DP1213
Lighting Dimmer

User Manual ver. 1.53 ENG

The Lighting Company

Basic information

*Please, read this manual carefully before placing **DP1213** in operation*

- Block of dimmers **DP1213** is designed to regulate the intensity of light in theatres, discotheques, etc.
- **DO NOT DISMANTLE OR ALTER THIS DEVICE.**
- In case of malfunction, **IMMEDIATELY** switch off power.
- Do not open the device.
- Do not try to fix the device on your own. Turn to your distributor.
- Block of dimmers **DP1213** conforms to standard TU 3434-001-434800356758-06, is certified with system ROSTEST, conformance certificate № РОСС RU.АЯ46.В16038.

Warranty

- The warranty period for this device is 24 months of the day of sale.
- The warranty period **ceases** in case of self-repairing of the device.

Manufacturer

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Made in Europe

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1. Basic Characteristics

- **Power supply:** 380V, 3 PHASES + NEUTRAL. Frequency 50 Hz. Power supply of electronics by one PHASE and NEUTRAL.
- **Max supply:** 45A per PHASE.
- **Input control signal:** DMX-512 (optoizolate).
- **Cooling system:** forced air-cooling by cooler. Smooth rotation speed control depending on the temperature of radiators.
- **Protection:** output power circuits protected by electromagnetic circuit breakers (13A). Electronics power circuit protected by a 0,25A safety fuse (situated on the board, near the feeding transformer). Temperature control of the radiators provided by the microprocessor. With the temperature of radiators above 80ºC, output signals are blocked.
- **Microprocessor:** settings control from the front panel via the keyboard and the LCD display by means of the menu.
- **Modes of operation:** individual control of each channel from the operator's desk, test-mode, "soft start"-mode.

1.1 Technical characteristics

Power supply	**380V (three PHASES + NEUTRAL)**
Frequency	**50 Hz**
Number of channels	**12**
Max output each channels	**2500VA**
Load	**active or inductive**
Interference-suppression filter	**LC, 120 mcs**
Power element	**Inverse parallel SCRs, 35A**
Control signals	**DMX-512**
Power supply connection	**Terminals, 65A, 600V, 10sq.mm**
Load connection	**Terminals, 30A, 600V, 4sq.mm**
Mounting	**into rack**
Block size, mm	**(W x D x H) : 482 x 424 x 132 (3U)h**
Block weight, no more than, kg	**14,5**
Package size, mm	**(W x D x H) : 540 x 495 x 205**
Overall weight, no more than, kg	**16,0**

1.2 Installation

1.2.1 Bundling

- **Block of dimmers PD1213**
- **Manual**

1.2.2 Before installation

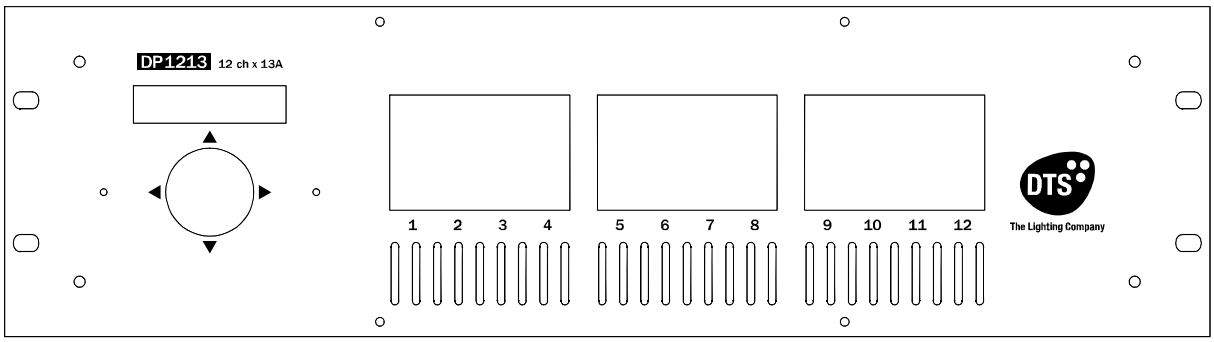
Please, read this paragraph carefully before installation.

