



# Master-Module for Decoder for Switchboard Lights

from the *Digital-Professional-Series* !

**GBS-Master-s88-F** Part-No.: **050122**

>> finished module <<

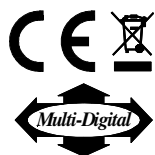
**Suitable for the s88-feedback bus**

The **GBS-Master-Module** together with the **Display-Module GBS-Display** will build the **Decoder for Switchboard Lights GBS-DEC**. Up to **4 Display-Modules** can be connected onto each **Master-Module**.

Each Display-Module GBS-Display can control

⇒ 16 turnout symbols or 32 track-occupancy symbols.

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.



white point



## Introduction/Safety instruction:

You have purchased the **Master-Module GBS-Master** as a kit or as a finished module for the **Decoder for Switchboard Lights GBS-DEC**. The **Master-Module GBS-Master** is a high quality product that is supplied within the *Digital-Professional-Series* of Littfinski DatenTechnik (LDT).

We are wishing you having a good time using this product.

Our components of the *Digital-Professional-Series* can be easily and without any problems operated on your digital model railway.

The **Master-Modules GBS-Master-s88** is suitable for the **s88-feedback bus**.

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.
- We designed our devices for indoor use only.

## Connecting GBS-Modules:

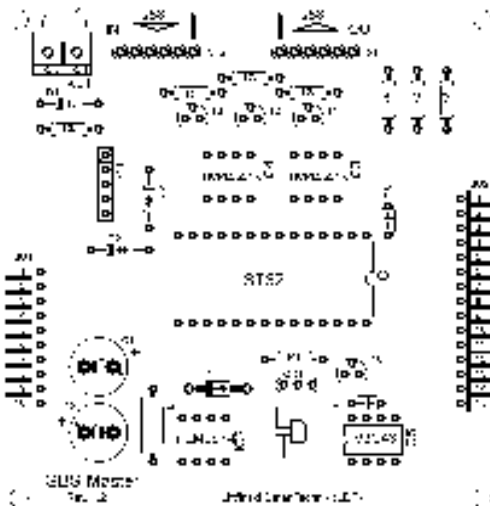
- **Attention:** Before starting the installation switch off the drive voltage by pushing the stop button or disconnect the main supply.

At first connect the **Master-Module GBS-Master** to a **Display-Module GBS-Display** via the **10-poles pin-plug-bar BU1**. For setting the **addresses and operating modes** connect the **Master-Module GBS-Master** additionally to a **Service-Module GBS-Service** via the **15-poles pin-plug-bar BU2**.

**Avoid any offset of the pin-plug-bar** of the Display- and the Service-Module to the **pin socket bar** of the Master-Module. For this issue **please attend** to the **operating instructions** of the **Display-** and **Service-Module**. The **picture 1** at the rear side of the **operating instruction** for the **Service-Module** shows the correct connection of the **Display-, Master- and Service-Module**.

Up to **4 Display-Modules GBS-Display** can be connected to each **Master-Module GBS-Master**.

For this layout has the **second Display-Module** to be connected to the **first Display-Module** via the **10-poles pin-plug-bar**. Corresponding has the **third module** to be connected to the **second** and the **fourth** to the **third module**.



## Connecting the GBS-DEC to the digital layout:

The **Master-Module GBS-Master-s88** makes it possible to "monitor" the s88-feedback bus and display the occupancy reports with LED's or incandescent lamps on the external switchboard panel.

For this purpose the **s88-feedback bus** has to be **split** and transmitted via the **GBS-DEC**. **Picture 1** at the rear side of this instruction shows how to connect the **GBS-Master-s88** module directly to the digital central unit (the example shows Intellibox) with the **attached s88-bus cable**. The s88-bus cable of the **first Feedback-Module** has to be connected to the **pin bar ST2** of the **Master-Module GBS-Master-s88**. The pin plug has got the correct position when the **white single wire corresponds** to the **white marking** on the pc-board. The **clamp KL1** shall be **vacant** and **shall not** be connected to the digital circuit.

The **Master-Module GBS-Master** receives always the **power supply** from the **first Display-Module**. More details about this issue can be found within the paragraph **Voltage supply to the Display-Modules** at the **operating instructions** of the **Display-Module GBS-Display**.

Also **details** for the **connection** of the **switchboard panel symbols** (light emitting diodes and incandescent lamps) to the **Decoder for Switchboard Lights GBS-DEC** will be available at the **operating instruction** for the **Display-Module**.

