PB-NLCP-SA – Operation Manual
Navigation Light / Signal Automat
Monitoring and Control System
Touch screen Monitor Version

GL and MED Approval

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Revision: 02
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1. **Design**

The system consists according to standard of the following parts:

1. **Control Unit**
   - Type: PB-NLCP
   - for maximal 8 Basis Measuring Modules
   - 12/24/115/230 Volt
   - PB - Art.No.: 7800100

2. **Basis Measuring Module**
   - Type: PB-MM-Basis
   - 12/24/115/230 Volt
   - for maximal 8 single lanterns
   - PB - Art.No.: 7800101

3. **Measuring Card**
   - Type: PB-MM
   - 115-230 AC
   - for 2 electrical items
   - PB - Art.No.: 7800102

4. **Measuring Card**
   - Type: PB-MM
   - 10-30V DC Volt
   - for 2 electrical items
   - PB - Art.No.: 7800103

5. **Touch screen Monitor - 13,3" - TFT**
   - Type: HD 13T21 MMC-E1C-PABA
   - Manufacture: Hatteland
   - IntelNM10 Atom 1.66GHz 1GBRAM
   - 8GBSSD-M OSNone 2xDC
   - 24V - 400 cd/m² - 1280x800
   - according to EN60945
   - PB - Art.No.: 7800104

6. **Connection Cable**
   - L = 2,0m
   - PB - Art.No.: 7800110
The minimal configuration comprises a Control unit, one Basic Measuring Module and Measuring Card for 2 electrical items and a Touch screen Monitor.

Depending on requirements, the number of electrical items can be extended to 64 electrical items. There for you need 8 Basic Measuring Modules 8 electrical items each and 4 Measuring cards for each Basis Measuring Module. Each Measuring card can be used for maximum 2 electrical items.

The system also can be used without our Touch screen panel, if you have an existing control unit standard version with switches.

EMV secured according to the regulations of the EN60945. That is the reason why the construction of the Basis Measuring Module is completely closed.
2. Function

2.1 Power supply

The system works on voltages common to vessels 10-30V DC and 115-230V AC.

The inputs are short-circuit proof and maintenance-free.
2.2 Signal Automat

The Signal Automat is programmed to release automatically the manoeuvring and warning signals according to Rule 35 (a, b, c, e, g) of the COLREG 1972 and additionally the SOS distress signal.

Automatic and manual signal release:

- Sound and light signals
- Ready for connection of one or two horns, one maneuver signal lamp
- Maintenance free System
- Self-describing pushbuttons

COLREG 1972 - Rule 35 Sound Signals in Restricted Visibility
In or near an area of restricted visibility, whether by day or night, whistle signals shall be used.
Characteristics of Automatic Signals

- Attention
- Starboard
- Port
- Astern
- SOS Distress Signal
- Vessel making way through water
- Vessel making no way through water
- Vessel not under command
- Vessel towed
- Vessel at anchor

**Lanterns and Horns which are configured to the Signal Automat will be not controlled through the panel during operation.**

The check of the Light will be made during the procedure.
3. **Programming / Configuration**

The layout on the screen can be programmed and/or changed individually by the customer.

The Code words will be listed on an extra page in the manual.

3.1 **Automatic**

To come in the configuration modus you have to go following way.

1. Press **Push bottom Service**
2. Press **Push bottom Configuration Tool**
3. Press **Push bottom Automatic**

Following screen you will see.
3.1.1 Launch Detection
The Launch Detection is to calibrate all electrical items which are installed on the Measuring units. It is necessary to do this calibration after you have installed all items the first time. This Detection will take 2 minutes. The system will turn on all electrical items and measure the existing power consumption of all items. After the calibration everything will shut off.

Flashlight (Dangerous cargo, Fast ferry or Huge vessel) will be not able to detect. Please make a visual check of these lights. You only able to turn the on and off through the panel. Lights which you program in the flashing modus will be only checked during the "Check all Lights" modus. Detection during the normal operation is not possible.

You finish the Launch detection with the push bottom

3.1.2 Load File
This bottom is to lead up some extra files.

You finish the loading with the push bottom

3.1.3 Update Firmware
This bottom is to lead up a new Firmware. This is possible after you got the new Firmware via Network

You finish the loading with the push bottom

3.1.4 Save locally
This bottom is for saving the existing changes on the computer in a separate area. It makes sence to use this field after you have installed and checked the complete system on board. You will be able to get back this version if something happened with the programming after changes. You will be always able to restore this version.

