

Just a little post with a few tips on the Progdisc features with the Kosmik. Most of this info is in the manual and a new manual is coming soon.

1, Capacity Limit. This when set will put the motor in to slow down mode for 30 secs to warn you when you have hit the pre set limit. This is in the Progdisc as AH so the mah you want to set it at needs to be divided by 1000 and this is what you enter in the Progdisc. So for 4000mah you would set 04.0ah. To set this look under RPM Control and scroll down until you see it listed.

2. Ri Comp. There is no simple answer to this and I will try to explain in terms that will help and not go in to much detail as it will give away information about how our governor works as it is information that is deep in our programming. What it does it match the Kosmik's output to match that of the motor Ri (internal resistance). It gives the Kosmik some forward feed or a better description would be to make the governor function more proactive than reactive. The Kosmik actually knows what is going on by seeing the information live from the logging such as battery current, motor power, throttle position etc so it not only sees the throttle position it can determine how hard the model is being pushed but it can not take into account items such as the models weight and the drag on the model.

If you increase this it will give a harsher or more strict governor response. In the Kosmik there is no more i gain only P gain and the Ri compensation as this governor works differently to that of the Jive.

Do you need to change this? 95% of pilots do not need to but then a lot is down to feel for the pilot and information you see on the logging. It is more aimed at the competing 3D pilots that want/need instant governor control. For the average pilot out there we have found that most prefer the soft setting it is on as stock and the low setting has no side effects.

So if you do need to or want to change this setting we recommend you do so in small steps or say a value of 2 each time and see how it feels and works for you, there is no direct answer and it will be different for every pilot.

The side effects of this could be high motor peak spikes, jumpy PWM and or overspeeding. A jumpy tail should not occur on the Kosmik like it could on the Jive with an overly stiff governor, but it could in extreme if you set the Ri comp to 50 and the motor has an Ri of 15 for example. The jumpy PWM can be controlled by the P gain.

For the most part as said above this is fine left low and the governor response is more than fine for most but for the demanding pilot who needs it then small steps and you will have the absolute governor control unrivalled by any other on the market today.

<http://www.kontronik.com/index.php?o...id=208&lang=en>

3. LVC. Low voltage cutoff. This can be set from 2.7v to 3.5v per cell. This also induces the slow down of the rpm for 30 secs to warn you that you have hit the preset limit after which it will shut off. With the use of the Bluetooth module you can set this to either slow down or to cut off. Default is 3v.

4. BEC voltage. Very straight forward. You can set the output BEC voltage from 5v-8v and is adjustable in increments of 0.1v. Many people set there BEC to 7.4v or 7.8v and say its being on the safe side. There is no safe side, setting it to 8v will not cause any issues for the Kosmik at all and is one question that is asked a lot. Of course it is personal preference but if you want to run 8v then do so with confidence
Default is 5.6v.

5. Smooth start. The smooth start can be adjusted to take from 8 seconds all the way up to 60 seconds to reach your % set in you throttle curve.
Default is 12 seconds.

6. Operation with a buffer pack installed. A common question is what buffer pack shall I use when I run the BEC at X voltage. Use this as the guide and do not charge the buffer pack to a higher voltage than the BEC output is set to.

Bec voltage 5.6v-6v Use a 4 cell Nicd

Bec voltage 6.6v-7v Use a 2s Life pack

Bec voltage 8v Use a 2s Lipo

If you do not want to run the internal BEC and I cant figure out for the life of me why you would want to when you can have the most consistent BEC there is then just pull the red wire from the leads connected to the RX. These are the recommended buffer packs, any other is at your risk.

If you want to use an external BEC then please copy the diagram below.

7. Torodial core. Many also ask mostly on the forums if it is ok to NOT run with these on the leads as "they look horrible" or with the advent of 2.4ghz radio's it has done away with the need for these little units. That part may be true as the harmonics of the BEC switching frequency may be weak enough to not interfere with the 2.4ghz band but gyros are oscillating devices which can cause issues so the advice is to run them. Not using them is at your own risk.

8. Autorotation mode (Bailout mode). To set this you simply set a switch such a Throttle Hold to 25% instead of 0% You do not have to worry that the Kosmik will start the motor if you connect while in TH as the Kosmik will not arm till you reach around 38% throttle. For Futaba users a value of 30% is needed. The spool up speed is as fast as it can safely do so and this is determined by the mass to be rotated and the settings used in gov store or when you spool up at 0 deg pitch until the set headspeed is reached. You have 25 secs to use the bailout option after which it reverts back to Smooth start. If you intend to use this feature then make sure the blades are a little tighter than normal due to the forces involved in

the quick start up.