You can find **colored sample connections** on our Web-Site [www.ltd-infocenter.com](http://www.ltd-infocenter.com) at the section "**Sample Connections**".

## Setting address- and operation modes:

### 1.1 Putting into operation:

If the **Decoder for Switchboard Lights** will be connected to the **power supply** at first all connected light diodes and incandescent lamps will lighten-up for **2 seconds** at a **brightness of 50% (lamp test)**. The display of the Service-Module indicates **GBS-DEC s88 Vx.y**. If the information at the display of the Service-Module is not clearly readable during the first start of operation, please turn **carefully** the **trim-pot R1** a **half turn** to the **left** and to the **right** by using a **small screwdriver** until the information at the display is optimal readable.

### 1.2 Setting the number of connected Display-Modules:

On top of the **Service-Module** are **4 keys** located which will be identified within the following description as **>left<**, **>right<**, **>above<** and **>below<**.

At first push the key **>right<**. The display shows **Anzahl DIS: 1** (quantity of Display-Modules).

If the start information remains to be at the display after pushing the key **>right<** there is probably the digital central unit not switched-on or the s88-feedback bus is incorrect connected to the Master-Module GBS-Master.

Push now the key **>above<** as many times until the display indicates the amount of connected Display-Modules. It is possible to operate at a **maximum 4 Display-Modules on one Master-Module**.

### 1.3 Assigning Feedback-Modules to a Display-Module:

If the display of the Service-Module shows **Anzahl DIS: x** (with 'x' for the quantity of connected Display-Modules) please push the key **>right<** for getting to the feedback-adjustment of the first Display-Module. The display shows now **DIS1 K16-01:RM01**.

At this moment the Feedback-Module No. 1 (**RM01**) with its 16 inputs has been assigned to the first 16 outputs (**K16-01**) of the first Display-Module (**DIS1**). The Feedback-Module No. 1 is directly connected to the Master-Module via the pin plug ST2.

Generally the GBS-DEC expects 16-fold Feedback-Modules. If you use our **RM-GB-8-N** with 8 feedback inputs the GBS-DEC identifies always two RM-GB-8-N as one 16-fold Feedback-Module.

By pushing the keys **>above<** and **>below<** you can select now one of **32 Feedback-Modules (RM01 to RM32)** for the first 16 outputs of the first Display-Module. For selecting a Feedback-Module for the outputs 17 to 32 please push again the key **>right<**. If you selected the Feedback-Module No. 1 for the first 16 outputs the display of the Service-Module shows for the second 16 outputs: **DIS1 K32-17:RM02**.

Now you can select for the output 17 to 32 a Feedback-Module by using the keys **>above<** and **>below<**. It is possible to skip Feedback-Modules.

The only importance is that the Feedback-Modules have always to be adjusted in an **affherent sequence**.

If you have registered a further Display-Modules under 1.2 you can assign the feedback adjustments for the second Display-Module by pushing again the key **>right<**. Is there only one Feedback-Module available for the last Display-Module you can select for the second 16 outputs (**K32-17**) **RMNC. NC** is an indication for **not connected**.

If you have selected the Feedback-Modules for all available Display-Modules please push the key **>left<** several times until the Decoder for Switchboard Lights confirms with a **lamp-test**. The display of the Service-Module shows now **GBS-DEC s88 Vx.y**. It is now ready for the display of occupation reports received from the selected Feedback-Modules.

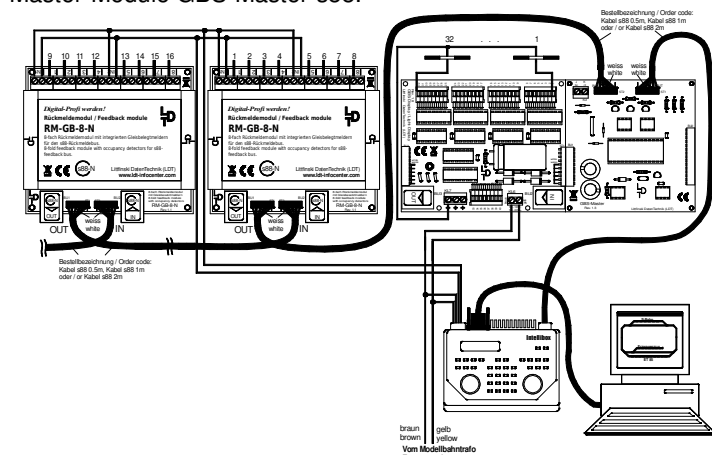
If there are not all Feedback-Modules selected in an afferent sequence the display will show **s88 ADR Fehler** (error).