If you want to save something locally you press following push bottom
You will see following screen

Give your file a name. It makes sence to give the actual date in the name, that you know what, when you save that file. Don’t move the .ini name, because it must be an .ini-data.

You finish this procedure with the push bottom

3.2 General
To come in the configuration modus you have to go following way.

Press Push bottom
Service

Press Push bottom
Configuration Tool

Press Push bottom
General
In this area you are able to detect different items. Font sizes, language and the silhouettes for the screen.

Following screen you will see.

3.2.1 Control buttons font
In this field you are able to choose the size and the type of the font for the control buttons. If the size of the font is too big, you might not see all letters.

You finish the selection of the font with the push bottom.

3.2.2 Group buttons font
In this field you are able to choose the size and the type of the font for the group buttons. If the size of the font is too big, you might not see all letters.

You finish the selection of the font with the push bottom.
3.2.3 Background image

In this field you are able to choose the Silhouette of the vessel for the touchscreen monitor. Press Push bottom  on the right side of the Background image. Than you will see following screen.

Choose the type of the vessel with pushing on the vessel type (Double push). The silhouettes can be selected from a list in the Database. At present the data base covers the following silhouettes:

- Container
- Bulker
- LNG
- Tanker
- Ferry
- Tugboat
The Database will be growing in the future.

You finish the selection of the vessel type silhouette with the push bottom Send.
3.2.4 Different language

If you want to have a different language behind each word on the touchscreen, you need an extra translation file. This translation file has to be created separate from Peters + Bey. All languages are possible if we get the translation from your side. Each word has to be translated.

Very important is that you use the translation file for different languages. Otherwise we will have a problem during the online service.

After that creation the translation file you have to set a hook in the “use translation file”. Than you have to choose the language. In the future you will be able to choose between a couple of different languages.

You finish the different language choosing with the push bottom Send.
3.2.4.1 Translation File

For the translation it is necessary to translate all English words/text files in the foreign language.
3.2.5 OS Administration
OS means Operating System Administration

To reach the Administration area you have to push that button. In this area you will be able to change or organize the ground basis of this system. You have to be very careful in this area, because you will affect the whole basis of this system.

Following screen you will see:

Choose yes or no if you want to come in the administration area.
3.3 Ports
To come in the configuration modus you have to go following way.

Press Push bottom  Service

Press Push bottom  Configuration Tool

Press Push bottom  Ports

In this area you are able to install the different modules. Each module is one of the Basis Measuring Modules. The system will realize when you install another Measuring module. This area is only necessary if you install an extra Measuring module.

You have to set the hook in “In Use” field. Ports which have no hook will be out of use.

You finish the different language choosing with the push bottom
3.4 Controls
To come in the configuration modus you have to go following way.

Press Push bottom **Service**
Press Push bottom **Configuration Tool**
Press Push bottom **Controls**

In this area you are able to install the different electrical items. Everything what you see on the screen will be selected is this area.

Following screen you will see.
3.4.1 Position
The position is the exact detail about the position of the light in the Basis Measuring module. Port 0/L0 is the first module – first position. (Modul 1 – Lantern 1)

3.4.2 Enabled
With the hook in the Enabled field you activate an electrical item. If you take out the hook you can see the electrical item in grey color and this electrical item is out of use. You are not able to turn it on or off.

3.4.3 Name
Here you give the name of the electrical item. The name will be seen on the screen.

3.4.4 Type
In this field you decided what type of lantern or electrical item you have. If you touch the right side of the type field you will see the 3 different types.
3.4.4.1 Normal
The “Normal” mode is for a constant Light or electrical item.

3.4.4.2 Flashing
With the flashing mode you are able to create your own flashing signal. Therefore you have to set the “On time” and “Off time” in seconds. On the screen you will see a flashing symbol.

3.4.4.3 Signal
All items which are marked with “signal” are running with the Signal Automat.
All signals which are running with the Signal Automat have to be connected in one Basic measuring board.

