

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

型号认可证数据单
TYPE VALIDATION CERTIFICATE DATA SHEET

编号/No: VTC0202E

版次/Revision: 3

型号/Type:

M601F

M601FS

M601F-22

M601F-32

H80

H80-100

H80-200

H85-100

H85-200

批准人/Approved By:

徐超群

日期/Date: 2019-10-08

本数据单是型号认可证(编号: VTC0202E)的组成部分, 它规定了符合中国民用航空总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: VTC0202E), prescribes condition and limitation 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:

GE Aviation Czech s.r.o.

Beranovych 65,

199 02 Praha 9 – Letnany

Czech Republic

有效页清单/List of effective pages :

页数/ Pages	1	2	3	4	5	6	7	8	9						
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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

	中国民用航空总局认可数据单号、版次和颁发日期 CAAC Validation Data Sheet Number, Revision and issuance date	型号合格证数据单号、版次和颁发日期 Type Certificate Data Sheet Number, Revision and issuance date
当前 Current	VTC0202E R3, 2019年10月8日	EASA TCDS No. E.070, R6, Date of Issue: September 16, 2016
历史 History	VTC0202E R2, 2013年6月9日	EASA TCDS No. E.070, R4, Date of Issue: December 13, 2011
	VTC0202E R1, 2009年4月8日	EASA TCDS No. E.070, R3, Date of Issue: August 25, 2008

2. 类别/Category: 发动机/ Engine

3. 认可当局/Validation Authority: 中国民用航空局/CAAC

审定当局/Certifying Authority: 欧洲航空局/EASA

4. 型号合格证持有人/Type Certificate Holder: GE Aviation Czech s.r.o.
Beranovych 65,
199 02 Praha 9 – Letnany
Czech Republic

5. 制造厂/Manufacturer: GE Aviation Czech s.r.o.

6. ETOPS: 不适用/NA

7. CAAC专用要求/CAAC Special Requirements: 满足中国3号燃油 (GB6537-2006) 的要求/Compliance with requirement
of P.R.China JET Fuel No.3(GB6537-2006)

第2部分/Section 2

A. 审定基础/Certification Basis

1. 适航标准/Airworthiness Standards:

CS-E 第 1 修正案, 2007 年 12 月 10 日生效 (E515 除外); JAR-E515, 版本 9	H80, H80-100, H80-200, H85-100, H85-200
JAR-E 版本 9, 1994 年 10 月 21 日生效	M601F
FAR 33 第 12 修正案, 1988 年 9 月 2 日生效;	M601F, M601FS
CS-E, Amendment 1, dated 10 December 2007 (except E515) JAR-E515 of JAR-E, Change 9	H80, H80-100, H80-200, H85-100, H85-200
JAR-E Change 9 dated October 21, 1994	M601F
FAR 33 Amdt. 12 effective Sept 2, 1988	M601F, M601FS

2. 专用条件/Special Conditions (SC): 无/none

3. 等效安全项目/Equivalent Safety Findings (ESF):

JAR-E 570(a)和FAR 31.71(b)(6) - 滑油滤告警意味着指示飞行员油滤即将堵塞。

JAR-E 560(d)和FAR 33.67 (b) - 燃油滤。

JAR-E 530(e) - 防火

H80, H80-100, H80-200, H85-100, H85-200无等效安全项目

JAR-E 570(a) and FAR 31.71 (b)(6) - Oil filter warning means indicating to the pilot impending its blockage.

JAR-E 560(d) and FAR 33.67 (b) - Fuel filter.

