ID Reader for Carrera Digital 132 & 124

With this ID reader, you can switch an output depending on which car (ID) is read by an IR sensor, independently of a PC.

Purpose:
As soon as a car passes the sensor, an output is immediately activated. In my situation, DRS** is activated for the autonomous car in question—which is controlled by the "Dual Speed Controller"—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)
- ☞ Activate and deactivate DRS control (Output On/Off)
- ☞ Activate a yellow LED flag while driving a pace car (by time or On/Off)
- ☞ Automatically control the polishing station (release after a set time)
- ☞ Control anything you want to control when a specific car passes the IR sensor

For whom?
Anyone who drives a Carrera digital 132/124 with or without a computer.
If IR sensors are already present on the track, you can also connect them (in parallel) to this ID Reader, with the advantages described above.

Setting options:
- ☞ Time setting for active output (ID 1…6)
- ☞ On/off control instead of time setting (ID 1…6)
- ☞ Adjust the time duration for 132 or 124
- ☞ Separate time setting for ID8 (Pace Car)
- ☞ 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 IR sensor (A or B) is activated, the corresponding output (ID 1…6) switches on for the set duration (adjustable with a dip switch between 100…1600 mS).
Using the DIP switch or external control, you can select 132 or 124.
132 indicates the duration setting mentioned above.
124 indicates the setting mentioned above, with the option to adjust it with a potentiometer (100…8000 mS). This is visible with a **blue LED**.
This setup is suitable for two tracks.

** Maximum speed in combination with the Dual Speed Controller

Operation with On/Off:
As soon as IR Sensor A is activated, the corresponding output (ID 1…6 & 8) is switched on and remains active until IR Sensor B is activated.
This setup is suitable for one track.
So, you will need two ID readers for both tracks and four IR sensors.

Pace Car*:
As soon as the pace car (ID 8) drives across the track and activates the IR sensor, the corresponding output becomes active and controls the yellow LED flag. After a set time (adjustable separately from the time setting for ID 1...6), the yellow "LED flag" is turned off again, or with the On/Off setting.

Polishing station*:
As soon as a car (ID 1...6) enters the polishing station, an adjustable timer is started. After this timer expires, the lock is released and the car can drive away. After the second sensor is activated, the lock is reactivated.
During this process, the output for the relevant car also becomes active, allowing you to see which car is in the polishing station.

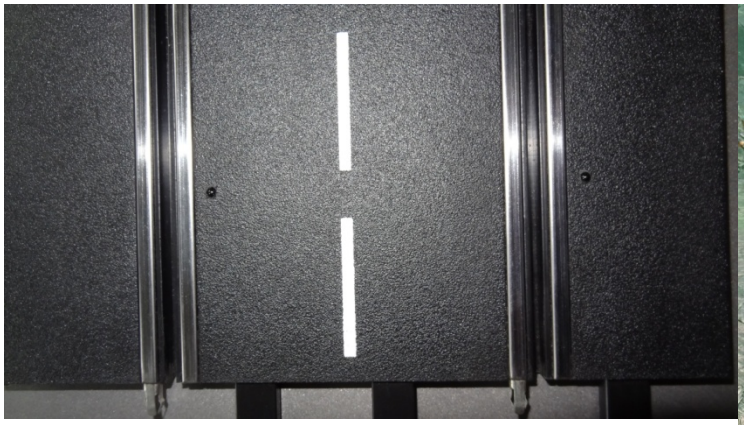
PC and software:
These options were previously only possible using a PC and Cockpit-XP in combination with a USB-Box module and an IR sensor.

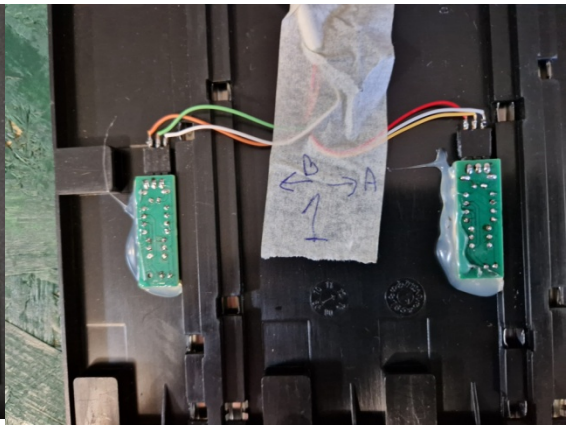
The disadvantage of this design is that time-critical switching is not easily possible, because the PC must first read the sensor via a USB port and then control a relay via the same or a different USB port. This method is too time-consuming (200...800 mS) and is also inconsistent! The PC's speed also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

*** For this application, an ID Reader expansion is required.**
1) The expanded ID Reader (external power supply, additional components)
2) External relay card