3.4.4.3.1 Type of Signal
Further you have to choose the signal type. For the Signal Automat you need the Maneuvering Light and/or the Horns.
3.4.5 Minimum / Maximum Value
Here is the position of the power consumption of the electrical item. The power consumption will be
detected automatically with the calibration of the system. If there are any problems during the sailing
of the vessel you are able to change these values. But you have to be very careful with any
changes, because this affects the points of alarm of each item.

3.4.6 Light color / Lights Size
In this field “Lights Color” you choose the color and form of the symbol on the screen.
In the field “Lights Size” you choose the size of the symbol on the screen.
3.4.7 Validate Position

In this field you can position the symbol of the light/electrical item on the screen.

For the fine tuning for the position you can use the keyboard.

For opening the keyboard you have to press the keyboard symbol.
3.4.7.1 Keyboard

To come to the arrows you have to press the NumLock push button. With the arrows you are able to do the fine positioning in the different directions.

To change the size of the keyboard you have to press the right corner and change the size.

You finish the complete installations of the Lights with the push bottom Send.
3.5 Groups

Group programming gives you the possibility of depositing different sailing/maneuvering conditions of a vessel. The programming gives you the possibility to deposit all existing lights in a group. It is possible to switch on or off extra lights during the use of group push buttons. The group-selectors simplify the circuit of various lights at the same time.

You are able to turn on/off allot of different Lights at the same time. You are always able to turn on/off other lights than the group if necessary.

To come in the configuration modus you have to go following way.

Press Push bottom

Press Push bottom

Press Push bottom
3.5.1 Add Group
To create a new group you have to press the push button Add Group.

After that you have to select the new group and give him a name.

To move a light in the group you have to select the light and press following push button >>.

To remove a light from the group you have to select the light and press following push button <<.
3.5.2 Name
The name is the name of the group. There for you have to select the group on the left side and change the name.

3.5.3 Remove Group
To remove a group you have to select the group and press following push button

After you have finished all installations or changes in this area

Press the push button
3.6 Pages

The point “Pages” gives you the chance to create your own layout of the screen. You can decide and program your own pages. The result of the programming of the pages you can see on this next picture.

To come in the configuration modus you have to go following way.

Press Push bottom Service

Press Push bottom Configuration Tool

Press Push bottom Pages
Following screen you will see.

3.6.1 Add page
To create a new page you have to press the push button "Add Page". After that you have to select the new page and give him a name.

To move a light in the page you have to select the light and press following push button ">>"

To remove a light from the page you have to select the light and press following push button "<<"
3.6.2 Name
The name is the name of the page. There for you have to select the page on the left side and change the name.

3.6.3 Remove page
To remove a page you have to select the page and press following push button. After you have finished all installations or changes in this area Press the push button

Send

Remove group

After you have finished all installations or changes in this area
Press the push button

Send

Send
3.7 **Blocking**

To come in the configuration modus you have to go following way.

Press Push bottom **Service**

Press Push bottom **Configuration Tool**

Press Push bottom **Pages**
3.7.1 Blocking Controls (Lights / Electrical items)

The Blocking mode gives the user, in a matrix, the possibility to protect certain lantern/electrical items from simultaneous switching.

For the setting you just have to place a cross in the fields.

Following screen you will see.

If you try to turn on one of the blocked lights you will get an Error "Can not be switch on:" information.

To quit this information you have to press the push bottom OK.
3.7.2 Blocking Groups

The Blocking mode gives the user, in a matrix, the possibility to protect certain groups from simultaneous switching.

Following screen you will see.

For the setting you just have to place a cross in the fields.

If you try to turn on one of the blocked groups you will get an Error "Can not be switch on:" information.
After you have finished all installations or changes in this area

Press the push button **Send**
3.8. Freeze Display

In the service area you are able to control the real power consumption of each electrical item. Therefore it is much easier to stop the screen. Therefore you push the Freeze Display push button.
3.9. Function Information

For your information that the system is working properly we have a small Sun stroke which circle around.

If the sun moves underscore the system is working properly.
4. Measurement and Detection

Measurement and detection is possible from 1mA up to 700mA.

The maximum load of power consumption per channel is 2.8A.

That means you can run LED and conventional Lighting, Floodlights, Door controlling or other electrical items at the same time.

Lanterns are connected directly to the modules.
5. Service

5.1 Ethernet Service
This Ethernet service is only possible in the OS Administration area.

The System can be serviced via Network. There for you have to connect the system with an Internet connection.

