



TYPE-CERTIFICATE DATA SHEET

NO. EASA.A.034

for
ASW 28-18 E

Type Certificate Holder
Alexander Schleicher GmbH & Co. Segelflugzeugbau

Alexander-Schleicher-Str. 1
36163 Poppenhausen
Germany

For models: ASW 28-18 E
AS 34 Me



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Contents

Section A: ASW 28-18 E.....	4
A.I General.....	4
A.II Certification Basis.....	4
A.III Technical Characteristics and Operational Limitations	5
A.IV Operating and Service Instructions.....	9
A.V Notes	10
Section B: AS 34 Me	11
B.I General.....	11
B.II EASA Certification Basis	11
B.III Technical Characteristics and Operational Limitations	13
B.IV Operating and Service Instructions.....	17
B.V Notes	18
Section C: Administrative Section	19
C.I Acronyms & Abbreviations	19
C.II Type Certificate Holder Record.....	19
C.III Change Record	19



Section A: **ASW 28-18 E**

A.I General

- | | |
|--|---|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | ASW 28-18 E |
| 1.2 Model: | ASW 28-18 E |
| 2. Airworthiness Category | Powered Sailplane, JAR 22 -Utility |
| 3. Manufacturer | Alexander Schleicher GmbH & Co.
Segelflugzeugbau
Alexander-Schleicher-Str. 1
36163 Poppenhausen
Germany |
| 4. Type Certification Application Date | 29 October 2002 |
| 5. Type Certification Date | 12 April 2005 |

A.II Certification Basis

- | | |
|-----------------------------------|--|
| 1. Certification basis | Defined by LBA letter M312-905/MZ-11/02, dated 11. November 2001 |
| 2. Airworthiness Requirements | JAR-22, Change 6, issued 1. August 2001 |
| 3. Requirements elected to comply | Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fibre Reinforced Plastics, issued July 1991
Additional Requirements for the Installation of a Water Ballast System in the Vertical Tail for the Purpose of Balancing a Nose Down Moment Caused by Water Ballast in the Wing, issued August 1991 |
| 4. Special Conditions | None |
| 5. Exemptions | None |
| 6. Deviations | None |
| 7. Equivalent Safety Findings | 22.335(f) VD – Determination |
| 8. LBA Environmental Standards | Lärmvorschrift für Luftfahrzeuge (LVL), third edition, issued 01-August-2004 |



A.III Technical Characteristics and Operational Limitations

1. Type Design Definition List of the drawing files ASW 28-18 E, issued 07. April 2005, LBA approved
2. Description Single-seat, shoulder-winged self-sustaining powered sailplane, CFRP/GFRP/PFRP-composite construction, T shaped horizontal tailplane with fin and elevator, Schempp-Hirth brake-flaps on upper wing surface, water ballast tanks in the wing and optionally in the vertical fin, retractable landing gear equipped with brakes and spring suspension, optionally 15 m span with winglets, or 18 m span with winglets.
3. Equipment
Min. required Equipment:
 - 1 Air speed indicator (up to 300 km/h)
 - 1 Altimeter
 - 1 Magnetic compass
 - 1 4-point harness (symmetrical)With engine installed:
 - 1 Engine Control Unit Typ ASW 28EAdditional equipment refer to Flight and Maintenance Manual
4. Dimensions

Span:	15,0 m	18,0 m
Length:	6,59 m	6,59 m
Height	1,3 m	1,3 m
Wing area:	10,5 m ²	11,88 m ²
5. Engine
 - 5.1 Model SOLO 2350
 - 5.2 Type Certificate Type Certificate Data Sheet No. EASA.E.219
 - 5.3 Limitations
 - Maximum RPM: 4500 min⁻¹
 - Maximum continuous RPM: 4500 min⁻¹
 - With TN 9 (see A.V note 3):
 - Maximum RPM: 5400 min⁻¹
 - Maximum continuous RPM: 5400 min⁻¹
 - 5.4 Maximum Continuous Power
 - 15,0 kW
 - With TN 9 (see A.V note 3):
 - 18,0 kW



