



## **Sample Connections:**

### **Monitor track sections and switching voltage-free**

(Version 3.3)

	<b>Page</b>
<b>1. <u>Three-conductor system</u></b>	
1.1 Disconnectable track section	2
1.2 Disconnectable track section monitored by contact rails	3
1.3 Disconnectable track section monitored by track occupancy detection	4
<b>2. <u>Two-conductor system</u></b>	
2.1 Disconnectable track section	5
2.2 Disconnectable track section monitored by track occupancy detection	6

## 1. Three-conductor system

### 1.1 Disconnectable track section

Track sections will be switched voltage free to assure that e.g. parked illuminated trains will not unnecessarily consume digital current at a hidden sidings.

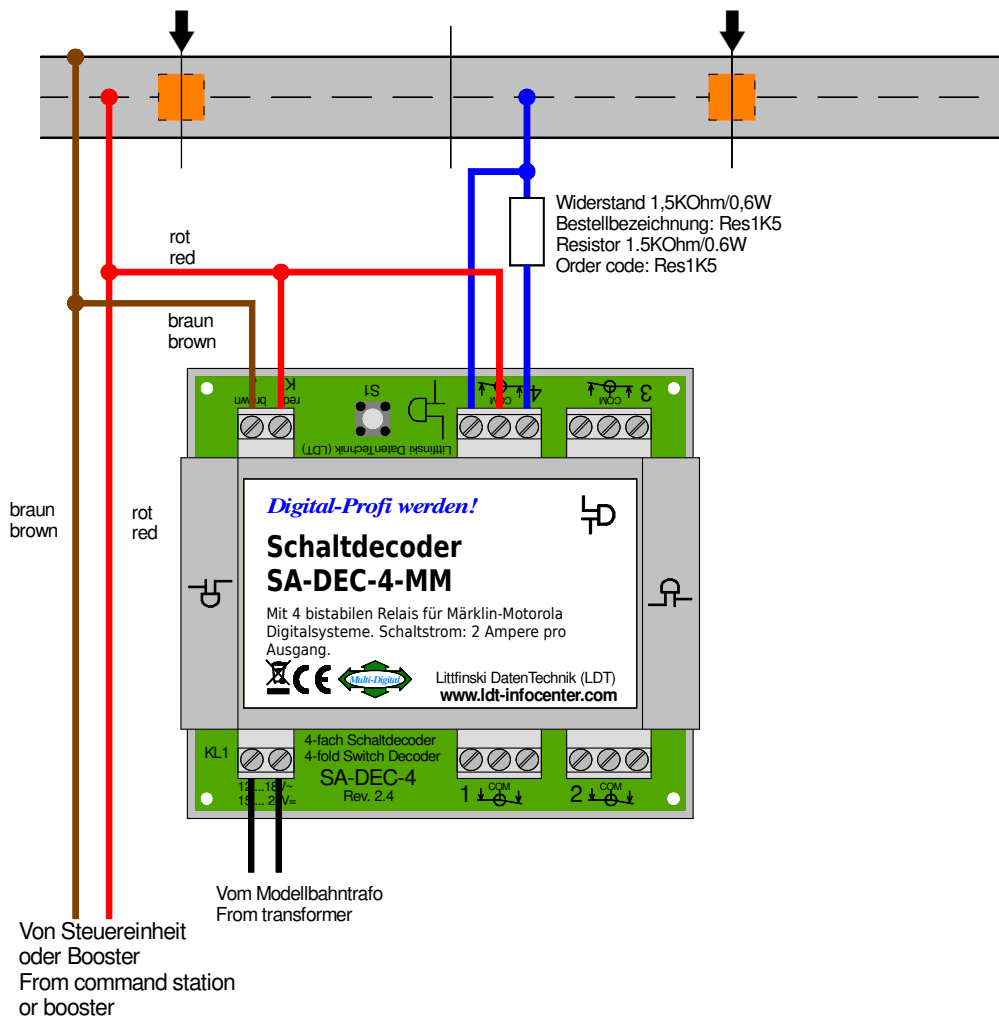
Also in front of signals is a disconnectable stop-section possible to assure the stop of a train within this safety section before the signal.

The following image shows the required wiring.

The non-disconnectable tracks will be supplied with digital current via the rail (brown) and center conductor (red) as usual.

The center conductor of the disconnectable track section shall be both sides isolated and will be supplied via an output of the switch decoder SA-DEC-4.

As older loc-decoders will lose the data (e.g. last drive direction) during the disconnection we have assembled a resistor of 1.5 kOhm. This resistor supplies a small current to the decoder which is sufficient to assure that the data will be preserved.



