

ALERT SERVICE BULLETIN

Checking propeller RPM-harness

ASB BW 6XXRG 06

MANDATORY

1 Planning information

The wiring harnesses for the propeller RPM-sensor and governor solenoid **could** be routed in a way that prevents correct function of propeller pitch. If the RPM-sensor harness is routed too close to the ignition coil assy and outgoing spark plug cables, there is risk for signal interference. There is also an insufficient signal from the RPM sensor. Both things can provide signal interference results in incorrect reading of RPM and the propeller controller can set the propeller in max pitch. With propeller in max pitch the engine RPM and power output will be severely limited. If this happens, please follow the emergency procedures in chapter 5.

1.1 Effectivity

This service bulletin is applicable to BLACKWING BW 6-series aircraft with

- Airplane S/N: 027,028,029,032,034,036,038,039,043
- E-props Glorieuse propeller
- FlyBox APR1 Controller

This check is mandatory before the next flight.

1.2 Concurrent requirement

N/A

1.3 Reason

Can affect propeller pitch and engine power.

1.4 Description (Subject)

This alert service bulletin describes how to inspect the wiring harness and component installation in the RPM sensor connector.

1.5 Compliance

Mandatory.

1.6 Manpower and time consumption

With the correct tools for inspection, the inspection can be completed within 30 minutes.

1.7 Weight and balance

Not affected.

1.8 Electrical load

Not affected.

1.9 Software modifications

Not affected.

1.10 References

Appendix A

1.11 Other publications affected

None affected.

2 Material and Tools information

2.1 Material – price and availability

Replacement and rerouting of electrical harness or components is free of charge if performed by BLACKWING.

2.2 Company support information

Not affected.

2.3 Tools necessary

Smaller Flat-head screwdriver

Wire stripper

Crimping Pliers for wire ferrules

2.4 Material necessary

Plastic tie wraps

2.5 Material necessary for each spare

1 pcs, 10 k ohm 0.4W Resistor.

1 pcs, 100 nF 5mm Film Capacitors.

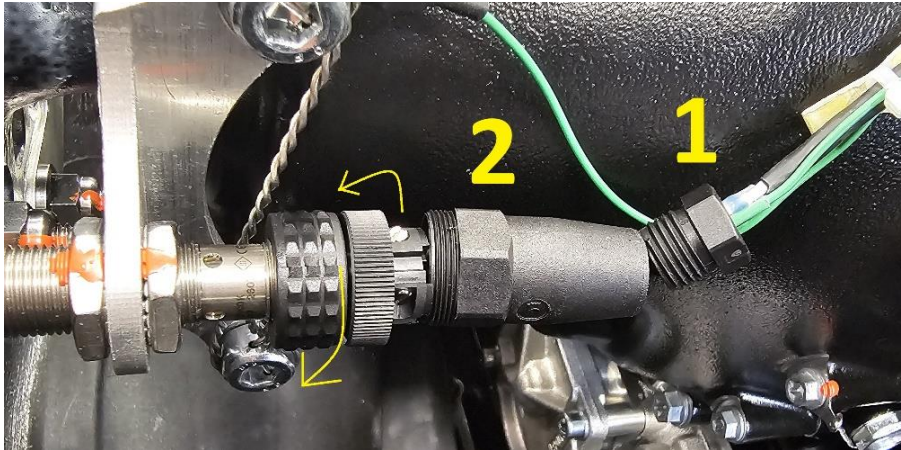
3 pcs, Wire end sleeves.

3 Rework of rpm-connector

Checking the RPM-Connector can be done with the top cowling removed.

1. Disconnect RPM-connector from the RPM-sensor
2. Open the connector. **Pic.1**
3. Inspect if there is a resistor and a capacitor installed. **Pic.2, Pic.3**
4. **Note! If only a resistor is installed but not the capacitor and no disturbances have been noted, a capacitor is not required, although it does improve stability.**
5. If no resistor is installed, unscrew the connector and terminals and proceed with installation.
6. Cut all three-wire close to existing wire end sleeve.
7. Strip all three cables approximately 6 mm. **Pic.4**
8. Install Resistor and Capacitor according to **Pic.5, Pic.6**
9. Crimp Wire End Sleeve with a Crimping Pliers. **Pic.7**
10. Reinstall all wire in the connector in the right position **Pic.2, Pic.3 , Pic.7**
11. Inspect the connector and wire and terminal screws so the wire is tightened.
12. Reinstall the housing in reverse order, as described in the section. 4.2
13. Reconnect RPM-Connector to the RPM-Sensor. Make sure it is screwed in all the way, as shown in the **Pic.8**

