



TYPE-CERTIFICATE DATA SHEET

No. EASA.A.310

for

SZD-59 "ACRO"

Type Certificate Holder

Allstar PZL Glider Sp. z o.o.

ul. Cieszyńska 325
43-300 Bielsko-Biała
POLAND

Models: SZD-59 "ACRO"

Issue 01, 15/12/2017

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Section A: SZD-59 „ACRO“

A.I. General

1. Data Sheet No.: EASA.A.310
2. a) Type: SZD-59 "ACRO"
b) Model: SZD-59 "ACRO"
c) Variants: SZD-59 "ACRO", SZD-59-1 "ACRO"
3. Airworthiness Category: Sailplane - Utility (U) and Aerobatic (A) Category
4. Manufacturer:
 1. Przedsiębiorstwo Doświadczalno-Produkcyjne Szybownictwa (PDPSz) „PZL - Bielsko”
 2. Allstar PZL Glider Sp. z o.o.
 3. Wytwórnia Konstrukcji Kompozytowych Andrzej Papiorek
ul. Strumieńska 829a
43-385 Jasienica, POLAND
5. Polish CAA Certification Date: 16 August 1994
6. The EASA TC replaces Polish Type Certificate No. BG-198/1 (TCDS No. BG-198/1, issue 5, dated 18 March 2004).

A.II. Certification Basis

1. Reference Date for determining the applicable requirements: February 1995
2. Airworthiness Requirements:
SZD-59 "ACRO":
JAR-22, Change 4, issued on 07 May 1987,
with amendments up to 22/94/1 inclusive
SZD-59-1 "ACRO":
JAR-22, Change 5, issued on 28 October 1995
3. Special Conditions: None
4. Exemptions: None
5. Deviations: None
6. Equivalent Safety Findings: None
7. Environmental Protection: None

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: SZD-59 "ACRO":
Drawing No. 59-00-10-00
SZD-59-1 "ACRO":
List of Drawings, Document No. 591.5.02,
issue 2, 15.09.2016, or later approved revision.
2. Description: Single-seater glider designed for flying both in Aerobatic and Utility category. All composite structure (GFRP). Cantilever high-wing monoplane with cruciform tail unit arrangement. For Utility category additional wingtips (with or without winglets) are provided, which increase wingspan up to 15 m. Water ballast tanks in wings to be used in Utility category only. Undercarriage consists of retractable main wheel and fixed tail wheel.
In the SZD-59 "ACRO" variant wings are equipped with airbrakes, extended on upper and lower surface.
In the SZD-59-1 "ACRO" variant wings are equipped with two-plate airbrakes, extended on upper surface only.
3. Equipment: Minimum equipment:
- airspeed indicator,
- altimeter,
- accelerometer,
- variometer,
- compass,
- 5-point safety belts.
Standard equipment, besides the above listed:
- side-slip indicator,
- balancing weights.
For cloud flying the glider should be equipped with:
- turn indicator.
4. Dimensions:
- | Category: | Aerobatic | Utility |
|------------------------------|---------------------|----------------------|
| Span: | 13,20 m | 15,00 m |
| Length: | 6,845 m | 6,845 m |
| Wing area: | 9,79 m ² | 10,66 m ² |
| Mean aerodynamic chord (MAC) | 765,4 mm | 742,4 mm |
5. Launching Hooks:
- Nose towing hook:
SZD-III P or TOST E
- Winch hook:
TOST G
6. Weak Links: Ultimate strength for aero-towing: 677+10% daN
Nominal strength for winch launching: 677±10% daN

7. Load Factors:

7.1 Utility category	+5,3 / -2,65	(up to V_A)
	+4,0 / -1,5	(up to V_{NE})
7.2 Aerobatic category	+7,0 / -5,0	(up to V_{NE})
7.3 Airbrakes extended	+3,5	(up to V_{NE})

8. Air Speeds:

IAS [km/h]

	Category	A	U
Never Exceed Speed	V_{NE}	285	265
Manoeuvring Speed	V_A	200	200
Rough Air Speed	V_{RA}	200	200
Max Aero-tow Speed	V_T	150	150
Max Winch-launch Speed	V_W	150	150
Max Landing Gear Operation Speed	V_{LO}	285	265

9. Operational Capability:

Approved for VFR-day conditions.

Cloud flying permitted in accordance with binding regulations.

