

中国民用航空局
CIVIL AVIATION ADMINISTRATION OF CHINA

型号认可证数据单

THE VALIDATION DATA SHEET

编号/No: VTC0217A

版次/Revision: 2

型别号/ModelType:

PZL SW-4

批准人/Approved By:

徐超群

职务 /Title : Director General of
CAAC-AAD

日期/Date: 2019 年 12 月 04 日

本数据单是型号认可证(编号: VTC0217A)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: VTC0217A), prescribes conditions and limitations under 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:

WYTWÓRNA SPRZĘTU KOMUNIKACYJNEGO "PZL -ŚWIDNIK"

SPÓŁKA AKCYJNA

Address:

Al. Lotników Polskich 1

21-045 Świdnik

POLAND

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第 1 部分总则（所有型别）

SECTION 1 General (ALL MODELS)

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 CAAC Validation Data Sheet Number, Revision and issuance date	EASA 型号合格证数据单号、版次和颁发日期 EASA type Certificate Data Sheet Number, Revision and issuance date
当前/ Current	VTC0217A 2 2019/12/04	EASA.R.100, Rev 7, May 14, 2018
历史/ History	VTC0217A 1 2011/11/22 VTC0217A 0 2008/12/30	EASA.R.100, Rev 5, August 25, 2011 EASA.R.100, Rev2, March 31, 2008

2. 适航类别/Airworthiness Category: 小型直升机-B 类/Small rotorcraft-Category B

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:
Wytwórnia Sprzętu Komunikacyjnego "PZL-Świdnik" Spółka Akcyjna
Al.Lotników Polskich 1
21-045 Świdnik, Poland

5. 认可审定基础/Validation Certification Basis

CAAC 的认可审定基础由 EASA 的审定基础（详见 EASA 型号合格证数据单：编号 EASA.R.100），和 CAAC 的附加技术条件组成。

The CAAC validation certification basis consists of the EASA certification basis (refer to EASA Type Certificate Data Sheet No.EASA.R.100), and the CAAC additional technical conditions.

第 2 部分/SECTION 2: PZL SW-4

I. 总则/General

1. 型号/衍生型或型别/Type/Variant or Model:
 - (a) 型号/Type: PZL SW-4
 - (b) 型别/ Model: PZL SW-4
 - (c) 衍生型/ Variant: 无/none
2. 适航类别/Airworthiness Category: 小型直升机-B 类/Small Rotorcraft, Category B
3. 制造商/Manufacturer:
Wytwórnia Sprzętu Komunikacyjnego "PZL-Świdnik" Spółka Akcyjna
Al.Lotników Polskich 1
21-045 Świdnik, Poland
4. 向ULC申请型号合格审定日期/Type Certification Application Date to ULC: 1994.04.14/14 April 1994
5. 设计当局状态/State of Design Authority :
EASA (EASA之前: ULC,波兰) /EASA (pre EASA:ULC, Poland)
6. ULC颁发型号合格证日期/Type Certificate Date by ULC : 2002.11.14/14 November 2002
7. ULC型号合格证编号/Type Certificate No. by ULC : BC-217
8. ULC型号合格证数据单编号/Type Certificate Data Sheet No. by ULC : BC-217
9. EASA型号合格审定日期/EASA Type Certification Date : 2007.09.28/28 September 2007 (注释 2/see Note 2)
10. CAAC 批准日期/CAAC Approved Date: 2008.12.30/ 30 Dec 2008

II. 认可审定基础/Validation Certification Basis

CAAC的认可审定基础由EASA审定基础和CAAC的附加技术条件组成。

The CAAC validation basis consists of the EASA certification basis and the CAAC additional technical conditions .

1.EASA审定基础//EASA certification basis:

1.1 确定适用要求的参考日期: 1998.02.16

Reference Date for determining the applicable requirements: 16 February 1998

1.2 适航要求/ Airworthiness Requirements:

JAR27 包括修正案 27/98/1 (更改号 1), 1998 年 2 月 16 日生效

JAR 27, Amdt. 27/98/1 (Change 1) effective 16 February 1998;

JAR36 (1997 年 5 月 23 日第一版) A 分部第 2 节, E 分部第 400、410、420、430、440、450 节

JAR 36 (Initial issue, 23 May 1997), Subpart A Para 2 , Subpart E Para .400, 410, 420, 430, 440, 450;

CS34 (2003 年 10 月 17 日第一版) 第一节, 燃油系统通气

CS 34 (Initial issue ,17 October 2003), Paragraph 1, Fuel Venting.