6. Propeller
- 6.1 Model AS2F1-2/L120-43-N2
- 6.2 Type Certificate Type Certificate Data Sheet No. EASA.P.004
- 6.3 Number of blades 2
- 6.4 Diameter 120 cm
- 6.5 Sense of Rotation counter-clockwise
- 6.6 Model AS2F1-3/L100-56-N3
- 6.7 Type Certificate Type Certificate Data Sheet No. EASA.P.004
- 6.8 Number of blades 2
- 6.9 Diameter 100 cm
- 6.10 Sense of Rotation counter-clockwise
7. Fluids:
- 7.1 Fuel: 2-stroke mixture from AVGAS 100LL or unleaded MOGAS 95 ROZ
- 7.2 Oil: Oil-to-fuel mixture 1:40
2-stroke oil Castrol RS 2T, Castrol Super TT, Castrol TTS or Castrol Go!2T.
- 7.3 Coolant: N/A
8. Fluid capacities:
- 8.1 Fuel: Max. capacity 6,0 l (optional 13,0 l)
Max. usable 5,7 l
- 8.2 Oil N/A
- 8.3 Coolant system capacity N/A
- Launching Hooks
- 1) Safety hook Tost "Europa G 73", LBA Datasheet No. 60.230/2
 - 2) Safety hook Tost "Europa G 72", LBA Datasheet No. 60.230/2
 - 3) Safety hook Tost "Europa G 88", LBA Datasheet No. 60.230/2
 - 4) Nose tow hook Tost "E 72", LBA Datasheet No. 60.230/1
 - 5) Nose tow hook Tost "E 76", LBA Datasheet No. 60.230/1
 - 6) Nose tow hook Tost "E 85", LBA Datasheet No. 60.230/1
9. Weak Links Ultimate strength:
- For aero tow: max. 825 daN
 - For winch- and car launch: max. 825 daN



10. Load Factors	+5,3 / -2,65 (up to V_A) +4,0 / -1,5 (up to V_{NE})
11. Air Speeds	
11.1 Manoeuvring speed	V_A 200 km/h
11.2 Never exceed speed	V_{NE} 270 km/h
11.3 Maximum permitted speeds	
- in strong turbulence	V_{RA} 200 km/h
- in aero-tow	V_T 170 km/h
- in winch-launch	V_W 140 km/h
- for gear operation	V_{LO} 200 km/h
- for engine operation	$V_{PO,max}$ 140 km/h
12. Maximum Operating Altitude	None
13. Approved Operations Capability	VFR Day only Cloud flying and limited aerobatic manoeuvres according to the specifications in the Flight Manual with restricted maximum mass.
14. Launch methods	Aero tow Winch and car launch
15. Maximum Masses	
15.1 Maximum Take-off Mass	With 15 m wingspan: 525 kg With 18 m wingspan: 575 kg
15.2 Max. Mass of non-lifting parts	285 kg
15.3 Max. Mass for Aerobatic/Cloud Flying	With 15 m wingspan: 409 kg With 18 m wingspan: 419 kg
15.4 Centre of Gravity Range	With 15 m wingspan: 227 mm – 406 mm With 18 m wingspan: 233 mm – 406 mm aft of datum
16. Datum	Wing leading edge at root rib
17. Levelling Means	Wedge 1000:49 placed horizontal on upper side of the fuselage boom horizontal
18. Control Surface Deflections	Refer to Maintenance Manual
19. Minimum Flight Crew	1



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|--|-----------------------------|
| 20. Maximum Passenger Seating Capacity | 0 |
| 21. Baggage/ Cargo Compartments | 12 kg |
| 22. Lifetime limitations | Refer to Maintenance Manual |



A.IV Operating and Service Instructions

1. Flight Manual
Flight Manual for the sailplane
ASW 28-18 E, issued 10. February 2005, LBA approved
2. Maintenance Manual
Maintenance Manual for the sailplane
ASW 28-18 E, issued 10. February 2005
3. Structural Repair Manual
Repair Manual Alexander Schleicher, latest approved revision
4. Manual for the Tost release, latest approved issue



A.V Notes

1. Manufacturing is confined to industrial production
2. All parts made from fibre reinforced plastic exposed to sun radiation – except the areas for markings and registration and except from the inner sides of the engine supports – must have a white colour surface.
3. Installation of propeller AS2F1-3 is permissible according to ASW 28-18E Technical Note Nr 9
4. Operation of the sailplane with power plant removed or inoperative according to the instructions given in the flight and maintenance manual is approved.



