

## How do I connect the ACD pro to an unknown track?

As a standard you will find two types of track polarity. The positive and the negative polarity. A positive track polarity means that the plus pole is controlled by the speed controller. A negative track polarity means that the negative pole is controlled by the speed controller.

The ACD pro is working for positive tracks by default. The cable and connector colors are based on the German standard.

You can use the ACD pro also for negative Track. To do this you just switch the polarity switch and reconnect the controller for negative polarity. Please see the User Manual for details.

If you are not sure about the polarity and connection please follow the flowing step by step instruction to find the correct connection to every track polarity and every track colors

### Step (1)

Remove every car from the track, remove every other controller from track and switch the track power on.

### Step (2)

With a voltmeter search for the connector positions, between them you can measure the voltage of the track.

### Step (3)

Please mark the found plus and minus poles. This is very important to avoid any mistakes in the Future.

### Step (4)

Connect the ACD pro black and red wires to the marked positions. The red connector of the ACD pro goes to the plus pole. The black connector of the ACD pro goes to the minus pole. The yellow connector of the ACD pro must remain unconnected.

The green LED on the ACD pro should go on. If not control the fuse on the ACD pro.

### Step (5)

Put a car on the track. Connect the yellow wire of the ACD pro to the remaining connector of the track. You will get one of two possible situations:

#### Situation (1)

The car does nothing until you use the ACD pro. You must get the normal operation and you have found the correct connection.

#### Situation (2)

The car will start with full speed without triggering the ACD pro. So disconnect the ACD pro, switch the polarity switch to the opposite position and reconnect the ACD pro according to the found and marked positions. After that, you will be able to control the car with the ACD pro.

(The polarity switch is the switch near the green and red LEDs)

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**Very Important:**

*Please mark the connectors very clearly to avoid any mistakes in the future.*

**Colors of the connectors**

The ACD pro has by default the German cable colors. The ACD pro works by default for positive wiring.

To convert the connector colors to the US colors use the following table (Positive wiring):

ACD pro	US color
Red	White
Yellow	Black
Black	Red

**Fuses and maximum current**

The ACD Pro5 has 2 Fuses. The Supply fuse is 5A and the motor fuse is 7.5A  
The ACD Pro10 has also 2 fuses. The supply fuse is 10A and the motor fuse is 15A.

The ACD Pro3 has internal fuses. The maximum pulse current is 8A. Please do not exceed this current. The ACD Pro3 is allowed to be used with Power supplies up to 10A maximum current. This is because the internal fuses are designed only for scale racing with the typical Power supplies from 1 to 10A.

The operation of the ACD Pro5 and ACD Pro10 with strong power supplies is not restricted.

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## Restriction for the power supply?

In general any power supply should be sufficient to work with the ACD pro. Due to the braking feature of the ACD pro some power supply will not work properly. In such cases you need to add a condenser and a resistance to your power supply.

To ensure the proper working of the power supply please measure the voltage at the braking moment. If you found a voltage pulse of more than 3V as your power setting then you should make one of the followings:

1)

Use a condenser of 22000 $\mu$ F/35V in parallel to a 180 Ohm/11W resistance. This combination must be connected to the plus and minus connectors of the power supply. Please watch the correct polarity of the condenser!

2)

Connect a condenser of 10000 $\mu$ F/35V in parallel to a 100 Ohm/11W resistance. This combination is also good but produces little more heat.

3)

If you have a regulated power supply with a current of 5A or more, so you can connect only a resistance of around 82 Ohm/11W without a condenser to the plus and minus connectors of your power supply. This is the cheapest way.

