



Light-Display-Module for the Light Control Light@Night and Light-DEC

Light-Display-F Part-No.: 050032

>> finished module <<

At least one **Light-Display-Module** and one **Light-Interface (LI-LPT or LI-LAN)** will build together the hardware for the **PC-Layout-Light Control Light@Night**.

The connection of a **Light-Display-Module** to a **Light-DEC-Basis-Module** will create the basic unit for the **Layout Light Control Light-DEC**.

Light-Display-Modules contain **40 light outputs** with a possible **current load of 0.5 Ampere** on each output.

The **lighting effects** (neon lamps, flashing blue light, light chains, traffic lights and many others) can be assigned to **40 outputs**.

Suitable for analog and digital model railways.

This product is not a toy! Not suitable for children under 14 years of age! The kit contains small parts, which should be kept away from children under 3! Improper use will imply danger of injuring due to sharp edges and tips! Please store this instruction carefully.



Introduction/Safety instruction:

You have purchased the **Light-Display-Module** for the Light Control **Light@Night** and **Light-DEC** for your model railway.

The **Light-Display-Module** is a high quality product that is supplied within the assortment of **Littfinski DatenTechnik (LDT)**. We are wishing you having a good time using this product.

The finished module comes with **24 month warranty**.

- Please read the following instructions carefully. Warranty will expire due to damages caused by disregarding the operating instructions. **LDT** will also not be liable for any consequential damages caused by improper use or installation.
- Also, note that electronic semiconductors are very sensitive to electrostatic discharges and can be destroyed by them. Therefore, discharge yourself before touching the modules on a grounded metal surface (e.g. heater, water pipe or protective earth connection) or work on a grounded electrostatic protection mat or with a wrist strap for electrostatic protection.
- We designed our devices for indoor use only.

Connect the Light-Display-Module:

- **Attention:** Before starting the installation switch off the drive voltage by pushing the stop button or disconnect the main supply.
- The **Light-Display-Modules** contain a large capacitor which has to be completely discharged before the **Light-Display-Module** can be connected or disconnected. Please wait a couple of minutes after switching off the supply transformer before you connect or disconnect the **Light-Display-Module**.

Connect the **Light-Display-Module** to the **Light-Interface (LI-LPT or LI-LAN)**, to the **Light-DEC-Basic-Module** or to the already available **Light-Power-** or **Light-Display-Modules** via the **10-poles pin-plug-bar**.

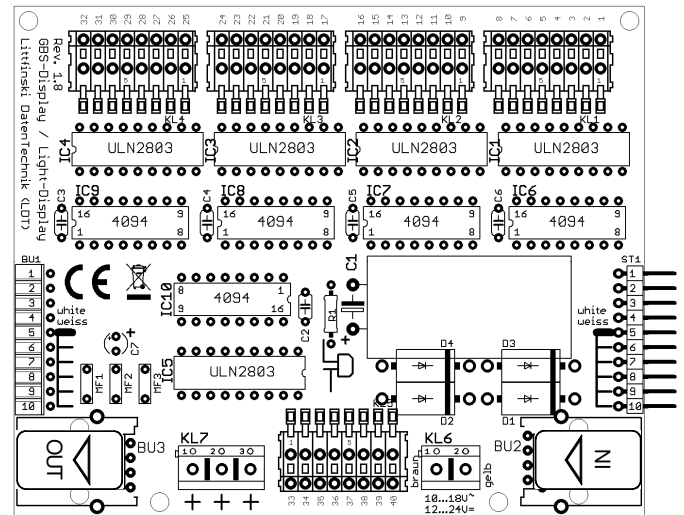
The pin bar shall **not be inserted in offset** position to the socket bar.

The **modules are correct inserted** whenever the pc-boards are

flash at the **top** and at the **bottom**. The **pictures** at the rear side of this instruction show the correct position of the modules.

Light-Power- and **Light-Display-Module** do not need to be connected directly to each other. It is as well possible to connect the module via the "**Kabel L@N**" or via the **screened** and therefore **interference protected "Kabel Patch"** (from **Light-Power Version 1.2** and **Light-Display Version 1.7**).

Light-Display-Modules contain **40 outputs** with a maximum load of **0.5 Ampere** each. They are particular suitable for switching light sources such as **incandescent model railway lamps** or **light emitting diodes (LED)**.



Voltage supply to the Display-Modules:

Each **Light-Display-Module** will get the **voltage** from a **model railway transformer** via the **clamp KL6**.

The **supply voltage** can be between **10 and 18 Volt AC** or between **12 and 24 Volt DC**.

If you use mainly **light emitting diodes** on your layout it is

possible that one **52VA transformer** can supply more than one **Light-Display-Module**. **Picture 3** at the rear side of this instruction shows how to arrange the **supply of one transformer to two Light-Display-Modules**.

Please **attend always** to the **same polarity** (marked **brown** and **yellow**) at the clamp **KL6** of the connected **Light-Display-Module**.