Disconnectable track section with switch decoder SA-DEC-4.

## 1.2 Disconnectable track section monitored by contact rails

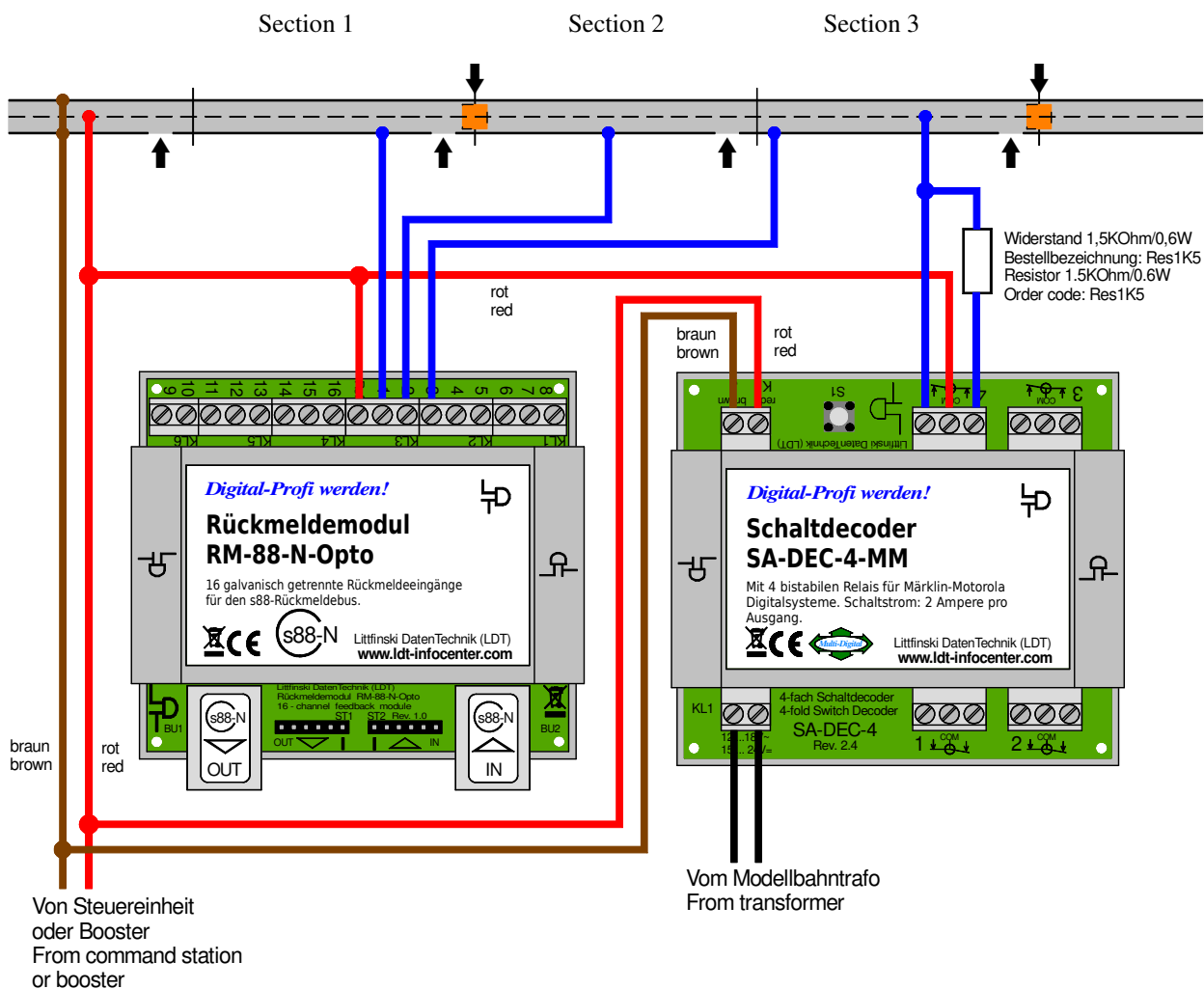
If you install a hidden siding you will certainly want to control there the track sections. This is the only possibility to switch the turnouts correct to assure that the next oncoming train can drive into a free track section.

To make sure that the parked trains will not consume unnecessary digital current for illumination you want eventually to switch the monitored sections current-free.

If there will be **contact rails** used for the feedback report the occupancy status can be controlled via the feedback modules **RM-88-N** or **RM-88-N-Opto**. Every conducting train axle will be a connection between the isolated and the current carrying rail and creates therefore an occupancy report via the feedback module.

The following wiring diagram shows the application of the module **RM-88-N-Opto** for monitoring the section 1 to 3.