The monitor has to be connected to the Internet.

Than you have to start the Team Viewer.
Following screen you will see.

Now you have to contact Peters + Bey in Hamburg:

Phone number: +49 40 54 76 00 0

They will ask you about the **ID - Number** and the **Kennwort (Codeword)**.

The service engineer will now be able to communicate directly with your system.
### 5.1.1 Service stations

<table>
<thead>
<tr>
<th>Company</th>
<th>Address</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peters + Bey GmbH</td>
<td>Schnackenburgallee 151, 22525 Hamburg, Germany</td>
<td>Phone: +49 40 54 76 00 0, Fax: +49 40 54 76 00 76, Mail: <a href="mailto:peters@peters-bey.com">peters@peters-bey.com</a>, Mobile: +49 40 173 23 08 123, <a href="http://www.peters-bey.com">www.peters-bey.com</a></td>
</tr>
<tr>
<td>BH Global Marine Ltd.</td>
<td>NO. 8 Penjuru Lane, Singapore 60 91 89</td>
<td>Phone: +65 6291 4444, Fax: +65 6294 4474, Mail: <a href="mailto:kmlee@bhglobal.com.sg">kmlee@bhglobal.com.sg</a>, Mobile: +65 9638 2574, <a href="http://www.bhglobal.com.sg">www.bhglobal.com.sg</a></td>
</tr>
<tr>
<td>Britmar Marine Ltd.</td>
<td>Unit 102, 2433 Dollarton HWY, CA-V7H 0A1 North Vancouver B.C.</td>
<td>Phone: +11 604 / 98 34 30 3, Fax: +11 604 / 98 34 31 3, Mail: <a href="mailto:tony@britmar.com">tony@britmar.com</a>, Mobile: +11 5346 0498 34 303, <a href="http://www.britmar.com">www.britmar.com</a></td>
</tr>
</tbody>
</table>
5.2 Change Fuse
To change the fuse you have to press the lid and screw it to the left.

5.3 Type of Fuse
The fuse has following performance:

T13,15 Ah – 250V

Length: 20mm
Diameter: 5mm
6. Technical data

6.1 Control unit

Power supply: 24VDC (18...36V DC)
Power consumption: 120...380mA (24V DC)
Operating temperature: -15°C ... 55°C according to EN 60945
Weight: 1,9kg
• NMEA 0183 connections can be set up either as entry or as exit
• Multiplexer and buffer/converter united in one device
• PC Interface RS232
• Speed of all NMEA interfaces is adjustable: from 1.200 Baud to 115.200 Baud
• Can be fully configured with the help of the accompanying PC software
• Inputs and outputs are galvanic isolated
• Intelligent data management helps to avoid data errors
• Data logging
• Data filter dynamically adjustable for high performance
• Robust casing
• Superior Quality
6.2 Basis Measuring Module

- Operation Power: 24V DC
- Detection Power: 10-30V DC and 115-230V AC
- Operating temperature: -15°C ... 55°C according to EN 60945
- PB- Article No.: 7800101
- Weight: 3,2kg
- Type: PB-MM-Basis
- EMV resistance according to EN60945
- Emergency toggle switches for each channel
- Stainless Steel box
- Superior quality – Made in Germany
6.2.1 Measuring Card 115-230V AC

- Power supply: 115-230V AC
- Operating temperature: -15°C ... 55°C according to EN 60945
- Weight: 0.35kg
- PB – Article number: 7800102
- Type: PB-MM

- This card is designed for 2 electrical items
- Superior quality – Made in Germany
6.2.2 Measuring Card 10-30V DC

- Power supply: 10 – 30V DC
- Operating temperature: -15°C ... 55°C according to EN 60945
- Weight: 0,38kg
- PB – Article number: 7800103
- Type: PB-MM

- This card is designed for 2 electrical items
- Superior quality – Made in Germany
6.3 Connection Cable
This connection cable is for the connection between the control unit and the Base Measuring Module. Cable length – 2m

Weight: 0,16kg
PB – Article number 7800110
6.4  Touch screen Monitor - 13,3" - TFT