1.3 专用条件/Special Conditions:无/none

1.4 豁免/ Exemptions:无/none

1.5 偏差/Deviations: 无/none

1.6 等效安全项目/Equivalent Safety Findings: 无/none

1.7 选择遵守的要求/Requirements elected to comply:无/none

1.8 环境保护要求/ Environmental Protection Requirements:

(1)噪声要求/ Noise Requirements:

参见 EASA 型号审定数据单 Noise TCDSN EASA.R.100。

See EASA Type Certificate Data Sheet for Noise TCDSN EASA.R.100

(2)排放要求/ Emission Requirements:

无/ None

2.中国民用航空局附加技术条件/CAAC Additional Technical Conditions:

交付到中国的每一架 PZL SW-4 飞机须满足下述附加技术条件:

Each of Model PZL SW-4 aircraft delivered to China shall meet the following Additional Technical Conditions:

(1)必须满足 CAAC 的运行要求;(例如标记标牌的中文要求,供乘客和地面营救人员使用的标记和标牌必须至少包含中文,供机组和地面维护人员使用的仪表和标记/标牌必须为英文和/或中文)

The operational requirements of CAAC must be met (e.g. Chinese language requirements for markings and placards, the making and placards used by passengers and ground rescue personnel should be in Chinese at least. Instruments and Marking/placards used by flight crew and maintenance staffs should be in English and/or Chinese).

(2) 燃油符合“中国国标 3 号航空燃煤—GB6537-2006”的规范;

Fuel conforms to Specification” PRC National Standard No.3 jet fuel –GB6537-2006”.

(3) 资料批准/Service Information;

所有的文件和手册必须为英文和/或中文。

All the documents and manuals should be in English and/or Chinese.

III. 技术特征和运行限制 /Technical Characteristics and Operational Limitations

1. 型号设计定义/ Type Design Definition:

PZL SW-4 Helicopter Type Definition, 文件号 SW-60-0251, C 版或以后版本
PZL SW-4 Helicopter Type Definition, Doc. No. SW-60-0251, Revision C, or later

2. 产品描述/Description:

多用途、多配制直升机,适用于昼夜目视条件下飞行。

Multi-purpose/multi version helicopter for VFR day/night.

主旋翼: 传统全铰接式三桨叶式构型;

Main rotor: Conventional fully articulated, 3 blades

尾桨: 传统跷板式双桨叶构型;

Tail rotor: Conventional, teetering type, 2 blades

机身: 主要为金属结构;

Fuselage: Metallic primary structure

起落架: 传统滑橇式起落架;

Landing gear: Conventional skids

发动机: 单发涡轮轴发动机。

Powerplant: Single turboshaft powered

3. 设备/Equipment:

适航要求所规定的基本设备必须安装在直升机上, 以获得单机适航证。关于设备清单, 请参见《旋翼机飞行手册》。

Basic equipment required by airworthiness requirements shall be installed on the helicopter for Airworthiness Certificate release. Refer to Rotorcraft Flight Manual for the equipment list.

4. 几何尺寸/ Dimensions

机身:	长度	8.238m
Fuselage	Length:	8.238m
	客舱宽度	1.515m
	Width of Cabin:	1.515m
	起落架	2.280m
	Landing gear:	2.280m
	高度	3.139m
	Height:	3.139m

主旋翼:	直径:	9.000m
Main Rotor	Diameter:	9.000m

尾旋翼:	直径:	1.500m
Tail Rotor	Diameter:	1.500m

5. 发动机/Engines:

5.1 型别/ Model:

罗尔斯·罗伊斯 (原艾利逊发动机公司) 一台型别 250-C20R/2
Rolls-Royce Corporation (formerly Allison Engine Company)
1 × Model 250-C20R/2

5.2 型号合格证/Type Certificate:

FAA TC/TCDS : E4CE
EASA TC/TCDS : EASA.IM.E.052

5.3 CAAC 型号认可证 /CAAC Validation Type Certificate

VTC094A, 认可 FAA 数据单 E4CE, 版次 35。
Validation Type Certificate No.VTC0945A, validate data sheet revision E4CE, Rev. 35 issued by FAA..

