TYPE-CERTIFICATE DATA SHEET

No. E.055

for

TAE 125 series engines

Type Certificate Holder

Continental Aerospace Technologies GmbH
Platanenstr. 14
D-09356 Sankt Egidien
Germany

For Models:

TAE 125-01
TAE 125-02-99
TAE 125-02-114
TAE 125-02-114P
TAE 125-02-125

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I. General

1. Type/ Model/ Variants

TAE 125 / TAE 125-01, TAE 125-02-99, TAE 125-02-114, TAE 125-02-114P, TAE 125-02-125

2. Type Certificate Holder

Continental Aerospace Technologies GmbH
Platanenstr. 14
D-09356 Sankt Egidien
Germany

DOA EASA.21J.010

3. Manufacturer

Continental Aerospace Technologies GmbH

POA DE.21G.0269

Previous Manufacturers:
Technify Motors GmbH (19 August 2013 to 31 July 2019)
Thielert Aircraft Engines GmbH (before 19 August 2013)

4. Date of Application

TAE 125-01	TAE 125-02-99	TAE 125-02-114	TAE 125-02-114P	TAE 125-02-125
27 Febr. 2001	3 June 2005	13 Febr. 2007	22 June 2017	15 May 2019

Note: Application for TAE 125-01 had been made to JAA before EASA was established.

5. EASA Type Certification Date

TAE 125-01	TAE 125-02-99	TAE 125-02-114	TAE 125-02-114P	TAE 125-02-125
03 May 2002	14 Aug. 2006	06 March 2007	18 October 2017	22 July 2020

Note: TAE 125-01 had been certified by LBA Germany (TC/TCDS 4631) prior to EASA existence.
This TCDS replaces LBA TCDS No 4631.
Transfer date to EASA Type Certificate: 24 March 2006
The TAE 125-02-114 engine model was previously approved as Major Change (power increase to 114 kW) to the initial 99 kW engine version under EASA approval number EASA.E.C.01379 on 3 Jan. 2007 (application date: 11 Sept. 2006).
The TAE 125-02-99 engine model was previously approved as TAE 125-02.

II. Certification Basis

1. EASA Certification Basis

1.1. Airworthiness Standards

TAE 125-01	JAR-E, Change 10, 15 August 1999
TAE 125-02-99 TAE 125-02-114 TAE 125-02-114P TAE 125-02-125	CS-E, 23 September 2003 except CS-E 130 (h) (see Note 2)

1.2. Special Conditions (SC)

TAE 125-01	SC1 Electronic Engine Control System SC2 Contaminated Fuel SC3 Failure Analysis SC4 Fire Precautions SC5 Certification of Programmed Logic Devices
TAE 125-02-99 TAE 125-02-114 TAE 125-02-114P TAE 125-02-125	SC1 Failure Analysis
TAE 125-02-114P TAE 125-02-125	SC2 Engine Flame Out during Flight

1.3. Equivalent Safety Findings

TAE 125-01	ESF1 Propeller Functioning Test ESF2 Engine Test Control Parameters ESF3 Engine Type Design
TAE 125-02-99 TAE 125-02-114 TAE 125-02-114P TAE 125-02-125	CS-E 70 and CS-E100: Engine Type Design

1.4. Deviations

none

1.5. Environmental Protection

none (not required for piston engines)

III. Technical Characteristics

1. Type Design Definition

TAE 125-01: TDD 02-01, Issue 2 dated February 02, 2002 or later approved issue/revision
TAE 125-02-99: TDD 02-02, Issue 1 dated June 30, 2006 or later approved issue/revision
TAE 125-02-114: TDD 02-02, Issue 2 dated Dec. 11, 2006 or later approved issue/revision
TAE 125-02-114P: TDD-02-02, Issue 4 dated July 19, 2013 or later approved issue/revision
TAE 125-02-125: TDD-02-02-125, Issue 1 dated Jan. 31, 2020 or later approved issue/revision

2. Description

The TAE 125 engine is a 4-cylinder, four stroke Diesel piston engine with an displacement of 1689 cm³ (TAE 125-01) resp. 1991 cm³ (TAE 125-02-99, TAE 125-02-114, -114P, -125), equipped with common rail high pressure direct injection, turbocharger, gearbox with reduction ratio of 1 : 1.689, propeller governor and FADEC.

