Slot sensor for Analog 132 & 124

Besides the digital version, there's now also one for analog racetracks!

This slot sensor module allows you to switch an output depending on which track is being driven on using a Slot sensor, independently of a PC.

Purpose:
As soon as a car passes through the sensor, an output is immediately activated. In my situation, DRS** is activated for the autonomous car in question—which is controlled by the "PWM controller for analog"—as soon as the car enters the straight. This process must be executed precisely, otherwise the car will brake too late for the upcoming corner.

Possible applications:
- ☞ Time-based DRS control (adjustable)
- ☞ Activation and deactivation-based DRS control (Output On/Off)
- ☞ Activation of a yellow LED flag while driving the pace car (by time or On/Off)
- ☞ Automatic control of the polishing station (release after a set time)
- ☞ Anything you want to control when a car passes through the lock sensor

For whom?
Anyone who **drives analog cars 132/124 with** or without a computer. If there are already slot sensors on the track, **you can also connect them (in parallel) to this slot sensor, with the advantages described above**.

Note: The Slot sensor is a bridge consisting of an IR transmitter and receiver. Interrupting this light beam sends a signal to the lock sensor module.

Setting options:
- ☞ Time setting for active output
- ☞ On/off control instead of time setting
- ☞ Adjusting the time duration for 132 or 124
- ☞ External control for switching between 132 and 124 (yellow LED)
- ☞ External control for releasing outputs ID 1…6 (**orange LED**)

Operation with time setting:
As soon as the Slot sensor (A or B) is activated, the corresponding output (1 and 4) switches on for the set duration (adjustable with a dip switch between 100…1600 mS). This is indicated by a **blue LED**. Outputs 2 and 5 provide a 100 mS pulse. Outputs 3 and 6 also provide a 100 mS pulse, but inversely (LEDs turn off instead of on).
You can select 132 or 124 using the DIP switch or external control.
132 provides the aforementioned duration setting.
124 provides the aforementioned setting with the option to adjust it with a potentiometer (100…8000 mS).
This setup is suitable for two tracks.

** Maximum speed in combination with the PWM controller for analog

Operation with On/Off: (*)
As soon as slot sensor A is activated, output 1 is enabled and output 2 is disabled, until slot sensor B is activated. Output 1 is disabled, and output 1 is enabled again.
This setup is suitable for one track.
So, you will need two slot sensors for both tracks and four slot sensors.

Polishing station*:
As soon as a car (sensor A) enters the polishing station, an adjustable timer is started. After this timer expires, the lock is released (output 6) and the car can drive away. After the second Slot sensor is activated, the lock is reactivated.

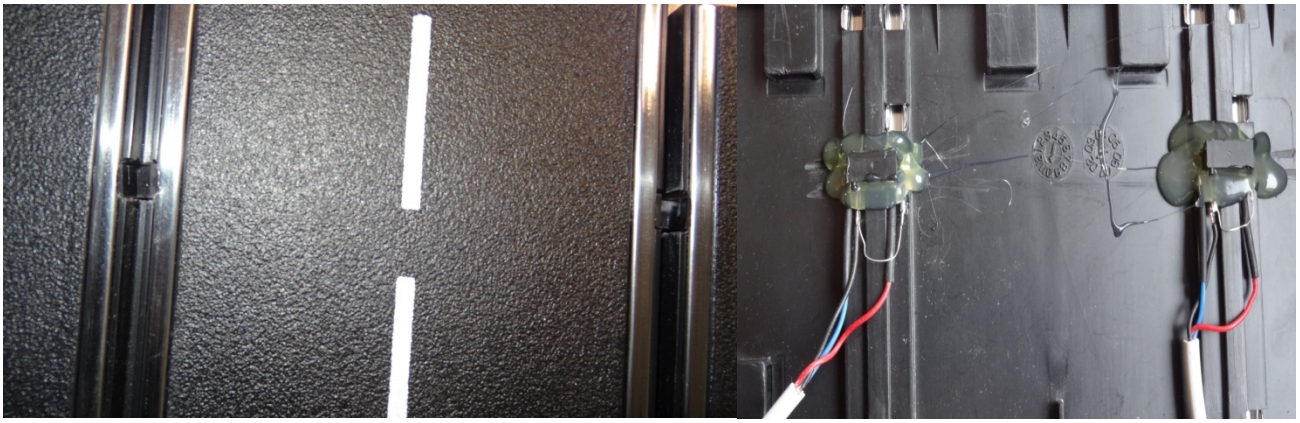
PC and software:
These options were previously only possible using a PC and Cockpit-XP in combination with a USB-Box module and a Slot sensor.

The disadvantage of this design is that time-critical switching is not easily possible, because the PC must first read the sensor via a USB port and then control a relay via the same or a different USB port. This method is too time-consuming (200…800 ms) and is also inconsistent! The PC's speed also affects this!

