

# 型号认可证数据单 THE VALIDATION DATA SHEET

编号/No.: VTC0252E

版次/Revision: 0

型号/Type:

E4

批准人/Approved by:

徐超群

日期/Date: 2011-2-28

本数据单是型号认可证（编号 VTC0252E）的组成部分，它规定了符合中国民用航空局的适航要求所颁发此型号认可证的产品状态和限制。

This data sheet, which is a part of Validation Type Certificate (No: VTC0252E), prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Chinese Civil Aviation Regulation.

型号认可证持有人/Validation of Type Certificate Holder:

Austro Engine GmbH  
Rudolf-Diesel-Straße 11  
A-2700 Wiener Neustadt  
Austria

有效页清单/List of effective pages :

|             |   |   |   |   |   |   |   |   |  |  |  |  |  |  |
|-------------|---|---|---|---|---|---|---|---|--|--|--|--|--|--|
| 页数/ Pages   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  |  |  |  |  |
| 版次/Revision | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |  |

## 第1部分 概述

### SECTION 1 GENERAL

#### 1. CAAC认可数据单和型号合格证数据单

##### CAAC Validation Data Sheet and Type Certificate Data Sheet

|               |                                                                                           |                                                                                        |
|---------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|               | 中国民用航空局认可数据单号、版次和颁发日期<br>CAAC Validation Data Sheet Number,<br>Revision and issuance date | 型号合格证数据单号、版次和颁发日期<br>Type Certificate Data Sheet Number,<br>Revision and issuance date |
| 当前<br>Current | No. VTC0252E, 版次 0,<br>2011 年 3 月 1 日                                                     | EASA TCDS No.E.200<br>Revision 03, Oct. 26, 2010                                       |
| 历史<br>History | 无/None                                                                                    | 无/None                                                                                 |

2. 类别/Category: 航空发动机/Aeroengine
3. 认可当局/Validation Authority: 中国民用航空局/CAAC  
审定当局/Certifying Authority: 欧洲航空安全局/EASA
4. 型号合格证持有人/Type Certificate Holder: Austro Engine GmbH  
Rudolf-Diesel-Straße 11  
A-2700 Wiener Neustadt  
Austria
6. ETOPS: 不适用/N/A
7. CAAC 专用要求/Special Requirements: 无/NONE