The sections 2 and 3 can be additionally switched voltage-free without influence of the occupancy report.



Track occupancy report and disconnectable track section with contact rails RM-88-N-Opto and SA-DEC-4.

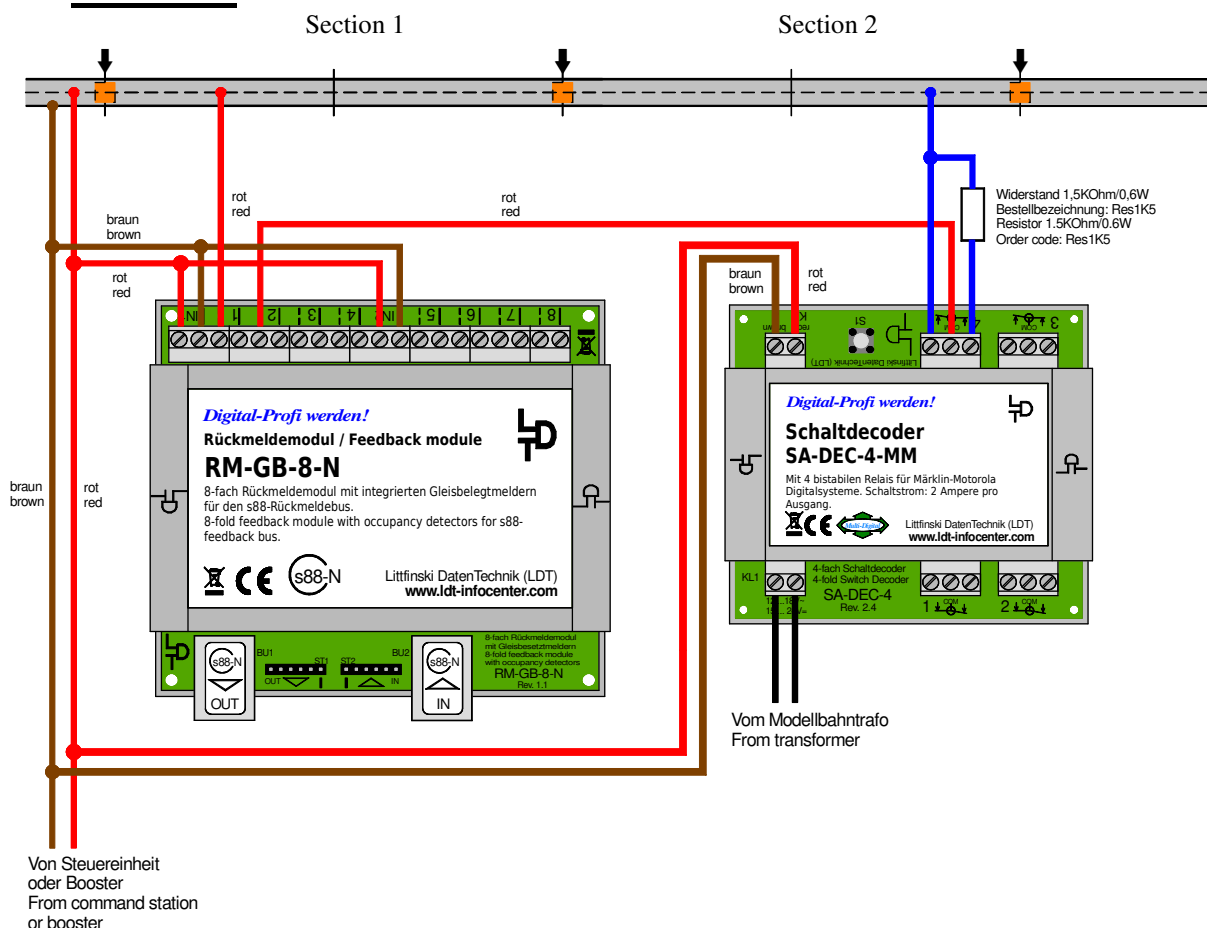
The center conductor of the isolated track section will be supplied or switched via an output of the switch decoder **SA-DEC-4**. As older loc-decoders will lose the data (e.g. last drive direction) during the disconnection of the digital voltage we have assembled a resistor of 1.5 kOhm. This resistor provides a small current to the decoder which is sufficient to assure that the data will be preserved.

Contact rails are available within the Märklin rail-supply or can be easily self-produced with K- and C-tracks by cutting one rail open with a saw.

This is not possible with M-rails. For this purpose expensive contact rails have to be used because the M-rail consists completely of metal. Therefore cutting one rail open will not suit the purpose to produce an isolated section.

