

RotorSport UK Ltd Service Bulletin (Permit)

Title: Fit TRT800H transponder to MTOS		
SB No.: 099 Iss1	Related documents MC No: None CCAR No.: None	Compliance Category:
Applicability		OPTIONAL or RECOMMENDED or MANDATORY
Aircraft type & model: MTOsport	Aircraft serial Nos. affected: Any	
This form is the response from RotorSport UK Ltd either against a problem found in the product in service requiring a containment or rectification action, or as service information for aircraft modification incorporation. For help, contact RotorSport on 44(0)1588 650769, or email info@rotorsport.org.		
<u>Reason and overview of the Service Bulletin (cause of problem if known)</u>		
New MTOsport gyroplanes are not always fitted with a transponder when manufactured. Under this Service Bulletin SB-099 the Funke Avionics (formerly Funkwerk) TRT800H Transponder approved by RSUK may be fitted to an aircraft already in service.		
<u>Approval</u>		
The technical content of this document is approved under the authority of the UK CAA Design Organisation Approval Ref: DAI/9917/06		
<u>Manpower estimates</u>		
Accomplishment of this Service Bulletin requires the following personnel		
<ul style="list-style-type: none"> (i) A3-7 Authorised engineer (ii) Competent person with equipment to perform transponder test 		
Estimated man-hours to complete the task as a standalone item: 2-3hours		
<u>Tooling required</u>		
Hand tools for installation. Approved ramp-test set for transponder test.		
<u>Weight and Balance Effects</u>		
Additional weight of transponder (600g), antenna, cable, and ground-plane (140g). Total 740g. Aircraft balance is slightly affected but it is known from other installations that the CG limits will remain within those approved.		
<u>Manuals affected</u>		
None		
<u>Previous Modifications that affect the SB</u>		
Refer to RSUK Service Bulletin SB-055 regarding instrument panel retaining screws		

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Aircraft type & model:
MTOSport

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Any

Accomplishment instructions (Action required to implement this bulletin):

Effective date of this SB-099 is 29.07.15. Reference should be made to the transponder manufacturers User/Operation manual and the CAA AD 2008-0183.

Instructions

1. Position the aircraft on level ground with the wheel-brakes on. Remove the front hatch to aid access.
2. Disconnect the battery ground cable
3. Release the instrument panel by removing the 13-off M4 button-head screws, pulling forward and disconnecting the five electrical connectors, pneumatic pipes (up to 5), antenna lead(s) and audio connector. Any cable-ties restricting removal should be carefully cut free
4. Remove the blanking plate fitted to the instrument aperture and fit the transponder using the three screws supplied. The transponder is usually fitted to the left or right of the fuel gauge.



5. Early aircraft have no static pipework system and if such the transponder static port should be unplugged and left open.
6. Later aircraft have two static ports and an installed pipework system. If such identify the pitot and static lines (pitot black, static clear) and at a suitable location cut the static line to allow insertion of Y-piece (RSD4209). Make connection to the transponder using 4mm pneumatic tube and silicone tube.
7. Identify the spare connectors for instrument power and instrument ground in the panel connector wiring. Using the cable supplied with the transponder (see below) make connection to these. Note that an in-line fuse is not used and circuit protection is provided by F5 (10A). Cable-tie the new cable securely to the existing harness

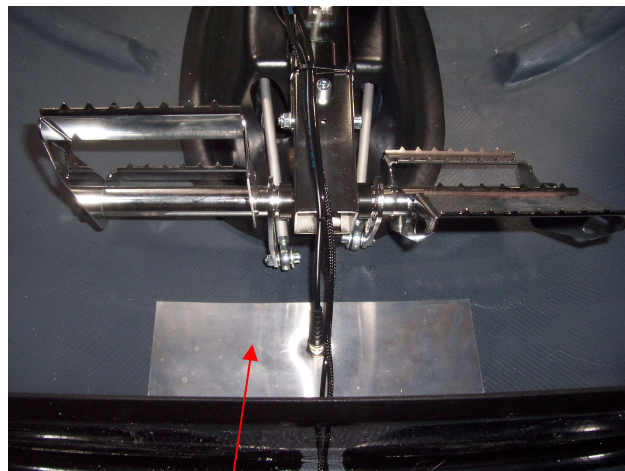
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8. Working under the aircraft nose drill a pilot hole 3mm diameter at a point on the centre-line 260mm forward of the nosewheel centre. Visually verify that if the antenna were to be positioned here there would be no interference with the forward keel-tube or the transverse bulkhead. Increase the hole diameter to 12.5mm (1/2") then fit the self-adhesive ground plane inside the enclosure, curving to suit the enclosure profile. Position and tighten the antenna in place. **Caution: the stem of the antenna is fragile and easily broken.**



