



Data switch

from the *Digital-Professional-Series* !

DSW-88-N-G Part-No.: 040113

>> finished module in a case <<

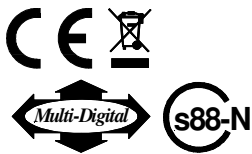
suitable for the s88 feedback bus

The data switch **DSW-88-N** enables to **ramify** the **s88-feedback line**.

⇒ **for s88-standard connections and s88-N**
(with 6-poles s88-pinbars as well as RJ-45 sockets and suitable for 5 and 12V bus voltage).

⇒ **suitable for the digital control:**
Control Unit, Central Station 1, Intellibox, TWIN-CENTER, HSI-88(-USB), EasyControl, ECoS, DiCoStation.

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 years of age! Improper use will imply danger or injuring due to sharp edges and tips! Please store this instruction carefully.



Introduction / Safety Information:

You have purchased the data switch **DSW-88-N** for your model railway. The **DSW-88-N** 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 data switch **DSW-88-N** from the *Digital-Professional-Series* can operate on your digital control without any problems.

The **DSW-88-N** is suitable for the application on any digital control unit which supports the **s88 feedback bus**

The finished modules in a case come 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 damage 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.

General description:

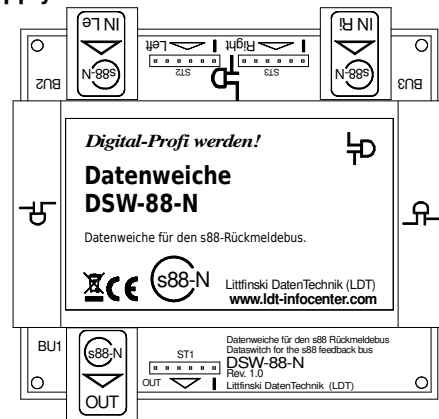
The **s88-feedback bus** is built up as a **continuous line** with all feedback modules behind each other. They are building one **line**.

This feature has its disadvantages on some model railway layouts. If the digital command station is positioned at the center of a model railway layout the feedback line can only be directed to the right or left hand side and has then to be re-directed from the left or right end via the layout middle into the opposite layout part.

The **data switch DSW-88-N** gives you the opportunity to **ramify** the s88 feedback bus at any position on the track.

Connecting the DSW-88-N to the digital model railway:

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



The data switch **DSW-88-N** contains **three 6-poles pin-bars** for the **s88-standard connection** and as well three **RJ-45 sockets**

for a bus connection according to **s88-N**. At the **DSW-88-N** are **pin-bars** and **sockets** marked with **OUT** and **IN**.

OUT indicates the connection in **direction to the command station or interface**. **IN** indicates the connection to the next following feedback module within the **s88-bus line**.

Command stations and **interfaces** are always equipped with an **s88-input** for a **s88-standard connection**.

For the **s88-standard connection** is an **interference protected twisted s88-bus cable** with **original s88-bus plugs** available.

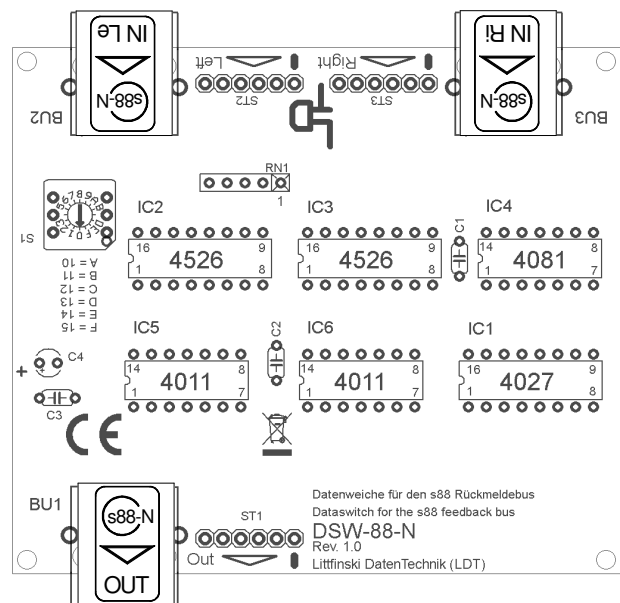
The **plugs** of the **s88-bus cable** are **correct attached** onto the **6-poles pin-bar** of the data switch **DSW-88-N** if the **white single wire corresponds** with the **white marking** on the pc-board **next to the pin-bar**. The direction of the **cable has to be** show directly **away from the data switch**.

