



# Littfinski DatenTechnik LDT S-DEC-4-MM-G 4 Fold Turnout Decoder Instruction Manual

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# Littfinski

**Littfinski DatenTechnik (LDT)**  
**Operating Instruction**  
4-fold turnout decoder from the  
Digital-Professional-Series !  
S-DEC-4-MM-G Part-No.: 910313  
(with possible external power supply)  
**>> finished module in a case<<**

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## S-DEC-4-MM-G 4 Fold Turnout Decoder

### Compatible to Märklin-Motorola-Format:

(e.g. Murklins-Digital~ [Control Unit, Central Station 1 und 2], Intellihot, EasyControl, Eco's, Keyon-MM,

MicroStation, Edits, Edits pro and others)

**For digital control of:**

- ⇒ up to 4 twin-coil magnet accessories (e.g. turnouts or signals).
- ⇒ up to 8 single-coil magnet accessories (e.g. uncoupling tracks).
- ⇒ up to 4 permanent power switch units [DSU] (e.g. illumination).

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 4-fold turnout decoder S-DEC-4 for your model railway as finished module in a case.

The S-DEC-4 is a high quality product that is supplied within the assortment of Littfinski DatenTechnik (LDT).

We wish you having a good time using this product.

The turnout decoder S-DEC-4 of the Digital-Professional-Series can be easily installed and used on your digital railway.

The decoder S-DEC-4-MM is suitable for Marlin-Digital~ respectively for Marlin-Motorola digital format.

The decoder S-DEC-4-MM is multi digital and can be installed to the Intellirocks without any problems.

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 be not liable for any consequential damages caused by improper use or installation.
- We designed our devices for indoor use only.

**Connecting the decoder to your digital model railway layout:**

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

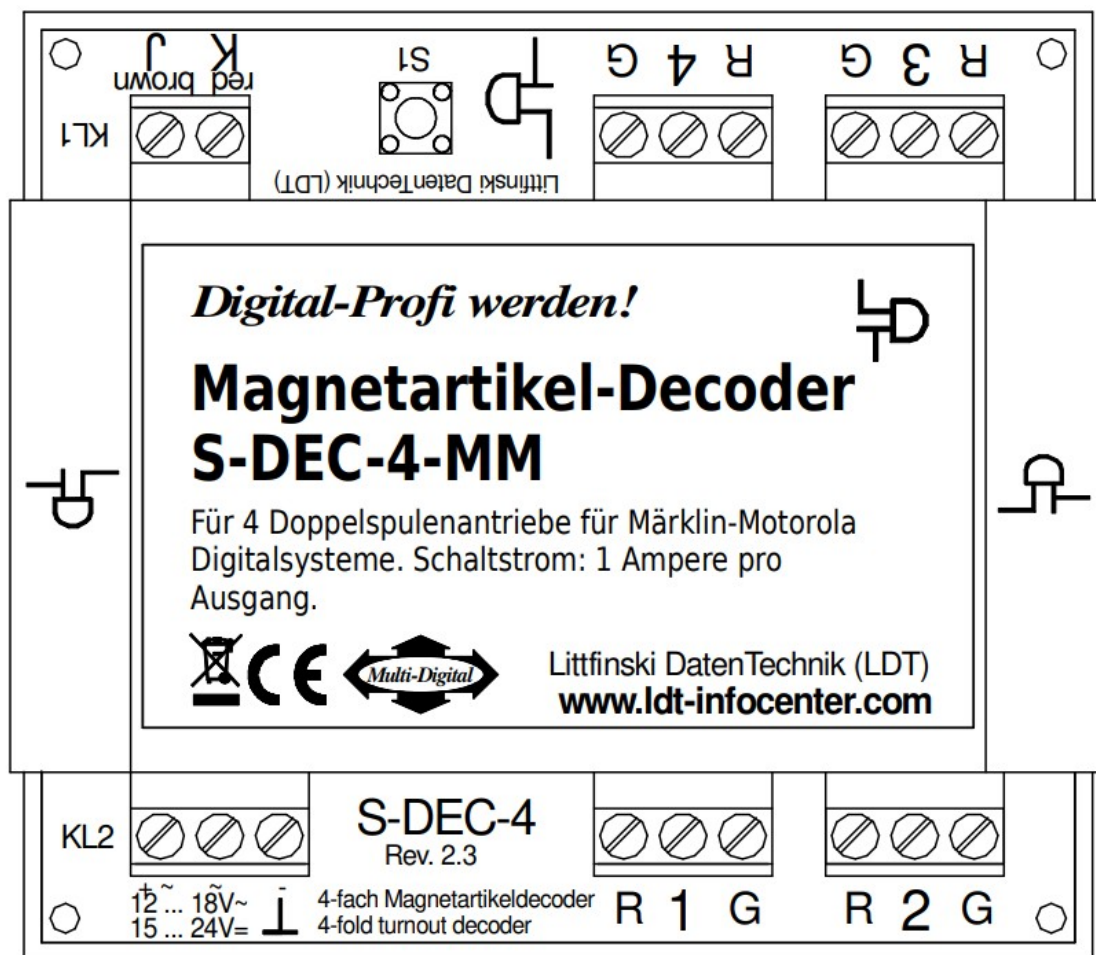
The decoder receives the digital information via the clamp KL1.

