of the next Autonomy Test;
- Time interval between repeated Functional Tests
- Time interval between repeated Autonomy Tests

For test date, time and test scheduling, see section "Scheduling Functional and Autonomy Tests".

Based on their unique identifying addresses, LOGICA luminaires are divided into EVEN-numbered and ODD-numbered luminaires. Using the EVEN-ODD TEST menu, you can decide whether to perform an autonomy test on all luminaires simultaneously or first on the odd-numbered luminaires, then, 7 days later, on the even-numbered luminaires.

| To: | go to the menu: |
|---|---|
| set a single simultaneous Test for all luminaires | SIMULTANEOUS |
| set a Test for even-numbered luminaires 7 days after the test on odd-numbered luminaires | DELAY 7 DAYS |

## CONTROL UNIT MANAGEMENT

### Date & Time Changes

To set the date and time on the Supervisor Control Unit, see section "Date and Time Settings". The Supervisor Control Unit synchronises the timetable of all connected Logica Control Units.

### Control Unit Code

The user can set the code of the Supervisor Control Unit: a number from 0 to 32.

### C Ups

This menu can be used to control a particular type of ups unit.

### Ups presence

If you enabled the Ups groups from the previous menu, in this menu you can check their presence.

### Save/Ups/Mod.

From this menu you can select what to connect to RS232_A:PRINTER/USB, other types of ups units or remote host with Modbus communication.

### Print/Save

**N.B**.: printing will be available if the Supervisor Control Unit is connected to a Logica Din RS232 serial printer by Beghelli (code 12099). As an alternative, the data can be stored in files on a USB flash drive that can be connected to port USB1. This menu is available if the PRINTER/USB option has been selected in the previous menu.

The following data can be printed/saved:

- **Configuration**: list of installed luminaires and their characteristics (model, even/odd-numbered, 1h/3h autonomy, etc.).
- **Scheduling**: timetables for Functional and Autonomy Tests, time intervals for testing, staggered testing on odd- and even-numbered luminaires.
- **Errors**: for each faulty luminaire, a warning is given that specifies the type of fault (e.g. 8W tube error, battery charge error, etc.).
- **Report**: for this menu, you must enter a start date and an end date for the report. The printout will list significant actions that occurred over the set time frame involving the Logica Control Units by Beghelli installed in the system. The printout will report the start time and the end time of the Functional or Autonomy Tests performed, be they manual or automatic tests, and a list of faulty luminaires.

The following controls are available in the PRINT/SAVE menu:

| To: | go to the menu: |
|---|---|
| print/save the Configuration | CONFIGURATION |
| print/save the Programmation | PROGRAMMATION |
| print/save Errors | ERRORS |
| print/save Reports | REPORT |

### Language

The user can set a different display language. Available languages: ITALIAN, GERMAN, ENGLISH, FRENCH and POLISH.

### Ethernet Network

From this menu, the user can set the IP ADDRESS, the NETMASK, the DEFAULT GATEWAY, the DNS, the PORT, the DHCP and view the MAC ADDRESS.

### NEA Control Unit YES/NO

From this menu, the user can enable the control of the NEA system.

**Out. Err. On/off**

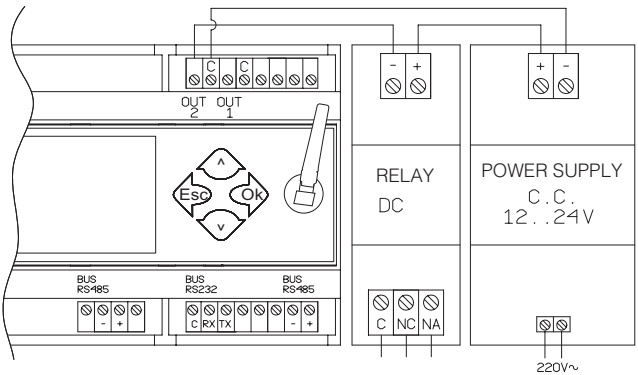
The user can enable or disable the use of an auxiliary output, OUT2, to signal errors in the system or Tests in progress.

**Out.Test/Errors**

The auxiliary output is activated during Tests or when there are errors in the system.