- This device is not designed for home use.
- Do not switch on power until the device is ready for use.
- All connections of the dimmer should be done by *qualified staff*.
- Do not install close to sources of heat.
- Install the dimmer in a well-aerated place. Do not block air-supply to the front and back panels of the dimmer.
- The dimmer should not be installed in the following places:
  - ✓ Wet places or places with very low or high humidity (less than 35% and more than 80%)
  - ✓ Places prone to vibration and strokes
  - ✓ Places with surrounding temperature below 2ºC and above 40ºC

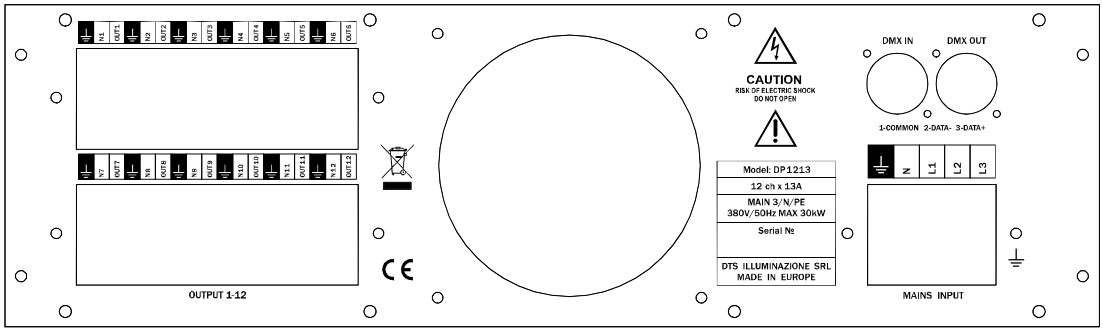
CAUTION! The dimmer MUST be earthed!

1.3 Connection of Dimmer PD1213

1.3.1 Front panel.



1.3.2 Back panel.



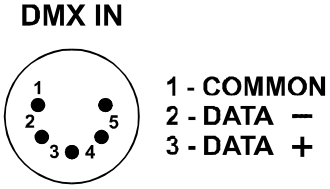
- **L1, L2, L3** – phases of power supply.
- **N** – neutral.
- ⏚ – earthing.
- Power for the dimmer should be fed from a electromagnetic breaker.
- Power, load connections and XLR-5pin connectors for DMX-512 connection are provided via terminals on the back panel of the block. On the front panel automatic 13A switchers, the block control buttons and the LCD display are situated.

1.3.3 DMX-512 signal connection

The interface cable should conform to the protocol EIA RS – 485 specifications and possess the following characteristics:

- ✓ 2 wires + braded screen
- ✓ resistance 120 Ohm
- ✓ low capacity
- ✓ provide max transmission speed of 250Kbit/s

Cable connection:
See the picture. Make sure that the screen is connected to contact 1.



CAUTION! The braded screen of the cable MUST NOT touch the earth wire of the system, as it can cause malfunctions!

1.3.4 An example of the DMX line connection

In order to get true data keep to the following settings of the connection line:

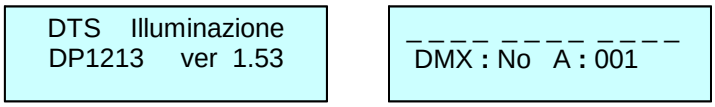
Max length of the connection line	250 m
Max number of devices	32
Cable laying	Do not lay the cable close to power lines
Terminator structure	A resistor of 120 Ohm between contacts 2 and 3 of the last connector

1.3.5 DMX line terminator structure

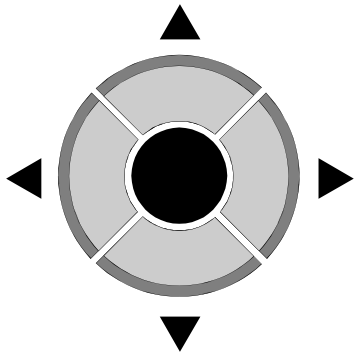
On the end of the DMX line a terminator should be installed. It is a resistor of 120 Om and power of 0.25W, situated between contacts 2 and 3 of the standard 3(5)-contact XLR connector.

1.3.6 First switching on

As soon as you have switched on the dimmer, the display reads the following:



1.3.7 Using microprocessor



1. To list through the menu use buttons **RIGHT / LEFT** ▶ ◀.
2. Press **OK** ● to enter the menu.
3. To change settings use buttons **UP / DOWN** ▲ ▼.
4. To confirm change of the settings press button **OK** ●.
5. To quit the menu press **LEFT** ◀.