If you use feedback modules with a **ribbon-cable** the plug has to be **inserted** that way that the **cable** will point **away from the data switch**.

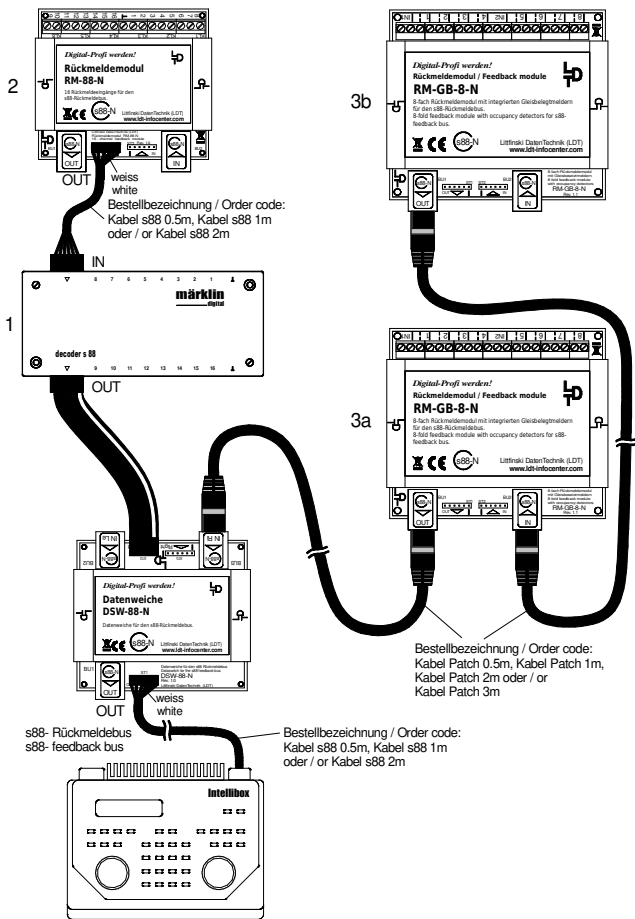
Additionally attend to the position of the **plugs** on the **6-poles pin-bars**. **No offset will be acceptable**.

For the **s88-N** s88-bus connection we offer a **screened blue patch-cable** with **RJ-45 plugs**.

Attention: **Command stations** with **PC-network connection** (e.g. **Central Station 1** and **ECoS**) contain as well a **RJ-45 socket**. **It is not acceptable to connect the DSW-88-N to the RJ-45 network sockets**.



Sample connections:



The above sample connection solves the before mentioned problem of a command station placed at the middle of a layout. In this example the data switch is connected directly to the Intellibox to built two feedback lines.

The left line at the left layout side consist of one Märklin s88 feedback module and one s88 compatible **RM-88-N** from LDT. At the right line there are two LDT feedback modules with integrated occupancy detector (**RM-GB-8-N**) connected.

Next to the **RJ-45 socket BU2** and the **pin bar ST2** for the **left s88-bus line** is a **rotary code switch** located. Access to the **rotary code switch** is possible by removing the cover of the **data-switch DSW-88-N**. The **number** of feedback modules connected to the **left line** must be set with a small screwdriver. At the above sample there are 2 modules connected to the left line and the code switch has to be set to 2. After the command station has read-out the feedback information the data switch **DSW-88-N** will know that after the read-out of the second feedback module it has to switch-over to the right line.

