

型号认可数据单

THE VALIDATION DATA SHEET

编号/No.: VTC0252E

版次/Revision: 2

型别/Models:

E4

E4P

批准人/Approved by:



职务/Title:

Director General of CAAC-AAD

日期/Date:

2021 年 1 月 21 日

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

型号认可证持有人/Validation of Type Certificate Holder: Austro Engine GmbH
Rudolf-Diesel-Straße 11
2700 Wiener Neustadt
Austria

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、版次和颁发日期 CAAC Validation Data Sheet Number, Revision and issuance date	型号合格证数据单、版次和颁发日期 Type Certificate Data Sheet Number Revision and issuance date
当前 Current	VTC0252E, 版次 2, 2021 年 1 月 21 日 VTC0252E, Revision 2, January 21, 2021	EASA TCDS No.E.200, 版本 12, 2020 年 6 月 30 日 EASA TCDS No.E.200, Revision 12, June 30, 2020
历史 History	VTC0252E, 版次 1, 2019 年 3 月 8 日 VTC0252E, Revision 1, March 8, 2019	EASA TCDS No.E.200, 版本 10, 2016 年 4 月 18 日 EASA TCDS No.E.200, Revision 10, April 18, 2016
	VTC0252E, 版次 0, 2011 年 3 月 1 日 VTC0252E, Revision 0, March 1, 2011	EASA TCDS No.E.200, 版本 3, 2010 年 10 月 26 日 EASA TCDS No.E.200, Revision 03, October 26, 2010

CAAC 认可数据单修订情况说明 / CAAC VTCDS Change Record

CAAC 认可数据单版次/ CAAC VTCDS Revision	相对上一版次的修订情况/ CAAC VTCDS Change Record	备注 /Remark
Rev 2	1.航空煤油标准由“GB6537-2006”升级为“GB6537-2018” / Standard of Jet Fuel updated from“GB6537-2006” to “GB6537-2018” 2.删除E4的最大推荐巡航功率额定值/ Delete the Max. Recommended Cruising Power Ratings of E4 3. 压力限制中, E4的“最小滑油压力”及“滑油压力(正常操作)”被“慢车条件下最小滑油压力”、“最大连续条件下最小滑油压力”及“最大滑油压力”取代/ In the pressure limitation, The “Minimum Oil Pressure” and “Oil Pressure (normal operation)” of E4 were replaced by the “Minimum Oil Pressure at Idle Conditions”, “Minimum Oil Pressure at Maximum Continuous Conditions” and “Maximum Oil Pressure” 4.新增制造人“芜湖钻石航空发动机有限公司”, 新增注12/ Additional Manufacturer Wuhu Diamond Aeroengine Co.LTD. Added NOTE 12 5.颁布E4大修手册“E4.12.01” / Overhaul Manual of E4 “E4.12.01” was published 6.注1中, 删除“本适航限制部分为空白, 因为这些型号无寿命限制” / Delete “This ALS section is empty because no life limit is necessary for these models” of NOTE 1 7. E4发动机推荐的最小十六烷值由37改为36/ The recommended minimum cetane number of E4 was changed from 37 to 36 8.调整限时派遣表述的文本位置/ Adjust the position of the statement of Time Limited Dispatch	

	9.删除原注7 “在发布大修手册之前不允许大修”，注释编号相应更改/ Delete the original NOTE 7 " No overhaul permitted before publication of the Overhaul Manual ", and change the serial number of notes accordingly 10.格式调整与文字纠正/ Format adjustment and text correction	
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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
5. ETOPS: 不适用/N/A
6. CAAC 专用要求/Special Requirements: 满足中华人民共和国国家标准 “3 号喷气燃料”
 (GB 6537-2018) 的要求
 Compliance with requirement of National Standard
 of the People’s Republic of China “No.3 Jet Fuel”
 (GB 6537-2018)