5.4 限制/Limitations

5.4.1 装机发动机限制:

	最大扭矩 [%]	燃气发生器转速 (连续) [%]	动力涡轮转速 (连续) [%]	涡轮出口温度 [°C]
起飞(5 分钟)	100	105	最大 103 ---- 最小 100	810
最大连续	85 ^(*)	105	最大连续 103 最大 108 (下降时) 最小 100	752
(*)对应扭矩指示: 直升机装备 P/N 4354-3007 扭矩指示器时指示 85%扭矩 直升机装备 P/N 4354-3011 扭矩指示器时指示 83%扭矩。				

Installed Engine Limits:

	Max. TQ [%]	Gas producer speed (continuous) [%]	PWR turbine speed continuous [%]	Temperature Outlet Temp [°C]
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TOP (5min)	100	105	max.103 --- min.100	810
MCP	85 ^(*)	105	max. cont. 103 max. 108 (in descent) min. 100	752
(*) corresponds to indicated TQ: - 85% for helicopters equipped with TQ indicator P/N 4354-3007, and - 83% for helicopters equipped with TQ indicator P/N 4354-3011				

5.4.2 传动系统扭矩限制/Transmission Torque Limits : 100%

6.液体（燃油、滑油、添加剂）Fluids (Fuel/Oil/Additives):

6.1 燃油/Fuel:

项目/Item	燃油类型/Fuel type	符合标准/Conforming to
1	JP-8 (F-34)	MIL-T-83133
2	JP-5 (F-44)	MIL-T-5624
3	Jet A1 (F-35)	ASTM D-1655
4	Jet-A	ASTM D-1655
5	JP-1	ASTM D-1555 (corresponds to Jet A)
6	TS-1	GOST 10227-86
7	RT	GOST 16564-71

6.2 滑油/Oil:

发 动 机 滑 油 / 壳牌 555 航空涡轮滑油 MIL-PRF-23699F 或 DEF STAN 91-100 或
 Engine oils: DOD-L-85734;
 AeroShell Turbine Oil 555 MIL-PRF-23699F, or, DEF STAN 91-100 or DOD-L-85734;
 壳牌 500 航空涡轮滑油 MIL-PRF-23699F;
 AeroShell Turbine Oil 500 MIL-PRF-23699F;
 美孚 254 喷气滑油或 291 MIL-PRF-23699F HTS;
 Mobil Jet Oil 254 or 291 MIL-PRF-23699F HTS;
 壳牌 560 航空涡轮滑油 MIL-PRF-23699F HTS;
 AeroShell Turbine Oil 560 MIL-PRF-23699F HTS;
 埃克森 Exxon ETO 2197 (BPTO 2197) MIL-PRF-23699F HTS;
 Exxon ETO 2197 (BPTO 2197) MIL-PRF-23699F HTS.

主减速器和尾减 壳牌 500 航空涡轮滑油, 符合 MIL-L-23699;
 速器滑油/ MGB AeroShell Turbine Oil 500 conforming to MIL-L-23699;
 and TGB oils: 壳牌 555 航空涡轮滑油, 符合 DOD-L-85734/DERD 2497;
 AeroShell Turbine Oil 555 conforming to DOD-L-85734/DERD 2497;
 嘉实多 599, 符合 DERD 2497;
 Castrol 599 conforming to DERD 2497.

6.3 添加剂/additives:

参考批准的旋翼机飞行手册中燃油防冰添加剂/Refer to approved RFM for fuel anti-ice additives

7.液体容量/Fluid capacities:

7.1 燃油/Fuel

油箱总容积: 471 升 (377kg)
 Total tank capacity: 471 litres (377kg)
 不可用燃油量: 4.8 升 (3.8kg)
 Unusable fuel: 4.8 litres (3.8kg)

7.2 滑油/Oil 发动机

6.8 升

/Engine:

6.8 litres

6.32 升（使用 P/N 60.06.340.00.00 型散热器）
6.32 litres (with cooler P/N 60.06.340.00.00)

主减速器
/MGB:

6.81 升（将 60.06.350.00.00 型散热器安装在燃料电池的顶板上）
6.81 litres (with cooler 60.06.350.00.00 installed on the fuel cell ceiling panel)

6.0 升（将 P/N 60.06.350.00.00 型散热器安装在发动机进气道防护罩上）
6.0 litres (with cooler P/N 60.06.350.00.00 installed on the engine intake shield)

尾减速器
/TGB:

0.38 升
0.38 litres

8. 空速限制/ Airspeed limits:

V_{NE PWR-On}:140 节（260km/h）V_{NE PWR-On}:140 KIAS (260km/h)

注：关于 V_{NE PWR-On} 相对实际重量、外界大气温度和高度变化的变化，参见《旋翼机飞行手册》的限制部分。

Note: for V_{NE PWR-On} variations versus actual weight, OAT, and altitude refer to Limitations Section of approved RFM.