Connect the clamp with a rail or even better connect the clamp directly to the command station or to a booster assuring supply of digital information free from any interference.

Pay attention to the mark at clamp KL1. The color markings 'Black/Schwarz' and 'Red/Rot' next to the clamp are used for Arnold-Digital (old) and Marlin-Digital=.

Other systems are using the letters 'J' and 'K'.

If you use the decoder for a Murklins-Digital~ respectively Marlin-Motorola installation please attend to the colors marks 'red/rot' and 'brown/Braun'.



The decoder receives the voltage-supply via the clamp KL2.

The voltage shall be in the range of 12 to 18V~ (alternating voltage output of a model railway transformer) or 15 to 24V~ = (direct voltage output of an insulated power supply unit).

Now connect turnouts, signals, uncoupling tracks or the permanent power switch unit [DSU] to the 3-pole clamp marked 1 to 4.

The common conductor of a double coil (turnout or signal) has to be connected to the middle clamp of the relevant decoder output clamp. The two remaining cables mostly marked with red (turnout round) and green (turnout straight) shall be connected to the clamps marked ,G' and ,R' accordingly.

### Programming the decoder address:

To program the decoder address a turnout has to be connected to the output 1 of the decoder.

- Switch on the power supply of your model rail way.
- Press the programming key S1.
- The turnout connected to output 1 will move now automatically every 1.5 seconds. This indicates that the decoder is in the programming mode.
- Switch now one turnout of the group of four assigned to the decoder via the keyboard of the control unit or via a remote control. For programming the decoder address you can also release a turnout switch signal via a personal computer.

Remarks: The decoder addresses for magnet accessories are combined in groups of four. The address 1 to 4 build the first group. The address 5 to 8 build the second group etc. Each S-DEC-4 decoder can be assigned to any of these groups. Which turnout of a group will be activated for the addressing does not matter.

- If the decoder has recognized the assignment correctly the connected turnout will move a little faster. Afterwards the movement slows down to the initial 1.5 seconds again. In case the decoder will not recognize

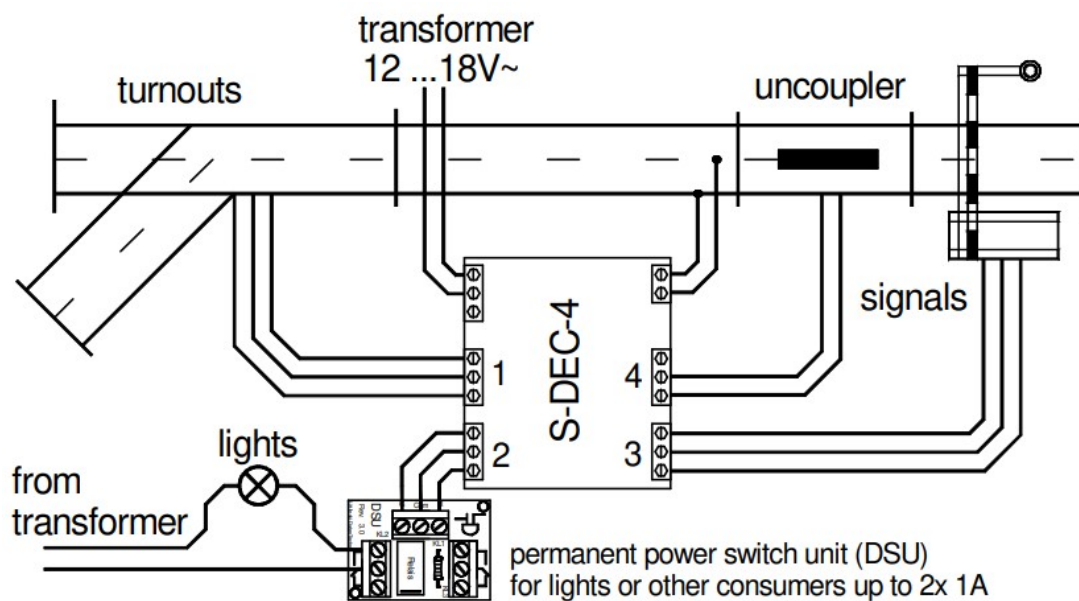
the address it could be that the two digital information connections (clamp1) are wrong connected. For testing this, switch the power supply off, exchange the connection on KL1 and start addressing again.

