

**EASA PAD No. 07-073**  
**COMMENT RESPONSE DOCUMENT**  
**[officially closed for comments on 18 May 2007]**

PAD / DOC PARAGRAPH COMMENTED	COMMENT / PROPOSAL	AUTHOR OF THE COMMENT	DATE OF COMMENT	PCM RESPONSE
Applicability	The TAE 125-02 comes with the same FADEC like the TAE 125-01. Any TAE 125 installation is affected, not just the DA42. Suggestion: Add TAE 125-02 and delete " if installed in Diamond Aircraft Industries DA42 aircraft"	Diamond Aircraft Industries (DAI),  Harald Lackner Chief, Office of Airworthiness	14/5/2007	Partially accepted.  AD will be extended to cover TAE 125-02 engines. Because only installations on aircraft with auto-feather propeller systems are affected, this AD is still only applicable to the DA42 aircraft.
Reason	The TAE125 has no independent electrical power supply for the engine. The alternator certified as part of the engine also provides electric power to the aircraft electric system. There is a low voltage condition in the electric system of the airplane in case of transients but the reason is the alternator. Suggestion: Change into "...and momentary low voltage in the engine electric system when significant electric loads (for example the hydraulic motor of the landing gear) are switched on.	DAI	14/5/2007	Partially accepted.  Change into "...and momentary low voltage in the electric system of the aircraft, when the aircraft electrical system is not in the certified condition (battery failure or other failure case) and significant electric loads (for example the hydraulic motor of the landing gear) are switched on the aircraft system.
Reason	Because of the DO160D, Section 16, Category B Equipment Qualifications for the FADEC as stated in the installation manual the installer can assume, that short term voltage drops resulting from transients in the electric system are coped with by the engine. This is obviously not the case. The current design relies on electric power from the aircraft in that case. This is a non compliance to TAE CRI -T1 and FAR 33.28. The proposed additional batteries of MSB 42-042 correct this issue by providing electric power during short term voltage	DAI	14/5/2007	Partially accepted.  The engine is designed to run on the own power source independent from the aircraft electrical system as required by CRI-T1 and FAR 33.28. A FADEC reset was found acceptable during DO160D,

	<p>drops caused by the mentioned transients. These batteries and all other accessories required to provide the above mentioned functionality are therefore part of the engine! Anyhow, this is not the only solution possible as the FADEC itself should have the built in capability to cope with voltage drops.</p> <p>Suggestion:</p> <p>Change first sentence of second paragraph as follows: "The TAE125-01/ TAE125-02 engines are FADEC controlled and are not totally independent from the aircraft electrical power supply as required by the engine's certification base."</p>			<p>Section 16, Cat. B. Equipment Qualification tests for engine certification.</p> <p>The current behaviour of the FADEC in conjunction with an auto-feather propeller is not described detailed enough in the Installation Manual. Therefore this was not considered during installation of the engine in the airframe. The engine Installation Manual has been amended in order to incorporate the necessary <u>information</u> about backup electrical power for the installer.</p>
Reason	<p>DAI MSB 42-042 is listed in this PAD. Design changes required to comply with this MSB are changes to the engine electric system. DAI still has no acceptable installation approval from TAE and is therefore unable to approve this MSB.</p> <p>Suggestion: Note should be deleted.</p>	DAI	14/5/2007	<p>Not accepted.</p> <p>TAE confirms that the proposed DAI MSB 42-042 will solve this failure case and will be in line with the TAE installation manual.</p>
Compliance	<p>What "further instructions" are part of the second chapter?</p> <p>The AD should give clear instructions what to do to rectify the unsafe condition and not leave it open to contact TAE for further instructions.</p>	DAI	14/5/2007	<p>Accepted</p> <p>Delete "for further instructions" and add "The unsafe condition on the DA42 will be rectified by MSB 42-042. See PAD 07-074 which is an acceptable compliance to this AD for the TAE 125 installation in the DA42."</p>
Compliance	<p>Is it required that all previously certified engine installations comply after 31 August 2007 to the whole installation manual, issue 4, revision 1 or is this just valid for new certification programs. TAE changed their IM several times since certification of our airplanes using the TAE125. IM, latest revision just required for all new certification programs except Chapter 13 due to current AD.</p>	DAI	14/5/2007	<p>Accepted.</p> <p>The Compliance requests only to carry out the content of issue 4, revision 1.</p> <p>Any other revisions must not be carried out unless mandated by AD.</p>
Ref. Publications	<p>IM-02-01 issue 4, Revision 1 and all later approved revisions?</p> <p>Suggestion:</p> <p>Delete "later approved revisions" and add Chapter 13 (02-IM-13-01)</p>	DAI	14/5/2007	Accepted