2. Menu pictures description

2.1 MAIN MENU

In this menu dimmer setting modes can be selected:

- **STATUS DEVICE**
- **Protocol**
- **DMX ADDRESS**
- **DMX fault**
- **EDIT CURVE**

- **EDIT PREHEAT**
- **EDIT LIMIT**
- **EDIT CUE**
- **SOFT START**
- **DISPLAY**
- **FAN**
- **Set by default**
- **CHANNEL TEST**

To select a mode do the following:

1. Enter **MAIN MENU** by pressing **OK** ● while in the settings menu.

```
*   MAIN  MENU   *
    Status  Device
```

2. By pressing buttons **RIGHT** ▶ or **LEFT** ◀ in the last line of the display select the mode you need *(see paragraph 2.1)*.
3. Press **OK** ● to enter the mode you need. Press **LEFT** ◀ to quit the settings menu.

```
_ _ _ _ _ _ _ _ _ _ _ _
DMX : NO   A : 001
```

2.2 STATUS DEVICE mode

1. Enter **MAIN MENU**. The display reads the following:

```
*    MAIN  MENU    *
     Status  Device
```

   In this mode the block of dimmers can be given a 'name' containing no more than 16 symbols, for example SOFIT 1, RAMPA and the like. Capital letters of the Latin alphabet, 'space' and figures from 0 to 9 may be used.
2. Press **OK** ● to enter the mode, the display reads the following:

```
* STATUS  DEVICE  *
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
```

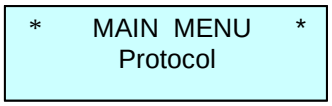
3. Press **UP** ▲ or **DOWN** ▼ to choose letters and figures you need (*see paragraph 2.2.*1) for each of the 16 character cells.

```
* STATUS  DEVICE  *
R_ _ _ _ _ _ _ _ _ _ _ _ _ _ _
```

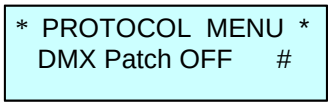
4. Press **OK** ●, the cursor will move automatically to the next cell.
5. By pressing and retaining **UP** ▲ you can move to the letter Z.
6. By pressing and retaining **DOWN** ▼ you can move to the symbol 'space'.
7. By pressing **RIGHT** ▶ or **LEFT** ◀ you can move the cursor from one cell to another.
8. To quit **STATUS DEVICE** mode use **LEFT** ◀ to move the cursor to the leftmost position and then press this button again.

2.3 PROTOCOL mode

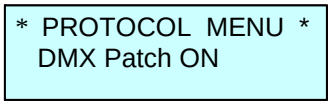
1. Enter **MAIN MENU**. The display reads the following:

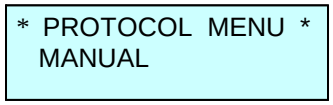


2. Press **OK** ● to enter the mode.

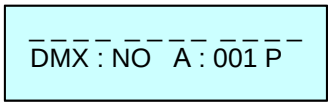


3. Press **UP** ▲ или **DOWN** ▼ to select a mode**.**





4. Press **OK** ● to confirm, to the right of the mode name symbol # appears.
5. To quit the menu press **LEFT** ◀.
6. If **DMX Patch ON** mode is selected, in the last line of the settings menu symbol **P** appears.

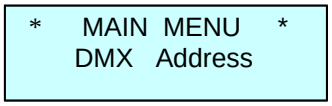


Input signal modes are the following:

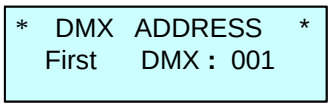
- **Patch Off -** appellation of a **DMX – address** to the dimmer,
- **Patch On -** appellation of a unique **DMX – address** to each channel of the dimmer,
- **Manual**

2.4 DMX ADDRESS mode

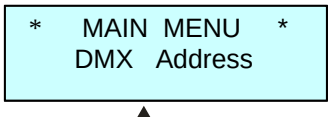
1. Select **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode.