Antenna



Ground plane

9. Fit the antenna cable to the antenna's BNC connector and route then cable tie the harness to a position at the base of the instrument panel location.
10. Lift the instrument panel into place and remake the pitot and static connections, the radio/transponder antenna cables and the aircraft connectors. Refit the panel retaining screws using Loctite 222 on the lower two screws only.
11. Cable-tie as required to ensure that there is no excessive looseness and no interference with the rudder pedals
12. Test the barometric instruments in accordance with the AMM (RSUK0012 or RSUK0044)
13. Refit the battery ground cable and nose hatch
14. Turn on the master switch and power-up the transponder. Enter the aircraft hexadecimal Mode S code, aircraft type (UL code is 1C) and FID (Aircraft registration without hyphen and three blanks after) Refer to the Funke documentation for method and CAA G-INFO database for aircraft data
15. Test the transponder installation and complete the Transponder Test Worksheet and the Service Bulletin Worksheet. Note the possible requirement for amendment of the aircraft's radio licence

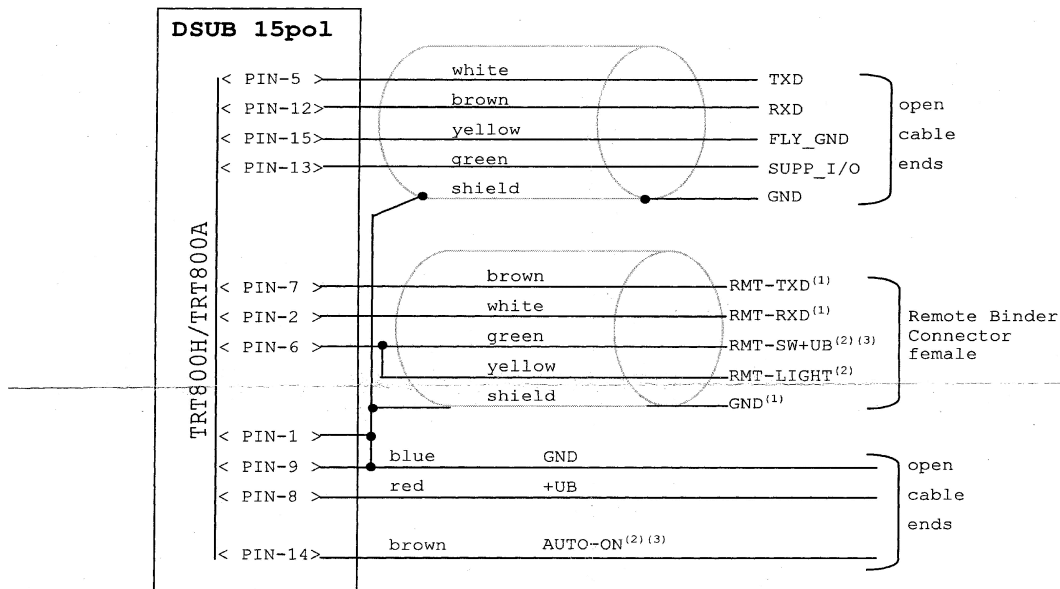
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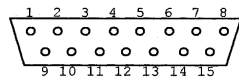
f.u.n.k.e. AVIONICS GmbH
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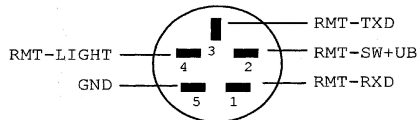
TRT800EMRS (ab S/N 90932114)



¹ New interface available
 -at TRT800H starting from S/N: 30430109 with SW V5.3
 -at TRT800A starting with SW V5.3
² New TRT800H interface starting from HW 6.0
³ port / function not available at TRT800A



D-SUB Connector female
(solder side)



Binder Connector female
(solder side)