10. Masses [kg]:

	Category	A	U
MTOM without water ballast		380	390
MTOM with water ballast		---	540

11. Centre of Gravity Range:

Forward limit: 145 mm aft of the datum
(19,0% MAC for span 13,2 m or 19,5% MAC for span 15,0 m)

Rearward limit: 275 mm aft of the datum
(36,0% MAC for span 13,2 m or 37,0% MAC for span 15,0 m)

12. Datum:

Vertical plane going through intersection points of wing leading edge and root rib planes

13. Levelling Means:

Wing trailing edge 22 mm below leading edge in the plane of wing root ribs

14. Control surface deflections:

Aileron:	- up	30° ±1°
	- down	18° ±1°
Elevator:	- up	32° ±1°
	- down	28° ±1°
Rudder:	- left	34° ±1°
	- right	34° ±1°

15. Minimum Flight Crew:

1 pilot

16. Maximum Passenger Seating Capacity:

No Passengers

17. Baggage/ Cargo Compartments:

Refer to the Technical Service Manual

18. Lifetime Limitations:

Refer to the Technical Service Manual

19. Other Limitations: The following is prohibited:
- night flying,
 - flight in icing conditions
 - aerobatics in rough air
 - spins with water ballast,
 - aerobatics with water ballast.

A.IV. Operating and Service Instructions

1. Flight Manuals:

- | | |
|---------|--|
| English | <ul style="list-style-type: none">● Flight Manual of Glider SZD-59 "ACRO", Issue III, November 10, 1995.● Flight Manual for a glider SZD-59-1 "ACRO", Doc. No. 591.4.01, Issue I – March 2017. |
| Polish | <ul style="list-style-type: none">● <i>Instrukcja Użytkowania w Locie szybowca SZD-59 „ACRO”, wydanie III, 10 listopada 1995.</i>● <i>Instrukcja Użytkowania w Locie szybowca SZD-59-1 „ACRO”, Dok. nr 591.4.01, wydanie I – Marzec 2017.</i> |

2. Maintenance Manuals:

- | | |
|---------|---|
| English | <ul style="list-style-type: none">● Technical Service Manual of Glider SZD-59 "ACRO", Issue II, July 1996.● Technical Service Manual for a glider SZD-59-1 "ACRO", Doc. No. 591.4.02, Issue I – March 2017. |
| Polish | <ul style="list-style-type: none">● <i>Instrukcja Obsługi Technicznej szybowca SZD-59 „ACRO”, Wydanie II, lipiec 1996.</i>● <i>Instrukcja Obsługi Technicznej szybowca SZD-59-1 „ACRO”, Dok. nr 591.4.02, wydanie I – Marzec 2017.</i> |

3. Repair Manuals:

- | | |
|---------|--|
| English | <ul style="list-style-type: none">● Repair Manual of glider SZD-59 "ACRO", Issue I, September 1996. |
| Polish | <ul style="list-style-type: none">● <i>Instrukcja Napraw Szybowca SZD-59 „ACRO”, wydanie I, wrzesień 1996.</i> |

4. Operating Manuals for the Launching Hooks:

- Operating Manual for the TOST Release (for release types installed), latest approved revision.
- Operating manual for SZD-III tow release

A.V. Notes:

1. This TCDS, Section A applies to the following S/N:
SZD-59 "ACRO":
 X-150; B-2157 ÷ B-2179;
 from 590.A.04.001 up to 590.A.14.018
SZD-59-1 "ACRO":
 591.A.yy.nnn, starting from 591.A.16.019
 where:
 yy - the year of an aircraft manufacture,
 nnn - the successive aircraft number.
 Aircraft manufactured by Wytwórnia Konstrukcji Kompozytowych Andrzej Papiorek
 have an additional letter „W“ at the end of S/N.
2. All glider outside surfaces must be white painted. No registration number or any colour marks on the wings and stabilizer upper surfaces are allowed.

Administrative section

Acronyms

GFRP	Glass Fibre Reinforced Plastic
MAC	Mean Aerodynamic Chord
S/N	Aircraft Serial Number
VFR	Visual Flight Rules

Type Certificate Holder Record

Allstar PZL Glider Sp. z o.o.
ul. Cieszyńska 325
43-300 Bielsko-Biała
POLAND

Change Record

Issue	Date	Changes
Issue 01	15 Dec 2017	Transfer from Polish Type Certificate No. BG-198/1 to the EASA TCDS.