

Check the internal generator

... there is another way, as in the manual ...
applies only to 912 / 914 !

If you search long enough in the Heavy Maintenance Manual and, above all, know what you are looking for, you will find the following illustration:

ROTAX Prüfprotokoll für Zündanlage / Inspection protocol for ignition unit																	
Type, S/N / engine type, SIN:																	
Zündanlage, S/N.: Ignition unit, SIN:		TSN															
Sichtkontrolle: Visual check:		Bem. / rem.															
Geber-Zuordnung: Pick-up coordination:		Zündkreis / Ignition circuit															
Zündspule: Einschaltzahl max. 220 1/min Ignition coil: start r.p.m. max. 220 r.p.m.		Type	A 1/2	A 3/4	B 1/2 B 3/4												
		912	1T / 2T	3B / 4B	1B / 2B 3T / 4T												
		914	1T / 2T	3T / 4T	1B / 2B 3B / 4B												
Abstellkontrolle: Kreis A Ignition stop check: Circuit A		Zündfunke "AUS" Spark "OFF"															
Abstellkontrolle: Kreis B Ignition stop check: Circuit B		Zündfunke "AUS" Spark "OFF"															
Zündverstellung bei: (max. 1000 1/min) Ignition variation at: (max. 1000 rpm)		A 1/2	A 3/4	B 1/2	B 3/4												
SMD-Modul oben, S/N, TNr: SMD-modul, top S/N, p/n:		Bem. / rem.															
SMD-Modul unten, S/N, TNr: SMD-Modul bottom S/N, p/n:																	
Anschlußbelegung gem. Schaltplan des letztgültigen Wartungshandbuchs wire connection checked according Maintenance Manual, current issue																	
Bemerkungen / Remarks:																	
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Note: measurements at ambient temperature between +20°C and +30°C Hinweis: Die Messung erfolgt bei einer Umgebungstemperatur von +20°C bis +30°C																	
Unterschrift Prüfer / Signature Tester:		Datum / Date:															

the charging coils

... are the two coils that generate the current for the two ignition circuits and can actually only be tested with the ohmmeter, as described in the figure, without much effort. Testing with the ohmmeter is also quite reliable.

These coils make the ignition system independent of all other power sources, so that the engine always runs unless the ignition circuits are switched off.

the light coils

... generate the power to supply the entire aircraft.

Their testing is described in the manual as checking the resistance of the two coils in series and a short circuit to ground.

And anyone who has ever tested a resistance of $0.1 \div 0.8 \Omega$ with a multimeter knows that you can forget that.

All that remains is to see if you can detect any discoloration of the coils.

To do this, however, you must at least remove the black ignition cover in the plane and try to see the coils through the holes in the magnet hub.

The only thing that helps here is a test method that is common in the motorcycle sector:

Measure the AC voltage generated by the coils without load

This is simple for motorcycles.

Disconnect the generator leads and check the voltage applied to the individual coils at a specified engine speed.

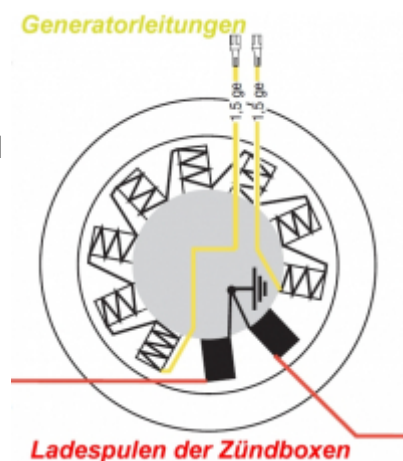
There are usually three coils, as three-phase alternators are used almost exclusively in motorcycles.

With the Rotax, we have 8 coils without a connection to ground, so consequently a simple alternator.

The test is very simple here.

The two yellow cables that come from the alternator and are connected to the regulator are disconnected from the regulator/rectifier and checked with the multimeter.

First, the resistance is measured - but this is not meaningful.



Caution: Danger to life!



Working with a running propeller is life-threatening !

Anyone working on a running aircraft engine should always be aware of this and work with extreme concentration.

If in doubt, do not carry out the following procedure!

Measure the AC voltage in the propeller wind according to the following table.

For this purpose, the multimeter set to over 100 volts AC voltage is connected to both yellow wires.

The two wires are **not** connected to the controller - i.e. without load.

The most reliable results are at 3000 - 4000 rpm.

Speed 1/min	AC voltage V
1700	12 - 13
2000	14 - 15
2500	17,5 - 18,5

Speed 1/min	AC voltage V
3000	21 - 23
4000	27 - 29
5000	34 - 36

The values were determined during test series on the dynamometer and are not official data from the manufacturer

If the measured values deviate significantly, the alternator is defective and must be replaced. You will usually also notice a discoloration of the coils.

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<http://kleinjung.de/rotax/> -

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