JAR-E 530(e) – Fire Precautions

None for H80, H80-100, H80-200, H85-100, H85-200

4. 偏离/Deviations:无/none

5. 环境标准/Environmental Standards:燃油排放:

CS-34.1/Fuel Venting: CS-34.1

B. 技术特性/Technical Characteristics

1. 型号设计定义/ Type Design Definitions

M601F: S-M601F, M601F-22: S-M601F-22, M601F-32: S-M601F-32,
M601FS: S-M601FS,
H80: TR-000087, H80-100: TR-000088, H80-200: TR-000089
H85-100: TR-000094, H85 - 200: TR-000095

2. 描述/ Description

M601系列和H80系列发动机为双转子涡轮、逆向进气布局、2级轴流压气机、1级离心压气机、环形燃烧室、1级高压涡轮和1级自由涡轮构型。

M601 and H80 series engines are 2 spool turboprop engines with reverse flow of air and gas, two stage axial compressor, one stage centrifugal compressor, annular combustor, one stage high-pressure turbine and one stage free turbine.

3. 设备/ Equipment

批准的设备见发动机安装手册。

Approved Equipment is defined in the applicable Engine Installation Manual.

4. 尺寸 (毫米) / Dimensions (mm)

总长/ Overall Length	1675
总宽/ Overall Width	590
总高/ Overall Height	650

5. 重量 (千克) /Weight (Kg)

H80-100, H85-100	200
H80, H80-200, H85-200	202
M601F, M601F-22, M601F-32	207
M601FS	212

6. 额定值 (千瓦) /Ratings (Kw)

	海平面最大连续 Maximum Continuous at sea level	海平面起飞 (5 分钟) Take-off (5 min) at sea level	海平面注水 起飞 (5 分钟) Take-off with water injection (5 min) at sea level	海平面最大紧急 (10 分钟) Max. Contingency at sea level	海平面中级紧急 Intermediate Contingency at sea level
H85-100	634	634	-		
H85-200	634	634	-		
H80	597	597	-		
H80-100	597	597	-		
H80-200	522	597	-		
M601F	500	580	580	595	580
M601FS	500	580	580		
M601F-32	490	560	-		

M601F-22	490	560	-		
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根据 FAR, M601F 和 M601FS 型也可用于:

最大起飞 (海平面 5 分钟) 和最大连续功率: 580KW。

M601F and M601FS models according to FAR also are certified for:

Max. Take-off (5 min at sea level) and Max. Continuous: 580 kW

H80 和 H80-200 批准的连续 OEI 额定值为 597 千瓦。

H85-200 批准的连续 OEI 额定值为 634 千瓦。

H80 and H80-200 models are certified for a Continuous OEI Rating of 597kW.

H85-200 models are certified for a Continuous OEI Rating of 634Kw.

7. 控制系统/Control System

液压机械燃油控制系统/Hydro mechanical fuel control system.

8. 液体 (燃油/滑油/添加剂) / Fluids (Fuel/Oil/Additives)

见使用手册/ See applicable Operation Manual

9. 飞机附件驱动/ Aircraft Accessory Drives

包括旋转方向、驱动速度比和扭矩连续衬垫额定和最大过扭位置在内的附件驱动参数, 可参见发动机安装手册。

For accessory drives specifications, including direction of rotation, drive speed ratio to engine speed, torque continuous pad rating and maximum overhung moment, refer to the applicable Engine Installation Manual.

10. 最大允许引气提取量/ Maximum Permissible Air Bleed Extraction

对所有发动机型号, 引气提取限制参见发动机安装手册。

For all engine models, the air bleed extraction limits are specified in the applicable Engine Installation Manual.

M601F和M601FS可以具有高压引气系统和低压引气系统。高压引气系统是标准引气系统。

M601F and M601FS can have both a high- pressure air bleed system and a low-pressure air bleed system. The high-pressure air bleed system is the standard bleed system.

建造构型 (BC01): 低压引气系统可以作为选项进行安装, 其构型可以由发动机铭牌看出。

Build Configuration (BC01): Low-pressure bleed system can be installed as an option and this engine build configuration is indicated on the engine identification plate by the additional designation BC01.