第 2 部分 数据单

SECTION 2 DATA SHEET

技术特性/TECHNICAL CHARACTERISTICS			
型别/models	E4/E4P		
型号设计定义/TYPE DESIGN DEFINITION	E4: TDD E4.08.01, Rev.4 2009 年 1 月 16 号发布/TDD E4.08.01, Rev.4 dated 16. January 2009 E4P: TDD E4.08.01 A001 章节, 2015 年 2 月 27 号第 0 版/TDD E4.08.01 Chapter A001, Rev. 0, dated 27.Feb 2015		
描述/DESCRIPTION	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, 装有共轨高压缸内直喷, 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) / The E4 engine is a 4-cylinder, four stroke Diesel piston engine with a displacement of 1991 cm ³ , equipped with common rail high pressure direct injection, turbocharger, gearbox with reduction ratio of 1:1.69 and an Electronic Engine Control Unit (EECU).		
设备/EQUIPMENT	见安装手册 E4.02.01/See Installation Manual. E4.02.01		
尺寸/DIMENSIONS	毫米/mm		
	总长度/Overall Length		738mm
	总高度 Overall Height		574mm
	宽度 Width		855mm
	重量 Weight		185kg
额定值/RATINGS 功率/Power	型别/models	E4	E4P
	起飞/Take-off	123.5 kW at 3880 rpm (2300 prop rpm)	132 kW at 3880 rpm(2300 prop rpm)
	最大连续/Max. Continuous		126 kW at 3720 rpm(2200 prop rpm)
	注释: 上述规定的性能值相当于在国际民航组织(ICAO) 或美国空军研发发展部 (ARDC) 制定的标准大气条件下定义的最小值/Note: The performance values specified above correspond to minimum values defined under the conditions of ICAO or ARDC standard atmosphere.		
	控制系统/CONTROL SYSTEM	发动机装有电子发动机控制单元 (EECU), 根据 RTCA DO-178B 文件软件验证等级为 C。/The engine is equipped with an Electronic Engine Control Unit (EECU). Software verified to level C according to RTCA Document DO-178B.	
E4			
EECU P/N E4A-92-100-00-010 EECU P/N E4A-92-100-00-010 软件: VC33_0_01_01 Software: VC33_0_01_01			
E4P			

	EECU P/N E4A-92-100-00-010 EECU P/N E4A-92-100-00-010 软件: VC33_2P_05_18_pre1 Software: VC33_2P_05_18_pre1			
液体(燃油、滑油、冷却液、添加剂) /Fluids (Fuel, Oil, Coolant, Additives)	见操作手册 E4.01.01 和 E4.01.02 批准的液体部分(也可见注释 4)/See Operation Manual E4.01.01 and E4.01.02 for approved fluids (see also Note 4)			
飞机附件驱动 /AIRCRAFT ACCESSORY DRIVES	旋转方向/ Rotation	转速/ Speed (rpm)	最大扭矩/ Max. Torque	驱动类型/ Type of Drive
螺旋桨控制/Propeller control	CCW	2680	40Nm	AND20010
	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 OPERATING LIMITATIONS				
温度限制 /TEMPERATURE LIMITS	E4		E4P	
	温度/ Temperature 摄氏度°C/ 华氏度°F	备注/Comments	温度/ Temperature 摄氏度°C / 华氏度°F	备注/Comments
最小启动滑油温度 /Minimum opening up Oil Temperature	50°C/122°F		50°C/122°F	
滑油温度(正常操作) /Oil Temperature (normal operation)	50°C-135°C/ 122°F-275°F			
最大滑油温度 /Max. Oil Temperature:	140°C/284°F		139°C/282°F	
起动最小环境温度 /Minimum Ambient Temperature for Starting	-22°C/-8°F	正常/normal	-22°C/-8°F	正常/normal
	-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	特别要求的程序, 见操作手册 /special procedure required, see Operation Manual
工作时最小燃油温度 /Minimum Fuel	-30°C/-22°F		-30°C/-22°F	

Temperature during operation				
最小启动冷却液温度 /Minimum opening up Cooling Fluid Temperature	60°C/140°F		60°C/140 °F	
最大冷却液温度 /Max. Cooling Fluid Temperature	105°C/221°F		100°C/212°F	
最大齿轮箱温度/Max. Gearbox Temperature	120°C/248°F		120°C/248°F	
转 速 限 制 /SPEED LIMITS	E4		E4P	
最大发动机超转转速 （曲轴转速）/Maximum Engine Over-speed (Crankshaft Speed)	4220 rpm (2500 prop rpm)		4220 rpm (2500 prop rpm)	
起飞转速/Take-off speed	3880 rpm (2300 prop rpm)		3880 rpm (2300 prop rpm)	
最大连续转速/ Max. continuous speed	3880 rpm (2300 prop rpm)		3720 rpm (2200 prop rpm)	
压力限制/PRESSURE LIMITS				
最小燃油压力（在发动 机 高 压 泵 进 口 处 ） /Minimum Fuel Pressure (at inlet of HP engine pump)	4 bar (58 psi)			
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)	7 bar (101.5 psi)			
慢车条件下最小滑油压 力/Minimum Oil Pressure at Idle Conditions	0.9 bar (13.05 psi)			
最大连续条件下最小滑 油 压 力 /Minimum Oil Pressure at Maximum Continuous Conditions	2.5 (36.3 psi)			
最 大 滑 油 压 力 /Maximum Oil Pressure	6.5 bar (94.3 psi)			

工作高度/OPERATING ALTITUDE	E4	E4P
最大高度 /Maximum altitude	5490 m (18 000 ft)	6096 m (20 000 ft)
限时派遣(TLD)/ Time Limited Dispatch (TLD)	发动机目前无限时派遣已获批准。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作手册 OM E4.01.01 和 OM E4.01.02。/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 OM E4.01.01 and OM E4.01.02.	