3. Equipment

See Installation Manual.

4. Dimensions

Model	TAE 125-01	TAE 125-02-99, -114, 114P	TAE 125-02-125
Overall Length	816 mm	816 mm	823 mm
Overall Height	636 mm	636 mm	624 mm
Width	778 mm	778 mm	778 mm

5. Dry Weight

Model	TAE 125-01, TAE 125-02-99, -114	TAE 125-02-114P	TAE 125-02-125
Weight	134 kg	153 kg	156 kg

6. Ratings

Rating		TAE 125-01, TAE 125-02-99	TAE 125-02-114	TAE 125-02-114P	TAE 125-02-125
Power	Take-off (5 min)	99 kW at 3900 rpm	114 kW at 3900 rpm	114 kW at 3900 rpm	125 kW at 3900 rpm
	Max. Continuous				114 kW at 3800 rpm
	Max. Recommended Cruising	71 kW at 3400 rpm	97 kW at 3400 rpm	85 kW at 3400 rpm	88 kW at 3400 rpm
	Max. Best Economy Cruising			71 kW at 3250 rpm	71 kW at 3250 rpm

Note: The performance values specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.

7. Control System

The engine is equipped with a Full Authority Digital Engine Control (FADEC). Software verified to level C according to RTCA Document DO-178B.

TAE 125-01:

FADEC P/N 02-7610-55001 R1 or later approved standard
Software: TAE-125 m2.91 or later approved standard
Software Mapping: Refer to Service Bulletin TM TAE 000-0007 for approved software P/N.

TAE 125-02-99, TAE 125-02-114:

FADEC P/N 05-7610-K000101 or later approved standard
Software: TAE-125 m3.0 or later approved standard
Software Mapping: Refer to Service Bulletin TM TAE 000-0007 for approved software P/N.

TAE 125-02-114P:

FADEC D4 P/N 05-7611-E0019 04 or later approved standard
Software: D4-160 or later approved standard
Software Mapping: Refer to Service Bulletin TM TAE 000-0007 for approved software P/N.

TAE 125-02-125:

FADEC D4 P/N 05-7611-E0019 06 or later approved standard
Software: D4-190 or later approved standard
Software Mapping: Refer to Service Bulletin TM TAE 000-0007 for approved software P/N.

8. Fluids (Fuel, Oil, Coolant, Additives)

See Operation & Maintenance Manual for approved fluids (see also Note 4).

9. Aircraft Accessory Drives

All models except TAE 125-02-114P: There are no provisions for customer/aircraft furnished equipment.

TAE 125-02-114P	Rotation	Speed (rpm)	Max. Torque	Type of Drive
Accessory Drive	CW	7670	3.7 Nm	Belt pulley

CW = Clock-Wise
Speed is indicated for a reference engine speed of 3900 rpm.
Accessory drive direction of rotation is as viewed facing the drive.

IV. Operating Limitations

1. Temperature Limits

Minimum opening up Fuel Temperature (for Diesel fuel operation only, see also OM-02-01 resp., OM-02-02, OM-02-02P, OM-02-02B):	-5 °C (23 °F)
Minimum opening up Oil Temperature:	50 °C (122 °F)
Max. Oil Temperature (all except TAE 125-02-125):	140 °C (284 °F)
Max. Oil Temperature (TAE 125-02-125):	120 °C (248 °F)
Minimum ambient temperature for starting:	-32 °C (-26 °F)
Minimum ambient temperature for starting (TAE 125-02-114P, -125):	-25 °C (-13 °F)
Minimum opening up Cooling Fluid Temperature:	60 °C (140 °F)
Max. Cooling Fluid Temperature:	105 °C (221 °F)
Max. Gearbox Temperature:	120 °C (248 °F)