If you use **incandescent lamps** for illumination one **52VA transformer** can supply one **Light-Display-Module**. Also in this case please **attend always** to the **same polarity** (marked **brown** and **yellow**) at the clamp **KL6** of the connected **Light-Display-Module** (**Picture 4** at the rear side of this instruction).

Connect the Illumination:

Each **Light-Display-Module** contains **40 outputs**. **Model incandescent lamps** can be **directly connected**. **LED's** require a **serial resistor** (about 4,7kOhm, depending to the input voltage on **KL6**).

Each **output** can be loaded up to **max. 0.5 Ampere**. For clamping a connection cable onto one of the 40 outputs please press **carefully** down the **white lever** and insert the cable from the top into the clamp.

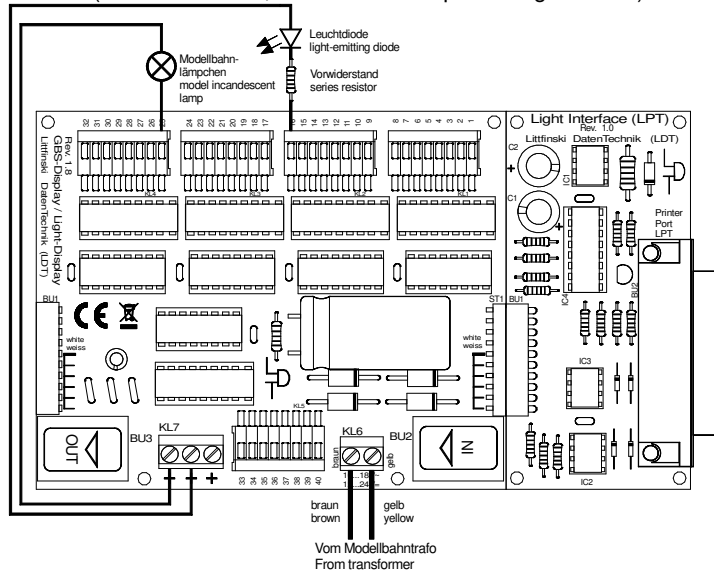
If the **Light-Display-Module** will be supplied with AC-voltage is the **DC-voltage** at the 40 outputs about **(1,414 * input voltage) - 1.4 Volt**. An AC input voltage of e.g. 15 Volt (on **KL6**) will give a DC-voltage of about 20 Volt at the outputs.

If the **Light-Display** will be supplied with DC voltage on **KL6** the **output DC voltage** will be **lower by about 1.4 Volt** related to the input voltage. The interrelation between input and output voltage will be shown on **table 1** at the rear side of this instruction.

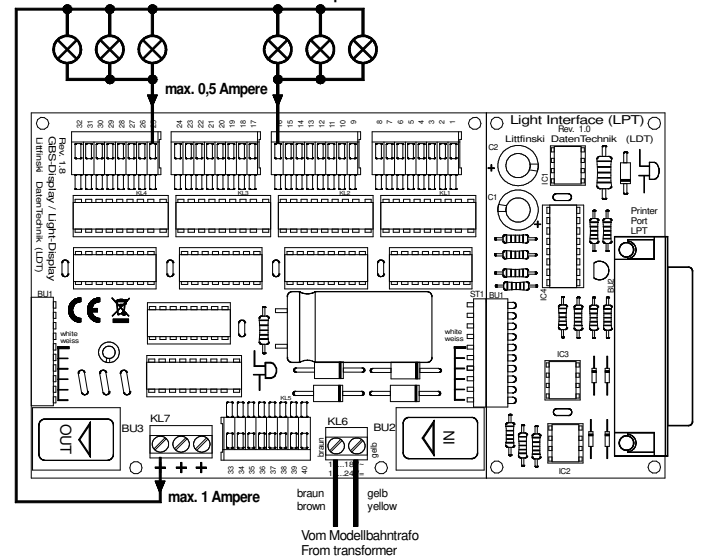
The **common positive pole** for all outputs is **clamp KL7** (**Picture 1** at the rear side).

The **common positive pole** contains **three inputs** which can be loaded with **1 Ampere** each. **Distribute** the common positive connection of the lamps and LED's **evenly** to the three positive clamps **KL7** (**Picture 2** at the rear side).