Section B: **AS 34 Me**

B.I General

- | | |
|--|---|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | ASW 28-18 E |
| 1.2 Model: | AS 34 Me |
| 2. Airworthiness Category | Powered Sailplane, JAR 22 - Utility |
| 3. Manufacturer | Alexander Schleicher GmbH & Co.
Segelflugzeugbau
Alexander-Schleicher-Str. 1
36163 Poppenhausen
Germany |
| 4. Type Certification Application Date | 07 March 2019 |
| 5. Type Certification Date | 30 June 2022 |

B.II EASA Certification Basis

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements | 07 March 2019 |
| 2. Airworthiness Requirements | JAR-22, Change 6, issued 1. August 2001 |
| 3. Special Conditions | SC-22.2014-01 - Installation of electric propulsion units in powered sailplanes
SC E-01 - Airworthiness standard for CS-22H Electrical retractable engine to be operated in powered sailplanes |
| 4. Requirements elected to comply | Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fibre Reinforced Plastics, issued July 1991
Additional Requirements for the Installation of a Water Ballast System in the Vertical Tail for the Purpose of Balancing a Nose Down Moment Caused by Water Ballast in the Wing, issued August 1991
CS 22.49, 22.1529, 22.1581, 22.1583, 22.1585, 22,1587, 22.1589 of Certification Specification for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5, 2009 |
| 5. Exemptions | None |
| 6. Deviations | None |



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|-------------------------------|-----------------------------------|
| 7. Equivalent Safety Findings | JAR 22.335 (f) |
| 8. Environmental Protection | CS 36 (ICAO Annex 16, Chapter 10) |



B.III Technical Characteristics and Operational Limitations

1. Type Design Definition List of drawing files AS 34 Me, issue 01
February 2022

2. Description Single-seat, shoulder-winged self-launching
powered sailplane, CFRP/GFRP/AFRP-
composite construction; four-part wing with
three-panel Schempp-Hirth type airbrakes
on upper wing surface, detachable winglets,
water ballast tanks in the wing and optional
in the fin, retractable landing gear with
hydraulic disc brake, T-shaped horizontal
tail (fixed horizontal stabilizer with elevator,
fin and rudder).

3. Equipment Min. required Equipment:
1 Air speed indicator (up to 300 km/h)
1 Altimeter
1 Outside air temperature indicator
(when flying with water ballast)
1 4-point harness (symmetrical)
1 Parachute or back cushion (thickness
approx. 8 cm)
With engine installed:
1 Power-plant instrument CU-34
1 Magnetic compass

Additional equipment refer to Flight and
Maintenance Manual

4. Dimensions

Span:	15,0 m	18,0 m
Wing area:	10,5 m ²	11,88 m ²
Length:	6,59 m	6,59 m

5. Engine Alexander Schleicher EA910/1-35LK
 - 5.1 Model n/a (accepted as part of the airframe)
 - 5.2 Type Certificate
 - 5.3 Limitations

Max. Power:	35 kW
Max. RPM:	3750 min ⁻¹
Max. continuous Power:	25 kW
Max. continuous RPM:	3000 min ⁻¹
Max. motor temperature	110°C
Max. power electronics temp.	80°C



6. Propeller	
6.1 Model	AS2F1-6/L120-96-N3
6.2 Type Certificate	Type Certificate Data Sheet No. EASA.P.004
6.3 Number of blades	2
6.4 Diameter	120 cm
6.5 Sense of Rotation	left
7. Battery:	
7.1 Battery Type 1	
7.1.1 Battery designation/part no:	Battery cell type 1, P/N 910.62.9001
7.1.2 Battery capacity:	28 Ah
7.1.3 Non-usable battery capacity:	10 Ah (36%)
7.1.4 Max battery discharge temperature:	70°C
7.1.5 Min battery discharge temperature:	-20°C
7.1.6 Max battery charge temperature:	50°C
7.1.7 Min battery charge temperature:	0°C
7.1.8 Range of permissible cell voltage:	3 - 4,15 V
7.2 Battery Type 2 (see BV.4)	
7.2.1 Battery designation/part no:	Battery cell type 2, P/N 910.62.9003
7.2.2 Battery capacity:	28 Ah
7.2.3 Non-usable battery capacity:	10 Ah (36%)
7.2.4 Max battery discharge temperature:	60°C
7.2.5 Min battery discharge temperature:	-20°C
7.2.6 Max battery charge temperature:	40°C
7.2.7 Min battery charge temperature:	0°C
7.2.8 Range of permissible cell voltage:	3 - 4,2 V
8. Launching Hooks	1) Nose tow hook Tost "E 22", LBA Datasheet No. 11.402/9 NTS 2) Safety hook Tost "Europa G 88", LBA Datasheet No. 60.230/2
9. Weak Links	Ultimate strength: - For aero tow: max. 825 daN - For winch- and car launch: max. 825 daN
10. Load Factors	+5,3 / -2,65 (up to V_A) +4,0 / -1,5 (up to V_{NE})
11. Air Speeds	
11.1 Manoeuvring speed	V_A 200 km/h