Power supply: 24V DC
Operating temperature: - 15°C ... 55°C according to EN 60945
Weight: 4,4kg
PB – Article number 7800104
Type: HD 13T21 MMC-E1C-PABA
TFT Technology:
• 13.3 inch TFT Liquid Crystal Display module
• Widescreen, Aspect Ratio 16:10
• a-si TFT Active Matrix
• CCFL Backlight

TFT Caracteristic:
• Native Resolution : 1280 x 800 (WXGA)
• Pixel Pitch (RGB) : 0.2235 (H) x 0.2235 (V) mm
• Response Time : 6/10ms (typical) (Tr/Tf)
• Contrast Ratio : 800:1 (typical)
• Light Intensity : 400 cd/m2 (typical)
• Viewable Angle : 70 deg (H) 60 deg (V) (typical)
• Active Display Area : 286.08 (H) x 178.8 (V) mm
• Max Colors : 262000

Physical Dimentions:
• 355.00 (W) x 248.50 (H) x 58.00 (D) mm
• 4 x M4 VESA mounting 75x75mm, Max 8mm deep
• Built-in Console mounting 4 x M5x15mm screws
• Weight: 4.4 kg

User control:
Behind front bezel - Glass Display Control™ (GDC) IP66:
• Power On/Off, Brightness Control (+/-), Light Sensor (not visible)
• Programmable Alarm LED, Buzzer (not visible)

Inviromental Considerations:
Operating : Temperature -15 deg. C to +55 deg. C
Humidity up to 95%
• Storage : Temperature -20 deg. C to +60 deg. C
Humidity up to 95%
• IP-Rating : Protection: IP66 front - IP22 rear (EN60529)

Safety Considerations:
Even although the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

Input and Output connectors:
• Primary Power 24VDC 1 x SL-SMT 90F (1 x 2 pole)
• Secondary Power 24VDC 1 x SL-SMT 90F (1 x 2 pole)
• LAN 2 x RJ45
• USB2.0 (<10m) 2 x Type A 1 x Pin header
• Solid State Relay (NO) (over current protection)
  2 x SCD 90F (2 x 2 pole)*
• Digital Input (isolated/protected)
  2 x SCD 90F (2 x 2 pole)
• COM (isolated RS-422/485) 1 x SC 90F (1 x 5 pole)
• Safety Signal Relay (NO/NC) 1 x SC 90F (1 x 3 pole)
  * IEC 60950 Compliant, 48VDC.
7. Commissioning

7.1 Connection cable
The connection cable has to be used between the Basis Measuring cable and the Basis Module.

Please connect the cable in the shown way.

Remove the radical cables shroud for the shielding.

Connect the short cable end with the plugs in such a way, as you can see it on the photo.
7.2 Basis Measuring Module

Connect the male plug with the socket at the backside of the Basis measuring module. Do the same with all Measuring modules.

Connect the Basis measuring board with 24V.
7.2.1 Basis Measuring Module Voltage 115/230V AC
Connect the lights / electrical equipment according to following drawing.
7.2.2 Basis Measuring Module - Voltage 12V / 24V DC

Connect the lights / electrical equipment according to following drawing.
7.2.3 Emergency switches

In case that the monitor or some other parts of the system are out of work, you are able to switch on or off the Lights / Electrical equipment with the toggle switches.

During the normal operation of the system all toggle switches have to be in “OFF”.

To use the toggle switches it is necessary, that the lanterns still have the running voltage. During manual use the lanterns will be not controlled.
7.3 Control Unit

The Control Unit has an extra separate Operation Manual.

7.3.1 Main Voltage for the control unit

Connect the control unit with 24VDC.
7.3.2 Connection between control unit / Basis Measuring Board

Connect the long cable part of the connection cable with the Control unit.

Make sure that the shielding of the cable is in contact with shielding contacts of the cable entry.

Connect the cable in this way through the cable entry of the Control unit.

Connect the long cable end with the plugs in such a way, as you can see it on the photo.
Than plug it on “CH0” for the first Base Measuring Board.

Repeat this for each Base Measuring board.
CH1 for the second etc..
Connect the Control unit with the Touch screen Monitor via Ethernet cable. The Ethernet cable is part of the delivery of the Control unit.

Please close all cable entries which are not in use with the delivered brass plates.

7.4 Monitor

The Monitor has an extra separate Operation Manual
7.5 Measuring Card

7.5.1 Insert of the card

The cards have to be connected between the two white card holders. Press it carefully in the end position and lock the blue bottoms.

