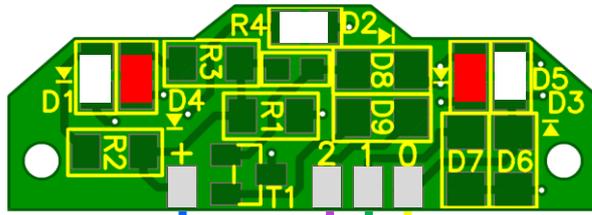


Light module for Märklin Re 4/4 locomotives, item no. 8084

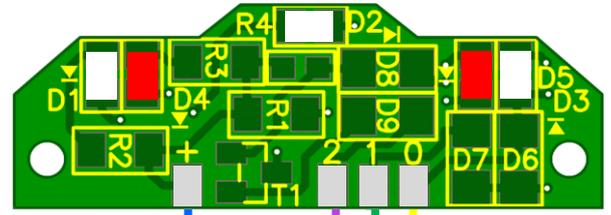
The 8084 light module has been specially developed for Märklin locomotives of the Re 4/4 series. It not only expands these locomotives with red tail lights, but also the possible signal patterns. The module fits exactly in the same place as the original circuit boards.

Connection variant 1



Decoder +
Aux 2
Aux 1
Light F/R

Connection variant 2



Decoder +
Aux 2 / 3
Aux 1
Light F/R

8084 Connections (Pads):

- + Decoder Plus
- 0 A-Light. Switches red LEDs off
- 1 Single LED white bottom right
- 2 Red LEDs

Decoder connections and strand colours (according to NEM standard):

- | | | |
|--------|--------------|----------------------------|
| Blue | Decoder Plus | Return conductor functions |
| White | F0 forward | Front light (LF, F0f) |
| Yellow | F0 reverse | Rear light (LR, F0r) |
| Green | Aux1 | Function key 1 |
| Violet | Aux2 | Function key 2 |

Functions at the central unit, direction-dependent (no decoder mapping necessary):

- Variant 1** Here, the red LEDs are connected to the common Aux2.
- Light Front light white (A-light), switches off red LED
 - Light and F1 Light in direction of travel front white, light rear white right below
 - Light and F2 Light in driving direction front white, light rear 2x red (loco solo)
 - Only F2 Red lamps front and rear (fault)

- Variant 2** Here the red LEDs are connected to separate Aux2/Aux3
- As variant 1, but red LED as follows:*
- Only F2 Red LED locomotive front (direction-independent)
 - Only F3 Red LED locomotive rear (direction-independent)

On the circuit board there is an electronic which switches off the red LED when the white LED is switched on. This allows the following signal patterns to be displayed with only four decoder outputs (front light, rear light, Aux1 and Aux2) (corresponds to variant 1):

Variant 1

Function 8084 with light and 2 aux outputs (Aux1 and Aux2)

Description, Decoder Outputs	Function on Control Unit	Loco front	Loco rear
Drive forward, for double traction F0v	Light		
Drive forward, with wagons F0f, Aux1	Light, F1		
Drive forward, loco solo drive F0f, Aux2	Light, F2		
Drive forward, for double traction F0r	Light		
Drive reverse, with wagons F0h, Aux1	Light, F1		
Drive reverse, loco solo F0r, Aux2	Light, F2		
Parking light Aux1	F1		
Loco malfunction Aux2	F2		

Wiring:

Pad 0 on front PCB
 Pad 0 on rear PCB
 Pad 1 on both PCBs
 Pad 2 on both PCBs
 Pad + on both PCBs

Decoder output:

Front light F0f
 Rear light F0r
 Aux1
 Aux2
 DC+ from decoder

Function:

All 3 white front lights. Switches off red lights.
 All 3 white rear lights. Switches off red lights.
 Lower right white lamps front and rear.
 Red lamps front and rear.
 Return conductor for function outputs.

Decoder mapping:

No mapping required

Variant 2

Function 8084 with light and 3 aux outputs (Aux1, Aux2 and Aux3)

Description, Decoder Outputs	Function on Control Unit	Loco front	Loco rear
Drive forward, for double traction F0f	Light		
Drive forward, with wagons F0f, Aux1	Light, F1		
Drive forward, loco solo drive F0f, Aux3	Light, F3		
Drive reverse, for double traction F0r	Light		
Drive reverse, with wagons F0r, Aux1	Light, F1		
Drive reverse, loco solo F0r, Aux2	Light, F2		
Drive forward, loco pushing Aux3	F3		
Drive reverse, loco pushing Aux2	F2		
Parking light Aux1	F1		
Loco malfunction Aux2, Aux3	F2		

Wiring:

Pad 0 an der vorderen Platine

Pad 0 an der hinteren Platine

Pad 1 an beiden Platinen

Pad 2 an der vorderen Platine

Pad 2 an der hinteren Platine

Pad + an beiden Platinen

Decoder output:

F0f

F0r

Aux1

Aux2

Aux3

DC+ from decoder

Funktion:

All 3 white front lights. Switches off red lights.

All 3 white rear lights. Switches off red lights.

Lower right white lamps.

Front red lights

Rear red lights.

Return conductor for
function outputs

Tip:
Additional mapping for shuttle trains

With the above wiring according to variant 2 it is possible with additional decoder mapping to switch on the light change for shuttle trains with a **single function key**.

In this example, the function key F10 is selected for this purpose. Any other free function key is also possible. The light is automatically switches over correctly when changing direction, without further operation of the function keys.

Loco with pickup shoe in front:

Description, Decoder Outputs	Function on Control Unit	Loco front	Loco rear
Forward drive (Loco in front) F0f, Aux1	F10		
Reverse drive (driving trailer in front) Aux2	F10		

Decoder mapping for function F10:

F10 fwd	Front light, Aux1
F10 rev	Aux2

Notes:

The electronics on the PCB switches off the red LEDs as soon as the white LEDs are switched on. This means that it does not make sense to dim the white LEDs via the decoder programming. This would result in the red LEDs lighting up at the same time as the white LEDs, and the brighter the more they are dimmed. This is due to the PWM principle (pulse-pause modulation) that the decoders use for dimming.

The shuttle train control (dt: reversible train) can also be achieved with restrictions with two aux outputs instead of three, if connection 2 is left empty on the rear circuit board. In this case, the locomotive must be coupled to the train set "the right way round". The white light at the front and the red light at the rear will then of course only work in one direction of travel.

The above signal patterns comply with the SBB regulations according to the Swiss Train Service Regulations.