C. 运行限制/ Operational Limits

1. 温度限制/ Temperature Limits:

1.1 最大涡轮间温度 (度) / Maximum Inter-turbine Temperature [°C]

	最大连续 Maximum Continuous	起飞 (5 分钟) Take-off(5 min)	最大紧急 (10 分钟) Max. Contingency (10 min)	中级紧急 Intermediate Contingency
H85-100	770	780		
H85-200	770	780		
H80	750	780		

H80-100	750	780		
H80-200	720	780		
M601F	690	735	780	760
M601FS	690	735		
M601F-32	710	735		
M601F-22	710	735		

M601F和M601FS可根据FAR在最大连续功率时具有最大涡轮间温度780摄氏度。

M601F and M601FS have according to FAR33 also been certified for Maximum Interturbine Temperature of: 780 °C at Max.

Continuous

1.2 滑油进口温度范围 (度) / Oil Inlet Temperature Range [°C]:

最大/Maximum: 85

最小/Minimum: -20

1.3 燃油进口温度范围 (度) / Oil Inlet Temperature Range [°C]:

最大/Maximum: 60

最小/Minimum: -50

2. 转子最大允许转速/ Maximum Permissible Rotor Speeds

功率 Rating	发动机型号 Engine Model	燃气涡轮[%] Gas Generator Rotor [%]	螺旋桨轴 [min ⁻¹] Propeller Shaft [min ⁻¹]
起飞/Take-off	H80, H80-100, H80-200	101.5	2080
	M601F, M601FS, M601F-22, M601F-32	100	2080
	H85-100, H85-200	101.5	2080
最大连续/Max. Continuous	M601F, M601FS, M601F-22, M601F-32	97	2080
	H80, H80-100	100.1	2080
	H80-200	98.4	2080
	H85-100, H85-200	101.2	2080
最大紧急 (10 分钟) Max. Contingency (10 min)	M601F, M601FS	102	2080
中级紧急/Intermediate Contingency	M601F, M601FS	100.5	2080
根据 FAR 的最大起飞(5 分钟) Max.Take-off (5 min)acc. to FAR	M601F, M601FS	102	2080
根据 FAR 的最大连续 /Max. Continuous acc. to FAR	H85-100, H85-200	101.2	2080
	H80, H80-200	101.5	2080
	H80-100	100.1	2080
	M601F, M601FS	100.5	2080

100% 螺旋桨轴转速等于 2080 rpm。

2080 rpm 的螺旋桨轴转速对应于自由涡轮转速 31023 rpm

100% 燃气涡轮转速等于 36660 rpm

对于带有螺旋桨直径小于 2185 毫米的发动机, 螺旋桨转速限制是 1950rpm

100% propeller shaft speed equals to 2080 rpm.

Propeller shaft speed of 2080 rpm corresponds to free turbine speed of 31023 rpm

100% gas generator rotor speed equals to 36660 rpm.

For engines with installed propellers having diameter smaller than 2185 mm the propeller speed limit is 1950 rpm.

3. 扭矩限制/Torque Limits

100%扭矩值 / 100% torque equals	
H80 H80-100 H80-200	H85-100 H85-200
2740 牛米 (2021 磅英寸) / 2740 Nm (2021 lb-ft)	2910 牛米 (2146 磅英寸) / 2910 Nm (2146 lb-ft)
对于所有列出的发动机型号, 瞬态 (低于30秒) 超扭值可以允许达到106%而无需采取维修措施。但H85-100和H85-200除外, 瞬态超扭值只允许达到104%。 可参考相关安装手册和使用手册。 Transient (less than 30sec) over-torque to 106% is permitted (without maintenance action) for all listed engine models except for H85-100, H85-200 where it is 104%. Refer to the Installation Manual and Operation Manual.	
- 最大连续扭矩值Nm(最大)适用于转速从1800rpm至最大恒转速限制值之间的范围。 - 海平面起飞 (5分钟) 扭矩值Nm (最大) 仅适用于起飞转速限制值。 - Maximum continuous Nm (max.) applies within range of 1800 rpm to max. cont. speed limit. - Take-off at sea level (5 min) Nm (max.) applies at take-off speed limit.	