2. Speed Limits

Maximum Engine Overspeed (Crankshaft Speed):	4220 rpm

3. Pressure Limits

Minimum Fuel Pressure (at inlet of LP engine pump):	200 mbar (2.9 psi)
Minimum Oil Pressure:	1.0 bar (14.5 psi)
Oil Pressure (normal operation):	2.3 …6.0 bar (33.4 … 87 psi)
Maximum Oil Pressure (for cold start, max. up to 20 sec):	6.5 bar (94.3 psi)

4. Time Limited Dispatch (TLD)

The engine is not approved for Time Limited Dispatch. All engine systems and equipment must be functional prior to aircraft take-off. Any detected engine system or equipment failure must be corrected before next flight. For special instructions, see applicable Operation & Maintenance Manual.

V. Operating and Service Instructions

Manuals	TAE 125-01	TAE 125-02-99 , TAE 125-02-114	TAE 125-02-114P	TAE 125-02-125
Installation Manual	IM-02-01	IM-02-02	IM-02-02P	IM-02-02B
Operation Manual	OM-02-01	OM-02-02	OM-02-02P	OM-02-02B

Instructions for Continued Airworthiness (ICA)	TAE 125-01	TAE 125-02-99 , TAE 125-02-114	TAE 125-02-114P	TAE 125-02-125
Maintenance Manual	OM-02-01	OM-02-02	OM-02-02P	OM-02-02B
Repair Manual	RM-02-01	RM-02-02	RM-02-02	RM-02-02
Overhaul Manual	OHM-02-01	OHM-02-02	OHM-02-02	OHM-02-02
Service Bulletins and Service Letters	as issued			

VI. Notes

1. Engine model numbers may include suffixes in parentheses to define installation specific configuration changes. The software of the electronic engine control for each application has a specific software mapping. See Service Bulletin TM TAE 000-0007 for the installation versions and software mappings. Also refer to Installation Manual for appropriate installation.

2. The applicable EASA Certification Basis for the TAE 125-02 engine models would have been the same as for the TAE 125-01 engine model, however, TAE elected to comply to CS-E except for CS-E 130 (h).

3. The TAE 125 engine is approved for the installation in Part 23 normal and utility category airplanes.

4. The TAE 125 engine is approved for the operation with Jet fuels (see Operation & Maintenance Manual) and Diesel fuel according to EN 590. In addition, the TAE 125-02 engine models are approved for Paraffinic Diesel fuel according to EN 15940. However, the cloud point (CFPP) of these Diesel fuels is regulated by national appendices to the EN 590 resp. EN 15940 Standard, and it varies between the countries and the time of the year. Therefore, the installation of a fuel tank thermometer is required as well as a minimum engine starting temperature is defined (refer to Installation Manual IM-02-01 resp. IM-02-02, IM-02-02P, IM-02-02B).
   The TAE 125-02-114P and TAE 125-02-125 engine have been tested for fuels up to minimum derived cetane number of 40 (TAE 125-02-114P) resp. 36 (TAE 125-02-125, determined according EN ISO 5165) for an operating envelope defined in the applicable Installation Manual.

5. The TAE 125-01 engine, including the FADEC, is approved for use with the propeller MTV-6-A/187-129, MTV-6-A/190-129 and MTV-6-A-C-F/CF187-129 models. This approval does not include the approval of the propellers and their control systems (see also Note 12).

   The TAE 125-02-99 and TAE 125-02-114 engine models, including the FADEC, are approved for use with the propeller models

   MTV-6-A-(1*)/(2**)-(3***)-(4****)

   (1*) Feather provision (Hub):
   - blank = no feather position possible
   - C - F = counterweights for pitch change forces to increase pitch and feather position possible

   (2**) Position of pitch change pin:
   - blank = pin position for pitch change forces to decrease pitch (Constant Speed)
   - CF (Constant Speed & Feather) pin position to allow feather, pitch change forces to increase pitch

   (3***) Propeller Diameter:

   - Propeller diameter from 175cm to 190cm

(4****) Identification of blade design:

- 69
- 80
- 129

This approval does not include the approval of the propellers and their control systems (see also Note 12).