**St. Err. open/cl.**

You can set how the auxiliary output, OUT2, operates. Once enabled, it can be set in normally open or normally closed mode: "normally open" means the output will remain open if there is no error or Test in progress; "normally closed" means the output will remain closed if there is no error or Test in progress.




**Password on/off**

You can enable/disable the password-protected use of the Supervisor Control Unit. Possible values are ON and OFF.

**Password change**

You can set a password of 6 characters. Once the password is entered, you will be prompted to enter it again for confirmation.

## CONFIGURATION

This menu is usually used when installing the system or replacing the Supervisor Control Unit.

Using this menu, the Supervisor Control Unit detects how many and what Logica Control Units are connected to it.

See section “Searching for Logica Control Units (New Configuration)” for more details on how to activate this search.

### REMOTE CONFIGURATION

Using this menu, the Supervisor Control Unit can request each connected Logica Control Unit separately or all Logica Control Units in the system to search for luminaires connected to it/them. Basically, you can use the Supervisor Control Unit to send a command equivalent to "SYSTEM CONFIGURATION", which is available on the Logica Control Units.

The Logica Control Unit by Beghelli to which such a command is sent will perform a search for connected luminaires; the operation generally takes less than a minute. Within another minute or so, the Logica Control Unit will send to the Supervisor Control Unit all the information related to detected luminaires.

### REMOTE LOCKING - REMOTE UNLOCKING

These menus allow you to lock or unlock the keyboard of each connected Logica Control Unit. Keyboard locking prevents unauthorised persons from tampering with the Control Units: this protection is achieved by prompting for a password when a key is pressed on the keyboard. After typing in the password, the user will be able to freely operate the Control Unit for a few minutes and then he/she will have to enter the password again. For more details, see the “Logica Control Unit by Beghelli” manual.

### SOFTWARE UPGRADE

This menu allows you to update the software of the Supervisor Control Unit. You need to have a USB stick with properly configured directories and contents: new software version, configuration files, logbook and possibly new images. Contact Technical Support to proceed.

## STATUS MENU

The STATUS menu provides the following information:

| Info | Screen |
|---|---|
| no. of Logica Control Units by Beghelli connected to the Supervisor Control Unit | 03 LOGICA CONTROL UNIT |
| total no. of luminaires in the system | TOT. LUMINAIRES 0321 |
| how many Logica Control Units by Beghelli have signalled at least one error | 01 ERR: CTRL UNITS |
| how many luminaires have errors | 0001 LOGICA CONTROL UNIT |
| software version of the Supervisor Control Unit by Beghelli | SW VER. 1.0 |

## TECHNICAL CHARACTERISTICS

Code 21131C
- Power supply voltage: 230V~50Hz
- Max. input power: 12VA
- Degree of protection IP20
- Insulation class II (double insulation ensured by installation inside protected cabinets that can be accessed with the use of a special tool, only by authorised service staff, for installation and maintenance purposes)
- Operating ambient air temperature: 0°C +50°C
- Housing: plastic case on 9-module DIN rail
- Dimensions: 160 x 90 x 75 mm

## WARNINGS - WARRANTY

- Before connecting the device, make sure the data on the rating plate match the specifications of the mains.
- This device must be used according to its intended use. Any other use shall be deemed improper and, therefore, dangerous. The manufacturer shall not be held liable for any injury or damage caused to persons, animals or property as a result of improper, incorrect or unreasonable use.
- Before any cleaning or maintenance operations, disconnect the device from the mains.
- Warning: this product contains materials that may be harmful if disposed in the environment.
- The device must not be disposed of as municipal waste. It must be subjected to separate collection to avoid polluting the environment. In compliance with Directive 2002/96 and implementing national laws on end-of-life product disposal, a failure to comply with the above is sanctioned by law.

- For any repairs, contact an authorised technical service centre and ask them to use original spare parts. A failure to comply with the above may compromise the safety of the device.
- For details on interventions under warranty, please contact us at 800 626626 (toll-free) or contact your Authorized Reseller.

334.902.274 B

**www.beghelli.com**
BEGHELLI S.p.A. - Via Mozzeghine 13/15 - località Monteveglio 40053 Valsamoggia (BO) - ITALY
Phone +39 051 9660411 - Fax +39 051 9660444