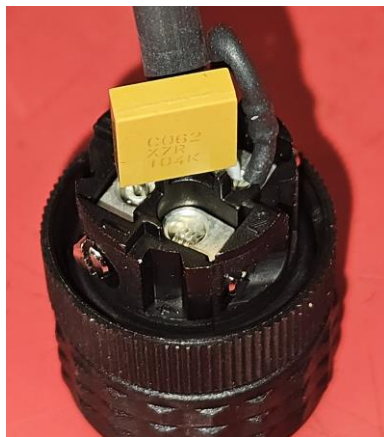
3.1 Information, and drawings



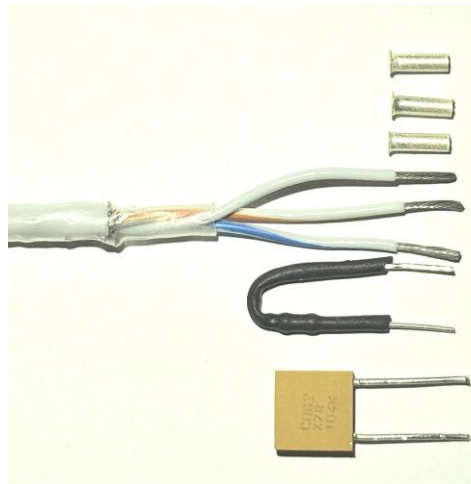
Pic.1



Pic.2



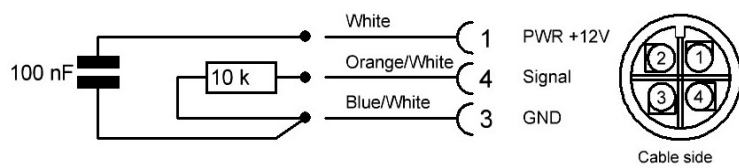
Pic.3



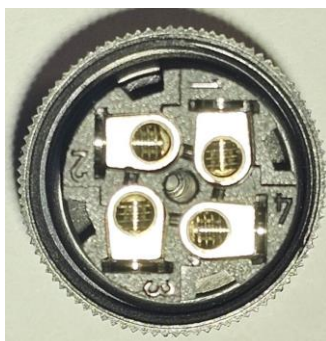
Pic.4



Pic.6



Pic.5



Pic.7



Pic.8

4 Rework of harness routing

Checking the wiring harness can be done with the top cowling removed.

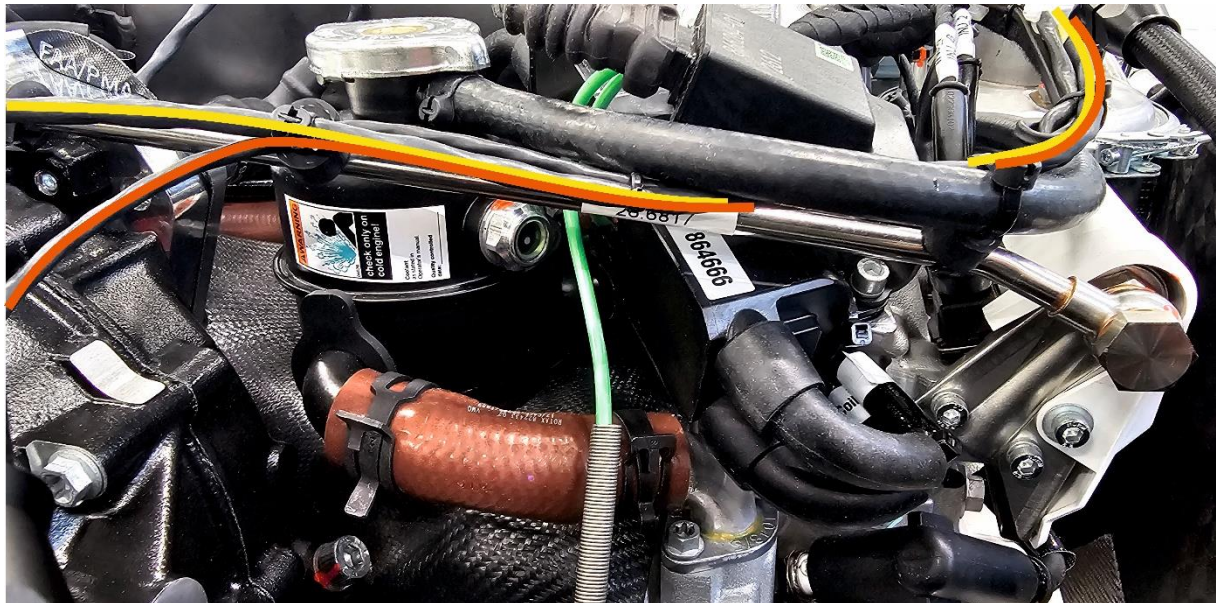
1. Visually inspect that the RPM-sensor harness is correctly routed.
Harness **must** be routed above the metal fuel-rail, not under and too close to the sparkplugs wire.

RPM-sensor harness (Red trace) and governor solenoid harness (Yellow trace) correctly routed

4.1 Tooling

To install the Cable Ties correctly normal hand tools are needed.

To install necessary harness, include a cable stripper and the required crimping tool.



5 Emergency procedures

If rpm signal is lost during flight the propeller can go to course pitch, significantly reducing power. In this case the controller needs to be turned off. This results in fine pitch setting. It is very easy that the propeller “over-speed”. Try to keep power under 30% and speed around 110kts when constant speed switch is placed in the **off** position.

If it happens after takeoff and runway clearance is critical, turn the constant speed switch on the controller **off immediately** and climb out at normal speed (80 kts). Adjust power as needed. The slower you fly the more power you can add without getting the engine above maximum RPM. For the 916is, if the rpm signal is below 6200 (<5min) there is no inspection needed. Please double check your Rotax maintenance manual for correct information. Turning the constant speed switch on the controller to the **off-position** result in that the propeller will going into maximum fine pitch.