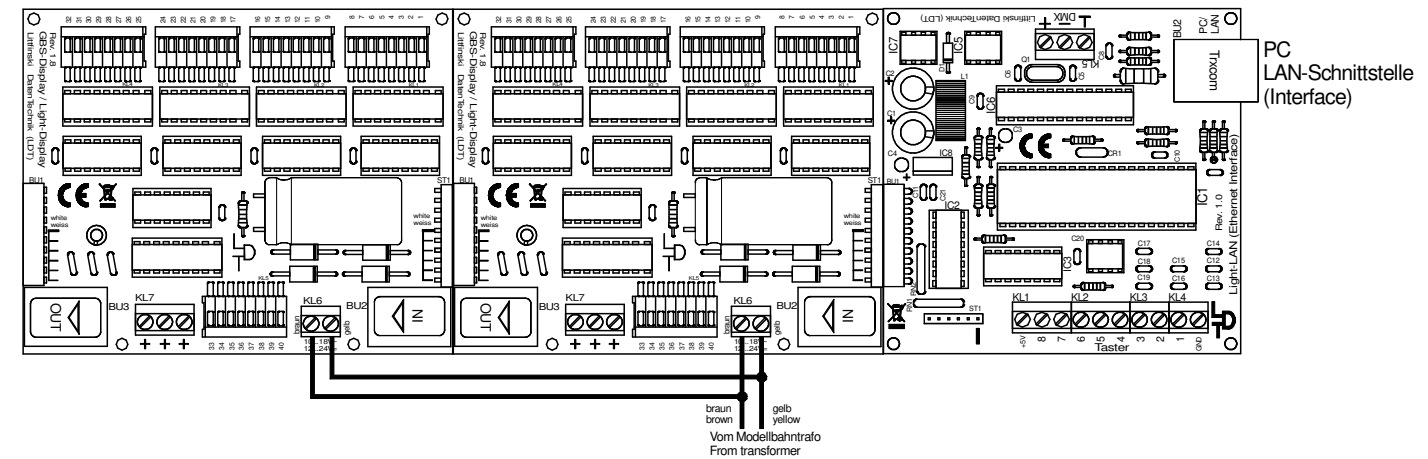
Picture 1: Incandescent lamps can be connected directly. For Light Emitting Diodes it is absolutely required to use a serial resistor (about 4.7kOhm, related to the input voltage at KL6).



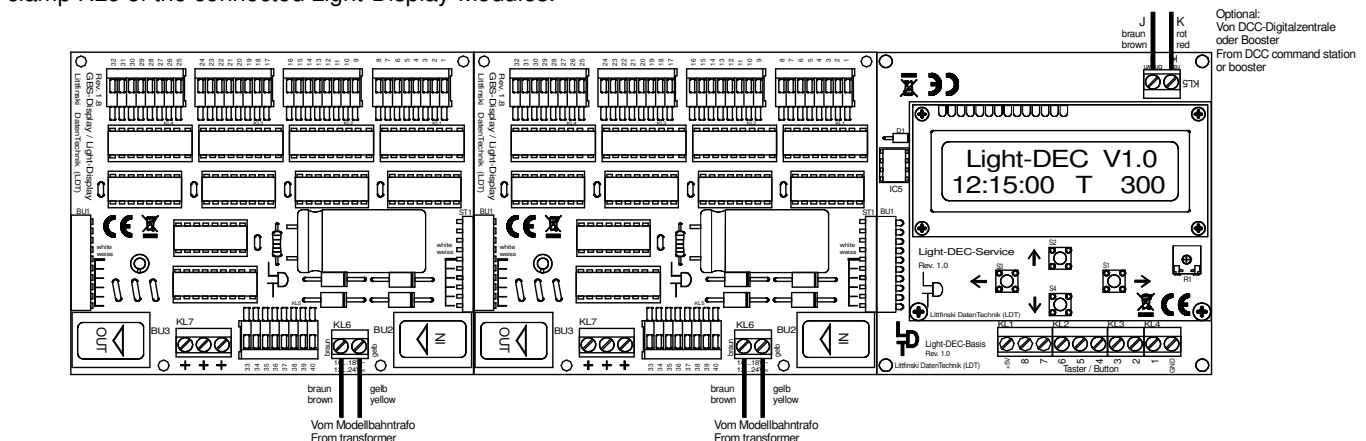
Picture 2: Each of the 40 light outputs can be loaded by up to max. 0.5 Ampere. Each input of the three positive clamps (KL7) can be loaded with max. 1 Ampere.



Picture 3: If you illuminate your layout mainly with Light Emitting Diodes one 52 VA transformer can supply more then one Light-Display-Module. In this case attend always to the same polarity (marked brown and yellow) at the clamp KL6 of the connected Light-Display-Modules.



Picture 4: If you illuminate your layout with incandescent lamps one 52VA transformer can supply one Light-Display-Module. If possible please use only transformers from the same manufacturer and attend to the same polarity (marked brown and yellow) at the clamp KL6 of the connected Light-Display-Modules.



Colored sample connections can be found on our Web-Site www.ltd-infocenter.com at the section "Sample Connections".

Table 1:

Input Voltage (KL6)	Output Voltage	Input Voltage (KL6)	Output Voltage
AC-Voltage	DC-Voltage	DC-Voltage	DC-Voltage
10 V AC	12.7 V DC		
12 V AC	15.6 V DC	12 V DC	10.6 V DC
15 V AC	19.8 V DC	15 V DC	13.6 V DC
16 V AC	21.2 V DC		
18 V AC	24.0 V DC	24 V DC	22.6 V DC

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