The TAE 125-02-114P engine, including the FADEC, is approved for use with the propeller MTV-6-A/LD203-80 model. The TAE 125-02-125 engine, including the FADEC, is approved for use with the propeller MTV-6-R/190-69 model. These approvals do not include the approval of the propellers and their control systems (see also Note 12).

6. For TAE 125-01: Overhaul is permitted for several engine parts only, see Overhaul Manual OHM-02-01.

7. For the TAE 125-01 core engine a recommended engine life has been established. The Time Between Replacement (TBR) of the TAE 125-01 and the Time Between Overhaul (TBO) of the TAE 125-02 models is published in Service Bulletin TM TAE 125-0001.

8. The engine control system has been tested according to DO-160D for lightning protection and magnetic interference. The demonstrated levels are declared in the Installation Manual.

9. The FADEC must not be installed in a dedicated fire zone. The installation conditions are defined in the Installation Manual.

10. Installation Assumptions: See Installation Manual.

11. The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Operation & Maintenance Manual" document, chapter 5 "Airworthiness Limitations".

12. This engine design features an integrated propeller control in the FADEC. The software in the FADEC has been developed in accordance with DO-178B at level C. The approval of the engine and its FADEC does not include approval of the propeller control system.

13. Sales name of the model

TAE 125-01:	CENTURION 1.7
TAE 125-02-99:	CD-135 (previous name until 18 July 2014: CENTURION 2.0)
TAE 125-02-114:	CD-155 (previous name until 18 July 2014: CENTURION 2.0 S)
TAE 125-02-114P:	CD-155P
TAE 125-02-125:	CD-170

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

Thielert Aircraft Engines GmbH Platanenstr. 14 D-09350 Lichtenstein Germany DOA EASA.21J.010	before 19 August 2013
Technify Motors GmbH Platanenstr. 14 D-09356 Sankt Egidien Germany DOA EASA.21J.010	19 August 2013 to 31 July 2019
Continental Aerospace Technologies GmbH Platanenstr. 14 D-09356 Sankt Egidien Germany DOA EASA.21J.010	From 01 August 2019

III. Change Record

Issue	Date	Changes	TC issue
Issue 1	24 March 2006	Initial version	24 March 2006
Issue 2	14 August 2006	Addition of new model TAE 125-02	14 August 2006
Issue 3	03 January 2007	For TAE 125-02: Increase of take-off power from 99 kW to 114 kW, decrease of min. ambient temp. for starting from -25°C to -32 °C	
Issue 4	06 March 2007	Introduction of TAE 125-02-99 and TAE 125-114 as separate models	06 March 2007
Issue 5	11 May 2007	Editorial change	
Issue 6	22 April 2008	Increase of TAE 125-02-114 max. recommended/ best economy cruising power from 71 kW to 97 kW	
Issue 7	19 August 2013	Change of TC Holder /Manufacturer	19 August 2013
Issue 8	20 March 2014	Change in Note 5: Approved propellers for TAE 125-02-99 and TAE 125-02-114	
Issue 9	18 July 2014	Change of sales names	
Issue 10	08 January 2016	Change in Note 6 and 7: Limited overhaul for TAE 125-01 only	
Issue 11	18 October 2017	Addition of TAE 125-02-114P as new model	18 October 2017
Issue 12	02 December 2019	Name Change of TC Holder /Manufacturer	02 December 2019
Issue 13	22 July 2020	Addition of TAE 125-02-125 as new model	22 July 2020
Issue 14	18 August 2021	Editorial correction: Missing max. oil temp. and dimensions for TAE 125-02-125 added	
Issue 15	08 April 2025	For TAE 125-02: Addition of EN 15940 (Note 4.)	

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