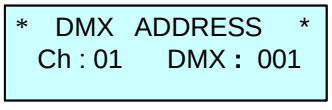
2. Press **OK** ● to enter the mode. If the protocol mode is **PATCH OFF** (*see paragraph 2.2*), the display reads the following:



3. Press **UP** ▲ or **DOWN** ▼ to select the initial address of the DMX signal (from 1 to 512). Press **OK** ● to confirm the selected address. The display reads the following:



4. Press **UP** ▲ to enter the mode. If the protocol mode is **PATCH ON** (*see paragraph 2.2*), the display will read the following:



5. Press **UP** ▲ or **DOWN** ▼ to select the number of channel (from 1 to 12 or AL), press **OK** ●, move the cursor to **DMX**.

6. Press **UP** ▲ or **DOWN** ▼ to select the DMX address (from 1 to 512), press **OK** ●, move the cursor to **Ch**.

7. Repeat the actions described in paragraphs 5 and 6 for all channels.

8. Press **LEFT** ◀ to quit to **MAIN MENU**.

! ***The factory default in the PATCH ON mode is the following: channel 1 has address 1, channel 2 has address 2, etc.***

2.5 DMX FAULT mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode *(in this mode you can choose the reaction of the dimmer on losing the DMX signal).*

```
*    MAIN  MENU    *
      DMX  fault
```

2. Press **OK** ● to enter the mode.

```
*    DMX  FAULT    *
     Level  SAVE   #
```

```
*    DMX  FAULT    *
     Level  RESET  #
```

```
*    DMX  FAULT    *
Manual  Emergency  #
```

3. Press **UP** ▲ or **DOWN** ▼ to select one of the three modes of dimmer's reaction in case of losing the DMX signal.
   - **Level SAVE** mode – the value of the latest DMX signal is saved.
   - **Level RESET** mode – all the channels turn down if the DMX signal disappears.
   - **Manual Emergency** – setting the output signals recorded in the memory of the device (in the scene Cue: 13).

4. Press **OK** ● to confirm. In the last line of the display symbol # appears.

5. If **Level RESET** mode is selected, symbol **F** appears in the last line of the settings menu.
   If **Manual Emergency** mode is selected, symbol **E** appears in the last line of the settings menu.

```
_ _ _ _  _ _ _ _  _ _ _ _
DMX : NO  A : 001 PF
```

```
_ _ _ _  _ _ _ _  _ _ _ _
DMX : NO  A : 001 PE
```

2.6 EDIT CURVE mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode (*in this mode you can choose a law according to which each channel will be regulated).*

```
*    MAIN  MENU    *
      Edit  Curve
```

2. Press **OK** ● to enter the mode.

```
*    EDIT  MENU    *
Ch : 01   Curve : LL
```

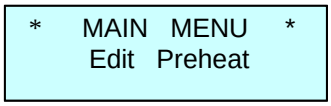
3. Press **UP** ▲ or **DOWN** ▼ to select the number of channel (from 1 to 12 or AL). Press **OK** ●, move the cursor to **Curve**. Press **UP** ▲ or **DOWN** ▼ to choose one of the 4 laws of regulation for the selected channel. Press **OK** ●.

4. The dimmer provides 4 laws of regulation:
   - LL curve – linear law
   - LS curve – luminosity linear law
   - LQ curve – logarithmic law
   - SR curve – switch on/off law.

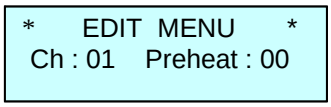
5. Repeat paragraph 3 for all channels.
6. Press **LEFT** ◀ to quit to **MAIN MENU**.

2.7 EDIT PREHEAT mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode *(in this mode you can choose the preheat rate of filaments for each channel of the dimmer).*



2. Press **OK** ● to enter the mode.

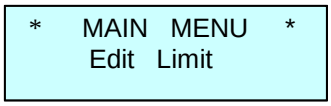


3. Press **UP** ▲ or **DOWN** ▼ to select the number of channel (from 1 to 12 or AL). Press **OK** ●, move the cursor to **Preheat**. Press **UP** ▲ or **DOWN** ▼ to choose the preheat rate (from 0 to 20%). Press **OK** ●.

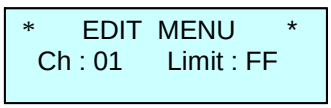
4. Repeat paragraph 3 for all channels.
5. Press **LEFT** ◀ to quit to **MAIN MENU**.