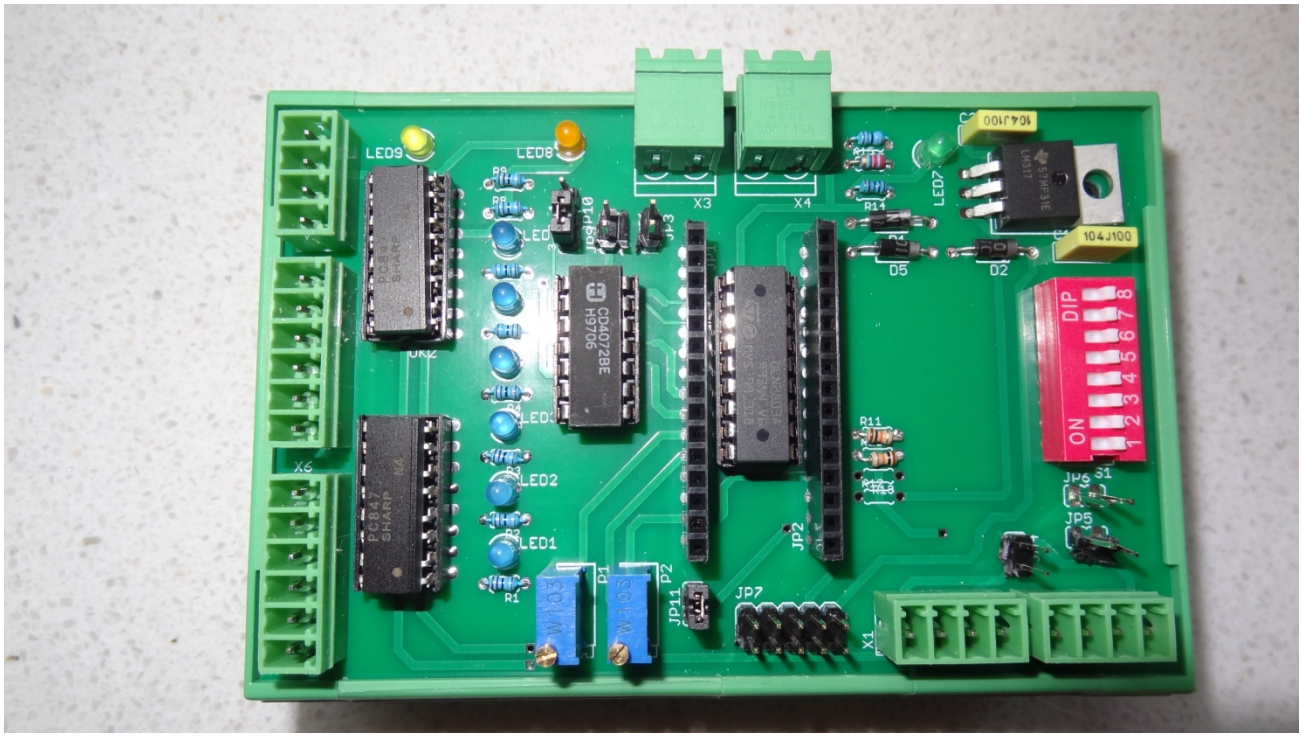
*** For this application, an extension of the lock sensor is required.**
1) The extended lock sensor (external power supply, additional components)
2) External relay card

The standard Slot sensor consists of:
2x Slot sensor connection
6x Outputs suitable for switching a maximum of 50mA
Power is supplied via a USB-C connection (5V)

Slot sensors must be purchased separately, either fully integrated into a straight track section with a cable or just a Slot sensor without a cable.
Power supply and cable must also be purchased separately.

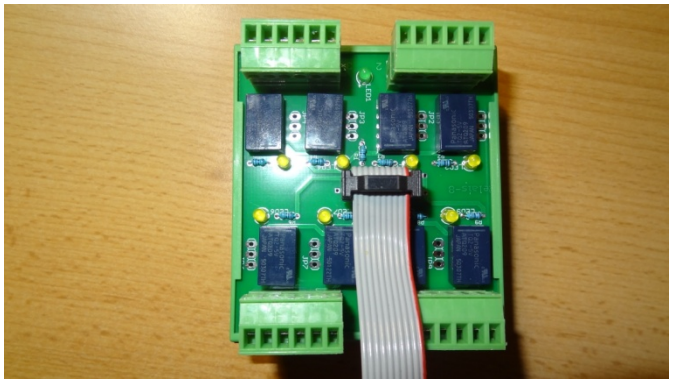


Slot sensor with possibility for relay expansion



Power is now supplied by a 9-15 V power supply (Carrera transformer).

Optional:
Expansion with a relay module (8 relays).
6x Outputs suitable for switching up to 2.0 A.
1x output as a shared output
Power is supplied via an external unit (e.g., the Carrera transformer).



Relay expansion

Compare standard and extended:

Function	Standard	Extended
Slot-1	✓	✓
Slot-2	✓	✓
Power	USB-C	9-15V
Output 1-6	< 50 mA	< 50 mA
Output relais	✗	✓ with external Relay

Dimensions:
115 x 80 x 45 (L x W x H) mm

Connections:
Removable connectors

Mounting:
Mounts on a DIN rail.