

U.S. DEPARTMENT OF TRANSPORTATION  FEDERAL AVIATION ADMINISTRATION  TYPE CERTIFICATE DATA SHEET	TCDS NUMBER: E00079EN  REVISION: Revision 1  DATE: September 19, 2013  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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Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00079EN and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations, provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

TYPE CERTIFICATE (TC) HOLDER                      Technify Motors GmbH  
 Platanenstrasse 14  
 D-09356 Sankt Egidien  
 Germany

TYPE CERTIFICATE HOLDER RECORD                      Thielert Aircraft Engines GmbH transferred TC E00079EN to  
 Technify Motors GmbH on August 19, 2013

MODELS (see Note 15)	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
TYPE	The Centurion 4.0 engine is a liquid-cooled 8 cylinder, 4 stroke diesel cycle engine with a displacement of 3996 cm <sup>3</sup> . It is equipped with common rail high pressure direct injection, 2 turbochargers, gearbox with reduction ratio of 1:1.689, propeller, governor, and FADEC.					
RATINGS (US Standard Atmosphere at Sea Level Pressure Altitude), KW, (Note 17)						
Takeoff	210 at 3900 rpm	221 at 3900 rpm	228 at 3900 rpm	239 at 3900 rpm	250 at 3900 rpm	257 at 3900 rpm
Max. Continuous	210 at 3900 rpm	221 at 3900 rpm	228 at 3900 rpm	228 at 3900 rpm	228 at 3900 rpm	228 at 3900 rpm
Max. Best Economy Cruising	154 at 3300rpm	154 at 3300rpm	154 at 3300rpm	154 at 3300rpm	154 at 3300rpm	154 at 3300rpm
FUEL (Also see Operation & Maintenance Manual)	Jet A, Jet A-1, Jet Fuel No.3, JP-8 and JP-8+100					
OIL (See NOTE 4)	Use the approved oil with exact declaration only. See Operation and Maintenance Manual OM-03-01 (US-Version) or Installation Manual IM-03-01 for approved oils					
OIL SUMP CAPACITY, liters						
Maximum level	10					
Minimum level	7					
Max. oil consumption	0.1 liter per hour					
PRINCIPAL DIMENSIONS						
Length, mm	900					
Width, mm	670					
Height, mm	770					

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LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"

"---" NOT APPLICABLE

NOTICE: ALL PAGES ARE REFORMATTED. SIGNIFICANT CHANGES, IF ANY ARE BLACK. LINED IN THE LEFT MARGIN

MODELS (Continued)	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
CENTER OF GRAVITY, mm	Relating to propeller flange, z-axis point downwards (Refer to Installation Manual)					
	X=635					
	Y=0					
	Z=10					
WEIGHT (dry), kg	286					
BORE, mm	86.00					
STROKE, mm	86.00					
Displacement Total, cm <sup>3</sup>	3996					
COMPRESSION RATIO	18.5:1					
PROPELLER ROTATION	CCW					
GEAR REDUCTION (crankshaft to propeller)	1.689 : 1					
CONTROL SYSTEM (See Notes 11-14)	Full Authority Digital Engine Control (FADEC): P/N 02-7610-55003R1 or later approved standard					
	Software P/N : Refer to Service Bulletin (SB) TM TAE 000-0007 or later approved standard					
	Software Mapping : Refer to SB TM TAE 000-0007 for approved installation version					

#### CERTIFICATION BASIS

FAR 21.29 and FAR 33 effective February 1, 1965 and Amendments 33-1 through Amendment 33-20.

Model	Date of Application	Date Type Certificate Issued/Revised
Centurion 4.0 BE-210	October 8, 2006	April 14 2008
Centurion 4.0 BE-221	October 8, 2006	April 14 2008
Centurion 4.0 BE-228	October 8, 2006	April 14 2008
Centurion 4.0 BE-239	October 8, 2006	April 14 2008
Centurion 4.0 BE-250	October 8, 2006	April 14 2008
Centurion 4.0 BE-257	October 8, 2006	April 14 2008

#### IMPORT REQUIREMENTS

To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States shall be accompanied by a Certificate of Airworthiness for export with EASA Form 1, Authorized Release Certificate. The EASA Form 1 should state that the engine conforms to the type design approved under the U.S. Type Certificate E00079EN, is in a condition for safe operation and has undergone a final operational check.