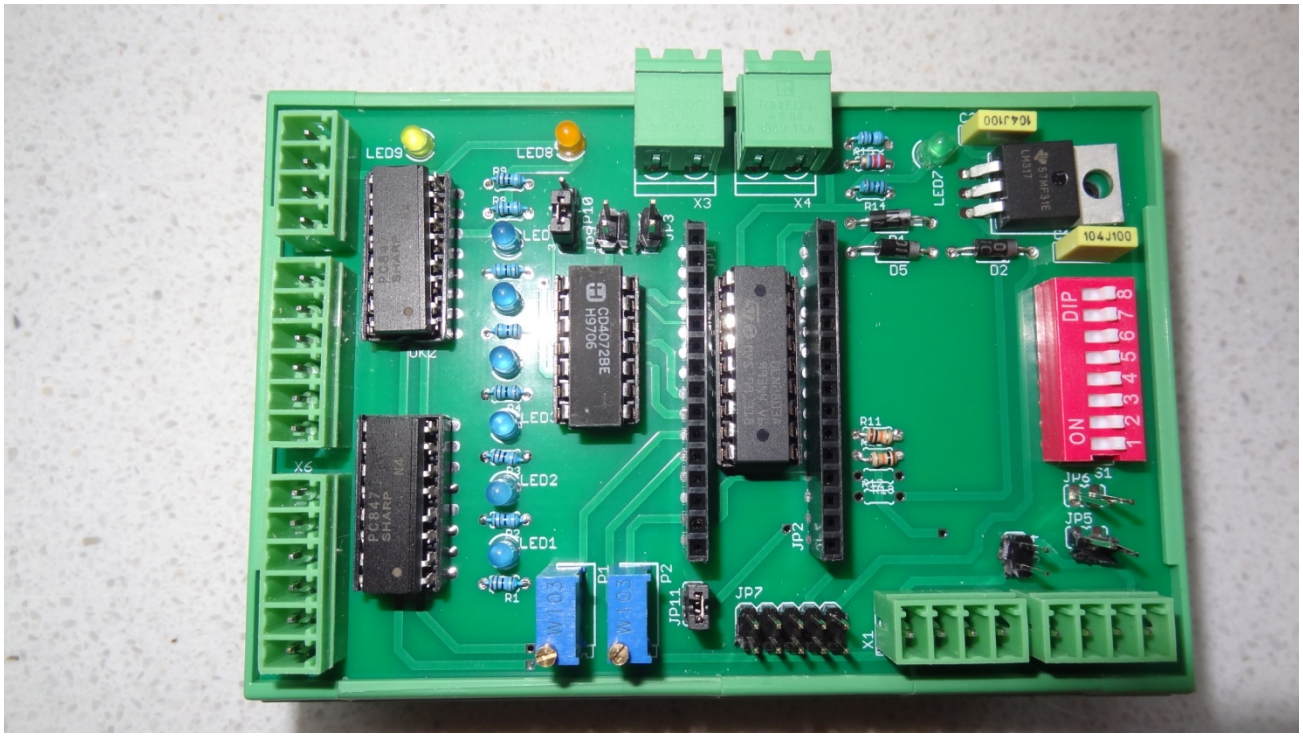
The standard ID Reader consists of:
2x IR sensor connections
6x outputs (ID 1...6) capable of switching a maximum of 50mA
Power is supplied via a USB-C connection (5V)

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



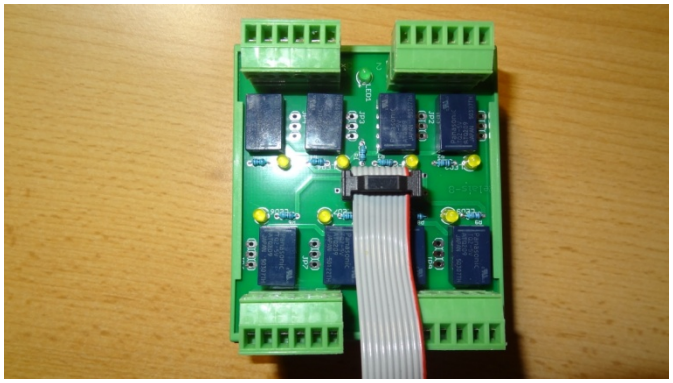


ID Reader with possibility for relay expansion



The power supply now comes from a 9-15 V power supply (Carrera transformer)

Optional:
Expansion with a relay module (8 relays)
With this expansion, ID 8 can also switch an output
7x outputs (ID 1...6 & 8) capable of switching a maximum of 2.0 A
1x output as a shared output for ID 1...6
Power is supplied via an external unit (e.g., a Carrera transformer)



Relay extension

With this extension, ID-8 can now also switch an output via a relay.

Compare Standard and Extended:

Function	Standard	Extended
ID-1	✓	✓
ID-2	✓	✓
ID-3	✓	✓
ID-4	✓	✓
ID-5	✓	✓
ID-6	✓	✓
ID-7	×	×
ID-8	×	✓
Power Supply	USB-C	9-15V
Output ID 1..6	< 50 mA	< 50 mA
Relay output	×	✓ with external Relay

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

Connections:
Removable connectors

Mounting:
Mounts on a DIN rail.