



TYPE-CERTIFICATE DATA SHEET

No. E.014

for
Centurion 4.0 series engines

Type Certificate Holder
Technify Motors GmbH

Platanenstr. 14
D-09356 St. Egidien
Germany

For Models:

Centurion 4.0 BE-210
Centurion 4.0 BE-221
Centurion 4.0 BE-228
Centurion 4.0 BE-239
Centurion 4.0 BE-250
Centurion 4.0 BE-257



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I. General

1. Type/ Models

Centurion 4.0 / Centurion 4.0 BE-210, Centurion 4.0 BE-221, Centurion 4.0 BE-228,
Centurion 4.0 BE-239, Centurion 4.0 BE-250, Centurion 4.0 BE-257

2. Type Certificate Holder

Technify Motors GmbH
Platanenstr. 14
D-09356 Sankt Egidien
Germany

DOA EASA.21J.010

3. Manufacturer

Technify Motors GmbH

Previous Manufacturer (before 19 August 2013):
Thielert Aircraft Engines GmbH

4. Date of Application

| | | | |
|----------------------|----------------------|----------------------|----------------------|
| Centurion 4.0 BE-210 | Centurion 4.0 BE-221 | Centurion 4.0 BE-228 | Centurion 4.0 BE-239 |
| 13 August 2007 | 13 August 2007 | 30 April 2001 | 13 August 2007 |
| Centurion 4.0 BE-250 | Centurion 4.0 BE-257 | | |
| 13 August 2007 | 13 August 2007 | | |

Note: Application had been made to JAA before EASA was established.

Certification Reference Date: 30 October 2001

The Centurion 4.0 BE has been renamed in Centurion 4.0 BE-228.

The Centurion 4.0 BE-257 engine model was previously approved as Major Change (power increase to 257 kW) to the initial 228 kW engine version under EASA approval number EASA.E.C.01064 on 28 August 2006 (application date: 11 May 2005).

The Centurion 4.0 BE-210, -221, -228, -239 and -250 engine, models were previously approved as Major Change (down rating) to the 257 kW engine version under EASA approval number EASA.E.C.01378 on 03 January 2007 (application date: 11 September 2006).

5. EASA Type Certification Date

| | | | |
|----------------------|----------------------|----------------------|----------------------|
| Centurion 4.0 BE-210 | Centurion 4.0 BE-221 | Centurion 4.0 BE-228 | Centurion 4.0 BE-239 |
| 26 September 2007 | 26 September 2007 | 28 October 2004 | 26 September 2007 |
| Centurion 4.0 BE-250 | Centurion 4.0 BE-257 | | |
| 26 September 2007 | 26 September 2007 | | |



II. Certification Basis

1. EASA Certification Basis

1.1. Airworthiness Standards

- JAR-E Change 10 dated August 15, 1999

1.2. Special Conditions (SC)

- SC1 Electronic Engine Control System
- SC2 Contaminated Fuel
- SC3 Failure Analysis
- SC4 Fire Precautions
- SC5 Certification of Programmed Logic Devices
- SC6 Use of Object Oriented Technology

1.3. Deviations:

None

1.4. Equivalent Safety Findings

- JAR-E180 Propeller Functioning Test
- JAR-E140(b), E310(a), E400(a)(1) and E440(a)(2) Engine Test Control Parameters
- JAR-E70 and E110 Engine Type Design

1.5. Environmental Standards

None (not required for piston engines)

III. Technical Characteristics

1. Type Design Definition

As defined by TDD-03-01.

2. Description

The Centurion 4.0 engine is an 8-cylinder, four stroke Diesel piston engine with a displacement of 3996 cm³, equipped with common rail high pressure direct injection, 2 turbochargers, a gearbox with reduction ratio of 1:1.689, propeller governor and FADEC.

3. Equipment

See Installation Manual.



