

LE 25 AMS SPORT

LRP Speed Control User's Guide

No. 8032 Forward/Brake

1. Installation

For proper operation of your LE 25 AMS, it is important to carefully read the full instructions. Put on/off switch to **off (LRP)**. Then start to connect motor, receiver and servo. Then solder plugs to the LRP power wires. Finally you should very carefully check all the connections you have made **BEFORE** connecting the speedo to the battery!

!!! Attention wrong or cross connection will definitely destroy the controller !!!

Attention: after each run let the speedo cool down before you race again, especially using very hot motors like the LRP Big C, Magic, LRP Bee D or 10 to 12 Turn motors of other manufacturers.

General Information

- ☞ the **antenna** should go **straight up out off the receiver**. Avoid contact with **carbon fibre or metal parts**. If the antenna is too long, cut it short but never roll it up
- ☞ mount controller with double-sided servo tape
- ☞ a little airflow inside the body shell is absolutely necessary, improves performance and increases lifetime of batteries and motor without any adverse effects on the speedo
- ☞ mount speedo so that it can't be harmed by a crash
- ☞ the controller should be mounted in a way that makes it easy to adjust the pots and current limiter; this definitely helps during racing
- ☞ as long as the **motor is connected to the speedo**, never let it run directly with a separate battery; this causes destruction of the speedo and loss of warranty

2. Connection of Wires

Thick LRP Power Wire:

thick black LRP wire	minus battery
thick red LRP wire	plus battery and plus motor
thick blue LRP wire	minus motor

The thick red LRP Power Wire:

has 2 functions, therefore the following connection is recommended:
The wire goes from the speedo to the plus terminal of the battery. **From the plus terminal** a second wire goes **directly** to motor plus.

☞ **Attention: avoid contact of power wires with receiver or antenna**

Thin Wires: (only to be used when required)

thin red wire	plus optional receiver battery
thin black wire	minus optional receiver battery
thin blue wire	only for special FET-Servo

Attention: Always look for good isolation of all wires. Only use the thin wires if you use an optional receiver pack or FET-Servo.

Connecting the Motor

before you connect the motor, make sure that proper capacitors (3 are included) and the Shottky Diode are soldered to the motor to protect your speedo from damage (see small instructions)

Connection of a FET Servo

The thin blue FET Servo wire is connected to the thin blue controller wire. This has to be done regardless of whether an additional receiver pack is used or not.

If you use a normal servo and not a FET-Servo, the thin blue wire has no function. Leave the wire isolated and don't connect it to other wires or parts of the speedo. Wrong contact will definitely destroy the speedo

Connection of an optional Receiver Pack

You can use an optional receiver pack with 5, 6 or 7 cells. Just connect + plus of the receiver pack with the speedo's thin red wire and - minus with the speedo's thin black wire.

You don't need to run an additional receiver pack. The LE 25 AMS works perfect without. It can just give you the racer's edge.

Attention: Always look for good isolation of all wires. Only use the thin wires if you use an optional receiver pack or Fet-Servo. Never connect them to anything else.

!!! Wrong handling or cross connection causes fatal damage of your high tech product!!!

Automatic Security System

If you use an additional receiver pack, the red Receiver-Pack-LED lights up when the pack is charged. If the packs goes flat or dead the LED goes off and the security system automatically switches to the car battery as power supply.

Receiver-Pack-LED is red ☞ receiver pack works

Receiver-Pack-LED is dead ☞ receiver pack is empty or damaged

Maximum Number of Battery Cells and BEC

The speed control's BEC is built for the typical 5-Minute use in RC-Models with car/ flight batteries up to 10 cells and 1 servo.

If you want to run your model longer than 5 minutes with more than 7 cells, the Built-in-BEC and the Automatic Security System have to be shut off. Simply cut the red thin wire which is leading from the speedo to the receiver and connect a separate receiver battery **directly** to the receiver. **Don't** use the separate thin wires coming out of the speedo. The speedo can be used with **maximum 10** cells.

