



Quadrant – *Digital Dimmer Pack*

Leid - Equipamento Electroacústico Iluminação e
Domótica Lda.

Rua do Município, 9 – 7490-243 MORA Portugal
Telef. +351.266.403.597 Fax. +351.266.403.461

www.leid-portugal.com e-mail: produto@leid-portugal.com

Models: LB123
LB123d
LB65

Instructions Manual

2KW to 5KW DIMMER PACKS.



Quadrant LB Series Digital Dimmer Packs have been projected to achieve the most exigent demands, such as Theatres, auditoriums and other live applications.

To have the best approach to his final use, LB series can be supplied in three different cases:

- Standard for stand alone application.
- Quick-install drawer type for simple maintenance.
- Ventilated Rack cabinets (30 or 42 U) with up to 72 channels. More channels can be quoted upon request. Those units are ready to install, fully protected (one MCB per channel and RCD) and supplied with a built-in DMX Splitter.

Communication protocol: DMX 512, (XLR - 5 Pins)

Main specs:

- Triple seven segments LED Display.
- Keyboard first DMX Channel selection.
- Keyboard General Pre-Heat adjust.
- Keyboard test option.

▪ **LED Display visualises:**

- Three Phase presence (each seven segment display corresponds to one phase). One phase fault is detected if respective display blinks.
- Three blinking displays represents DMX fault.
- First DMX Channel.
- 12 LED's are real output monitors.
- Each channel is protected by one MCB. "d" versions are equipped with built in 63 Amperes RCD (ΔI max. 30mA).
- Double 80mm fans for best cooling during demanding applications.
- Fans are individually electronic thermal controlled.
- Electronic thermal shut-down, if internal temperature rises up to dangerous values, with automatic reset.

Figure 1 shows us what the control panel should look like when we put power on for the first time. If everything is O.K and DMX is present at the input, all three digits should remain steady. If DMX signal is not connected, three digits should blink. We have decided to use seven segment LED display, in order to give the user the possibility to detect any malfunction even at "long" distances.

One blinking display shows us that one phase is missing.

If one display is blinking the user should verify electrical installation in order to identify any electrical problem.

Number **001** says that the DMX channel stored on the unit is Channel "1". The user can reprogram DMX channel, set pre-heat level or perform a channel test using the three keys, but for that you should read carefully SET-UP Section.



Fig.1

Technical Specifications

Protocol: DMX512

Input / Output Connectors: XLR-5

Memory: Memorises last DMX information during DMX failure and all pre-sets (DMX Channel and pre-heat) after Power down.

Output protections: One MCB per channel to protect the unit from overloads.

Thermal protections.

One 63 Amp. RCD (ΔI max. 30mA) - only on version "d".

Output Connector: 16 Pins Harting Type (16 Amp.)

Output Configuration:

Output Channel→	1/7	2/8	3/9	4/10	5/11	6/12
Config.A (Pins)	L:1-N:2	L:3-N:4	L:5-N:6	L:7-N:8	L:9-N:10	L:11-N:12
Config.B (Pins)	L:1-N:9	L:2-N:10	L:3-N:11	L:4-N:12	L:5-N:13	L:6-N:14

L= Live N= Neutral Earth should be connected to Harting body.

Power per Channel:

LB123 and LB123d : 3,6KW

LB65: 5KW

Dimensions: 483 x 132 x 450 mm.

Handles will increase depth 32mm out from front panel.

Weight: 22,5 Kg

Mains: 3 Phases + Neutral.

Working Conditions: ambient Temperature: -10°C to 35°C.

Relative Humidity: 80% max. (without condensation).

▪ Dimmers from LB Series have been projected with a new feature: OUTPUT TEST:

- First press both **DOWN** and **SELECT** keys. As soon as the three decimal points light on, you are on TEST Menu and channel 1 is set at 40% (this value has been chosen in order to detect a 110Volt bulb connected to a 230Volt circuit without blowing it up).
- Press **SELECT** again and you can check channel by channel. **IMPORTANT:** In TEST Mode, the display shows the selected DMX channel, while the LED's shows which channel of the unit has been selected.


The idea of this feature is to allowed any technician to check if electrical circuits are O.K. without the need of a light desk.

WARRANTY and SERVICE.

All distributors are in conditions to give technical service. Any assistance should be made by authorised personal only.

One year Warranty for all Quadrant equipment should be given. Purchase date will initiate warranty period (consider invoice date).

Warranty will terminate if equipment has been open by not authorised person or misuse.