## 第2部分

### SECTION 2

| 技术特征/TECHNICAL CHARACTERISTICS     |                                                                                                                                                                                                                                                                                                                                                                                              |                    |                      |                      |                 |                                  |                    |  |                 |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|----------------------|-----------------|----------------------------------|--------------------|--|-----------------|
| 型号/MODELS                          | E4                                                                                                                                                                                                                                                                                                                                                                                           |                    |                      |                      |                 |                                  |                    |  |                 |
| 型号设计定义/TYPE<br>DESIGN DEFINITION   | TDD E4.08.01, 2009年1月16日第4版或后面认可的版本/TDD E4.08.01, Rev.4 dated 16. January 2009 or later approved revisions                                                                                                                                                                                                                                                                                   |                    |                      |                      |                 |                                  |                    |  |                 |
| 描述/DESCRIPTION                     | <p>E4 发动机是具有 1991 立方厘米排气量的 4 汽缸、四冲程柴油活塞发动机, 装有共轨高压直流喷嘴, 涡轮增压器, 减速比 1:1.69 的齿轮箱和电子发动机控制单元 (EECU) /</p> <p>The E4 engine is a 4-cylinder, four stroke Diesel piston engine with a displacement of 1991 cm<sup>3</sup>, equipped with common rail high pressure direct injection, turbocharger, gearbox with reduction ratio of 1: 1.69 and an Electronic Engine Control Unit (EECU).</p>       |                    |                      |                      |                 |                                  |                    |  |                 |
| 设备/EQUIPMENT                       | 见安装手册 E4.02.01/ See Installation Manual. E4.02.01                                                                                                                                                                                                                                                                                                                                            |                    |                      |                      |                 |                                  |                    |  |                 |
| 尺寸/DIMENSIONS                      | <p>毫米/mm</p> <table> <tr> <td>总长度/Overall Length</td><td>738 mm</td></tr> <tr> <td>总高度/Overall Height</td><td>574 mm</td></tr> <tr> <td>宽度/Width</td><td>855 mm</td></tr> </table>                                                                                                                                                                                                           | 总长度/Overall Length | 738 mm               | 总高度/Overall Height   | 574 mm          | 宽度/Width                         | 855 mm             |  |                 |
| 总长度/Overall Length                 | 738 mm                                                                                                                                                                                                                                                                                                                                                                                       |                    |                      |                      |                 |                                  |                    |  |                 |
| 总高度/Overall Height                 | 574 mm                                                                                                                                                                                                                                                                                                                                                                                       |                    |                      |                      |                 |                                  |                    |  |                 |
| 宽度/Width                           | 855 mm                                                                                                                                                                                                                                                                                                                                                                                       |                    |                      |                      |                 |                                  |                    |  |                 |
| 干重/DRY WEIGHT                      | 重量/Weight 185kg                                                                                                                                                                                                                                                                                                                                                                              |                    |                      |                      |                 |                                  |                    |  |                 |
| 额定值 (见注 1)<br>/RATINGS(see Note 1) | <table> <tr> <td>起飞/Takeoff</td><td>123.5 kW at 3880 rpm</td></tr> <tr> <td>最大连续/Max. Continuous</td><td>(2300 prop rpm)</td></tr> <tr> <td>最大推荐巡航/Max. Recommended Cruising</td><td>114 kW at 3550 rpm</td></tr> <tr> <td></td><td>(2100 prop rpm)</td></tr> </table>                                                                                                                       | 起飞/Takeoff         | 123.5 kW at 3880 rpm | 最大连续/Max. Continuous | (2300 prop rpm) | 最大推荐巡航/Max. Recommended Cruising | 114 kW at 3550 rpm |  | (2100 prop rpm) |
| 起飞/Takeoff                         | 123.5 kW at 3880 rpm                                                                                                                                                                                                                                                                                                                                                                         |                    |                      |                      |                 |                                  |                    |  |                 |
| 最大连续/Max. Continuous               | (2300 prop rpm)                                                                                                                                                                                                                                                                                                                                                                              |                    |                      |                      |                 |                                  |                    |  |                 |
| 最大推荐巡航/Max. Recommended Cruising   | 114 kW at 3550 rpm                                                                                                                                                                                                                                                                                                                                                                           |                    |                      |                      |                 |                                  |                    |  |                 |
|                                    | (2100 prop rpm)                                                                                                                                                                                                                                                                                                                                                                              |                    |                      |                      |                 |                                  |                    |  |                 |
| 功率/Power                           | <p>注意: 上述规定的性能值相当于在国际民航组织 (ICAO) 或 ARDC 标准大气情况下定义的最小值。/Note: The performance values specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.</p>                                                                                                                                                                                       |                    |                      |                      |                 |                                  |                    |  |                 |
| 控制系统/CONTROL<br>SYSTEM             | <p>发动机装有电子发动机控制单元 (EECU), 根据RTCA文件DO-178B软件验证为C级。/The engine is equipped with an Electronic Engine Control Unit (EECU). Software verified to level C according to RTCA Document DO-178B.</p> <p>EECU P/N E4A-92-100-00-010 或以后认可的标准。/<br/>EECU P/N E4A-92-100-00-010 or later approved standard</p> <p>软件: VC33_0_01_01 或以后认可的标准。/<br/>Software: VC33_0_01_01 or later approved standard</p> |                    |                      |                      |                 |                                  |                    |  |                 |

液体（燃油/滑油/添加剂）  
/FLUIDS(FUEL/OIL/AD  
DITIVES)

飞机附件驱动/  
AIRCRAFT  
ACCESSORY DRIVES:  
螺旋桨控制/Propeller  
control

见操作手册E4.01.01批准的液体部分（也可见注3）/See Operation Manual E4.01.01 for approved fluids (see also Note 3)

| 旋转方向<br>/Rotation | 转速/Speed<br>(rpm) | 最大扭矩/Max.<br>Torque | 驱动类型/Type<br>of Drive |
|-------------------|-------------------|---------------------|-----------------------|
| CCW               | 2680              | 40 N.m              | AND 20010             |

CCW=逆时针/CCW = Counter-Clock-Wise  
速度显示以3880转/分钟的发动机转速为参考/Speed is indicated for a reference engine speed of 3880 rpm.  
附件驱动的转动方向是面对驱动器观察的方向/Accessory drive direction of rotation is as viewed facing the drive.