9. Adjusting the Throttle end points to reduce the deadband. **DO NOT DO THIS.** The deadband is there for a reason and one being the above feature, this actually applies to all Kontronik ESC's. Leave them at 100%-100%

10. The Kosmik is now supplied with 2 ESC leads with torodial cores on, use them both as this helps spread the BEC's work load so is a good thing.

11. Why so many logs on the memory card? Every time you connect power to the ESC with the SD card in a new log is created. It starts logging at power up everytime so even when you are setting up or disconnect the batts as the rx/fbl system has not initialised a new log is created. You may simply delete these or do with what you wish.

12. Why is LED 1 flashing 10 times on batt connection? This is because the Mode Programming is incomplete. When programming the Kosmik it is important to wait for the RED LED to turn GREEN. This tells you the selection has been accepted. If it does not change the repeat the programming.

13. I have a shut down with the code 8 flashes. This is most likely caused by poor connections. This could be a dry solder joint or a loose plug so always make sure each connection is good and all soldering is spot on. There are other issues that can cause it but this is the most likely.

14. The SD card. Please always make sure this is in as if you have any issues this helps aid the diagnosis 100x as it logs EVERYTHING

15. Do I need to reprogram if I want to use a different cell count? This depends on how different the cell count is. So far it seems this is only being used on 12s and 14s systems so the simple answer is no. Just when you do the programming make sure you use the 14s flight packs and then you can use 12s flight packs without issue.

16. How do I view the logs? Download a program called Logview. More info can be found here

<http://www.kontronik.com/index.php?o...id=203&lang=en>

and some tips on how to use it can be found here

Some Kosmik and Logview Setup videos - HeliFreak

Or alternatively send them to me and I'll happily look over them and let you know if anything is wrong or if you simply have some questions about the info you are looking at.

17. Do not think the Kosmik is complicated as it is not. It will work within in minutes perfectly fine for everyone just by programming Mode 1 and then helicopter mode which is Mode 4. Yes, it really is that easy.

18. The ideal throttle % in the Kosmik is around 80% unlike the Jive series which is 65%. The harder you are flying the closer you need to be to this figure. How do you

know if you are flying hard enough and need to be near this number? Well the only way is if you are getting shutdowns while running lower TC's. The Kosmik can handle lower curves as detailed in the manual but if you are dropping away from this figure and still demanding the same performance issues will occur. As you lower your TC then performance will need to follow. Generally for a perfectly geared setup then the Kosmik is most happy at 80%

19. With V4 out now the error codes have changed and they are all listed in the back of the manual for ease.

20. With V4 when you open the file on the SD card it will give you an error log file. Simply open this with any text editor and it will now detail any errors and on what number log so you will see what is happening and when. See the pic below of where to find this and an example from one I have been sent.

21. Bluetooth module. You need v4.1 for this to work. This can do everything the Progdisc can except updates and change the ESC timing. You need the KProg for the programming and K-View for viewing the data, not logs. K-Prog replaces the need to do any mode programming in the typical way using the sticks. It can also do as mentioned above do everything the Progdisc does in setup. Change the BEC voltage, start up time, Ri comp etc. To connect the BT module to your phone is simple, put your phone in to pair mode/search for device and while it is searching press the button PRESS on the Kosmik and it will now pair. It is a very easy app to use and I don't need to explain this as you will see Just select the preset heli then go through all the steps. At the moment its only available for Android devices but the Apple software has been in testing now for some time and is very nearly ready for general use.

22. K-View, Very simple again, this shows you live data from the ESC, the battery status, motor, limits - which is all the highest and lowest data from things like the BEC amps, voltage, motor amps etc and any events such as any warnings during the flight.

23. Do I need to run the supplied fuse? YES. Connect this to the negative terminal on the KOSMIK and then to the negative battery lead. It is recommended to do this as it is a last resort failsafe. The supplied 200a fuse will not fail when you hit 200a for a split second, it will take a constant run at 200a for it to fail which never happens unless there is an issue then it will do the job its designed to do. Not running this is at your own risk.