2.8 EDIT LIMIT mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode (*in this mode you can limit the luminosity for each channel).*



2. Press **OK** ● to enter the mode.

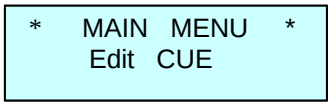


3. Press **UP** ▲ or **DOWN** ▼ to select the number of channel (from 1 to 12 or AL). Press **OK** ●, move the cursor to **Limit**. Press **UP** ▲ or **DOWN** ▼ to choose the limit (from 100% to 20%). Press **OK** ●.

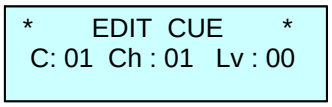
4. Repeat paragraph 3 for all channels.
5. Press **LEFT** ◀ to quit to **MAIN MENU**.

2.9 EDIT CUE mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode (*in this mode you can programming CUE (max 13)).*



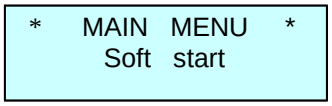
2. Press **OK** ● to enter the mode (the cursor is on cue C:).



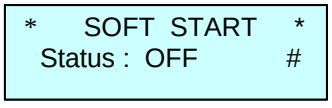
3. Press **UP** ▲ or **DOWN** ▼ to select the number of cue **C:** (from 1 to 12 or 13 (cue uses the Manual Emergency mode). Press **OK** ●, move the cursor to channel **Ch:**. Press **UP** ▲ or **DOWN** ▼ to choose the **Channel** (from 1 to 12, or AL). Press **OK** ●**,** move the cursor to level **Lv:**. Press **UP** ▲ or **DOWN** ▼ to choose the level (from 0% to 100%). Press **OK** ●.
   To repeat paragraph 3 for all channels.
4. Press **LEFT** ◀ to quit number of cue **C:**.
5. Press **LEFT** ◀ to quit to **MAIN MENU**. All the cues are recorded in the flash memory of the device.

2.10 SOFT START mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode.



2. Press **OK** ● to enter the mode.



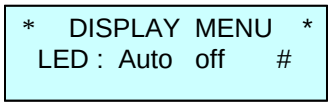
3. Press **UP** ▲ or **DOWN** ▼ to select one of the two modes: **Status OFF** *("soft start" mode off)* or **Status ON** *("soft start" mode on).* Press **OK** ●. When the mode is on, the output signal achieves its maximum value in about 0.2 seconds.
4. Press **LEFT** ◀ to quit to **MAIN MENU**.

CAUTION! All the settings of the dimmer are saved in the flash memory and are available even after power is switched off.

2.11 DISPLAY mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode *(in this mode you can control the display illumination).*

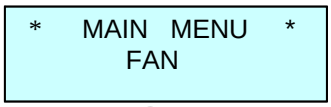
2. Press **OK** ● to enter the mode.



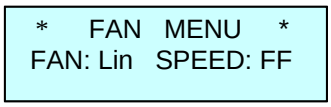
3. Press **UP** ▲ or **DOWN** ▼ to select one of the two modes: **Always On** or **Auto Off** *(the illumination turns off automatically in 40 seconds after the latest pressure of any button).* Press **OK** to confirm. In the last line of the display symbol # appears.
4. Press **LEFT** ◀ to quit to **MAIN MENU**.

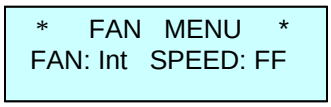
2.12 FAN mode

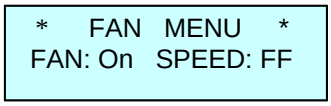
1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode FAN.