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<u>Material information (Parts required to be made to implement this service bulletin):</u>		
No parts manufactured during installation		
<u>List of components (with purchasable part nos)</u>		
<p>Funke Avionics TRT800H Transponder and dongle (memory module) Antenna installation kit M.EL13 (comprising antenna, pre-terminated RG58C cable, ground plane [280 x 90 x 0.5mm]) 4mm tube (black) RSD4059 4mm tube (clear) RSD4058 Silicone tube RSD4438 Y-piece RSD4209 Loctite 222 RSD4696</p>		
<u>Interchangeability</u>		
Not affected		
<u>Parts disposition</u>		
<p>a) Disposal requirements (e.g. whether discard or re-use) – not applicable b) Environmental hazards of parts containing hazardous materials – not applicable c) Scrap requirements (e.g. mutilate scrapped items beyond use) - not applicable.</p>		
<u>Documentation (Service Bulletin Completion action)</u>		
<p>a) Entries within the aircraft logbooks, e.g CAA BCAR A3-7 Authorised Person to certify that the work is completed by writing '<i>SB-099 TRT800H transponder incorporated</i>' in the aircraft logbook white pages, and record the action in the pink pages entitled 'Aircraft Modifications'. Both entries must be signed by the CAA Authorised Person together with their CAA Authorisation number.</p> <p>b) Completion of the SB worksheet attached, This must contain a PMR statement, and a final check item that no tools or equipment have been left within the aircraft.</p> <p>c) No Permit Change Application document required, however the aircraft may require an amendment to its radio licence. It is the owner's responsibility to ensure that the proper licence is held.</p> <p>d) PMR or Permit Flight Release form requirements are covered by the worksheet attached.</p> <p>e) The transponder must be tested to verify that it is functioning correctly and the Transponder Test Worksheet completed accordingly.</p> <p>NB: The owner should note that the transponder installation should be tested every two years.</p>		

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Document approval signatures			
Engineering Manager	CVE (as required) Not required (TRT800H already approved under AAN29247 and modification MC-109)	Chief Test Pilot (if flight performance or safety effect) Not required (TRT800H already approved under AAN29247 and modification MC-109)	Head of Airworthiness

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Service Bulletin implementation Worksheet

Aircraft type:	Serial no:	G-
Worksheet completed by:		Document ref: SB-099 Iss1
Worksheet cross-checked by (if applicable):		
Purpose – record service bulletin implementation actions taken to inspect aircraft and return to service.		
Maintenance manual referred-to and issue level/date:	MTOsport - RSUK0004 Iss7 of 10/10/12	

Note: attach SB sheets to this document

Task	Notes	Eng'r check/date	Inspector check/date
Disconnect battery. Remove instrument panel			
Fit transponder securely to panel	Record transponder serial number		
State "open static" or "static connection made"			
Make electrical connection and secure cable			
Install antenna and ground plane. Secure cable.			
Refit instrument panel	Use Loctite 222 on lower two screws only		
Test barometric installation			
Reconnect battery, refit nose hatch			
Test transponder installation	Complete test worksheet		

Customer acceptance:

Name: Signature/date:	Aircraft hobbs meter reading: Confirm logbooks annotated:
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Permit Maintenance Release:
'The work recorded above has been completed to my satisfaction and in that respect the aircraft is considered fit for flight. I confirm that no tools, equipment or debris have been left in the aircraft'

Engineer signature and date: CAA PMR Authorisation ref :	Location where work completed
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Transponder test worksheet		
Purpose – record transponder verification actions as part of in-service inspection.		
Location:	Aircraft serial no:	G-
AMM reference and issue:	Maintenance document reference:	
Task or defect description	Rectification or action undertaken	Eng'r initials
1. If the transponder is new and not programmed with the aircraft information, enter the aircraft hexadecimal mode S code, aircraft type (UL, code is 1C) and FID (Aircraft registration without hyphen, and three blanks after). Refer to equipment handbook for method, and CAA G-INFO for aircraft data.	Programming required Code programmed into transponder: Transponder type:and s/no:	
2. If transponder is programmed and the test is only for verification of function, record the aircraft registration and assigned hexadecimal code from G-INFO	G- Hex code:	
3. Rig IFR6000 or equivalent ramp test unit with antenna and turn on. Set to Generic Mode S test with reference to test equipment manufacturers instructions, and place equipment level with the antenna and 6ft away (subject to test set antenna requirements).	<p style="text-align: center;">Ramp test unit details:</p> Type: s/n: Calibrated to	
4. Turn on aircraft keyswitch and transponder. Set transponder to mode ACS. Set altimeter to 1013mb		
5. Start test on Ramp test unit. If test passes save the pass file, and print. Check on the print that the codes replied as the same as those required. If not, correct the fault and retest.	<p style="text-align: center;">Test PASS or FAIL</p> Code reported: Match? Yes/No	
6. Confirm that the transponder reported altitude matches the altimeter. If the discrepancy exceeds 100ft, confirm calibration of the altimeter. Adjust altimeter if required, or have transponder recalibrated.	Transponder altitude Altimeter altitude Was any recalibration undertaken? State action taken.	
Supply copy of the test report from the ramp tester as evidence of the tests undertaken.	Test report reference (if avail):	
Engineer/Inspector		
Name:	Signature and date:	
CAA Authorisation code :		

Note: All worksheets should be attached or referenced in the logbooks of the aircraft to which they refer and are considered to be part of the aircraft's legal maintenance record.