If you intend to assemble your older M-tracks into a hidden siding there is a low cost alternative possible:

## 1.3 Disconnectable track section monitored with track occupancy detection



Track occupancy report and disconnectable track section with track occupancy detector RM-GB-8-N and SA-DEC-4.

Our feedback module with integrated track occupancy detection **RM-GB-8-N** is able to monitor track sections even without using contact-rails.

The center conductors of the sections 1 and 2 are getting the supply of digital voltage via the track occupancy detector. Whenever a current consumer will be located at this sections an occupancy report will be transmitted via the s88 feedback bus to the connected control unit.

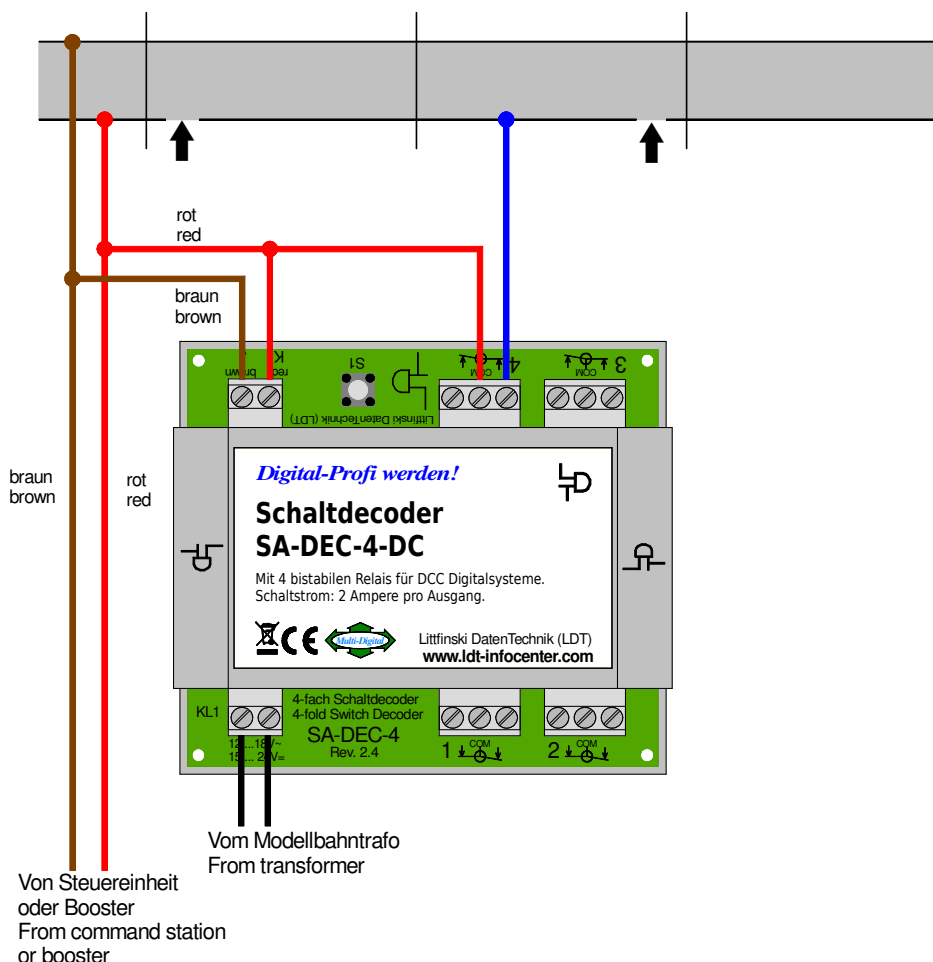
The section 2 can be additionally switched voltage-free via an output of the switch decoder **SA-DEC-4**. Thus parked illuminated trains will not consume expensive digital current. The 1.5 kOhm resistor has to be assembled in any case to enable the track occupancy detector during the voltage-free status to transmit an occupancy report if a current consumer has been located. The resistance value has been selected to assure that the illumination is off during the voltage-free switched time.

## 2. Two-conductor system

### 2.1 Disconnectable track section

Track sections will be switched voltage-free to assure that e.g. parked illuminated trains will not unnecessarily consume digital current at a hidden siding.