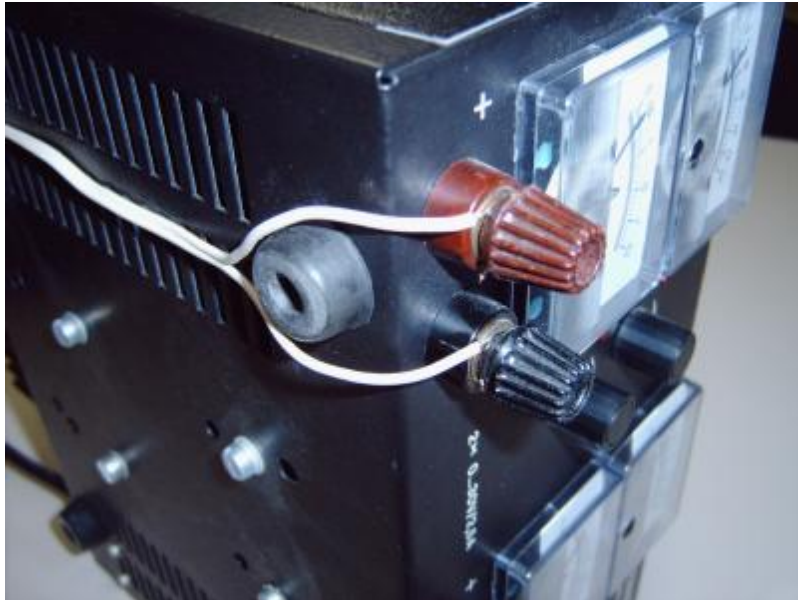
Please note, that the resistance in general will produce some heat. You should mount the resistance to a metallic surface for cooling.

In general the use of a condenser/resistance combination will improve the total behavior of the power supply.



Sample Parts for upgrading

The metal bracket maybe done using any metal strip



connection of the Resistance



Mounting of the resistance  
on the heat sink of the  
power supply

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Connection of the condenser if needed

Please pay attention to connect the + pole of the condenser to the + pole of the power supply

### Power adapter

If you don't wish to add any parts to your power supply you can buy a special adapter. This adapter may be connected directly to the power supply by standard connectors. Price and delivery time on request.

Photo of the external adapter for direct connection to a any power supply



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### Do I need to protect the cables?

Yes, Even if the cables of the ACD pro are very reliable they can not withstand too much pull force. The cables are sufficient for all normal racing situations. The gray cable of the ACD Pro5 / Pro10 is light. In some cases you need a Pull strength to avoid stresses of the cable.

Since this is not often necessary so we don't deliver this Pull strength with the standard controller.

You can mount this pull strength by your self using a plastic cord.

You need a 3 mm plastic cord with the length of 105 cm. Make a small 3mm hole in the Black Box using a cutter. (!! Pay attention to not damage any Electronic Parts within the box) Make a knot at one end of the cord and a double knot on the other end

Please see the following Photos for the mounting details:



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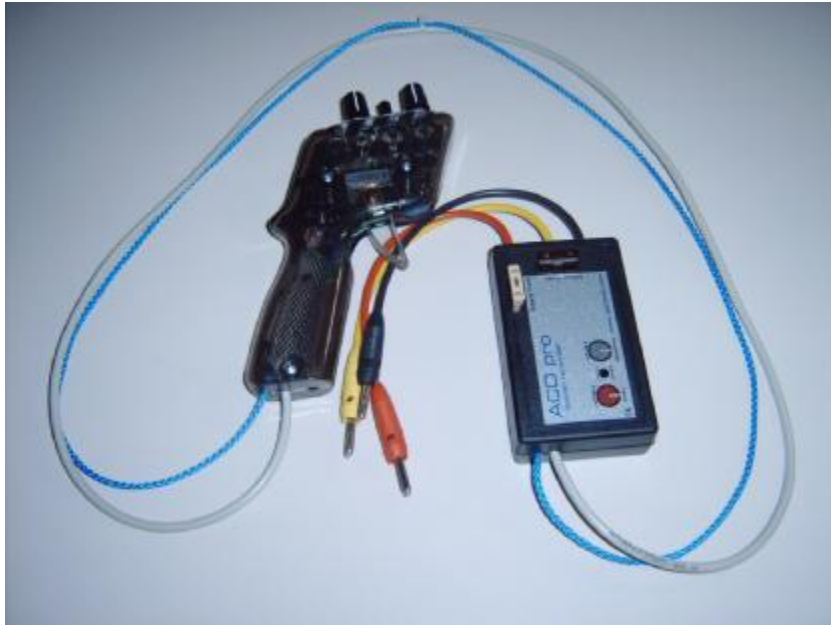
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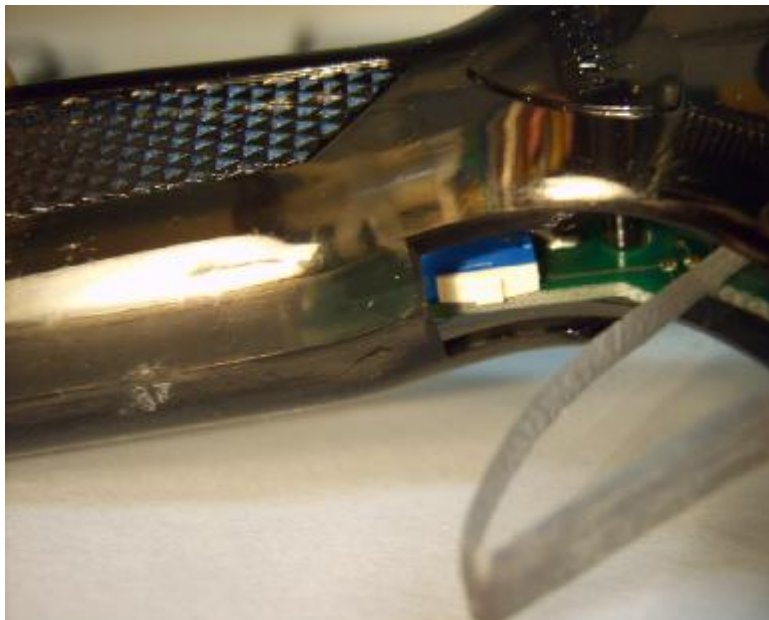


### What is the function of the Knops and switches?



The red knob is for the brake adjustment  
The gray knob is for adjusting the start speed of the slot car (Sensitivity)  
The black small knob adjusts the maximum speed of the slot car

In addition to these knobs you have the trigger characteristic switch. This switch changes the trigger behavior from Aggressive to smooth.  
The factory default setting: Slider to the upper Position = aggressive



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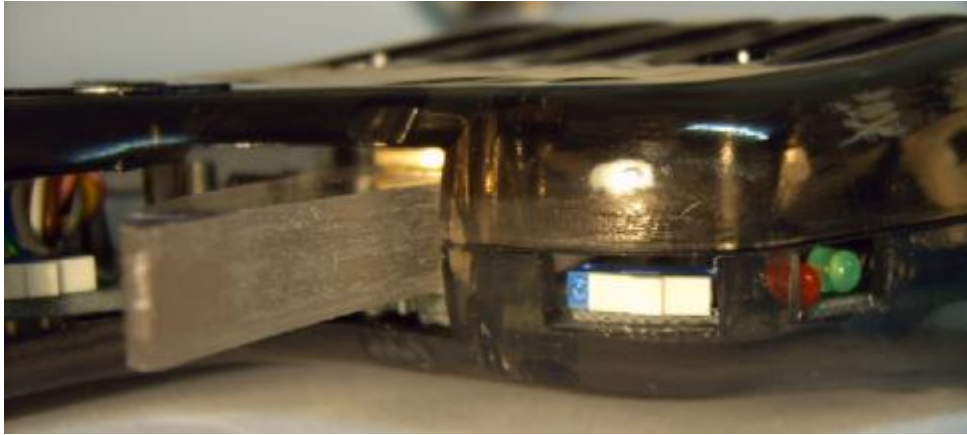
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Polarity switch. The factory Default position is positive.(Slider set to the LEDs)



**Attention:**

This switch must be set ones for a given Track. If you switch it by mistake then the car maybe go to full speed. Please see the connection procedure in this FAQ and read the manual.

**LEDs**

The green LED illuminates constantly as soon as the power is connected. The red LED is normally off. This LED will flash if the controller detects a malfunction.

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