Additional guidance is contained in FAA Advisory Circular 21-23, "Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products Imported into the United States."

#### NOTES

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
NOTE 1: Engine permissible maximum crankshaft speed	4220 rpm					
NOTE 2: Temperature Limitations, deg F(C)						
Min ambient temperature for starting	-13 (-25)					

<b>MODELS (Continued)</b>	<b>Centurion 4.0 BE-210</b>	<b>Centurion 4.0 BE-221</b>	<b>Centurion 4.0 BE-228</b>	<b>Centurion 4.0 BE-239</b>	<b>Centurion 4.0 BE-250</b>	<b>Centurion 4.0 BE-257</b>
Max Oil Temperature	284 (140)					
Min opening up Oil Temperature	122 (50)					
Min opening up Cooling Fluid Temperature	140 (60)					
Max Cooling Fluid Temperature	221 (105)					
Max Gearbox Temperature	248 (120)					
<b>NOTE 3:</b> Altitude	1. Maximum altitude, 25,000 ft 2. Critical altitude, 12,000 ft					
<b>NOTE 4:</b> Fuel and Oil Pressure Limits, kPa						
Min Fuel Pressure at LP Engine pump Inlet	70					
Max Oil Pressure for cold start, up to 20 seconds	700					
Min Oil Pressure	100					
Normal Oil Pressure	300-400					
<b>NOTE 5:</b>	Dispatch Limitations: 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.					
<b>NOTE 6:</b>	Centurion 4.0 engine is Life-Limited. The core engine must be removed from service in accordance with the Airworthiness Limitations Section, Chapter 5 of the Operation & Maintenance manual OM-03-01 (US-Version).					
<b>NOTE 7:</b>	Overhaul of the core engine is not permitted. See Overhaul Manual for the accessory/parts permitted for overhaul.					
<b>NOTE 8:</b>	The Instructions for Continued Airworthiness contained in the Operation & Maintenance Manual, OM-03-01 (US-Version) have been approved by the FAA.					
<b>NOTE 9:</b>	Any repair other than those covered by the Instructions for Continued Airworthiness or DER approved repairs in accordance with FAR Part 183 must be approved by the Engine Certification Office.					
<b>NOTE 10:</b>	The engine is approved for installation in FAR 23 Normal and Utility aircraft categories only.					
<b>NOTE 11:</b>	The software of the ECU has been validated according to DO 178 B, level C.					
<b>NOTE 12:</b>	The FADEC system relies on electrical power supplied from the aircraft. Interruption of the FADEC electrical power supply will result with FADEC reboot and reinitiate.					
<b>NOTE 13:</b>	The electrical interface requirements between the FADEC and the aircraft electrical system are defined in the Installation Manual.					
<b>NOTE 14:</b>	EMI/Lightning: The engine control system has been tested according to DO 160 D for lightning protection and magnetic interference. The demonstrated levels are provided in the Installation Manual.					
<b>NOTE 15:</b>	Engine model numbers may include suffixes in parentheses to define installation specific configuration changes. Each application has a specific software mapping. Refer to SB TM TAE 000-0007 for installation of the software of engine control.					
<b>NOTE 16:</b>	Engine Manual : Installation Manual : IM-03-01 Operation & Maintenance Manual : OM-03-01(US version) Overhaul Manual : OHM-03-01					
<b>NOTE 17:</b>	Convert from kW to Horsepower (hp), use conversion factor- 1kW=1.341022 hp (international)					

**NOTE 18:**

## Service Information:

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA). Any such documents including those approved under a delegated authority, are accepted by the FAA and are considered FAA approved.

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

These approvals pertain to the type design only.

---THE END---