



16-fold feedback module

from the *Digital-Professional-Series!*

RM-DEC-88-O-B Part-No.: 310301

As Märklin s88 but with 16 opto coupling inputs.

>> kit <<

As Märklin **s88** with 16 inputs but additionally with opto couplings for galvanic separation and high safety against interferences.

Suitable for digital devices with s88-feedback bus:

- ⇒ Märklin-**INTERFACE** (up to 31 modules)
- ⇒ Märklin-**MEMORY** (up to 3 modules)
- ⇒ **Intellibox / TWIN-CENTER** (up to 31 modules)
- ⇒ **DiCoStation / HSI-88** (up to 31 modules)
Littfinski DatenTechnik (LDT)
- ⇒ **EasyControl / ECoS** (up to 31 modules)

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 or injuring due to sharp edges and tips! Please store this instruction carefully.



Introduction:

You have purchased a kit for your model railway that is supplied within the assortment of Littfinski DatenTechnik (LDT).

- These kits are easy to assemble and they are a product of high quality.
- Model railway kits are not only well come handicraft jobs but they can be purchased with a considerable price reduction. This will justify to spend about an hour because you do not need more time to assemble this kit.

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

General:

Tools required for the assembly

Please assure that the following tools are available:

- a small side cutter
- a mini soldering iron with a small tip
- solder tin (if possible 0,5mm diameter)

Safety Instructions

- All electrical and electronic components included in this kit shall be used on low voltage only by using a tested and approved voltage transducer (transformer). All components are sensitive to heat. During soldering the heat shall be applied to the respective component for a very short period only.
- The soldering iron develops up to 400°C. Please keep continual attention to this tool. Keep sufficient distance to combustible material. Use a heat resistant pad for this work.

- This kit consist of small parts, which can be possibly swallowed from children. Children (especially under 3 years) shall not participate on the assembly without supervision.

Set-Up:

For the board assembly please follow exact the sequence of the below **assembly list**. Cross each line off as **done** after completing the insertion and the soldering of the respective part.

Please put the **clamps** together to a block with 17 connections before assembling the clamps to the board.

Special attention is required for the **Tantal capacitors**. The leg with the mark "+" has to be inserted to the respective marked position on the pc-board.

Resistor-networks are marked on one end with a printed circle or a square. Assemble this component that way that the marking corresponds with the marking between the first and second bore on the pc-board. The first bore has been additionally marked with a "1".

Please attend to the flat side of the **transistors**.

Integrated circuits (IC`s) are either marked with a half round notch on one end or a printed point for the correct mounting position. Push the IC`s into the correct socket assuring that the notch or the printed point is corresponding to the half-rounded marking on the pc-board.

Please attend to the sensitivity of the **ICs** to **electrostatic discharge**, which will cause immediate damage of the IC. Before touching those components please discharge yourself by contacting an earthed metal (e.g. earthed radiator) or work with an electrostatic safety pad.

Assembly List:

Pos.	Qty.	Component	Remarks	Ref.	Done
1	1	Printed Circuit Board			
2	10	IC-Sockets 16poles		IC1..10	
3	4	Networks 4*10kOhm	Attend to the polarity!	R1..R4	
4	2	Networks 8*100kOhm	Attend to the polarity!	R5, R6	
5	2	Resistors 100kOhm	brown-black-black-orange	R7, R8	
6	1	Resistor 10kOhm	brown-black-black-red	R9	
7	16	Capacitors 10nF		C1..C16	
8	1	Tantalcap. 1uF/35V	Attend to the polarity!	C17	
9	1	Capacitor 100nF		C18	
10	1	Pin-plug 6poles		ST2	
11	1	Transistor BC 547	Attend to the polarity!	T1	
12	5	Clamps 3poles	Build a block before assy.!	KL1..KL5	
13	1	Clamp 2poles	Build a block with KL1 to 5	KL6	
14	1	Connection cable 6poles	Attend to the colors!	ST1	
15	4	IC: 4044	Attend to the polarity!	IC1,2,4,5	
16	2	IC: 4014	Attend to the polarity!	IC3, IC6	
17	4	IC: 844	Attend to the polarity!	IC7.. IC10	
18			Final Control		

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