If you want to change adjustments or correct data please start as described under 1.2. If you want to change something at a particular position you can end-up with the adjustment from this particular position by pushing the key **>left<** several times until the **lamp-test** starts. During the normal indication-function the Service-Module does not need to be attached to the Master-Module.

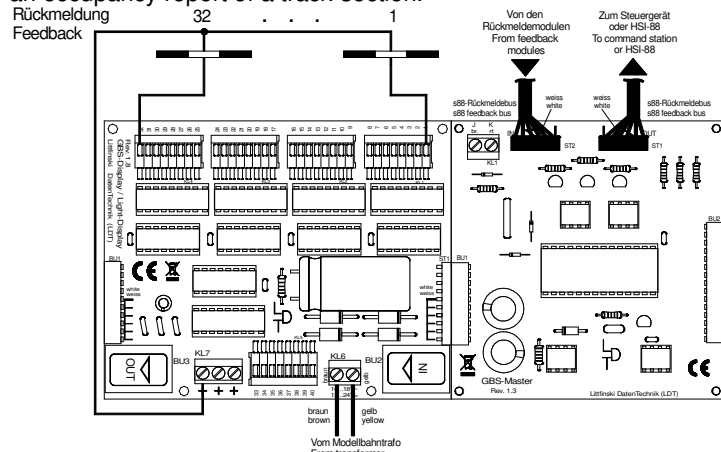
## Accessories:

For the **assembly** of the pc-boards of the GBS-DEC inside your switchboard panel we offer **assembly material** under the order code **MON-SET**. The set consists of **4 plastic distance spacer** and **4 matching wood-screws**.

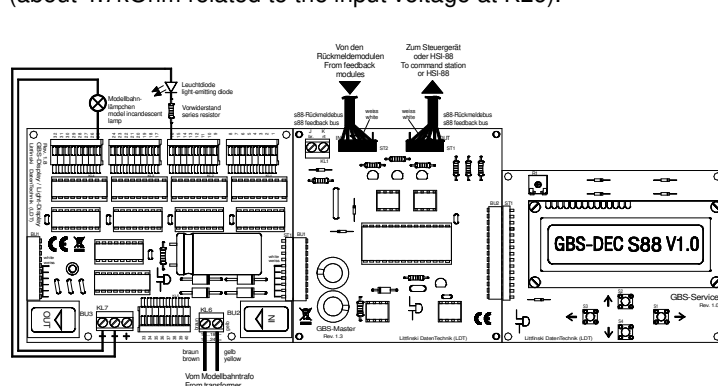
**Picture1:** The sample shows that the s88-feedback bus will be separated behind the digital central unit and connected to the Master-Module GBS-Master-s88.



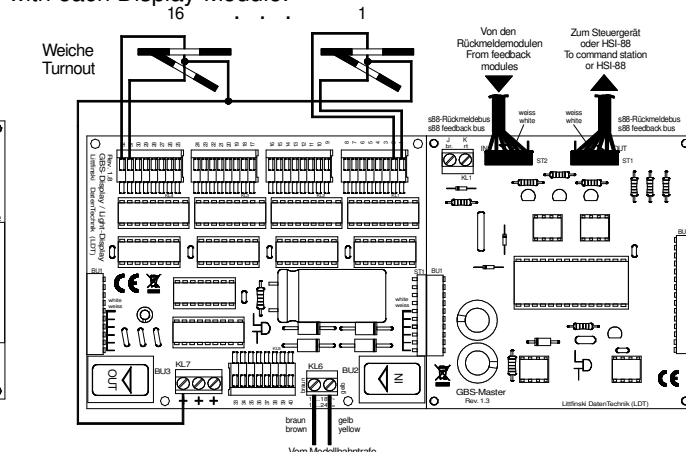
**Picture 3:** It is possible to connect 32 track-symbols onto the outputs 1 to 32. Each output can supply several track-symbols for an occupancy report of a track-section.



**Picture 2:** Incandescent lamps can be connected directly. For light-emitting diodes it is absolutely necessary to use a serial resistor (about 4.7kOhm related to the input voltage at KL6).



**Picture 4:** Have you created a turnout feedback via the s88-feedback bus you can connect a maximum of 16 turnout symbols with each Display-Module.



You can find **colored sample connections** on our Web-Site [www.ldt-infocenter.com](http://www.ldt-infocenter.com) at the section **"Sample Connections"**.

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