Quadrant equipment complies CE specifications 

IMPORTANT: In order to develop all equipment in production, **Leid** reserves the right to change any part or specifications of this equipment or this manual with no previous notice.

WARRANTY and SERVICE.

Those units should be installed on dry and well ventilated places. A special attention should taken by installer when he is going to make electrical connections.

Mind following points:

- Mains supply should have three phases and should be protected by a 4 Pole 63Amp. (or other adequate value) R.C.D. (ÄI = 30mA), except for **LB123d**. In case of electrical rule discrepancies **mind local electrical regulations**.
- Power cable should be protected by a 4 pole 63Amp. M.C.B. In case of electrical rule discrepancies **mind local electrical regulations**.

▪ Never overload cables and electrical sectors. Respect following table:

LTB123: 3x230V @ 63Amp. (3 Phase at 63 Amps per phase).

LTB123d: 3x230V @ 63Amp. (3 Phase at 63 Amps per phase).

LTB65: 3x230V @ 63Amp. (3 Phase at 63 Amps per phase).

▪ Installer should be very careful with electrical connections (crimp, ring and screw terminals). Screws should be verified at least once per year. Bad contacts will generate overheat with consequent degradation of insulation materials of cables and connectors. This overheat can produce **FIRE!** Electrical regulations identifies the type of cables (section and insulation specifications) you should use on different installations... Follow those regulations. Harting pin out should be verified and understood before installation. According with customer demands, there are two pin out configurations (type 1 and 2).

▪ **Neutral should have a cable with a conductor area 130% larger than phase conductors**, (In small installations, same conductor areas for Neutral and Phases are acceptable) Missing Neutral produces equipment malfunction and, in special situations some components could be destroyed.

▪ Choose a dry and ventilated place (Tamb. < 35°C). The installer should remember this equipment produces heat.

This heat should be removed from the room or place where it has been installed.

- **Very Important:** For safety reasons ***never*** work with this equipment on wet conditions!

Each channel is protected by one M.C.B. If any M.C.B. breaks that means there are an output problem. Never try to substitute a magnetic circuit breaker by new one with larger value. Any action of any kind inside the equipment by non authorised person will terminate warranty.

- DMX should be transmitted through a DMX or STP data cable (impedance around 100 to 120 Ohms). Microphone cables should be avoided.

Important: if the installer uses data cable with more than one twisted pair, only one twisted pair should be identified and used. The others should be connected to ground. Remember, the cable manufacturer only guaranties the impedance for a twisted pair (not between adjacent pairs).

- XLR5 should follow the pin-out mentioned above:

Pin 1 = Ground - GND

Pin 2 = Data -

Pin 3 = Data +

- Last equipment on a DMX line, should have a male XLR5 with a 120 Ohms resistor between pin 2 and 3. This resistor will terminate the DMX data line. If one doesn't follow this rule, problems with data transmission should happen generating a strange malfunction, specially if cables are bigger than 20m (approximate value).
- If you have a complex DMX installation (such as equipment on a truss and on the floor) you should separate each sector (or branch) from others using a DMX splitter (better if the splitter is opto-coupled to prevent ground loops, type **S6P** from **Quadrant**).
- NEVER FORGET to terminate each branch with a terminator.

SET-UP.

After installation, one can prepare the dimmer Set-up operation. Let's enter the *edit mode*:

- First touch both **UP** and **SELECT** keys. After some seconds, decimal point of digit "hundreds" from "DMX channel" will turn ON. That means you can pre-set this digit.
- If we want to select DMX channel 27, this digit should be "**0**". In that case we should follow to "tens" digit, touching **SELECT** key once. Decimal point of digit "tens" will light up. Touching two times **UP** key, number **2** will appear. Now we'll need to define "units" digit. Touch again **SELECT** key and decimal point of digit "units" will turn ON. Now we need to touch **UP** key six times (or **DOWN** key four times) and we'll have units selected on number **7**. **We have set up the dimmer at channel 27.** Another touch on **SELECT** key, and we leave channel pre-set and enter the *General pre-heat* set-up menu.
- Now the display shows us: **P00**. That means General Pre-Heat is 00%. Touch **UP** and **DOWN** keys and you can pre-set any level from 0 to 30%.
- New touch on **SELECT** key and we are ready to work.

IMPORTANT: Depending on light desks, dimmers LB123, LB123d and LB65, could not detect DMX data signal if any selected channel do not exist on the DMX data string (Ex.: if we are working with a 256 channels light desk, the dimmers will not detect DMX if it was set-up at channel 246, or bigger, cause in that case the 12th channel should be 257 and that channel doesn't exist – remember it is a 256 channels light desk).