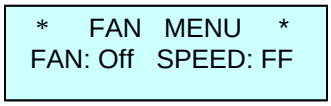


2. Press **OK** ● to enter the mode.





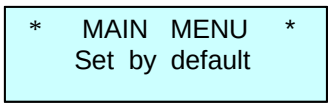




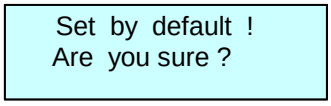
3. Press **UP** ▲ or **DOWN** ▼ to select режим работы FAN
   - **FAN: Lin** – fan performance is changed depending on radiators temperature. As soon as radiators temperature achieves the rate of +32ºC, the fan starts at speed one, then speed increases in proportion to the rise in temperature. When radiators cool down to about +27ºC the fan switches off,
   - **FAN: Int** – should at least 2 channels of the dimmer reach the rate of 50% or 4 channels of the dimmer reach the rate of 10%, the fan turns to max speed. The fan switches off within 30 sec after all the channels fall to 0%,
   - **FAN: On** – the fan is ALWAYS ON independently of reading of the temperature sensor,
   - **FAN: Off** – the fan is OFF! The fan switches on automatically at maximum speed, should temperature of at least one radiator of the dimmer exceed +50ºC, and remains on until the temperature falls to about +30ºC.
4. Press **OK** ●**,** move the cursor to SPEED**:** FF. Press **UP** ▲ or **DOWN** ▼ to choose the max speed of the fan. The speed rate lies between 37 and 100%. Press **OK** ●.
5. Press **LEFT** ◀ to quit to **MAIN MENU**.

2.13 SET BY DEFAULT mode

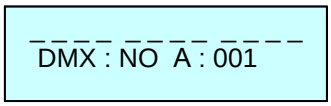
1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode *(all the settings return to factory default).*



2. Press **OK** ● to enter the mode.

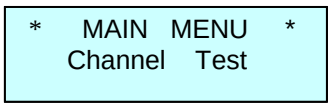


3. Press *simultaneously* **LEFT** ◀ and **RIGHT** ▶ to confirm. All the settings will return to factory default. All the settings will return to factory default.

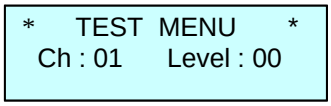


2.14 CHANNEL TEST mode

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀ to select the mode.



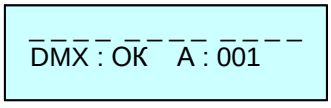
2. Press **OK** ● to enter the mode.



3. Press **UP** ▲ or **DOWN** ▼ to select the number of channel (from 1 to 12, or AL), press **OK** ●, move the cursor to **Level**. Press **UP** ▲ or **DOWN** ▼ to choose the output signal rate (from 0 to 100%). Press **OK** ●, the cursor will move to **Ch**.
4. Repeat paragraph 3 for all channels.
5. Press **LEFT** ◀ to quit to **MAIN MENU**.

2.15 SETTINGS DISPLAY

1. Enter **MAIN MENU**, press **RIGHT** ▶ or **LEFT** ◀. The display will read the following:



The first line reads channels level.
The last line shows the following information:

- DMX availability **DMX : OK**
- DMX absence **DMX : NO,** *the display light twinkles* (to attract staff's attention)
- Signal receipt error **DMX : ER,** *the display light twinkles*
- Initial block address in **PATCH OFF** mode

- First channel address in **PATCH ON** mode

2. Press **RIGHT** ▶ or **LEFT** ◀, now you can see the following:

```
TºC : 24  23
Pwr :  Ok  Ok  Ok
```

3. The first line reads the temperature of block radiators (in ºC), the last line reads availability of all phases of the feeding network – symbol OK (in case the phase is off – symbol Bad).

4. Enter **MAIN MENU**, press **LEFT** ◀. The display will read the following (mode CUE):

```
_ _ _ _  _ _ _ _  _ _ _ _
MANUAL  CUE : 01
```

The first line reads channels level.
The last line shows the following information:

- Mode **MANUAL**
- Number **CUE**

5. Press **RIGHT** ▶ or **LEFT** ◀, now you can see the following:

```
  STATUS  DEVICE
RAMPA
```

The first line reads **STATUS DEVICE.**
The last line shows the following information – the given name of the block.

3. Circuits protection

3.1 **Temperature protection:** the maximum temperature of any of the radiators can achieve the rate of 80ºC. When this rate is achieved, the dimmer's outputs turn to "off". The display reads the following:
The display light starts to blink

```
TºC : Hi   23  ALARM
Pwr :  Ok  Ok  Ok
```

Having cooled down, the dimmer starts again.

3.2 **Protection of disappearing of one or two phases:** if the voltage of phase L2 or L3 of the power circuit disappears, the following message is displayed:
The display light starts to blink

```
TºC :  23   24  ALARM
Pwr :  Ok  Bad  Bad
```

After the breakdown is dealt with, the dimmer starts again.

3.3 **Load protection** is provided by 13A electromagnetic breakers.

The Lighting Company

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