Number of cells **with BEC for longer than 5 minutes:** 7 cells

Number of cells **without BEC for longer than 5 minutes:** 10 cells

3. Set-Up

The pots' positions are:

right	☞ neutral
middle	☞ full power
left	☞ brake

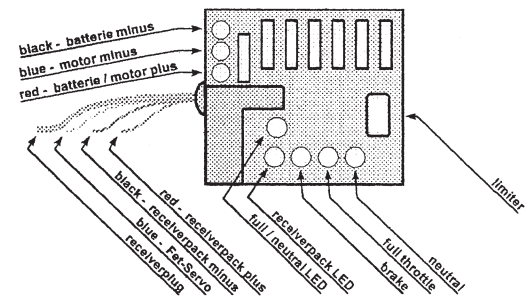
The 2 LEDs' functions are:

1) full throttle (red) / neutral (green) LED

2) Receiver-Pack-LED

☞ **red** - optional receiver pack charged

☞ **dead** - optional receiver pack is flat



The speedo is preadjusted, so with most transmitters you will only have to make some slight adjustments. First set all adjusters of your transmitter effecting speed/neutral/brake to neutral. If the full/neutral-LED lights up while braking, you have to change direction mode of your transmitter to reverse.

Pot Setting:

First of all: Do not force adjustment pots past their stops !!!

a) wheels of the car must be able to turn free or better remove the pinion

b) turn on the transmitter

c) put speedo switch to **off (LRP)** and connect the speedo to a charged battery

d) put speedo switch to **on**

due to the **'Switch-On Impulse Suppression'** the speedo is ready to operate after 2 seconds

e) **Neutral**

To set **neutral**, adjust the **right pot** until the motor stops and 2-colour-LED is off. After advancing the transmitter throttle for some millimeters the LED must switch to green. When throttle is released, the motor shouldn't brake.

f) **Full Throttle**

Adjust Full Throttle (**middle pot**) so that the LED switches to red (full power) 3-4 mm before the transmitter throttle reaches the end.

g) **Brake**

Turning the **left pot** to right (clockwise) increases brake power, to left decreases the brake. To get used to the all new LRP-brake, which can bite very hard, start in middle range.

h) Finally it's time for the **Current Limiter**:

Each speedo is delivered with 5 different coloured chips. Using the chips you limit a certain amp rate that is **maximum** allowed through the speedo. The chips can be changed fast and easy and are well worth experimenting with. To change the rate just take out the chip and plug in another. With no chip, the speedo runs without limiter. The plug-in direction of the chip (or pot) doesn't matter.

As an option a Plug-In-Pot is available to adjust every possible current limitation between 0 and 100 ampère. The number on the pot shows the actual adjusted amp rate of the current limiter.

☞ **Basic rule:** more limitation (less amps) means saving energy/longer running time and more driveability and allows longer gearing and more top speed.

colour	max. amp rate
black	☞ no limit - max amp
white	☞ 80 A (4WD)
green	☞ 60 A (2WD)
red	☞ 45 A (Pro 10)
yellow	☞ 35 A (1/12)

recommended	amp rates
4WD Off-Road:	☞ 60 - 100 A
2WD and Pro 10:	☞ 40 - 80 A
1/12:	☞ 35 - 60 A

The best limitation point depends on circuit, car and motor. With a little chip testing you can definitely improve your lap-times.

Trouble Shooting Guide

If you have any kind of unexpected trouble with the speedo, here are some hints and tips.

- ⊗ You accelerate forward but the LED stays off, motor doesn't turn
 - ☞ Check all connections and if the servo works
 - ☞ Check if the motor revs up when you reverse the throttle. If yes you have to change the direction mode of your transmitter
- ⊗ Speedo gets too hot
 - ☞ Definatly make some air holes in the body shell
 - ☞ the gear ratio is too long ⇨ use a smaller pinion
 - ☞ the car can't move freely ⇨ check the bearings and drive shafts of your model
- ⊗ No motor or servo action
 - ☞ Check wires, motor, receiver and crystal
- ⊗ Interferences, servo moves uncontrolled
 - ☞ The motor must be equipped with the right capacitors and they have to be soldered correctly! We strongly suggest you to use the LRP capacitor set Nr.6141. Both capacitors have to be soldered between plus and minus of the motor.
 - ☞ Speedo or power wires are too near to the receiver

You Should Never (Unless you want to destroy the speedo)

- ☞ leave your RC-Model unattended when the battery is plugged in or the speedo is switched on
 - In case the speedo was damaged before, this could cause fire to your model or worse
- ☞ Cut off the original wires, connectors and switch - this definatly will cause the loss of any warranty
- ☞ Put any kind of metal or wire in touch with the heat sinks.
- ☞ Cover your speedo with any kind of material - in contrary, airflow increases performance!
- ☞ Get your speedo or other electronic parts in touch with water.
- ☞ Change the polarity of your receiver plug.