4. 压力限制/ Pressure Limits

4.1 燃油泵进口压力 (千帕) / Fuel Pump Inlet Pressure (kPa)

最小绝对压力 / Minimum absolute pressure: 80

最大计量压力 / Maximum gauge pressure: 300

4.2 滑油压力 (千帕) / Oil Pressure (kPa)

正常工作计量压力 / Normal operating gauge pressure: 180 to 270

慢车最小计量压力 / Minimum gauge pressure at Idle: 120

5. 滑油适用性及消耗限制/Oil capacity, consumption limit

见发动机工作手册

See applicable Operation manual

6. 安装假设/ Installation Assumptions

安装假设见相应发动机安装手册。

The installation assumptions are quoted in the respective Engine Installation Manuals.

D. 操作和使用指南/ Operating and Service Instructions

发动机型号 Engine Model	安装手册 Installation Manual	使用手册 Operation Manual	维修手册 Maintenance Manual	服务通告 Service Bulletins
H85-100, H85-200	0983202	0983302	0983402	按需发布 Published as required
H80, H80-100, H80-200	0983202	0983302	0983402	
M601F	0982509	0982413	0982302	
M601FS	0982509	0982413	0982302	
M601F-32	0982062	0982108	0982062	
M601F-22	0982062	0982108	0982062	

注1: 发动机额定值是基于ICAO国际标准海平面大气静态条件:

- 无附件驱动负载
- 无压气机引气
- 无安装损失

Note 1: The engine ratings are based on ICAO International Standard Atmosphere sea level, static conditions:

- No loading of accessory drives
- No compressor air bleed
- No installation losses

注2: 某些发动机部件为寿命限制件, 这些限制参见维修手册中的适航限制章节。

Note 2: Certain engine parts are life-limited. These limits are published in the Maintenance Manual, Airworthiness Limitations Section.

注3: 当进气系统符合经批准的设计时(件号P/NB062350), M601系列发动机满足JAR-E 780(H80、H80-100、H80-200、H85-100、H85-200对应于CS-E780)关于结冰条件(参见FAR25附录C定义)下运行的要求。

Note 3: The M601 series engines meet the requirements of JAR-E 780 (CS-E780 for H80, H80-100, H80-200, H85-100 and H85-200) for operation in icing conditions as defined in FAR 25, Appendix C, when the intake system conforms to the approved design (Part number (P/N) B 062350).

注4: 当进气系统符合经批准的设计时(件号P/NB062350), M601系列发动机满足JAR-E 500(H80、H80-100、H80-200、H85-100、H85-200对应于CS-E500)关于不发生喘振的要求。

Note 4: The M601 series engines meet the requirements of JAR-E 500 (CS-E500 for H80, H80-100, H80-200, H85-100 and H85-

200) for surge free operation, when the intake system conforms to the approved design (Part number (P/N) B 062350).

注5: 当进气系统符合经批准的设计时(件号P/NB062350), M601系列发动机满足JAR-E 800(H80、H80-100、H80-200、H85-100、H85-200对应于CS-E800)关于鸟击的要求。

Note 5: The M601 series engines meet the requirements of JAR-E 800 (CS-E800 for H80, H80-100, H80- 200 , H85-100 and H85-200) for bird ingestion when the intake system conforms to the approved design (Part number (P/N) B 062350).

注6: 在热天情况下, 根据相关的安装手册和使用手册, 发动机功率可以通过喷水方式得到恢复。这仅适用于M601F、M601FS系列发动机。

Note 6: Power may be restored in hot day conditions by means of water injection when accomplished in accordance with requirements of the applicable Installation Manual and Operation Manual. This applies to M601F, M601FS engine models only.

结束

END