11.2 Never exceed speed	V_{NE}	270 km/h
11.3 Maximum permitted speeds		
- in strong turbulence	V_{RA}	200 km/h
- in aero-tow	V_T	170 km/h
- in winch-launch	V_W	140 km/h
- for gear operation	V_{LO}	200 km/h
- for extracting engine	$V_{PO,max}$	120 km/h
- with extended engine	V_{PE}	170 km/h
12. Maximum Operating Altitude	None	



13. Approved Operations Capability	VFR Day only Cloud flying not permitted Aerobatic manoeuvres not permitted
14. Launch methods	Aero tow Winch and car launch Self-launch
15. Maximum Masses	
15.1 Maximum Take-off Mass	With 15 m wingspan: 525 kg With 18 m wingspan: 575 kg
15.2 Max. Mass of non-lifting parts	295 kg (285 kg with removed propulsion batteries)
16. Centre of Gravity Range	260 mm – 406 mm aft of datum
17. Datum	Wing leading edge at root rib
18. Levelling Means	Wedge 1000:49 placed horizontal on upper side of the fuselage boom horizontal
19. Control Surface Deflections	Refer to Maintenance Manual
20. Minimum Flight Crew	1
21. Maximum Passenger Seating Capacity	0
22. Baggage/ Cargo Compartments	12 kg (upper baggage compartment) 5 kg (lower baggage compartment)
23. Lifetime limitations	Refer to Maintenance Manual



B.IV Operating and Service Instructions

1. Flight Manual
Flight Manual for the powered sailplane AS 34 Me, Issue 01 September 2021, or later EASA approved revisions
2. Maintenance Manual
Maintenance Manual for the powered sailplane AS 34 Me, Issue 01 September 2021, or later EASA approved revisions
3. Structural Repair Manual
Repair Manual Alexander Schleicher, latest approved revision
4. Operating Manual and Maintenance Manual for Engine
Operating and Maintenance Manual for Motor Alexander Schleicher EA910, latest approved version *)
5. Operating Manual and Maintenance Manual for Propeller
Operating and Maintenance Manual for the propeller AS2F1, series AS2F1-6, in the latest approved version *)
6. Manual for the Tost release, latest approved issue

*) The operation and maintenance manuals are elements of the operation instructions of the AS 34 Me. Necessary revisions are not provided by flight and maintenance manuals of the AS 34 Me but separately by the engine and propeller manufacturer.



B.V Notes

1. Production is confined to industrial production
2. All parts made from fibre reinforced plastic exposed to sun radiation – except the areas for markings and registration – must have a white colour surface.
3. Operation of the sailplane with power plant removed or inoperative according to the instructions given in the flight and maintenance manual is approved.
4. The usage of propulsion batteries with cell type 2 (AS P/N 910.62.9003) according TN 1 is approved.



Section C: Administrative Section

C.I Acronyms & Abbreviations

AFRP	Aramid Fibre Reinforced Plastic
CFRP	Carbon Fibre Reinforced Plastic
CRI	Certification Review Item
CS	Certification Specification
CU	Control Unit
EASA	European Union Aviation Safety Agency
GFRP	Glass Fibre Reinforced Plastic
JAR	Joint Aviation Requirements
LBA	Luftfahrt-Bundesamt
ROZ	Researched-Oktanzahl
RPM	Revolutions per minute
TN	Technical Note
VFR	Visual Flight Rules

C.II Type Certificate Holder Record

Alexander Schleicher GmbH & Co. Segelflugzeugbau
Alexander-Schleicher-Str. 1
36163 Poppenhausen
Germany

C.III Change Record

Issue	Date	Changes	TC Issue No. & Date
01	12 April 2005	Initial Issue	
02	07 September 2015	Propeller AS2F1-3/L100-56-N3 for ASW 28-18 E	
03	01 July 2022	Introduction of Model AS 34 Me	30 June 2022
04	19 December 2022	Battery Type 2 for AS 34 Me	

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