| 操作限制/OPERATIONAL LIMITATIONS                                                                                                                                                                                       |                                     |                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------|
| 温度限制<br>/TEMPERATURE<br>LIMITS                                                                                                                                                                                     |                                     |                                                                |
|                                                                                                                                                                                                                    | 温度/Temperature 摄氏度°C/华氏度°F          | 备注/Comments                                                    |
| 最小启动滑油温度<br>/Minimum opening up Oil<br>Temperature<br>滑油温度（正常操作）/<br>Oil Temperature (normal<br>operation)<br>最大滑油温度/Max. Oil<br>Temperature<br>起动最小环境温度<br>/Minimum Ambient<br>Temperature for Starting           | 50 °C / 122 °F                      |                                                                |
|                                                                                                                                                                                                                    | 50 °C - 135 °C /<br>122 °F - 275 °F |                                                                |
|                                                                                                                                                                                                                    | 140 °C / 284 °F                     |                                                                |
|                                                                                                                                                                                                                    | -22 °C / -8 °F                      | 正常/normal                                                      |
| 操作时最大燃油温度<br>/Minimum Fuel<br>Temperature during<br>operation<br>最小启动冷却液温度<br>/Minimum opening up<br>Cooling Fluid Temperature<br>最大冷却液温度/Max.<br>Cooling Fluid Temperature<br>最大齿轮箱温度/Max.<br>Gearbox Temperature | -30 °C / -22 °F                     | 特别要求的程序，见操作手册/special procedure required, see Operation Manual |
|                                                                                                                                                                                                                    | -30 °C / -22 °F                     |                                                                |
|                                                                                                                                                                                                                    | 60 °C / 140 °F                      |                                                                |
|                                                                                                                                                                                                                    | 105 °C / 221 °F                     |                                                                |
|                                                                                                                                                                                                                    | 120 °C / 248 °F                     |                                                                |

**速度限制/SPEED LIMITS**

最大发动机超转速度（曲轴速度）/Maximum Engine Over-speed (Crankshaft Speed)

起飞速度，最大 5 分钟  
/Take-off speed, maximum 5 minutes

最大持续转速/Max. continuous speed

**压力限制/PRESSURE LIMITS**

最小燃油压力（在高压发动机泵进口处）/ Minimum Fuel Pressure (at inlet of HP engine pump)

最大燃油压力（在高压发动机泵进口处）/Maximum Fuel Pressure (at inlet of HP engine pump)

最小滑油压力/Minimum Oil Pressure

滑油压力（正常操作）/Oil Pressure (normal operation)

**工作高度/ OPERATING ALTITUDE**

最大高度/ Maximum altitude

|                                 |  |
|---------------------------------|--|
|                                 |  |
| 4220 rpm (2500 prop rpm)        |  |
| 3880 rpm (2300 prop rpm)        |  |
|                                 |  |
| 4 bar (58 psi)                  |  |
| 7 bar (101.5 psi)               |  |
| 1.5 bar (21.8 psi)              |  |
| 2.5 - 6.5 bar (36.3 - 94.3 psi) |  |
|                                 |  |
| 5490 m (18000 ft)               |  |

审定基础/

**CERTIFICATION BASIS**

1.适航标准/Airworthiness Standard:

CS-E 第一版，2003 年 10 月 23 日生效/CS-E, initial issue effective 23 October 2003.

型号合格证编号 E.200/

Type Certificate Number E.200

设计组织批准: DOA EASA.21J.399

| 型号/<br>MODEL                                       | 申请日期/<br>Application Date | 审定日期/<br>Certification Date |
|----------------------------------------------------|---------------------------|-----------------------------|
| E4                                                 | 2006 年 6 月 26 日           | 2009 年 1 月 28 日             |
| 该型号合格证于 2009 年 10 月 20 日由钻石飞机公司 (N.-A.-Otto-Straße |                           |                             |

5, A-2700 Wiener Neustadt, DOA EASA.21J.052) 转到 Austro 发动机公司 /

The Type Certificate was transferred from Diamond Aircraft Industries GmbH, N.-A.-Otto-Straße 5, A-2700 Wiener Neustadt, DOA EASA.21J.052 to Austro Engine GmbH on 30 October 2009.

2.特殊条件/ Special Conditions (SC): 无/None

3.等效安全等效要求/Equivalent Safety Finding (ESF) :

CS-E 130 (h) 发动机安装点防火/CS-E 130(h) Fire Proof Engine Attachment Points

4.豁免/Deviation: 无/None

5.环境标准/ Environmental Standards: 无(活塞发动机不要求)/none (not required for piston engines)

**CAAC 认可审定基础/  
CAAC VALIDATION  
BASIS**

接受 EASA 的审定基础作为认可审定基础。 /

Accept EASA certification basis as validation basis.