Attention !
Looking to the pin directions
7.5.2 Locking the card

After the insert of the Measuring card you have to lock the lock bolt. Then the card is not able to fall out of the board.
7.6 Basis Measuring Module - Connection Table

Module 1 – Voltage 24V

<table>
<thead>
<tr>
<th>Ch</th>
<th>Voltage</th>
<th>Lantern Type or Electrical item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch1</td>
<td>1.0</td>
<td>Port</td>
</tr>
<tr>
<td>Ch2</td>
<td>1.1</td>
<td>Starboard</td>
</tr>
<tr>
<td>Ch3</td>
<td>1.2</td>
<td>Towing Masthead 1</td>
</tr>
<tr>
<td>Ch4</td>
<td>1.3</td>
<td>Towing Masthead 2</td>
</tr>
<tr>
<td>Ch5</td>
<td>1.4</td>
<td>Mast forward</td>
</tr>
<tr>
<td>Ch6</td>
<td>1.5</td>
<td>Stern</td>
</tr>
<tr>
<td>Ch7</td>
<td>1.6</td>
<td>Towing Light aft</td>
</tr>
<tr>
<td>Ch8</td>
<td>1.7</td>
<td>Anchor</td>
</tr>
</tbody>
</table>

Module 2 – Voltage 24V

<table>
<thead>
<tr>
<th>Ch</th>
<th>Voltage</th>
<th>Lantern Type or Electrical item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch1</td>
<td>2.0</td>
<td>NUC upper SSb</td>
</tr>
<tr>
<td>Ch2</td>
<td>2.1</td>
<td>NUC upper SBB</td>
</tr>
<tr>
<td>Ch3</td>
<td>2.2</td>
<td>RIAM Light SSb</td>
</tr>
<tr>
<td>Ch4</td>
<td>2.3</td>
<td>RIAM Light SBB</td>
</tr>
<tr>
<td>Ch5</td>
<td>2.4</td>
<td>NUC lower SSb</td>
</tr>
<tr>
<td>Ch6</td>
<td>2.5</td>
<td>NUC lower SBB</td>
</tr>
<tr>
<td>Ch7</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Ch8</td>
<td>2.7</td>
<td></td>
</tr>
</tbody>
</table>
### Modul 3 – Voltage 230V

<table>
<thead>
<tr>
<th>Ch</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch1</td>
<td>3.0</td>
</tr>
<tr>
<td>Ch2</td>
<td>3.1</td>
</tr>
<tr>
<td>Ch3</td>
<td>3.2</td>
</tr>
<tr>
<td>Ch4</td>
<td>3.3</td>
</tr>
<tr>
<td>Ch5</td>
<td>3.4</td>
</tr>
<tr>
<td>Ch6</td>
<td>3.5</td>
</tr>
<tr>
<td>Ch7</td>
<td>3.6</td>
</tr>
<tr>
<td>Ch8</td>
<td>3.7</td>
</tr>
</tbody>
</table>

### Modul 4 – Voltage 230V

<table>
<thead>
<tr>
<th>Ch</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Ch2</td>
<td>4.1</td>
</tr>
<tr>
<td>Ch3</td>
<td>4.2</td>
</tr>
<tr>
<td>Ch4</td>
<td>4.3</td>
</tr>
<tr>
<td>Ch5</td>
<td>4.4</td>
</tr>
<tr>
<td>Ch6</td>
<td>4.5</td>
</tr>
<tr>
<td>Ch7</td>
<td>4.6</td>
</tr>
<tr>
<td>Ch8</td>
<td>4.7</td>
</tr>
</tbody>
</table>
### Modul 5 – Voltage 230V

<table>
<thead>
<tr>
<th></th>
<th>Lantern Type or Electrical item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch1</td>
<td>5.0</td>
</tr>
<tr>
<td>Ch2</td>
<td>5.1</td>
</tr>
<tr>
<td>Ch3</td>
<td>5.2</td>
</tr>
<tr>
<td>Ch4</td>
<td>5.3</td>
</tr>
<tr>
<td>Ch5</td>
<td>5.4</td>
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<tr>
<td>Ch6</td>
<td>5.5</td>
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<tr>
<td>Ch7</td>
<td>5.6</td>
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<td>Ch8</td>
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</tbody>
</table>