V_{NE PWR-Off}:102 节（190km/h）V_{NE PWR-Off}:102 KIAS (190km/h)

注：V_{NE PWR-Off} 随高度的变化值参考《旋翼机飞行手册》中限制章节。

Note: for V_{NE PWR-Off} variations versus altitude refer to Limitations Section of approved RFM.

V_{min PWR-Off}（稳定自转）：44 节（80km/h）V_{min PWR-Off} (steady autorotation): 44 KIAS (80km/h)

9. 旋翼转速限制/Rotor Speed Limitations:

有动力/Power on:

瞬态最大值（15 秒）:

Max. transient (15 sec): 108%

最大连续:

Max. continuous: 103%

最大连续（下降时）:

Max. continuous in descent: 108%

最小连续:

Min. continuous: 100%

瞬态最小值（5 秒）:

Min. transient (5 sec): 95%

无动力/Power off:

瞬态最大值（5 秒，见注释 3）:

Max. transient (5 sec, see Note 3): 115%

最大连续:
Max. continuous: 108%

最小连续:
Min. continuous: 90%

瞬态最小值 (5 秒):
Min. transient (5 sec): 85%

注: 100%主旋翼转速对应 437.3 转/分
Note: 100% main rotor speed corresponds to 437.3 rpm

10. 使用高度和温度限制/Operating Altitude and Temperature Limitations:

高度/Altitude:

最大飞行高度:
Max. flight altitude: 5000m (16400ft) 压力高度
5000m (16400ft) PA

最大起飞、着陆高度:
Max. TO/LDG altitude: 2742m (9000ft) 密度高度
2742m (9000ft) DA

温度/Temperature:

-30℃到+46℃, 平均海平面外界大气温度

-30℃ to +46℃ OAT MSL

注: 高度随外界大气温度的变化, 参见《旋翼机飞行手册》的限制部分

Note: For variation of altitude with OAT refer to Limitations Section of approved RFM.

11. 运行限制条件/Operating Limitations:

11.1 运行类别/Kinds of operations:

昼夜目视飞行规则,
不允许在已知结冰条件下飞行

VFR day/night

no flight into known icing conditions

11.2 起飞和着陆附加条件/Additional limitations for TO/LDG:

启动和停止旋翼时的最大风速:

Max. wind velocity for starting and stopping rotor:

逆风: 48 节 (90km/h, 25m/s)

head wind: 48 knots (90km/h, 25m/s)

侧风: 17 节 (32km/h, 9m/s)

side wind: 17 knots (32km/h, 9m/s)

顺风: 17 节 (32km/h, 9m/s)

tail wind: 17 knots (32km/h, 9m/s)

最大着陆坡度: 5°

Max. landing slope: 5°

12. 最大重量/Maximum Mass:

最大起飞和着陆重量:
Max. TO/LDG mass: 1800kg (3968 lb)

最小着陆重量:
Min. LDG mass: 1150kg (2535 lb)

13. 重心范围/Centre of Gravity Range:

纵向重心限制/Longitudinal limitations

后限/Aft 500mm (19.69 ins)

前限/Fwd	750mm (29.53 ins)
横向重心限制/Lateral limitations	
右限/Right	60mm (2.36 ins)
左限/Left	60mm (2.36 ins)

14. 基准/Datum

纵向/Longitudinal:

纵向重心的基准位置在主旋翼轴线与机身基准平面相交点后 499mm

The centre of gravity datum position is 499 mm aft from intersection point of the main rotor axis and base plane of the fuselage.

横向/Lateral:

位于直升机对称面上

helicopter symmetry plane

15. 水平测量措施/ Leveling Means:

从顶部基准点垂线至客舱地板上的刻度牌。

Vertical line from ceiling reference point to the index plate located on the passenger compartment floor.

16. 最小飞行机组/Minimum Flight Crew:

一名驾驶员/1 (one) pilot

17. 最大座位数/Maximum Passenger Seating Capacity: 4 (four)**18. 乘客紧急出口/Passenger Emergency Exit:**

2 个可抛放式前舱门

2 forward doors are jettisonable

从 s/n 60.04.01 起, 2 个前舱门窗户可抛放。

2 forward door window panels are jettisonable from s/n 60.04.01.