审定基础/ CERTIFICATION BASIS	1.适航标准/Airworthiness Standard CS-E 初版，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/ Model	申请日期/ Application Date	审定日期/ Certification Date
	E4	2006 年 6 月 26 日	2009 年 1 月 28 日
	E4P	2014 年 3 月 11 日	2015 年 3 月 26 日
	该型号合格证于 2009 年 10 月 30 由钻石飞机公司（N.-A.-Otto-Straße 5, A-2700 Wiener Neustadt, DOA EASA.21J.052）转给 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.专用条件/Special Conditions (SC) 增加 CS-E 40(d)飞行中发动机熄火 (E4P) Addition to CS-E 40(d) Engine Flame Out during Flight (E4P) 3.等效安全判定/Equivalent Safety Findings(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/Deviations:无/None 5 环境保护 Environmental Protection: 无 (活塞发动机不要求)/none (not required for piston engines)
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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.
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生产基础 /PRODUCTION BASIS	制造人/manufacture: Austro Engine GmbH 生产组织批准/ POA AT.21G.0010 制造人/manufacture:芜湖钻石航空发动机有限公司/ Wuhu Diamond Aeroengine Co. LTD 中华人民共和国安徽省芜湖县新芜经济开发区/ Xinwu Economic Zone, Wuhu Country, Anhui Province - China 生产组织批准/ POA PC0047E-HD
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操作和服务说明/OPERATIONAL AND SERVICE INSTRUCTIONS		
	E4	E4P
安 装 手 册 /Installation Manual	E4.02.01	E4.02.01
操 作 手 册 /Operation Manual	E4.01.01	E4.01.02
维 修 手 册 /Maintenance Manual	E4.08.04	E4.08.04
大 修 手 册 /Overhaul Manual	E4.12.01	E4.12.01
服务通告和服务信函 /Service Bulletins and Service Letters	如所发布/as issued	

注释/Notes	
注1/ NOTE 1	EASA 批准的持续适航文件中适航限制章节已在相应的“维修手册”文件中, 第 04-00-00 “适航限制” 章节发布。/The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Maintenance Manual" document, chapter 04-00-00 "Airworthiness Limitations".

注2/ NOTE 2	发动机型号数字可包含后缀以定义与安装特定构型相关的发动机微小更改。见 SB 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 SB E4-003 中的安装版本。也可以参考安装手册 E4.02.01 中关于安装的相关内容。/Engine model numbers may include suffixes to define minor engine changes related to installation specific configurations. See SB-E4-002 for configuration specifications. The software of the electronic engine control for each application has specific software application data. See SB-E4-003 for the installation versions. Also refer to Installation Manual E4.02.01 for appropriate installation.
注3/ NOTE 3	E4 系列发动机批准用于 23 部正常类和通用类飞机。/The E4 series engines are approved for the installation in Part 23 normal and utility category airplanes.
注4/ NOTE 4	E4 系列发动机批准使用喷气燃料（见操作手册 E4.01.01 和 E4.01.02），推荐的最小十六烷值为 36（根据 EN ISO 5165/ASTM D613 标准确定）。/ The E4 series engines are approved for operation with jet fuels (see Operation Manual E4.01.01 and E4.01.02). A minimum cetane number of 36 (determined according to EN ISO 5165/ASTM D613) is recommended.
注5/ NOTE 5	E4 系列发动机批准使用列入安装手册 E4.02.01 中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 series engines are 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6/ NOTE 6	推荐的大修间隔时间(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指定火区。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	安装假设：见安装手册。/Installation Assumptions: See Installation Manual.
注10/ NOTE 10	已证明在涡轮增压器 172000 转/分钟（E4）、178 000 转/分钟(E4P)的最大转速下能够包容。/Containment has been demonstrated for max. turbocharger speed of 172 000 rpm (E4) resp. 178 000 rpm (E4P).

注11/NOTE 11	型别销售名称: E4——AE300; E4P——AE330/Sales name of the variants: E4——AE300;E4P——AE330
注12/ NOTE 12	增加制造商芜湖钻石航空发动机有限公司 (WDAE); WDAE 发动机序列号的结构为: “发动机类型” + “WDAE 制造商代码: 156W” + “连续 5 位数字编号系统”。WDAE 生产的发动机序列号为: E4-A-156W00001 及其后续序列号; E4-B-156W00001 及其后续序列号; E4-C-156W00001 及其后续序列号; / Additional Manufacturer Wuhu Diamond Aeroengine Co. LTD (WDAE); The WDAE engine serial number is structured as: “Engine Type” + “WDAE Manufacturer Code:156W” + “Progressive 5 digits Numbering System” . The engine serial numbers produced by WDAE are: E4-A-156W00001 and subsequent E4-B-156W00001 and subsequent E4-C-156W00001 and subsequent

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