**生产基础/PRODUCTION  
BASIS**

制造人/Manufacture: Austro Engine GmbH

生产组织批准/POA AT.21G.0010

| 操作和服务说明/OPERATIONAL AND SERVICE INSTRUCTIONS                                                                                                              |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 安装手册/ Installation Manual<br>操作手册/Operation Manual<br>维护手册/Maintenance Manual<br>大修手册 Overhaul Manual<br>服务通告和服务信函 /Service Bulletins and Service Letters | E4                     |
|                                                                                                                                                           | E4.02.01               |
|                                                                                                                                                           | E4.01.01               |
|                                                                                                                                                           | E4.08.04               |
|                                                                                                                                                           | 尚未颁布/Not yet published |
|                                                                                                                                                           | 如所发布/as issued         |

| 注释/NOTES   |                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 注 1/NOTE 1 | <p>发动机型号数字可包含后缀以定义与安装特殊构型相关的发动机微小变化。见MSB E4-002 中的结构说明。针对每一应用程序的电子发动机控制软件都有特殊的软件应用数据。见MSB E4-003中的安装版本。也可以参考安装手册E4.02.01中关于合适的安装部分内容。/Engine model numbers may include suffixes to define minor engine changes related to installation specific configurations. See MSB E4-002 for configuration specifications. The software of the electronic engine control for each application has specific</p> |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | software application data. See MSB E4-003 for the installation versions. Also refer to Installation Manual E4.02.01 for appropriate installation.                                                                                                                                                                                                                                                                |
| 注 2/NOTE 2   | E4 发动机批准用于 23 部正常类和通用类飞机。/ The E4 engine is approved for the installation in Part 23 normal and utility category airplanes.                                                                                                                                                                                                                                                                                      |
| 注 3/NOTE 3   | E4 发动机批准使用 3 号喷气燃料和其他航空燃油（见操作手册 E4.01.01），推荐的最小十六烷值为 37（根据 EN ISO 5165/ASTM D613 标准确定）。/ The E4 engine is approved for operation with No. 3 jet fuel and other fuels (see Operation Manual E4.01.01). A minimum cetane number of 37 (determined according EN ISO 5165/ASTM D613) is recommended.                                                                                                                 |
| 注 4/NOTE 4   | E4 发动机批准使用列入安装手册 E4.02.01 的螺旋桨和螺旋桨调速器。这一批准不包括针对于螺旋桨及其调速器的批准。/ The E4 engine is approved for use with propellers and propeller governors as listed in IM E4.02.01. This approval does not include the approval of the propellers and their governors.                                                                                                                                                             |
| 注 5/NOTE 5   | 在发布大修手册之前不允许大修。/ No overhaul permitted before publication of the Overhaul Manual.                                                                                                                                                                                                                                                                                                                                |
| 注 6/NOTE 6   | 大修之间的推荐时间（TBO）在维护手册 E4.08.04 中发布。/ The recommended Time Between Overhaul (TBO) is published in Maintenance Manual E4.08.04.                                                                                                                                                                                                                                                                                      |
| 注 7/NOTE 7   | 发动机控制系统根据 DO-160D 针对避雷保护和电磁干扰进行了测试。已证明级别在安装手册中说明。/ 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.                                                                                                                                                                           |
| 注 8/NOTE 8   | 电子控制单元严禁安装在专用火区。安装条件在安装手册中定义。/ The EECU must not be installed in a dedicated fire zone. The installation conditions are defined in the Installation Manual.                                                                                                                                                                                                                                                      |
| 注 9/NOTE 9   | 安装条件: 见安装手册。/ Installation Assumptions: See Installation Manual.                                                                                                                                                                                                                                                                                                                                                 |
| 注 10/NOTE 10 | <p>签派限制: 目前无时间限制签派已获批准。所有发动机系统和设备在飞机起飞之前必须是功能完好的。任何检测到的发动机系统或设备失效必须在下次飞行前予以校正。对于特殊的指令参见操纵手册 OM E4.01.01./</p> <p>Dispatch Limitations: Currently no Time Limited Dispatch has been approved. 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 OM E4.01.01.</p> |

注 11/NOTE 11

已证明在涡轮增压器 172000 转/分钟的最大转速下能够包容。/Containment  
has been demonstrated for max. turbocharger speed of 172000 rpm.

注 12/NOTE 12

E4 的销售名称: AE300。/Sales name of the variant E4: AE 300.

----完----  
----END----