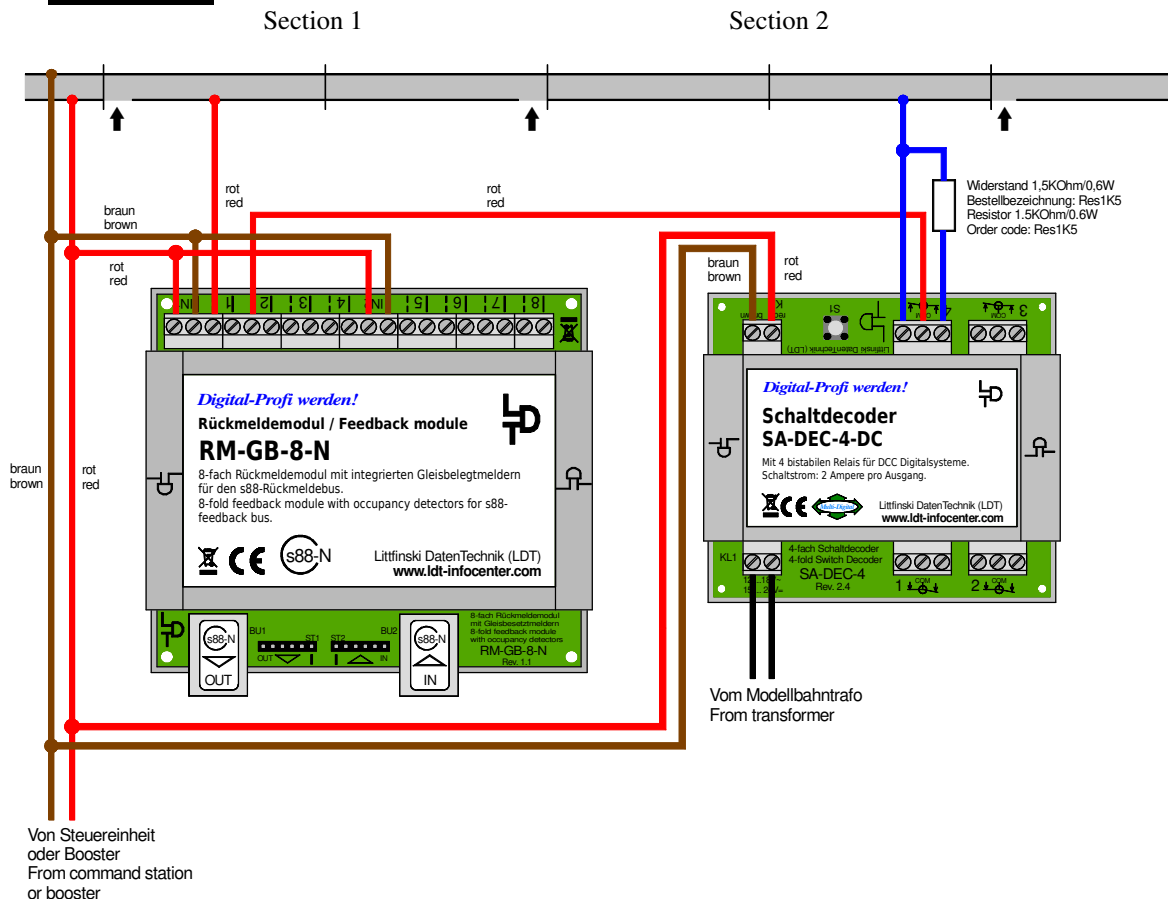
Also in front of signals is a disconnectable stop-section possible to assure the stop of a train within this safety section before the signal.



Disconnectable track section with switch decoder SA-DEC-4.

Digital voltage will be supplied onto both rails of the non-disconnectable track as usual. The disconnectable section arises by cutting one rail. This isolated section will be supplied either with digital voltage or switched voltage-free via an output of the switch decoder **SA-DEC-4**.

## 2.2 Disconnectable track section monitored by track occupancy detection



Track occupancy report and disconnectable track section with track occupancy detector  
RM-GB-8-N and SA-DEC-4.

The isolated sections 1 and 2 will be supplied with digital voltage via the feedback module with integrated track occupancy detector **RM-GB-8-N**. Whenever a current consumer will be located at this sections an occupancy report will be transmitted via the s88 feedback bus to the connected control unit.

The section 2 can be additionally switched voltage-free via an output of the switch decoder **SA-DEC-4**. Thus parked illuminated trains will not consume expensive digital current. The 1.5 kOhm resistor has to be assembled in any case to enable the track occupancy detector during the voltage-free status to transmit an occupancy report if a current consumer has been located. The resistance value has been selected to assure that the illumination is off during the switched off time.

Made in Europe by  
Littfinski DatenTechnik (LDT)  
Bühler electronic GmbH  
Ulmenstraße 43  
15370 Fredersdorf / Germany  
Phone: +49 (0) 33439 / 867-0  
Internet: [www.ldt-infocenter.com](http://www.ldt-infocenter.com)

Subject to technical changes and errors.  
© 02/2022 by LDT