4. Dimensions

| | |
|----------------|--------|
| Overall Length | 900 mm |
| Overall Height | 770 mm |
| Width | 670 mm |

5. Dry Weight

286 kg

6. Ratings

| Rating | | Centurion 4.0 BE-210 | Centurion 4.0 BE-221 | Centurion 4.0 BE-228 |
|-----------|-------------------------------|----------------------|----------------------|----------------------|
| Power, kW | Take-off | 210 at 3900 rpm | 221 at 3900 rpm | 228 at 3900 rpm |
| | Maximum Continuous | 210 at 3900 rpm | 221 at 3900 rpm | 228 at 3900 rpm |
| | Maximum Best Economy Cruising | 154 at 3300 rpm | 154 at 3300 rpm | 154 at 3300 rpm |

| Rating | | Centurion 4.0 BE-239 | Centurion 4.0 BE-250 | Centurion 4.0 BE-257 |
|-----------|-------------------------------|----------------------|----------------------|----------------------|
| Power, kW | Take-off (5 minutes) | 239 at 3900 rpm | 250 at 3900 rpm | 257 at 3900 rpm |
| | Maximum Continuous | 228 at 3900 rpm | 228 at 3900 rpm | 243 at 3900 rpm |
| | Maximum Best Economy Cruising | 154 at 3300 rpm | 154 at 3300 rpm | 154 at 3300 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), P/N 02-7610-55003R1 or later approved standard.

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

See Operation & Maintenance Manual for approved fluids (see also note 3).

9. Aircraft Accessory Drives

There are no provisions for customer/aircraft furnished equipment.

IV. Operating Limitations

1. Temperature Limits, °C

| | |
|--|-----|
| Minimum ambient temperature for starting | -25 |
| Minimum opening up oil temperature | 50 |
| Maximum oil temperature | 140 |
| Minimum opening up cooling fluid temperature | 60 |



| | |
|-----------------------------------|-----|
| Maximum cooling fluid temperature | 105 |
| Maximum gearbox temperature | 120 |

2. Rotational Speeds

Max. Engine Overspeed (JAR-E 400): 4220 rpm

3. Pressure Limits

3.1 Fuel Pressure Limit at LP Engine Pump Inlet

Minimum: 70 kPa absolute

3.2 Oil Pressure Limits

Minimum: 100 kPa
Normal operation 300...400 kPa
Max., for cold start, up to 20 sec: 700 kPa

4. Oil consumption limit

Max. oil consumption: 0.1 l/h

5. Oil Capacity

Oil tank: 7...10 litres

V. Operating and Service Instructions

| | |
|---------------------------------------|-----------|
| Installation Manual | IM-03-01 |
| Operation & Maintenance Manual | OM-03-01 |
| Overhaul Manual | OHM-03-01 |
| Service Bulletins and Service Letters | As issued |

VI. Notes

Note 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.

Note 2: The Centurion 4.0 engine is approved for the installation in CS-23/JAR-23/FAR-23 normal and utility category airplanes.



- Note 3:** The Centurion 4.0 engine is approved for the operation with Jet fuels (see Operation & Maintenance Manual).
- Note 4:** The engine, including the FADEC, is approved for use with the propeller MTV-14-D/()-() and MTV- 9/ ()-() model up to the max. diameter of 230 mm. The suitability of the propeller blade for a certain aircraft/engine-combination must be demonstrated within the scope of the type certification of the aircraft. This approval does not include the approval of the propeller and its control systems (see also Note 11).
- Note 5:** For the core engine a recommended engine life has been established. The Time Between Replacement (TBR) is published in Service Bulletin TM TAE 310-0001.
- Note 6:** The engine control system has been tested according to DO-160D for lightning protection and magnetic interference. The demonstrated levels are declared in IM-03-01.
- Note 7:** The FADEC must not be installed in a dedicated fire zone. The installation conditions are defined in IM-03-01.
- Note 8:** Overhaul is permitted for several engine parts only, see Overhaul Manual.
- Note 9:** Installation Assumptions: See Installation Manual IM-03-01.
- Note 10:** Dispatch Limitations: At present there are no dispatch limitations.
- Note 11:** 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.



SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

Technify Motors GmbH
Platanenstr. 14
D-09356 Sankt Egidien
Germany

DOA EASA.21J.010

Previous TC Holder (before 19 August 2013):
Thielert Aircraft Engines GmbH
Platanenstr. 14
D-09350 Lichtenstein
Germany

III. Change Record

| Issue | Date | Changes | TC issue |
|--------------|-------------|-------------------|-----------------|
| Issue 06 | 18.09.2015 | Editorial Changes | |
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