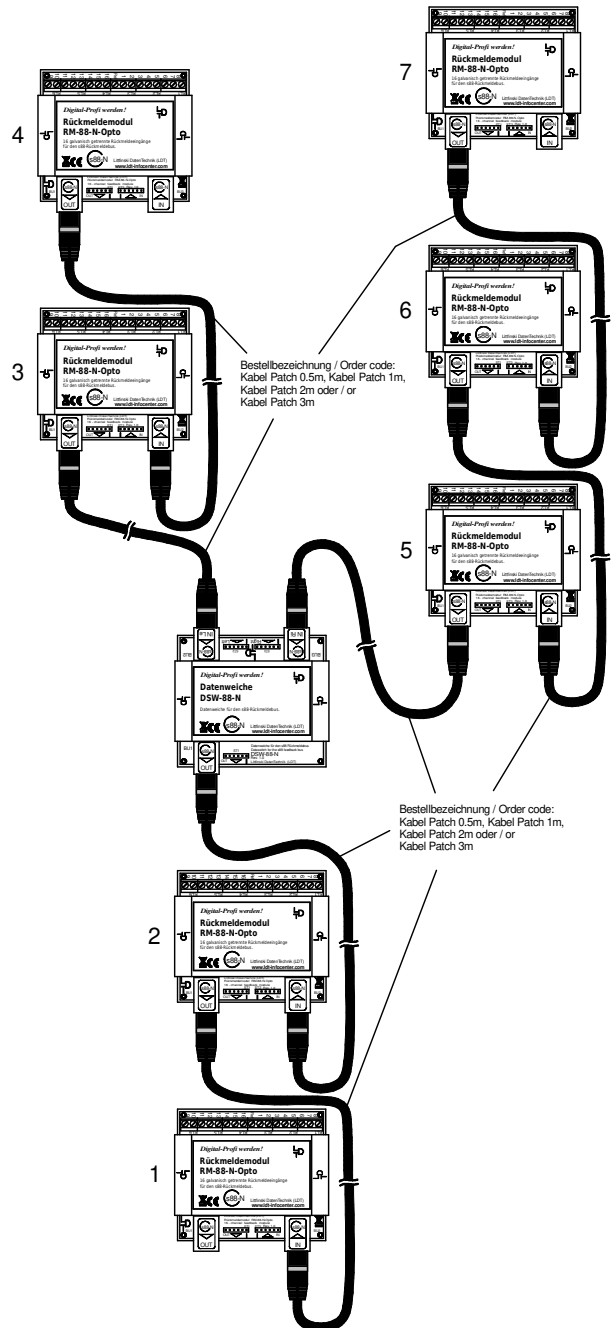
The **rotary code switch** allows up to **15 modules for the left line**. Number 1 to 9 are shown on the switch with printed letters. Followed with A to F. The letter A means number 10 and F the number 15. The exact allocation is printed on the board next to the code switch.

The command station or the PC software will assign an individual address to each of the feedback modules with 16 inputs beginning from the command station.

The module with the number 1 is always connected directly to the command station or the Interface, followed by module 2, 3 and so on.

In case you use our feedback modules with integrated occupancy function **RM-GB-8-N** with 8 inputs, two feedback modules will be detected by the command station respectively by the model railway software as one feedback module because the digital command station and as well the PC-Software will occupy 16 inputs for each feedback module.

Example 1 shows the module numbering in detail.



The numbering of the modules will be done behind the data switch from left to right. The Märklin module s88 on the left line has been assigned as module number 1, followed by the **RM-88-N** as number 2. The two **RM-GB-8-N** modules connected to the right line will both have the module number 3 in this system, as both together have 16 Inputs.

The second sample connection shows a feedback system with 7 feedback modules. The **data switch DSW-88-N** is used behind the second module to **split the s88-feedback bus**.

The left line connected to the **DSW-88-N** has the assigned modules number 3 and 4 and on the right line modules number 5, 6 and 7 are connected. As there are 2 modules connected to the left line the rotary code switch has been set to 2.

Further sample connections can be found on our internet site (www.ldt-infocenter.com) in the area "Sample Connections".

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