- Leave the programming mode by pressing the programming key S1 again. The decoder address is now permanently stored but it can be changed at any time by repeating the programming as described above.
- If you press the first key of the programmed group of keys or you send a switch signal for this turnout from a PC the addressed turnout should move into the called direction either into round or into straight. In case the movement goes the wrong way please exchange the two turnout connection cables at the ,G'reen (straight) and ,R'ed (round) marked connection clamps of the decoder output 1.

## Decoder application:

The below draft provides examples of the multipurpose application of the decoder S-DEC-4.

Besides the typical application of turnout control the decoder can also be used for uncoupling tracks and signals.



With our permanent power switch unit [DSU], which is equipped with a bi-stable relay it is possible to switch lights or other consumers up to 2x 1A digital on or off.

Further application and circuit examples can be found in the Internet on our Web-Site ([www.ldt-infocenter.com](http://www.ldt-infocenter.com)) at the section downloads.

## Please attend to the following:

- All 4 decoder outputs can switch a current of 1 Ampere peak. Modern turnout drives need about 0.25 up to 0.5 Ampere. Older drives which are not free moving or which are dirty need more Ampere. The S-DEC-4 Decoder is protected against overload caused by drives which are not switching off at the end movement. The protector is an automatic fuse which will switch back into normal operation a few seconds after the load current is below maximum value.
- Turnouts with integrated end-switch can create considerable electromagnetic interference. Normally the decoder S-DEC-4 will not be influenced by this interference. In case the decoder will be influenced please check the turnout installation cables. Those cables should not wrap or cross the decoder closely. Install the cables that way that they go straight away from the clamps of the decoder. If limited space requires a bad installation layout and the function of the decoder will be disturbed please disconnect the middle cable of each

turnout connection and push about 5 to 10 ferrous pearls onto this cable before connecting to the clamp again.

- These ferrous pearls are available at electronic shops or at LDT with the order code `FP`.
- Turnout illumination: If you want to have a realistic switching of the turnout lights you can use the LDT permanent power switch unit [DSU] or our switch decoder SA-DEC-4.

## Trouble shooting:

What to do if something is not working as described above?

Here some possible functional errors and possible solutions:

1. During programming of the decoder addresses the turnout moves within 1.5 seconds, but does not confirm the programming with faster movement by pressing any key.
  - Change cable connections at KL1.
  - Interfered digital information at KL1 respectively lost of voltage at the tracks or at the installation! Connect the decoder directly with cables to the digital control unit or to the booster instead to the tracks. Increase the cable diameter for long distances.
  - Eventually the clamps have been tightened to strong and therefore the clamps got loose at the soldering to the pc board. Check the soldering connection of the clamps at the lower side of the pc-board and re-solder them if required.
2. The programming of the decoder address functions as described, nevertheless the turnouts will not be activated.

Interfered digital information on KL1 respectively larger lost of voltage at the tracks or the installation result to unsafe data transfer! Connect the decoder directly to the command station or the booster. Increase the cable diameter of long distance connection cables.


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Subject to technical changes and errors. 09/2022 by LDT

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## Documents / Resources

	<p><a href="#">Littfinski DatenTechnik LDT S-DEC-4-MM-G 4 Fold Turnout Decoder</a> [pdf] Instruction Manual</p> <p>S-DEC-4-MM-G 4 Fold Turnout Decoder, S-DEC-4-MM-G, 4 Fold Turnout Decoder, Turnout Decoder, Decoder</p>
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## References

-  [de:ldt-infocenter](http://de:ldt-infocenter) [LDT]