### Modul 6 – Voltage ??

<table>
<thead>
<tr>
<th></th>
<th>Lantern Type or Electrical item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch1</td>
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</tr>
<tr>
<td>Ch2</td>
<td>6.1</td>
</tr>
<tr>
<td>Ch3</td>
<td>6.2</td>
</tr>
<tr>
<td>Ch4</td>
<td>6.3</td>
</tr>
<tr>
<td>Ch5</td>
<td>6.4</td>
</tr>
<tr>
<td>Ch6</td>
<td>6.5</td>
</tr>
<tr>
<td>Ch7</td>
<td>6.6</td>
</tr>
<tr>
<td>Ch8</td>
<td>6.7</td>
</tr>
<tr>
<td>Modul 7 – Voltage ??</td>
<td>Lantern Type or Electrical item</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------</td>
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<tr>
<td>Ch1</td>
<td>7.0</td>
</tr>
<tr>
<td>Ch2</td>
<td>7.1</td>
</tr>
<tr>
<td>Ch3</td>
<td>7.2</td>
</tr>
<tr>
<td>Ch4</td>
<td>7.3</td>
</tr>
<tr>
<td>Ch5</td>
<td>7.4</td>
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<td>7.5</td>
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<td>7.6</td>
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<td>Ch8</td>
<td>7.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modul 8 – Voltage ??</th>
<th>Lantern Type or Electrical item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch1</td>
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</tr>
<tr>
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<td>8.1</td>
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<td>Ch3</td>
<td>8.2</td>
</tr>
<tr>
<td>Ch4</td>
<td>8.3</td>
</tr>
<tr>
<td>Ch5</td>
<td>8.4</td>
</tr>
<tr>
<td>Ch6</td>
<td>8.5</td>
</tr>
<tr>
<td>Ch7</td>
<td>8.6</td>
</tr>
<tr>
<td>Ch8</td>
<td>8.7</td>
</tr>
</tbody>
</table>
8. **Start the system**

8.1 **Start the system normal**
To start the system you have to push the Start button.
8.2 Start the system for OS Administration Area
You will see following screen.

With a double click on the “Lightscontrol.sh” you will start the program.

You have to press the push bottom

Ausführen
9. **Shut down the system**

To shut down the system you have to push the push button. Following screen you will see:

Now you have to select Yes or No.
10. Error

10.1 Blocking Error

This Error comes if you try to turn on a light / group which is blocked through the blocking mode.

To quit the Error you have to press the push bottom OK

To solve this problem you have to change the programming of the group / controls via the service mode.
10.2 Error Code 6

This Error Code 6 comes up, if one of the lights exhibits an error.

**If one light is not working correctly it will take 30 seconds before you get the alarm.**

Following will be shown on the screen:

![Error Code 6 Screen](image)

This Error Code 6 shows which light is not working properly.

The error can have the following reasons:

- Bulb is burned
- Cable to the light is damages
- Wrong wiring
- The LED Light has the wrong Minimum / Maximum Value
- No electricity
- Measuring card could be damaged

To quit the buzzer you have to press the push bottom.

To quit the Error you have to press the push bottom a second time.

The red point and the “ERROR” will stay until you solve the problem.

To check the light you could use the toggle switch. If the light run properly the measuring card will be damaged. Change the card.
10.3 Communication Error

This error comes if one of the Modules is not working properly.

**If one Module is not working correctly it will take 30 seconds before you get the alarm.**

![Communication Error Message]

This Communication Error shows which Module is not working properly.

The error can have the following reasons:

- Cable to the Module is damaged
- Wrong wiring
- No electricity

To quit the buzzer you have to press the push bottom

To quit the Error you have to press the push bottom a second time
10.4 General Communication Error

This error comes if the Basic Module is not working properly.

**If the Basic Module is not working correctly it will take 60 seconds before you get the alarm.**

The error can have the following reasons:

- Cable to the Module is damages
- Wrong wiring
- No electricity
- Network error

To quit the buzzer you have to press the push bottom **Yes**

To quit the Error you have to press the push bottom a second time **Yes**
10.5 Alerts

With this bottom you are able to get a list of all existing error in the system, which are not solved.