2 个后舱门的窗户可抛弃

2 rear door window panels are jettisonable

19. 最大行李/货物载重/ Maximum Baggage/Cargo Loads:

客/货舱:

Passenger /cargo cabin: 323kg (712 lb)

行李舱:

Baggage compartment: 150kg (330.7 lb)

20. 主桨叶和操纵系统/Rotor Blade Control Movement:

参见《维修手册》文件号 AE-60.01.04.0 MM 第六章

See Maintenance Manual, Doc. No. AE-60.01.04.0 MM (Chapter 6)

21. 辅助电源装置/Auxiliary Power Unit (APU):

无/none

22. 时限件/Life-limited Parts:

参见文件号 AE-60.01.04.0 MM 第一卷第四章第 4.00.00 节: 适航限制

Refer to document AE-60.01.04.0 MM Volume 1, Chapter 4, Subchapter 4.00.00 Airworthiness Limitations.

IV.使用和服务说明/Operating and Service Instructions

1.旋翼机飞行手册:

AE-60.01.04.1 (英文版), 经过 EASA 批准

Flight Manual:

AE-60.01.04.1 RFM (English), EASA approved

2.维修手册:	AE-60.01.04.0 (英文版)
Maintenance Manual:	AE-60.01.04.0 MM (English)
3.结构维修手册:	60.10.000.02.00 (维修手册规范)
Structural Repair Manual:	60.10.000.02.00 (specification of repair manuals)
4.重量与平衡手册:	AE-60.01.04.0 MM 第八章
Weight and Balance Manual:	AE-60.01.04.0 MM Chapter 8
5.图解零件目录:	AE 60.02.02.0 IPC 第 I 和 II 版
Illustrated Parts Catalogue:	AE 60.02.02.0 IPC Vol.I&II
6.服务函和服务通报:	见 PZL 出版物
Service Letters and Service Bulletins:	As published by PZL
7.所需设备:	参见《旋翼机飞行手册》中有关批准的必装和选装设备
Required Equipment :	Refer to approved RFM for mandatory and optional equipment.

V.经批准的中文标记标牌/ The Approved Chinese Placards

以下资料中所包含的中文标记标牌已由 CAAC 接受并由 EASA 批准:

The Chinese Placards involved in the following data have been accepted by CAAC and approved by EASA:

序号 Code	标题 Title	编号 Number	版本 Rev.
1	SUPPLEMENT AE-60.01.04.1 RFMS - 19.00	AW_60.00.011.00.01_01	B

VI. 注释/Notes

注释/Note 1: 有效序列号/ Eligible serial numbers:
60.02.02 以及此后的 60.XX.YY 编号/60.02.02 and subsequent 60.XX.YY numbers
(序列号的格式为 60.XX.YY, 其中 XX 表示生产批号, YY 代表该批次内的编号)
(s/n format is 60.XX.YY where XX is the production batch number and YY the number within the batch).

注释/Note 2: 依照 CR (EU) 1702/2003,第 2 款, 第 3 (c)条, BC-217 型号审查标准是 2007 年 3 月 28 日生效的 EASA 的“始祖”。“EASA 型号合格证颁发日期”表示从该日起, 因欧洲型号审定作业 (EASA 之前的程序) 而产生的针对始祖的型号设计变更已引入基本的 EASA 型号定义 (第 III, 1 节) 并且已被 EASA 正式承认和接受。
即注释 1 中的有效序列号范围内的所有航空器都符合 BC-217 和 2007 年 9 月的标准。

In accordance with the provisions of CR (EU) 1702/2003,Article 2, point 3.(c),the BC-217 Type Certification standard was “grandfathered” to become the EASA standard on 28 March 2007. The “EASA Type Certificate date” reflects the date at which changes to the grandfathered type design resulting from a European Type Certification exercise (initiated prior to EASA) and incorporated into the basic EASA Type Definition of paragraph III,1 were formally accepted and adopted by EASA.

All aircraft falling within the serial number applicability range of Note 1 above conform to the BC-217 plus”28 September 2007” design standard.

注释/Note 3: EASA 已经声明原“15 秒”为编辑错误。该处正确数值应为“5 秒”。
EASA has made a statement that the “15 sec” was editorial mistake. The correct values should be “5 sec”.