Motor Choice (6-cell batteries):

If you want to hot up your model we recommend:

- ☞ **LRP Rallye-Series** - all winds
- ☞ **LRP F1-Series** - all winds
- ☞ **LRP Super-Plus Series** - all winds
- ☞ **LRP X-Generation** - all winds

5225 Big C	5224 Magic	5227 Killer XI	5241 Bee D
5243 Viper	5231 pink X	5216 blue-SX	5212 Diablo
5219 orange-X	5217 white X	5512 Truck Torque	5514 Truck Speed
5516 Truck Stadium	5312 silver X	5313 gold X	all 1/12 Types

or every stock motor (normally 27 Turns) and any other Modified motor with 10 and more turns (i.e. Kyosho Mega or Tamiya-Tuning)

With a 7-cell battery you have to choose a softer motor and a shorter gear ratio

Rule of thumb: less turns give more power but are also harder on the speedo and the batteries (less running time).

Technical Data

Input voltage with BEC	4.8 - 12.0 V
Cells with BEC 5 minutes run time	4 - 10
Cells with BEC more than 5 min.	7
Input voltage without BEC (BEC cut off, with receiver pack)	4.8 - 12.0 V
Cells without BEC	4 - 10

BUILT IN BEC:	
(no receiver battery necessary)	
BEC Voltage	5.7 V
max. BEC Current 30 Seconds	1.6 A
cont. BEC Current 5 Minutes	0.5 A
Automatic Security System	yes

Power Data:		
max. Current 1 Second		300 A
max. Current 30 Seconds		90 A
continuous Current 5 Minutes		50 A
Switch-On Impulse Suppression		yes
Thermal Overload Protection		no
Reverse Polarity Protection		no
EMK-Brake		yes/adjustable
Regenerative Brake		yes
Motor Current Limitation		yes/adjustable
Frequency		2500 Hz
weight with wires		40 g
size in mm		41x36x19 mm

The value **max. Current 1 Second** is identical to the rating of American Companies: 'rated current at a temperature of 25°C.'

Operation with receiver pack/without BEC and Automatic Security System: cut the red plus wire of the receiver line and connect the receiver pack directly to the receiver.

Repair Procedures/Warranty

Hobby shops are not authorized to replace speedos thought to be defective. Each speedo goes through our sophisticated quality control. As known from our motors, we check every piece very carefully. We do a multi function test of brake, neutral, full throttle and receiver power supply. At last it has to pass our cruel long time high load power test. Therefore we guarantee 100 p.c. performance for every speedo leaving the factory!!! If you have any problems with your speedo, contact your hobby shop or your **LRP-importer**.

For quick repair and return we definitely need:

- ☞ original sales receipt and your address, repair is guaranteed only with sales receipt from an authorized LRP dealer
- ☞ the quality control and guarantee sheet included with the speedo
- ☞ detailed description of the problem/malfunction

Cut off receiver plugs, wires and switches will be replaced and charged in any case.

To guarantee a perfect repair, we might have to replace wires and charge this

Speedos sent in for repair that operate perfect normally will be charged with a service fee

Any speedo treated severely with silicone or anything similar inside, might not be repairable

LRP guarantees all products to be free from defects in materials or workmanship for 60 days from the date of purchase. The warranty **doesn't cover:** components worn by use, any soldering inside the speedo, application of reverse voltage, cross connector, poor installation, replacing of wires in the speedo, connection to electrical components not mentioned in the instructions, mechanical damage, immersion in water and **cut off the original wires, plugs, connectors and switches.**

LRP products are manufactured due to very strong quality rules and very little tolerances. Sadly we can't watch out for a correct use of our products, therefor no liability may be assumed nor will liability be accepted for any damage resulting from using this product.